August 8, 2023

NEW ENGLAND POWER COMPANY D/B/A NATIONAL GRID

301 Transmission Line Soil Borings - Sturbridge, MA

Notice of Intent

Prepared for:
New England Power Company
D/B/A National Grid
170 Data Drive
Waltham, MA 02451

PROJECT NUMBER:
178593

PROJECT CONTACT:
Eileen Piskura
EMAIL:
Eileen.Piskura@powereng.com
PHONE:
774-643-1800

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nationalgrid

August 8, 2023

Sturbridge Conservation Commission
Attn: Edward Goodwin, Chair
301 Main Street
Sturbridge, MA 01566

Subject: **New England Power Company d/b/a National Grid**
Notice of Intent
Geotechnical Investigation Activities - Existing Transmission Line Rights-of-Way
Sturbridge, Massachusetts

Dear Members of the Sturbridge Conservation Commission:

New England Power Company d/b/a National Grid (NEP) is pleased to submit this Notice of Intent (NOI) application with the Sturbridge Conservation Commission in order to perform subsurface geotechnical investigations within the existing 301 Line transmission right-of-way (ROW) to collect data on soil characteristics, seasonal high groundwater, and bedrock depth. The proposed subsurface geotechnical investigations are in support of the engineering design and pre-construction planning for proposed maintenance improvements to the transmission system in Sturbridge.

This NOI is being submitted in accordance with the Massachusetts Wetlands Protection Act (M.G.L. Ch.131, S.40) (WPA) and its implementing regulations (310 CMR 10.00), and the Sturbridge Wetland Protection Bylaw (Chapter 286) and its implementing regulations (Chapter 365). Proposed activities are within bordering vegetated wetlands (BVW), buffer zone to BVW, inland banks, and riverfront area. All work activities will occur within the ROW easement held by NEP with access to the boring locations obtained along existing public roads, overland routes, or temporary construction matting.

Enclosed please find the NOI forms and supporting documentation for your review. At the direction of the Sturbridge Conservation Commission staff, "Residential-Other" was selected on the Sturbridge Wetlands Filing Fee Calculations Worksheet to comply with the local by-law. We respectfully request that this project activity be placed on your next scheduled public meeting agenda. Please do not hesitate to contact me at 781-392-9594 or laura.ernst@nationalgrid.com, or Eileen Piskura of POWER Engineers Consulting PC. at 774-643-1800 or eileen.piskura@powereng.com if you have any questions or require additional information. Thank you for your consideration and review.

Sincerely,

Laura Ernst

Laura Ernst
Lead Environmental Scientist

Enclosed: Sturbridge NOI Application Coversheet
WPA Form 3
NOI Fee Transmittal Form and Local Filing Fee Worksheet
Copy of filing fee checks

Attachments: Attachment A: Project Narrative
Attachment B: Project Figures
Attachment C: Typical Construction Details
Attachment D: Field Data Forms
Attachment E: Certified Abutters List and Notifications

c: MassDEP, Central Regional Office
Lauren Glorioso, Massachusetts Natural Heritage Endangered Species Program
Karen Hanecak, POWER Engineers, Inc.

Notice of Intent

PREPARED FOR: *NEW ENGLAND POWER COMPANY D/B/A NATIONAL GRID*

PREPARED BY: *EILEEN PISKURA*
774-643-1800
EILEEN.PISKURA@POWERENG.COM

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TABLE OF CONTENTS

301 Transmission Line Soil Borings
Sturbridge, Massachusetts
Notice of Intent

NOTICE OF INTENT FORMS

Town of Sturbridge
Conservation Commission
Notice of Intent Application Coversheet/Checklist

Date	August 8, 2023

Fill in all white cells completely

Parcel Address Assessors Map/Plat Book & Page	660-01233-159; 660-00754-210; 518-01343-034	**Applicant** name Address Email Phone	Laura Ernst 170 Data Drive, Waltham, MA 02451 laura.ernst@nationalgrid.com 781-392-9594
Owner name Address Email Phone		**Representative** Address Email Phone	Eileen Piskura 2 Hampshire Drive, Suite 301, Foxborough, MA 02035 eileen.piskura@powereng.com 774-643-1800

Wetland type	BVW	**sf/cf affected**	12,883	**Relevant Perf. Standards**	**10.** 55(4)a-e
Wetland type	Inland bank	**sf/cf affected**	50	**Relevant Perf. Standards**	**10.** 54(4)a-c
Wetland type	BLSF	**sf/cf affected**	2030	**Relevant Perf. Standards**	**10.** 57(4)(a)1-3

Components of a Complete NOI Application

State Form: NOI Form 3	Included? ☒ Yes ☐ No	
Engineered Plan	Included? ☐ Yes ☒ No	not an engineered project
Proof of Mailing to DEP	Included? ☒ Yes ☐ No	
Narrative	Included? ☒ Yes ☐ No	
Proof that all relevant perf. standards are met	Included? ☒ Yes ☐ No	
TOPO Map identifying locus with scale	Included? ☒ Yes ☐ No	
FIRM Map identifying locus with scale	Included? ☒ Yes ☐ No	
Natural Heritage Map with WH, PH, & VP data	Included? ☒ Yes ☐ No	Included? ☐
Delineation lines (backup material)	Included? ☒ Yes ☐ No	
Tax Form	Included? ☐ Yes ☒ No	N/A within ROW easement
Fees		
★ Fee Transmittal form	Included? ☒ Yes ☐ No	
★ Filing Fee Worksheet	Included? ☒ Yes ☐ No	
★ Town portion of state filing fee	Included? ☒ Yes ☐ No	
★ Sturbridge local filing fee $ 750	Included? ☒ Yes ☐ No	
Abutter Information		
★ Certified abutters list (within 200')	Included? ☒ Yes ☐ No	
★ Abutter notification form	Included? ☒ Yes ☐ No	
★ Affidavit & proof -- bring to hearing	*Present them at the hearing*	
Other Attachments, e.g.		
Confirmation of submission to NHESP	Included? ☐ Yes ☐ No ☒ Not Applicable	
Planting Plan	Included? ☐ Yes ☐ No ☒ Not Applicable	
Floodplain analysis	Included? ☐ Yes ☐ No ☒ Not Applicable	
Stormwater analysis	Included? ☐ Yes ☐ No ☒ Not Applicable	

Components of a Complete NOI Application

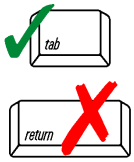
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Sturbridge
City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

Existing electric transmission ROW — a. Street Address
Sturbridge — b. City/Town
c. Zip Code
Latitude and Longitude:
see attached mapping — d. Latitude
e. Longitude
660-01233-159; 660-00754-210; 518-01343-034 — f. Assessors Map/Plat Number
g. Parcel /Lot Number

2. Applicant:

Laura — a. First Name
Ernst — b. Last Name
National Grid — c. Organization
170 Data Drive — d. Street Address
Waltham — e. City/Town
MA — f. State
02451 — g. Zip Code
781-392-9594 — h. Phone Number
i. Fax Number
laura.ernst@nationalgrid.com — j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Eileen — a. First Name
Piskura — b. Last Name
POWER Engineers Consulting PC — c. Company
2 Hampshire Street, Suite 301 — d. Street Address
Foxborough — e. City/Town
MA — f. State
02035 — g. Zip Code
774-643-1800 — h. Phone Number
i. Fax Number
eileen.piskura@powereng.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

3,000 — a. Total Fee Paid
1,487.50 — b. State Fee Paid
1,512.50 — c. City/Town Fee Paid

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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A. General Information (continued)

6. General Project Description:

New England Power Company d/b/a National Grid (NEP) proposes geotechnical investigations within the existing 301 Line transmission ROW to collect data on soil characteristics, seasonal high groundwater, and bedrock depth. See attached narrative for additional information.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☒ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☒ Yes ☐ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

Construction, reconstruction, operation and maintenance of overhead public utilities.

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

a. County

b. Certificate # (if registered land)

c. Book

d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Massachusetts Department of Environmental Protection
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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☒ Bank	50 (temporary) 1. linear feet	2. linear feet
b. ☒ Bordering Vegetated Wetland	12,883 (temporary) 1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☒ Bordering Land Subject to Flooding	2,030 1. square feet 0 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☒ Riverfront Area	Hobbs Brook and McKinstry Brook - inland 1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☒ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: 172,948 square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet	b. square feet within 100 ft.	c. square feet between 100 ft. and 200 ft.
1,024	399	625

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

Massachusetts Department of Environmental Protection
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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐ Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

Massachusetts Department of Environmental Protection
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C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

a. ☒ Yes ☐ No

If yes, include proof of mailing or hand delivery of NOI to:

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

August 1, 2021
b. Date of map

If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

c. Submit Supplemental Information for Endangered Species Review*

1. ☐ Percentage/acreage of property to be altered:

(a) within wetland Resource Area _____ percentage/acreage

(b) outside Resource Area _____ percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

2. ☒ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

(a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

(b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review).
Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.
** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☒ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: dmf.envreview-north@mass.gov

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

c. ☐ Is this an aquaculture project? d. ☐ Yes ☐ No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).

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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☒ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☐ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☐ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

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D. Additional Information (cont'd)

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

Geotechnical Map Book
a. Plan Title

POWER Engineers Consulting, PC
b. Prepared By

c. Signed and Stamped by

June 21, 2023
d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☒ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

000083
2. Municipal Check Number

Aug 03, 2023
3. Check date

000081
4. State Check Number

Aug 03, 2023
5. Check date

POWER Engineers Consulting, PC
6. Payor name on check: First Name

7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

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Sturbridge
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Laura Ernst

1. Signature of Applicant

8/7/2023
2. Date

3. Signature of Property Owner (if different)

4. Date

Ed Pesa

5. Signature of Representative (if any)

8/7/2023
6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the “yes” box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

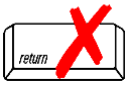
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

a. Street Address	b. City/Town
National Grid ROW	Sturbridge

c. Check number	d. Fee amount
	$1,487.50

2. Applicant Mailing Address:

a. First Name	b. Last Name
Laura	Ernst

c. Organization: New England Power Company d/b/a National Grid

d. Mailing Address: 170 Data Drive

e. City/Town	f. State	g. Zip Code
Waltham	MA	02451

h. Phone Number	i. Fax Number	j. Email Address
781-392-9594		laura.ernst@nationalgrid.com

3. Property Owner (if different):

a. First Name	b. Last Name

c. Organization

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
NOI Wetland Fee Transmittal Form
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
2j any other activity not in 1,3,4,5	6	$500	$3,000

Step 5/Total Project Fee: $3,000

Step 6/Fee Payments:

Total Project Fee: $3,000
a. Total Fee from Step 5

State share of filing Fee: $1,487.50
b. 1/2 Total Fee **less $**12.50

City/Town share of filling Fee: $1,512.50
c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

STURBRIDGE WETLANDS PROTECTION BY-LAW AND REGULATIONS

WETLANDS FILING FEE CALCULATION WORSHEET

Application Type	Qty	Town Filing Fee	TOTAL
Notice of Intent (NOI):			
Residential – Single Family:			
Accessory (Deck, Shed, Pool Septic)	____	$150	_____
Shoreline Work	____	$150	_____
New Construction	____	$300	_____
Residential – Other:			
Subdivision/Multi-Unit	1	$750	$750
Commercial/Industrial:			
New	____	$1500	_____
Redevelopment	____	$1000	_____
Limited Project (as defined in SWB & WPA)	____	Equal to full WPA fee	_____
Alterations – located within Riverfront Area	____	Additional 50% of Fee	_____
Application filed after Enforcement Order		Double the Municipal fee	_____
Request for Amended Order of Conditions	____	50% of initial fee	_____
Request for Determination of Applicability (RDA:			
No Wetland Boundary Confirmation Residential:	____	$100	_____
No Wetland Boundary Confirmation All Other:	____	$200	_____
For Wetland Boundary Confirmation **File ANRAD or NOI**			
Abbreviated Notice of Resource Area Delineation (ANRAD):			
Residential – Single Family:	_____	$100	_____
All Other: **Base Review**	_____	$300	_____
Resource Area Boundary			

Certificate of Compliance (COC):			
Residential:			
Single Family	____	$50	_____
Subdivision or Multi-Unit	____	$150	_____
Commercial or Industrial:	____	$150	_____
If Order of Conditions has Expired	____	Add an additional $150	_____
OOC Extension Request	____	$50	_____
Emergency Certification	_____	$50	_____

(NOI may be required to be filed following issuance of Emergency Cert)

Local Bylaw Fee (includes Town Filing Fee)	**$** 750
State Filing Fee (from DEP Wetland Transmittal Form)	**$** 1,487.50
Total Payable to "Town of STURBRIDGE"	**$** 2,262.50

*Additional Consultant Fee may be required for reasons which may include:

- Significant amount of wetland impact;
- Extensive resource areas on a site;
- Lack of information supplied;
- Incomplete plans, reports, forms submitted;
- Supplemental information submitted.

ATTACHMENT A PROJECT NARRATIVE

1.0 INTRODUCTION

This Notice of Intent (NOI) is being filed with the Town of Sturbridge Conservation Commission by POWER Engineers Consulting, PC. (POWER) on behalf of the New England Power Company d/b/a National Grid (NEP) for subsurface geotechnical investigations within the existing 301 Line transmission right-of-way (ROW) to collect data on soil characteristics, seasonal high groundwater, and bedrock depth. The proposed subsurface geotechnical investigations in Sturbridge are in support of the engineering, design, and pre-construction planning for proposed maintenance improvements to the transmission system in Sturbridge. This NOI is being filed pursuant to the Massachusetts Wetland Protection Act (MA WPA) Massachusetts General Law [M.G.L.] c. 131 § 40 and associated Regulations (310 CMR 10.00) and the Sturbridge Wetland Protection Bylaw (Chapter 286) and its implementing regulations (Chapter 365).

The subsurface geotechnical investigations include 14 soil borings in Sturbridge, ten of which are located within resource areas or require crossing resource areas to access (B.208.A & B.208.B, B.211.A & B.211.B, B.214.A & B.214.B, B.216.A & B.216.B, B.230.A & B.230.B) and maintenance to an existing, upland access road in 200-foot buffer to bordering vegetated wetland (BVW). Four borings (B.211.A & B.211.B, B.214.A & B.214.B) are proposed within BVW and four borings (B.208.A & B.208.B, B.216.A & B.216.B) are proposed within the 200-foot buffer to BVW. Access to borings B.230.A & B.230.B is proposed from Route 49 along an existing, upland access road before reaching Wetland STUW16 and STUS05 McKinstry Brook where temporary construction matting will be used to complete the wetland and brook crossing. At the proposed crossing location, McKinstry Brook is less than 20 feet wide and will be spanned with temporary construction matting. Impacts resulting from these ten soil borings are the subject of this NOI.

All work activities will occur within the ROW easement held by NEP with access to the boring locations obtained along existing public roads, overland routes, or temporary construction matting (timber or equivalent). Figures in Attachment B show the proposed boring locations and access details; Attachment C contains details of prefabricated mats and construction mats that may be used during the geotechnical investigations.

Throughout the planning process for these activities, wetland impacts have been minimized to the greatest extent practicable by utilizing existing transmission line corridors and existing access roads. However, given the scale and landscape setting of Line 301, certain wetland impacts associated with access to boring locations and workspace cannot be avoided and will result in temporary impacts to wetland resources. Refer to Section 3.0 for a discussion on project impacts to regulated resource areas.

Temporary construction mats (timber or equivalent) are used to minimize soil disturbance and rutting when crossing or working within wetlands. The matting will be removed from the wetland once the boring is completed, and any ground disturbance will be restored, and the area stabilized. Each boring will be backfilled and stabilized. Erosion and sediment controls will be installed pursuant to National Grid's EG-303, ROW Access, Maintenance and Construction Best Managements Practices (BMP Manual). The drilling rig will be equipped with emergency spill kits and secondary containment as outlined in National Grid's Spill Release Notification Procedures (EG-501MA and EG-502MA). Prior to the start of Project activities access routes and the area around proposed soil borings will be mowed. NEP expects the geotechnical investigation activities to commence in the Fall of 2023.

2.0 EXISTING CONDITIONS

The existing transmission line ROW where geotechnical activities will occur extends approximately 3.3 miles from Sturbridge's municipal border with Brookfield east of Gay Road to Sturbridge's municipal boundary with Charlton west of Interstate 90. Dominant land uses adjacent to the project area include forest, Wells State Park, and single-family properties.

POWER conducted field assessments within the limit of work activities associated the Project (hereafter referred to as the "Survey Area"). Wetland field assessments occurred from August to October 2022.

2.1 Wetland Resource Area Summary

On behalf of NEP, POWER conducted wetland and watercourse delineations for the 301 Line. During the field surveys in Sturbridge, wetlands were identified and delineated in accordance with requirements of the following jurisdictions:

Clean Water Act (CWA) (33 United States Code [U.S.C.] §§ 1251 et seq., Section 404 and Section 401)

Massachusetts Wetland Protection Act (MA WPA) (M.G.L. c. 131, § 40) and associated Regulations (310 Code of Massachusetts Regulations [CMR] 10.00)

Town of Sturbridge Conservation Commission Wetland Protection Bylaw (Chapter 286) and its implementing regulations (Chapter 365)

The wetlands were delineated in accordance with the methodology as outlined in the *Handbook on Delineating Bordering Vegetated Wetlands* (MassDEP 1995)[1] and the *United States Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987)[2] and the subsequent *Regional Supplement to the US Army Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (USACE 2012).[3]

For each wetland, photographs, along with other observations and descriptive information were recorded including location, wetland classification, vegetative community, wetland functions and values, and general wildlife use. Detailed information was collected at paired data plots in the wetland and upland along each side of the boundary from representative wetlands to document the vegetation, soils and hydrology criteria used to establish the wetland boundary. This information appears on United States Army Corps of Engineers (USACE) wetland data sheets completed for delineated wetlands and watercourses.

Photographs were taken of each wetland. Additional observations and descriptive information recorded for each wetland includes location, wetland classification, vegetative community, wetland functions and values, and general wildlife use. Detailed information was collected at paired data plots

[1] Massachusetts Department of Environmental Protection (MassDEP). 1995. *Handbook on Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act*. Boston, MA. Division of Wetlands and Waterways. March 1995.

[2] Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

[3] United States Army Corps of Engineers (USACE). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

in the wetland and upland along each side of the boundary from representative wetlands to document the vegetation, soils and hydrology criteria used to establish wetland boundaries. The wetland boundaries were marked with consecutively numbered pink flagging hung on vegetation at approximately 15- to 30-foot intervals. As stated previously, wetlands have been labeled based upon an alpha-numeric coding system, based upon the letter of the transmission line (e.g., "STUW" for the Sturbridge Wetlands, followed by increasing numbers from west to east).

Streams and drainage ways were examined for the presence/absence of an Ordinary High-Water Mark (OHWM) and defined bed (refer to "LUW" below) and bank (refer to "IB" below). Generally, if these characteristics were observed along a waterway, it was determined to be a regulated stream but if absent, or atypical circumstances existed, these areas were determined to be a drainage way, swale, ditch, or other erosional feature, and likely not a CWA-regulated feature (i.e., not a "water of the United States"). Any streams encountered were classified based on the observed flow and channel characteristics at the time of the field review. Watercourses were delineated with blue flagging. As stated previously, watercourses were labeled based upon the wetland that the stream is associated with. Photographs were taken of each watercourse and waterbody.

State regulated wetland resource areas identified on and/or near the Project include: BVW, Riverfront Area (RFA), IB, LUW, and Bordering Land Subject to Flooding (BLSF).

The Town of Sturbridge has adopted a wetland protection bylaw: *"…to protect the wetlands, related water resources and adjoining land areas in Sturbridge by controlling, via prior review and approval, activities deemed by the Sturbridge Conservation Commission (hereinafter referred to as Conservation Commission") as likely to have a significant or cumulative effect upon resource area values, including but not limited to the following: public or private water supply, groundwater, flood control, erosion and sedimentation control, storm damage prevention, water quality, water pollution control, fisheries, wildlife habitat, rare species habitat including rare plant species, recreation values, agriculture and aquaculture, deemed important by the community (collectively, the "resource area values protected by this bylaw")."*

POWER conducted wetland and watercourse delineations of the Survey Area from August through October 2022. Resource Areas subject to the WPA have been field delineated or identified to occur in the Survey Area:

• Bank (310 CMR 10.54)

• Bordering Vegetated Wetlands (310 CMR 10.55)

• Land under Waterway (310 CMR 10.56)

• Bordering Land Subject to Flooding (310 CMR 10.57(a))

• Riverfront Area (310 CMR 10.58)

Refer to the field data sheets in Attachment D for more detailed descriptions of the wetland resource areas.

2.2 Bordering Vegetated Wetlands (BVW)

As listed in Table 1, four wetland systems that will be impacted by the geotechnical work are designated as BVW. Since the wetlands are within maintained NEP ROWs, the majority of these BVWs are characterized as Palustrine Scrub-Shrub (PSS) wetlands dominated by woody deciduous vegetation (shrubs and small trees) less than six meters (20 feet) tall or Palustrine Emergent (PEM) wetlands dominated by herbaceous vegetation are also present within several BVWs.

TABLE 1 WETLANDS IMPACTED BY THE PROJECT

WETLAND ID	WETLAND CLASS[1]		JURISDICTIONAL STATUS[2]	STATE-REGULATED WETLAND BUFFER AREA	TOWN REGULATED WETLAND BUFFER AREA	TYPICAL PLANT SPECIES	ADDITIONAL COMMENTS
	NWI	State					
STUW05*	PSS/PEM	BVW	Federal and State	100 feet	200 feet	Speckled alder, poison sumac, red maple, silky dogwood, maleberry, rough goldenrod, eastern red cedar, and sensitive fern.	STUW05 located partially within 100 year floodplain. Beavers have built a dam on the existing gravel access road that traverses the wetland.
STUW07	PEM/PSS	BVW	Federal and State	100 feet	200 feet	Red maple, mountain laurel, maleberry, broadleaf meadowsweet, cinnamon fern, woolgrass, and broadleaf cattail.	STUW07 located in Wells State Park. Beavers have constructed a dam on the existing gravel access road that traverses the wetland.
STUW09	PSS/PEM	BVW	Federal and State	100 feet	200 feet	Winterberry, red maple, sallow sedge, woolgrass, broadleaf meadowsweet, and Joe-Pye weed.	STUW09 located within Wells State Park.

WETLAND ID	WETLAND CLASS[1]		JURISDICTIONAL STATUS[2]	STATE-REGULATED WETLAND BUFFER AREA	TOWN REGULATED WETLAND BUFFER AREA	TYPICAL PLANT SPECIES	ADDITIONAL COMMENTS
	NWI	State					
STUW16	PEM	BVW	Federal and State	100 feet	200 feet	Red maple, highbush blueberry, woolgrass, soft rush, maleberry, and sedges (Carex sp.).	STUW16 borders McKinstry Brook on both sides. There is a beaver dam located in McKinstry Brook north of the wetland and stream crossing. An existing access route runs through both STUW16 and McKinstry Brook.

[1] Wetlands were classified according to Cowardin et al. (1979). PSS = palustrine scrub-shrub wetland; PFO = palustrine forested wetland; PEM = palustrine emergent wetland; PUB = palustrine unconsolidated bottom.
[2] Please note that the determination of each wetland's isolated or connected status represents the professional opinion of POWER. Final determination of jurisdictional status is the purview of the USACE.
Notes: NWI = National Wetlands Inventory
[*] Portion of this wetland identified as potential vernal pool habitat.

NEP secured the services of Beaver Solutions LLC to assess beaver activity, prepare recommendations, and implement solutions to beaver-related issues in support of the geotechnical program. In April 2023, Beaver Solutions, NEP, and POWER Engineers reviewed two locations, Wetlands STUW05 and STUW07, along the 301 Line with active beaver dams within existing access roads in Sturbridge. Based on the site visit and recommendations from Beaver Solutions, NEP will pursue the procedure detailed below to secure temporary access to B.208.A & B.208.B and B.211.A & B.211.B while minimizing affects to the beavers and resource areas. NEP will require its civil contractor to coordinate very closely with the drilling contractor to ensure the temporary wetland crossings are in place for the minimum amount of time as possible.

Borings B.208.A & B.208.B are accessed via an existing upland access road from New Boston Road. Between Structures 207 and 208 beavers have constructed a dam on, and subsequently flooded, the existing compacted gravel road that crosses Wetland STUW05 for approximately 260 linear feet. Beaver Solutions plans to obtain a 10-Day Emergency Beaver or Muskrat Permit from the Town of Sturbridge Board of Health prior to breaching the dam and installing temporary construction mats on the existing roadbed. Once the permit is secured, construction mats will be installed on the existing access road alignment and left in place for the minimum amount of time needed to complete soil borings B.208.A & B.208.B. The intent is to use the existing dam to partially support the construction mats and not to completely remove the dam. During activities associated with B.208.A & B.208.B,

Beaver Solutions will monitor mat installation, remove any new dam material if placed by beavers on/around the mats, and monitor construction mat removal. Installation of construction mats on the footprint of the existing access road will minimize impacts to Wetland STUW05.

Borings B.211.A & B.211.B are accessed via an existing on-ROW access road. At this site, beavers have constructed a large dam immediately upstream of the existing compacted gravel road that crosses a portion of Wetland STUW07 for approximately 290 linear feet. Based on the field review, it was determined by Beaver Solutions and NEP that temporary construction mats can be placed at the toe of the beaver dam on the footprint of the existing compacted gravel access road without causing direct or indirect impacts to the dam. The mats would be left in place for the minimum amount of time needed to complete soil borings B.211.A & B.211.B. Installation of construction mats on the footprint of the existing access road will minimize impacts to Wetland STUW07.

Wetland STUW16 contains a beaver dam north of the existing access road. That beaver dam will not be impacted by the Project.

2.3 Inland Bank (IB), Streams, and Land Under Water (LUW)

One stream, STUS05, will require temporary construction matting to access geotechnical borings. This stream is "*waters of the United States*" and subject to the jurisdiction of the CWA. WPA Resources Areas associated with the stream include Inland Bank (IB) along each side of the channel, beneath which is LUW. An IB occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, the IB occurs between a water body and upland. An IB may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, or stone. The upper boundary of IB is the first observable break in the slope or the mean annual flood level, whichever is lower. The lower boundary of IB is the mean annual low flow level.

STUS05 is a perennial stream named McKinstry Brook which runs south through Wetland STUW16 and the existing access road crosses the stream on the south side of ROW. The stream has an estimated OHMW depth of approximately 0.4 feet and width of approximately 28 feet. The stream will be spanned with temporary construction mats to access boring locations. A 200-foot Riverfront Area (RFA) is associated with stream STUS05.

LUW is defined as the land beneath any creek, river, stream, pond, or lake and the boundary of an LUW is the mean annual low water level. LUW may be composed of muck or peat, fine sediments, rocks, or bedrock (310 CMR 10.56(2)). A 100-foot buffer zone is also associated with LUW and typically occurs within the RFA. LUW is associated with all nine streams. There will be no impacts to LUW.

2.4 Riverfront Area (RFA)

RFA is defined as the area of land between a perennial river's mean annual high-water line and a parallel line measured horizontally, in most cases a distance of 200 feet (310 CMR 10.58(2)). The RFA may include or overlap other resource areas or their buffer zones. The RFA does not have a buffer zone. Perennial streams (STUS03 and STUS05) have an associated 200-foot RFA.

Temporary construction matting associated with the crossing of STUS05 is required in RFA, additionally one geotechnical boring is on the border of RFA associated with STUS03. No tree clearing in RFA will be required for the geotechnical work.

2.5 Bordering Land Subject to Flooding (BLSF)

BLSF is defined as an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds, or lakes (310 CMR 10.57(2)(a)). BLSF extends from the IB of these waterways and water bodies; where a BVW occurs, it extends from said wetland. Flood profile data displayed on Flood Insurance Rate Maps (FIRMs) prepared by the Federal Emergency Management Agency (FEMA) identifies the boundary of BLSF which represents the estimated maximum lateral extent of flood water to theoretically result from the statistical 100-year frequency storm. BLSF does not have a buffer zone. The FIRM map for the project area in Attachment A identifies 100-year floodplains (BLSF) along the NEP ROW within Sturbridge. The proposed access through STUW05 also passes through BLSF, however BLSF will not be altered and no flood storage capacity will be impacted.

2.6 Vernal Pools

Vernal pool habitat is defined in 310 CMR 10.04 as confined basin depressions which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations. These areas provide essential breeding habitat for a variety of amphibian species such as wood frogs (*Rana sylvatica*) and spotted salamanders (*Ambystoma maculatum*). Vernal pool habitat also includes the area within 100 feet of the mean annual boundaries of such depressions, to the extent that such habitat is within an Area Subject to Protection under M.G.L. c. 131, § 40 as specified in 310 CMR 10.02(1). Certified vernal pools (CVPs) are those that have been certified by the Massachusetts Natural Heritage and Endangered Species Program (NHESP) according to the *Guidelines for Certification of Vernal Pool Habitat* (Massachusetts Division of Fisheries & Wildlife 2000)[4] and are protected if they fall under the jurisdiction of the MA WPA. Potential vernal pools (PVPs) have also been mapped by NHESP but do not receive protection under the MA WPA or under any other state or federal wetlands protection laws. Wetland STUW05 has been identified as containing potential vernal pool habitat. No CVPs were identified.

[4] Massachusetts Division of Fisheries & Wildlife. 2000. *Guidelines for Certification of Vernal Pool Habitat.*

2.6.1 Massachusetts Natural Heritage and Endangered Species Program Conservation and Management Permit

Rare species are protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c.131A) and Regulations (321 CMR 10.00). In addition, rare species are also protected under the MA WPA 310 CMR 10.59. NEP evaluated state agencies' data to determine whether any Massachusetts State-listed, and/or proposed, endangered, or threatened species or critical habitats are known to occur in the Project ROW. The project area is within Massachusetts Natural Heritage and Endangered Species Program (NHESP) Priority Habitat, however geotechnical/subsurface investigations are exempt under the Massachusetts Endangered Species Act and its implementing regulations (321 CMR 10.14(14)). Consultation with NHESP indicates their concurrence that this work can be performed under the exemption with additional protections for rare species, which NEP will comply with. NHESP habitat in the Project area is included in the Geotechnical Map Book provided in Attachment B. NEP will copy NHESP on this filing.

3.0 CONSTRUCTION ACTIVITIES

The Project proposes geotechnical activities will include 14 soil borings in Sturbridge, ten of which will have temporary impacts to regulated resources. The purpose of the borings is to evaluate subsurface conditions foundation design and construction associated with the future maintenance of the 301 Line.

A small drill rig will be used to perform the soil borings. Each bore hole will be approximately four to six inches in diameter and is typically completed within one to two days. Soils from the bore hole will be temporarily stored adjacent to the boring location. If for any reason, the soil remains overnight, they will be properly contained (fiber rolls, etc.). Upon completion of the work, bored-out soil will be used to backfill the hole.

3.1 Wetland Resource Area Impacts

Construction of the Project requires temporary impacts to wetland resource areas. Impacts will result from the placement of temporary construction mats to serve as construction work pads around poles in wetlands and the geotechnical boring process.

Throughout the planning and design process for the Project, wetland impacts have been minimized to the greatest extent practicable by utilizing existing transmission line corridors and existing access roads. However, given the scale and landscape of Line 301, certain wetland impacts associated with the geotechnical activities cannot be avoided. Table 2 summarizes the potential impacts to wetlands from the proposed soil boring program.

Installation of an estimated 12,883 square feet of temporary construction mats across BVW will be required to access the boring locations and provide workspace. Borings B.208.A & B.208.B will cross Wetland STUW05 in Sturbridge requiring approximately 4,317 square feet of temporary impact. Borings B.211.A & B.211.B are in Wetland STUW07 requiring approximately 5,261 square feet of temporary impact. Borings B.214.A & B.214.B are in Wetland STUW09 requiring approximately 2,469 square feet of temporary impact. Borings B.216.A & B.216.B are in RFA to STUS03 and in 200-foot buffer to BVW; these borings will require approximately 625 square feet of workspace in RFA and 200-foot buffer to

BVW. Borings B.230.A & B.230.B will require access through Wetland STUW16 and STUS05 (McKinstry Brook) from Route 49 requiring approximately 825 square feet of temporary impact to the wetland and 25 linear feet of impact to each bank of STUS05. This crossing will also require approximately 399 square feet of temporary matting in the RFA and 100-foot buffer. NEP must access these borings from the west via Route 49 because access from the east would require entering the ROW from Interstate 90, the Massachusetts Turnpike. Access from Interstate 90 is unsafe and likely would not be allowed by the Massachusetts Department of Transportation. Additionally, proposed maintenance to the upland portion of the access road to B.230.A & B.230.B is within 200-foot buffer to Wetland STUW14 for approximately 42 linear feet.

TABLE 2 SUMMARY OF ANTICIPATED WETLAND IMPACTS

RESOURCE AREA	TEMPORARY IMPACTS
Bordering Vegetated Wetland (BVW)	12,883 sf
Inland Bank (IB)[1]	50 lf
Riverfront Area (RFA)[1]	1,024 sf
Bordering Land Subject to Flooding (BLSF) [1]	2,030 sf

[1] Overlapping impacts in BVW have been removed

4.0 ALTERNATIVES ANALYSIS

Based on the presence of Riverfront Area resources in the Project Area, NEP performed an alternatives analysis, as described below.

NEP evaluated a "No-Action Alternative" in which no soil borings would occur. The No-Action Alternative would leave NEP to rely on existing, publicly available soil data for the area. This information does not offer the depth-specific and site-specific information required for engineering needs in planning for proposed maintenance improvements to the transmission system in Sturbridge. Without detailed soil information, the engineering team will have limited information in designing appropriate foundations and structures. This limitation could impact the overall stability and longevity of the project, potentially leading to the need for costly revisions and retrofits in the future.

Proceeding with the geotechnical activities as planned is essential for the successful and safe execution of the proposed maintenance improvements to the transmission system in Sturbridge and is the alternatives that best meets the identified system needs. NEP has minimized the impacts of these activities to the extent practicable by utilizing public roads and existing access roads to access the boring locations, however, due to the nature of the ROW, not all impacts could be avoided. All impacts will be temporary and NEP will implement their BMP Manual to minimize impacts and restore disturbed areas.

5.0 REGULATORY REVIEW

As demonstrated below, the proposed Project complies with and exceeds applicable performance standards for work in BVW, Inland Bank, Bordering Land Subject to Flooding, and Riverfront Area.

5.1 Inland Bank (*310 CMR 10.54*)

Where Inland Bank (IB) is encountered, the following MA WPA general performance standards apply:

[310 CMR 10.54 (4)(a)] – *Where the presumption set forth in 310 CMR 10.54(3) is not overcome, any proposed work on an IB shall not impair the following:*

1. *the physical stability of the Bank;*
2. *the water carrying capacity of the existing channel within the Bank;*
3. *groundwater and surface water quality;*
4. *the capacity of the Bank to provide breeding habitat, escape cover and food for fisheries;*
5. *the capacity of the Bank to provide important wildlife habitat function. A project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 50 feet (whichever is less) of the length of the bank found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. In the case of a bank of a river or stream. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.*

Response: Temporary alteration of IB may result from the placement of construction mats across stream STUS05. Using construction mats for this purpose is intended to minimize stream bank impacts by avoiding compaction, bank erosion, and loss of vegetation and will not result in permanent impact to the physical ability of the banks or the water carrying capacity of the existing channels. The use of construction mats will not impact groundwater or surface water or the capacity of the IBs to provide breeding habitat, escape cover, food for fisheries, or reduce the capacity of the IBs to provide important wildlife habitat functions, as these areas will be restored after construction is complete.

There are no anticipated impacts to the stability of the stream bank due to tree removal since no tree removal is proposed. There are no anticipated impacts to the water carrying capacity of the channel, or the groundwater and surface water quality.

[310 CMR 10.54 (4)(b)] – *Notwithstanding the provisions of 310 CMR 10.54(4)(a), structures may be permitted in or on a Bank when required to prevent flood damage to facilities, buildings and roads constructed prior to the effective date of 310 CMR 10.51 through 10.60 or constructed pursuant to a Notice of Intent filed prior to the effective date of 310 CMR 10.51 through 10.60 (April 1, 1983).*

Response: Not applicable; no structures are proposed in or on an IB.

[310 CMR 10.54 (4)(c)] – *Notwithstanding the provisions of 310 CMR 10.54(4)(a) or (b), no project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.59.*

Response: The project area is within NHESP Priority Habitat, however geotechnical/subsurface investigations are exempt under the Massachusetts Endangered Species Act and its implementing regulations (321 CMR 10.14(14)). Consultation with NHESP indicates their concurrence that this work

can be performed under the exemption with additional protections for rare species as outlined in National Grid's NHESP-approved Operations and Maintenance Plan, which NEP will comply with.

5.2 Bordering Vegetated Wetlands (*310 CMR 10.55*)

BVW is prevalent throughout the Project ROW. Where BVW is encountered, the following MA WPA general performance standards apply:

[310 CMR 10.55 (4)(a)] – *Where the presumption set forth in 310 CMR 10.55(3) is not overcome, any proposed work in a BVW shall not destroy or otherwise impair any portion of said area.*

Response: NEP has designed the Project to avoid or minimize wetland impacts to the greatest extent practicable. However, unavoidable temporary impacts to BVW will occur in work areas and along access routes during construction. These impacts are primarily associated with the use of stabilization techniques (e.g., construction mats, stabilizing material) which minimize impacts while allowing necessary work within resource areas to occur. All impacts will be temporary and disturbed areas will be restored as necessary according to NEP's BMP Manual.

[310 CMR 10.55 (4)(b)] – *Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an Order of Conditions permitting work which results in the loss of up to 5,000 sf of BVW when said area is replaced in accordance with the following general conditions and any additional, specific conditions the issuing authority deems necessary to ensure that the replacement area will function in a manner similar to the area that will be lost:*

1. *the surface of the replacement area to be created ("the replacement area") shall be equal to that of the area that will be lost ("the lost area");*

2. *the ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area;*

3. *the overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area;*

4. *the replacement area shall have an unrestricted hydraulic connection to the same water body or waterway associated with the lost area;*

5. *the replacement area shall be located within the same general area of the water body or reach of the waterway as the lost area;*

6. *at least 75% of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporary stabilized to prevent erosion in accordance with standard U.S. Soil Conservation Service methods; and*

7. *the replacement area shall be provided in a manner which is consistent with all other General Performance Standards for each resource area in Part III of 310 CMR 10.00.*

Response: The proposed work will not result in the permanent loss of BVW. To offset construction impacts, protective measures and BMPs will be in place to avoid and minimize impacts and the Project will restore disturbed areas as necessary.

[310 CMR 10.55 (4)(c)] – *Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an Order of Conditions permitting work which results in the loss of a portion of BVW when and;*

1. *said portion has a surface area less than 500 square feet;*
2. *said portion extends in a distinct linear configuration ("finger like") into adjacent uplands; and*
3. *in the judgement of the issuing authority it is not reasonable to scale down, redesign or otherwise change the proposed work so that it could be completed with loss of said wetland.*

Response: The Project will not result in a net loss of wetlands and no permanent impacts are proposed.

[310 CMR 10.55 (4)(d)] – *Notwithstanding the provisions of 310 CMR 10.55(4)(a),(b), or (c), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.*

Response: The project area is within NHESP Priority Habitat, however geotechnical/subsurface investigations are exempt under the Massachusetts Endangered Species Act and its implementing regulations (321 CMR 10.14(14)). Consultation with NHESP indicates their concurrence that this work can be performed under the exemption with additional protections for rare species as outlined in National Grid's NHESP-approved Operations and Maintenance Plan, which NEP will comply with.

[310 CMR 10.55 (4)(e)] – *Any proposed work shall not destroy or otherwise impair any portion or BVW that is within an Area of Critical Environmental Concern designated by the Secretary of Environmental Affairs under M.G.L. c.21A, § 2(7) and 301 CMR 12.00.*

Response: Not applicable; the Project ROW is not located within an Area of Critical Environmental Concern.

5.3 Bordering Land Subject to Flooding (*310 CMR 10.57*)

Where Bordering Land Subject to Flooding (BLSF) is encountered, the following MA WPA general performance standards apply:

[310 CMR 10.57 (4)(a)1] – *Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within BLSF, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows. Compensatory storage shall mean a volume not previously used for flood storage and shall be incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall be provided within the same reach of the river, stream, or creek.*

Response: Not applicable; there will be no loss of flood storage.

[310 CMR 10.57 (4)(a)2] – *Work within BLSF, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.*

Response: Not applicable; there will be no loss of flood storage.

[310 CMR 10.57 (4)(a)3] – *Work in those portions of BLSF found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, a project or projects on a single lot, for which Notice(s) of Intent is filed or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 sf (whichever is less) or land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat function. Additional alternations beyond the above threshold, or altering vernal pool habitat, may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.*

Response: The Project is not anticipated to impair the capacity of BLSF to provide wildlife habitat and there will be no loss of flood storage. The scrub-shrub and emergent habitats will remain in the BLSF habitat.

5.4 Riverfront Area (*310 CMR 10.58*)

Where RFA is encountered, the following MA WPA general performance standards apply:

[310 CMR 10.58 (4)(a)] – *Protection of Other Resource Areas: The work shall meet the performance standards for all other resource areas within the riverfront area, as identified in 310 CMR 10.30 (coastal bank), 10.32 (salt marsh), 10.55 (BVW), and 10.57 (Land Subject to Flooding). When work in riverfront area is also within the buffer zone to another resource area, the performance standards for the riverfront area shall contribute to the protection of the interests of M.G.L. c. 131, § 40 in lieu of any additional requirements that might otherwise be imposed on work in the buffer zone within riverfront area.*

Response: Two perennial streams will be impacted by the Project, each with an associated 200-foot Riverfront Area. Temporary disturbance in RFA will result from workspace and the placement of construction mats to establish stable access areas. All disturbed areas will be restored as necessary according to NEP's BMP Manual so impacts to the functions of the RFA will be minimal.

NEP recognizes that maintaining/reestablishing the natural vegetation within the RFA is critical to protecting water supplies, providing flood control, preventing pollution, and protecting wildlife and fisheries habitat.

[310 CMR 10.58 (4)(b)] – *Protection of Rare Species. No project may be permitted within the riverfront area which will have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, as identified by the procedures established under 310 CMR 10.59 or 10.37, or which will have any adverse effect on vernal pool habitat certified prior to the filing of the Notice of Intent.*

Response: The project area is within NHESP Priority Habitat, however geotechnical/subsurface investigations are exempt under the Massachusetts Endangered Species Act and its implementing regulations (321 CMR 10.14(14)). Consultation with NHESP indicates their concurrence that this work can be performed under the exemption with additional protections for rare species as outlined in National Grid's NHESP-approved Operations and Maintenance Plan, which NEP will comply with. Wetland STUW05 contains a PVP, however the proposed access is both an existing access road and an active

beaver dam with flooded habitat north of the road providing potential habitat for vernal pool species; crossing the access road will not impact the wetland north of the road and will not impact vernal pool habitat. After field survey, it is POWER's professional opinion that this area is unlikely to be a CVP because the beaver activity maintains a permanently or semi-permanently flooded ponded area. Additionally, the geotechnical activities are proposed for Fall and will conclude before spring, outside of the active period for vernal pool species.

[310 CMR 10.58 (4)(c)] – *Practicable and Substantially Equivalent Economic Alternatives. There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in M.G.L. c. 131, § 40.*

The WPA performance standards for RFA require that the applicant prove by a preponderance of the evidence that there are no practicable and substantially equivalent economic alternatives to the Project with less adverse effects on the interests identified in the WPA. The above provision is met because the proposed Project represents the alternative that will provide a reliable energy supply for the Commonwealth with a minimum impact on the environment.

[310 CMR 10.58 (4)(d)] – *No Significant Adverse Impact. The work, including proposed mitigation measures, must have no significant adverse impact on the RFA to protect the interest identified in M.G.L. c. 131, § 40.*

Response: Temporary construction matting and work space will be removed and disturbed areas restored according to NEP's BMP Manual. No tree clearing is proposed within RFA in accordance with 301 CMR 10.58(4)(d)1.a.

To offset construction impacts, protective measures and BMPs will be in place to avoid and minimize impacts. Consequently, in accordance with 310 CMR 10.58(4)(d)1.c., the Project is not anticipated to impair the capacity of RFA to provide wildlife habitat.

In accordance with 310 CMR 10.58(4)(d)1.d., the Project is not anticipated to impair groundwater or surface water quality by incorporating erosion and sedimentation controls.

[310 CMR 10.58 (5)] – *Redevelopment Within Previously Developed Riverfront Areas: Restoration and Mitigation. Notwithstanding the provisions of 310 CMR 10.58(4)(c) and (d), the issuing authority may allow work to redevelop a previously developed RFA, provided the proposed work improves existing conditions. Redevelopment means replacement, rehabilitation or expansion of existing structures, improvement of existing roads, or reuse of degraded or previously developed areas. A previously developed RFA contains areas degraded prior to August 7, 1996 by impervious surfaces from existing structures or pavement, absence of topsoil, junkyards, or abandoned dumping grounds. Work to redevelop previously developed RFAs shall conform to the following criteria.*

Response: Although a majority of the Project activities will be occurring within an existing ROW, NEP is not filing under the redevelopment provisions at 310 CMR 10.58(5).

6.0 PROJECT MITIGATION

6.1 Wetlands Protection and Best Management Practices

Throughout the planning process for the geotechnical work, wetland and watercourse impacts have been minimized to the greatest extent practicable by utilizing existing transmission line corridors and existing

access roads. However, given the scale and landscape setting of the Project, certain temporary impacts associated with the soil boring program cannot be avoided.

To reduce the impacts associated with the geotechnical activities of the Project, NEP incorporated design measures to minimize impacts. These measures, which include using an existing ROW, utilizing existing access roads, and avoiding the placement and construction of structures and access roads in wetlands and watercourses where possible, have resulted in the avoidance and minimization of impacts to wetlands, watercourses, and vernal pools to the greatest extent practicable. BMPs, as detailed in the NEP BMP Manual, will be employed to minimize disturbances to wetland resources during construction of the Project. The boundaries of the wetlands and watercourses along the ROW will be clearly demarcated by a qualified wetland scientist prior to the commencement of work. Boundaries of other sensitive environmental resources such as the vernal pool or cultural resources sites will also be flagged, or fenced-off, as necessary.

NEP will comply with all applicable wetland regulatory permit requirements and conditions, as well as the associated Project plans and specifications submitted in support of these permit applications. Typical construction details from NEP's BMP manual are provided in Attachment C.

Surface Water and Groundwater Resources – NEP will require its contractor to adhere to BMPs regarding the storage and handling of oil and potentially hazardous materials during construction of the Project. Furthermore, NEP will require its contractors to adhere to a standard emergency response plan. Equipment refueling and equipment/material storage will not be permitted within 100 feet of any wetland or waterbody, with the exception of equipment that cannot be feasibly moved from its working location (e.g., drilling equipment, dewatering pumps). Secondary containment will be used at these refueling locations. Contractor staging areas and contractor yards typically will be located at existing developed areas (parking lots, existing yards), where the storage of construction materials and equipment, including fuels and lubricants, would not conflict with protection of public surface water supplies or wetland resources.

Erosion and Sediment Control and Storm Water Pollution Prevention – Erosion and sediment control devices will be installed along the perimeter of the identified wetland resource areas prior to the onset of soil disturbance activities to ensure that excess soil piles and other impacted soil areas are confined and do not result in downslope sedimentation of sensitive areas. Erosion controls will be inspected on a regular basis and maintained or replaced as necessary.

Environmental Guidance Documents – NEP will develop construction permit documents and guidelines for the project. At a minimum, will include the location of sensitive areas to be avoided, a summary of all permit requirements, detailed erosion and sediment control plans, and training requirements/documentation. All contractors and environmental monitors will be required to participate in environmental training before beginning work on site. Regular construction progress meetings will provide the opportunity to reinforce the contractor's awareness of these matters.

Supervision and Monitoring – Throughout the entire construction process, NEP will retain the services of an environmental monitor. The primary responsibility of the monitor will be to oversee construction activities including the installation and maintenance of soil erosion and sediment controls on a routine basis to ensure compliance with all federal, state, and local permit commitments. The environmental monitor will be a trained environmental scientist responsible for supervising construction activities relative to environmental issues. The environmental monitor will be experienced in soil erosion control techniques and will have an understanding of wetland resources to be protected.

During periods of prolonged precipitation, the monitor will inspect all locations to confirm that the environmental controls are functioning properly. Additionally, all construction personnel will be briefed on Project environmental compliance issues and obligations prior to the start of construction. Regular construction progress/environmental training meetings will provide the opportunity to reinforce the contractor's awareness of these environmental issues.

6.1.1 Soil Erosion and Sediment Control and Stormwater Pollution Prevention

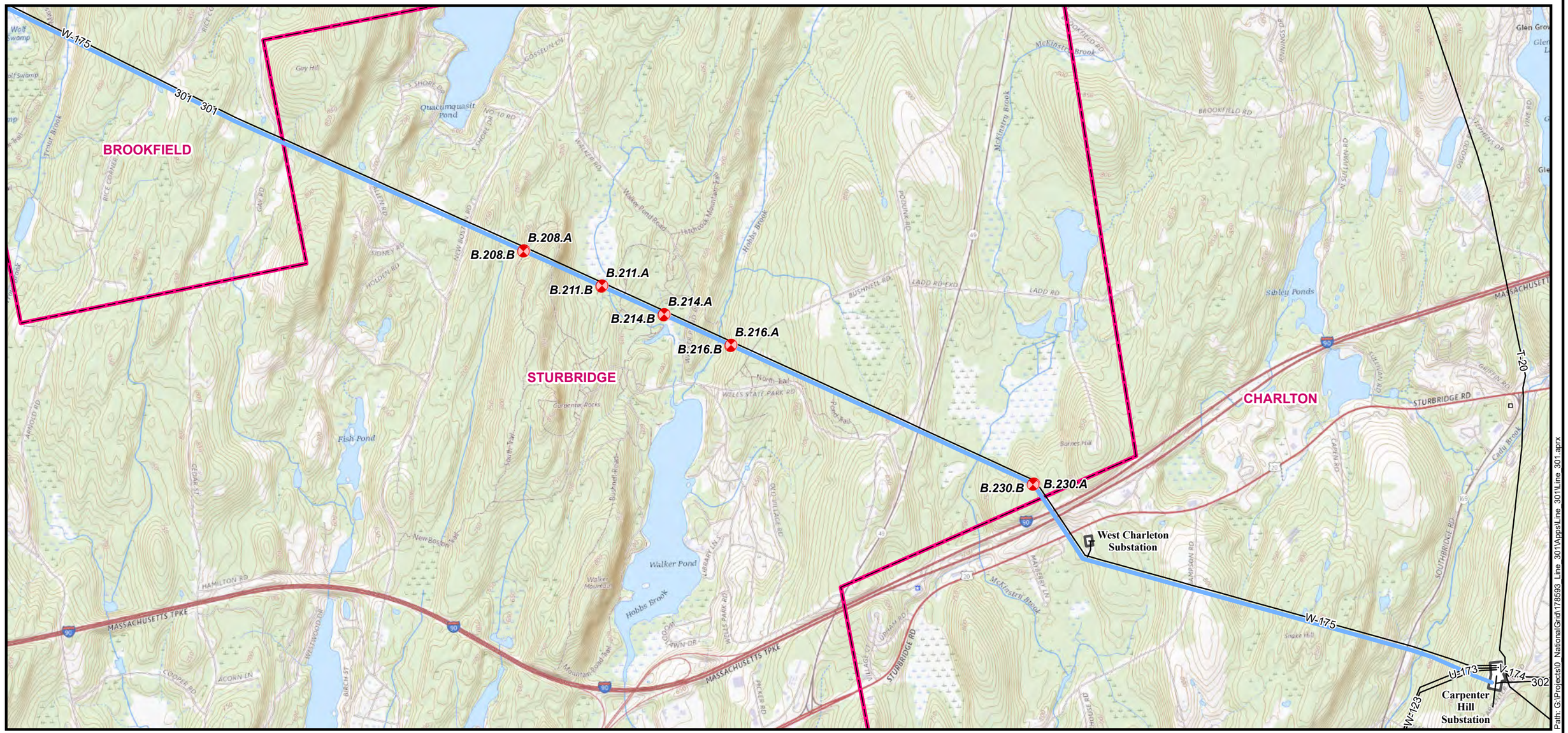
Soil erosion and sediment control devices will be installed along the perimeter of the identified wetland resource areas prior to the onset of soil disturbance activities to ensure that impacted soil areas are confined and do not result in downslope sedimentation of sensitive areas. Soil erosion controls will be inspected on a regular basis and maintained or replaced as necessary.

7.0 CONCLUSION

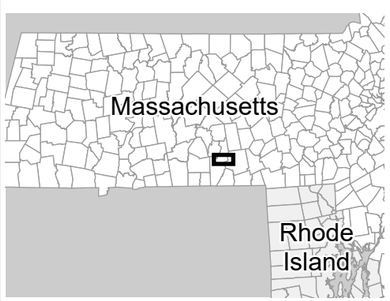
The proposed Project involves the soil boring and geotechnical activities along approximately 3.3 miles of existing NEP ROW in Sturbridge. The purpose and need for work on the 301 Line is to perform proposed subsurface geotechnical investigations in support of the engineering design and pre-construction planning for proposed maintenance and improvements to the transmission system in Sturbridge.

NEP requests that the Sturbridge Conservation Commission find this proposal adequately protective of the public interests identified in the MA WPA M.G.L. c. 131 § 40 and associated Regulations (310 CMR 10.00) and the Sturbridge Wetland Protection Bylaw (Chapter 286) and its implementing regulations (Chapter 365) allowing the Project to proceed as described in this NOI.

ATTACHMENT B PROJECT FIGURES



Project Vicinity



- GeoTech Boring Location
- Line 301
- Transmission Line
- Substation
- Town Boundary

Line 301 Project

Figure 1: Project Locus Map - Town of Sturbridge

Town of Sturbridge

Worcester County:
Commonwealth of Massachusetts

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NAD 1983 UTM Zone 18N USFt
Foot US
Transverse Mercator
North American 1983

N
W E
S

0 2,000 4,000 Feet

nationalgrid

NOT FOR CONSTRUCTION

Date: 7/19/2023

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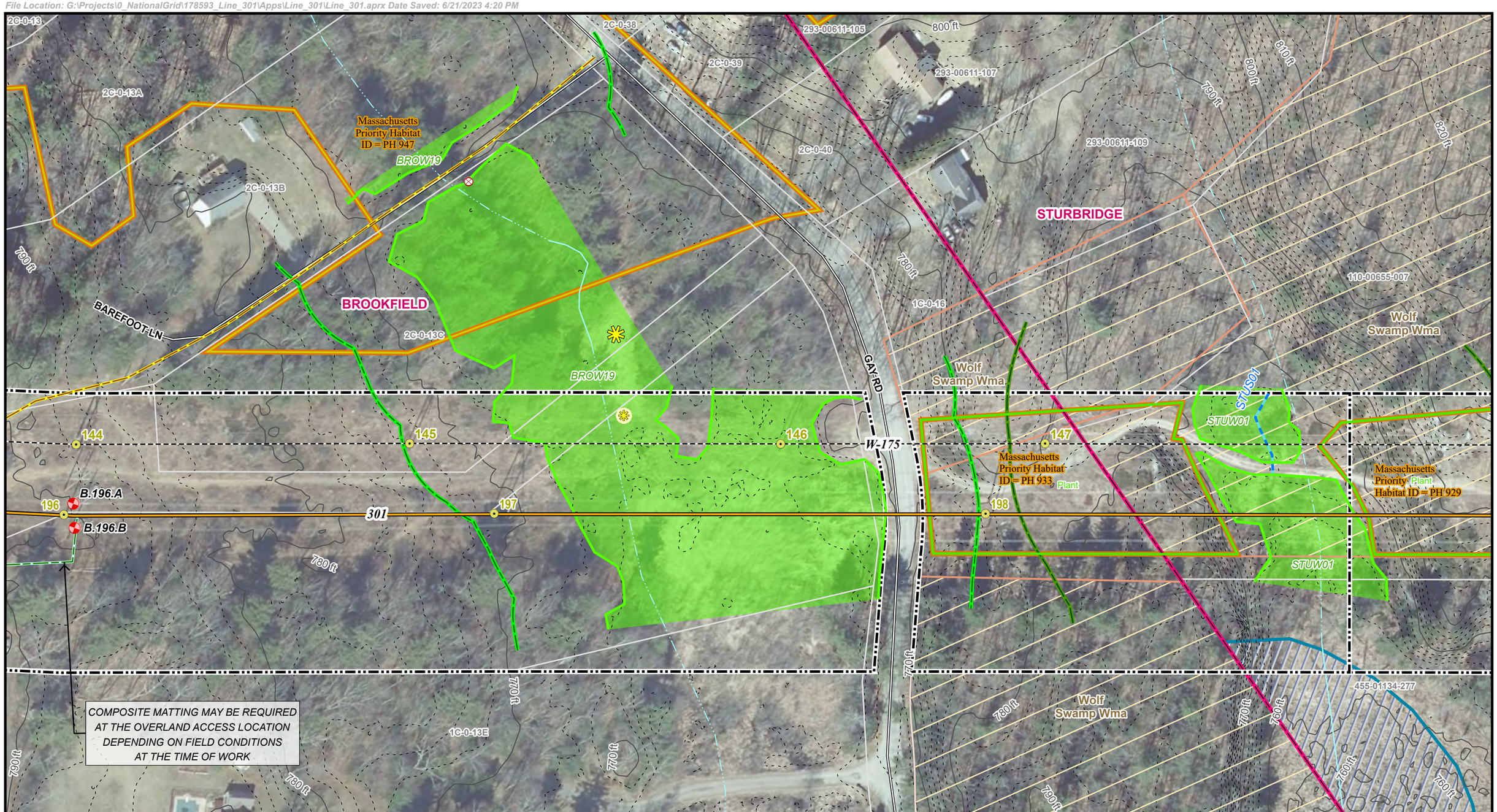
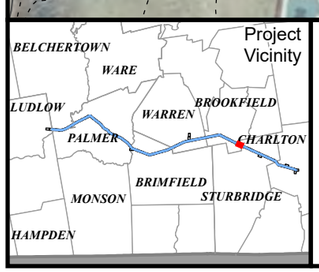
Author: TDH





- GeoTech Boring Location
- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Access - No Improvements
- New Overland Access (Drive and Crush)
- Existing Right of Way
- Local Road
- Town Boundary
- Parcel
- Potential Vernal Pool (Field Identified)
- Existing Culvert
- Intermittent Stream
- Wetland Border
- 100 ft Buffer Wetland
- 200 ft Buffer Wetland
- Perennial Stream (NHD)
- Intermittent Stream (NHD)
- Field Delineated Wetland*
- Potential Vernal Pools (NHESP)
- 100 Year Floodplain
- Priority Habitats Rare Species (MA-NHESP)
- Other Protected Lands
- Plant
- Index Contour (10' Interval)
- Contour (2' Interval)

N

1:1,200

0 50 100

Feet

*Indicates Layers Set to Transparency

LINE 301 PROJECT

Geotechnical Map Book
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Commonwealth of Massachusetts, Worcester County
Town of Brookfield and Sturbridge

Date: 6/21/2023

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Imagery Source: 2021 Aerial Imagery:

nationalgrid

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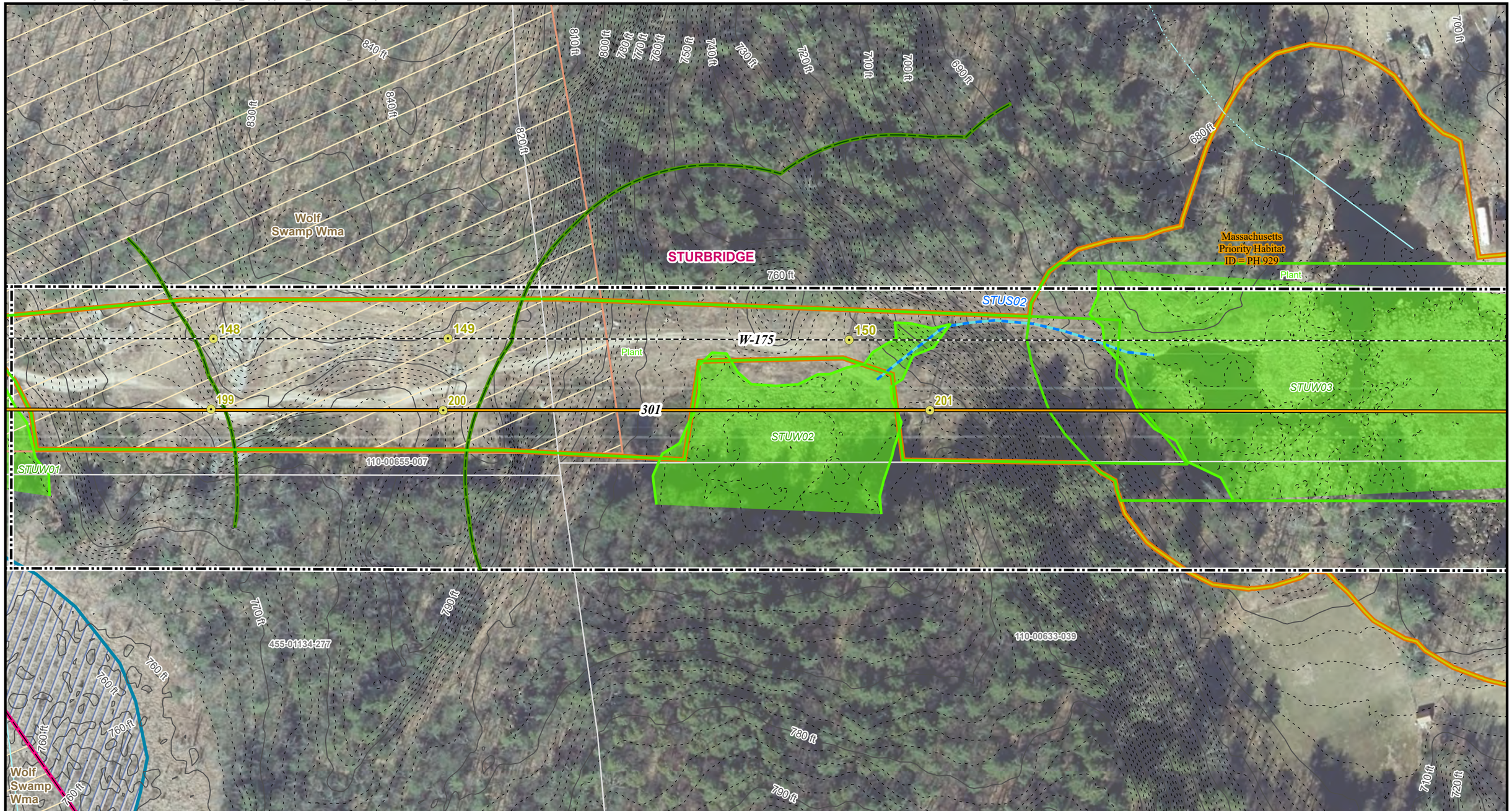

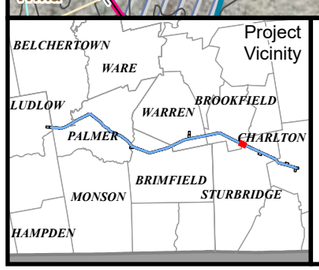

- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Right of Way
- Town Boundary
- Parcel
- Intermittent Stream
- Wetland Border
- 200 ft Buffer Wetland
- Perennial Stream (NHD)
- Intermittent Stream (NHD)
- Field Delineated Wetland*
- 100 Year Floodplain
- Priority Habitats Rare Species (MA-NHESP)
- Other Protected Lands
- Plant
- Index Contour (10' Interval)
- Contour (2' Interval)

N

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Feet

*Indicates Layers Set to Transparency

LINE 301 PROJECT

Geotechnical Map Book
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Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

Date: 6/21/2023

NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

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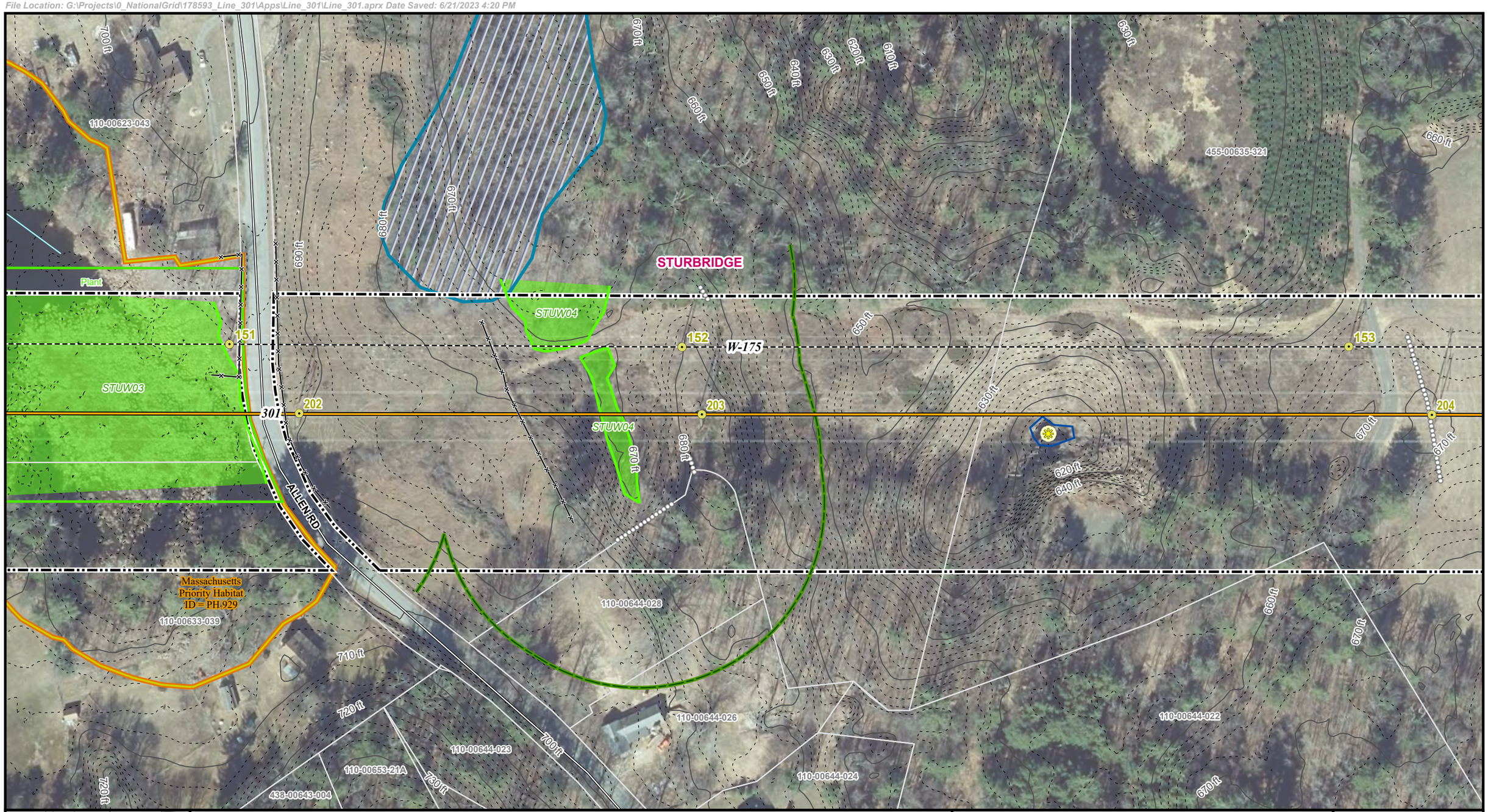

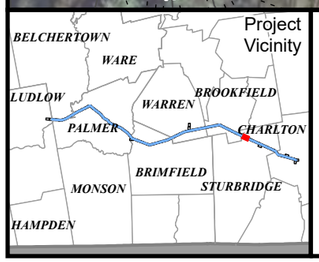

- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Right of Way
- Local Road
- Stone Wall
- Fence or Guard Rail
- Parcel
- Potential Vernal Pool (Field Identified)
- Area of Inundation
- Wetland Border
- 200 ft Buffer Wetland
- Perennial Stream (NHD)
- Field Delineated Wetland*
- 100 Year Floodplain
- Priority Habitats Rare Species (MA-NHESP)
- Plant
- Index Contour (10' Interval)
- Contour (2' Interval)

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Feet

*Indicates Layers Set to Transparency

LINE 301 PROJECT

Geotechnical Map Book
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Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

Date: 6/21/2023

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Imagery Source: 2021 Aerial Imagery:

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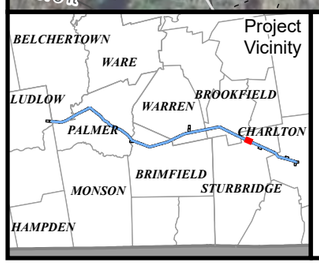
455-00636-323
455-00635-321
110-00644-022
110-00655-012
455-00655-313
660-01233-159
STURBRIDGE
NEW BOSTON RD
Wells State Park
Massachusetts Priority Habitat ID = PH 942
Reptile
W-175
301
153
154
155
156
157
204
205
206
207
B.205.A
B.205.B
660 ft
670 ft
680 ft
690 ft
700 ft
710 ft
720 ft
730 ft
740 ft
750 ft
760 ft

COMPOSITE MATTING MAY BE REQUIRED AT THE OVERLAND ACCESS LOCATION DEPENDING ON FIELD CONDITIONS AT THE TIME OF WORK

Project Vicinity



- GeoTech Boring Location
- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Access - No Improvements
- New Overland Access (Drive and Crush)
- Existing Right of Way
- Local Road
- Stone Wall
- Parcel
- Access Gate
- 200 ft Buffer Wetland
- Priority Habitats Rare Species (MA-NHESP)
- Massachusetts DCR Protected Lands
- Reptile
- Index Contour (10' Interval)
- Contour (2' Interval)

N

1:1,200
0 50 100
Feet

**Indicates Layers Set to Transparency*

LINE 301 PROJECT

Geotechnical Map Book
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Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

Date: 6/21/2023

NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

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POWER ENGINEERS

NATIONAL GRID TO ACQUIRE 10-DAY EMERGENCY PERMIT TO BREACH DAM. CONSTRUCTION MAT INSTALLATION TO BE MONITORED BY BEAVER SOLUTIONS, LLC.

Wells State Park

Massachusetts Priority Habitat ID = PH 942

Plant

Reptile

STUW06

STUW05

W-175

157

158

159

160

207

208

209

210

301

B.208.A

B.208.B

COMPOSITE MATTING MAY BE REQUIRED AT THE OVERLAND ACCESS LOCATION DEPENDING ON FIELD CONDITIONS AT THE TIME OF WORK

STURBRIDGE

Wells State Park

Project Vicinity

BELCHERTOWN
WARE
LUDLOW
WARREN
BROOKFIELD
PALMER
CHARLTON
BRIMFIELD
MONSON
STURBRIDGE
HAMPDEN

- GeoTech Boring Location
- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Access - No Improvements
- New Overland Access (Drive and Crush)
- Construction Matting
- Existing Right of Way
- Parcel
- Potential Vernal Pool (Field Identified)
- Wetland Border
- Beaver Dam
- 200 ft Buffer Wetland
- Perennial Stream (NHD)
- Field Delineated Wetland*
- Potential Vernal Pools (NHESP)
- 100 Year Floodplain
- Priority Habitats Rare Species (MA-NHESP)
- Massachusetts DCR Protected Lands
- Plant
- Reptile
- Index Contour (10' Interval)
- Contour (2' Interval)

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Feet

*Indicates Layers Set to Transparency

LINE 301 PROJECT

Geotechnical Map Book
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DRAFT

Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

Date: 7/31/2023

NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

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POWER ENGINEERS

CONSTRUCTION MATS TO BE INSTALLED DOWNSTREAM OF EXISTING BEAVER DAM. MAT INSTALLATION TO BE MONITORED BY BEAVER SOLUTIONS, LLC.

Massachusetts Priority Habitat ID = PH 942

Wells State Park

STURBRIDGE

160 W-175 161

210 301 211

B.211.B

STUW07

Plant Reptile

830 ft 670 ft 680 ft 640 ft 720 ft 700 ft 640 ft 650 ft 640 ft 630 ft

820 ft 810 ft 800 ft 750 ft 740 ft 690 ft 730 ft 720 ft 710 ft 700 ft 650 ft 640 ft 650 ft

Project Vicinity

BELCHERTOWN WARE LUDLOW WARREN BROOKFIELD PALMER CHARLTON BRIMFIELD MONSON STURBRIDGE HAMPDEN

GeoTech Boring Location
Existing Structure
Proposed New Alignment
Existing Transmission Line
Existing Access - No Improvements
Construction Matting
Existing Right of Way
Stone Wall
Parcel
Wetland Border
Beaver Dam
200 ft Buffer Wetland
Perennial Stream (NHD)
Intermittent Stream (NHD)
Field Delineated Wetland*
Priority Habitats Rare Species (MA-NHESP)
Massachusetts DCR Protected Lands
Plant
Reptile
Index Contour (10' Interval)
Contour (2' Interval)

N

1:1,200
0 50 100
Feet

*Indicates Layers Set to Transparency

LINE 301 PROJECT

Geotechnical Map Book
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Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

Date: 6/21/2023

NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

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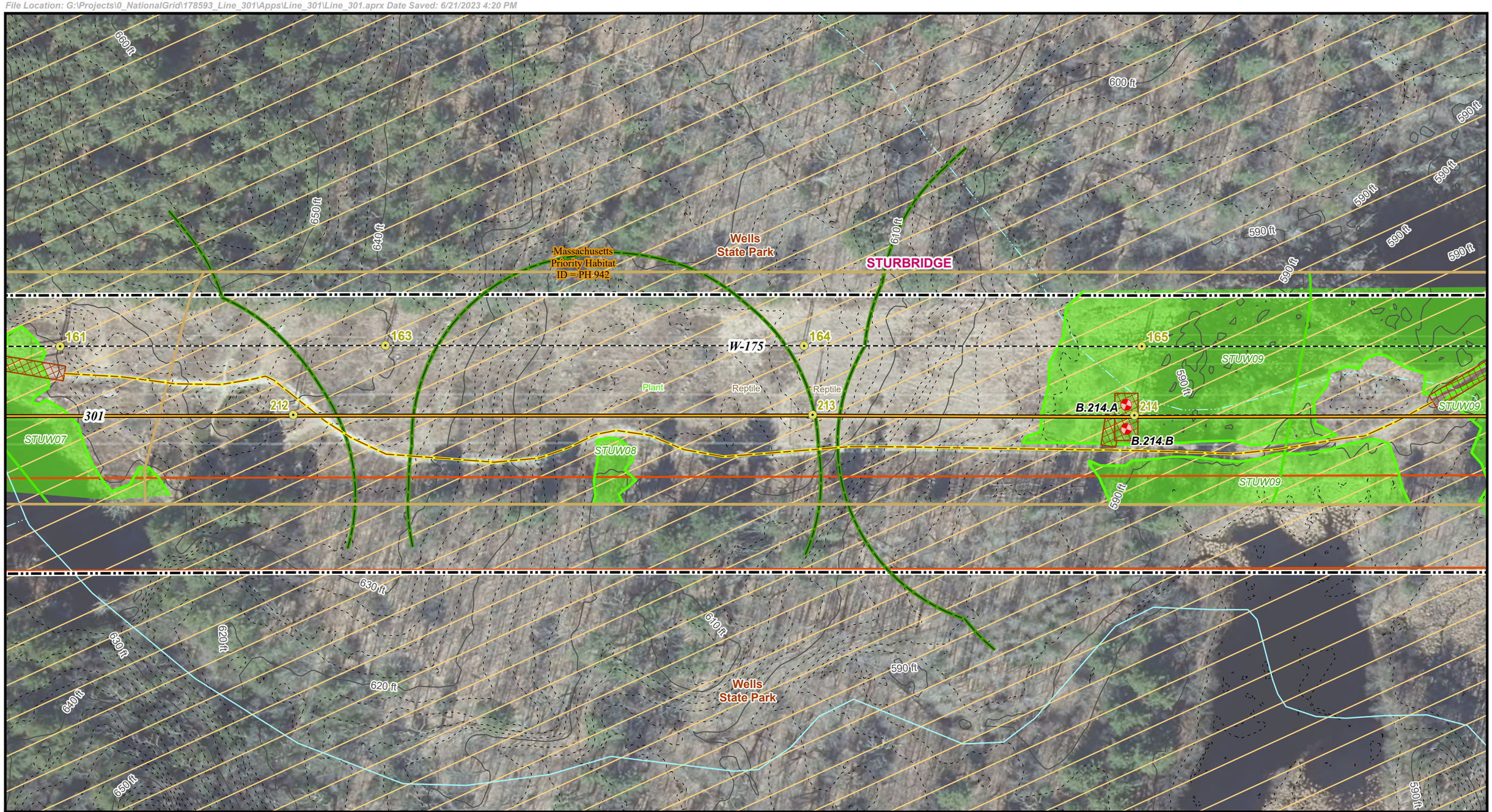

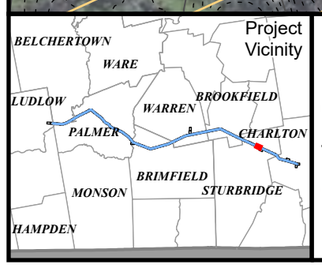

- GeoTech Boring Location
- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Access - No Improvements
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- Contour (2' Interval)

N

1:1,200

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Feet

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LINE 301 PROJECT

Geotechnical Map Book
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Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

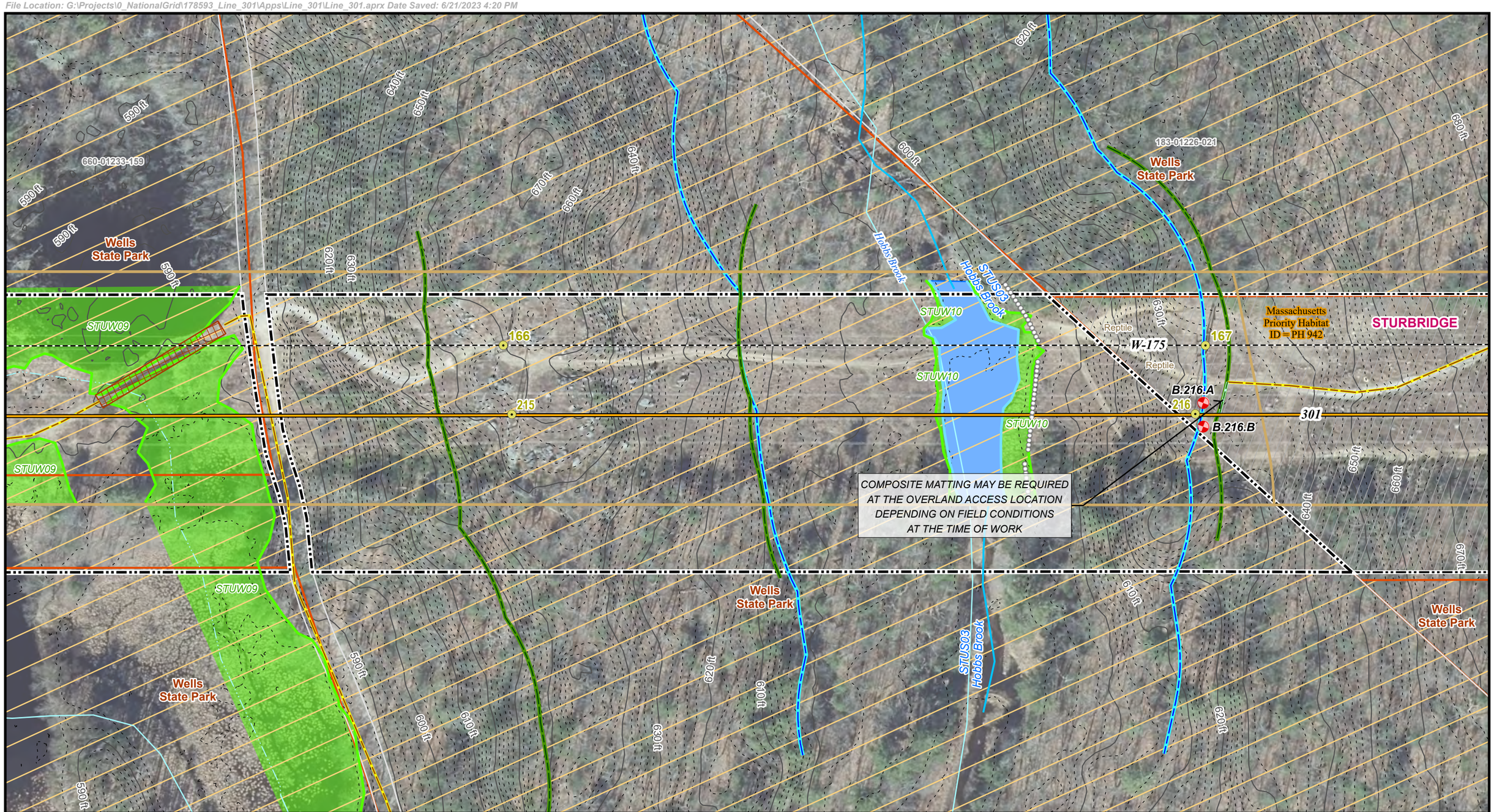
Date: 6/21/2023

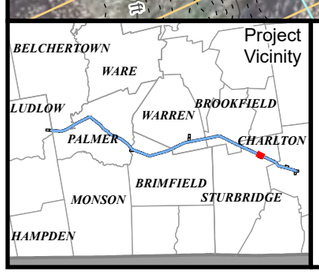
NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

nationalgrid

POWER ENGINEERS





- GeoTech Boring Location
- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Access - No Improvements
- New Overland Access (Drive and Crush)
- Construction Matting
- Existing Right of Way
- National Grid Owned Land
- Stone Wall
- Parcel
- Perennial Stream or River
- Mean Annual High Water Line
- Wetland Border
- Riverfront Area
- 200 ft Buffer Wetland
- Perennial Stream (NHD)
- Intermittent Stream (NHD)
- Delineated Open Water
- Field Delineated Wetland*
- Priority Habitats Rare Species (MA-NHESP)
- Massachusetts DCR Protected Lands
- Reptile
- Index Contour (10' Interval)
- Contour (2' Interval)

N

1:1,200

0 50 100

Feet

*Indicates Layers Set to Transparency

LINE 301 PROJECT

Geotechnical Map Book
Page 77 of 93

Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

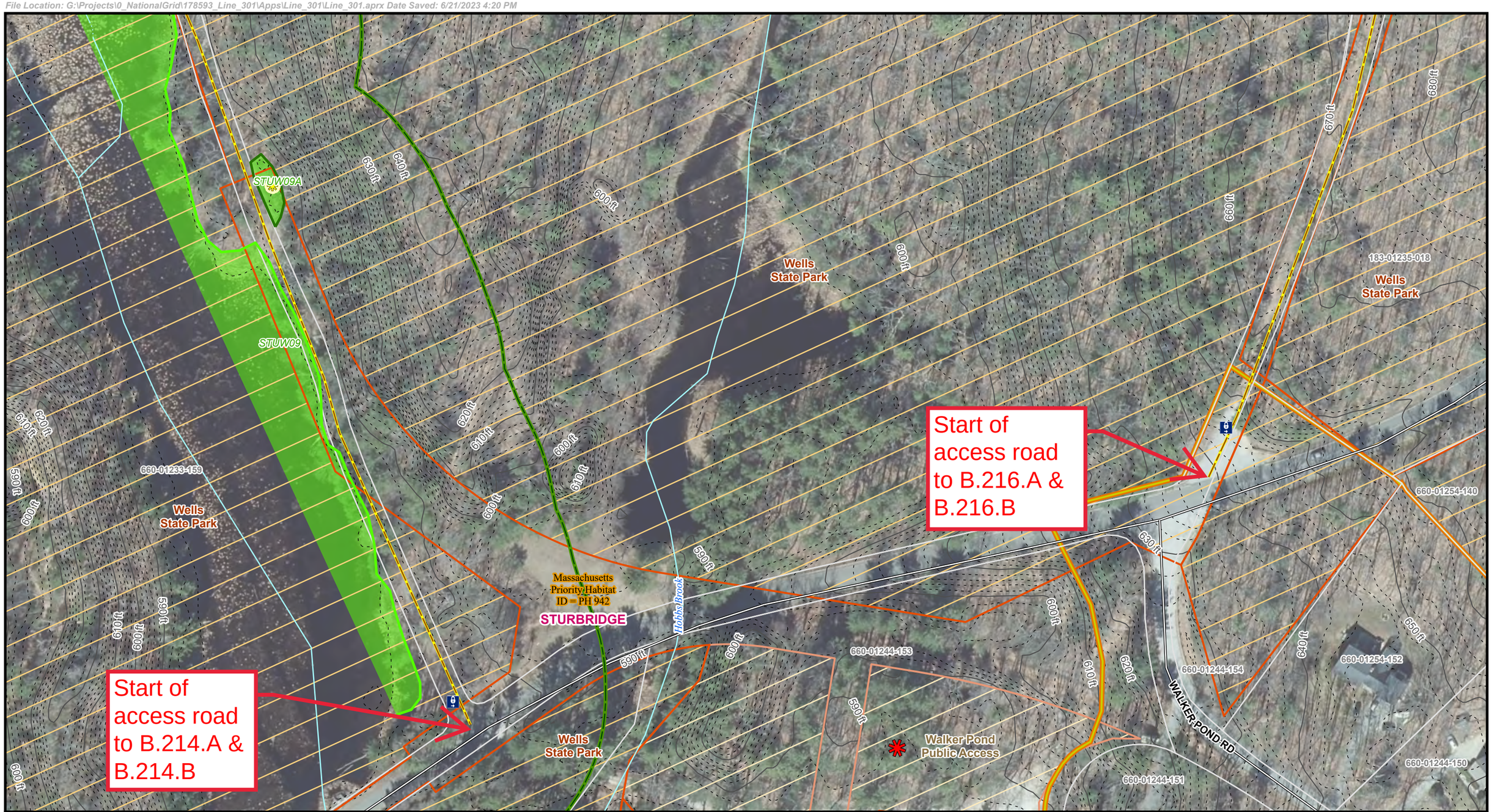
Date: 6/21/2023

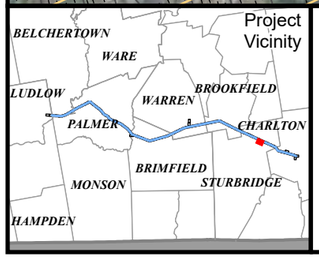
NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

nationalgrid

POWER ENGINEERS





- Existing Access - No Improvements
- Local Road
- Parcel
- Potential Vernal Pool (Field Identified)
- Access Gate
- Wetland Border
- Isolated Wetland Border
- 200 ft Buffer Wetland
- Perennial Stream (NHD)
- Intermittent Stream (NHD)
- Field Delineated Wetland*
- Certified Vernal Pools (NHESP)
- Priority Habitats Rare Species (MA-NHESP)
- Massachusetts DCR Protected Lands
- Other Protected Lands
- Index Contour (10' Interval)
- Contour (2' Interval)

N

1:1,200

0 50 100

Feet

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LINE 301 PROJECT

Geotechnical Map Book
Page 78 of 93

Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

Date: 6/21/2023

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Imagery Source: 2021 Aerial Imagery:

nationalgrid

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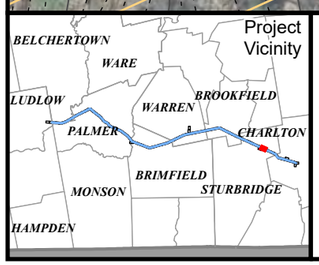

- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Access - No Improvements
- Existing Right of Way
- National Grid Owned Land
- Local Road
- Stone Wall
- Parcel
- Potential Vernal Pool (Field Identified)
- Wetland Border
- 200 ft Buffer Wetland
- Field Delineated Wetland*
- Potential Vernal Pools (NHESP)
- Priority Habitats Rare Species (MA-NHESP)
- Massachusetts DCR Protected Lands
- Reptile
- Index Contour (10' Interval)
- Contour (2' Interval)

N

1:1,200

0 50 100

Feet

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LINE 301 PROJECT

Geotechnical Map Book
Page 79 of 93

Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

Date: 6/21/2023

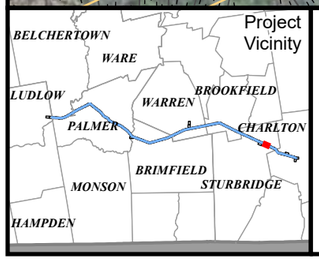
NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

nationalgrid

POWER ENGINEERS

Project Vicinity



- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Right of Way
- Local Road
- Parcel
- Intermittent Stream
- Wetland Border
- 200 ft Buffer Wetland
- Intermittent Stream (NHD)
- Field Delineated Wetland*
- Potential Vernal Pools (NHESP)
- 100 Year Floodplain
- Priority Habitats Rare Species (MA-NHESP)
- Massachusetts DCR Protected Lands
- Reptile
- Index Contour (10' Interval)
- Contour (2' Interval)

N

1:1,200

0 50 100

Feet

*Indicates Layers Set to Transparency

LINE 301 PROJECT

Geotechnical Map Book
Page 80 of 93

Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

Date: 6/21/2023

NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

nationalgrid

POWER ENGINEERS

Project Vicinity

- GeoTech Boring Location
- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Access - No Improvements
- Type R - Refresh/Cap Existing Sub-base
- Existing Right of Way
- State Highway
- Local Road
- Stone Wall
- Parcel
- Intermittent Stream
- Wetland Border
- 200 ft Buffer Wetland
- Intermittent Stream (NHD)
- Field Delineated Wetland*
- Potential Vernal Pools (NHESP)
- 100 Year Floodplain
- Priority Habitats Rare Species (MA-NHESP)
- Massachusetts DCR Protected Lands
- Reptile
- Index Contour (10' Interval)
- Contour (2' Interval)

N

1:1,200

0 50 100

Feet

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LINE 301 PROJECT

Geotechnical Map Book
Page 81 of 93

Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

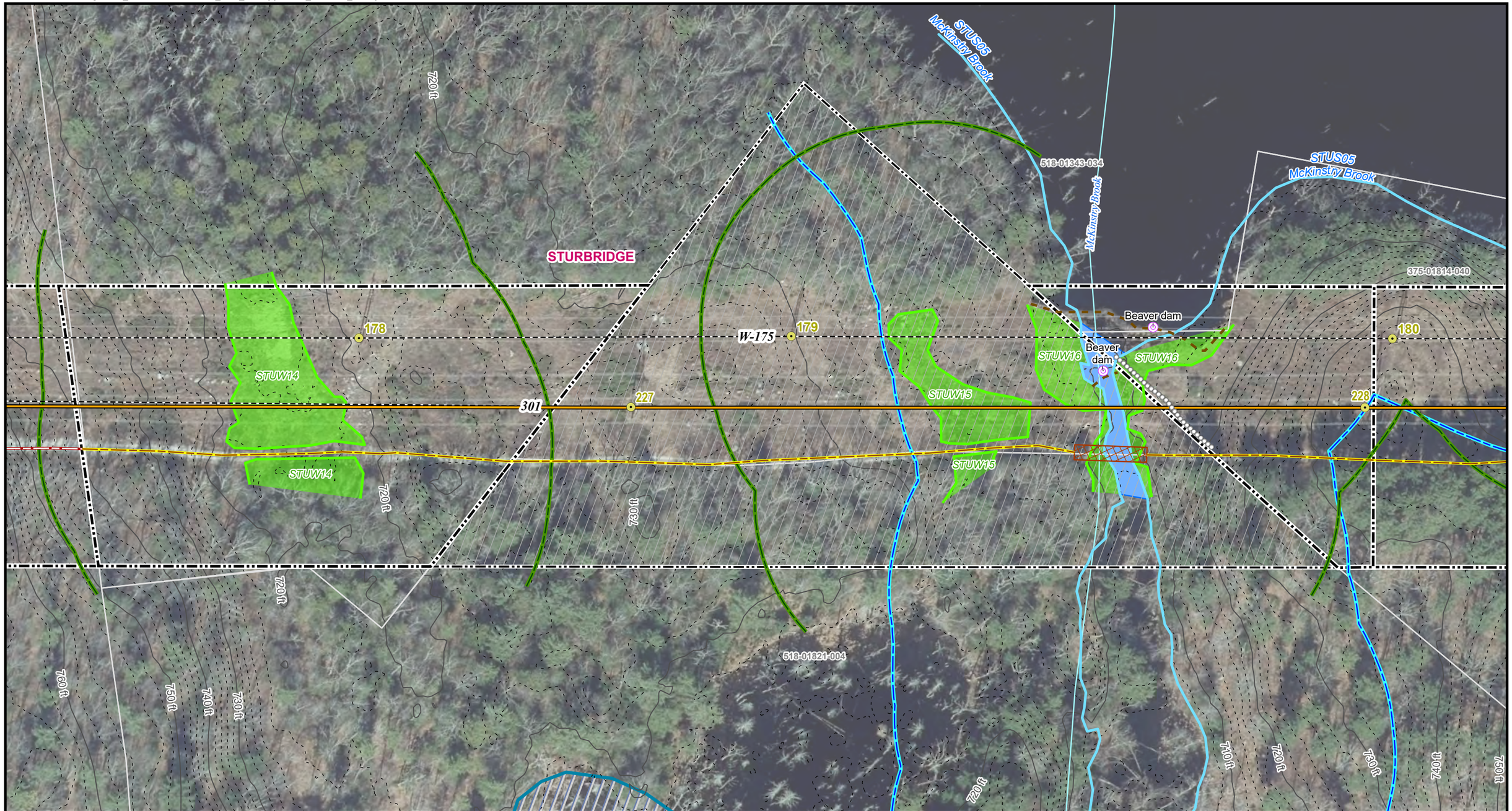
Date: 6/21/2023

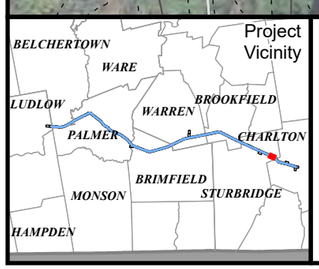
NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

nationalgrid

POWER ENGINEERS





- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Access - No Improvements
- Type R - Refresh/Cap Existing Sub-base
- Construction Matting
- Existing Right of Way
- National Grid Owned Land
- Stone Wall
- Parcel
- Note
- Mean Annual High Water Line
- Wetland Border
- Beaver Dam
- Riverfront Area
- 200 ft Buffer Wetland
- Perennial Stream (NHD)
- Delineated Open Water
- Field Delineated Wetland*
- 100 Year Floodplain
- Index Contour (10' Interval)
- Contour (2' Interval)

N

1:1,200

0 50 100

Feet

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LINE 301 PROJECT

Geotechnical Map Book
Page 82 of 93

Commonwealth of Massachusetts, Worcester County
Town of Sturbridge

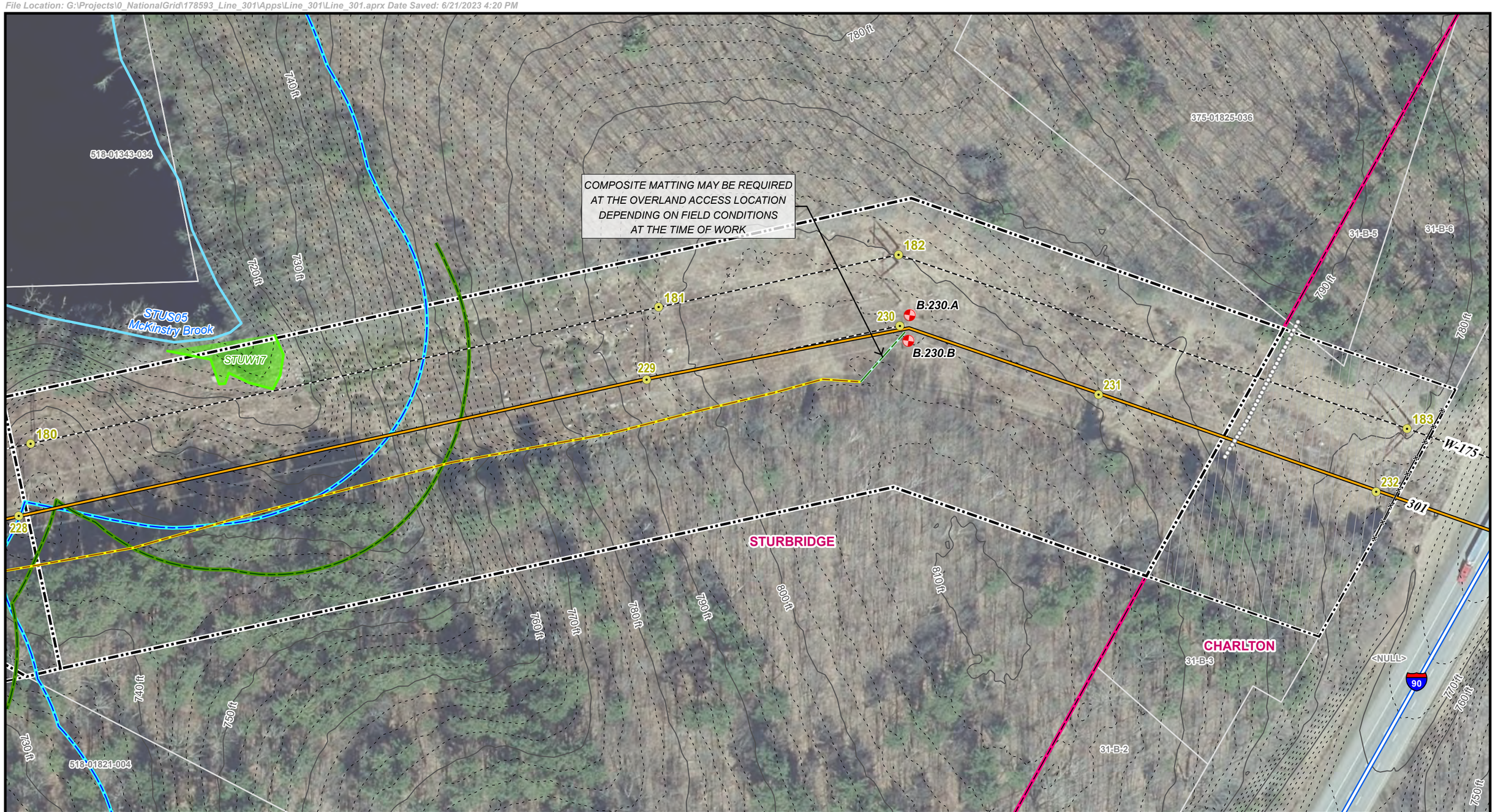
Date: 6/21/2023

NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

nationalgrid

POWER ENGINEERS



- GeoTech Boring Location
- Existing Structure
- Proposed New Alignment
- Existing Transmission Line
- Existing Access - No Improvements
- New Overland Access (Drive and Crush)
- Existing Right of Way
- National Grid Owned Land
- Interstate Highway
- Stone Wall
- Fence or Guard Rail
- Town Boundary
- Parcel
- Mean Annual High Water Line
- Wetland Border
- Riverfront Area
- 200 ft Buffer Wetland
- Field Delineated Wetland*
- Index Contour (10' Interval)
- Contour (2' Interval)

N

1:1,200

0 50 100

Feet

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LINE 301 PROJECT

Geotechnical Map Book
Page 83 of 93

Commonwealth of Massachusetts, Worcester County
Town of Sturbridge and Charlton

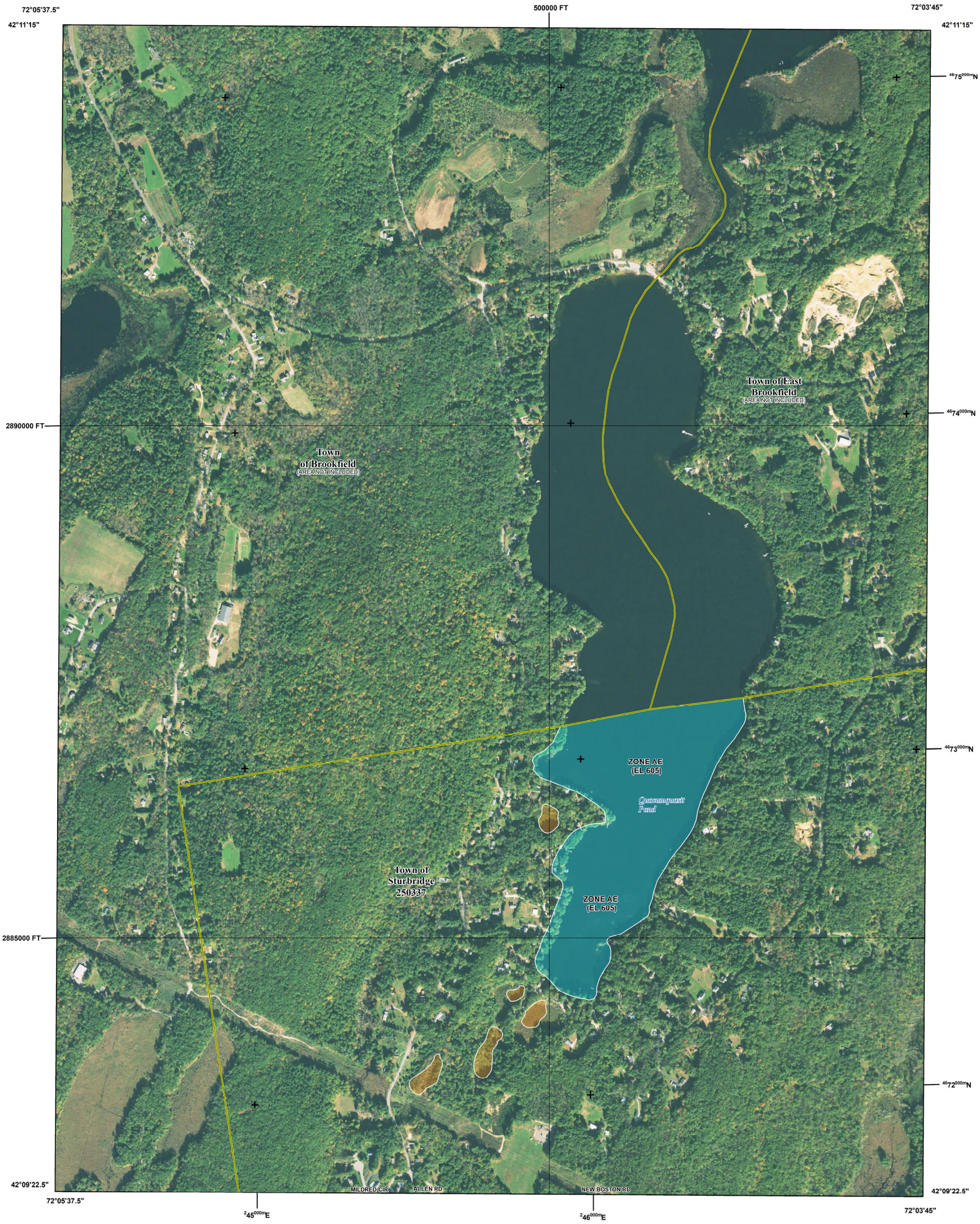
Date: 6/21/2023

NOT FOR CONSTRUCTION

Imagery Source: 2021 Aerial Imagery:

nationalgrid

POWER ENGINEERS



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A,V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
	Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard *Zone X*
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
OTHER FEATURES	E 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

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SCALE

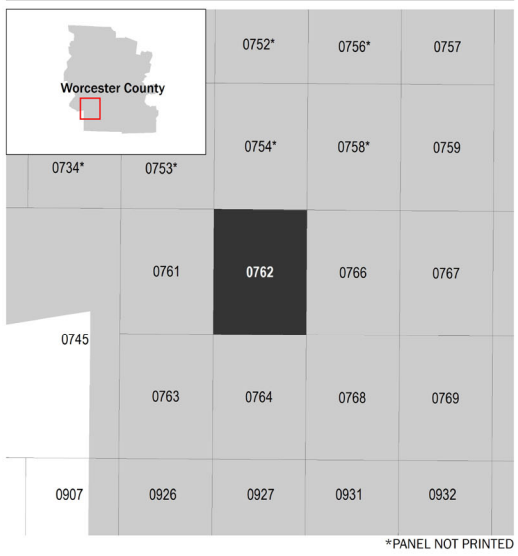
Map Projection:
NAD 1983 StatePlane Massachusetts Mainland FIPS 2001 Feet; North American 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 feet

0 125 250 500 meters

PANEL LOCATOR



*PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

WORCESTER COUNTY, MASSACHUSETTS

All Jurisdictions

PANEL 762 OF 1075

FEMA

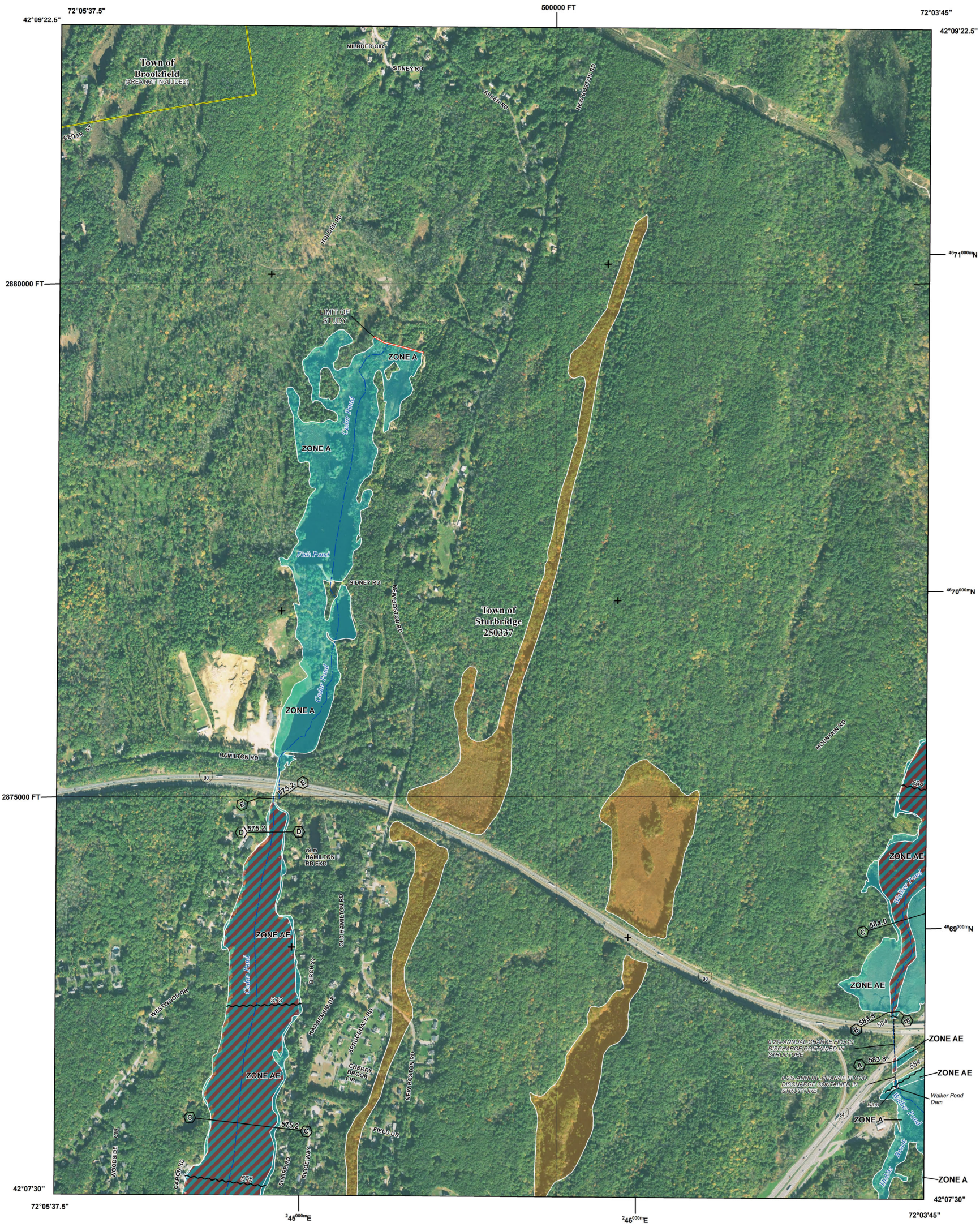
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
STURBRIDGE, TOWN OF	250337	0762	F

VERSION NUMBER
2.6.3.6

MAP NUMBER
25027C0762F

MAP REVISED
JUNE 21, 2023



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	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
	Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard *Zone X*
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
OTHER FEATURES	E 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

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SCALE

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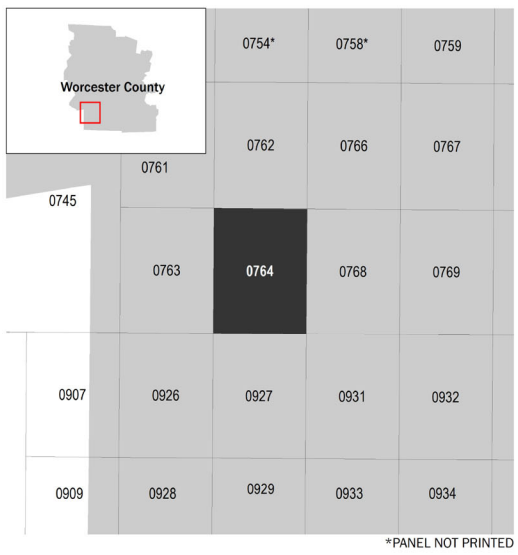
NAD 1983 StatePlane Massachusetts Mainland FIPS 2001 Feet; North American 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 feet

0 125 250 500 meters

PANEL LOCATOR



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FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

WORCESTER COUNTY, MASSACHUSETTS

All Jurisdictions

PANEL 764 OF 1075

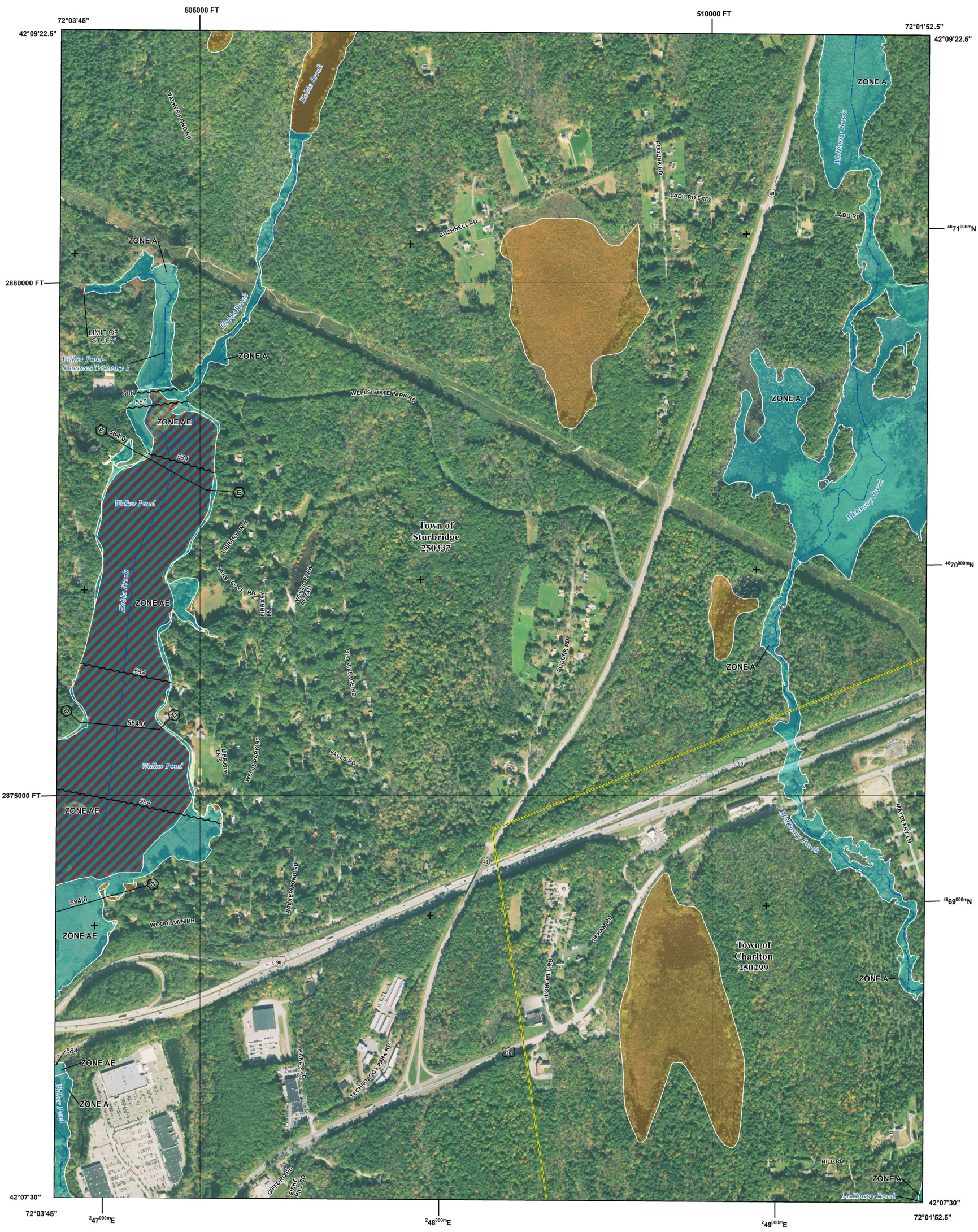
Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
STURBRIDGE, TOWN OF	250337	0764	F

VERSION NUMBER
2.6.3.6

MAP NUMBER
25027C0764F

MAP REVISED
JUNE 21, 2023



FLOOD HAZARD INFORMATION

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SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A,V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
	Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard *Zone X*
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
OTHER FEATURES	E 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
	Limit of Study
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NAD 1983 StatePlane Massachusetts Mainland FIPS 2001 Feet; North American 1983; Western Hemisphere; Vertical Datum: NAVD 88

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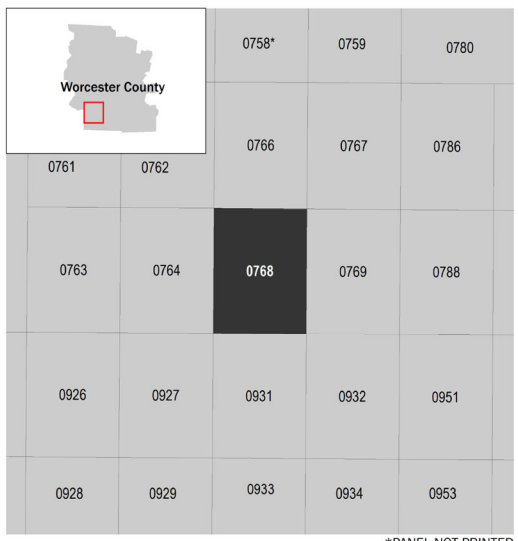
0 125 250 500 meters

PANEL LOCATOR



*PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

WORCESTER COUNTY, MASSACHUSETTS

All Jurisdictions

PANEL 768 OF 1075

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
CHARLTON, TOWN OF	250299	0768	F
STURBRIDGE, TOWN OF	250337	0768	F

VERSION NUMBER
2.6.3.6

MAP NUMBER
25027C0768F

MAP REVISED
JUNE 21, 2023

ATTACHMENT C TYPICAL CONSTRUCTION DETAILS

BMP PICTURE

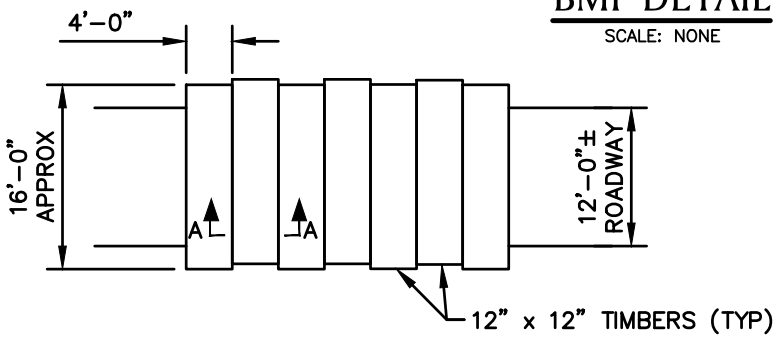
SCALE: NONE

NOTES:

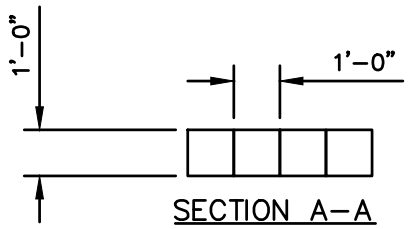
1. PRODUCT TO BE ALTURNAMATS' PREFABRICATED MATS OR APPROVED EQUAL BY NATIONAL GRID ENVIRONMENTAL SCIENTIST.
2. PRODUCT AVAILABLE IN 4X8' UNITS.
3. IF MATS ARE INSTALLED IN A WETLAND AREA, INSTALL EROSION CONTROLS TO CONTAIN MATERIAL UTILIZED IN THE MAT TRANSITIONS.

BMP DETAIL

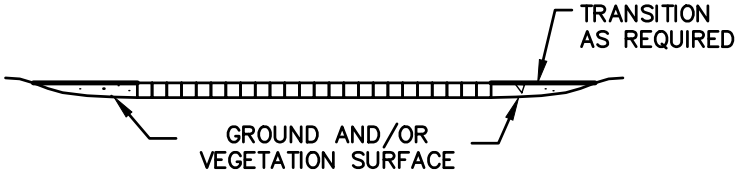
SCALE: NONE



TYPICAL PLAN VIEW



SECTION A–A
TYPICAL MAT SECTION
BOLTED TOGETHER



TYPICAL SECTION VIEW

NOTES:

1. TO BE INSTALLED IF NECESSARY TO PREVENT RUTTING, TO ACCESS STRUCTURES.
2. THIS DETAIL SHOWS TYPICAL DIMENSIONS. SOME CONTRACTOR'S CONSTRUCTION MATS ARE DIMENSIONALLY DIFFERENT FROM WHAT IS SHOWN HERE.
3. DEPENDENT ON SITE CONDITIONS, MULTIPLE LAYERS OF CONSTRUCTION MATS MAY BE INSTALLED.

BMP PICTURE

CM-3
CONSTRUCTION MAT LAYOUT
(WITH TRANSITION)

File: Swamp_Mat_Layout.dwg

BMP

Definition

Applying coarse plant residue or chips, or other suitable materials, to cover the soil surface.

Purpose

The primary purpose is to provide initial erosion control while a seeding or shrub planting is establishing. Mulch will conserve moisture and modify the surface soil temperature and reduce fluctuation of both. Mulch will prevent soil surface crusting and aid in weed control. Mulch is also used alone for temporary stabilization in non-growing months.

Conditions Where Practice Applies

On soils subject to erosion and on new seedings and shrub plantings. Mulch is useful on soils with low infiltration rates by retarding runoff.

Criteria

Site preparation prior to mulching requires the installation of necessary erosion control or water management practices and drainage systems.

Slope, grade and smooth the site to fit needs of selected mulch products.

Remove all undesirable stones and other debris to meet the needs of the anticipated land use and maintenance required.

Apply mulch after soil amendments and planting is accomplished or simultaneously if hydroseeding is used.

Select appropriate mulch material and application rate or material needs. Determine local availability.

Select appropriate mulch anchoring material.

NOTE: The best combination for grass/legume establishment is straw (cereal grain) mulch applied at 2 ton/ acre (90 lbs./1000sq.ft.) and anchored with wood fiber mulch (hydromulch) at 500 – 750 lbs./acre (11 – 17 lbs./1000 sq. ft.). The wood fiber mulch must be applied through a hydroseeder immediately after mulching.

NOTE:

1. PICTURE DEPICTS STRAW MULCH APPLICATION (FROM MULCH SPREADER) ON STEEP SLOPE WITH AN IMPROVED DRAINAGE SWALE.
2. COORDINATE MULCH MATERIALS AND RATES WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

* BMP INFORMATION FROM "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (AUGUST, 2005)." INFORMATION OBTAINED VIA WEBSITE: http://www.dec.ny.gov/chemical/29066.html

UPLAND ROW RESTORATION MIX – GENERAL

Species Composition Options:

- Andropogon gerardii; Niagra Big Bluestem
- Schizachyrium scoparium; Little Bluestem
- Elymus Canadensis; Canada Wild Rye
- Elymus virginicus; Virginia Wildrye
- Lolium multiflorum; Annual Ryegrass
- Sorghastrum nutans; Indiangrass
- Chamaecrista fasciculate; Partridge Pea
- Desmodium canadense; Showy Tick Trefoil
- Helioposis helianthoides; Ox–Eye Sunflower
- Panicum virgatum; Switchgrass
- Rudbeckia hirta; Black Eyed Susan
- Poa palustris; Fowl Bluegrass
- Agrostis perennans; Upland Bentgrass
- Agrostis alba; Redtop
- Festuca rubra; Red Fescue
- Lotus corniculatus; Birds–Foot Trefoil
- Chrysanthemum leucanthem; Ox–Eye Daisy
- Aster novae–angliae; New England Aster

Example Seed Mixes:

1. Native Upland wildlife forage and Cover Meadow Mix – Ernst Conservation Seeds (ERNMX–123)
2. Eastern Ecotype Native Grass Mix– Ernst Conservation Seeds (ERNMX–177)
3. New England Native Warm Season Grass Mix – New England Wetland Plants, Inc.
4. New England Logging Road Mix – New England Wetland Plants, Inc.
5. Northeast Upland Wildflower/Restoration Erosion Mix – Southern Tier Consulting (STCMX–2)

UPLAND ROW RESTORATION MIX – DRY/ROCKY SITES

Species Composition Options:

- Festuca rubra; Red Fescue
- Schizachyrium scoparium; Little Bluestem
- Elymus Canadensis; Canada Wild Rye
- Bouteloua gracillis; Blue Grama
- Lolium multiflorum; Annual Ryegrass
- Lolium perenne; Perennial Ryegrass
- Agrostics scabra; Rough Bentgrass
- Agrostis perennans; Upland Bentgrass
- Sorghastrum nutans; Indiangrass

Example Seed Mixes:

1. New England Erosion Control/ Restoration Mix for Dry Sites – New England Wetland Plants, Inc.
2. Ernst Conservation Seeds and similar companies can create a custom seed mix matching the composition above (with site specific additions if necessary).

WETLAND ROW RESTORATION MIX

Species Composition Options:

- Agrostis stolonifera; Creeping Bentgrass
- Poa trivialis; Rough Bluegrass
- Alopecurus arundinaceus; Creeping Meadow Foxtail
- Lolium multiflorum; Annual Ryegrass
- Festuca rubra; Creeping Red Fescue
- Elymus virginicus; Virginia Wildrye
- Schizachyrium scoparium; Little Bluestem
- Andropogon gerardii; Niagra Big Bluestem
- Carex vulpinoidea; Fox sedge
- Panicum virgatum; Switchgrass
- Agrostis scabra; Rough Bentgrass
- Aster novae–angliae; New England Aster
- Eupatorium perfoliatum; Boneset
- Euthamia graminifolia; Grass Leaved Goldenrod
- Scirpus atrovirens; Green Bulrush
- Verbene hastate; Blue Vervain
- Juncus effusus; Soft Rush
- Scirpus cyperinus; Wool Grass
- Panicum clandestinum; Deertongue

Example Seed Mixes

1. New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites – New England Wetland Plants, Inc.
2. Northeast Wetland Grass Seed Mix – Southern Tier Consulting (STCMX–7)
3. Ernst Conservation Seeds and similar companies can create a custom seed mix matching the composition above (with site specific additions if necessary).

GERNERAL NOTES:

1. Seed mixes described herein are intended to cover a variety of typical new england landscapes. However, site specific seed mixes will need to be evaluated in coastal or mountainous regions.
2. Seed mixes described herein are intended for general ROW restoration. Site specific wetland seed mixes may be required by local, state and/or federal regulators for certain impacts to wetlands.
3. All seed mixes are to be approved by National Grid Environmental Scientist prior to construction and must conform with all project permits.
4. Seedbed preparation and maintenance as well as temporary erosion and sediment controls are crucial to the establishment of newly seeded areas. Coordinate with National Grid Environmental Scientist on seed bed preparation and maintenance as well as temporary erosion and sediment controls prior to construction.

BMP PICTURE

NOTE:

1. PICTURE SHOWS VIEW OF ACCESS WAY STABILIZATION ADJACENT TO A WETLAND.
2. COORDINATE STABILIZATION DESIGN AND PRODUCT WITH NATIONAL GRID ENVIRONMENTAL SCIENTIST.

ATTACHMENT D FIELD DATA FORMS

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 301 ACR City/County: Sturbridge/Worcester County Sampling Date: 2022-08-25

Applicant/Owner: National Grid State: Massachusetts Sampling Point: STUW05-U

Investigator(s): Patrick Fellion, Jessica Lyons Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 8-15

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.154928 Long: -72.070742 Datum: WGS84

Soil Map Unit Name: Paxton fine sandy loam, 15 to 35 percent slopes, extremely stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)
Massachusetts Level 3 Critical Drought Conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): _____
Water Table Present?	Yes ____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): _____

Wetland Hydrology Present? **Yes** ____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: STUW05-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Lyonia ligustrina*	20	Y	FACW
2. *Kalmia latifolia*	20	Y	FACU
3. *Acer rubrum*	10	Y	FAC
4.			
5.			
6.			
7.			
	50.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Solidago rugosa*	40	Y	FAC
2. *Osmundastrum cinnamomeum*	30	Y	FACW
3. *Rubus allegheniensis*	20	Y	FACU
4. *Polystichum acrostichoides*	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0.00	x 1 = 0.00
FACW species 50.00	x 2 = 100.00
FAC species 50.00	x 3 = 150.00
FACU species 45.00	x 4 = 180.00
UPL species 0.00	x 5 = 0.00
Column Totals: 145.00 (A)	430.00 (B)

Prevalence Index = B/A = 2.97

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STUW05-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/3	100					SIL	
10-14	2.5Y 5/3	90	7.5YR 4/6	10	C	M	FSL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 14

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 301 ACR City/County: Sturbridge/Worcester County Sampling Date: 2022-08-25

Applicant/Owner: National Grid State: Massachusetts Sampling Point: STUW05-W

Investigator(s): Patrick Fellion, Jessica Lyons Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.15497 Long: -72.070859 Datum: WGS84

Soil Map Unit Name: Paxton fine sandy loam, 15 to 35 percent slopes, extremely stony NWI classification: PSS/PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes ✓ No _____**
Hydric Soil Present?	Yes ✓	No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
Massachusetts Level 3 Critical Drought Conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ✓ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 4
Water Table Present?	Yes ✓	No _____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Drought conditions

VEGETATION – Use scientific names of plants.

Sampling Point: STUW05-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Alnus incana*	20	Y	FACW
2. *Toxicodendron vernix*	20	Y	OBL
3. *Acer rubrum*	10	N	FAC
4. *Cornus amomum*	10	N	FACW
5. *Lyonia ligustrina*	5	N	FACW
6.			
7.			
	65.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Solidago rugosa*	50	Y	FAC
2. *Juniperus virginiana*	30	Y	FACU
3. *Cornus amomum*	20	N	FACW
4. *Onoclea sensibilis*	10	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	110.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20.00	x 1 =	20.00
FACW species	65.00	x 2 =	130.00
FAC species	60.00	x 3 =	180.00
FACU species	30.00	x 4 =	120.00
UPL species	0.00	x 5 =	0.00
Column Totals:	175.00 (A)		450.00 (B)

Prevalence Index = B/A = 2.57

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STUW05-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					MUCK	
4-10	2.5Y 3/1	95	10YR 4/6	5	C	M	SIL	
10-16	2.5Y 4/2	80	10YR 4/6	20	C	M	FS	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✓ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 301 ACR City/County: Sturbridge/Worcester County Sampling Date: 2022-08-25

Applicant/Owner: National Grid State: Massachusetts Sampling Point: STUW07-U

Investigator(s): Patrick Fellion, Jessica Lyons Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 8-15

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.153186 Long: -72.066108 Datum: WGS84

Soil Map Unit Name: Freetown muck, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)
Massachusetts Level 3 Critical Drought Conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: STUW07-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Hamamelis virginiana*	40	Y	FACU
2. *Kalmia latifolia*	30	Y	FACU
3.			
4.			
5.			
6.			
7.			
	70.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Dennstaedtia punctilobula*	30	Y	UPL
2. *Osmundastrum cinnamomeum*	30	Y	FACW
3. *Solidago rugosa*	20	Y	FAC
4. *Aralia nudicaulis*	20	Y	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	30.00	x 2 =	60.00
FAC species	20.00	x 3 =	60.00
FACU species	90.00	x 4 =	360.00
UPL species	30.00	x 5 =	150.00
Column Totals:	170.00 (A)		630.00 (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STUW07-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 3

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 301 ACR City/County: Sturbridge/Worcester County Sampling Date: 2022-08-25

Applicant/Owner: National Grid State: Massachusetts Sampling Point: STUW07-W

Investigator(s): Patrick Fellion, Jessica Lyons Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.153225 Long: -72.065937 Datum: WGS84

Soil Map Unit Name: Freetown muck, 0 to 1 percent slopes NWI classification: PEM/PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes ✓ No _____**
Hydric Soil Present?	Yes ✓	No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
Massachusetts Level 3 Critical Drought Conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes ✓	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Drought conditions

VEGETATION – Use scientific names of plants.

Sampling Point: STUW07-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Kalmia latifolia*	40	Y	FACU
2. *Lyonia ligustrina*	30	Y	FACW
3. *Acer rubrum*	5	N	FAC
4.			
5.			
6.			
7.			
	75.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Spiraea latifolia*	30	Y	FACW
2. *Osmundastrum cinnamomeum*	30	Y	FACW
3. *Scirpus cyperinus*	20	Y	OBL
4. *Typha latifolia*	10	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30.00	x 1 =	30.00
FACW species	90.00	x 2 =	180.00
FAC species	5.00	x 3 =	15.00
FACU species	40.00	x 4 =	160.00
UPL species	0.00	x 5 =	0.00
Column Totals:	165.00 (A)		385.00 (B)

Prevalence Index = B/A = 2.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STUW07-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					SIL	
8-18	2.5Y 4/1	70	10YR 6/6	30	C	M	FS	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✓ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 301 ACR City/County: Sturbridge/Worcester County Sampling Date: 2022-08-25

Applicant/Owner: National Grid State: Massachusetts Sampling Point: STUW09-U

Investigator(s): Madeline Conley, Carmen Dancy Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.150913 Long: -72.060036 Datum: WGS84

Soil Map Unit Name: Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)
Massachusetts Level 3 Critical Drought Conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): _____
Water Table Present?	Yes ____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): _____

Wetland Hydrology Present? **Yes** ____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: STUW09-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Acer rubrum*	10	Y	FAC
2. *Populus deltoides*	10	Y	FAC
3. *Viburnum dentatum*	10	Y	FAC
4.			
5.			
6.			
7.			
	30.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Solidago canadensis*	40	Y	FACU
2. *Kalmia angustifolia*	30	Y	FAC
3. *Comptonia-peregrina*	10		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	60.00	x 3 =	180.00
FACU species	40.00	x 4 =	160.00
UPL species	0.00	x 5 =	0.00
Column Totals:	100.00 (A)		340.00 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STUW09-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/6	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 301 ACR City/County: Sturbridge/Worcester County Sampling Date: 2022-08-25

Applicant/Owner: National Grid State: Massachusetts Sampling Point: STUW09-W

Investigator(s): Patrick Fellion, Jessica Lyons Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.15086 Long: -72.059985 Datum: WGS84

Soil Map Unit Name: Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony NWI classification: PSS/PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** **Yes ✓ No ____**
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Massachusetts Level 3 Critical Drought Conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: STUW09-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Ilex verticillata*	40	Y	FACW
2. *Acer rubrum*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
	50.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex lurida*	40	Y	OBL
2. *Scirpus cyperinus*	20	Y	OBL
3. *Spiraea latifolia*	20	Y	FACW
4. *Eutrochium purpureum*	5	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60.00	x 1 =	60.00
FACW species	60.00	x 2 =	120.00
FAC species	15.00	x 3 =	45.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	135.00 (A)		225.00 (B)

Prevalence Index = B/A = 1.67

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STUW09-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	2.5Y 3/2	95	10YR 5/8	5	C	M/PL	SL	
8-14	10YR 4/2	85	7.5YR 4/6	15	C	M	SL	
14-18	2.5Y 3/2	85	7.5YR 3/4	5	C	M	SL	
			2.5Y 2.5/1	10	C	M	SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✓ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 301 ACR City/County: Sturbridge/Worcester County Sampling Date: 2022-08-29

Applicant/Owner: National Grid State: Massachusetts Sampling Point: STUW16-U

Investigator(s): Patrick Fellion, Tom Wing Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Baseslope Local relief (concave, convex, none): Convex Slope (%): 3-7

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.142303 Long: -72.036228 Datum: WGS84

Soil Map Unit Name: Freetown muck, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)
Massachusetts Level 3 Critical Drought Conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Drought conditions

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 301 ACR City/County: Sturbridge/Worcester County Sampling Date: 2022-08-29

Applicant/Owner: National Grid State: Massachusetts Sampling Point: STUW14-U

Investigator(s): Patrick Fellion, Tom Wing Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 3-7

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.143078 Long: -72.038707 Datum: WGS84

Soil Map Unit Name: Freetown muck, 0 to 1 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)
Massachusetts Level 3 Critical Drought Conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: STUW14-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Kalmia latifolia*	20	Y	FACU
2. *Rubus allegheniensis*	5	N	FACU
3. *Vaccinium corymbosum*	5	N	FACW
4.			
5.			
6.			
7.			
	30.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Solidago canadensis*	60	Y	FACU
2. *Dennstaedtia punctilobula*	20	Y	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	5.00	x 2 =	10.00
FAC species	0.00	x 3 =	0.00
FACU species	85.00	x 4 =	340.00
UPL species	20.00	x 5 =	100.00
Column Totals:	110.00 (A)		450.00 (B)

Prevalence Index = B/A = 4.09

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STUW14-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					SIL	
6-10	10YR 5/4	100					SIL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 301 ACR City/County: Sturbridge/Worcester County Sampling Date: 2022-08-29

Applicant/Owner: National Grid State: Massachusetts Sampling Point: STUW14-W

Investigator(s): Patrick Fellion, Tom Wing Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.143115 Long: -72.038824 Datum: WGS84

Soil Map Unit Name: Freetown muck, 0 to 1 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** **Yes ✓ No ____**
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Massachusetts Level 3 Critical Drought Conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ✓ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 8

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Drought conditions

VEGETATION – Use scientific names of plants.

Sampling Point: STUW14-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Lyonia ligustrina*	20	Y	FACW
2. *Vaccinium corymbosum*	20	Y	FACW
3.			
4.			
5.			
6.			
7.			
	40.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Solidago gigantea*	5812	Y	FACW
2. *Typha latifolia*	30	N	OBL
3. *Thelypteris palustris*	30	N	FACW
4. *Scirpus cyperinus*	20	N	OBL
5. *Onoclea sensibilis*	10	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5902.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50.00	x 1 =	50.00
FACW species	5892.00	x 2 =	11784.00
FAC species	0.00	x 3 =	0.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	5942.00 (A)		11834.00 (B)

Prevalence Index = B/A = 1.99

Hydrophytic Vegetation Indicators:

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STUW14-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	95	10YR 4/4	5	C	M/PL	SIL	
12-24	10YR 2/1	95	2.5Y 4/2	5	D		SIL	Mucky

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** _____

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: STUW16-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Acer rubrum*	30	Y	FAC
2. *Juniperus virginiana*	10	N	FACU
3. *Quercus rubra*	10	N	FACU
4. *Pinus strobus*	5	N	FACU
5.			
6.			
7.			
	55.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Rubus flagellaris*	40	Y	FACU
2. *Pteridium aquilinum*	30	Y	FACU
3. *Vaccinium angustifolium*	20	Y	FACU
4. *Dendrolycopodium obscurum*	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0.00	x 1 =	0.00
FACW species	0.00	x 2 =	0.00
FAC species	30.00	x 3 =	90.00
FACU species	120.00	x 4 =	480.00
UPL species	0.00	x 5 =	0.00
Column Totals:	150.00 (A)		570.00 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STUW16-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					SIL	
6-12	10YR 4/4	100					SIL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Line 301 ACR City/County: Sturbridge/Worcester County Sampling Date: 2022-08-29

Applicant/Owner: National Grid State: Massachusetts Sampling Point: STUW16-W

Investigator(s): Patrick Fellion Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.142268 Long: -72.036149 Datum: WGS84

Soil Map Unit Name: Freetown muck, 0 to 1 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** **Yes ✓ No ____**
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)
Massachusetts Level 3 Critical Drought Conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: STUW16-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Acer rubrum*	10	Y	FAC
2. *Vaccinium corymbosum*	5	Y	FACW
3.			
4.			
5.			
6.			
7.			
	15.0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex sp.*	50	Y	FAC
2. *Scirpus cyperinus*	20	Y	OBL
3. *Juncus effusus*	10	N	OBL
4. *Lyonia ligustrina*	10	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90.0 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30.00	x 1 =	30.00
FACW species	15.00	x 2 =	30.00
FAC species	60.00	x 3 =	180.00
FACU species	0.00	x 4 =	0.00
UPL species	0.00	x 5 =	0.00
Column Totals:	105.00 (A)		240.00 (B)

Prevalence Index = B/A = 2.29

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STUW16-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	95	10YR 4/6	5	C	M/PL	SIL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
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- ___ Depleted Matrix (F3)
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- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

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- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
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- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

ATTACHMENT E CERTIFIED ABUTTERS LIST AND NOTIFICATION

Town of Sturbridge

Conservation Commission

Notification to Abutters

under the MA Wetlands Protection Act and the Town of Sturbridge Wetland Bylaw Regulations

In accordance with the second paragraph of Massachusetts General Laws, Chapter 131, § 40, as well as the Town of Sturbridge Wetland Bylaw, you are hereby notified of the following permit application for work within a wetland resource area and/or within the 200-foot buffer zone to a resource area:

A. The name of the applicant is: New England Power Company

B. The address of the lot(s) where the activity is proposed is: 34 Podunk Pike; 210 Walker Pond Rd; 159 Walker Pond Rd

C. The nature of the activity proposed includes: 10 exploratory geotechnical soil borings

D. The applicant has filed the following in accordance with the Wetlands Protection Act (MGL c. 131, § 40), and/or the Town of Sturbridge Wetland Bylaws.

- ☒ Notice of Intent seeking permission to conduct work within a wetland, water body or resource area
- ☐ Request for Determination seeking permission to conduct work within a buffer zone to a wetland, waterbody or resource area
- ☐ Abbreviated Notice of Resource Area Delineation seeking to confirm the wetland resource area boundaries.
- ☐ Request to amend an existing Order of Conditions for DEP File #300-_____

The Public Hearing for this application will be held in person and remotely via GoTo Meeting

at the Center Office Building, 301 Main Street, 2nd Floor

Date and Time of Hearing: _____

Public Hearing can be accessed remotely:

- **From your computer using: _____ or**
- **From your phone: +1 872 240 3212, followed by the access code _____**

Please note that while an option for remote attendance and/or participation is being provided to the public, the meeting/hearing will not be suspended or terminated if technological problems interrupt the virtual broadcast, unless otherwise required by law. Members of the public with particular interest in any specific item on this agenda should make plans for in-person vs. virtual attendance accordingly. Please note that meetings can also be watched either online via the Town's on demand video broadcast or on cable television on channel 191, however, there is no public participation through these options.

PLEASE NOTE: Copies of the application and related materials including agendas and staff notes can be found here:

- https://www.sturbridge.gov/conservation-commission/pages/meeting-calendar-and-documents

You may contact the Sturbridge Conservation Commission Office (508) 347-2506 or the Department of Environmental Protection Central Regional Office at 508-792-7650 with questions in regards to the application process or the Wetlands Protection Act.

Parcel ID	Owner	Owner Address	Owner City	State	Zip	Property Address
518-01821-004	4 PODUNK PIKE LLC	8 PICKER ROAD	STURBRIDGE	MA	01566	4 PODUNK PIKE
375-01323-007	BARNICLE DAVID M	7 LADD ROAD	STURBRIDGE	MA	01566	7 LADD ROAD
518-01342-036	BARNICLE DAVID M	7 LADD ROAD	STURBRIDGE	MA	01566	36 PODUNK PIKE
375-01355-026	GAGNER MATTHEW P	152 FREEMAN ROAD	CHARLTON	MA	01507	26 LADD ROAD
375-01345-020	GAGNER MATTHEW P	152 FREEMAN ROAD	CHARLTON	MA	01507	20 LADD ROAD
375-01344-022	GAGNER MATTHEW P	152 FREEMAN ROAD	CHARLTON	MA	01507	22 LADD ROAD
375-01354-032	GAGNER MATTHEW P	152 FREEMAN ROAD	CHARLTON	MA	01507	32 LADD ROAD
518-01812-008	NEW ENGLAND POWER CO	40 SYLVAN ROAD	WALTHAM	MA	02451	8 PODUNK PIKE
375-01814-040	TOWN OF STURBRIDGE	308 MAIN STREET	STURBRIDGE	MA	01566	40 LADD ROAD
	BOARD OF ASSESSORS					
Above persons listed are record owners as they appear on the most recent applicable tax list.						
Assessors are not responsible for errors or omissions. RE: M.G.L. - Chapter 40A, Section 11						
Abutters List -	Conservation Commission - 200'					
RE: 34 PODUNK PIKE						
Certified Copy						
Assessor:						
Date:	7-25-2023					

Parcel ID	Owner	Owner Address	Owner City	State	Zip	Property Address
662-00721-238	CLOUTIER EDWARD J	180 LAKE ROAD	FISKDALE	MA	01518	238 WALKER ROAD
660-01233-159	COMMONWEALTH OF MASS	100 CAMBRIDGE STREET	BOSTON	MA	02114	159 WALKER POND ROAD
660-01244-154	COMMONWEALTH OF MASS	100 CAMBRIDGE STREET	BOSTON	MA	02114	154 WALKER POND ROAD
183-01235-018	COMMONWEALTH OF MASS	100 CAMBRIDGE STREET	BOSTON	MA	02114	18 BUSHNELL ROAD
183-01226-021	COMMONWEALTH OF MASS	100 CAMBRIDGE STREET	BOSTON	MA	02114	21 BUSHNELL ROAD
662-00721-235	KOWALSKI JOSEPH	235 WALKER ROAD	STURBRIDGE	MA	01566	235 WALKER ROAD
183-01235-017	NEW ENGLAND POWER CO	40 SYLVAN ROAD	WALTHAM	MA	02451	17 BUSHNELL ROAD
662-00721-256	OUELETTE DAVID	256 WALKER ROAD	STURBRIDGE	MA	01566	256 WALKER ROAD
660-01254-152	PARSONS GARRETT A & QUINN LAURA E TRS	152 WALKER POND ROAD	STURBRIDGE	MA	01566	152 WALKER POND ROAD
662-00725-236	TOWN OF STURBRIDGE	308 MAIN STREET	STURBRIDGE	MA	01566	236 WALKER ROAD
662-00724-234	TOWN OF STURBRIDGE	308 MAIN STREET	STURBRIDGE	MA	01566	234 WALKER ROAD
660-01244-153	TOWN OF STURBRIDGE	308 MAIN STREET	STURBRIDGE	MA	01566	153 WALKER POND ROAD
	BOARD OF ASSESSORS					
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Abutters List -	Conservation Commission - 200'					
RE: 210 WALKER POND ROAD						
Certified Copy						
Assessor:	Ann P. Murphy					
Date:	7-25-2023					

Parcel ID	Owner	Owner Address	Owner City	State	Zip	Property Address
455-00645-319	BOITEAU DOROTHY L. ESTATE	112 DREXEL STREET	SPRINGFIELD	MA	01104	319 NEW BOSTON ROAD
110-01115-004	CAIRNS ZACHARY E	4 ALLEN ROAD	STURBRIDGE	MA	01566	4 ALLEN ROAD
455-00635-321	CARRIER KATHLEEN M TRUSTEE	121 LAKE SHORE DRIVE	W BROOKFIELD	MA	01585	321 NEW BOSTON ROAD
455-01123-283	CHARRON ROBERT G	283 NEW BOSTON ROAD	STURBRIDGE	MA	01566	283 NEW BOSTON ROAD
662-00721-238	CLOUTIER EDWARD J	180 LAKE ROAD	FISKDALE	MA	01518	238 WALKER ROAD
660-00754-210	COMMONWEALTH OF MA DEPT OF	100 CAMBRIDGE STREET	BOSTON	MA	02114	210 WALKER POND ROAD
455-01135-278	COMMONWEALTH OF MASS	100 CAMBRIDGE STREET	BOSTON	MA	02114	278 NEW BOSTON ROAD
426-02212-140	COMMONWEALTH OF MASS	100 CAMBRIDGE STREET	BOSTON	MA	02114	140 MASS TURNPIKE
455-01144-271	CONNOLLY DONALD B JR	271 NEW BOSTON ROAD	STURBRIDGE	MA	01566	271 NEW BOSTON ROAD
455-01144-263	FIVE STAR REALTY TRUST	34 NEWMAN AVENUE	SOUTHBRIDGE	MA	01550	263 NEW BOSTON ROAD
455-01633-225	FRANCESS DONNA (LT)	7 COVE DRIVE	STURBRIDGE	MA	01566	225 NEW BOSTON ROAD
455-00655-309	GILMAN FRANCIS J JR	309 NEW BOSTON RD	STURBRIDGE	MA	01566	309 NEW BOSTON ROAD
455-01125-287	GIROUX BERNARD A	287 NEW BOSTON RD	STURBRIDGE	MA	01566	287 NEW BOSTON ROAD
662-00721-239	GOLFIERI JOSEPH M	239 WALKER ROAD	STURBRIDGE	MA	01566	239 WALKER ROAD
455-01613-233	HAMILTON ROD & GUN CLUB	PO BOX 954	STURBRIDGE	MA	01566	233 NEW BOSTON ROAD
318-01632-024	HAMILTON ROD & GUN CLUB INC	P O BOX 954	STURBRIDGE	MA	01566	24 HAMILTON ROAD
455-01613-247	HAMILTON ROD & GUN CLUB INC	PO BOX 954	STURBRIDGE	MA	01566	247 NEW BOSTON ROAD
455-01125-289	HODGE RICHARD &	289 NEW BOSTON RD	STURBRIDGE	MA	01566	289 NEW BOSTON ROAD
455-01613-246	JOLIN FRANCIS G	246 NEW BOSTON RD	STURBRIDGE	MA	01566	246 NEW BOSTON ROAD
455-01154-264	JOLIN JOSEPH R & NANCY A TR	264 NEW BOSTON ROAD	STURBRIDGE	MA	01566	264 NEW BOSTON ROAD
455-01154-256	JOLIN JOSEPH R & NANCY A TR	264 NEW BOSTON ROAD	STURBRIDGE	MA	01056	256 NEW BOSTON ROAD
455-01154-262	JOLIN JOSEPH R & NANCY A TRUSTEES	264 NEW BOSTON ROAD	STURBRIDGE	MA	01566	262 NEW BOSTON ROAD
455-01154-258	JOLIN JOSEPH R & NANCY A TRUSTEES	264 NEW BOSTON ROAD	STURBRIDGE	MA	01566	258 NEW BOSTON ROAD
455-01135-279	JUAIRE DANIEL R	279 NEW BOSTON ROAD	STURBRIDGE	MA	01566	279 NEW BOSTON ROAD
455-01633-221	KOSINSKI JOSEPH M JR	221 NEW BOSTON ROAD	STURBRIDGE	MA	01566	221 NEW BOSTON ROAD
662-00721-235	KOWALSKI JOSEPH	235 WALKER ROAD	STURBRIDGE	MA	01566	235 WALKER ROAD
110-01115-001	KREIDEMAKER FRANK C	1 ALLEN RD	STURBRIDGE	MA	01566	1 ALLEN ROAD
455-01125-302	LAFORTUNE ERIK M	302 NEW BOSTON ROAD	STURBRIDGE	MA	01566	302 NEW BOSTON ROAD
318-01634-001	LANGER JOHN W	P O BOX 452	STURBRIDGE	MA	01566	1 HAMILTON ROAD
455-00637-330B	LEPAGE PAUL C	P.O. BOX 841	STURBRIDGE	MA	01566	330B NEW BOSTON ROAD
455-00655-305	LYNCH PATRICK S	305 NEW BOSTON RD	STURBRIDGE	MA	01566	305 NEW BOSTON ROAD
455-00636-323	MANNILA CODY	323 NEW BOSTON ROAD	STURBRIDGE	MA	01566	323 NEW BOSTON ROAD
455-01125-298	MCCARTHY KAYLA L	298 NEW BOSTON ROAD	STURBRIDGE	MA	01566	298 NEW BOSTON ROAD
110-01115-002	MICHAUD-CONROY LINDA	2 ALLEN ROAD	STURBRIDGE	MA	01566	2 ALLEN ROAD
455-00655-313	O'BRIEN JOSEPH E	313 NEW BOSTON ROAD	STURBRIDGE	MA	01566	313 NEW BOSTON ROAD

455-01125-291	OSBORNE KIMBERLY G	291 NEW BOSTON ROAD	STURBRIDGE	MA	01566	291 NEW BOSTON ROAD
455-00655-307	PAPANDREA JOSEPH R	307 NEW BOSTON ROAD	STURBRIDGE	MA	01566	307 NEW BOSTON ROAD
455-00655-311	POVER JONATHAN EDWIN	311 NEW BOSTON ROAD	STURBRIDGE	MA	01566	311 NEW BOSTON ROAD
455-01144-269	SCHANTZ RAYMOND SHAWN	269 NEW BOSTON ROAD	STURBRIDGE	MA	01566	269 NEW BOSTON ROAD
455-01125-285	SILVA JOSHUA I	285 NEW BOSTON ROAD	STURBRIDGE	MA	01566	285 NEW BOSTON ROAD
455-01135-281	SOULE AMANDA	281 NEW BOSTON ROAD	STURBRIDGE	MA	01566	281 NEW BOSTON ROAD
455-00636-324	SPROESSER SUZANNE L	324 NEW BOSTON ROAD	STURBRIDGE	MA	01566	324 NEW BOSTON ROAD
455-01633-223	TORRES RUBEN	223 NEW BOSTON ROAD	STURBRIDGE	MA	01566	223 NEW BOSTON ROAD
455-01134-277	TOWN OF STURBRIDGE	308 MAIN STREET	STURBRIDGE	MA	01566	277 NEW BOSTON ROAD
660-01244-153	TOWN OF STURBRIDGE	308 MAIN STREET	STURBRIDGE	MA	01566	153 WALKER POND ROAD
455-00638-338	TREMBLAY SCOTT E & HOLLY L TRUSTEES	334 NEW BOSTON ROAD	STURBRIDGE	MA	01566	338 NEW BOSTON ROAD
110-01115-005	YOUNG DEBORAH A	5 ALLEN ROAD	STURBRIDGE	MA	01566	5 ALLEN ROAD
455-00636-325	ZAPUN PAUL	325 NEW BOSTON RD.	STURBRIDGE	MA	01566	325 NEW BOSTON ROAD
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Certified Copy						
Assessor:	Anne P. Murphy					
Date:	7-25-2023					