November 20, 2017

Sudbury Conservation Commission
275 Old Lancaster Road
Sudbury, MA 01776

Re: Abbreviated Notice of Resource Area Delineation
Sudbury-Hudson Transmission Reliability Project

Dear Sudbury Conservation Commission,

The Applicant, NSTAR d/b/a Eversource Energy, is submitting this Abbreviated Notice of Resource Area Delineation under both the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40) and its implementing regulations (310 CMR 10.00) to confirm the limits of state and local jurisdictional wetland resource areas within the boundaries of the Sudbury-Hudson Transmission Reliability Project in Sudbury. Bordering vegetated wetlands, banks, riverfront areas, vernal pools, and intermittent and perennial streams are located throughout the site. Please refer to the attached narrative for a more detailed description of the delineated resource areas. Figures provided in Attachment A contain site location maps. Existing Conditions Plans in Attachments E and F show delineated wetland resources on the property and approximate resources within 200 feet of the property lines, as well as applicable MADEP 100-foot buffer zone and Sudbury Conservation Commission Adjacent Upland Resource Areas (AURA).

Resources used to identify BLSF included the FEMA's Flood Insurance Study (FIS) for Middlesex County, Massachusetts Revised July 6, 2016, and on-site existing topography. On-site existing topography was developed by a combined effort of aerial photogrammetric mapping by Eastern Topographics, Inc. based on aerials taken on February 22, 2013 and augmented by an on-the-ground survey performed by VHB during 2015 and 2017. A discrepancy was noted between the FEMA Flood Insurance Study and existing condition topographic information along Hop Brook between Union Avenue and Landham Road. Consequently, the Bordering Land Subject to Flooding in this area has yet to be determined. To rectify this, VHB has requested data from FEMA so that a detailed evaluation of floodplain in this area can be made. When this evaluation is completed, the ANRAD existing condition plans for this location will be updated with floodplain information and will be submitted to the Commission.

On behalf of Eversource, we respectfully request that the Commission issue an Order of Resource Area Delineation verifying the jurisdictional limits as presented herein. As required, abutters within 100 feet of the property have been notified. A check made payable to the Commonwealth of Massachusetts in the amount of $987.50 was sent directly to the DEP Lock Box for payment of the state's share of the filing fee. A check made payable to the Town of Sudbury in the amount of $1,012.50 is enclosed to cover the local portion of the filing fee. A separate check to cover the fee for the Sudbury bylaw in the amount of $35,326.00 is also enclosed. The fee was calculated as follows:

www.vhb.com

Engineers | Scientists | Planners | Designers

Union Station, Suite 219
2 Washington Square
Worcester, Massachusetts 01604
P 508.752.1001
F 508.752.1276

Base fee of $500.00 + $2.00 per linear foot of resource area subject to the bylaw

Resource Area	Linear Feet	Fee
Bordering Vegetated Wetlands	9,428	$18,856
Bank	4,770	$9,540
Riverfront Area	3,215	$6,430
Subtotal		$34,826
Subtotal + Base Fee ($500)		$35,326
Total Fee		**$35,326**

Eversource acknowledges the potential for continuances of public hearings to facilitate a third-party review of the delineated resources. This review may potentially be further continued to review jurisdictional boundaries in the field due to seasonal constraints (e.g. snow and/or frozen ground).

Should you have any questions concerning this submittal or require additional information, please contact me at 508-513-2717.

Sincerely,

John Vieira

Vanasse Hangen Brustlin, Inc.

CC: Denise Bartone, Eversource
Massachusetts Department of Environmental Protection - NERO

Eversource Energy
Sudbury-Hudson Transmission Reliability Project

Sudbury, Massachusetts

PREPARED FOR

NSTAR Electric Company
d/b/a Eversource Energy
247 Station Drive
Westwood, Massachusetts 02090

PREPARED BY

Union Station, Suite 219
2 Washington Square
Worcester, Massachusetts 01604

NOVEMBER 2017

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Abbreviated Notice of Resource Area Delineation Form

- WPA Form 4A
- Copy of Filing Fee Checks

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 4A – Abbreviated Notice of Resource Area Delineation

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

A. General Information

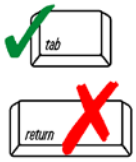
1. Project Location (**Note:** electronic filers will click on button for GIS locator):

183 Boston Post Road (Sudbury Substation) — a. Street Address
Sudbury — b. City/Town
01776 — c. Zip Code

Latitude and Longitude:
42.387349 — d. Latitude
-71.556237 — e. Longitude

Book 7734/Page 426 — f. Assessors Map/Plat Number
K10-0014 — g. Parcel /Lot Number

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



2. Applicant:

Denise — a. First Name
Bartone — b. Last Name
NSTAR Electric Company d/b/a/ Eversource Energy — c. Organization
247 Station Drive, SE270 — d. Mailing Address
Westwood — e. City/Town
MA — f. State
02090 — g. Zip Code
781-441-8174 — h. Phone Number
i. Fax Number
denise.bartone@eversource.com — j. Email Address

3. Property owner (if different from applicant):

☒ Check if more than one owner (attach additional sheet with names and contact information)

a. First Name
b. Last Name
Massachusetts Bay Transportation Authority — c. Organization
10 Park Plaza — d. Mailing Address
Boston — e. City/Town
MA — f. State
02116 — g. Zip Code
h. Phone Number
i. Fax Number
j. Email Address

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

4. Representative (if any):

John — a. Contact Person First Name
Vieira — b. Contact Person Last Name
VHB — c. Organization
2 Washington Square, Suite 219 — d. Mailing Address
Worcester — e. City/Town
MA — f. State
01604 — g. Zip Code
508-513-2717 — h. Phone Number
508-752-1278 — i. Fax Number
jvieira@vhb.com — j. Email Address

Fees will be calculated for online users.

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

$2,000.00 — a. Total Fee Paid
$987.50 — b. State Fee Paid
$1,012.50 — c. City/Town Fee Paid

B. Area(s) Delineated

1. Bordering Vegetated Wetland (BVW) — 9,428 Linear Feet of Boundary Delineated

2. Check all methods used to delineate the Bordering Vegetated Wetland (BVW) boundary:

   a. ☒ MassDEP BVW Field Data Form (attached)

   b. ☒ Other Methods for Determining the BVW boundary (attach documentation):

      1. ☒ 50% or more wetland indicator plants
      2. ☒ Saturated/inundated conditions exist
      3. ☐ Groundwater indicators
      4. ☒ Direct observation
      5. ☒ Hydric soil indicators
      6. ☐ Credible evidence of conditions prior to disturbance

3. Indicate any other resource area boundaries that are delineated:

a. Resource Area	b. Linear Feet Delineated
Bank	4,770
Riverfront Area	3,215

c. Resource Area	d. Linear Feet Delineated

C. Additional Information

Applicants must include the following plans with this Abbreviated Notice of Resource Area Delineation. 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. ☒ ANRAD (Delineation Plans only)
2. ☒ 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.)
3. ☒ Plans identifying the boundaries of the Bordering Vegetated Wetlands (BVW) (and/or other resource areas, if applicable).
4. ☐ List the titles and final revision dates for all plans and other materials submitted with this Abbreviated Notice of Resource Area Delineation.

D. Fees

The fees for work proposed under each Abbreviated Notice of Resource Area Delineation must be calculated and submitted to the Conservation Commission and the Department (see Instructions and Wetland Fee Transmittal Form).

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 the attached Wetland Fee Transmittal Form) to confirm fee payment:

327946	11/2/2017
2. Municipal Check Number	3. Check date
327945	11/2/2017
4. State Check Number	5. Check date
Vannasse Hangen Brustlin, Inc.	
6. Payor name on check: First Name	7. Payor name on check: Last Name

E. Signatures

I certify under the penalties of perjury that the foregoing Abbreviated Notice of Resource Area Delineation 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 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.

I hereby grant permission, to the Agent or member of the Conservation Commission and the Department of Environmental Protection, to enter and inspect the area subject to this Notice at reasonable hours to evaluate the wetland resource boundaries subject to this Notice, and to require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.

I acknowledge that failure to comply with these certification requirements is grounds for the Conservation Commission or the Department to take enforcement action.

1. Signature of Applicant	2. Date: 11/17/2017
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date: 11/17/2017

For Conservation Commission:
Two copies of the completed Abbreviated Notice of Resource Area Delineation (Form 4A), including supporting plans and documents; two copies of the ANRAD Wetland Fee Transmittal Form; and the city/town fee payment must be sent to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Abbreviated Notice of Resource Area Delineation (Form 4A), including supporting plans and documents; one copy of the ANRAD Wetland Fee Transmittal Form; and a copy of the state fee payment must be sent to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery. (E-filers may submit these electronically.)

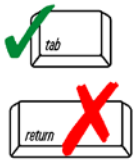
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

ANRAD 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:

183 Boston Post Road (Sudbury Substation)	Sudbury
a. Street Address	b. City/Town
$987.50	327945
c. Fee amount	d. Check number

2. Applicant:

Denise	Bartone	NSTAR Electric Company d/b/a/ Eversource Energy
a. First Name	b. Last Name	

247 Station Drive, SE270
d. Mailing Address

Westwood	MA	02090
e. City/Town	f. State	g. Zip Code

781-441-8174
h. Phone Number

3. Property Owner (if different):

		Massachusetts Bay Transportation Authority
a. First Name	b. Last Name	

10 Park Plaza
d. Mailing Address

Boston	MA	02116
e. City/Town	f. State	g. Zip Code

h. Phone Number

B. Fees

The fee is calculated as follows for each Resource Area Delineation included in the ANRAD (check applicable project type). The maximum fee for each ANRAD, regardless of the number of Resource Area Delineations, is $200 activities associated with a single-family house and $2,000 for any other activity.

☐ **Online users:** check box if fee exempt.

Bordering Vegetated Wetland Delineation Fee:

1. ☐	single family house project	a. feet of BVW	x $2.00 =	b. Fee for BVW
2. ☒	all other projects	9,428 a. feet of BVW	$18,856 x $2.00 =	$18,856 b. Fee for BVW

Other Resource Area (e.g., bank, riverfront area, etc.):

3. ☐	single family house project	a. linear feet	x $2.00 =	b. Fee
4. ☒	all other projects	7,985 a. linear feet	$15,970 x $2.00 =	$15,970 b. Fee

Total Fee for all Resource Areas:	$34,826 Fee
State share of filing fee:	$987.50 5. 1/2 of total fee **less** $12.50
City/Town share of filing fee:	$1,012.50 6. 1/2 of total fee **plus** $12.50

C. Submittal Requirements

a.) Send a copy of this form, with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts, to:

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

c.) **To DEP Regional Office**: Send one copy of the Abbreviated Notice of Resource Area Delineation (and any additional documentation required as part of a Simplified Review Buffer Zone Project); a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

VANASSE HANGEN BRUSTLIN, INC.
101 WALNUT STREET • PO BOX 9151
WATERTOWN, MASSACHUSETTS 02471

CITIZENS BANK
MASSACHUSETTS
5-7017/2110

327945
CHECK DATE

November 2, 2017

Nine Hundred Eighty Seven and 50/100

AMOUNT

$987.50

Commonwealth of Massachusetts
DEP-Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

MP
AUTHORIZED SIGNATURE

Security Check features included. Details on back.

⑈327945⑈ ⑆211070175⑆ 113016137⑈

VANASSE HANGEN BRUSTLIN, INC.
101 WALNUT STREET • PO BOX 9151
WATERTOWN, MASSACHUSETTS 02471

CITIZENS BANK
MASSACHUSETTS
5-7017/2110

327946
CHECK DATE

November 2, 2017

One Thousand Twelve and 50/100

AMOUNT

$1,012.50

Town of Sudbury
278 Old Sudbury Road
Sudbury, MA 01776

AUTHORIZED SIGNATURE

Security Check features included. Details on back.

⑈327946⑈ ⑆211070175⑆ 113016137⑈

NSTAR ELECTRIC - DISTRIB DBA EVERSOURCE ENERGY

Bank of America Higher Standards

51-44
119 CT

10685

DATE
11/07/2017

USD: $35,326.00

PAY Thirty-Five Thousand Three Hundred Twenty-Six Dollars & 00/100 US Dollars

TO THE ORDER OF
TOWN OF SUDBURY
275 OLD LANCASTER RD
275 OLD LANCASTER RD
SUDBURY,MA 01776,UNITED STATES

Authorized Signature

SUPER SAFETY® ANTI-FRAUD PROTECTION

VOID

⑈00010685⑈ ⑆011900445⑆ 002240072730⑈

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Abutter Notification

- Abutter Notification Letter
- Hudson List of Abutters

www.vhb.com

Notification to Abutters under the Wetlands Protection Act

Pursuant to the requirements of the Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40) and the Sudbury Wetlands Administration Bylaw, you are hereby notified of the following:

The applicant, NSTAR Electric Company d/b/a Eversource Energy has filed an Abbreviated Notice of Resource Area Delineation (ANRAD) with the Sudbury Conservation Commission seeking confirmation of the limits of state and local jurisdictional wetland resource areas located within the boundaries of the Sudbury-Hudson Transmission Reliability Project. No work is proposed as part of this filing.

Information regarding this ANRAD can be obtained by calling the Sudbury Conservation Commission at (978) 440-5471 between 9:00 AM and 4:00 PM, Monday through Friday. You can also call John Vieira at (508) 513-2717 between 9:00 AM and 5:00 PM, Monday through Friday, with questions or to arrange to view the ANRAD.

Copies of the ANRAD can be obtained from the Sudbury Conservation Commission or John Vieira by calling the numbers above. You may be charged for a copy of the ANRAD.

The Sudbury Conservation Commission will hold a public hearing on the ANRAD. Notice of the public hearing, including the date, time and place, will be published in a local newspaper at least five (5) business days in advance and will be posted in Town Hall at least 48 hours in advance. You can also call the Sudbury Conservation Commission at the number listed above to determine the date, time, and place of the hearing.

Information on this ANRAD and the Wetlands Protection Act can also be obtained by calling the Northeast Regional Office of the Massachusetts Department of Environmental Protection at (978) 694-3200.

Engineers | Scientists | Planners | Designers

Union Station, Suite 219
2 Washington Square
Worcester, Massachusetts 01604
P 508.752.1001
F 508.752.1276

Owner	Owner Address	Owner City	Owner State	Owner Zip
EMMA LOU LLC	1 GLEN PINES WAY	Millis	MA	05054
GOODRICH PETER M & RACHEL W	10 MAPLE AVE	Sudbury	MA	01776
MASS BAY TRANSPORTATION	10 PARK PLAZA	Boston	MA	2116
CHABAD CENTER OF SUDBURY	100 HORSE POND RD	Sudbury	MA	01776
ZIMMER CHARLES C & GLADYS E	101 AUSTIN RD	Sudbury	MA	01776
DENSEL WILLIAM & CHRISTIANE	109 AUSTIN RD	Sudbury	MA	01776
YANZHEN JENNY & CAO YONG	11 TRAILSIDE CIR	Sudbury	MA	01776
PAUL J CAVICCHI JR TR P.N.J. 1995 REALTY TRUST	110 CODJER LN	Sudbury	MA	01776
MURPHY MATTHEW D & FELICIA K	111 HORSE POND RD	Sudbury	MA	01776
GIBBS DAVID D	115 AUSTIN RD	Sudbury	MA	01776
CROTEAU MARK G & CROTEAU LINDA B	12 COLBURN CIR	Sudbury	MA	01776
MEIDELL PHILIP & TATIANA	12 JARMAN RD	Sudbury	MA	01776
HENDLER ELIZABETH S & WYNNE EDWARD J III	123 AUSTIN RD	Sudbury	MA	01776
SHEA JOSEPH & RAPUANO-SHEA DOLORES	124 HORSE POND RD	Sudbury	MA	01776
SALATINO CHERYL A TRUSTEE OF CHERYL A SALATINO	14 MAPLE AVE	Sudbury	MA	01776
RICHARD J BOSSE HOLDINGS LLC	141 BOSTON POST RD	Sudbury	MA	1776
RESNIC DAVID J & AMY Z	15 BULKLEY RD	Sudbury	MA	01776
CARTY DANIEL E & FALLON MAURA G	15 STONEBROOK RD	Sudbury	MA	01776
BUDDY DOG	151 BOSTON POST RD	Sudbury	MA	1776
CRANE ROBERT	17 TRAILSIDE CIR	Sudbury	MA	01776
PEARLMAN ALLAN ETAL TR DELTA LAND TRUST	172 BISHOPS FOREST DR	Waltham	MA	02173
ROSEN THERESA M	18 JARMAN RD	Sudbury	MA	01776
HELWIG MARK W & RUTHIE	18 NADINE RD	Framingham	MA	01701
SUDBURY VALLEY TRUSTEES INC	18 WOLBACH RD	Sudbury	MA	01776
SUDBURY VALLEY TRUSTEES INC MEMORIAL FOREST GFW	18 WOLBACH RD	Sudbury	MA	01776
CCC POST ROAD LP C/O THE COOLIDGE	189 BOSTON POST RD	Sudbury	MA	01776
CHEN BENJAMIN J & REBECCA A	19 BULKLEY RD	Sudbury	MA	01776
MAPLE AVENUE MEADOWS LLC	2 BLUEBERRY LANE	Lincoln	MA	01773
JENDRZEJEWSKI JONATHAN R & SHETH SAMIRA	21 STONEBROOK RD	Sudbury	MA	01776

MICHELS KARL H & HILDEGARD M TRUSTEES MICHELS FAMILY TRUST	215 BOSTON POST RD	Sudbury	MA	01776
ORR CHARLES W & CAROLINA TRS SPEER REALTY TRUST	215 BOSTON POST RD	Sudbury	MA	01776
ACKERMAN JOSEPH & ACKERMAN ANGELA	22 COLBURN CIR	Sudbury	MA	01776
LI WENJUN & LU LU	22 MAPLE AVE	Sudbury	MA	01776
HUDSON GILBERT L & MEGHAN	222 PEAKHAM RD	Sudbury	MA	01776
ARTHUR DOUGLAS R & JOYCE E	229 PEAKHAM RD	Sudbury	MA	01776
FENDELL SHERRY R & IGLESIAS MARIA A	230 PEAKHAM RD	Sudbury	MA	01776
BPR SUDBURY DEVELOPMENT LLC C/O NATIONAL DEVELOPMENT	2310 WASHINGTON ST	Newton Lower Falls	MA	02462
GUSKI MICHAEL E & HELENE	237 PEAKHAM RD	Sudbury	MA	01776
PAPPAS NICHOLAS & CHRISTINA K	24 JARMAN RD	Sudbury	MA	01776
JOHNSON ETHEL V, ELNA A & DAVIDH TRS, ETHEL V JOHNSON LIV TR	242 PEAKHAM RD	Sudbury	MA	01776
MCMAHON JOHN	249 DUTTON RD	Sudbury	MA	01776
MACARTHUR GORDON R & LESLEY A	25 BRIDLE PATH	Sudbury	MA	01776
HELON CHRISTOPHER & MARGARET	25 BULKLEY RD	Sudbury	MA	01776
UNITED STATES OF AMERICA	256 LANDHAM RD	Sudbury	MA	01776
POST ROAD PROPERTIES LLC	26 SPRING ST	Sudbury	MA	01776
ARCURI JOSEPH & ANNETTE	271 BOSTON POST RD	Sudbury	MA	01776
CORTHELL CRAIG R & ANGUS ERIN	271 LANDHAM RD	Sudbury	MA	01776
BLAIR CHADWICK & LAUREN	272 LANDHAM RD	Sudbury	MA	01776
BAZILE CASTERA	275 BOSTON POST RD	Sudbury	MA	01776
TRANTER EDWARD J & KRISTIE	277 LANDHAM RD	Sudbury	MA	01776
TOWN OF SUDBURY	278 OLD SUDBURY RD	Sudbury	MA	01776
TOWN OF SUDBURY CONSERVATION	278 OLD SUDBURY ROAD	Sudbury	MA	01776
SAFAR GASTON	279 NEWBURY ST	Boston	MA	02116
JACOBSON JEFFREY H JACOBSON JUDITH S	28 BABE RUTH DR	Sudbury	MA	01776
VELLOM DANIEL C	28 MAPLE AVE	Sudbury	MA	01776
MCNAMARA ROBERT W TRS THE ROBMAR REALTY TRUST	28 UNION AVE	Sudbury	MA	01776
BISSON PAUL E & DOROTHY A	290 DUTTON RD	Sudbury	MA	01776
SCRIVANOS CONSTANTINE G TRS SUD REALTY TRUST	3 PLUFF AVENUE	North Reading	MA	01864
ADMV MANAGEMENT LLC	3 RONALD RD	Sudbury	MA	01776

ROGERS ARLIN B & KATHLEEN A	3 STONEBROOK RD	Sudbury	MA	01776
DEITEL HARVEY M & BARBARA S	3 TRAILSIDE CIR	Sudbury	MA	01776
YE XIUZI & YU RUISHENG	30 JARMAN RD	Sudbury	MA	01776
US FISH AND WILDLIFE	300 WESTGATE CENTER DR	Hadley	MA	01035
UNITED STATES OF AMERICA DEPT. OF INTERIOR	300 WESTGATE CENTER DR	HADLEY	MA	1035
ARNHEIM DAVID L & MERRILL JANE	303 BOSTON POST RD	Sudbury	MA	01776
ZIFFER RANDALL E & LYNNE E	318 DUTTON RD	Sudbury	MA	01776
ANDERSON ROBERT M TRS RMA REALTY TRUST	321 BOSTON POST RD	Sudbury	MA	01776
FEE MICHAEL C & HART CHARLES F	321 BOSTON POST RD	Sudbury	MA	01776
NICKERSON GLENDON B & GLENDON B JR & DAVID A TRS	321 BOSTON POST RD SUITE 4C	Sudbury	MA	01776
PEDULLA BARBARA M TRUSTEE OF THE BARBARA M	321 BOSTON POST RD UNIT 3C	Sudbury	MA	01776
PRCC LLC	321 BOSTON POST RD UNIT 3D	Sudbury	MA	01776
RPG PROPERTIES LLC	321 BOSTON POST RD UNIT 4A 4B	Sudbury	MA	01776
STONE LAURA & RICHARD	323 2A BOSTON POST RD	Sudbury	MA	01776
RONG QING DU	323 BOSTON POST RD 4A	Sudbury	MA	01776
NEWMAN-ASPEL MARILYN & ADOLPH JANE D TRS JAMA NOMINEE TRUST	323 BOSTON POST RD 4C	Sudbury	MA	01776
323 BOSTON POST ROAD REALTY LL	323 BOSTON POST RD STE 3A	Sudbury	MA	01776
GERBE THOMAS	323 BOSTON POST RD UNIT 1C	Sudbury	MA	01776
LOPILATO PAUL V & LAFRATTA PHILIP J	323 BOSTON POST RD UNIT 3D	Sudbury	MA	01776
O`CONNOR REALTY GROUP LLC	325 BOSTON POST RD UNIT 1	Sudbury	MA	01776
MCGLYNN PARTNERS LLC	325 BOSTON POST ROAD	Sudbury	MA	01776
TJ REAL ESTATE CORP C/O BOYD NEELON INS AGENCY INC	325-3 BOSTON POST ROAD	Sudbury	MA	01776
YAFFE PETER E & STEINBERG CAROL S	327 BOSTON POST RD	Sudbury	MA	01776
STRAUS MERRIL & ELLEN	327 BOSTON POST RD SUITE C	Sudbury	MA	01776
DICKMAN ERIC S	327 BOSTON POST RD UNIT 1E	Sudbury	MA	01776
CTA REAL ESTATE HOLDINGS LLC	327 F BOSTON POST RD	Sudbury	MA	01776
SPENCER THOMAS W JR	327A BOSTON POST RD	Sudbury	MA	01776
SHANNON PRODUCTS CORP	329 BOSTON POST RD, UNIT 2B	Sudbury	MA	01776
KARASSIK PETER S TRS PETERS REALTY TRUST	329A BOSTON POST ROAD	Sudbury	MA	01776
LIGHT BRIAN & RHONDA J	33 BULKLEY RD	Sudbury	MA	01776

INGHAM JAMES P	33 STONEBROOK RD	Sudbury	MA	01776
MUTUAL REALTY TRUST OF SUDBURY INC	34 AUTUMN ST	Sudbury	MA	01776
CCC POST ROAD LP	34 WASHINGTON ST	Brighton	MA	02135
HART JON L	35 BRIDLE PATH	Sudbury	MA	01776
LIEBERMAN PAUL E & BARBARA J	35 MAPLE AVE UNIT 101	Sudbury	MA	01776
RAPA DENNIS MD & GILLESPIE JOANNE	35 MAPLE AVE UNIT 102	Sudbury	MA	01776
WADSWORTH PAMELA R & CHARLES K	35 MAPLE AVE UNIT 103	Sudbury	MA	01776
LAMKIN ROBERT B & JOAN R	35 MAPLE AVE UNIT 201	Sudbury	MA	01776
BURKLEY ELAINE J TRUSTEE OF MAPLE MEADOWS	35 MAPLE AVE UNIT 202	Sudbury	MA	01776
PARRISH R WAYNE & CAROLE B	35 MAPLE AVE UNIT 203	Sudbury	MA	01776
TABLOSKI THEODORE F & PATRICIA A	35 MAPLE AVE UNIT 301	Sudbury	MA	01776
BRADY CORNELIUS W & MARGARET	35 MAPLE AVE UNIT 302	Sudbury	MA	01776
MOORE LYNN H	35 MAPLE AVE UNIT 303	Sudbury	MA	01776
RADBILL FRANCESCA	35 MAPLE AVE UNIT 401	Sudbury	MA	01776
KATZ PHILIP	35 MAPLE AVE UNIT 402	Sudbury	MA	01776
REVIS SUSAN M & ANTONY	35 MAPLE AVE UNIT 501	Sudbury	MA	01776
WEIBERTH FRANZ J & CAROL L	35 MAPLE AVE UNIT 502	Sudbury	MA	01776
DROPKIN GOLDIE	35 MAPLE AVE UNIT 503	Sudbury	MA	01776
PERLMAN NOAH & LAUREN	35 MAPLE AVE UNIT 601	Sudbury	MA	01776
GOODMAN LEON & LEONA	35 MAPLE AVE UNIT 602	Sudbury	MA	01776
AARONSON BURTON C & MAXINE	35 MAPLE AVE UNIT 701	Sudbury	MA	01776
CONLIN JEFFREY L	35 MAPLE AVE UNIT 702	Sudbury	MA	01776
VARGO MARK W & KAREN M	35 MAPLE AVE UNIT 703	Sudbury	MA	01776
LUBAR EDWARD & PHYLLIS TRS MAPLE AVENUE REALTY TRUST	35 MAPLE AVE UNIT 801	Sudbury	MA	01776
NORINA BOYLE	35 MAPLE AVE UNIT 802	Sudbury	MA	01776
HULIHAN MAILE	35 MAPLE AVE UNIT 901	Sudbury	MA	01776
FLORU DAN & MARIETTA	35 MAPLE AVE UNIT 902	Sudbury	MA	01776
HAMILTON CHRISTOPHER & LESLIE	36 JARMAN RD	Sudbury	MA	01776
STATION RD AUTO BODY & GAR INC	38-40 STATION RD	Sudbury	MA	01776
CHEN LI-YUN YUNG-ANN&YUNG-MOU CHENS FAMILY REALTY TRUST	394 BOSTON POST RD	Sudbury	MA	01776
4 MAPLE LLC	4 MAPLE AVE	Sudbury	MA	01776

PHILLIPS RAYMOND JOHN	40 WHISPERING PINE RD	Sudbury	MA	01776
ADOLFSSON ULLA ANN-BRITT	41 BRIDLE PATH	Sudbury	MA	01776
SENNETT MICHAEL S & JUDITH B	41 STONEBROOK RD	Sudbury	MA	01776
CASS PAUL N & VALERIE R	42 JARMAN RD	Sudbury	MA	01776
AINSWORTH MARY JANE	44 MAPLE AVE	Sudbury	MA	01776
WADDILL DAVID M & KAREN M	45 AMANDA RD	Sudbury	MA	01776
SALVIA PETER M & SUSAN W	45 BISHOP LANE	Sudbury	MA	01776
PEDO REALTY LLC	45 MEADOWBROOK CIR	Sudbury	MA	01776
KOMMIT KATHY	45 WHISPERING PINE RD	Sudbury	MA	01776
UNION AVENUE REALTY, LLC	46 UNION AV	Sudbury	MA	01776
UNION AVENUE REALTY LLC	46 UNION AVE	Sudbury	MA	01776
WHITING MARGARET R & WILLIAM R JR & WHITING PETER E TRUSTEES OF	47 STONEBROOK RD	Sudbury	MA	01776
SAVOY ROBERT P & JO ANN	48 JARMAN RD	Sudbury	MA	01776
FONTE NICHOLAS & JENNIFER C	49 AMANDA RD	Sudbury	MA	01776
BOOTHBY BRYCE C JR & CATHERINE	49 BRIDLE PATH	Sudbury	MA	01776
BOSEKY LIMITED PARTNERSHIP	490 B BOSTON POST RD STE 201	Sudbury	MA	01776
E B REALTY LLC	490-B BOSTON POST RD SUITE 201	Sudbury	MA	01776
LIFSCHULTZ MICHAEL	50 AUSTIN RD	Sudbury	MA	01776
MASS BAY TRANSPORTATION AUTH	50 HIGH ST	Boston	MA	02110
LEIBOWITZ HENRY & PEPPI JOELLE	50 MAPLE AVE	Sudbury	MA	01776
CSX	500 WATER ST C910	Jacksonville	FL	32202
SPACECRAFT LLC	51 RIVER STREET	Wellesley Hills	MA	02481
SCHOLTEN JAMES E & LEPAK AMY E	54 JARMAN RD	Sudbury	MA	01776
WILNER HOWARD & MARIA TRUSTEES OF THE MARIA WILNER	55 AMANDA RD	Sudbury	MA	01776
STONE ANNE TRS THE STONE FAMILY IRREVOCABLE T RUST	554 BOSTON POST RD	Sudbury	MA	01776
SPEROU JOHN C & CHALAT T TRUST EES SPEROU REALTY TRUST	57 BRIDLE PATH	Sudbury	MA	01776
MCCARTHY LAURA B ET AL TRUSTEE S CAS TRUST	578 BOSTON POST RD	Sudbury	MA	01776
GENEROSO JOHN A & ROBIN LEE TRUSTEES OF JOHN A GENEROSO	6 COLBURN CIR	Sudbury	MA	01776
HOWARD FARM LLC	6 HOWARD FARM RD	Sharon	MA	02067
KIBBE ADAM S & PATRICIA T TRUSTEES OF THE KIBBE FAMILY	60 JARMAN RD	Sudbury	MA	01776

GOLDBERG KENNETH M TRS C/O INTRUM CORP	60 WELLS AVENUE STE 100	Newton	MA	02459
EWART CHRISTOPHER &LORA KELLY ANN	66 JARMAN RD	Sudbury	MA	01776
LOGAN BARBARA N	71 ROBERT BEST RD	Sudbury	MA	01776
KAHLER ROYCE C & SHIRLEY B	72 JARMAN RD	Sudbury	MA	01776
POYDAR HENRY R TRS IVY REALTY TRUST	76 BIRCHWOOD LN	Lincoln	MA	01773
POYDAR HENRY R TRS IVY REALTY TRUST	76 BIRCHWOOD LN	Lincoln	MA	01773
BILLIG RICHARD L. & MARTHA T.	79 ROBERT BEST RD	Sudbury	MA	01776
BLANCHETTE CHRISTOPHER & MARY	80 JARMAN RD	Sudbury	MA	01776
JOST ALAN C & DIANE A	81 AUSTIN RD	Sudbury	MA	01776
HARDING MICHAEL R & KARA K	89 AUSTIN RD	Sudbury	MA	01776
MOHANTY SANJIB K & IPSITA	9 STONEBROOK RD	Sudbury	MA	01776
THOLANDER JASON B & LEWARS JEANINE	95 AUSTIN RD	Sudbury	MA	01776
MCNAMARA ROBERT W TRS	P O BOX 833	Sudbury	MA	01776
NSTAR ELECTRIC COMPANY	P.O. BOX 567	Norwood	MA	02062
NSTAR ELECTRIC COMPANY PROPERTY TAX DEPT.	P.O. BOX 567	Norwood	MA	02062
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Eversource Energy Sudbury-Hudson Transmission Reliability Project

Sudbury, Massachusetts

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Wetland Delineation Report

1 Introduction

Vanasse Hangen Brustlin, Inc. (VHB) delineated wetland resources in September and October 2017 on an existing Massachusetts Bay Transportation Authority (MBTA) railroad right-of-way (ROW) in Sudbury to identify those areas in support of the NSTAR Electric Company d/b/a Eversource Sudbury-Hudson Transmission Reliability Project (the Project). This Wetland Delineation Report was prepared to document field delineated boundaries of vegetated wetland resource areas and provide descriptions of them. Other resources (e.g. 100-year floodplain) were also delineated based on field derived data and information available from applicable resources. This report focuses on the identification and delineation of wetland resource areas based on definitions and regulatory requirements found in:

- The Massachusetts Wetlands Protection Act G.L. Ch. 131 §40
- The Massachusetts Wetlands Protection Act Regulations 310 CMR 10.00 et seq.
- The 2016 Town of Sudbury Bylaws
- The Town of Sudbury Wetlands Administration Bylaw Regulations, last revised September 25, 2017
- Other state and federal regulatory requirements governing activities in and around wetland resources include:
- Section 401 of the Federal Clean Water Act implemented by the Massachusetts Department of Environmental Protection (DEP) by way of Massachusetts Water Quality Certification Regulations (314 CMR 9.00); and
- Section 404 of the Clean Water Act, implemented by the U.S. Army Corps of Engineers

2 Project Description

The project involves construction of a new 115-kV underground transmission line within portions of Sudbury, Marlborough, Stow, and Hudson, Massachusetts (see location maps in Attachment A). To accommodate the new transmission line, upgrades will be completed at the Sudbury and Hudson Substations.

The project length is approximately nine (9) miles, with 7.6 miles occurring within an existing, inactive MBTA railroad ROW and 1.4 miles occurring within roadways in Hudson. The project will originate at Eversource's Sudbury Substation and will travel northwest along the MBTA ROW, passing through short sections of Marlborough and Stow before entering Hudson, where it will travel underground within public roadways for approximately 1.4 miles after exiting the MBTA

ROW, terminating at Hudson Light & Power Department's Hudson Substation. The width of the existing MBTA ROW varies in some locations, but is approximately 80-feet wide.

In addition, a 30-foot wide corridor will be used during construction and maintained to a width of 22 feet in width following construction. The maintained ROW will remain cleared of trees and woody shrubs.

3 Regulations Governing Activities in Wetlands

Wetlands through Massachusetts are subject to federal, state, and local regulations. Below is a discussion of all regulations that apply to the project.

3.1 State Regulations

Massachusetts regulates activities in and near wetland resource areas under the authority of the Wetlands Protection Act (M.G.L. c. 131 §40) and its implementing regulations (310 CMR 10.00). In 310 CMR 10.02, the Wetlands Protection Act (WPA) regulations identifies wetland resource areas subject to protection. These include: bordering vegetated wetlands (BVW); banks of streams/ watercourses (bank); land under waterbodies and waterways (LUWW); land subject to flooding, including bordering land subject to flooding (BLSF) and isolated land subject to flooding (ILSF); and riverfront area (RFA). The WPA also established a 100-foot buffer from BVW and bank. Additionally, authority of enforcing the WPA was delegated to local Conservation Commissions. The definitions below were excerpted from the WPA regulations.

3.1.1 Bank (310 CMR 10.54)

As defined by 310 CMR 10.54(2)(a) and (c), banks are "portions of the land surface which normally abuts and confines a water body." "The upper boundary of a bank is the first observable break in the slope or the mean annual flood level, whichever is lower. The lower boundary of a bank is the mean annual low flow level."

3.1.2 Bordering Vegetated Wetlands (310 CMR 10.55)

As defined in 310 CMR 10.55(2)(a) and (c), bordering vegetated wetlands (BVW) are "freshwater wetlands that border on creeks, rivers, streams, ponds, and lakes." The boundary of BVW is determined by the presence of 50 percent or more of wetland indicator plants and saturated or inundated conditions.

3.1.3 Land Under Water Bodies and Waterways (310 CMR 10.56)

Land under water bodies and waterways (LUWW) is "the land beneath any creek, river, stream, pond, or lake." The boundary of a LUWW is "the mean annual low water level."

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

As described in 310 CMR 10.57(2)(a), a bordering land subject to flooding (BLSF) is an "area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds, or lakes. It extends from the banks of these waterways and waterbodies; where a bordering vegetated wetland occurs, it extends from said wetland." The boundary of a BLSF "is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm" as defined by "the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program" or, if "unavailable, the boundary of the BLSF shall be the maximum lateral extent of flood water which has been observed or recorded."

3.1.5 Isolated Land Subject to Flooding (310 CMR 10.57(b))

As described in 310 CMR 10.57(b), an isolated land subject to flooding (ILSF) is "an isolated depression or closed basin without an inlet or outlet. It is an area which at least once a year confines standing water to a volume of at least ¼ acre-feet to an average depth of at least six inches." The boundary of an ILSF is "the perimeter of the largest observed or recorded volume of water confined in said area."

3.1.6 Riverfront Area (310 CMR 10.58)

As defined by 310 CMR 10.58(2)(a) and (c), the riverfront area (RFA) is "the area of land between a river's mean annual high-water line and a parallel line measured horizontally." This "parallel line" is generally 200 feet from the mean annual high-water line with a few noted exceptions as defined by 310 CMR 10.58(2)(a)(3). The riverfront area may include or overlap other resource areas or their buffer zones.

3.1.7 Vernal Pool Habitat (310 CMR 10.57)

Vernal pool habitat is defined in 310 CMR 10.04 as "confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as 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 MGL Ch. 131, § 40 as specified in 310 CMR 10.02(1). These areas are essential breeding habitat, and provide other extremely important wildlife habitat functions during non-breeding season as well, for a variety of amphibian species such as wood frog (*Rana sylvatica*) and the spotted salamander (*Ambystoma macultum*), and are important habitat for other wildlife species."

The boundary of vernal pool habitat is certified by the Massachusetts Division of Fisheries and Wildlife. In the event of a conflict of opinion, or the lack of a clear boundary delineation certified by the Division of Fisheries and Wildlife, the applicant may submit an opinion certified by a registered professional engineer, supported by engineering calculations, as to the probable extent of said habitat" (310 CMR 10.57(2)(a)(6).

Vernal pool habitat is subject to special protection under the Act and Regulations because of its unique wildlife habitat value. Such protection is not provided automatically, however. The Regulations (310 CMR 10.57(2)(a)(5) presume that vernal pools do not exist on a site unless:

1. They have been certified by the Division of Fisheries and Wildlife, or
2. "A clear showing." Evidence may be presented by the public, or the conservation commission.

3.2 Local (Sudbury) Regulations

3.2.1 Town of Sudbury Bylaws, Article XXII Wetlands Administration

The Town of Sudbury bylaws protects wetlands, related water resources, and certain adjoining land areas. The bylaws utilize Home Rule authority to protect additional resource areas, with additional standards and procedures to augment the WPA. All definitions and descriptions in the sections below were taken from the Sudbury 2016 Bylaws (Town of Sudbury, 2016).

3.2.1.1 Jurisdiction (Section 2)

In accordance with the WPA and Sudbury bylaw, the following resource areas are protected: any freshwater wetland; marshes; wet meadows; bogs; swamps; vernal pools; banks; reservoirs; lakes; pond; rivers; streams; creeks; land under waterbodies; lands subject to flooding by groundwater, surface water, or storm flow; and certain adjacent upland areas.

3.2.1.2 Resource Area Definitions (Section 9)

For certain resource areas, Sudbury enforces a different definition from the WPA, which is generally more restrictive. When this occurs, Sudbury has the authority to enforce their interpretation and implementation. Below are resource area definitions that differ from the WPA.

3.2.1.2.1. Adjacent Upland Resource Area

Per Section 9 of the bylaw, an "adjacent upland resource area shall include all lands within 100 feet of wetland resource areas…except for perennial streams and rivers for which the adjacent upland resource area extends 200 feet from the top of bank, and except for vernal pools, ponds under 10,000 square feet in area, and isolated land subject to flooding for which special adjacent upland resource areas" are established.

3.2.1.2.2. Vernal Pools

Vernal pools are defined as "in addition to that already defined under the Wetlands Protection Act, G.L. Ch. 131, §40 and Regulations thereunder, 310 CMR 10.00, any confined basin or depression not occurring in existing lawns, gardens, landscaped areas, or driveways which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, contains at least 200 cubic feet of water at some time during most years, is free of adult predatory

fish populations, and provides essential breeding and rearing habit functions for amphibian, reptile, or other vernal pool community species, regardless of whether the site has been certified by the Massachusetts Division of Wildlife and Fisheries." Furthermore, to determine whether a ponding area is a vernal pool, "most years" means three out of five consecutive years.

The adjacent upland resource area is "100 feet from the mean annual high-water line defining the depression, or one-half of the distance between the vernal pool and any existing house foundation, whichever is smaller" (Town of Sudbury, 2016).

3.2.1.2.3. Isolated Land Subject to Flooding

Isolated lands subject to flooding are an area, depression, or basin that holds a minimum of 1/8-acre foot of water and at least six-inches of standing water at least once a year. This differs from the WPA definition of ¼ acre foot of water. The adjacent upland resource area is 25 feet.

3.2.1.2.4. Pond

A pond includes any open body of fresh water with a surface area observed or recorded within the last ten years of at least 5,000 square feet. Ponds must contain standing water except for periods of extended drought. The adjacent upland resource area for ponds under 10,000 SF is 100 feet from the mean annual high-water line or one-half the distance from an existing house foundation, whichever is smaller. In no case shall the upland resource area include existing lawns, gardens, landscaped, or developed areas.

3.2.2 Town of Sudbury Wetlands Administration Bylaw Regulations

All definitions and descriptions in the sections below were taken from the Sudbury Wetlands Administration Bylaw Regulations, last revised September 25, 2017 (Town of Sudbury, 2017).

3.2.2.1 Wetlands (Section 2.1)

In accordance with the Massachusetts WPA and the Town of Sudbury Wetlands Administration Bylaw Regulations, protected wetland resources include: any creek, stream (intermittent or perennial), river, pond, lake, or vernal pool; isolated and bordering land subject to flooding; any bank, freshwater wetland, marsh, swamp, wet meadow, or bog bordering on or having a hydraulic connection to any of the previously mentioned resources; land under any of the previously mentioned resources; and any adjacent upland resource area as defined by the bylaw or the bylaw regulations (i.e. buffers).

3.2.2.2 Intermittent Streams (Section 2.3)

Sudbury protects intermittent streams and the adjacent upland resource within 100 feet of the stream (i.e. 100-foot buffer). Per Section 2.3 of the bylaw, Sudbury defines intermittent streams as a "flowing watercourse that regularly experiences naturally occurring sporadic flow interruptions such that it does not have a continuous sheet of surface water for five consecutive days or more

annually." The Conservation Commission recognizes two types of intermittent streams, both of which have to be identified in the field.

- **Type I** – stream segments where standing water disappears for at least five consecutive days but not more than 30 consecutive days annually
- **Type II** – streams where continuous standing water disappears for more than 30 consecutive days annually.

3.2.2.3 Perennial Streams (Section 2.4)

Sudbury protects perennial streams and considers all flowing watercourses to be perennial unless proven otherwise (i.e. intermittent streams). The upland resource area within 200 feet surrounding perennial streams is considered Riverfront Area and is a protected resource (i.e. 200' Riverfront Area buffer).

3.2.2.4 Riverfront Area (Section 2.5)

The Riverfront Area is defined as the area of land situated between a river's mean annual high-water line and a parallel line that measures 200 feet outward horizontally (i.e., 200-foot buffer). In areas where the mean annual high-water line aligns with the bank, the 200-foot buffer is extended outward from the bank.

3.2.2.5 Mean Annual High Water (Section 2.5.1)

The mean annual high water is defined as the line that is apparent from visible marking or changes in the character of soils or vegetation due to the prolonged presence of water, which distinguishes between predominantly aquatic and terrestrial land. Therefore, based on the bylaw regulations, the mean annual high-water line is based on the change from predominantly aquatic to predominantly terrestrial characteristics.

3.2.2.6 Cold Water Fisheries Resources (Section 2.6)

Cold water fisheries resources contain at least one of the following: brook trout (*Salvelinus fontinalis*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), creek chubsucker (*Erimyzon oblongus*), fall fish (*Semotilus corporalis*), slimy sculpin (*Cottus cognatus*), or longnose sucker (*Catostomus catostomus*). All streams and/or stream segments that meet one or more of the following criteria are considered cold water fisheries resources:

- Any stream designated as a cold water fishery in 314 CMR 4.00;
- Any stream designated as a cold water fishery by the MA Division of Fisheries and Wildlife;
- Waters where there is evidence based on a fish survey that a cold water fish population and habitat exist
- Streams where the mean daily maximum temperature over a seven day period generally does not exceed 70 degrees F near the stream bottom, and suitable habitat factors exist.

4 Wetland Resource Area Delineation Methodology

4.1 Wetland Delineation Methodology

4.1.1 Wetland Resource Areas Inside the MBTA ROW

Wetland resource areas (i.e. bordering vegetated wetlands, streams/banks, and vernal pools) within the MBTA ROW were identified and delineated in the field by VHB environmental scientists along the length of the project area in September and October 2017. The delineation followed methodologies described in the Massachusetts Department of Environmental Protection's (MADEP) 1995 manual titled "Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act," (Jackson, 1995) and is consistent with the US Army Corps of Engineers (ACOE) 1987 Manual and the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)" (U.S. Army Corps of Engineers, 2011).

In accordance with the MADEP Delineating Bordering Vegetated Wetlands manual (Jackson, 1995), BVWs were identified by the co-occurrence of hydrophytic vegetation and wetland hydrology. Due to the time of year (i.e. late summer) and the historically disturbed nature of the project corridor (i.e., MBTA ROW), the presence of hydrology and wetland conditions was verified by the presence of hydric soils.

4.1.2 Wetland Resource Areas Outside of the MBTA ROW

Wetland resource areas outside of the MBTA were not field delineated due to property access restrictions. Resource areas outside but within 200 feet of the site were approximated using available Geographic Information Systems (GIS) data.

Wetlands outside of the MBTA ROW were digitized by using the MassDEP Wetlands 1:12000 Polygon GIS shapefile (MA Department of Environmental Protection, 2009) and the MassDEP Wetlands 1:12000 Change GIS shapefile (MA Department of Environmental Protection, 2013).

Stream banks outside of the MBTA ROW were digitized using the MassDEP Hydrography 1:25,000 GIS shapefile (MA Department of Environmental Protection, 2017). The stream GIS shapefile was compared to the Digital Globe 2011/2012 Color Ortho Imagery available through ArcGIS Online (MassGIS). This imagery is from spring 2011 and 2012 and is prior to leaf-out, which permits a more accurate interpretation of field conditions.

4.1.3 Stream Delineation

Streams and banks were identified and delineated as described in Section 4.1. The determination of whether a stream is intermittent or perennial was based on field observations (e.g. whether water and surface water flow was present), by reviewing stream data on MassGIS's OLIVER website (i.e. USGS mapping of perennial and intermittent streams), and by running StreamStats.

Available data to determine whether an intermittent stream is Type I or Type II per the Sudbury Wetlands Administration Bylaw Regulations was not available at the time of this submission (i.e. 30 consecutive days of observations).

4.1.4 Wetland Resource Area Flagging

Different flagging was used to identify different wetland resources in the field. All delineated resource areas were also delineated using metal tags. The flagging that was used in the field is as follows:

Wetland Resource	Flag Color
Bordering Vegetated Wetlands	Pink
Vernal Pools	Yellow and Black Striped
Banks	Blue

4.1.5 Wetland Resource Data Collection

Data (i.e. vegetation, soils, and hydrology) were collected in the field using the ACOE Northcentral and Northeast Data Forms and was transcribed onto the MADEP Bordering Vegetated Wetland Delineation Field Data Forms (see Attachment B for MADEP forms). ACOE Data Forms are available upon request. A wetland and upland data form were collected at every BVW where possible. In some areas where the wetland was immediately adjacent to railroad fill or the MBTA ROW boundary, an upland data plot was not able to be collected.

Photographs were also taken at every BVW, stream, and vernal pool location to document the conditions of the wetland resource during the delineation. Photographs are in Attachment C. Photographs of vernal pools are in Attachment D.

4.1.6 Wetland Resource Data Survey

All points that were delineated in the field (e.g. BVW, bank, vernal pool) were field-located by traditional plane surveying methods (i.e. instrument survey).

4.1.7 Wetland Resource Classification

All delineated wetlands and waterways were classified in accordance with the "Classification of Wetlands and Deepwater Habitats of the United State, 2nd Edition," (Federal Geographic Data Committee, 2013). The second edition is an update from the 1979 "Classification of Wetlands and Deepwater Habitats of the United States," (Cowardin, Carter, Golet, & LaRoe, 1979).

4.2 Vernal Pool Delineation Methodology

Certified and potential vernal pools were initially identified using available MassGIS data. These areas were then visited in the field (2015, 2016, and 2017) and data collected documenting physical and biological vernal criteria if present. The limits of each noted "pool" was delineated and mapped based on observed water levels.

4.3 Coldwater Fisheries Delineation Methodology

Coldwater fisheries were identified by delineating the stream banks in the field and researching Massachusetts Coldwater Fish Resources Map (MADEP Division of Fisheries and Wildlife). The available mapping was then cross-checked by reviewing the Coldwater Fish Resources List (MADEP Division of Fisheries and Wildlife). Furthermore, the Massachusetts Surface Water Quality Standards, 314 CMR 4.0 (MA Department of Environmental Protection, 2013) were reviewed.

4.4 Isolated Land Subject to Flooding Delineation Methodology

Isolated land Subject to Flooding (ILSF) was identified using guidance provided by MassDEP Hydrology Handbook for Conservation Commissioners (March 2002), 310 CMR 10.00: Wetland Protection Act Regulations, and the Town of Sudbury Wetlands Administration Bylaw. Article XXII, Section 9 of the Town of Sudbury Wetland Bylaw defines ILSF as "an area, depression, or basin that holds at minimum one-eighth acre foot of water and at least six inches of standing water once a year". This volume is smaller than the volume defined in the Massachusetts Wetlands Protections Act; therefore, one-eighth acre-foot of water was the controlling volume used in calculations for the determination of ILSF in the Town of Sudbury.

4.5 Bordering Land Subject to Flooding Delineation Methodology

Bordering Land Subject to Flooding (BLSF) delineation was identified using the following Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM):

- Map Number #25017C0364F Revised July 7, 2014;
- Map Number #25017C0502F Revised July 7, 2014;
- Map Number #25017C0506F Revised July 7, 2014;
- Map Number #25017C0507F Revised July 7, 2014;

Additional resources used to identify BLSF included the FEMA's Flood Insurance Study (FIS) for Middlesex County, Massachusetts Revised July 6, 2016, and on-site existing topography. On-site existing topography was developed by a combined effort of aerial photogrammetric mapping by Eastern Topographics, Inc. based on aerials taken on February 22, 2013 and augmented by an on-the-ground survey performed by VHB during 2015 and 2017.

5 Delineated Massachusetts Wetland Protection Act and Sudbury Bylaw Regulations Resource Areas

Wetland Resource Areas (WRAs) delineated and located on the project site are defined in the Wetland Protection Act (MWPA) (Chapter 131, Section 40) and its implementing regulations (310 CMR 10.00), as well as the Town of Sudbury General Bylaws and the Sudbury Wetlands Administration Bylaw Regulations. These wetland resource areas include Bordering Vegetated Wetland (BVW) (310 CMR 10.55), Bank (310 CMR 10.54), Bordering Land Subject to Flooding (BLSF) (310 CMR 10.57), and Riverfront Area (RFA) (310 CMR 10.58). Coldwater fisheries, the 100-foot

buffer zone (310 CMR 10.04) adjacent to BVW and Bank, and buffers associated with Sudbury's Adjacent Upland Resource Areas also occur on portions of the project site.

5.1 Freshwater Wetlands/Bordering Vegetated Wetlands

Three (3) wetland community types and 47 wetlands were identified within the right-of-way (ROW). Forty-two wetlands were determined to be bordering vegetated wetlands and five (5) were determined to be isolated. The wetlands are generally described using the federal Cowardin system of classification. The following communities exist along the ROW:

- Palustrine Forested Broad-leaved Deciduous (PFO1)
- Palustrine Scrub-Shrub Broad-leaved Deciduous (PSS1)
- Palustrine Emergent (PEM)

Wetland resources along the ROW are generally described below be each classification type. Table 1 shows additional information for each delineated wetland.

5.1.1 Palustrine Forested Wetlands, Broad-leaved Deciduous (PFO1)

Palustrine Forested (PFO) wetlands are dominated by woody tree species that lose their leaves in the fall and become dormant until the spring. The hydrology of PFO wetlands vary significantly and may be inundated or saturated for different lengths of the year. Because hydrology is variable, soil and vegetation types may vary as well.

5.1.2 Palustrine Scrub-Shrub, Broad-leaved Deciduous (PSS1)

Palustrine Scrub-Shrub (PSS) wetlands are dominated by woody deciduous plants that are less than 20 feet tall. The hydrology of a PSS wetland can vary between wetlands, but is generally categorized as having shallow inundation or soil saturation in the early spring followed by extended periods of dry conditions during the late spring, summer and fall. Soils within PSS wetlands generally consist of mineral soils with minor amounts of organics.

5.1.3 Palustrine Emergent, Persistent Wetlands (PEM)

Palustrine Emergent wetlands (PEM) are dominated by herbaceous vegetation, though there can be some trees and shrubs present. The hydrology of PEM wetlands can vary considerably from being seasonally inundated in certain situation to permanently flooded in others. Substrates in PEM wetlands vary with hydrology. Soils associated with permanently flooded areas may consist entirely of organic soils, or mineral soils enriched with organic materials. PEM wetlands that are saturated for only portions of the year are generally mineral soils.

Table 1. Bordering vegetated wetlands and isolated wetlands delineated within the MBTA ROW in Sudbury, MA

Wetland ID	Flag Sequence	Cowardin Classification	Bordering Vegetated Wetland (BVW) or Isolated Wetland (IW)	Associated Waterway	Dominant Vegetation	Local Jurisdiction	Plan Set Sheet(s)	Aerial Sheet(s)	Comments
1	DW280-DW380	PFO1	BVW	Wash Brook	Glossy buckthorn, red maple, highbush blueberry, northern arrowwood	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA	40-43	15	Red maple dominated BVW. This wetland was previously delineated by Brad Holmes, Environmental Consulting & Restoration, LLC, on June 1, 2012. The BVW line was approved by the Sudbury Conservation Commission under an Order of Conditions and as such, VHB re-delineated the existing line.
2	DW381-DW461	PFO1/PEM	BVW	Wash Brook	Red maple, highbush blueberry, glossy buckthorn, silky dogwood, rice cutgrass	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA	43-46	15	This wetland was previously delineated by Brad Holmes, Environmental Consulting & Restoration, LLC, on June 1, 2012. The BVW line was approved by the Sudbury Conservation Commission under an Order of Conditions and as such, VHB re-delineated the existing line. The PFO portion of the wetland is dominated by glossy buckthorn and red maple. The PEM wetland is located within the utility ROW.
3	DW1-DW19	PSS1E	BVW	Wash Brook	Glossy buckthorn, red maple	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from vernal pool which is inside the BVW buffer	39-40	15	Wetland that was historically connected to Wetland 4 via a culvert which has since failed. This wetland also contains Vernal Pool 1/VP-1.
3A	SW0-SW3	PEM	BVW	Wash Brook	Glossy buckthorn, gray birch	Yes – 100’ AURA from BVW is coincident with 100’ zone in WPA	39	15	Small feature that appears to have formed by receiving stormwater discharge from the surrounding parking lots
4	CW1-CW4	PSS1	BVW	Wash Brook	Silky dogwood, glossy buckhorn, sensitive fern	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA	39-40	15	This wetland is a small depression that is approximately four to five feet lower in elevation than the surrounding uplands. A culvert was historically present that provided a hydrologic connection to Wetland 3. However, the culvert could not be located and appears to have collapsed/failed.
5	DW20-DW50	PFO1E	BVW	Wash Brook	Red maple, glossy buckthorn, silky dogwood, drooping wood reed, fowl manna grass	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from vernal pool and intermittent streambank, both of which are inside the 100' BVW buffer	36-37	14	This wetland is hydrologically connected to Wetlands 6, 7, 8, and 11 via a culvert. An intermittent stream (Stream 1) is present which appears to convey runoff after storm events. In addition, a documented vernal pool (Vernal Pool 2/VP-2) is located within this wetland.

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Table 1. Bordering vegetated wetlands and isolated wetlands delineated within the MBTA ROW in Sudbury, MA (Continued)

Wetland ID	Flag Sequence	Cowardin Classification	Bordering Vegetated Wetland (BVW) or Isolated Wetland (IW)	Associated Waterway	Dominant Vegetation	Local Jurisdiction	Plan Set Sheet(s)	Aerial Sheet(s)	Comments
6	CW-65-CW-81	PFO1E	BVW	Wash Brook	Red maple, glossy buckthorn, green ash, sensitive fern, skunk cabbage	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from intermittent streambank is inside the 100' BVW buffer	36-37	14	An intermittent stream (Stream 1) is present that appears to convey runoff after storm events. This wetland slopes in a general southerly direction towards Wash Brook. Wetlands 6, 7, 8, and 11 are one overall large wetland complex. However, the wetland delineation was broken up as it traveled outside of the MBTA ROW. Therefore, vegetation and wetland characteristics are similar throughout these wetlands.
7	CW61-CW64	PFO1E	BVW	Wash Brook	Red maple, glossy buckthorn, green ash, sensitive fern, royal fern	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA	36	14	This wetland slopes in a general southerly direction towards Wash Brook. Wetlands 6, 7, 8, and 11 are one overall large wetland complex. However, the wetland delineation was
8	CW36-CW60	PFO1E	BVW	Wash Brook	Red maple, glossy buckthorn, green ash, spice bush, sensitive fern, skunk cabbage	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from vernal pool which is inside the 100' BVW buffer	35-36	14	This wetland slopes in a general southerly direction towards Wash Brook. Vernal Pool 4/VP-4 is located within this wetland. Wetlands 6, 7, 8, and 11 are one overall large wetland complex.
9	DW51-DW65	PFO1E	IW	N/A - isolated and not associated with a waterway	Red maple, silky dogwood, false nettle	Yes - 100' AURA from vernal pool	36	14	This is an isolated wetland. It does not meet the requirements for an ILSF per the WPA or the Sudbury Bylaw. Vernal Pool 3/VP-3 is located within this wetland.
10	DW65-DW72	PFO1E	IW	N/A - isolated and not associated with a waterway	Red maple, silky dogwood, common reed	No	36	14	This is an isolated wetland. It does not meet the requirements for an ILSF per the WPA or Sudbury Bylaw.
11	CW16-CW32	PFO1E/PEM	BVW	Hop Brook	Red maple, eastern white pine, glossy buckthorn, highbush blueberry, royal fern	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 200' Riverfront Area from edge of perennial stream is coincident with WPA	34	13	This wetland is associated with the large palustrine emergent wetland system associated with Hop Brook. A portion of perennial streambank (Stream 2) associated with flowing water (CB18-CB39) is partially located inside the delineated BVW line.

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Table 1. Bordering vegetated wetlands and isolated wetlands delineated within the MBTA ROW in Sudbury, MA (Continued)

Wetland ID	Flag Sequence	Cowardin Classification	Bordering Vegetated Wetland (BVW) or Isolated Wetland (IW)	Associated Waterway	Dominant Vegetation	Local Jurisdiction	Plan Set Sheet(s)	Aerial Sheet(s)	Comments
12	CW5-CW15	PFO1E/PEM	BVW	Hop Brook	Red maple, glossy buckthorn, highbush blueberry, royal fern, eastern marsh fern	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 200' Riverfront Area from edge of Hop Brook is coincident with WPA	33	13	This wetland is associated with the large palustrine emergent wetland system associated with Hop Brook; CW-5 begins at the edge of Hop Brook.
13	DW73-DW79	PFO1	IW	N/A - isolated and not associated with a waterway	Red maple, highbush blueberry, gray birch, royal fern	No	34	13	Small, isolated wetland depression. It does not meet the requirements for an ILSF per the WPA or Sudbury Bylaw.
14	DW80-DW94	PFO1E/PEM	BVW	Hop Brook	Duckweed, rice cutgrass, bluejoint	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 200' Riverfront Area from edge of Hop Brook is coincident with WPA	33	13	This emergent wetland had surface water and is associated with Hop Brook. The wetland line ends (DW-94) at Hop Brook.
15	CW186-CW197	PEM	BVW	Hop Brook	American bur-reed, duckweed, rice cutgrass, green arrow arum	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 200' Riverfront Area from edge of Hop Brook is coincident with WPA	32-33	13	This emergent wetland had surface water and is associated with Hop Brook. The wetland line ends (CW-192) at Hop Brook.
16	DW254-DW267	PEM	BVW	Hop Brook	Cinnamon fern, glossy buckthorn	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 200' Riverfront Area from edge of Hop Brook is coincident with WPA	33	13	This emergent wetland had limited vegetation and is associated with Hop Brook. There were areas of standing water that varied from one to six inches in depth; there was no flow present.
17	CW173-CW185	PSS1	BVW	Hop Brook	Red maple, glossy buckthorn, poison ivy, jewelweed	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 200' Riverfront Area from edge of Hop Brook is coincident with WPA	32	12	This palustrine scrub/shrub wetland was terraced and is associated with Hop Brook
18	CW161-CW172	PSS	BVW	Hop Brook	Red maple, sugar maple, glossy buckthorn, evergreen wood fern, poison ivy	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 200' Riverfront Area from edge of Hop Brook is coincident with WPA	31	12	This wetland system appears disturbed and is associated with Hop Brook
19	DW242-DW248	PSS1	BVW	Hop Brook	Red maple, glossy buckthorn, false nettle	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA	31	12	This wetland is hydrologically connected to Wetland 19 via culvert
20	DW236-DW241	PSS1	BVW	Unnamed, intermittent stream/roadside ditch	Silky dogwood, arrowwood, sensitive fern, Virginia creeper	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from intermittent streambank is inside the 100' BVW buffer	30	12	This is a small, terraced wetland that is adjacent to a roadside ditch/intermittent stream (Stream 4) that contains water
21	DW227-DW235	PFO1	BVW	Unnamed, intermittent stream/roadside ditch	Red maple, American elm, winterberry, poison ivy, glossy buckthorn, silky dogwood, rice cutgrass	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from intermittent streambank is inside the 100' BVW buffer	29-30	11	This is a small, terraced wetland that is adjacent to a roadside ditch/intermittent stream (Stream 4) that contains water
22	DW217-DW222	PFO1	BVW	Unnamed, intermittent stream/roadside ditch	Red maple, arrowwood speckled alder, eastern white pine, eastern marsh fern, glossy buckthorn	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from intermittent streambank is inside the 100' BVW buffer	29	11	This is a small, terraced wetland that is adjacent to a roadside ditch/intermittent stream (Stream 4) that contains water

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Table 1. Bordering vegetated wetlands and isolated wetlands delineated within the MBTA ROW in Sudbury, MA (Continued)

Wetland ID	Flag Sequence	Cowardin Classification	Bordering Vegetated Wetland (BVW) or Isolated Wetland (IW)	Associated Waterway	Dominant Vegetation	Local Jurisdiction	Plan Set Sheet(s)	Aerial Sheet(s)	Comments
23	DW223-DW226	PFO1	BVW	Unnamed, intermittent stream/roadside ditch	Red maple, American elm, winterberry, poison ivy, glossy buckthorn, silky dogwood, rice cutgrass	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from intermittent streambank is inside the 100' BVW buffer	29	11	This is a small, terraced wetland that is adjacent to a roadside ditch/intermittent stream (Stream 4) that contains water
24	DW209-DW213	PFO	BVW	Unnamed, intermittent tributary to Hop Brook	Red maple, highbush blueberry, glossy buckthorn	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA	27	10	This is a small wetland that slopes towards a larger wetland complex to the north
24A	DW214-DW216	PEM	BVW	Unnamed, intermittent tributary to Hop Brook	Red maple, glossy buckthorn, highbush blueberry, common winterberry	Yes – 100’ AURA from BVW/vernal pool is coincident with 100’ buffer zone in WPA	27-28	11	This wetland contains Vernal Pool 5/VP-5
25	DW200-DW208	PFO1	BVW	Unnamed, intermittent tributary to Hop Brook	Red maple, glossy buckthorn, green ash, cinnamon fern	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA	24	9	This is a small wetland that slopes towards a larger wetland complex to the north and is connected to Wetland 26 via a culvert
26	CW155-CW160	PSS1	BVW	Unnamed, intermittent tributary to Hop Brook	Glossy buckthorn, cinnamon fern, eastern marsh fern, stinging nettle	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA	24	9	This small wetland depression is hydrologically connected to Wetland 25 via a culvert
27	CW140-CW154	PFO1/PEM	BVW	Unnamed, intermittent tributary to Dudley Brook	Red maple, glossy buckthorn, stinging nettle, jewelweed, bittersweet nightshade	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from vernal pool and intermittent streambank, both of which are inside the 100' BVW buffer	21-22	8	This wetland is hydrologically connected to Wetland 29 via a culvert. Intermittent Stream 6 flows through this wetland. Vernal Pool 6/VP-6 is located in the western corner of the wetland.
28	DW190-DW199	PFO1	BVW	Unnamed, intermittent tributary to Dudley Brook	Red maple, glossy buckthorn, jewelweed	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; a portion of the 100' buffer from the intermittent stream associated with Wetland 29 extends into this wetland	21-22	8	This wetland is associated with Wetland 29
29	DW175A-DW-189	PFO1	BVW	Unnamed, intermittent tributary to Dudley Brook	Red maple, glossy buckthorn, jewelweed	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from intermittent stream is inside BVW buffer	21	8	This wetland is associated with Wetland 28 and is hydrologically connected to Wetland 27 via a culvert. Intermittent Stream 6 flows through this wetland.
30	CW 116-CW126, CW127-CW129, CW130-CW135, CW136-CW139	PSS1	BVW	Dudley Brook	Red maple, glossy buckthorn	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from intermittent stream is inside BVW buffer; 200' RFA buffer from the portion of Dudley Brook this is perennial is coincident with the WPA	17-18	7	This wetland complex consists of fringe wetlands delineated along the bank of Dudley Brook (Stream 7)
31	DW158-DW175	PSS1	BVW	Dudley Brook	Red maple, cinnamon fern, glossy buckthorn	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 200' RFA buffer from Dudley Brook is coincident with the WPA	18	7	This wetland is associated with Dudley Brook (Stream 7) and is hydrologically connected to Wetland 30 via a culvert. The entire portion of Dudley Brook within this wetland is perennial.

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Table 1. Bordering vegetated wetlands and isolated wetlands delineated within the MBTA ROW in Sudbury, MA (Continued)

Wetland ID	Flag Sequence	Cowardin Classification	Bordering Vegetated Wetland (BVW) or Isolated Wetland (IW)	Associated Waterway	Dominant Vegetation	Local Jurisdiction	Plan Set Sheet(s)	Aerial Sheet(s)	Comments
32	DW151-DW157	PSS1	IW	N/A - isolated and not associated with a waterway	Red maple	No	17	7	Small, isolated wetland depression. It does not meet the requirements for an ILSF per the WPA or Sudbury Bylaw.
33	CW99-CW110	PFO1	BVW	Unnamed, intermittent tributary to Dudley Brook	Red maple, glossy buckthorn, highbush blueberry	Yes - 100' AURA from BVW buffer is coincident with 100' buffer zone in WPA; 100' buffer from intermittent streambank is inside BVW buffer	15-16	6	This wetland is associated with an intermittent, unnamed tributary (Stream 8) to Dudley Brook and is hydrologically connected to Wetland 34 via a culvert
34	DW129-DW146	PFO1	BVW	Unnamed, intermittent tributary to Dudley Brook	Red maple, highbush blueberry, skunk cabbage	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from vernal pool and intermittent streambank, both of which are inside the 100' BVW buffer	15-16	6	This wetland is associated with an intermittent, unnamed tributary (Stream 8) to Dudley Brook and is hydrologically connected to Wetland 33 via a culvert. Vernal Pool 7/VP-7 is located within this wetland.
35	DW122-DW128	PFO1	IW	N/A - isolated and not associated with a waterway	Red maple, glossy buckthorn, winterberry	Yes - 100' AURA from vernal pool	15	6	This is an isolated wetland system that also contains Vernal Pool 8/VP-8. It does not meet the requirements for an ILSF per the WPA or Sudbury Bylaw.
36	CW111-CW115	PFO1	BVW	Unnamed, intermittent tributary to Dudley Brook	Red maple, eastern white pine, glossy buckthorn, cinnamon fern	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from adjacent intermittent streambank (Stream 9) is inside the 100' BVW buffer	14	5	It appears that the adjacent stream (Stream 9) was historically dugout/incised which altered the hydrology
37	DW147-DW150	PSS1	BVW	Unnamed, intermittent tributary to Dudley Brook	Red maple, Morrow's honeysuckle, glossy buckthorn, silky dogwood	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from adjacent intermittent streambank (Stream 9) is inside the 100' BVW buffer	14	5	Small wetland adjacent to an intermittent stream (Stream 9) with a dry streambed
38	DW268-DW279	PFO1	BVW	Unnamed, intermittent tributary to Dudley Brook	N/A - filled with vegetative debris	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from adjacent intermittent streambank (Stream 9) is inside the 100' BVW buffer	14	5	This wetland has approximately 4 to 5 feet of fill that consists of tree limbs and vegetative debris. Vegetative information and data plots were not able to be taken due to the fill.
39	DW117-DW121	PFO1	BVW	Hop Brook	Red maple, eastern white pine, glossy buckthorn	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from vernal pool which is inside the 100' BVW buffer	11	4	This wetland system contains Vernal Pool 9/VP-9.
40	DW112A-DW116	PSS1	BVW	Hop Brook	Black gum, highbush blueberry, cinnamon fern	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from vernal pool which is inside the 100' BVW buffer	10-11	4	This wetland system contains Vernal Pool 10/VP-10.
41	DW105-DW111	PFO1	BVW	Hop Brook	Sweet pepperbush, red maple, winterberry, highbush blueberry	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from vernal pool which is inside the 100' BVW buffer	10	4	This wetland system contains Vernal Pool 12/VP-12

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Table 1. Bordering vegetated wetlands and isolated wetlands delineated within the MBTA ROW in Sudbury, MA (Continued)

Wetland ID	Flag Sequence	Cowardin Classification	Bordering Vegetated Wetland (BVW) or Isolated Wetland (IW)	Associated Waterway	Dominant Vegetation	Local Jurisdiction	Plan Set Sheet(s)	Aerial Sheet(s)	Comments
42	CW82-CW97	PEM	BVW	Hop Brook	Red maple, highbush blueberry, skunk cabbage, cinnamon fern	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from vernal pool which is inside the 100' BVW buffer	10	4	This wetland system contains Vernal Pool 11/VP-11
43	DW95-DW104	PEM	BVW	Hop Brook	Red maple, swamp white oak, highbush blueberry	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 100' AURA from vernal pool which is inside the 100' BVW buffer	10	4	This wetland system contains Vernal Pool 13/VP-13
44	AW170-AW179, BW93-BW105, AW180-AW186, and BW106-BW-114	PEM/PFO1	BVW	Hop Brook	Black willow, red maple, eastern white pine, glossy buckthorn, common reed, purple loosestrife, bluejoint, cinnamon fern, royal fern	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA; 200' RFA buffer from Hop Brook is coincident with the WPA	8-9	3	This wetland system is associated with Hop Brook, which is a perennial stream. There is a small fringe of BVW connecting the AW170-179 line to the BW93-105 line, and the AW180-186 line to the BW106-114 line. Therefore, the wetlands on both sides of the rail bed were considered one overall wetland complex, which is bisected by Hop Brook.
45	AW162-AW169	PFO1	BVW	Cranberry Brook	Red maple, eastern white pine, highbush blueberry, cinnamon fern, royal fern, New York fern	Yes - 100' AURA from BVW is coincident with 100' buffer zone in WPA	3	1	This wetland system is associated with Cranberry Brook, which is a coldwater fisheries resource. Cranberry Brook is a tributary to Hop Brook.

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5.2 Streams/Banks

Ten streams and two (2) stream communities were identified throughout the project area. Six (6) streams were determined to be intermittent, three (3) were determined to be perennial, and one (1) was partially intermittent and partially perennial.

- Riverine Intermittent Streambed (R4SB3)
- Riverine Lower Perennial Streambed (R2SB)

Table 2 shows additional information for each delineated watercourse. The designation of perennial and intermittent streams will be confirmed with the Sudbury Conservation Commission agent to be consistent with written testimony provided to the Energy Facility Siting Board (EFSB).

5.2.1 Riverine Intermittent Streambed

Intermittent riverine systems include wetlands and deepwater habitats contained within a channel. They are bound on the landward site by uplands, the channel bank, or wetlands dominated by trees, shrubs, persistent emergent, emergent mosses, or lichens. Intermittent streams only contain flowing water for part of the year; when water is not flowing, water is either absent or in isolated pools.

5.2.2 Riverine Lower Perennial Streambed

Lower perennial riverine systems include wetlands and deepwater habitats that are contained within a channel. They are bound on the landward site by uplands, the channel bank, or wetlands dominated by trees, shrubs, persistent emergent, emergent mosses, or lichens. Lower perennial systems are low gradient with no tidal influence, and have some water flow year-round except in the case of extreme drought

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Table 2. Intermittent and perennial streams delineated within the MBTA ROW in Sudbury, MA

Stream ID	Stream Bank Flag Sequence	Cowardin Classification	Watercourse Name	Associated BVW ID	Cold Water Fisheries	Water Depth	Perennial or Intermittent	Local Jurisdiction	Plan Set Sheet(s)	Aerial Sheet(s)	Comments
1	CB0-CB1 and DB1-DB12	R4SB4	Unnamed Tributary to Wash Brook	Wetland 5 and 6	No	Varies - see comments	Intermittent	Yes - 100' AURA from streambank	37	14	Although this stream is mapped as perennial by OLIVER, field observations and StreamStats confirmed that it is intermittent. This intermittent stream had varying amounts of water in it (0.25"-1") on September 7, 2017, which followed a heavy rainfall. A subsequent visit on 9/8/17 showed that the majority of the streambed was dry, and on 9/13/17 it was completely dry (see Photos 8-10 in Attachment C). The intermittent stream connects from Wetland 5 to Wetland 6 via a culvert and it appears to flow in a general northerly direction.
2	CB18-CB39	R2SB5	Unnamed Tributary Hop Brook	Wetland 12	No	~2-3'	Perennial	Yes - 200' RFA from streambank is coincident with WPA	34	13	This stream was delineated as part of the overall Hop Brook emergent marsh system and is not a mapped stream on OLIVER. However, because it is associated with Hop Brook it was determined to be perennial. At the time of the delineation it had approximately two to three feet of water and a slight easterly flow was present.
3	DB13-DB17 and CB127-CB129	R2SB4/5	Hop Brook	Wetland 13, 15, 16, and 17	Yes	~3-5'	Perennial	Yes - 200' RFA from streambank is coincident with WPA	33	13	Hop Brook bisects the MBTA ROW at this location via a railroad bridge and is a coldwater fisheries resource. Water levels at the time of the delineation varied from approximately three to five feet.
4	CB40-CB126	R4SB5	N/A - intermittent	Wetland 21, 22, 23, and 24	No	~0.5-2'	Intermittent	Yes - 100' AURA from streambank	28- 30	11-12	This delineated bank appears to be a roadside ditch that captures roadway runoff following storm events. It was determined to be intermittent because it is not mapped by OLIVER and StreamStats confirmed that it is intermittent. It outlets into Hop Brook via a culvert during storm events.
5	DB135-DB157 and DB158-DB163	R4SB4/5	Unnamed Tributary to Landham Brook	N/A - bank only	No	~0-0.5'	Intermittent	Yes - 100' AURA from streambank	26-27	10	DB135-DB157 appears to be part of a stormwater management system and was dry but mucky at the time of the delineation. This feature is not mapped in OLIVER. DB158-DB163 is connected to DB135-DB157 via a culvert; the streambed was dry at the time of the delineation and it is identified as intermittent in OLIVER.
6	DB113-DB123 and DB124-DB135	R4SB4	Unnamed tributary to Dudley Brook	Wetland 29 and 30	No	See comments	Intermittent	Yes - 100' AURA from streambank	21	8	This stream is mapped as intermittent in OLIVER which was confirmed by StreamStats. In addition, at the time of the delineation, the streambed was dry.

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Table 2. Intermittent and perennial streams delineated within the MBTA ROW in Sudbury, MA (Continued)

Stream ID	Stream Bank Flag Sequence	Cowardin Classification	Watercourse Name	Associated BVW ID	Cold Water Fisheries	Water Depth	Perennial or Intermittent	Local Jurisdiction	Plan Set Sheet(s)	Aerial Sheet(s)	Comments
7	DB63-DB96, DB97-DB112, and DB119-DB121	R2SB4/5	Dudley Brook	Wetland 32 and 34	No	See comments	Perennial (DB63-85, DB106-112, DB119-121) and Intermittent (DB86-96, DB97-105) See comments	Yes - 100' AURA from intermittent portion of stream; 200' RFA from perennial portion of Dudley Brook is coincident with WPA	18	7	The southwestern portion of the bank that was delineated with DB63-DB85 and DB106-DB112 (areas up to the culvert) had areas of standing water that ranged from 0.5' to 2.5'. This portion of the streambank is mapped as perennial in OLIVER. The water was stagnant and did not appear to have any flow. The southeastern bank that was delineated with DB86-DB96 and from DB97-DB105 (east of culvert) was dry and is mapped as intermittent in OLIVER. The northern side of the feature that was flagged as DB119-DB121 was a dry streambed at the time of the delineation and is mapped as perennial in OLIVER. The feature is connected beneath the rail bed via a culvert.
8	DB30-DB34 and DB63-DB66	R4SB3/4	Unnamed tributary to Dudley Brook	Wetland 35 and 36	No	~1-1.5'	Intermittent	Yes - 100' AURA from streambank	16	6	Water was present at the time of the delineation. However, available USGS stream mapping through OLIVER and StreamStats confirmed that the stream is intermittent.
9	DB35-DB40 and DB41-DB45	R4SB3/4	Unnamed stream	Wetland 36 and 37	No	See comments	Intermittent	Yes - 100' AURA from streambank	14	5	This feature is not mapped in OLIVER and was confirmed to be intermittent by StreamStats. In addition, at the time of the delineation there was no water present within the streambed (see Photo 51 in Attachment C). Appears to flow into a wetland south of ROW.
10	AB23-AB26 and AB27-AB34	R2SB5	Hop Brook	Wetland 49	Yes	~2-3'	Perennial	Yes - 200' RFA from streambank is coincident with WPA	8	3	Hop Brook bisects the MBTA ROW in this area and is a coldwater fisheries resource. There was evidence of beaver activity within the area.

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5.3 Isolated Land Subject to Flooding

The project team identified six (6) potential locations within the Sudbury project area that could be defined as Isolated Land Subject to Flooding (ILSF). These locations were evaluated using the methodology described in Section 4.4. VHB calculated the maximum volume of water that each depression could confine. Four (4) locations were determined to have insufficient volume, depression volume < 1/8 acre-foot, to be defined as ILSF.

For the two (2) remaining locations, the rainfall-runoff response of the contributing watershed was evaluated for the 1-year storm event based on National Oceanic Atmospheric Administration (NOAA) Atlas-14 rainfall data. Run-off coefficients and watersheds were determined using National Resources Conservation Service (NRCS) Technical Release 55 (TR-55) methodology and using MassGIS Datalayers for Land-use, NRCS SSURGO-Certified Soils, and LiDAR Terrain Data (2010-Concord River). HydroCAD modeling software was used to calculate the volume of water draining to the two (2) potential ILSF locations. The sum of the calculated runoff volume and estimated standing water volume in the depression for both locations was calculated to be less than the required 1/8-acre-foot requirement to be defined as ILSF. As a result, no areas are defined as ILSF within the project area. Supporting documentation and calculations will be provided upon request.

Below a summary of the potential ILSF areas that were investigated and the reason for elimination as ILSF.

Wetland Flag Sequence	Reason for Elimination
DW51-DW65	Depression volume < 1/8 acre-foot
DW65-DW72	Depression volume < 1/8 acre-foot
DW73-DW79	Depression volume < 1/8 acre-foot
DW214-DW216	Runoff + standing water volume < 1/8 acre-foot
DW151-DW157	Depression volume < 1/8 acre-foot
DW122-DW128	Runoff + standing water volume < 1/8 acre-foot

5.4 Bordering Land Subject to Flooding

Several areas throughout the Sudbury project area were identified as Bordering Land Subject to Flooding (BLSF). BLSF areas located in the Sudbury project area include FEMA designated Floodway, and FEMA Zone AE (areas subject to inundation by the 1-percent annual chance flood event which include a Base Flood Elevation (BFE)). VHB used the FEMA FIS BFEs, delineated to on-site topographic information, to determine the limits of the 100-year flood plain and BLSF.

Below is a summary of the BLSF located in Sudbury:

Area	Zone AE – Base Flood Elevation (NAVD 88)
Hop Brook (Stream 10) (Sheet 8+9 of ANRAD plans)	161.0
Dudley Brook (Stream 7, Wetland 30 & 31) (Sheet 17 + 18 of ANRAD Plans)	Wetland 30 (South of ROW) – 152.2 Wetland 31 (North of ROW) – 148.6
Hop Brook (Stream 3 and 4) – Between Union Avenue and Sudbury Limits	Varies – See note below

VHB evaluated the BLSF and FEMA FIS associated with Hop Brook in Sudbury. A discrepancy appears to exist between the FEMA FIS BFE and the existing conditions topographic information at the crossing of Hop Brook and the Project's ROW between Union Avenue and Landham Road. Based on this information, this segment of Hope Brook would not have a BLSF (100-year floodplain). Because of this discrepancy, the BLSF for Hop Brook in this location was excluded in the ANRAD submission. VHB has submitted a data request to FEMA for the FIS calculations and backup data, and will evaluate the additional information in order to resolve the discrepancy.

5.5 Land Under Waterbodies and Waterways (LUW)

Locations where LUW has been identified on the provided project plans. Mean annual low water elevations establishing the upper limits of this resource have not been determined at this time and will be provided during project permitting at a later date if necessary.

5.6 Vernal Pools

Thirteen (13) vernal pools have been identified and documented either on or immediately adjacent to the MBTA ROW. Of these, only one (1) has been previously certified by the Massachusetts Natural Heritage and Endangered Species Program. Because field activities were limited to areas on the MBTA, off-ROW vernal polls have been generally identified based on written testimony provided to the EFSB by the Sudbury Conservation Commission's agent. Table 3 lists vernal pools documented as occurring on and adjacent to the MBTA ROW.

Table 3. Vernal Pools identified on and adjacent to the MBTA ROW in Sudbury, MA

Vernal Pool ID	VP Flag Sequence	Associated BVW Wetland	General Location Description	Plan Set Page(s)	Aerial Sheet(s)	Observations by Year			NHESP CVP	NHESP Certifiable	Sudbury Bylaw Vernal Pool	Photographs ID	Comments
						2015	2016	2017					
VP-1	DW1-DW19	Wetland 3	Approximately 150" West of Sudbury Substation access road, north side of MBTA ROW	39-40	14	No organisms found	No organisms found	Snails (*Lymnaeidae*) and amphipods	N	?	Y	1-5	Limited access from MBTA ROW to fully evaluate wetland. Sudbury Conservation Commission agent appears to have identified this basin as a vernal pool in EFSB written testimony.
VP-2	DSVP1-DSVP12	Wetland 5	Approximately 1300' west of Landham Road, north of MBTA ROW	36-37	14	Wood frog tadpoles	5/18/16 Green Frog adult and invertebrates	5/2/17, Green frog, amphipods, annelids	N	Y	Y	6-9	
VP-3	DSVP13-DSVP19	Wetland 8	Approximately 1000' west of Landham Road, north of MBTA ROW	36	14	Lots of algae and leaves on surface, No tadpoles	5/18/16 Green Frog adult and invertebrates	5/2/17 Green frog, leopard frog adult, isopods, pleurobid snail, beetle larvae, caddis fly larvae, isopods	N	N	Y	10-13	
VP-4	CSVP1-CSVP6	Wetland 9	Approximately 1100' west of Landham Road, north of MBTA ROW	36	14	Green frog	5/18/16 *Ambystoma sp.* Larva	5/2/17, Green frog, amphipods, mosquito larvae, caddisfly larvae	N	Y	Y	14-17	
VP-5	DW214-DW216	24A	Approximately 300 feet west of Union Avenue, north side of MBTA ROW	27-28	11				N	?	Y	18-19	No access from ROW to evaluate wetland. Sudbury Conservation Commission agent appears to have identified this basin as a vernal pool in EFSB written testimony.
VP-6	CSVP24-CSVP29	Wetland 27	Approximately 400’ east of Horse Pond Road, south side of ROW	21	8	Hundreds of wood frog tadpoles	5/19/16 Wood Frog tadpoles	Wood frog tadpoles (hundreds), amphipods, ostricods, caddid fly larvae	N	Y	Y	20-24	
VP-7	DSVP40-DSVP45	Wetland 34	Approximately 150 west of Peakham Road, north side of ROW	16	6	Fairy shrimp, Hundreds of wood frog tadpoles, caddisfly larvae	5/12/16 Wood Frog tadpoles	5/2/17, no vertebrates, mosquito larvae	N	Y	Y	25-27	
VP-8	DSVP34-DSVP39	Wetland 35	Approximately 550 west of Peakham Road, north side of ROW	15	6	Thousands of wood frog tadpoles, caddisfly larvae	5/12/16 Green Frog adult and mosquito larvae	5/2/17, no vertebrates, mosquito larvae, chironomid midge larvae	N	Y	Y	28-29	
VP-9	DW117-DW121	Wetland 39	Approximately 150' west of Dutton Road, north of MBTA ROW	11	4	n/a	n/a	n/a	Y	Y	Y	30	No access from ROW to evaluate wetland. Sudbury Conservation Commission agent appears to have identified this basin as a vernal pool in EFSB written testimony.
VP-10	DSVP30-DSVP33	Wetland 40	Approximately 300 feet west of Dutton Road, north side of ROW	11	4	n/a	n/a	4-24-17 Ambystoma egg mass and fairy shrimp	N	Y	Y	31-33	Limited access from MBTA ROW, mostly off site on Sudbury town land
VP-11	CSVP7-CSVP23	Wetland 42	Approximately 450 feet west of Dutton Road, north side of ROW	10	4	n/a	5/12/16 Green Frog adult and caddisflies	4/24/17, Green frog, mosquito larvae	N	N	Y	34-35	
VP-12	DW105-DW111	Wetland 41	Approximately 550 feet west of Dutton Road, north side of ROW	10	4				N	?	Y		No access from ROW to evaluate wetland. Sudbury Conservation Commission agent appears to have identified this basin as a vernal pool in EFSB written testimony.
VP-13	DSVP20-DSVP29	Wetland 43	Approximately 750 feet west of Dutton Road, south side of ROW	10	4	n/a	6/1/16 Wood Frog tadpoles	4-24-17 Wood frog egg masses (few)	N	Y	Y	36-39	Gray tree frog vocalizations heard in area

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6 Summary

VHB delineated all wetland resource areas within the MBTA in September 2017. The delineation resulted in the identification of 40 BVWs, five (5) isolated wetlands, thirteen (13) vernal pools, four (4) perennial streams, and six (6) intermittent streams. The resources were mapped onto 11x17 orthophoto imagery figures (Attachment E) and 24x36 plans (Attachment F).

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Attachment A:
Site Location (Locus) Maps

- Overall Location Map
- USGS Quadrangle Maps (Scale 1":100')
- Aerial (Orthophotograph) Maps (Scale 1":100')

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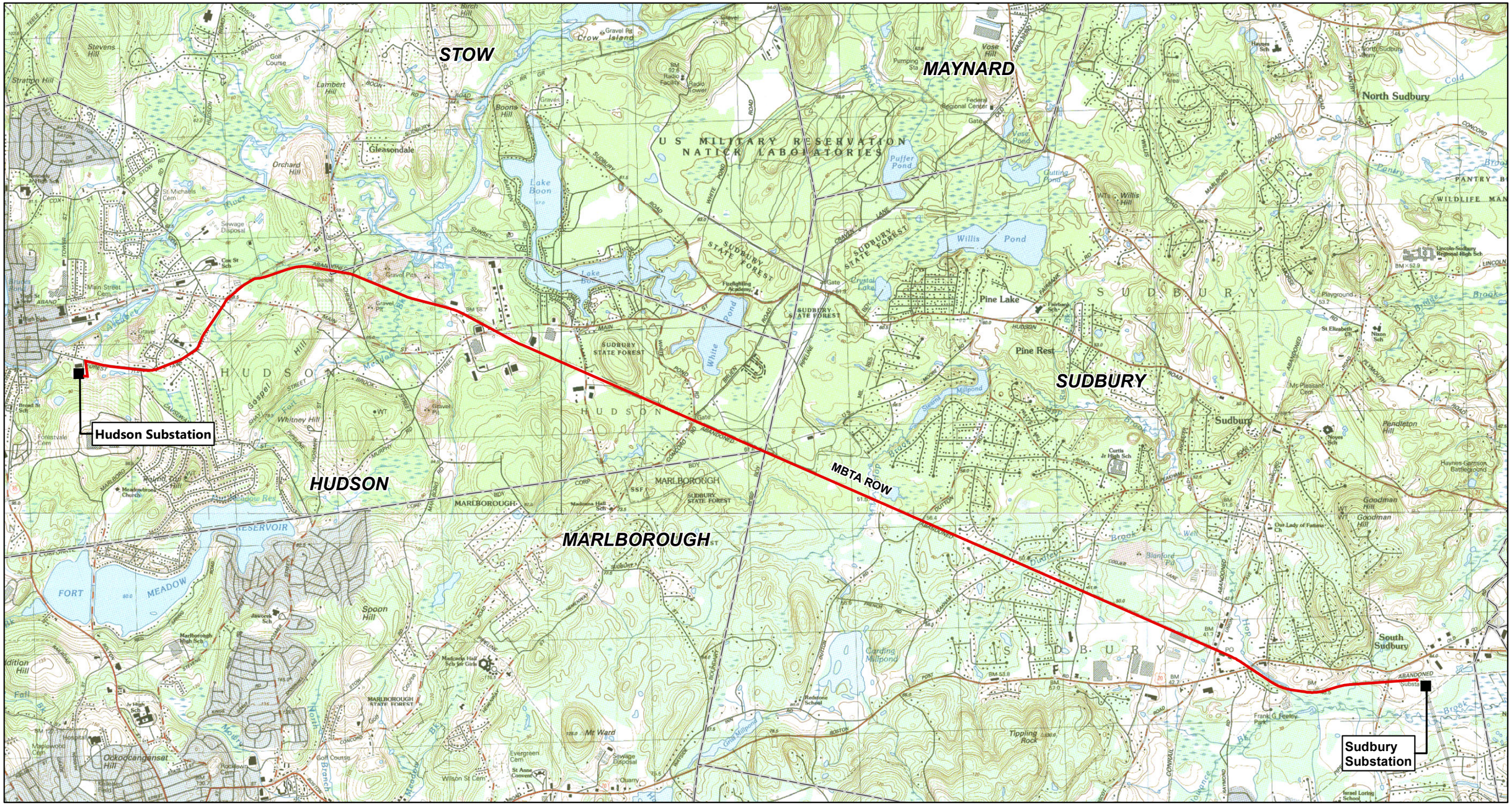
\\NHBEDATA\gislib\NSTAR\SudburytoHudson\Figures\Application_Figures\Figure 1 Locus Map.mxd 10/18/2017



Source:
MassGIS, VHB

10/18/2017

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 1: Locus Map (USGS)

vhb

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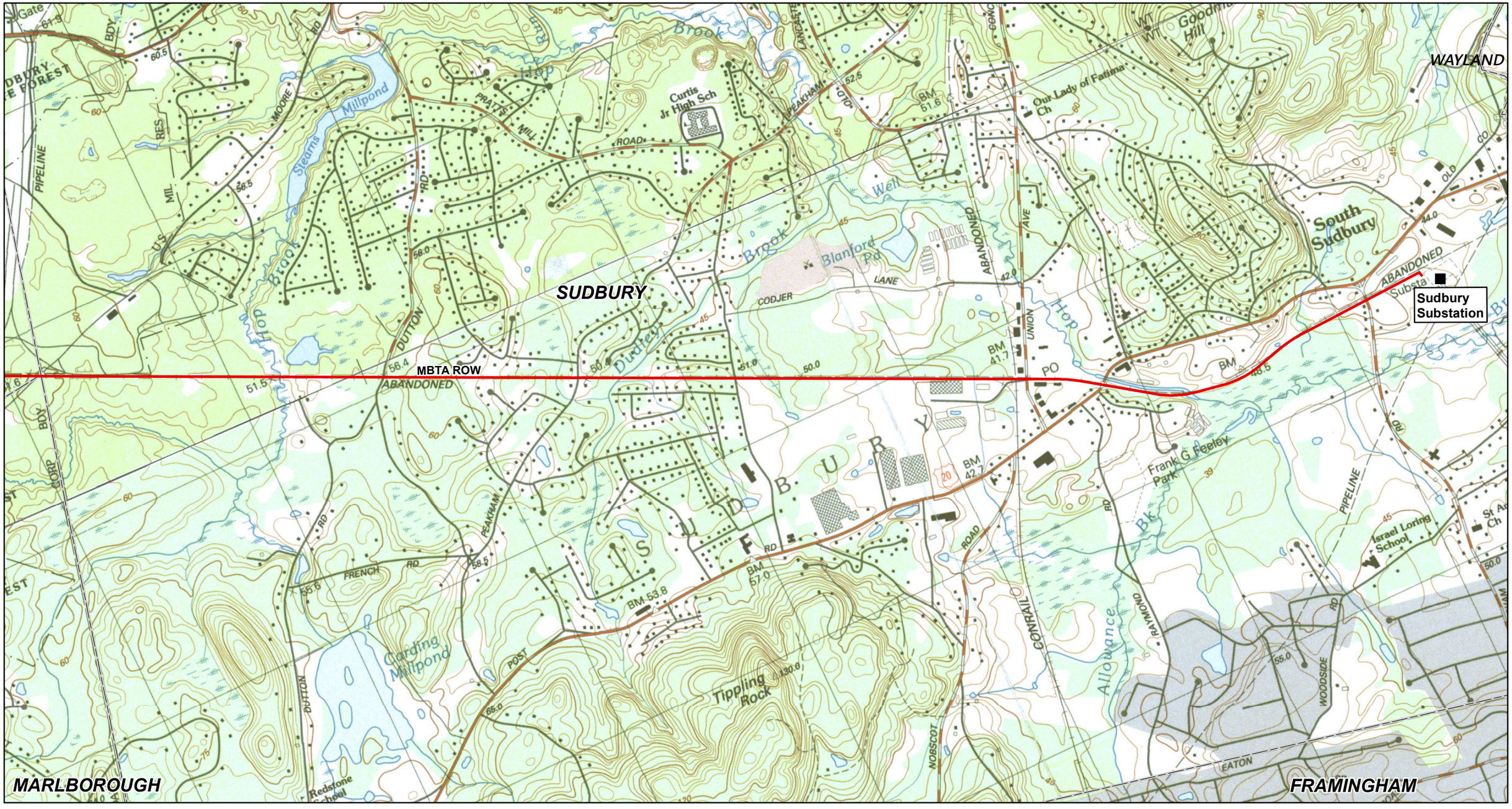


Project

Substation Location

Municipal Boundary

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 2: Sudbury Locus Map (USGS)

N

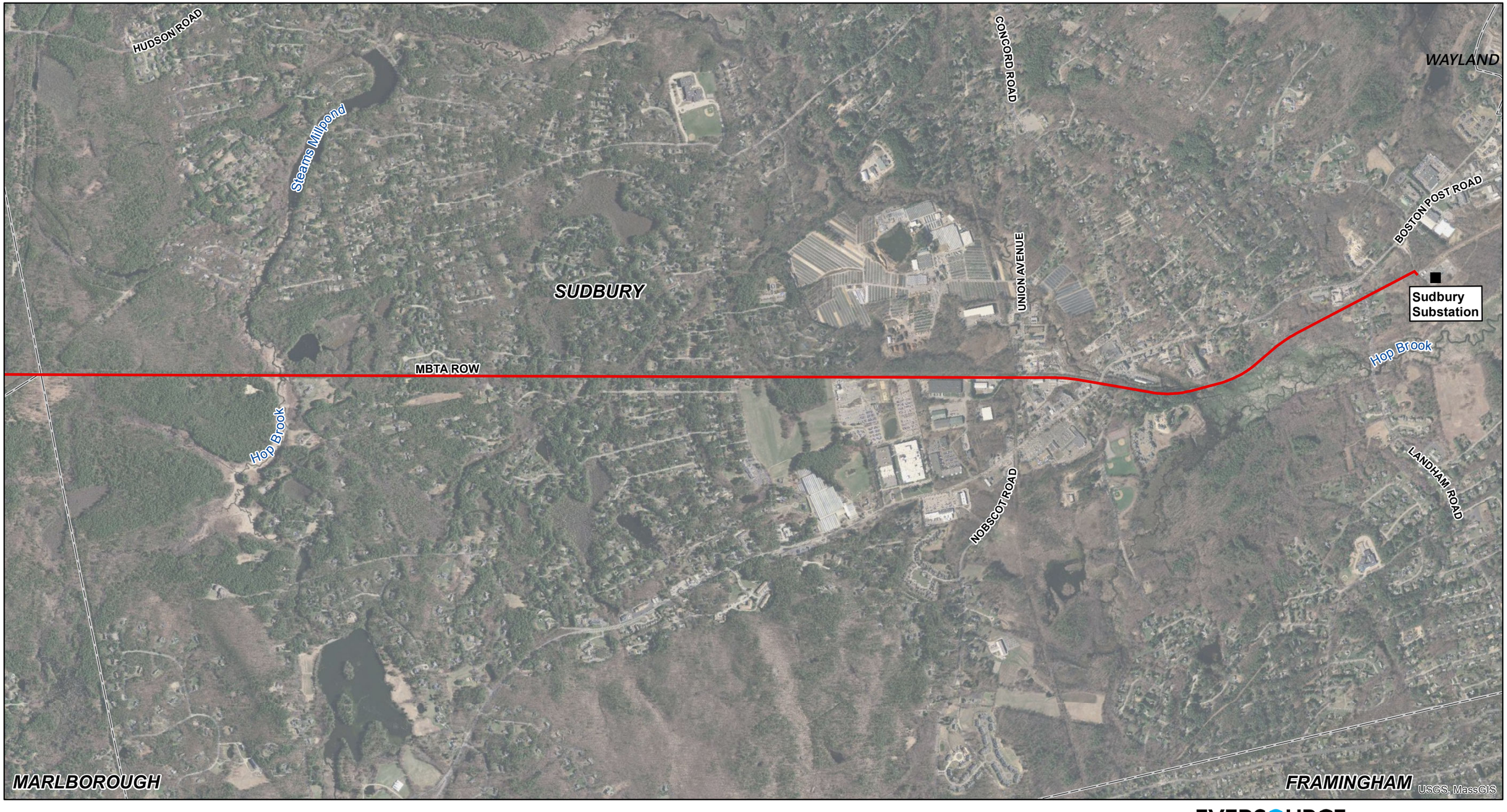
Source: MassGIS, VHB

10/18/2017

0 1,500 3,000 Feet

vhb

\\NHBEDATA\gislib\NSTAR\SudburytoHudson\Figures\Application_Figures\Figure 3 Sudbury Aerial Map.mxd 10/18/2017



Project

Substation Location

Municipal Boundary

N

Source:
MassGIS, VHB

10/18/2017

0 1,500 3,000 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 3: Sudbury Locus Map (Aerial)

vhb

Attachment B:
MassDEP Bordering Vegetated Wetlands Delineation Field Data Forms

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DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: AW-162 Transect #: Up Plot Date of Delineation: 9/12/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern Red Oak/ *Quercus rubra*	38	55.1	Yes	FACU
Red Maple/ Acer rubrum*	20.5	29.7	Yes	FAC
European Aspen/ *Populus tremula**	10.5	15.2	No	FAC
Sapling/Shrub				
Gray Birch/ *Betula populifolia**	20.5	22	Yes	FAC
Eastern White Pine/ Pinus strobus	20.5	22	Yes	FACU
Late Lowbush Blueberry/ Vaccinium angustifolium	20.5	22	Yes	FACU
Northern White Oak/ *Quercus alba*	10.5	11.3	No	FACU
Northern Red Oak/ *Quercus rubra*	10.5	11.3	No	FACU
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	11.3	No	FACW
Herb				
Late Lowbush Blueberry/ *Vaccinium angustifolium*	20.5	60.3	Yes	FACU
Eastern White Pine/ *Pinus strobus*	10.5	30.9	Yes	FACU
Red Maple/ *Acer rubrum**	3	8.8	No	FAC
Woody Vine				

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 5

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Carver loamy coarse sand, 3-8% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-3	10YR 3/2		Sandy Loam
Bw1	3-10	10YR 4/4		Loamy Sand
Bw2	10-16	10YR 4/6		Loamy Sand

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I Vegetation

Observation Plot Number: AW-162 Transect #: Wet Plot Date of Delineation: 9/12/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red maple/ *Acer rubrum**	85.5	96.6	Yes	FAC
Eastern White Pine/ *Pinus strobus*	3.0	3.4	No	FACU
Sapling/Shrub				
Eastern White Pine/ *Pinus strobus*	38.0	48.1	Yes	FACU
Red Maple/ *Acer rubrum**	20.5	25.9	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	25.9	Yes	FACW
Herb				
Cinnamon fern/ *Osmunda cinnamomea**	20.5	25.8	Yes	FACW
Royal fern/ *Osmunda regalis**	20.5	25.8	Yes	OBL
New York fern/ *Thelypteris noveboracensis**	20.5	25.8	Yes	FAC
Princess pine / *Lycopodium obscurum*	3.0	3.8	No	FACU
Eastern White Pine/ *Pinus strobus*	3.0	3.8	No	FACU
Chokecherry/ *Prunus virginiana*	3.0	3.8	No	FACU
Canada mayflower/ *Maianthemum canadense*	3.0	3.8	No	FACU
Highbush blueberry/ *Vaccinium corymbosum**	3.0	3.8	No	FACW
Starflower/ *Trientalis borealis**	3.0	3.8	No	FAC
Woody Vine				

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 6 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck
Hydric Soil Inclusions: Yes

Are field observations consistent with soil survey? No

2. Soil Description

Remarks: Mesic Spodic

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oe	0-1	7.5YR 2.5/2		Hemic
Ap	1-11	10YR 2/1		Sandy loam
Bhs	11-26	7.5YR 2.5/2, 80% 10YR 2/2, 18%	5YR 4/6, 2%	Sandy loam

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☒ Water-stained leaves:

☒ Other: Microtopographic relief

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: AW-184 Transect #: Up Plot Date of Delineation: 9/12/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern Red Oak/ *Quercus rubra*	10.5	33.3	Yes	FAC
Black Cherry/ *Prunus serotina*	10.5	33.3	Yes	FACU
Red Maple/ *Acer rubrum**	10.5	33.3	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus*	85.5	58	Yes	FAC
Black Cherry/ *Prunus serotina*	38	25.8	Yes	FACU
Twinsisters/ *Lonicera tatarica*	10.5	7.1	No	FACU
Highbush Blueberry/ *Vaccinium corymbosum**	3	2	No	FACW
Herb				
Canada Goldenrod/ *Solidago canadensis*	3	100	No	FACU
Woody Vine				
Fox Grape/ *Vitis labrusca*	38	100	Yes	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck, ponded, 0-1% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? No

Remarks: Freetown series described as poorly drained.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
	0-10	2.5Y 3/2		Sandy Loam
	10-16	2.5Y 4/3		Loamy Sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: AW-184 Transect #: Wet Plot Date of Delineation: 9/12/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Black Willow/ *Salix nigra**	10.5	100	Yes	OBL
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	85.5	100	Yes	FAC
Herb				
Purple Loosestrife/ *Lythrum salicaria**	20.5	30.1	Yes	OBL
Common Reed/ *Phragmites australis**	20.5	30.1	Yes	FACW
Bluejoint/ *Calamagrostis canadensis**	10.5	15.4	No	OBL
Sensitive Fern/ Onoclea sensibilis*	10.5	15.4	No	FACW
Stinging Nettle/ *Urtica dioica**	3	4.4	No	FAC
Spotted Touch-Me-Not/ *Impatiens capensis**	3	4.4	No	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:4 Number of dominant non-wetland indicator plants:0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck, ponded, 0-1% slopes
Hydric Soil Inclusions: Histosol

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
	0-30	10YR 2/1		Muck, Sapric

Other Indicators of Hydrology: (check all that apply and describe)

- ☒ Site inundated: Surface water 6”
- ☒ Depth to free water in observation hole: 0”
- ☒ Depth to soil saturation in observation hole: 0”
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**Yes**
hydric soil present	**Yes**
other indicators of hydrology present	
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: BW-112 Transect #: Up Plot Date of Delineation: 9/12/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	63.0	75.4	Yes	FAC*
Northern Red Oak/ *Quercus rubra*	20.5	24.5	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	38.0	43.9	Yes	FAC*
Eastern White Pine/ *Pinus strobus*	38.0	43.9	Yes	FACU
Red Maple/ *Acer rubrum**	10.5	12.1	No	FAC*
Herb				
Glossy False Buckthorn/ *Frangula alnus**	38.0	61.8	Yes	FAC*
Eastern White Pine/ *Pinus strobus*	20.5	33.3	Yes	FACU
Fox Grape/ *Vitis labrusca*	3.0	4.8	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Remarks:

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oe	0-2	7.5YR 2.5/3		Hemic
Ap	2-15	10YR 2/1		Sandy loam
Bw	15-20	10YR 5/8	7.5YR 4/6	Sandy loam

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: BW-112 Transect #: Wet Plot Date of Delineation: 9/12/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	63	100	Yes	FAC
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	20.5	46.1	Yes	FAC
Eastern White Pine/ *Pinus strobus*	10.5	23.6	Yes	FACU
Red Maple/ *Acer rubrum**	10.5	23.6	Yes	FAC
Gray Birch/*Betula populifolia**	3	6.7	No	FAC
Herb				
Cinnamon Fern/ *Osmundastrum cinnamomeum**	38	48.1	Yes	FACW
Royal Fern/ *Osmunda regalis**	38	48.1	Yes	OBL
False Lily-of-the-Valley/ *Maianthemum canadense*	3	3.8	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:5 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: Mesic Spodic

Are field observations consistent with soil survey?

Remarks: Windsor series described as excessively drained.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oa	0-3	10YR 2/2		Sapric
Ap	3-11	10YR 2/1		Sandy loam
Bhs	11-17	7.5YR 2.5/2		Sandy loam

Remarks: Mesic Spodic

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres
- ☒ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-1 Transect #: Up Plot Date of Delineation: 9/7/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	65	Yes	FAC
Eastern White Pine/ Pinus *strobus*	20.5	35	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	38	86.4	Yes	FAC
Morrow's Honeysuckle/ *Lonicera morrowii*	3	6.8	No	FACU
European Buckthorn/ *Rhamnus cathartica**	3	6.8	No	FAC
Herb				
Glossy False Buckthorn/ *Frangula alnus**	38	66.1	Yes	FAC
Asian Bittersweet/ *Celastrus orbiculatus*	10.5	18.3	No	UPL
European Buckthorn/ *Rhamnus cathartica**	3	5.2	No	FAC
Eastern Marsh Fern/ *Thelypteris palustris**	3	5.2	No	FACW
Wrinkle-Leaf Goldenrod/ *Solidago rugosa**	3	5.2	No	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:3 Number of dominant non-wetland indicator plants:1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Latest SURGO Data obtained from web soil survey)

Soil Type Mapped: Windsor loamy sand, 3-8% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-3	10YR 2/2		Fine Sandy Loam
Ap	3-9	10YR 3/3		Fine Sandy Loam
Bw	9-13	10YR 5/8	7.5YR 4/6	Fine Sandy Loam
BC	13-17	2.5YR 5/6	2.5YR 5/4	Fine Sandy Loam
C	17-21	2.5YR 5/3	2.5YR 5/6	Loamy Fine Sand
			2.5YR 6/2	
			7.5YR 4/4	

Remarks: ESHWT+ 17" bgs

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-1 Transect #: Wet Plot Date of Delineation: 9/7/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Silver Maple/ *Acer saccharum**	38	65	Yes	FACW
Black Walnut/*Juglans nigra*	20.5	35	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	10.5	50	Yes	FAC
Silky Dogwood/ *Cornus amomum**	10.5	50	Yes	FACW
Morrow's Honeysuckle/ *Lonicera morrowii*	Trace		No	FACU
Herb				
Sensitive Fern/ *Onoclea sensibilis**	20.5	100	Yes	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 3-8% slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? No

Remarks: Windsor series described as excessively drained.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-4	10YR 2/2		Sandy Loam
Bg	4-14	10YR 4/2	10YR 4/4	Sandy Loam

Remarks: Meets A11

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☒ Water-stained leaves:

☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-14 Transect #: Up Plot Date of Delineation: 9/8/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Eastern White Pine/ Pinus *strobus*	38	39.4	Yes	FACU
Red Maple/ *Acer rubrum**	38	39.4	Yes	FAC
Northern Red Oak/ *Quercus rubra*	20.5	21.2	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	10.5	50	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	50	Yes	FACW
Gray Birch/ *Betula populifolia**	T		No	FAC
Herb				
Glossy False Buckthorn/ *Frangula alnus**	10.5	63.6	Yes	FAC
Northern Red Oak/ *Quercus rubra*	3	18.2	No	FACU
Eastern White Pine/ Pinus *strobus*	3	18.2	No	FACU
Eastern Poison Ivy/ *Toxicodendron radicans**	T		No	FAC
.				

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 2

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand, 8-15% slopes
Hydric Soil Inclusions: no

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-7	10YR 2/2		Sandy Loam
Ap	7-9	10YR 3/3		Sandy Loam
Bw	9-16	10YR 4/4		Sandy Loam

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-14 Transect #: Wet Plot Date of Delineation: 9/8/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	64.4	Yes	FAC
Eastern White Pine/ *Pinus strobus*	10.5	17.8	No	FACU
Northern Red Oak/ *Quercus rubra*	10.5	17.8	No	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	38	69.7	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	19.3	No	FACW
Common Winterberry/ *Ilex verticillata**	3	5.5	No	FACW
Swamp White Oak/ *Quercus bicolor**	3	5.5	No	FACW
Herb				
Royal Fern/ *Osmunda spectabilis**	38	55.9	Yes	OBL
Eastern Marsh Fern/*Thelypteris palustris**	10.5	15.4	No	FACW
Rice Cut Grass/ Leersia oryzoides*	10.5	15.4	No	OBL
Skunk-Cabbage/ *Symplocarpus foetidus**	3	4.4	No	OBL
Glossy False Buckthorn/ *Frangula alnus**	3	4.4	No	FAC
Cattail/*Typha latifolia**	3	4.4	No	OBL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

Remarks:

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Scarboro mucky fine sandy loam, 0-3% slopes
Hydric Soil Inclusions: NA

Are field observations consistent with soil survey? Yes

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oa	0-15		Muck	Sandy Loam
A	15-18	10YR 2/2		Mucky Sandy Loam

Remarks: Meets A2

Other Indicators of Hydrology: (check all that apply and describe)

☒ Site inundated: High water table, saturated at 3 inches

☒ Depth to free water in observation hole: ~12 inches

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☒ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-48 Transect #: Wet Plot Date of Delineation: 9/8/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	85.5	100	Yes	FAC
Sapling/Shrub				
Green Ash/ *Fraxinus pennsylvanica**	38	55	Yes	FACW
Northern Spicebush/ *Lindera benzoin**	20.5	29.7	Yes	FACW
Glossy False Buckthorn/ *Frangula alnus**	10.5	15.2	No	FAC
Herb				
Skunk-Cabbage/ *Symplocarpus foetidus**	38	61.3	Yes	OBL
Sensitive Fern/ *Onoclea sensibilis**	10.5	16.9	No	FACW
Glossy False Buckthorn/ *Frangula alnus**	10.5	16.9	No	FAC
Eastern Poison Ivy/ *Toxicodendron radicans**	3	4.8	No	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? No

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-14	N 2.5/0		Mucky Silt Loam
Bg/A	14-18	10YR 4/2	10YR 4/4	Silt Loam
		10YR 2/1		Silt Loam

Remarks: Meets F1 which is not used In this region

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☒ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☒ Other: Geomorphic position/ Shallow exposed roots

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**Yes**
hydric soil present	**Yes**
other indicators of hydrology present	
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-65 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	48.1	Yes	FAC
Northern Red Oak/ *Quercus rubra*	20.5	26	Yes	FACU
Black Cherry/ *Prunus serotina*	20.5	26	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	38	47.5	Yes	FAC
Eastern White Pine/ *Pinus strobus*	10.5	13.1	No	FACU
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	13.1	No	FACW
Gray Birch/ *Betula populifolia**	10.5	13.1	No	FAC
Northern Red Oak/ *Quercus rubra*	10.5	13.1	No	FACU
Herb				
Interrupted Fern/ *Osmunda claytoniana**	38	40.9	Yes	FAC
Late Lowbush Blueberry/ *Vaccinium angustifolium*	20.5	22	Yes	FACU
Black Huckleberry/ *Gaylussacia baccata*	10.5	11.3	No	FACU
Pennsylvania Sedge/ *Carex pensylvanica*	10.5	11.3	No	UPL
Royal Fern/ *Osmunda spectabilis**	10.5	11.3	No	OBL
Glossy False Buckthorn/ *Frangula alnus**	3	3.2	No	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-4	10YR 2/1		Sandy Loam
Ap	4-12	10YR 2/2		Fine Loamy Sand
Bw	12-16	2.5YR 4/4		Fine Loamy Sand
BC	16-23	2.5YR 4/3	2.5YR 4/2	Fine Loamy Sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**No**
hydric soil present	**No**
other indicators of hydrology present	
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-65 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	78.4	Yes	FAC
Northern Red Oak/ *Quercus rubra*	10.5	21.6	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	20.5	55.4	Yes	FAC
Green Ash/ *Fraxinus pennsylvanica**	10.5	28.4	Yes	FACW
Eastern White Pine/ *Pinus strobus*	3	8.1	No	FACU
Common Winterberry/ *Ilex verticillata**	3	8.1	No	FACW
Herb				
Skunk-Cabbage/ *Symplocarpus foetidus**	20.5	35.7	Yes	OBL
Sensitive Fern/ *Onoclea sensibilis**	20.5	35.7	Yes	FACW
Small-Spike False Nettle/ *Boehmeria cylindrica**	10.5	18.3	No	OBL
Jewelweed/ *Impatiens capensis**	3	5.2	No	FACW
Slender Wood-Reed/ *Cinna latifolia**	3	5.2	No	FACW
Quaker Bittercress/ *Cardamine pensylvanica**	T		No	FACW
Eastern Poison Ivy/ Toxicodendron radicans*	T		No	FAC
Devil's-Pitchfork/*Bidens frondosa**	T		No	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 5 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

.

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? No

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-15	10YR 3/1	7.5YR 3/4	Clay Loam

Remarks: Meets F6

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☒ Drainage patterns in BVW:

☒ Oxidized rhizospheres:

☐ Water-stained leaves:

☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants: **Yes**

Wetland hydrology present:

hydric soil present **Yes**

other indicators of hydrology present **Yes**

Sample location is in a BVW **Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-81 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Quaking Aspen/ *Populus tremuloides*	38	43.9%	Yes	FACU
Northern Red Oak/ Quercus rubra	38	43.9%	Yes	FACU
Red Maple/ *Acer rubrum**	10.5	12.1%	No	FAC
Sapling/Shrub				
Gray Birch/ *Betula populifolia**	10.5	23.3%	Yes	FAC
Northern Red Oak/ *Quercus rubra*	10.5	23.3%	Yes	FACU
White Ash/ *Fraxinus americana*	10.5	23.3%	Yes	FACU
Glossy False Buckthorn/ *Frangula alnus**	10.5	23.3%	Yes	FAC
Red Maple/ *Acer rubrum**	3	6%	No	FAC
Herb				
Pennsylvania Sedge/ *Carex pensylvanica*	85.5	83.8%	Yes	UPL
Cinnamon Fern/ *Osmundastrum cinnamomeum**	10.5	10.3%	No	FACW
Glossy False Buckthorn/ *Frangula alnus**	3	2.9%	No	FAC
Wild Sarsaparilla/ *Aralia nudicaulis*	3	2.9%	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 5

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

Remarks:

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 3-8% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Ap	0-8	10YR 2/2		Fine Sandy Loam
Bw	8-17	10YR 4/4		Sandy Loam

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-96 Transect #: Up Plot Date of Delineation: 9/17/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern Red Oak/ *Quercus rubra*	63	62.4	Yes	FACU
Eastern White Pine/ *Pinus strobus*	38	37.6	Yes	FACU
Sapling/Shrub				
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	100	Yes	FACW
Herb				
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	63.1	Yes	FACW
Sheep-Laurel/ *Kalmia angustifolia*	3	9.2	No	FAC
Eastern Teaberry/ *Gaultheria procumbens*	3	9.2	No	FACU
Feathery False Solomon's-Seal/ *Maianthemum racemosum*	3	9.2	No	FACU
Northern Red Oak/ *Quercus rubra*	3	9.2	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 2

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Remarks:

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand, 8-15% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oe	0-2	5YR 2.5/2		Hemic
A	2-5	10YR 2/1		Sandy loam
Ap	5-12	10YR 3/2		Sandy loam
Bs	12-18	7.5YR 4/6		Sandy loam

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-96 Transect #: Wet Plot Date of Delineation: 9/12/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	20.5	100	Yes	FAC
Sapling/Shrub				
Highbush Blueberry/ *Vaccinium corymbosum**	85.5	86.4	Yes	FACW
Red Maple/ *Acer rubrum**	10.5	10.6	No	FAC
Coastal Sweet-Pepperbush/ *Clethra alnifolia**	3	3	No	FAC
Herb				
Skunk-Cabbage/ *Symplocarpus foetidus**	3	50	Yes	OBL
Cinnamon Fern/ *Osmundastrum cinnamomeum**	3	50	Yes	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants:0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck, 0-1% slopes
Hydric Soil Inclusions: Histosol

Are field observations consistent with soil survey? Yes

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-30	10YR 2/1		Muck, Sapric

Remarks: A1 Histosol

Other Indicators of Hydrology: (check all that apply and describe)

- ☒ Site inundated: High water table/ saturated
- ☒ Depth to free water in observation hole: 0”
- ☒ Depth to soil saturation in observation hole: 0”
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-99 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Eastern White Pine/ *Pinus strobus*	38	50	Yes	FACU
Northern Red Oak/ *Quercus rubra*	38	50	Yes	FACU
Sapling/Shrub				
Red Maple/ *Acer rubrum**	38	78.4	Yes	FAC
Glossy False Buckthorn/ *Frangula alnus**	10.5	21.6	Yes	FAC
Herb				
Black Cherry/ *Prunus serotina*	10.5	43.8	Yes	FACU
Eastern Teaberry/ *Gaultheria procumbens*	10.5	43.8	Yes	FACU
Glossy False Buckthorn/ *Frangula alnus**	3	12.5	No	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:2 Number of dominant non-wetland indicator plants:4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand, 15-25% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? No

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
^AC	0-14	10YR 3/2		Very gravelly sandy loam fill

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	**No**
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-99 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	100	Yes	FAC
Sapling/Shrub				
Red Maple/ *Acer rubrum**	20.5	51.3	Yes	FAC
Glossy False Buckthorn/ *Frangula alnus**	10.5	26.3	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	3	7.5	No	FACW
Eastern White Pine/ *Pinus strobus*	3	7.5	No	FACU
Burning Bush/ *Euonymus alatus*	3	7.5	No	UPL
Herb				
Cinnamon Fern/ *Osmundastrum cinnamomeum**	36	63.7	Yes	FACW
Skunk-Cabbage/ *Symplocarpus foetidus**	20.5	36.3	Yes	OBL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 5 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckly loamy sand, 15-25% slopes
Hydric Soil Inclusions: Histic epipedon

Are field observations consistent with soil survey? No

Remarks: Hinckly series described as excessively drained.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
	0-14	10YR 2/1		Muck
	14-18	2.5Y 4/1	10YR 4/6	Loamy Sand

Remarks: A2 Histic Epipedon

Other Indicators of Hydrology: (check all that apply and describe)

- ☒ Site inundated: saturated, high water table
- ☒ Depth to free water in observation hole: 6”
- ☒ Depth to soil saturation in observation hole: 0”
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**Yes**
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-112 Transect #: Up Plot Date of Delineation: 9/22/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	63	62.4	Yes	FAC
Eastern White Pine/ *Pinus strobus*	38	37.6	Yes	FACU
Sapling/Shrub				
Eastern White Pine/ *Pinus strobus*	10.5	50	Yes	FACU
Glossy False Buckthorn/ *Frangula alnus**	10.5	50	Yes	FAC
Herb				
False Lily-of-the-Valley/ *Maianthemum canadense*	10.5	38.9	Yes	FACU
Black Cherry/ *Prunus serotina*	10.5	38.9	Yes	FACU
Glossy False Buckthorn/ *Frangula alnus**	3	11.1	No	FAC
Pennsylvania sedge/ *Carex pensylvanica*	3	11.1	No	UPL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017)

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckly loamy sand, 8-15% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-3	10YR 2/2		Fine sandy loam
Bw	3-14	10YR 4/4		Loamy fine sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-112 Transect #: Wet Plot Date of Delineation: 9/22/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	39.2	Yes	FAC
Eastern White Pine/ *Pinus strobus*	38	39.2	Yes	FACU
Northern Red Oak/ *Quercus rubra*	10.5	10.8	No	FACU
American Elm/ *Ulmus americana**	10.5	10.8	No	FACW
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	38	92.7	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	3	7.3	No	FACW
Herb				
Glossy False Buckthorn/ *Frangula alnus**	20.5	39.4	Yes	FAC
Cinnamon Fern/ *Osmundastrum cinnamomeum**	10.5	20.2	Yes	FACW
Northern Lady Fern/ *Athyrium angustum**	10.5	20.2	Yes	FAC
New York Fern/ *Thelypteris noveboracensis**	10.5	20.2	Yes	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:6 Number of dominant non-wetland indicator plants:1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site?

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available, information gathered from web soil survey

Soil Type Mapped: Hinckley loamy sand, 8-15% slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? No

Remarks:

.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A1	0-4	10YR 2/2		Fine sandy loam
A2	4-12	10YR 2/1	10YR 6/1	Sandy loam
C1	12-14	10YR 5/1		Sand
Ab	14-18	10YR 2/1		Mucky fine sandy loam

Remarks: recent deposits over wetland soil. May meet F7.

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated: saturated

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☒ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☒ Other: It appears that the adjacent stream was historically dugout which altered site hydrology. However, hydrophytic vegetation and hydric soils remain.

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-116 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern Red Oak/ *Quercus rubra*	38	39.4	Yes	FACU
Northern White Oak/ *Quercus alba*	38	39.4	Yes	FACU
Eastern White Pine/ *Pinus strobus*	20.5	21.2	Yes	FACU
Sapling/Shrub				
Red Maple/ *Acer rubrum**	10.5	30.4	Yes	FAC
Eastern White Pine/ *Pinus strobus*	10.5	30.4	Yes	FACU
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	30.4	Yes	FACW
Glossy False Buckthorn/ *Frangula alnus**	3	8.7	No	FAC
Herb				
Eastern Teaberry/ *Gaultheria procumbens**	10.5	26.9	Yes	FAC
Hay-Scented Fern/ *Dennstaedtia punctilobula*	10.5	26.9	Yes	UPL
Red Maple/ *Acer rubrum**	3	7.7	No	FAC
Sheep-Laurel/ *Kalmia angustifolia*	3	7.7	No	FACU
Cinnamon Fern/ *Osmundastrum cinnamomeum**	3	7.7	No	FACW
Princess-Pine/ Lycopodium obscurum	3	7.7	No	FACU
Highbush Blueberry/ *Vaccinium corymbosum**	3	7.7	No	FACW
Late Lowbush Blueberry/ *Vaccinium angustifolium*	3	7.7	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:3 Number of dominant non-wetland indicator plants:5

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 3-8% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oe	0-2	5YR 2.5/2		Hemic
A	2-5	10YR 2/2		Silt loam
Bw	5-15	10YR 3/4		Silt loam

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-116 Transect#: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	20.5	100	Yes	FAC
Sapling/Shrub				
Red Osier Dogwood/ *Cornus sericea**	38	78.4	Yes	FACW
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	21.6	Yes	FACW
Herb				
Cinnamon Fern/ *Osmundastrum cinnamomeum**	63	60.3	Yes	FACW
Spotted Touch-Me-Not/ Impatiens capensis*	20.5	19.6	No	FACW
Skunk-Cabbage/ *Symplocarpus foetidus**	10.5	10	No	OBL
Royal Fern/ *Osmunda spectabilis**	10.5	10	No	OBL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 3-8% slopes
Hydric Soil Inclusions: Histosol

Are field observations consistent with soil survey? No

Remarks: Windsor series described as excessively drained

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-16	10YR 3/1		Muck, Sapric
Bw	16-18	2.5Y 4/1		Loamy Sand

Remarks: A1 Histosol

Other Indicators of Hydrology: (check all that apply and describe)

- ☒ Site inundated: Saturated/ high water table
- ☒ Depth to free water in observation hole: 6”
- ☒ Depth to soil saturation in observation hole: 0”
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-153 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Eastern White Pine/ *Pinus strobus*	38	50	Yes	FACU
Red Maple/ *Acer rubrum**	38	50	Yes	FAC
Sapling/Shrub				
Red Maple/ *Acer rubrum**	20.5	77.4	Yes	FAC
Glossy False Buckthorn/ *Frangula alnus**	3	11.3	No	FAC
Late Lowbush Blueberry/ *Vaccinium angustifolium*	3	11.3	No	FAC
Herb				
Late Lowbush Blueberry/ *Vaccinium angustifolium*	3	20	Yes	FACU
False Lily-of-the-Valley/ *Maianthemum canadense*	3	20	Yes	FACU
Eastern Teaberry/ *Gaultheria procumbens*	3	20	Yes	FACU
Spinulose Wood Fern/ *Dryopteris carthusiana**	3	20	Yes	FACW
Red Maple/ *Acer rubrum**	3	20	Yes	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants:4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck, 0-1% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? No

Remarks: Freetown series described as poorly drained.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
	0-8	2.5Y 3/2		Sandy Loam
	8-14	2.5Y 4/3		Loamy Sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-153 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	38	100	Yes	FAC
Sapling/Shrub				
Red Maple/*Acer rubrum**	20.5	43.6	Yes	FAC
Glossy False Buckthorn / *Frangula alnus**	20.5	43.6	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	3	6.4	No	FACW
Eastern White Pine/ *Pinus strobus*	3	6.4	No	FACU
Herb				
Stinging Nettle/ *Urtica dioica**	20.5	33.1	Yes	FAC
Climbing Nightshade/ *Solanum dulcamara**	20.5	33.1	Yes	FAC
Spotted Touch-Me-Not/ *Impatiens capensis**	10.5	16.7	No	FACW
Massachusetts Fern/ *Thelypteris simulata**	10.5	16.7	No	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 5 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicaility or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck, 0-1% slopes
Hydric Soil Inclusions: Histosol

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks: A1 Histosol

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oa	0-16	10YR 3/2		Sapric
A	16-20	10YR 3/2		Sandy loam

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☒ Depth to soil saturation in observation hole: 14 inches
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-156 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Black Oak/ *Quercus velutina*	38	48.1	Yes	UPL
Red Maple/ *Acer rubrum**	20.5	25.9	Yes	FAC
Eastern White Pine/ *Pinus strobus*	20.5	25.9	Yes	FACU
Sapling/Shrub				
Eastern White Pine/ *Pinus strobus*	20.5	100	Yes	FACU
Herb				
Eastern White Pine/ *Pinus strobus*	3	50	Yes	FACU
Northern Red Oak/ *Quercus rubra*	3	50	Yes	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 1 Number of dominant non-wetland indicator plants:5

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
	0-6	10YR 3/2		Sandy Loam
	6-15	10YR 4/4		Loamy Sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-156 Transect #: Wet Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
None				
Sapling/Shrub				
Glossy False Buckthorn / *Frangula alnus**	38	100	Yes	FAC
Herb				
Sensitive Fern/ *Onoclea sensibilis**	10.5	33.3	Yes	FACW
Eastern Marsh Fern/ *Thelypteris palustris**	10.5	33.3	Yes	FACW
Stinging Nettle/ *Urtica dioica**	10.5	33.3	Yes	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicaility or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available, information gathered from web soil survey

Soil Type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: Redox depressions, depleted matrix

Are field observations consistent with soil survey? No

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-4	10YR 3/2		Sandy loam
Bg	4-15	2.5Y 5/2, 60% 10YR 4/3, 20% 10YR 3/2, 15%	7.5YR 4/4, 5%	Sandy loam and loamy sand; disturbed soils

Remarks: F3 Depleted Matrix

Other Indicators of Hydrology: (check all that apply and describe):

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☒ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☒ Other: Microtopographic relief

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-169 Transect #: Up Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Sugar Maple/ *Acer saccharum*	38	100	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	20.5	77.4	Yes	FAC
Black Cherry/ *Prunus serotina*	3	11.3	No	FACU
Green Ash/ *Fraxinus pennsylvanica**	3	11.3	No	FACW
Herb				
Eastern Poison Ivy/ *Toxicodendron radicans**	20.5	33.1	Yes	FAC
Black Cherry/ *Prunus serotina*	20.5	33.1	Yes	FACU
Virginia-Creeper/ *Parthenocissus quinquefolia*	10.5	16.9	No	FACU
Allegheny Blackberry/ *Rubus allegheniensis*	10.5	16.9	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 2

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Scarboro mucky fine sandy loam, 0-3% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey?

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
^A	0-6	10YR 3/2		Fine sandy loam
		10YR 5/1		Masses of fine sand
Bw1	6-11	7.5YR 4/4		Sandy loam
Bw2	11-16	7.5YR 4/4	7.5YR 4/3	Sandy loam

Remarks: Surface layer mechanically disturbed or possibly fill

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-169 Transect #: Wet Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	38	65	Yes	FAC
Sugar Maple/ *Acer saccharum*	20.5	35	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn / *Frangula alnus**	38	76	Yes	FAC
Black Cherry/ *Prunus serotina*	3	6	No	FACU
Sugar Maple/ *Acer saccharum*	3	6	No	FACU
Redbud/ *Cercis canadensis*	3	6	No	FACU
Common Winterberry/ *Ilex verticillata**	3	6	No	FACW
Herb				
Evergreen Wood Fern/ *Dryopteris intermedia**	38	61.8	Yes	FAC
Eastern Poison Ivy/ *Toxicodendron radicans**	20.5	33.3	Yes	FAC
Green Ash/ *Fraxinus pennsylvanica**	3	4.9	No	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicaility or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available, information gathered from web soil survey

Soil Type Mapped: Scarboro mucky fine sandy loam, 0-3% slopes
Hydric Soil Inclusions: Redox depressions

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-5	10YR 2/2	10YR 4/4	Fine sandy loam
Bw	5-16	10YR 5/3	10YR 4/4	Sandy loam
			10YR 4/2	
Bg	16-18	10YR 4/2	10YR 4/4	Sandy loam

Remarks: F6

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☒ Drainage patterns in BVW:
- ☒ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-176 Transect #: Up Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Norway Maple/ *Acer platanoides*	38	47.8	Yes	UPL
Northern Red Oak/ *Quercus rubra*	20.5	25.8	Yes	FACU
White Ash/ *Fraxinus americana*	10.5	13.2	No	FACU
Red Maple/ *Acer rubrum**	10.5	13.2	No	FAC
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	20.5	87.2	Yes	FAC
Black Cherry/ *Prunus serotina*	3	12.8	No	FACU
Herb				
Whiplash Dewberry/ *Rubus flagellaris*	20.5	55.4	Yes	FACU
Glossy False Buckthorn/ *Frangula alnus**	10.5	28.4	Yes	FAC
Black Cherry/ *Prunus serotina*	3	8.1	No	FACU
Burning Bush/ *Euonymus alatus*	3	8.1	No	UPL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants:3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Scarboro mucky fine sandy loam, 0-3% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? No

Remarks: Scarboro series described as very poorly drained

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-5	10YR 2/2		Gravelly loamy sand
Bw	5-18	2.5Y 4/4		Gravelly sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants: **No**

Wetland hydrology present: **No**
hydric soil present

other indicators of hydrology present **No**

Sample location is in a BVW **No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-176 Transect #: Wet Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	63	85.7	Yes	FAC
Black Cherry/ *Prunus serotina*	10.5	14.3	No	FACU
Sapling/Shrub				
Glossy False Buckthorn / *Frangula alnus**	38	92.7	Yes	FAC
Burning Bush/ *Euonymus alatus*	3	7.3	No	UPL
Herb				
Eastern Poison Ivy/ *Toxicodendron radicans**	10.5	35	Yes	FAC
Spotted Touch-Me-Not/ *Impatiens capensis**	10.5	35	Yes	FACW
Fowl Manna Grass/ *Glyceria striata**	3	10	No	OBL
Sensitive Fern/ *Onoclea sensibilis**	3	10	No	FACW
Northern Lady Fern/ *Athyrium angustum**	3	10	No	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicaility or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available, information gathered from web soil survey

Soil Type Mapped: Scarboro mucky fine sandy loam, 0-3% slopes
Hydric Soil Inclusions: Muck layer

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks: meets A12

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oa	0-4	10YR 2/1		Muck
A	4-14	N 2.5/0		Mucky gravelly sandy loam
2Cg	14-18	5Y 5/1		Gravelly sand

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☒ Depth to free water in observation hole: 6 inches
- ☒ Depth to soil saturation in observation hole: 6 inches
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-5 Transect #: Up Plot Date of Delineation: 9/7/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern Red Oak/ *Quercus rubra*	38	50	Yes	FACU
Black Cherry/ *Prunus serotina*	38	50	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	38	78.4	Yes	FAC
Morrow's Honeysuckle/ *Lonicera morrowii*	10.5	21.6	Yes	FACU
Herb				
Glossy False Buckthorn/ *Frangula alnus**	38	47.8	Yes	FAC
Morrow's Honeysuckle/ *Lonicera morrowii*	20.5	25.8	Yes	FACU
Virginia-Creeper/*Parthenocissus quinquefolia*	10.5	13.2	No	FACU
Asian Bittersweet/ *Celastrus orbiculatus*	10.5	13.2	No	UPL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 3-8% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-2	10YR 2/2		Sandy Loam
Ap	2-9	10YR 3/3		Fine Sandy Loam
Bw	9-16	10YR 4/6		Fine Sandy Loam
BC	16-18	2.5Y 4/4		Fine Sandy Loam

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	**No**
hydric soil present	**No**
other indicators of hydrology present	
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-5 Transect #: Wet Plot Date of Delineation: 9/7/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Glossy False Buckthorn/ *Frangula alnus**	20.5	66.1%	Yes	FAC
Red Maple/ *Acer rubrum**	10.5	33.9%	Yes	FAC
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	38	64.4%	Yes	FAC
Silky Dogwood/ *Cornus amomum**	10.5	17.8%	No	FACW
Tartarian Honeysuckle/ *Lonicera tatarica*	10.5	17.8%	No	FACU
Herb				
Burnweed/ *Erechtites hieraciifolius*	38	50.7%	Yes	FACU
Sensitive Fern/ *Onoclea sensibilis**	20.5	27.3%	Yes	FACW
Fox Grape/ *Vitis labrusca*	10.5	14%	No	FACU
Purple Loosestrife/ *Lythrum salicaria**	3	4%	No	OBL
European Black Nightshade/ *Solanum nigrum*	3	4%	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017) No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand

Hydric Soil Inclusions: No

Are field observations consistent with soil survey? No

Remarks:

.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-2	10YR 2/1		Sandy Loam
Ap	2-9	10YR 2/2		Sandy Loam
Bg	9-16	2.5YR 4/2	10YR 4/6	Silt Loam

Remarks: meets A11

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☒ Oxidized rhizospheres:

☒ Water-stained leaves:

☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants: **Yes**

Wetland hydrology present:

hydric soil present **Yes**

other indicators of hydrology present **Yes**

Sample location is in a BVW **Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-27 Transect #: Up Plot Date of Delineation: 9/7/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
White Ash/ *Fraxinus americana*	20.5	33.1	Yes	FACU
Black Cherry/ *Prunus serotina*	20.5	33.1	Yes	FACU
Red Maple/ *Acer rubrum**	10.5	16.2	No	FAC
Swamp White Oak/ *Quercus bicolor**	10.5	16.2	No	FACW
Quaking Aspen/ *Populus tremuloides*	3	4.6	No	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	20.5	46.1	Yes	FAC
Rambler Rose/ *Rosa multiflora*	10.5	23.6	Yes	FACU
Morrow's Honeysuckle/ *Lonicera morrowii*	10.5	23.6	Yes	FACU
Highbush Blueberry/ *Vaccinium corymbosum**	3	6.7	No	FACW
Herb				
Rambler Rose/ *Rosa multiflora*	10.5	17.9	Yes	FACU
Glossy False Buckthorn/ *Frangula alnus**	10.5	17.9	Yes	FAC
White Ash/ *Fraxinus americana*	10.5	17.9	Yes	FACU
Eastern Poison Ivy/ Toxicodendron radicans*	10.5	17.9	Yes	FAC
Pennsylvania Sedge/ Carex pensylvanica	10.5	17.9	Yes	UPL
Common Red Raspberry/ *Rubus idaeus*	3	5.1	No	FACU
Redbud/ *Cercis canadensis*	3	5.1	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 7

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 3-8% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-2	10YR 2/2		Sandy Loam
Ap	2-7	10YR 2/2		Fine Sandy Loam
Bw1	7-10	10YR 4/4		Fine Sandy Loam
Bw2	10-18	10YR 4/6		Fine Sandy Loam

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-27 Transect #: Wet Plot Date of Delineation: 9/7/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	63	85.7%	Yes	FAC
Black Cherry/ *Prunus serotina*	10.5	14.3%	No	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	3	33.3%	Yes	FAC
Silky Dogwood/ *Cornus amomum**	3	33.3%	Yes	FACW
Morrow's Honeysuckle/ *Lonicera morrowii*	3	33.3%	Yes	FACU
Herb				
Slender Wood-Reed/ *Cinna latifolia**	20.5	38.7%	Yes	FACW
Fowl Manna Grass/ Glyceria striata*	20.5	38.7%	Yes	OBL
Fox Grape/ *Vitis labrusca*	3	5.7%	No	FACU
Spotted Touch-Me-Not/ *Impatiens capensis**	3	5.7%	No	FACW
Eastern Poison Ivy/ *Toxicodendron radicans**	3	5.7%	No	FAC
Silky Dogwood/ *Cornus amomum**	3	5.7%	No	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 5 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 3-8% slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? No

Remarks: Soil mixed in upper part
Resting on wetland topsoil

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A1	0-5	10YR 2/1		Mucky Silt Loam
A2	5-9	10YR 2/2	10YR 3/3 10YR 3/1	Silt Loam
A/Bg	9-12	10YR 2/2 & 10YR 4/2	2.5YR 4/3	Sandy Loam
Bg/A	12-14	2.5YR 4/3 & 10YR 2/2	2.5YR 4/3	Sandy Loam
Ab	14-18	10YR 2/2		Mucky Silt Loam

Remarks: Upper part of profile disturbed
nearly meets F6 and F3 rests on a partially buried hydric soil.

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☒ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-56 Transect #: Up Plot Date of Delineation: 9/8/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Quaking Aspen/ *Populus tremuloides*	63	72.8	Yes	FACU
Red Maple/ *Acer rubrum**	20.5	23.7	Yes	FAC
Northern Red Oak/ *Quercus rubra*	3	3.5	No	FACU
Sapling/Shrub				
Red Maple/ *Acer rubrum**	10.5	100	Yes	FAC
Herb				
Whiplash Dewberry/ *Rubus flagellaris*	38	59.9	Yes	FACU
Asian Bittersweet/ Celastrus orbiculatus	10.5	16.5	No	UPL
Glossy False Buckthorn/ *Frangula alnus**	3	4.7	No	FAC
Eastern Poison Ivy/ *Toxicodendron radicans**	3	4.7	No	FAC
Rambler Rose/ *Rosa multiflora*	3	4.7	No	FACU
Common Red Raspberry/ *Rubus idaeus*	3	4.7	No	FACU
Pennsylvania Sedge/ *Carex pensylvanica*	3	4.7	No	UPL
Black Cherry/ Prunus serotina	T		No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 2

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Montauk fine sandy loam, 15-25% slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-6	10YR 2/2		Sandy Loam
Bw1	6-10	7.5YR 4/4		Sandy Loam
Bw2	10-12	10YR 5/4		Sandy Loam
C	12-18	2.5YR 5/4		Sandy Loam

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-56 Transect #: Wet Plot Date of Delineation: 9/8/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	63	85.7	Yes	FAC
White Ash/ *Fraxinus americana*	10.5	14.3	No	FACU
Sapling/Shrub				
Silky Dogwood/ *Cornus amomum**	38	92.7	Yes	FACW
Morrow's Honeysuckle/ *Lonicera morrowii*	3	7.3	No	FACU
Herb				
Small-Spike False Nettle/ *Boehmeria cylindrica**	20.5	87.2	Yes	OBL
Virginia-Creeper/ *Parthenocissus quinquefolia*	3	12.8	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Montauk fine sandy loam, 15-25% slopes
Hydric Soil Inclusions: Depleted matrix

Are field observations consistent with soil survey? No

Remarks: Montauk described as well drained

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-6	10YR 2/2		Silt Loam
A/Bg	6-14	10YR 2/2	10YR 4/4	Silt Loam
		10YR 3/2		Silt Loam
		2.5YR 4/2	10YR 4/4	Silt Loam
2C	14-17	2.5YR 4/3	2.5YR 4/2 & 2.5YR 4/4	Loamy sand
Ab	17-21	10YR 2/2		Mucky Silt Loam

Remarks: A/Bg horizon appears mechanically mixed. Rests on wetland surface

Meets HTM-A in New England Field Indicators Version 4

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☒ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present: hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW:	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-69 Transect #: Up Plot Date of Delineation: 9/8/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	63	100	Yes	FAC
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	20.5	49.4	Yes	FAC
Red Maple/ *Acer rubrum**	10.5	25.3	Yes	FAC
Silky Dogwood/ *Cornus amomum**	10.5	25.3	Yes	FACW
Herb				
Dames Rocket/ *Hesperis matronalis*	38	37.4	Yes	FACU
Virginia-Creeper/ Parthenocissus quinquefolia	20.5	20.2	Yes	FACU
Carolina Horsenettle/*Solanum carolinense*	10.5	13	No	FACU
Garlic-Mustard/*Alliaria petiolata*	3	3	No	FACU
Rambler Rose/ *Rosa multiflora*	3	3	No	FACU
Asian Bittersweet/ Celastrus orbiculatus	3	3	No	UPL
Common Red Raspberry/ *Rubus idaeus*	3	3	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 2

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hollis-Rock Outcrop-Charlton complex, 15-25% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
^A	0-6	10YR 2/2		Fine Sandy Loam
^C	6-9	2.5Y 5/3		Fine sandy Loam
^C/A	9-18	2.5Y 5/3	2.5Y 5/4	Sandy Loam
		10YR 2/2		

Remarks: 18 inches

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-69 Transect #: Wet Plot Date of Delineation: 9/8/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	50	Yes	FAC
Black Locust/ *Robinia pseudoacacia*	38	50	Yes	FACU
Sapling/Shrub				
Silky Dogwood/ *Cornus amomum**	20.5	100	Yes	FACW
Herb				
Silky Dogwood/ *Cornus amomum**	38	73.8	Yes	FACW
Common Reed/ *Phragmites australis**	10.5	20.4	Yes	FACW
Virginia-Creeper/ *Parthenocissus quinquefolia*	3	5.8	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Remarks:

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hollis-Rock Outcrop-Charlton complex, 15-25% slopes
Hydric Soil Inclusions: Depleted below dark surface

Are field observations consistent with soil survey? No

2. Soil Description

Remarks: A11

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-6	10YR 2/2		Silt Loam
A/B	6-7	10YR 2/2		Silt Loam
		10YR 4/2		Loam
Bg	7-13	10YR 4/2	10YR 4/4	Loam

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☒ Other: Moss trim lines/
- ☐ Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**Yes**
hydric soil present	**Yes**
other indicators of hydrology present	
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-79 Transect #: Up Plot Date of Delineation: 9/8/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	48.1	Yes	FAC
Silver Maple/ *Acer saccharinum*	20.5	25.9	Yes	FACW
Northern Red Oak/ *Quercus rubra*	20.5	25.9	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	3	33.3	Yes	FAC
Eastern White Pine/ *Pinus strobus*	3	33.3	Yes	FACU
Black Cherry/ *Prunus serotina*	3	33.3	Yes	FACU
Herb				
Asian Bittersweet/ *Celastrus orbiculatus*	10.5	77.8	Yes	UPL
Northern Red Oak/ *Quercus rubra*	3	22.2	Yes	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 5

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hollis-Rock Outcrop-Charlton complex, 15-25% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A1	0-6	10YR 2/2		Fine Sandy Loam
A2	6-9	10YR 3/3		Fine Sandy Loam
Bw	9-15	10YR 4/4		Fine Sandy Loam

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-79 Transect #: Wet Plot Date of Delineation: 9/8/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	63	75	Yes	FAC
Gray Birch/ *Betula populifolia**	10.5	12.5	No	FAC
Black Walnut/ *Juglans nigra*	10.5	12.5	No	FACU
Sapling/Shrub				
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	50	Yes	FACW-
Gray Birch/ *Betula populifolia**	10.5	50	Yes	FAC
Herb				
Royal Fern/ *Osmunda spectabilis**	10.5	100	Yes	OBL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hollis-Rock Outcrop-Charlton complex, 15-25% slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? No

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-7	10YR 2/1	7.5YR 4/4	Sandy Loam
Bw	7-9	5Y 5/3	7.5YR 4/6	Loam
Bg	9-13	2.5Y 5/2	7.5YR 4/4	Silt Loam
Ab	13-17	2.5Y 2.5/1	7.5YR 4/4	Loam

Remarks: Variant of A11

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☒ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-103 Transect #: Up Plot Date of Delineation: 9/12/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern Red Oak/ *Quercus rubra*	38	48.1	Yes	FACU
Northern White Oak/ *Quercus alba*	20.5	25.9	Yes	FACU
Eastern White Pine/ *Pinus strobus*	20.5	25.9	Yes	FACU
Sapling/Shrub				
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	100	Yes	FACW
Herb				
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	100	Yes	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? No

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oe	0-2	7.5YR 2.5/2		Hemic
A	2-5	10YR 3/2		Sandy loam
Bw	5-15	10YR 5/8		Sandy loam

Remarks: Restrictive layer @ 15”

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants: **No**

Wetland hydrology present:

hydric soil present **No**

other indicators of hydrology present **No**

Sample location is in a BVW **No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-103 Transect #: Wet Plot Date of Delineation: 9/12/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	63	85.7	Yes	FAC
Swamp White Oak/ *Quercus bicolor**	10.5	14.3	No	FACW
Sapling/Shrub				
Highbush Blueberry/ *Vaccinium corymbosum**	38	61.8	Yes	FACW
Red Maple/*Acer rubrum**	20.5	33.3	Yes	FAC
Northern Spicebush/ *Lindera benzoin**	3	4.9	No	FACW
Herb				
None				

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available, information gathered from web soil survey

Soil Type Mapped: Hinckly loamy sand, 8-15% slopes
Hydric Soil Inclusions: Histosol

Are field observations consistent with soil survey? No

Remarks: Hinckly series described as excessively drained.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-24	10YR 2/1		Muck

Remarks: A1 Histosol

Other Indicators of Hydrology: (check all that apply and describe)

☒ Site inundated: High water table/ saturation

☒ Depth to free water in observation hole: 0”

☒ Depth to soil saturation in observation hole: 0”

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☒ Water-stained leaves:

☒ Other: Vernal Pool depression, pit and mound

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-110 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern Red Oak/ *Quercus rubra*	63	85.7	Yes	FACU
Eastern White Pine/ *Pinus strobus*	10.5	14.3	No	FACU
Sapling/Shrub				
Late Lowbush Blueberry/ *Vaccinium angustifolium*	38	47.6	Yes	FACU
Coastal Sweet-Pepperbush/ Clethra alnifolia*	10.5	13.1	Yes	FAC
Eastern White Pine/ *Pinus strobus*	10.5	13.1	Yes	FACU
Red Maple/ *Acer rubrum**	10.5	13.1	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	13.1	Yes	FACW
Herb				
Bracken Fern/ *Pteridium aquilinum*	3	50	Yes	FACU
White Oak/ *Quercus alba*	3	50	Yes	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 5

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck, 0-1% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? No

Remarks: Freetown series described as very poorly drained

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-3	10YR 3/2		Sandy Loam
E	3-4	10YR 4/1		Fine Sand
Bw1	4-9	10YR 4/6		Sand
Bw2	9-16	7.5YR 4/6		Loamy Sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-110 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Sapling/Shrub				
Sweet pepperbush/ *Clethra alnifolia**	20.5	46.1	Yes	FACW
Red maple/ *Acer rubrum**	10.5	23.6	Yes	FAC
Winterberry/ *Ilex verticillata**	10.5	23.6	Yes	FACW
Highbush blueberry/ *Vaccinium corymbosum**	3.0	6.7	No	FACW
Herb				
Sweet pepperbush/ *Clethra alnifolia **	10.5	53.8	Yes	FACW
Highbush blueberry/ *Vaccinium corymbosum**	3.0	15.4	No	FACW
Purple loosestrife/ *Lythrum salicaria**	3.0	15.4	No	FACW
Touch me not/ *Impatiens capensis**	3.0	15.4	No	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand
Hydric Soil Inclusions: Histosol

Are field observations consistent with soil survey? No

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oa	0-16	10YR 2/1		Sapric

Remarks: A1 Histosol

Other Indicators of Hydrology: (check all that apply and describe)

☒ Site inundated: Surface water <1”

☒ Depth to free water in observation hole: 0”

☒ Depth to soil saturation in observation hole: 0”

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☒ Water-stained leaves:

☒ Other: Saturation visible on aerial imagery, geomorphic position, microtopographic relief

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-114 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern Red Oak/ *Quercus rubra*	85.5	80.7	Yes	FACU
Eastern White Pine/ *Pinus strobus*	20.5	19.3	No	FACU
Sapling/Shrub				
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	100	Yes	FACW
Herb				
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	63.1	Yes	FACW
Sheep-Laurel/ *Kalmia angustifolia**	3	9.2	No	FAC
Black Tupelo/ *Nyssa sylvatica**	3	9.2	No	FAC
Eastern White Pine/ *Pinus strobus*	3	9.2	No	FACU
Northern Red Oak/ *Quercus rubra*	3	9.2	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:2 Number of dominant non-wetland indicator plants:1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand, 8-15% slopes

Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oe	0-1	7.5YR 3/3		Hemic
A	1-4	10YR 3/2		Sandy loam
AB	4-8	10YR 3/4		Sandy loam
Bw	8-17	10YR 5/8		Sandy loam

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-114 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Black Tupelo/ *Nyssa sylvatica**	38	100	Yes	FAC
Sapling/Shrub				
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	66.1	Yes	FACW
Black Tupelo/ *Nyssa sylvatica**	10.5	33.8	Yes	FAC
Herb				
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	51.3	Yes	FACW
Cinnamon Fern/ *Osmundastrum cinnamomeum**	10.5	26.3	Yes	FAC
Black Tupelo/ *Nyssa sylvatica**	3	7.5	No	FAC
Swamp Dewberry/ *Rubus hispidus**	3	7.5	No	FACW
Sheep-Laurel/ *Kalmia angustifolia**	3	7.5	No	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 5 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

Remarks: Hinckley described as excessively drained soils

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand, 8-15% slopes
Hydric Soil Inclusions: Mesic spodic

Are field observations consistent with soil survey? No

2. Soil Description

Remarks: Mesic Spodic

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oe	0-2	7.5YR 2.5/3		Hemic
A	2-6	10YR 2/1		Sandy loam
Eg	6-11	10YR 4/2 70% 10YR 5/1 30%		Sandy loam
Bhs	11-17	7.5YR 2.5/3		Sandy loam

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☒ Water-stained leaves:

☒ Other: Inundation and saturation visible on aerial

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**Yes**
hydric soil present	**Yes**
other indicators of hydrology present	
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-119 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern White Oak/ *Quercus alba*	20.5	39.4	Yes	FACU
Red Maple/ *Acer rubrum**	10.5	20.2	Yes	FAC
Eastern White Pine/ *Pinus strobus*	10.5	20.2	Yes	FACU
Swamp White Oak/ *Quercus bicolor**	10.5	20.2	Yes	FACW
Sapling/Shrub				
Red Maple/ *Acer rubrum**	38	55.1	Yes	FAC
Late Lowbush Blueberry/ Vaccinium angustifolium	20.5	29.7	Yes	FACU
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	15.2	No	FACW
Herb				
Bog Fern/ *Parathelypteris simulata**	10.5	63.6	Yes	FACW
Northern White Oak/ *Quercus alba*	3	18.2	No	FACU
Wild Sarsaparilla/ *Aralia nudicaulis*	3	18.2	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Udorthents-Urban land complex
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-7	10YR 3/2		Sandy Loam
E	7-9	10YR 4/1		Loamy Sand
Bw	9-16	10YR 4/4		Loamy Sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**No**
hydric soil present	
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-119 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	20.5	39.8	Yes	FAC
Swamp White Oak/ *Quercus bicolor**	20.5	39.8	Yes	FACW
Eastern White Pine/ *Pinus strobus*	10.5	20.4	Yes	FACU
Sapling/Shrub				
Red Maple/ *Acer rubrum**	20.5	50	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	50	Yes	FACW
Herb				
Cinnamon Fern/ *Osmundastrum cinnamomeum**	10.5	77.8	Yes	FACW
Spotted Touch-Me-Not/ *Impatiens capensis**	3	22.2	Yes	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 6 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck, 0-1% slopes

Hydric Soil Inclusions: Histosol

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
	0-30	10YR 2/1		Muck

Remarks: A1 Histosol

Other Indicators of Hydrology: (check all that apply and describe)

- ☒ Site inundated:
- ☒ Depth to free water in observation hole: 0”
- ☐ Depth to soil saturation in observation hole: 0”
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-122 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern Red Oak/ *Quercus rubra*	63	67	Yes	FACU
Northern White Oak/ Quercus alba	20.5	21.8	Yes	FACU
Eastern White Pine/ *Pinus strobus*	10.5	11.2	No	FACU
Sapling/Shrub				
Eastern White Pine/ *Pinus strobus*	10.5	77.8	Yes	FACU
Northern Red Oak/ *Quercus rubra*	3	22.2	Yes	FACU
Herb				
Highbush Blueberry/ *Vaccinium corymbosum**	3	100	Yes	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:1 Number of dominant non-wetland indicator plants:4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand, 15-25% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-3	10YR 3/2		Sandy loam
Bw	3-14	10YR 5/8		Sandy loam

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	**No**
hydric soil present	**No**
other indicators of hydrology present	
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-122 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	65	Yes	FAC
Eastern White Pine/ *Pinus strobus*	20.5	35	Yes	FACU
Sapling/Shrub				
Red Maple/ *Acer rubrum**	20.5	77.4	Yes	FACW
Common Winterberry/*Ilex verticillata**	3	11.3	No	FACW
False Glossy Buckthorn/*Frangula alnus**	3	11.3	No	FAC
Herb				
False Glossy Buckthorn/ *Frangula alnus**	3	50	Yes	FAC
Common Winterberry/ *Ilex verticillata**	3	50	Yes	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:4 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckly loamy sand, 15-25% slopes
Hydric Soil Inclusions:

Are field observations consistent with soil survey? No

Remarks: Hinckley series described as excessively drained

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-6	10YR 2/1		Fine sandy loam
Bw	6-8	2.5Y 5/2		Fine Sand
Bw2	8-18	2.5Y 5/2	2.5Y 6/6	Sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☒ Water-stained leaves:

☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants: **Yes**

Wetland hydrology present:

hydric soil present **Yes**

other indicators of hydrology present **Yes**

Sample location is in a BVW **Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-130 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Eastern White Pine/ *Pinus strobus*	63	62.4	Yes	FACU
Red Maple/ *Acer rubrum**	38	37.6	Yes	FAC
Sapling/Shrub				
Red Maple/ *Acer rubrum**	10.5	38.9	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	38.9	Yes	FACW
Glossy False Buckthorn/ *Frangula alnus**	3	11.1	No	FACU
American Hazelnut/ *Corylus americana*	3	11.1	No	FAC
Herb				
Wild Sarsaparilla/ *Aralia nudicaulis*	10.5	36.8	Yes	FACU
Late Lowbush Blueberry/ *Vaccinium angustifolium*	3	10.5	No	FACU
New York Fern/ *Parathelypteris noveboracensis**	3	10.5	No	FAC
Glossy False Buckthorn/ *Frangula alnus**	3	10.5	No	FAC
Partridge-Berry/ *Mitchella repens*	3	10.5	No	FACU
Highbush Blueberry/ *Vaccinium corymbosum**	3	10.5	No	FACW
Eastern White Pine/ *Pinus strobus*	3	10.5	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:3 Number of dominant non-wetland indicator plants:2

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand, 15-25% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-4	10YR 3/2		Fine sandy loam
Bw1	4-8	2.5YR 4/4		Fine sandy loam
Bw2	8-14	2.5YR 5/4		Fine sandy loam

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**No**
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-131 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	100	Yes	FAC
Sapling/Shrub				
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	77.4	Yes	FACW
Glossy False Buckthorn/ *Frangula alnus**	3	11.3	No	FAC
Common Winterberry/ *Ilex verticillate**	3	11.3	No	FACW
Herb				
Skunk-Cabbage/ *Symplocarpus foetidus**	38	66.1	Yes	OBL
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	18.3	No	FACW
Eastern White Pine/ *Pinus strobus*	3	5.2	No	FACU
Cinnamon Fern/ *Osmundastrum cinnamomeum**	3	5.2	No	FACW
New York Fern/ *Parathelypteris noveboracensis**	3	5.2	No	FAC
		]		

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:3 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckly loamy sand, 15-25% slopes
Hydric Soil Inclusions: Histosol

Are field observations consistent with soil survey? No

Remarks: Hinckly series described as excessively drained

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-30	10YR 2/1		Muck

Remarks: A1 Histosol

Other Indicators of Hydrology: (check all that apply and describe)

☒ Site inundated: High water table/ saturated

☒ Depth to free water in observation hole: 9”

☒ Depth to soil saturation in observation hole: 0”

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☒ Water-stained leaves:

☐ Other:

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-149 Transect #: Up Plot Date of Delineation: 9/22/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	78.4	Yes	FAC
American Elm/ *Ulmus americana**	10.5	21.6	Yes	FACW
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	38	78.4	Yes	FAC
Black Walnut/ *Juglans nigra*	10.5	21.6	Yes	FACU
Herb				
Sensitive Fern/ *Onoclea sensibilis**	10.5	77.8	Yes	FACW
Eastern Poison Ivy/ *Toxicodendron radicans**	3	22.2	Yes	FAC
Woody Vine				
Asian Bittersweet/ *Celastrus orbiculatus*	3	100	Yes	UPL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 5 Number of dominant non-wetland indicator plants: 2

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand, 8 to 15 percent slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? Yes*

Remarks: *Solum thickness with textures finer than LFS than in OSD.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture/Comments
A	0-2	10YR 2/1		Sandy Loam, many fine roots
Ap	2-8	10YR 2/2		Sandy Loam, common fine roots
Bw	8-18	10YR 4/4		Sandy Loam, common fine roots
		10YR 2/2		Silt skins in pore linings

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-150 Transect#: Wet Plot Date of Delineation: 9/22/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	63	100	Yes	FAC
Sapling/Shrub				
Morrow's Honeysuckle/ *Lonicera morrowii*	38	55.1	Yes	FACU
Silky Dogwood/ *Cornus amomum**	20.5	29.7	Yes	FACW
Glossy Buckthorn/ *Frangula alnus**	10.5	15.2	No	FAC
Herb				
Silky Dogwood/ *Cornus amomum**	3	100	Yes	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:3 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Remarks: Alluvial soil

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Hinckley loamy sand, 8 to 15 percent slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? No

2. Soil Description

Remarks: Alluvium. Variant of A12

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-5	N 2.5/0		Mucky sandy loam
A/C	5-7	N 2.5/0 (70%)		Mucky sandy loam
		2.5Y 5/2 (30%)		Interbedded with loamy fine sand
C/A	7-10	2.5Y 5/2 (70%)		Loamy sand
		N 2.5/0 (30%)		Mucky sandy loam
Cg	10-12	2.5Y 4/1		Loamy sand
Ab/C	12-18	10YR 2/2 (70%)	7.5YR 4/4 (10%)	Sandy loam
		2.5Y 4/3 (15 %)	10YR 4/2	

Other Indicators of Hydrology: (check all that apply and describe)

- ☒ Site inundated: Saturated
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☒ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☒ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-155 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Pitch Pine/ *Pinus rigida*	38	64.4	Yes	FACU
Northern White Oak/ *Quercus alba*	10.5	17.8	No	FACU
Eastern White Pine/ *Pinus strobus*	10.5	17.8	No	FACU
Sapling/Shrub				
Red Maple/ *Acer rubrum**	10.5	33.3	Yes	FAC
Beaked Hazelnut/ *Corylus cornuta*	10.5	33.3	Yes	FACW
Glossy False Buckthorn/ *Frangula alnus**	10.5	33.3	Yes	FAC
Herb				
Late Lowbush Blueberry/ *Vaccinium angustifolium*	3	50	Yes	FACU
Red Maple/ *Acer rubrum**	3	50	Yes	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 2

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 3-8% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-7	10YR 3/2		Sandy Loam
Bw	7-15	10YR 4/3		Loamy Sand

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-157 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
None				
Sapling/Shrub				
None				
Herb				
Red Maple/*Acer rubrum**	3	100	Yes	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 1 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 3-8% slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey?

Remarks: Windsor series described as excessively drained.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oa	0-4	7.5YR 2.5/2		Sapric
A	4-8	10YR 2/1		Sandy loam
C	8-14	2.5Y 4/4	5YR 3/4	Gravelly sandy loam

Remarks: Soil is disturbed and does not meet an indicator

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-160 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Black Oak/ *Quercus velutina*	38	47.8	Yes	UPL
Eastern White Pine/ Pinus strobus	20.5	25.8	Yes	FACU
Pitch Pine/ *Pinus rigida*	10.5	13.2	No	FACU
Northern White Oak/ *Quercus alba*	10.5	13.2	No	FACU
Sapling/Shrub				
Red Maple/ *Acer rubrum**	10.5	35	Yes	FAC
Late Lowbush Blueberry/ Vaccinium angustifolium	10.5	35	Yes	FACU
Eastern White Pine/ *Pinus strobus*	3	10	No	FACU
Northern White Oak/ *Quercus alba*	3	10	No	FACU
Choke Cherry/ *Prunus virginiana*	3	10	No	FACU
Herb				
Cinnamon Fern/ *Osmundastrum cinnamomeum**	10.5	63.6	Yes	FACW
Red Maple/ *Acer rubrum**	3	18.2	No	FAC
Late Lowbush Blueberry/ *Vaccinium angustifolium*	3	18.2	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck, 0-1% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? No

Remarks: Freetown series described as poorly drained

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-7	10YR 3/2		Sandy Loam
Bw	7-15	10YR 4/4		Loamy Sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-161 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	38	100	Yes	FAC
Sapling/Shrub				
None				
Herb				
Cinnamon Fern/ *Osmundastrum cinnamomeum**	85.5	86.3	Yes	FACW
Glossy False Buckthorn/ *Frangula alnus**	10.5	10.6	No	FAC
Eastern White Pine/ *Pinus strobus*	3	3.0	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site?

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand
Hydric Soil Inclusions: Mesic spodic

Are field observations consistent with soil survey? No

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oe	0-2	2.5YR 2.5/3		Hemic
A	2-11	10YR 2/1		Sandy loam
Bhs	11-17	7.5YR 2.5/3 70% 7.5YR 3/2 20% 10YR 2/1 10%		Sandy loam

Remarks: Mesic Spodic

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☒ Other: Microtopographic relief

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-177 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Black Oak/ *Quercus velutina*	38	39.4	Yes	UPL
Red Maple/ *Acer rubrum**	38	39.4	Yes	FAC
Eastern White Pine/ *Pinus strobus*	20.5	21.2	Yes	FACU
Sapling/Shrub				
Red Maple/ *Acer rubrum**	20.5	39.4	Yes	FAC
Northern White Oak/ *Quercus alba*	10.5	20.2	Yes	FACU
Glossy False Buckthorn/*Frangula alnus**	10.5	20.2	Yes	FAC
Eastern White Pine/ *Pinus strobus*	10.5	20.2	Yes	FACU
Herb				
Glossy False Buckthorn/*Frangula alnus**	10.5	46.7	Yes	FAC
Sheep-Laurel/ *Kalmia angustifolia**	3	13.3	No	FACU
Northern White Oak/ *Quercus alba*	3	13.3	No	FACU
Eastern Poison Ivy/ *Toxicodendron radicans*	3	13.3	No	FAC
Southern Arrow-Wood/ *Viburnum dentatum*	3	13.3	No	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oe	0-1	7.5YR 2.5/3		Hemic
A	1-4	10YR 2/1		Fine sandy loam
Bw1	4-7	10YR 3/4		Fine sandy loam
Bw2	7-10	10YR 4/6		Fine sandy loam
Bw3	10-16	7.5YR 5/8		Fine sandy loam

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**No**
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-179 Transect#: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	20.5	100	Yes	FAC
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	20.5	100	Yes	FACW
Herb				
Spotted Touch-Me-Not/ *Impatiens capensis**	63	75	Yes	FACW
Cinnamon Fern/ *Osmundastrum cinnamomeum**	10.5	12.5	No	FACW
Skunk-Cabbage/ *Symplocarpus foetidus**	10.5	12.5	No	OBL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants:3 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: Histosol

Are field observations consistent with soil survey? No

Remarks: Windsor series described as excessively drained.

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-5	2.5Y 2/1		Muck, Sapric
Bw1	5-12	2.5Y 4/2	10YR 4/4	Sand
Bw2	12-16	5Y 5/2	10YR 4/6	Sand

Remarks: F3 Depleted Matric

Other Indicators of Hydrology: (check all that apply and describe)

- ☒ Site inundated: Saturated
- ☐ Depth to free water in observation hole:
- ☒ Depth to soil saturation in observation hole: 2”
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-201 Transect #: Up Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Black Oak/ *Quercus velutina*	50	50	Yes	UPL
White Oak/ *Querucs alba*	50	50	Yes	FACU
Sapling/Shrub				
Late Lowbush Blueberry/ *Vaccinium angustifolium*	38	73.7	Yes	FACU
Red Maple/ *Acer rubrum**	10.5	20.4	Yes	FAC
Northern Red Oak/ *Quercus rubra*	3	5.8	No	FACU
Herb				
Late Lowbush Blueberry/ *Vaccinium angustifolium*	10.5	53.8	Yes	FACU
White Oak/ *Querucs alba*	3	15.4	No	FACU
Black Oak/ *Quercus velutina*	3	15.4	No	UPL
Eastern White Pine/ *Pinus strobus*	3	15.4	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 1 Number of dominant non-wetland indicator plants:4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-5	10YR 3/2		Sandy Loam
Ap	5-6	10YR 5/1		Loamy Sand
Bw	6-15	10YR 4/6		Sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-203 Transect #: Wet Plot Date of Delineation: 9/13/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	85.5	100	Yes	FAC
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	10.5	50	Yes	FAC
Green Ash/ *Fraxinus pensylvanica**	10.5	50	Yes	FACW
Herb				
Cinnamon Fern/ *Osmundastrum cinnamomeum**	20.5	66.1	Yes	FACW
Skunk-Cabbage/ Symplocarpus foetidus	10.5	33.9	Yes	OBL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 5 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil type Mapped: Windsor loamy sand, 0-3% slopes
Hydric Soil Inclusions: Redox dark surface, disturbed soils

Are field observations consistent with soil survey? No

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oa	0-4	10YR 2/1		Sapric
^AC	4-8	5Y 2.5/1		Gravelly sand fill
^CA	8-13	5Y 2.5/1	5YR 4/2, 20% 5 YR 3/4	Gravelly loamy sand fill
Oab	13-18	10YR 2/1		Sapric, buried native surface

Remarks: F6 Redox Dark Surface

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☒ Depth to soil saturation in observation hole: 14 inches
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☒ Other: Micro-relief

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-212 Transect #: Up Plot Date of Delineation: 9/26/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	63	56.5	Yes	FAC
Northern Red Oak/ *Quercus rubra*	38	34.1	Yes	FACU
Eastern White Pine/ *Pinus strobus*	10.5	9.4	No	FACU
Sapling/Shrub				
Eastern White Pine/ *Pinus strobus*	20.5	55.4	Yes	FACU
Red Maple/ *Acer rubrum**	10.5	28.4	Yes	FAC
Northern White Oak/ *Quercus alba*	3	8.1	No	FACU
Glossy False Buckthorn/ *Frangula alnus**	3	8.1	No	FAC
Herb				
Glossy False Buckthorn/ *Frangula alnus**	20.5	60.3	Yes	FAC
Princess-Pine/ *Lycopodium obscurum*	10.5	30.9	Yes	FACU
Black Cherry/ *Prunus serotina*	3	8.8	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Remarks:

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Deerfield loamy sand, 3-8% slopes
Hydric Soil Inclusions: Yes

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oi	0-1	10YR 2/1		Leaf litter
Ap	1-8	10YR 2/2		Fine sandy loam
Bw1	8-14	10YR 5/6		Loamy fine sand
Bw2	14-17	10YR 5/4	10YR 5/3	Loamy fine sand
BC	17-20	10YR 5/3	10YR 4/4	Loamy fine sand

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:
Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-211 Transect #: Wet Plot Date of Delineation: 9/26/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	63	75	Yes	FAC
Northern White Oak/ *Quercus alba*	10.5	12.5	No	FACU
Scarlet Oak/ *Quercus coccinea*	10.5	12.5	No	UPL
Sapling/Shrub				
Red Maple/*Acer rubrum**	38	47.8	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	20.5	25.8	Yes	FACW
Glossy False Buckthorn/ *Frangula alnus**	10.5	13.2	No	FAC
Eastern White Pine/ *Pinus strobus*	10.5	13.2	No	FACU
Herb				
Glossy False Buckthorn/ *Frangula alnus**	10.5	38.9	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	10.5	38.9	Yes	FACW
Red Maple/*Acer rubrum**	3	11.1	No	FAC
Eastern White Pine/ *Pinus strobus*	3	11.1	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 5 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?
Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017)

Map Number: Not available (information gathered from web soil survey)

Soil type Mapped: Deerfield loamy sand, 3-8% slopes
Hydric Soil Inclusions: Yes

Are field observations consistent with soil survey? Yes

2. Soil Description

Remarks: meets A11

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oa	0-2	10YR 2/2		muck
A1	2-8	10YR 2/1		mucky sandy loam
A2	8-11	10YR 2/1		coarse sandy loam
Bg	11-15	10YR 4/2	10YR 5/1, 10YR 4/1	Sandy loam
Cg	15-24	10YR 4/2	10YR 4/3	Loamy sand

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☒ Water-stained leaves:

☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants: **Yes**

Wetland hydrology present:

hydric soil present **Yes**

other indicators of hydrology present **Yes**

Sample location is in a BVW **Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-215 Transect #: Up Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	50	Yes	FAC
Northern Red Oak/ *Quercus rubra*	38	50	Yes	FACU
Sapling/Shrub				
Red Maple/ *Acer rubrum**	20.5		Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	3		No	FACW
Glossy False Buckthorn/ *Frangula alnus**	3		No	FAC
Eastern White Pine/ *Pinus strobus*	3		No	FACU
Black Cherry/ *Prunus serotina*	3		No	FACU
Herb				
Glossy False Buckthorn/ *Frangula alnus**	10.5		Yes	FAC
Northern Red Oak/ *Quercus rubra*	3		No	FACU
Northern Bracken Fern/ *Pteridium aquilinum*	3		No	FACU
Eastern Red-Cedar/ *Juniperus virginiana*	3		No	FACU
Smooth Arrow-Wood/ *Viburnum recognitum**	3		No	FAC
Black Cherry/ *Prunus serotina*	3		No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Remarks:

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Deerfield loamy sand, 3-8% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
OI	0-1	7.5YR 3/2		Fibric
A	1-5	10YR 3/2		Fine sandy loam
Bw1	5-14	10YR 4/4	10YR 4/3	Sandy loam
Bw2	14-17	10YR 4/3	10YR 4/4	Fine sandy loam

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**No**
hydric soil present	
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-215 Transect #: Wet Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	63	64.9	Yes	FAC
Northern Red Oak/ *Quercus rubra*	20.5	21.1	Yes	FACU
Northern White Oak/ *Quercus alba*	10.5	10.8	No	FACU
Eastern White Pine/ *Pinus strobus*	3	3.1	No	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	3	50	Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	3	50	Yes	FACW
Herb				
Common Winterberry/ *Ilex verticillata**	10.5	100	Yes	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment: Both Quercus species were rooted in the surrounding uplands.

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil type Mapped: Deerfield loamy sand, 3-8% slopes
Hydric Soil Inclusions: Yes

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture

Remarks: Soil boring data was not collected at this location because the wetland is outside of the MBTA ROW. determination of hydrology was made by visual observations; presence of hydric soil was assumed based on indicators of hydrology and hydrophytic vegetation.

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☒ Other: Geomorphic position,
- ☒ Moss trim lines

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-219 Transect #: Up Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	10.5	25	Yes	FAC
Northern Red Oak/ *Quercus rubra*	10.5	25	Yes	FACU
American Elm/ *Ulmus americana**	10.5	25	Yes	FACW
Gray Birch/ *Betula populifolia**	10.5	25	Yes	FAC
Sapling/Shrub				
Eastern White Pine/ *Pinus strobus*	10.5	100	Yes	FACU
Herb				
Hay-Scented Fern/ *Dennstaedtia punctilobula*	85.5	89	Yes	UPL
Northern Bracken Fern/ *Pteridium aquilinum*	10.5	10.9	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Udorthents-Urban land complex
Hydric Soil Inclusions:N/A

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-1	10YR 3/2		Gravelly sandy loam
Bg	1-17	10YR 5/3		Fine sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

Remarks:

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-219 Transect #: Wet Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	63	100	Yes	FAC
Sapling/Shrub				
Southern Arrow-Wood/ *Viburnum dentatum**	10.5	63.6	Yes	FAC
Eastern White Pine/ *Pinus strobus*	3	18.2	No	FACU
Speckled Alder/ *Alnus incana**	3	18.2	No	FACW
Herb				
Eastern Marsh Fern/ *Thelypteris palustris**	38	48.7	Yes	FACW
Glossy False Buckthorn/ *Frangula alnus**	20.5	26.3	Yes	FAC
Rambler Rose/ *Rosa multiflora*	10.5	13.5	No	FACU
Groundnut/ *Apios americana**	3	3.8	No	FACW
Bluejoint/ *Calamagrostis canadensis**	3	3.8	No	OBL
Speckled Alder/ *Alnus incana**	3	3.8	No	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil type Mapped: Udorthents-Urban land complex
Hydric Soil Inclusions: No
Are field observations consistent with soil survey? No

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A1	0-2	10YR 3/2	7.5YR 3/4	Silt loam
A2	2-8	10YR 2/1	7.5YR 3/4	Fine sandy loam
	8-18	5Y 4/1		Coarse sandy loam

Remarks: Meets A11

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole: 12 inches
- ☐ Depth to soil saturation in observation hole: 8 inches
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☒ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-229 Transect #: Up Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Northern White Oak/ *Quercus alba*	38	55.1	Yes	FACU
Red Maple/ *Acer rubrum**	20.5	29.7	Yes	FAC
Northern Red Oak/ *Quercus rubra*	10.5	15.2	No	FACU
Sapling/Shrub				
Autumn Olive/ *Elaeagnus umbellata*	20.5	66.1	Yes	UPL
Eastern White Pine/ *Pinus strobus*	10.5	33.9	Yes	FACU
Herb				
Pennsylvania sedge/ *Carex pensylvanica*	63	58.3	Yes	UPL
Asian Bittersweet/ *Celastrus orbiculatus*	10.5	9.7	No	UPL
Northern Red Oak/ *Quercus rubra*	10.5	9.7	No	FACU
Northern White Oak/ *Quercus alba*	10.5	9.7	No	FACU
Glossy False Buckthorn/ *Frangula alnus**	10.5	9.7	No	FAC
Eastern Poison Ivy/ *Toxicodendron radicans**	3	2.8	No	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 1 Number of dominant non-wetland indicator plants: 4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck, ponded, 0-1% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? No

2. Soil Description

Remarks:

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-3	10YR 3/2		Gravelly sandy loam
Bw	3-14	10YR 5/3		Fine sand

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

Remarks:

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-229 Transect #: Wet Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	38	78.4	Yes	FAC
American Elm/ *Ulmus americana**	10.5	21.6	Yes	FACW
Sapling/Shrub				
Common Winterberry/ *Ilex verticillata**	38	73.8	Yes	FACW
Speckled Alder/ *Alnus incana**	10.5	20.4	Yes	FACW
Glossy False Buckthorn/ *Frangula alnus**	3	5.8	No	FAC
Herb				
Eastern Poison Ivy/ *Toxicodendron radicans**	10.5	16.7	Yes	FAC
Glossy False Buckthorn/ *Frangula alnus**	10.5	16.7	Yes	FAC
Silky Dogwood/ *Cornus amomum**	10.5	16.7	Yes	FACW
Rice Cut Grass/ Leersia oryzoides*	10.5	16.7	Yes	OBL
Speckled Alder/ *Alnus incana**	3	4.8	No	FACW
Asian Bittersweet/ *Celastrus orbiculatus*	3	4.8	No	UPL
Groundnut/ *Apios americana**	3	4.8	No	FACW
Northern White Oak / *Quercus alba*	3	4.8	No	FACU
Meadow Rue/ *Thalictrum aquilegifolium*	3	4.8	No	UPL
Wrinkle-Leaf Goldenrod/ *Solidago rugosa**	3	4.8	No	FAC
American Elm/ *Ulmus americana**	3	4.8	No	FACW

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 8 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Remarks:

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil type Mapped: Freetown muck, ponded, 0-1% slopes
Hydric Soil Inclusions: Redox dark surface
Are field observations consistent with soil survey? Yes

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A1	0-3	10YR 3/2		Silt loam
A2	3-8	10YR 2/1	10YR 3/3	Silt loam
Bg	8-14	2.5Y 5/1	10YR 4/6	Loamy sand

Remarks: Meets A11

Other Indicators of Hydrology: (check all that apply and describe)

- ☒ Site inundated: Saturated
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☒ Sediment deposits:
- ☒ Drainage patterns in BVW:
- ☒ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-240 Transect #: Up Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Norway Maple/ *Acer platanoides*	20.5	24.8	Yes	UPL
Black Cherry/ *Prunus serotina*	20.5	24.8	Yes	FACU
Northern Catalpa/ *Catalpa speciosa*	20.5	24.8	Yes	FACU
Northern Red Oak/ *Quercus rubra*	10.5	12.7	No	FACU
Tree-of-Heaven/ *Ailanthus altissima*	10.5	12.7	No	UPL
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	10.5	31.8	Yes	FAC
Red Maple/ *Acer rubrum**	10.5	31.8	Yes	FAC
Morrow's Honeysuckle/ *Lonicera morrowii*	3	9	No	FACU
Japanese Barberry/ *Berberis thunbergii*	3	9	No	FACU
Norway Maple/ *Acer platanoides*	3	9	No	UPL
Burning Bush/ *Euonymus alatus*	3	9	No	UPL
Herb				
Asian Bittersweet/ *Celastrus orbiculatus*	38	62.8	Yes	UPL
Eastern Poison Ivy/ *Toxicodendron radicans**	10.5	17.4	No	FAC
Black Cherry/ *Prunus serotina*	3	5	No	FACU
Rambler Rose/ *Rosa multiflora*	3	5	No	FACU
Black Raspberry/ *Rubus occidentalis*	3	5	No	UPL
Garlic-Mustard/ *Allaria petiolata*	3	5	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Freetown muck, ponded, 0-1% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? No

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
^A	0-4	10YR 3/2		Gravelly sandy loam
^C	4-19	10YR 3/4		Gravelly sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	**No**
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-240 Transect #: Wet Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
White Walnut/ *Juglans cinerea*	38	50	Yes	FACU
Northern Red Oak/ *Quercus rubra*	38	50	Yes	FACU
Sapling/Shrub				
Silky Dogwood/ *Cornus amomum**	10.5	38.9	Yes	FACW
Southern Arrow-Wood/ *Viburnum dentatum**	10.5	38.9	Yes	FAC
Glossy False Buckthorn/ *Frangula alnus**	3	11.1	No	FAC
Winged Burning Bush/ *Euonymus alatus*	3	11.1	No	UPL
Herb				
Virginia-Creeper/ *Parthenocissus quinquefolia*	38	46.1	Yes	FACU
Sensitive Fern/ *Onoclea sensibilis**	20.5	24.8	Yes	FACW
Eastern Poison Ivy/ *Toxicodendron radicans**	10.5	12.7	No	FAC
Broad-Leaf Enchanter's-Nightshade/ *Circaea canadensis*	10.5	12.7	No	FACU
Fox Grape/ *Vitis labrusca*	3	3.6	No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment: Trees in adjacent upland shade plot.

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil type Mapped: Freetown muck, ponded, 0-1% slopes
Hydric Soil Inclusions: Sandy Redox
Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-6	10YR 2/2	10YR 4/1	Sandy loam
Cg1	6-9	2.5Y 4/1	2.5Y 4/4	Loamy sand
Cg2	9-16	5Y 4/2	2.5Y 4/3	Coarse sandy loam

Remarks: meets A11

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☒ Depth to soil saturation in observation hole: 12 inches

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☒ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants: **Yes**

Wetland hydrology present:

hydric soil present **Yes**

other indicators of hydrology present **Yes**

Sample location is in a BVW **Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-248 Transect #: Up Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	63	60.6	Yes	FAC
Sugar Maple/ *Acer saccharum*	20.5	19.7	No	FACU
Black Cherry/ *Prunus serotina*	20.5	19.7	No	FACU
Sapling/Shrub				
Sugar Maple/ *Acer saccharum*	10.5	33.3	Yes	FACU
Glossy False Buckthorn/ *Frangula alnus**	10.5	33.3	Yes	FAC
Black Cherry/ *Prunus serotina*	10.5	33.3	Yes	FACU
Herb				
Eastern Poison Ivy/ *Toxicodendron radicans**	10.5	28	Yes	FAC
Glossy False Buckthorn/ *Frangula alnus**	10.5	28	Yes	FAC
Black Cherry/ *Prunus serotina*	10.5	28	Yes	FACU
Sugar Maple/ *Acer saccharum*	3	8	No	FACU
Greater Celandine/ *Chelidonium majus*	3	8	No	UPL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants:3

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Remarks:

Soil Type Mapped: Scarboro mucky fine sandy loam, 0-3% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey?

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-6	10YR 3/2		Gravelly loamy sand
Bw	6-15	10YR 5/4		Gravelly loamy sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-248 Transect #: Wet Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	38	38.2	Yes	FAC
Northern Catalpa/ *Catalpa speciosa*	10.5	10.6	No	FACU
Silver Maple/ *Acer saccharinum**	10.5	10.6	No	FACW
Sugar Maple/ *Acer saccharum*	10.5	10.6	No	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	3	100	Yes	FAC
Herb				
Small-Spike False Nettle/ *Boehmeria cylindrica**	63	100	Yes	OBL

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Scarboro mucky fine sandy loam, 0-3% slopes
Hydric Soil Inclusions: Loamy mucky material

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
C	0-7	10YR 5/3	10YR 5/4	Fine sand (recent sediment)
Ab	7-17	N 2.5/		Mucky silt loam
Bg	17-20	10YR 4/2		Fine sand

Remarks: Top of Ab is relevant surface; assumed to meet A11

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☒ Sediment deposits:
- ☒ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☒ Other: geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-260 Transect #: Up Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Sugar Maple/ *Acer saccharum*	38	42.5	Yes	FACU
Northern Red Oak/ *Quercus rubra*	20.5	22.9	Yes	FACU
Eastern White Pine/ *Pinus strobus*	20.5	22.9	Yes	FACU
Red Maple/ *Acer rubrum**	10.5	11.7	No	FAC
Sapling/Shrub				
Sugar Maple/ *Acer saccharum*	10.5	100	Yes	FACU
Herb				
Southern Arrow-Wood/ *Viburnum dentatum**	3	50	Yes	FAC
Red Maple/ *Acer rubrum**	3	50	Yes	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 4

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Scarboro mucky fine sandy loam, 0-3% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? No

Remarks: Scarboro series described as very poorly drained

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-2	10YR 3/2		Fine sandy loam
AB	2-3	2.5Y 4/3		Loamy fine sand
Bw	3-18	2.5Y 5/4		Loamy fine sand

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

- ☐ Site inundated:
- ☐ Depth to free water in observation hole:
- ☐ Depth to soil saturation in observation hole:
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**No**
Wetland hydrology present:	
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	**No**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-260 Transect #: Wet Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/*Acer rubrum**	38	48.1	Yes	FAC
Eastern White Pine/ *Pinus strobus*	20.5	25.9	Yes	FACU
Northern Red Oak/ *Quercus rubra*	20.5	25.9	Yes	FACU
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	10.5	100	Yes	FAC
Herb				
Cinnamon Fern/ *Osmundastrum cinnamomeum**	20.5	66.1	Yes	OBL
Glossy False Buckthorn/ *Frangula alnus**	10.5	33.9	Yes	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment: *Pinus strobus* and *Quercus rubra* were rooted in the adjacent uplands

Vegetation conclusion:

Number of dominant wetland indicator plants: 4 Number of dominant non-wetland indicator plants: 2

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Scarboro mucky fine sandy loam, 0-3% slopes
Hydric Soil Inclusions: Named series is hydric

Are field observations consistent with soil survey? Yes

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
Oa	0-18	N 2.5/		Muck

Remarks: Meets A1

Other Indicators of Hydrology: (check all that apply and describe)

- ☒ Site inundated: High water table, saturated
- ☐ Depth to free water in observation hole:
- ☒ Depth to soil saturation in observation hole: 1 inch
- ☐ Water marks:
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☒ Water-stained leaves:
- ☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: DW-215 Transect #: Up Plot Date of Delineation: 9/29/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Red Maple/ *Acer rubrum**	38	50	Yes	FAC
Northern Red Oak/ *Quercus rubra*	38	50	Yes	FACU
Sapling/Shrub				
Red Maple/ *Acer rubrum**	20.5		Yes	FAC
Highbush Blueberry/ *Vaccinium corymbosum**	3		No	FACW
Glossy False Buckthorn/ *Frangula alnus**	3		No	FAC
Eastern White Pine/ *Pinus strobus*	3		No	FACU
Black Cherry/ *Prunus serotina*	3		No	FACU
Herb				
Glossy False Buckthorn/ *Frangula alnus**	10.5		Yes	FAC
Northern Red Oak/ *Quercus rubra*	3		No	FACU
Northern Bracken Fern/ *Pteridium aquilinum*	3		No	FACU
Eastern Red-Cedar/ *Juniperus virginiana*	3		No	FACU
Smooth Arrow-Wood/ *Viburnum recognitum**	3		No	FAC
Black Cherry/ *Prunus serotina*	3		No	FACU

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment:

Vegetation conclusion:

Number of dominant wetland indicator plants: 3 Number of dominant non-wetland indicator plants: 1

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Remarks:

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Deerfield loamy sand, 3-8% slopes
Hydric Soil Inclusions: N/A

Are field observations consistent with soil survey? Yes

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
OI	0-1	7.5YR 3/2		Fibric
A	1-5	10YR 3/2		Fine sandy loam
Bw1	5-14	10YR 4/4	10YR 4/3	Sandy loam
Bw2	14-17	10YR 4/3	10YR 4/4	Fine sandy loam

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

☐ Site inundated:

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☐ Other:

3. Other:

Conclusion: Is soil hydric? No

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	**No**
hydric soil present	**No**
other indicators of hydrology present	**No**
Sample location is in a BVW	

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Eversource Energy Prepared by: VHB,Inc. Project location: Sudbury-Hudson DEP File #:

Check all that apply:

☐ Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only

☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II

☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Observation Plot Number: CW-48 Transect #: Wet Plot Date of Delineation: 9/8/2017

Sample Layer & Plant Species Common Name/ Scientific Name	% Cover (or Basal Area)	Percent Dominance	Dominant Plant (Y/N)	Indicator Status*
Tree				
Sapling/Shrub				
Glossy False Buckthorn/ *Frangula alnus**	3	100	No	FAC
Herb				
Duckweed/ *Lemna minor**	38	42.5	Yes	OBL
Rice Cutgrass/ *Leersia oryzoides**	38	42.5	Yes	FACW
Canada Bluejoint/ *Calamgrostis canadensis**	10.5	11.7	No	FAC
Joe Pye-Weed/ *Eutrochium purpureum**	3	3.3	No	FAC

***** Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW. FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Comment: Per the MADEP Delineating Bordering Vegetated Wetlands manual, plant abundance should only be measured for each layer where the total percent cover is greater than 5%. Accordingly, the sapling/shrub layer was excluded from the dominance test because it is less than 5%.

Vegetation conclusion:

Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 0

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?

Yes

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent

Section II. Indicators of Hydrology

Hydric Soil Interpretation

1. Soil Survey

Is there a published soil survey for this site? Yes

Title/Date: Middlesex County, MA (MA017), No date found

Map Number: Not available (information gathered from web soil survey)

Soil Type Mapped: Scarboro mucky fine sandy loam, 0-3% slopes
Hydric Soil Inclusions: No

Are field observations consistent with soil survey? No

Remarks:

2. Soil Description

Horizon	Depth (in.)	Matrix Color	Mottles Color	Texture
A	0-6	See remarks		Muck

Remarks: Soil was muck down to 6" and then there was refusal (i.e. gravel)

Other Indicators of Hydrology: (check all that apply and describe)

☒ Site inundated: Surface water 3" deep

☐ Depth to free water in observation hole:

☐ Depth to soil saturation in observation hole:

☐ Water marks:

☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):

☐ Drift lines:

☐ Sediment deposits:

☐ Drainage patterns in BVW:

☐ Oxidized rhizospheres:

☐ Water-stained leaves:

☒ Other: Geomorphic position

3. Other:

Conclusion: Is soil hydric? Yes

Vegetation and Hydrology Conclusion

Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	**Yes**
Wetland hydrology present:	
hydric soil present	**Yes**
other indicators of hydrology present	**Yes**
Sample location is in a BVW	**Yes**

Submit this form with the Request for Determination of Applicability or Notice of Intent.

Attachment C:
Representative Wetland Resource Area Photographs

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Photo 1 View of Wetland 1 near flag DW-340 to the north of the Sudbury Substation



Photo 2 View of Wetland 2 near flag DW-388 to the northeast of the Sudbury Substation



Photo 3 View of forested Wetland 3 near flag DW-3 located on the north side of the existing rail bed



Photo 4 View of PEM Wetland 3A located on the north side of the existing rail bed; it receives stormwater runoff from the surrounding parking lots.



Photo 5 View of rip rap and outfall structure associated with Wetland 3A



Photo 6 View of Wetland 4 located on the south side of the rail bed near flag CW-2



Photo 7 View of forested Wetland 5 near flag DW-34 to the north of the existing rail bed



Photo 8 View of intermittent Stream 1 and culvert near flag DB-5 to the north of the existing rail bed. This photo was taken on September 7, 2017 after a storm event.



Photo 9 View of intermittent Stream 1 near the culvert on September 8, 2017



Photo 10 View of intermittent Stream 1 near the culvert on September 13, 2017



Photo 11 View of Wetland 6 on the south side of the existing rail bed near flag CW-65



Photo 12 View of intermittent Stream 1 on the southern side of the rail bed near flag CB-2



Photo 13 View of Wetland 7 on the south side of the rail bed near flag CW-62



Photo 14 View of Wetland 8 on the south side of the rail bed near flag CW-39



Photo 15 View of Wetland 9 on the north side of the rail bed near flag DW-51



Photo 16 View of Wetland 10 near flag DW-69



Photo 17 View of Wetland 11 and 12 associated with the Hop Brook marsh system to the south of the rail bed near flag CW-23



Photo 18 View of the flowing water within Stream 2 that was delineated as CB18-CB39



Photo 19 View of Wetland 13 to the north of the rail bed near flag DW-73



Photo 20 View of the PFO portion of Wetland 14 to the north of the rail bed near flag DW-86



Photo 21 View of the PEM portion of Wetland 14 to the north of the rail bed near flag DW-89



Photo 22 View of Stream 3/Hop Brook to the north of the railroad bridge near flags DW-94/DB-13



Photo 23 View of Wetland 15 to the north of the rail bed near flag CW-190



Photo 24 View of Wetland 16 to the south of the rail bed near flag DW-264



Photo 25 View of Wetland 17 to the north side of the rail bed near flag CW-175



Photo 26 View of Wetland 18 to the north of the rail bed near flag CW-163



Photo 27 View of Wetland 19 to the south of the rail bed near flag DW-244



Photo 28 View of Stream 4/Wetland 20 to the north of the rail bed near flag DW-237



Photo 29 View of Stream 4/Wetland 21 to the north of the rail bed near flag DW-227



Photo 30 View of Stream 4/Wetland 22 to the north of the rail bed near flag DW-218



Photo 31 View of Stream 4/Wetland 23 to the north of the rail bed from the opposite bank near flag DW-223



Photo 32 View of Wetland 24 to the north of the rail bed near flag DW-211



Photo 33 View of Wetland 24A to the north of the existing rail bed near flag DW-214



Photo 34 View of intermittent Stream 5 to the south of the rail bed near flag DB-141



Photo 35 View of Wetland 25 to the north of the rail bed near flag DW-203



Photo 36 View of Wetland 26 to the south of the rail bed near flag CW-157



Photo 37 View of Wetland 27 to the south of the rail bed near flag CW-150



Photo 38 View of intermittent Stream 6 to the south of the rail bed near flag DB-118



Photo 39 View of Wetland 28 to the north of the rail bed near flag DW-192



Photo 40 View of Wetland 29 near flag DW-182



Photo 41 View of Wetland 30 to the south of the rail bed near flag CW-118



Photo 42 View of Stream 7/Dudley Brook in Wetland 30 near flag DB-69



Photo 43 View of the intermittent portion of Stream 7 where there is no water present to the south of the rail bed near flag DB-89



Photo 44 View of Wetland 31 to the north of the rail bed near flag DW-165



Photo 45 View of Wetland 32 to the north of the rail bed near flag DW-155



Photo 46 View of Wetland 33 to the south of the rail bed near flag CW-100



Photo 47 View of intermittent Stream 8 to the south of the rail bed near flag DB-33



Photo 48 View of Wetland 34 to the north of the rail bed near flag DW-138



Photo 49 View of Wetland 35 to the north of the rail bed near flag DW-125



Photo 50 View of Wetland 36 to the south of the rail bed near flag CW-111



Photo 51 View of intermittent Stream 9 adjacent to Wetland 36



Photo 52 View of Wetland 37 to the north of the rail bed near flag DW-150



Photo 53 View of Wetland 38 to the south of the rail bed that is filled with vegetative debris near flag DW-274



Photo 54 View of Wetland 39 to the north of the rail bed near flag DW-118



Photo 55 View of Wetland 40 to the north of the rail bed by flag DW-114



Photo 56 View of Wetland 41 to the north of the rail bed near flag DW-106



Photo 57 View of Wetland 42 to the south of the rail bed near flag CW-89



Photo 58 View of Wetland 43 to the north of the rail bed near flag DW-99



Photo 59 View of Wetland 44 to the north of the rail bed near flag BW-112



Photo 60 View of Stream 10/Hop Brook to the south of the rail bed near flag AB-34



Photo 61 View of Wetland 45 to the south of the rail bed near flag AW-168

Attachment D:
Vernal Pool Photographs

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Photograph 1 Vernal Pool 1, 2015



Photograph 2 Vernal Pool 1, 2016

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 3 Vernal Pool 1, 5-2-2017



Photograph 4 Vernal Pool 1 Snail *(Lymnaeidae)*, 5-2-2017

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 5 Vernal Pool 1, Amphipod 5-2-2017



Photograph 6 Vernal Pool 2, 2015

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 7 Vernal Pool 2, 2016



Photograph 8 Vernal Pool 2, 5-2-2017

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 9 Vernal Pool 2, Green Frog, 5-2-2017



Photograph 10 Vernal Pool 3, 2015

Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384

Vernal Pool Photographs

EVERSOURCE ENERGY

vhb



Photograph 11 Vernal Pool 3 2016



Photograph 12 Vernal Pool 3 Caddis fly larvae 2017

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 13 Vernal Pool 3 Isopod 2017



Photograph 14 Vernal Pool 4, 2015

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 15 Vernal Pool 4 2016



Photograph 16 Vernal Pool 4, 5-18-2016, *Ambystoma sp.* larvae



Photograph 17 Vernal Pool 4, 5-2-2017



Photograph 18 VP 5, 2015

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 19 Vernal Pool 5, 5-18-2016



Photograph 20 Vernal Pool 6, 5-19-2016

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 21 Vernal Pool 6, 5-19-2016



Photograph 22 Vernal Pool 6, 5-2-2017

Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384

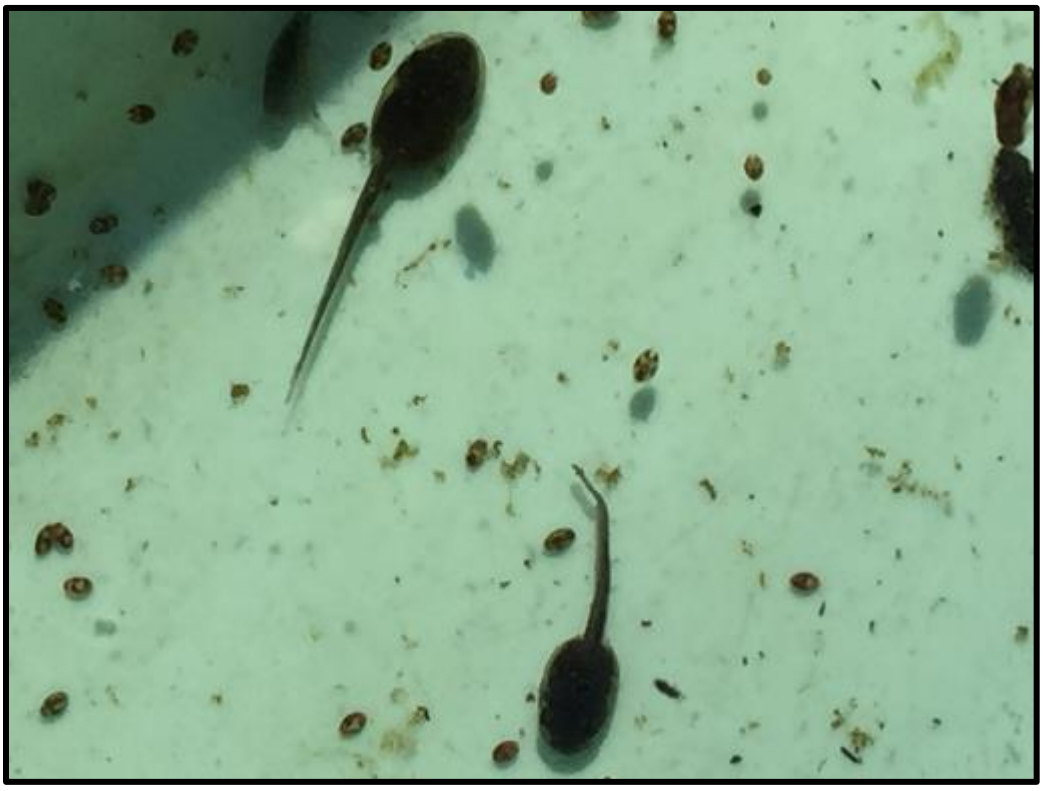
Vernal Pool Photographs

EVERSOURCE ENERGY

vhb



Photograph 23 Vernal Pool 6 Caddis fly larvae and ostracods, 5-2-2017



Photograph 24 Vernal Pool 6 Wood frog tadpoles and ostracods 5-2-2017

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 25 Vernal Pool 7, 5-12-2016



Photograph 26 Vernal Pool 7, wood frog tadpoles, 5-12-2016

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 27 Vernal Pool 7, 5-2-2017



Photograph 28 Vernal Pool 8, 5-12-2016

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 29 Vernal Pool 8, 5-2-2017



Photograph 30 Vernal Pool 9, 5-12-2016

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



*Photograph 31*Vernal Pool 10, 5-12-2016



Photograph 32 Vernal Pool 10, 4-24-2017,

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 33 Vernal Pool 10, Ambystoma egg mass and fairy shrimp, 2-24-2017.



Photograph 34 Vernal Pool 11, 5-12-2016



Photograph 35 Vernal Pool 11, 4-24-2017



Photograph 36 Vernal Pool 13, 6-1-2016

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 37 Vernal Pool 13, Wood frog tadpoles, 6-1-2017



Photograph 38 Vernal Pool 13, 4-24-2017

	Proposed 115 kV Line Sudbury Substation 342 to Hudson Municipal Substation 384 Vernal Pool Photographs	EVERSOURCE ENERGY vhb



Photograph 39 Vernal Pool 13, Wood frog egg mass 4-24-2017

Attachment E:
Orthophoto Imagery – Existing Conditions ANRAD Plans (11x17)

(Provided under separate cover at a later date)

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Attachment F:
Existing Conditions ANRAD Plans (24 x 36)

(Provided under separate cover)

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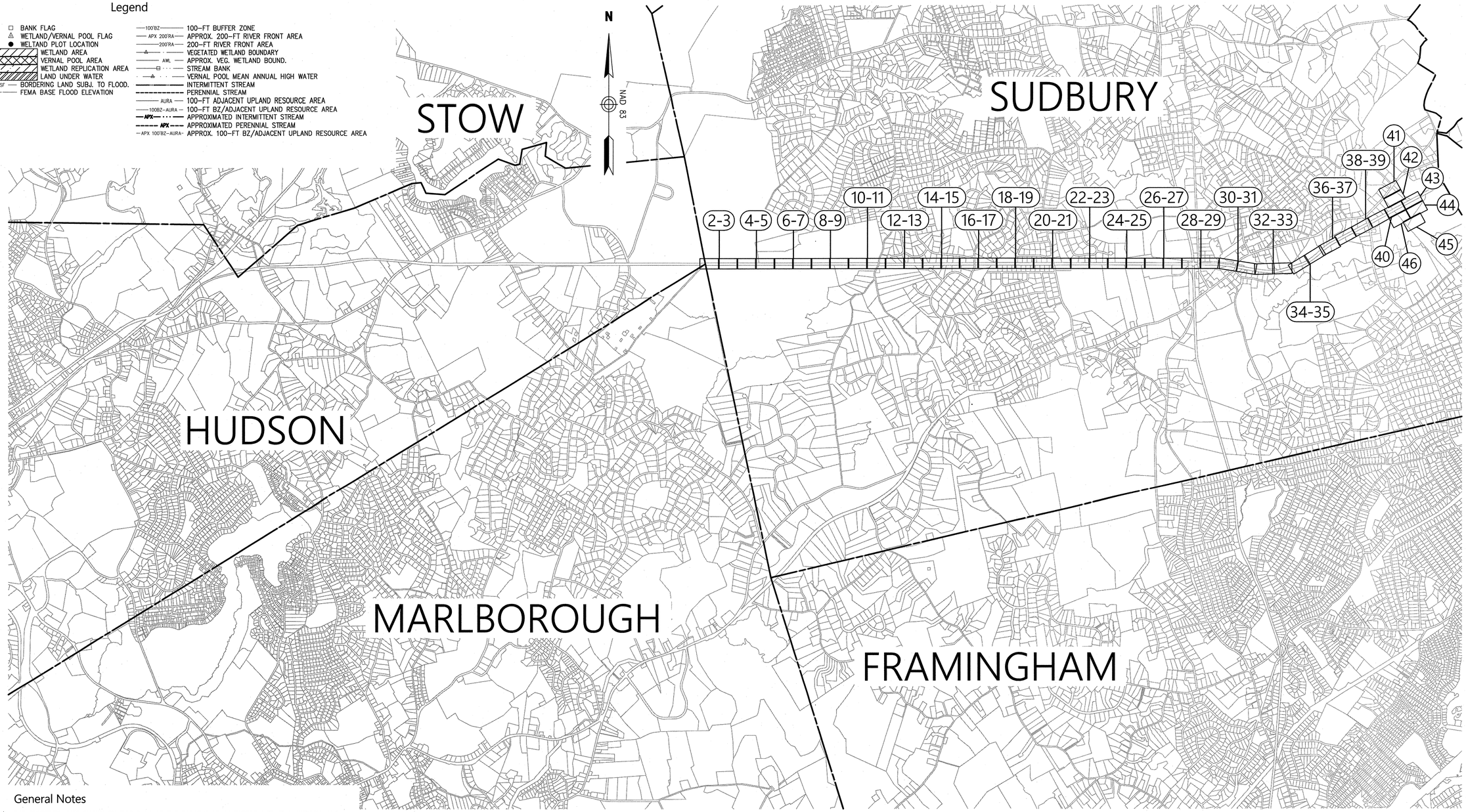
Saved Friday, November 17, 2017 12:52:04 PM SRYAN Plotted Friday, November 17, 2017 1:54:55 PM Ryan, Steven \\VHB\PROJ\WAT-LOY\12970.01 SUDBURY-HUDSON-SURVEY\CAD\SR\PLANMISC\CONVERSIONTONORTHUP\12970.01-ANRAD-SUDBURY

Legend

- BANK FLAG
- WETLAND/VERNAL POOL FLAG
- WETLAND PLOT LOCATION
- WETLAND AREA
- VERNAL POOL AREA
- WETLAND REPLICATION AREA
- LAND UNDER WATER
- BLSF — BORDERING LAND SUBJ. TO FLOOD.
- BFE — FEMA BASE FLOOD ELEVATION
- 100'BZ — 100-FT BUFFER ZONE
- APX 200'RA — APPROX. 200-FT RIVER FRONT AREA
- 200'RA — 200-FT RIVER FRONT AREA
- VEGETATED WETLAND BOUNDARY
- AWL — APPROX. VEG. WETLAND BOUND.
- STREAM BANK
- VERNAL POOL MEAN ANNUAL HIGH WATER
- INTERMITTENT STREAM
- PERENNIAL STREAM
- AURA — 100-FT ADJACENT UPLAND RESOURCE AREA
- 100BZ-AURA — 100-FT BZ/ADJACENT UPLAND RESOURCE AREA
- APX — APPROXIMATED INTERMITTENT STREAM
- APX — APPROXIMATED PERENNIAL STREAM
- APX 100'BZ-AURA — APPROX. 100-FT BZ/ADJACENT UPLAND RESOURCE AREA



General Notes

1) THE PROPERTY LINES SHOWN ON THIS PLAN OF THE PARCELS AT 44 FOREST AVENUE IN HUDSON, AND 163 BOSTON POST ROAD IN SUDBURY, AND THE FORMER RAILROAD RIGHT-OF-WAY ARE BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VHB, INC. IN 2015 AND FROM DEEDS AND PLANS OF RECORD.
2) THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE DEVELOPED FROM A COMBINED EFFORT OF AERIAL PHOTOGRAMMETRIC MAPPING BY EASTERN TOPOGRAPHICS, INC., BASED ON AERIAL PHOTOGRAPHS TAKEN ON FEBRUARY 22, 2013, AND AUGMENTED BY AN ON-THE-GROUND SURVEY PERFORMED BY VHB DURING 2015 AND 2017.
3) THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD OBSERVATIONS AND INFORMATION OF RECORD. THEY ARE NOT WARRANTED TO BE EXACTLY LOCATED NOR IS IT WARRANTED THAT ALL UNDERGROUND UTILITIES OR OTHER STRUCTURES ARE SHOWN ON THIS PLAN.
4) HORIZONTAL DATUM IS BASED ON MASS. GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN ON THIS PLAN REFER TO NAVD OF 1988.
7) THE DELINEATED WETLANDS SHOWN ON THIS PLAN WERE FLAGGED BY VHB ENVIRONMENTAL DEPARTMENT AND FIELD SURVEYED BY VHB IN SEPTEMBER AND OCTOBER, 2017.
8) THE APPROXIMATE WETLANDS AND STREAMS WERE TAKEN FROM AVAILABLE MASSGIS DATA. THESE WERE NOT FIELD DELINEATED OR FIELD VERIFIED.
9) BASE FLOOD ELEVATIONS ARE BASED ON THE FLOOD INSURANCE RATE MAP FOR MIDDLESEX COUNTY, MASSACHUSETTS, MAP NUMBER 25017C, EFFECTIVE DATE JULY 7, 2014.

1500 0 1500 3000
1"=1,500'

JAMES L. DIORIO NO. 32092 REGISTERED PROFESSIONAL LAND SURVEYOR COMMONWEALTH OF MASSACHUSETTS
11/17/17

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

Prepared By
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box9151
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FIELD BOOK. NO:

Project Title
Sudbury-Hudson Transmission Reliability Project
Sudbury, Massachusetts
Drawing Title
Existing Conditions Plan For ANRAD Submittal

DATE: OCTOBER 18, 2017 | SHEET 1 OF 46

SUDBURY

Legend

- BANK FLAG
- WETLAND/VERNAL POOL FLAG
- WELTAND PLOT LOCATION
- WETLAND AREA
- VERNAL POOL AREA
- WETLAND REPLICATION AREA
- LAND UNDER WATER
- BLSF — BORDERING LAND SUBJ. TO FLOOD.
- BFE — FEMA BASE FLOOD ELEVATION
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N

NAD 83

TOWN OF SUDBURY
TOWN OF HUDSON

TOWN OF HUDSON
CITY OF MARLBOROUGH

TOWN OF SUDBURY
CITY OF MARLBOROUGH

TENNESSEE GAS PIPELINE

N/F
US GOVERNMENT FORT-DEVENS
MAIN ST & WHITE POND MLT-HSE
0048-0003
BK PAGE

N/F
UNITED STATES OF AMERICA
0 HUDSON RD
F03-0002
BK PAGE

N/F
CITY OF MARLBOROUGH
CONCORD RD
4-5
BOOK 14306 PAGE 364

N/F
SUDBURY VALLEY TRUSTEES INC
0 DUTTON RD
J03-0001
BK 30259 PG 117

L-W

L-M

PROPOSED

SEE SHEET 3

20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JAMES L. DIORIO
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SHEET 2 OF 46

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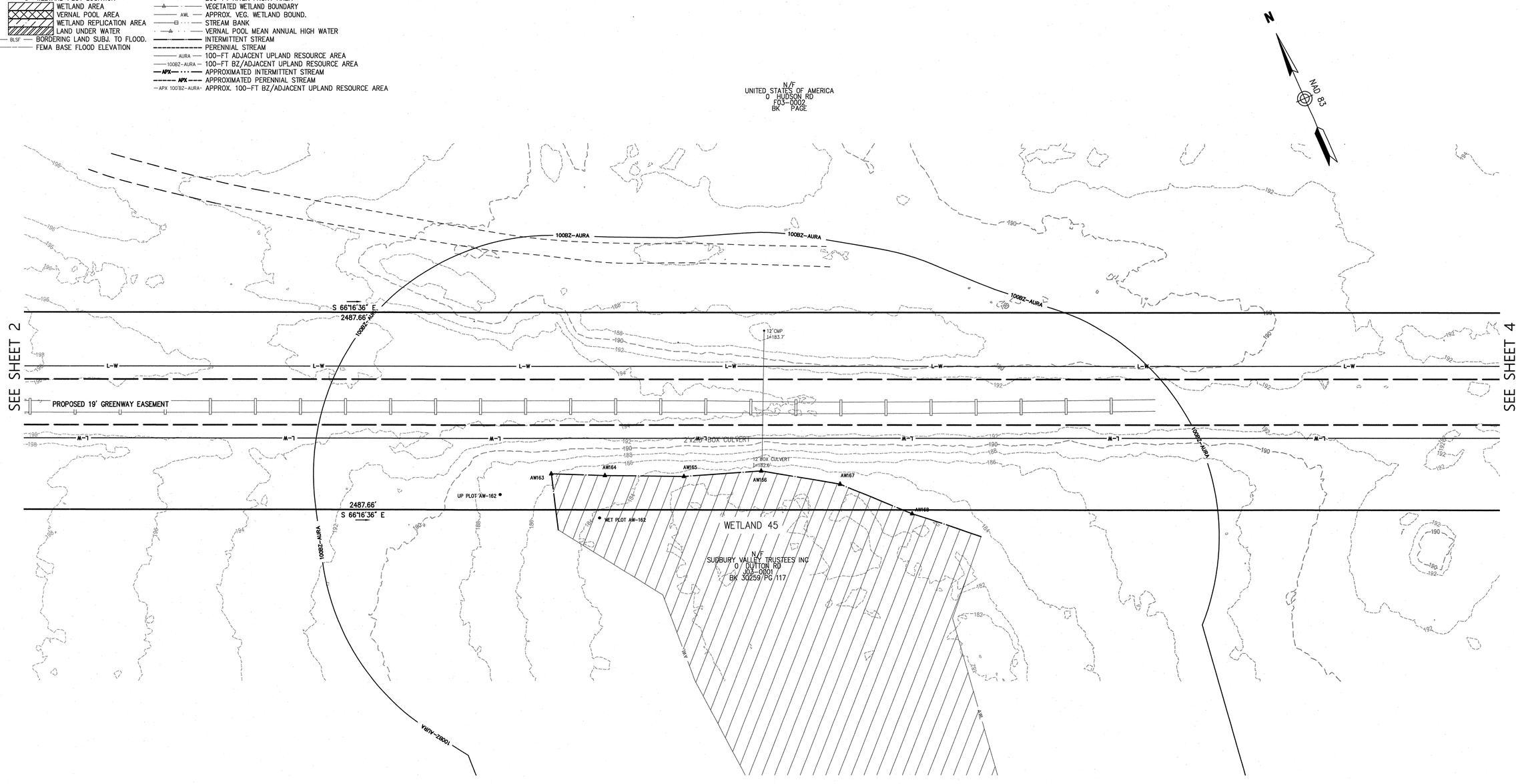

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N

NAD 83

N/F
UNITED STATES OF AMERICA
0 HUDSON RD
F03-0002
BK PAGE

S 66°16'36" E
2487.66'

SEE SHEET 3

SEE SHEET 5

2487.66'
S 66°16'36" E

N/F
SUDBURY VALLEY TRUSTEES INC
0 DUTTON RD
J03-0001
BK 30259 PG 117

20 0 20 40
1"=20'

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N/F
TOWN OF SUDBURY
325 DUTTON RD
H04-0009
BK 11608 PG 127

NAD 83

S 66°17'04" E
3822.81'

SEE SHEET 4

SEE SHEET 6

PROPOSED 19' GREENWAY EASEMENT

L-W

M-T

2387.53'
S 66°17'04" E

N/F
SUDBURY VALLEY TRUSTEES INC
0 DUTTON RD
J03-0001
BK 30259 PG 117

20 0 20 40
1"=20'

JAMES L. DIORIO NO. 32092 COMMONWEALTH OF MASSACHUSETTS REGISTERED PROFESSIONAL LAND SURVEYOR

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		.		

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NAD 83

N/F
TOWN OF SUDBURY
325 DUTTON RD
104-0009
BK 11608 PG 127

SEE SHEET 5

SEE SHEET 7

N/F
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103-0001
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20 0 20 40
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JAMES L. DIORIO NO. 32092 REGISTERED PROFESSIONAL LAND SURVEYOR COMMONWEALTH OF MASSACHUSETTS

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0 DUTTON RD
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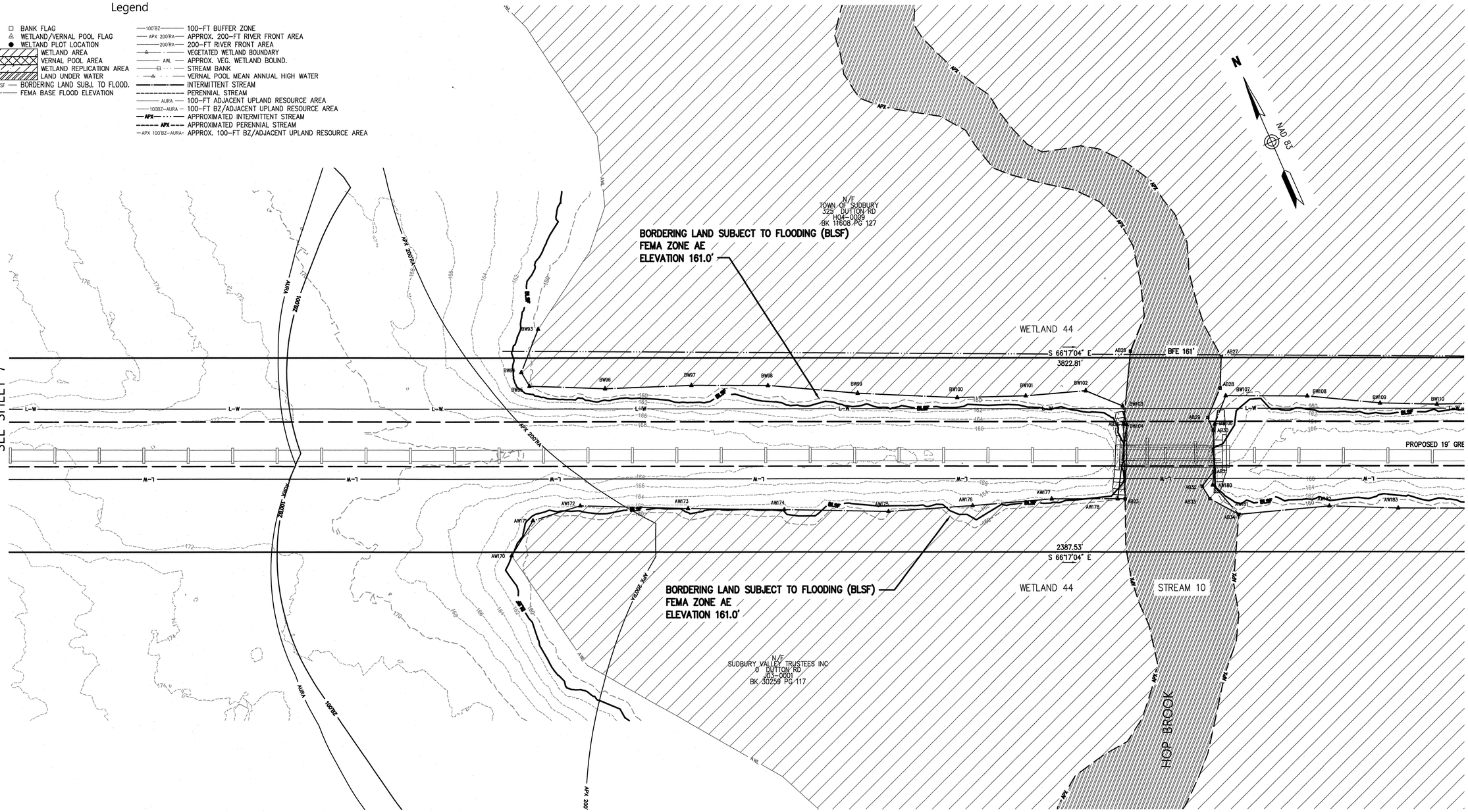

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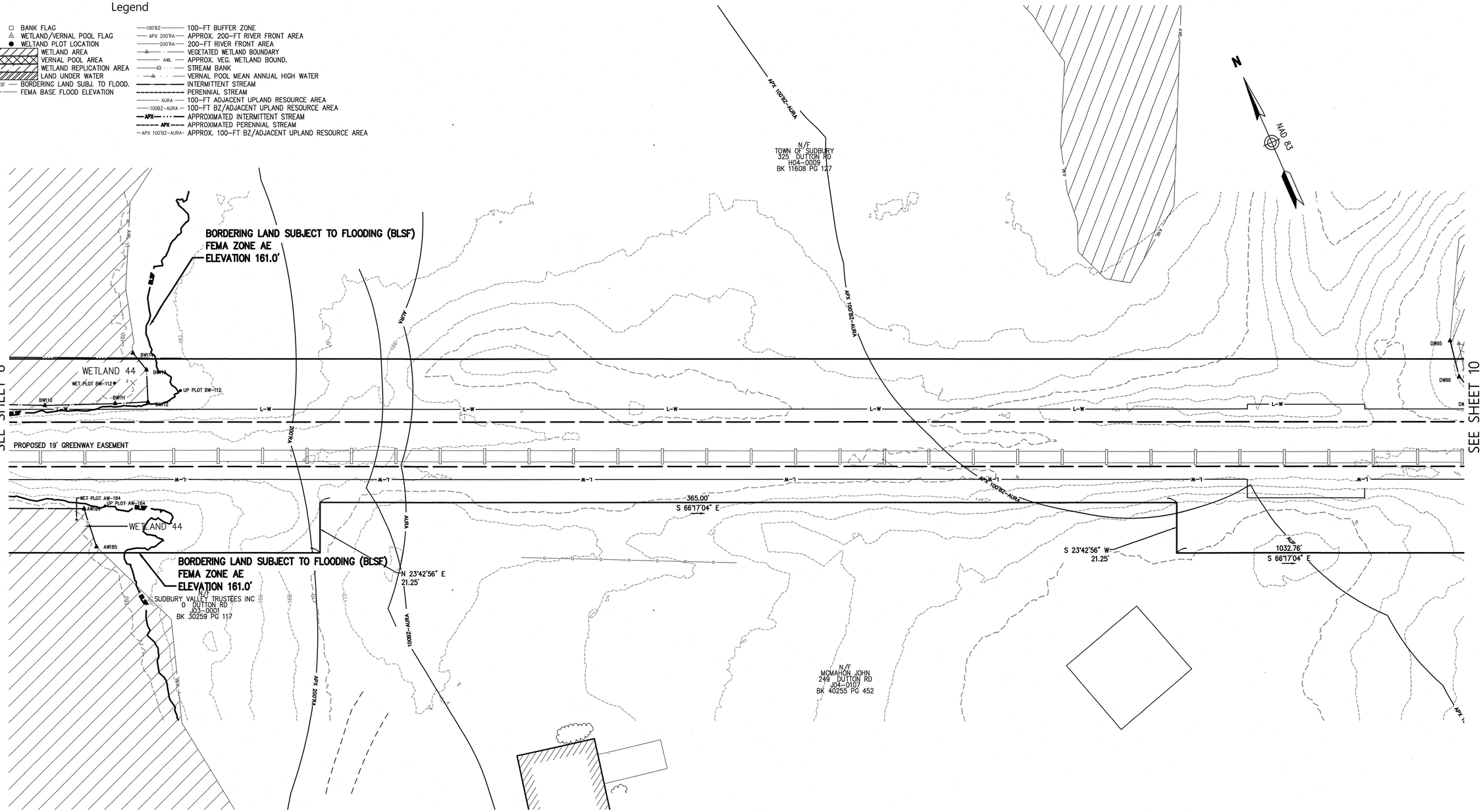

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Prepared By

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vhb

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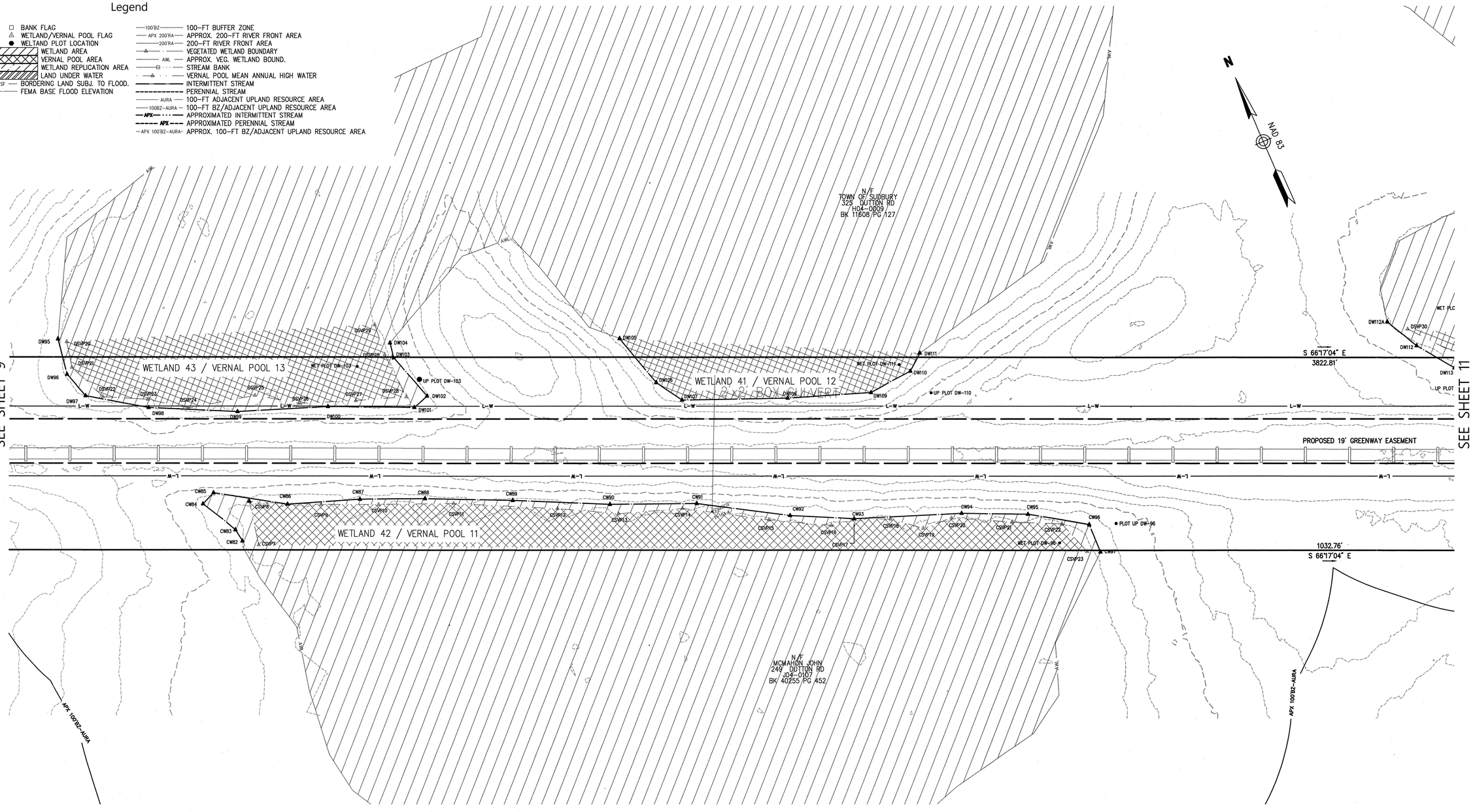

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

COMMONWEALTH OF MASSACHUSETTS
JAMES L. DIORIO
NO. 32092
REGISTERED PROFESSIONAL LAND SURVEYOR

Prepared By

Vanasse Hangen Brustlin, Inc.

vhb
Transportation
Land Development
Environmental Services

101 Walnut Street, P.O. Box9151
Watertown, Massachusetts 02471-9151
617.924.1770 • FAX 617.924.2286

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NO.	COMMENTS	DATE

Issued For

EVERSOURCE ENERGY

SCALE: 20 FEET TO THE INCH

DRAWING NAME: 12970.01-ANRAD-Sudbury.dwg

FIELD BOOK. NO:

Project Title

Sudbury-Hudson Transmission Reliability Project

Sudbury, Massachusetts

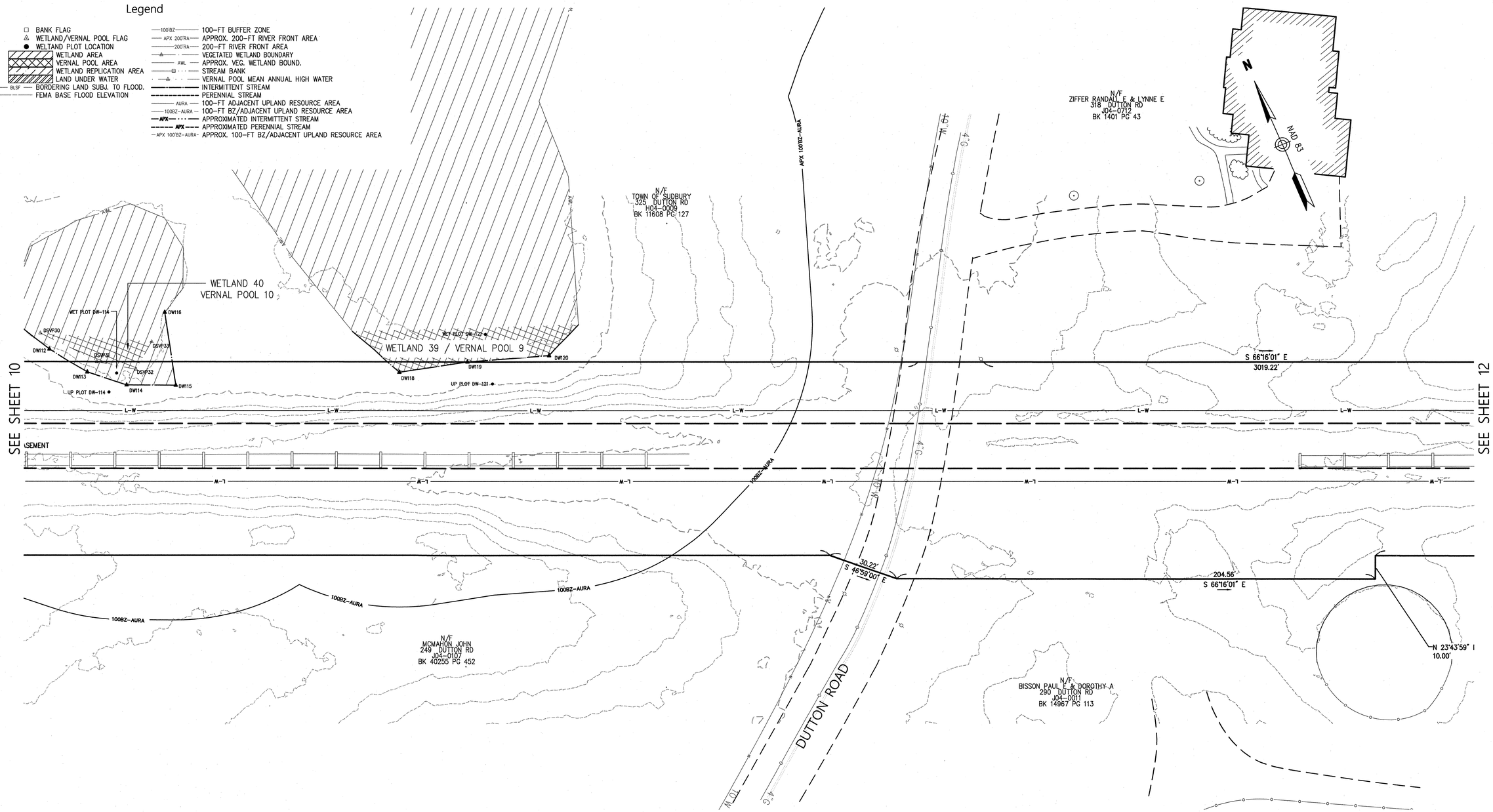
Drawing Title

Existing Conditions Plan For ANRAD Submittal

DATE: OCTOBER 18, 2017

SHEET 10 OF 46

SUDBURY



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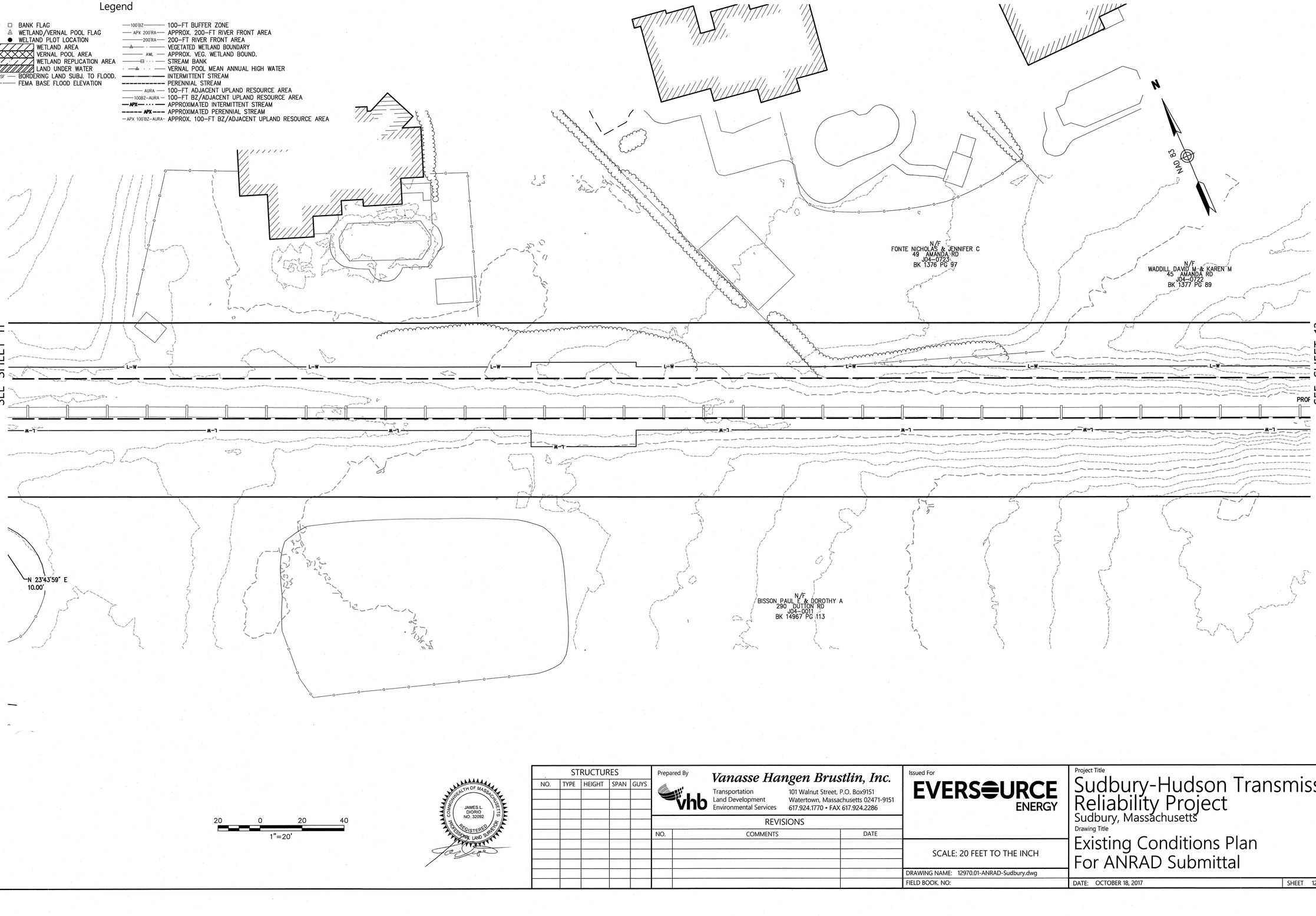

20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
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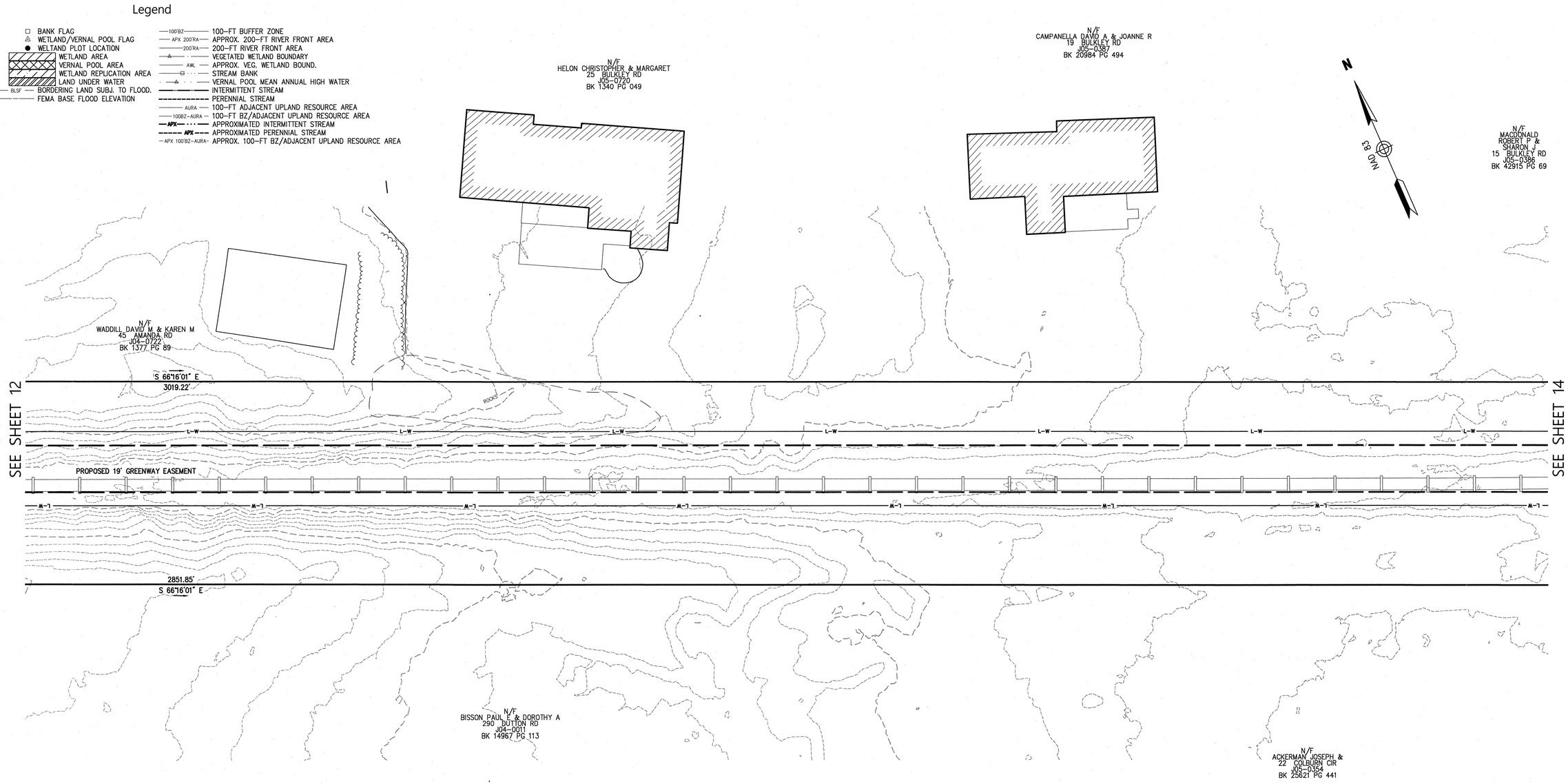

COMMONWEALTH OF MASSACHUSETTS
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N/F
JOST ALAN C & DIANE A
81 AUSTIN RD
J05-0385
BK 21348 PG 409

N/F
HARDING MICHAEL R & KARA K
89 AUSTIN RD
J05-0384
BK 59393 PG 206

N/F
GIORGIO JEAN
95 AUSTIN RD
J05-0383
BK 47877 PG 572

N

NAD 83

SEE SHEET 13

SEE SHEET 15

WETLAND 37

WETLAND 38

WETLAND 36

STREAM 9

PROPOSED 1

1'x2' BOX CULVERT

UP PLOT DW-149

WET PLOT DW-150

UP PLOT CW-112

WET PLOT CW-112

L-W

M-1

AWL

100BZ-AURA

N/F
ACKERMAN JOSEPH &
22 COLBURN CIR
J05-0354
BK 25621 PG 441

N/F
CROTEAU MARK G &
12 COLBURN CIR
J05-0358
BK 33602 PG 141

COLBURN CIR.

20 0 20 40
1"=20'

JAMES L. DIGRIO NO. 32092 — COMMONWEALTH OF MASSACHUSETTS — REGISTERED PROFESSIONAL LAND SURVEYOR

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

Prepared By

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Transportation
Land Development
Environmental Services

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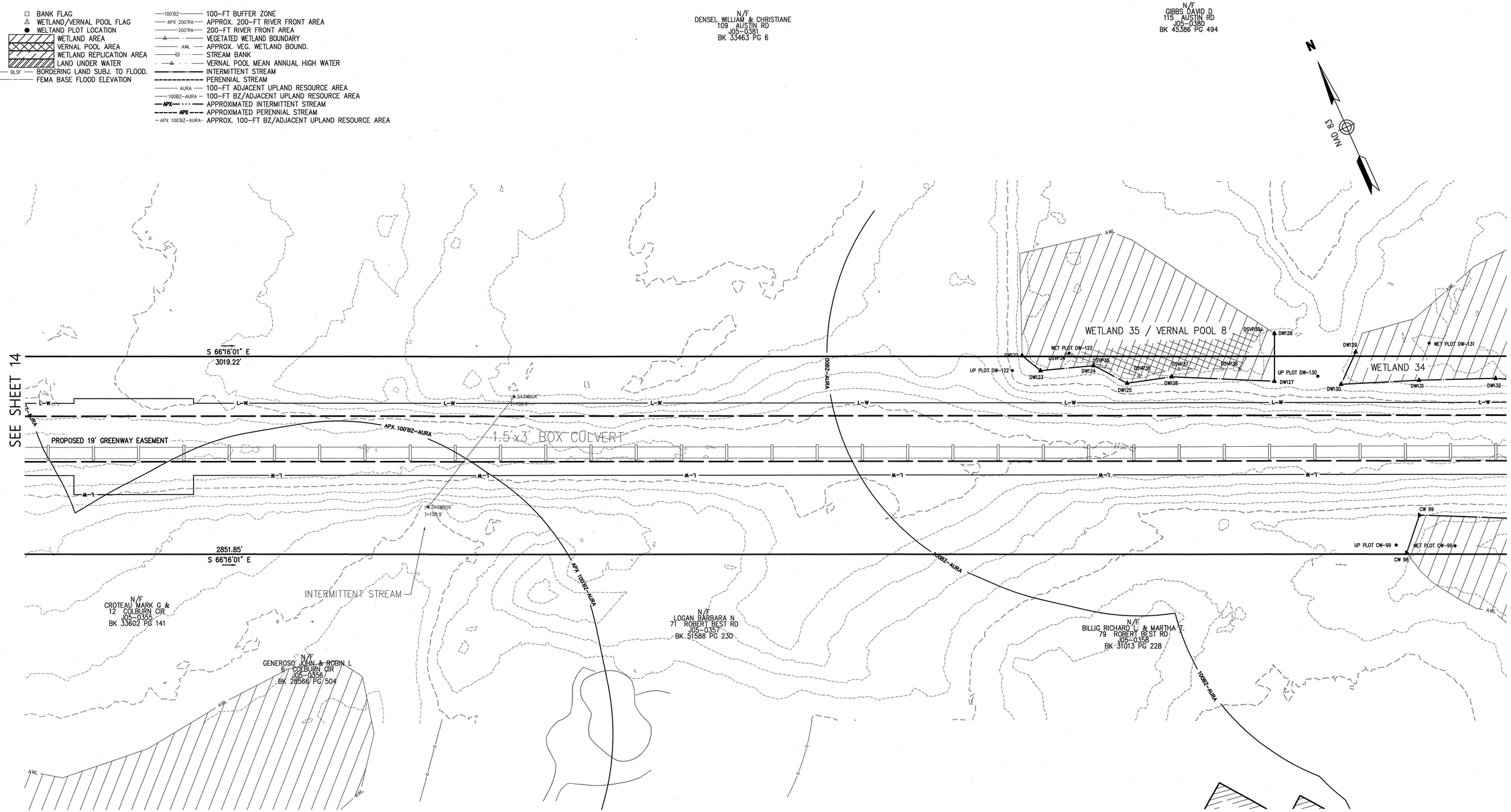

20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
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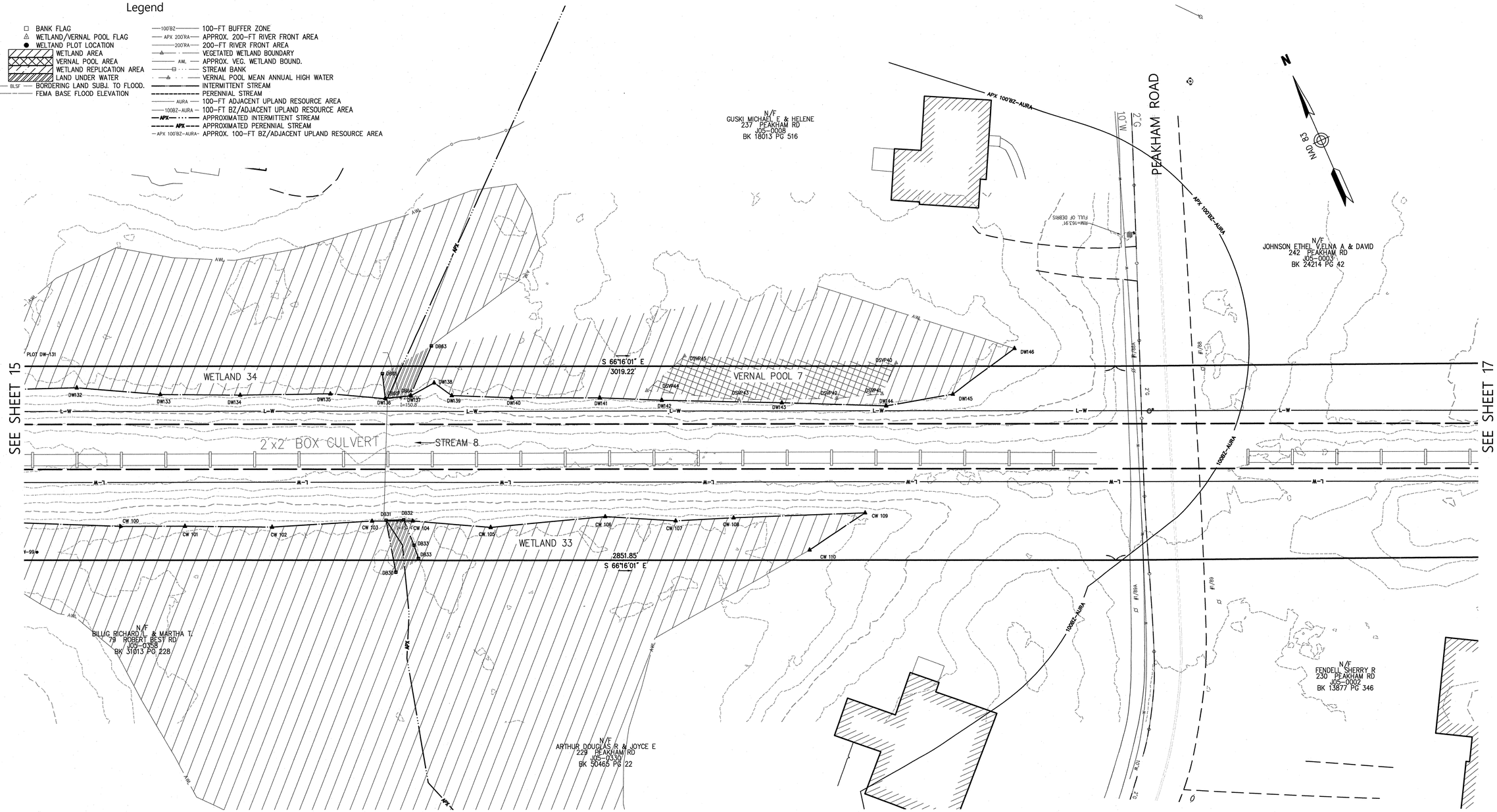

20 0 20 40

1"=20'

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COMMONWEALTH OF MASSACHUSETTS — JAMES L. DIORIO NO. 32092 — REGISTERED PROFESSIONAL LAND SURVEYOR

Prepared By

vhb *Vanasse Hangen Brustlin, Inc.*

Transportation, Land Development, Environmental Services

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LNA A & DAVID
IAM RD
03
PG 42

N/F
KOMMIT KATHY
45 WHISPERING PINE RD
J05-0217
BK 23638 PG 553

N/F
PHILLIPS RAYMOND JOHN
40 WHISPERING PINE RD
J06-0216
BK 25564 PG 515

N/F
FENDELL SHERRY R
230 PEAKHAM RD
J05-0002
BK 13877 PG 346

BLANCHETTE CHRISTOPHER & MARY
80 JARMAN RD
J05-0101
BK 1378 PG 121

NAD 83

BORDERING LAND SUBJEC
FEMA ZONE AE
ELEVATION 148.6'

BORDERING LAND SUBJECT TO FLOODING (BLSF)
FEMA ZONE AE
ELEVATION 152.2'

BFE 152'

WETLAND 32

WETLAND 30

S 66°41'27" E
550.25'

S 66°26'22" E
1984.06'

550.38'
S 66°41'27" E

1984.00'
S 66°26'22" E

PROPOSED 19' GREENWAY EASEMENT

SEE SHEET 16

SEE SHEET 18

20 0 20 40
1"=20'

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

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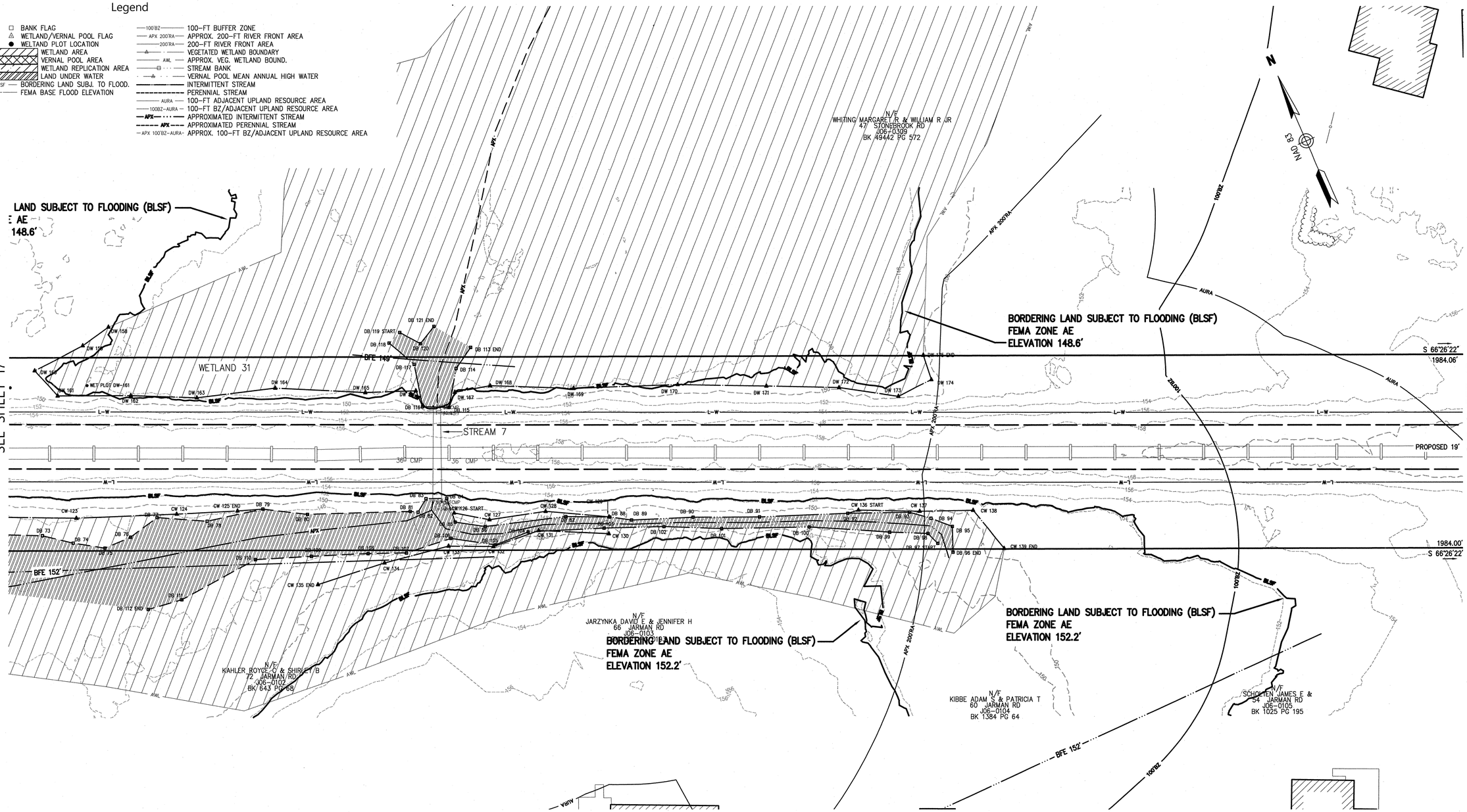

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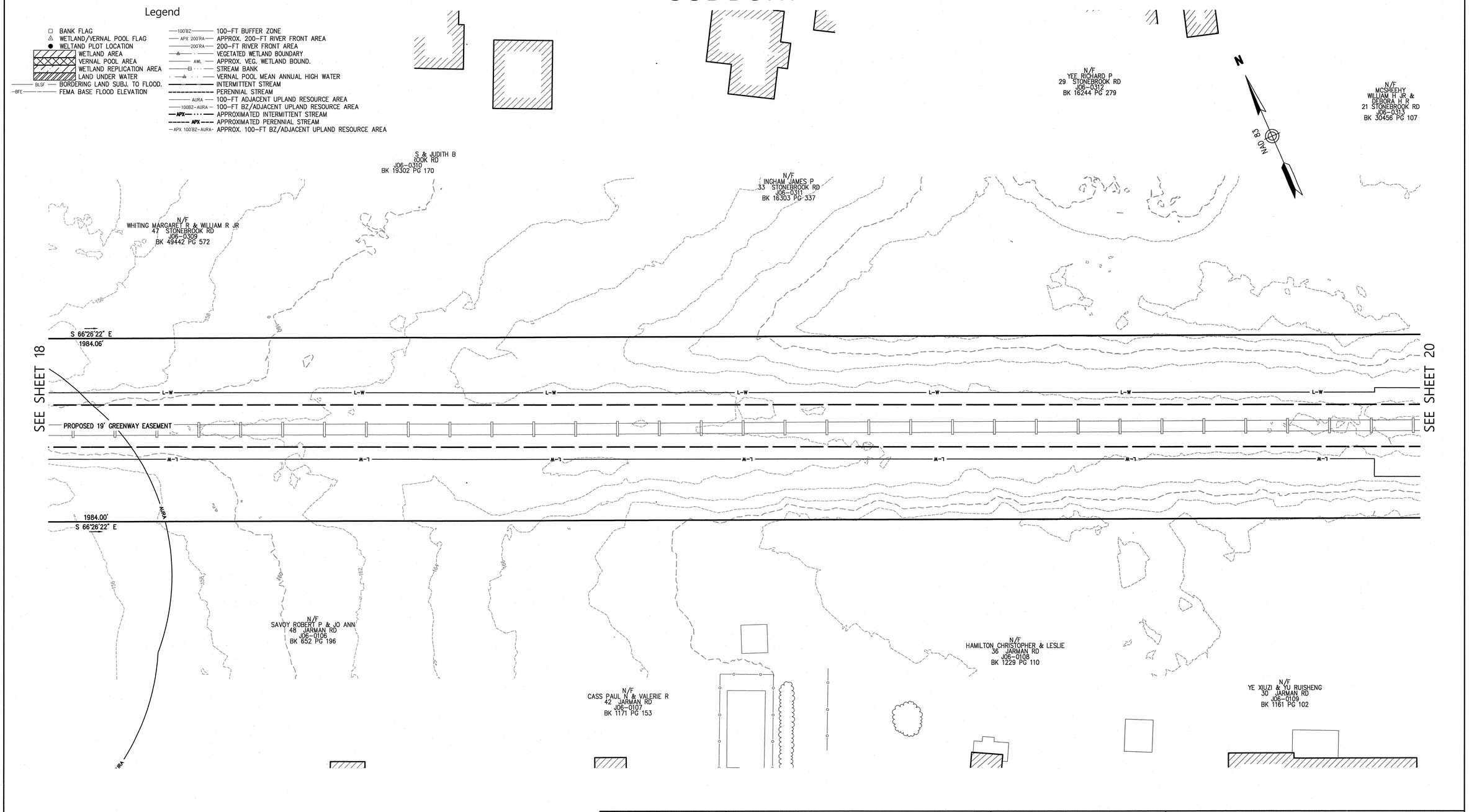

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N/F
MARLEY FREDERICK C &
9 STONEBROOK RD
J06-0315
BK 18533 PG 389

N/F
KISSANE KATIE A
3 STONEBROOK RD
J06-0316
BK 52352 PG 138

N

NAD 83

HUNT

SEE SHEET 19

SEE SHEET 21

S 66°26'22" E
1984.06'

L-W

1984.00'
S 66°26'22" E

N/F
PAPPAS NICHOLAS & CHRISTINA K
24 JARMAN RD
J06-0110
BK 1404 PG 66

N/F
ROSEN THERESA M
18 JARMAN RD
J06-0111
BK 1311 PG 42

N/F
MEIDELL PHILIP & TATIANA
12 JARMAN RD
J06-0112
BK 1028 PG 92

N/F
MURPHY MATTHEW D & FELICIA K
111 HORSE POND RD
J06-0113
BK 1270 PG 0147

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1"=20'

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NO.	TYPE	HEIGHT	SPAN	GUYS

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Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box9151
Watertown, Massachusetts 02471-9151
617.924.1770 • FAX 617.924.2286

REVISIONS

NO.	COMMENTS	DATE

Issued For
EVERSOURCE ENERGY

SCALE: 20 FEET TO THE INCH

DRAWING NAME: 12970.01-ANRAD-Sudbury.dwg
FIELD BOOK. NO:

Project Title
Sudbury-Hudson Transmission Reliability Project
Sudbury, Massachusetts
Drawing Title
Existing Conditions Plan
For ANRAD Submittal

DATE: OCTOBER 18, 2017

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SUDBURY

Legend

- BANK FLAG
- WETLAND/VERNAL POOL FLAG
- WELTAND PLOT LOCATION
- WETLAND AREA
- VERNAL POOL AREA
- WETLAND REPLICATION AREA
- LAND UNDER WATER
- BLSF — BORDERING LAND SUBJ. TO FLOOD.
- BFE — FEMA BASE FLOOD ELEVATION
- 100'BZ — 100-FT BUFFER ZONE
- APX 200'RA — APPROX. 200-FT RIVER FRONT AREA
- 200'RA — 200-FT RIVER FRONT AREA
- VEGETATED WETLAND BOUNDARY
- AWL — APPROX. VEG. WETLAND BOUND.
- STREAM BANK
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- PERENNIAL STREAM
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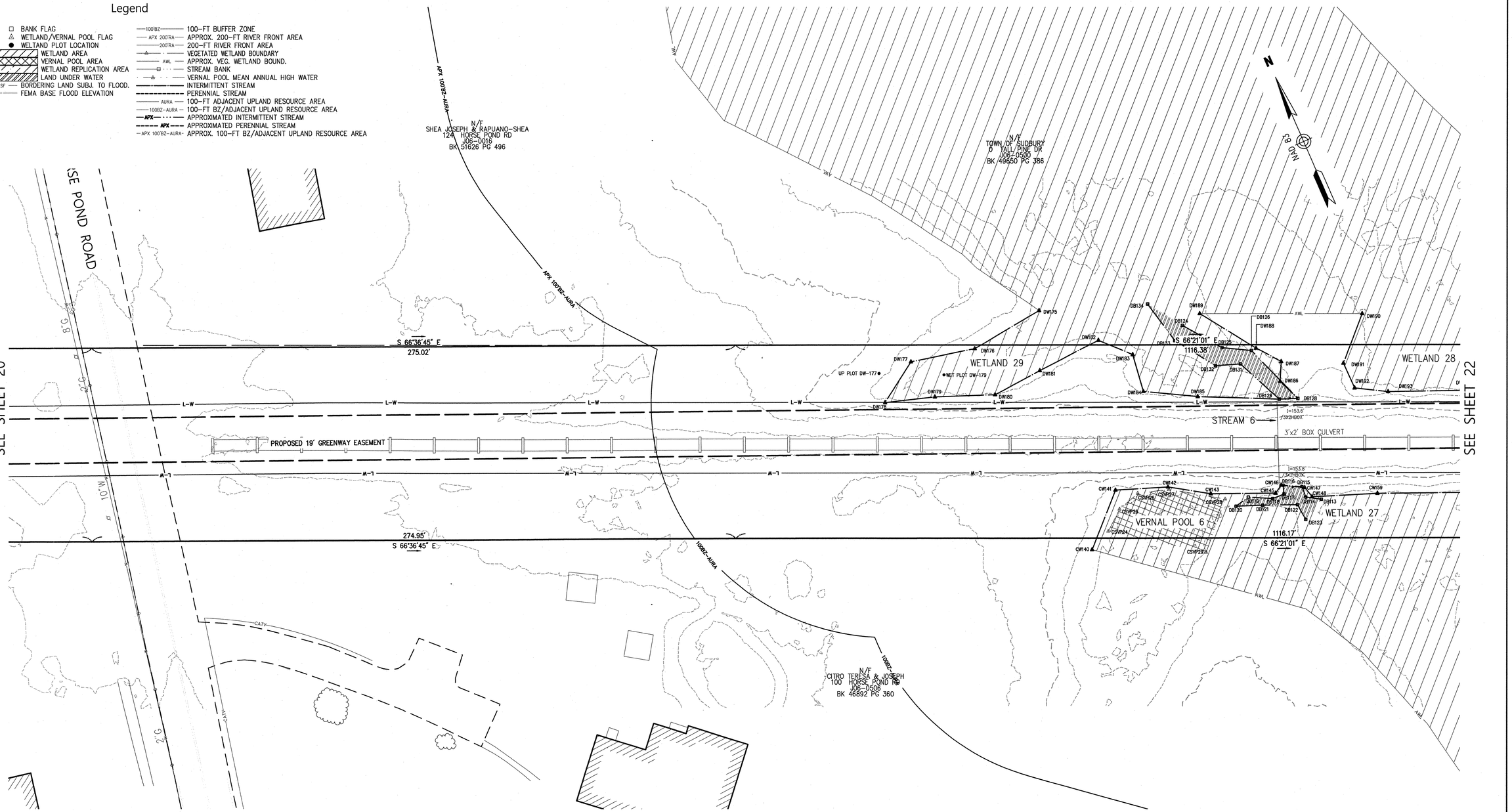

20 0 20 40
1"=20'

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

COMMONWEALTH OF MASSACHUSETTS
JAMES L. DIORIO
NO. 32092
REGISTERED
PROFESSIONAL LAND SURVEYOR

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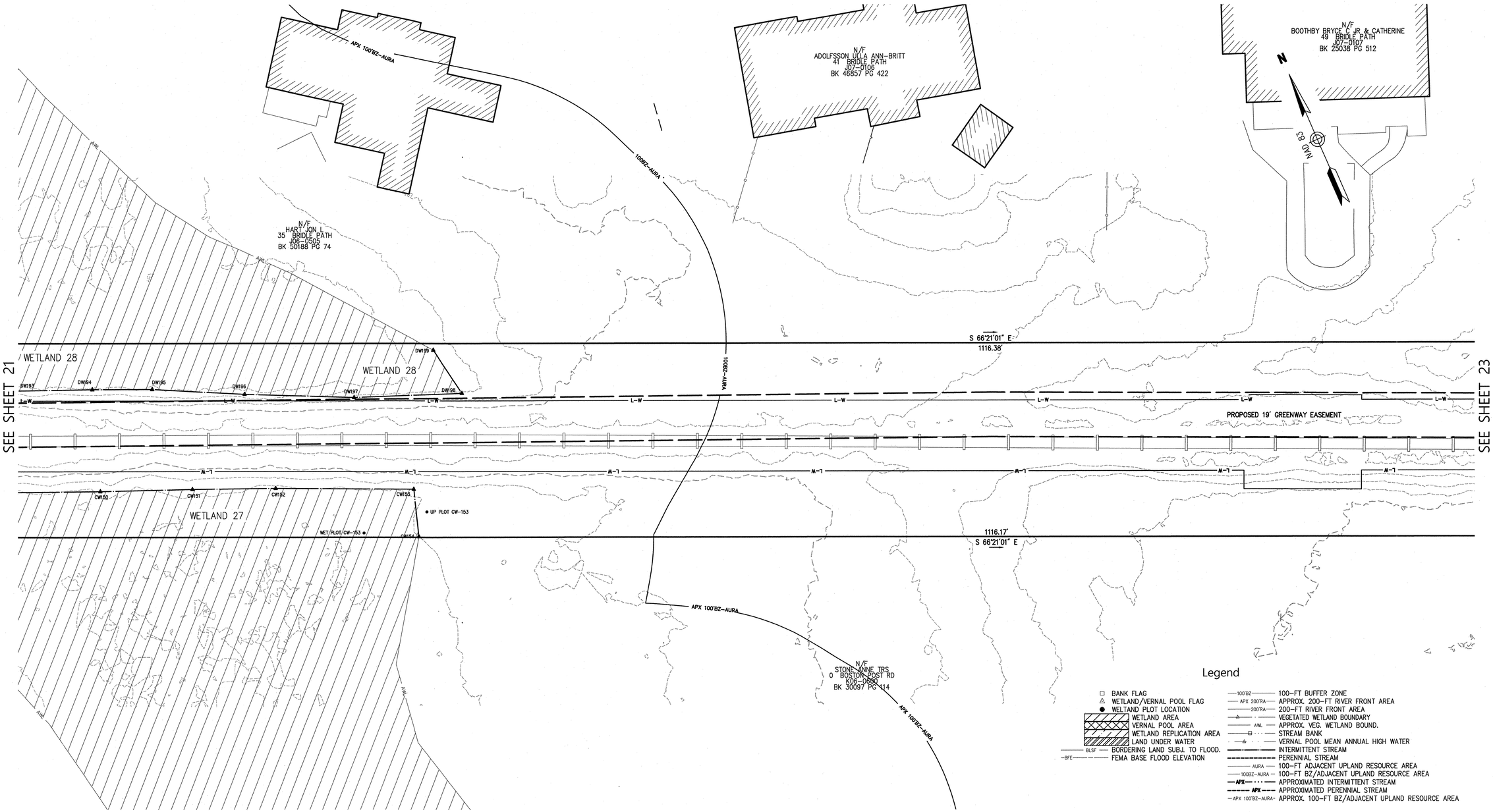

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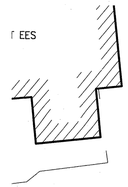

N/F
FORMAN BARBARA S
11 TRAILSIDE CIR
K07-0110
BK 22716 PG 527

N/F
DEITEL HARVEY M & BARBARA S
3 TRAILSIDE CIR
K07-0109
BK 27677 PG 584

NAD 83

SEE SHEET 22

SEE SHEET 24

S 66°18'46" E
3693.82'

3306.72'
S 66°18'46" E

N/F
STONE ANNE TRS
0 BOSTON POST RD
K06-0600
BK 30097 PG 114

N/F
RAYTHEON COMPANY
528 BOSTON POST RD
K07-0013
BK 51383 PG 258

20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JAMES L DIORIO NO. 32092
REGISTERED PROFESSIONAL LAND SURVEYOR

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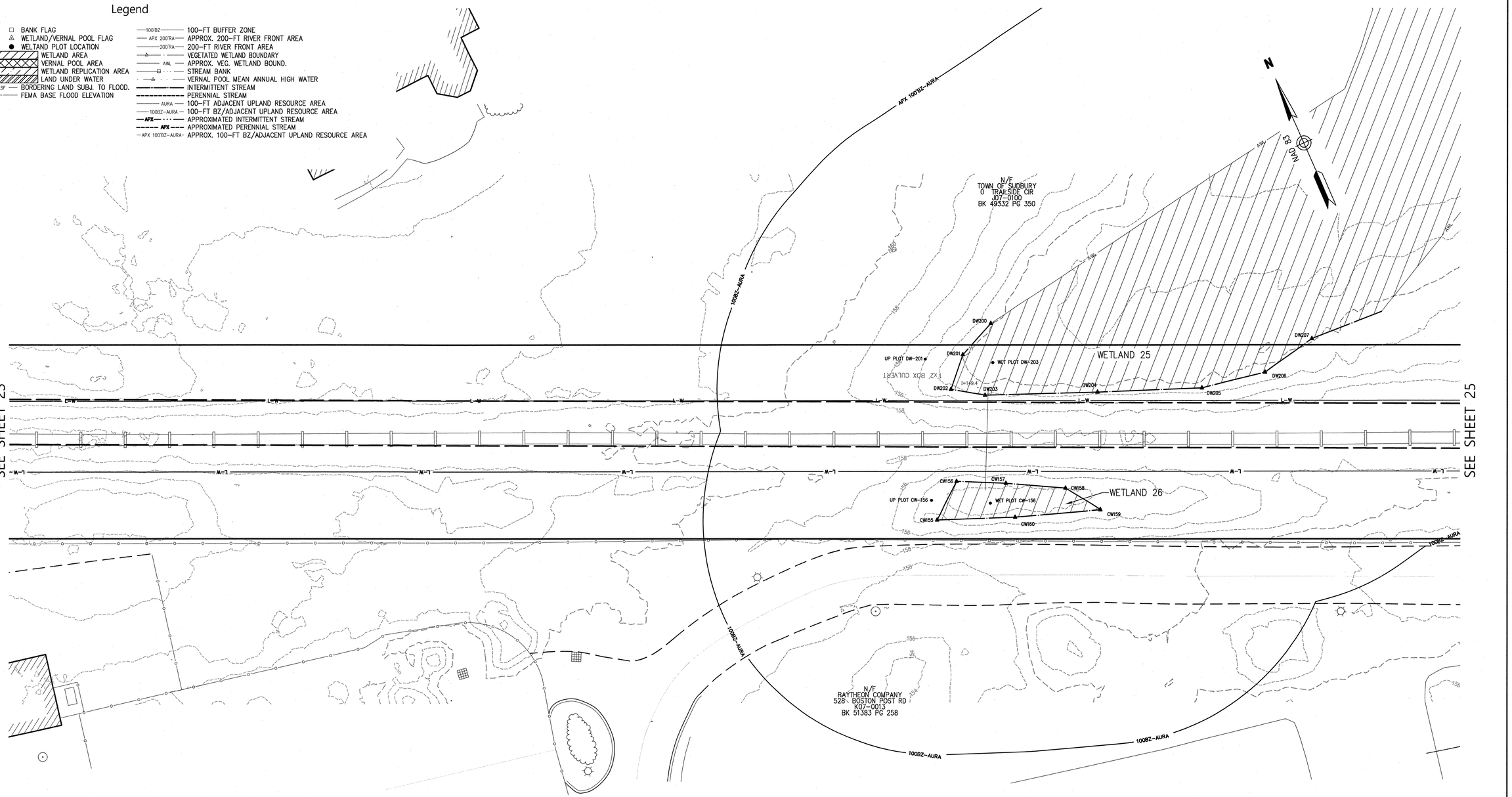

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JAMES L. DIORIO NO. 32092 REGISTERED PROFESSIONAL LAND SURVEYOR COMMONWEALTH OF MASSACHUSETTS

STRUCTURES				
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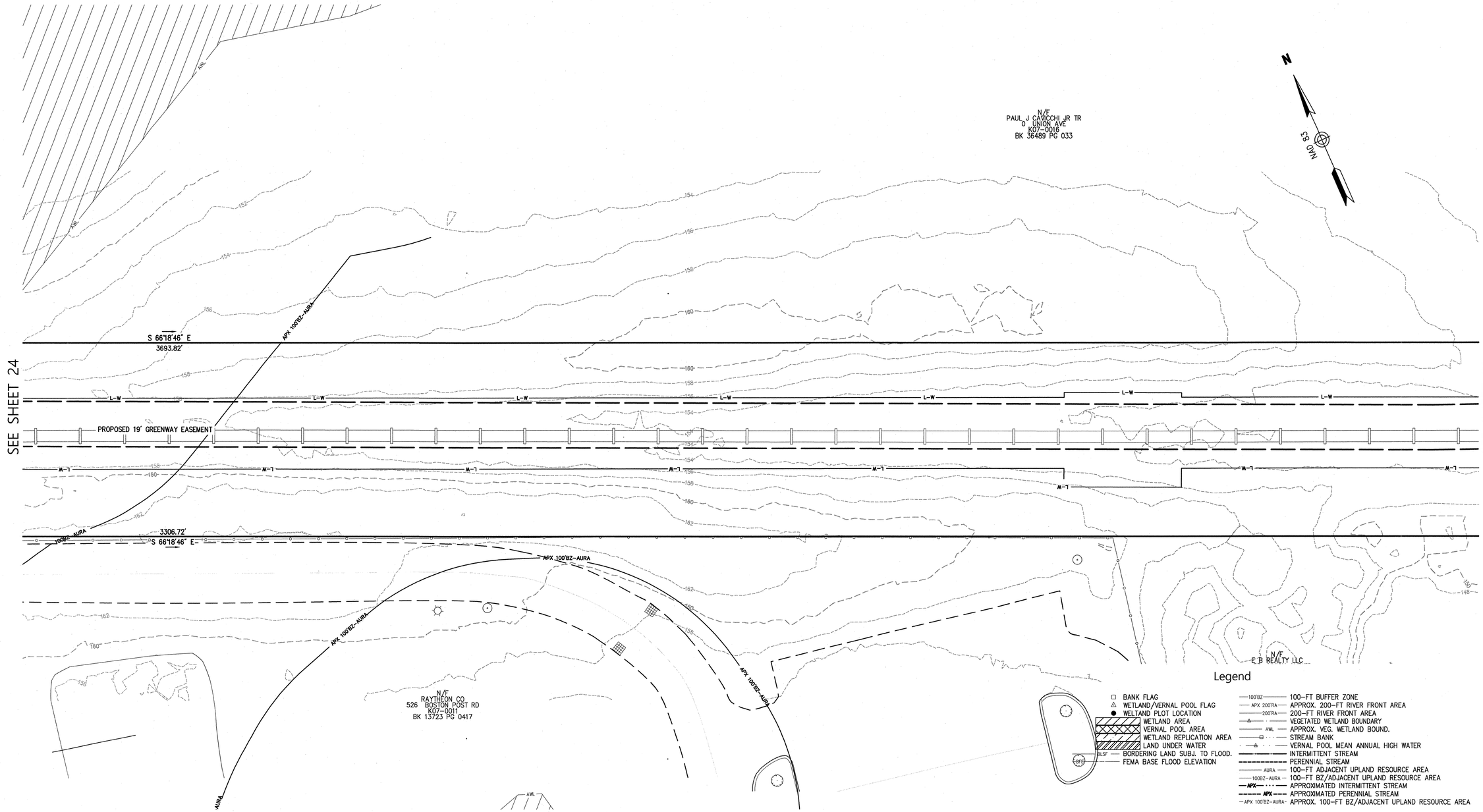

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NO. 32092
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N/F
PAUL J CAVICCHI JR TR
0 UNION AVE
K07-0016
BK 36489 PG 033

N

NAD 83

AURA

L-W

M-1

PRE

DB135 DB136 DB137 DB138 DB139 DB140 DB141 DB142 DB143 DB144 DB145 DB146 DB147

S 66°18'46" E
3693.82'

S 66°18'46" E
3306.72'

SEE SHEET 25

SEE SHEET 27

N/F
E B REALTY LLC
33 UNION AVE
K07-0017
BK 52138 PG 522

20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JAMES L. DIORIO
NO. 32092
REGISTERED PROFESSIONAL LAND SURVEYOR

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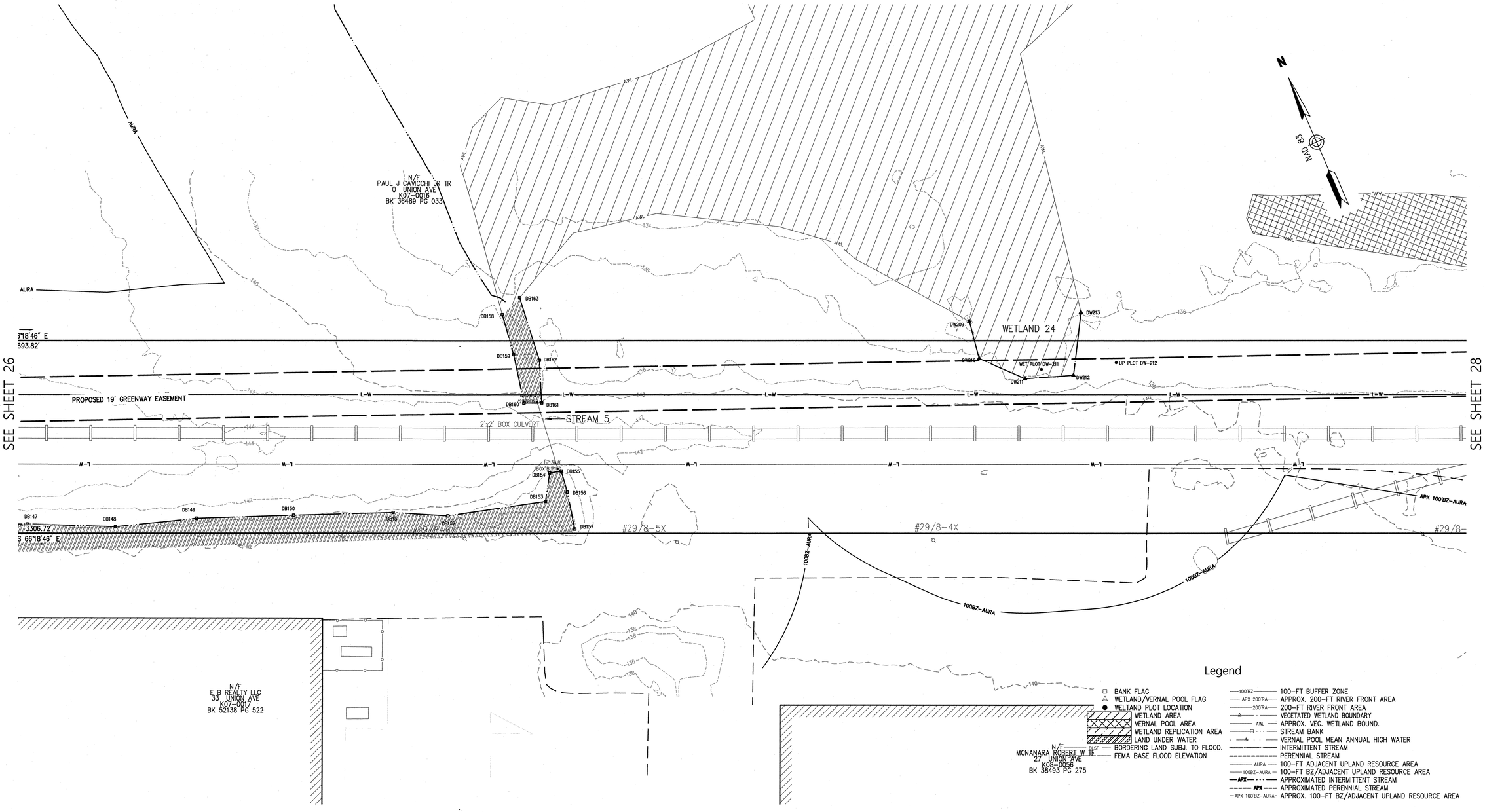

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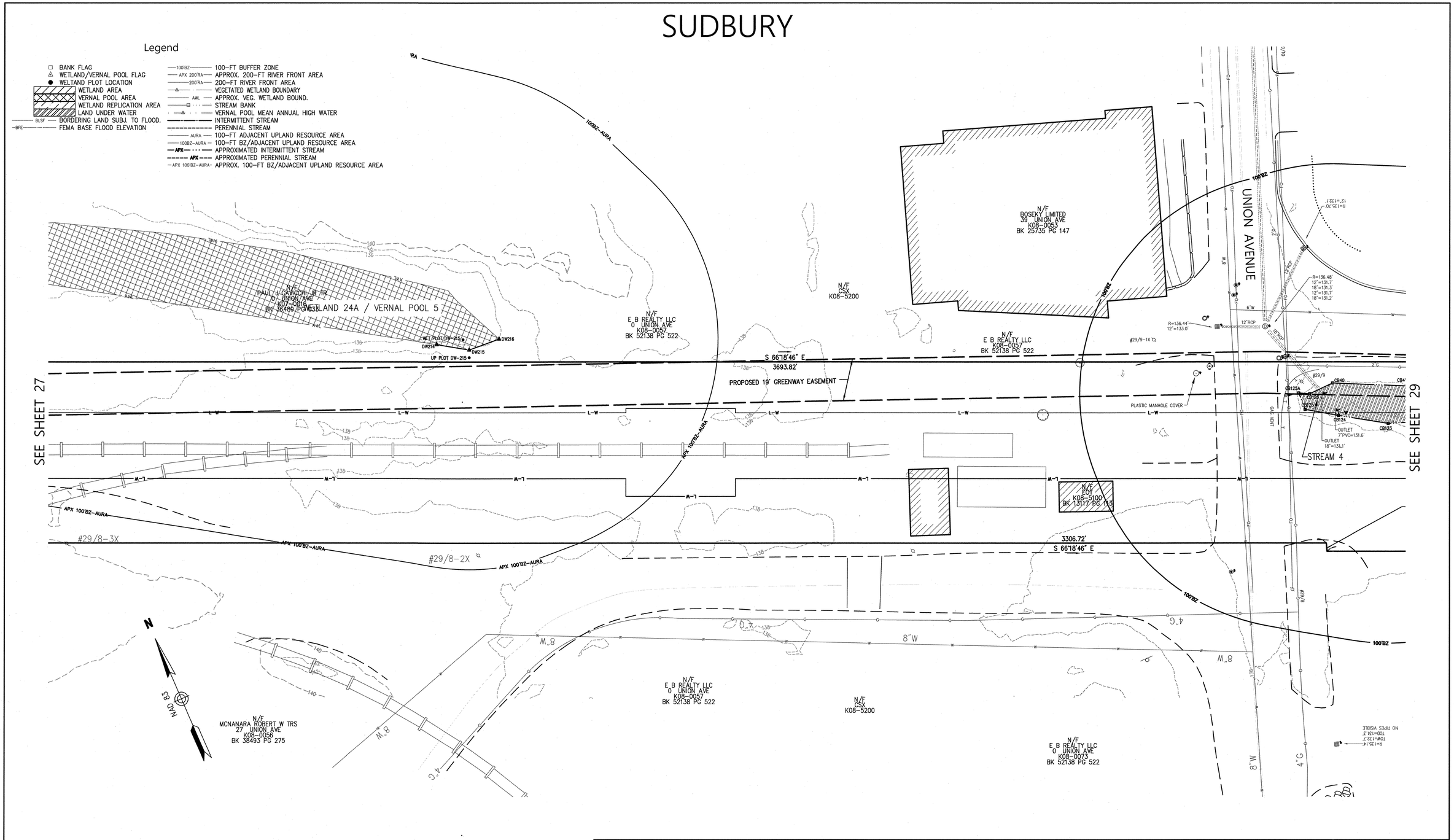

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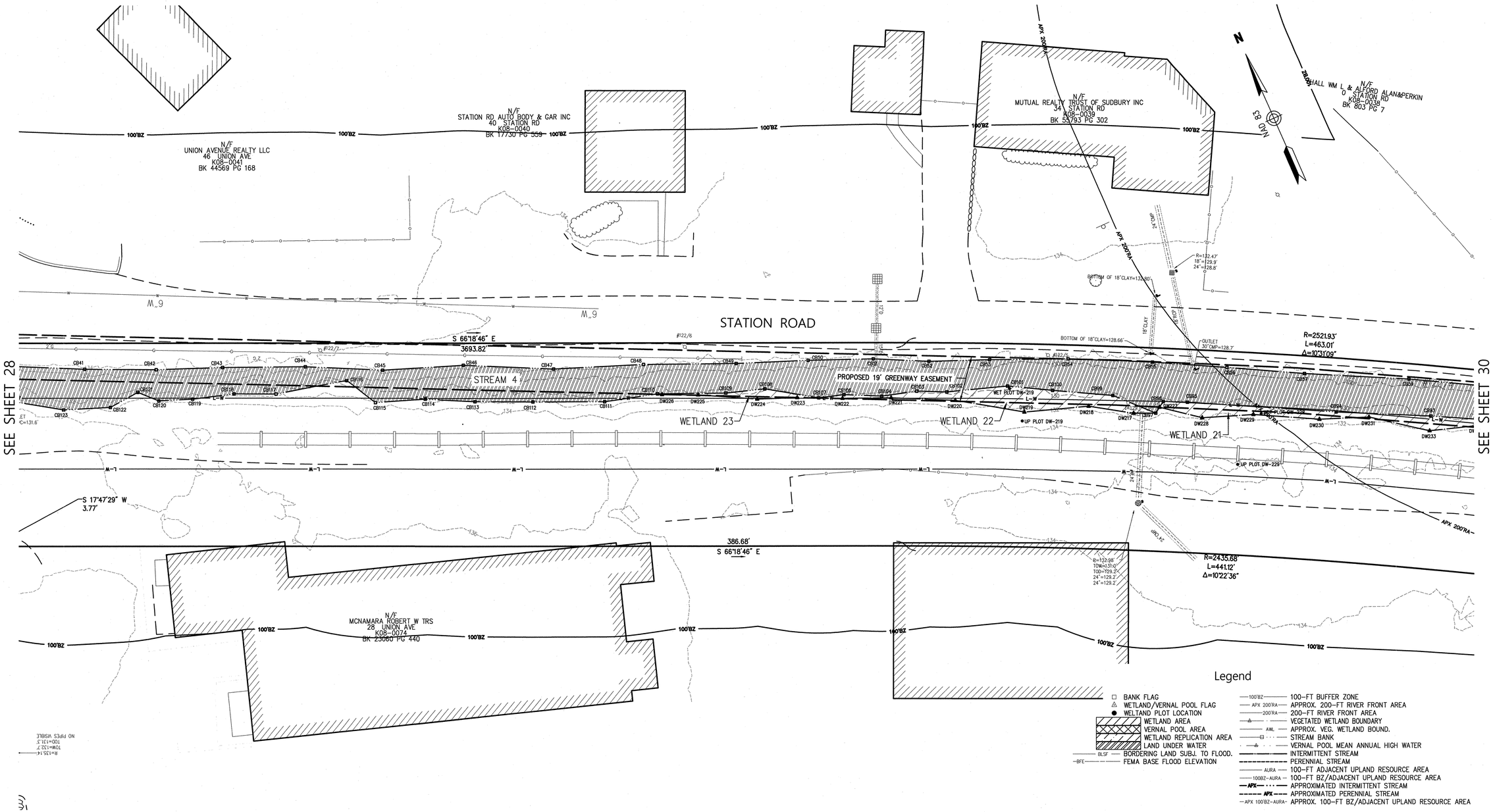

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Note:

VHB EVALUATED THE BORDERING LAND SUBJECT TO FLOODING (BLSF) AND FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE STUDY (FIS) ASSOCIATED WITH HOP BROOK IN SUDBURY. A DISCREPANCY BETWEEN THE FEMA FIS BASE FLOOD ELEVATION (BFE) AND THE EXISTING CONDITIONS TOPOGRAPHIC INFORMATION (AT THE CROSSING OF HOP BROOK AND THE PROJECT'S RIGHT-OF-WAY) WAS FOUND THAT RESULTED IN HOP BROOK NOT HAVING A REGULATORY BLSF AND FLOODPLAIN. BECAUSE OF THIS DISCREPANCY THE BLSF FOR HOP BROOK, BETWEEN UNION AVENUE AND LANDHAM ROAD, HAS BEEN EXCLUDED IN THE ANRAD SUBMISSION. VHB HAS SUBMITTED A DATA REQUEST TO FEMA FOR THE FIS CALCULATIONS AND BACKUP DATA, AND WILL EVALUATE THE ADDITIONAL INFORMATION IN ORDER TO RESOLVE THE DISCREPANCY.

COMMONWEALTH OF MASSACHUSETTS
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- 100BZ-AURA — 100-FT BZ/ADJACENT UPLAND RESOURCE AREA
- APX — APPROXIMATED INTERMITTENT STREAM
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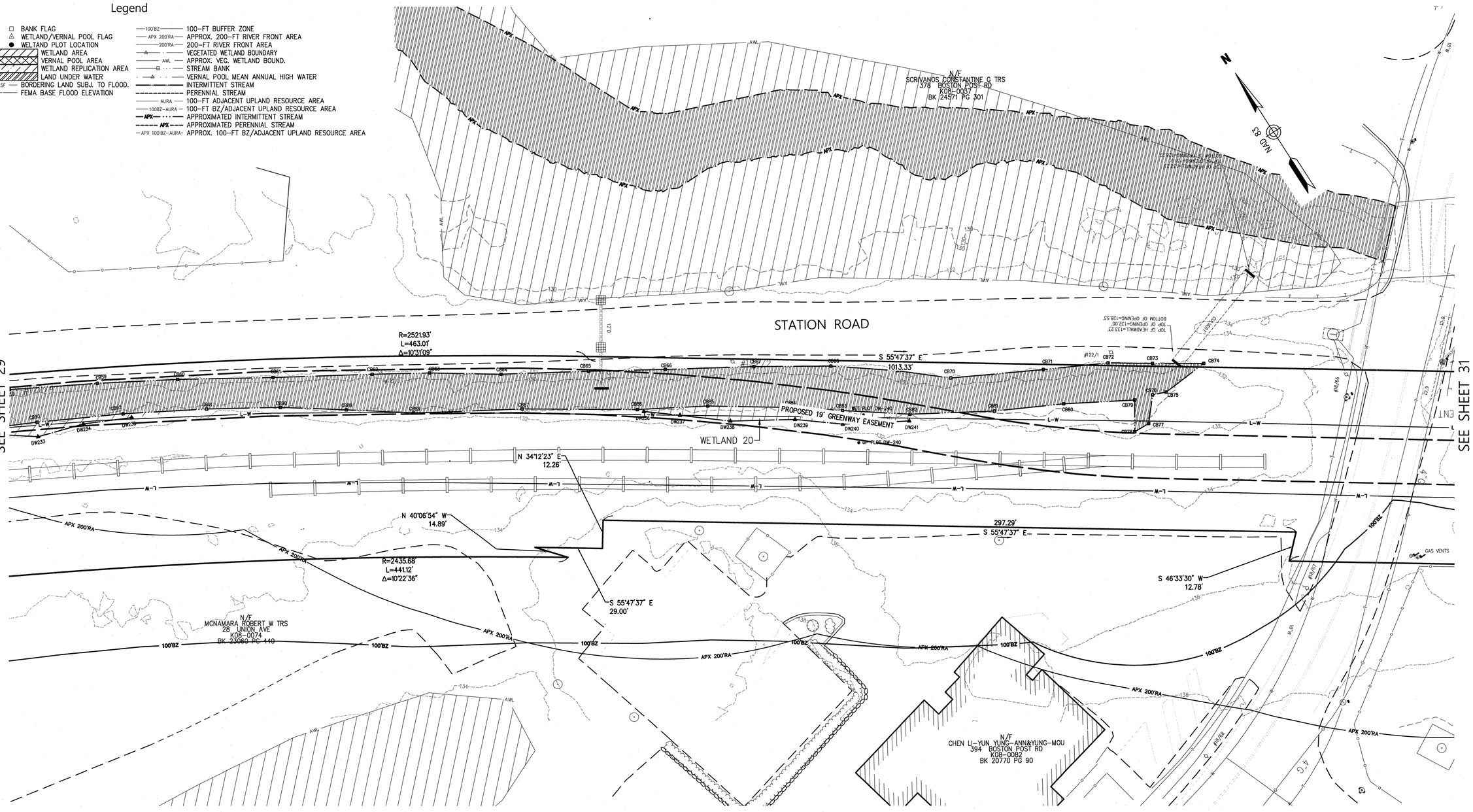

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COMMONWEALTH OF MASSACHUSETTS
JAMES L. DIORIO
NO. 32092
REGISTERED PROFESSIONAL LAND SURVEYOR

20 0 20 40
1"=20'

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

Prepared By
Vanasse Hangen Brustlin, Inc.
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Land Development
Environmental Services
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FIELD BOOK. NO:

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Drawing Title
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SHEET 30 OF 46

Saved Friday, November 17, 2017 12:05:39 PM SRYAN Plotted Friday, November 17, 2017 12:23:39 PM Ryan, Steven \\VHB\PROJ\WAT-LD\12970.01 SUDBURY-HUDSON-SURVEY\CAD\SR\PLANMISC\CONVERSIONTOKORTHUP\12970.01-ANRAD-SUDBURY

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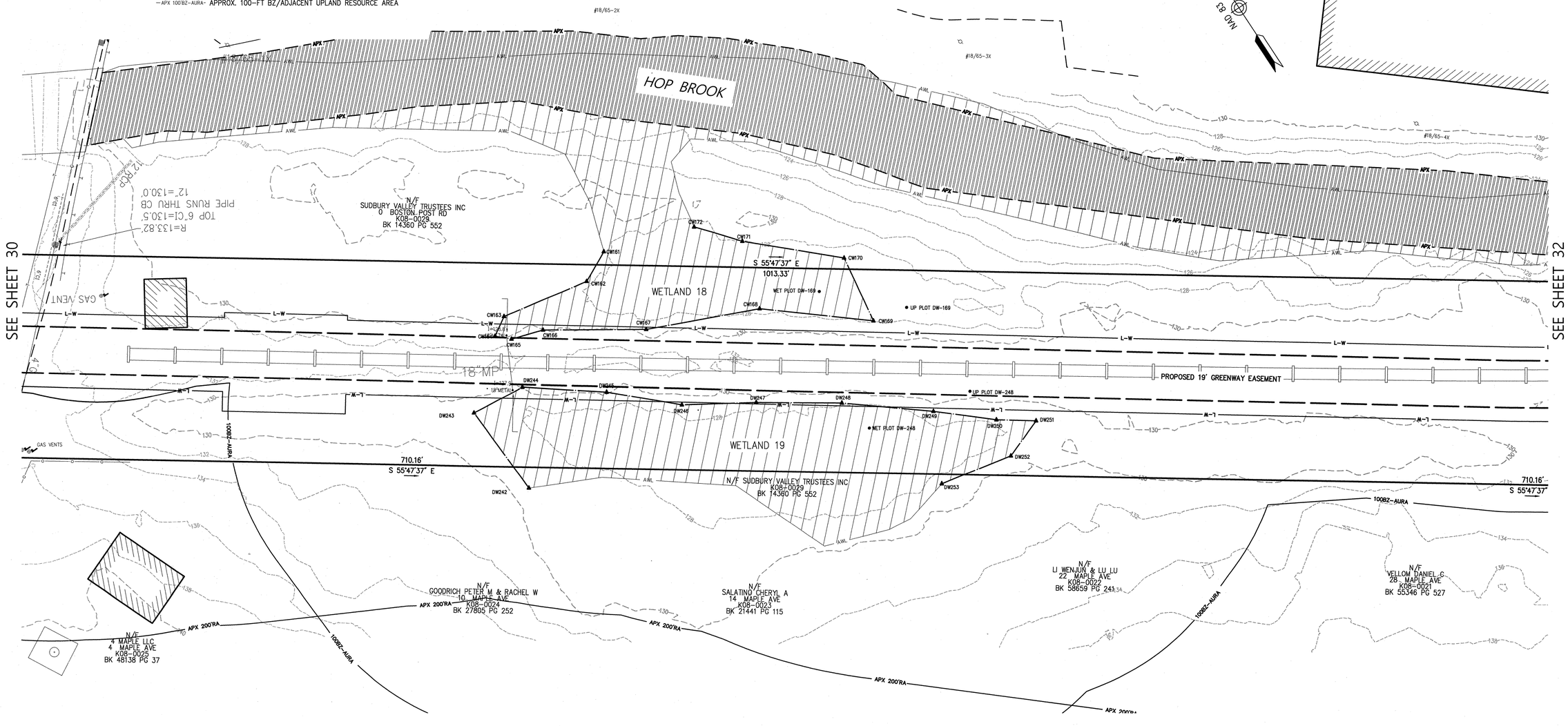

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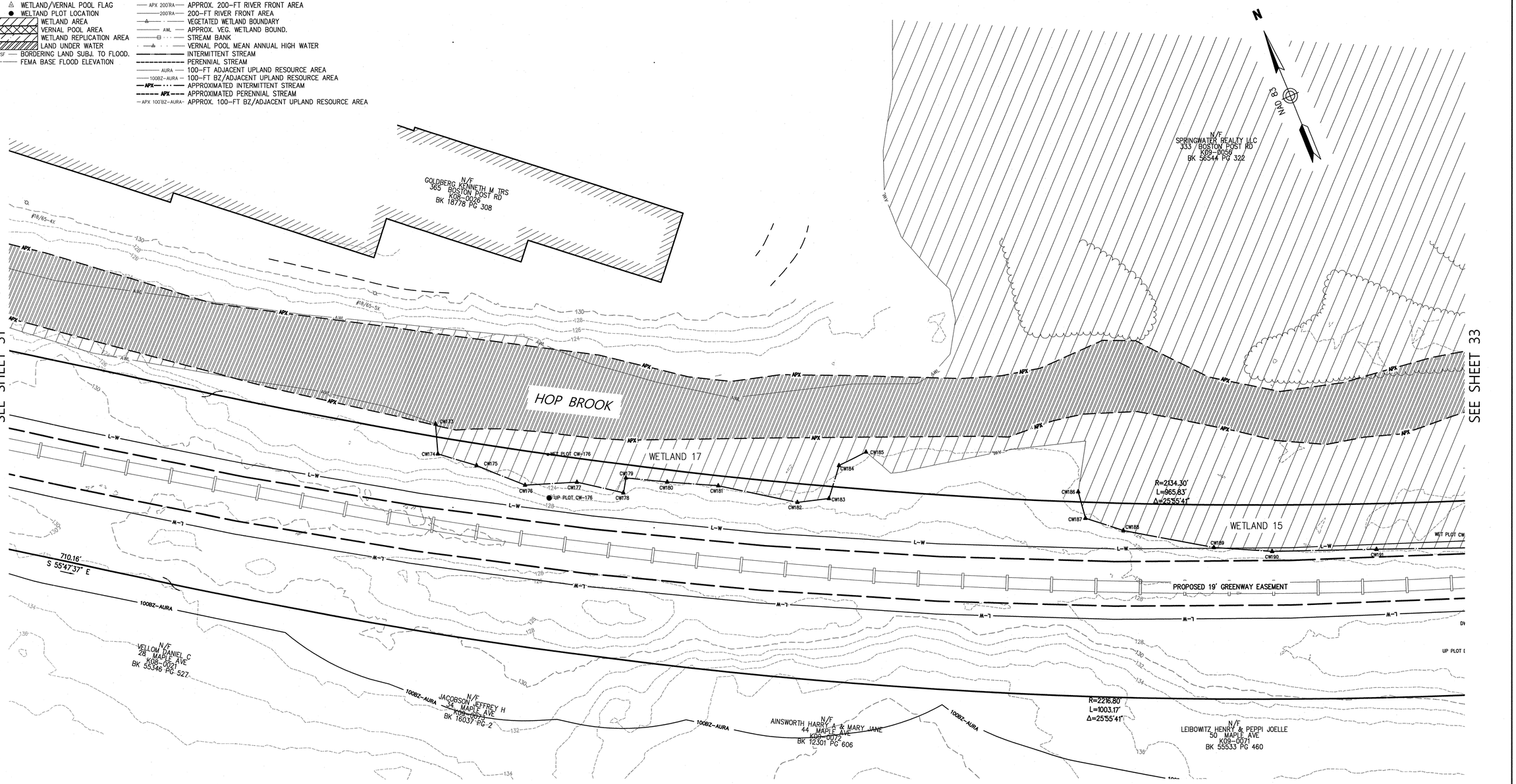

ALL OF SHEET 32 LIES WITHIN THE LIMIT OF THE 200' RIVER FRONT AREA

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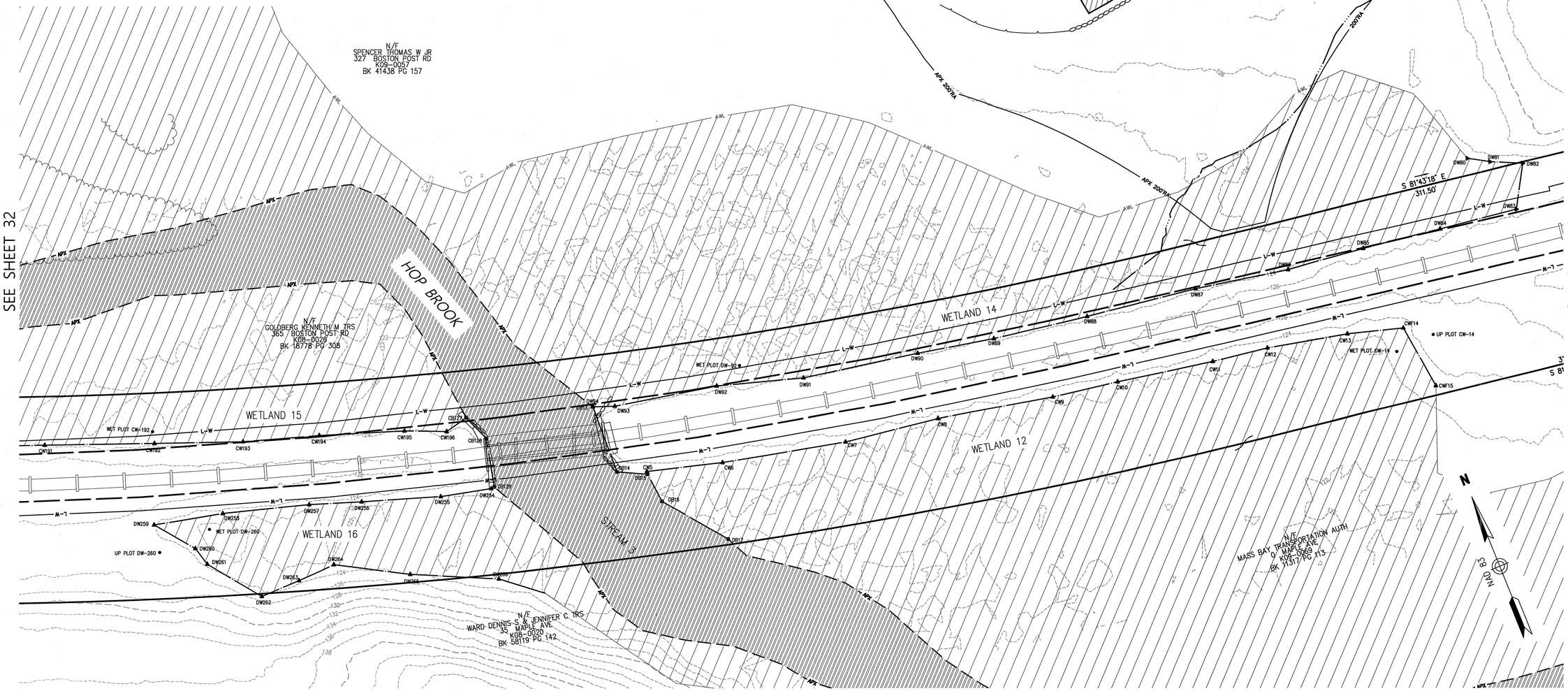

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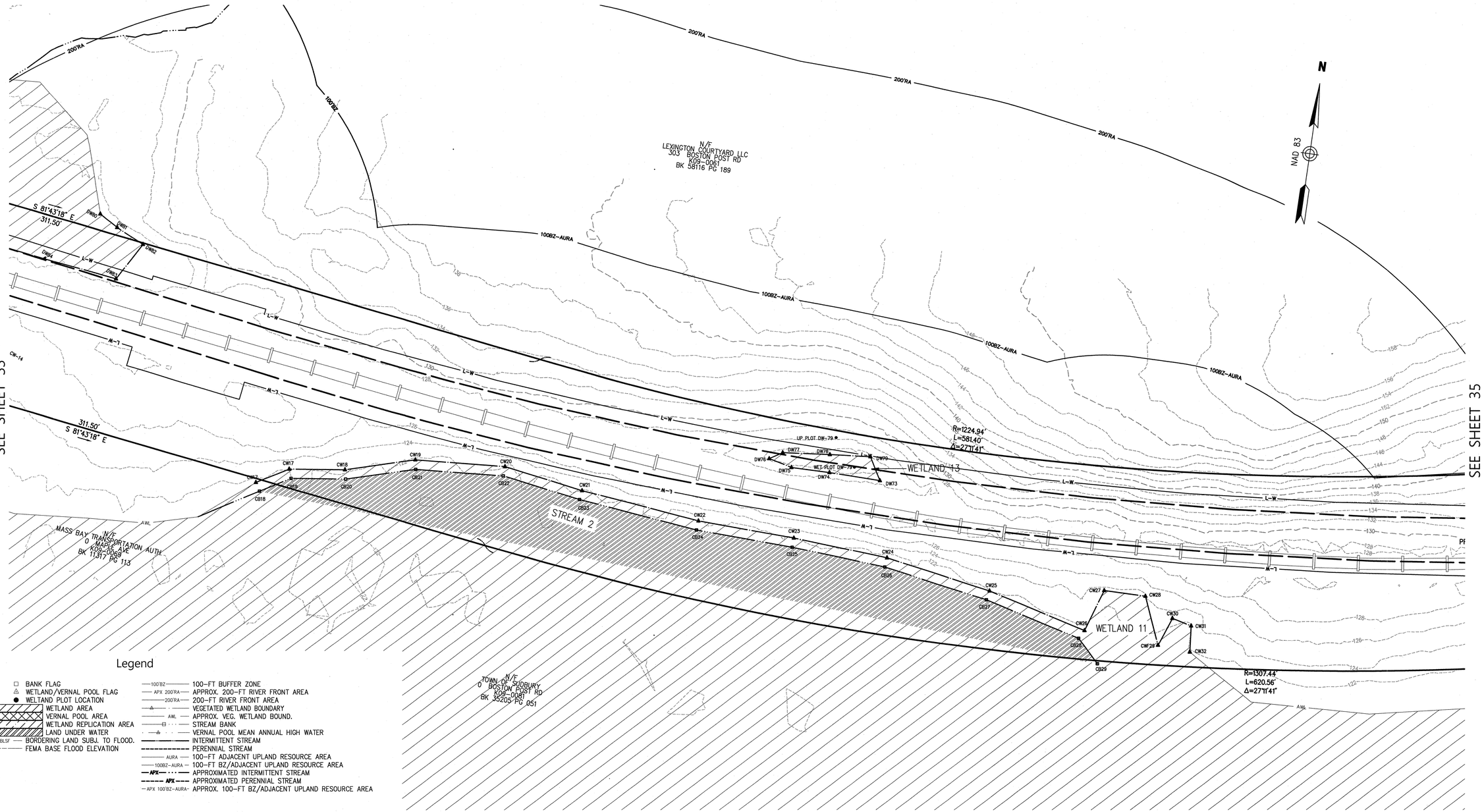

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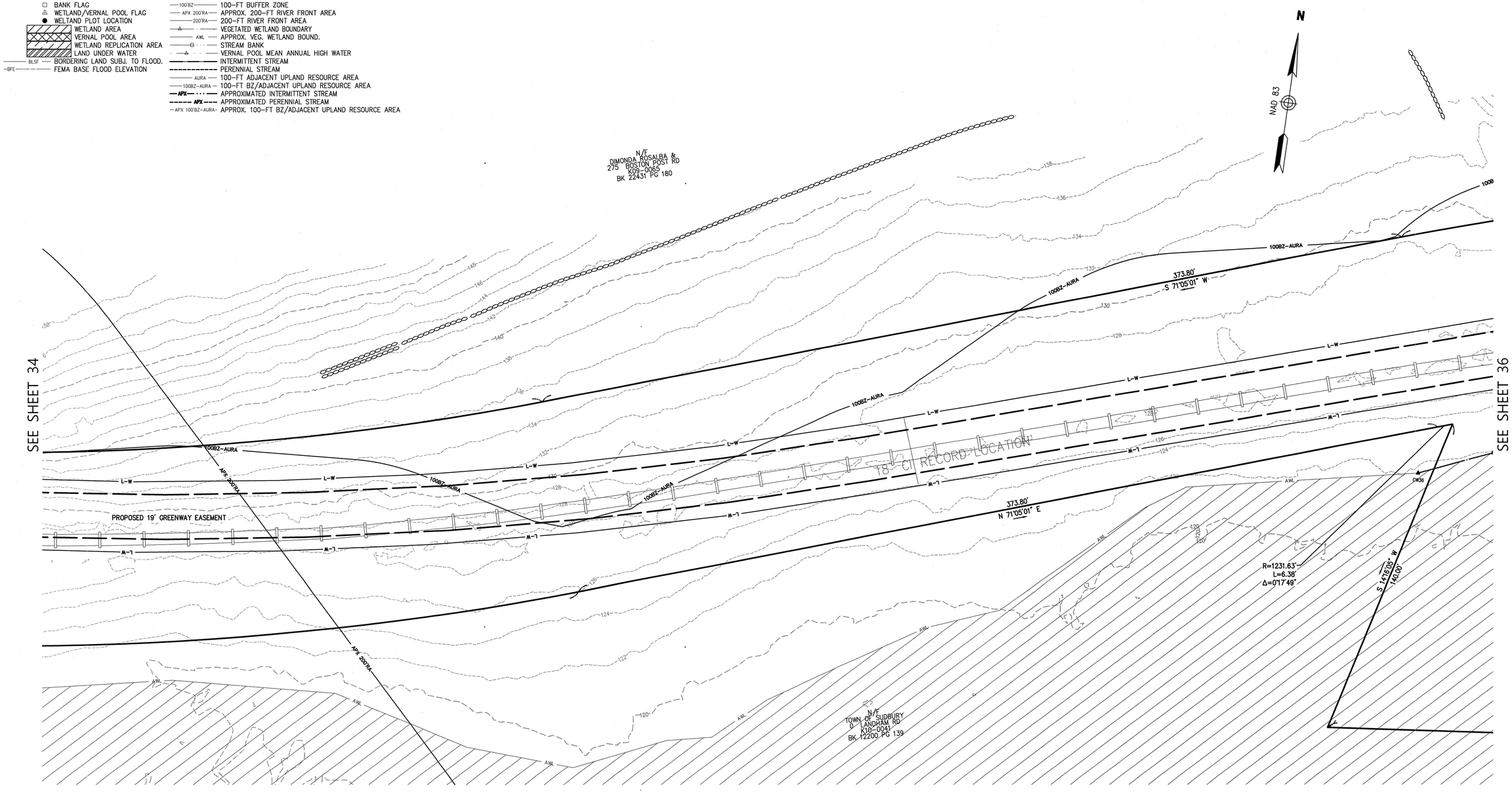

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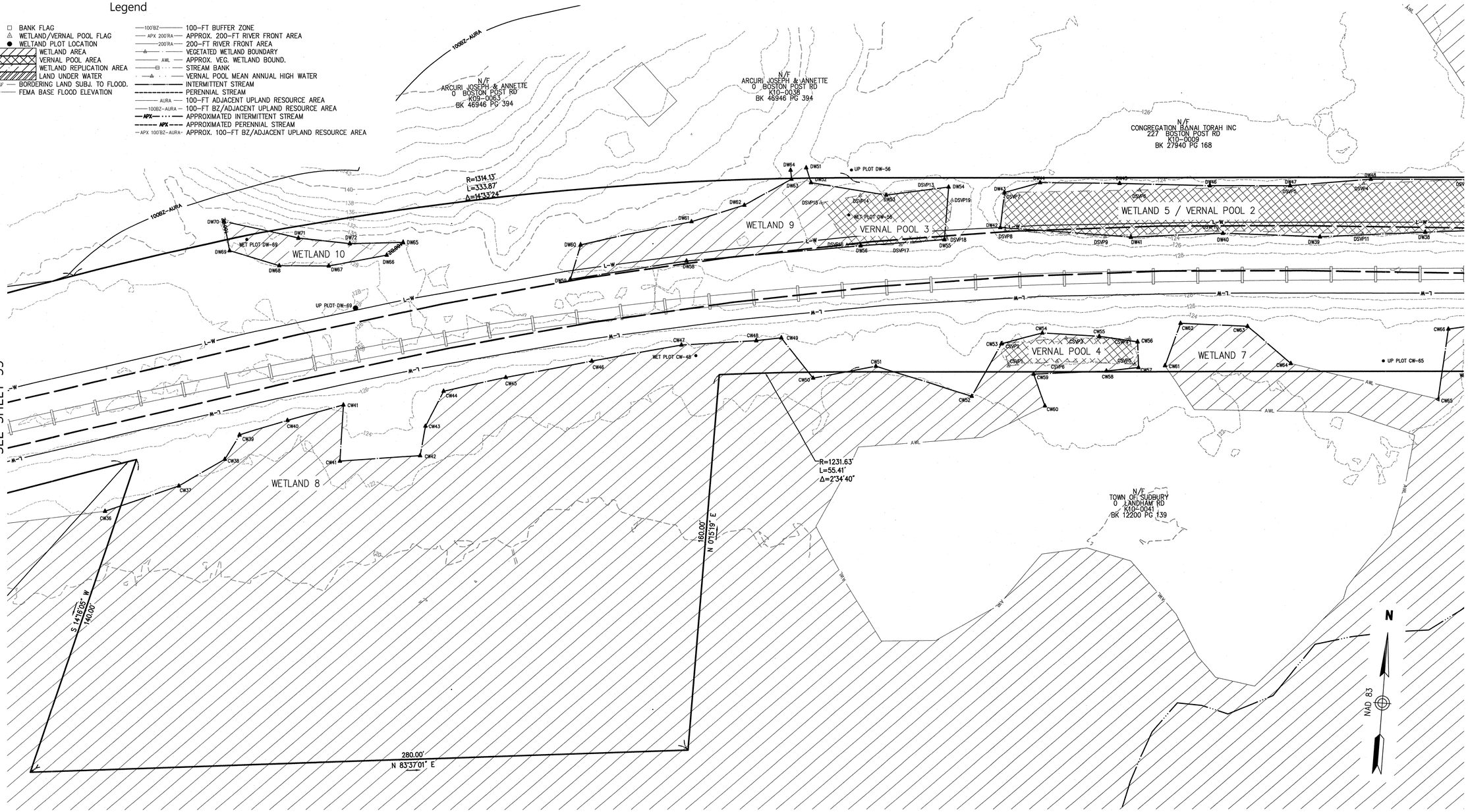

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- APX 100'BZ-AURA — APPROX. 100-FT BZ/ADJACENT UPLAND RESOURCE AREA

APX AURA'RA

N

NAD 83

N/F
CONGREGATION BANAI TORAH INC
225 BOSTON POST RD
K10-0040
BK 27940 PG 168

N/F
TOWN OF SUDBURY
0 LANDHAM RD
K10-0041
BK 12200 PG 139

N/F
SAFAR GASTON
0 LANDHAM RD
K10-0004
BK 48358 PG 458

N 85°29'28" E
1349.19'

1339.20'
N 85°29'28" E

PROPOSED 19' GREENWAY EASEMENT

STREAM 1

2X2.5' BOX CULVERT

12"CMP

I=128.3'
12"CMP

I=127.4'
12"CMP

WETLAND 6

WET PLOT DW-27

UP PLOT DW-27

UP PLOT CW-81

WET PLOT CW-65

SEE SHEET 36

SEE SHEET 38

20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JAMES L DIORIO
NO. 32092
REGISTERED
PROFESSIONAL LAND SURVEYOR

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

Prepared By
vhb
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box9151
Watertown, Massachusetts 02471-9151
617.924.1770 • FAX 617.924.2286

REVISIONS		
NO.	COMMENTS	DATE

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EVERSOURCE ENERGY

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DRAWING NAME: 12970.01-ANRAD-Sudbury.dwg

FIELD BOOK. NO:

Project Title
Sudbury-Hudson Transmission Reliability Project
Sudbury, Massachusetts
Drawing Title
Existing Conditions Plan For ANRAD Submittal

DATE: OCTOBER 18, 2017

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Plotted Friday, November 17, 2017 12:05:39 PM SRYAN

SUDBURY

Legend

- BANK FLAG
- WETLAND/VERNAL POOL FLAG
- WETLAND PLOT LOCATION
- WETLAND AREA
- VERNAL POOL AREA
- WETLAND REPLICATION AREA
- LAND UNDER WATER
- BLSF — BORDERING LAND SUBJ. TO FLOOD.
- BFE — FEMA BASE FLOOD ELEVATION
- 100'BZ — 100-FT BUFFER ZONE
- APX 200'RA — APPROX. 200-FT RIVER FRONT AREA
- 200'RA — 200-FT RIVER FRONT AREA
- VEGETATED WETLAND BOUNDARY
- AWL — APPROX. VEG. WETLAND BOUND.
- STREAM BANK
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- APX 100'BZ-AURA — APPROX. 100-FT BZ/ADJACENT UPLAND RESOURCE AREA

N

NAD 83

SHADOWS

N/F
PEARLMAN ALLAN ETAL TR
209 BOSTON POST RD
K10-0008
BK 15292 PG 175

LANDHAM ROAD

#15/1

#15/2

#15/25

N 85°29'28" E
1349.19'

S 85°55'15" E
55.25'

S 85°55'15" E
55.25'

1339.20'
N 85°29'28" E

SEE SHEET 37

SEE SHEET 39

100BZ-AURA

APX AURATRA

N/F
CORTHELL CRAIG R & ANGUS ERIN
271 LANDHAM RD
K10-0005
BK 51371 PG 461

N/F
TRANTER EDWARD J & KRISTIE
277 LANDHAM RD
K10-0006
BK 47521 PG 148

20 0 20 40
1"=20'

JAMES L. DIORIO NO. 32092 — COMMONWEALTH OF MASSACHUSETTS — REGISTERED PROFESSIONAL LAND SURVEYOR

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

Prepared By
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box9151
Watertown, Massachusetts 02471-9151
617.924.1770 • FAX 617.924.2286

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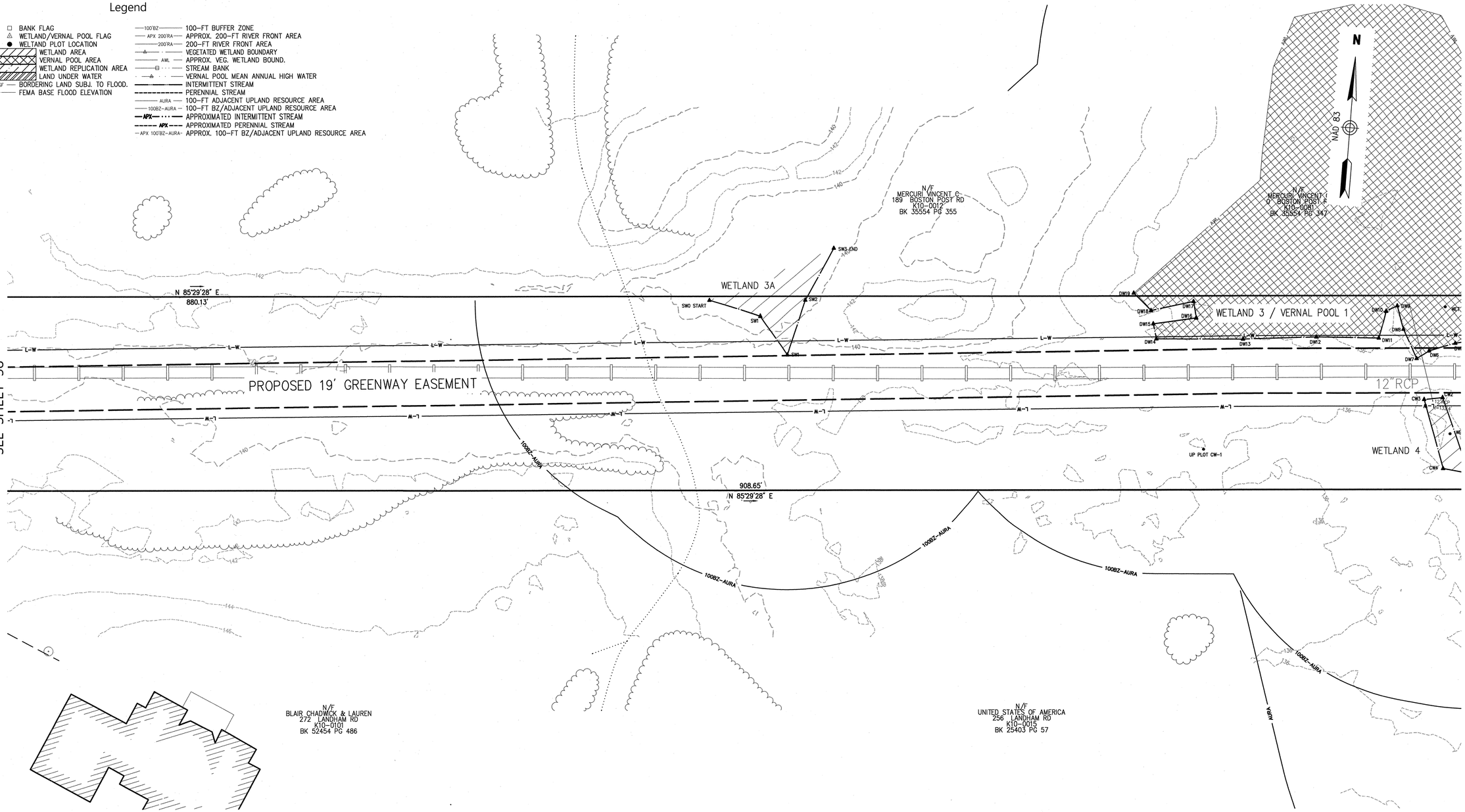

20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JAMES L. DIORIO
NO. 32092
REGISTERED PROFESSIONAL LAND SURVEYOR

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NO.	TYPE	HEIGHT	SPAN	GUYS

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SHEET 39 OF 46

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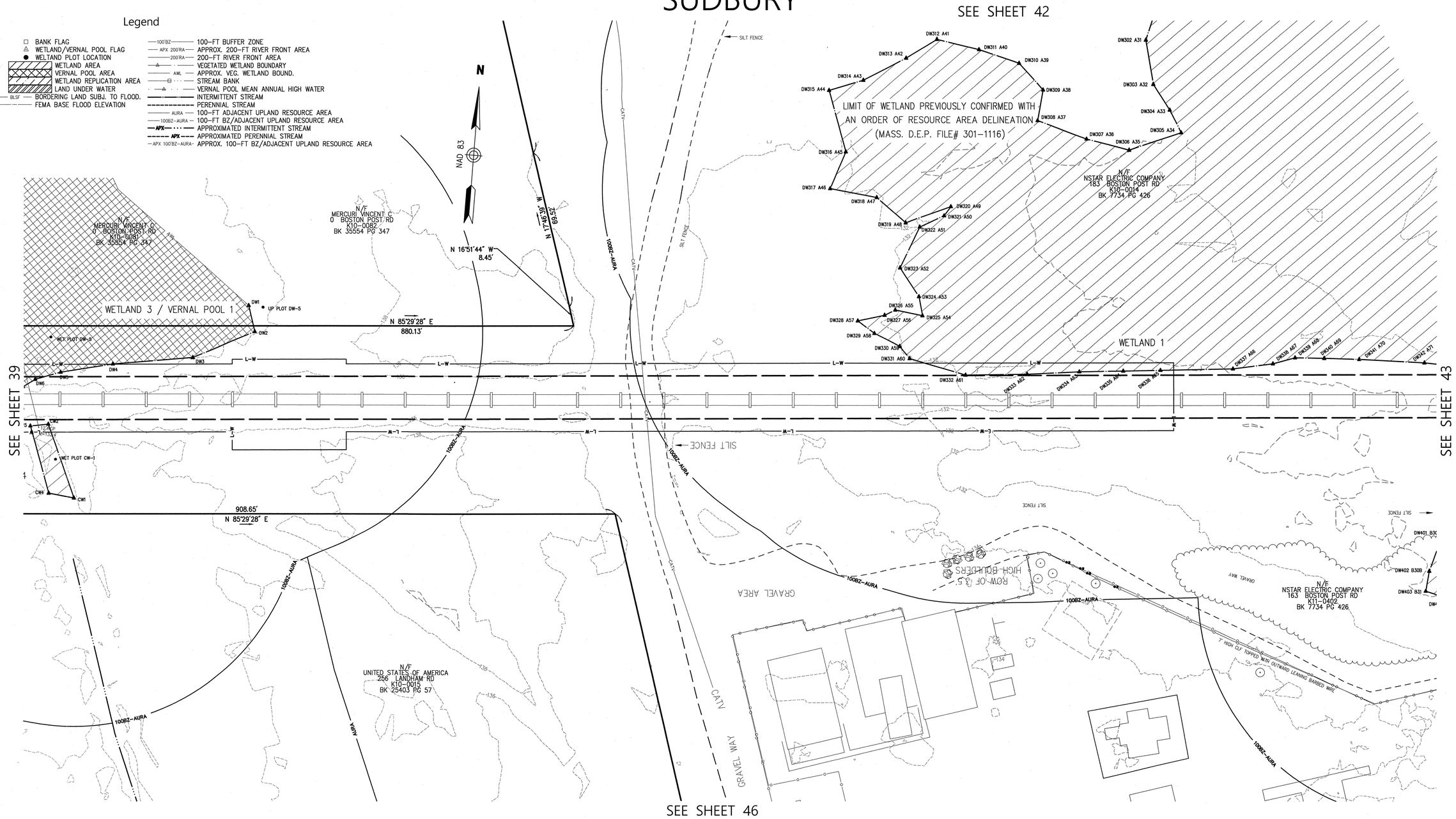
SUDBURY



20 0 20 40
1"=20'

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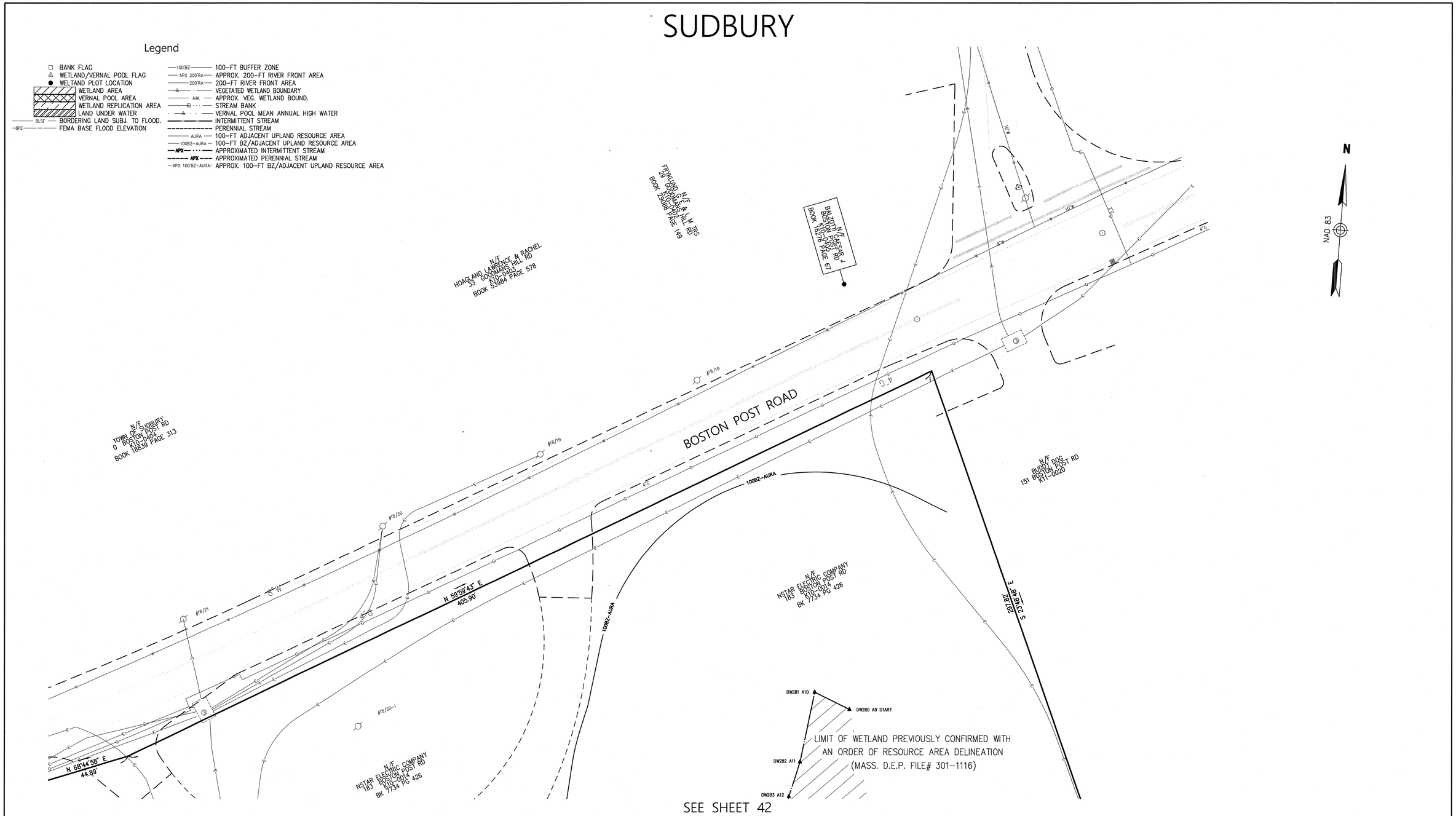

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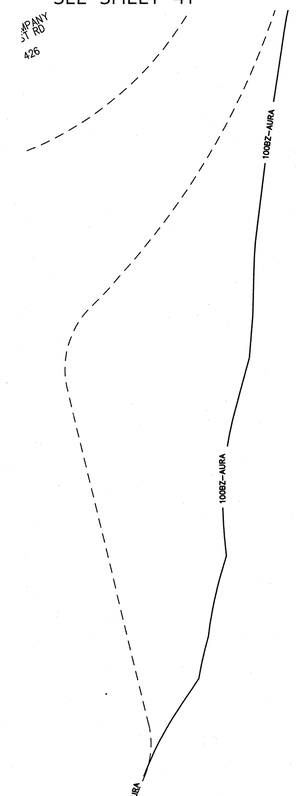
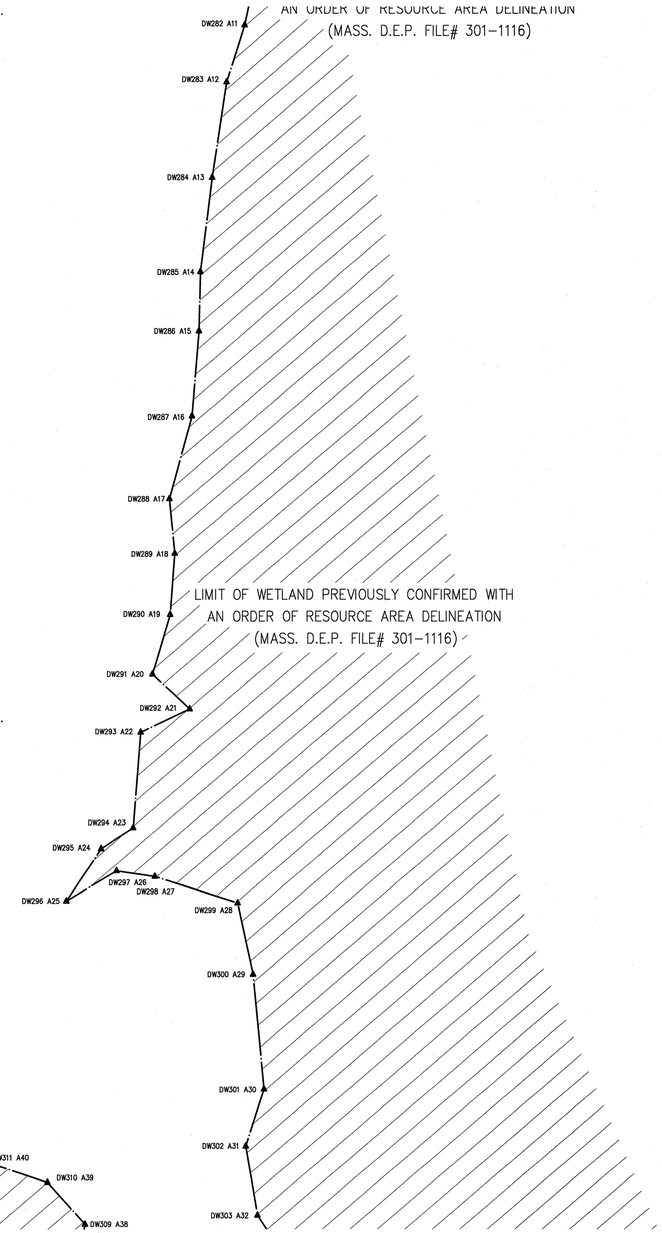
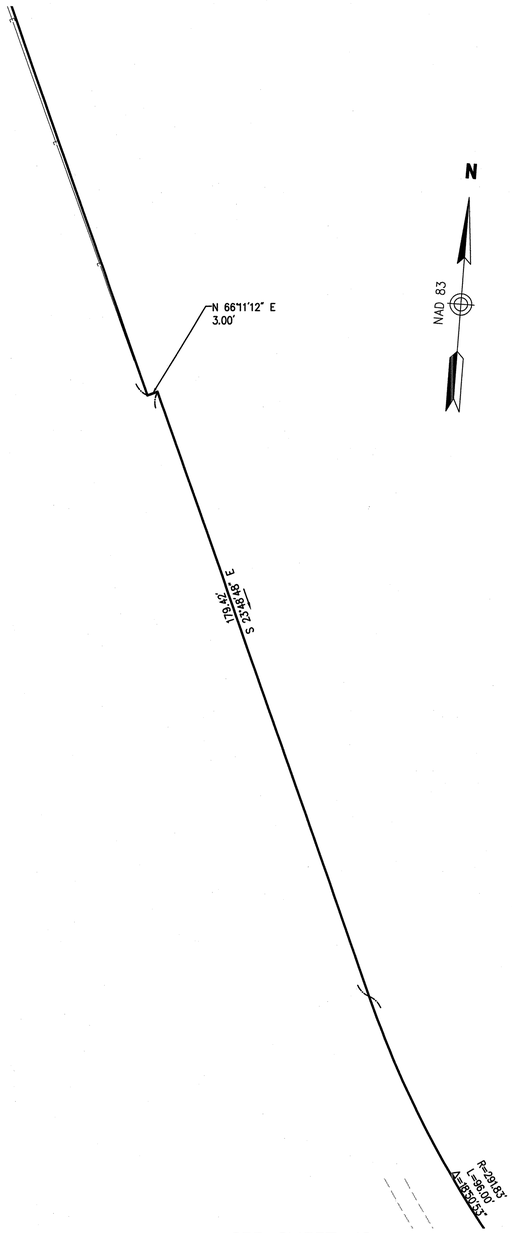
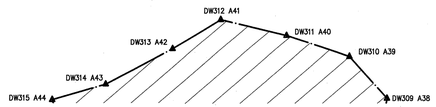
SEE SHEET 41









SEE SHEET 40

SEE SHEET 43

20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JAMES L. DIORIO
NO. 32092
REGISTERED PROFESSIONAL LAND SURVEYOR

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

Prepared By
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box9151
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SHEET 42 OF 46

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- APX — APPROXIMATED PERENNIAL STREAM
- APX 100'BZ-AURA — APPROX. 100-FT BZ/ADJACENT UPLAND RESOURCE AREA

N/F
BUDDY DOG
151 BOSTON POST RD
K11-0020

N/F
RICHARD J BOSSE HOLDINGS LLC
141 BOSTON POST RD
K11-0019
BK 1250 PG 85

N

NAD 83

100BZ-AURA

R=256.04'
L=121.85'
Δ=27°16'02"

N 85°29'28" E

LIMIT OF WETLAND PREVIOUSLY CONFIRMED WITH AN ORDER OF RESOURCE AREA DELINEATION (MASS. D.E.P. FILE# 301-1116)

DW350 A80
DW349 A79
DW348 A78
DW347 A76
DW346 A75
DW345 A74
DW344 A73
DW343 A72
DW342 A71

PROPOSED 19' GREENWAY EASEMENT

SEE SHEET 40

DW399 B28
DW398 B27
DW397 B26
DW396 B25
DW400 B29
DW385 B24
DW394 B23
DW393 B22
DW392 B21
DW392 B20
DW391 B19
DW390 B18
DW389 B17
DW388 B16
DW387 B17
DW386 B14
DW385 B12
DW384 B11
DW383 B10
DW382 B9
DW381 B8

WETLAND 2

LIMIT OF WETLAND PREVIOUSLY CONFIRMED WITH AN ORDER OF RESOURCE AREA DELINEATION (MASS. D.E.P. FILE# 301-1116)

SILT FENCE

DW401 B30A
DW402 B30B
DW403 B31
DW404 B32
DW405 B33
DW406 B34
DW407 B35
DW408 B36
DW409 B37
DW410 B38
DW411 B39
DW412 B40
DW413 B41
DW414 B42
DW415 B43
DW417 B45
DW418 B44
DW419 B47
DW424 B53
DW425 B54

N/F
NSTAR ELECTRIC COMPANY
163 BOSTON POST RD
K11-0402
BK 7734 PG 426

GATE

3-CONCRETE FOOTINGS

7' HIGH CLF TOPPED WITH OUTWARD LEANING BARBED WIRE

SILT FENCE

INLAND LEANING BARBED WIRE

100BZ-AURA

SEE SHEET 44

20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JAMES L. DIORIO
NO. 32092
REGISTERED PROFESSIONAL LAND SURVEYOR

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

Prepared By
Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services
101 Walnut Street, P.O. Box9151
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SHEET 43 OF 46

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SEE SHEET 43

SEE SHEET 46

N/F
NSTAR ELECTRIC COMPANY
163 BOSTON POST RD
K11-0402
BK 7734 PG 426

7 INCH GLF TOPPED WITH OUTWARD LEANING BARBED WIRE

GATE

100BZ-AURA

DW419 B47
DW419A B48
DW420 B49
DW421 B50
DW423 B52
DW424 B53
DW425 B54
DW426 B55
DW427 B56
DW428 B57
DW428 B58
DW429 B59
DW430 B60
DW431 B6
DW432 B62
DW433 B63
DW434 B64
DW435 B65
DW436 B66
DW437 B67
DW438 B68
DW439 B69
DW440 B70
DW441 B71
DW442 B72
DW443 B73
DW443 B74
DW444 B75
DW445 B76

LIMIT OF WETLAND PREVIOUSLY CONFIRMED WITH AN ORDER OF RESOURCE AREA DELINEATION (MASS. D.E.P. FILE# 301-1116)

639.45'
N 59°25'22" E

TENNESSEE GAS PIPELINE

N/F
UNITED STATES OF AMERICA
0 PELHAM ISLAND RD
K11-0400
BK 22103 PG 515

400.40'
N 50°30'22" E

SEE SHEET 45

N

NAD 83

20 0 20 40
1"=20'

JAMES L. DIORIO NO. 32092 REGISTERED PROFESSIONAL LAND SURVEYOR COMMONWEALTH OF MASSACHUSETTS

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

Prepared By
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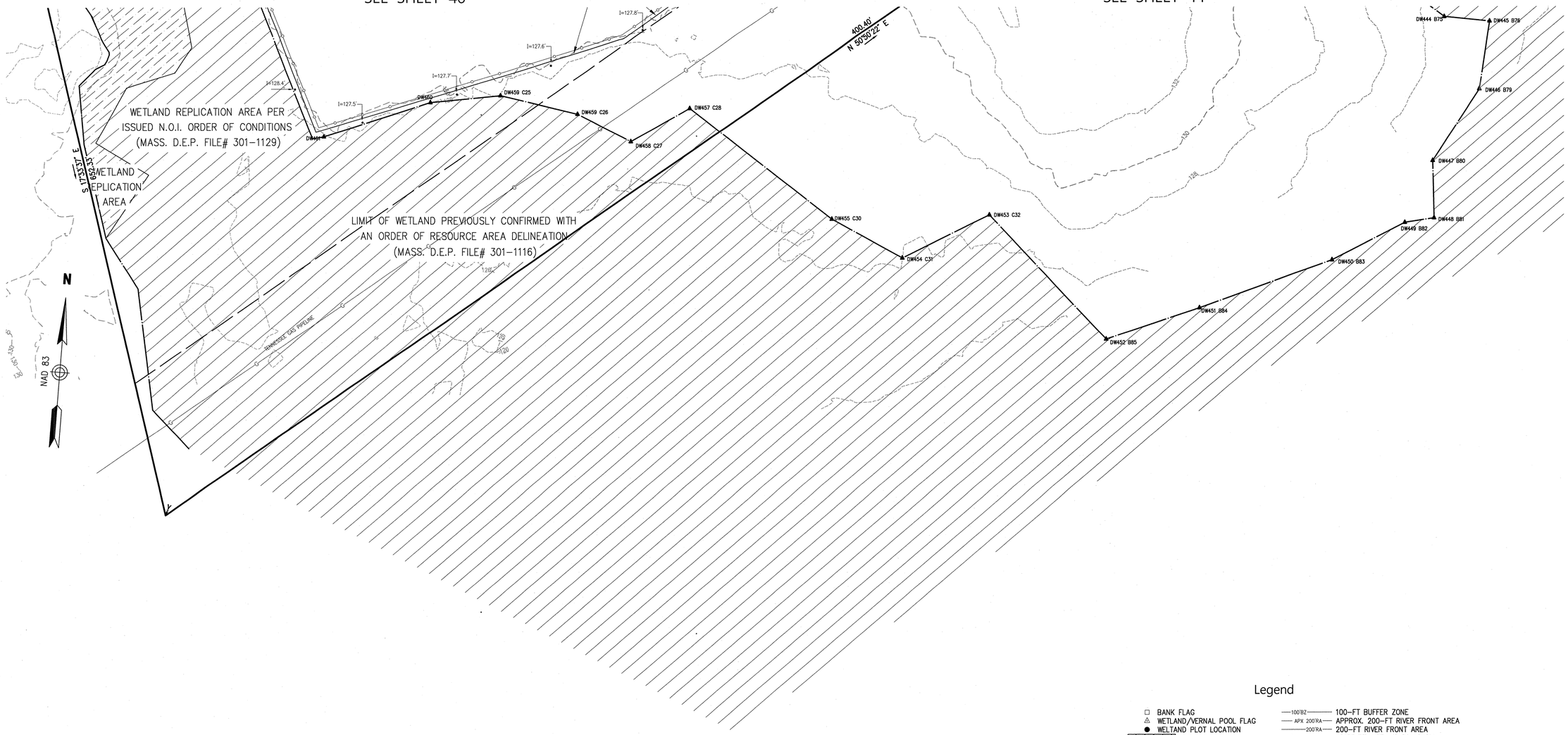
SUDBURY

SEE SHEET 46

SEE SHEET 44



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20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JAMES L. DIORIO
NO. 32052
REGISTERED PROFESSIONAL LAND SURVEYOR

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

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- 100'BZ — 100-FT BUFFER ZONE
- APX 200'RA — APPROX. 200-FT RIVER FRONT AREA
- 200'RA — 200-FT RIVER FRONT AREA
- VEGETATED WETLAND BOUNDARY
- AWL — APPROX. VEG. WETLAND BOUND.
- STREAM BANK
- VERNAL POOL MEAN ANNUAL HIGH WATER
- INTERMITTENT STREAM
- PERENNIAL STREAM
- AURA — 100-FT ADJACENT UPLAND RESOURCE AREA
- 100BZ-AURA — 100-FT BZ/ADJACENT UPLAND RESOURCE AREA
- APX — APPROXIMATED INTERMITTENT STREAM
- APX — APPROXIMATED PERENNIAL STREAM
- APX 100'BZ-AURA — APPROX. 100-FT BZ/ADJACENT UPLAND RESOURCE AREA

SEE SHEET 40

F
OF AMERICA
DHAM RD
015
PG 57

S 17°33'37" E
652.33'

GRAVEL WAY

7' HIGH C.L.F. TOPPED WITH OUTWARD LEANING BARBED WIRE

100BZ-AURA

GATE POST

GATE POST

N/F
NSTAR ELECTRIC COMPANY
163 BOSTON POST RD
K11-0402
BK 7734 PG 426

LIMIT OF WETLAND PREVIOUSLY CONFIRMED WITH AN ORDER OF RESOURCE AREA DELINEATION (MASS. D.E.P. FILE# 301-1116)

WETLAND REPLICATION AREA PER ISSUED N.O.I. ORDER OF CONDITIONS (MASS. D.E.P. FILE# 301-1129)

WETLAND REPLICATION AREA

I=129.6'

I=128.1'

CONCRETE BLOCK RETAINING WALL (TYP)

I=127.8'

I=127.6'

SEE SHEET 44

SEE SHEET 45

N

NAD 83

20 0 20 40
1"=20'

COMMONWEALTH OF MASSACHUSETTS
JAMES L. DIORIO
NO. 32092
REGISTERED PROFESSIONAL LAND SURVEYOR

STRUCTURES				
NO.	TYPE	HEIGHT	SPAN	GUYS

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REVISIONS

NO.	COMMENTS	DATE

Issued For
EVERSOURCE ENERGY

SCALE: 20 FEET TO THE INCH

DRAWING NAME: 12970.01-ANRAD-Sudbury.dwg

FIELD BOOK. NO:

Project Title
Sudbury-Hudson Transmission Reliability Project
Sudbury, Massachusetts

Drawing Title
Existing Conditions Plan For ANRAD Submittal

DATE: OCTOBER 18, 2017

SHEET 46 OF 46