

NOTICE OF PUBLIC HEARING SUDBURY CONSERVATION COMMISSION

The Sudbury Conservation Commission will hold a public hearing to review the Notice of Intent filing for replacement of an existing culvert, construction of a sidewalk, and road realignment, within the 100-foot Buffer Zone, Riverfront Area, and Land Under Waterways, pursuant to the State Act and local Bylaw, at Old Framingham Road, Sudbury MA. Dan Nason, DPW Director, applicant. The hearing will be held on Mon., March 22, 2021 at 6:45 pm, via Zoom. Please see the Conservation Commission web page for further information.

<https://sudbury.ma.us/conservationcommission/meeting/conservation-commission-meeting-monday-march-22-2021/>

SUDBURY CONSERVATION COMMISSION
March 8, 2021



EcoTec, Inc.

ENVIRONMENTAL CONSULTING SERVICES

102 Grove Street

Worcester, MA 01605-2629

508-752-9666 / Fax: 508-752-9494

NOTICE OF INTENT

Old Framingham Road Sidewalk Extension

Sudbury, MA

March, 2021

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2. Abutters List & Locus Map
3. Technical Memorandum by Woodard & Curran, Inc. (including project description, alternatives analysis, wetland report, USGS & other map figures)
4. Project Plans



Massachusetts Department of Environmental Protection

eDEP Transaction Copy

Here is the file you requested for your records.

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Username: **ECOTEC**

Transaction ID: **1262281**

Document: **WPA Form 3 - NOI**

Size of File: **248.80K**

Status of Transaction: **In Process**

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

Provided by MassDEP:
MassDEP File #:
eDEP Transaction #:1262281
City/Town:SUDBURY

A.General Information

1. Project Location:

a. Street Address	OLD FRAMINGHAM ROAD		
b. City/Town	SUDBURY	c. Zip Code	01776
d. Latitude	42.35156N	e. Longitude	71.43304W
f. Map/Plat #	N/A	g.Parcel/Lot #	N/A

2. Applicant:

☐ Individual ☒ Organization

a. First Name	DANIEL	b.Last Name	NASON
c. Organization	TOWN OF SUDBURY DEPT. OF PUBLIC WORKS		
d. Mailing Address	275 OLD LANCASTER ROAD		
e. City/Town	SUDBURY	f. State	MA
g. Zip Code	01776		
h. Phone Number	978-443-2209	i. Fax	
j. Email	nasond@sudbury.ma.us		

3.Property Owner:

☐ more than one owner

a. First Name	DANIEL	b. Last Name	NASON
c. Organization	TOWN OF SUDBURY DEPT. OF PUBLIC WORKS		
d. Mailing Address	102 GROVE STREET		
e. City/Town	WORCESTER	f.State	MA
g. Zip Code	01605		
h. Phone Number	150-875-2966	i. Fax	
j.Email	aallen@ecotecinc.com		

4.Representative:

a. First Name	ARTHUR	b. Last Name	ALLEN
c. Organization	ECOTEC, INC.		
d. Mailing Address	102 GROVE STREET		
e. City/Town	WORCESTER	f. State	MA
g. Zip Code	01605		
h.Phone Number	508-752-9666	i.Fax	
j.Email	aallen@ecotecinc.com		

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

a.Total Fee Paid	0.00	b.State Fee Paid	0.00	c.City/Town Fee Paid	0.00
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6.General Project Description:

7a.Project Type:

- | | |
|---|--|
| 1. <input type="checkbox"/> Single Family Home | 2. <input type="checkbox"/> Residential Subdivision |
| 3. <input type="checkbox"/> Limited Project Driveway Crossing | 4. <input type="checkbox"/> Commercial/Industrial |
| 5. <input type="checkbox"/> Dock/Pier | 6. <input type="checkbox"/> Utilities |
| 7. <input type="checkbox"/> Coastal Engineering Structure | 8. <input type="checkbox"/> Agriculture (eg., cranberries, forestry) |
| 9. <input checked="" type="checkbox"/> Transportation | 10. <input type="checkbox"/> Other |

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

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1. ☒ Yes ☐ No If yes, describe which limited project applies to this project:

2. Limited Project 310 CMR 10.53(3)(F). MAINTENANCE AND IMPROVEMENT OF AN EXISTING PUBLIC ROADWAY.

8. Property recorded at the Registry of Deeds for:

a. County:

SOUTHERN MIDDLESEX

b. Certificate:

c. Book:

N/A

d. Page:

N/A

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

1. Buffer Zone & Resource Area Impacts (temporary & permanent):

☐ This is a Buffer Zone only project - Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.

2. Inland Resource Areas: (See 310 CMR 10.54 - 10.58, if not applicable, go to Section B.3. Coastal Resource Areas)

Resource Area Size of Proposed Alteration Proposed Replacement (if any)

a. ☒ Bank

22

1. linear feet

10

2. linear feet

b. ☐ Bordering Vegetated Wetland

1. square feet

2. square feet

c. ☒ Land under Waterbodies and Waterways

6

1. Square feet

0

2. square feet

0

3. cubic yards dredged

d. ☐ Bordering Land Subject to Flooding

1. square feet

2. square feet

3. cubic feet of flood storage lost

4. cubic feet replaced

e. ☐ Isolated Land Subject to Flooding

1. square feet

2. cubic feet of flood storage lost

3. cubic feet replaced

f. ☒ Riverfront Area

unnamed

1. Name of Waterway (if any)

2. Width of Riverfront Area (check one)

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☒ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project

9069

square feet

4. Proposed Alteration of the Riverfront Area:

9069

7004

2065

a. total square feet

b. square feet within 100 ft.

c. square feet between 100 ft. and 200 ft.

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☒ Yes ☐ No☒ Yes ☐ No

Resource Area

Size of Proposed Alteration

Proposed Replacement (if any)

Indicate size under

Land under the ocean below,

1. square feet

2. cubic yards dredged

Indicate size under Coastal Beaches and/or Coastal Dunes, below

1. square feet

2. cubic yards beach nourishment

1. square feet

2. cubic yards dune nourishment

1. linear feet

1. square feet

1. square feet

2. sq ft restoration, rehab, crea.

1. square feet

2. cubic yards dredged

1. square feet

Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above

1. cubic yards dredged

1. square feet

☐ Restoration/Replacement

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

a. square feet of BVW

b. square feet of Salt Marsh

☐ Project Involves Streams Crossings

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If the project involves Stream Crossings, please enter the number of new stream crossings/number of replacement stream crossings.

a. number of new stream crossings

b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage of Endangered Species program (NHESP)?

a. ☐ Yes ☒ No

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

Natural Heritage and Endangered Species

Program

Division of Fisheries and Wildlife

1 Rabbit Hill Road

Westborough, MA 01581

b. Date of map:11/3/2020

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18)...

c. Submit Supplemental Information for Endangered Species Review * (Check boxes as they apply)

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

(a) within Wetland Resource Area

percentage/acreage

(b) outside Resource Area

percentage/acreage

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

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

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

b. ☐ Photographs representative of the site

c. ☐ MESA filing fee (fee information available at: <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/mesa-fee-schedule.html>)

Make check payable to "Natural Heritage & Endangered Species Fund" and **mail to NHESP** at above address

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

d. ☐ Vegetation cover type map of site

e. ☐ Project plans showing Priority & Estimated Habitat boundaries

d. OR Check One of the following

1. ☐ Project is exempt from MESA review. Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, <http://www.mass.gov/eea/agencies/dfg/dfw/laws-regulations/cmr/321-cmr-1000-massachusetts-endangered-species-act.html#10.14>; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing.

a. NHESP Tracking Number

b. Date submitted to NHESP

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Provided by MassDEP:

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City/Town:SUDBURY

3. ☐ Separate MESA review completed.

Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review...

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

a. ☒ Not applicable - project is in inland resource area only

b. ☐ Yes ☐ No

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

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

North Shore - Hull to New Hampshire:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 S. Rodney French Blvd
New Bedford, MA 02744

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

If yes, it may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office.

For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional office.

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

a. ☐ Yes ☒ No

If yes, provide name of ACEC (see instructions to WPA Form 3 or DEP Website for ACEC locations). **Note:** electronic filers click on Website.

b. ACEC Name

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

a. ☐ Yes ☒ No

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

a. ☐ Yes ☒ No

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

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

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

2. ☐ A portion of the site constitutes redevelopment

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

b. ☒ No, Explain why the project is exempt:

1. ☐ Single Family Home

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☒ 2. Emergency Road Repair

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

D. Additional Information

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

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

1. USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the ☒ Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland ☒ [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.
3. Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s). ☒ Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.
4. List the titles and dates for all plans and other materials submitted with this NOI. ☒

a. Plan Title: **b. Plan Prepared By:** **c. Plan Signed/Stamped By:** **c. Revised Final Date:** **e. Scale:**

ENGINEER'S
TECHNICAL MEMO
INCLUDING
WETLAND REPORT,
DATA FORMS AND
PROJECT PLANS

WOODARD &
CURRAN

March 4, 2021

5. If there is more than one property owner, please attach a list of these property owners not listed on this form. ☐
6. Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed. ☐
7. Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed. ☐
8. Attach NOI Wetland Fee Transmittal Form. ☒
9. Attach Stormwater Report, if needed. ☐

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E. Fees

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

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

2. Municipal Check Number	3. Check date
4. State Check Number	5. Check date
6. Payer name on check: First Name	7. Payer name on check: Last Name

F. Signatures and Submittal Requirements

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

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

1. Signature of Applicant	2. Date
3. Signature of Property Owner(if different)	4. Date
Arthur Allen	3/4/2021
5. Signature of Representative (if any)	6. Date

For Conservation Commission:

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

For MassDEP:

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

Other:

If the applicant has checked the "yes" box in Section C, Items 1-3, above, refer to that section and the Instructions for additional submittal requirements.

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 3 - Notice of Wetland Fee Transmittal
Form

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

Provided by MassDEP:
MassDEP File #:
eDEP Transaction #:1262281
City/Town:SUDBURY

A. Applicant Information

1. Applicant:

a. First Name	DANIEL	b. Last Name	NASON
c. Organization	TOWN OF SUDBURY DEPT. OF PUBLIC WORKS		
d. Mailing Address	275 OLD LANCASTER ROAD		
e. City/Town	SUDBURY	f. State	MA
g. Zip Code	01776		
h. Phone Number	9784432209	i. Fax	
j. Email	nasond@sudbury.ma.us		

2. Property Owner:(if different)

a. First Name	DANIEL	b. Last Name	NASON
c. Organization	TOWN OF SUDBURY DEPT. OF PUBLIC WORKS		
d. Mailing Address	102 GROVE STREET		
e. City/Town	WORCESTER	f. State	MA
g. Zip Code	01605		
h. Phone Number	15087529666	i. Fax	
j. Email	aallen@ecotecinc.com		

3. Project Location:

a. Street Address	OLD FRAMINGHAM ROAD	b. City/Town	SUDBURY
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Are you exempted from Fee? ☐ (YOU HAVE SELECTED 'YES')

Note: Fee will be exempted if you are one of the following:

- City/Town/County/District
- Municipal Housing Authority
- Indian Tribe Housing Authority
- MBTA

State agencies are only exempt if the fee is less than \$100

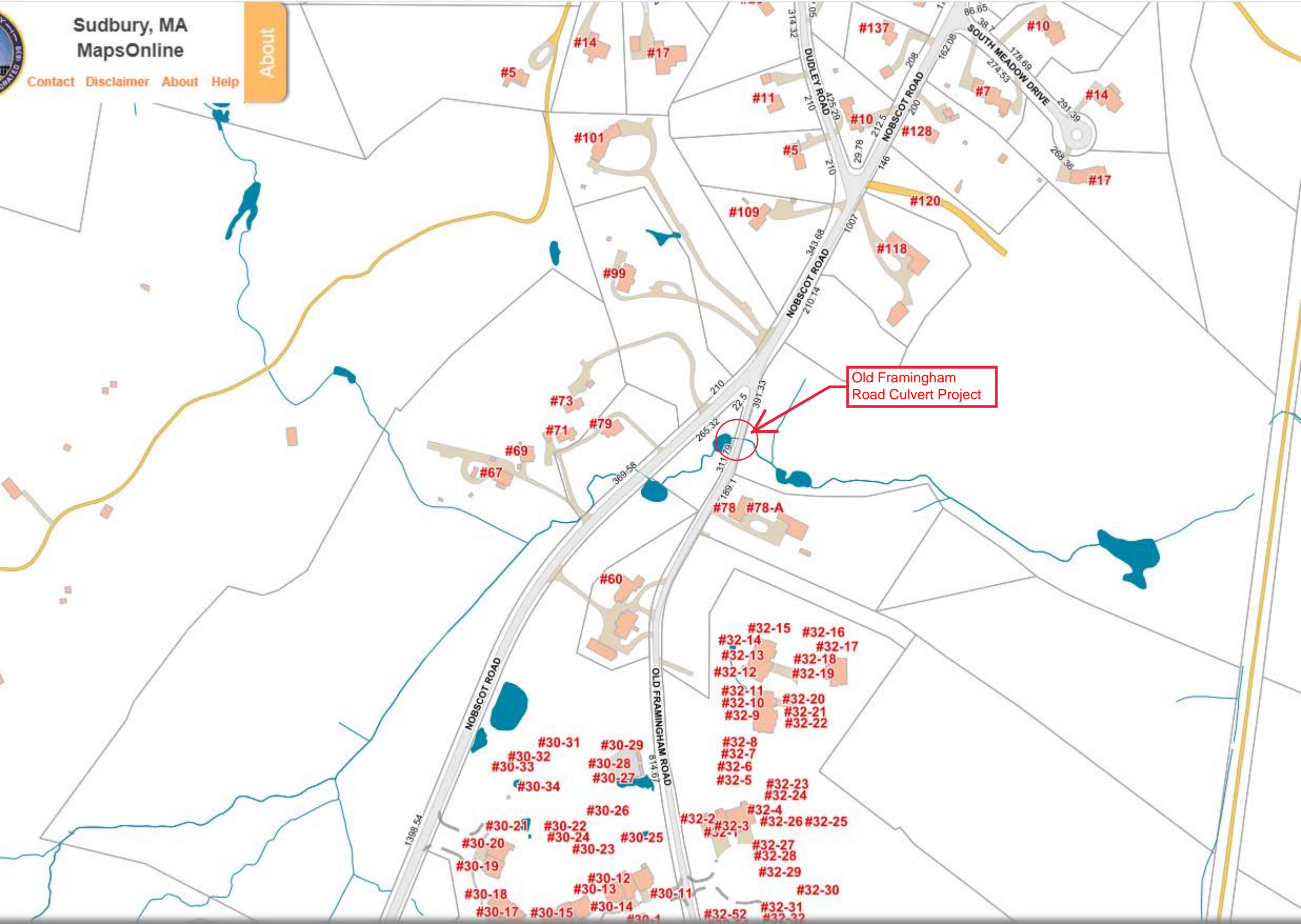
B. Fees

Activity Type	Activity Number	Activity Fee	RF Multiplier	Sub Total
	City/Town share of filling fee	State share of filing fee	Total Project Fee	
	\$0.00	\$0.00	\$0.00	

abutters_i	abutters_owner1	abutters_owner2	abutters_address
L07-0024	SOWINSKI PAWEL & HAACK MONIKA		78 OLD FRAMINGHAM RD
L07-0029	GETTINGS BRIAN		17 MAIN STREET
L07-0030	PARK DONNA R		99 NOBSCOT RD
L07-0040	GONG XIAO C & LIU YAO YAO		101 NOBSCOT RD
L07-0202	MURPHY AUDREY C TRUSTEE	HOLLY REALTY TRUST	120 NOBSCOT RD

abutters_a abutters_t abutters_s abutters_z abutters_k abutters_location

	SUDBURY	MA	01776	54298-54	78 OLD FRAMINGHAM RD
	WINDSOR	VT	05089	1564-169	79 NOBSCOT RD
	SUDBURY	MA	01776	216497	99 NOBSCOT RD
	SUDBURY	MA	01776	62841-342	101 NOBSCOT RD
	SUDBURY	MA	01776	46796-553	120 NOBSCOT RD



TECHNICAL MEMORANDUM

TO: Arthur Allen, EcoTec, Inc.
PREPARED BY: Dan Pasquale, Woodard & Curran
REVIEWED BY: Scott Salvucci, Woodard & Curran
DATE: March 4, 2021
RE: Old Framingham Road Sidewalk Extension and Roadway Realignment



1. INTRODUCTION

Woodard & Curran has developed a preliminary-phase design of a sidewalk extension alongside Old Framingham Road in Sudbury, MA. Additionally, the design includes a realignment of Old Framingham Road and a re-configuration of the Old Framingham Road/Nobscot Road intersection. This memorandum is intended to support filing of a Notice of Intent application with the Conservation Commission for authorization to construct the sidewalk extension and roadway improvements. The sidewalk extension would improve pedestrian safety and enhance access between the residential communities along Old Framingham Road and an existing sidewalk along Nobscot Road. An existing reinforced concrete pipe (RCP) culvert carries an unnamed perennial stream beneath Old Framingham Road. To accommodate the sidewalk and adjacent roadway alignment, Woodard & Curran recommends replacing a portion of the existing culvert with new RCP piping. Please refer to Figure 1 for the Site Location Map.

2. EXISTING CONDITIONS EVALUATION

2.1 Survey and Existing Unnamed Stream Channel Condition

An existing conditions survey of the site was performed by Jarvis Land Survey, with field data collected in November and December 2020. A 43.4-foot long closed-channel/pipe culvert carries an unnamed stream flowing west to east beneath Old Framingham Road. Upstream of the crossing, the stream pools in an area west of the roadway, impounded by a stone masonry headwall. A weir structure forms the outlet of the upstream pool area, discharging into an approximately 12-foot long, 3.5-foot-wide channelized stream section with stone masonry walls. The downstream 6-feet of the channelized section is covered by a concrete slab structure. Refer to Figure 2 for a photo of the closed-channel stream section. The stream then enters a 30" RCP pipe and flows beneath the roadway. Based on information from the Town, a doghouse-style drop inlet structure was built on top of the RCP pipe near the upstream end, with the top half of the pipe within the structure footprint removed to allow direct discharge of stormwater runoff from the roadway into the culvert. The existing pipe culvert is set at a slope of approximately 2.4%. Downstream of the roadway, the RCP culvert discharges into a wooded area. The upstream and downstream properties are both privately owned. An existing condition survey is included as Attachment A.

2.2 Wetland Resource Evaluation

A wetland resource evaluation was performed by EcoTec, Inc. on November 4, 2020 to evaluate the presence of resource areas within the project area. Wetland flags were delineated for the boundary of bordering vegetated wetlands (BVW) associated with the upstream and downstream wetland complexes, labeled B1-B5 and A1-A10, respectively. Flags marking the Mean Annual High-water Line (MAHWL) of the perennial stream on the east and west sides of the crossing were also delineated, labeled RA1-RA8 and RB1-RB10/RB1A-RB5A, respectively. The intermittent stream continues from the culvert outlet through wooded areas and

relatively flat marshes within farmland before ultimately draining to Landham Brook (also known as Allowance Brook). The Wetland Resource Evaluation is included as Attachment B.

2.3 Site Soil Conditions



On December 1, 2020, two test pits (TP-1 and TP-2) were excavated adjacent to the existing roadway near the culvert crossing under the supervision of Woodard & Curran staff. The purpose of the test pit excavation was to gain a general understanding of the soil conditions and groundwater level at the site. Subsurface conditions consisted primarily of poorly sorted silt/sand layers. No significant organic soil layer was discovered. As soil conditions can vary across a given site, Woodard & Curran recommends that soil conditions be monitored during construction activities and that any unsuitable soil materials encountered at the subgrade be removed and replaced with clean fill material. Groundwater was encountered at 6.2-feet below ground surface at TP-1 and at 4.5-feet below ground surface at TP-2, corresponding to elevations ranging from approximately 152.8-154.0.

2.4 FEMA FIRM Review

Review of the Federal Emergency Management Agency (FEMA) flood maps indicates that the site is within an Area of Minimal Flood Hazard as mapped on FEMA Flood Insurance Rate Map (FIRM) Panel 25017C0506F. The FIRMette showing the project site is included as Attachment C.

3. DESIGN CONSIDERATIONS

The design intent was to provide the minimum required cross-sectional sidewalk and roadway width at the culvert crossing. This ensures pedestrian accessibility and safe vehicular passage while minimizing land disturbance near the stream. Because there is a steep drop-off along the eastern side of the road right-of-way, a line approximately coincidental with the eastern edge of the existing roadway was held for the back of sidewalk line at the culvert crossing. The western edge of the proposed roadway alignment is shifted west of the current alignment by a maximum of 5.83-feet at the crossing location.

Modifications to the culvert are required to accommodate the proposed alignment. The new roadway footprint would cross over the concrete slab enclosing the channelized stream. Because the current structural condition of the concrete slab is unknown and possibly unsuitable for regular vehicle loading, Woodard & Curran recommends removing the concrete slab, as discussed in the Proposed Conditions section below.

Additionally, the existing stormwater drop inlet structure over the pipe culvert would be positioned close to the proposed roadway centerline, which is a non-optimal location for capturing runoff from the road surface. Woodard & Curran recommends removing the existing drop inlet structure.

4. PROPOSED CONDITIONS

Please refer to Figure 3 for preliminary-phase project plans. The proposed sidewalk width is 5-feet, and the proposed roadway width is 18-feet. A 0.5-foot-wide vertical granite curb will separate the roadway from the sidewalk. To facilitate construction of the new sidewalk extension and roadway alignment, Woodard & Curran recommends replacing the existing 30" RCP culvert from the current RCP inlet up to and including the cut-open drop inlet pipe with new 30" RCP pipe. Woodard & Curran also recommends replacing the concrete slab-covered portion of the channel with additional 30" RCP pipe to the upstream limit of the existing concrete slab. A concrete headwall will be constructed within the stone masonry channel at the new pipe inlet. The existing stone masonry channel walls and the walls bordering the upstream marsh pool area will receive new mortar as part of the work. The new piping will provide a structurally-sound conveyance for the culvert and allow for the westward shift of the roadway.



Woodard & Curran also recommends constructing a new deep-sump catch basin with a grate inlet at the west edge of the roadway south of the culvert crossing to replace the drop inlet. The new deep-sump catch basin would form the low point along the road surface, which would be cross-pitched to the west similar to the existing roadway cross-slope. The catch basin would connect to an existing drain manhole (DMH) south of the culvert crossing with 12" HDPE pipe. Flow from the existing DMH is conveyed east and discharges to the wooded area immediately downstream of the existing RCP culvert outlet. It is assumed that during extreme precipitation events, any overflow from the catch basin would flow into the open channel section of the stream.

The proposed configuration would replace the current stormwater inlet with a new inlet in an optimal location to capture runoff from the proposed roadway alignment. It would also provide an improvement to water quality—the existing drop inlet structure provides no treatment of runoff before discharge to the brook, while the deep-sump catch basin would provide a small level of treatment before discharging into the drainage system.

The total length of the sidewalk extension is approximately 681-feet, measured from the existing sidewalk at Nobscot Road to the northern terminus of the existing Old Framingham Road sidewalk. Additional work farther from the crossing will be needed to construct the full length of the sidewalk extension. An existing catch basin in front of #78 Old Framingham Road will be removed and re-located within the roadway footprint, and a utility pole west of the roadway will be relocated to provide sufficient clearance between it and the proposed edge of pavement. The Town intends to acquire a walkway easement from the owners of #78 Old Framingham Road, and some re-grading along the frontage of the property will be required. Additional grading is proposed within a Town-owned property south of #78 Old Framingham Road to achieve a more gradual sidewalk slope.

As part of this project, the intersection of Old Framingham Road and Nobscot Road will be re-configured to remove the existing traffic island on Old Framingham Road. This will narrow the Old Framingham Road approach to the intersection, reducing the impervious area associated with the intersection itself. As a result of the re-configuration, the Old Framingham Road approach will be shifted to the south of its current footprint by approximately 19.5-feet. The new Old Framingham Road approach will require additional grading on the private property at the south corner of Old Framingham Road and Nobscot Road. The Town intends to acquire a permanent easement on this property, which has the same ownership as #78 Old Framingham Road.

Design considerations also included utility and roadway elevation constraints. The existing culvert has invert elevations of 154.32 feet and 153.27 feet at the culvert inlet and outlet, respectively. Subsurface gas and water utilities were found near the crossing based a review of available record plans and field utility markings. During construction, it will be the responsibility of the contractor to field locate and protect all subsurface utilities. Overhead electric utilities are present, crossing from the east to the west side of the roadway, and one utility pole is anticipated to be relocated as discussed above, although the electrical utility may require relocation of additional utility poles during construction. It is anticipated that surface elevations will be raised slightly within the proposed sidewalk alignment and lowered slightly within the roadway alignment to accommodate the proposed vertical granite curbing in the vicinity of the crossing area. However, grading patterns near the culvert crossing will be maintained to the maximum extent feasible under the proposed conditions.

5. CONCEPTUAL SEQUENCE OF CONSTRUCTION

Old Framingham Road is a two-lane road. At minimum, temporary closure of the southbound lane of the roadway will be required to facilitate construction, with temporary flaggers or police details posted to direct traffic. During full-depth reconstruction, a temporary complete closure of the roadway between Nobscot Road and #78 Old Framingham Road will be required. The anticipated sequence of construction is as follows:

1. Install temporary erosion and sedimentation control and flow control measures, including cofferdam, flow diffuser, and/or flow diversion;
2. Locate and protect existing utilities;



3. Close the southbound lane of the roadway;
4. Remove and dispose of the existing drop inlet and concrete slab. Partially remove, and dispose, the existing RCP pipe culvert and the stone masonry RCP pipe headwall;
5. Install new culvert piping and headwall;
6. Install new deep-sump catch basin;
7. Backfill new culvert and catch basin to roadway subgrade
8. Completely close roadway between Nobscot Road and #78 Old Framingham Road;
9. Excavate existing traffic island, roadway pavement, and base layers. Store signage to be reused;
10. Grade and prepare roadway and sidewalk subgrade;
11. Install new base layer and pavement binder/wearing courses, and guardrails. Reinstall signage;
12. Reopen roadway;
13. Stabilize side slopes as needed;
14. Install erosion control matting, loam, and seed on all disturbed areas; and
15. Remove temporary erosion and sedimentation control measures and flow control measures.

6. ATTACHMENTS

Figures

Figure 1 – Site Location Map

Figure 2 – Photo of Closed-Channel Stream Section and RCP Pipe Inlet

Figure 3 – Preliminary-Phase Project Plans

Figure 4 – Resource Area Impact Figure

Attachments

Attachment A – Existing Conditions Survey

Attachment B – Wetland Resource Evaluation

Attachment C – FEMA FIRMETTE

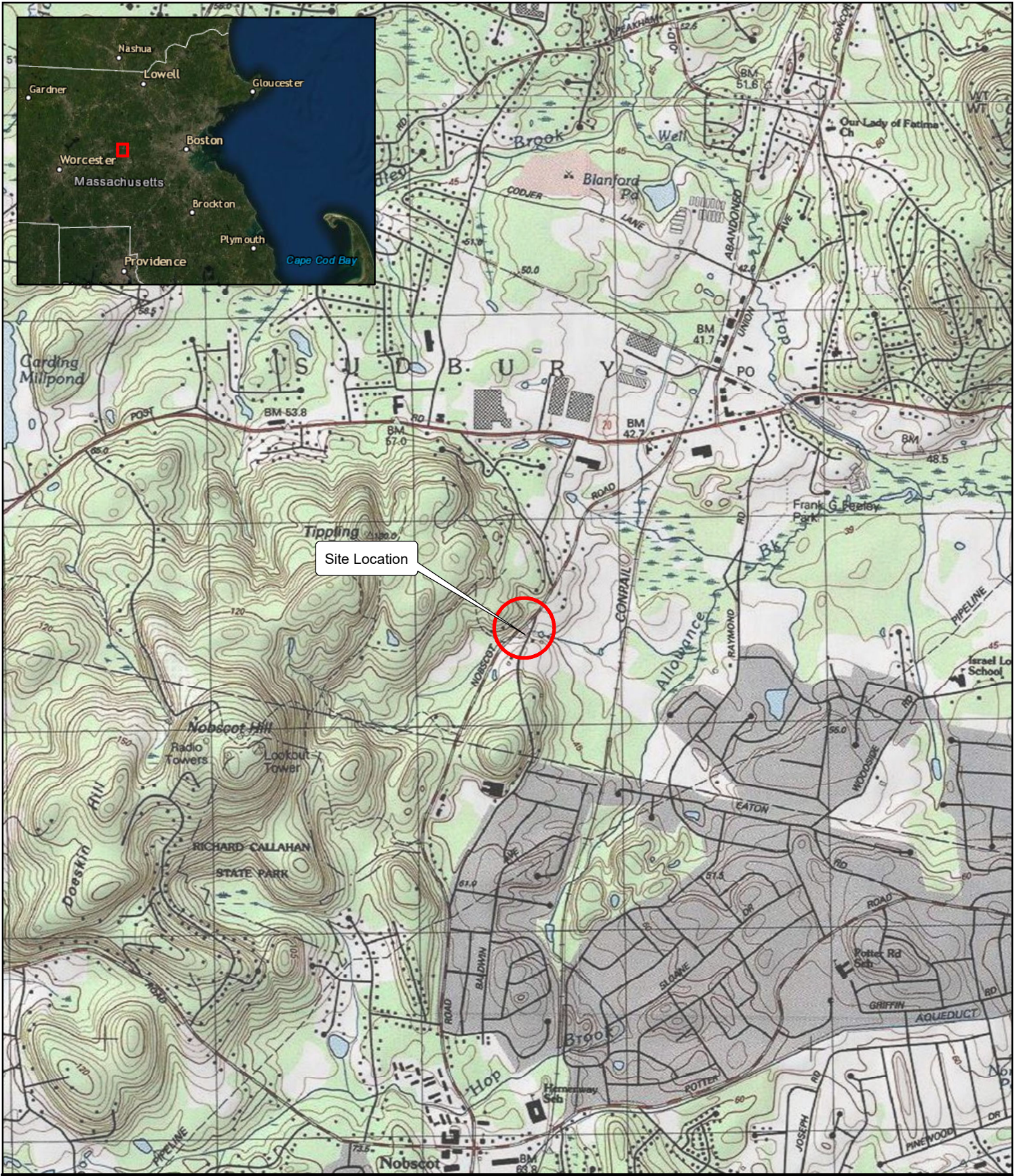
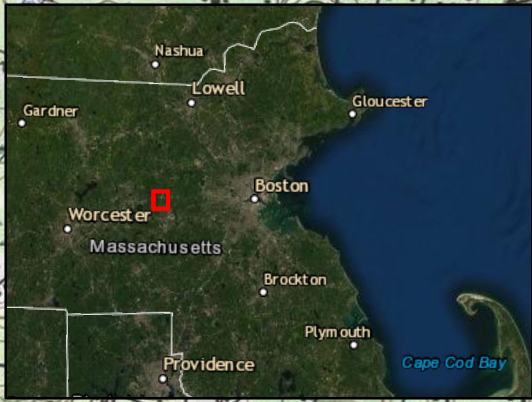
7. REFERENCES

FEMA FIRM Panel 25017C0506F, effective July 7, 2014





Figure 1: Site Location Map



OLD FRAMINGHAM ROAD SIDEWALK EXTENSION

SUDBURY, MA
FIGURE 1 - SITE LOCATION MAP



Project #: 0233335.00
Map Created: January 2021

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions.
Any reliance upon the map or data contained herein shall be at the users' sole risk. Data Sources: ESRI, National Geographic



Figure 2: Photo of Closed-Channel Stream Section and RCP Pipe Inlet



Figure 3: Preliminary-Phase Project Plans



TOWN OF SUDBURY, MA PUBLIC WORKS DEPARTMENT

OLD FRAMINGHAM ROAD SIDEWALK EXTENSION

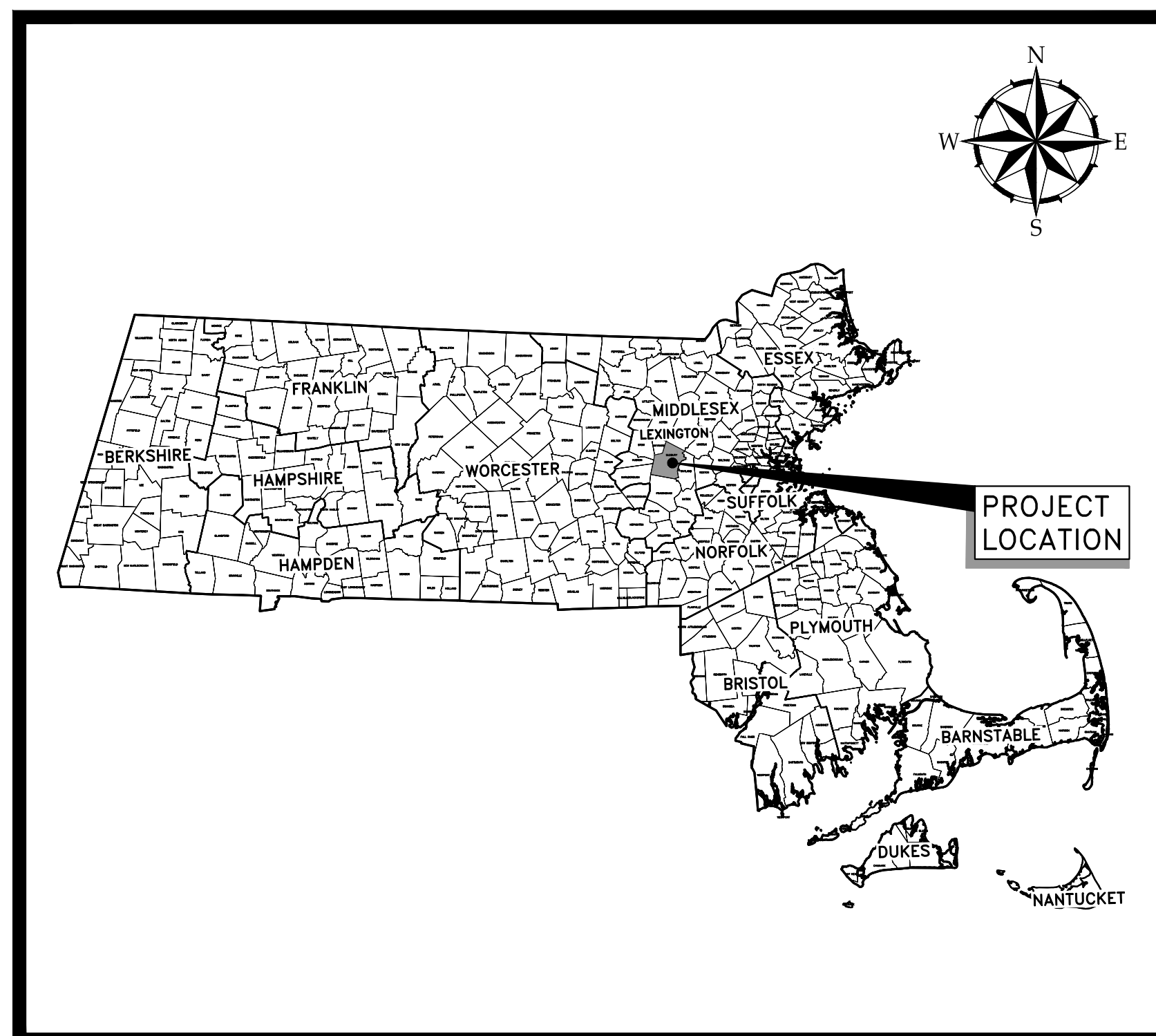
PROJECT NO.
0233128.00
MARCH 2021

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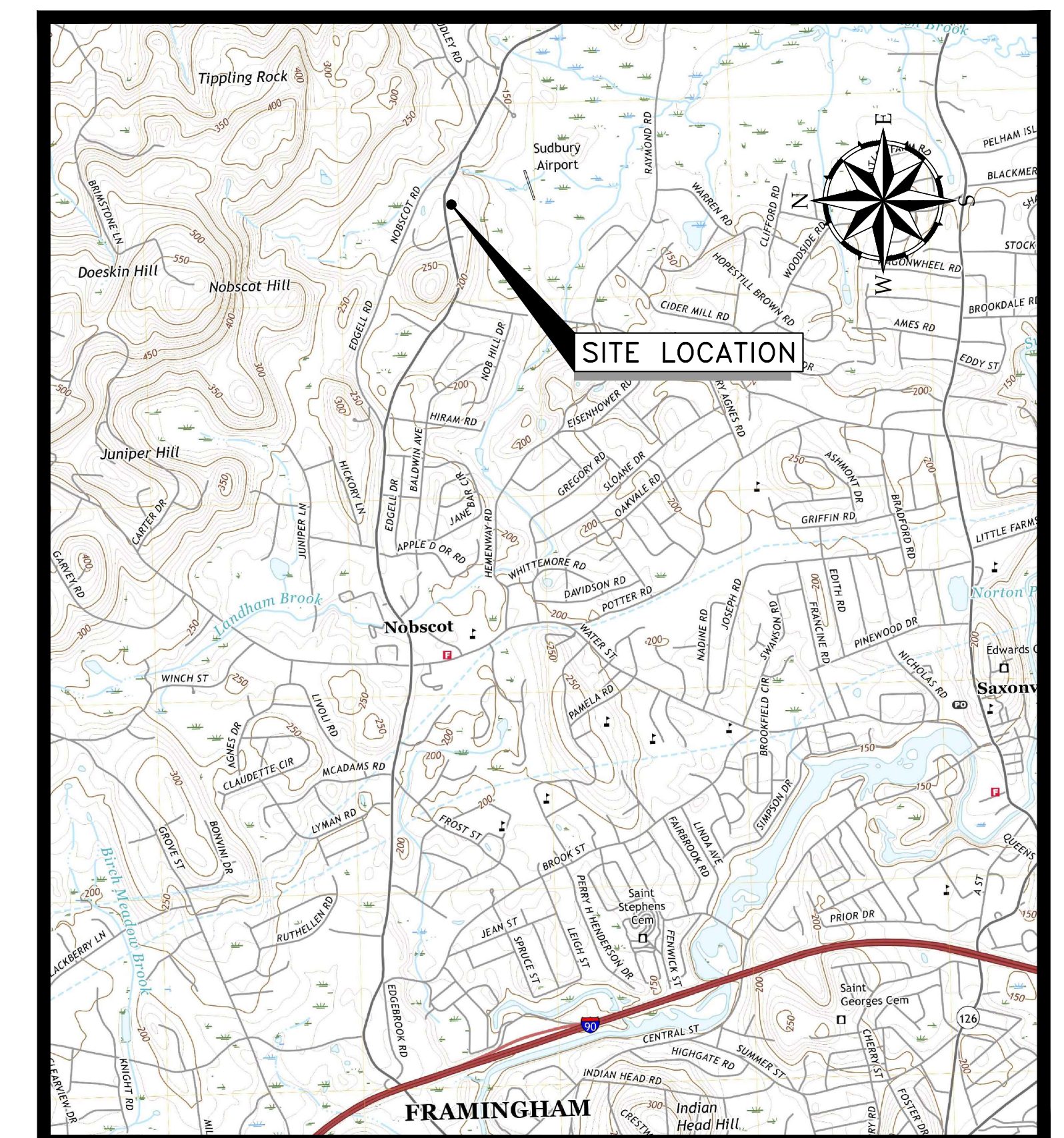


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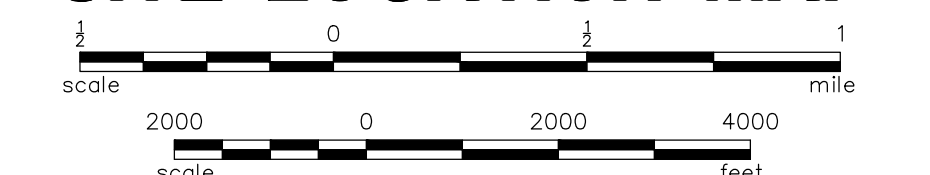


PROJECT LOCATION MAP



SOURCE: USGS MAPS

SITE LOCATION MAP



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GENERAL NOTES:

- EXISTING CONDITIONS ARE BASED ON A SURVEY PREPARED BY JARVIS LAND SURVEY, INC., DATED 1/21/2021.
- JARVIS LAND SURVEY, INC. IS LOCATED AT THE FOLLOWING ADDRESS:
29 GRAFTON CIRCLE
SHREWSBURY, MA 01545
(508) 842-8087
- CONTRACTOR SHALL INVESTIGATE EXISTING CONDITIONS AND FIELD VERIFY LOCATIONS, DEPTH, AND SIZE OF UTILITIES AND SUB-SURFACE STRUCTURES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS OR DISCREPANCIES WITH THE EXISTING AND PROPOSED UTILITY LOCATIONS.
- THE HORIZONTAL DATUM DEPICTED ON THE MAPS HEREON IS BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, MAINLAND ZONE, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983. THE VERTICAL DATUM IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- ANY PROPERTY AND RIGHT OF WAY LOCATIONS THAT MAY BE SHOWN HEREON ARE APPROXIMATE AND DO NOT REPRESENT A PROPERTY BOUNDARY SURVEY.
- WOODARD & CURRAN ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACURATELY SHOWN.
- COORDINATE CONSTRUCTION ACTIVITY WITH UTILITY COMPANIES, EMERGENCY SERVICES AND TOWN. CONTRACTOR SHALL NOTIFY ALL UTILITIES PRIOR TO COMMENCING WORK, ALLOWING SUFFICIENT TIME TO LOCATE AND MARK THE LOCATION OF BURIED UTILITIES. CONTRACTOR SHALL CONTACT "DIG SAFE", TELEPHONE 811, PRIOR TO EXCAVATION.
- RESTORE ALL AREAS DISTURBED BY CONTRACTOR'S OPERATIONS TO ORIGINAL FINISH (GRAVEL, PAVEMENT, GRASS, ETC.) UNLESS NOTED OTHERWISE ON THE PLANS. RESTORATION OF PAVED SURFACES, GRAVEL SURFACES, DRIVEWAYS, AND LAWNS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE PERFORMED AT NO ADDITIONAL COST TO OWNER. ANY CURB DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND AND SHALL CONFORM TO TOWN OF SUBURRY AND MASSACHUSETTS DOT SPECIFICATIONS AT NO ADDITIONAL COST TO OWNER.
- PROPERLY PROTECT AND DO NOT DISTURB PROPERTY IRONS AND MONUMENTS. IF DISTURBED, THE PROPERTY MONUMENT SHALL BE RESET AT THE CONTRACTOR'S EXPENSE BY A LICENSED LAND SURVEYOR ACCEPTABLE TO THE TOWN.
- EXISTING FACILITIES (I.E. TREES, POLES, LIGHT POSTS, CATCH BASINS, STONE FROM CULVERT, ETC.) SHALL BE REMOVED AND/OR PROTECTED DURING CONSTRUCTION. THE TOWN RETAINS RIGHT TO KEEP ANY AND ALL REMOVED FACILITIES. CONTRACTOR SHALL DISPOSE OF ANY REMOVED FACILITY AT THE REQUEST OF THE TOWN AT NO ADDITIONAL COST TO OWNER.
- ALL TREES NOT NOTED TO BE REMOVED OR RELOCATED SHALL BE PROTECTED BY CONTRACTOR DURING CONSTRUCTION.
- RESTRICT ACCESS TO SITE THROUGH THE USE OF APPROPRIATE SIGNAGE, BARRIERS, FENCES, ETC. SITE SHALL BE LEFT WITH APPROPRIATE SAFETY MEASURES IN PLACE DURING NON-WORKING HOURS. SITE SAFETY IS THE RESPONSIBILITY OF CONTRACTOR, DURING BOTH WORKING AND NON-WORKING HOURS.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS INCLUDING "PERMIT TO CONSTRUCT WITHIN A PUBLIC WAY" FROM THE TOWN. PERMIT APPLICATIONS SHALL BE SUBMITTED WITH ADEQUATE TIME SO AS NOT TO DELAY CONSTRUCTION.
- ALL WORK ASSOCIATED WITH THE PROJECT SHALL BE COMPLETED IN ACCORDANCE WITH THE TOWN OF SUBURRY BYLAW AND LOCAL REGULATIONS AND MASSACHUSETTS DOT STANDARD SPECIFICATIONS.
- UPON COMPLETION OF CONSTRUCTION, A COMPLETE SET OF "RECORD" DRAWINGS SHALL BE SUBMITTED TO THE TOWN ENGINEER. THESE DRAWINGS SHALL BE SUBMITTED IN BOTH DIGITAL AND HARD COPY FORMAT AS DEFINED IN THE SPECIFICATIONS PRIOR TO PAYMENT OF FINAL RETAINAGE.
- PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION SHALL BE PROVIDED AT NO ADDITIONAL COST.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SWEEPING OLD FRAMINGHAM ROAD EVERY FRIDAY AND AS NECESSARY DURING THE DURATION OF THE WORK.
- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING HELD AT THE PROJECT SITE WITH THE CONTRACTOR, ENGINEER, OWNER, AND CONSERVATION OFFICE TO REVIEW THE CONSTRUCTION SCHEDULE AND SEQUENCING, ORDER OF CONDITIONS, STOCKPILE LOCATIONS AND CRITICAL ASPECTS OF THE PROJECT.
- ALL DISTURBED UPLAND AREAS SHALL BE BROUGHT TO FINAL GRADE AND SHALL BE PERMANENTLY STABILIZED WITHIN 30 DAYS AFTER DISTURBANCE. BARE GROUND AND DISTURBED AREAS THAT CANNOT BE PERMANENTLY VEGETATED WITHIN 30 DAYS SHALL BE TEMPORARY STABILIZED BY AN APPROVED METHOD.
- CONTRACTOR SHALL DEMARCAT CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE AREAS PRIOR TO CONSTRUCTION.
- THE CONSTRUCTION SITE SHALL BE MAINTAINED IN CLEAN CONDITIONS AT ALL TIMES AND CONSTRUCTION REFUSE AND DEBRIS SHALL BE DISPOSED OF PROMPTLY AND IN A LEGAL MANNER.
- STORING, SERVICING, OR CLEANING OF TRUCKS OR EQUIPMENT SHALL BE PERFORMED IN AN UPLAND AREA AT A HORIZONTAL DISTANCE GREATER THAN 100 FEET FROM THE WETLAND RESOURCE AREAS.
- CONTRACTOR SHALL REFER TO SPECIFICATION XXX MASSACHUSETTS COVID ORDER AND CONSTRUCTION GUIDELINES AND EXECUTE CONSTRUCTION IN COMPLIANCE WITH APPLICABLE SOCIAL DISTANCING PROTOCOLS.
- TEST PITS TP-1 AND TP-2 WERE EXCAVATED UNDER THE SUPERVISION OF WOODARD & CURRAN ON DECEMBER 1, 2020. GROUNDWATER WAS ENCOUNTERED AT APPROXIMATE ELEVATIONS OF 152.8 IN TP-1 AND 154.0 IN TP-2.
- WETLAND DELINEATION WAS PREPARED BY ECOTEC, INC. 102 GROVE STREET, WORCESTER, MA 01605. THE WETLAND RESOURCE EVALUATION REPORT IS DATED XX XX, 2021 AND WETLAND FIELD INSPECTION WAS CONDUCTED ON NOVEMBER 4, 2020.
- DO NOT PARK, IMPEDE ACCESS TO, OR STORE EQUIPMENT BEYOND LIMIT OF WORK, UNLESS PERMISSION HAS BEEN GRANTED IN WRITING BY TOWN AND/OR LAND OWNER.
- PRIOR TO THE START OF WORK, CONTRACTOR SHALL CONFIRM EXISTING WETLAND FLAGS ARE IN PLACE AND SHALL BE MAINTAINED DURING CONSTRUCTION. MISSING FLAGS SHALL BE RESET PRIOR TO CONSTRUCTION. AN AUTOCAD FILE OF THE WETLAND FLAG LOCATIONS SHALL BE PROVIDED FOR CONTRACTOR'S USE IN RESETTING WETLAND FLAGS.
- NO EQUIPMENT IS TO CROSS OR ENTER WETLAND RESOURCE AREAS AT ANY TIME UNLESS THE LOCATION OF DISTURBANCE IS MARKED ON THE PLANS REFERENCED IN THE ORDER OF CONDITIONS AND FLAGGED IN THE FIELD (DEP FILE #XXX-XXXX).
- THE CONTRACTOR, SITE ENGINEER, OR OTHER INDIVIDUAL IN CHARGE OF WORK ON THE SITE SHALL HAVE A COPY OF THE ORDER OF CONDITIONS AT ALL TIMES (DEP FILE #XXX-XXXX).

EROSION CONTROL NOTES:

- EROSION CONTROL DEVICES SHALL REMAIN IN PLACE, UNTIL ALL DISTURBED SURFACES HAVE BEEN STABILIZED WITH FINAL VEGETATION COVER OR THE COMMISSION HAS AUTHORIZED THEIR REMOVAL.
- EROSION CONTROL MEASURES AND BARRIERS SHALL BE MONITORED DAILY AND MAINTAINED, OR REINFORCED AS NECESSARY TO ENSURE AND PREVENT EROSION AND SILTATION OF SOILS TO WETLAND RESOURCE AREAS. ADDITIONAL FILTER FABRIC AND STRAW WATTLES SHALL BE STORED ON SITE FOR EMERGENCY USE.
- DURING ALL PHASES OF CONSTRUCTION, ALL DISTURBED OR EXPOSED AREAS OUTSIDE THE ROADWAY SHALL BE BROUGHT TO FINISHED GRADE AND EITHER A) LOAMED AND SEEDED FOR PERMANENT STABILIZATION, IN ACCORDANCE WITH U.S. SOIL CONSERVATION SERVICE PROCEDURES, OR B) STABILIZED IN ANOTHER WAY APPROVED BY THE COMMISSION. AREAS THAT CANNOT BE PERMANENTLY STABILIZED WITHIN 30 DAYS OF DISTURBANCE SHALL BE STABILIZED WITH HAY, STRAW, MULCH OR ANY OTHER PROTECTIVE COVERING AND/OR METHOD APPROVED BY THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE OR BY OTHER TEMPORARY MEASURES ACCEPTABLE TO THE COMMISSION.
- AN ADEQUATE STOCKPILE OF EROSION AND SEDIMENTATION CONTROL MATERIALS SHALL BE ON SITE AT ALL TIMES FOR EMERGENCY OR ROUTINE REPLACEMENT.
- ANY DAMAGE CAUSED AS A DIRECT RESULT OF CONSTRUCTION TO THE WETLAND RESOURCE AREAS SHALL BE REPAIRED, RESTORED AND/OR REPLACED. SEDIMENTATION OR EROSION SHALL BE CONSIDERED DAMAGE TO THE WETLAND RESOURCE AREAS. IF SEDIMENTATION REACHES THESE AREAS, THE CONSERVATION COMMISSION SHALL BE CONTACTED AND A PLAN FOR THE PROPOSED RESTORATION SHALL BE SUBMITTED FOR APPROVAL.

DEWATERING NOTES:

- THE CONTRACTOR SHALL SUBMIT A WATER CONTROL MANAGEMENT PLAN FOR THE PROJECT LOCATION IN ACCORDANCE WITH THE SPECIFICATIONS. THE PLAN SHALL INCLUDE A DESCRIPTION OF PROPOSED PROCEDURE FOR DEWATERING METHODS.
- ALL DEWATERING ACTIVITIES SHALL MEET LOCAL, STATE, AND FEDERAL REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL LABOR AND EQUIPMENT REQUIRED TO PERFORM THE WORK INCLUDING BUT NOT LIMITED TO PROPER SHORING, DEWATERING EQUIPMENT, AND WATER TREATMENT EQUIPMENT IN ACCORDANCE WITH THE SPECIFICATIONS AND ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
- IN ACCORDANCE WITH THE TIME OF YEAR RESTRICTIONS SET FORTH IN 310 CMR 10.11(5) AND THE US ARMY CORPS OF ENGINEERS GENERAL PERMIT FOR MASSACHUSETTS GENERAL CONDITION 18, ALL SILT-GENERATING, IN-WATER WORK SHALL BE CONDUCTED BETWEEN JULY 1ST AND SEPTEMBER 30TH. WORK BEYOND THE LIMITS OF THE WATER, SUCH AS SEEDING AND INSTALLATION OF RESTORATION PLANTINGS, MAY BE CONDUCTED AFTER SEPTEMBER 30TH, PER CONTRACT TIMES LISTED IN THE PROJECT SPECIFICATIONS.
- ALL DREDGING OPERATIONS SHALL BE CONDUCTED FROM UPLAND AREAS.
- ALL DREDGE SPOILS SHALL BE DEWATERED AND DISPOSED OF AT AN UPLAND LOCATION (OR OTHER APPROVED LOCATION).
- THE REMOVAL OF MATERIAL FROM THE STREAM BOTTOM SHALL BE DONE IN SUCH A MANNER AS TO ENSURE THAT THE RECONFIGURED BOTTOM AREA WILL NOT IMPEDE OR OBSTRUCT FISH MIGRATION, OR INTERFERE WITH THE NATURAL FLOW OF THE BROOK.
- DEWATERING ACTIVITIES SHALL BE CONDUCTED AS SHOWN ON THE APPROVED PLANS AND SHALL BE MONITORED DAILY TO ENSURE THAT SEDIMENT LADEN WATER IS APPROPRIATELY SETTLED PRIOR TO DISCHARGE TOWARD THE RESOURCE AREAS. NO DISCHARGE OF WATER IS ALLOWED DIRECTLY INTO AN AREA SUBJECT TO JURISDICTION OF THE WETLANDS PROTECTION ACT. SHOULD EMERGENCY DEWATERING REQUIREMENTS ARISE, THE APPLICANT SHALL SUBMIT A CONTINGENCY PLAN TO THE COMMISSION FOR APPROVAL WHICH PROVIDES FOR THE PUMPED WATER TO BE CONTAINED IN A SETTLING BASIN, TO REDUCE TURBIDITY TO DISCHARGE INTO A RESOURCE AREA.

ABBREVIATIONS

&	AASHTO	AND	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS ABOVE GROUND
A.G.		BIT	BITUMINOUS
B/W		BETWEEN	BORDERING VEGETATED WETLAND
BWV			
CB		CATCH BASIN	
CI		CAST IRON	
CMP		CORRUGATED METAL PIPE	
CONC		CONCRETE	
D		STORM DRAIN	
DI		DUCTILE IRON	
DIA.		DIAMETER	
DMH		DRAIN MANHOLE	
DOT		DEPARTMENT OF TRANSPORTATION	
DTL		DETAIL	
DYL		DOUBLE YELLOW LINE	
E		UNDERGROUND ELECTRICAL	
EL.		ELEVATION	
EOP		EDGE OF PAVEMENT	
EXIST.		EXISTING	
FF		FINISH FLOOR	
FT		FOOT/FEET	
G		GAS MAIN	
GS		GAS SERVICE	
GALV.		GALVANIZED	
GRAN.		GRANITE	
HDPE		HIGH DENSITY POLYETHYLENE	
HDP		HIGH DENSITY POLYPROPYLENE	
HYD		HYDRANT	
INV.		INVERT	
LF		LINEAR FEET	
MASSDEP		MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION	
MADOT		MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	
MAX.		MAXIMUM	
MIN.		MINIMUM	
MON		MONUMENT	
N.I.P.		NOT IN CONTRACT	
NO.		NUMBER	
NR		NO REFUSAL	
N.T.S.		NOT TO SCALE	
OE		OVERHEAD ELECTRIC	
OH		OVERHEAD	
±		PLUS OR MINUS	
L.S.		LICENSED LAND SURVEYOR	
PROP.		PROPOSED	
PT.		POINT	
PVC		POLYVINYL CHLORIDE	
R.O.W.		RIGHT-OF-WAY	
RCP		REINFORCED CONCRETE PIPE	
REINF.		REINFORCED	
REQ'D		REQUIRED	
RPP		RIBBED PLASTIC PIPE	
S		SLOPE (FT./FT.)	
S		SEWER	
SGC		SLOPED GRANITE CURB	
SMH		SEWER MANHOLE	
SCH		SCHEDULE	
STA.		STATION	
TOWN		TOWN OF SUBURRY	
TYP.		TYPICAL	
UNO		UNLESS NOTED OTHERWISE	
UP		UTILITY POLE	
VC		VITRIFIED CLAY	
VGC		VERTICAL GRANITE CURB	
VT.		VITRIFIED CLAY	
W		WEST	
W		WATER	
W/		WITH	
WS		WATERMAIN	
WS		WATER SERVICE	
WV		WATER VALVE	

SYMBOLS

DESCRIPTION	EXISTING
UTILITY POLE	
CATCH BASIN	
WETLAND FLAG LOCATION	
BORING	
MANHOLE	
MAILBOX	
TREE	

SHEET INDEX

G-001	COVER SHEET
G-002	GENERAL NOTES, ABBREVIATIONS AND LEGEND
C-100	EXISTING CONDITIONS PLAN
C-101	EROSION CONTROL & DEMOLITION PLAN
C-102	SITE LAYOUT PLAN
C-103	GRADING AND DRAINAGE PLAN
C-200	CIVIL DETAILS 1
C-201	CIVIL DETAILS 2

RESOURCE AREA LEGEND

BORDERING VEGETATED WETLAND (BWV)	
100' BORDERING VEGETATED WETLAND (BWV) BUFFER	
MEAN ANNUAL HIGH-WATER LINE (MAHWL) OF PERENNIAL STREAM	
100' RIVERFRONT AREA	
200' RIVERFRONT AREA	
COFFERDAM	
LIMIT OF WORK	
SEDIMENT BARRIER	
TURBIDITY CURTAIN	

LINE TYPES & HATCHES

DESCRIPTION	EXISTING	PROPOSED
CONTOUR (1' INTERVAL)		
CONTOUR (INDEX)		
STORM DRAIN		
BITUMINOUS CURB		
EDGE OF PAVEMENT		
OVERHEAD ELECTRIC		
UNDERGROUND GAS		
UNDERGROUND TELEPHONE		
WATER LINE		
RIGHT OF WAY/ PROPERTY LINE		
GUARDRAIL		
LIMIT OF WORK		
SEDIMENT BARRIER/COFFERDAM		
SEDIMENT BARRIER/SILT/SOXX/ SILT FENCE		
TURBIDITY CURTAIN		
SAWCUT		
RETAINING WALL		
STONE WALL		
EXISTING FEATURE TO BE REMOVED		
BITUMINOUS PAVEMENT		
CONCRETE SIDEWALK		

GENERAL NOTES, ABBREVIATIONS AND LEGEND

TOWN OF SUBURRY, MA
PUBLIC WORKS DEPARTMENT

OLD FRAMINGHAM
ROAD SIDEWALK
EXTENSION

JOB NO: 0233350.00
DATE: MARCH 2021
SCALE: AS SHOWN
SHEET: 2 OF 8

G-002

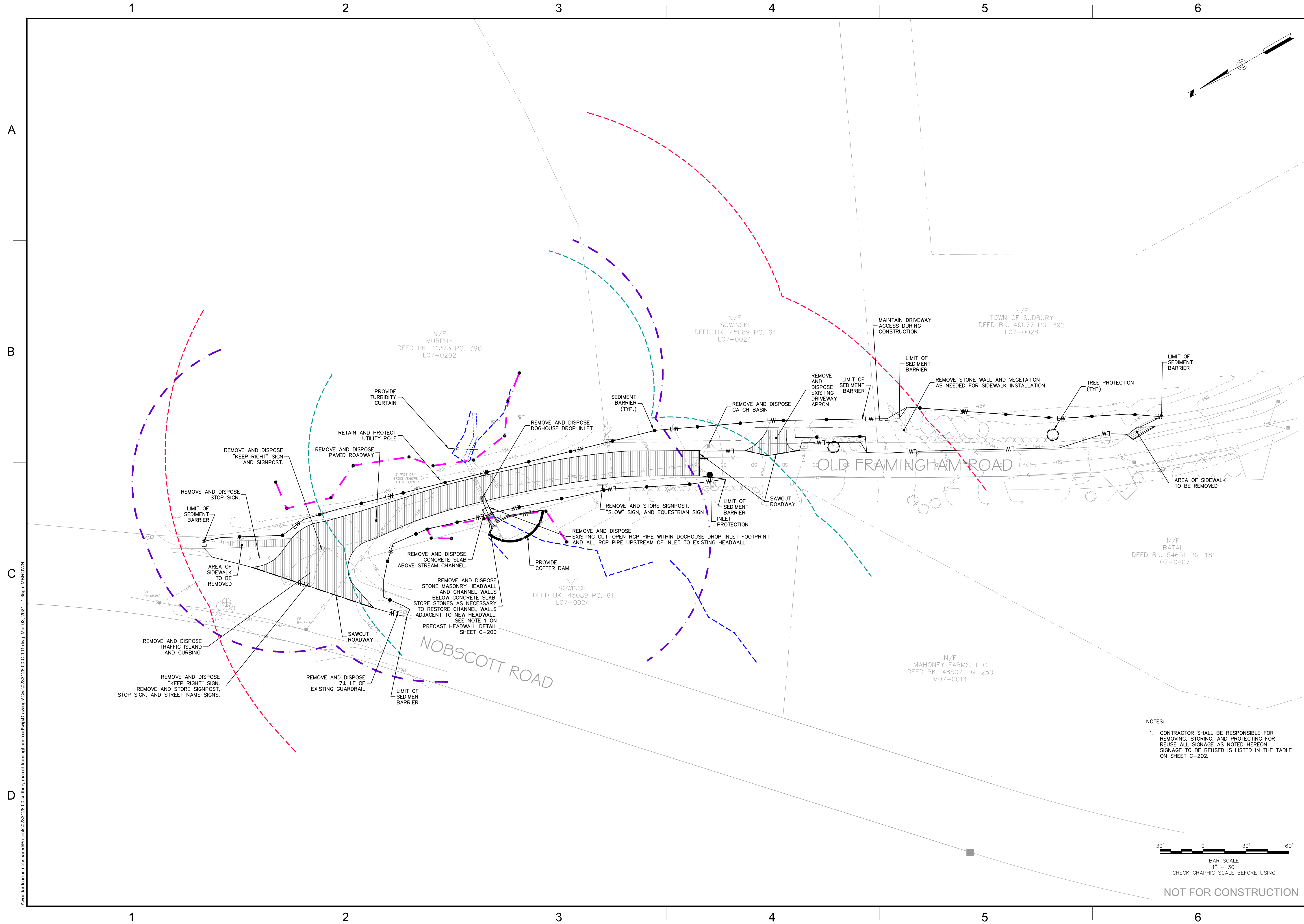
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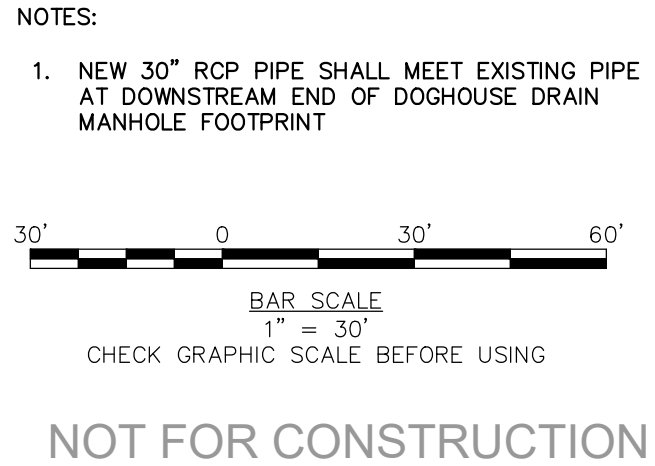
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REV	DESCRIPTION	CHECKED BY	DATE
DESIGNED BY:	DLP/MB	CHECKED BY:	HCP/SS
DRAWN BY:	MB		02/23/2020

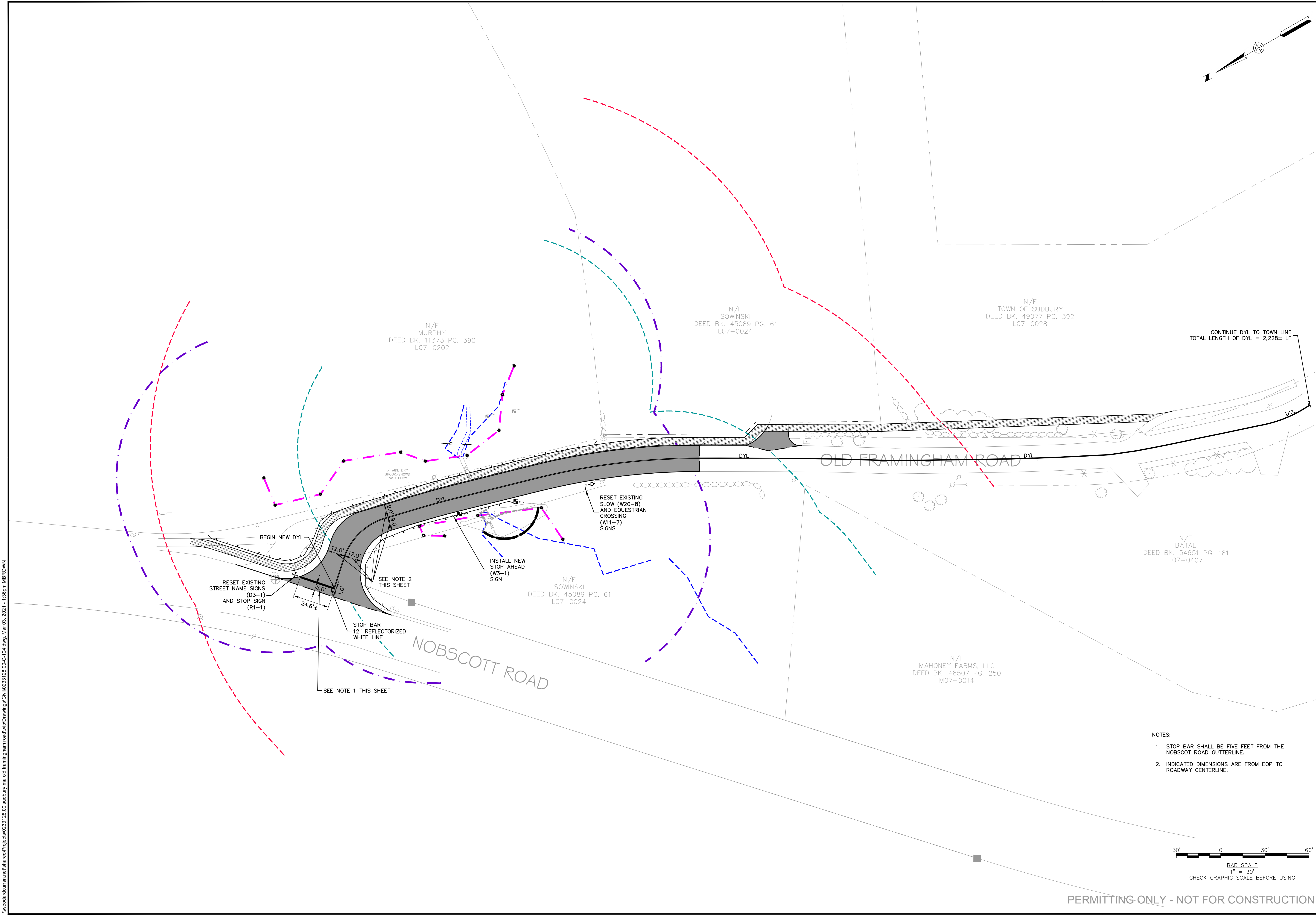
MARKING AND SIGNAGE PLAN

TOWN OF SUDBURY, MA

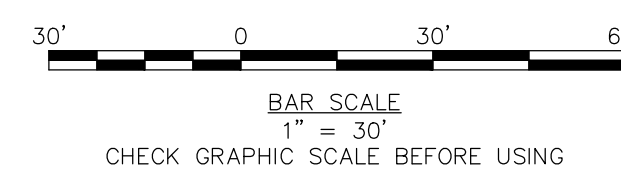
OLD FRAMINGHAM ROAD
SIDEWALK EXTENSION

JOB NO: 0233350.00
DATE: MARCH 2021
SCALE: AS SHOWN
SHEET: 7 OF 8

C-104



- NOTES:
1. STOP BAR SHALL BE FIVE FEET FROM THE NOBSCOTT ROAD GUTTERLINE.
 2. INDICATED DIMENSIONS ARE FROM EOP TO ROADWAY CENTERLINE.



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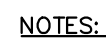
Temporary Erosion Control

Permanent Erosion Control:

Inspections:

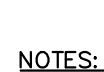
Regular inspections of all erosion and sedimentation controls shall be made at least weekly and prior to and following storm events. Minimum inspections shall be made as listed in the table below.

NOT TO SCALE



1. AFTER INSTALLATION OF HEADWALL, CONTRACTOR SHALL RESTORE EXISTING STONE MASONRY CHANNEL WALLS UP TO THE HEADWALL.

N.T.S.



1. INSTALL FABRIC ON UPHILL SIDE OF WOOD STAKES.
2. SPACING BETWEEN WOOD STAKES PER MANUFACTURER'S RECOMMENDATION.
3. SILT FENCE WILL NOT BE USED IN DRAINAGE WAYS.
4. MAINTENANCE: INSPECT FOR TEARS IN THE FABRIC OR DAMAGE TO SUPPORTS. REPAIR AS NECESSARY. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES A DEPTH OF SIX-INCHES OR MORE.
5. REMOVAL: WHEN UPSLOPE AREAS ARE STABILIZED, THE STRUCTURE AND ANY ACCUMULATED SEDIMENT WILL BE REMOVED.

N.T.S.



NOT TO SCALE



1. BARRIER WILL EXTEND ACROSS THE ENTIRE CHANNEL WHEN WORK IS PERFORMED WITHIN THE CHANNEL.
2. ROPE SHALL BE 1/2" NYLON OR MANILA.

N.T.S.



1. INSTALL SILTSACK PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
2. EMPTY OR REMOVE SEDIMENT FROM SILTSACK WHEN RESTRAINT CORD IS NO LONGER VISIBLE. CLEAN, RINSE, AND REPLACE AS NEEDED.
3. SILT SACKS TO BE INSTALLED WHEN THE POTENTIAL FOR SEDIMENT TO ENTER EXISTING & PROPOSED BASINS EXISTS.

NOT TO SCALE



NOT TO SCALE



NOT TO SCALE



1. CURB MOLD 2 WILL BE USED IN ALL SITUATIONS EXCEPT WHERE THE CURB FORMS THE EDGE OF THE SIDEWALK. MOLD 1 SHALL BE USED IN CONJUNCTION WITH SIDEWALKS OR WHERE THERE IS A POTENTIAL FOR SIDEWALKS.

NOT TO SCALE



N.T.S.



N.T.S.

NOT FOR CONSTRUCTION

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REV	DESCRIPTION	DATE
	DESIGNED BY: DLPMB	CHECKED BY: HCP/SS
	DRAWN BY: MB	02/21/2005-002-000.dwg

CIVIL DETAILS 1

TOWN OF SUDBURY, MA

OLD FRAMINGHAM ROAD
SIDEWALK EXTENSION

JOB NO: 0233350.00

DATE: MARCH 202

SCALE: AS SHOWN

SHEET: 8 OF 8

C-200

C-201

NOTES:

1. SEE MUTCD STANDARDS FOR TEXT DIMENSIONS INCLUDING LETTER HEIGHT, VERTICAL SPACING, AND COLORS INCLUDING BACKGROUND, LEGEND AND BORDER.
2. SEE MARKING AND SIGNAGE PLAN (SHEET C-104) FOR ALL SIGN LOCATIONS.

PERMITTING ONLY - NOT FOR CONSTRUCTION

C-202

Figure 4: Resource Area Impact Figure



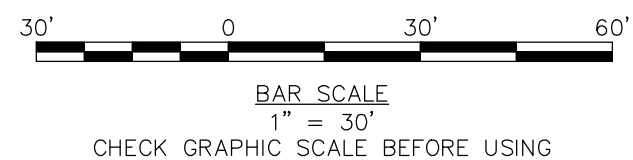


RESOURCE AREA IMPACT TABLE

100' BORDERING VEGETATED WETLAND (BVW) BUFFER	PERMANENT 9005 S.F.	TEMPORARY 3042 S.F.		
BANK* (PERMANENT IMPACT DUE TO REPLACEMENT OF 6± LF OF CLOSED-CHANNEL CULVERT WITH RCP, TEMPORARY IMPACT DUE TO REPLACEMENT OF 11± LF OF EXISTING RCP IN-KIND.)	12± L.F.	22± L.F.	*NOTE: REPOINTING OF EXISTING HEADWALL NOT INCLUDED IN BANK IMPACT COMPUTATION	
LAND UNDER WATER BODIES AND WATERWAYS (PERMANENT IMPACT DUE TO REPLACEMENT OF 6± LF OF 3.5'W CLOSED-CHANNEL CULVERT WITH 2.5'W RCP.)	6± S.F.	0 S.F.		
RIVERFRONT AREA (NOTE: AREAS BELOW WERE COMPUTED WITHIN LIMIT OF WORK SHOWN HEREON)				
	EXISTING IMPERVIOUS AREA	PROPOSED IMPERVIOUS AREA	NET ALTERATION	TEMPORARY DISTURBANCE TO BE RESTORED
0'-100' RIVERFRONT AREA	4960 S.F.	7004 S.F.	+2044 S.F.	2980 S.F.
100'-200' RIVERFRONT AREA	2561 S.F.	2065 S.F.	-496 S.F.	2714 S.F.
TOTAL RIVERFRONT AREA	7521 S.F.	9069 S.F.	+1548 S.F.	5694 S.F.



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250 Royall Street, Suite 200E
Canton, MA 02021
800.426.4262 | www.woodardcurran.com

[illegible]

IMPACT AREAS

TOWN OF SUDBURY, MA

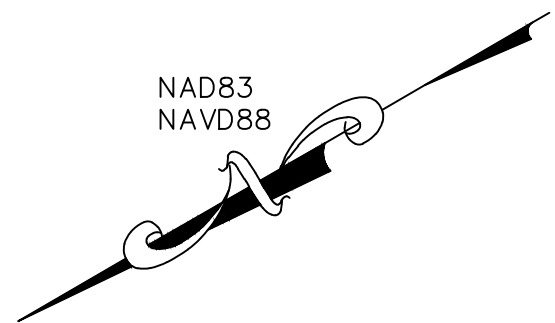
OLD FRAMINGHAM ROAD
SIDEWALK EXTENSION

JOB NO:	0233350.00
DATE:	MARCH 2021
SCALE:	AS SHOWN
SHEET:	OF

FIG-4



ATTACHMENT A: EXISTING CONDITIONS SURVEY



LEGEND

These standard symbols will be found in the drawing.

- UTILITY POLE WITH GUY
- SIGN
- DRAIN MANHOLE
- DRILL HOLE
- TREE
- MAILBOX
- BENCHMARK
- TEST PIT
- GAS GATE
- STONE BOUND
- WETLANDS
- WETLAND FLAGS
- UTILITY POLE
- CATCH BASIN
- WATER GATE

N/F
MURPHY
DEED BK. 11373 PG. 390
L07-0202

N/F
SOWINSKI
DEED BK. 45089 PG. 61
L07-0024

N/F
TOWN OF SUDBURY
DEED BK. 49077 PG. 392
L07-0028

N/F
BATAL
DEED BK. 54651 PG. 181
L07-0407

N/F
SOWINSKI
DEED BK. 45089 PG. 61
L07-0024

N/F
MAHONEY FARMS, LLC
DEED BK. 48507 PG. 250
M07-0014

ZONING DATA:

SINGLE RESIDENCE -C (SRC)
LOT AREA = 60,000 S.F.
LOT FRONTAGE = 210'
FRONT YARD SETBACK = 40'
SIDE YARD SETBACK = 20'
REAR YARD SETBACK = 30'

PLAN REFERENCE:
PLAN BOOK 1963 PLAN 921
PLAN BOOK 1991 PLAN 772
PLAN BOOK 2002 PLAN 225
PLAN BOOK 2005 PLAN 1465
PLAN BOOK 2007 PLAN 804
PLAN BOOK 2006 PLAN 1459
PLAN BOOK 2014 PLAN 891
PLAN BOOK 2019 PLAN 171
1951 STREET LAYOUT 21

OWNER OF RECORD:
CITY OF SUDBURY

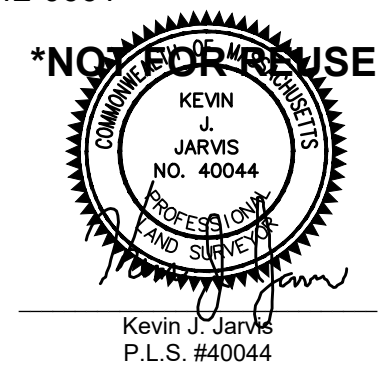
LOCATION:
OLD FRAMINGHAM ROAD &
NOBSCOTT ROAD
SUDBURY, MA

FIELD SURVEY WAS CONDUCTED 11/10/2020, 11/17/2020 & 12/2/2020

- THIS PLAN HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE FINDINGS SUCH A REPORT MIGHT DISCLOSE.
- THIS PLAN HAS NOT BEEN PREPARED FOR RECORDING PURPOSES.**
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JARVIS LAND SURVEY, INC
29 Grafton Circle
Shrewsbury, MA 01545
Tel. (508) 842-8087 ~ Fax. (508) 842-0661 1-21-2021



PLAN OF PROPERTY
SURVEYED FOR
SCOTT SALVUCCI
WOODARD & CURRAN
OLD FRAMINGHAM ROAD
SUDBURY, MASSACHUSETTS

DATE:	CHECK:	CALC:	FIELD:	N.B. #	PLAN:
1/21/2021	K.J.J.	K.J.J.	CS/SM	321/68	20-149

0'

30'

60'

90'

SCALE: 1 INCH = 30 FEET

ATTACHMENT B: WETLAND RESOURCE EVALUATION



EcoTec, Inc.
ENVIRONMENTAL CONSULTING SERVICES
102 Grove Street
Worcester, MA 01605-2629
508-752-9666 – Fax: 508-752-9494

November 5, 2020

Scott Salvucci, P.E.
Woodard & Curran, Inc.
980 Washington St., Suite 325
Dedham, MA 02026

RE: Wetland Resource Evaluation, Old Framingham Road Culvert, Sudbury, MA

Dear Scott:

On November 4, 2020, EcoTec, Inc. inspected the above-referenced property for the presence of wetland resources as defined by: (1) the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, § 40; the “Act”) and its implementing regulations (310 CMR 10.00 *et seq.*; the “Regulations”); and (2) the U.S. Clean Water Act (i.e., Section 404 and 401 wetlands). Arthur Allen, CPSS, CWS conducted the inspection.

The subject site consists of the vicinity of an existing culvert carrying Pantry Brook under Marlboro Road in Sudbury. The upland portions of the site consist of a public roadway and wooded road shoulder slopes. The wetland resources observed on the site are described below.

Methodology

The site was inspected, and areas suspected to qualify as wetland resources were identified. The boundary of Bordering Vegetated Wetlands was delineated in the field in accordance with the definition set forth in the regulations at 310 CMR 10.55(2)(c). Section 10.55(2)(c) states that “The boundary of Bordering Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist.” The methodology used to delineate Bordering Vegetated Wetlands is further described in: (1) the BVW Policy “*BVW: Bordering Vegetated Wetlands Delineation Criteria and Methodology*,” issued March 1, 1995; and (2) “*Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act: A Handbook*,” produced by the Massachusetts Department of Environmental Protection, dated March 1995. The plant taxonomy used in this report is based on the *National List of Plant Species that Occur in Wetlands: Massachusetts* (Fish and Wildlife Service, U.S. Department of the Interior, 1988). Federal wetlands were presumed to have boundaries conterminous with the delineated Bordering Vegetated Wetlands. One set of DEP Bordering Vegetated Wetland Delineation Field Data Forms completed for observation plots located in the wetlands and uplands near flag A-3

is attached. The table below provides the Flag Numbers, Flag Type, and Wetland Types and Locations for the delineated wetland resources.

Flag Numbers	Flag Type	Wetland Types and Locations
A-1 to A-10 (Test Plots at A-3)	Blue Flags	Boundary of Bordering Vegetated Wetlands located on the east side of Old Framingham Road that is associated with a perennial stream. Flags A-4 & A-5 connect to stream culvert outfall.
B-1 to B-5	Blue Flags	Boundary of Bordering Vegetated Wetlands located on the west side of Old Framingham Road that is associated with a perennial stream. Flag B-3 connects to stream culvert inlet.
RA-1 to RA-8	Red Flags	Mean Annual High-water Line (MAHWL) of perennial stream on the east side of Old Framingham Road.
RB-1 to RB-10 & RB-1A to RB-5A	Red Flags	Mean Annual High-water Line (MAHWL) of perennial stream on the west side of Old Framingham Road.

Findings

Wetland A/B consists of a wooded swamp fringing on a marsh and wet meadow that is associated with an unnamed, perennial stream. Plant species observed include red maple (*Acer rubrum*) and American elm (*Ulmus americana*) trees and/or saplings; poison ivy (*Toxicodendron radicans*) climbing woody vines; highbush blueberry (*Vaccinium corymbosum*), common winterberry (*Ilex verticillata*), arrow-wood (*Viburnum dentatum*), withe-rod (*Viburnum cassinoides*), swamp rose (*Rosa palustris*), speckled alder (*Alnus rugosa*), silky dogwood (*Cornus amomum*), maleberry (*Lyonia ligustrina*), glossy buckthorn (*Rhamnus frangula*), sweet pepper-bush (*Clethra alnifolia*), swamp azalea (*Rhododendron viscosum*), and American elderberry (*Sambucus canadensis*) shrubs; and sheep-laurel (*Kalmia angustifolia*), bristly blackberry (*Rubus hispidus*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*), sensitive fern (*Onoclea sensibilis*), subarctic lady fern (*Athyrium filix-femina*), marsh fern (*Thelypteris thelypteroides*), Massachusetts fern (*Thelypteris simulata*), spinulose woodfern (*Dryopteris spinulosa*), skunk-cabbage (*Symplocarpus foetidus*), swamp Jack-in-the-pulpit (*Arisaema triphyllum*), spotted touch-me-not (*Impatiens capensis*) and sphagnum moss (*Sphagnum sp.*) ground cover. Evidence of wetland hydrology, including hydric soils, high groundwater, saturated soils, pore linings, evidence of flooding, and drainage patterns, was observed within the delineated wetland. This vegetated wetland borders a perennial stream; accordingly, the vegetated wetlands would be regulated as Bordering Vegetated Wetlands and the perennial stream would be regulated as Bank and Land Under Water Bodies and Waterways under the Act. A 100-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands under the Act.

Bordering Land Subject to Flooding is an area that floods due to a rise in floodwaters from a bordering waterway or water body. Where flood studies have been completed, the boundary of Bordering Land Subject to Flooding is based upon flood profile data prepared by the National

Flood Insurance Program. Section 10.57(2)(a)3. states that “The boundary of Bordering Land Subject to Flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm.” The project engineer should evaluate the most recent National Flood Insurance Program flood profile data to confirm the absence of Bordering Land Subject to Flooding on the site. Bordering Land Subject to Flooding would occur in areas where the 100-year flood elevation is located outside of or upgradient of the delineated Bordering Vegetated Wetlands boundary. Bordering Land Subject to Flooding does not have a Buffer Zone under the Act.

The Massachusetts Rivers Protection Act amended the Act to establish an additional wetland resource area: Riverfront Area. Based upon a review of the current USGS Map (attached), a stream that is shown as intermittent is located within the delineated wetland. The watershed area for this stream at the site was determined to be 0.51 square miles, which is at least one-half square miles but less than one square mile (see attached watershed map). The USGS StreamStats method printout for the stream (attached) shows a predicted flow rate of 0.0119 cubic feet per second, which is greater than 0.01 cubic feet per second at the 99% flow duration. As such, the stream would be designated perennial under the Massachusetts Wetlands Protection Act regulations. Unless this perennial designation is overcome, Riverfront Area is presumed to extend 200 feet horizontally upgradient from the mean annual high-water line of the stream. Section 10.58(2)(a)2. states that the “Mean annual high-water line of a river is the line that is apparent from visible markings or changes in the character of soils or vegetation due to prolonged presence of water and that distinguishes between predominantly aquatic and predominantly terrestrial land. Field indicators of bankfull conditions shall be used to determine the mean annual high-water line. Bankfull field indicators include but are not limited to: changes in slope, changes in vegetation, stain lines, top of pointbars, changes in bank materials, or bank undercuts.” Section 10.58(2)(a)2.a. states that “In most rivers, the first observable break in slope is coincident with bankfull conditions and the mean annual high-water line.” The mean annual high-water line of the stream was delineated in the field with flag series RA and RB based upon the above-referenced regulation. Furthermore, based upon a review of the current USGS Map and observations made during the site inspection, there are no other mapped or unmapped streams located within 200 feet of the site. Accordingly, except as noted above, Riverfront Area would not occur on the site. Riverfront Area does not have a Buffer Zone under the Act, but may overlap other wetland resources and their Buffer Zones.

The Regulations require that no project may be permitted that will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures set forth at 310 CMR 10.59. Based upon a review of the *Massachusetts Natural Heritage Atlas*, 14th edition, Priority Habitats and Estimated Habitats from the NHESP Interactive Viewer, valid from August 1, 2017, and Certified Vernal Pools from MassGIS, there are no Estimated Habitats [for use with the Act and Regulations (310 CMR 10.00 *et seq.*)], Priority Habitats [for use with Massachusetts Endangered Species Act (M.G.L. Ch. 131A; “MESA”) and MESA Regulations (321 CMR 10.00 *et seq.*)], or Certified Vernal Pools on or in the immediate vicinity of the site. A copy of this map is attached.

The reader should be aware that the regulatory authority for determining wetland jurisdiction rests with local, state, and federal authorities. A brief description of my experience and qualifications is attached. If you have any questions, please feel free to contact me at any time.

Cordially,
ECOTEC, INC.



Arthur Allen, CWS, CPSS
Vice President

Attachments (6, 10 pages)

AA/NOI/Sudbury Marlboro EcoTec Wet Report 9.12.2019



EcoTec, Inc.

ENVIRONMENTAL CONSULTING SERVICES

102 Grove Street
Worcester, MA 01605-2629
508-752-9666 / Fax: 508-752-9494

Arthur Allen, CPSS, CWS, CESSWI
Vice President
Soil & Wetland Scientist

Arthur Allen is the Vice President of EcoTec, Inc. and has been a senior environmental scientist there since 1995. His work with EcoTec has involved wetland delineation, wildlife habitat evaluation, environmental permitting (federal, state and local), environmental monitoring, expert testimony, peer reviews, contaminated site assessment and the description, mapping and interpretation of soils. His clients have included private landowners, developers, major corporations and regulatory agencies. Prior to joining EcoTec, Mr. Allen mapped and interpreted soils in Franklin County, MA for the U.S.D.A. Natural Resources Conservation Service (formerly Soil Conservation Service) and was a research soil scientist at Harvard University's Harvard Forest. Since 1994, Mr. Allen has assisted the Massachusetts Department of Environmental Protection and the Massachusetts Association of Conservation Commissions as an instructor in the interpretation of soils for wetland delineation and for the Title V Soil Evaluator program.

Mr. Allen has a civil service rating as a soil scientist, an undergraduate degree in Natural Resource Studies and a graduate certificate in Soil Studies. His work on the Franklin County soil survey involved interpretation of landscape-soil-water relationships, classifying soils and drainage, and determining use and limitation of the soil units that he delineated. As a soil scientist at the Harvard Forest, Mr. Allen was involved in identifying the legacies of historical land-use in modern soil and vegetation at a number of study sites across southern New England. He has a working knowledge of the chemical and physical properties of soil and water and how these properties interact with the plants that grow on a given site. While at Harvard Forest he authored and presented several papers describing his research results which were later published. In addition to his aforementioned experience, Mr. Allen was previously employed by the Trustees of Reservations as a land manager and by the Town of North Andover, MA as a conservation commission intern.

Education:

1993-Graduate Certificate in Soil Studies, University of New Hampshire
1982-Bachelor of Science in Natural Resource Studies, University of Massachusetts

Professional Affiliations:

Certified Professional Soil Scientist (ARCPACS CPSS #22529)
New Hampshire Certified Wetland Scientist (#19)
Registered Professional Soil Scientist – Society of Soil Scientists of SNE [Board Member (2000-2006)]
Certified Erosion, Sediment & Stormwater Inspector (#965)
Massachusetts Approved Soil Evaluator (#13764)
Massachusetts Arborists Association-Certified Arborist (1982 – 1998)
New England Hydric Soils Technical Committee member
Massachusetts Association of Conservation Commissions member
Society of Wetland Scientists member

Refereed Publications:

Soil Science and Survey at Harvard Forest. A.Allen. In: Soil Survey Horizons. Vol. 36, No. 4, 1995, pp. 133-142.
Controlling Site to Evaluate History: Vegetation Patterns of a New England Sand Plain. G.Motzkin, D.Foster, A.Allen, J.Harrold, & R.Boone. In: Ecological Monographs 66(3), 1996, pp. 345-365.
Vegetation Patterns in Heterogeneous Landscapes: The Importance of History and Environment. G.Motzkin, P.Wilson, D.R.Foster & A.Allen. In: Journal of Vegetation Science 10, 1999, pp. 903-920.

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

Applicant

Prepared by: EcoTec, Inc

Project Location: Old Framingham Rd., Sudbury

DEP File #

Section I. Vegetation

Number: TPU

Transect # A-3

Date of Delin: 11/4/2020

A. Sample layer and plant species (Enter largest to smallest % cover by layer)			Percent Cover (or basal area)	Percent Dominance	Dominant Plant?	Wetland Indicator Category
Tree	Sugar Maple	Acer saccharum	20		20.0 YES	FACU-
	Red Maple	Acer rubrum	80		80.0 YES	FAC
	<div style="background-color: #d9e1f2; border: 1px solid black; height: 40px;"></div>		<div style="background-color: #d9e1f2; border: 1px solid black; height: 40px;"></div>			*
Sapling	Sugar Maple	Acer saccharum	30		100.0 YES	FACU-
	<div style="background-color: #d9e1f2; border: 1px solid black; height: 80px;"></div>		<div style="background-color: #d9e1f2; border: 1px solid black; height: 80px;"></div>			
Shrub	Multi-Flora Rose	Rosa multiflora	20		66.7 YES	FACU
	Tartarian Honeysuckle	Lonicera tatarica	10		33.3 YES	FACU
	<div style="background-color: #d9e1f2; border: 1px solid black; height: 80px;"></div>		<div style="background-color: #d9e1f2; border: 1px solid black; height: 80px;"></div>			
Ground	none					
	<div style="background-color: #d9e1f2; border: 1px solid black; height: 60px;"></div>		<div style="background-color: #d9e1f2; border: 1px solid black; height: 60px;"></div>			
Vine						
	<div style="background-color: #d9e1f2; border: 1px solid black; height: 60px;"></div>		<div style="background-color: #d9e1f2; border: 1px solid black; height: 60px;"></div>			

Vegetation Conclusions

Number of dominant wetland indicator plants

1

Number of dominant non-wetland indicator plants

4

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

NO

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

Applicant

Prepared by: EcoTec, Inc

Project Location: Old Framingham Rd., Sudbury

DEP File #

Section II. Indicators of Hydrology

Number: TPU

Transect # A-3

Date of Delin: 11/4/2020

1. Soil Survey

Is there a published soil survey for this site?

title/date

map number

soil type mapped

hydric soil inclusions

Are field observations consistent with soil survey?

Remarks:

2. Soil Description

Horizon	Depth (inches)	Matrix Color	Mottle Color
Litter	2		
A	0-14	10YR 3/2	
Bw	14-20	10YR 5/6	

Remarks Stony fine sandy loams

3. Other

Conclusion: Is the soil hydric?

No

Other Indicators of hydrology (check all that apply):

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

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants \geq number of non-wetland indicator plants	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wetland hydrology present:		
Hydric soil present	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other indicators of hydrology present	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample Location is in a BVW	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Applicant

Prepared by: EcoTec, Inc

Project Location: Old Framingham Rd., Sudbury

DEP File #

Section I. Vegetation

Number: TPW

Transect # A-3

Date of Delin: 11/4/2020

A. Sample layer and plant species (Enter largest to smallest % cover by layer)			Percent Cover (or basal area)	Percent Dominance	Dominant Plant?	Wetland Indicator Category	
Tree	Green Ash	Fraxinus pennsylvanica	20		25.0 YES	FACW	*
	Red Maple	Acer rubrum	60		75.0 YES	FAC	*
Sapling	none						
Shrub	Multi-Flora Rose	Rosa multiflora	20		50.0 YES	FACU	
	Silky Dogwood	Cornus amomum	20		50.0 YES	FACW	*
Ground	Jewelweed	Impatiens capensis	30		75.0 YES	FACW	*
	Virginia Wild Rye	Elymus virginicus	10		25.0 YES	FACW-	*
Vine							

Vegetation Conclusions

Number of dominant wetland indicator plants

5

Number of dominant non-wetland indicator plants

1

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

YES

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

Applicant

Prepared by: EcoTec, Inc

Project Location: Old Framingham Rd., Sudbury

DEP File #

Section II. Indicators of Hydrology

Number: TPW

Transect # A-3

Date of Delin: 11/4/2020

1. Soil Survey

Is there a published soil survey for this site?

title/date

map number

soil type mapped

hydric soil inclusions

Are field observations consistent with soil survey?

Remarks:

2. Soil Description

Horizon	Depth (inches)	Matrix Color	Mottle Color
Litter	1		
A	0-3	10YR 2/1	
Cg	3-14	10YR 6/2	10% 7.5YR 4/6

Remarks A-Mucky Sand; Cg-Coarse Sand

3. Other

Conclusion: Is the soil hydric?

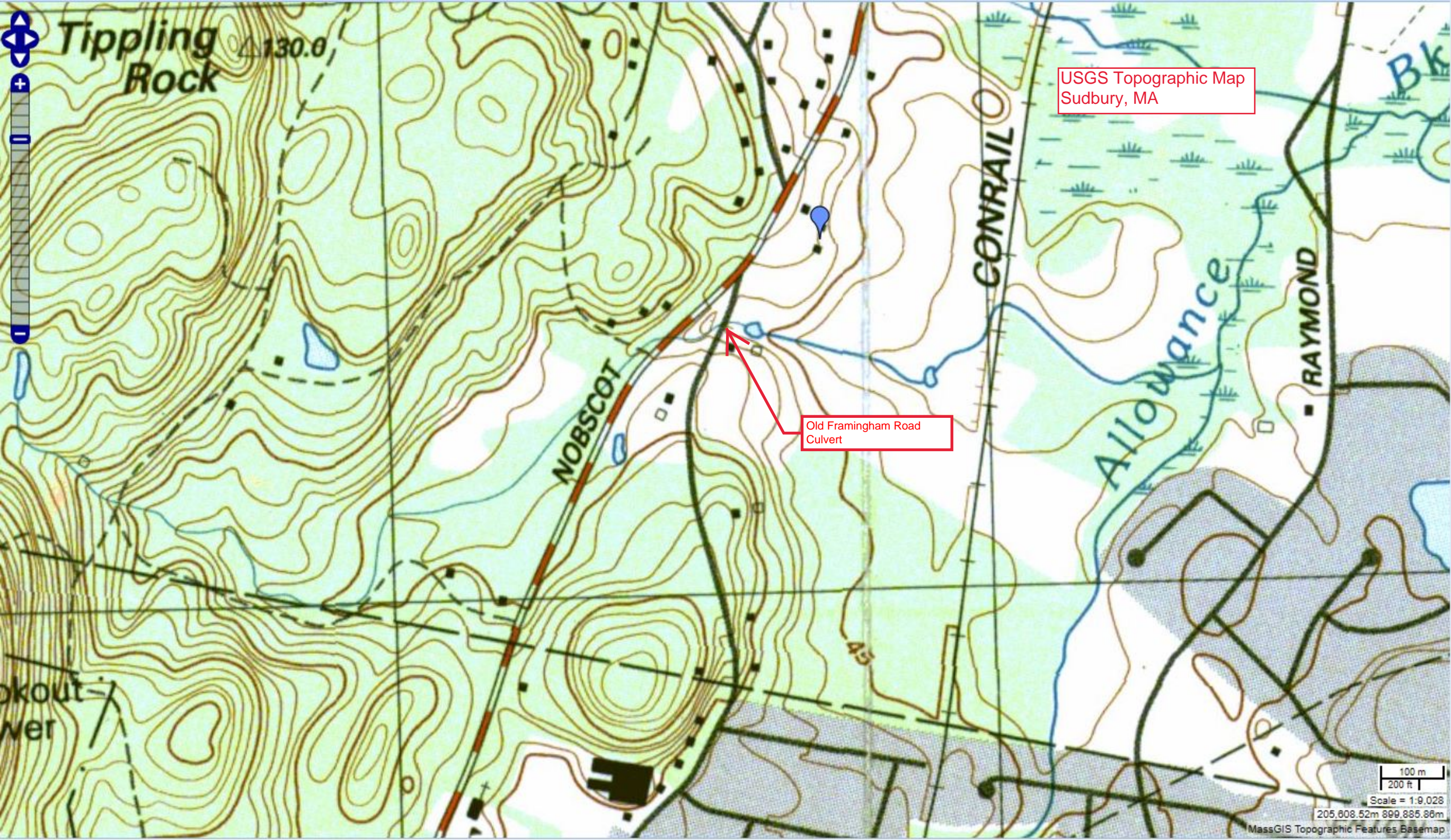
Yes

Other Indicators of hydrology (check all that apply):

- ☐ Site Inundated
- ☒ Depth to free water in observation hole 4"
- ☒ Depth to soil saturation in observation hole 0"
- ☐ Water marks
- ☐ Drift lines
- ☐ Sediment Deposits
- ☐ Drainage patterns in BVWs
- ☐ Oxidized rhizospheres
- ☒ Water stained leaves
- ☐ Recorded data (stream, lake, or tidal gauge; aerial photo; other):
- ☐ Other:

Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants \geq number of non-wetland indicator plants	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wetland hydrology present:		
Hydric soil present	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other indicators of hydrology present	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample Location is in a BVW	<input checked="" type="checkbox"/>	<input type="checkbox"/>



Tippling Rock 130.0

USGS Topographic Map
Sudbury, MA

Old Framingham Road
Culvert

100 m
200 ft

Scale = 1:9,028

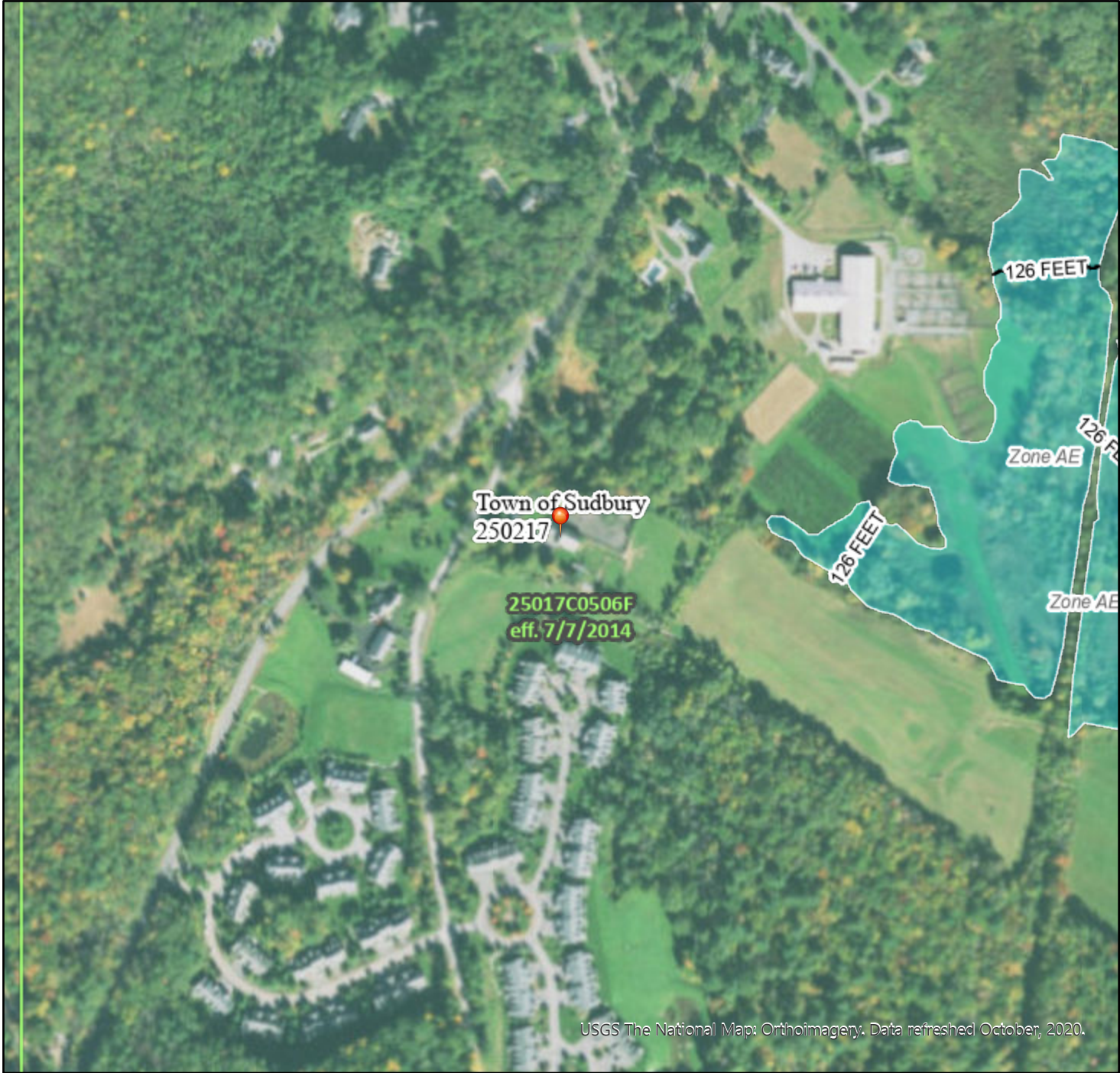
205,608.52m 899,885.86m

MassGIS Topographic Features Basemap

National Flood Hazard Layer FIRMette



71°26'16"W 42°21'17"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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Massachusetts Natural Heritage & Endangered Species Program ATLAS
November 3, 2020

PH 1334

Old Framingham Road
Culvert

Potential Vernal Pools



NHESP Certified Vernal Pools



MassDOT Roads Street Names

Major MassDOT Routes



Interstate Highways



US Roads



State

Massachusetts Towns



NHESP Estimated Habitats of Rare
Wildlife



NHESP Priority Habitats of Rare
Species



2013-2014 Color Orthos (USGS)

Orthos 2019
2019 Color Orthos (USGS)

200 m
1000 ft



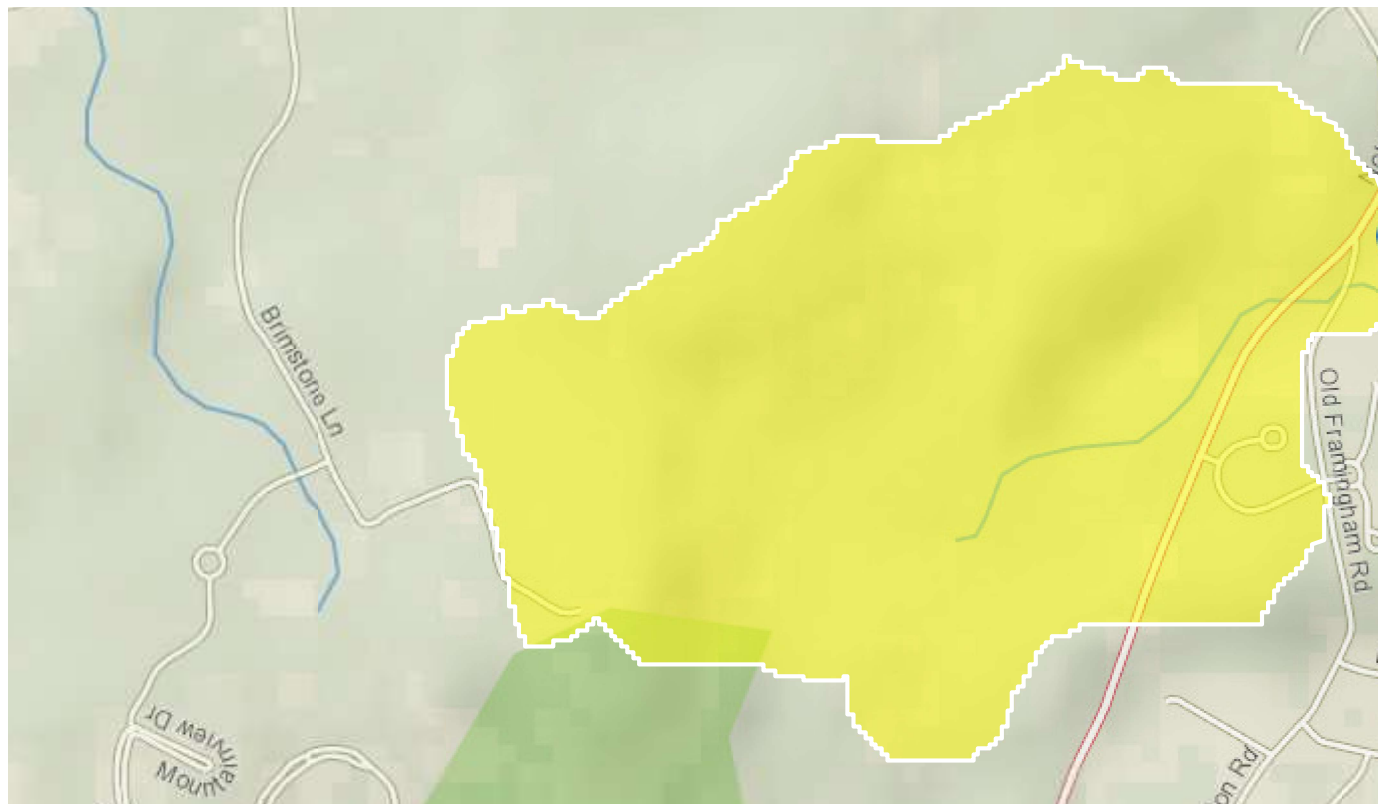
StreamStats Report

Region ID: MA

Workspace ID: MA20210105154012609000

Clicked Point (Latitude, Longitude): 42.35123, -71.43178

Time: 2021-01-05 10:35:08 -0500



Old Framingham Road, Sudbury, MA

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.51	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	8.599	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.0522	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

Low-Flow Statistics Parameters^[Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.51	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	8.599	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.0522	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

Low-Flow Statistics Disclaimers^[Statewide Low Flow WRIR00 4135]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

Low-Flow Statistics Flow Report^[Statewide Low Flow WRIR00 4135]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0289	ft ³ /s
7 Day 10 Year Low Flow	0.0119	ft ³ /s

Low-Flow Statistics Citations

Ries, K.G., III, 2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p. (<http://pubs.usgs.gov/wri/wri004135/>)

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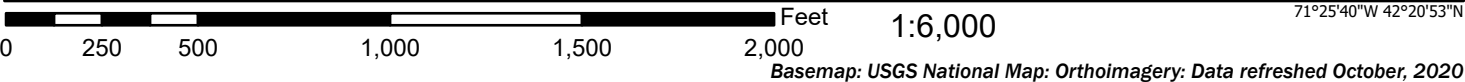
ATTACHMENT C: FEMA FIRMETTE



National Flood Hazard Layer FIRMMette



71°26'17"W 42°21'19"N



Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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