
Notice of Intent

Sturbridge Rt. 20 Drainage Repair Project

Sturbridge, MA

PREPARED FOR

Massachusetts Department of Transportation, Highway Division
499 Plantation Parkway
Worcester, Massachusetts 01605

PREPARED BY



101 Walnut Street
PO Box 9151
Watertown, MA 02471
617.924.1770

August 2023



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

Date 8/8/2023

Fill all white cells completely

Parcel	595 Main Street	Applicant name	James Robida, Massachusetts Department of Transportation
Address	595 Main Street	Address	499 Plantation Parkway, Worcester, MA 01605
Assessors	415-02338-595	Email	James.Robida@dot.state.ma.us
Map/Plat		Phone	857-368-3151
Book & Page	48946, 0109		
Owner name	Blackington LLC	Representative	Eric Olson, VHB
Address	530 Main Street, Sturbridge, MA 01566	Address	120 Front Street, Suite 500 Worcester, MA 01608
Email		Email	eolson@vhb.com
Phone		Phone	508-513-2740

Wetland type	Riverfront Area	sf/cf affected	4,078 sf	Relevant Perf. Standards	10. <u>.58(4)</u>
Wetland type		sf/cf affected		Relevant Perf. Standards	10. _____
Wetland type		sf/cf affected		Relevant Perf. Standards	10. _____

Components of a Complete NOI Application

State Form: NOI Form 3	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Engineered Plan	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Proof of Mailing to DEP	Included? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Submitted via eDEP
Narrative	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Proof that all relevant perf. standards are met	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
TOPO Map identifying locus with scale	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
FIRM Map identifying locus with scale	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Natural Heritage Map with WH, PH, & VP data	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Delineation lines (backup material)	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Tax Form	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Fees	
★ DEP Fee Transmittal form	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
★ Town portion of state filing fee	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
★ Sturbridge local filing fee \$ <u>50</u>	Included? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Abutter Information	
★ Certified abutters list (within 200')	Included? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
★ Abutter notification form	Included? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
★ Affidavit & proof -- bring to hearing	<i>Present them at the hearing</i>
Other Attachments, e.g.	
Confirmation of submission to NHESP	Included? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Applicable Will be submitted at a later date.
Planting Plan	Included? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Floodplain analysis	Included? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Stormwater analysis	Included? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable



August 8, 2023

Ref: 15592.67

Rebecca Gendreau, Conservation Agent
Sturbridge Conservation Commission
308 Main Street
Sturbridge, MA 01566

Re: Notice of Intent
Sturbridge Rt. 20 Drainage Repair Project
Sturbridge, Massachusetts

Dear Commissioners,

On behalf of the Applicant, Massachusetts Department of Transportation (MassDOT), Vanasse Hangen Brustlin, Inc. is submitting the enclosed Notice of Intent (NOI) for work to repair and enhance the subsurface drainage system located at 595 Main Street (the Project Property) in Sturbridge, Massachusetts. Work will also occur along a portion of the adjacent Route 20 (Main Street) road layout. The work areas are collectively referred to as the "Project Site". The repair will include removal and replacement of existing deteriorated drainage structures, implementation of a new discharge system, and improvements to the downgradient eroded slope (the Project). The Project will improve overall drainage performance on the Project Site while enhancing the existing conditions of the natural environment. A full scope of work is included in the attached NOI narrative. This NOI is being filed pursuant to the Massachusetts Wetlands Protection Act (WPA). MassDOT is exempt from locally established bylaws and regulations and the Project is therefore not subject to review pursuant to the Town of Sturbridge's Wetlands Bylaw.

Wetland resource areas subject to protection under the WPA are present on the Project Property, including Bank, Bordering Vegetated Wetlands (BVW), Bordering Land Subject to Flooding (BLSF), Land Under Waterbodies and Waterways (LUWW), and Riverfront Area (RFA). The WPA also establishes a 100-foot buffer zone extending from the limits of Bank and BVW. All resource areas are associated with the Quinebaug River. Proposed work will result in both temporary and permanent impacts within RFA and the 100-foot buffer zone. Wetland resource areas will be protected from impacts during construction through the implementation of an erosion and sedimentation control program.

A check made payable to the Town of Sturbridge in the amount of \$387.50 for the Town share of the NOI filing fee has been included with this submission. A check made payable to the

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August 8, 2023
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Commonwealth of Massachusetts in the amount of \$362.50 has been submitted to the MassDEP lockbox for payment of the State share of the NOI filing fee.

As stated in the WPA under 10.05(4)(a): Abutter notification is not required for projects proposed by the Massachusetts Department of Transportation Highway Division pursuant to St. 1993, c. 472 as approved on January 13, 1994.

Please advertise this matter for public hearing at the Commission's next scheduled meeting. Should you have any questions concerning this submittal, or require additional information please contact me at 508.951.2328 or eolson@vhb.com.

Regards,

A handwritten signature in black ink that reads "Eric Olson". The signature is written in a cursive, flowing style.

Eric Olson, CPESC
Senior Environmental Scientist

Attachment: Notice of Intent – Sturbridge Rt. 20 Drainage Repair Project

CC: DEP Central Regional Office
Massachusetts Department of Transportation



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Notice of Intent Forms

- › WPA Form 3A
- › NOI Wetland Fee Transmittal Form
- › Copies of Filing Fee Checks
- › Signed Tax Form



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 #:1349032
City/Town:STURBRIDGE

A.General Information

1. Project Location:

a. Street Address	595 MAIN STREET		
b. City/Town	STURBRIDGE	c. Zip Code	01518
d. Latitude	42.11549N	e. Longitude	72.11613W
f. Map/Plat #	415-02338	g.Parcel/Lot #	595

2. Applicant:

Individual Organization

a. First Name	JAMES	b.Last Name	ROBIDA
c. Organization	MASSACHUSETTS DEPARTMENT OF TRANSPORTATION		
d. Mailing Address	499 PLANTATION PARKWAY		
e. City/Town	WORCESTER	f. State	MA
		g. Zip Code	01605
h. Phone Number	857-368-3151	i. Fax	
		j. Email	James.Robida@dot.state.ma.us

3.Property Owner:

more than one owner

a. First Name		b. Last Name	
c. Organization	BLACKINGTON LLC		
d. Mailing Address	530 MAIN STREET		
e. City/Town	STURBRIDGE	f.State	MA
		g. Zip Code	01566
h. Phone Number		i. Fax	
		j.Email	

4.Representative:

a. First Name	ERIC	b. Last Name	OLSON
c. Organization	VHB		
d. Mailing Address	101 WALNUT STREET, PO BOX 9151		
e. City/Town	WATERTOWN	f. State	MA
		g. Zip Code	02471
h.Phone Number	508-513-2740	i.Fax	
		j.Email	eolson@vhb.com

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

a.Total Fee Paid	750.00	b.State Fee Paid	362.50	c.City/Town Fee Paid	387.50
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6.General Project Description:

THE APPLICANT, MASSDOT, IS PROPOSING TO REPAIR AND ENHANCE THE SUBSURFACE DRAINAGE SYSTEM LOCATED AT 595 MAIN STREET AND ALONG A PORTION OF THE ADJACENT ROUTE 20 (MAIN STREET) ROAD LAYOUT IN STURBRIDGE, MASSACHUSETTS. THE REPAIR WILL INCLUDE REMOVAL AND REPLACEMENT OF EXISTING DETERIORATED DRAINAGE STRUCTURES, IMPLEMENTATION OF A NEW DISCHARGE SYSTEM, AND IMPROVEMENTS TO THE DOWNGRAIENT ERODED SLOPE. REFER TO THE ATTACHED NOI NARRATIVE FOR FULL PROJECT DETAILS.

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 |



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7. Coastal Engineering Structure
9. Transportation
8. Agriculture (eg., cranberries, forestry)
10. 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)?

1. Yes No If yes, describe which limited project applies to this project:
2. Limited Project

8. Property recorded at the Registry of Deeds for:

a. County:	b. Certificate:	c. Book:	d. Page:
WORCESTER		48946	0109

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. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet	2. square feet
c. <input type="checkbox"/> Land under Waterbodies and Waterways	1. Square feet	2. square feet
	3. cubic yards dredged	
d. <input type="checkbox"/> Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. <input type="checkbox"/> Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. <input checked="" type="checkbox"/> Riverfront Area	Quinebaug River	
	1. Name of Waterway (if any)	
2. Width of Riverfront Area (check one)	<input type="checkbox"/> 25 ft. - Designated Densely Developed Areas only <input type="checkbox"/> 100 ft. - New agricultural projects only <input checked="" type="checkbox"/> 200 ft. - All other projects	
3. Total area of Riverfront Area on the site of the proposed project	90266 square feet	
4. Proposed Alteration of the Riverfront Area:		



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City/Town:STURBRIDGE

5. Projects Involves Stream Crossings

Project Involves Streams Crossings

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: 2021

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.



Massachusetts Department of Environmental Protection

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Provided by MassDEP:
MassDEP File #:
eDEP Transaction #:1349032
City/Town:STURBRIDGE

- a. NHESP Tracking Number 19-38362
- b. Date submitted to NHESP 4/27/2021

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:



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 #:
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City/Town:STURBRIDGE

- 1. Single Family Home
- 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)).
- 4. 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: d. Revised Final Date: e. Scale:

STURBRIDGE ROUTE
20 DRAINAGE
REPAIR

RACHEL LUNA

LUKE BOUCHER

6/29/23

1"=20'

- 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.

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 #:1349032
City/Town:STURBRIDGE

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:

379421	6/14/2023
2. Municipal Check Number	3. Check date
379358	6/14/2023
4. State Check Number	5. Check date
Vanasse Hangen Brustlin	
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.

	8/2/23
1. Signature of Applicant	2. Date
MassDOT	8/2/23
3. Signature of Property Owner(if different)	4. Date
	8/3/23
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 #:1349032
 City/Town:STURBRIDGE

A. Applicant Information

1. Applicant:

a. First Name JAMES b.Last Name ROBIDA
 c. Organization MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
 d. Mailing Address 10 PARK PLAZA
 e. City/Town BOSTON f. State MA g. Zip Code 02116
 h. Phone Number 8573683151 i. Fax j. Email James.Robida@dot.state.ma.us

2. Property Owner:(if different)

a. First Name b. Last Name
 c. Organization BLACKINGTON LLC
 d. Mailing Address 530 MAIN STREET
 e. City/Town STURBRIDGE f.State MA g. Zip Code 01566
 h. Phone Number i. Fax j.Email

3. Project Location:

a. Street Address 595 MAIN STREET b. City/Town STURBRIDGE

Are you exempted from Fee? (YOU HAVE SELECTED 'NO')

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
J.) ANY OTHER ACTIVITY NOT IN CATEGORY 1,3,4,5 OR 6;	1	500.00	RFA MULTIPLIER 1.5	750.00
		City/Town share of filling fee \$387.50	State share of filing fee \$362.50	Total Project Fee \$750.00



Town of Sturbridge

Barbara A. Barry, Finance Director

Department/Board/Committee: Conservation Commission

Please verify outstanding tax/fee status for the following property owner:

Property Owner: Blackington LLC

Property Location: 595 Main St (Parcel ID: 415-02338-595)

The license/permit may be released.

The license/permit may not be released.

Barbara A. Barry

Finance Director

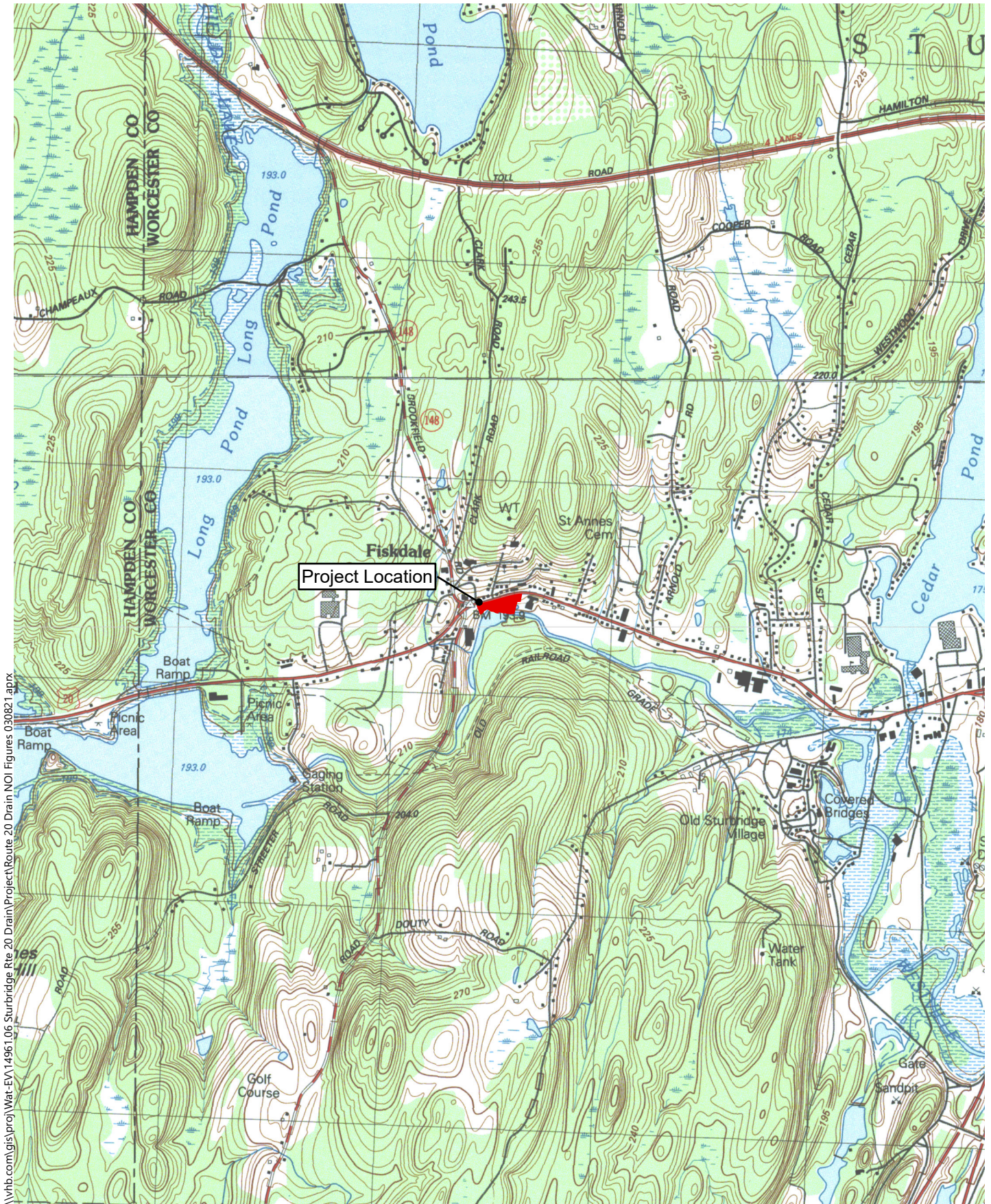
8/4/23

Date



Notice of Intent Figures

- › Figure 1 – Project Location Map
- › Figure 2 – Aerial Map
- › Figure 3 – NHESP Map
- › Figure 4 – FEMA Map



\\vhb.com\gis\proj\Wat-EV\14961.06 Sturbridge, Rte 20 Drain\Project\Route 20 Drain NOI Figures 030821.aprx



Sturbridge Rt. 20 Drainage | Sturbridge, MA

Legend

 Project Location

Figure 1 - USGS Locus Map
Source Info: USGS, MassGIS, VHB



\\vhb.com\gis\pro\Wat-EV\14961.06.Sturbridge.Rte.20.Drain\ProjectRoute.20.Drain.NOI\Figures.030821.aprx



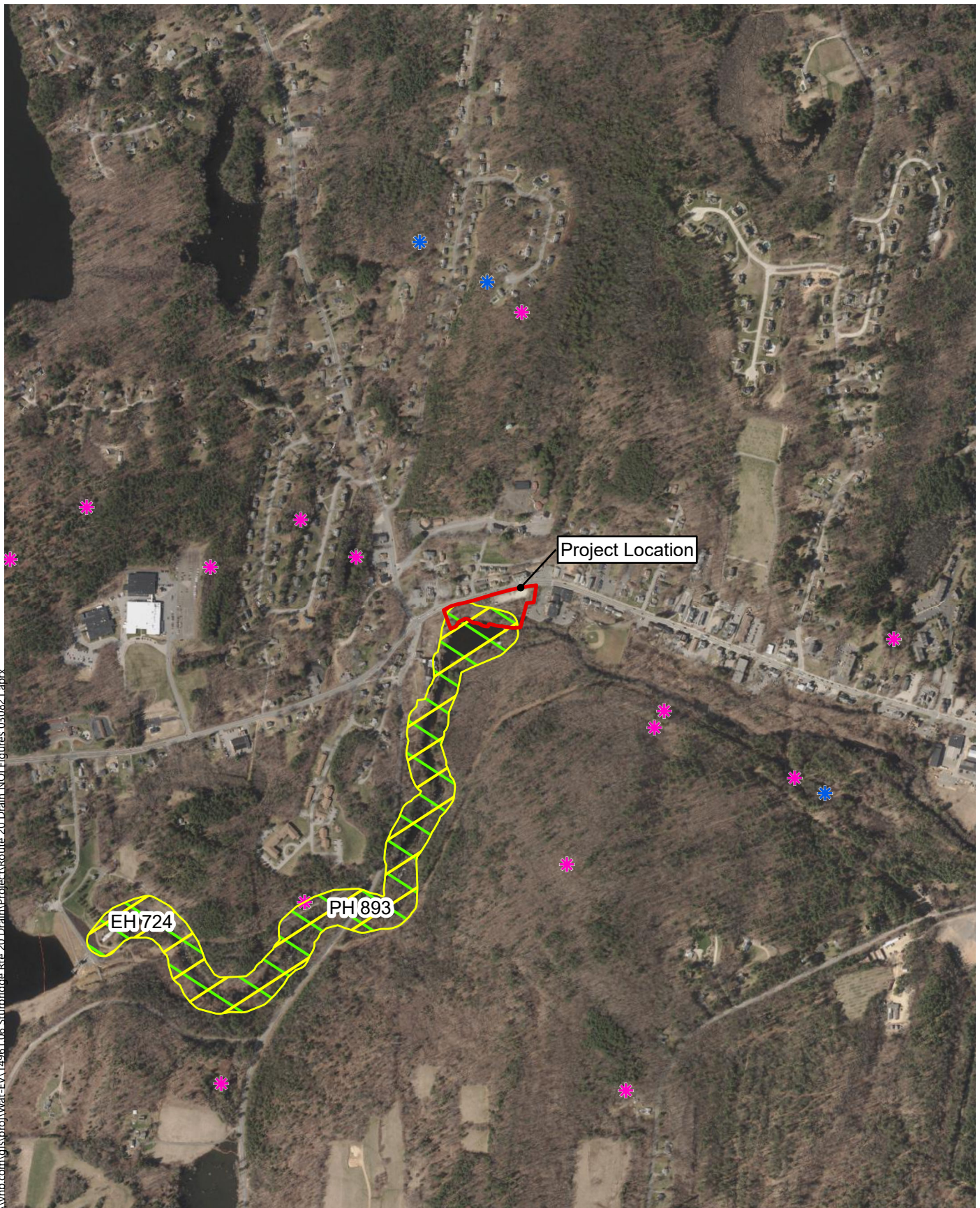
Sturbridge Rt. 20 Drainage | Sturbridge, MA

Legend

 Project Location

Figure 2 - Aerial Map

Source Info: USGS, MassGIS, VHB



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Sturbridge Rt. 20 Drainage | Sturbridge, MA

Legend






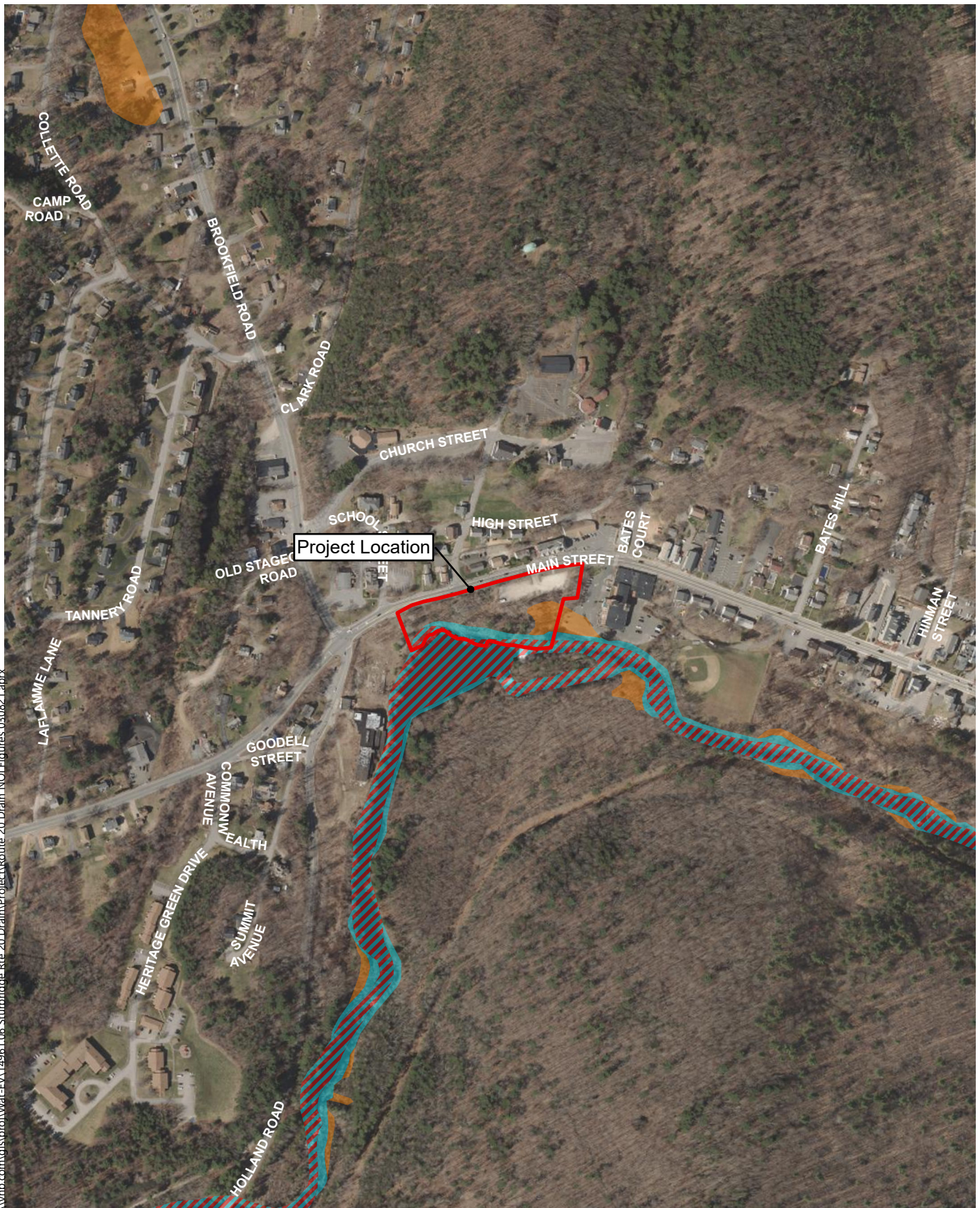
-  Project Location
-  NHESP Priority Habitats of Rare Species
-  NHESP Estimated Habitats of Rare Wildlife
-  NHESP Potential Vernal Pools
-  NHESP Certified Vernal Pools

Figure 3 - NHESP Map
Source Info: USGS, MassGIS, VHB



\\vhb.com\gis\proj\Wat-EVA14961.06.Sturbridge.Rte.20.Drain\ProjectRoute.20.Drain.NOIFigures.0310821.aprx



Sturbridge Rt. 20 Drainage | Sturbridge, MA

Legend

- Project Location
- AE: Regulatory Floodway
- FEMA Flood Zone Designations**
- AE: 1% Annual Chance of Flooding, with BFE
- X: 0.2% Annual Chance of Flooding

Figure 4 - FEMA Map
Source Info: USGS, MassGIS, VHB



Attachment A

Notice of Intent Narrative

- › Introduction
- › Site Description
- › Work Description
- › Mitigation Measures
- › Regulatory Compliance
- › Summary

Attachment A - Notice of Intent Narrative

This Notice of Intent (NOI) is filed pursuant to the Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40) and its implementing regulations (310 CMR 10.00). The Massachusetts Department of Transportation is exempt from locally established bylaws and regulations and the Project is therefore not subject to review pursuant to the Town of Sturbridge's Wetlands Bylaw. This narrative describes wetland resource areas associated with the Project Site, the proposed work, impacts to wetland resource areas, mitigation measures, and how the Project meets the performance standards of the WPA. Refer to the accompanying Project plans included as Attachment E (bound separately) for a layout and details of the Project components.

Introduction

The Applicant, the Massachusetts Department of Transportation (MassDOT), is proposing to repair and enhance the subsurface drainage system on the western portion of the parcel located at 595 Main Street (the Project Property) in Sturbridge, Massachusetts. Work will also occur along a portion of the adjacent Route 20 (Main Street) road layout. The work areas are collectively referred to as the "Project Site". The repair will include removal and replacement of existing deteriorated drainage structures, implementation of a new discharge system, and improvements to the downgradient eroded slope (the Project). The Project will improve overall drainage performance on the Project Site while enhancing the existing conditions of the natural environment.

Portions of land on or near the Project Property contain resource areas subject to the jurisdiction of the WPA, including Bank, Bordering Vegetated Wetland (BVW), Bordering Land Subject to Flooding (BLSF), Land Under Waterbodies and Waterways (LUWW), and Riverfront Area (RFA). The WPA also establishes a 100-foot buffer zone to Bank. All resource areas are associated with the Quinebaug River. Proposed work will result in both temporary and permanent impacts within RFA and the 100-foot buffer zone.

Wetland resource areas will be protected from impacts during construction through the implementation of an erosion and sedimentation control program. This program includes provisions to minimize areas of disturbance through phasing and sequencing, limit erosion through stabilization, and prevent sediment from leaving the site by installing structural controls. Runoff generated from the Project will be collected and

treated in accordance with design guidelines¹ developed by Department of Environmental Protection (DEP) and standards contained in the WPA Regulations.

Refer to the figures and Project Plans (Attachment E) accompanying this NOI for the Project location and construction details.

Site Description

The Project Property is a 2.51-acre parcel of land located at 595 Main Street in Sturbridge, Massachusetts (Parcel ID: 415-02338-595). The Project Property is located within the Quinebaug River watershed and is generally bounded by the westbound lane of Route 20 (Main Street) to the north, the Quinebaug River to the south, commercial properties including a martial arts studio and a Subway restaurant to the east, and by the intersection of Route 148, Route 20, and Holland Road to the west. Figures 1 and 2 show a USGS map and an aerial map of the Project Property.

The Project Property is mostly comprised of undisturbed forested land. In the northeast corner of the parcel is a dirt lot which provides parking space, access to Route 20, and a walking trail that leads down to the river. The Quinebaug River (and the trail) borders the entire southern edge of the parcel. A dam in the Quinebaug River is located off the southeastern corner of the property. Within the Project Site, there are three existing catch basins along Rt. 20 that discharge from a single deteriorating corrugated metal outfall pipe located on a steep, wooded slope above the Quinebaug River. A fourth catch basin is located on the Project Site east of the drainage pipes and south of Route 20 but is not operational. Close to the river, there is substantial scour and erosion on the steep slope below the outfall pipe, between the existing uncontrolled drainage discharges and the river. The slopes in this area are greater than 8%.

According to the most recently available data provided by the Massachusetts Natural Heritage and Endangered Species Program² (NHESP), a portion of the Project Site is located within both Priority Habitat of Rare Species (PH 893) and Estimated Habitat of Rare Wildlife (EH 724). An information request was submitted to NHESP in April 2021, and the response letter received in May 2021 indicated that the Priority and Estimated Habitat is for the state-listed species of Special Concern the creeper mussel (*Strophitus undulatus*). Because all work is upland of the Quinebaug River and proper erosion and sedimentation controls will be installed to protect resource areas during construction, no impact to the mussel population is anticipated. A full Massachusetts Endangered Species Act (MESA) review will be conducted with NHESP after this NOI is filed.

¹ DEP, 2008. *Massachusetts Stormwater Handbook*.

² NHESP, 2021. *Massachusetts Natural Heritage Atlas, 15th Edition*.

There are no certified or potential vernal pools located on or adjacent to the Project (Figure 3). Refer to Attachment C to view the response letter received from Natural Heritage upon submission of an Information Request.

The Project Site does not lie within any Area of Critical Environmental Concern³ (ACEC). According to the most recent information provided by MassDEP, the Project Site is not located in an area designated as an Outstanding Resource Water⁴, and no portion of the Project Site is located within a Zone II Interim Wellhead Protection Area⁵.

The most recently issued Flood Insurance Rate Map (FIRM)⁶ for the area indicates that the Quinebaug River is within mapped Zone AE floodplain (base flood-elevations 597 - 598) and is also a mapped Regulatory Floodway (Figure 4 & Firmette Panel #25027C0926E). The mapped floodplain extends upslope of the river in areas east and southeast of the Project Site.

The Natural Resources Conservation Service⁷ (NRCS) soil survey has mapped the property and surrounding area and classified soils within the vicinity of the Project as Paxton fine sandy loam with 0 to 8 percent slopes and Udorthents.

Topography within the Project Property ranges from undulating with gentle slopes in the eastern portion to steep slopes present along the bank of the Quinebaug River in the west and along the northern end of the property along Route 20.

Wetland Resource Areas

Wetlands on the Project Property were delineated in December 2020 by environmental scientists with Vanasse Hangen Brustlin, Inc. in accordance with methods developed by the DEP⁸ and the U.S. Army Corps of Engineers⁹. Wetland resource areas present on or near the Project Site include Bank, BVW, LUWW, BLSF, and RFA. Documentation of conditions in and adjacent to the wetlands are described in the Wetland Delineation Summary Report included as Attachment B of this NOI.

Buffer Zone

The WPA regulations (310 CMR 10.02(2)(b)) establish a 100-foot buffer zone from the limits of wetlands Bank and BVW described above. Refer to Attachment B for a description of the buffer zones on and adjacent to the Project Property.

³ Massachusetts Executive Office of Energy and Environmental Affairs, 2009.

⁴ MassDEP, 2010. Designated Outstanding Resource Waters of Massachusetts

⁵ MassDEP, 2012. Approved Wellhead Protection Areas (Zone II).

⁶ Federal Emergency Management Agency, National Flood Hazard Layer, Digital Flood Insurance Rate Map (DFIRM).

⁷ Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey.

⁸ DEP, 1995. *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act*.

⁹ USACE, 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0*.

Work Description

The Applicant is proposing to repair the existing drainage systems located on the Project Site. Proposed work includes removing a corrugated metal outlet pipe, three catch basins, and the basins' connecting pipes, as well as installing two new catch basins and three new drainage manholes to collect runoff from the roadway. This work will all occur on the eastbound side of Route 20. Two of the manholes serve to connect the proposed MassDOT-owned closed drainage on Route 20 to the proposed 12-inch corrugated plastic pipe (CPP) which will run down the steep slope south of Route 20 and discharge approximately 14 feet uphill of the existing outfall. The third manhole will be installed at the same location as the furthest downstream catch basin of the existing system and will connect the existing Town-owned closed drainage on School Street to a separate proposed 12-inch CPP. This pipe will run immediately east of the proposed MassDOT outlet pipe down the steep slope and discharge at the same location as the proposed MassDOT outfall. This design will eliminate the drainage interconnection between MassDOT and the Town and discharge their respective runoff via separate outfalls.

No new impervious area will be added as a result of the proposed work and the contributing drainage areas for MassDOT and the Town will not be altered under proposed conditions. The Town and MassDOT outfalls will both discharge into a riprap stilling basin via a double-barreled headwall. The proposed stilling basin has been sized to dissipate the energy of the flow from both the MassDOT and Town outfalls and will measure approximately 1 foot deep by 12 feet wide by 6 feet long in the direction of flow. The runoff will flow out of the stilling basin over a level spreader and down a stone protected slope into the Quinebaug River.

The stone protected slope will be stabilized with 24-inch vertical granite curbing anchored in a concrete footing at the toe of the slope to prevent the stone from sliding down the embankment into the river. Areas within the limit of work south of the basin will be restored to match their original grade and fix the existing scour. The energy dissipation provided by the stilling basin in conjunction with the erosion control provided by the stone stabilized slope will alleviate the existing erosion issue and prevent future sediment discharge from the Project Site into the Quinebaug River. The system will require an easement along the shared property line between 9 Holland Road and 595 Main Street.

Detailed means and methods of construction will be at the discretion and responsibility of the contractor performing the work. However, it is anticipated that the Project will be phased as such to limit the time that the steep slope is exposed by conducting the work at the lowest portion of the slope first and then working upslope. The Project will consist of the following general activities:

- › Before any work begins, installing sedimentation controls according to the Project Plans;
- › Vegetation clearing and excavation;
- › Installation of stilling basin, headwall, and stone stabilized slope;
- › Removal of existing pipes and catch basins;

- › Installation of new pipes, catch basins, and manholes;
- › Additional earthwork (placing fill and grading);
- › Loaming and seeding; and
- › After soils have stabilized, removing sedimentation controls.

Work in wetland resource areas and their buffer zones is described in more detail below.

Work in Riverfront Area

Proposed work in the inner riparian zone includes installing erosion controls, removing the existing corrugated metal outlet pipe, replacing a 12" pipe which drains to the outlet pipe, and installing a new headwall, stilling basin, and stone-stabilized slope. Additional work includes grading the eroded slope and loaming and seeding after completion of work.

Proposed work in the outer riparian zone includes removing three catch basins and the basins' connecting pipes, removing existing curbing, and installing two new catch basins, three new drainage manholes, and two new pipes.

Installation of the headwall, stilling basin, and stabilized slope will result in 700 sf of permanent impact to the inner RFA, and the other work described above will result in 2,632 sf of temporary impact to the inner RFA. Work proposed in the outer RFA will result in 746 sf of temporary impact. Overall, the Project will result in 3,378 sf of temporary and 700 sf of permanent impacts to the RFA. There will be no increase of impervious surface within the RFA.

Work in Buffer Zone

Work in the 100-foot buffer zone to Bank is the same as the work described above within the inner riparian zone.

Mitigation Measures

A suite of mitigation measures is proposed to prevent short- and long-term impacts to wetland resource areas. Mitigation measures proposed for this project include project phasing and an erosion and sedimentation control program, which will include structural and non-structural practices.

Project Phasing and Sequencing

It is anticipated that the Project work will be phased to conduct earthwork at the base of slope and along the steep portions first in order to minimize the time the steep slope is exposed. This would also serve to first stabilize the existing scoured and eroded downslope portions of the slope.

Erosion and Sediment Control

An erosion and sedimentation control program will be implemented to minimize temporary impacts to wetland resource areas during the construction phase of the project. The program incorporates Best Management Practices (BMPs) specified in guidelines developed by the DEP¹⁰ and the U.S. Environmental Protection Agency (EPA)¹¹.

Proper implementation of the erosion and sedimentation control program will:

- › minimize exposed soil areas through sequencing and temporary stabilization;
- › place structures to manage stormwater runoff and erosion; and
- › establish a permanent vegetative cover or other forms of stabilization as soon as practicable.

The following sections describe the controls that will be used and practices that will be followed during construction. These practices comply with criteria contained in the NPDES General Permit for Discharges from Large and Small Construction Activities issued by the EPA.

Non-Structural Practices

Non-structural practices to be used during construction include temporary stabilization, temporary seeding, permanent seeding, and dust control. These practices will be initiated as soon as practicable in appropriate areas at the site.

Temporary Stabilization

Any areas of exposed soil or stockpiles that will remain inactive for more than 14 days will be covered with a layer of straw mulch applied at a rate of 90 pounds per 1,000 square feet. The mulch will be anchored with a tacking coat (non-tar) applied by a hydroseeded. Steeper slopes (greater than 10 percent) will be covered with a bonded fiber matrix (EcoAegis® or similar) according to the recommendations provided by the manufacturer.

Temporary Seeding

If conditions allow, a temporary vegetative cover will be established on areas of exposed soils (including stockpiles) that remain unstabilized for a period of more than 60 days. The seeded surfaces will be covered with a layer of straw mulch or bonded fiber matrix as described above. The seed mix shall include a blend of rapid germinating grasses that are indigenous to central Massachusetts.

Permanent Seeding

¹⁰ DEP, 1997. *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas: A Guide for Planners, Designers, and Municipal Officials*.

¹¹ EPA, 2007. *Interim Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites*. Office of Water. Report EPA 833-R-060-04.

Upon completion of final grading, any areas not covered by pavement or other forms of stabilization within the easement and upgradient of the headwall will be seeded with a New England Erosion Control/Restoration Mix for Dry Sites or New England Conservation/Wildlife Mix produced by New England Wetland Plants, Inc., as shown below. The mix will be applied at a rate of 25 pounds per acre and will be covered with mulch or bonded fiber matrix as described above.

Conservation seed mix typical species: Virginia Wild Rye (*Elymus virginicus*), Little Bluestem (*Schizachyrium scoparium*), Big Bluestem (*Andropogon gerardii*), Red Fescue (*Festuca rubra*), Switch Grass (*Panicum virgatum*), Partridge Pea (*Chamaecrista fasciculata*), Panicleleaf Tick Trefoil (*Desmodium paniculatum*), Indian Grass (*Sorghastrum nutans*), Blue Vervain (*Verbena hastata*), Butterfly Milkweed (*Asclepias tuberosa*), Black Eyed Susan (*Rudbeckia hirta*), Common Sneezeweed (*Helenium autumnale*), Heath Aster (*Aster pilosus/Symphotrichum pilosum*), Early Goldenrod (*Solidago juncea*), Upland Bentgrass (*Agrostis perennans*)

Dust Control

The erosion and sediment control program includes provisions to minimize the generation of dust during dry and windy conditions. When necessary, larger areas of exposed soil will be wetted to prevent wind borne transport of fine-grained sediment. Enough water shall be applied to wet the upper 0.5 inches of soil. The water will be applied as a fine spray to prevent erosion. A water truck will be kept on the property (or at a nearby location) to facilitate this practice.

Structural Practices

Structural erosion and sedimentation controls to be used on the site include barriers and catch basin inlet protection.

Erosion Control Barriers

Prior to any ground disturbance, an approved erosion control barrier will be installed at the downgradient limit of work. As construction progresses, additional barriers will be installed around the base of stockpiles and other erosion prone areas. The barriers will be entrenched into the substrate to prevent underflow.

If sediment has accumulated to a depth which impairs proper functioning of the barrier, it will be removed by hand or by machinery operating upslope of the barriers. This material will be either reused at the Site or disposed of at a suitable offsite location. Any damaged sections of the barrier will be repaired or replaced immediately upon discovery.

During active construction, additional barriers will be installed along the steep slope, on an as-needed basis.

Catch Basin Inlet Protection

The inlets of existing and proposed catch basins will be protected from sediment inflow during the work period by surrounding them with a barrier of staked straw bales or by installing Silt Sacks®. If straw bales are used, a layer of non-woven filter fabric shall be placed beneath the grate of each basin. If sediment has collected behind the barrier or in the Silt Sack® to a point where it impairs proper functioning, it will be removed and will be either reused onsite or disposed of at a suitable offsite location.

Stormwater Management

The Project will not result in any increase to the amount of impervious area on the Project Site. Runoff generated from impervious surfaces will be collected and managed in accordance with the DEP policy. A stormwater management system will be constructed that includes measures to provide groundwater recharge, attenuate peak flows and provide water quality treatment. Full details on the system (including supporting calculations) are included in the accompanying Stormwater Memorandum(Attachment D).

Compliance with the 10 stormwater management standards cited in Section 310 CMR 10.05(6)(k) of the WPA Regulations is evaluated in the Regulatory Compliance section of the Stormwater Memorandum.

Regulatory Compliance

As demonstrated below, the Project work fully complies with applicable performance standards contained in the WPA and the Bylaw for RFA and the 100-ft buffer zone, and will protect the interests of the Bylaw. Compliance with each of the applicable performance standards is described in more detail below.

Work in Riverfront Area

As demonstrated below, work proposed in the Riverfront Area complies with the requirements contained in 310 CMR 10.58(4):

Where the presumption set forth in 310 CMR 10.58(3) is not overcome, the applicant shall prove by a preponderance of the evidence that there are no practicable and substantially equivalent economic alternatives to the proposed project with less adverse effects on the interests identified in M.G.L. c.131 § 40 and that the work, including proposed mitigation, will have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131 § 40. In the event that the presumption is partially overcome, the issuing authority shall make a written determination setting forth its grounds in the Order of Conditions and the partial rebuttal shall be taken into account in the application of 310 CMR 10.58 (4)(d)1.a. and c.; the issuing authority shall impose conditions in the Order that contribute to the protection of interests for which the riverfront area is significant.

The proposed Project has been designed to address these requirements. Since the proposed work is to repair an existing drainage system located in the inner RFA, there is no practicable alternative to the Project. The work will not have a significant adverse

impact on the existing riparian zone and the Project will not significantly alter existing conditions adjacent to the river with regard to impervious surface or wildlife habitat. By remediating the existing scour and adding drainage features that will prevent future erosion, the Project will result in an improvement over the existing conditions on the Project Site.

Alternatives Analysis

As stated in 310 CMR 10.58(4)(c), work within the RFA requires that:

There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in M.G.L. c. 131 § 40.

Alternatives evaluated for the Project included:

- Alternative 1 – outlet scour not addressed and drainage system not repaired (i.e. the “no-build” alternative)
- Alternative 2 – scour filled in; drainage system untouched
- Alternative 3 – scour addressed, and drainage system repaired (preferred alternative)

As the purpose of this Project is to mitigate the existing scour at the culvert outlet and repair the existing drainage system, not addressing these items would not satisfy the Project’s purpose. Therefore, Alternative 1 was not considered a viable option for the Project’s design.

Alternative 2 would address the existing scour at the culvert outlet, but as the cause of erosion is the drainage from the culvert, this would be a short-term fix and would likely require mitigation again in the future. Alternative 2 was therefore determined not to be a viable alternative.

Alternative 3, the preferred alternative, addresses both the existing scour and the drainage system. Mitigating the existing scour by regrading the area and eliminating the cause of erosion by improving the drainage system results in the most favorable Project outcome. As described in previous sections of this NOI, the preferred alternative has been designed to minimize impacts to Riverfront Area to the greatest extent possible while still meeting the Project goals.

No Significant Adverse Impact

As stated in 310 CMR 10.58(4)(d), work within the RFA requires that:

The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131, § 40.

According to the provisions of this regulation, “*the issuing authority may allow the alteration of up to 5000 square feet or 10% of the riverfront area within the lot, whichever is greater,*” subject to the following:

- a. *At a minimum, a 100 foot wide area of undisturbed vegetation is provided. This area shall extend from mean annual high-water along the river unless another location would better protect the interests identified in M.G.L. c. 131 § 40. If there is not a 100 foot wide area of undisturbed vegetation within the riverfront area, existing vegetative cover shall be preserved or extended to the maximum extent feasible to approximate a 100 foot wide corridor of natural vegetation. Replication and compensatory storage required to meet other resource area performance standards are allowed within this area; structural stormwater management measures may be allowed only when there is no practicable alternative. Temporary impacts where necessary for installation of linear site-related utilities are allowed, provided the area is restored to its natural conditions. Proposed work which does not meet the requirement of 310 CMR 10.58(4)(d)1.a. may be allowed only if an applicant demonstrates by a preponderance of evidence from a competent source that an area of undisturbed vegetation with an overall average width of 100 feet will provide equivalent protection of the riverfront area, or that a partial rebuttal of the presumptions of significance is sufficient to justify a lesser area of undisturbed vegetation;*

Less than 5,000 sf of alterations to the Riverfront Area are proposed. Because of the nature and location of the work, the area proposed for repair is located within 100-feet of the mean-annual high-water line and a 100-foot buffer cannot be maintained. The majority of the anticipated impacts will be temporary in nature for the removal and replacement of the pipes. The stabilization of the slope below the outfall, which will result in permanent impacts to the RFA, will create an improvement over existing conditions by fixing the existing scour on the slope above the bank and adding drainage features which will prevent future erosion and runoff into the Quinebaug River. The Project is designed to preserve existing vegetative cover within the RFA to the maximum extent feasible.

- b. *Stormwater is managed according to standards established by the Department in its Stormwater Policy.*

Stormwater will be managed according to the Stormwater Standards. A Stormwater Memorandum has been prepared for the Project and is included as Attachment D of this submittal.

- c. *Proposed work does not impair the capacity of the riverfront area to provide important wildlife habitat functions. Work shall not result in an impairment of the capacity to provide vernal pool habitat identified by evidence from a competent source, but not yet certified. For work within an undeveloped riverfront area which exceeds 5,000 square feet, the issuing authority may require a wildlife habitat evaluation study under 310 CMR 10.60.*

As discussed previously, the Project will not impact greater than 5,000 square feet of RFA and will not impair the area's ability to provide wildlife habitat functions. The majority of the RFA on the Project Property associated with the Quinebaug River will remain undisturbed. No vernal pools are present on or near the Project Site.

- d. *Proposed work shall not impair groundwater or surface water quality by incorporating erosion and sedimentation controls and other measures to attenuate nonpoint source pollution.*

As discussed previously, an erosion and sedimentation control plan has been developed for the Project Site and includes multiple provisions to prevent sedimentation associated with work activities from impacting resource areas.

Work in Buffer Zone

Work within buffer zone is not governed by specific regulatory performance standards in the WPA. In general, work within buffer zones is permissible when said work has been designed, or can be conditioned, such that there will be no impact on the downgradient wetland resource area(s) being buffered. As identified in 310 CMR 10.53(1) of the WPA regulations:

For work in Buffer Zone subject to review under 310 CMR 10.02(2)(b)3., the issuing authority should consider the characteristics of the buffer zone, such as the presence of steep slopes, that may increase the potential for adverse impacts on resource areas. Conditions may include limitations on the scope and location of work in the buffer zone as necessary to avoid alteration of resource areas. The issuing authority may require erosion and sedimentation controls during construction, a clear limit of work, and the preservation of natural vegetation adjacent to the resource area and/or other measures commensurate with the scope and location of the work within the buffer zone to protect the interests of the Act.

The proposed project has been designed to address these requirements. Work within the 100-foot buffer zone includes installing erosion controls, removing and replacing CPP pipes and catch basins, installing new catch basins and manholes, installing a concrete headwall and stilling basin, and regrading the existing slope and stabilizing it with large stones.

As identified in the Mitigation Measures section of this attachment, an erosion and sedimentation control program will be implemented to prevent adverse impacts during construction.

Summary

The Applicant is proposing to repair and enhance the subsurface drainage system located at 595 Main Street in Sturbridge, Massachusetts. Work will also occur along a portion of the adjacent Route 20 (Main Street) road layout. The repair will include removal and replacement of existing deteriorated drainage structures, implementation of a new discharge system, and improvements to the downgradient eroded slope. The Project will improve overall drainage performance on the Project Site while enhancing the existing conditions of the natural environment.

As proposed, the Project will result in both temporary and permanent impacts within RFA and the 100-foot buffer zone. A suite of mitigation measures is proposed to prevent

short- and long-term impacts to resource area buffer zones. Mitigation measures proposed include an erosion and sedimentation control program, which will include structural and non-structural practices.

As such, the Applicant respectfully requests that the Sturbridge Conservation Commission find these measures adequately protective of the interests identified in the WPA and issue an Order of Conditions approving the work described in this NOI and shown on the accompanying plans.

Attachment B

Wetland Delineation Summary Report

- › Wetland Delineation Summary Report
- › DEP Field Data Forms
- › Photographic Log

Sturbridge Rt. 20 Drainage Repair Project

Sturbridge, Massachusetts

PREPARED FOR

Massachusetts Department of Transportation
10 Park Plaza, Room 4260
Boston, Massachusetts 02116

PREPARED BY



101 Walnut Street
Watertown, MA 02472
617-924-1770

March 2022



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Wetland Delineation Summary Report Narrative

This Notice of Intent (NOI) is filed pursuant to the Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40) and its implementing regulations (310 CMR 10.00). The Massachusetts Department of Transportation is exempt from locally established bylaws and regulations and the Project is therefore not subject to review pursuant to the Town of Sturbridge's Wetlands Bylaw. This narrative describes wetland resource areas delineated within the Project property.

Introduction

The Applicant, the Massachusetts Department of Transportation (MassDOT), is proposing to repair and enhance the subsurface drainage system located at 595 Main Street (the Project Property) in Sturbridge, Massachusetts. Work will also occur along a portion of the adjacent Route 20 (Main Street) road layout. The work areas are collectively referred to as the "Project Site". The repair will include removal and replacement of existing deteriorated drainage structures, implementation of a new discharge system, and improvements to the downgradient eroded slope (the Project). The Project will improve overall drainage performance on the Project Site while enhancing the existing conditions of the natural environment.

Portions of land on or near the Project Property contain resource areas subject to the jurisdiction of the WPA, including Bank, Bordering Vegetated Wetland (BVW), Bordering Land Subject to Flooding (BLSF), Land Under Waterbodies and Waterways (LUWW), and Riverfront Area (RA). The WPA also establishes a 100-foot buffer zone to Bank. All resource areas are associated with the Quinebaug River.

Refer to the figures and Project Plans (Attachment E) accompanying this NOI for the Project location and construction details.

Site Description

The Project Property is a 2.51-acre parcel of land located at 595 Main Street in Sturbridge, Massachusetts (415-02338-595). The Project Property is located within the Quinebaug River watershed and is generally bounded by the westbound lane of Route 20 (Main Street) to the north, the Quinebaug River to the south, commercial properties including a martial arts studio and a Subway restaurant to the east, and by the intersection of Route 148, Route 20, and Holland Road to the west. Figures 1 and 2 show a USGS map and an aerial map of the Project Property.

The Project Property is mostly comprised of undisturbed forested land. In the northeast corner of the parcel is a dirt lot which provides parking space, access to Route 20, and a walking trail that leads down to the river. The Quinebaug River (and the trail) borders the entire southern edge of the parcel. A dam in the Quinebaug River is located off the southeastern corner of the property. Within the Project Site, there are three existing catch basins that discharge south to the Quinebaug River down a steep, wooded slope. A fourth catch basin is located on the Project Site east of the drainage pipes and south of Route 20, but is not operational. Close to the river, there is substantial scour and erosion on the steep slope between the existing uncontrolled drainage discharges and the river.

According to the most recently available data provided by the Massachusetts Natural Heritage and Endangered Species Program¹ (NHESP), the Project Site is located within both Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife. There are no certified or potential vernal pools located on or adjacent to the Project (Figure 3).

The Project Site does not lie within any Area of Critical Environmental Concern² (ACEC). According to the most recent information provided by MassDEP, the Project Site is not located in an area designated as an Outstanding Resource Water³, and no portion of the Project Site is located within a Zone II Interim Wellhead Protection Area⁴.

The most recently issued Flood Insurance Rate Map (FIRM)⁵ for the area indicates that the Quinebaug River is within mapped Zone AE floodplain (base flood-elevations 597 -598) and is also a mapped Regulatory Floodway (Figure 4 & Firmette Panel #25027C0926E). The mapped floodplain extends upslope of the river in areas east and southeast of the Project Site.

The Natural Resources Conservation Service⁶ (NRCS) soil survey has mapped the property and surrounding area and classified soils within the vicinity of the Project as Paxton fine sandy loam with 0 to 8 percent slopes and Udorthents.

¹ NHESP, 2021. *Massachusetts Natural Heritage Atlas, 15th Edition*.

² Massachusetts Executive Office of Energy and Environmental Affairs, 2009.

³ MassDEP, 2010. Designated Outstanding Resource Waters of Massachusetts

⁴ MassDEP, 2012. Approved Wellhead Protection Areas (Zone II).

⁵ Federal Emergency Management Agency, National Flood Hazard Layer, Digital Flood Insurance Rate Map (DFIRM).

⁶ Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey.

Topography within the Project Property ranges from undulating with gentle slopes in the eastern portion to steep slopes present along the bank of the Quinebaug River in the west and along the northern end of the property along Route 20.

Wetland Resource Areas

Wetlands on the Project Property were delineated in December 2020 by environmental scientists with Vanasse Hangen Brustlin, Inc. (VHB) in accordance with methods developed by the DEP⁷ and the U.S. Army Corps of Engineers⁸. The following sections of this narrative describe the wetlands and identify resource areas that are regulated under the WPA Regulations (310 CMR 10.00). Documentation of conditions in and adjacent to wetlands are summarized in the data forms provided in Attachment A of this NOI.

The resource areas identified near the Project Site subject to state regulations under the WPA include Bank, Bordering Vegetated Wetland (BVW), Land Under Water and Waterways (LUWW), Bordering Land Subject to Flooding (BLSF), and Riverfront Area (RFA). The resource areas are defined under the WPA (310 CMR 10.00) as follows:

- **Bank:** As defined by 310 CMR 10.54 (2), "a Bank is the portion of the land surface which normally abuts and confines a water body ... The upper boundary of Bank is the first observable break in slope or the mean annual flood level, whichever is lower."
- **BVW:** As defined by 310 CMR 10.55 (2)(a), BVWs "are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes." They "are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants."
- **LUWW:** As defined at 310 CMR 10.56 (2), LUWW is "*land beneath any creek, river, stream, pond or lake ... The boundary of LUWW is the mean annual low water level.*"
- **BLSF:** As defined at 310 CMR 10.57(2)(a), 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 water bodies; where a bordering vegetated wetland occurs, it extends from said wetland ... The boundary of BLSF is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm.*"
- **RFA:** As defined by 310 CMR 10.58 (a)(3) and the Bylaw, Riverfront Area is "*the area of land between a river's mean annual high-water line measured horizontally outward from the river and a parallel line located 200 feet away.*"

An additional resource area on the Project Site subject to regulations under the Bylaw includes the 200-foot buffer zone to all above resource areas.

⁷ DEP, 1995. *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act.*

⁸ USACE, 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0.*



Wetlands and their buffer zones located within the Project Property are described in more detail in the table below and the following sections of this attachment.

Table 1 Wetland Resource Areas

Wetland ¹	Type ¹	Resource Areas	Delineation Flags ¹
Stream 1 (Quinebaug River)	Perennial	Bank, LUWW, BLSF, RFA	BF1-100 to BF1-129
Wetland 1	PFO	BVW	WF1-100 to WF1-142
Stream 2 (UNT to the Quinebaug River)	Intermittent	Bank, LUWW	BF2-100 to BF2-116

Source: VHB, 2021.

¹ UNT = Unnamed Tributary; PFO = Palustrine Forested; BF = Bank Flag

Stream 1 – Quinebaug River

The Quinebaug River is a perennial stream, which is adjacent to the entire southern portion of the Project Property, and was delineated with flags numbered BF1-100 to BF1-129 (see Photos 1 through 6 in Attachment B). The Quinebaug River is 69 miles in length with an 850 square mile watershed and originates from the Hamilton Reservoir, approximately 4 miles to the southwest. The river flows from west to east adjacent to the Project Property and contains a dam just in the southeastern portion, which has created an upstream ponded area (Mill Pond) along the western portion of the property. The ponded portion of the river is approximately 250-300 feet wide, while the banks of the river, downstream of the dam, are approximately 40-feet wide. Resource areas onsite associated with the Quinebaug River include, Bank, LUWW, RFA and a 100-foot buffer zone.

Wetland 1

Wetland 1 consists of a sloped, freshwater, palustrine, forested swamp wetland system (USFWS Class: PFO1E)⁹ and was delineated with an closed loop of flags numbered WF1-100 to WF1-142 (see Photos 8 through 12 in Attachment B). This groundwater slope wetland is located with the central and eastern portions of the Project Property, and gently slopes to the southeastern corner of the property. The wetland is fed by a combination of groundwater discharge, stormwater runoff from an outfall culvert located at the far northwestern corner of the wetland and overland stormwater flow from the surrounding uplands. The culvert drains stormwater from catch basins located along Rt. 20 to the north of the property.

Table 2 below summarizes the dominant wetland vegetation observed within Wetland 1, DEP Field Data Forms are included in Attachment A. Soils within wetland 1 consisted of a mucky fine sandy loam consisted with the mapped soil type of Rippowam fine sandy loam, 0-3 percent slopes.

Resource areas located within Wetland 1 include, BVW, Bank and LUWW (associated with Stream 2, described below), and RFA associated with the Quinebaug River. The uplands

⁹ FGDC, 2013. Federal Geographic Data Committee. Classification of Wetlands and Deepwater Habitats of the United States, *Second edition*.



surrounding Wetland 1 consist of a band of undeveloped forested land and the Quinebaug River to the south, undeveloped forested land to the west, a small strip of undeveloped forested land and Route 20 to the north, and a developed commercial property and parking lot to the east. Dominant vegetation within the surrounding upland includes paper birch (*Betula papyrifera*), Eastern white pine (*Pinus strobus*), and red maple (*Acer rubrum*).

Table 2 Dominant Wetland Vegetation

Scientific	Common	Indicator	Upland	Wetland
Trees				
<i>Betula populifolia</i>	Paper Birch	FAC	X	X
<i>Acer rubrum</i>	Red Maple	FAC	X	X
<i>Quercus bicolor</i>	Swamp White Oak	FACW	-	X
Saplings/Shrubs				
<i>Comus amomum</i>	Silky dogwood	FACW	-	X
<i>Alnus incana</i>	Grey alder	FACW	-	X
Herbaceous				
<i>Phragmites australis</i> ¹	Common reed	FACW	-	X

¹ *Phragmites australis* is listed as an invasive species in New England. ¹⁰

Stream 2

An unnamed intermittent tributary to the Quinebaug River is present within Wetland 1 and the centerline was delineated with flags numbered BF2-100 to BF2-106 (see Photos 12 through 14 in Attachment B). The stream starts in the northwestern corner of the wetland and meanders to the southeast for the length of the wetland, ultimately exiting the Wetland 1 and draining into the Quinebaug River off the southeastern corner of the Project Property. The stream is fed by the wetland hydrology and stormwater runoff from the culvert outlet. At the culvert outlet in the far northeastern corner, there is diffuse flow through dense common reed inside the wetland for approximately 40-50-feet before the stream forms a channel with an discernable Bank. The stream is approximately 1-2 feet wide in the western portion of the wetland and 4-5 feet wide at the eastern terminus into the Quinebaug River with a substrate consisting of a mucky sandy gravel throughout.

Bordering Land Subject to Flooding

BLSF without a base flood elevation is located along the entire southern side of the Project Property and consists primarily of upland forested area adjacent to the Quinebaug River.

¹⁰ IPANE, 2008. Invasive Plant Atlas of New England. Website: <https://www.invasive.org/weedcd/html/ipane.htm>



Riverfront Area

If RFA is present, and extends to the north and west in the Project Property from the delineated Bank of the Quinebaug River (and Mill Pond). RFA within the Project Property is a mix of upland forested area and BVW.

Results

In summary, VHB scientists delineated Bank along the Quinebaug River, one intermittent Unnamed Tributary to the Quinebaug River, and one Bordering Vegetated Wetland, associated with the unnamed tributary, within the Study Area based on the presence of physical indicators.



Attachment A Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 595 Main Street (Rt. 20) City/County: Sturbridge Sampling Date: 12/14/2020
 Applicant/Owner: Massachusetts Department of Transportation State: MA Sampling Point: WPL
 Investigator(s): Eric Olson Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Depressional Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.115726 Long: -72.114437 Datum: _____
 Soil Map Unit Name: Rippowam fine sandy loam, 0 to 3 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>x</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____ If yes, optional Wetland Site ID: <u>Wetland 1 (Flags 100 to 142)</u>
Remarks: (Explain alternative procedures here or in a separate report.) <div style="border: 1px solid black; height: 100px; width: 100%;"></div>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) _____ Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	_____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <u>x</u> No _____ Depth (inches): <u>3"</u> Water Table Present? Yes <u>x</u> No _____ Depth (inches): <u>0"</u> Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>0"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No _____
--	---

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

Remarks:
 A meandering intermittent stream (Stream 2) is present within Wetland 1 running northwest to southeast. Water enters the wetland from a culvert/outfall pipe located in the northwestern corner. There is diffuse flow within the wetland in the area of the culvert then a channel forms approximately 40-50' from the culvert. Stream 2 meanders through the wetland and eventually terminates into the larger Stream 1 (the Quinebaug River) in the southeastern corner of the site.

VEGETATION – Use scientific names of plants.

Sampling Point: WPL

Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Betula populifolia</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Acer rubrum</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Quercus bicolor</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
4. <u>Pinus strobus</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>40</u> =Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>)			
1. <u>Cornus amomum</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Alnus incana</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>10</u> =Total Cover		
Herb Stratum (Plot size: <u>5 ft.</u>)			
1. <u>Phragmites australis</u>	<u>90</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Carex sp.</u>	<u>15</u>	<u>No</u>	<u>FACW</u>
3. <u>Carex stricta</u>	<u>5</u>	<u>No</u>	<u>OBL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>110</u> =Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	_____ =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>5</u>	x 1 = <u>5</u>
FACW species <u>125</u>	x 2 = <u>250</u>
FAC species <u>25</u>	x 3 = <u>75</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>160</u> (A)	<u>350</u> (B)
Prevalence Index = B/A = <u>2.19</u>	

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- _____ Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes x No _____

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

SOIL

Sampling Point: WPL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	7.5YR 2.5/2						Mucky Loam/Clay	Mucky fine sandy loam
7-20+	10Y 3/2						Mucky Sand	M-C mucky, loamy sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)	
<input checked="" type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> High Chroma Sands (S11) (LRR K, L)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Marl (F10) (LRR K, L)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Dark Surface (S7)			

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 595 Main Street (Rt. 20) City/County: Sturbridge Sampling Date: 12/14/2020
 Applicant/Owner: Massachusetts Department of Transportation State: MA Sampling Point: UPL
 Investigator(s): Eric Olson Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): _____ Slope (%): 5
 Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.115420 Long: -72.114528 Datum: _____
 Soil Map Unit Name: Rippowam fine sandy loam, 0 to 3 percent slopes NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>x</u> Hydric Soil Present? Yes _____ No <u>x</u> Wetland Hydrology Present? Yes _____ No <u>x</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>x</u> If yes, optional Wetland Site ID: <u>Wetland 1 - Upland Plot</u>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) _____ _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (minimum of two required) _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
---	---

Field Observations: Surface Water Present? Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>x</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>x</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>x</u>
--	---

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UPL

Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Betula papyrifera</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Pinus strobus</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Betula populifolia</u>	<u>15</u>	<u>No</u>	<u>FAC</u>
4. <u>Acer rubrum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>110</u> =Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>15</u> =Total Cover		
Herb Stratum (Plot size: <u>5 ft.</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carex sp.</u>	<u>20</u>	<u>Yes</u>	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>20</u> =Total Cover		
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	_____ =Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>35</u>	x 3 = <u>105</u>
FACU species <u>90</u>	x 4 = <u>360</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>125</u> (A)	<u>465</u> (B)
Prevalence Index = B/A = <u>3.72</u>	

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes No X

Remarks: (Include photo numbers here or on a separate sheet.)
 The wetland delineation was conducted in the winter, which hindered herbaceous species identification.



Attachment B
Photo Log

Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No.: 14961.06

Photo No.: 1

Date: 12/14/20

Description:

View facing southwest of the ponded portion of the Quinebaug River located along the southern end of the project property and upstream of the dam.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No.: 14961.06

Photo No.: 2

Date: 12/14/20

Description:

View facing west from the dam of the ponded portion of the Quinebaug River located along the southern end of the project property and upstream of the dam.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No: 14961.06

Photo No.: 3

Date: 12/14/20

Description:

View facing south of the dam along the Quinebaug River located along the southern end of the project.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No: 14961.06

Photo No.: 4

Date: 12/14/20

Description:

View facing southeast from the dam of the Quinebaug River along the southeastern end of the project property and downstream of the dam.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No: 14961.06

Photo No.: 5

Date: 12/14/20

Description:

View facing west of a walking path along the Quinebaug River located in the southeastern portion of the project.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No: 14961.06

Photo No.: 6

Date: 12/14/20

Description:

View facing southwest of the banks along the ponded portion of the Quinebaug River located along the western portion of the property.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

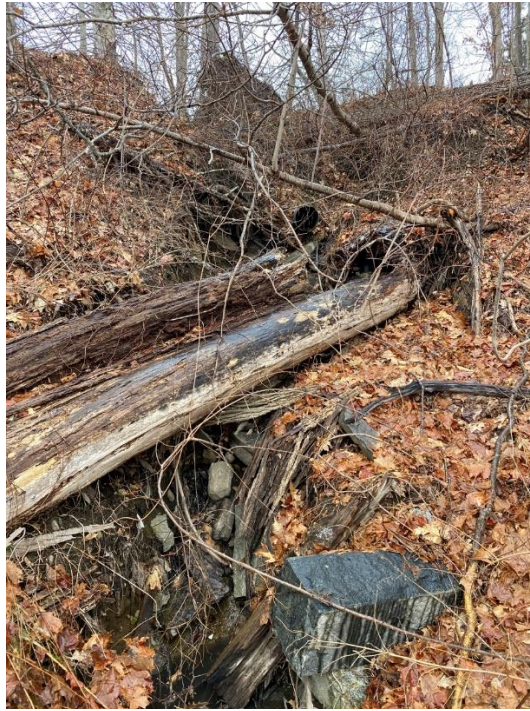
Project No: 14961.06

Photo No.: 7

Date: 12/14/20

Description:

View facing northwest of scouring located under the culvert to be replaced, located on the slope above the banks of the Quinebaug River located in the western portion of the property.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No: 14961.06

Photo No.: 8

Date: 12/14/20

Description:

View facing northwest of Wetland 1 in the far northwestern corner. The culvert outlet is located under the fallen tree in the background.

Note the diffuse water flow through the wetland in the background of the photo and the channel of Stream 2 forming in the foreground of the photo. Rt. 20 on the top of the slope in the background.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No: 14961.06

Photo No.: 9

Date: 12/14/20

Description:

View facing northeast of Wetland 1. Note Rt. 20 in the background.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No: 14961.06

Photo No.: 10

Date: 12/14/20

Description:

View facing north of Wetland 1. Note the steep slope in the background leading to a parking area located off Rt. 20.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No.: 14961.06

Photo No.: 11

Date: 12/14/20

Description:

View facing northeast of Wetland 1. Note the adjacent businesses located to the east of the site and along Rt. 20.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No.: 14961.06

Photo No.: 12

Date: 12/14/20

Description:

View facing northeast of Stream 2 (UNT Tributary to the Quinebaug River) within Wetland 1.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No: 14961.06

Photo No.: 13

Date: 12/14/20

Description:

View facing north of the walking path where it crosses over Stream 2 in the southeast portion of the property. Stream 2 exits Wetland 1 (on the left and in background, behind the footbridge, of the photo) at this location.



Client Name: MassDOT

Site Location: 595 Main Street (Rt. 20), Sturbridge, MA

Project No: 14961.06

Photo No.: 14

Date: 12/14/20

Description:

View facing south of the terminus of Stream 2 where it meets the Quinebaug River just off the southeastern corner of the property.



Attachment C
Natural Heritage Response Letter



MASSWILDLIFE

DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581

p: (508) 389-6300 | f: (508) 389-7890

MASS.GOV/MASSWILDLIFE

May 06, 2021

Taylor Donovan
Vanasse Hangen Brustlin, Inc
101 Walnut Street
PO Box 9151
Waterton, MA 02472

RE: Project Location: 595 Main Street
Town: STURBRIDGE
NHESP Tracking No.: 19-38362

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program of the MA Division of Fisheries & Wildlife (the "Division") for information regarding state-listed rare species in the vicinity of the above referenced site. Based on the information provided, this project site, or a portion thereof, is located **within** *Priority Habitat 893* (PH 893) and *Estimated Habitat 724* (EH 724) as indicated in the *Massachusetts Natural Heritage Atlas* (14th Edition) for the following state-listed rare species:

<u>Scientific name</u>	<u>Common Name</u>	<u>Taxonomic Group</u>	<u>State Status</u>
<i>Strophitus undulatus</i>	Creeper	Mussel	Special Concern

The species listed above is protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (WPA) (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.00). Fact sheets for most state-listed rare species can be found on our website (www.mass.gov/nhesp).

Please note that projects and activities located within Priority and/or Estimated Habitat **must** be reviewed by the Division for compliance with the state-listed rare species protection provisions of MESA (321 CMR 10.00) and/or the WPA (310 CMR 10.00).

Wetlands Protection Act (WPA)

If the project site is within Estimated Habitat and a Notice of Intent (NOI) is required, then a copy of the NOI must be submitted to the Division so that it is received at the same time as the local conservation commission. If the Division determines that the proposed project will adversely affect the actual Resource Area habitat of state-protected wildlife, then the proposed project may not be permitted (310 CMR 10.37, 10.58(4)(b) & 10.59). In such a case, the project proponent may request a consultation with the Division to discuss potential project design modifications that would avoid adverse effects to rare wildlife habitat.

MASSWILDLIFE

A streamlined joint MESA/WPA review process is available. When filing a Notice of Intent (NOI), the applicant may file concurrently under the MESA on the same NOI form and qualify for a 30-day streamlined joint review. For a copy of the NOI form, please visit the MA Department of Environmental Protection's website: <https://www.mass.gov/how-to/wpa-form-3-wetlands-notice-of-intent>.

MA Endangered Species Act (MESA)

If the proposed project is located within Priority Habitat and is not exempt from review (see 321 CMR 10.14), then project plans, a fee, and other required materials must be sent to Natural Heritage Regulatory Review to determine whether a probable Take under the MA Endangered Species Act would occur (321 CMR 10.18). Please note that all proposed and anticipated development must be disclosed, as MESA does not allow project segmentation (321 CMR 10.16). For a MESA filing checklist and additional information please see our website: <https://www.mass.gov/regulatory-review>.

We recommend that rare species habitat concerns be addressed during the project design phase prior to submission of a formal MESA filing, as avoidance and minimization of impacts to rare species and their habitats is likely to expedite endangered species regulatory review.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. If the purpose of your inquiry is to generate a species list to fulfill the federal Endangered Species Act (16 U.S.C. 1531 et seq.) information requirements for a permit, proposal, or authorization of any kind from a federal agency, we recommend that you contact the National Marine Fisheries Service at (978)281-9328 and use the U.S. Fish and Wildlife Service's Information for Planning and Conservation website (<https://ecos.fws.gov/ipac>). If you have any questions regarding this letter please contact Melany Cheeseman, Endangered Species Review Assistant, at (508) 389-6357.

Sincerely,



Everose Schlüter, Ph.D.
Assistant Director

Attachment D
Stormwater Memorandum (Bound
Separately)

Attachment E

Project Plans (Bound Separately)