

October 29, 2024

Shannon Palmer, Conservation Officer
Hingham Conservation Commission
210 Central Street
Hingham, MA 02043

**RE: Notice of Intent
Union Street Culvert Replacement
Hingham, Massachusetts**

Dear Ms. Palmer,

On behalf of the Massachusetts Department of Conservation & Recreation (DCR), AECOM respectfully submits this revised Notice of Intent (NOI) for the proposed replacement of two (2) corrugated metal pipe (CMP) culverts (Project) underneath Union Street in Wompatuck State Park (Hingham, Massachusetts) (Site). The revised NOI is being submitted as a result of comments received from the Hingham Conservation Commission via e-mail on October 10, 2024.

AECOM believes all outstanding comments from the Commission and Commission Staff have been addressed. Therefore, AECOM requests that this matter be placed on the agenda for the next Conservation Commission meeting. We look forward to meeting with the Conservation Commission to discuss the Project further at that time. If you have any questions regarding the revised application, please do not hesitate to contact me at (203) 536-1833 or jessica.marino@aecom.com.

Sincerely,



Jessica Marino, PWS
Senior Wetland Scientist
jessica.marino@aecom.com

Copies to:

- Tom Valton, DCR
- MassDEP – Southeast Regional Office



Notice of Intent

Union Street Culvert Replacement

Wompatuck State Park

Hingham, Massachusetts

Massachusetts Department of Conservation & Recreation

Quality information

Prepared by	Checked by	Verified by	Approved by
			
Jessica Marino Senior Wetland Scientist	Thomas J. Keough Project Manager		

Revision History

Revision	Revision date	Details	Authorized	Name	Position
1.0	6/18/2024	First draft		Jessica Marino	Senior Scientist
2.0	9/11/2024	Updated per GD comments		Jessica Marino	Senior Scientist
3.0	10/20/2024	Updated per HCC comments		Jessica Marino	Senior Scientist

Distribution List

# Hard Copies	PDF Required	Association / Company Name
2		Town of Hingham Conservation Commission
1		MassDEP – SERO

Prepared for:

Massachusetts Department of Conservation & Recreation
6 Edwin H. Land Boulevard
Cambridge, MA 02141

Prepared by:

Jessica Marino
Senior Wetland Scientist
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Appendix B – Site Plans

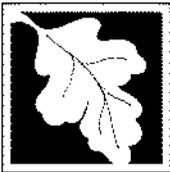
Appendix C – Wetland Delineation Report

Appendix D – Photographic Log

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WPA Form 3 and Wetland Fee Transmittal 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 Number

Document Transaction Number

Hingham

City/Town

Important:

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



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

A. General Information

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

<u>Union Street</u>	<u>Hingham</u>	<u>02043</u>
a. Street Address	b. City/Town	c. Zip Code
<u>Latitude and Longitude:</u>	<u>42.197511</u>	<u>-70.840213</u>
	d. Latitude	e. Longitude
<u>Map 111</u>	<u>Lot 3</u>	
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant:

<u>Thomas</u>	<u>Valton</u>	
a. First Name	b. Last Name	
<u>Massachusetts Department of Conservation & Recreation</u>		
c. Organization		
<u>6 Edwin H. Land Boulevard</u>		
d. Street Address		
<u>Cambridge</u>	<u>MA</u>	<u>02141</u>
e. City/Town	f. State	g. Zip Code
<u>(339) 368-2930</u>	<u>thomas.valton@mass.gov</u>	
h. Phone Number	i. Fax Number	j. Email Address

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

<u>Priscilla</u>	<u>Geigis</u>	
a. First Name	b. Last Name	
<u>Massachusetts Department of Conservation & Recreation</u>		
c. Organization		
<u>10 Park Plaza, Suite 6620</u>		
d. Street Address		
<u>Boston</u>	<u>MA</u>	<u>02116</u>
e. City/Town	f. State	g. Zip Code
<u>(617) 626-4986</u>	<u>priscilla.geigis@mass.gov</u>	
h. Phone Number	i. Fax Number	j. Email address

4. Representative (if any):

<u>Jessica</u>	<u>Marino</u>	
a. First Name	b. Last Name	
<u>AECOM</u>		
c. Company		
<u>250 Apollo Drive</u>		
d. Street Address		
<u>Chelmsford</u>	<u>MA</u>	<u>01824</u>
e. City/Town	f. State	g. Zip Code
<u>(203) 536-1833</u>	<u>jessica.marino@aecom.com</u>	
h. Phone Number	i. Fax Number	j. Email address

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

<u>\$750.00</u>	<u>\$362.50</u>	<u>\$387.50</u>
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid



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A. General Information (continued)

6. General Project Description:

DCR is proposing to replace two failing 30" CMPs that convey the Aaron River underneath Union Street in Wompatuck State Park.

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

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

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

- 1. Yes No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

310 CMR 10.53 (3)(i) and (k)

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

Norfolk

a. County

3396

c. Book

N/A

b. Certificate # (if registered land)

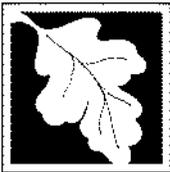
436

d. Page Number

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

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

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



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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input checked="" type="checkbox"/> Bank	15 LF (temp), 9 LF (perm) 1. linear feet	0 LF 2. linear feet
b. <input checked="" type="checkbox"/> Bordering Vegetated Wetland	303 SF (temp), 73 SF (perm) 1. square feet	73 SF 2. square feet
c. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	48 SF (temp), 24 SF (perm) 1. square feet 3. cubic yards dredged	0 SF 2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input checked="" type="checkbox"/> Bordering Land Subject to Flooding	181 SF (temp), 205 SF (perm) 1. square feet 0 CF 3. cubic feet of flood storage lost	0 SF 2. square feet 0 CF 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	Aaron River (inland) 1. Name of Waterway (if available) - specify coastal or inland	

2. Width of Riverfront Area (check one):

- 25 ft. - Designated Densely Developed Areas only
- 100 ft. - New agricultural projects only
- 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: 5,299 SF
square feet

4. Proposed alteration of the Riverfront Area:

1,142 SF 1,142 SF 0 SF
a. total square feet b. square feet within 100 ft. c. square feet between 100 ft. and 200 ft.

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

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

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

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



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

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

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

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	_____	
	1. square feet	

	2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	_____	_____
	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	_____	_____
	1. square feet	2. cubic yards dune nourishment

	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	_____	
	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	_____	
	1. square feet	
h. <input type="checkbox"/> Salt Marshes	_____	_____
	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	_____	
	1. square feet	

	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	_____	
	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	

	1. cubic yards dredged	
l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	_____	
	1. square feet	

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

a. square feet of BVW

b. square feet of Salt Marsh

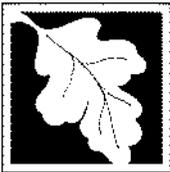
5. Project Involves Stream Crossings

0

a. number of new stream crossings

1

b. number of replacement stream crossings



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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

- a. Yes No **If yes, include proof of mailing or hand delivery of NOI to:**

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

- August 2021
b. Date of map

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

- c. Submit Supplemental Information for Endangered Species Review*

1. Percentage/acreage of property to be altered:
 - (a) within wetland Resource Area _____ percentage/acreage
 - (b) outside Resource Area _____ percentage/acreage
2. Assessor's Map or right-of-way plan of site

2. Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **
 - (a) Project description (including description of impacts outside of wetland resource area & buffer zone)
 - (b) Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <https://www.mass.gov/endangered-species-act-mesa-regulatory-review>).

Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.



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

- (c) MESA filing fee (fee information available at <https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review>).

Make check payable to "Commonwealth of Massachusetts - NHESP" and **mail to NHESP** at above address

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

- (d) Vegetation cover type map of site
- (e) Project plans showing Priority & Estimated Habitat boundaries
- (f) OR Check One of the Following

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

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

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

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

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

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

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

North Shore - Hull to New Hampshire border:

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

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

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

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

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



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Provided by MassDEP:
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Hingham
City/Town

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

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

- 4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
 a. Yes No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
 b. ACEC

- 5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
 a. Yes No
- 6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
 a. Yes No
- 7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
 a. Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
 - 1. Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)
 - 2. A portion of the site constitutes redevelopment
 - 3. Proprietary BMPs are included in the Stormwater Management System.
 b. No. Check why the project is exempt:
 - 1. Single-family house
 - 2. Emergency road repair
 - 3. Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

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

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

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

- 1. USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
- 2. Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



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D. Additional Information (cont'd)

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

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

Union Street Culvert Replacement

a. Plan Title

AECOM

b. Prepared By

7/1/24

d. Final Revision Date

Yan Zhang

c. Signed and Stamped by

Varies

e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8. Attach NOI Wetland Fee Transmittal Form

9. Attach Stormwater Report, if needed.

E. Fees

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

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

638

2. Municipal Check Number

Paid via eDEP

4. State Check Number

Thomas

6. Payor name on check: First Name

9/18/24

3. Check date

5. Check date

Keough

7. Payor name on check: Last Name



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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.

<p>1. Signature of Applicant <i>Thomas Valton</i></p> <hr/> <p>3. Signature of Property Owner (if different)</p> <hr/> <p>5. Signature of Representative (if any)</p> <hr/>	<p>2. Date <i>9-10-2024</i></p> <hr/> <p>4. Date <i>9-10-24</i></p> <hr/> <p>6. Date <i>9/17/2024</i></p> <hr/>
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For Conservation Commission:

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

For MassDEP:

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

Other:

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

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



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

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



A. Applicant Information

1. Location of Project:

Union Street Hingham
 a. Street Address b. City/Town

 c. Check number d. Fee amount

2. Applicant Mailing Address:

Thomas Valton
 a. First Name b. Last Name
 Massachusetts Department of Conservation and Recreation
 c. Organization
 6 Edwin H. Land Boulevard
 d. Mailing Address
 Cambridge MA 02141
 e. City/Town f. State g. Zip Code
 (339) 368-2930 thomas.valton@mass.gov
 h. Phone Number i. Fax Number j. Email Address

3. Property Owner (if different):

Priscilla Geigis
 a. First Name b. Last Name
 Massachusetts Department of Conservation and Recreation
 c. Organization
 6 Edwin H. Land Boulevard
 d. Mailing Address
 Cambridge MA 02141
 e. City/Town f. State g. Zip Code
 (617) 626-4986 priscilla.geigis@mass.gov
 h. Phone Number i. Fax Number j. Email Address

B. Fees

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

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

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

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

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

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

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

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



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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
2(e) - inland limited project	1	\$500.00	\$500.00 x 1.5
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Step 5/Total Project Fee:			\$750.00

Step 6/Fee Payments:

Total Project Fee:	\$750.00
State share of filing Fee:	\$362.50
City/Town share of filing Fee:	\$387.50
	a. Total Fee from Step 5
	b. 1/2 Total Fee less \$12.50
	c. 1/2 Total Fee plus \$12.50

C. Submittal Requirements

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

Department of Environmental Protection
 Box 4062
 Boston, MA 02211

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

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

Project Narrative

1. Introduction

On behalf of the Massachusetts Department of Conservation and Recreation (DCR), AECOM is submitting this Notice of Intent (NOI) for the replacement of two existing corrugated metal pipes (CMPs) underneath Union Street in Wompatuck State Park in Hingham, Massachusetts (Site). This NOI is being submitted to the Hingham Conservation Commission and the Massachusetts Department of Environmental Protection (MassDEP), pursuant to the Massachusetts Wetlands Protection Act (WPA) (MGL C. 131, s. 40), and Regulations (310 CMR 10.00), as well as the Town of Hingham Wetlands Protection Bylaw (General Bylaws of the Town of Hingham, Article 22).

1.1 Project Overview

DCR is proposing to replace two failing 30" CMPs that convey the Aaron River underneath Union Street in Wompatuck State Park, as shown on the United States Geological Survey (USGS) Project Location Map (**Figure 1**) in **Appendix A**. Work will include the removal and disposal of the failing CMPs and replacement with a new 10-foot by 4-foot box culvert, as shown in the Site Plans in **Appendix B**.

The Project is located within Bordering Vegetated Wetlands (BVW), Bank, Land Under Water Bodies and Waterways (LUWW), Bordering Land Subject to Flooding (BLSF), Riverfront Area, and the 100-foot Buffer Zones to BVW and Bank.

1.2 Site Description

Wompatuck State Park is a state-owned, public recreation area located primarily in the Town of Hingham. Union Street is the primary road used by motorists and bicyclists in the park and is a two-land road with one travel lane in each direction. Union Street begins at the Wompatuck State Park Main Entrance and continues in a southeasterly direction through Wompatuck State Park before terminating at the intersection of Mount Blue Street and Mount Hope Street in Norwell, Massachusetts. Wompatuck State Park is managed by DCR.

The existing structure underneath Union Street consists of two 30" diameter CMPs, approximately 24 feet in length, with deteriorating stone headwalls and various boulders at the inlet and outlet. There is a buffer of between 3 feet and 5 feet between edge of pavement and area designated as wetlands. Banks are heavily vegetated with both trees and brush. The upstream portion of channel features a significant backwater area before flow narrows and accelerates towards the inlet. The downstream portion is more well-defined and includes a slight widening of the banks immediately downstream of the outlet.

1.3 Project Purpose

The purpose of the Project is to improve safety, functionality, and reliability of Union Street. The existing structure under Union Street is currently failing and the road above the culvert is collapsing, which poses safety risks for walkers, runners, vehicles, and cyclists who use the road on a regular basis.

2. Existing Conditions

2.1 Desktop Review of Project Limits

According to the USGS topographic map, the approximate range of elevation for the Site is from 79 to 83 feet above mean sea level (**Figure 1**). Based on reviews of the MassDEP Wetland Area Maps for Suffolk County¹, the Site is mapped as having the following inland resource: Wooded Swamp Deciduous (**Figure 3**).

Based on review of the National Wetland Inventory (NWI) Map provided by the U.S. Fish and Wildlife Service (USFWS), inland wetlands are mapped within and surrounding the Site and have similar boundaries as the inland resources mapped by MassDEP (**Figure 4**). The wetlands mapped within the Site are

¹MassDEP. 2020. Mass DEP Online Map Viewer Wetland and Wetland Change Areas Map. Available at: <http://maps.massgis.state.ma.us/images/dep/omv/wetviewer.htm>. Accessed May 2024.

classified as palustrine forested, broad-leaved deciduous, seasonally flooded/saturated (PFO1E) and riverine, perennial, unconsolidated bottom, permanently flooded (R5UBH).

The most recently issued Flood Insurance Rate Map² produced by the Federal Emergency Management Agency (FEMA), indicates that portions of the Site are mapped as Zone A, which is characterized as having a 1% annual chance of a flood hazard (also known as the 100-year floodplain) (**Figure 5**). There is no Base Flood Elevation (BFE) identified for the Project.

The U.S. Department of Agriculture Natural Resources Conservation Service³ (USDA – NRCS) soil survey for Plymouth County has mapped most of the Site as Brockton sandy loam, 3 to 8 percent slopes, extremely stony (48A). For a full listing of the soils within and surrounding the Site, refer to **Figure 6**.

According to the most recently available data provided by the Massachusetts Natural Heritage and Endangered Species Program⁴ (NHESP), the Site is not located within a Priority Habitat of Rare Species area or Estimated Habitat or Rare Wildlife area. There are no Certified or Potential Vernal Pools within or adjacent to the Site. The Project is not located within an Area of Critical Environmental Concern⁵, but is located within an Outstanding Resource Water⁶ associated with the Aaron River Reservoir. The Project is not located within any Zone I, Zone II, or Interim Wellhead Protection Areas⁷ (**Figure 7**).

2.2 Field Delineation, Resource Areas, and Buffer Zones

A field delineation was conducted on November 28th, 2023, and was performed in accordance with methods developed by MassDEP⁸ and the USACE⁹. Wetland resources areas identified within or near the Site included Bordering Vegetated Wetland (BVW), Land Under Water Bodies and Waterways (LUWW), Bank, Bordering Land Subject to Flooding (BLSF), and Riverfront Area (RA). These resources are defined under the WPA as:

- **Bordering Vegetated Wetlands (BVW):** As defined in 310 CMR 10.55(2)(a), is “freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants.”
- **Land Under Water Bodies and Waterways (LUWW):** As defined in 310 CMR 10.56(2)(a), is “the land beneath any creek, river, stream, pond or lake.”
- **Bank:** As defined in 310 CMR 10.54(2)(a), is “the portion of the land surface which normally abuts and confines a waterbody.”
- **Bordering Land Subject to Flooding (BLSF):** As defined in 310 CMR 10.57(2)(a)(3), is “the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm.”
- **Riverfront Area (RA):** As defined in 310 CMR 10.58(2), is “the area of land between a river’s mean annual high-water line and a parallel line measured horizontally outward from the river and a parallel line located 200 feet away.”

Wetland resource areas within the Site are summarized in the table below and depicted on the Site Plans in **Appendix B**. Refer to the Wetland Delineation Report in **Appendix C** for details on each delineated wetland area, including written descriptions, photographs, and field data forms.

Table 1. Summary of Resources within Project Area

Wetland Series	WPA Regulated Features						
	BVW	LUWW	Bank	BLSF	RA	100-foot Buffer Zone to BVW	100- foot Buffer Zone to Bank
Wetland 1	X					X	
Wetland 2	X					X	

²Federal Emergency Management Agency, National Hazard Flood Layer, Digital Flood Insurance Rate Map. Map 25023C0104K. Effective 7/6/2021. Accessed May 17, 2024.

³Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey

⁴Massachusetts Natural Heritage and Endangered Species Program, July 2021. Massachusetts Natural Heritage Atlas. 15th Edition.

⁵MassGIS (collaboration with DCR and CZM), Sept. 2017. Massachusetts ACECs.

⁶MassGIS, Dec. 2017. Designated Outstanding Resource Waters of Massachusetts.

⁷MassGIS, Oct. 2017. Approved Wellhead Protection Areas (Zone I, II, and IWPA).

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

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

Aaron River		X	X	X	X		X
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The WPA establishes 100-foot buffer zones extending from inland resources including BVW, LUWW, and Bank. The WPA states that any activities that are undertaken within 100 feet of an area specified in 310 CMR 10.02(1)(a) will be conducted per 310 CMR 10.02(2)(b), “in a manner so as to reduce the potential for any adverse impacts to the resource area during construction, and with post-construction measures implemented to stabilize any disturbed areas.” The WPA also establishes a 200-foot Riverfront Area for Aaron River. Work within the Riverfront Area must meet the performance standards pursuant to 310 CMR 10.58(4).

2.2.1 Hingham Wetlands Protection Bylaw Resource Areas

Wetland resources subject to jurisdiction under the Hingham Conservation Commission Bylaw are concurrent with those identified above in Section 2.2.

3. Alternatives Analysis

No feasible alternatives exist for the Project. The existing structure has deteriorated significantly and cannot be repaired. Replacement of the existing structure with new 30” CMPs would not accomplish the purpose of the Project, as existing conditions such as scour, erosion, and ponding indicate that the size of the existing structure is not suitable. Additionally, the existing structure does not meet the Massachusetts River and Stream Crossing Standards.

4. Project Description

4.1 Proposed Project

The Project consists of the replacement of two 30” CMPs with a new singular 10-foot by 4-foot reinforced concrete (RC) box culvert. The replacement of the two deteriorating CMP culverts will also include grading and repaving of Union Street to ensure the integrity of the road and removal of the existing wooden walkway extending from Union Street. Boulders and debris within Aaron River will also be removed as part of the Project. Details regarding the limits of the proposed activities are provided in **Appendix B**.

4.2 Project Impacts

The Project is anticipated to result in temporary impacts and permanent impacts to WPA and Town of Hingham jurisdictional resource areas, as shown in the table below.

Table 2. Summary of Impacts

Resource Area	Temporary Impacts (ft ²)	Permanent Impacts (ft ²)	Total Impacts (ft ²)
BVW	303 ft ²	73 ft ²	376 ft ²
Bank*	15 LF	9 LF	24 LF
BLSF	181 ft ²	205 ft ²	386 ft ²
LUWW	48 ft ²	24 ft ²	72 ft ²
Riverfront Area	2,268 ft ²	1,142 ft ²	3,418 ft ²
100-foot Buffer Zone to BVW	181 ft ²	1,142 ft ²	1,323 ft ²
100-foot Buffer Zone to Bank	181 ft ²	1,142 ft ²	1,323 ft ²

*Bank impacts provided in linear feet.

4.2.1 Bordering Vegetated Wetlands

The Project will result in temporary and permanent impacts to Bordering Vegetated Wetlands. Temporary impacts to wetlands are due to grading required to install the new structure. Permanent impacts to wetlands are due to the culvert replacement and associated wingwalls. All permanent impacts to wetlands will be mitigated for as described in Section 4.3.3. and Section 6. For wetlands temporarily impacted by the Project,

they will be restored to pre-construction condition, including regrading and loaming and seeding with an appropriate wetland seed mix¹⁰. Impacts to wetlands are quantified in Table 2.

4.2.2 Bank

The Project will result in temporary and permanent impacts to Bank associated with Aaron River. Temporary impacts to Bank are due to the installation of a turbidity curtain on the downstream side and removal of the boulders and other debris within Aaron River. Permanent impacts to Bank are due to grading associated with the installation of the new culvert.

4.2.3 Bordering Land Subject to Flooding

Portions of the Site are located within BLSF associated with Aaron River. Total impacts to BLSF are quantified in the table above. The Project will not impact or impair BLSF’s capacity to provide important wildlife habitat functions as the impact areas associated with BLSF are comprised mainly of the existing roadway and side slopes of Union Street and do not currently provide any important wildlife habitat functions. Areas of resurfacing were not quantified as an impact as there is no proposed change in grade or in land use cover type.

4.2.4 Floodplain

Portions of the Site are located within the 100-year floodplain associated with Aaron River. The base flood elevation (BFE) on the Site was not available from FEMA. Therefore, the limit of BLSF was estimated to be 76.0’ based on the highest contour that intersected FEMA Flood Zone A. As a result of the Project, there is a net gain of approximately 310.5 ft³ of flood storage capacity to the floodplain. No floodplain loss will occur at any elevation; therefore, floodplain compensation will not be provided as part of the Project. The floodplain calculations are detailed in Table 3 below. The Project will not alter the hydraulic capacity of the culvert or adversely impact the regulatory floodway or associated floodplain. The Project will not restrict flows so as to cause an increase in flood stage or velocity, and the Project will not impair the ability of wildlife habitat to provide important wildlife habitat functions.

Table 3. Net Impacts to the 100-year Floodplain

Elevation	Cut (ft ³)	Fill (ft ³)	Net Loss (-)/Gain (+) to Flood Storage Capacity (ft ³)
72 – 73	0.0	0.0	0.0
73 – 74	13.5	0.0	+13.5
74 – 75	153.9	0.0	+153.9
75 – 76	156.6	13.5	+143.1
TOTAL	324.0	13.5	+310.5

4.2.5 Land Under Water Bodies and Waterways

The Project will result in temporary and permanent impacts to LUWW. Permanent impacts to LUWW are due to grading and temporary impacts to LUWW are due to the installation of a temporary turbidity curtain and removal of the boulders and other debris within Aaron River. Sheet 4 of the Site Plans (**Appendix B**) further details the turbidity curtain.

4.2.6 Riverfront Area

Portions of the Site are located within the 200-foot Riverfront Area associated with Aaron River, a mapped perennial stream. The 200-foot Riverfront Area is concurrent with the outer riparian zone and consists mostly of the existing roadway and maintained right-of-way. For areas temporarily impacted by the Project, they will be restored to pre-construction condition, including regrading and loaming and seeding with an appropriate upland seed mix¹¹. Impacts to the Riverfront Area quantified in Table 2.

¹⁰New England Wetmix (Wetland Seed Mix) (<https://newp.com/product/new-england-wetmix-wetland-seed-mix/>) or equivalent.

¹¹New England Roadside Matrix Upland Seed Mix (<https://newp.com/product/new-england-roadside-matrix-upland-seed-mix/>) or equivalent.

4.2.7 100-foot Buffer Zone to BVW and Bank

Portions of the Site are located within the 100-foot Buffer Zones to BVW and Bank. Most of these areas are associated with the existing roadway and side slopes of Union Street. Total impacts to the 100-foot Buffer Zones to BVW and Bank are quantified in Table 2.

4.3 Regulatory Compliance

The following section details the Project's regulatory compliance with the WPA, including all applicable resource area performance standards. As afforded at 310 CMR 10.53(3), it is within the issuing authority's discretion to consider the magnitude of the alteration and the significance of the Project to the interests identified in the WPA, the availability of reasonable alternatives to the proposed activities, the extent to which disturbances are minimized, and the extent to which mitigation measures, including restoration, are provided to contribute to the protection of the interests identified in the WPA.

4.3.1 Limited Project Status

The Project is characterized as a *Limited Project* under the following:

- 310 CMR 10.53(i): "the maintenance, repair and improvement (but not substantial enlargement except when necessary to meet the Massachusetts Stream Crossing Standards) of structures, including dams and reservoirs and appurtenant works to such dams and reservoirs, buildings, piers, towers, headwalls, bridges, and culverts which existed on the effective date of April 1, 1983," and
- 310 CMR 10.53(k): "the routine maintenance and repair of road drainage structures including culverts and catch basins, drainage easements, ditches, watercourses and artificial water conveyances to ensure flow capacities which existed on the effective date of April 1, 1983."

These types of projects may be permitted without fully meeting the resource area performance standards so long as they will have any no adverse effect on specified habitats site of rare species, the availability of reasonable alternatives to the proposed activity, the extent to which adverse impacts are minimized, and the extent to which mitigation measures are provided contribute to the protection of the WPA. The Project is believed to meet this criterion as further discussed below.

4.3.2 Massachusetts Stream Crossing Standards

According to the Massachusetts River and Stream Crossing Standards¹², regulations require that all new and, where feasible, replacement crossings adhere to stream crossing guidelines. As the Project involves the full replacement of two existing crossings, the Project is required to meet the Massachusetts River and Stream Crossing Standards. The Project meets the Massachusetts Stream Crossing Standards as described in Table 4 on the following page.

¹²<https://www.mass.gov/doc/massachusetts-stream-crossing-handbook/download>

Table 4. Stream Crossing Standards Met for Culvert Replacement at Aaron River

<u>Standard</u>	<u>Description of Standard</u>	<u>Standard Met</u>	<u>Remarks</u>
Type of Crossing	<p>General: Spans (bridge, 3-sided box culverts, open bottom culverts, or arches) are strongly preferred.</p> <p>Optimum: Use a bridge.</p>	General	The existing crossing is two 30" corrugated metal pipes and will be replaced with single 10-foot by 4-foot 3-sided box culvert. Therefore, the Project meets the general standard.
Embedment	All culverts should be embedded (sunk into stream) a minimum of 2 feet, and round pipe culverts at least 25%. If pipe culverts cannot be embedded this deep, then they should not be used. When embedment material includes elements >15 inches in diameter, embedment depths should be at least twice the D ₈₄ (particle width larger than 84% of particles) of the embedment material.	Yes	The proposed structure will be embedded 2 feet with natural substrate. Therefore, the Project meets this standard.
Crossing Span	<p>General: Spans channel width (a minimum of 1.2 times the bankfull width of the stream).</p> <p>Optimum: Spans the streambed and banks (at least 1.2 times the bankfull width) with sufficient headroom to provide dry passage for wildlife.</p>	Optimum	The bankfull width at the crossing is 9'-2" and the proposed structure is 10 feet wide. Additionally, the proposed structure will provide significantly more headroom for dry passage for wildlife than the existing 30" CMPs, as the proposed structure is 4 feet high. Therefore, the Project meets the optimum standard.
Openness	<p>General: Openness ratio (cross-sectional area/crossing length) of at least 0.82 feet (0.25 meters). The crossing should be wide and high relative to its length.</p> <p>Optimum: Openness ratio of at least 1.64 feet (0.5 meters) and minimum height of 6 feet. If conditions significantly reduce wildlife passage near a crossing (e.g., steep embankments, high traffic volumes, and physical barriers), maintain a minimum height of 8 feet (2.4 meters) and openness ratio of 2.46 feet (0.75 meters).</p>	General	The openness ratio of the proposed structure is 1.67 feet (0.51 meters) with a height of 4 feet. Therefore, the Project meets the general standard.
Substrate	Natural bottom substrate should be used within the crossing, and it should match the upstream and downstream substrates. The substrate and design should resist displacement during floods and maintain an appropriate bottom during normal flows.	Yes	The proposed structure will include 2 feet of natural substrate that will match the upstream and downstream substrates as closely as possible. Therefore, the Project meets this standard.
Water Depth and Velocity	Water depths and velocities are comparable to those found in the natural channel at a variety of flows.	Yes	The proposed outlet velocity of 5.68 feet per second is roughly equal to the tailwater velocity of 5.61 feet per second for the design flood. Therefore, the Project meets this standard.

4.3.3 Massachusetts Wetlands Protection Act

The Project qualifies as a Limited Project as described in Section 4.3.1 and meets performance standards associated with WPA resources to the greatest extent practicable, as described below:

- **Bordering Vegetated Wetlands General Performance Standards (310 CMR 10.55(4)):**

Performance Standard 1: Performance Standard 1 requires that any permanent loss of Bordering Vegetated Wetlands will be replaced with an area that will function in a similar manner to the area that will be lost. Compensatory wetland mitigation and replication is proposed to address the filling of the forested wetlands associated with the culvert replacement. Per 310 CMR 10.55(4)(b)(1), MassDEP requires that the surface area of the replacement area to be created shall be equal to that of the area that will be lost (e.g. 1:1 replacement). Therefore, the Project is proposing on-site mitigation of approximately 73 ft², following the MassDEP Inland Wetland Replication Guidelines¹³. Section 6 further details the proposed on-site mitigation area.

Performance Standard 2: Performance Standard 2 states that no project may be permitted which will have an adverse effect on specified habitat sites of rare vertebrate or invertebrate species. No portion of the Project is located within a Priority Habitat of Rare Species area or Estimated Habitat or Rare Wildlife area designated by NHESP.

Performance Standard 3: Performance Standard 3 states that no project may destroy or impair any portion of a Bordering Vegetated Wetland that is within an Area of Critical Environmental Concern. No portion of the Project is located within an Area of Critical Environmental Concern.

- **Bordering Vegetated Wetlands Replacement Area Performance Standards (310 CMR 10.55(4)(b)(1-7)):**

Performance Standard 1: Performance Standard 1 states that the surface of the replacement area to be created ("the replacement area") shall be equal to that of the area that will be lost ("the lost area"). The Project is proposing 73 ft² of permanent impacts to Bordering Vegetated Wetlands. Therefore, the Project is proposing on-site mitigation ("the replacement area") of approximately 73 ft², equal to "the lost area".

Performance Standard 2: Performance Standard 2 states that the ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area. The replacement area will be constructed at the same or similar elevation to the existing wetlands in the area to allow for sufficient inundation for ground water.

Performance Standard 3: Performance Standard 3 states that the overall horizontal configuration and location of the replacement area with respect to the Bank shall be similar to that of the lost area. The replacement area will be placed in close proximity to the existing Bank of Aaron River.

Performance Standard 4: Performance Standard 4 states that the replacement area shall have an unrestricted hydraulic connection to the same water body or waterway associated with the lost area. The replacement area will have an unrestricted hydraulic connection to Aaron River, as the replacement area will be constructed directly adjacent to the existing wetlands on-Site.

Performance Standard 5: Performance Standard 5 states that the replacement area shall be located within the same general area of the water body or reach of the waterway as the lost area. The proposed mitigation area is located adjacent to wetland flag #W1-106, approximately 55 feet south of Aaron River and the wetlands to be permanently impacted.

Performance Standard 6: Performance Standard 6 states that at least 75% of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporarily stabilized to prevent erosion in accordance with standard U.S. Soil Conservation Service methods. The proposed replacement area includes the planting of 2 native

¹³<https://www.mass.gov/departments/water-laws/replicat.pdf>

wetland trees and 10 native wetland shrubs. The area will also be loamed and seeded with a native New England wetland seed mix.

Performance Standard 7: Performance Standard 7 states that the replacement area shall be provided in a manner which is consistent with all other General Performance Standards for each resource area in Part III of 310 CMR 10.00. The replacement area meets the general performance standards pursuant to 310 CMR 10.55(4) as discussed above.

- **Bank (310 CMR 10.54(4)):**

Performance Standard 1: Performance Standard 1 requires that the proposed work will not impair the physical stability of the Bank. The proposed structure will be wider than existing, which will allow for continual flow of Aaron River without the potential for ponding, scour, or erosion, as the existing structure currently demonstrates. The replacement structure represents an improvement over existing conditions and will enhance the physical stability of the Bank, not impair the physical stability of the Bank.

Performance Standard 2: Performance Standard 2 requires that the proposed work will not impair the water carrying capacity of the existing channel within the Bank. The proposed structure will be wider than the existing structure, which will allow for continual flow of Aaron River without ponding or backwatering. The replacement structure represents an improvement over existing conditions and will enhance the water carrying capacity of the Bank, not impair the water carrying capacity of the Bank.

Performance Standard 3: Performance Standard 3 requires that the proposed work will not impair the ground and surface water quality. The Project will not result in a net addition of any impervious area. Therefore, no impairment of groundwater or surface water quality is anticipated to result as part of the Project.

Performance Standard 4: Performance Standard 4 requires that the proposed work will not impair the capacity of the Bank to provide breeding habitat, escape cover, or food for fisheries. The Project will not permanently impact the capacity of the Bank to provide breeding habitat, escape cover, or food for fisheries, as the replacement structure complies with the Massachusetts Stream Crossing Standards and represents an improvement over existing conditions by providing a larger cross-sectional area and openness ratio.

Performance Standard 5: Performance Standard 5 requires that the proposed work will not impair the capacity of the Bank to provide important wildlife habitat functions. The Project may temporarily impair the ability of the Bank to provide important wildlife habitat functions, as the area will be disturbed during the installation of the turbidity curtain. However, the Project will not permanently impair important wildlife habitat functions associated with Bank, as the Project represents an improvement over existing conditions by providing a larger cross-sectional area and openness ratio.

Performance Standard 6: Performance Standard 6 requires that the proposed work will meet the Massachusetts Stream Crossing Standards. As discussed in Section 4.3.2, the replacement complies to all six (6) of the Massachusetts Stream Crossing Standards.

- **Bordering Land Subject to Flooding (310 CMR 10.57(4)(a)):**

Performance Standard 1: Performance Standard 1 requires that incremental compensatory flood storage shall be provided for all flood storage volume that will be lost because of a proposed project. Work in BLSF will result in a small (approximately 1 ft³) loss of storage between elevations 72.0' and 74.0'. However, the Project will create approximately 11 ft³ of additional flood storage volume between elevations 72.0' and 76.0', resulting in a net increase in flood storage of approximately 10 ft³ (see Table 3). The performance standard has been met, and no incremental compensatory flood storage is proposed as part of the Project.

Performance Standard 2: Performance Standard 2 states that the work will not restrict flow as to increase in flood stage or velocity. The Project does not propose any alterations which will restrict flow which would result in an increase in flood stage or velocity.

Performance Standard 3: Performance Standard 3 states that work in BLSF found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important habitat functions. All the work within BLSF is occurring within previously degraded and/or disturbed right-of-way per 310 CMR 10.57(1)(a)3, and thus will not impair the protection of wildlife habitat.

- **Land under Water Bodies and Waterways (310 CMR 10.56(4)):**

Performance Standard 1: Performance Standard 1 requires that the proposed work will not impair the water carrying capacity within the defined channel. The proposed structure will be wider than existing, which will allow for continual flow of Aaron River without ponding or backwatering. The replacement structure represents an improvement over existing conditions and will not impair the water carrying capacity of the channel.

Performance Standard 2: Performance Standard 2 requires that the proposed work will not impair the ground and surface water quality. The Project will not result in a net addition of any impervious area. Therefore, no impairment of groundwater or surface water quality is anticipated to result as part of the Project.

Performance Standard 3: Performance Standard 3 requires that the proposed work will not impair the ability to provide breeding habitat, escape cover, or food for fisheries. The Project will not permanently impact breeding habitat, escape cover, or food for fisheries, as the replacement structure complies with the Massachusetts Stream Crossing Standards and represents an improvement over existing conditions by providing a larger cross-sectional area and openness ratio.

Performance Standard 4: Performance Standard 4 requires that the proposed work will not impair the ability to provide important wildlife habitat functions. The Project may temporarily impair the ability to provide important wildlife habitat functions, as the area will be disturbed during the installation of the turbidity curtain. However, the Project will not permanently impair important wildlife habitat functions associated with LUWW, as the Project represents an improvement over existing conditions by providing a larger cross-sectional area and openness ratio.

Performance Standard 5: Performance Standard 5 requires that the proposed work will meet the Massachusetts Stream Crossing Standards. As discussed in Section 4.3.2, the replacement complies to all 6 of the Massachusetts Stream Crossing Standards.

- **Riverfront Area (310 CMR 10.58(4)):**

Performance Standard - Protection of Other Resource Areas: This performance standard requires that work shall meet the performance standards for all other resource areas within the Riverfront Area and if work is conducted in the buffer zone of another resource, the Riverfront Area shall contribute to the protection of the interests of M.G.L. c. 131, § 40 in lieu of any additional requirements. For locations where work in the Riverfront Area is also within the buffer zone to another resource area, the performance standards for the Riverfront Area shall contribute to the protection of the interests of M.G.L. c. 131, § 40 in lieu of any additional requirements. The Project is a Limited Project per 310 CMR 10.53(3)(i) and impacts to other resources have been avoided and minimized to the greatest extent practicable.

Performance Standard - Protection of Rare Species: This performance standard states that no project may be permitted within the Riverfront Area which will have any adverse effect on specified habitat sites of rare wetland or upland species or vernal pool habitat. No portion of the Project falls within a Natural Heritage and Endangered Species Program Estimated Habitat of Rare Wildlife area or Priority Habitat of Rare Species area.

Performance Standard - Practicable and Substantially Equivalent Economic Alternatives:

This performance standard requires that there must be no practicable and substantially equivalent economic alternative to the Project with less adverse effects on the interests identified in M.G.L. c. 131 § 40. As described in Section 3.0, there are no practicable or substantially equivalent alternatives for the Project and the proposed activities improve existing conditions pedestrians, cyclists, and vehicles that traverse Union Street.

Performance Standard - No Significant Adverse Impact: The performance standard 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. The Project does not involve a change in use. There is 5,299 ft² of Riverfront Area located within the right-of-way (ROW). 1,231 ft² is impervious and work there is considered redevelopment. 4,068 ft² is not impervious and is not considered redevelopment. The Project will meet 310 CMR 10.58(5)(e) because the project will not alter more than 10,000 ft² in the Riverfront Area. No Riverfront Area mitigation is proposed as this work meets the definition of a Limited Project per 310 CMR 10.53(3)(i).

- **310 CMR 10.58(5) Redevelopment Within Previously Developed Riverfront Area; Restoration and Mitigation:**

The Site is classified as a previously developed Riverfront Area, as it contains areas degraded prior to August 7, 1996, by impervious surfaces from existing pavement. Impacts proposed within the Riverfront Area will not result in an increase of degraded or disturbed areas, as the right-of-way is already disturbed and maintained. The Project is an improvement from existing conditions, as it will reestablish vegetation adjacent to the roadway by spreading loam borrow and native seed mixes where some existing areas were observed to be unstable or eroding. No significant adverse impact is anticipated to the Riverfront Area, as much of the area is already an existing roadway right-of-way and is previously degraded. The existing vegetative area between the edge of pavement and the edge of Bank will be preserved as best as possible, with those areas temporarily disturbed restored to the natural conditions. Per 310 CMR 10.58(5), a redevelopment project must conform to performance standards. The proposed work in the Riverfront Area meets all performance standards as discussed above.

- **Wildlife Habitat Evaluations (310 CMR 10.60):**

Adverse Effects on Wildlife Habitat – This performance standard requires that a wildlife habitat evaluation be performed if the proposed work will have an adverse effect on wildlife habitat beyond the permissible thresholds shown below. Adverse effects on wildlife habitat means the alteration of any habitat characteristic listed in 310 CMR 10.60(2), insofar as such alteration will, following two growing seasons of project completion and thereafter substantially reduce its capacity to provide the important wildlife habitat functions. As temporary construction activities such as the installation of erosion and sedimentation controls will not substantially reduce a resource area’s capacity to provide important habitat functions after two growing seasons, temporary impacts to resources were not evaluated.

Table 5. Performance Standard Thresholds for Wildlife Habitat

<u>Resource Area</u>	<u>Permissible Threshold</u>	<u>Area of Resource Present On-Site</u>	<u>Area of Permanent Alteration</u>	<u>Requires Wildlife Habitat Evaluation?</u>
BLSF	10% or 5,000 ft ² (whichever is less)	2,118 ft ²	205 ft ²	No
BVW	No threshold. Impacts must be replicated in a manner that will function similar to the area that will be lost.	1,848 ft ²	73 ft ²	N/A
Riverfront Area	No threshold. However, different review requirements apply depending on whether the Riverfront Area is undisturbed, previously developed, or if the activity is grandfathered or	5,299 ft ²	1,142 ft ²	N/A

	exempted from requirements for the Riverfront Area.			
Bank	10% or 50 linear feet (whichever is less)	139 linear feet	9 linear feet	No
LUW	10% or 5,000 ft ² (whichever is less)	482 ft ²	24 ft ²	No

The proposed work will not impact any resource areas beyond the permissible thresholds. Therefore, the Project does not require a wildlife habitat evaluation.

4.3.4 Hingham Wetlands Regulations (HWR)

- **Land Under Inland Water Bodies and Waterways (HWR Section 17.3)**

Performance Standard 1: Performance Standard 1 states that proposed work shall not cause a significant adverse effect or cumulative adverse effect upon the wetland values of Land Under an Inland Water Body. The proposed structure will be wider than existing, which will allow for continual flow of Aaron River without ponding or backwatering. The replacement structure represents an improvement over existing conditions by providing a larger cross-sectional area and openness ratio. Therefore, the Project will not cause a cumulative adverse effect upon the wetland values of Land Under an Inland Water Body.

Performance Standard 2: Performance Standard 2 states that no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate species or rare plant species. No portion of the Project is located within a Priority Habitat of Rare Species area or Estimated Habitat or Rare Wildlife area designated by NHESP.

Performance Standard 3: Performance Standard 3 refers to HWR 23.0 et seq. for additional project-specific performance standards. The Project does not include the construction of a septic system, pool, tennis court, lawn, driveway, dock, pier, or underground storage tank.

Performance Standard 4: Performance Standard 4 states that performance standards for proposed work or activities within the buffer zone to Land Under an Inland Water Body are specified in HWR 22.0. The Project meets all performance standards associated with the buffer zone to Land Under an Inland Water Body as discussed below under Buffer Zone (HWR Section 22.0).

Performance Standard 5: Performance Standard 5 states that the Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw. Noted. The Applicant is aware that additional requirements to protect the wetland values protected under the Bylaw may be necessary.

- **Bordering Land Subject to Flooding (HWR Section 19.1)**

Performance Standard 1: Performance Standard 1 states that a proposed project shall not cause any adverse effect or cumulative adverse effect on the wetland values of Land Subject to Flooding. Work in BLSF will result in a small (approximately 1 ft³) loss of storage between elevations 72.0' and 74.0'. However, the Project will create approximately 11 ft³ of additional flood storage volume between elevations 72.0' and 76.0', resulting in a net increase in flood storage of approximately 10 ft³. Therefore, the Project will not cause a cumulative adverse effect upon the wetland values of Land Subject to Flooding.

Performance Standard 2: Performance Standard 2 requires that projects on land subject to flooding shall be permitted only in connection with such procedures determined by the Commission as not having the effect of reducing the ability of the land to absorb and contain floodwaters. The Project does not propose any alterations which will reduce the ability of the land to absorb and contain floodwaters.

Performance Standard 3: Performance Standard 3 states that the Commission may require compensating or greater flood storage capacity in the same watershed if it permits any filling of land subject to flooding, and all filling of areas subject to flooding shall be strictly minimized. Except

as stated in the preceding sentence, no proposed projects shall be permitted to displace or direct floodwaters, through fill or other means, to other areas. The Project will create approximately 11 ft³ of additional flood storage volume between elevations 72.0' and 76.0', resulting in a net increase in flood storage of approximately 10 ft³ (see Table 3).

Performance Standard 4: Performance Standard 4 states that projects shall not have any adverse effect on vernal pools, whether certified or uncertified. Not applicable. The Project is not within or adjacent to a certified or uncertified vernal pool.

Performance Standard 5: Performance Standard 5 states that no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species. No portion of the Project is located within a Priority Habitat of Rare Species area or Estimated Habitat or Rare Wildlife area designated by NHESP.

Performance Standard 6: Performance Standard 6 refers to HWR 23.0 et seq. for additional project-specific performance standards. The Project does not include the construction of a septic system, pool, tennis court, lawn, driveway, dock, pier, or underground storage tank.

Performance Standard 7: Performance Standard 7 states that performance standards for proposed work or activities within the buffer zone to Land Subject to Flooding are specified in HWR 22.0. The Project meets all performance standards associated with the buffer zone to Land Subject to Flooding as discussed below under Buffer Zone (HWR Section 22.0).

Performance Standard 8: Performance Standard 8 states that the Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw. Noted. The Applicant is aware that additional requirements to protect the wetland values protected under the Bylaw may be necessary.

- **Bank (HWR Section 19.2)**

Performance Standard 1: Performance Standard 1 states that a proposed project shall not cause any adverse effect or cumulative adverse effect upon the wetland values of Inland Bank. Permanent impacts to Bank have been minimized to the maximum extent practicable and are limited to 9 linear feet. The Project will not permanently impair important wildlife habitat functions associated with Bank, as the Project represents an improvement over existing conditions by providing a larger cross-sectional area and openness ratio.

Performance Standard 2: Performance Standard 2 states that a proposed project shall be permitted only if there is no adverse effect on bank stability, bank height, ground water and surface water quality, the water carrying capacity of an existing channel within a bank, and the capacity of the bank to provide habitat for fisheries and/or wildlife. The Project will not permanently impact the capacity of the Bank to provide breeding habitat, escape cover, or food for fisheries, as the replacement structure complies with the Massachusetts Stream Crossing Standards and represents an improvement over existing conditions by providing a larger cross-sectional area and openness ratio.

Performance Standard 3: Performance Standard 3 states that no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species. No portion of the Project is located within a Priority Habitat of Rare Species area or Estimated Habitat or Rare Wildlife area designated by NHESP.

Performance Standard 4: Performance Standard 4 refers to HWR 23.0 et seq. for additional project-specific performance standards. The Project does not include the construction of a septic system, pool, tennis court, lawn, driveway, dock, pier, or underground storage tank.

Performance Standard 5: Performance Standard 5 states that performance standards for proposed work or activities within the buffer zone to Inland Bank are specified in HWR 22.0. The Project meets all performance standards associated with the buffer zone to Inland Bank as discussed below under Buffer Zone (HWR Section 22.0).

Performance Standard 6: Performance Standard 6 states that the Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw.

Noted. The Applicant is aware that additional requirements to protect the wetland values protected under the Bylaw may be necessary.

- **Bordering Vegetated Wetlands (HWR Section 19.3)**

Performance Standard 1: Performance Standard 1 states that a proposed project shall not cause any adverse effect or cumulative adverse effect upon the wetland values of a Vegetated Wetland. Compensatory wetland mitigation and replication is proposed to address the filling of the forested wetlands associated with the culvert replacement. The Project will not cause a cumulative adverse effect upon the wetland values of Vegetated Wetlands.

Performance Standard 2: Performance Standard 2 states that Where an Isolated Vegetated Wetland meets the criteria for a vernal pool, whether or not it has been certified, as described in HWR 19.1. Except as authorized by the Commission, no activity or alteration shall be permitted within 100 feet of a vernal pool, whether it be certified or uncertified but accompanied by credible evidence of its viability as a vernal pool. The 100 feet around the defined vernal pool boundaries shall be known as "Vernal Pool Protection Zone". A proposed project shall not cause any adverse effect or cumulate adverse effect upon the wetland values of vernal pool habitat. Not applicable. The Project is not within or adjacent to a certified or uncertified vernal pool.

Performance Standard 3: Performance Standard 3 states that no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species. No portion of the Project is located within a Priority Habitat of Rare Species area or Estimated Habitat or Rare Wildlife area designated by NHESP.

Performance Standard 4: Performance Standard 4 refers to HWR 23.0 et seq. for additional project-specific performance standards. The Project does not include the construction of a septic system, pool, tennis court, lawn, driveway, dock, pier, or underground storage tank. Although the Project does involve filling of jurisdictional Resource Areas, mitigation for impacts is being proposed.

Performance Standard 5: Performance Standard 5 states that performance standards for proposed work or activities within the buffer zone to Vegetated Wetland are specified in HWR 22.0. The Project meets all performance standards associated with the buffer zone to Bordering Vegetated Wetlands as discussed below under Buffer Zone (HWR Section 22.0).

Performance Standard 6: Performance Standard 6 states that the Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw. Noted. The Applicant is aware that additional requirements to protect the wetland values protected under the Bylaw may be necessary.

- **Riverfront Area (HWR Section 21.1)**

Performance Standard 1: Performance Standard 1 states that except as stated below, the Commission hereby incorporates 310 CMR 10.58 in its regulations for all matters related to Bylaw jurisdiction in lands within 200 feet of rivers and streams. Noted. The Project complies with all applicable performance standards pursuant to 310 CMR 10.58.

Performance Standard 2: Performance Standard 2 states that a river is any natural flowing body of water that empties to any ocean, lake, pond, other river, stream or wetland and which flows throughout the year. Perennial rivers, streams and creeks are rivers; intermittent streams are not. Notwithstanding 310 CMR 10.58, the burden of proof shall be on any applicant to show that a river, stream or creek is not perennial (i.e., is intermittent). Noted. The Applicant concurs that Aaron River is a perennial stream and is subject to the Riverfront Area performance standards.

Performance Standard 3: Performance Standard 3 states that for any river or stream that is tidally influenced, the Commission shall use the DEP mouth of the river designation line. Not applicable. Aaron River is not tidally influenced.

Performance Standard 4: Performance Standard 4 states that notwithstanding any provisions of 310 CMR 10.58, the Commission shall presume that the mean annual high-water line of a non-tidal river is coincident with the outer (landmost) boundary of any Bordering Vegetated Wetland

(as defined in these regulations) that may be adjacent to the river. For non-tidal rivers lacking any Bordering Vegetated Wetland, the inner boundary of the 200-foot Riverfront Area shall be the top of Inland Bank as determined by the first observable break in slope or the mean annual flood level, whichever is lower. For tidal rivers, the inner boundary of the 200-foot Riverfront Area shall be the mean annual high-water line. Noted. The Applicant concurs that the mean annual high-water line of Aaron River is coincident with the outer (landmost) boundary of the associated Bordering Vegetated Wetlands, demarcated in the field as W1 and W2.

Performance Standard 5: Performance Standard 5 states that the alternatives analysis shall include only lots adjacent to the lot(s) being proposed for development or located in the near vicinity. Not applicable. The Project is not proposing any new development.

Performance Standard 6: Performance Standard 6 states that no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species. No portion of the Project is located within a Priority Habitat of Rare Species area or Estimated Habitat or Rare Wildlife area designated by NHESP.

Performance Standard 7: Performance Standard 7 states that the Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw. Noted. The Applicant is aware that additional requirements to protect the wetland values protected under the Bylaw may be necessary.

Performance Standard 8: Performance Standard 8 refers to HWR 23.0 et seq. for additional project-specific performance standards. The Project does not include the construction of a septic system, pool, tennis court, lawn, driveway, dock, pier, or underground storage tank. Although the Project does involve filling of jurisdictional Resource Areas, mitigation for impacts is being proposed.

- **Buffer Zone (HWR Section 22.0)**

Performance Standard 1: Performance Standard 1 states that the intent of the Conservation Commission is to move all structures and activities as far away as possible from any Resource Area, in order to protect the wetland values of Resource Areas. Impacts to Resource Areas due to the Project activities have been minimized to the maximum extent practicable, and compensatory wetland mitigation and replication is proposed to address the filling of the forested wetlands associated with the culvert replacement.

Performance Standard 2: Performance Standard 2 states that Resource Area buffers shall be retained and maintained in a naturally vegetated condition. Where buffer disturbance has occurred during construction, revegetation with native vegetation may be required. Areas of the Buffer Zone that are temporarily impacted by the Project will be restored to pre-construction condition, including regrading and loaming and seeding with a wetland or upland seed mix, as appropriate.

Performance Standard 3: Performance Standard 3 states that the Commission may require that already-altered buffer zone be restored in order to protect or improve Resource Area values. Restoration means planting native vegetation, grading, correcting site drainage, removing debris, or other measures which will improve, restore and protect the wetland values of the Resource Area. Areas of the Buffer Zone that are temporarily impacted by the Project will be restored to pre-construction condition, including regrading and loaming and seeding with a wetland or upland seed mix, as appropriate. Additionally, debris removal including the removal of boulders and logs impeding the natural flow of Aaron River is proposed as part of the Project.

Performance Standard 4: Performance Standard 4 states that no project may be permitted which will have any adverse effect on specified habitat of rare vertebrate or invertebrate and rare plant species. No portion of the Project is located within a Priority Habitat of Rare Species area or Estimated Habitat or Rare Wildlife area designated by NHESP.

Performance Standard 5: Performance Standard 5 states that the Commission may impose such additional requirements as are necessary to protect the wetland values protected under the Bylaw. Noted. The Applicant is aware that additional requirements to protect the wetland values protected under the Bylaw may be necessary.

4.3.4.1 Hingham Wetlands Regulations (HWR) Buffer Zone Mitigation Policy

Pursuant to HWR Section 22.0, the Commission requires mitigation or restoration for activities resulting in new alterations in the 100-foot Buffer Zone. Mitigation is required when the existing area to be altered is a pervious surface, such as lawn, landscape beds, areas with naturally occurring rocks or vegetation, etc. Mitigation is not required when the existing area to be altered is an impervious surface. No work shall be permitted unless the applicant has demonstrated that there are no feasible alternatives with less impact to the Buffer Zone and adjacent Resource Areas. All proposed work within the Buffer Zone is comprised of impervious area associated with Union Street. Therefore, no Buffer Zone mitigation is required for the Project.

5. Avoidance and Minimization

The Project was planned and designed to avoid impacts to sensitive environmental resource areas where practicable. Where avoiding impacts was not feasible, DCR sought to minimize impacts while completing the Project's purpose.

5.1 Erosion and Sedimentation Control

During construction, erosion and sedimentation controls such as silt fencing and compost filter tubes (or similar) will be utilized. All erosion and sedimentation controls will be removed following completion of the work, and all disturbed areas will be permanently stabilized. Erosion controls will be inspected on a regular basis and maintained in working condition until all disturbed areas are stable. Locations and details of erosion and sediment controls are shown in **Appendix B**.

The Contractor will also inspect the Site and remove any demolition debris or other construction related materials upon completion. To minimize runoff and washout, no work shall be performed adjacent to resource areas during significant rain events.

5.2 Restoration

Following installation of the new structure, gravel and paved surfaces will be restored to pre-construction conditions in accordance with the DCR Parkway Standards. Disturbed areas will be loamed and seeded with an upland grass seed mix¹⁴ to match the existing environment.

6. Wetland Mitigation

Compensatory wetland mitigation and replication is proposed to address the filling of the forested wetlands associated with the culvert replacement. Per 310 CMR 10.55(4)(b)(1), MassDEP requires that the surface area of the replacement area to be created shall be equal to that of the area that will be lost (e.g. 1:1 replacement). Therefore, the Project is proposing on-site mitigation of approximately 73 ft², following the MassDEP Inland Wetland Replication Guidelines¹⁵. The proposed mitigation area is located within the construction limits of the new structure. The proposed mitigation areas are shown on Sheet 3 of the Site Plans and will be constructed by excavating upland areas and matching the excavated grades of the existing wetlands to allow for sufficient inundation indicative of wetland conditions. As per the planting schedule, supplemental hydrophytic tree/shrub species will be planted in the replicated wetland areas using the Massachusetts Inland Wetland Replacement Guidelines as supplemental guidance. For further details on the proposed wetland replication area, refer to Sheet 3 of the Construction Plans and Sheet 2 of the Construction Details in the Site Plans (**Appendix B**).

Table 6. Summary of Proposed On-Site Wetland Mitigation

<u>Wetland ID</u>	<u>MassDEP Jurisdictional Determination</u>	<u>USACE Jurisdictional Determination</u>	<u>Permanent Wetland Loss (ft²)</u>	<u>Proposed Mitigation Area (ft²)</u>	<u>Mitigation Ratio</u>
Wetland 1	Bordering Vegetated Wetland	Forested Wetland	38 ft ²	73 ft ²	1:1

¹⁴New England Roadside Matrix Upland Seed Mix (<https://newp.com/product/new-england-roadside-matrix-upland-seed-mix/>) or equivalent.

¹⁵<https://www.mass.gov/doc/massachusetts-inland-wetland-replacement-guidelines/download>

Wetland 2	Bordering Vegetated Wetland	Forested Wetland	35 ft ²		
TOTAL:			73 ft²	73 ft²	1:1

7. Compliance with Massachusetts Stormwater Policy

In 1996, the Massachusetts Department of Environmental Protection (MassDEP) issued the Stormwater Policy that established Stormwater Management Standards aimed at encouraging recharge and preventing stormwater discharges from causing or contributing to the pollution of the surface waters and groundwaters of the Commonwealth. In 1997, MassDEP published the Massachusetts Stormwater Handbook as guidance on the Stormwater Policy. MassDEP has revised the Stormwater Management Standards and Massachusetts Stormwater Handbook to promote increased stormwater recharge, the treatment of more runoff from polluting land uses, low impact development (LID) techniques, pollution prevention, the removal of illicit discharges to stormwater management systems, and improved operation and maintenance of stormwater best management practices (BMPs). MassDEP applies the Stormwater Management Standards pursuant to its authority under the WPA and the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53. The revised Stormwater Management Standards have been incorporated in the WPA Regulations, 310 CMR 10.05(6)(k) and the Water Quality Certification Regulations, 314 CMR 9.06(6)(a).

7.1 Standard 1: No New Untreated Discharges or Erosion to Wetlands

Not applicable. The Project does not include the construction of any new stormwater conveyances.

7.2 Standard 2: Peak Rate Attenuation

Not applicable. The Project does not include the construction of a stormwater management system, and there will be no increase in post-development peak discharge rates.

7.3 Standard 3: Stormwater Recharge

Not applicable. The Project will not result in a loss of annual recharge to groundwater, as there will be no increase in impervious surface due to the Project.

7.4 Standard 4: Water Quality

Not applicable. The installation of the new structure will not negatively affect the existing stormwater management system. No changes to TSS removal are proposed.

7.5 Standard 5: Land Uses with Higher Potential Pollutant Loads

Not applicable. None of the land uses within the Site have higher potential pollutant loads.

7.6 Standard 6: Critical Areas

Not applicable. The Project is not located within Zone II or Interim Wellhead Protection Area of a public water supply.

7.7 Standard 7: Redevelopment Projects

The Project will not result in an increase of impervious surfaces on Union Street. Therefore, Standards 1 through 6, when applicable, have been met to the maximum extent practicable as previously described. The additional standards are addressed below.

7.8 Standard 8: Construction Period Pollution Prevention, Erosion/Sedimentation Controls

The Project fully complies with Standard 8. Erosion control measures will be used as part of the Project and

are shown in **Appendix B**.

7.9 Standard 9: Operation and Maintenance Plan

Not applicable. The property is subject to an existing MS4 operation and maintenance plan.

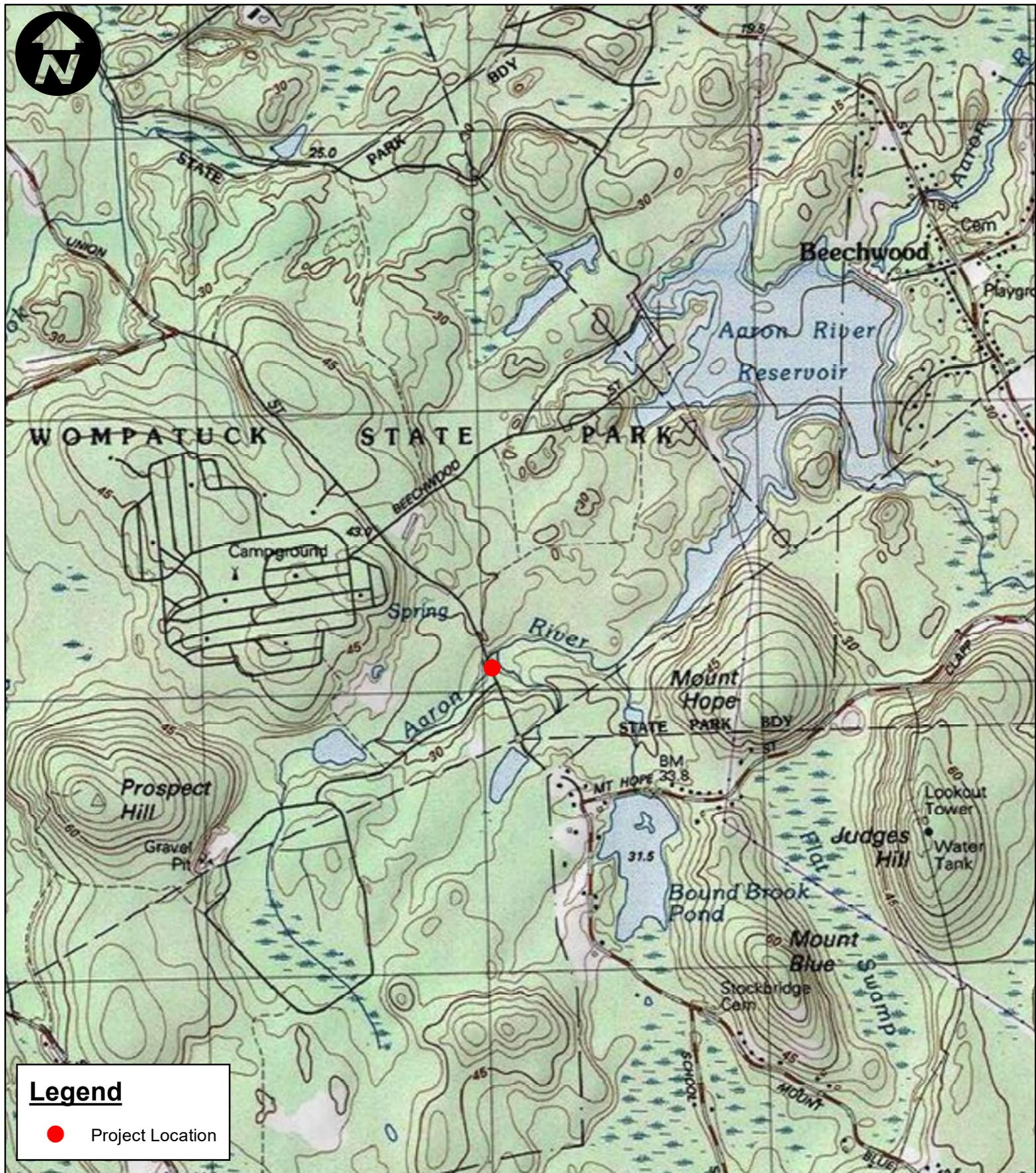
7.10 Standard 10: Prohibition of Illicit Discharges

Not applicable. No illicit discharges are proposed as part of the Project.

8. Summary

The Project will improve the safety, functionality, and reliability of Union Street. Permanent impacts to regulated wetland resources have been minimized to the maximum extent practicable and are limited to 73 ft² of BVW, 9 linear feet of Bank, 205 ft² of BLSF, 24 ft² of LUWW, 1,142 ft² within the 100-foot Buffer Zone to BVW and Bank, and 1,142 ft² within the 200-foot Riverfront Area. DCR respectfully requests that the Hingham Conservation Commission find that these measures are adequately protective of the interests identified in the WPA and issue an Order of Conditions approving the work shown on the accompanying Site Plans.

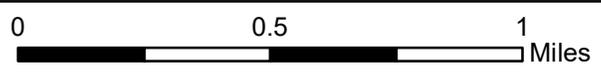
Appendix A – Figures



Legend

● Project Location

**Figure 1 - USGS Topographic Map
Culvert Replacement on Union Street
Wompatuck State Park
Hingham, MA**



Notes: Projection is in Massachusetts State Plane (ft) NAD 1983. Topographic map courtesy of ESRI USGS Topography Basemap.

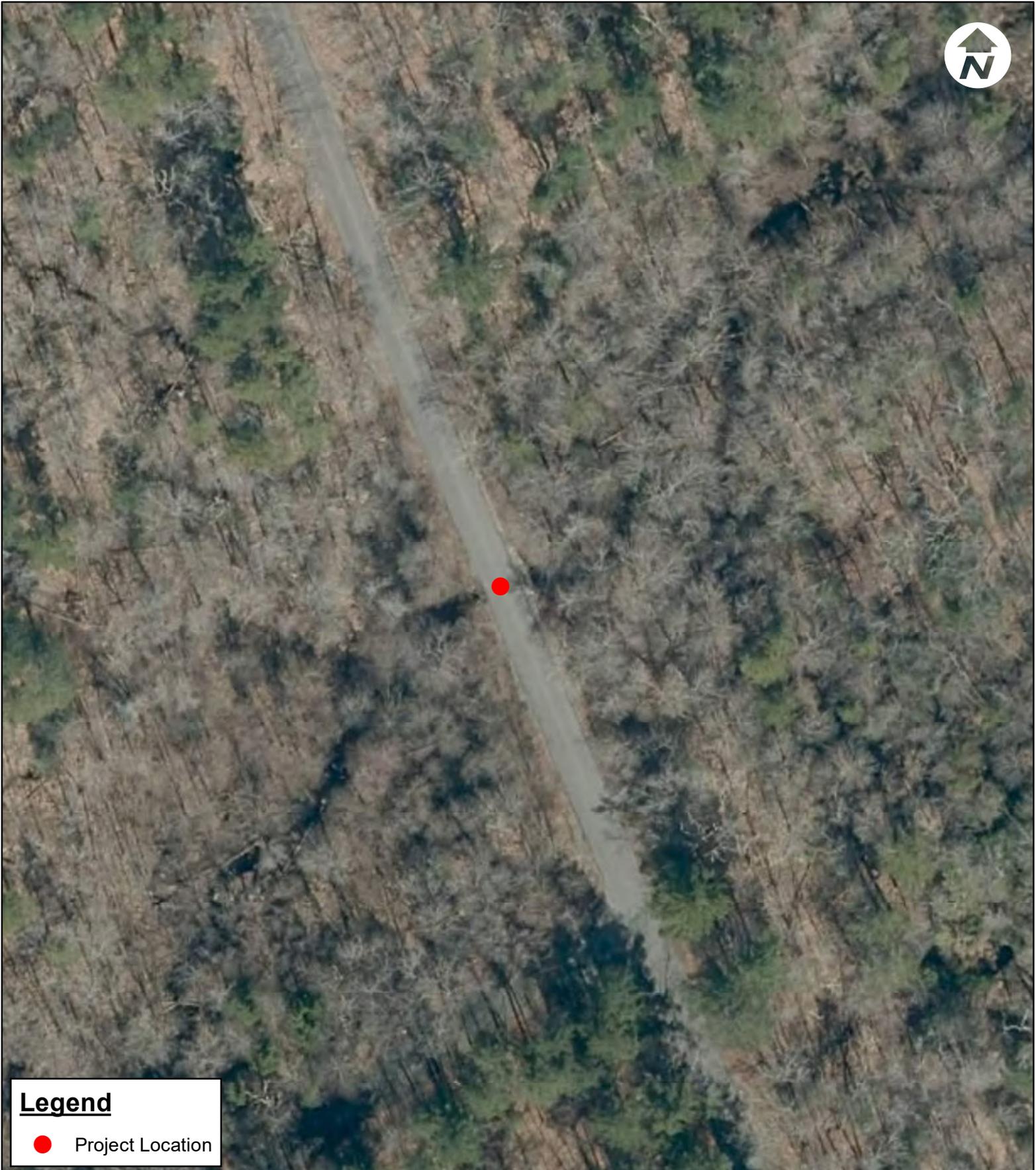
Prepared for:



Prepared by:



April 2024



Legend

● Project Location

Locus Map
1 in = 100 miles



Figure 2 - Aerial Map
Culvert Replacement on Union Street
Wompatuck State Park
Hingham, MA

0 150 300
Feet

Notes: Projection is in Massachusetts State Plane (ft) NAD 1983.

Prepared for:



Prepared by:



April 2024

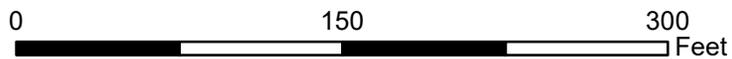


Legend

-  Project Location
-  MassDEP Hydrologic Connections
-  Wooded Swamp Deciduous



Figure 3 - MassDEP Wetlands Map
Culvert Replacement on Union Street
Wompatuck State Park
Hingham, MA



Notes: Projection is in Massachusetts State Plane (ft) NAD 1983.

Prepared for:



Prepared by:



April 2024

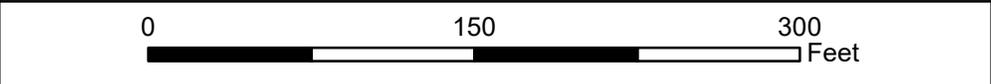


Legend

- Project Location
- Freshwater Forested/Shrub Wetland
- Riverine



Figure 4 - NWI Map
Culvert Replacement on Union Street
Wompatuck State Park
 Hingham, MA

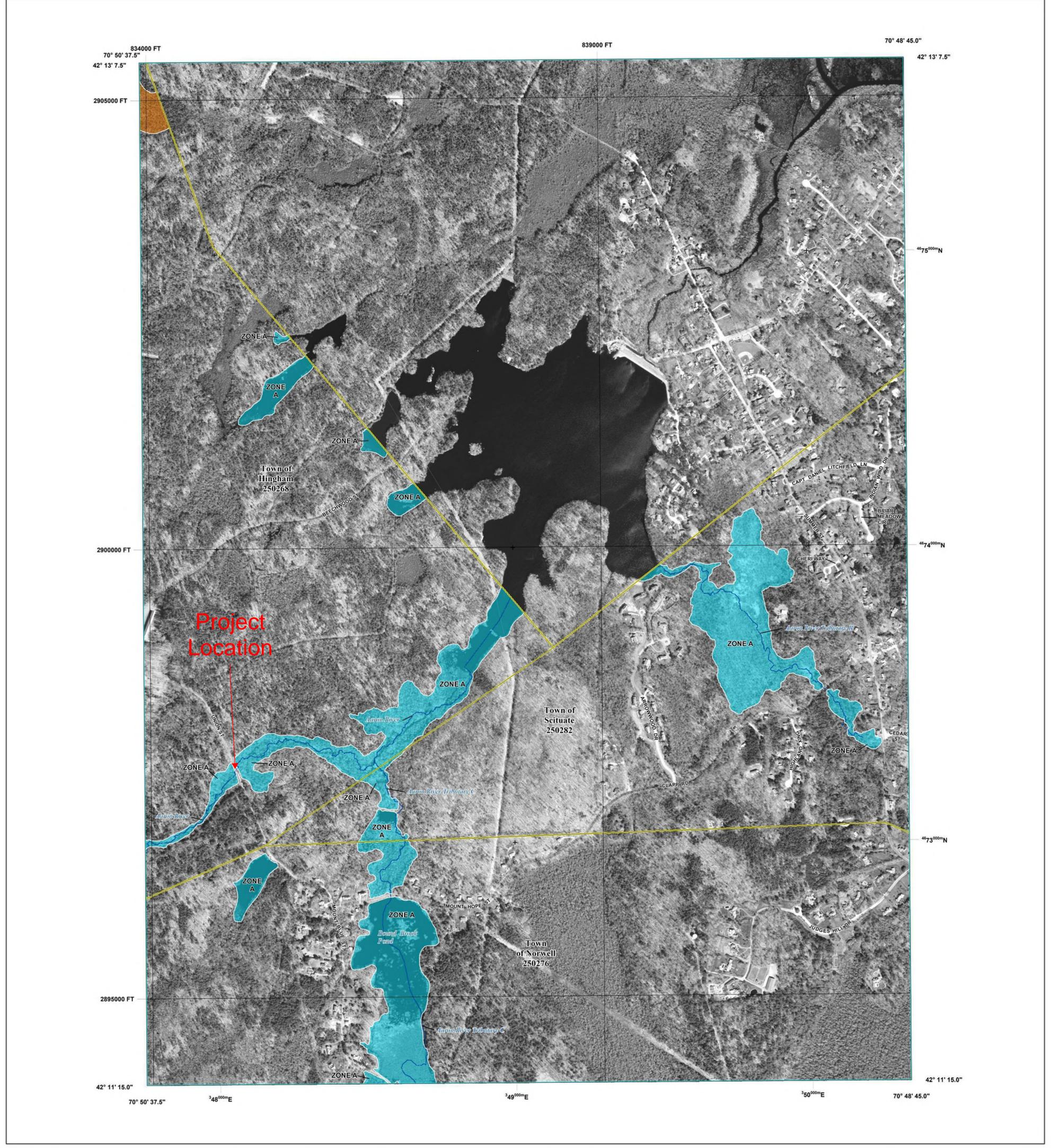


Notes: Projection is in Massachusetts State Plane (ft) NAD 1983.

Prepared for:

Prepared by:

April 2024



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTPS://MSC.FEMA.GOV](https://msc.fema.gov)

	Without Base Flood Elevation (BFE) Zone A, V, A99
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes. Zone X
	Area with Flood Risk due to Levee Zone D
	Area of Minimal Flood Hazard Zone X
	Area of Undetermined Flood Hazard Zone D
	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	Cross Sections with 1% Annual Chance Water Surface Elevation
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

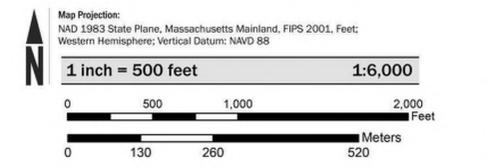
For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at <https://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM index. These may be ordered directly from the Flood Map Service Center at the number listed above.

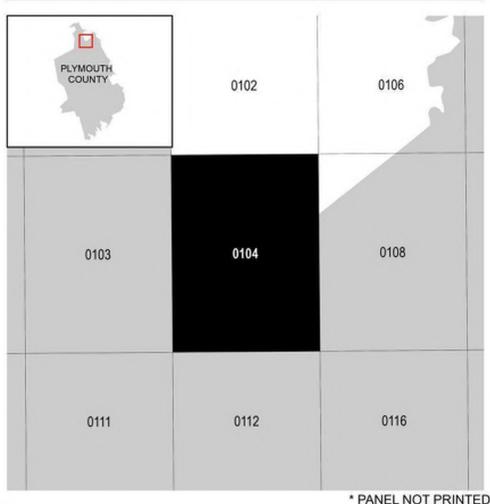
For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction. To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on the FIRM uses 2013 and 2014 imagery provided by the U.S. Geological Survey and 2016 transportation data provided by the U.S. Census Bureau, with all other vector data unchanged from the previous FIRM.

SCALE



PANEL LOCATOR



FEMA
 National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
 FLOOD INSURANCE RATE MAP

PLYMOUTH COUNTY, MASSACHUSETTS
 (ALL JURISDICTIONS)

PANEL 104 OF 650

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
HINGHAM, TOWN OF	250268	0104	K
NORWELL, TOWN OF	250276	0104	K
SCITUATE, TOWN OF	250282	0104	K

VERSION NUMBER 2.6.3.5
 MAP NUMBER 25023C0104K
 MAP REVISED July 6, 2021

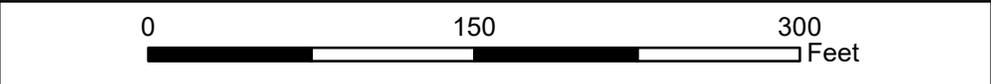


Legend

- Project Location
- 420B - Canton fine sandy loam, 3 to 8 percent slopes
- 427B - Newfields fine sandy loam, 3 to 8 percent slopes, extremely stony
- 48A - Brockton sandy loam, 0 to 3 percent slopes, extremely stony
- 49A - Norwell mucky fine sandy loam, 0 to 3 percent slopes, extremely stony
- 660C - Udorthents, 8 to 15 percent slopes, gravelly



Figure 6 - Soils Map
Culvert Replacement on Union Street
Wompatuck State Park
 Hingham, MA



Notes: Projection is in Massachusetts State Plane (ft) NAD 1983.

Prepared for:

Prepared by:

April 2024

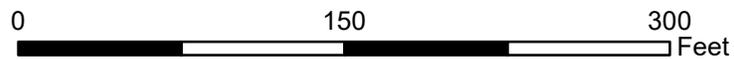


Legend

-  Project Location
-  Outstanding Resource Water



Figure 7 - NHESP Map
Culvert Replacement on Union Street
Wompatuck State Park
Hingham, MA



Notes: Projection is in Massachusetts State Plane (ft) NAD 1983.

Prepared for:



Prepared by:



April 2024



Wompatuck State Park

Legend

-  Project Location
-  DCR - State Parks & Recreation

Locus Map
1 in = 100 miles



Figure 8 - Open Space by Ownership Map
Culvert Replacement on Union Street
Wompatuck State Park
Hingham, MA

0 150 300
Feet

Notes: Projection is in Massachusetts State Plane (ft) NAD 1983.

Prepared for:



Prepared by:



April 2024

Appendix B – Site Plans

MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

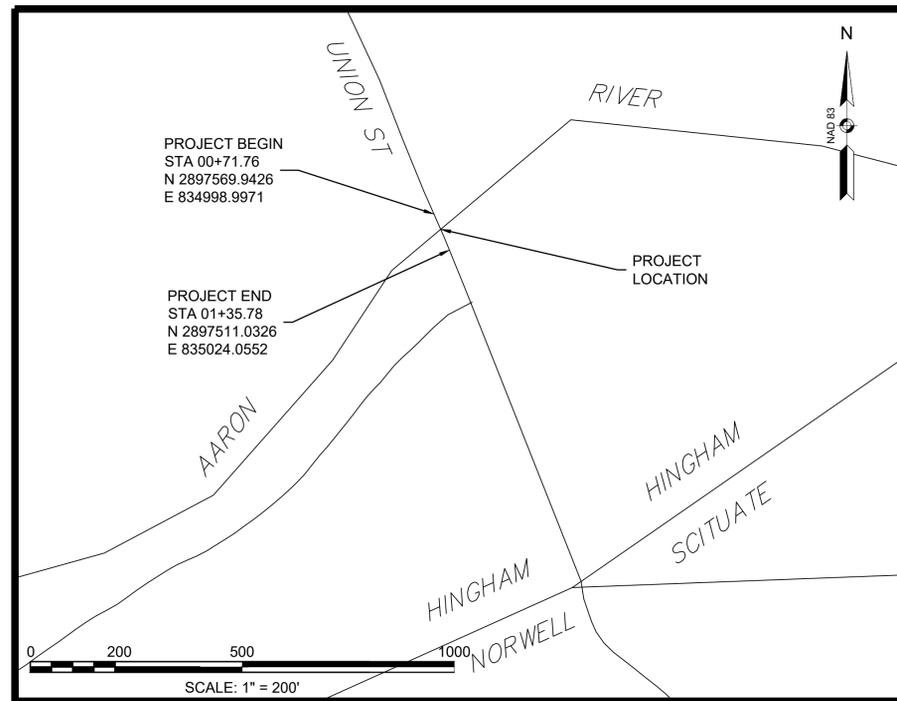
CULVERT REPLACEMENT
UNION STREET
IN THE TOWN OF
HINGHAM
PLYMOUTH COUNTY

HINGHAM UNION STREET			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	1	6
PROJECT FILE NO.		60724762	
TITLE SHEET & INDEX			

ISSUED FOR PERMIT

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	EXISTING CONDITION PLAN & GENERAL NOTES
3	PROPOSED CONDITION PLAN & SEDIMENT AND EROSION CONTROL
4	PROFILE AND CROSS SECTIONS
5	DETAILS
6	WETLAND REPLICATION PLAN



NOTICE OF INTENT
10/29/2024

DATE	DESCRIPTION	REV #
7/1/2024		1



AECOM
AECOM TECHNICAL SERVICES, INC.
250 APOLLO DRIVE, CHELMSFORD, MA 01824



Yan Zhang
CHIEF ENGINEER

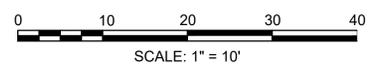
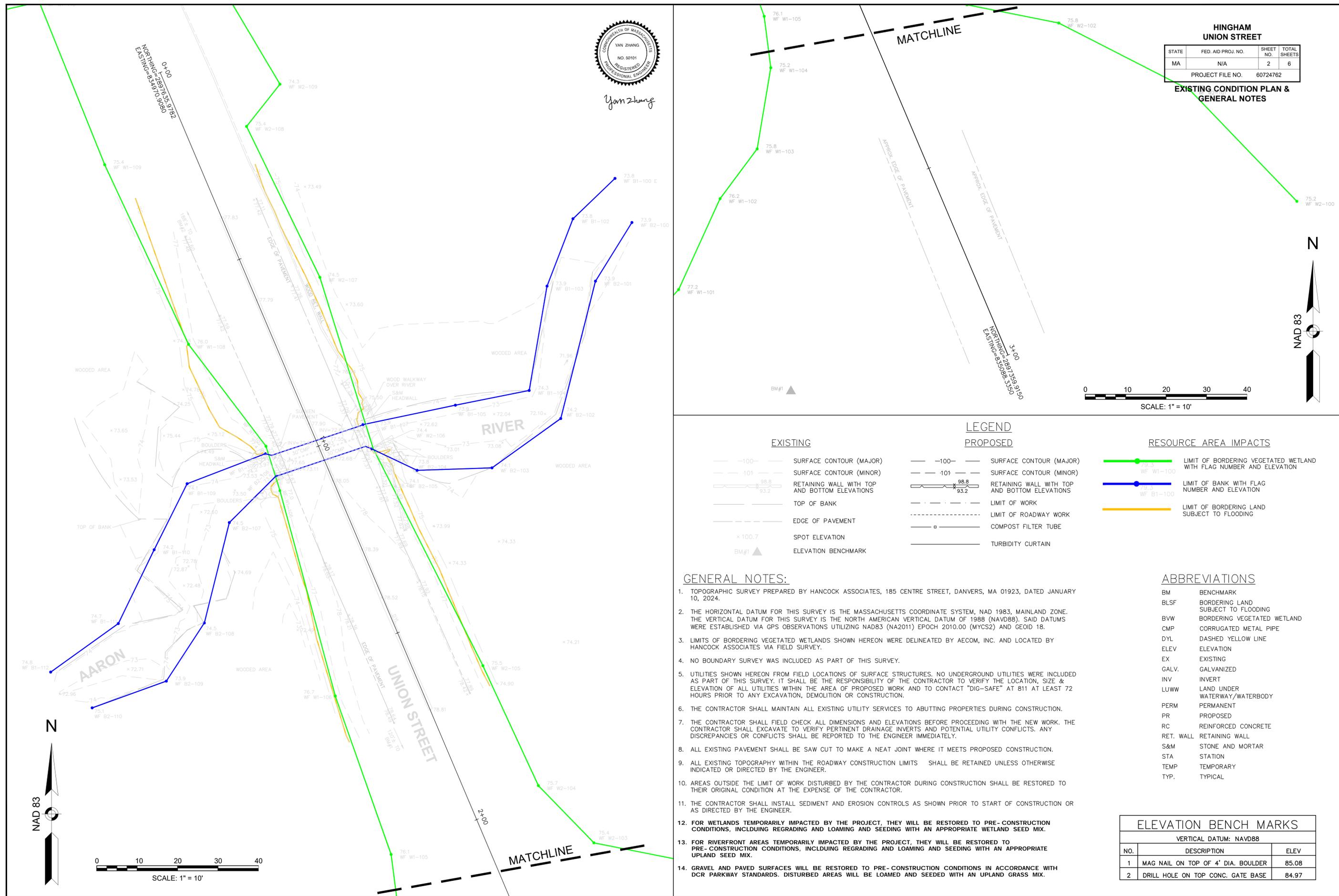
10/29/2024
DATE



Yan Zhang

HINGHAM UNION STREET			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	2	6
PROJECT FILE NO. 60724762			

EXISTING CONDITION PLAN & GENERAL NOTES



EXISTING		PROPOSED		RESOURCE AREA IMPACTS	
	— 100 — SURFACE CONTOUR (MAJOR)		— 100 — SURFACE CONTOUR (MAJOR)		79.3 LIMIT OF BORDERING VEGETATED WETLAND WITH FLAG NUMBER AND ELEVATION
	- 101 - SURFACE CONTOUR (MINOR)		- 101 - SURFACE CONTOUR (MINOR)		75.3 LIMIT OF BANK WITH FLAG NUMBER AND ELEVATIONS
	98.8 RETAINING WALL WITH TOP AND BOTTOM ELEVATIONS		98.8 RETAINING WALL WITH TOP AND BOTTOM ELEVATIONS		LIMIT OF BORDERING LAND SUBJECT TO FLOODING
	93.2 TOP OF BANK		— — — — — LIMIT OF WORK		
	— — — — — EDGE OF PAVEMENT		— — — — — LIMIT OF ROADWAY WORK		
	× 100.7 SPOT ELEVATION		— ○ — — — — COMPOST FILTER TUBE		
	BM #1 ▲ ELEVATION BENCHMARK		— — — — — TURBIDITY CURTAIN		

GENERAL NOTES:

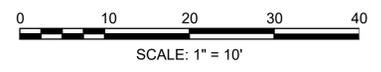
- TOPOGRAPHIC SURVEY PREPARED BY HANCOCK ASSOCIATES, 185 CENTRE STREET, DANVERS, MA 01923, DATED JANUARY 10, 2024.
- THE HORIZONTAL DATUM FOR THIS SURVEY IS THE MASSACHUSETTS COORDINATE SYSTEM, NAD 1983, MAINLAND ZONE. THE VERTICAL DATUM FOR THIS SURVEY IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). SAID DATUMS WERE ESTABLISHED VIA GPS OBSERVATIONS UTILIZING NAD83 (NA2011) EPOCH 2010.00 (MYCS2) AND GEOID 18.
- LIMITS OF BORDERING VEGETATED WETLANDS SHOWN HEREON WERE DELINEATED BY AECOM, INC. AND LOCATED BY HANCOCK ASSOCIATES VIA FIELD SURVEY.
- NO BOUNDARY SURVEY WAS INCLUDED AS PART OF THIS SURVEY.
- UTILITIES SHOWN HEREON FROM FIELD LOCATIONS OF SURFACE STRUCTURES. NO UNDERGROUND UTILITIES WERE INCLUDED AS PART OF THIS SURVEY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION, SIZE & ELEVATION OF ALL UTILITIES WITHIN THE AREA OF PROPOSED WORK AND TO CONTACT "DIG-SAFE" AT 811 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION OR CONSTRUCTION.
- THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITY SERVICES TO ABUTTING PROPERTIES DURING CONSTRUCTION.
- THE CONTRACTOR SHALL FIELD CHECK ALL DIMENSIONS AND ELEVATIONS BEFORE PROCEEDING WITH THE NEW WORK. THE CONTRACTOR SHALL EXCAVATE TO VERIFY PERTINENT DRAINAGE INVERTS AND POTENTIAL UTILITY CONFLICTS. ANY DISCREPANCIES OR CONFLICTS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- ALL EXISTING PAVEMENT SHALL BE SAW CUT TO MAKE A NEAT JOINT WHERE IT MEETS PROPOSED CONSTRUCTION.
- ALL EXISTING TOPOGRAPHY WITHIN THE ROADWAY CONSTRUCTION LIMITS SHALL BE RETAINED UNLESS OTHERWISE INDICATED OR DIRECTED BY THE ENGINEER.
- AREAS OUTSIDE THE LIMIT OF WORK DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL INSTALL SEDIMENT AND EROSION CONTROLS AS SHOWN PRIOR TO START OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
- FOR WETLANDS TEMPORARILY IMPACTED BY THE PROJECT, THEY WILL BE RESTORED TO PRE- CONSTRUCTION CONDITIONS, INCLUDING REGRADING AND LOAMING AND SEEDING WITH AN APPROPRIATE WETLAND SEED MIX.
- FOR RIVERFRONT AREAS TEMPORARILY IMPACTED BY THE PROJECT, THEY WILL BE RESTORED TO PRE- CONSTRUCTION CONDITIONS, INCLUDING REGRADING AND LOAMING AND SEEDING WITH AN APPROPRIATE UPLAND SEED MIX.
- GRAVEL AND PAVED SURFACES WILL BE RESTORED TO PRE- CONSTRUCTION CONDITIONS IN ACCORDANCE WITH DCR PARKWAY STANDARDS. DISTURBED AREAS WILL BE LOAMED AND SEEDING WITH AN UPLAND GRASS MIX.

ABBREVIATIONS

BM	BENCHMARK
BLSF	BORDERING LAND SUBJECT TO FLOODING
BVW	BORDERING VEGETATED WETLAND
CMP	CORRUGATED METAL PIPE
DYL	DASHED YELLOW LINE
ELEV	ELEVATION
EX	EXISTING
GALV.	GALVANIZED
INV	INVERT
LUWW	LAND UNDER WATERWAY/WATERBODY
PERM	PERMANENT
PR	PROPOSED
RC	REINFORCED CONCRETE
RET. WALL	RETAINING WALL
S&M	STONE AND MORTAR
STA	STATION
TEMP	TEMPORARY
TYP.	TYPICAL

ELEVATION BENCH MARKS

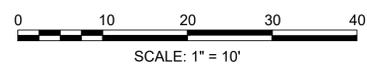
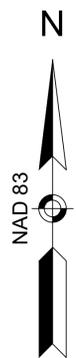
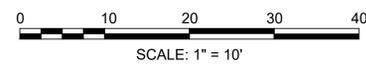
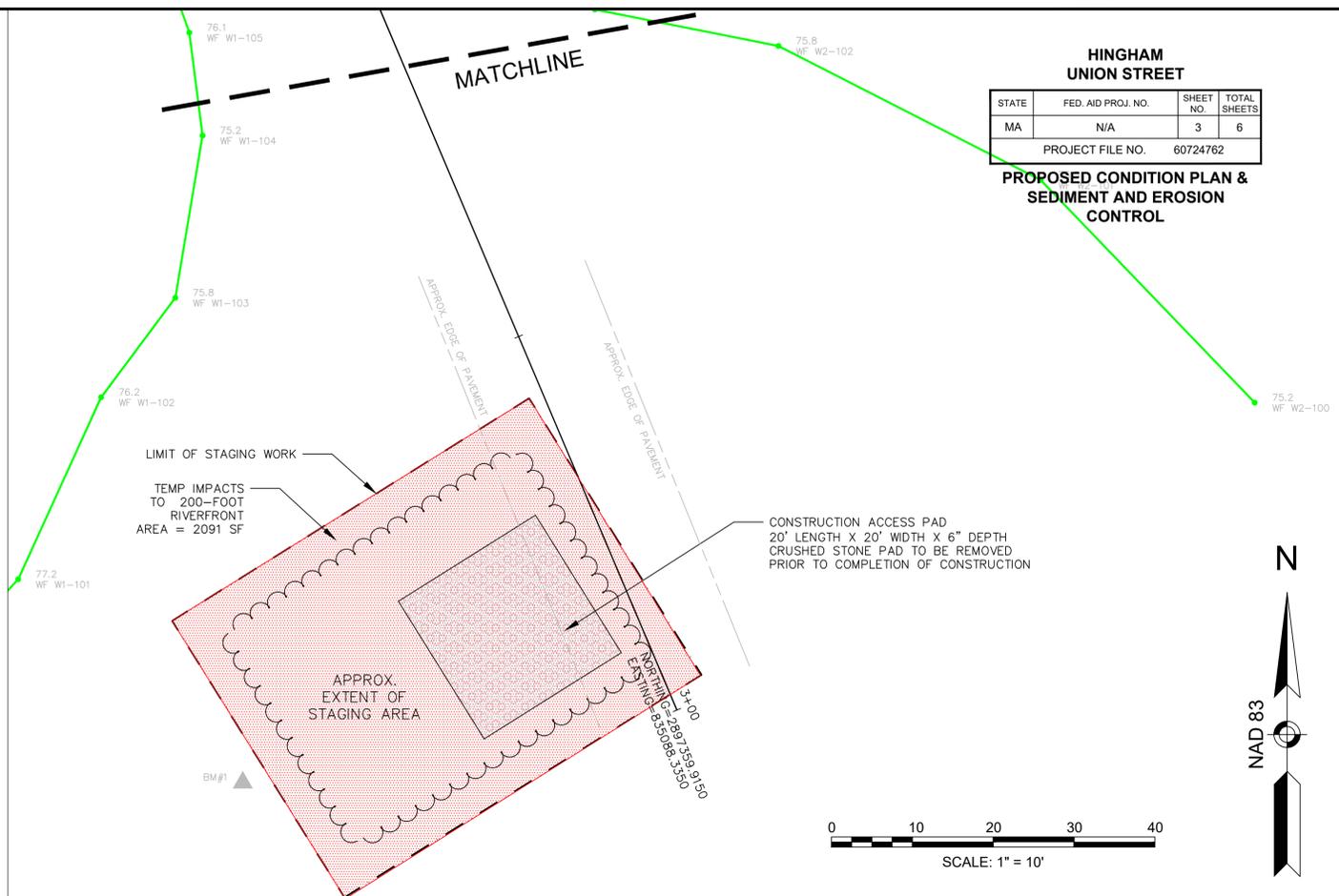
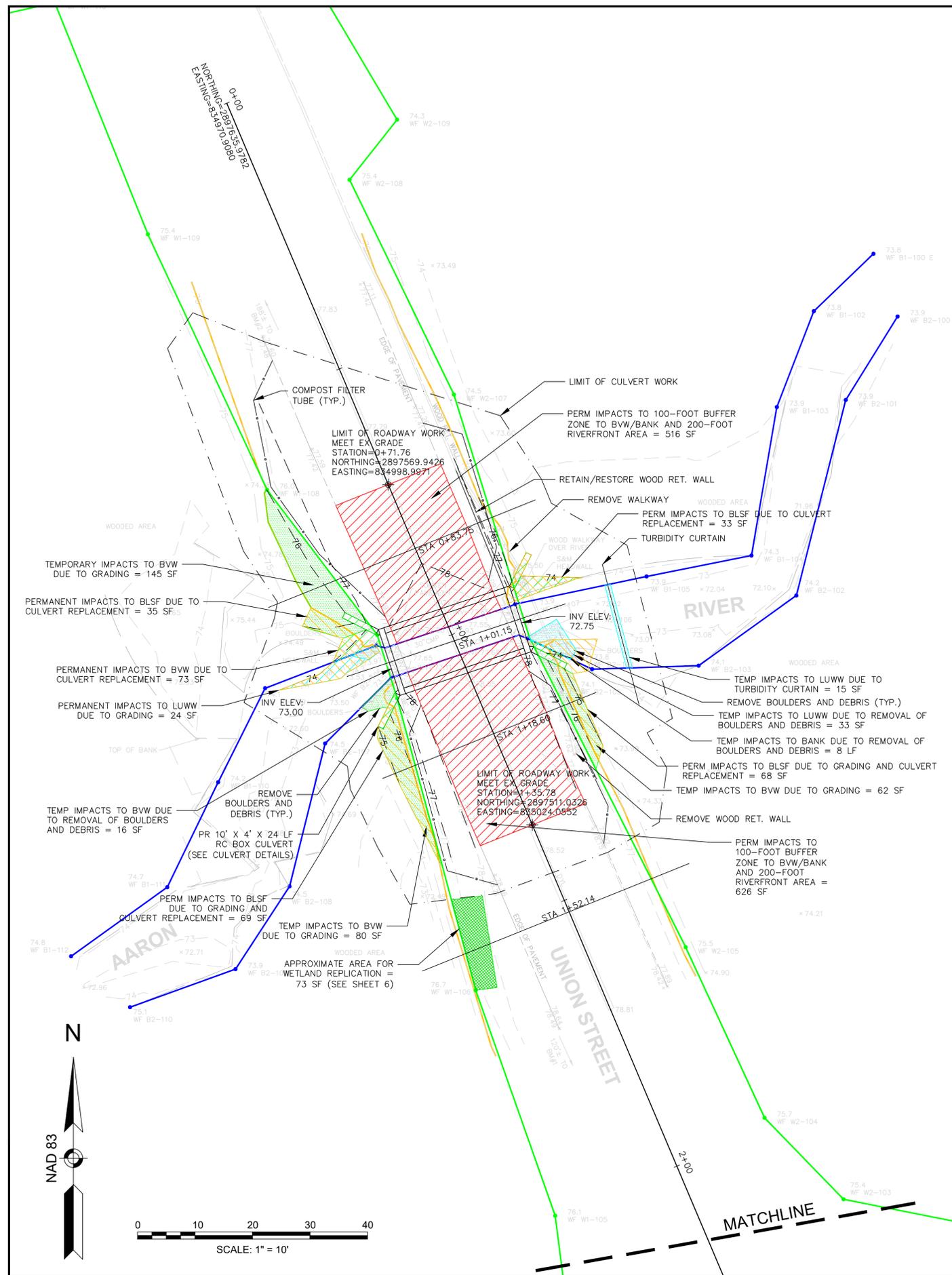
VERTICAL DATUM: NAVD88		
NO.	DESCRIPTION	ELEV
1	MAG NAIL ON TOP OF 4' DIA. BOULDER	85.08
2	DRILL HOLE ON TOP CONC. GATE BASE	84.97



HINGHAM UNION STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	3	6
PROJECT FILE NO. 60724762			

PROPOSED CONDITION PLAN & SEDIMENT AND EROSION CONTROL



Yan Zhang

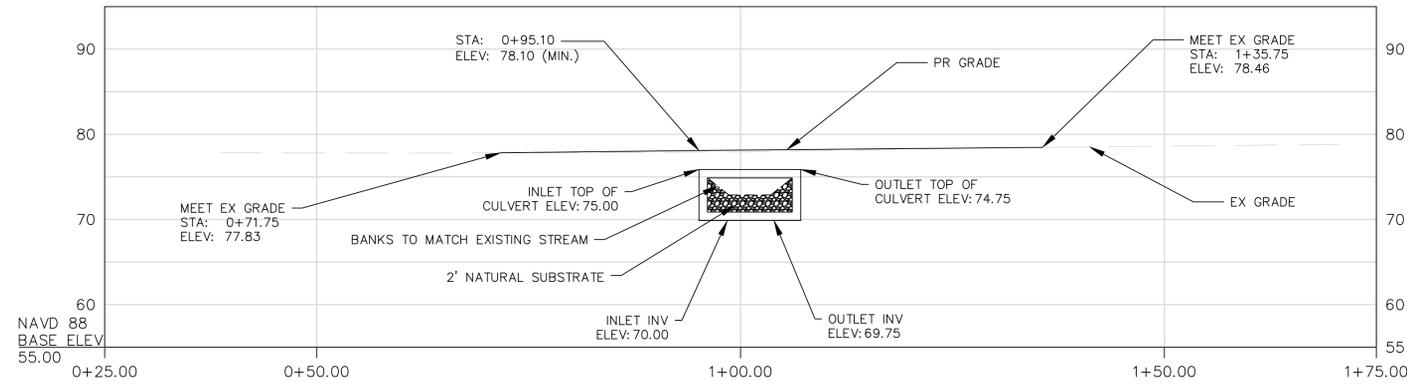
**HINGHAM
UNION STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	4	6
PROJECT FILE NO.		60724762	

PROFILE AND CROSS SECTIONS

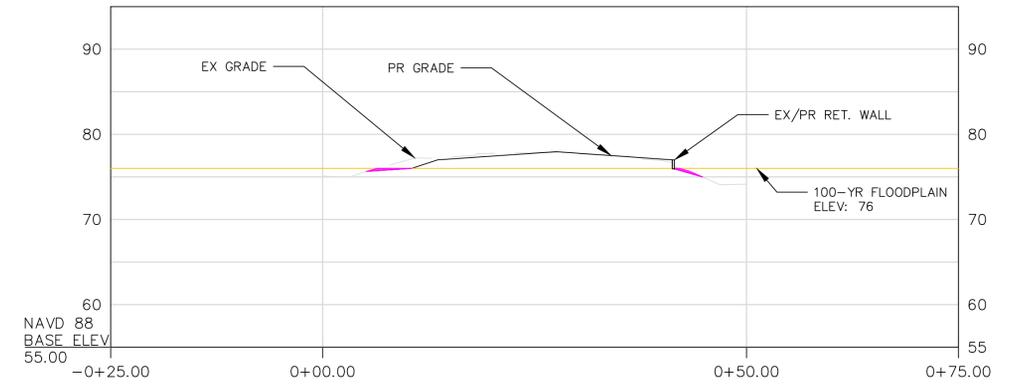
ROADWAY PROFILE

SCALE: 1" = 10'



STA 0+83.75

SCALE: 1" = 10'

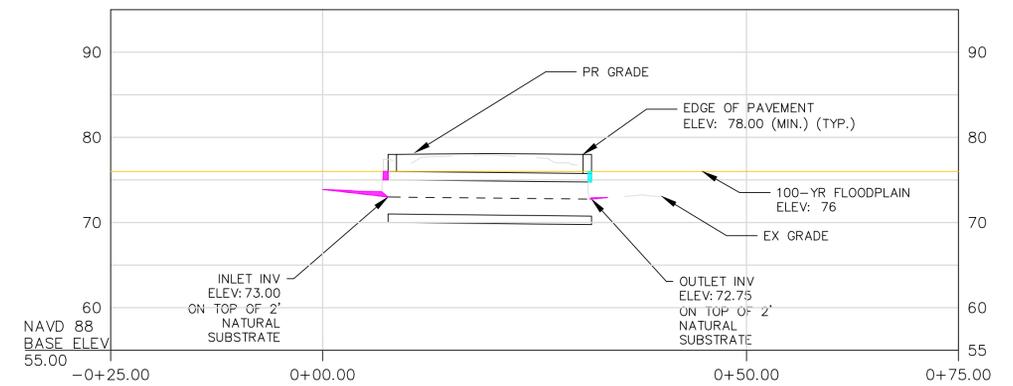


IMPACT TO BLSF			
ELEVATION (FT, NAVD88)	CUT (CY)	FILL (CY)	NET LOSS(-)/GAIN(+) TO FLOOD STORAGE CAPACITY (CY)
72-73	0	0	0
73-74	0.5	0	+0.5
74-75	5.7	0	+5.7
75-76	5.8	0.5	+5.3
TOTAL	12.0	0.5	+11.5

NOTE: THE LIMIT OF BLSF WAS ESTIMATED TO BE EL. 76 BASED ON THE HIGHEST CONTOUR THAT INTERSECTED FEMA FLOOD ZONE A.

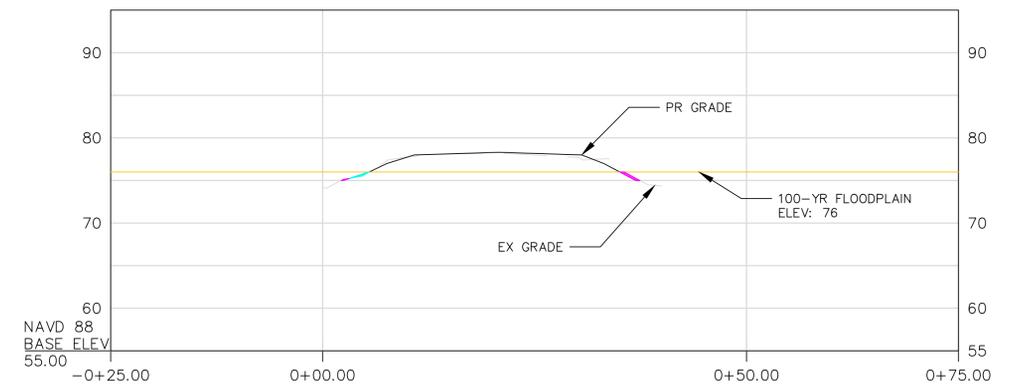
STA 1+01.15

SCALE: 1" = 10'



STA 1+18.60

SCALE: 1" = 10'



LEGEND

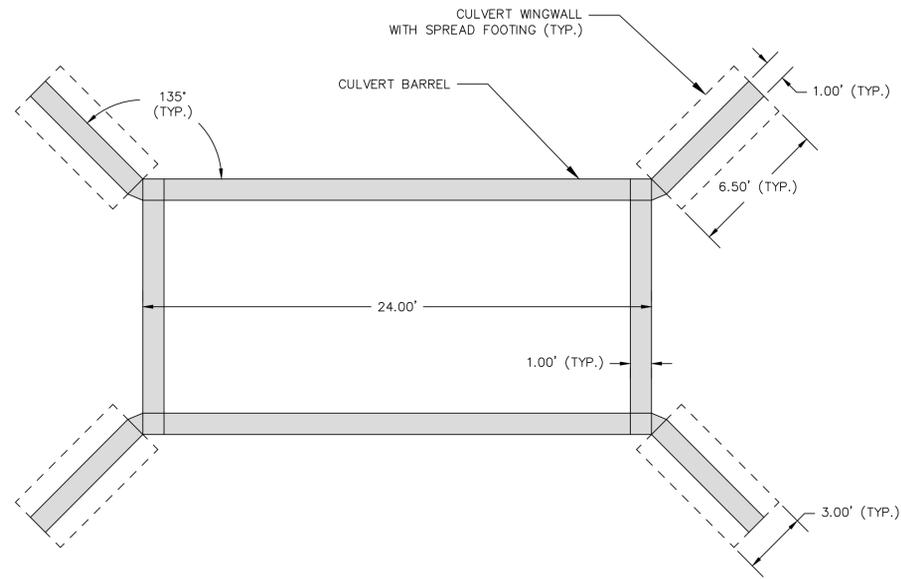
	FLOOD STORAGE GAIN
	FLOOD STORAGE LOSS



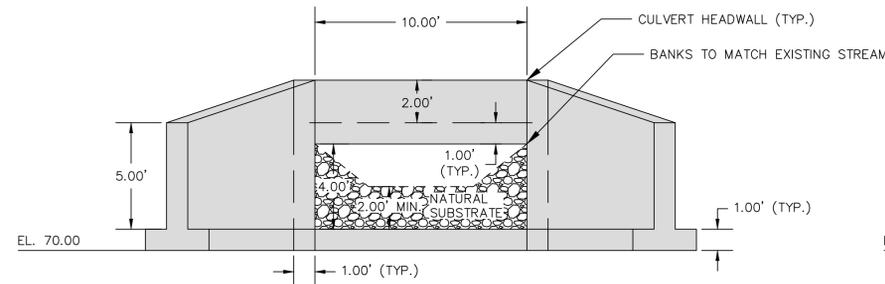
Yan Zhang

HINGHAM UNION STREET			
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MA	N/A	5	6
PROJECT FILE NO.		60724762	

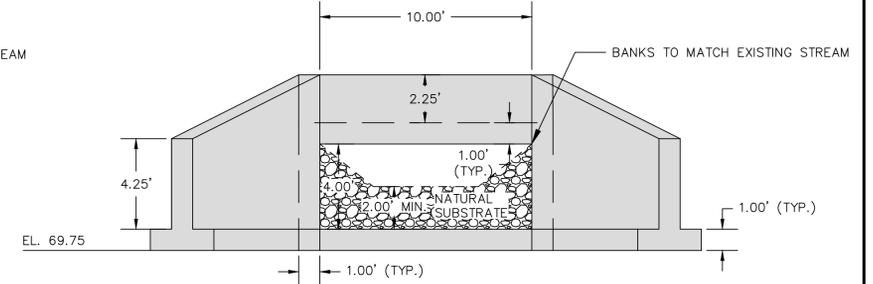
DETAILS



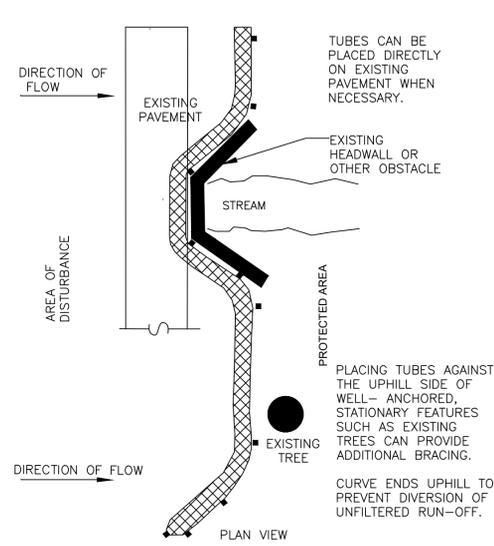
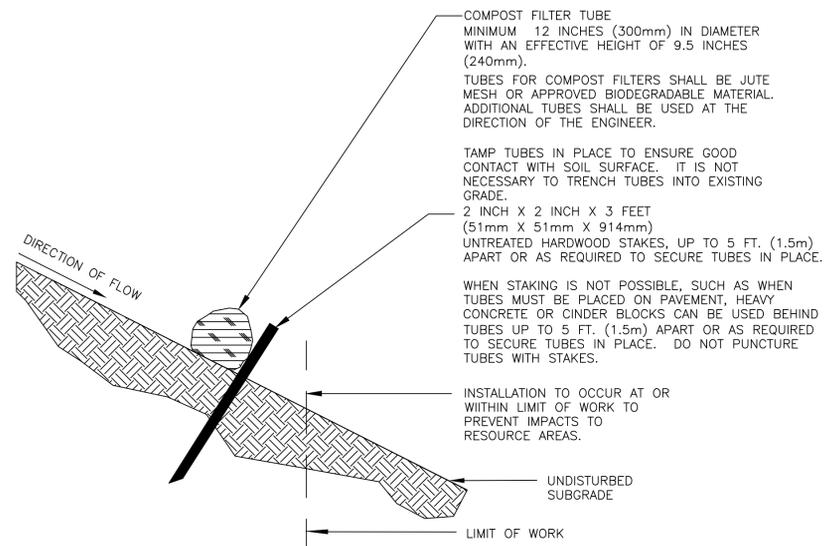
PROPOSED CULVERT PLAN VIEW
NTS



PROPOSED CULVERT INLET ELEVATION VIEW
NTS



PROPOSED CULVERT OUTLET ELEVATION VIEW
NTS



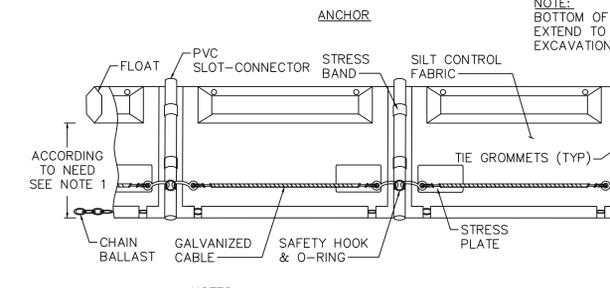
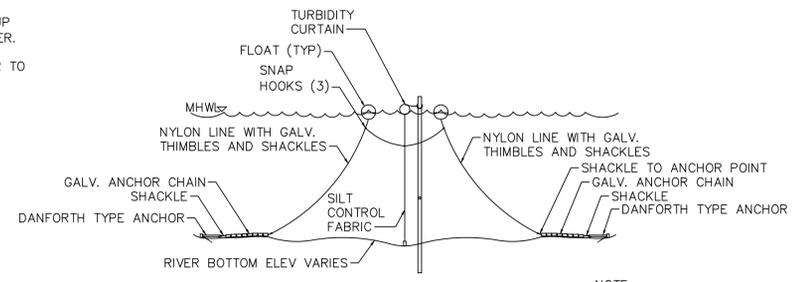
SINGLE COMPOST FILTER TUBE DETAIL
NTS

GENERAL NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.

PROVIDE A 3 FT. (914mm) MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW. STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.

SECURE ENDS OF TUBES WITH STAKES SPACED 18 IN. (457mm) APART THROUGH TOPS OF TUBES. DO NOT PUNCTURE TUBES WITH STAKES.



- NOTE: BOTTOM OF TURBIDITY CURTAIN SHALL EXTEND TO RIVER BOTTOM DURING EXCAVATION AND FILLING OPERATIONS
1. TURBIDITY CURTAIN DEPTH VARIES. TURBIDITY CURTAIN SHALL EXTEND FROM RIVER BOTTOM TO WATER SURFACE DURING EXCAVATION AND FILLING OPERATIONS
 2. INSTALL PER MANUFACTURER'S RECOMMENDATION

TURBIDITY CURTAIN DETAIL
NTS



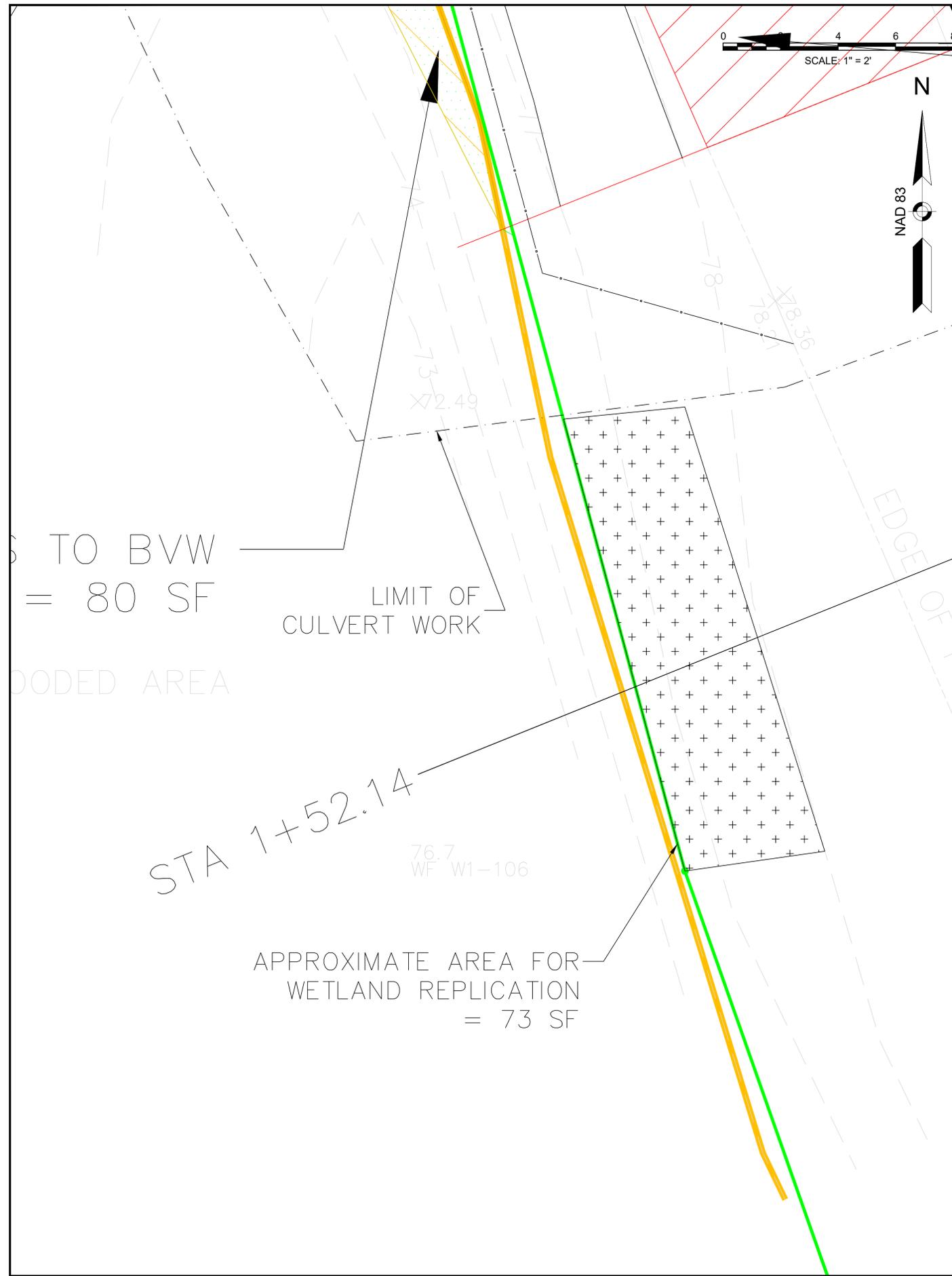
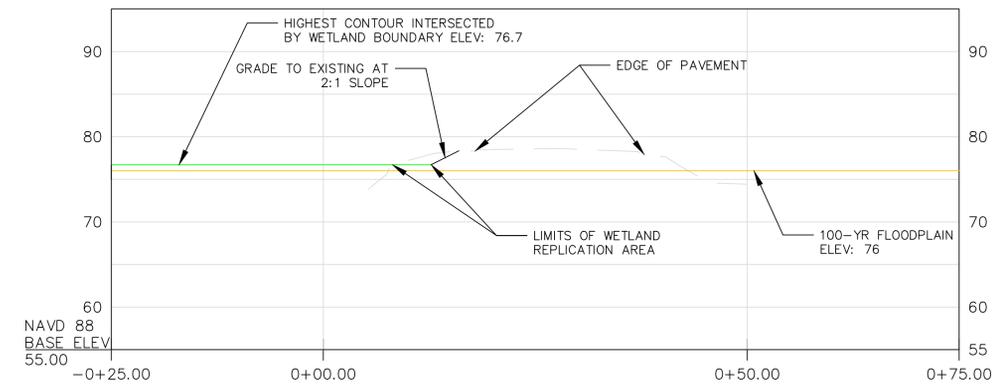
Yan Zhang



Yan Zhang

HINGHAM UNION STREET			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	6	6
PROJECT FILE NO.		60724762	

STA 1+52.14
SCALE: 1" = 10'



TO BVW
= 80 SF
FLOODED AREA

LIMIT OF CULVERT WORK

STA 1+52.14

76.7
WF W1-106

APPROXIMATE AREA FOR WETLAND REPLICATION = 73 SF

EXISTING		PROPOSED		RESOURCE AREA IMPACTS	
—100—	SURFACE CONTOUR (MAJOR)	—100—	SURFACE CONTOUR (MAJOR)	—79.3—	LIMIT OF BORDERING VEGETATED WETLAND WITH FLAG NUMBER AND ELEVATION
---	EDGE OF PAVEMENT	---	LIMIT OF WORK	—78.3—	LIMIT OF BANK WITH FLAG NUMBER AND ELEVATION
x100.7	SPOT ELEVATION	—o—	COMPOST FILTER TUBE	—	LIMIT OF BORDERING LAND SUBJECT TO FLOODING
				+++++	PROPOSED WETLAND REPLICATION AREA

FORESTED WETLAND MITIGATION AREA PLANTING SCHEDULE						
CODE	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	NOTES
AR	1	ACER RUBRUM	RED MAPLE	4' - 6'	10' O.C.	
UA	1	ULMUS AMERICANA	AMERICAN ELM	4' - 6'	10' O.C.	
VC	2	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	2' - 3'	8' O.C.	
CA	2	CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	2' - 3'	8' O.C.	
VD	2	VIBURNUM DENTATUM	ARROWWOOD	2' - 3'	8' O.C.	
SN	2	SALIX NIGRA	BLACK WILLOW	2' - 3'	8' O.C.	
SD	2	SALIX DISCOLOR	PUSSY WILLOW	2' - 3'	8' O.C.	
WM	-	NEW ENGLAND WETLAND SEED MIX	-	-	-	APPLICATION RATE: 1LB/2,500 SQ. FT

- WETLAND MITIGATION NOTES:
- PRIOR TO COMMENCEMENT OF ANY WORK ASSOCIATED WITH THE REPLICATION AREA, THE CONTRACTOR SHALL SUBMIT TO MASSDCR FOR REVIEW AND APPROVAL, A WORK PLAN AND STAGING PLAN THAT INCLUDES A CONSTRUCTION SCHEDULE AND AN OUTLINE OF CONSTRUCTION METHODOLOGIES FOR PERFORMING THE REQUIRED WORK.
 - A WETLAND SCIENTIST WILL BE ON-SITE TO MONITOR AND DIRECT CONSTRUCTION OF THE REPLICATION AREA. AT LEAST 10 DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL ARRANGE FOR A MEETING WITH THE WETLAND SCIENTIST AND ENGINEER TO REVIEW THE PLANNED WORK ACTIVITIES.
 - ALL EXCAVATED MATERIAL STRIPPED FROM THE REPLICATION AREA SHALL NOT BE REUSED BUT SHALL BE REMOVED FROM THE AREA AND PROPERLY DISPOSED OF AT AN APPROVED UPLAND LOCATION.
 - AS DIRECTED BY THE WETLAND SCIENTIST, A 12" DEEP LAYER OF WETLAND PLANTING SOIL/TOPSOIL SHALL BE PLACED ON UNEXCAVATED GRADE WHERE NEEDED TO SUPPORT PLANTING EFFORTS.
 - EQUIPMENT WILL NOT BE PERMITTED ON WETLAND SOILS TO PREVENT COMPACTION WITHIN THE REPLICATION AREA.

- PLANTING NOTES:
- PLANTING IN THE REPLICATION AREA SHALL BE DEPENDENT ON PLANT TYPE. WETLAND SEED MIX SHALL BE APPLIED APRIL - MAY. TREES AND SHRUBS SHALL BE PLANTED APRIL - MAY OR SEPTEMBER - OCTOBER.
 - PRIOR TO PLANTING, THE CONTRACTOR WILL SUBMIT AN AS-BUILT INCLUDING FINAL GRADE TO MASSDCR AND ENGINEER FOR APPROVAL.
 - PRIOR TO PLANTING, ANY PLANT MATERIAL STORED ON SITE WILL BE WATERED AND CARED FOR UNDER THE DIRECTION OF THE WETLAND SCIENTIST.
 - THE WETLAND SCIENTIST SHALL INSPECT THE REPLICATION AREA PRIOR TO PLANTING TO DETERMINE THAT THE SOILS ARE SUITABLE FOR PLANTING. THIS WILL INCLUDE TESTING OF PH AND NUTRIENTS OF THE TOPSOIL TO VERIFY RANGES ARE ACCEPTABLE FOR PLANTING. THE WETLAND SCIENTIST MAY MODIFY THE PLANTING LAYOUT FROM THE PLANTING PLAN IF THE AS-BUILT CONDITIONS POSE A THREAT TO THE SURVIVAL OF PLANTINGS.
 - HAND AUGER OR DIG TO MAKE PLANTING HOLES FOR TREES AND SHRUBS. DO NOT REMOVE PLANTS FROM CONTAINERS UNTIL IMMEDIATELY BEFORE PLANTING. SEPARATE ANY POT-BOUND OR CRAMPED ROOTS AND SPREAD THEM WHEN PLACING THE PLANTS. MACHINERY WILL NOT BE ALLOWED WITHIN THE REPLICATION AREA AT ANY TIME FOR PLANTING.
 - FINAL PLANT PLACEMENT WILL BE VERIFIED BY THE WETLAND SCIENTIST.
 - DISTURBED UPLAND AREAS WILL BE LOAMED, SEEDED WITH AN UPLAND SEED MIX, AND STABILIZED WITH STRAW MULCH.

Appendix C – Wetland Delineation Report

To	Massachusetts Department of Conservation and Recreation	Page	1 of 7
CC	Thomas Keough		
Subject	Wetland Resource Area Assessments Aaron Brook & Union Street Wompatuck State Park, Hingham, MA		
From	Julia Stearns, Senior Staff Specialist		
Date	December 18, 2023		

Introduction

AECOM wetland scientists conducted wetland and waterbody resource area assessments on November 28, 2023, within Wompatuck State Park, on Union Street where it crosses over Aaron Brook, the project site, in Hingham, Massachusetts. This report describes wetland resource areas Subject to Protection under the Town of Hingham Wetland Regulations (HWR) and By-Law (Article 22), the Massachusetts Wetlands Protection Act (Act) (M.G.L Chapter 131, Section 40- *the Act*), the federal Clean Water Act (33 U.S.C. §1344 et seq (1972)), the Massachusetts Clean Waters Act (M.G.L. Chapter 21 Section 26-53) that exist on the site and methodology used to delineate their boundaries.

Site Description

The site is located at the culvert where Aaron Brook passes under Union Street, within the southern portion of Wompatuck State Park, (Figure 1 – Site Locus). The assessment area included an approximate 150-foot by 150-foot area around the Aaron Brook culvert. State and local jurisdictional resource areas identified on the site include Bank of Aaron Brook; Bording Vegetated Wetlands (BVW); Land Under Water (LUW); Bordering Land Subject to Flooding (BLSF), and Riverfront Area (RFA).

Pre-Survey Desktop Investigations

Prior to the commencement of the field survey, AECOM performed an in-office desktop review of pertinent information utilizing the online mapping resources available through the MassGIS Online Data Viewer, as well as the Natural Resource Conservation Service (NRCS) Web Soil Survey to evaluate the potential presence of wetlands, waterbodies, hydric soils and Federal Emergency Management Agency (FEMA) flood hazard areas. Results of the in-office review of publicly available and MassGIS data include:

- The site area contains wetland and river resources and is situated within locally important prime forested lands and adjacent to locally important wetlands, as mapped by the MassDEP Wetland Inventory Program, United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), and as mapped by United States Geological Survey (USGS) National Hydrography Dataset (NHD);
- MA Natural Heritage & Endangered Species Program (NHESP) mapped one Certified Vernal Pool approximately 250-feet southwest of the site;
- USDA Natural Resources Conservation Service (NRCS) – Soil Survey, mapped soils on the site and in the vicinity of the site are classified as Brockton sandy loam within the wetlands and Canton fine sandy loam within the uplands. Brockton sandy loam soil series was defined as very poorly drained, with a water table within 6 inches of the soil surface, and a positive hydric soil rating. Canton fine sandy loam was defined as well drained soil with a water table more

than 80 inches below the soil surface. The field assessment confirmed these soil types within the site. The *Custom Soil Resource Report for Plymouth County, Massachusetts* is attached to this memo.

- Land Subject to Flooding, the 100-year floodplain, Zone A Special Flood Hazard Area, without a Base Flood Elevation (BFE), as defined and protected by HWR (19.0), WPA 310 CMR 10.02(1) and 10.57(1)) associated with Aaron Brook was mapped on the project site by FEMA, see FEMA FIRMette in Appendix A.

Wetland and Waterbody Field Survey Methodology

The wetland and bank identification and delineation surveys were performed pursuant to the guidance contained in *Delineating Bordering Vegetated Wetlands under the Massachusetts Wetlands Protection Act Handbook* (MassDEP 1995), and Routine Onsite Determination Method as described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and applicable *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Ver. 2.0; U.S. Army Corps of Engineers 2012) and the *Field Indicators for Identifying Hydric Soils in New England, Version 4* (New England Hydric Soils Technical Committee 2018).

Field surveys were performed to identify soil types, topographic and drainage features, and plant associations that would indicate the presence of potential jurisdictional resources. Soil profiles were sampled using a soil auger to determine if any hydric soil indicators were present. The information collected for each soil profile included soil horizons, depth, texture, color, and the presence or absence of redoximorphic features (mottles and other features). Colors of the soil matrix and mottles were identified using Munsell Soil Color Charts. The banks of Aaron Brook were delineated based on the WPA definition of Bank at 310 CMR 10.54, in accordance with HWA and in this occasion coincided with the Mean Annual High-Water Line (MAHWL) which was determined based on the description for rivers of the WPA¹.

The indicator status of dominant plant species in each stratum was evaluated in the field to determine whether a hydrophytic plant association was present. Dominant species in both upland and wetland communities were visually estimated and recorded with appropriate radius plots, and the wetland indicator status was noted using the applicable state reference materials. Wetlands were classified during field surveys according to the "Cowardin system", which is a process discussed in *Classification of Wetlands and Deepwater Habitats of the United States* (1979). The US Fish & Wildlife Service, National Wetlands Inventory (NWI) mapper classified site wetland resources as Palustrine Forested/Shrub Wetland (PFO1E) on both sides of Union Street and Aaron Brook. The NWI identified Aaron Brook as R5UBH or Riverine Perennial Unconsolidated Bottom with a Permanently Flooded water regime.

Indicators of wetland hydrology were also observed and recorded. Site hydrology was evaluated during field survey by initially observing whether the soil at the surface was inundated or saturated. If the ground surface was dry, the depth to water table or saturated soil was measured, and the

¹ 310 CMR 10.58(2): "Mean Annual High Water Line of a river is the line that is apparent from visible markings or changes in the character of soils or vegetation due to the prolonged presence of water and that distinguished between predominantly aquatic and predominantly terrestrial land. Field indicators of bankfull conditions shall be used to determine the mean annual high-water line. Bankfull indicators include but are limited to: changes in slope, changes in vegetation, stain lines, top of pointbars, changes in bank materials, or bank undercut."

presence or absence of other indicators of wetland hydrology (e.g., surface water, drainage patterns, drift lines, water-stained leaves, etc.) was noted.

During the field investigations, the boundaries of each wetland and Aaron Brook were demarcated with surveyors flagging tape labeled with a unique numeric designation for each point tied to vegetation and spaced at appropriate intervals. Wetlands and streams were flagged with pink and blue ribbon (respectively). The delineated resource boundaries were surveyed by others and plotted on site plans and confirmed by AECOM field personnel.

Survey Results

A total of two (2) Bordering Vegetated Wetlands (BVW) and one (1) perennial stream were documented and delineated within and adjacent to the project site. A description of each resource area delineated in the field has been provided below and includes identifying the feature's location, classification type, hydrologic indicators and associated characteristics. US Army Corps of Engineers Wetland Determination Data Forms for each vegetated wetland feature can be found in Appendix B and site photographs of the delineated wetlands and open water bodies have been included for review in Appendix C.

Jurisdictional Wetland Resource Areas – Massachusetts Wetlands Protection Act

Waterbodies - Bank (310 CMR 10.54)

Under the Act, a "Bank" is the portion of the land which normally abuts and confines a waterbody. Based on review and delineation of the of Aaron Brook within the project site, the brook meets the regulatory definition of a Bank. AECOM identified and delineated both banks of Aaron Brook as described below. Under the Act a 100-foot buffer zone extends horizontally outward from the boundary of a wetland or a Bank. A buffer zone itself is not a jurisdictional resource area under the Act; however, this location functions as a review area in which activities proposed within 100-feet of a BVW or Bank require the submission of a Notice of Intent (NOI) or a Request for Determination of Applicability (RDA) to the MassDEP and local Conservation Commission.

Aaron Brook B1/B2

Aaron Brook, B1/B2, is a perennial stream that flows west to east under Union Street at the project site, in the western portion of Wompatuck State Park. Mean Annual High Water (MAHW) was delineated in the field with blue surveyor's flagging tape identified with numbers B1-100 through B1-112 along the north bank and B2-100 through B2-110 along the south bank within the project site. The brook is contiguous with Wetlands W1 and W2 via a culvert under Union Street. Flags B1-107 and B1-108 demarcate the north bank at the culvert, B1-107 on the east side of Union Street and B1-108 on the west side. Similarly, flags B2-105 and B2-106 demarcate the south bank of Aaron Brook at the culvert, where flag B2-105 represents the east side of Union Street and flag B2-106 represents the west side of the street.

Bordering Vegetation Wetlands (310 CMR 10.55)

According to 310 CMR 10.55(2), Bordering Vegetated Wetlands (BVW) are freshwater wetlands which border on creeks, rivers, streams, ponds, or lakes are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The boundary of a BVW is the line within which 50% or more of the vegetation community consists of wetland indicator plants and saturated or inundated conditions exist. The Act establishes a 100-foot buffer zone that extends horizontally outward from the boundary of a BVW.

AECOM identified and delineated two BVWs within the project site, herein called Wetland 1 and Wetland 2. The wetlands were contiguous with Aaron Brook and located west and east of Union Street.

Wetland 1

Wetland 1 is a BVW wooded swamp bordering Aaron Brook on the west side of Union Street. The wetland drains to the brook as well as receives flood flow during highwater conditions. The boundary between the swamp and uplands was demarcated in the field with pink surveyor's tape, labeled W1-100 through W1-112, at the toe of slope along the west side of Union Street. The swamp was dominated by red maple (*Acer rubrum*), river birch (*Betula nigra*), willow (*Salix* sp.), speckled alder (*Alnus incana*), winterberry (*Ilex verticillata*) and cinnamon fern (*Osmunda cinnamomea*). Hydric soils were documented in the BVW. Hydrologic indicators observed during the site review included saturated conditions, high water table, and water-stained leaves.

Wetland 2

Wetland 2 is a BVW wooded swamp bordering Aaron Brook on the east side of Union Street. The wetland drains to the brook and receives flood flow from the brook during highwater conditions. The boundary between the wetland and uplands was demarcated in the field with pink surveyor's tape, labeled W2-100 through W2-113, at the toe of slope along the east side of Union Street. The wetland was dominated by red maple (*Acer rubrum*), white oak (*Quercus alba*), river birch (*Betula nigra*), highbush blueberry (*Vaccinium corymbosum*), speckled alder (*Alnus incana*), winterberry (*Ilex verticillata*) and cinnamon fern (*Osmunda cinnamomea*). Hydric soils were documented in the BVW. Hydrologic indicators observed during the site review included saturated conditions at the time of the site visit, high water table, water-stained leaves, and standing water.

Land Under Water (310 CMR 10.56)

According to the Act the definition of Land Under Water (LUW) is the land beneath any creek, river, stream, pond or lake and may be composed of organic muck or peat, fine sediments, rocks or bedrock. LUW exists along the inner edge of the Bank boundaries, below the mean annual low water level of Aaron Brook. This boundary was not delineated in the field. The Act establishes a 100-foot buffer zone that extends horizontally outward from the Bank at the boundary of a LUW.

Bordering Land Subject to Flooding (310 CMR 10.57)

Bordering Land Subject to Flooding (BLSF) is defined in the Act as an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds or lakes. It extends from the banks of these waterways and waterbodies; where a BVW occurs, it extends from the BVW edge. The boundary of BLSF is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm. Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program (NFIP), currently administered by FEMA. The brook and the contiguous wetlands, W1 and W2, are mapped by FEMA (Flood Insurance Rate Map [FIRM] Panel No. 25023C0104K) (7/6/2021) as being located within special flood hazard areas, Zone A, without a Base Flood Elevation (BFE).

Riverfront Area (310 CMR 10.58)

According to the definition at 310 CMR 10.58(2), Riverfront Area (RFA) is the area of land between a river's mean annual high water and a parallel line measured horizontally. The boundary of RFA is the area of land between a River's mean annual high-water line (MAHWL) measured horizontally outward from the river and a parallel line located 200 feet away. Based on the Act, Aaron Brook includes a RFA that extends outward, 200 feet, from the delineated Bank/MAHWL.

Jurisdictional Wetland Resource Areas – Town of Hingham Wetlands Regulations

The Town of Hingham Wetland Regulations (Article 22) generally maintains the same wetland resource area definitions as provided in the Act. As it states, “the definitions, presumptions of significant, and performance standards, set forth in 310 CMR 10.00 et seq. are incorporated only when definitions, presumptions of significance or performance standards are given in the Hingham Wetland Regulations”. As it pertains to the site resources, the HWR provides additional protection to BLSF (19.1), RFA (21.1), and includes “Additional Protection of Special Flood Hazard Zones” (24.0).

Section 19.1 of the HWR defines BLSF same as the Act at 310 CMR 10.57 (2) with the additional term “vernal pool” and regardless of whether the wetland site has been certified as a vernal pool shall extend 100 feet from the mean annual high-water line defining the depression. One certified vernal pool was identified, via MassGIS, as being located greater than 200 feet southwest of the project site. Given the distance from the project site proposed activities are not anticipated to affect the vernal pool.

Under the HWR, Section 19.1(d), land within a minimum distance of 100-feet of Land Subject to Flooding (bordering or isolated) is determined to be significant to a wetland value and performance standards at 19.1(d)(1-8) apply to this resource.

Section 21.1(c), RFA, of the HWR is defined similar to the Act, however under the performance standards (21.1(d)(4)) the commission presumes that the “MAHW line of a non-tidal river is coincident with the outer (landmost) boundary of any BVW that may be adjacent to the river.” Based on this performance standard RFA at the site extents 200 feet outward from boundary lines of Wetlands W1 and W2.

Section 24.0 “Additional Protection of Special Flood Hazard Zones” of the HWR identifies areas subject to protection under the regulations to include all special flood hazard areas within the Town of Hingham designated as Zone A, AE, or VE on the Plymouth County FIRM issued by FEMA for the National Flood Insurance Program (NFIP) including the project site map panel No. 25023C0103K) dated 7/6/2021. Section 24.0(i) of the HWR states “expansion of existing structures in VE-, AE-, and A-Zones is prohibited though reconstruction of existing structures must allow for the free passage of flood waters.”

Jurisdictional Wetland Resource Areas – Federal Clean Water Act (Section 404)

The wetlands and Aaron Brook located on the site are considered “Waters of the United States,” and are therefore subject to the federal Clean Water Act, 33 U.S.C. §1251 et seq (1972). The boundary to “Waters of the United States” is the Vegetated Wetlands Boundary, or, in the absence of Vegetated Wetlands, is the Ordinary High-Water Mark (OHWM) for non-tidal rivers and streams, as specified at 33 CFR §328.4. Vegetated wetlands are defined as “those areas that are inundated with or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” The wetland boundaries previously described in this memo were delineated in accordance with this definition. The US Army Corps of Engineers’ *Vegetated Wetland Boundary Delineation Field Data Sheets* are attached documenting AECOM’s observed evidence of hydrology, soils profile, and hydrophytic vegetation at the two data plot locations. The OHWM, as defined at 33 CFR §328.3(c)(6), coincided with MAHWL of the Act for Aaron Brook was delineated in the field. Work conducted below the boundary of Vegetated Wetlands or OHWM is Subject to Jurisdiction under Section 404 of the Clean Water Act.

Jurisdictional Wetland Resource Areas – Massachusetts Clean Water Act (Section 401)

The limit of jurisdiction under the Massachusetts Clean Water Act (Section 401), as specified in 314 CMR 9.00, is the limit of Section 404 jurisdiction under the federal Clean Water Act. Exceedances of the jurisdictional threshold under 314 CMR 9.00 require filing for a Water Quality Certification under Section 401.

Summary

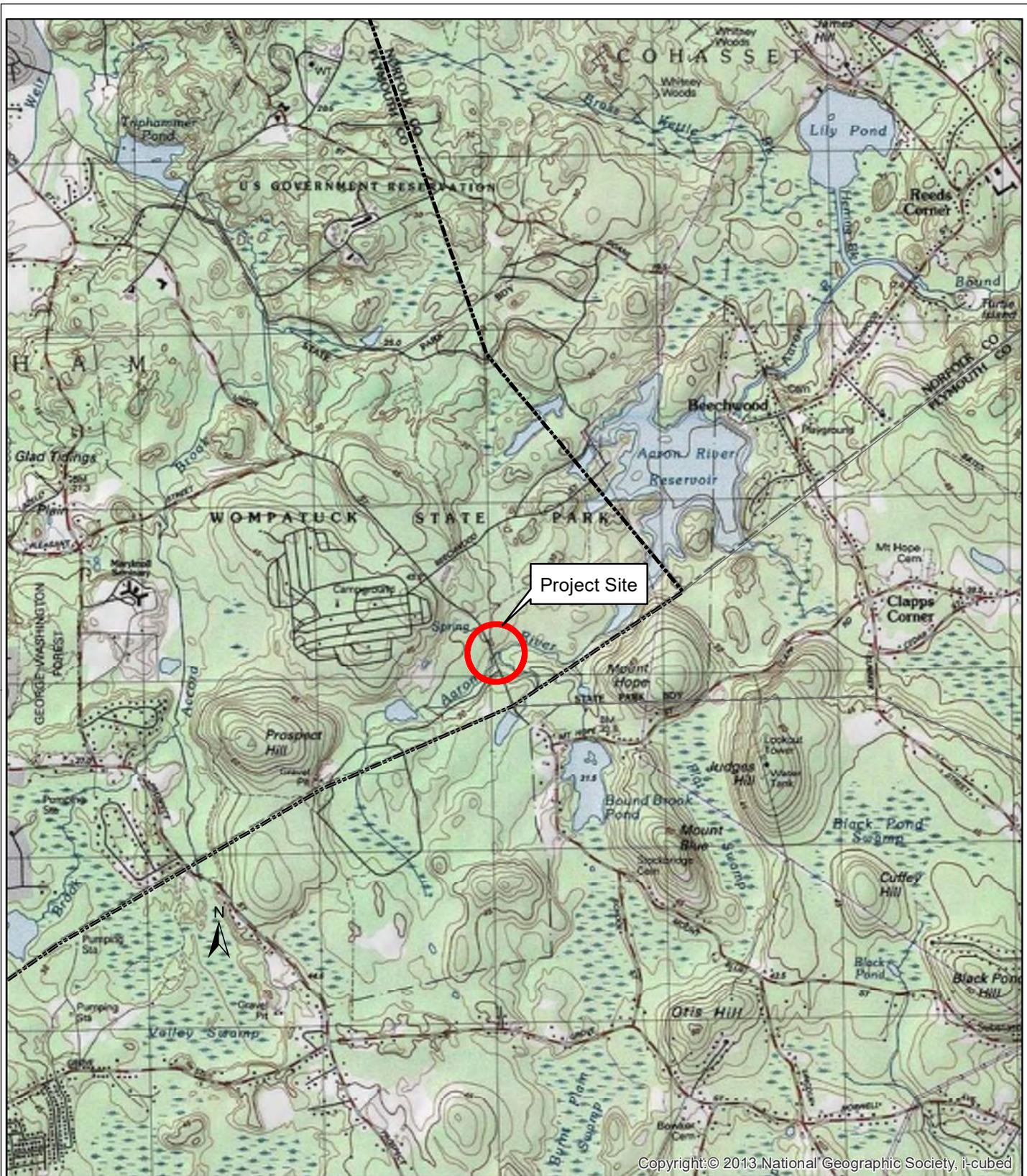
AECOM identified areas Subject to Protection and/or Jurisdiction under the Massachusetts Wetlands Protection Act, the federal Clean Water Act, the Massachusetts Clean Waters Act, and Hingham Wetland Regulations on or within 100 feet of the site and has delineated the boundaries of Bank (federally defined OHWM) and BVW on the site. The boundary of BLSF is not delineated in the field but rather defined as the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm. Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the community within which the work is proposed under the National Flood Insurance Program (NFIP), currently administered by FEMA.

References:

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. United States Fish and Wildlife Service Biological Report 79/31. Washington, D.C.
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1*. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Massachusetts Department of Environmental Protection. 1995. *Delineating Bordering Vegetated Wetlands under the Wetlands Protection Act, A Handbook*. Division of Wetlands and Waterways, Boston, MA.
- Massachusetts Geographical Information Systems Interactive, MassMapper an interactive on-line map for Massachusetts; [MassMapper](#)
- New England Hydric Soils Technical Committee. 2018 Version 4, *Field Indicators for Identifying Hydric Soils in New England*. New England Interstate Water Pollution Control Commission, Lowell, MA.
- Town of Hingham Wetland Regulations. revised 2023. Hingham, MA.
- U.S. Army Corps of Engineers. 2011. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Appendix A

Figures



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USGS Topographic Map



1 inch = 2,602 feet

Site Locus

Department of Conservation and Recreation
 Arron Brook/Union Street
 Wompatuck State Park
 Hingham, MA



FIGURE NUMBER

1

SCALE	DATE	PROJECT NO.
1:24,000	12/2023	60687346

Appendix B

MassDEP Vegetated Wetland Delineation Field Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Union Street at Accord Brook City/County: Hingham, MA Sampling Date: 11/28/2023
 Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W1
 Investigator(s): Julia Stearns Section, Township, Range: Hingham
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____
 Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.211307 Long: -70.859269 Datum: WGS84
 Soil Map Unit Name: Brockton NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: <u>W1-Wet Plot</u>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <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) <input checked="" type="checkbox"/> Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) <input checked="" type="checkbox"/> 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) <input checked="" type="checkbox"/> Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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)
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Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>to surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
---	--

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W1

<u>Tree Stratum</u> (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Acer rubrum</i></u>	<u>30</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)																
2. <u><i>Quercus rubra</i></u>	<u>15</u>	Yes	FACU																	
3. <u><i>Fagus grandifolia</i></u>	<u>5</u>	No	FACU																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>50</u> =Total Cover																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>220</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>2.93</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>75</u> (A)	<u>220</u> (B)	Prevalence Index = B/A = <u>2.93</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>25</u>	x 2 = <u>50</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>20</u>	x 4 = <u>80</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>75</u> (A)	<u>220</u> (B)																			
Prevalence Index = B/A = <u>2.93</u>																				
1. <u><i>Ilex verticillata</i></u>	<u>20</u>	Yes	FACW																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>20</u> =Total Cover																				
<u>Herb Stratum</u> (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u><i>Osmundastrum cinnamomeum</i></u>	<u>5</u>	Yes	FACW																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>5</u> =Total Cover																				
<u>Woody Vine Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				

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

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Union Street at Accord Brook City/County: Hingham, MA Sampling Date: 11/28/2023
 Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W2
 Investigator(s): Julia Stearns Section, Township, Range: Hingham
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____
 Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.211450 Long: -70.858969 Datum: WGS84
 Soil Map Unit Name: Brockton NWI classification: PFO

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 <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>W2-Wet Plot</u>
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <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) <input checked="" type="checkbox"/> Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) <input checked="" type="checkbox"/> 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) <input checked="" type="checkbox"/> Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ 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 <u>X</u> No _____ Depth (inches): <u>2"</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>to surface</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:

VEGETATION – Use scientific names of plants.

Sampling Point: W2

<u>Tree Stratum</u> (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Acer rubrum</i></u>	15	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)																
2. <u><i>Quercus rubra</i></u>	15	Yes	FACU																	
3. <u><i>Fagus grandifolia</i></u>	5	No	FACU																	
4. <u><i>Betula alleghaniensis</i></u>	20	Yes	FAC																	
5. _____																				
6. _____																				
7. _____																				
	<u>55</u>	=Total Cover		Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of:</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>65</u></td> <td>x 2 = <u>130</u></td> </tr> <tr> <td>FAC species <u>35</u></td> <td>x 3 = <u>105</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u></td> <td>(A) <u>315</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>2.63</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>65</u>	x 2 = <u>130</u>	FAC species <u>35</u>	x 3 = <u>105</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>120</u>	(A) <u>315</u> (B)	Prevalence Index = B/A = <u>2.63</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>65</u>	x 2 = <u>130</u>																			
FAC species <u>35</u>	x 3 = <u>105</u>																			
FACU species <u>20</u>	x 4 = <u>80</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>120</u>	(A) <u>315</u> (B)																			
Prevalence Index = B/A = <u>2.63</u>																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u><i>Ilex verticillata</i></u>	15	Yes	FACW																	
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>15</u>	=Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5'</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
1. <u><i>Osmundastrum cinnamomeum</i></u>	50	Yes	FACW																	
2. <u><i>Osumunda regalis</i></u>	10	No																		
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	<u>60</u>	=Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
1. _____																				
2. _____																				
3. _____																				
4. _____																				

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

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Union Street at Accord Brook City/County: Hingham, MA Sampling Date: 11/28/2023
 Applicant/Owner: Massachusetts Department of Conservation and Recreation State: MA Sampling Point: W2
 Investigator(s): Julia Stearns Section, Township, Range: Hingham
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope (%): _____
 Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.211450 Long: -70.859060 Datum: WGS84
 Soil Map Unit Name: Brockton NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: <u>W2-UP Plot</u>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.)			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ 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)	<u>Secondary Indicators (minimum of two required)</u> _____ 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 <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: W2

<u>Tree Stratum</u> (Plot size: <u>30'</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Pinus strobus</u>	10	No	FACU
2.	<u>Quercus rubra</u>	40	Yes	FACU
3.	<u>Fagus grandifolia</u>	30	Yes	FACU
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
		<u>80</u>	=Total Cover	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
		_____	=Total Cover	
<u>Herb Stratum</u> (Plot size: <u>5'</u>)				
1.	<u>Dryopteris sp.</u>	5	Yes	
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
		<u>5</u>	=Total Cover	
<u>Woody Vine Stratum</u> (Plot size: _____)				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
		_____	=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (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>0</u>	x 3 = <u>0</u>
FACU species <u>80</u>	x 4 = <u>320</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>80</u> (A)	<u>320</u> (B)
Prevalence Index = B/A = <u>4.00</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 and greater than or equal to 3.28 ft (1 m) tall.

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

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

Hydrophytic Vegetation Present?

Yes	<u> </u>	No	<u>X</u>
-----	-----------	----	----------

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

Appendix C

Representative Site Photographs

Client Name: Massachusetts Department of Conservation and Recreation		Site Location: Wompatuck State Park, Hingham, Massachusetts		Project No. 60687346	
Photo No. 1	Date: November 28, 2023	Photo No. 2	Date: November 28, 2023		
Description: View of Accord Brook and Wetland 1, facing west from Union Street.			Description: View of Accord Brook and Wetland 1, west of Union Street, facing east.		
					

Photo No. 3	Date: November 28, 2023	Photo No. 4	Date: November 28, 2023
Description: View of Accord Brook and Wetland 2 on the east side of Union Street, facing east.		Description: View of boardwalk over Accord Brook on east side of Union Street, at the culvert location, facing east.	
			

Client Name: Massachusetts Department of Conservation and Recreation		Site Location: Wompatuck State Park, Hingham, Massachusetts		Project No. 60687346	
Photo No. 5	Date: November 28, 2023	Photo No. 6	Date: November 28, 2023		
Description: View of Wetland 1 located on the west side of Union Street.			Description: View of Wetland 2 located on the east side of Union Street.		
					

Photo No. 7	Date: November 28, 2023	Photo No. 8	Date: November 28, 2023		
Description: View of the upland/wetland boundary of Wetland 2, facing northeast.			Description: View of the upland/wetland boundary and Wetland 1 plot, facing south.		
					

Appendix D – Photographic Log

Client:
Massachusetts Department of
Conservation & Recreation

Site Location:
Wompatuck State Park
Union Street, Hingham, MA

Project Number:
60724762-9.2

Photograph 1	Date: 3/19/24	
<p>View of the existing 30" CMPs looking west from the downstream side of Aaron River. Existing wooden walkway to be removed.</p>		

Photograph 2	Date: 3/19/24	
<p>View of the existing 30" CMPs looking east from the upstream side of Aaron River. Partial collapse of the structures and deteriorating roadway are visible.</p>		

Client:
Massachusetts Department of
Conservation & Recreation

Site Location:
Wompatuck State Park
Union Street, Hingham, MA

Project Number:
60724762-9.2

<p>Photograph 3</p>	<p>Date: 3/19/24</p>	 <p>Deterioration of Union Street due to the existing structure's collapse.</p>
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<p>Photograph 4</p>	<p>Date: 3/19/24</p>	 <p>Existing condition of Union Stream and the downstream end of the existing culvert. Note cracks in the pavement and the cracked headwall.</p>
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Appendix E – Certified Abutters List and Abutter Notification

TOWN OF HINGHAM
BOARD OF ASSESSORS



CERTIFICATION SHEET

Property Address: 0 Union Street

Parcel ID: 111-0-3

Pursuant to the provisions of Chapter 131 Section 40 of the MA General Laws and Article 22 of the Town of Hingham General Bylaws (Wetlands Protection By-law), we hereby certify that the list attached hereto is a true list of names and addresses of abutters concerning a matter to be heard by the Hingham Conservation Commission involving the above-referenced property.

As used herein the term "abutter" means:

Owners of adjoining land within 100 feet of the property line where the activity proposed;

Owners of adjoining land within 300 feet of the property line where the activity proposed for coastal projects; or

Owners of land directly opposite on any public or private street or way; or across a body of water.

All as they appear on the most recent applicable tax list.

BOARD OF ASSESSORS

CERTIFICATION DATE

MAY 22ND, 2024

Abutters List [print this list](#)

Date: May 21, 2024

Subject Property Address: 0 UNION STREET Hingham, MA
Subject Property ID: 111-0-3

Search Distance: 100 Feet

Owner: TOWN OF HINGHAM
Prop ID: 110-0-11
Prop Location: 0 UNION STREET Hingham, MA
Mailing Address:

210 CENTRAL STREET
HINGHAM, MA 02043

Owner: COMMONWEALTH OF MASS
Prop ID: 110-0-8
Prop Location: 202 UNION STREET Hingham, MA
Mailing Address:
METROPOLITAN DIST COMM REAL
20 SOMERSET STREET
BOSTON, MA 02108

Owner: BUTLER PAULINE TT
Co-Owner: PAULINE BUTLER HINGHAM TRUST
Prop ID: 110-0-9
Prop Location: 200 UNION STREET Hingham, MA
Mailing Address:
200 UNION STREET
HINGHAM, MA 02043

Owner: COMM OF MASS DEPT OF PUBLIC WORKS
Prop ID: 160-0-2
Prop Location: 0 NEW RT 128 Hingham, MA
Mailing Address:
100 NASHUA ST
BOSTON, MA 02114

Owner: COMMONWEALTH OF MASSACHUSETTS
Co-Owner: PART OF WOMPATUCK STATE PARK
Prop ID: 93-0-5
Prop Location: 0 LEAVITT STREET Hingham, MA
Mailing Address:
LEAVITT STREET
HINGHAM, MA 02043

AFFADAVIT OF SERVICE
Under the MA Wetlands Protection Act and
Hingham Wetlands Protection By-Law

(To be submitted to the Hingham Conservation Commission and the MA Department of Environmental Protection when filing an application requiring abutter notification)

I, Jessica Marino, hereby certify under the pains and penalties of perjury
Name of person making Affidavit
that on September 18, 2024 I gave notification to abutters in compliance with the second paragraph of
Date
the Massachusetts General Laws Chapter 131, Section 40, and the Hingham Wetlands Protection By-Law and
Wetland Regulations, by USPS Certified Mailings in connection with the following matter:
Type of Service

A Notice of Intent was filed under the MA Wetlands Protection Act and Hingham Wetlands Protection By-Law with the Hingham Conservation Commission on:

September 18, 2024 for property located at Union Street, Wompatuck State Park, Hingham, MA .
Date *Property Address*

The form of the notification and a list of abutters to whom notice was given and their addresses are attached to this Affidavit of Service.



Signature

9/18/2024

Date

Appendix F – Stormwater Checklist



Checklist for Stormwater Report

A. Introduction

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



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the [Massachusetts Stormwater Handbook](#). The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

¹ The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

² For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

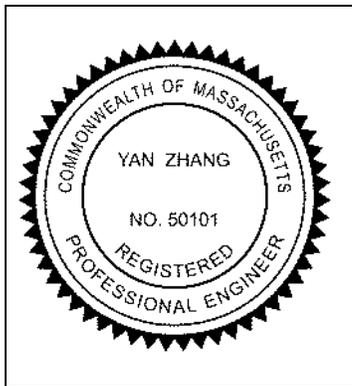
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Yan Zhang

9/18/2024

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

- New development
- Redevelopment
- Mix of New Development and Redevelopment



Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- No disturbance to any Wetland Resource Areas
- Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- Reduced Impervious Area (Redevelopment Only)
- Minimizing disturbance to existing trees and shrubs
- LID Site Design Credit Requested:
 - Credit 1
 - Credit 2
 - Credit 3
- Use of "country drainage" versus curb and gutter conveyance and pipe
- Bioretention Cells (includes Rain Gardens)
- Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- Treebox Filter
- Water Quality Swale
- Grass Channel
- Green Roof
- Other (describe): _____

Standard 1: No New Untreated Discharges

- No new untreated discharges
- Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

N/A - The Project does not include the construction of a stormwater management system and there will be no increase in post-development peak discharge rates.

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

N/A - The Project will not result in a loss of annual recharge to groundwater, as there will be no increase in impervious surface due to the Project.

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic Field¹
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

¹ 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

N/A - The installation of new culvert will not negatively affect the existing stormwater management system. No changes to TSS removal are proposed.

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
 - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - involves runoff from land uses with higher potential pollutant loads.
 - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
 - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
 - The ½" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided. N/A - None of the land uses within the Site have higher potential pollutant loads.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted **prior to** the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does **not** cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has **not** been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas N/A - The Project is not located within Zone II or Interim Wellhead Protection Area of a public water supply.

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
- Limited Project
 - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
 - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
 - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
 - Bike Path and/or Foot Path
 - Redevelopment Project
 - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

Erosion control measures will be used as part of the Project and are shown in the accompanying Site Plans.

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has **not** been included in the Stormwater Report but will be submitted **before** land disturbance begins.
- The project is **not** covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan N/A - The property is subject to an existing MS4 operation and maintenance plan.

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is **not** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges N/A - No illicit discharges are proposed as part of the Project.

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted **prior to** the discharge of any stormwater to post-construction BMPs.

Appendix G – Signed Policy of Receipt of Information

HINGHAM WETLAND REGULATIONS

APPENDIX C

Policy on Receipt of Information

(Revised March 4, 2024)

1. New applications/filings must be submitted to the Conservation office (by certified mail or hand delivery) in accordance with the [Commission's Meeting Schedule and Deadlines](#) to facilitate the placement of the legal advertisement and to allow timely review by the Conservation Officer. Conservation staff will review the application for administrative completeness. Upon receipt of a complete application, a hearing or meeting will be scheduled in accordance with the 310 CMR 10.05(5) and the Wetland Regulations, Section 7.6.
2. If deemed necessary, based on the Commission's meeting schedule, Conservation staff may request the applicant *voluntarily* waive the 21 day statutory deadline for holding a public hearing or issuing a Determination of Applicability.
3. Requests for additional information may be made by the Commission members or their agent to clarify the scope of the project or determine compliance with the 310 CMR 10.00 and/or the Hingham Wetland Regulations. Such requests, if not made at the public hearing, will be communicated to the applicant or their representative as promptly as possible.
4. Additional information requested by the Commission or their agent in accordance with No.3, must be submitted to the Conservation office (hard copy and electronic copy) a minimum of 7 days prior to the meeting date, on Monday by 4PM. If the office is closed on Monday due to a holiday, the information is due on the preceding Thursday by 4PM. *Revisions submitted after the established deadline may not receive a timely review, thereby resulting in a continuance to the next available meeting.*
5. The Commission may engage the peer review services of an outside consultant as provided by M.G.L. Ch. 44, § 53G, to be paid for by the applicant, for specific expert review deemed necessary to come to a final decision on a submitted application. Specific consultant services may include but are not limited to, review of a Notice of Intent, Wetland Resource Area Delineation, Stormwater/Drainage Reports, etc. The consultant shall be chosen by the Conservation Commission by vote at the public hearing, and report only to the Commission or its agent. *Requested additional information/revisions by the peer reviewer is required a minimum of two weeks prior to the hearing date.*
5. All supplemental documentation and revised plans must include a revision date and must be date stamped by the Conservation office upon receipt. If this information is not present, the documents may be considered incomplete and may not receive a timely review, thereby resulting in a continuance to the next available meeting.
6. Please note that all supplemental documentation and revised plans submitted to the Commission for a pending application, subject to the MA Wetlands Protection Act, must also be sent to the DEP Southeast Regional Office, 20 Riverside Dr., Lakeville, MA 02347

The Hingham Conservation Commission is committed to a thorough and timely review of each application and an efficient hearing process. Cooperation with this policy is appreciated to facilitate these efforts. Exceptions to this policy may be made by the Conservation staff if deemed warranted. Please sign and include with your filing. Thank you.



Applicant or Applicant's Representative Signature

9/18/2024

Date