

April 8, 2022

Foxborough Conservation Commission  
40 South Street  
Town Hall, Room 204  
Foxborough, MA 02035

**RE: Notice of Intent  
Stormwater Improvements Along Interstate 95 and Interstate 495  
MassDOT Project 612023  
Foxborough, Massachusetts**

Dear Members of the Foxborough Conservation Commission:

BSC Group Inc., on behalf of MassDOT (“the Applicant”) respectfully submits this Notice of Intent for stormwater improvements along I-95 and I-495. The proposed project will improve the existing stormwater facilities on-site with the installation of a water quality swale with sediment forebay and associated piping and gravel access road (Stormwater BMP A1) on the southbound shoulder of I-95 just north of Exit 13B, the installation of leaching basins (Stormwater BMP A2) on the median in the same vicinity, and the retrofit an existing swale (Stormwater BMP B1) on the median of I-495. The project improvements include, but are not limited to, the installation of leaching basins, check dams, associated stormwater piping, riprap and stone outlet protection, and grading to meet the existing stormwater features. Maintenance includes replacement of stormwater piping and outfall structures, replacement and expansion of existing check dams. The proposed work will effectively increase infiltration and allow for more stormwater detention on-site from the facilities that drain stormwater from I-95 towards Robinson Brook. This will provide additional treatment and improve stormwater quality. Work along I-95 is proposed within the 200-foot Riverfront Area (RFA) to Robinson Book, 100-foot Buffer Zone to Bordering Vegetated Wetlands (BVW) and Bank, and Bordering Land Subject to Flooding (BLSF). The proposed stormwater improvements along I-495 are not located within jurisdictional wetland resource areas or buffer zones.

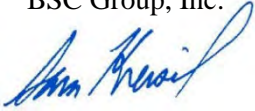
As a state agency, MassDOT is not subject to local wetland bylaws. As demonstrated in this NOI filing, MassDOT will minimize and mitigate impacts to wetland resource area to the maximum extent practicable. In addition, as cited in 310 CMR 10.05 (4)(a), MassDOT does not need to notify abutters.

This Notice of Intent has been prepared in accordance with the Massachusetts Wetland Protection Act, M.G.L. c.131 S.40 (the Act), and implementing regulations (310 CMR 10.00). The proposed activities can also be reviewed as a limited project per 310 CMR 10.53(3)(f) which allows for (in part) maintenance, repair and improvement of existing roadways, substandard intersections, and improving inadequate drainage systems. The project has been designed to be in compliance the Wetlands Protection Act Performance Standards. A copy of this Notice of Intent has been sent to the Northeast Regional Office of the Massachusetts Department of Environmental Protection (MassDEP).

The total filing fee for this NOI is \$750.00 under the state regulations. A check for \$387.50 made out to the Town of Foxborough is enclosed. The \$362.50 fee for the Commonwealth of Massachusetts has been submitted on eDEP.

We respectfully request that you place this project on your next scheduled Conservation Commission Public Hearing. If you have any questions, please do not hesitate to contact me at [skreisel@bscgroup.com](mailto:skreisel@bscgroup.com), or at (617) 896-4579.

Sincerely,  
BSC Group, Inc.



Sara Kreisel, PWS  
Ecological Project Manager

cc: Hung Pham, MassDOT  
Melissa Lenker, MassDOT  
MassDEP Southeast Regional Office  
Kathryn Eagan, PE, BSC Group  
Diana Walden, BSC Group

**Stormwater Improvements**  
**Along Interstate 95 and Interstate 495**  
**MassDOT Project 612023**  
**Notice of Intent**

**Town of Foxborough**  
**Conservation Commission**  
**April 2022**

Prepared for:  
MassDOT  
10 Park Plaza  
Boston, MA 02116

BSC Project No. 28302.41

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Prepared by:



803 Summer Street  
Boston, MA 02127

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Notice of Intent Application

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ATTACHMENT B SITE FIGURES  
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# 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

Foxborough

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):

Median of I-495 north of Green St; Median and Southbound shoulder of I-95, north of exit 13B	Foxborough	02035
	b. City/Town	c. Zip Code
Latitude and Longitude:	42.047134	-71.24130
	d. Latitude	e. Longitude
N/A State Highway Layout (SHLO)	N/A	
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant:

Melissa	Lenker	
a. First Name	b. Last Name	
Massachusetts Department of Transportation - Highway Division		
c. Organization		
10 Park Plaza, Environmental Services		
d. Street Address		
Boston	MA	02116
e. City/Town	f. State	g. Zip Code
(978) 429-1772	melissa.lenker@dot.state.ma.us	
h. Phone Number	i. Fax Number	j. Email Address

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

a. First Name	b. Last Name	
Massachusetts Department of Transportation - Highway Division		
c. Organization		
10 Park Plaza		
d. Street Address		
Boston	MA	02116
e. City/Town	f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email address

4. Representative (if any):

Sara	Kreisel	
a. First Name	b. Last Name	
BSC Group, Inc.		
c. Company		
803 Summer Street		
d. Street Address		
Boston	MA	02127
e. City/Town	f. State	g. Zip Code
(617) 896-4579	skreisel@bscgroup.com	
h. Phone Number	i. Fax Number	j. Email address

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

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



# WPA Form 3 – Notice of Intent

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## A. General Information (continued)

6. General Project Description:

The project will improve existing highway stormwater facilities with the extension of a stormwater quality swale and leaching basins just north of Exit 13B on I-95 and the retrofit an existing swale on the median of I-495. The proposed work will increase stormwater infiltration and detention, as well as improve treatment. Portions of the work are proposed within RFA, BLSF, and 100-foot Buffer Zone.

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

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Single Family Home                        | 2. <input type="checkbox"/> Residential Subdivision       |
| 3. <input type="checkbox"/> Commercial/Industrial                     | 4. <input type="checkbox"/> Dock/Pier                     |
| 5. <input type="checkbox"/> Utilities                                 | 6. <input type="checkbox"/> Coastal engineering Structure |
| 7. <input type="checkbox"/> Agriculture (e.g., cranberries, forestry) | 8. <input checked="" type="checkbox"/> Transportation     |
| 9. <input type="checkbox"/> 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)(f) Maintenance and improvement of existing public roadways, but limited to... and improving inadequate drainage systems."

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

8. Property recorded at the Registry of Deeds for:

\_\_\_\_\_

a. County

State Highway Layout (SHLO)

\_\_\_\_\_

c. Book

\_\_\_\_\_

b. Certificate # (if registered land)

\_\_\_\_\_

d. Page Number

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

- 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.
- 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.

Table with 3 columns: Resource Area, Size of Proposed Alteration, Proposed Replacement (if any). Rows include Bank, Bordering Vegetated Wetland, and Land Under Waterbodies and Waterways.

Table with 3 columns: Resource Area, Size of Proposed Alteration, Proposed Replacement (if any). Rows include Bordering Land Subject to Flooding and Isolated Land Subject to Flooding.

Table with 3 columns: Resource Area, Size of Proposed Alteration, Proposed Replacement (if any). Row includes Riverfront Area.

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: 162,461 sf square feet

4. Proposed alteration of the Riverfront Area:

2,715 sf(Perm) 35 sf (Perm), 1,746 sf (Temp) 2,680 sf (Perm)1,536 sf (Temp)
3,282 sf (Temp) 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? [X] Yes [ ] No

6. Was the lot where the activity is proposed created prior to August 1, 1996? [X] 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. <input type="checkbox"/> 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. <input type="checkbox"/> Project Involves Stream Crossings		
	_____	_____
	a. number of new stream crossings	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 Notice of Intent – 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](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**

MassGIS 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.1.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 <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/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 [http://www.mass.gov/dfwele/dfw/nhosp/regulatory\\_review/ mesa/ mesa\\_fee\\_schedule.htm](http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/ mesa/ mesa_fee_schedule.htm)). 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, [http://www.mass.gov/dfwele/dfw/nhosp/regulatory\\_review/ mesa/ mesa\\_exemptions.htm](http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/ mesa/ mesa_exemptions.htm); the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)
- 2.  Separate MESA review ongoing. a. NHESP Tracking # \_\_\_\_\_ b. Date submitted to NHESP \_\_\_\_\_
- 3.  Separate MESA review completed. Include copy of NHESP “no Take” determination or valid Conservation & Management Permit with approved plan.

- 3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?
  - a.  Not applicable – project is in inland resource area only
  - b.  Yes  No

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

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

Division of Marine Fisheries -  
 Southeast Marine Fisheries Station  
 Attn: Environmental Reviewer  
 1213 Purchase Street – 3rd Floor  
 New Bedford, MA 02740-6694  
 Email: [DMF.EnvReview-South@state.ma.us](mailto:DMF.EnvReview-South@state.ma.us)

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -  
 North Shore Office  
 Attn: Environmental Reviewer  
 30 Emerson Avenue  
 Gloucester, MA 01930  
 Email: [DMF.EnvReview-North@state.ma.us](mailto:DMF.EnvReview-North@state.ma.us)

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.



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

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

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

## D. Additional Information

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

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

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

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



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## D. Additional Information (cont'd)

- 3.  Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.
- 4.  List the titles and dates for all plans and other materials submitted with this NOI.
 

<u>Massdot Project #612023, Stormwater Improvements Along Interstate 95 and Interstate 495</u>	
a. Plan Title	
<u>BSC Group, Inc</u>	
b. Prepared By	c. Signed and Stamped by
<u>March 2022</u>	<u>1 inch = 20 feet</u>
d. Final Revision Date	e. Scale
<u>Environmental Resources Map</u>	<u>March 2022</u>
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:

<u>34897</u>	<u>April 8, 2022</u>
2. Municipal Check Number	3. Check date
<u>Credit Card on eDEP</u>	
4. State Check Number	5. Check date
<u>BSC Companies, Inc</u>	<u>BSC Companies, Inc</u>
6. Payor name on check: First Name	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.

*Melissa Lemker*

1. Signature of Applicant

April 7, 2022

2. Date

3. Signature of Property Owner (if different)

*John Heavil*

4. Date

April 7, 2022

5. Signature of Representative (if any)

6. Date

### For Conservation Commission:

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

### For MassDEP:

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

### Other:

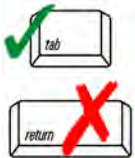
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

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:

Median of I-495 north of Green St; Median and Southbound shoulder of I-95, north of exit 13B

Foxborough

b. City/Town

\$362.50

d. Fee amount

c. Check number

2. Applicant Mailing Address:

Melissa

a. First Name

Lenker

b. Last Name

Massachusetts Department of Transportation - Highway Division

c. Organization

10 Park Plaza, Environmental Services

d. Mailing Address

Boston

e. City/Town

MA

f. State

02116

g. Zip Code

(978) 429-1772

h. Phone Number

i. Fax Number

melissa.lenker@dot.state.ma.us

j. Email Address

3. Property Owner (if different):

a. First Name

b. Last Name

Massachusetts Department of Transportation - Highway Division

c. Organization

10 Park Plaza

d. Mailing Address

Boston

e. City/Town

MA

f. State

02116

g. Zip Code

h. Phone Number

i. Fax Number

j. Email Address

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

**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.



**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
Category 2e - Limited Inland Project	1	\$500*1.5	\$750
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
<b>Step 5/Total Project Fee:</b>			\$750
<b>Step 6/Fee Payments:</b>			
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 <b>less</b> \$12.50
			c. 1/2 Total Fee <b>plus</b> \$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.)

# Attachment A

Stormwater Improvements Along Interstate 95 and Interstate 495  
MassDOT Project 612023  
Notice of Intent Application

PROJECT NARRATIVE



## **1.0 Introduction**

The BSC Group Inc. (BSC), on behalf of the Massachusetts Department of Transportation – Highway Division (MassDOT) (the Applicant), is seeking an Order of Conditions from the Foxborough Conservation Commission to perform maintenance, upgrades, and improvement activities to existing stormwater features along I-95 and I-495 in Foxborough, MA. This Notice of Intent has been prepared pursuant to the Massachusetts Wetlands Protection Act, M.G.L. c.131 S.40 (the Act), and its implementing regulations (310 CMR 10.00). Along the I-95 southbound shoulder, just north of Exit 13B, MassDOT is proposing to expand on-site stormwater facilities with the installation of a water quality swale with a sediment forebay, installation of a new drainage pipe to redirect runoff from existing catch basins to the proposed forebay, and a new gravel access road for maintenance purposes (Stormwater BMP A1). Additionally, within the median at this same location on I-95, MassDOT is proposing to install six leaching basins that will receive runoff from four existing catch basins at the low point in the road (Stormwater BMP A2). On the median of I-495 in Foxborough between Green Street (Route 106) and South Street, MassDOT is proposing to retrofit an existing swale (Stormwater BMP B1) through grading and check dam installation. As a state agency, MassDOT is not subject to local wetland bylaws.

The project improvements include, but are not limited to, the installation of leaching basins, check dams, associated stormwater piping, riprap and stone outlet protection, and grading to meet the existing stormwater features. Maintenance includes replacement of stormwater piping and outfall structures, replacement and expansion of existing check dams. The proposed work will effectively increase infiltration and allow for more stormwater detention on-site from the facilities that drain stormwater from I-95 towards Robinson Brook. This will provide additional treatment and improve stormwater quality. Due to the nature of the proposed work and location of existing stormwater features, impacts to resource areas are unavoidable. However, efforts have been made to avoid where possible, minimize and mitigate. The proposed stormwater improvements along I-95 will result in unavoidable impacts to Bordering Land Subject to Flooding (BLSF), the 200-foot Riverfront Area (RFA) to Robinson Brook, and the 100-foot Buffer Zone to Bordering Vegetated Wetlands (BVW) and Bank. The proposed stormwater improvements along I-495 are located outside jurisdictional wetland resource areas and buffer zones and are not the subject of this filing. The proposed activities can also be reviewed as a limited project per 310 CMR 10.53(3)(f) which allows for (in part) maintenance, repair and improvement of existing roadways, substandard intersections, and improving inadequate drainage systems. The project has been designed to be in compliance the Wetlands Protection Act Performance Standards.

The following project components detail the proposed project activities. Please refer to Project Site Plans (Attachment F) for additional detail.

## **2.0 Existing Conditions**

The surrounding area to project activities on I-95 is generally characterized by residential and commercial developments, state transportation corridors, palustrine forested and scrub shrub wetland, and deciduous upland forest. Specifically, activities in the I-95 project limits are within deciduous forest, medians and the State Highway Layout (SHLO). I-95 is oriented in a northeast-southwest direction. Project activities on I-95 are proposed on the southbound shoulder and highway median, approximately 100-200 feet (respectively) north of the off-ramp associated with Exit 13B (I-95/ Route 140). The proposed upgrades will tie-into into existing stormwater ditch/swales that drain towards Robinson Brook.

The surrounding area to project activities on I-495 is generally classified by residential developments, state transportation corridors, evergreen forest, and deciduous forest. Specifically, activities on I-495 are within the

median and highway layout. I-495 is oriented in a northwest-southeast direction. Project activities on I-495 are proposed on the median of I-495 approximately 0.5 miles west of the interchange with I-95, between Green Street (Route 106) and South Street.

I-495 and I-95 are each functionally classified as Mainline Interstate Highways, and are each six-lanes wide, with northbound and southbound directions separated by expansive medians that are 100- and 200-feet wide, respectively. Each project area occurs entirely within the SHLO and no impacts to adjacent properties is proposed. There are no overhead utilities in the project vicinity.

## 2.1 Wetland Resource Areas

Site investigations at I-95 were conducted in August 2021 by BSC Wetland Scientists to identify and delineate the boundary of existing wetland resource areas within and in the immediate vicinity of the site. Wetlands were delineated in accordance with the methods developed by the Massachusetts Department of Environmental Protection's (MassDEP) *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act*, dated 1995, as well as definitions set forth in implementing Regulations 310 CMR 10.00. Methods were also in compliance with the Federal Clean Water Act, the *Corps of Engineers Wetlands Delineation Manual (1987 edition)*, and regional supplemental guidance. Existing conditions, wetland resource areas, and buffer zones in relation to the proposed activities are shown in the figures and photos in Attachment B and Project Site Plans in Attachment F. Per MassDOT, no jurisdictional wetland resource areas were identified near the project area along I-495, as this area was previously delineated by VHB in May/June 2015. No wetland resource areas were delineated within the vicinity of the proposed I-495 work. All jurisdictional wetland resource areas described below occur in the vicinity to the work proposed along I-95:

### Watershed

Headwaters of Robinson Brook (Stream S2) originate approximately 1.5 miles north of the project area. Robinson Brook is identified by USGS topographic maps as a perennial stream that is approximately 3.3 miles long and generally flows in a north-to-south orientation. It discharges into the Rumford River, approximately 1 mile south of the project area. According to the USGS Streamstats program Robinson Brook has a drainage area of 1.9 square miles with a mean basin elevation of 273 feet. The unnamed intermittent stream, (Stream S3/S4) flows north-south through a culvert under the Exit 13B off-ramp and through the median of I-95 before joining Robinson Brook immediately southeast of I-95. Review of Streamstats confirms it is an intermittent stream with a 0.14 square mile drainage basin.

### Inland Bank

As defined in the WPA regulations 310 CMR 10.54 (2), Bank is a portion of land surface that normally abuts and confines a water body. The upper boundary of Bank is the first observable break in slope. A 100-foot buffer zone extends from the delineated Bank. The streambank to Robinson Brook (Stream S2) is naturally lined with cobbles and various trees, saplings, and herbaceous growth. The streambank to the unnamed intermittent stream (Stream S3/S4) is naturally lined with saplings.

### Bordering Vegetated Wetlands

As defined in the WPA regulations 310 CMR 10.55 (2)(a): Bordering Vegetated Wetlands (BVW) are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes where soils are saturated or inundated as a result of a specific hydrology (M.G.L. c. 131, § 40), which results in the predominance of hydrophytic vegetation.

Three wetlands were delineated within the vicinity of the project site and are described below. Representative delineation forms are in Attachment D:

### Wetland W1

Wetland W1 is located on the western bank of Robinson Brook on the southbound shoulder of I-95. The wetland was delineated with sequentially numbered (W1-100 to W1-W104) pink survey flags. This wetland occurs > 300 feet from the project area, therefore a Delineation Form was not prepared for this wetland.

### Wetland W2

Wetland W2 is a palustrine forested / scrub shrub wetland located west of Robinson Brook and adjacent to the project site north of the I-95 off-ramp. This wetland appears to have developed adjacent to the existing linear drainage swale (DS1) from excess hydrology from stormwater runoff. The wetland was delineated with sequentially numbered (W2-100 to W2-W114) pink survey flags. Dominant vegetation within Wetland W2 consists of red maple (*Acer Rubrum*), northern spicebush (*Lindera benzoin*), sensitive fern (*Onoclea sensibilis*), and poison ivy (*Toxicodendron radicans*). High water table, saturation to 4-inches of the soil surface, and redoximorphic features were observed within the soil profile. Swale DS1 was also determined to support wetland vegetation and hydrology but was identified and maintained in plans as an existing stormwater ditch as recently as a 2012 highway resurfacing project. Since it was developed and maintained specifically as a stormwater management feature, it does not by itself constitute an area subject to protection under the WPA as described further in Section 8.

### Wetland W3

Wetland W3 is a palustrine forested / scrub shrub wetland located in the median of I-95 west of Robinson Brook and adjacent to the proposed leaching basin upgrade work. The wetland was delineated with sequentially numbered (W3 100, 200, 300 and 400 series) pink survey flags. A small wetland area occurs on the eastern bank of Robinson Brook (W3 100 series), a large section connects Robinson Brook (Stream S2) to Stream S3/S4 (W3 200 and 400 series), and another portion occurs on the west side of S3/S4 (W3 200 and 300 series). Dominant vegetation within Wetland W3 consists of red maple, White meadowsweet (*Spiraea alba*), Purple loosestrife (*Lythrum salicaria*), poison ivy, and Fox grape (*Vitis labrusca*). High water table of 12-inches, saturation of 4-inches and presence of reduced iron were observed within the wetland.

### Land Under Waterbodies and Waterways

As defined in the WPA regulations 310 CMR 10.56 (2)(a): Land under Water Bodies and Waterways (LUW) is the land beneath any creek, river, stream, pond or lake, which may be composed of organic muck or peat, fine sediments, rocks or bedrock; the boundary of which is the mean annual low water level. Robinson Brook (Stream S2) is approximately 20 feet wide with a rock and sand substrate. There were approximately 6-8 inches of water depth at the time of delineation. The unnamed intermittent stream (Stream S3/S4) is characterized by a rocky and sandy bottom, and with approximately 2-inch water depth at the time of delineation.

### Bordering Land Subject to Flooding

As defined in the WPA regulations 310 CMR 10.57 (2)(a): Bordering Land Subject to Flooding (BLSF) is an area with low, flat topography adjacent to and inundated by flood waters, which extends from the banks of waterways and waterbodies. BLSF is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year/1% annual chance frequency storm. According to the FEMA Flood Insurance Rate Maps and National Flood Hazard Layer for Foxborough (25051CO361E dated 7/17/2012), the Base Flood Elevation (BFE) for the 1% annual chance floodplain (Zone AE) associated with Robinson Brook is established generally at 210' NAVD88 in the project location. Portions of the proposed water quality swale retrofit occurs within Zone AE / BLSF.

## Riverfront Area

As defined in the WPA regulations 310 CMR 10.58 (2)(a): Riverfront Area (RFA) is the area of land between a river's mean annual high water (MAHW) line and a parallel line measured approximately 200 feet horizontally. Since Robinson Brook is a perennial stream, an associated 200-foot RFA is present. The RFA in the Project location west of Robinson Brook consists of steep slopes extending down the I-95 embankments to areas densely vegetated with trees and shrubs. A portion of the project limits on the southbound ramp shoulder of I-95 occurs within the outer 100-feet of the 200-foot RFA. The leaching basin retrofitting work within the median of I-95 is also located within the 200-foot RFA.

## Buffer Zone

A 100-foot Buffer Zone extends outward from the limit of Bank and BVW into the project site. Portions of the project on the southbound shoulder are within the Buffer Zone associated with Stream S3/S4 and Wetland 2. Work proposed on the median of I-95 is located within the Buffer Zone associated with Wetland 3 and Robinson Brook (Stream 2).

## 2.2 Rare, Threatened, and Endangered Species

Based upon review of the most-recently published (2021), publicly available data issued by the Natural Heritage and Endangered Species Program (NHESP), there are no Priority Habitats of Rare Species, Estimated Habitats of Rare Wildlife, potential or certified vernal pools within the vicinity of the proposed project. The U.S. Fish and Wildlife Service (USFWS) has listed the northern long-eared bat (*Myotis septentrionalis*) as threatened under the Endangered Species Act (ESA). MassDOT has consulted with the USFWS through the Optional Framework to Streamline Section 7 Consultation, and the project was found to be consistent with the Programmatic Biological Opinion under the authority of section 4(d) of the Endangered Species Act and the Final 4(d) Rule published in the Federal Register on January 14, 2016. According to the review, no conservation measures or time of year restrictions on tree cutting are required. Additionally, the monarch butterfly (*Danaus plexippus*) is listed as a candidate species; no conservation measures are required at this time.

## 2.3 Other Environmental Resources

According to MassGIS data layers and classifications provided in 314 CMR 4.00, none of project area at I-95 occurs within an Outstanding Resource Water (ORW), Surface Water Protection Zone, or Area of Critical Environmental Concern (ACEC). The project area at I-495 partially occurs within a watershed contributing to the Wading River Public Water Supply ORW. However, there are no direct impacts or stormwater discharges to wetlands and waterbodies in this location. According to MassGIS data layers, Robinson Brook (Stream S2) and the unnamed intermittent stream (Stream S3/S4) are not Coldwater Fish Resources (CFR). Robinson Brook is classified as an 303(d) waterway not requiring a pollutant-based TMDL but noted as impaired for physical substrate habitat alterations based on results from aquatic macroinvertebrate bioassessments.

## 3.0 Alternative Analysis

Various possible alternatives and additional locations along this portion of I-95 were considered for this project, but they typically proposed more significant (i.e. direct) impacts to wetland resources areas or proved impractical:

**1. No-Build or Maintenance In-Kind**

Redesign and extension of the existing drainage swale, Stormwater BMP A1 Water Quality Swale, on the southbound shoulder on I-95 is required to provide adequate drainage and detention. Stormwater BMP A2 is proposed to provide additional infiltration and stormwater treatment to I-95. A no-build or maintenance in-kind alternatives were not considered viable for this project, as it will not achieve project objectives for stormwater detention and treatment required.

**2. Drainage Swale on the Median, North of Robinson Brook**

The area north/east of Robinson Brook within the median of I-95 was proposed for a stormwater swale feature. However, contours were deemed to be too steep, and grading would have required tying directly into the bank of the Brook. This location would have also resulted in more significant impacts to both the 200-foot RFA and BLSF.

**3. Drainage Swale on the Median, West of Wetland 3 & Stream S3/S4**

A swale was originally proposed, and design was advanced in the median west of Wetland W3 and Stream S3/S4. However, due to the inability to maintain this feature long-term (it was determined that an access road would be infeasible), this BMP was removed from the scope. Grading would have also occurred immediately adjacent to Wetland 3.

**4. Preferred: Stormwater BMPs A1 & A2**

Due to the proximity of Wetland W2, the amount of proposed grading was altered to keep the limit of work outside the delineated BVW but within the existing ditch for BMP A1. While Project activities propose increasing the amount of drainage in this area, it retrofits a pre-existing stormwater management feature. Only minimal impacts to BLSF, the 200-foot RFA, and the 100-foot Buffer Zone would occur.

In addition, upgrades to existing catch basins with the installation of leaching basins and upgraded piping within the median are also proposed for BMP A2. This option provides upgrades and stormwater treatment with minimal direct impact to RFA.

## **4.0 Proposed Project**

The following sections detail the proposed project activities and summarize impacts to jurisdictional areas:

MassDOT's contractor will utilize both I-95 and I-495 to access each of the work sites respectively. On the southbound shoulder of I-95, proposed work for Stormwater BMP A1 (Water Quality Swale) includes expanding the existing stormwater management swale by grading to the southwest and constructing a sediment forebay with a 226 sf base comprised of pavers. A forebay check dam and 12-inches of stone will protect the swale. Approximately 90 linear feet of the existing ditch will be regraded to meet the new forebay and the forebay structure and associated grading will extend another 60 to 70 feet. New 12-inch piping and manholes are proposed which will bring the roadway runoff to the new forebay of the extended swale and up to 210 feet further from Robinson Brook than the existing outlets. Two existing outlets will be abandoned. Construction of an access driveway (12-inch deep gravel) is also proposed for continued maintenance of the swale; see Attachment F.

Along the median shoulder of I-95 southbound, the proposed work includes upgrading existing catch basins with the installation of six leaching basins and piping connections (Stormwater BMP A2). Existing catch basins, piping and outfall structures will be retained.

On the I-495 Stormwater BMP (B1), a retrofit of the existing stormwater infiltration swale is proposed. Specifically, the work will include installation of six upgraded check dams, and grading to meet the existing contours for approximately 400 linear feet.

The proposed Project will improve and upgrade inadequate stormwater drainage and treatment, by redeveloping existing features. As previously stated, the project qualifies as a Limited Project for maintenance of a roadway and associated drainage. Impacts to Bordering Land Subject to Flooding, Riverfront Area, and the 100-foot Buffer Zone are anticipated but the outcome will result in an improvement over existing stormwater management and water quality.

### Work in Wetland Resource Areas

A description of the impacts to the wetland resource areas is provided below. Table 1 provides an overview of impacts with regard to each resource area jurisdictional to the WPA:

**Table 1 – Summary of Wetland Resource Area Impacts**

Resource Area	Impact Type (Stormwater BMP)	Surface Area Square Feet (SF)	Volume (CY / CF)
200-foot Riverfront Area (RFA) <sup>1</sup>	Permanent: Clearing and grading within tree/brush line for BMP A1	2,715 sf	
	Temporary: Access, subsurface installation in maintained areas	3,282 sf	
	<b>Total</b>	5,997 sf	
Bordering Land Subject to Flooding (BLSF)	Proposed Alteration (To be Restored in Kind)	261sf <sup>2</sup>	0 cf

<sup>1</sup>Calculations towards Riverfront Area development thresholds are not required for impacts related to stormwater management features per 310 CMR 10.58(4)(d)1 “The calculation also shall exclude areas used for structural stormwater management measures, provided there is no practicable alternative to siting these structures within the riverfront area.” Impact numbers are provided for information.

<sup>2</sup>255sf of area will be gained at the elevation 210' contour through the swale extension

### Inland Bank/Bordering Vegetated Wetlands/ Land Under Waterbodies and Waterways

No direct impacts to Bank, BVW, or Land Under Waterbodies and Waterways are proposed. Grading work for the water quality swale (BMP A1) will be required adjacent to Wetland 2 as well as within the existing swale (DS1) which was described as supporting wetland vegetation and hydrology. The interpretation of this area as a stormwater management feature and compliance with the WPA is further described in Section 8.0.

### Bordering Land Subject to Flooding

The Zone AE Base Flood Elevation provided by FEMA is generally established at elevation 210’ NAVD88 in the project area. Per ground survey of topography, I-95 southbound is on an embankment that places it 8- to 10-feet above the floodplain and BLSF. A small area of the existing swale (261 sf) within the ele. 210’ contour will be cleared in order to extend and incorporate it into the new swale. The new swale will extend along this elevation, providing 255 sf of additional area available for flood storage. There will be no change in elevation to existing BLSF within the project area.

### Riverfront Area

Work proposed on the northerly end of the limits of work for stormwater swale BMP #A1 is located in the outer 100-feet of the 200-foot RFA to Robinson Brook. A small portion of this work may be classified as redevelopment, as it reworks and regrades the existing stormwater swale feature. However, a total of approximately 2,680 sf of clearing and grading will be required to construct the extension of the swale. While this will remain pervious and be allowed to revegetate, continued and future maintenance and operation as a stormwater BMP is intended. Up to 1,536 sf of temporary alteration is needed along the previously maintained shoulder embankment beyond the existing tree and brush line in order to access and install piping and associated grading. This area will be maintained in existing conditions after the subsurface work and access are complete. All forebay and stone installation as well as driveway construction will be located beyond the extent of the RFA.

Work proposed within the median for the leaching basin upgrades will also occur within the inner 100 feet of the 200-foot RFA. However, the majority of this workspace is also in a maintained median shoulder area beyond the tree and brush line. Approximately 335 sf will be cleared or permanently altered for installation of the leaching basins and piping. The remaining 1,446 sf within the limits of work may be temporarily altered for access or installation but will be returned to pre-existing conditions following construction.

Approximately 659 sf of RFA within the previously developed roadway/ guardrail limits will be disturbed to integrate the catch basins and other drainage features of Stormwater BMPs A1 and A2.

Since “*there is no practicable alternative to siting these structures within the riverfront area,*” and given that the purpose of this project is solely for improvements to existing stormwater facilities, calculations for impacts to RFA are presented for informational purposes only. The total impacts are excluded from regulatory compliance requirements and thresholds per 310 CMR 10.58 (4)(d)1, which “*exclude[s calculations in] areas used for structural stormwater management measures.*”

### **Work within Buffer Zone**

Portions of the I-95 project site and proposed activities will be located within the 100-foot Buffer Zone to BVW. This includes the installation of drainage features, grading and clearing for the BMP #A1 stormwater swale, and the gravel access drive. Vegetation will be preserved whenever possible within the project limits, and the area will be returned to preconstruction conditions as feasible.

## **5.0 Stormwater Management**

The goal of the Project is to further manage and reduce the impacts of stormwater run-off from the impervious cover of the interstate highways to adjacent wetland resource areas. The project will not change the layout of the existing highway system nor increase impervious surfaces within the Project Limits. The proposed improvements will result in increased storage capacity, distance between outfalls and receiving waters, stormwater treatment, infiltration, and groundwater recharge.

As a redevelopment project, a formal Stormwater Management Report has not been prepared for this project, but a streamlined discussion of Standards and checklist form is included in Attachment C. The report lists the numerous upgrades to water quality and quantity controls designed to protect surface and groundwater resources, and wetlands. The Report describes how the project has been designed to meet all applicable standards of the MassDEP Stormwater Management Handbook to the maximum extent practicable. In accordance with the Handbook, Standards 1, 8, 9, and 10 must be met fully, while the remaining standards are proposed to be met to the maximum extent practicable.

## **6.0 Construction Considerations and Sequencing**

The construction sequence listed below is anticipated; however, the means and methods will be determined by the contractor:

- Closure of one lane at a time for work (Lane 1 for median, Lane 3 for shoulder)
- Tree removal and/or tree protection
- Erosion and Sedimentation / Best Management Practices (BMP) Installation
- Grading activities

- Removal of drainage structures/piping
- Replacement of drainage structures and installation of new structures
- Restoration of slopes, stabilization, and seeding,
- Removal of erosion and sedimentation controls

## **7.0 Mitigation Measures**

The proposed project will occur within BLSF, RFA, and the 100-foot Buffer Zone. The project itself is a form of mitigation to improve water quality and quantity from existing infrastructure on resource areas. In order to minimize impacts from the implementation of the stormwater upgrades, the project incorporates construction BMPs, and avoids and minimizes impacts to wetland resource areas to the extent practicable. Clearing and grubbing will be avoided where it is unnecessary within project limits. Pervious surfaces and treatments, and vegetative cover have been incorporated wherever feasible. Drainage will not be directed to expanded BMP areas until construction is complete and areas are stable. Disturbed areas will be stabilized and restored following the completion of project activities.

### **Erosion and Sedimentation Controls**

Sediment and erosion controls will be installed at the downgradient limits of work. Sedimentation barriers will be checked on a regular basis and following significant storm events. Sediment controls will remain in-place during all phases of the project and will be removed once the area is sufficiently stabilized. Please refer to Attachment F (Site Plans) for erosion and sedimentation control details and the proposed locations of controls.

### **Construction Stockpiling Locations**

In the event stockpiled materials must be left on site overnight, the piles will be covered with tarps and surrounded by erosion control measures (e.g, compost filter tubes or equivalent). Staging and storage areas will be outside of all jurisdictional resource areas where feasible and practicable.

## **8.0 Regulatory Compliance**

According to the Wetlands Protection Act regulations, on-site wetland resource areas are presumed significant in varying capacities to flood control, storm damage prevention, prevention of pollution, wildlife habitat, fisheries habitat, protection of public water supply, and protection of groundwater supply. The proposed project includes measures to maximize compliance with the applicable WPA performance standards listed in 310 CMR 10.00 for each jurisdictional wetland resource area as discussed below.

### **Jurisdictional Discussion**

While the drainage swale (DS1) proposed to be upgraded by the expansion of Stormwater BMP A1 has developed soils, plants, and hydrology consistent with a BVW, the work is interpreted as permissible under 310 CMR 10.02(2)(c). Existing plans from MassDOT Project number 612023 (MassDOT Project #605596) depict the existing drainage swale on-site, which differentiated this feature from those that are jurisdictional under the Wetland Protection Act (WPA) during the site delineation.

Per 310 CMR 10.02 (2)(c)., “*stormwater management systems designed, constructed, installed, operated, maintained, and/or improved as defined in 310 CMR 10.04 in accordance with the Stormwater Management Standards as provided in the Stormwater Management Policy (1996) or 310 CMR 10.05(6)(k) through (q) do not by themselves constitute Areas Subject to Protection under M.G.L. c. 131, § 40 or Buffer Zone...*”. Under 310 CMR



10.02(4) “...work other than maintenance that may alter or affect a stormwater management system...may be permitted through an Order of Conditions....”

The work proposed in 2012 included upgrades associated with the operation, maintenance, and improvement of the existing stormwater management system and depicts the existing ditch in its current location. The application resulted in a Negative Determination by the Foxborough Conservation Commission which denoted that:

*“work described in the Request is within the Buffer Zone, as defined in the regulations, but will not alter an Area subject to protection under the Act.”*

Plans from this project work, as well as a Determination of Applicability from the Foxborough Conservation Commission (October 24, 2012) are included in Attachment E. These documents prove, as required by 310 CMR 10.02 (5), that the work proposed within this NOI occurs within an existing stormwater management system that has been operated, maintained, and improved within the timeline provided; (310 CMR 10.02 (2)(c)1.) and given that the system has been reviewed by the Conservation Commission, is in accordance with the WPA (310 CMR 10.02 (2)(c)2.).

## General Performance Standards

### Bordering Lands Subject to Flooding, 310 CMR 10.57 (4)(a)

Work temporarily impacting approximately 261 square feet of Flood Zone AE/BLSF is associated with the proposed clearing and extension of the existing swale. Where the presumption set forth in 310 CMR 10.57(3) is not overcome, any proposed work within the Bordering Land Subject to Flooding shall not impair the following:

1. *Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.*

The proposed work within the 100-year floodplain will occur on the southbound shoulder of I-95 to grade and extend the existing drainage swale (BMP A1). Volume of flood storage at each elevation, up to and including the BFE, will not change from existing conditions. Only temporary clearing and access impacts from construction are proposed, and no change in existing floodplain storage capacity will occur. As a result, compensatory storage is not needed. However, the extended drainage swale along the BFE contour will provide 255 sf of additional area for floodwater storage.

2. *Work within Bordering Land Subject to Flooding, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.*

The proposed work does not directly affect stream flow as no in-water work or impacts to the waterway itself are proposed. Proposed work is also all upgradient of the FEMA floodway limits. Flow will not be displaced by the proposed activities.

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

Impacts to the shoulder, median, and adjoining slopes of I-95 will be temporary in nature to upgrade existing stormwater facilities and will not impair the capacity of BLSF to provide important wildlife habitat functions.

### Riverfront Area, 310 CMR 10.58 (5)

Portions of the proposed work are considered a Redevelopment Project in RFA in accordance with 310 CMR 10.58(5), because the project involves the replacement, rehabilitation or expansion of existing structures and the improvement of existing roads. Some work is occurring in areas that are not considered previously developed. Since the project purpose is to improve stormwater quality to receiving waters, “*there is no practicable alternative to siting these structures within the riverfront area.*”. Per 310 CMR 10.58 (4)(d)(1), calculations for allowable development thresholds can “*exclude areas used for structural stormwater management measures.*” All Redevelopment portions of the project must comply with the following standards cited under 310 CMR 10.58(5).

- a) *At a minimum, the proposed work [must] result in an improvement over existing conditions of the capacity of the riverfront area to protect the interests identified in M.G.L.c.131 Section 40*

The proposed stormwater drainage facilities will result in an improvement over existing stormwater detention capacity and treatment with the proposed facilities.

- b) *Stormwater management is provided according to standards established by the Department*

See Section 5.0 and the streamlined Stormwater Management Report in Attachment C.

- c) *Within 200-foot riverfront areas, proposed work shall not be located closer to the river than existing conditions or 100 feet, whichever is less*

The proposed project involves the redevelopment and expansion of existing stormwater facilities within the SHLO. Portions of the work closest to the Brook are located in previously disturbed and maintained areas of RFA. The majority of the permanent impacts and more significant grading for BMP A1 is located greater than 100 feet from Robinson Brook. A majority of permanent impacts within RFA occurs in the outer 100-feet, with additional work proposed beyond the resource limits.

- d) *Proposed work, including expansion of existing structures, shall be located outside the riverfront area or toward the riverfront area boundary and away from the river*

The proposed project involves the redevelopment of existing stormwater facilities within the SHLO. Proposed expansion of the existing stormwater swale is proposed on the outer edge of the RFA, as far away from Robinson Brook as possible but it must tie-into the existing drainage swale. The forebay construction and access drive will all be outside of RFA.

- e) *The area of proposed work shall not exceed the amount of degraded area, provided that the proposed work may alter up to 10% if the degraded area is less than 10% of the riverfront area*

Since all impacts result from stormwater improvements, it is assumed that impacts for thresholds can “*exclude[s] calculations in] areas used for structural stormwater management measures.*”

- f) *When an applicant proposes restoration on-site of degraded riverfront area, alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), and (e) at a ratio in square feet of at least 1:1 of restored area to area of alteration not conforming to the criteria*

All temporarily disturbed areas will be restored to their existing, maintained conditions. All impacts result

from stormwater improvements which do not generate impacts or alteration that require restoration. The proposed stormwater upgrades will improve existing conditions by improving the water quality of the receiving waters.

### **5.3 Summary**

The information contained in this Notice of Intent application sufficiently describes the site, proposed work, and the effect of said work on the interests identified in the Wetlands Protection Act. The design approach taken was to first avoid jurisdictional wetland resource area impacts where feasible, and where unavoidable, to minimize the impacts to the extent practicable and mitigate where applicable. The application demonstrates that the project can be performed in accordance with the applicable general performance standards for the affected resource areas, under the limited project provisions. The Applicant therefore respectfully requests that the Foxborough Conservation Commission issue an Order of Conditions for work to proceed as described in this narrative and as shown on the project plans.

# Attachment B

Stormwater Improvements Along Interstate 95 and Interstate 495  
MassDOT Project 612023  
Notice of Intent Application

SITE FIGURES

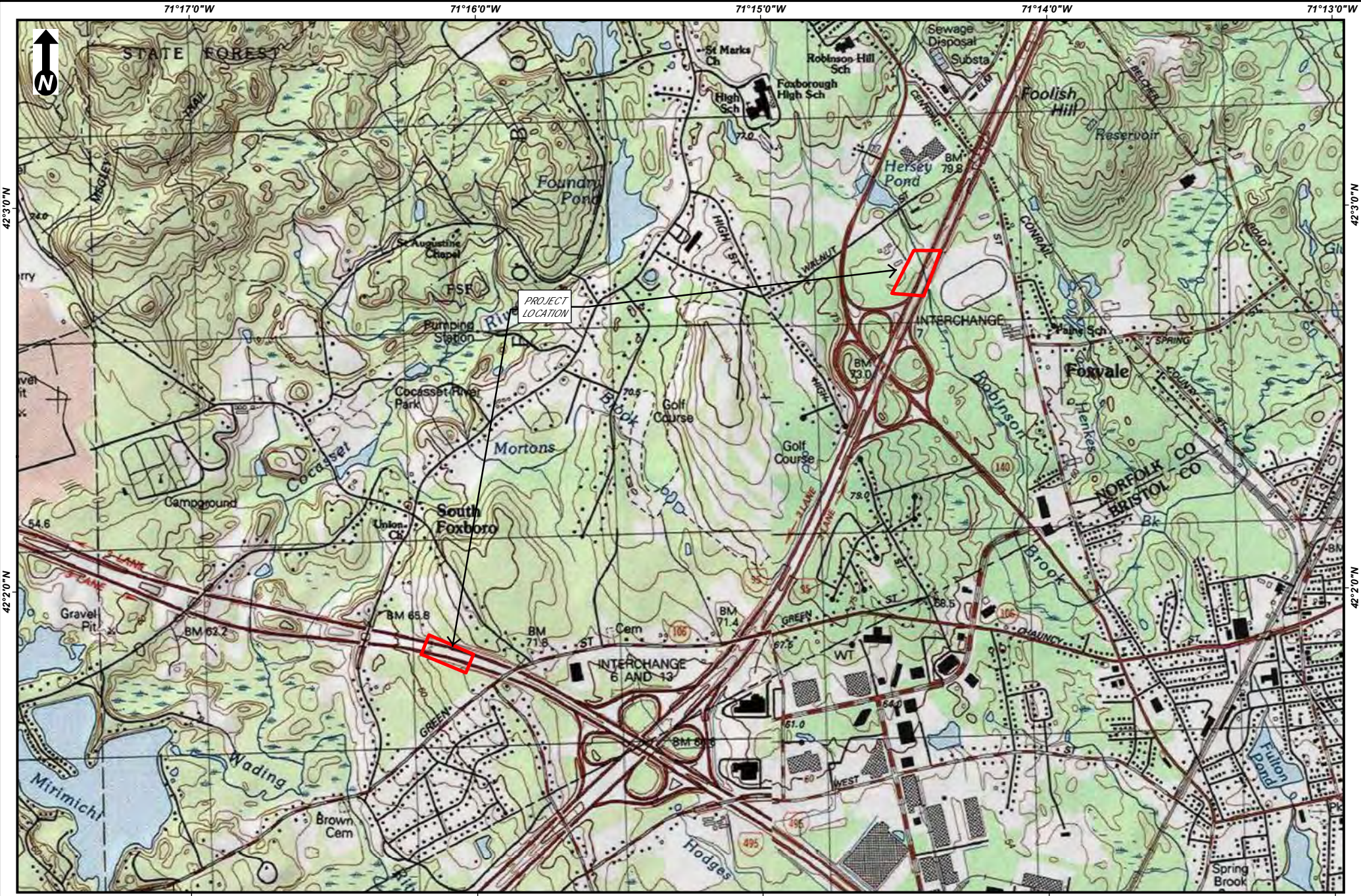
USGS Locus Map

Environmental Resources Map

FEMA FIRM Maps

PHOTOGRAPHS

USGS STREAM STATS

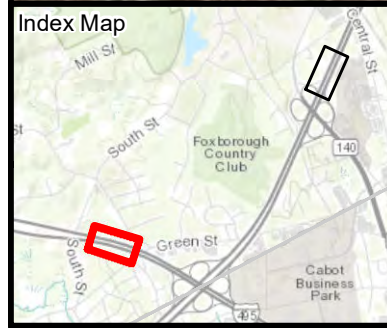


Scale: 1:24,000  
 1 inch = 2,000 feet  
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 Feet  
 (Page Size 8.5 x 11)

**MASSDOT PROJECT #612023, DISTRICT 5 BMP REHABILITATION - I-95 / I-495**  
**USGS Site Location Map**  
**Foxborough, MA**

Source: Copyright ©  
 2013 National  
 Geographic Society, Inc.  
 massDOT  
 BSC GROUP

Resource Areas Reviewed:  
 MADEP Tier Classified Oil and/or Hazardous Material Sites (21E);  
 MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations;  
 Certified Vernal Pools; Potential Vernal Pools; NHESP Priority Habitats; NHESP  
 Estimated Habitats; NHESP Restricted Data; Wild & Scenic Rivers; NHD  
 Hydrography; Census 2000 Streams; NRCS Hydric Soils; Public Water Supply;  
 Zone II Wellhead Protection Area; Interim Wellhead Protection Area; Surface  
 Water Protection Zone; Areas of Critical Environmental Concern; Watershed  
 Protection Act Zones; Ch. 91 Tidelands Jurisdiction; Article 97 Land; Landfills  
 ([Not]Capped, [Un]Lined, [In]Active, Closed)



**Legend**

Limit of Work	Delineated Wetland Boundary	Flood Elevation Level
Wetland Flag	Delineated Wetland Area	FEMA Floodway
Stream Flag	Estimated Wetland Area	Outstanding Resource Water
Delineated Intermittent Stream Bank	MADEP Hydrologic Connections	Fence
Delineated Perennial Stream Bank	MADEP Wetlands*	Culvert Headwall
Delineated Drainage Swale	100ft Buffer to Wetlands & Streams	Culvert
Delineated Stream Area	200ft Riverfront Area	
Delineated Drainage Area	FEMA 100yr Floodplain Zone AE*	

1 inch = 50 feet  
 0 25 50  
 Feet  
 \*Indicates Layers Set to Transparency

**MASSDOT PROJECT #612023, DISTRICT 5  
 BMP REHABILITATION - I-95/I-495**

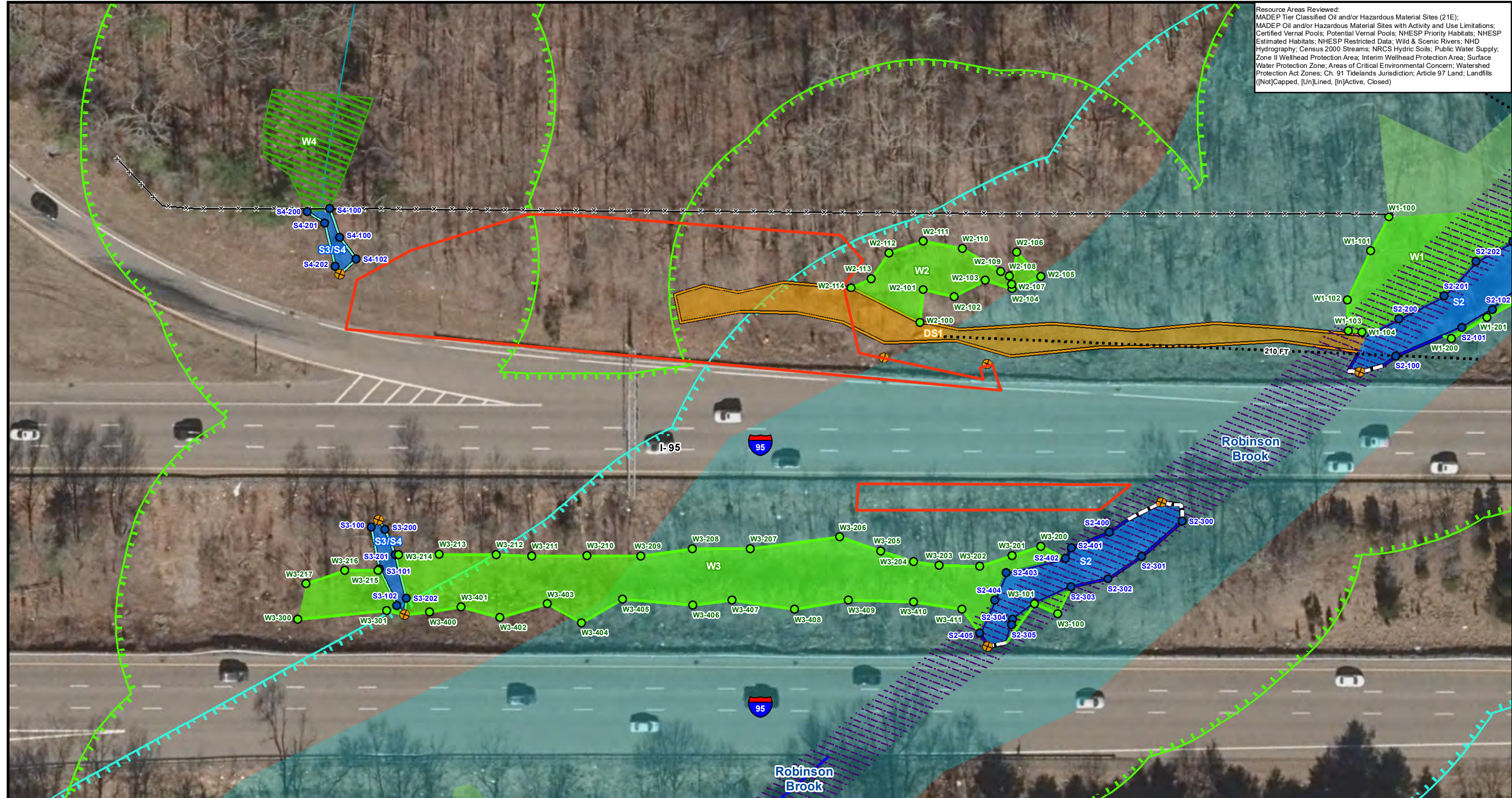
**Environmental Resources Map**

Foxborough, MA  
 Page 1 of 2

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Resource Areas Reviewed:  
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 MADEP Oil and/or Hazardous Material Sites with Activity and Use Limitations;  
 Certified Vernal Pools; Potential Vernal Pools; NHESP Priority Habitats; NHESP  
 Estimated Habitats; NHESP Restricted Data; Wild & Scenic Rivers; NHD  
 Hydrography; Census 2000 Streams; NRCS Hydric Soils; Public Water Supply;  
 Zone II Wellhead Protection Area; Interim Wellhead Protection Area; Surface  
 Water Protection Zone; Areas of Critical Environmental Concern; Watershed  
 Protection Act Zones; Ch. 91 Tidelands Jurisdiction; Article 97 Land; Landfills  
 ([Not]Capped, [Un]Lined, [In]Active, Closed)



**Legend**

Limit of Work	Delineated Wetland Boundary	Flood Elevation Level
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Delineated Perennial Stream Bank	MADEP Wetlands*	Culvert Headwall
Delineated Drainage Swale	100ft Buffer to Wetlands & Streams	Culvert
Delineated Stream Area	200ft Riverfront Area	
Delineated Drainage Area	FEMA 100yr Floodplain Zone AE*	

1 inch = 50 feet  
 0 25 50  
 Feet

\*Indicates Layers Set to Transparency

**MASSDOT PROJECT #612023, DISTRICT 5**  
**BMP REHABILITATION - I-95/I-495**

**Environmental Resources Map**

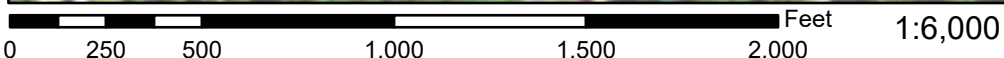
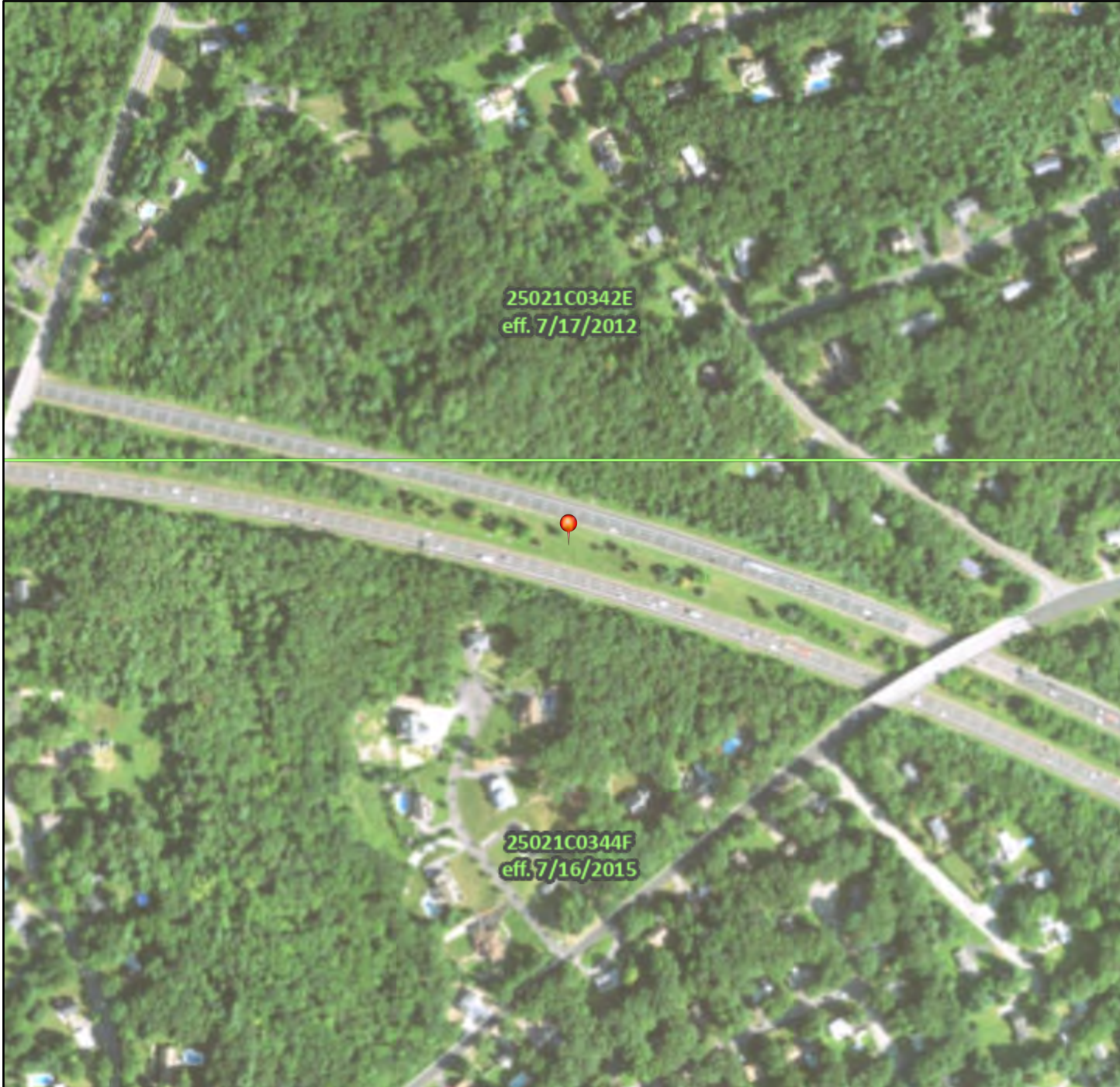
Foxborough, MA  
 Page 2 of 2

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

# National Flood Hazard Layer FIRMMette



71°16'24"W 42°2'4"N



71°15'47"W 42°1'37"N

## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		8 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **1/14/2022 at 4:32 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

No Special Flood Hazard Areas in Project Area

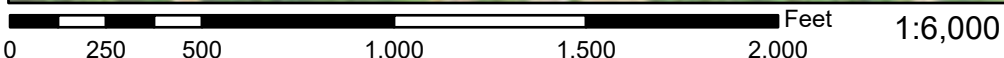
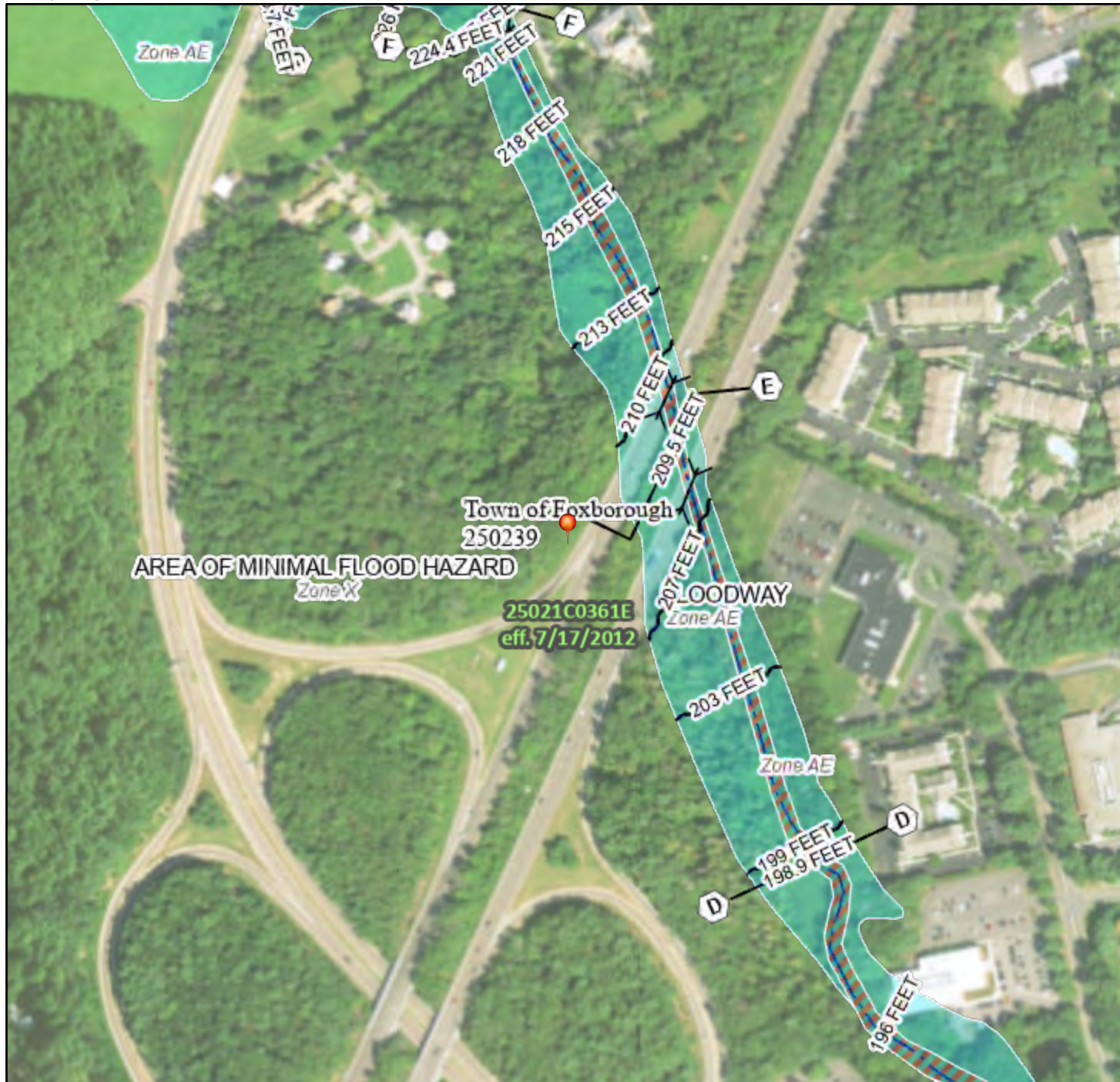
Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020



# National Flood Hazard Layer FIRMMette



71°14'48"W 42°3'1"N



Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

## Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/14/2022 at 4:43 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



**Photo #1:** View Northeast of Robinson Brook. Stormwater BMPs A1 and A2 proposed within the 200-foot Riverfront Area of this Brook, no direct impacts are proposed.



**Photo #2:** View of Wetland W1 which is on the southern edge of Robinson Brook. No direct impacts are proposed, work is outside the 100-foot Buffer Zone to this wetland as well.



**Photo #3:** View of wetland W2 which is characterized by *Acer rubrum*, *Lindera benzoin*, *Onoclea sensibilis*, and *Toxicodendron radicans*. Proposed work associated with Stormwater BMP A1 will be within the 100-foot buffer to this wetland; no direct impacts are proposed.



**Photo #4:** View of Wetland W3 and Stream S3/S4 which is characterized by *Acer rubrum*, *Spiraea alba*, *Lythrum salicaria*, *Solidago uliginosa*, *Toxicodendron radicans*, and *Vitis labrusca*. No work is proposed within 100-feet of the Stream. No impacts to the wetland are proposed.



**Photo #5:** View West of the project area on the southbound shoulder of I-95 where Stormwater BMP A1 is proposed. From *Google Maps Streetview*.



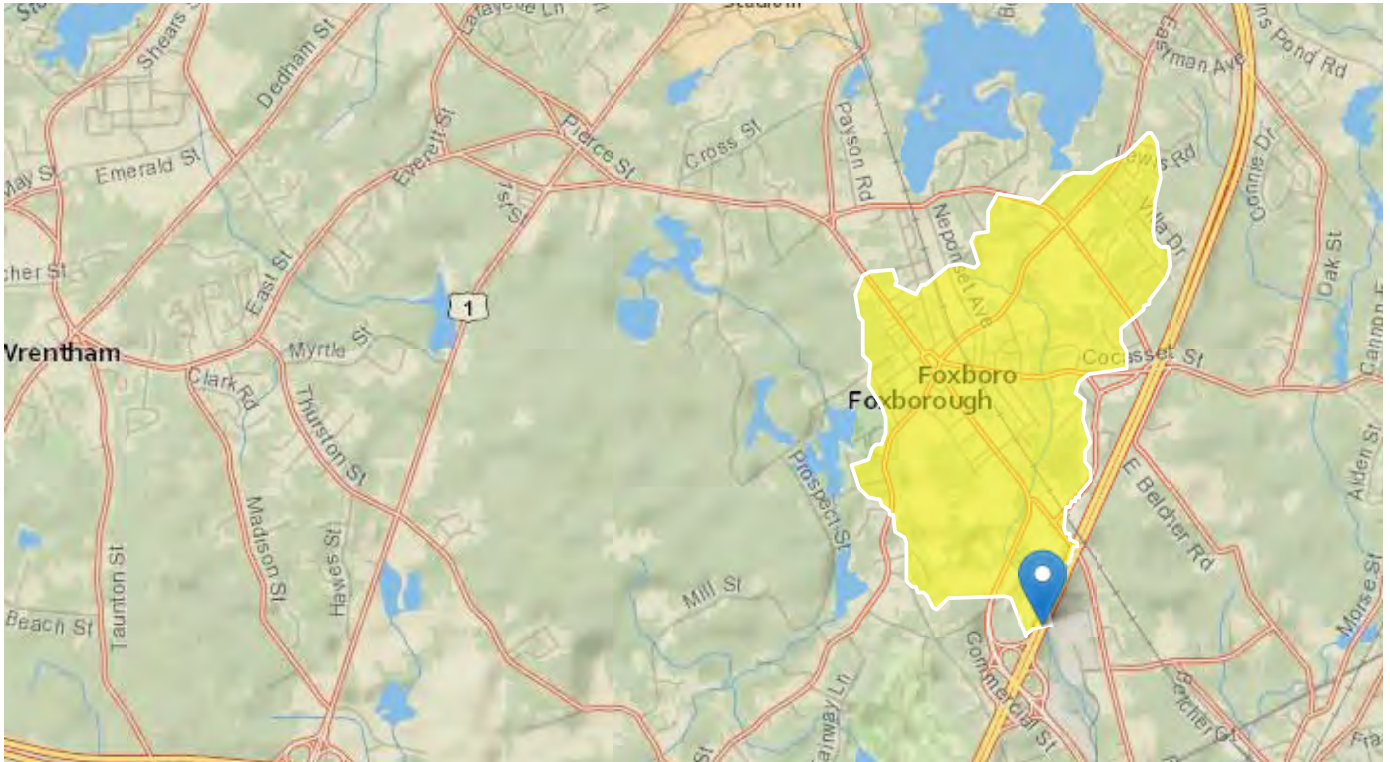
**Photo #6:** View East of the project area on the median of I-95 taken from I-95 Southbound. Stormwater BMP A2 is proposed in the median. From *Google Maps Streetview*.



**Photo #7:** View North of the project area in the median of I-495, as taken from I-495 Southbound. Stormwater BMP B1 is proposed in the median. From *Google Maps Streetview*.

# Robinson Brook StreamStats Report, MassDOT Project #612023, District 5 BMP Rehabilitation - I-95/I-495

**Region ID:** MA  
**Workspace ID:** MA20210831135043659000  
**Clicked Point (Latitude, Longitude):** 42.04697, -71.24044  
**Time:** 2021-08-31 09:51:03 -0400



## Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.91	square miles
ELEV	Mean Basin Elevation	273	feet
LC06STOR	Percentage of water bodies and wetlands determined from the NLCD 2006	3.27	percent
BSLDEM10M	Mean basin slope computed from 10 m DEM	2.788	percent
BSLDEM250	Mean basin slope computed from 1:250K DEM	0.915	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.42	square mile per mile

<b>Parameter Code</b>	<b>Parameter Description</b>	<b>Value</b>	<b>Unit</b>
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless
PCTSNDGRV	Percentage of land surface underlain by sand and gravel deposits	75.58	percent
FOREST	Percentage of area covered by forest	19.5	percent

Peak-Flow Statistics Parameters [Peak Statewide 2016 5156]

<b>Parameter Code</b>	<b>Parameter Name</b>	<b>Value</b>	<b>Units</b>	<b>Min Limit</b>	<b>Max Limit</b>
DRNAREA	Drainage Area	1.91	square miles	0.16	512
ELEV	Mean Basin Elevation	273	feet	80.6	1948
LC06STOR	Percent Storage from NLCD2006	3.27	percent	0	32.3

Peak-Flow Statistics Flow Report [Peak Statewide 2016 5156]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

<b>Statistic</b>	<b>Value</b>	<b>Unit</b>	<b>PIl</b>	<b>PIu</b>	<b>ASEp</b>
50-percent AEP flood	73.8	ft <sup>3</sup> /s	37.6	145	42.3
20-percent AEP flood	123	ft <sup>3</sup> /s	61.7	245	43.4
10-percent AEP flood	162	ft <sup>3</sup> /s	79.3	331	44.7
4-percent AEP flood	219	ft <sup>3</sup> /s	104	463	47.1
2-percent AEP flood	266	ft <sup>3</sup> /s	122	581	49.4
1-percent AEP flood	316	ft <sup>3</sup> /s	140	712	51.8
0.5-percent AEP flood	372	ft <sup>3</sup> /s	160	864	54.1
0.2-percent AEP flood	451	ft <sup>3</sup> /s	185	1100	57.6

*Peak-Flow Statistics Citations*

**Zarriello, P.J.,2017, Magnitude of flood flows at selected annual exceedance probabilities for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2016–5156, 99 p. (<https://dx.doi.org/10.3133/sir20165156>)**

Bankfull Statistics Parameters [Bankfull Statewide SIR2013 5155]

<b>Parameter Code</b>	<b>Parameter Name</b>	<b>Value</b>	<b>Units</b>	<b>Min Limit</b>	<b>Max Limit</b>
-----------------------	-----------------------	--------------	--------------	------------------	------------------

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.91	square miles	0.6	329

BSLDEM10M	Mean Basin Slope from 10m DEM	2.788	percent	2.2	23.9
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Bankfull Statistics Parameters [Appalachian Highlands D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.91	square miles	0.07722	940.1535

Bankfull Statistics Parameters [New England P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.91	square miles	3.799224	138.999861

Bankfull Statistics Parameters [USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.91	square miles	0.07722	59927.7393

Bankfull Statistics Flow Report [Bankfull Statewide SIR2013 5155]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
Bankfull Width	16.5	ft	21.3
Bankfull Depth	1.01	ft	19.8
Bankfull Area	16.4	ft <sup>2</sup>	29
Bankfull Streamflow	29.5	ft <sup>3</sup> /s	55

Bankfull Statistics Flow Report [Appalachian Highlands D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	19.9	ft
Bieger_D_channel_depth	1.35	ft
Bieger_D_channel_cross_sectional_area	27.2	ft <sup>2</sup>

Bankfull Statistics Disclaimers [New England P Bieger 2015]

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

Bankfull Statistics Flow Report [New England P Bieger 2015]



<b>Statistic</b>	<b>Value</b>	<b>Unit</b>
Bieger_P_channel_width	9.23	ft
Bieger_P_channel_depth	0.483	ft
Bieger_P_channel_cross_sectional_area	48.1	ft <sup>2</sup>

Bankfull Statistics Flow Report [USA Bieger 2015]

<b>Statistic</b>	<b>Value</b>	<b>Unit</b>
Bieger_USA_channel_width	4.74	ft
Bieger_USA_channel_depth	0.422	ft
Bieger_USA_channel_cross_sectional_area	24.2	ft <sup>2</sup>

Bankfull Statistics Flow Report [Area-Averaged]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

<b>Statistic</b>	<b>Value</b>	<b>Unit</b>	<b>ASEp</b>
Bankfull Width	16.5	ft	21.3
Bankfull Depth	1.01	ft	19.8
Bankfull Area	16.4	ft <sup>2</sup>	29
Bankfull Streamflow	29.5	ft <sup>3</sup> /s	55
Bieger_D_channel_width	19.9	ft	
Bieger_D_channel_depth	1.35	ft	
Bieger_D_channel_cross_sectional_area	27.2	ft <sup>2</sup>	
Bieger_P_channel_width	9.23	ft	
Bieger_P_channel_depth	0.483	ft	
Bieger_P_channel_cross_sectional_area	48.1	ft <sup>2</sup>	
Bieger_USA_channel_width	4.74	ft	
Bieger_USA_channel_depth	0.422	ft	
Bieger_USA_channel_cross_sectional_area	24.2	ft <sup>2</sup>	

#### *Bankfull Statistics Citations*

**Bent, G.C., and Waite, A.M.,2013, Equations for estimating bankfull channel geometry and discharge for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2013-5155, 62 p., (<http://pubs.usgs.gov/sir/2013/5155/>)**

**Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G.,2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications from USDA-ARS / UNL Faculty, 17p.**

([https://digitalcommons.unl.edu/usdaarsfacpub/1515?](https://digitalcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_campaign=)

[utm\\_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm\\_medium=PDF&utm\\_campaign="](https://digitalcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_campaign=)

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.91	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	0.915	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.42	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	Plu	SE	ASEp
7 Day 2 Year Low Flow	0.2	ft <sup>3</sup> /s	0.0561	0.687	49.5	49.5
7 Day 10 Year Low Flow	0.0753	ft <sup>3</sup> /s	0.0169	0.312	70.8	70.8

*Low-Flow Statistics Citations*

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

Probability Statistics Parameters [Perennial Flow Probability]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.91	square miles	0.01	1.99
PCTSNDGRV	Percent Underlain By Sand And Gravel	75.58	percent	0	100
FOREST	Percent Forest	19.5	percent	0	100
MAREGION	Massachusetts Region	0	dimensionless	0	1

Probability Statistics Flow Report [Perennial Flow Probability]

PII: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

<b>Statistic</b>	<b>Value</b>	<b>Unit</b>	<b>PC</b>
Probability Stream Flowing Perennially	0.979	dim	71
<i>Probability Statistics Citations</i>			
<b>Bent, G.C., and Steeves, P.A.,2006, A revised logistic regression equation and an automated procedure for mapping the probability of a stream flowing perennially in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2006–5031, 107 p.</b> <b>(<a href="http://pubs.usgs.gov/sir/2006/5031/pdfs/SIR_2006-5031rev.pdf">http://pubs.usgs.gov/sir/2006/5031/pdfs/SIR_2006-5031rev.pdf</a>)</b>			

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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Application Version: 4.6.2

StreamStats Services Version: 1.2.22

NSS Services Version: 2.1.2

# Attachment C

Stormwater Improvements Along Interstate 95 and Interstate 495  
MassDOT Project 612023  
Notice of Intent Application

STREAMLINED STORMWATER MANAGEMENT REPORT

## **Streamlined Stormwater Management Report – Interstate 95**

According to the Massachusetts Department of Environmental Protection Stormwater Management Regulations, the project is considered a redevelopment project. As such, the project has been designed to meet all applicable standards of the MassDEP Stormwater Management Handbook to the maximum extent practicable. In accordance with the DEP Stormwater Management Handbook, Standards 1,8, 9, and 10 must be met fully, while the remaining standards must be met to the maximum extent practicable.

### Standard 1: New Stormwater Conveyances

Per Massachusetts Stormwater Management Standard #1, no new outfalls may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. This project does not have any new outfalls. The project is a retrofit project to improve stormwater quality within the area to better improve water quality to Robinson Brook and its watershed. The project proposes sediment forebays and leaching basins to retain and treat stormwater.

### Standard 2: Stormwater Runoff Rates

As a redevelopment project, this standard will be met to the maximum extent practicable. The project will not increase impervious cover to the area. The purpose of the project is to improve and upgrade existing stormwater infrastructures. The proposed sediment forebay and leaching basins will promote infiltration and result in lower post-development runoff rates versus pre-development runoff rates. This standard has been met to the maximum extent practicable.

### Standard 3: Groundwater Recharge

As a redevelopment project, this standard will be met to the maximum extent practicable. As mentioned, proposed sediment forebay and leaching basins will promote infiltration and provide increased groundwater recharge over existing conditions.

To confirm site soils were appropriate for infiltration, onsite soils investigation and a test pit was performed. A Certified DEP (Department of Environmental Protection) Soil Evaluator from BSC Group performed the deep-hole test pits in March 2022. Based on the test pit soil classification and the soil survey map, soils were classified as a hydrologic group “B”, Sandy Loam, which is appropriate for infiltration. Groundwater was encountered in the test pit, and redoximorphic features were encountered as well. The maximum separation feasible is provided between the bottom of the sediment forebay and estimated seasonal high groundwater. This is approximately 2-ft of separation. There will be an overall increase in groundwater recharge as a result of the drainage improvements.

At this time, it was not feasible to perform a test pit in the median for the leaching basins due access constraints. A test pit will be performed by the contractor at the start of construction to confirm estimated seasonal high groundwater in the median. It is anticipated that similar soil and groundwater elevations will be encountered.

### Standard 4: Water Quality

As a redevelopment project, this standard will be met to the maximum extent practicable. The purpose and need of the project is to improve stormwater quality to Robinson Brook and its watershed, the proposed forebay and leaching basins will retain and allow stormwater to infiltrate and treat contaminants.

### Standard 5: Land Uses with Higher Pollutant Loads (LUHPPL)

The Project does not propose work within a land use with higher potential pollutant loads.

### Standard 6: Stormwater Discharges to a Critical Area

This project is not located within a Critical Area as described in the Massachusetts Stormwater Standards. The project is not within Zone 1, Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area, require the use of specific source control and pollution prevention measures. Also, the project is not within Outstanding Resource Waters, bathing beaches, cold-water fisheries, or shellfish growing areas.

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Standard 7: Redevelopment Projects

This project is classified as a redevelopment project. In accordance with the DEP Stormwater Management Handbook, standards 1, 8, 9 and 10 have been fully met. In addition, the project has met all other standards (Standards 2, 3, 4, 5, 6, and 7) to the maximum extent practicable.

Standard 8: Sedimentation and Erosion Control Plan

Erosion control measures, including silt sacks in catch basins and sediment control barriers placed at the bottom of proposed slopes and limits of work will be installed during construction, which will meet this standard's implementation.

Standard 9: Long Term Operations and Maintenance Plan

Temporarily impacted areas associated with project construction activities will be restored following the completion of project work and will result in an overall improvement over existing condition. Proposed project activities will not be considered complete until the areas disturbed as part of project activities are considered adequately stabilized, as determined by the Foxborough Conservation Commission.

Standard 10: Illicit Discharges to the Stormwater Management System are Prohibited

There are no known illicit discharges to the proposed Stormwater Management System.

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# 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.<sup>1</sup> 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 8<sup>2</sup>
- 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.

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<sup>1</sup> 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.

<sup>2</sup> 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

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## 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.

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### 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



*Kath Eagan*

Signature and Date

4/7/22

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## 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

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## 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): Sediment Forebay, Leaching Basins

### 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

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## Checklist (continued)

### Standard 2: Peak Rate Attenuation

- 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

- 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 Field<sup>1</sup>
- <sup>1</sup> 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.
- 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.

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



# Checklist for Stormwater Report

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## 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

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

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## Checklist (continued)

### Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
  - The  $\frac{1}{2}$ " 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.

### 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

- 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

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## 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:

- 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

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## 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

- 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

- 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.
-

## Long-Term Pollution Prevention & Operation and Maintenance Plan

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As required by Standard 4 and Standard 9 of the Massachusetts Stormwater Handbook, a Long-Term Pollution Prevention Plan is developed for source control and pollution prevention at the site after construction and to ensure that the stormwater management systems function as designed.

This Stormwater Management System Operation and Maintenance Plan provides for the inspection and maintenance of structural Best Management Practices (BMPs) and for measures to prevent pollution associated with the Interstate 9 5 drainage improvements project located in Foxborough, Massachusetts.

This document has been prepared in accordance with the requirements of the Stormwater Regulations included in the Massachusetts Wetlands Protection Act Regulations (310 CMR 10).

### **Responsible Party**

MassDOT will be responsible for the maintenance of the stormwater BMP's and associated stormwater management features, in accordance with MassDOT standards.

Questions or concerns regarding maintenance activities may also be addressed to MassDOT:

#### **MassDOT Highway Division:**

10 Park Plaza Room 4260  
Boston, Massachusetts 02116  
Phone: 857-368-4636

### **Maintenance Measures**

The stormwater management system covered by this Operation and Maintenance Plan consists of the following components:

- Catch Basins
- Leaching Catch Basins
- Sediment Forebay

Maintenance of these components will be conducted in accordance with MassDOT standard maintenance practices, as noted in the attached Operation and Maintenance table summarizing the pertinent inspection and maintenance activities.

Table: Best Management Practices: Operation & Maintenance Measures

Best Management Practice	Sweep	Mow	Inspect	Clean	Repair	Notes
Catch Basins	NA	NA	Annually (after snow melt)	<ul style="list-style-type: none"> <li>As Needed Based on Inspection (ANI)</li> <li>Litter and debris clogging inlet grate or curb inlet opening</li> </ul>	ANI	
Leaching Catch Basins	NA	NA	Annually	Annually and ANI	ANI	
Sediment Forebay	NA	NA	Annually	Annually and ANI	ANI	

If inspection indicates the need for major repairs of structural surfaces, the inspector should contact the MassDOT maintenance supervisor to initiate procedures to effect repairs in accordance with MassDOT standard construction practices.

### **Practices for Long Term Pollution Prevention**

A long term operation and maintenance plan is included in the MassDOT Storm Water Management Plan (SWMP), (<http://www.mhd.state.ma.us/downloads/projDev/swmp.pdf>), which includes a Maintenance Schedule and Catch Basin Cleaning Standard Operating Practice in Appendices E and F. This document is made part of this Stormwater Report by reference. The stormwater management structures included in this project require no additional operation and maintenance beyond MassDOT's standard practices. Long term pollution prevention and related maintenance activities will also be conducted consistent with MassDOT Highway Division's NPDES Stormwater MS4 Permit. Information about the permit and the SWMP are available at the following web-site:

<http://www.mhd.state.ma.us/default.asp?pgid=content/environ/envNPDES&sid=about>

For the facilities covered by this Operation and Maintenance Plan, long term pollution prevention includes the following measures:

#### Litter Pick-up

MassDOT will conduct litter pick-up from the stormwater management facilities in conjunction with routine road maintenance activities.

#### Routine Inspection and Maintenance of Stormwater BMPs

MassDOT will conduct inspection and maintenance of the stormwater management practices in accordance with the guidelines discussed above.

#### Spill Prevention and Response

MassDOT will implement response procedures for releases of significant materials such as fuels, oils, or chemical materials onto the ground or other areas that could reasonably be expected to discharge to surface or groundwater.

- Reportable quantities will immediately be reported to the applicable Federal, State, and local agencies as required by law. The MassDOT Environmental Division should also be notified.
- Applicable containment and cleanup procedures will be performed immediately. Impacted material collected during the response must be removed promptly and disposed of in



accordance with Federal, State, and local requirements. A licensed emergency response contractor may be required to assist in cleanup of releases depending on the amount of the release and the ability of the responsible party to perform the required response.

- Reportable quantities of chemical, fuels, or oils are established under the Clean Water Act and enforced through DEP.

#### Maintenance of Landscaped Areas

Routine mowing should be conducted according to standard MassDOT practices. As indicated in the attached O&M table, embankments designed to impound water should be mowed as required to prevent establishment of woody vegetation.

MassDOT shall minimize use of fertilizers, herbicides, and pesticides for the maintenance of facilities covered by this plan. Any use of fertilizers, herbicides, or pesticides shall be reviewed and approved by the MassDOT Environmental Division prior to application. Local Conservation Commission review may also be required.

#### Snow and Ice Management

Snow and Ice Management shall be conducted consistent with the practices outlined in the Environmental Status and Planning Report (ESPR, formerly known as the Snow and Ice Control Generic Environmental Impact Report or GEIR.

#### Prohibition of Illicit Discharges

The DEP Stormwater Management Standards prohibit illicit discharges to the storm water management system. Illicit discharges are discharges that do not entirely consist of stormwater, except for certain specified non-stormwater discharges.

Discharges from the following activities are not considered illicit discharges:

firefighting	foundation drains
water line flushing	footing drains
landscape irrigation	individual resident car washing
uncontaminated groundwater	flows from riparian habitats and wetlands
potable water sources	dechlorinated water from swimming pools
water used to clean residential buildings	water used for street washing
without detergents	air conditioning condensation

There are no known or proposed illicit connections associated with this project. If a potential illicit discharge to the facilities covered by this plan is detected (e.g., dry weather flows at any pipe outlet, evidence of contamination of surface water discharge by non-stormwater sources), the MassDOT Environmental Division shall be notified for assistance in determining the nature and source of the discharge, and for resolution.

## Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan

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MassDOT will require the Contractor to develop a Storm Water Pollution Prevention Plan (SWPPP) for the development of **MassDOT Interstate 95 Drainage Improvements in Foxborough, Massachusetts**.

The storm water pollution prevention measures contained in the SWPPP shall be at least the minimum required by Local, State, and Federal Regulations. The Contractor shall NOT begin construction without submitting evidence that a NPDES Notice of Intent (NOI) governing the discharge of storm water from the construction site for the entire construction period has been filed at least seven days prior to construction.

### 1.0 CONTACT INFORMATION AND RESPONSIBLE PARTIES

The following is a list of all project-associated parties:

#### **Applicant**

MassDOT, Highway Division  
10 Park Plaza, Room 4260  
Boston, Massachusetts 02116  
Phone: 857-368-4636

Contact: To Be Determined During Construction

#### **Owner**

MassDOT, Highway Division  
10 Park Plaza, Room 4260  
Boston, Massachusetts 02116  
Phone: 857-368-4636

Contact: To Be Determined During Construction

#### **Contractor**

To Be Determined

#### **Environmental Consultant**

BSC Group  
803 Summer Street  
Boston, MA 02127

Contact: Kathryn Eagan, Project Manager  
Phone: (617) 896 – 4300  
Email: keagan@bscgroup.com

# TSS Removal Calculation Worksheet

Location: Foxborough, MA

Project: Interstate 95 Drainage Improvements



Prepared By: K. Eagan

Date: 3/16/2022

<b>BMP A1</b>				
<b>Total Impervious Area, Acres= 0.832</b>				

A	B	C	D	E
BMP	TSS Removal Rate	Starting TSS Load*	Amount Removed (BxC)	Remaining Load (C-D)
Sediment Trap (Forebay)	0.25	1.00	0.25	0.75

**TSS Removal = 0.25**

<b>BMP A2-1</b>				
<b>Total Impervious Area, Acres= 0.073</b>				

A	B	C	D	E
BMP	TSS Removal Rate	Starting TSS Load*	Amount Removed (BxC)	Remaining Load (C-D)
Leaching Basin	0.8	1.00	0.80	0.20

**TSS Removal = 0.80**

<b>BMP A2-2</b>				
<b>Total Impervious Area, Acres= 0.073</b>				

A	B	C	D	E
BMP	TSS Removal Rate	Starting TSS Load*	Amount Removed (BxC)	Remaining Load (C-D)
Leaching Basin	0.8	1.00	0.80	0.20

**TSS Removal = 0.80**

**BMP A2-3**

**Total Impervious Area, Acres= 0.328**

A	B	C	D	E
BMP	TSS Removal Rate	Starting TSS Load*	Amount Removed (BxC)	Remaining Load (C-D)
Leaching Basin	0.8	1.00	0.80	0.20

**TSS Removal = 0.80**

**WEIGHTED AVERAGE**

Total = Sum(Watershed Impervious Area \* TSS Removal Rate)

Sum(Impervious Area)

**Total Site TSS Removal = 0.4**

# Calculation Sheet



Project No. 28302.41  
Subject Leaching Basin Sizing  
Location Foxborough, MA

Calc By DX  
Date 3/16/2021  
Checked by KLE  
Date 3/22/2022

## REQUIRED WATER QUALITY VOLUME BMP#A2-1 - Leaching Basin

$$V = [D/12 \text{ inches/foot}] * A$$

A = Impervious Area (square feet)  
D = Water Quality Pretreatment Depth  
V = Required Leaching Basin Volume (cubic feet)

PROPOSED IMPERVIOUS AREA = 3,500 SF  
WATER QUALITY PRETREATMENT DEPTH = 0.5 IN

WATER QUALITY VOLUME = (0.5 inches/12 inches/foot) \* (3500 sf)  
**146 CF**

LB Capacity 41.85 CF  
Stone Capacity 136.81 CF  
**Runoff** 146 CF  
#of LB needed 0.82 EA  
**Say** 1 EA

## REQUIRED WATER QUALITY VOLUME BMP#A2-2 - Leaching Basin

$$V = [D/12 \text{ inches/foot}] * A$$

A = Impervious Area (square feet)  
D = Water Quality Pretreatment Depth  
V = Required Leaching Basin Volume (cubic feet)

PROPOSED IMPERVIOUS AREA = 3,500 SF  
WATER QUALITY PRETREATMENT DEPTH = 0.5 IN

WATER QUALITY VOLUME = (0.5 inches/12 inches/foot) \* (3500 sf)  
**146 CF**

LB Capacity 41.85 CF  
Stone Capacity 136.81 CF  
**Runoff** 146 CF  
#of LB needed 0.82 EA  
**Say** 1 EA

**REQUIRED PRETREATMENT VOLUME**  
**BMP#A2-3 - Leaching Basin**

$$V = [D/12 \text{ inches/foot}] * A$$

- A = Impervious Area (square feet)
- D = Water Quality Pretreatment Depth
- V = Required Forebay Volume (cubic feet)

PROPOSED IMPERVIOUS AREA = 14,500 SF  
 WATER QUALITY PRETREATMENT DEPTH = 0.5 IN

PRETREATMENT VOLUME = (0.5 inches/12 inches/foot) \* (20000 sf)  
**604 CF**

LB Capacity 48.25 CF 48.25 CF

Assume # of LB is n

Total LB capacity is (48.25\*n) CF

Total Stone Projected Area=[(n-1)\*2+(n-1)\*5]\*9+4.5^2\*π=63n+0.62 SF

Total Stone Volume=7.33\*(63n+0.62)-6.33\*2.5^2\*π\*n=337.5n+4.54 CF

Stone Capacity=0.4\*(337.5n+4.54)=135n+1.8 CF

Total Capacity=135n+1.8+4\*π\*3.83\*n=183.12n+1.8 CF

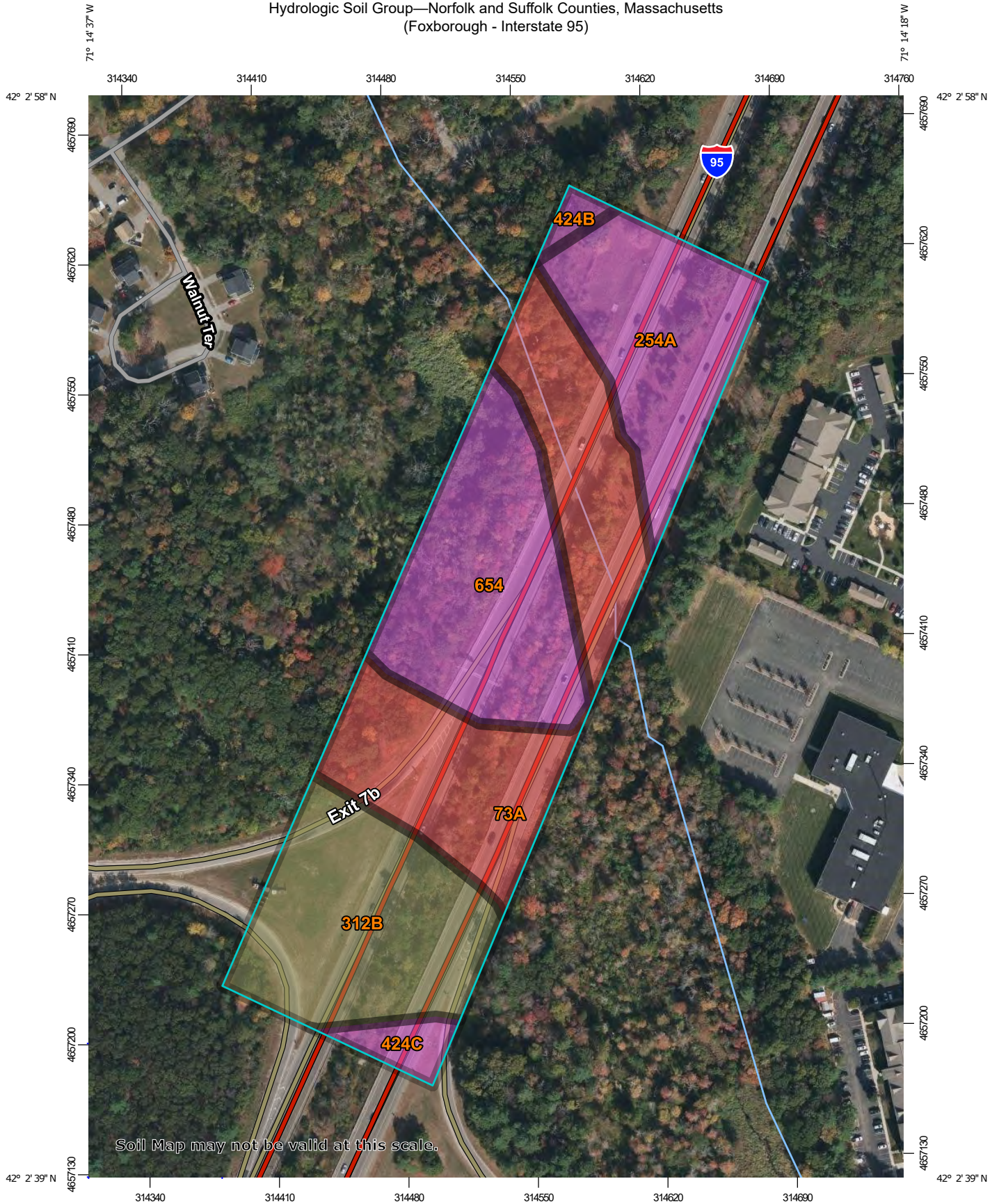
**Runoff** 604 CF

#of LB needed n=(958-1.8)/183.12

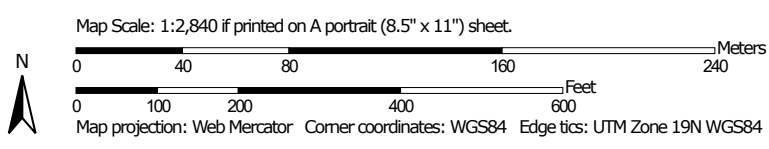
#of LB needed 3.29 EA

**Say 4 EA**

Hydrologic Soil Group—Norfolk and Suffolk Counties, Massachusetts  
(Foxborough - Interstate 95)



Soil Map may not be valid at this scale.



## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines


 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points






 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available


### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts  
 Survey Area Data: Version 17, Sep 3, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 4, 2020—Oct 19, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
73A	Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony	D	4.5	31.7%
254A	Merrimac fine sandy loam, 0 to 3 percent slopes	A	2.6	18.3%
312B	Woodbridge fine sandy loam, 0 to 8 percent slopes, extremely stony	C/D	3.2	22.6%
424B	Canton fine sandy loam, 3 to 8 percent slopes, extremely bouldery	A	0.2	1.1%
424C	Canton fine sandy loam, 8 to 15 percent slopes, extremely bouldery	A	0.4	2.5%
654	Udorthents, loamy	A	3.4	23.7%
<b>Totals for Area of Interest</b>			<b>14.3</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher



## Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

### C. On-Site Review *(minimum of two holes required at every proposed primary and reserve disposal area)*

**Deep Observation Hole Number:** 1 Hole #      3/25/22 Date      9:45 am Time      Cloudy Weather      \_\_\_\_\_ Latitude      \_\_\_\_\_ Longitude

1. Land Use Highway Shoulder (e.g., woodland, agricultural field, vacant lot, etc.)      Grassed Vegetation      N/A Surface Stones (e.g., cobbles, stones, boulders, etc.)      20% Slope (%)

Description of Location: Highway Shoulder behind Guardrail

2. Soil Parent Material: Udorthents      Drumlin Landform      SH Position on Landscape (SU, SH, BS, FS, TS, Plain)

3. Distances from:      Open Water Body 150 feet      Drainage Way 100 feet      Wetlands 150 feet  
    Property Line 70 feet      Drinking Water Well N/A feet      Other \_\_\_\_\_ feet

4. Unsuitable Materials Present:  Yes  No      If Yes:  Disturbed Soil/Fill Material       Weathered/Fractured Rock       Bedrock

5. Groundwater Observed:  Yes       No      If yes: \_\_\_\_\_ Depth to Weeping in Hole      96 in Depth to Standing Water in Hole

#### Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
1-0	O				Cnc : Dpl:						
0-5	Ap	Loam	7.5YR 2.5/2		Cnc : Dpl:				GR	FR	
5-15	B	Sandy Loam	7.5YR 6/3		Cnc : Dpl:				GR	FR	
15-23	C1	Loamy Sand	7.5YR 5/4		Cnc : Dpl:		10-15	5-10	SG	FR	
23-96	C2	Loamy Sand	7.5YR 5/4	60	Cnc :2.5YR 4/6 Dpl:	15	20-25	5-10	SG	FR	
					Cnc : Dpl:						

Additional Notes:

# Attachment D

Stormwater Improvements Along Interstate 95 and Interstate 495  
MassDOT Project 612023  
Notice of Intent Application

WETLAND DELINEATION FORMS

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: I95 MassDOT Prj. No. City/County: Foxborough Sampling Date: 8/12/21  
 Applicant/Owner: Mass DOT State: MA Sampling Point: W2  
 Investigator(s): BSC Group: Ethan Sneesby Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave  
 Slope (%): 0/2 Lat: 42.047247 Long: -71.241164 Datum: WGS  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes <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: _____
Remarks: (Explain alternative procedures here or in a separate report.) This plot was taken within a disturbed highway shoulder, invasive and disturbance species dominated communities (mainly knotweed and poison ivy) are present and the soils all likely have some degree HTM and younger less developed hydric features.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> 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 <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8"</u>	<b>Wetland Hydrology Present?</b> 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: W2

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30'</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</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>100</u> (A/B)
1. <u>Acer Rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>10</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. <u>Lindera benzoin</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>20</u> = Total Cover				
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Onoclea sensibilis</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Toxicodendron radicans</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>95</u> = Total Cover				
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
1. <u>none</u>	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____

**SOIL**

Sampling Point: W2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 2/2	95	7.5YR 4/6	5	c	m	SL	
12+	refusal							Roadbase/fill material

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

**Hydric Soil Indicators:**

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

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: Fill material  
 Depth (inches): 12+

Hydric Soil Present?    Yes     No

Remarks:

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: I95 MassDOT Prj. No. City/County: Foxborough Sampling Date: 8/12/21  
 Applicant/Owner: Mass DOT State: MA Sampling Point: W3  
 Investigator(s): BSC Group: Ethan Sneesby Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave  
 Slope (%): 0/2 Lat: 42.046224 Long: -71.241083 Datum: WGS  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes <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: _____
Remarks: (Explain alternative procedures here or in a separate report.) This plot was taken within a disturbed highway shoulder, many invasive plants (mainly knotweed and poison ivy) are present and the soils all likely have some degree HTM	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>12"</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4"</u>	<b>Wetland Hydrology Present?</b> 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: W3

	Absolute % Cover	Dominant Species?	Indicator Status	
<u>Tree Stratum</u> (Plot size: <u>30'</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B)
1. <u>Acer Rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>10</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> )				
1. <u>Spiraea alba</u>	_____	<u>Y</u>	<u>FACW</u>	
2. <u>Acer rubrum</u>	_____	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Lythrum salicaria</u>	<u>35</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Solidago uliginosa</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
3. <u>Toxicodendron radicans</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15'</u> )				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
1. <u>Vitis labrusca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: W3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 2/2	100					SL	
4-13+	10YR 2/2	90	2.5Y 4/3	10	D	M	SL	See note regarding depletions

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

**Hydric Soil Indicators:**

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

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: none(see second note)  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

**Remarks:**

Redox depletions were sandy in texture, washed clean of fines and should be considered depletions based on the sandy criteria for a reduced/depleted matrix.

Additionally Alpha-alpha-dipyridyl test strips were used on site to confirm the presence of reduced iron in the solution of the second horizon.

Given the disturbed nature of this wetland (being located on the median to I95) and the evidence presented this soil should be considered hydric even though it does not meet the explicit definition of F7 depleted dark surface.

Saturated and sandy subsoil conditions prevented accurate description of underlying soils.

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: I95 MassDOT Prj. No. City/County: Foxborough Sampling Date: 8/12/21  
 Applicant/Owner: Mass DOT State: MA Sampling Point: W2 / W3 (up)  
 Investigator(s): BSC Group: Ethan Sneesby Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Toe of slope Local relief (concave, convex, none): none  
 Slope (%): 0/2 Lat: 42.0460585 Long: -71.2411274 Datum: WGS  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) This plot was taken within a disturbed highway shoulder, many invasive plants (mainly knotweed and poison ivy) are present and the soils all likely have some degree HTM	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	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 (up)  
W3 (up)

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer Rubrum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)
2. <u>Carya glabra</u>	<u>40</u>	<u>y</u>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
<u>10</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. <u>Quercus Rubra</u>	<u>10</u>	<u>y</u>	<u>FACU</u>	
2. <u>Acer rubrum</u>	<u>5</u>		<u>FAC</u>	
3. <u>Pinus strobus</u>	<u>20</u>	<u>y</u>	<u>FACU</u>	
4. <u>Carya glabra</u>	<u>20</u>	<u>y</u>	<u>FACU</u>	
5. _____				
6. _____				
7. _____				
_____ = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Pteridium Gleditsch</u>	<u>10</u>	<u>n</u>	<u>OBL</u>	
2. <u>Lysimachia quadrifolia</u>	<u>30</u>	<u>y</u>	<u>FACU</u>	
3. <u>Toxicodendron radicans</u>	<u>60</u>	<u>y</u>	<u>FAC</u>	
4. <u>Parthenocissus quinquefolia</u>	<u>30</u>	<u>y</u>	<u>FACU</u>	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
_____ = Total Cover				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. <u>Vitis labrusca</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
_____ = Total Cover				
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 2/2	100	none				SL	
12-14+	10YR 3/4	90	none				SL	

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

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)</p> <p><input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
---	--

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

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <b>X</b> _____
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Remarks:

# **Attachment E**

Stormwater Improvements Along Interstate 95 and Interstate 495  
MassDOT Project 612023  
Notice of Intent Application

PROJECT HISTORY (MASSDOT PROJECT 605596)  
DETERMINATION OF APPLICABILITY, OCTOBER 24, 2012  
RELEVANT, SELECTED PLAN PAGES



Massachusetts Department of Environmental Protection  
Bureau of Resource Protection - Wetlands

Project Address:

**WPA Form 2 – Determination of Applicability**

Rt. I-95

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
Foxborough Wetland and Groundwater Protection Bylaw, Article IX

**A. General Information**

From:

Foxborough  
Conservation Commission

To: Applicant (Property Owner  or Rep. ):

Mail to: Property Owner  or Representative :

Mass DOT, Highway Division, District 5  
Name  
1000 County Street  
Mailing Address  
Taunton MA 02780  
City/Town State Zip Code

\_\_\_\_\_  
Name  
\_\_\_\_\_  
Mailing Address  
\_\_\_\_\_  
City/Town State Zip Code

1. Title and Date (or Revised Date if applicable) of Final Plans and Other Documents:

Foxborough, Rt. I-95 - USGS Locus Map 9/26/12  
Title Date  
\_\_\_\_\_  
Title Date  
\_\_\_\_\_  
Title Date

2. Date Request Filed:

10/10/12

**B. Determination**

Pursuant to the authority of M.G.L. c. 131, § 40, the Conservation Commission considered your Request for Determination of Applicability, with its supporting documentation, and made the following Determination.

Project Description (if applicable):

The proposed work involves pavement milling, resurfacing, and related items necessary to rehabilitate this roadway. Please see the detailed scope of work and USGS locus map, submitted with the Request for Determination.

Project Location:

Route I-95, just north of Rt 106, northerly to Sharon town line  
Street Address  
N/A  
Assessors Map/Plat Number

Foxborough  
Town  
N/A  
Parcel/Lot Number



## WPA Form 2 – Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
Foxborough Wetland and Groundwater Protection Bylaw, Article IX

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### B. Determination (cont.)

The following Determination(s) is/are applicable to the proposed site and/or project relative to the Wetlands Protection Act and regulations and relative to Article IX and regulations, as indicated:

#### Positive Determination

Note: No work within the jurisdiction of the Wetlands Protection Act may proceed until a final Order of Conditions (issued following submittal of a Notice of Intent or Abbreviated Notice of Intent) has been received from the issuing authority (i.e., Conservation Commission or the DEP).

#### Pursuant to the Wetlands Protection Act:

- 1. The area described on the referenced plan(s) is an area subject to protection under the Act. Removing, filling, dredging, or altering of the area requires the filing of a Notice of Intent.
- 2a. The boundary delineations of the resource areas described on the referenced plan(s) are confirmed as accurate.
- 2b. The boundaries of resource areas are not confirmed by this Determination, regardless of whether such boundaries are contained on the plans attached to this Determination or to the Request for Determination.
- 3. The work described on referenced plan(s) and document(s) is within an area subject to protection under the Act and will remove, fill, dredge, or alter that area. Therefore, said work requires the filing of a Notice of Intent.
- 4. The work described on referenced plan(s) and document(s) is within the Buffer Zone and will alter an Area subject to protection under the Act. Therefore, said work requires the filing of a Notice of Intent.

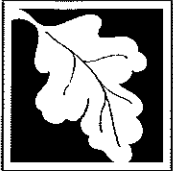
#### Pursuant to the Foxborough Wetland and Groundwater Protection Bylaw, Article IX:

- 5. The work described on referenced plan(s) and document(s) is within the Buffer Zone and will alter an Area subject to protection under the Bylaw. Therefore, said work requires the filing of a Notice of Intent.
- 6. The following area and/or work, if any, is subject to the Bylaw but not subject to the Massachusetts Wetlands Protection Act, therefore, said work requires the filing of a Bylaw Notice of Intent.

#### Pursuant to the Wetlands Protection Act:

- 7. If a Notice of Intent is filed for the work in the Riverfront Area described on referenced plan(s) and document(s), which includes all or part of the work described in the Request, the applicant must consider the following alternatives. (Refer to the wetland regulations at 10.58(4)c. for more information about the scope of alternatives requirements):
  - Alternatives limited to the lot on which the project is located.
  - Alternatives limited to the lot on which the project is located, the subdivided lots, and any adjacent lots formerly or presently owned by the same owner.
  - Alternatives limited to the original parcel on which the project is located, the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality.
  - Alternatives extend to any sites which can reasonably be obtained within the appropriate region of the state.





## WPA Form 2 – Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
Foxborough Wetland and Groundwater Protection Bylaw, Article IX

### B. Determination (cont.)

#### Negative Determination

Note: No further action under the Wetlands Protection Act (the Act) is required by the applicant. However, if the Department is requested to issue a Superseding Determination of Applicability, work may not proceed on this project unless the Department fails to act on such request within 35 days of the date the request is post-marked for certified mail or hand delivered to the Department. Work may then proceed at the owner's risk only upon notice to the Department and to the Conservation Commission. Requirements for requests for Superseding Determinations are listed at the end of this document.

#### Pursuant to the Wetlands Protection Act:

1. The area described in the Request is not an area subject to protection under the Act or the Buffer Zone.
2. The work described in the Request is within an Area subject to protection under the Act, but will not remove, fill, dredge, or alter that area. Therefore, said work does not require the filing of a Notice of Intent provided that the work is completed in compliance with the following conditions
3. The work described in the Request is within the Buffer Zone, as defined in the regulations, but will not alter an Area subject to protection under the Act. Therefore, said work does not require the filing of a Notice of Intent, unless and until said work alters an Area subject to protection under the Act, and provided that the work is completed in compliance with the following conditions (if any)
- When construction is scheduled to occur
- (1) within 100 feet of a wetland resource area or
- (2) within 200 feet of a stream or river,
- the Conservation Agent shall review and approve the type of erosion controls and their installation locations prior to the start of construction.
4. The work described in the Request is not within an Area subject to protection under the Act (including the Buffer Zone). Therefore, said work does not require the filing of a Notice of Intent, unless and until said work alters an Area subject to protection under the Act.
5. The area described in the Request is subject to protection under the Act. Since the work described therein meets the requirements for the following exemption, as specified in the Act and the regulations, no Notice of Intent is required, provided that the work is completed in compliance with the following conditions (if any):

---

Exempt Activity (site applicable statutory/regulatory provisions)

#### Pursuant to the Foxborough Wetland and Groundwater Protection Bylaw, Article IX:

6. The area and/or work described in the Request is subject to review and approval pursuant to Foxborough's Wetland and Groundwater Protection Bylaw, Article IX, but will not alter an Area subject to protection under the Bylaw. Therefore, said work does not require the filing of a Notice of Intent, unless and until said work alters an Area subject to protection under the Bylaw, provided that the work is completed in compliance with the following conditions (if any):
- When construction is scheduled to occur
- (1) within 100 feet of a wetland resource area or
- (2) within 200 feet of a stream or river,
- the Conservation Agent shall review and approve the type of erosion controls and their installation locations prior to the start of construction.



# WPA Form 2 – Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40  
Foxborough Wetland and Groundwater Protection Bylaw, Article IX

## C. Authorization

This Determination is issued to the applicant and delivered as follows:

by hand delivery on \_\_\_\_\_  by certified mail, return receipt requested on \_\_\_\_\_

Date

Date

10-24-12

This Determination is valid for **three years** from the date of issuance (except Determinations for Vegetation Management Plans which are valid for the duration of the Plan). This Determination does not relieve the applicant from complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

This Determination must be signed by a majority of the Conservation Commission. A copy must be sent to the DEP Southeast Regional Office and the property owner (if different from the applicant).

MassDEP Southeast Region Main Office  
20 Riverside Drive  
Lakeville, MA 02347

Signatures:

Robert W. Boette, Chairman

Judith L. Johnson

Allan F. Curtis, Vice Chairman

James Marsh

Eric Nelson, Clerk

Valerie Marshall

Douglas L. Davis

10/22/12  
Date

## D. Appeals

### State Appeal

The applicant, owner, any person aggrieved by this Determination, any owner of land abutting the land upon which the proposed work is to be done, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate Department of Environmental Protection Regional Office (see <http://www.mass.gov/dep/about/region.findyour.htm>) to issue a Superseding Determination of Applicability.

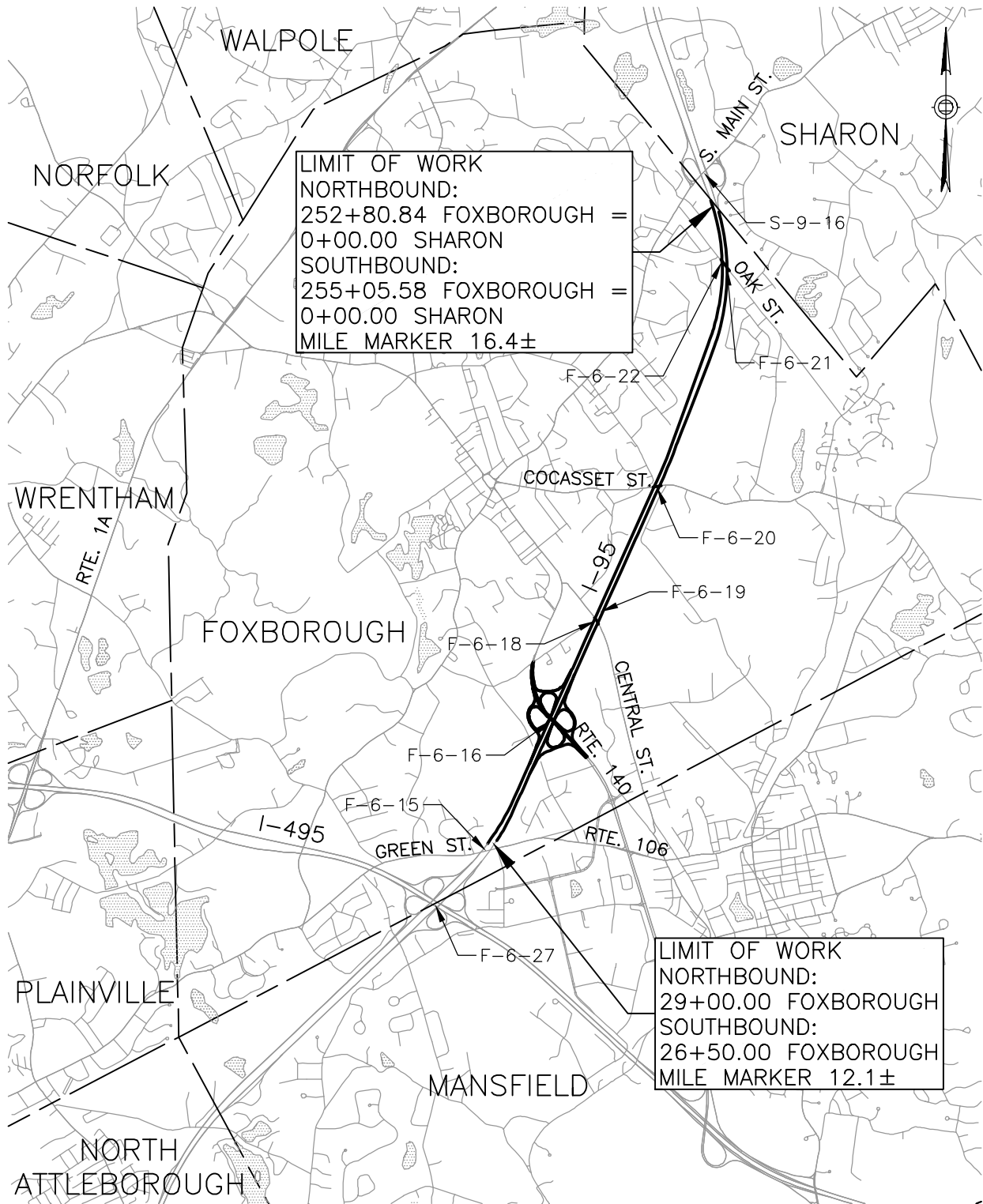
The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and Fee Transmittal Form (see Request for Departmental Action Fee Transmittal Form) as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Determination. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant if he/she is not the appellant.

The request shall state clearly and concisely the objections to the Determination which is being appealed. To the extent that the Determination is based on a municipal ordinance or bylaw and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.

### Bylaw Appeal

An appeal may be taken from a decision under the Bylaw in accordance with the provision of Massachusetts General Laws, Chapter 249.

# I-95 FOXBOROUGH PROJECT LOCATION



SCALE: 1" = 5000'

# I-95 FOXBOROUGH PROJECT LOCATION



13+99.49 SW INNER RAMP OPP.  
13+99.49 SW INNER RAMP

67+75.00 AUX. BL 'A' =  
10+00.00 SE INNER RAMP

63+75.00 AUX. BL 'A' =  
7+96.27 SW OUTER RAMP

71+55± AUX. BL 'A' OPP.  
8+00 SW INNER RAMP

STA. 72+72.72 AUX. BL 'A' =  
STA. 36+83.29 RTE. 140 BL

40+95± RTE. 140 BL OPP.  
25+58± SW INNER RAMP

57+67.61 RELOC. RTE 140 BL =  
26+51.58 WALNUT ST. BL

PROJECT LIMIT END  
MILLING & OVERLAY  
STA. 56+75±

CONT. ON  
SHEET NO. 1

54+49 AUX. BL 'A' OPP.  
4+95 SE OUTER RAMP

12+89 SE OUTER RAMP OPP.  
12+89 SE OUTER RAMP

45+39± RTE. 140 BL OPP.  
24+42± SW OUTER RAMP

50+75± RTE. 140 BL OPP.  
22+59± NW OUTER RAMP

44+15± RTE. 140 BL OPP.  
21+05± NW INNER RAMP

78+85± AUX. BL 'A' OPP.  
11+44± NW INNER RAMP

12+89.15 NW OUTER RAMP OPP.  
12+89.15 NW OUTER RAMP

90+07± AUX. BL 'A' OPP.  
5+06.60 NW OUTER RAMP

CONT. ON  
SHEET NO. 3

32+78± RTE. 140 BL OPP.  
24+78± NE INNER RAMP

19+50.18 SE OUTER RAMP OPP.  
19+50.18 SE OUTER RAMP

30+13± RTE. 140 BL OPP.  
22+00± SE INNER RAMP

29+60.82 SE OUTER RAMP OPP.  
18+50.97 RELOC. RTE. 140

LIMIT OF RESURFACING STA. 27+50±

27+53± RTE. 140 BL OPP.  
23+55± NE OUTER RAMP

21+90.02 RTE. 140 BL =  
21+90.02 RELOC. RTE. 140

PROJECT LIMIT BEGIN  
MILLING & OVERLAY  
STA. 20+00±

16+02.24 RTE 140 BL =  
16+74.86 FISHER ST. BL

### LEGEND

= MILL AND OVERLAY

LIMIT OF RESURFACING  
I-95 STA. 83+50±

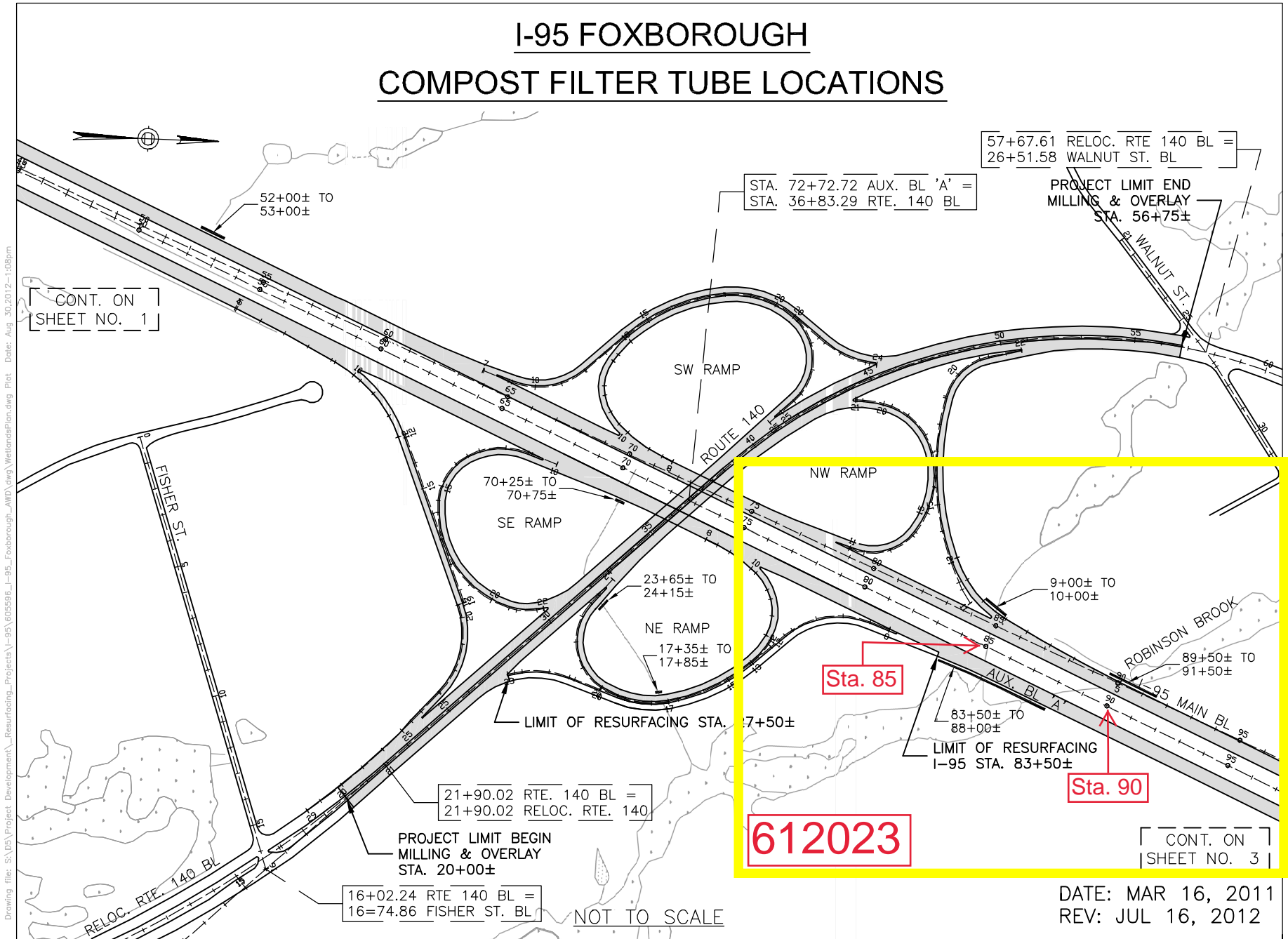
81+82± AUX. BL 'A' OPP.  
8+19.20 NE OUTER RAMP

12+76± NE INNER RAMP OPP.  
12+76± NE INNER RAMP

74+71± AUX. BL 'A' OPP.  
8+47 NE INNER RAMP

NOT TO SCALE

# I-95 FOXBOROUGH COMPOST FILTER TUBE LOCATIONS



Drawing file: S:\DCA\Project\_Development\Resurfacing\_Projects\I-95\_Foxborough\_AWD\I-95\WetlandsPlan.dwg Plot Date: Aug 30 2012 - 1:08pm

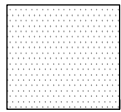
CONT. ON SHEET NO. 1

CONT. ON SHEET NO. 3

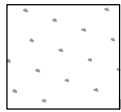
DATE: MAR 16, 2011  
 REV: JUL 16, 2012

I-95 FOXBOROUGH  
COMPOST FILTER TUBE LOCATIONS

LEGEND



OPEN WATER



WETLAND



MILLING AND RESURFACING



COMPOST FILTER TUBES

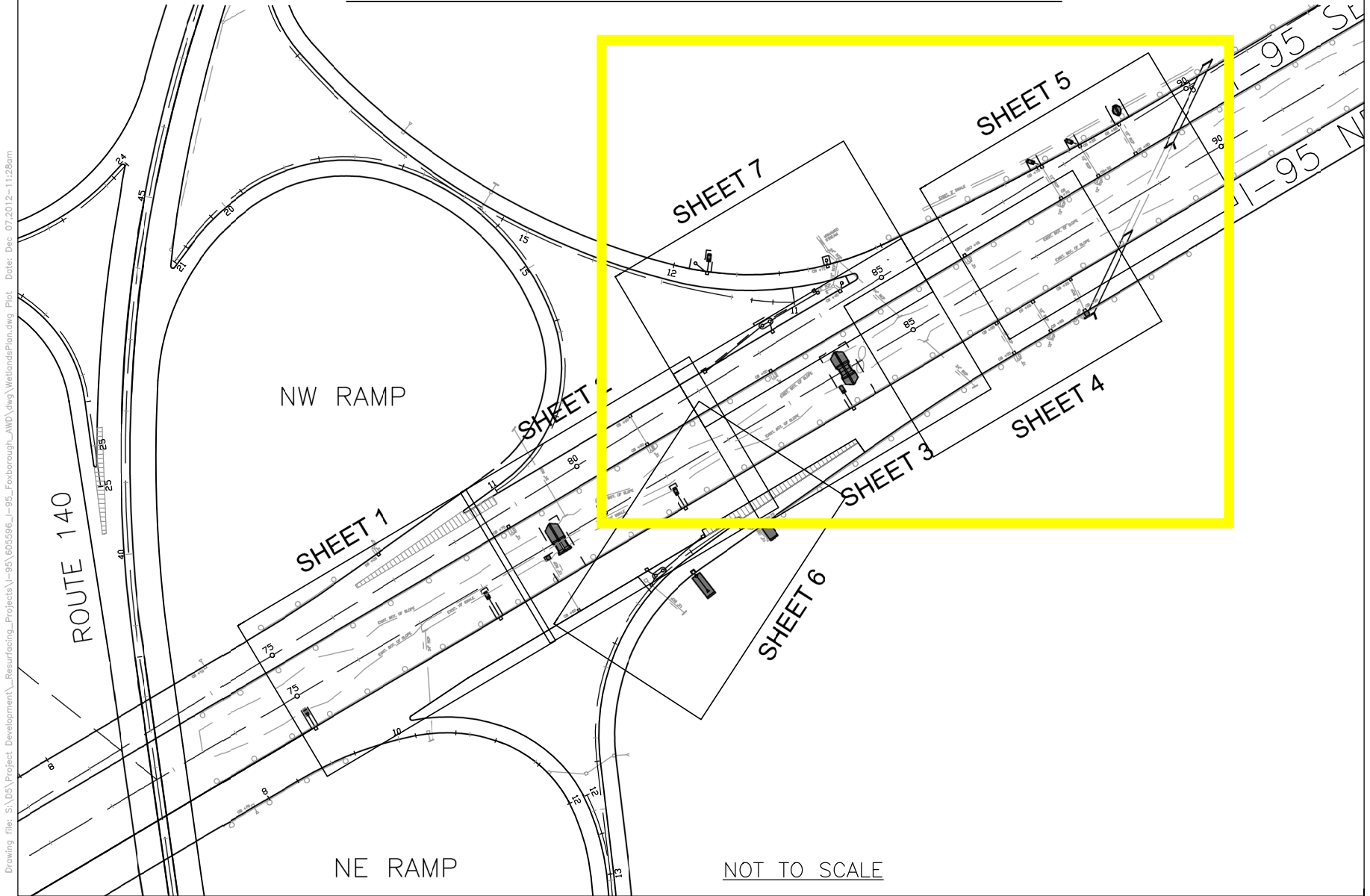
NOT TO SCALE

DATE: MAR 16, 2011  
REV: JUL 16, 2012

# I-95 FOXBOROUGH

KEY PLAN

## DRAINAGE IMPROVEMENTS: LOCATION 1-5



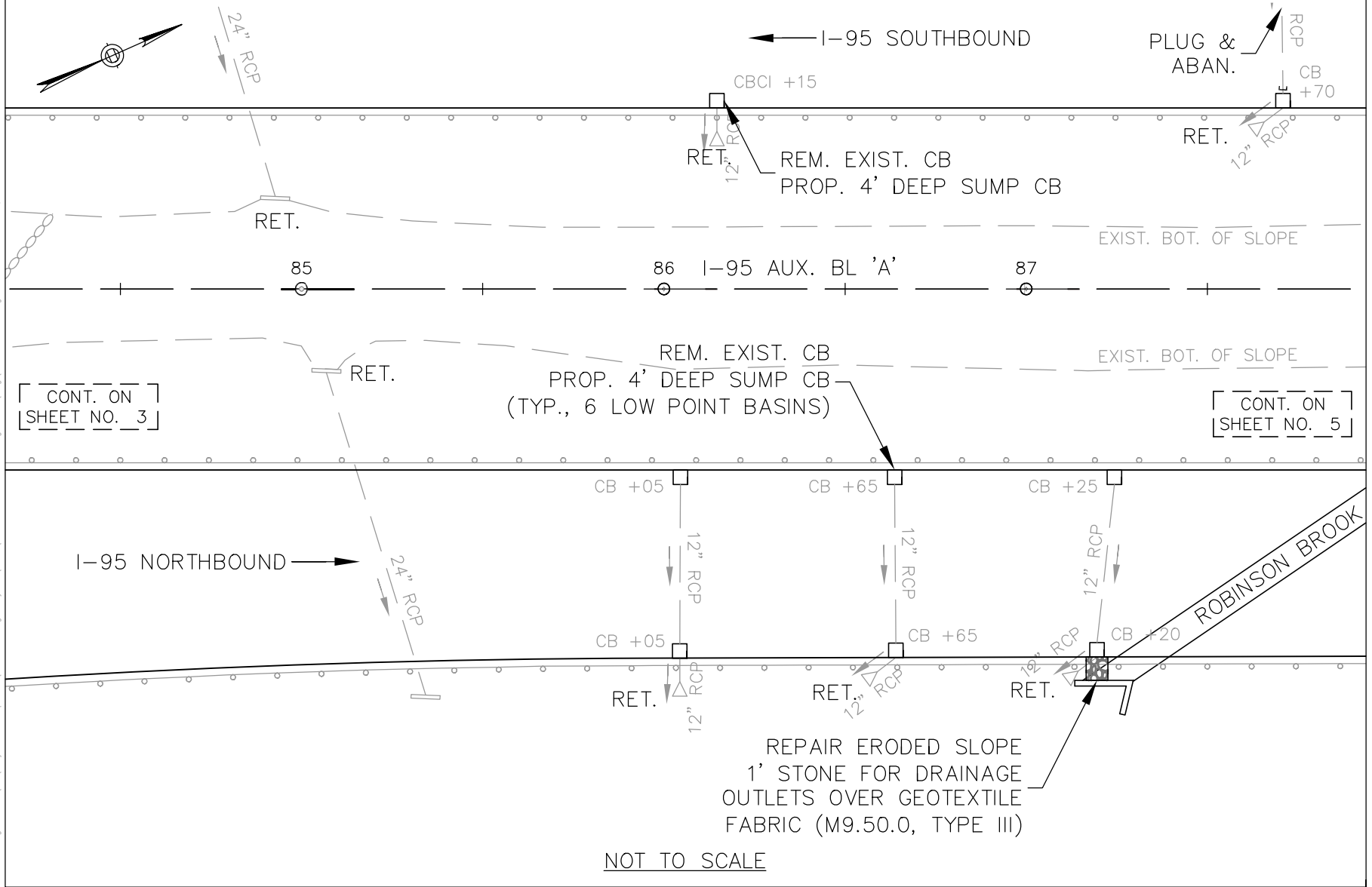
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# I-95 FOXBOROUGH

## DRAINAGE IMPROVEMENTS: LOCATION 2

SHEET 4 OF 7

Drawing file: S:\D5\Project\_Development\Resurfacing\_Projects\I-95\Foxborough\_AWD\dwg\WetlandsPlan.dwg Plot Date: Dec 07, 2012 - 11:30am



CONT. ON  
SHEET NO. 3

CONT. ON  
SHEET NO. 5

PLUG &  
ABAN.

CBI +15

CB +70

RET.

RET.  
12" RCP

REM. EXIST. CB  
PROP. 4' DEEP SUMP CB

RET.

12" RCP

EXIST. BOT. OF SLOPE

85

86

87

RET.

REM. EXIST. CB  
PROP. 4' DEEP SUMP CB  
(TYP., 6 LOW POINT BASINS)

EXIST. BOT. OF SLOPE

CB +05

CB +65

CB +25

I-95 NORTHBOUND →

24" RCP

12" RCP

12" RCP

12" RCP

CB +05

CB +65

CB +20

RET.

RET.  
12" RCP

RET.  
12" RCP

CONT. ON  
SHEET NO. 3

CONT. ON  
SHEET NO. 5

PLUG &  
ABAN.

CBI +15

CB +70

RET.

RET.  
12" RCP

REM. EXIST. CB  
PROP. 4' DEEP SUMP CB

RET.

12" RCP

EXIST. BOT. OF SLOPE

85

86

87

RET.

REM. EXIST. CB  
PROP. 4' DEEP SUMP CB  
(TYP., 6 LOW POINT BASINS)

EXIST. BOT. OF SLOPE

CB +05

CB +65

CB +25

I-95 NORTHBOUND →

24" RCP

12" RCP

12" RCP

12" RCP

CB +05

CB +65

CB +20

RET.

RET.  
12" RCP

RET.  
12" RCP

REPAIR ERODED SLOPE  
1' STONE FOR DRAINAGE  
OUTLETS OVER GEOTEXTILE  
FABRIC (M9.50.0, TYPE III)

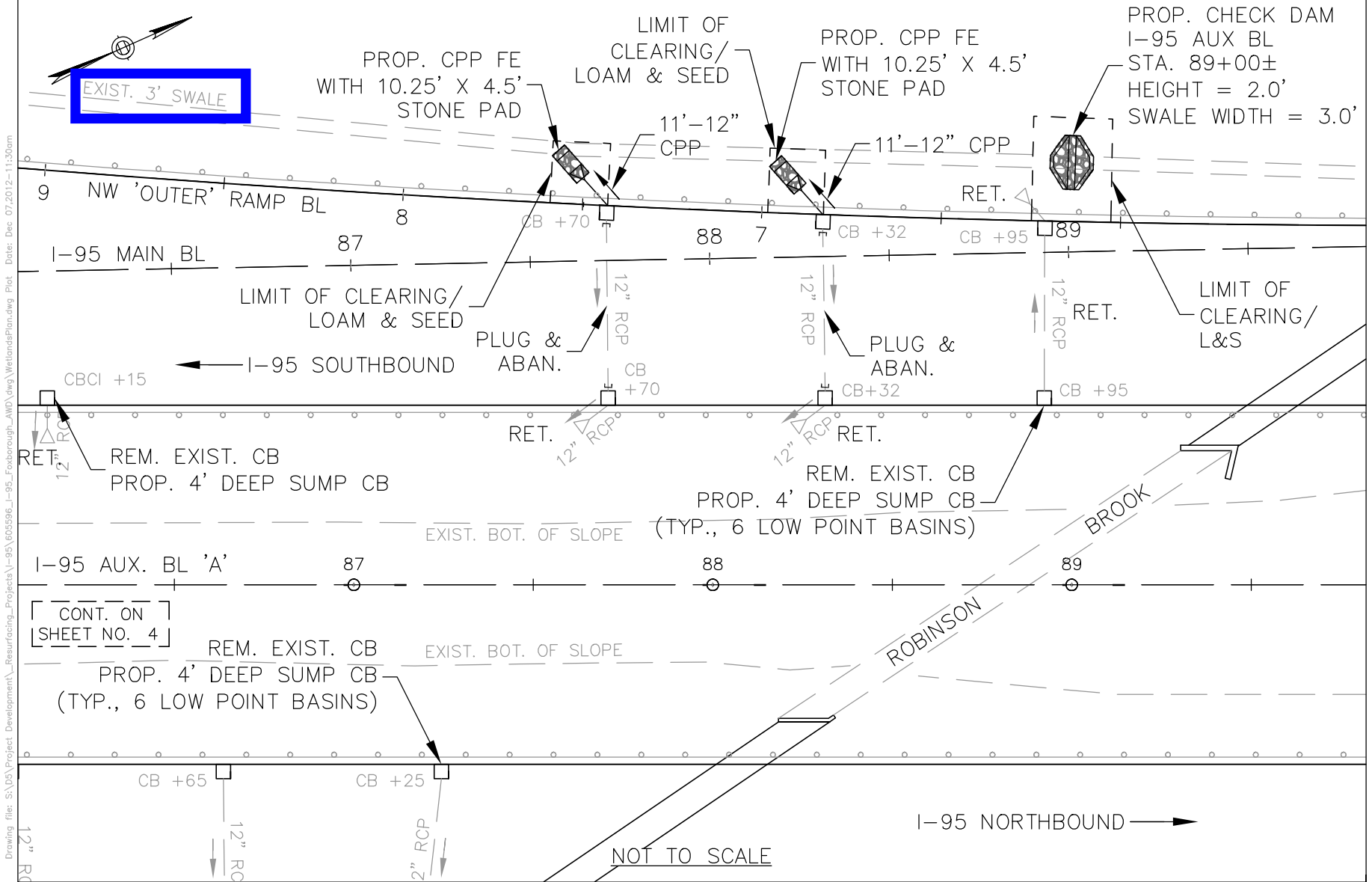
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# I-95 FOXBOROUGH

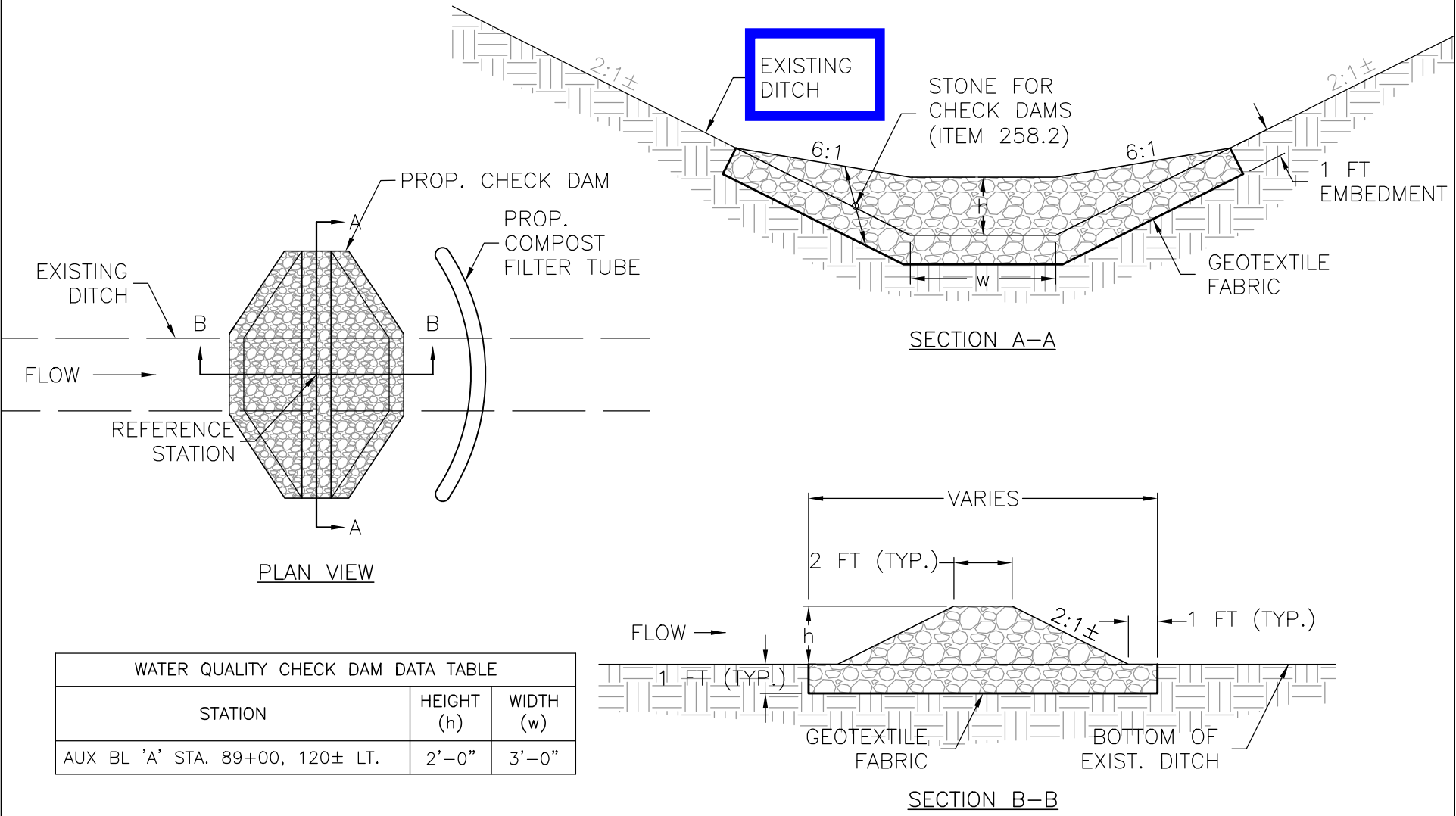
SHEET 5 OF 7

## DRAINAGE IMPROVEMENTS: LOCATION 3



Drawing file: S:\DVA\Project Development\Resurfacing\Projects\I-95\Foxborough\AWP\I-95\_Foxborough\WetlandsPlan.dwg Plot Date: Dec 07, 2012 11:30am

# I-95 FOXBOROUGH TYPICAL - WATER QUALITY CHECK DAMS LOCATION 3



PLAN VIEW

SECTION A-A

SECTION B-B

WATER QUALITY CHECK DAM DATA TABLE		
STATION	HEIGHT (h)	WIDTH (w)
AUX BL 'A' STA. 89+00, 120± LT.	2'-0"	3'-0"

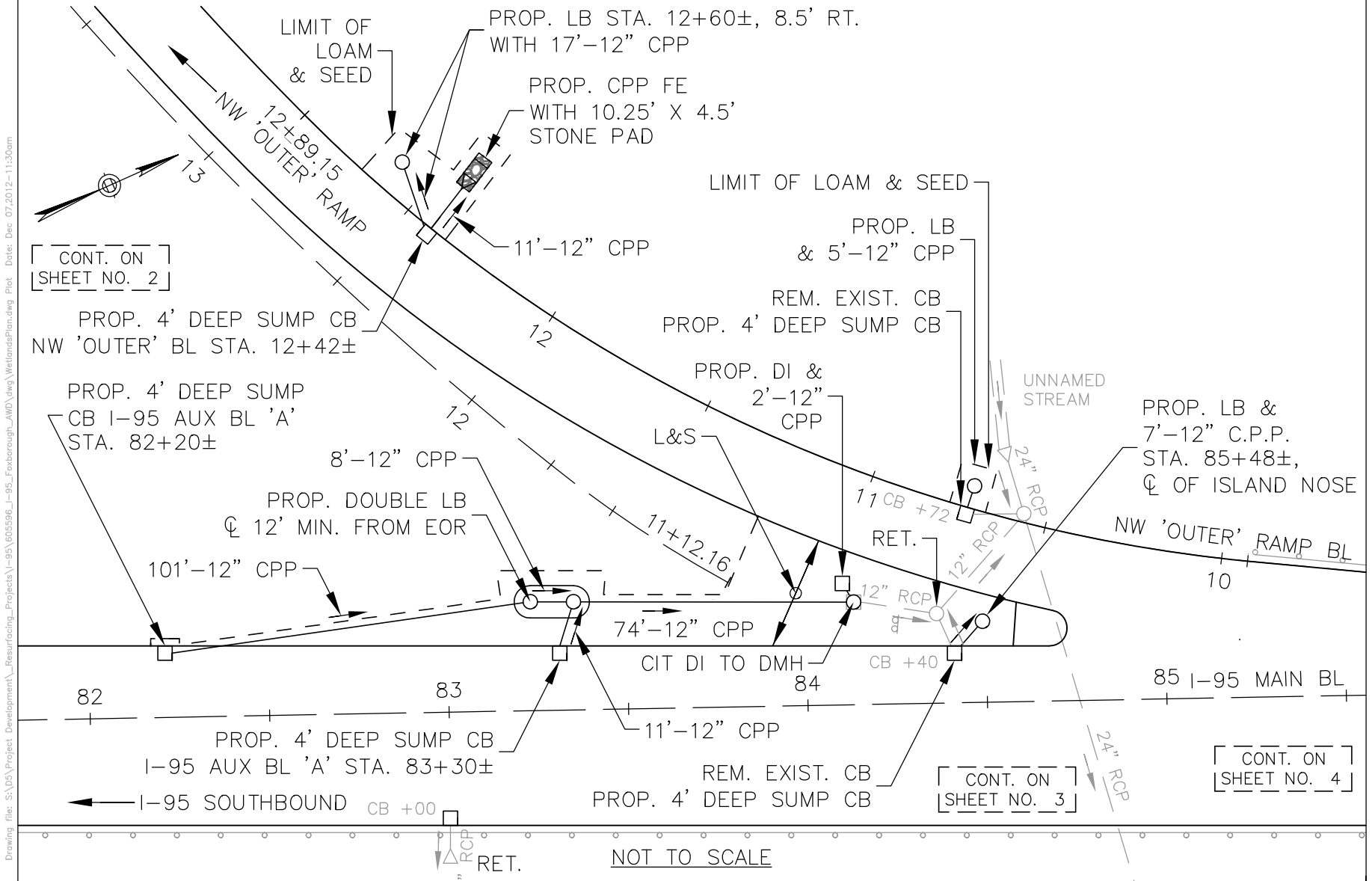
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# I-95 FOXBOROUGH

SHEET 7 OF 7

## DRAINAGE IMPROVEMENTS: LOCATION 5



# Attachment F

Stormwater Improvements Along Interstate 95 and Interstate 495  
MassDOT Project 612023  
Notice of Intent Application

PROJECT PLANS  
CONSTRUCTION DETAILS

# MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

FOXBOROUGH  
INTERSTATE 95 & INTERSTATE 495

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	14
PROJECT FILE NO.		612023	

TITLE SHEET & INDEX  
NOTICE OF INTENT PLAN SET

STORMWATER IMPROVEMENTS  
INTERSTATE 95 & INTERSTATE 495

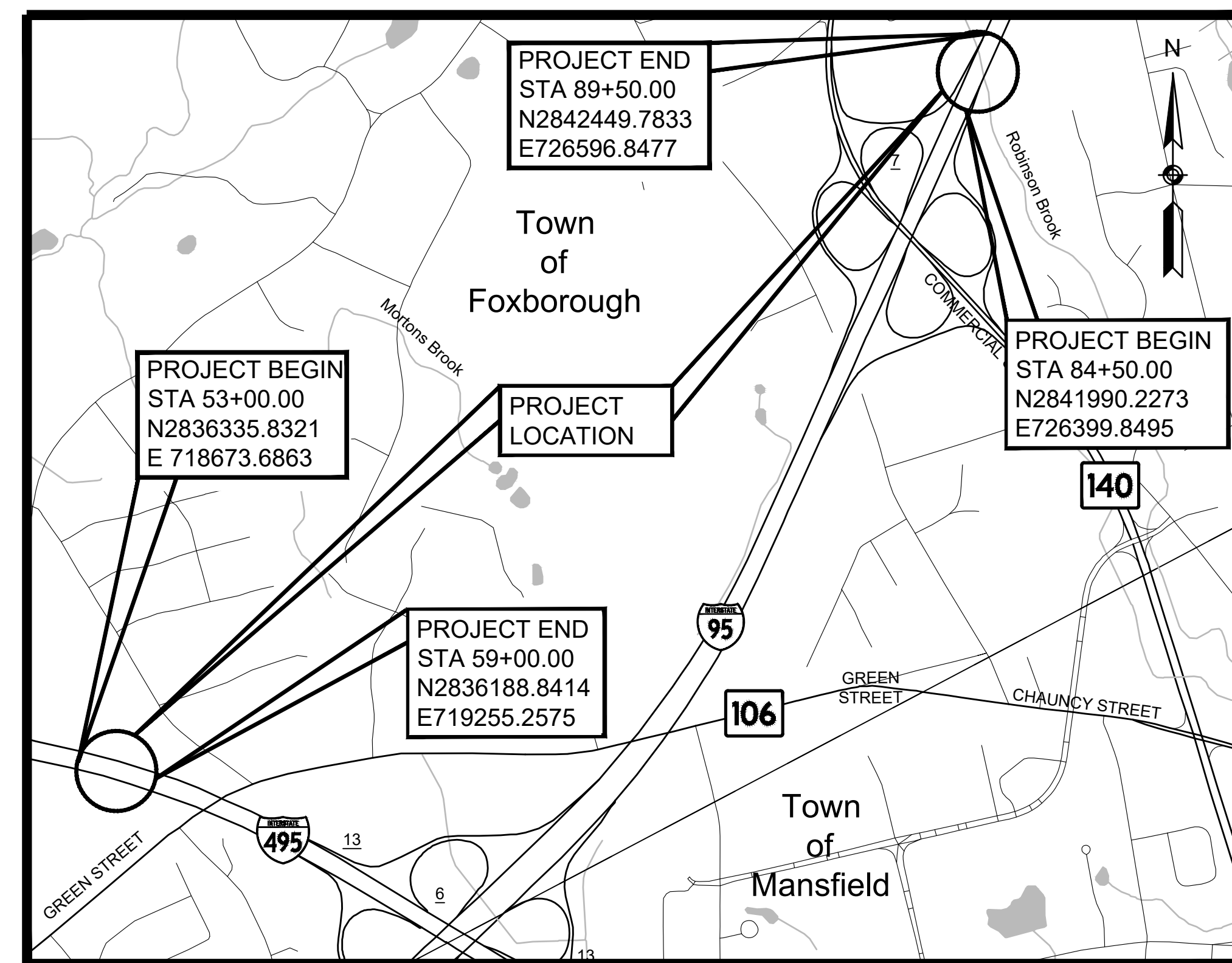
IN THE TOWN OF  
FOXBOROUGH  
NORFOLK COUNTY

FEDERAL AID PROJECT NO. -

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2022, AS AMENDED, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

## NOI SUBMITTAL

INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	GENERAL NOTES & DRAINAGE STRUCTURE DATA
3	LEGEND & ABBREVIATIONS
4	KEY PLAN - INTERSTATE 95
5	KEY PLAN - INTERSTATE 495
6	CONSTRUCTION PLAN - INTERSTATE 95
7	CONSTRUCTION PLAN - INTERSTATE 495
8-10	BMP SECTIONS - INTERSTATE 95
11	BMP PROFILE AND SECTIONS - INTERSTATE 495
12-14	CONSTRUCTION DETAILS

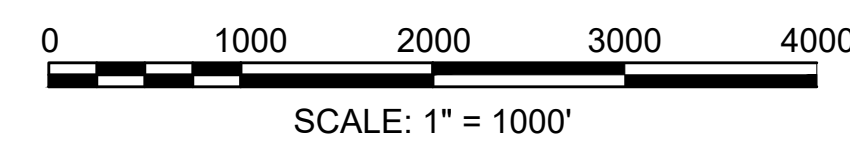


### DESIGN DESIGNATION (INTERSTATE 95)

DESIGN SPEED	70 MPH
ADT (2019)	115,935
K	8%
D	54%
FUNCTIONAL CLASSIFICATION	INTERSTATE

### DESIGN DESIGNATION (INTERSTATE 495)

DESIGN SPEED	70 MPH
ADT (2019)	98,484
K	9%
D	54%
FUNCTIONAL CLASSIFICATION	INTERSTATE



LENGTH OF PROJECT (INTERSTATE 95) = 500.00 FEET = 0.095 MILES

LENGTH OF PROJECT (INTERSTATE 495) = 600.00 FEET = 0.114 MILES

TOTAL LENGTH OF PROJECT = 1100.00 FEET = 0.209 MILES



 803 Summer Street Boston, Massachusetts 02127 www.bscgroup.com 617 896 4300	DATE	DESCRIPTION	REV #
	 Massachusetts Department of Transportation Highway Division		
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION APPROVED:	APPROVED		
DIVISION ADMINISTRATOR _____ DATE _____	CHIEF ENGINEER _____ DATE _____		

**FOXBOROUGH  
INTERSTATE 95 & INTERSTATE 495**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	14
PROJECT FILE NO.		612023	

**GENERAL NOTES & DRAINAGE  
STRUCTURE DATA  
NOTICE OF INTENT PLAN SET**

GENERAL NOTES

1. ALL EXISTING UTILITY CASTINGS THAT ARE TO REMAIN WITHIN AREAS TO BE REPAVED SHALL BE ADJUSTED TO LINE AND GRADE BY THE CONTRACTOR UNLESS OTHERWISE NOTED. ALL PRIVATE TELEPHONE, GAS, AND ELECTRICAL CASTINGS SHALL BE ADJUSTED BY OTHERS.
2. NO EXISTING PUBLIC UTILITY STRUCTURES SHALL BE ABANDONED AND/OR DISMANTLED WITHOUT THE AUTHORIZATION FROM THE ENGINEER.
3. THE LOCATIONS OF EXISTING SUBSURFACE UTILITIES SHOWN ON THE PLANS WERE COMPILED FROM AVAILABLE RECORD DRAWINGS AND ARE NOT WARRANTED TO BE CORRECT. THE LOCATIONS ARE APPROXIMATE ONLY AND IN SOME CASES MAY BE INCOMPLETE. THE CONTRACTOR SHALL NOTIFY ALL AGENCIES REQUIRED AND VERIFY THE LOCATIONS OF ALL EXISTING SUBSURFACE UTILITIES PRIOR TO PERFORMING ANY WORK.
4. PRIOR TO THE INSTALLATION OF PROPOSED UTILITIES, THE CONTRACTOR SHALL EXCAVATE TEST PITS AT LOCATIONS OF UTILITY CROSSINGS TO VERIFY DEPTHS OF EXISTING PIPES, CONDUITS OR OTHER FACILITIES AS DIRECTED BY THE ENGINEER.
5. IF THE CONTRACTOR DAMAGES UTILITY SERVICES, THEY SHALL IMMEDIATELY NOTIFY THE RESPECTIVE UTILITY COMPANY AND SHALL IMMEDIATELY REPLACE OR REPAIR, UNLESS INDICATED OTHERWISE BY THE RESPECTIVE UTILITY OWNER.
6. THE CONTRACTOR SHALL ENSURE THAT ALL ROADWAY RUNOFF SHALL BE DIRECTED TO CATCH BASINS.
7. THE CONTRACTOR SHALL VERIFY ALL OUTLET GRADES OF DRAINAGE STRUCTURES PRIOR TO CONSTRUCTING THE DRAINAGE IMPROVEMENTS.
8. THE CONTRACTOR SHALL SAWCUT TO THE FULL PAVEMENT DEPTH AT BOUNDARIES BETWEEN FULL DEPTH CONSTRUCTION AND EXISTING PAVEMENT.
9. BASE MAPPING FOR I-95 COMPILED FROM ON-THE-GROUND SURVEY PERFORMED BY BSC GROUP IN AUGUST 2021. BASE MAPPING FOR I-495 COMPILED AS PART OF MASSDOT PROJECT NO. 606176 WAS BASED UPON A COMBINATION OF ACTUAL FIELD SURVEY CONDUCTED BY BSC GROUP BETWEEN APRIL 2015 AND JULY 2015, AND FROM MASSGIS ORTHOPHOTOS. (HORIZ: NAD83, VERT NAVD88).
10. ALL AREAS OUTSIDE OF THE LIMIT OF WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S OWN EXPENSE, SUBJECT TO THE APPROVAL OF THE ENGINEER AND ACCEPTANCE OF THE PROPERTY OWNER.
11. ALL EXISTING TREES TO REMAIN SHALL BE PROTECTED FROM DAMAGE CAUSED BY CONTRACTOR OPERATIONS.
12. HORIZONTAL DATUM IS BASED ON NORTH AMERICAN DATUM (NAD) 1983.
13. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
14. ALL PROPOSED WORK SHALL BE AS APPROVED AND COORDINATED WITH MASSDOT DISTRICT 5 RESIDENT ENGINEER.
15. ALL PROPOSED DRAINAGE CONNECTIONS TO EXISTING STRUCTURES WILL BE INCLUDED IN THE COST OF INSTALLATION OF THE NEW PIPE OR STRUCTURE.
16. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT DIGSAFE TO MARK OUT UTILITIES WITHIN THE PROJECT AREA. 1-888-344-7233: 1-888-DIG-SAFE.
17. THE CONTRACTOR SHALL PROVIDE METHODS DURING DEWATERING OPERATIONS AND FOR STORM WATER RUNOFF NOT TO ALLOW SILT OR DEBRIS TO ENTER EXISTING DRAINAGE FACILITIES OR CREATE NUISANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING EXISTING OR NEW FACILITIES IF SILTATION OCCURS DUE TO THE CONTRACTOR'S OPERATIONS.
18. ALL NON-PRECAST CEMENT CONCRETE USED ON THIS PROJECT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI OR AS OTHERWISE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS.
19. ALL EXISTING DRAINAGE STRUCTURES AND PIPE TO REMAIN THAT CONVEY STORMWATER TO THE PROPOSED BMPS, CARRY FLOWS FROM THE PROPOSED BMPS, OR AS DIRECTED BY THE RESIDENT ENGINEER SHALL BE CLEANED AND SEDIMENT DISPOSED OF.
20. THE CONTRACTOR SHALL DISPOSE OF ALL WASTE MATERIAL IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS AT THEIR OWN EXPENSE IF NOT OTHERWISE SPECIFIED, OUTSIDE OF THE PROJECT LIMITS.
21. SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH MASSDOT REQUIREMENTS, THE 2009 MUTCD AS AMENDED AND THE SPECIAL PROVISIONS.
22. ALL UNPAVED AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE LOAMED AND SEEDED PRIOR TO THE END OF THE PROJECT.
23. EXISTING LUMEN TELECOMMUNICATION LINE WITHIN PROJECT LIMITS. CONTRACTOR SHALL CONTACT COMPANY PRIOR TO THE START OF CONSTRUCTION.
24. ALL EXISTING DRAINAGE STRUCTURES AND PIPES TO BE RETAINED UNLESS OTHERWISE NOTED.
25. PROVIDE JUTE MESH BELOW SEED MIX WITHIN BOTTOM OF SWALE TO 2-FT UP SWALE SIDE SLOPES.
26. MINIMIZE REMOVAL OF HEALTHY AND ESTABLISHED TREES AND SHRUBS WITHIN THE PROJECT LIMITS TO THE MAXIMUM EXTENT PRACTICABLE.
27. ALL CATCH BASINS WITHIN THE PROJECT LIMITS TO BE FURNISHED WITH A SILT SACK.

**DRAINAGE STRUCTURE DATA**

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	CB	88+31.25, 8.9' LT	217.86	-	214.57	ADJ CB
2	CB	87+68.77, 12.1' LT	217.79	-	214.80 (EXIST)	ADJ CB
3	DMH	87+69.86, 18.3' LT	217.00	214.27 (1) 214.3± (2)	214.27	PROP DMH
4	DMH	86+52.14, 40.3' LT	216.18	213.68 (3)	213.68	PROP DMH
5	FES	86+24.31, 66.8' LT	-	-	213.50	FLARED END
6	CB	87+70.32, 41.7' RT	218.19	-	214.19 (7) 214.09 (8)	ADJ CB
7	DMH	87+70.04, 45.6' RT	218.00	214.16 (6)	212.77± (EXIST) (SEE NOTE 4)	PROP DMH
8	LB	87+77.84, 47.0' RT	217.72	213.99 (6)	-	PROP LB
9	CB	88+32.55, 42.3' RT	217.98	-	213.93 (10) 213.83 (11)	ADJ CB
10	DMH	88+37.81, 46.4' RT	218.00	213.87 (9)	213.58± (EXIST) (SEE NOTE 4)	PROP DMH
11	LB	88+21.36, 47.8' RT	217.90	213.70 (9)	-	PROP LB
12	CB	88+94.14, 43.9' RT	218.23	213.70 (EXIST)	213.70 (EXIST) 213.60 (13)	ADJ CB
13	LB	88+72.04, 49.2' RT	217.50	213.50 (12)	-	PROP LB

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		CURB CUT TYPE
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS (ON-THE-GROUND SURVEY DATA)
		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		SEDIMENT CONTROL BARRIER
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		LIMIT OF WORK
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE
		CROSSWALK
		SOLID WHITE LINE (ALL SWL ARE TO BE 4" WIDE UNLESS DENOTED ON PLANS)
		SOLID YELLOW LINE
		BROKEN WHITE LINE
		BROKEN YELLOW LINE
		DOTTED WHITE LINE
		DOTTED YELLOW LINE
		DOTTED WHITE LINE EXTENSION
		DOTTED YELLOW LINE EXTENSION
		DOUBLE WHITE LINE
		DOUBLE YELLOW LINE
		12" YELLOW TRANSVERSE LINES @ 10' O.C. @ 45°

ABBREVIATIONS

GENERAL	DESCRIPTION
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CPP	CORRUGATED PLASTIC PIPE
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DMH	DRAINAGE MANHOLE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FES	FLARED END SECTION
FLDSTN	FIELDSTONE
FT	FOOT/FEET
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
O.C.	ON CENTER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY

FOXBOROUGH INTERSTATE 95 & INTERSTATE 495

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	14

PROJECT FILE NO. 612023

LEGEND & ABBREVIATIONS NOTICE OF INTENT PLAN SET

ABBREVIATIONS (cont.)

GENERAL	DESCRIPTION
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REFL.	RETROREFLECTIVE
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TP	TEST PIT
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

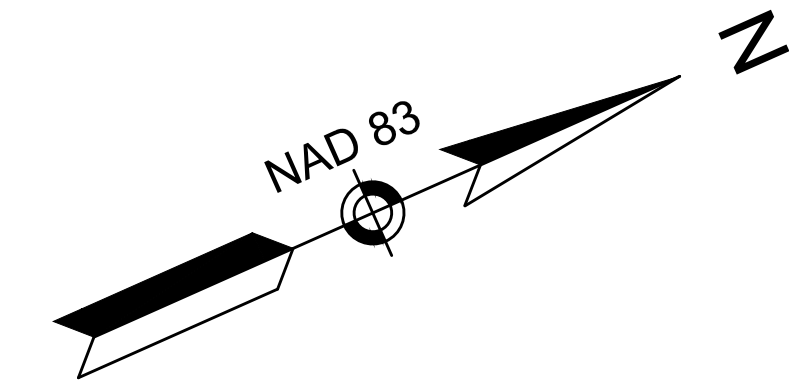
TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

**FOXBOROUGH  
INTERSTATE 95 & INTERSTATE 495**

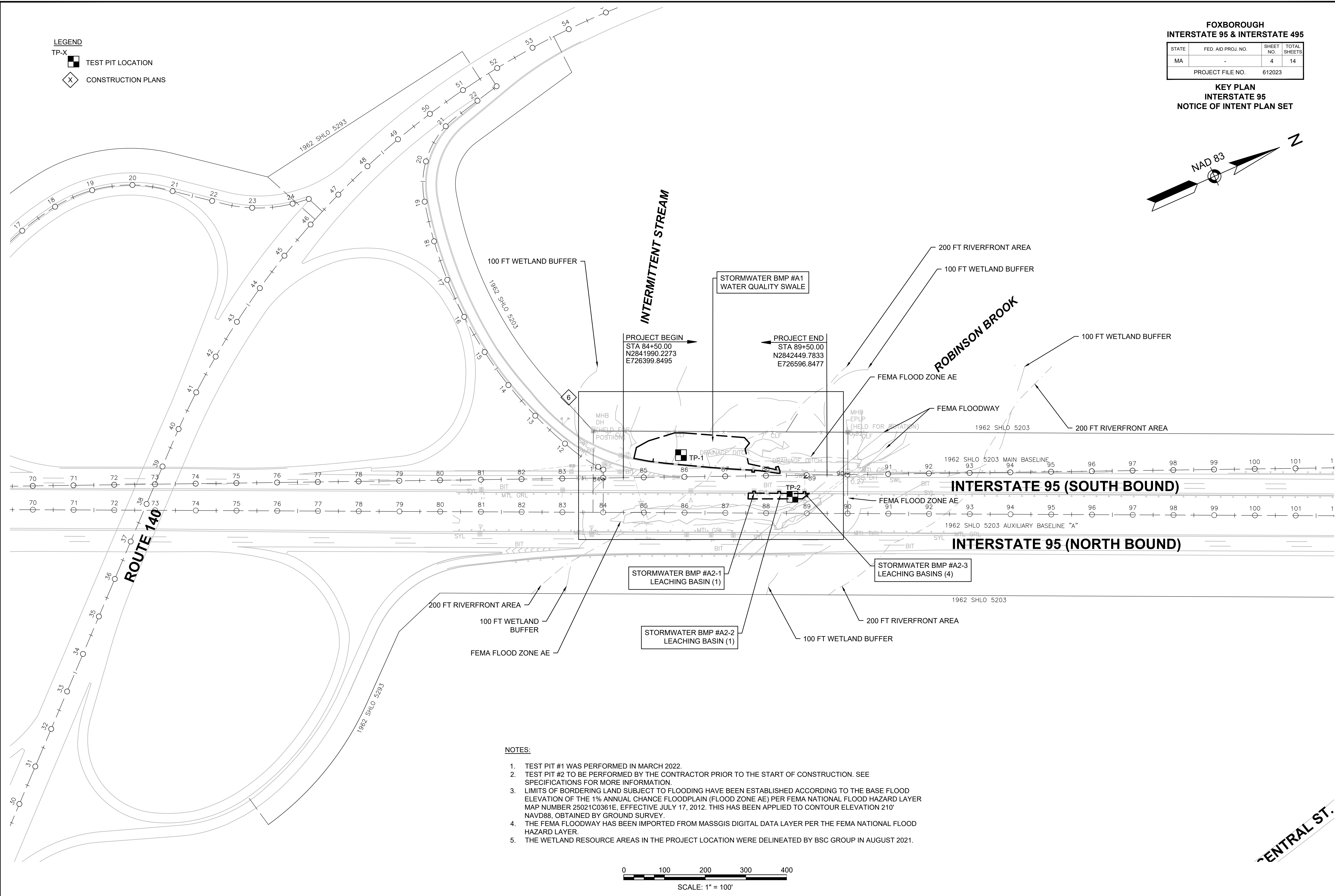
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	14
PROJECT FILE NO.		612023	

**KEY PLAN  
INTERSTATE 95  
NOTICE OF INTENT PLAN SET**



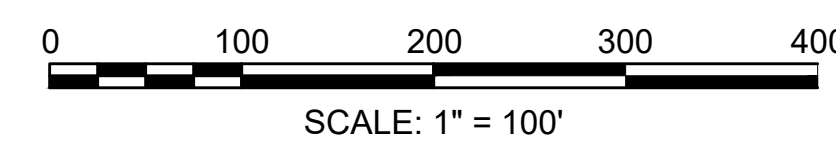
**LEGEND**

- TP-X TEST PIT LOCATION
- X CONSTRUCTION PLANS



**NOTES:**

1. TEST PIT #1 WAS PERFORMED IN MARCH 2022.
2. TEST PIT #2 TO BE PERFORMED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. SEE SPECIFICATIONS FOR MORE INFORMATION.
3. LIMITS OF BORDERING LAND SUBJECT TO FLOODING HAVE BEEN ESTABLISHED ACCORDING TO THE BASE FLOOD ELEVATION OF THE 1% ANNUAL CHANCE FLOODPLAIN (FLOOD ZONE AE) PER FEMA NATIONAL FLOOD HAZARD LAYER MAP NUMBER 25021C0361E, EFFECTIVE JULY 17, 2012. THIS HAS BEEN APPLIED TO CONTOUR ELEVATION 210' NAVD88, OBTAINED BY GROUND SURVEY.
4. THE FEMA FLOODWAY HAS BEEN IMPORTED FROM MASSGIS DIGITAL DATA LAYER PER THE FEMA NATIONAL FLOOD HAZARD LAYER.
5. THE WETLAND RESOURCE AREAS IN THE PROJECT LOCATION WERE DELINEATED BY BSC GROUP IN AUGUST 2021.



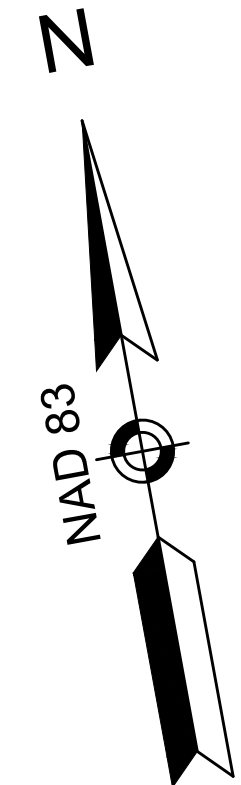
**CENTRAL ST.**



**FOXBOROUGH  
INTERSTATE 95 & INTERSTATE 495**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	14
PROJECT FILE NO.		612023	

**KEY PLAN & TEST PIT LOCATIONS  
INTERSTATE 495  
NOTICE OF INTENT PLAN SET**

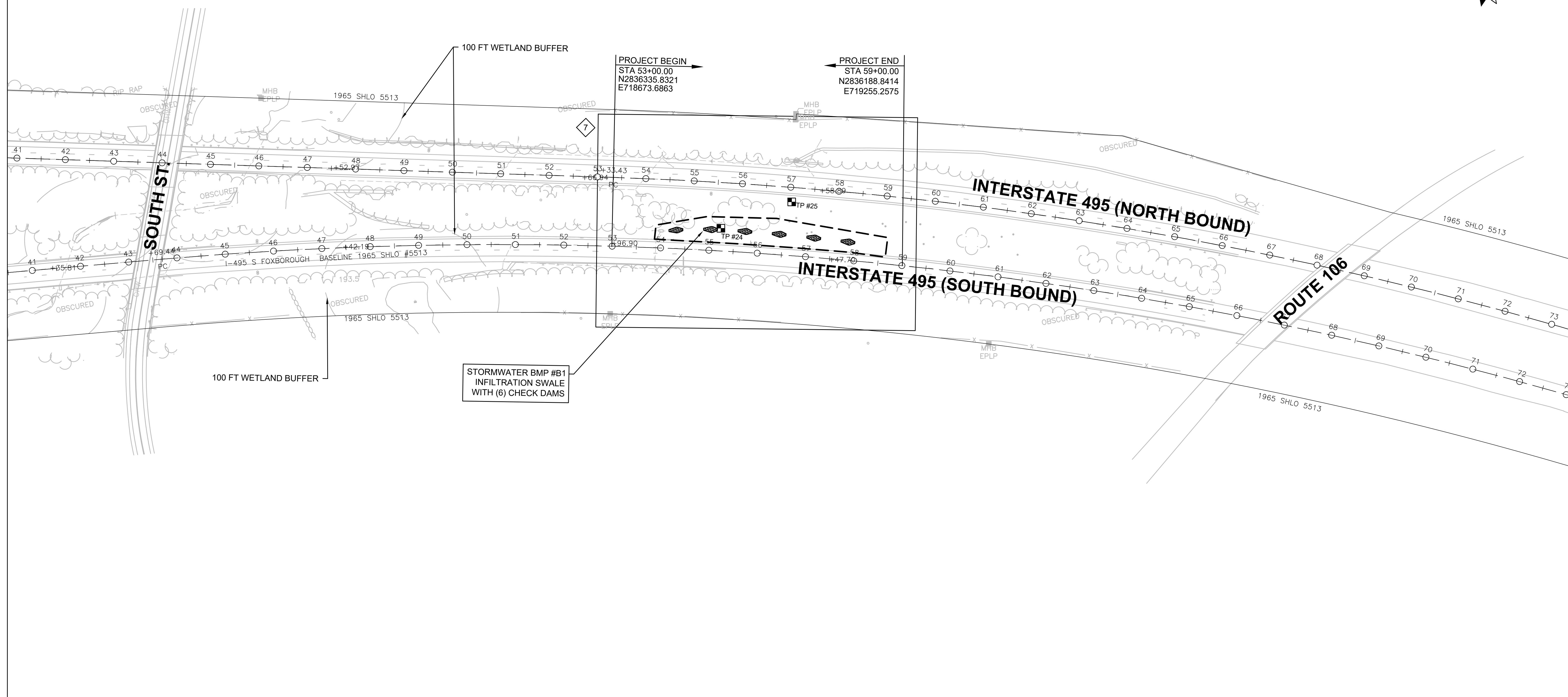


**LEGEND**

- TP-X TEST PIT LOCATION
- CONSTRUCTION PLANS

**NOTES:**

1. TEST PITS WERE PERFORMED IN NOVEMBER 2015 BY OTHERS AS PART OF MASSDOT PROJECT NO. 606176.
2. THE I-495 PROJECT LOCATION DELINEATION WAS PROVIDED BY MASSDOT AND DELINEATED BY OTHERS BETWEEN MAY 2015 AND JUNE 2015.

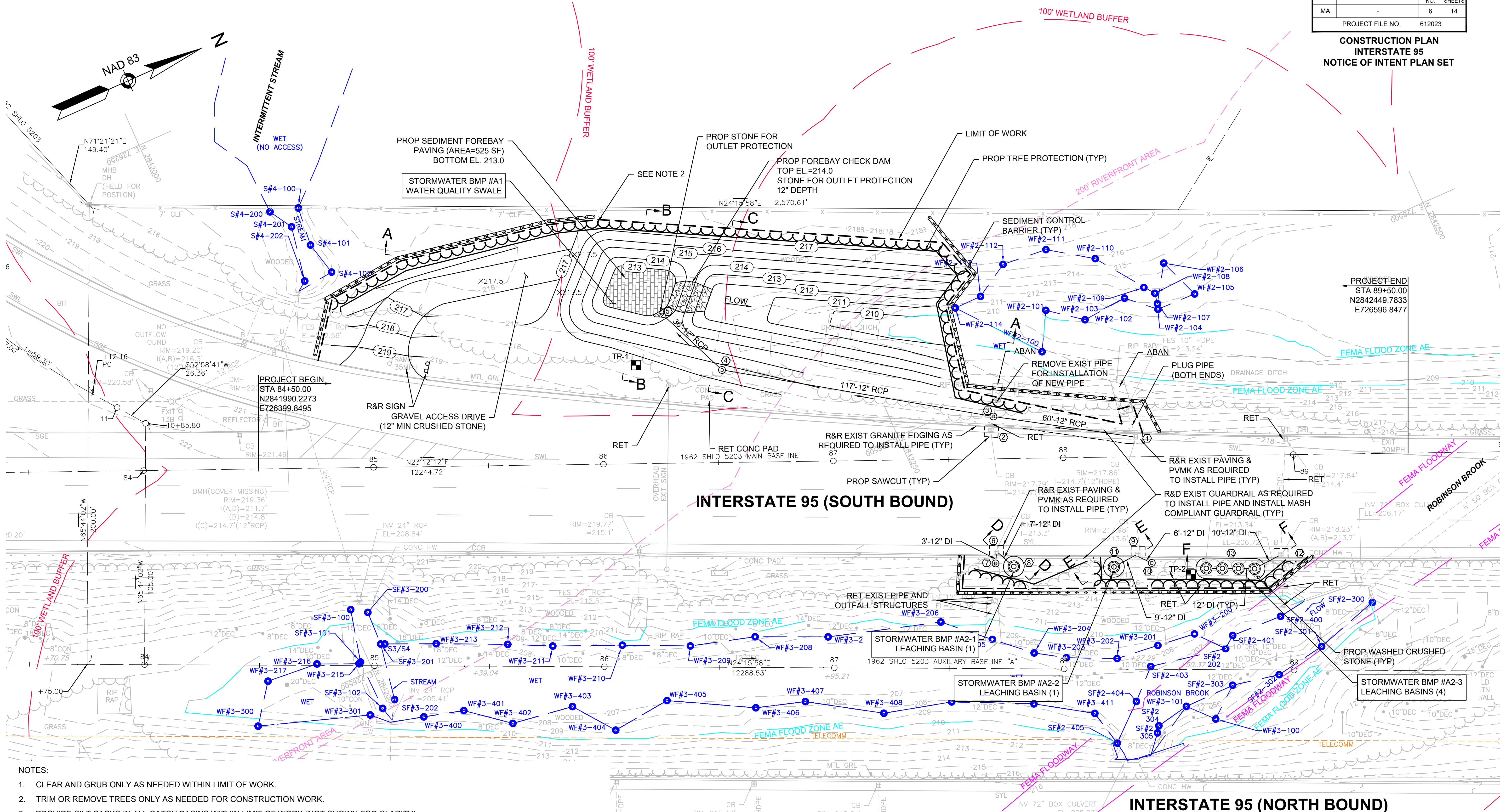


HIGHWAY GUARD DETAILS SEE BELOW  
 TRAFFIC SIGNAL CONDUIT NONE  
 WATER SUPPLY ALTERATIONS NONE  
 DRAINAGE DETAILS SEE BELOW

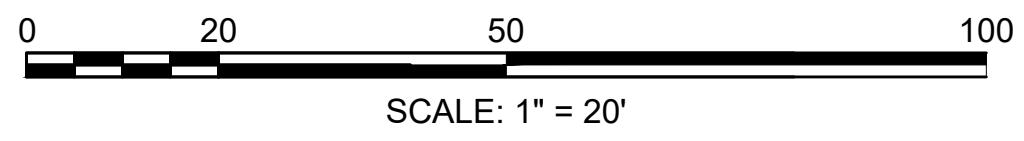
**FOXBOROUGH**  
**INTERSTATE 95 & INTERSTATE 95**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		6	14
PROJECT FILE NO.		612023	

**CONSTRUCTION PLAN**  
**INTERSTATE 95**  
**NOTICE OF INTENT PLAN SET**



- NOTES:**
- CLEAR AND GRUB ONLY AS NEEDED WITHIN LIMIT OF WORK.
  - TRIM OR REMOVE TREES ONLY AS NEEDED FOR CONSTRUCTION WORK.
  - PROVIDE SILT SACKS IN ALL CATCH BASINS WITHIN LIMIT OF WORK (NOT SHOWN FOR CLARITY).
  - CONTRACTOR TO PERFORM A TEST PIT PRIOR TO INSTALLATION OF THE PROPOSED DMH TO CONFIRM THE INVERT OF THE EXISTING PIPE. CONTRACTOR TO CONTACT THE ENGINEER TO CONFIRM CONNECTION WILL WORK.
  - SEE SHEET 8, 9 AND 10 FOR BMP SECTIONS.
  - LIMITS OF BORDERING LAND SUBJECT TO FLOODING HAVE BEEN ESTABLISHED ACCORDING TO THE BASE FLOOD ELEVATION OF THE 1% ANNUAL CHANCE FLOODPLAIN (FLOOD ZONE AE) PER FEMA NATIONAL FLOOD HAZARD LAYER MAP NUMBER 25021C0361E, EFFECTIVE JULY 17, 2012. THIS HAS BEEN APPLIED TO CONTOUR ELEVATION 210' NAVD88, OBTAINED BY GROUND SURVEY.
  - THE FEMA FLOODWAY HAS BEEN IMPORTED FROM MASSGIS DIGITAL DATA LAYER PER THE FEMA NATIONAL FLOOD HAZARD LAYER.
  - THE WETLAND RESOURCE AREAS IN THE PROJECT LOCATION WERE DELINEATED BY BSC GROUP IN AUGUST 2021.
  - SEE SHEET 2 FOR DRAINAGE STRUCTURE TABLE.



HIGHWAY GUARD DETAILS

TRAFFIC SIGNAL CONDUIT

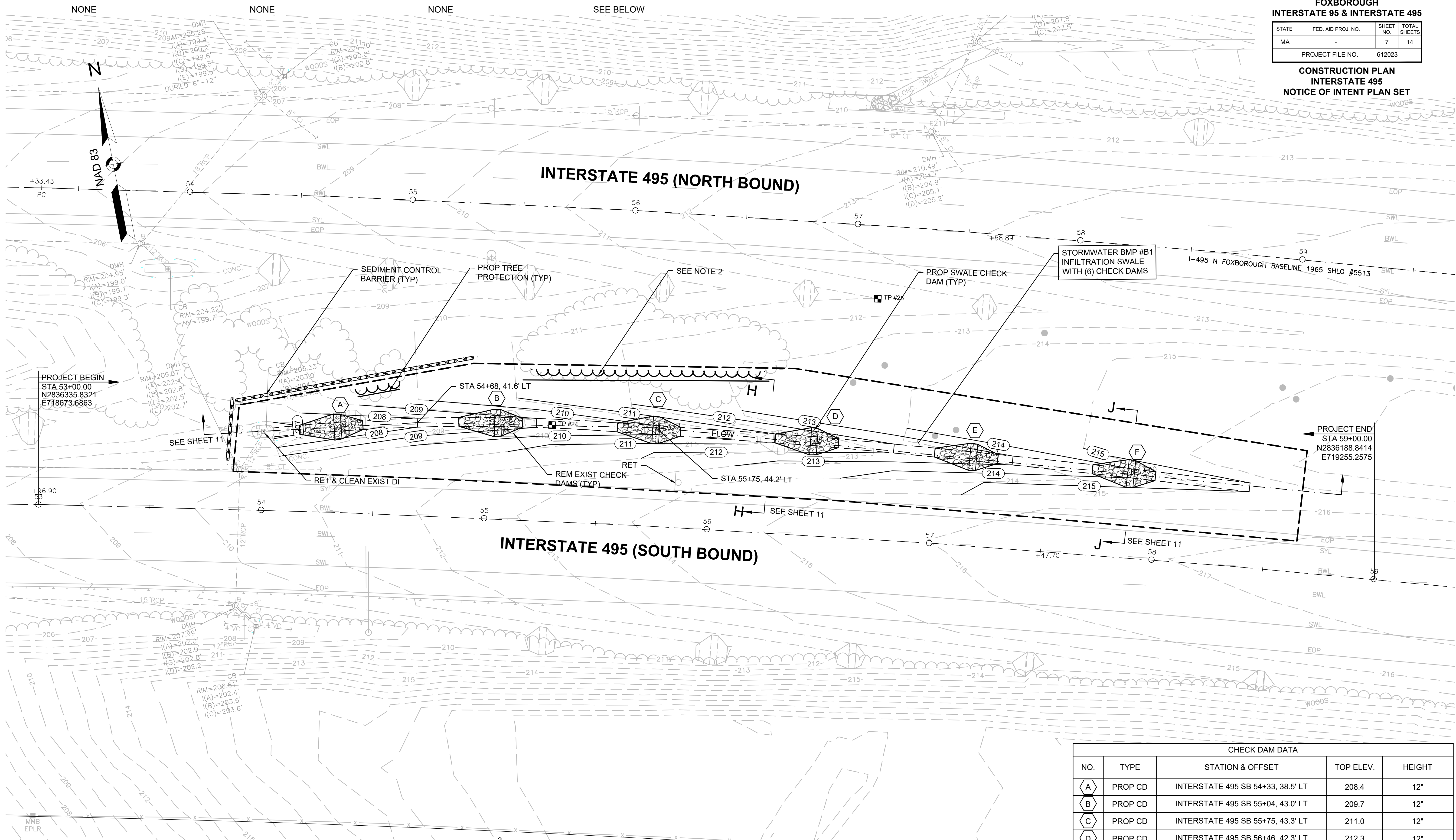
WATER SUPPLY ALTERATIONS

DRAINAGE DETAILS

FOXBOROUGH  
INTERSTATE 95 & INTERSTATE 495

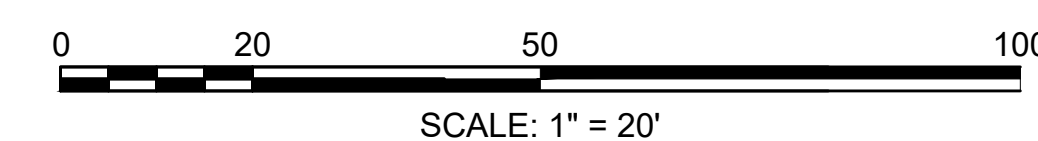
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		7	14
PROJECT FILE NO.		612023	

CONSTRUCTION PLAN  
INTERSTATE 495  
NOTICE OF INTENT PLAN SET



CHECK DAM DATA				
NO.	TYPE	STATION & OFFSET	TOP ELEV.	HEIGHT
A	PROP CD	INTERSTATE 495 SB 54+33, 38.5' LT	208.4	12"
B	PROP CD	INTERSTATE 495 SB 55+04, 43.0' LT	209.7	12"
C	PROP CD	INTERSTATE 495 SB 55+75, 43.3' LT	211.0	12"
D	PROP CD	INTERSTATE 495 SB 56+46, 42.3' LT	212.3	12"
E	PROP CD	INTERSTATE 495 SB 57+17, 39.5' LT	213.7	12"
F	PROP CD	INTERSTATE 495 SB 57+88, 37.8' LT	215.0	12"

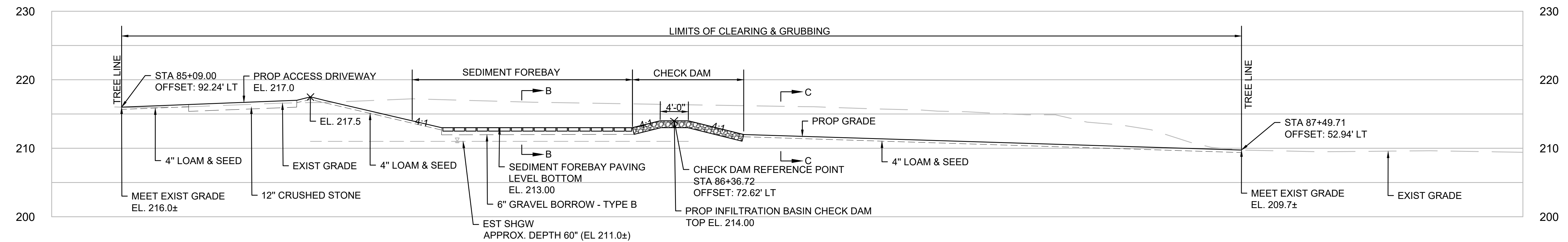
- NOTES:
- CLEAR AND GRUB ONLY AS NEEDED WITHIN LIMIT OF WORK.
  - TRIM OR REMOVE TREES ONLY AS NEEDED FOR CONSTRUCTION WORK.
  - PROVIDE SILT SACKS IN ALL CATCH BASINS WITHIN LIMIT OF WORK (NOT SHOWN FOR CLARITY).
  - THE I-495 PROJECT LOCATION DELINEATION WAS PROVIDED BY MASSDOT AND DELINEATED BY OTHERS BETWEEN MAY 2015 AND JUNE 2015.



**FOXBOROUGH  
INTERSTATE 95 & INTERSTATE 495**

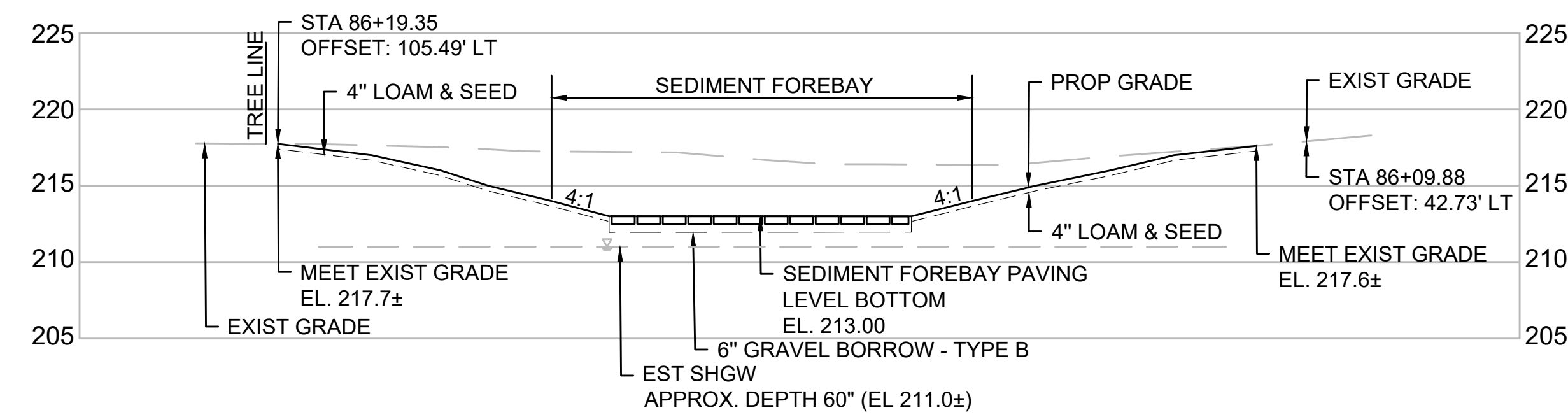
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	14
PROJECT FILE NO.		612023	

**BMP SECTIONS  
BMP #A1 WATER QUALITY SWALE  
NOTICE OF INTENT PLAN SET**



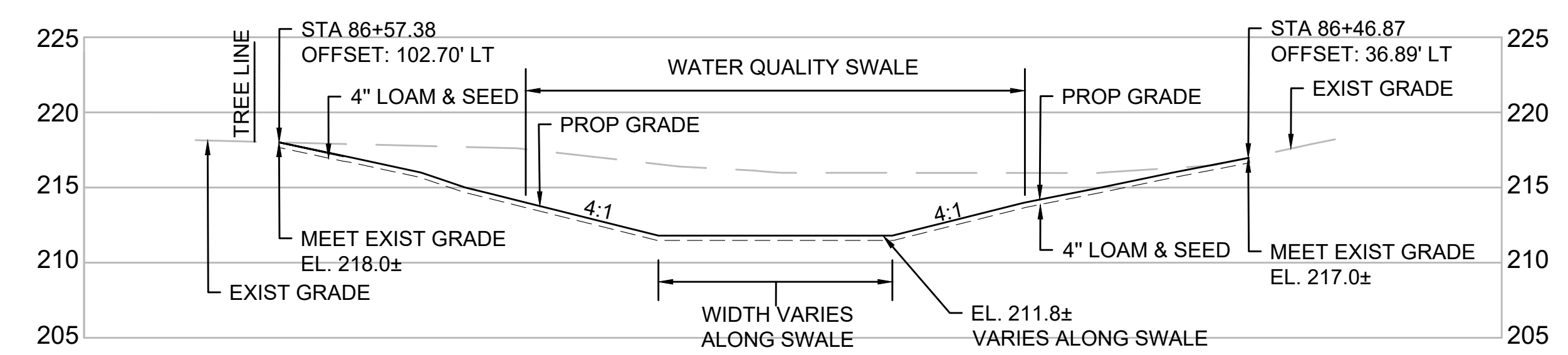
**SECTION A-A: STORMWATER BMP #A1 SEDIMENT FOREBAY**

SEE SHEET 6 FOR PLAN VIEW AND SHEET 12 FOR CONSTRUCTION DETAILS  
SCALE: 1" = 8'



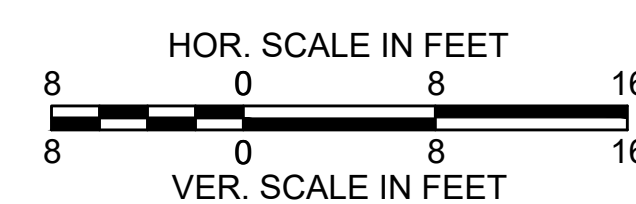
**SECTION B-B: BMP #A1 - SEDIMENT FOREBAY**

SEE SHEET 6 FOR PLAN VIEW AND SHEET 12 FOR CONSTRUCTION DETAILS  
SCALE: 1" = 8'



**SECTION C-C: BMP #A1 - WATER QUALITY SWALE**

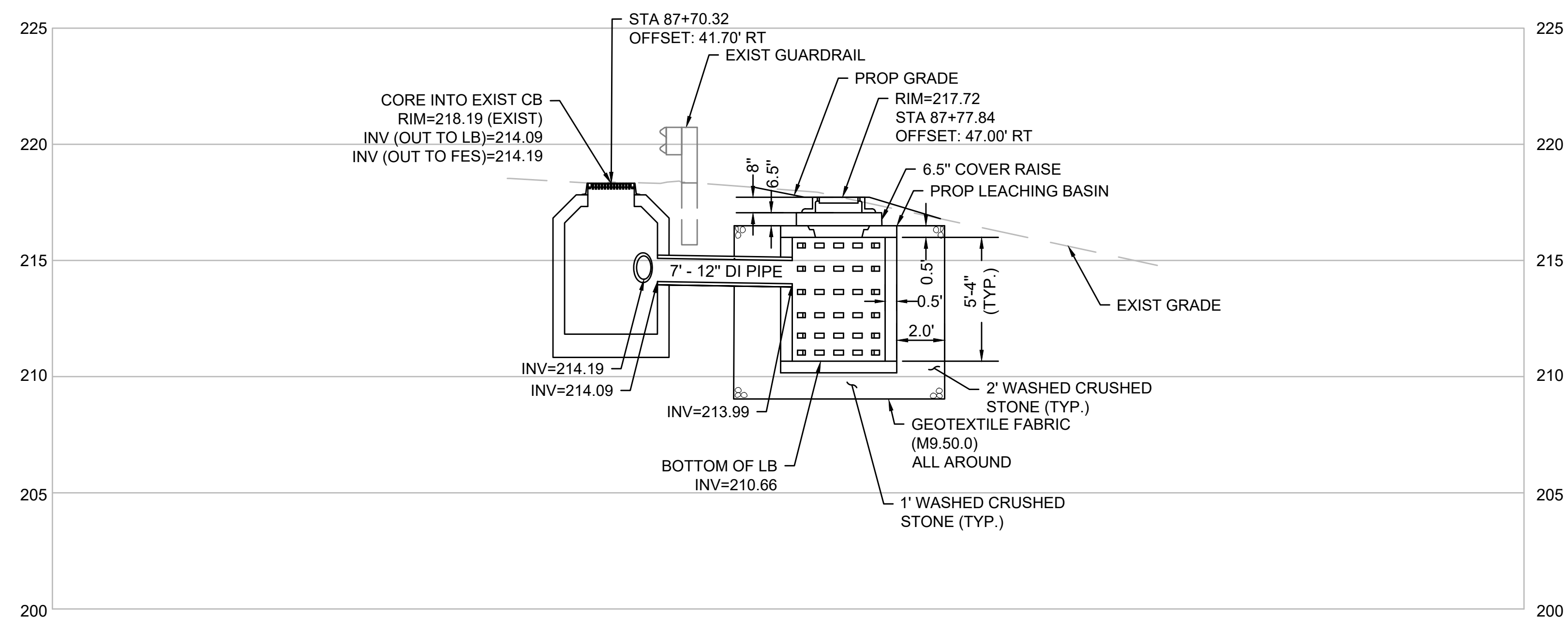
SEE SHEET 6 FOR PLAN VIEW AND SHEET 12 FOR CONSTRUCTION DETAILS  
SCALE: 1" = 8'



**FOXBOROUGH  
INTERSTATE 95 & INTERSTATE 495**

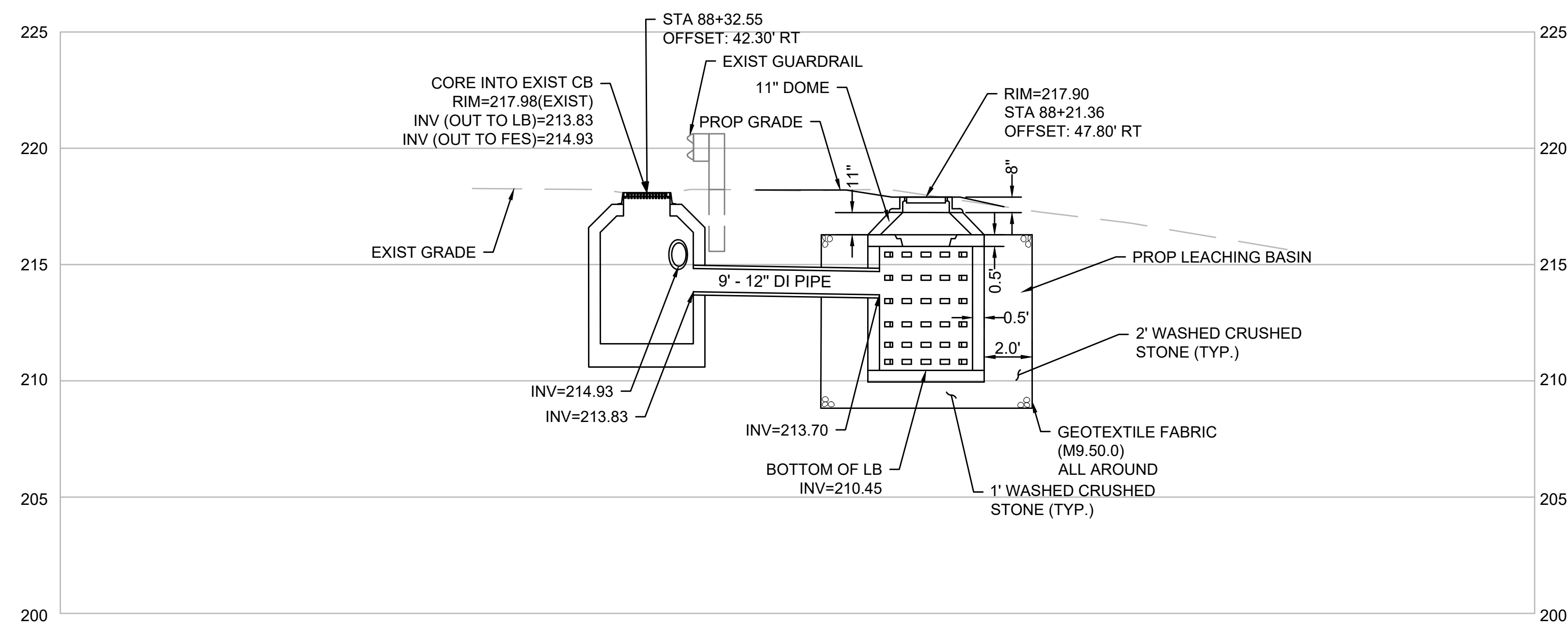
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	14
PROJECT FILE NO.		612023	

**BMP SECTIONS  
BMP #A2 LEACHING BASINS  
NOTICE OF INTENT PLAN SET**



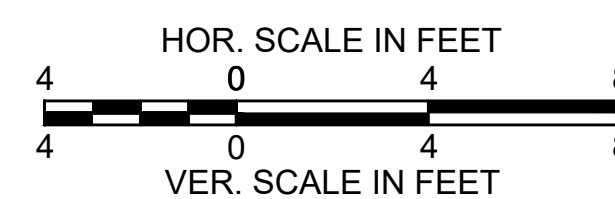
**SECTION D-D: BMP #A2-1 - LEACHING BASIN**

SEE SHEET 6 FOR PLAN VIEW AND SHEET 12 FOR CONSTRUCTION DETAILS  
SCALE: 1" = 4'



**SECTION E-E: BMP #A2-2 - LEACHING BASIN**

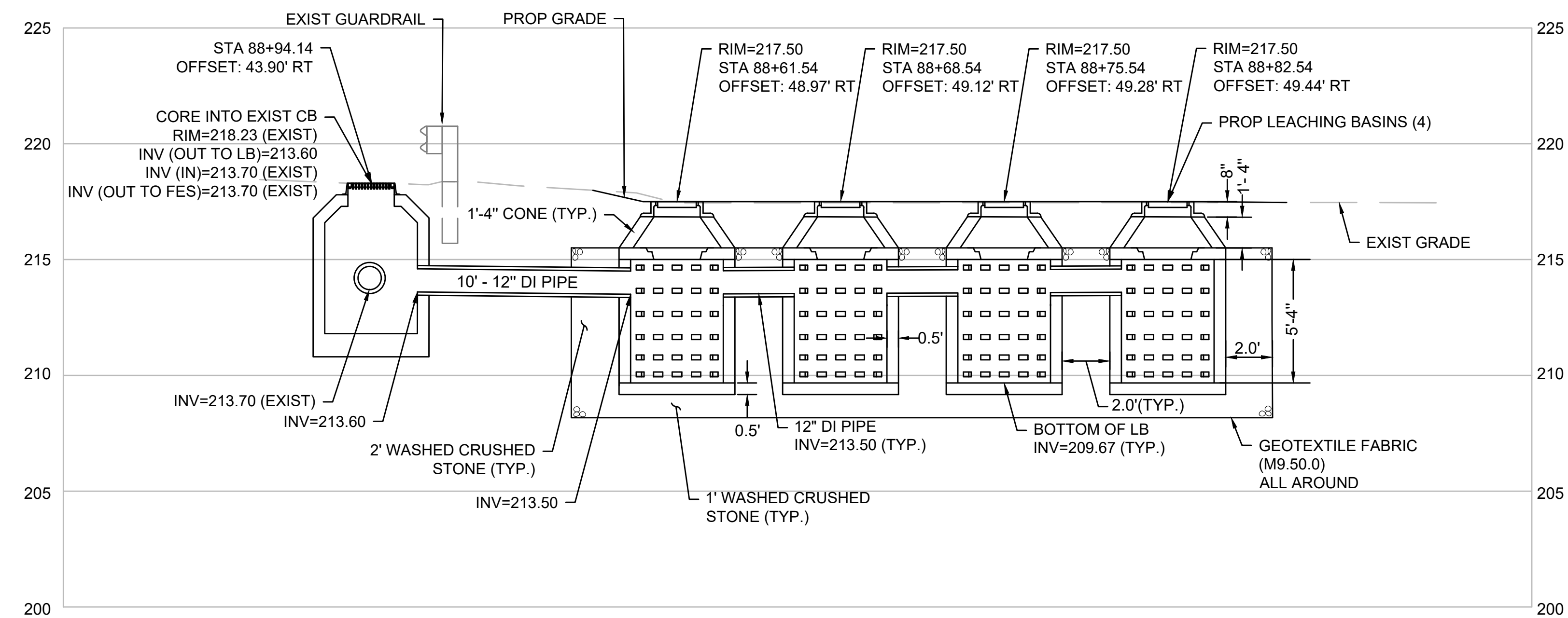
SEE SHEET 6 FOR PLAN VIEW AND SHEET 12 FOR CONSTRUCTION DETAILS  
SCALE: 1"=4'



FOXBOROUGH  
INTERSTATE 95 & INTERSTATE 495

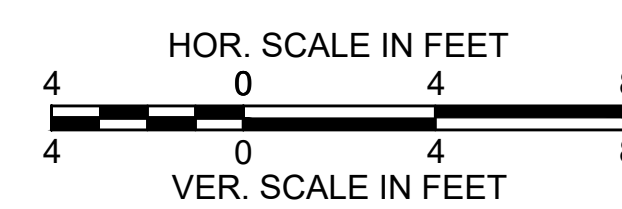
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	14
PROJECT FILE NO.		612023	

BMP SECTIONS  
BMP #A2 LEACHING BASINS  
NOTICE OF INTENT PLAN SET



**SECTION F-F: BMP #A2-3 - LEACHING BASINS**

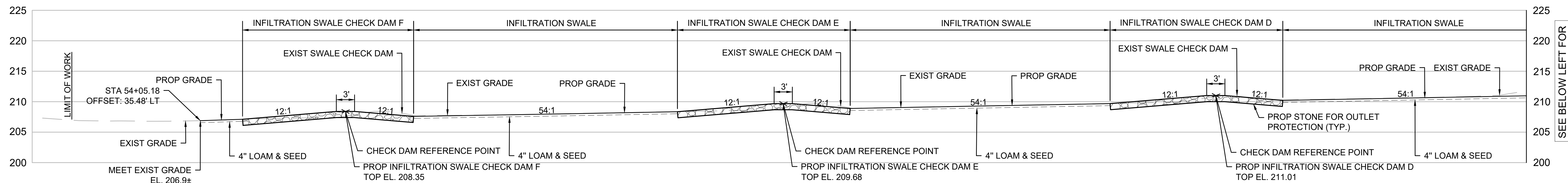
SEE SHEET 6 FOR PLAN VIEW AND SHEET 12 FOR CONSTRUCTION DETAILS  
SCALE: 1" = 4'



**FOXBOROUGH  
INTERSTATE 95 & INTERSTATE 495**

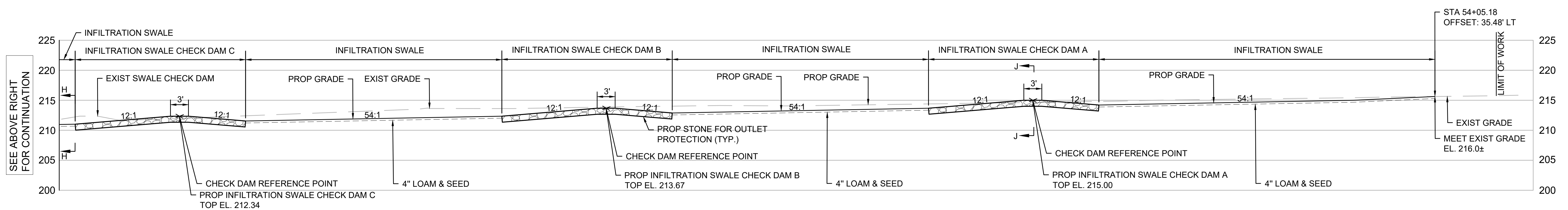
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	14
PROJECT FILE NO.		612023	

**BMP PROFILE & SECTIONS  
BMP #B1 INFILTRATION SWALE  
NOTICE OF INTENT PLAN SET**



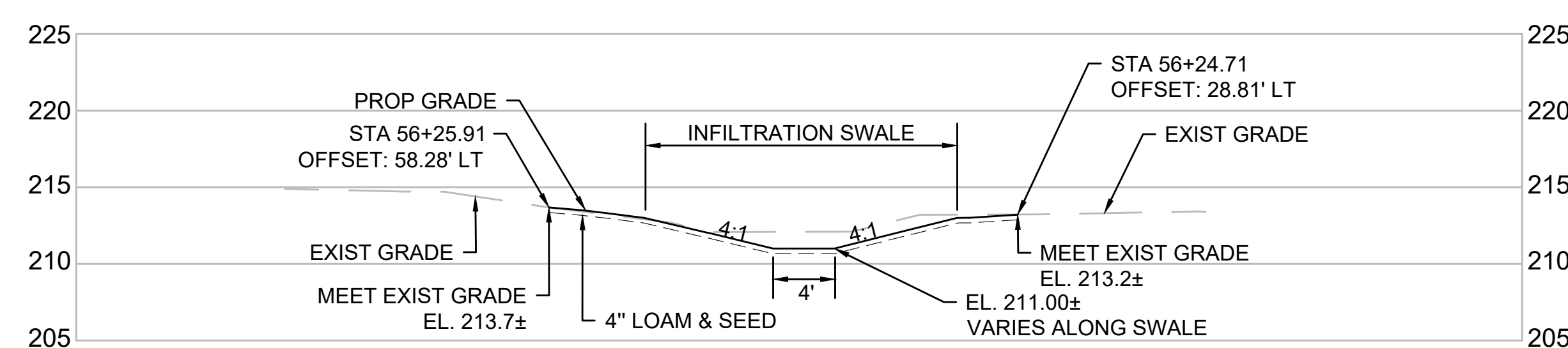
**BMP #B1 PROFILE - INFILTRATION SWALE WITH CHECK DAMS**

SEE SHEET 7 FOR PLAN VIEW AND SHEET 13 FOR CONSTRUCTION DETAILS  
SCALE: 1" = 8'



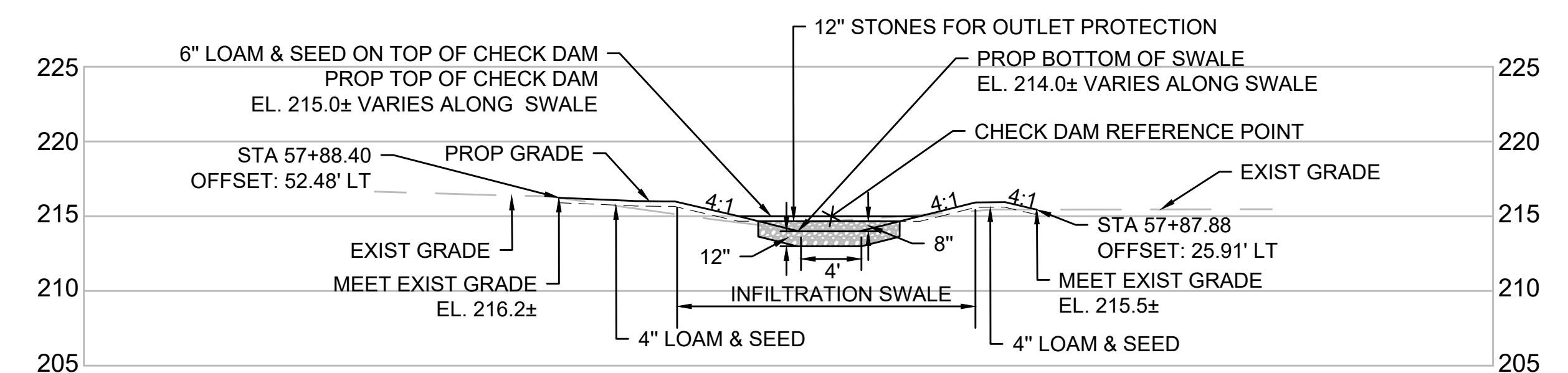
**BMP #B1 PROFILE - INFILTRATION SWALE WITH CHECK DAMS**

SEE SHEET 7 FOR PLAN VIEW AND SHEET 13 FOR CONSTRUCTION DETAILS  
SCALE: 1" = 8'



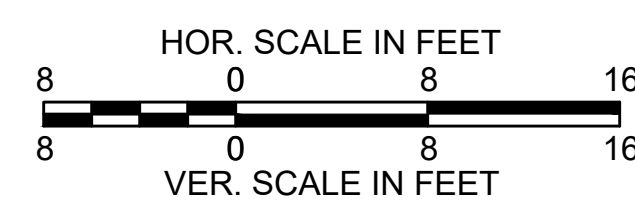
**SECTION H-H: BMP #B1 - INFILTRATION SWALE WITH CHECK DAMS**

SEE SHEET 7 FOR PLAN VIEW AND SHEET 13 FOR CONSTRUCTION DETAILS  
SCALE: 1" = 8'

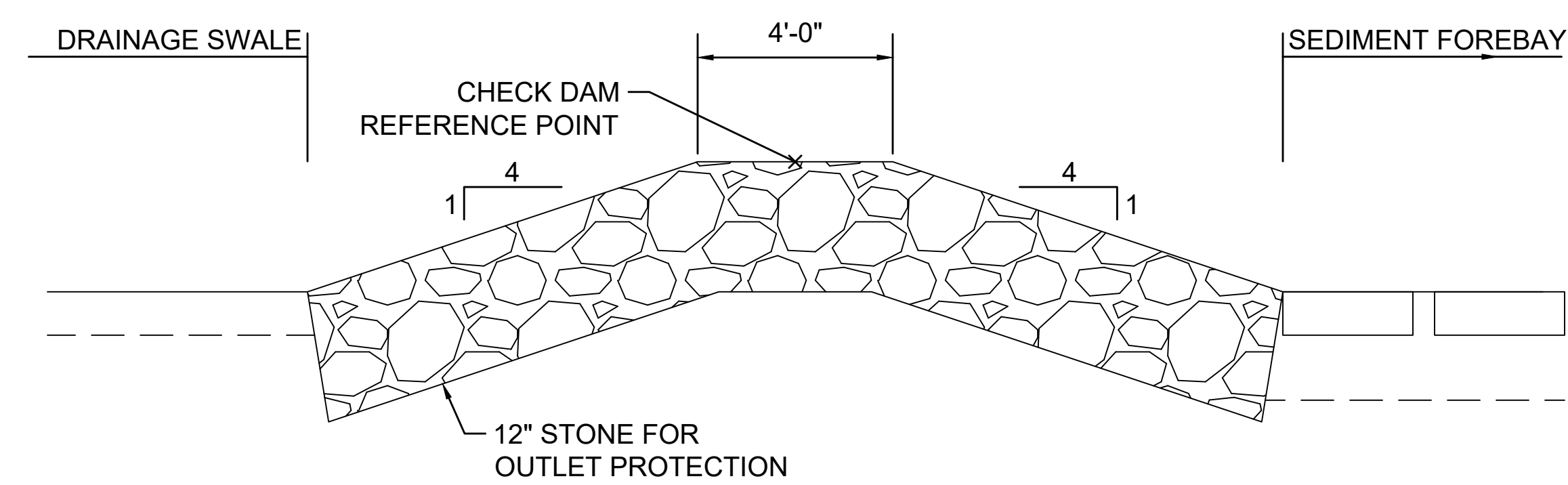


**SECTION J-J: BMP #B1 - INFILTRATION SWALE CHECK DAM**

SEE SHEET 7 FOR PLAN VIEW AND SHEET 13 FOR CONSTRUCTION DETAILS  
SCALE: 1" = 8'



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	14
PROJECT FILE NO.		612023	

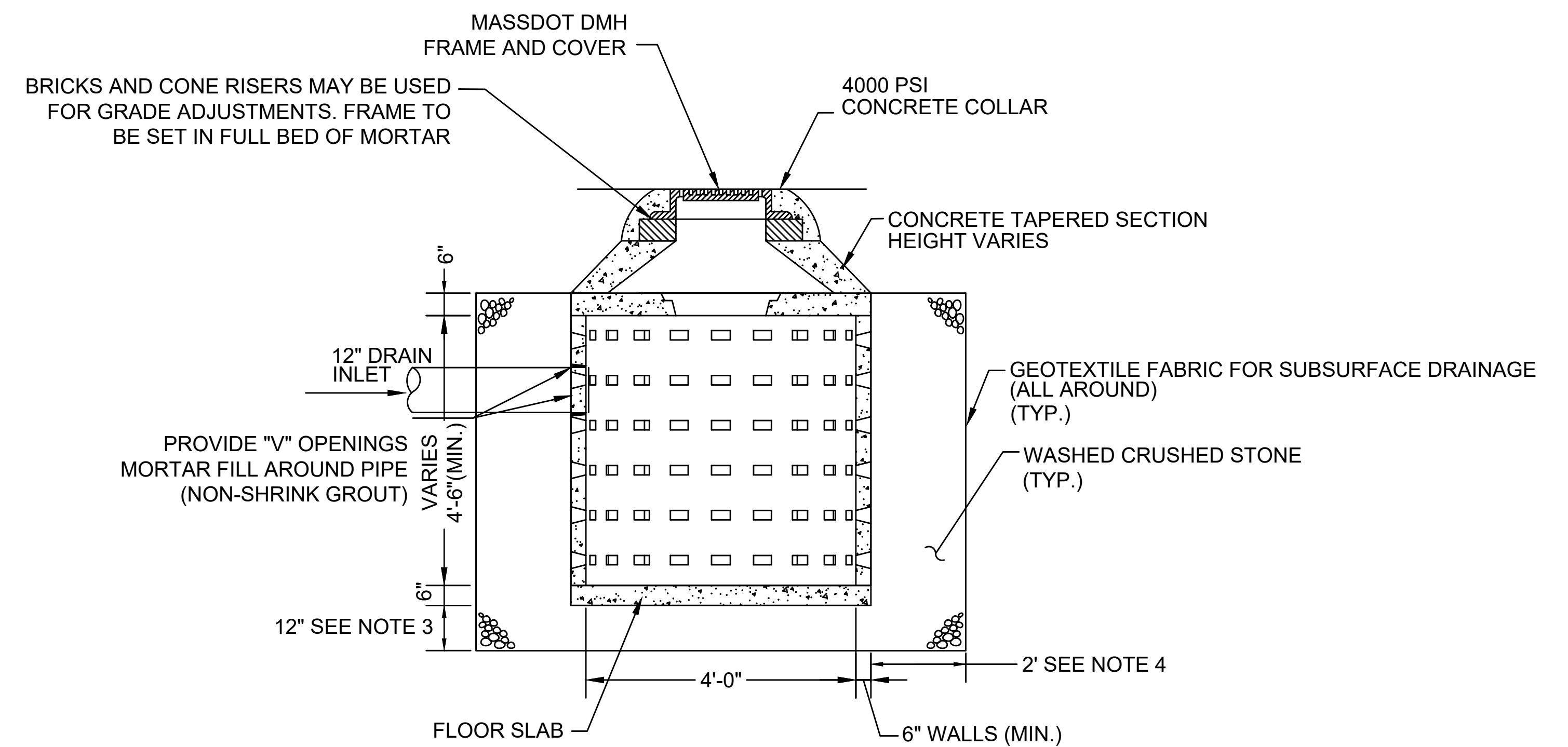


**FOREBAY CHECK DAM DETAIL(BMP #A1)**

NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY THAT THE DIFFERENCE BETWEEN CHECK DAM REFERENCE POINT ELEVATION AND ADJACENT ROADWAY ELEVATION IS NOT LESS THAN 1-FOOT. IF FIELD CONDITIONS DO NOT RESULT IN 1-FOOT ELEVATION DIFFERENCE BETWEEN PROVIDED CHECK DAM REFERENCE POINT AND ADJACENT ROADWAY ELEVATION AT EDGE OF PAVEMENT, CONTRACTOR SHALL NOTIFY ENGINEER.
2. 12:1 SLOPE. STEEPER TRANSVERSE SLOPES ARE PERMISSIBLE (3:1 MAXIMUM) WITH LONGITUDINAL ROADSIDE BARRIERS, AREAS OUTSIDE THE CLEAR ZONE, OR ON LOW SPEED FACILITIES.



**PRECAST CONCRETE LEACHING BASIN DETAIL(BMP #A2)**

NOT TO SCALE

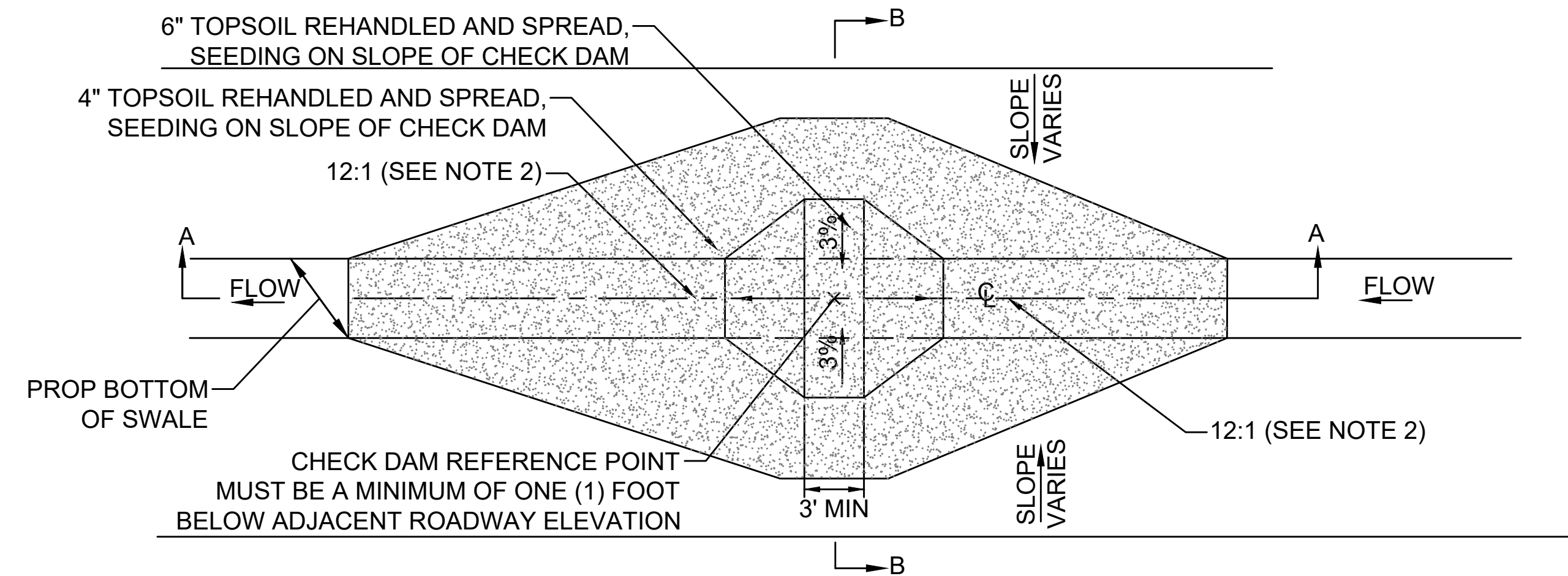
NOTES:

1. 4 FOOT DIAMETER (MIN.) PRECAST HEAVY DUTY DRYWELL (DESIGN H-20 LOADING)
2. BACKFILL FOR FULL DEPTH OF BASIN EXCAVATION TO BE WASHED CRUSHED STONE.
3. THE LEACHING BASIN SHALL BE PLACED ON A 12" UNIFORM DEPTH OF COMPACTED CRUSHED STONE TO FORM A FIRM FOUNDATION.
4. WASHED CRUSHED STONE SURROUNDING LEACHING BASIN TO BE WRAPPED IN NON-WOVEN GEOTEXTILE FABRIC FOR SEPARATION (MASSDOT STANDARD PAY ITEM 698.3).
5. IMPERMEABLE LINER TO BE INSTALLED AROUND STONE ON THE DOWNSLOPE SIDE, SEE SPECIFICATIONS FOR DETAILS.

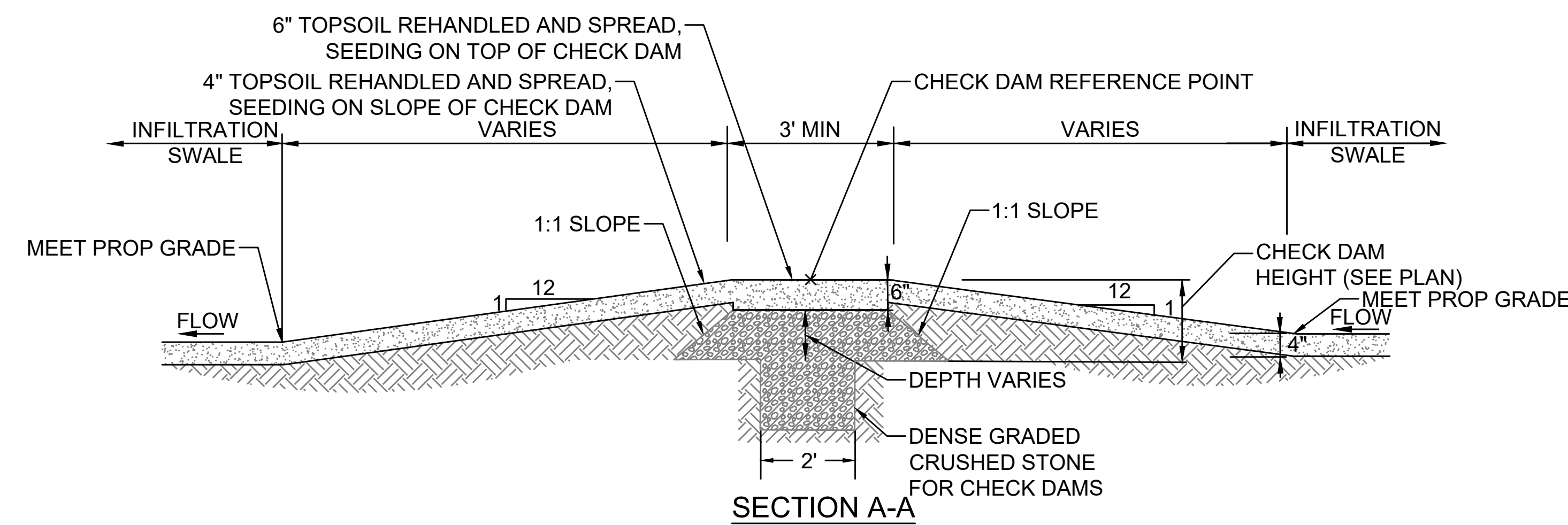


STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	14
PROJECT FILE NO.		612023	

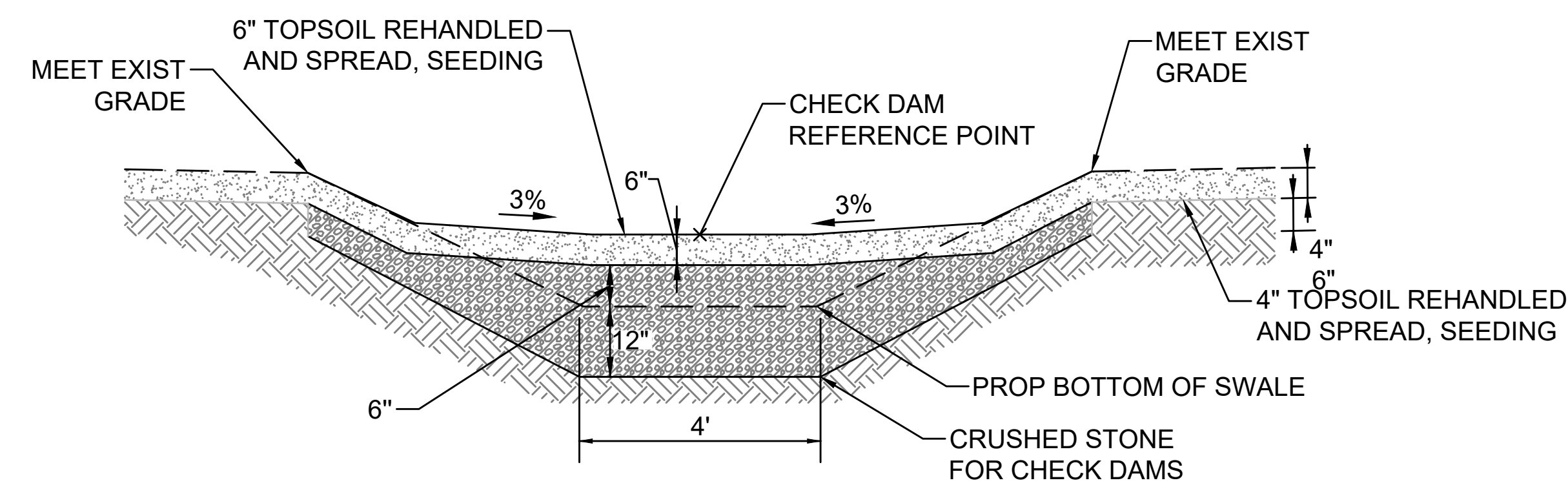
CONSTRUCTION DETAILS  
NOTICE OF INTENT PLAN SET



PLAN VIEW



SECTION A-A



SECTION B-B

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY THAT THE DIFFERENCE BETWEEN CHECK DAM REFERENCE POINT ELEVATION AND ADJACENT ROADWAY ELEVATION IS NOT LESS THAN 1-FOOT. IF FIELD CONDITIONS DO NOT RESULT IN 1-FOOT ELEVATION DIFFERENCE BETWEEN PROVIDED CHECK DAM REFERENCE POINT AND ADJACENT ROADWAY ELEVATION AT EDGE OF PAVEMENT, CONTRACTOR SHALL NOTIFY ENGINEER.
2. 12:1 SLOPE. STEEPER TRANSVERSE SLOPES ARE PERMISSIBLE (3:1 MAXIMUM) WITH LONGITUDINAL ROADSIDE BARRIERS, AREAS OUTSIDE THE CLEAR ZONE, OR ON LOW SPEED FACILITIES.

SWALE CHECK DAM DETAIL (BMP #B1)

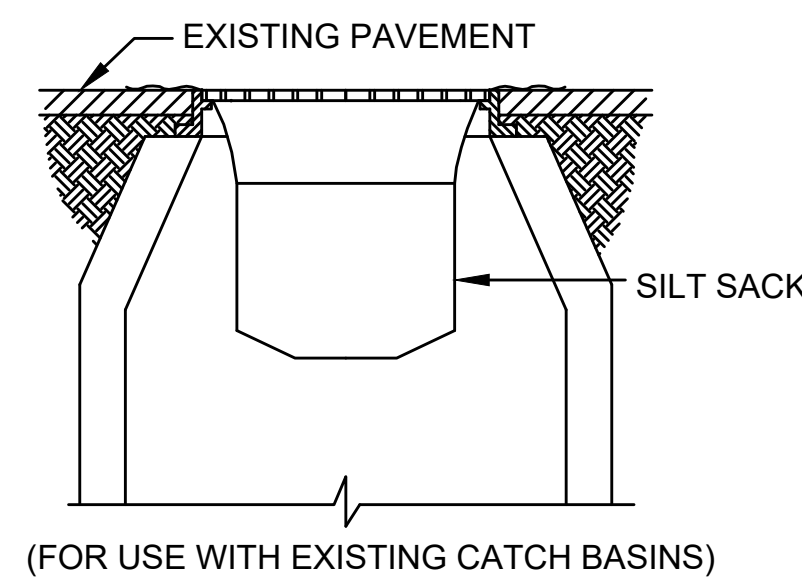
NOT TO SCALE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	14
PROJECT FILE NO.		612023	

**CONSTRUCTION DETAILS  
NOTICE OF INTENT PLAN SET**

**NOTE:**

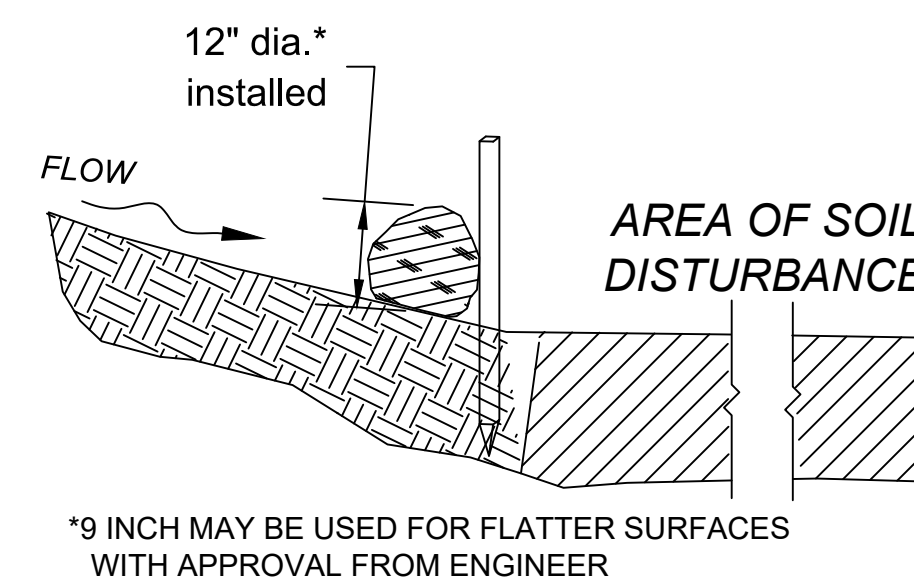
SILT SACKS TO BE PLACED IN ALL CATCH BASINS IN THE VICINITY OF NEW CONSTRUCTION. CATCH BASINS ARE TO BE PROTECTED AS SHOWN. INSPECTION AND MAINTENANCE SHOULD BE PERFORMED AT A MINIMUM WEEKLY, OR AFTER SIGNIFICANT RAIN EVENTS, OR AS REQUIRED AND REPLACED IF NECESSARY.



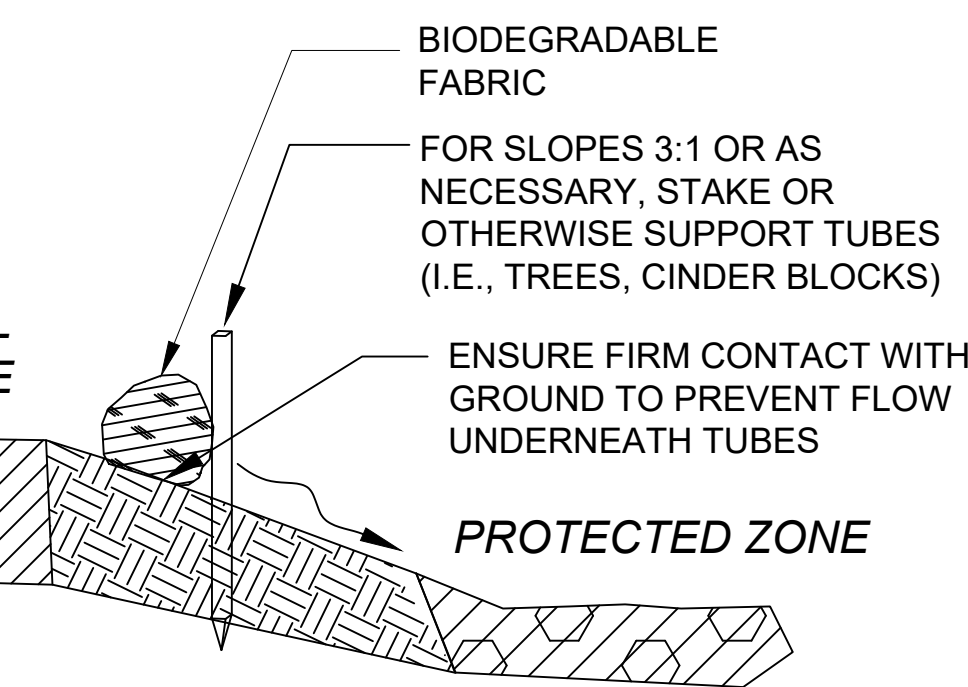
**SILT SACK INLET PROTECTION**

SCALE: NONE

**REDUCE HIGH WATER FLOW ONTO WORK ZONE**



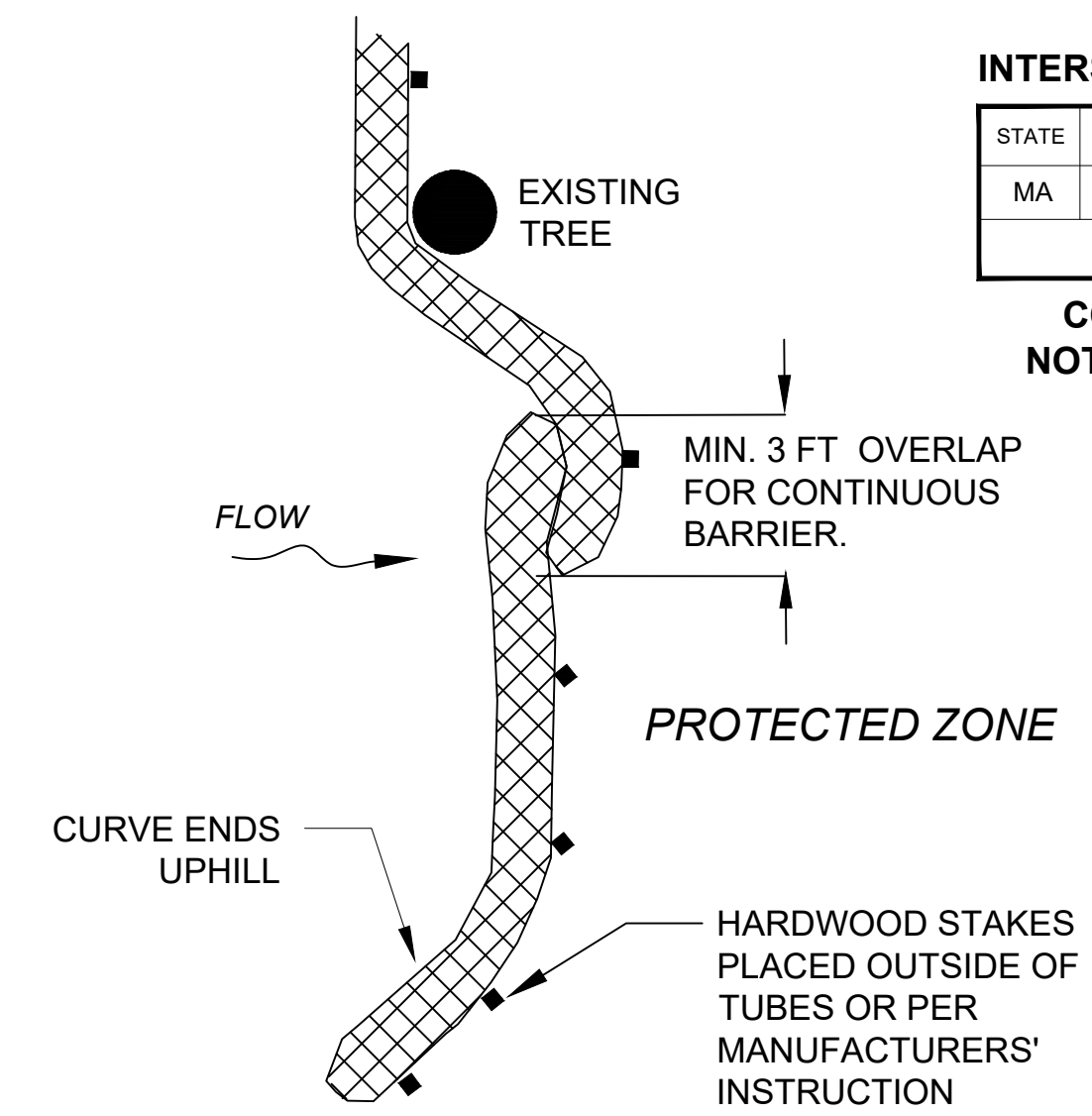
**CAPTURE SEDIMENT AND PREVENT FLOW OFF SITE**



**SECTION**

**SEDIMENT BARRIER - COMPOST FILTER TUBES**

NOT TO SCALE



PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

PLACE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE

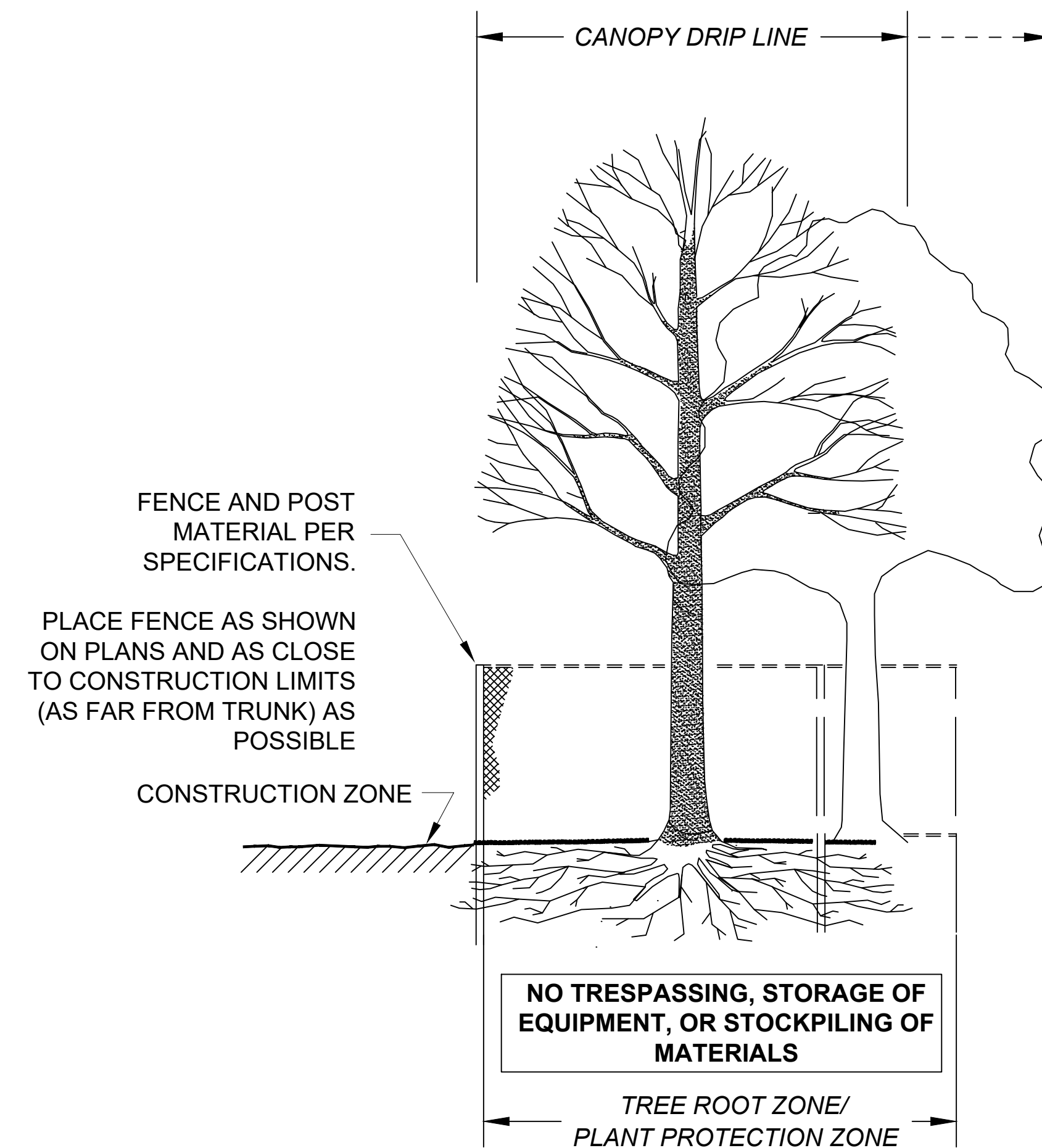
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

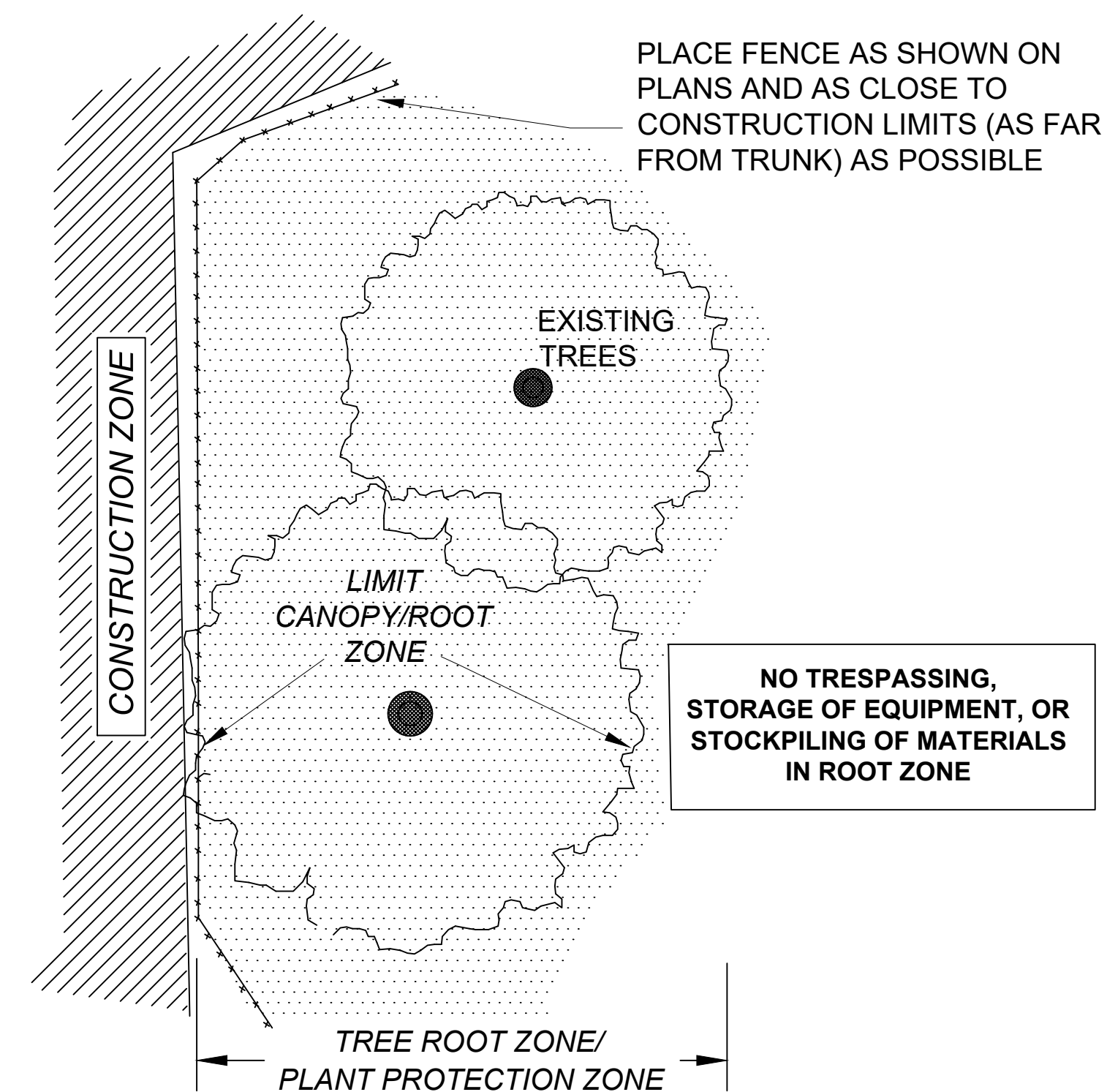
**PLAN VIEW**

**COMPOST FILTER TUBE**

NOT TO SCALE



**SECTION - FENCE PROTECTION OF ROOT ZONE**



**PLAN VIEW - FENCE PROTECTION OF ROOT ZONE**

**TREE PROTECTION - ROOT ZONE**

NOT TO SCALE