Reconstruction and Expansion of Route I-495/Route 1A
Wrentham, Massachusetts

Request for Determination of Applicability

MassDOT Project #603739

July 6, 2022

Submitted by:

Massachusetts Department of Transportation

Highway Division (MassDOT)

Contents

Cover Letters

Jacobs

July 6, 2022

Darryl Luce, Conservation Agent
Wrentham Conservation Commission
79 South Street
Wrentham, MA 02093

RE: Request for Determination of Applicability
MassDOT I-495 and Route 1A Reconstruction Project
Wrentham, Massachusetts

Dear Mr. Luce:

In accordance with the Massachusetts Wetlands Protection Act (M.G.L. Chapter 131, Section 40) and the implementing regulations (310 CMR 10.00), Jacobs Engineering (Jacobs), on behalf of Massachusetts Department of Transportation (MassDOT) has prepared this Request for Determination of Applicability (RDA) and supporting documentation to perform roadway reconstruction along I-495 and Route 1A in Wrentham, MA. The Project was designed to avoid direct impacts to wetlands and waterbodies. Please note that MassDOT is exempt from notifying abutters under 310 CMR 10.05(4)a. As an Agency of the Commonwealth, MassDOT is also not subject to local bylaws and fees, and peer review fees.

If you have any questions about the project, please feel free to contact me at kyle.purdy@jacobs.com or (518) 598-8242.

Sincerely,

Kyle Purdy, CPESC
Jacobs

Enclosures: 2 copies of RDA
2 full size copies of Site Plans

CC: Melissa Lenker, MassDOT Highway Division

Jacobs

July 6, 2022

MassDEP – Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347

RE: Request for Determination of Applicability
MassDOT I-495 and Route 1A Reconstruction Project
Wrentham, Massachusetts

Dear MassDEP:

In accordance with the Massachusetts Wetlands Protection Act (M.G.L. Chapter 131, Section 40) and the implementing regulations (310 CMR 10.00), Jacobs Engineering (Jacobs), on behalf of Massachusetts Department of Transportation (MassDOT), has prepared this Request for Determination of Applicability (RDA) and supporting documentation to perform roadway reconstruction along I-495 and Route 1A in Wrentham, MA. The Project was designed to avoid direct impacts to wetlands and waterbodies. Please note that MassDOT is exempt from notifying abutters under 310 CMR 10.05(4)a. As an Agency of the Commonwealth, MassDOT is also not subject to local bylaws and fees, and peer review fees.

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Sincerely,

Kyle Purdy, CPESC
Jacobs

Enclosures: 1 copy of RDA

CC: Melissa Lenker, MassDOT Highway Division
Town of Wrentham Conservation Commission

WPA 1 Form

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

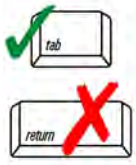
Wrentham
City/Town

WPA Form 1- Request for Determination of Applicability

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

A. General Information

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



1. Applicant:

Massachusetts Department of Transportation - Highway Div. (Name) | melissa.lenker@state.ma.us (E-Mail Address)

10 Park Plaza, Room 7360 (Mailing Address)

Boston (City/Town) | MA (State) | 02116 (Zip Code)

(978) 429-1772 (Phone Number) | (Fax Number (if applicable))

2. Representative (if any):

Jacobs Engineering Group (Firm)

Kyle Purdy (Contact Name) | kyle.purdy@jacobs.com (E-Mail Address)

120 Saint James Avenue, 5th Floor (Mailing Address)

Boston (City/Town) | MA (State) | 02116 (Zip Code)

(518) 598-8242 (Phone Number) | (Fax Number (if applicable))

B. Determinations

1. I request the Wrentham (Conservation Commission) make the following determination(s). Check any that apply:

☐ a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.

☐ b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.

☒ c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.

☐ d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Name of Municipality

☐ e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).

C. Project Description

1. a. Project Location (use maps and plans to identify the location of the area subject to this request):

I-495 and Route 1A	Wrentham
Street Address	City/Town
N/A	N/A
Assessors Map/Plat Number	Parcel/Lot Number

b. Area Description (use additional paper, if necessary):

The Project is located in the Town of Wrentham, Massachusetts. The majority of the area to be impacted by the proposed activities consists of the previously cleared and maintained I-495 and Route 1A ROWs. The remaining portions of the Project are a mixed use of commercial, residential, and industrial properties; including the Wrentham Village Premium Outlets parking lot.

c. Plan and/or Map Reference(s):

MassDOT I-495 and Route 1A Reconstruction Project	6/29/2022
Title	Date
Title	Date
Title	Date

2. a. Work Description (use additional paper and/or provide plan(s) of work, if necessary):

The Project will improve Wrentham's multi-modal network and be consistent with MassDOT's Healthy Transportation Policy Directive (P-13-0001) and their Complete Streets standards for state roadways (E-20-001). Specifically, the proposed work in the buffer zone to BVW and the Bank on an intermittent stream consists of installing erosion controls, grading, repaving, and adding curbing and guardrail. See the attached narrative for additional details.

C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

Certain project activities such as repaving, and drainage improvements are considered minor activities within the buffer zone and are exempt from regulation under 310 CMR 10.02 (2)(b)(2)(p).

3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

☐ Single family house on a lot recorded on or before 8/1/96

☐ Single family house on a lot recorded after 8/1/96

☐ Expansion of an existing structure on a lot recorded after 8/1/96

☐ Project, other than a single-family house or public project, where the applicant owned the lot before 8/7/96

☐ New agriculture or aquaculture project

☐ Public project where funds were appropriated prior to 8/7/96

☐ Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision

☐ Residential subdivision; institutional, industrial, or commercial project

☐ Municipal project

☐ District, county, state, or federal government project

☐ Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)

D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

Massachusetts Department of Transportation - Highway Division
Name

10 Park Plaza
Mailing Address

Boston
City/Town

MA
State

02116
Zip Code

Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

Melissa Lenker
Signature of Applicant

06/29/2022
Date

Kyle Purdy
Signature of Representative (if any)

06/29/2022
Date

Acronyms and Abbreviations

BLSF	Bordering Land Subject to Flooding
BMPs	Best Management Practice
BVW	Bordering Vegetated Wetlands
CMR	Code of Massachusetts Regulations
CVP	Certified Vernal Pool
FEMA	Federal Emergency Management Agency
MAHW	mean annual high water
MassDEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
MassGIS	Massachusetts Bureau of Geographic Information
NHESP	Massachusetts Natural Heritage and Endangered Species Program
NWI	National Wetland Inventory
ORW	Outstanding Resource Water
Project	Reconstruction and Expansion of I-495 and Route 1
PVP	Potential Vernal Pool
RDA	Request for Determination of Applicability
ROW	right-of-way
Site	MassDOT's ROW, I-495 and Route 1A, Wrentham, Massachusetts
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WPA	Massachusetts Wetlands Protection Act

1. Project Description

1.1 Introduction

The Massachusetts Department of Transportation (MassDOT), submits this Request for Determination of Applicability (RDA) and supporting documentation in accordance with the Massachusetts Wetlands Protection Act (WPA) (M.G.L. Chapter 131, Section 40) and the implementing regulations (310 Code of Massachusetts Regulations (CMR) 10.00) for work within the buffer zone to a Bordering Vegetated Wetland (BVW). The proposed activities include the reconstruction and expansion of the Interstate 495 (I-495) and Route 1A intersection (Project) located in the Town of Wrentham, Massachusetts (Site). The proposed work area is limited to work within the MassDOT right-of-way (ROW). MassDOT, as an Agency of the Commonwealth, is exempt from local bylaws and fees. In addition, as per 310 CMR 10.05(4)(a), "Abutter notification is not required for projects proposed by the Massachusetts Department of Transportation Highway Division pursuant to St. 1993, c. 472 as approved on January 13, 1994."

1.2 Project Overview

The Project proposes the construction of ramps at the interchange of I-495 and Route 1A to accommodate increased volumes resulting from commercial development along Route 1A adjacent to the interchange. The purpose of the Project is to improve the vehicular safety and functionality of Route 1A within the Site. The Project proposes the addition of a southbound slip ramp onto I-495 from Route 1A, milling and repaving existing pavement, improving intersection capacity and safety, and complying with the Healthy Transportation Policy (P-13-0001) which aims to increase bicycling, transit and walking options through the inclusion of wide shoulders, bike lanes and sidewalks and Engineering Directive E-20-001, which indicates the controlling criteria and appropriate design guidance that shall be applied to MassDOT Highway Division Projects. The intent is to retain the existing horizontal and vertical roadway geometry, as practical. The Project scope includes drainage, landscaping, installation of sidewalks, widening of shoulders for use as bicycle lanes, granite curbing, and associated roadway work, including various pavement rehabilitation treatments such as standard overlay, structural overlay and full depth reconstruction. Construction will include the establishment and installation of erosion and sediment control best management practices (BMPs) around the work zones prior to the proposed activities.

1.3 Purpose and Need

The purpose of the Project is to improve the pedestrian network and the limited crossing opportunities throughout the roadway corridor. In addition to the broken network, the existing travel lanes and shoulders encourage high vehicle speeds that negatively impact pedestrian and bicyclist safety. The intersections have substandard design features including the lack of pedestrian and bicycle lanes and insufficient roadway geometry for the motor vehicle traffic volumes traveling through the intersections. The Project will also increase stormwater structures and drainage by installation of deep sump catch basins, drainage pipe, stormwater managements features, and stabilized outfalls.

The Project will improve Wrentham's multi-modal network. It will bring the pedestrian features within the Project limits into compliance with ADA/AAB[1] standards and provide necessary bicycle lanes. Specifically, the Project will improve the functionality and appearance of Route 1A by incorporating:

- Enhanced roadway geometry that will encourage safe vehicular speeds and increase capacity at the intersections;

[1] Americans with Disabilities Act, Architectural Access Board (M.G.L. c. 22, § 13A).

- Gateway geometry and traffic calming features such as pedestrian safety islands to enforce safe vehicular speeds and mitigate other safety issues;
- Safe and connected pedestrian and bicycle facilities, such as side paths, landscaped buffers, and sidewalks; and
- Pedestrian and bicycle crossings within the corridor to improve safety and connectivity for pedestrians and cyclists.

2. Existing Conditions

The Project is located in the Town of Wrentham, Massachusetts. The majority of the area to be impacted by the proposed activities consists of the previously cleared and maintained I-495 and Route 1A ROW. The remaining portions of the Project are a mixed use of commercial, residential, and industrial properties (**Figure 1**). Directly north of I-495 is a residential area, with an abandoned farm/parking area located approximately 780 feet north of the I-495/Route 1A intersection. Both northeast and southeast of I-495 is an undisturbed area associated with the Wrentham State Forest. To the southwest of the I-495/Route 1A intersection is the Wrentham Village Premium Outlet's parking lot. Located just east of the Wrentham Village Premium Outlet's parking lot is an overhead electrical transmission line ROW that runs in a north - south direction. Further south along the western portion of Route 1A is a ponded area. Located just southeast of the I-495/Route 1A intersection is a residential area associated with Nickerson Lane/Berry Street (**Figure 2**).

2.1 Desktop Review for Resource Areas

Based on reviews of the Massachusetts Department of Environmental Protection (MassDEP) Wetland Maps for Norfolk County, freshwater wetlands are mapped within the I-495 and Route 1A ROW **(Figure 3)**. MassDEP classifies the wetlands to the southwest of the I-495/Route 1A intersection as open water (OW, located east of the electrical transmission line ROW) and deep marsh (DM, located west of the electrical transmission line ROW). Along the western side of Route 1A, in the southernmost portion of the survey area is a mapped OW pond. This pond has a hydrologic connection running southward then eastward underneath Route 1A. Located along the southern portion of I-495, in the easternmost portion of the survey area, is a shrub swamp (SS) wetland. Located along the northern portion of I-495, in the easternmost portion of the survey area is a DM wetland. Located northeast of the I-495 southbound exit ramp is a SS wetland continuing westward into a DM wetland.

The most recently issued Flood Insurance Rate Map [2] for the area, produced by the Federal Emergency Management Agency (FEMA), indicates the Site is not located within the 100-year floodplain (**Figure 5**). Therefore, the Project is not anticipated to impact Bordering Land Subject to Flooding (BLSF) under the WPA.

The Natural Resources Conservation Service[3] soil survey for Norfolk County has mapped a majority of the Site as Udorthents, sandy (653). For a full listing of the mapped soils within and surrounding the Site, please refer to **Figure 6**.

According to the most recently available data provided by the Massachusetts Natural Heritage and Endangered Species Program (NHESP)[4], no Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife are mapped within or adjacent to the Site (**Figure 7**). There are no Certified or Potential Vernal Pools within the Site. The closest Certified Vernal Pool (CVP 7774) is located approximately 210 feet north of the northern edge of the I-495 pavement. Another Certified Vernal Pool (CVP 7397) is located approximately 230 feet south of the southern edge of the I-495 pavement. There is one Potential Vernal Pools (PVP 29587) located southwest of the I-495/Route 1A intersection; just southwest of the I-495 northbound exit ramp. Another Potential Vernal Pool (PVP 29588) is located just east of the electrical transmission line. One Potential Vernal Pool (PVP 29596) is located

[2] Federal Emergency Management Agency, October 2017, National Hazard Flood Layer, Digital Flood Insurance Rate Map. Maps 25021C0336E and 25021C0337E. Effective 7/17/2012. Accessed July 9, 2019.
[3] Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey
[4] Massachusetts Natural Heritage and Endangered Species Program, Oct. 2017. Massachusetts Natural Heritage Atlas. 14th Edition.

approximately 134 feet east of CVP 7397. Another Potential Vernal Pool (PVP 29599) is located directly on top of CVP 7774. The last Potential Vernal Pool (PVP 29600) is located approximately 390 feet north of the I-495 southbound exit ramp. All of these features are well outside of the Project limits.

No portion of the Site is within an Area of Critical Environmental Concern[5]. According to MassDEP, the easternmost portion of the Site is located in an area designated as an Outstanding Resource Water[6] (ORW). This ORW is associated with Wading River, which is a public water supply watershed of Taunton (PWS 4016000-05S3009000-01S), but no work is proposed within this area. No portion of the Site is located within a Zone I or Interim Wellhead Protection Area[7]. The Site however is located in a Zone II Wellhead Protection Area; supplying Wrentham Water Division (**Figure 8**).

2.2 Wetland and Waterbody Resources

Jacobs Wetland Scientists delineated wetlands and waterbodies immediately adjacent to the Site on July 16th and 17th, 2019 in accordance with methods developed by the MassDEP[8] and the U.S. Army Corps of Engineers[9] (USACE). The WPA resource areas identified adjacent to the Project include Bank, BVWs, and Isolated Land Subject to Flooding:

- **Bank**: As defined in 310 CMR 10.54(2), Bank is "the portion of the land surface which normally abuts and confines a water body. The upper boundary of Bank is the first observable break in slope or the mean annual flood level, whichever is lower."
- **Bordering Vegetated Wetland (BVW):** As defined in 310 CMR 10.55(2), BVWs are "freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants."
- **Isolated Land Subject to Flooding (ILSF):** As defined in 310 CMR 10.57(2)(b), are "isolated depression or closed basin without an inlet or an outlet. It is an area which at least once a year confines standing water to a volume of at least ¼ acre-feet and to an average depth of at least six inches."

A total of eight wetlands (two non-jurisdictional) and one waterbody were delineated adjacent to the Site. Additional information regarding the dominant vegetation, hydrological indicators, and soil characteristics are provided in **Attachment B** – Wetland Delineation Report. Only the 100-foot buffer zones of Wetland 3 and Intermittent Stream 1 will be impacted by the Project. All other resources are located well outside the limits of the proposed work activities.

2.2.1 Wetland 3

Wetland 3 was delineated as an open water/ponded feature located just south of the driveway to PW Preston company, located off the western shoulder of Route 1A. The mean annual high water (MAHW) line of the pond was delineated with flagging labeled as W3-1 through W3-10. At delineation flag W3-9, an inlet to a 24-inch ductile iron culvert was observed to drain southward, connecting with Intermittent Stream 1 at delineation flag IS1-1.

2.2.2 Intermittent Stream 1

Intermittent Stream 1 was delineated south of Wetland 3, originating from the outlet of the 24 inch ductile iron culvert pipe and continuing southward then eastward underneath Route 1A. Intermittent Stream 1 was observed to enter a separate 24 inch ductile iron culvert pipe that crosses underneath Route 1A at delineation flag IS1-19

[5] MassGIS (collaboration with DCR and CZM), Sept. 2017. Massachusetts ACECs.
[6] MassGIS, Dec. 2017. Designated Outstanding Resource Waters of Massachusetts.
[7] MassGIS, Oct. 2017. Approved Wellhead Protection Areas (Zone I and IWPAs).
[8] MassDEP, 1995. Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act.
[9] USACE, 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0.

and outlets east of Route 1A at delineation flag IS1-20; the stream was then observed to extend northeastward outside the Project limits. The eastern/northern Bank of Intermittent Stream 1 was delineated, as the Project limits are located northeast/north of the stream. During the time of delineation, no surficial flow was observed. The western/southern Bank was not delineated, as this channel was observed to be well outside the Project limits. The stream varies in width with the portion located west of Route 1A approximately three feet in width; to the east side of Route 1A was observed to vary between 10-12 feet in width. The stream substrate was observed to be vegetated with some sand observed east of the culvert.

MassDEP establishes 100-foot buffer zones extending from BVW and Bank and as such, these areas are depicted in the Site Plans (**Attachment A**). The area of the 100-foot buffer zone was observed during the field visits to not be in a naturally vegetated state. The area was observed to be covered by impervious surfaces or consist of maintained/mowed grass as seen in the Photographic Log. The 100-foot buffer zone was not observed to be a high-quality buffer zone providing substantial value as an upland transitional zone to wetlands and waterbodies.

Additional information pertaining to the characterization of BVWs can be found within the USACE Data Forms, as well as representative photographs depicting the existing conditions of the Site during the time of the delineation can be found in **Attachment B**.

2.2.3 100-foot Buffer Zones

The WPA states that any activities that are undertaken within 100 feet of an area specified in 310 CMR 10.02(1)(a) (e.g. Bank, BVW) will be conducted per (310 CMR 10.02(2)(b)), "in a manner so as to reduce the potential for any adverse impacts to the resource area during construction, and with post-construction measures implemented to stabilize any disturbed areas." A portion of the proposed work is located within the 100-foot buffer zones to Bank and BVW. The 100-foot buffer zones to Bank and BVW were observed to be predominantly paved roadways, gravel driveways, mowed and vegetated side slopes of the roadway, as well as small scrub-shrub upland areas just off of Route 1A. As per 310 CMR 10.02(2)(b)(1), erosion and sediment controls will be placed prior to the start of work within these areas to avoid adverse impacts to adjacent resource areas.

3. Regulatory Compliance

A majority of the Project's reconstruction and resurfacing activities fit the *Minor Activities* designation under 310 CMR 10.02(2)(b)(2)(p): "Pavement repair, resurfacing, and reclamation of existing roadways within the right-of-way configuration provided that the roadway and shoulders are not widened, no staging or stockpiling of materials, all disturbed road shoulders are stabilized within 72 hours of completion of the resurfacing or reclamation, and no work on the drainage system is performed, other than adjustments and/or repairs to respective structures within the roadway."

3.1 Massachusetts Wetlands Protection Act

As described in 310 CMR 10.00(2), the Project complies with the following eight interests of the WPA:

1) *Protection of public and private water supply*: No portion of the Site is located within a Zone I, II or Interim Wellhead Protection Area. The Project is proposing to implement BMPs for the proposed activities along Route 1A, including the addition of deep sump catch basins, drainage pipe, stormwater managements features, and stabilized outfalls to treat additional stormwater resulting from the addition of impervious surfaces. These BMPs will minimize the potential for the migration of sediment and sediment-laden runoff from draining into wetlands and waterbodies. The BMPs are also intended to prevent erosion of soil. Therefore, no adverse impacts to public or private water supplies are anticipated as a result of the proposed Project.

2) *Protection of ground water supply*: The Project is not anticipated to impact groundwater resources as no known groundwater supply wells exist within or adjacent to the Site. As described above, BMPs will be employed to minimize adverse impacts to surface waters.

3) *Flood control*: There is no mapped 100-year floodplain within or adjacent to the Site. Therefore, the Project is not anticipated to result in negative impacts to flood control structures or the storage of flood flows.

4) *Storm damage prevention*: The proposed work is anticipated to impact the 100-foot buffer zones to Bank and BVW. The work is required to maintain vehicle and pedestrian traffic along Route 1A, as well as improve existing catch basin inlets, culverts and other stormwater structures. The Project will provide more resilient conditions than those that currently exist, as well as improve stormwater runoff with the addition of an extended dry detention basin with sediment forebay by the new I-495 southbound on ramp.

5) *Prevention of pollution*: The proposed work is not anticipated to impact wetlands that currently provide value for prevention of pollution or contaminant attenuation. BMPs will be employed during the Project to minimize the potential for adverse impacts to the water quality of wetlands and waterbodies.

6) *Protection of land containing shellfish*: The Site is located well outside of areas influenced by the ebb and flow of the tide. Therefore, no land or areas containing shellfish will be impacted by the Project.

7) *Protection of fisheries*: BMPs will be installed to prevent migration of sediment, erosion of existing soil, and sediment-laden runoff from draining into wetlands and waterbodies. Intermittent Stream 1 is not a perennial stream and therefore is not a designated coldwater fisheries resource, nor does it possess the presence of anadromous fish. Therefore, no known fisheries will be impacted by the Project.

8) *Protection of wildlife habitat*: No portion of the Project is located within an area mapped as Natural Communities, Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife. The Site consists of ROW and the previously disturbed side slopes of the roadway. As no wildlife habitat exists within the ROW, wildlife habitat is not anticipated to be negatively impacted by the Project.

4. Project Description

4.1 Route 1A Reconstruction

The proposed reconstruction along Route 1A employs sidewalks as well as shared use paths. From Wrentham Crossing north to the Premium Outlets Boulevard, a 10 foot wide shared use path with a five foot grass buffer is proposed along the eastern side of Route 1A. Pedestrians then cross Route 1A using new crosswalks and pedestrian signals. From Premium Outlets Boulevard north to the limit of work, pedestrians and bicyclists share a proposed 10 foot wide shared use path with grass buffer along both the western and eastern sides of Route 1A. The construction of new shared use paths along the corridor includes wheelchair ramps compliant with MassDOT and ADA/AAB standards.

4.2 I-495 and Route 1A Ramps

The proposed design of the roadways and I-495 on and off ramps include 11 foot wide travel lanes and ten foot wide turning lanes in combination with the suggested pedestrian and bicycle strategy described above. At the I-495 overpasses, the existing abutment slope retaining walls will be removed and a new wall constructed to support the raised 10 foot wide shared use path. The available width between the walls will support a vertical curb on each side, four, 11 foot wide travel lanes, two, four foot shoulders. An extended dry detention basin with sediment forebay is proposed within the land bounded by the proposed on ramp to I-495 southbound, from Route 1A. The proposed drainage improvements to the drainage network include installation/upgrading of a closed drainage system to direct, treat, and discharge stormwater runoff from the roadway. No retaining wall is required in front of

Wrentham Crossing. To further facilitate safe operations, signage and pavement markings, as well as upgraded roadway lighting are proposed. The proposed drainage system improvements include deep sump catch basins, manholes, drainage pipe, stormwater management features, and stabilized outfalls, that will provide infiltration treatment and reduce erosion and sediment runoff directly into the nearby wetlands.

4.3 Wetland and Waterbody Impacts

The Project will not result in any temporary or permanent impacts to Bank or BVW. However, temporary and permanent impacts are proposed to their 100-foot buffer zones.

4.3.1 100-foot Buffer Zone

Portions of the Site are located within the 100-foot buffer zones to BVW and Bank. A majority of these areas are associated with the existing roadway and side slopes of Route 1A. The work in the buffer zone consists of installing erosion controls, grading, repaving, and adding curbing and guardrail. Portions of this work qualifies as minor exempt activities under 310 CMR 10.02(2)(b)(2)(p). Upon regrading the side slopes, the area will be loamed and seeded with a native seed mixture. Guardrail will be installed behind the edge of the sidewalk. Total impacts to the 100-foot buffer zones to BVW and Bank are quantified in **Table 1** below.

Table 1 – Impact Table

WPA Resource Area	Temporary Impact Area (ft^2)	Permanent Impact Area (ft^2)	Total Impacts (ft^2)
100-foot Buffer Zone to BVW/Bank	4,835	1,470	6,305

The Project design has avoided direct impacts to wetlands and other sensitive environmental resource areas. Negligible impacts to the 100-foot buffer zones of WPA resources have been minimized to the maximum extent practicable. More details on impact minimization are provided in Section 5 below.

5. Mitigation Measures

5.1 Erosion and Sedimentation Controls

Prior to construction, erosion and sedimentation controls (e.g. sediment control barriers, catch basin inlet protection, silt fencing) will be installed as per the Site Plans (**Attachment A**). These controls will be maintained by the Contractor throughout the life of the Project. After completion of the work and final stabilization, all erosion and sedimentation controls will be removed. The Contractor will also be required to remove any remnant demolition debris or other construction related materials. Work within the Site will be conducted from the existing roadway wherever feasible. Minor vegetation clearing may be necessary during or prior to construction.

5.2 Stormwater Management

The Project is proposing to reconstruct the roadway and construct several new stormwater drainage structures. The Stormwater Report is available upon request which further details how the proposed Project will utilize structural and non-structural control measures to provide stormwater management in accordance with federal and state requirements.

The new portion of the Project includes the proposed I-495 southbound entrance ramp. The ramp will be 22 feet wide with slope granite edging. The extended dry detention basin with sediment forebay will treat and properly discharge stormwater runoff from the new roadway. The existing conditions currently allow for sheet flow runoff to drain directly off the roadway along parts of the Project corridor. There are other locations where an existing

closed drainage system is in place, with improper spacing. The deep sump catch basins, manholes, drainage pipe, stormwater management features, and stabilized outfalls, will provide infiltration treatment and reduce erosion and sediment runoff. The proposed catchment areas consist of more impervious surface than the existing conditions, because of the proposed side use paths, sidewalks, minor roadway widening on Route 1A, and the addition of the new ramp. The additional attributes include groundwater recharge, sediment/toxicant retention, nutrient removal/retention/transformation, and visual quality/aesthetics.

Note that none of the proposed stormwater management features lie within jurisdictional buffer zones to wetland resource areas. Once a Contractor is awarded the work, they will be responsible for providing a Stormwater Pollution Prevention Plan (SWPPP) that coincides with the applicable permits.

5.3 Site Restoration

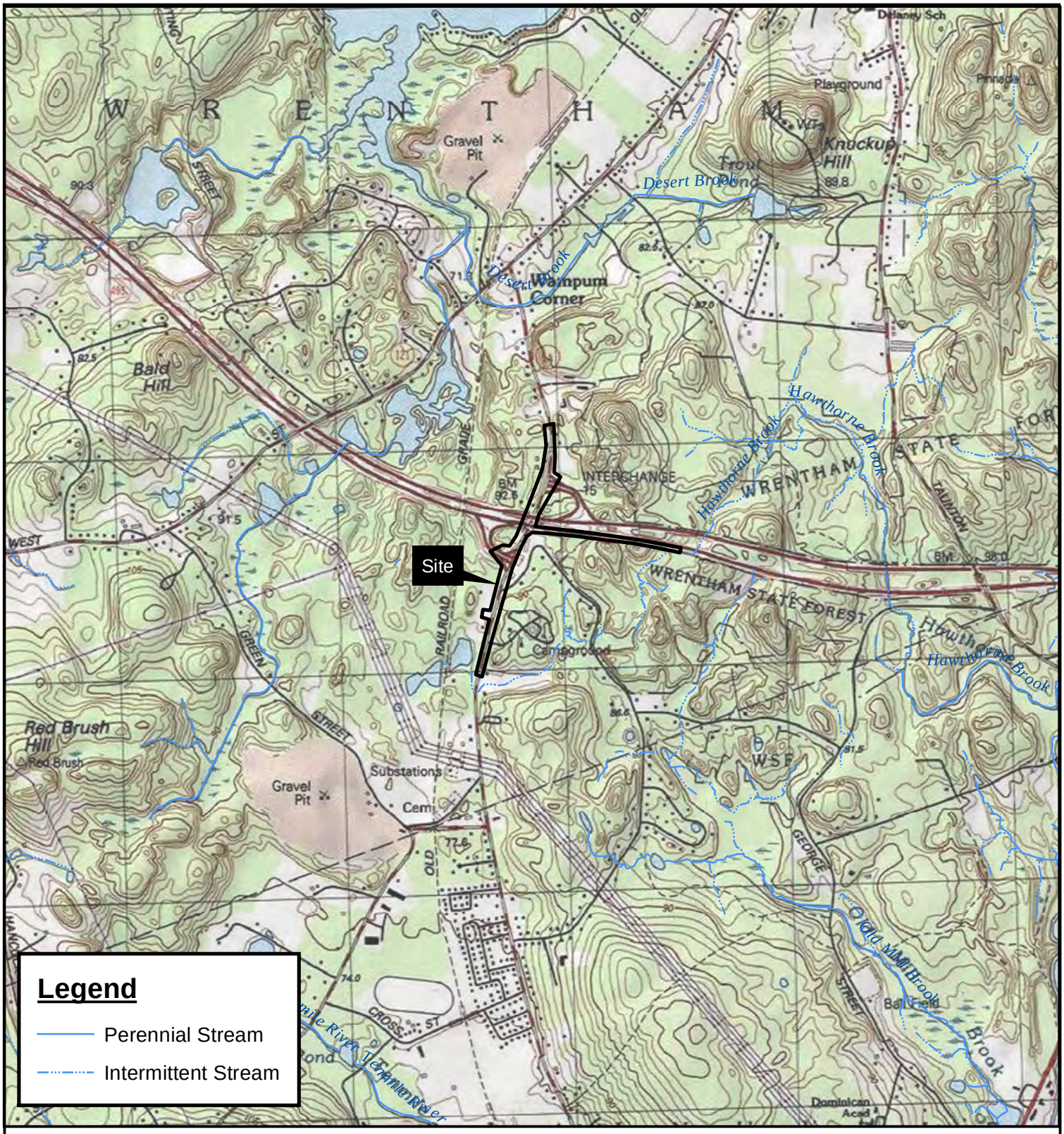
Areas that are temporarily impacted, that will remain pervious, will be loamed and seeded (with an upland seed mix native to New England) following construction. Vegetation will be reestablished in these areas which include uplands, and the 100-foot buffer zones to Bank and BVW. This mix is composed of species that should produce more than 75% ground cover in two full growing seasons. The mix may be applied by hydro-seeding, by mechanical spreader, or spread by hand and then lightly raked to ensure proper soil-seed contact.

6. Summary

MassDOT is proposing to reconstruct a portion of the I-495 and Route 1A intersections to improve multi-modal accommodation, as well as incorporate geometric improvements to the roadway corridor. Proposed work will result in temporary and permanent impacts to the 100-foot buffer zones to Bank and BVW. Temporary impacts will be mitigated by reseeding affected areas with a native seed mixture. Work will take place within previously degraded areas and will not result in the loss of the 100-foot buffer zones upland transitional functions and values. Erosion and sedimentation controls will be employed throughout construction to prevent any additional impacts to resource areas.

MassDOT respectfully requests that the Wrentham Conservation Commission find these measures adequately protective of the interests identified in the WPA and issue a Negative Determination that the Project is subject to the jurisdiction of the WPA.

Figures



Location: \\BOSFIL11\Data2\NAI_proj\MASSDOT\2019\E2X691A7-Wrentham\600 Discipline Resource Files\610.05 EnvironmentalGIS\MXD\Figure 1 - USGS Map.mxd

Prepared for: massDOT Highway Division

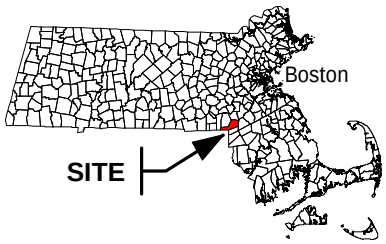
Prepared by: Jacobs

FIGURE 1 - USGS MAP

ROUTE I-495 AND ROUTE 1A RECONSTRUCTION
WRENTHAM, NORFOLK COUNTY, MASSACHUSETTS

APRIL 2022

E2X691A7



0 500 1,000 Feet

1 inch = 572 feet

Prepared for: massDOT Highway Division

Prepared by: Jacobs

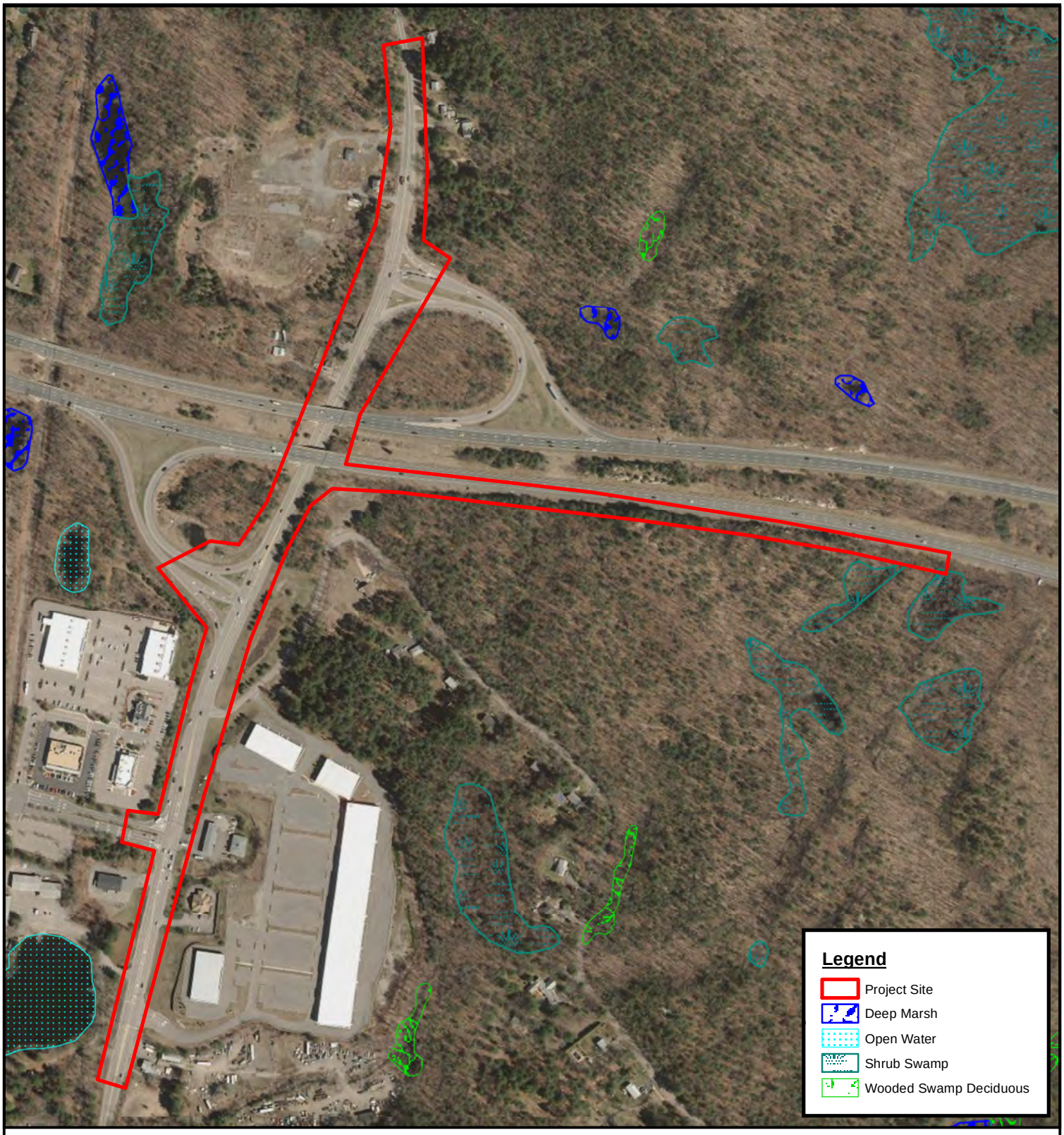
FIGURE 2 - AERIAL MAP

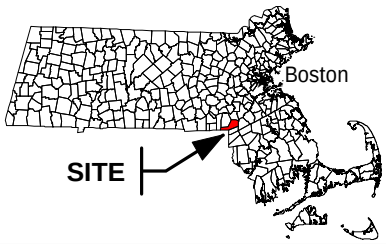
ROUTE I-495 AND ROUTE 1A RECONSTRUCTION
WRENTHAM, NORFOLK COUNTY, MASSACHUSETTS

APRIL 2022

E2X691A7

Location: \\BOSFIL11\Data2\NAI_proj\MASSDOT\2019\E2X691A7-Wrentham\600 Discipline Resource Files\610.05 Environmental\GIS\MXD\Figure 2 - Aerial Map.mxd





0 450 900 Feet

1 inch = 482 feet

Location: \\BOSFIL11\Data2\NAI_proj\MASSDOT\2019\E2X691A7-Wrentham\600 Discipline Resource Files\610.05 Environmental\GIS\MXD\Figure 3 - DEP Wetlands Map.mxd

Prepared for: massDOT Highway Division

Prepared by: Jacobs

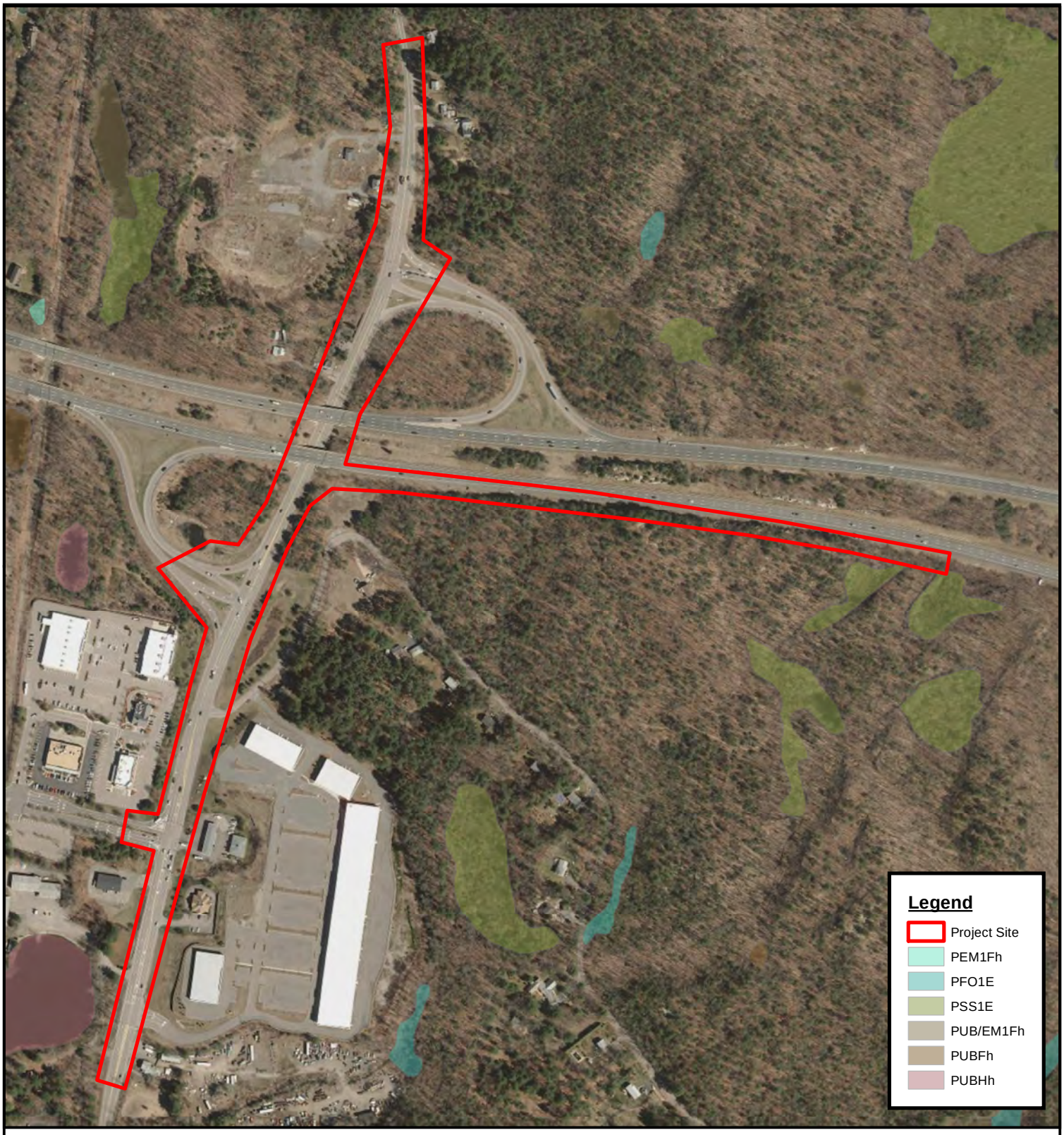
FIGURE 3 - MASSDEP WETLANDS MAP

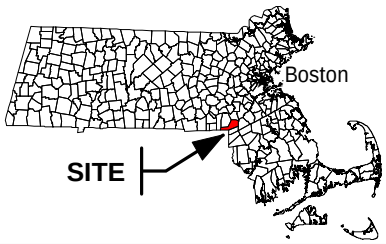
ROUTE I-495 AND ROUTE 1A RECONSTRUCTION
WRENTHAM, NORFOLK COUNTY, MASSACHUSETTS

APRIL 2022

E2X691A7

Location: \\BOSFIL11\Data2\NAI_proj\MASSDOT\2019\E2X691A7-Wrentham\600 Discipline Resource Files\610.05 Environmental\GIS\MXD\Figure 4 - NWI Map.mxd





0 450 900 Feet

1 inch = 481 feet

Prepared for: massDOT Highway Division

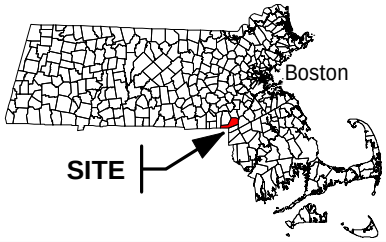
Prepared by: Jacobs

FIGURE 4 - NWI MAP

ROUTE I-495 AND ROUTE 1A RECONSTRUCTION
WRENTHAM, NORFOLK COUNTY, MASSACHUSETTS

APRIL 2022

E2X691A7



0 462.5 925 Feet

1 inch = 496 feet

Location: \\BOSFIL11\Data2\NAI_proj\MASSDOT\2019\E2X691A7-Wrentham\600 Discipline Resource Files\610.05 Environmental\GIS\MXD\Figure 4 - FEMA Map.mxd

Prepared for: massDOT Highway Division

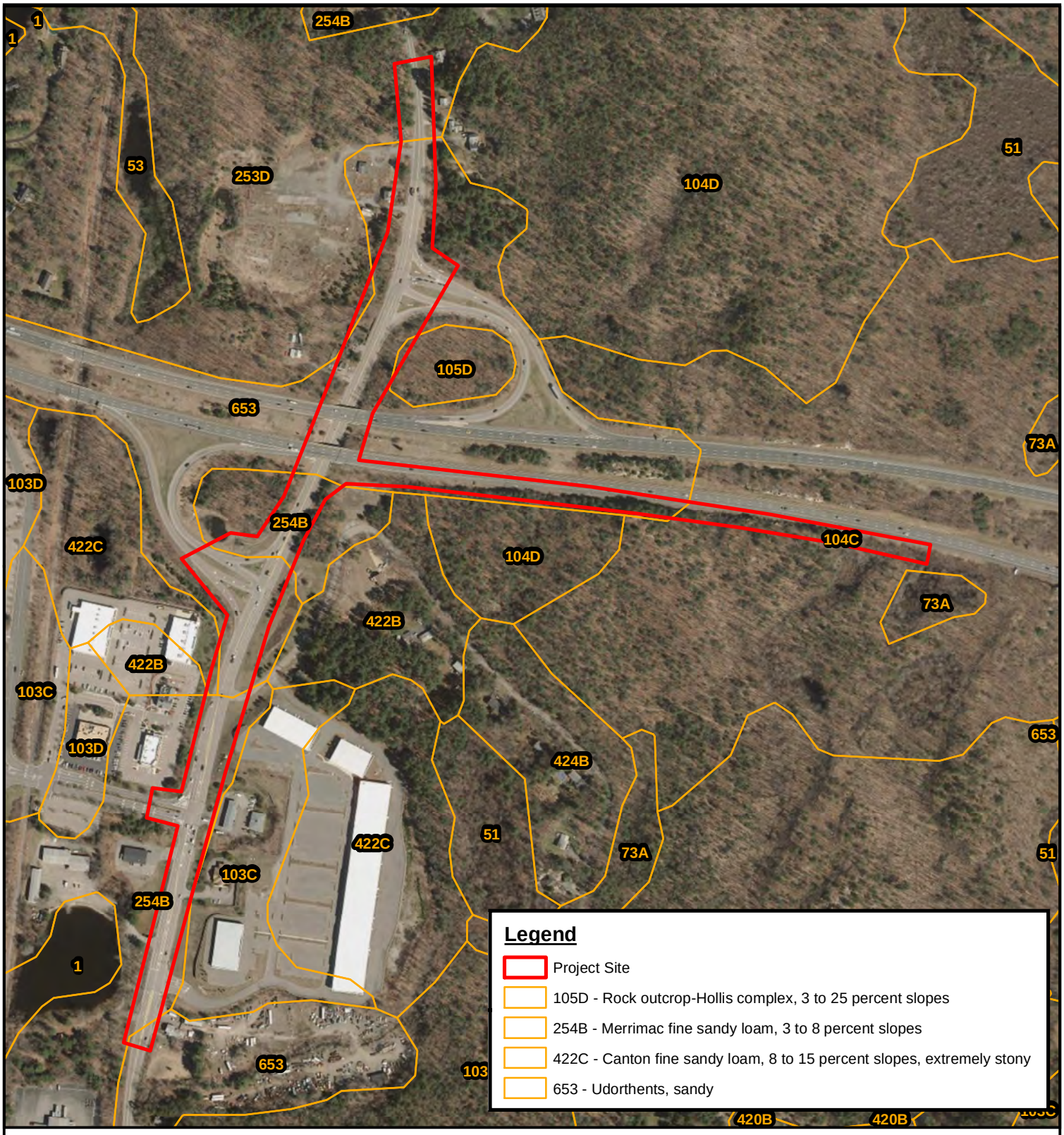
Prepared by: Jacobs

FIGURE 5 - FEMA MAP

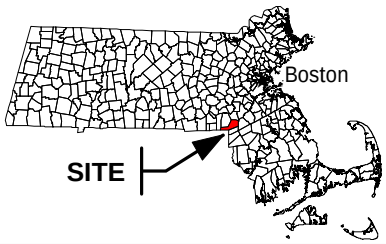
ROUTE I-495 AND ROUTE 1A RECONSTRUCTION
WRENTHAM, NORFOLK COUNTY, MASSACHUSETTS

APRIL 2022

E2X691A7



Location: \\BOSFIL11\Data2\NAI_proj\MASSDOT\2019\E2X691A7-Wrentham\600 Discipline Resource Files\610.05 Environmental\GIS\MXD\Figure 6 - Soils Map.mxd



0 475 950 Feet

1 inch = 509 feet

Prepared for: massDOT Highway Division

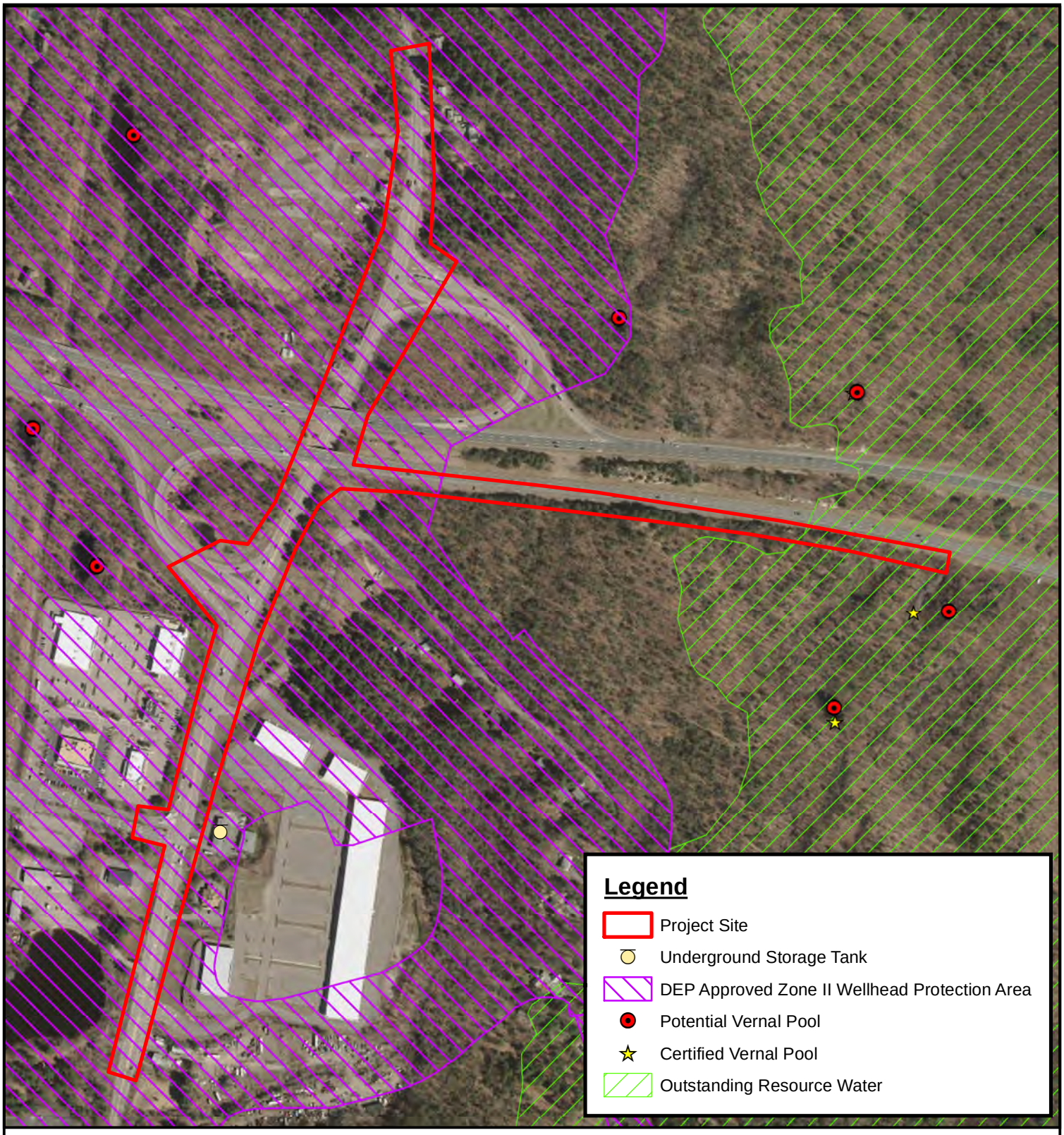
Prepared by: Jacobs

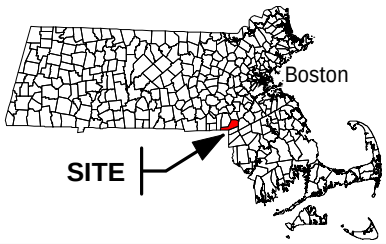
FIGURE 6 - SOILS MAP

ROUTE I-495 AND ROUTE 1A RECONSTRUCTION
WRENTHAM, NORFOLK COUNTY, MASSACHUSETTS

APRIL 2022

E2X691A7





0 455 910 Feet

1 inch = 488 feet

Location: \\BOSFIL11\Data2\NAI_proj\MASSDOT\2019\E2X691A7-Wrentham\600 Discipline Resource Files\610.05 Environmental\GIS\MXD\Figure 7 - NHESP & Others Map.mxd

Prepared for: massDOT Highway Division

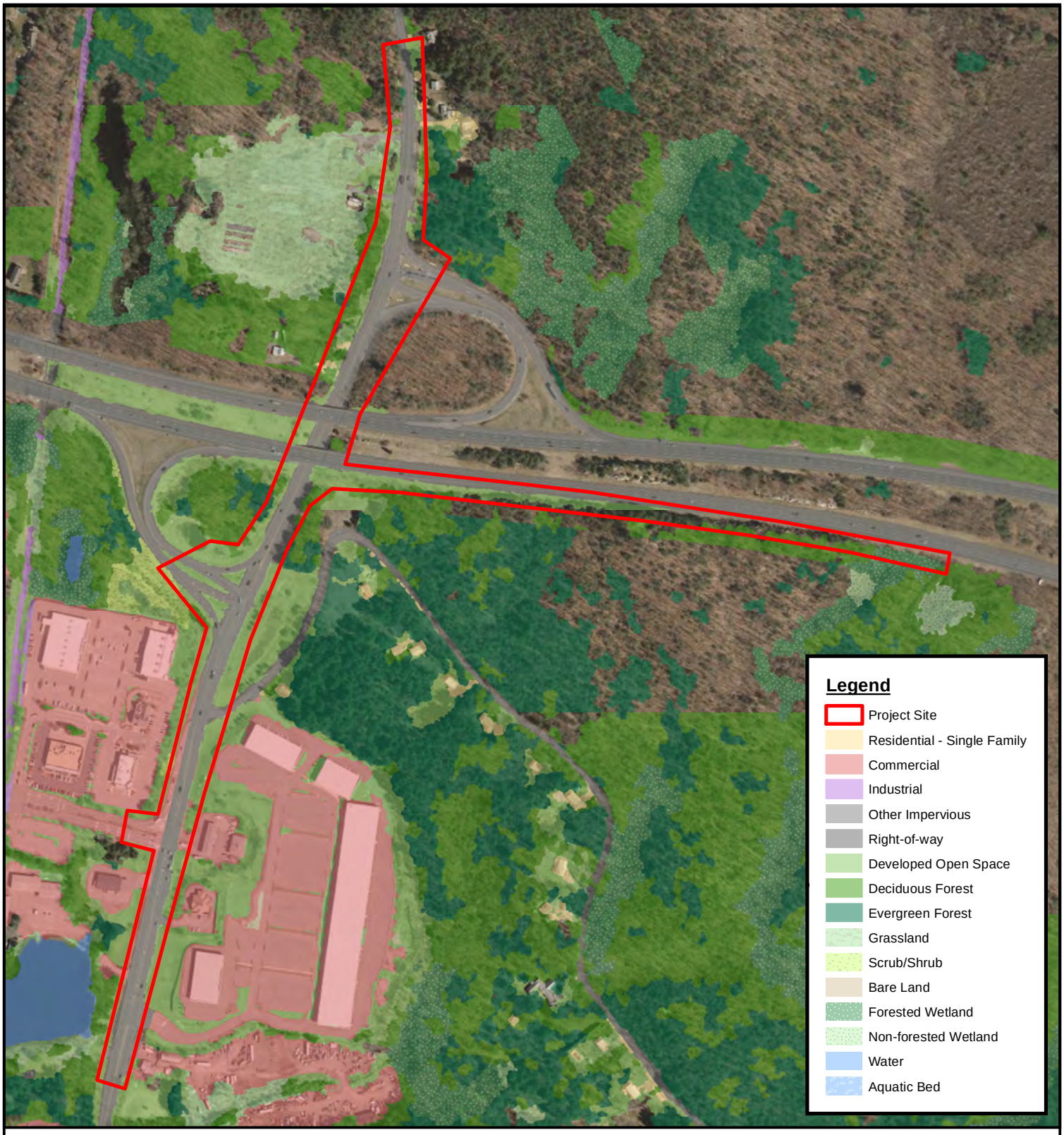
Prepared by: Jacobs

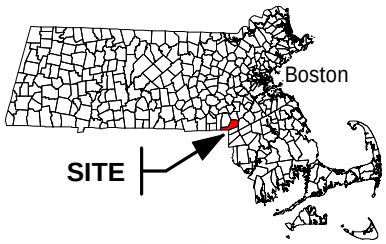
FIGURE 7 - NHESP & OTHERS MAP

ROUTE I-495 AND ROUTE 1A RECONSTRUCTION
WRENTHAM, NORFOLK COUNTY, MASSACHUSETTS

APRIL 2022

E2X691A7





0 450 900 Feet

1 inch = 482 feet

Location: \\BOSFIL11\Data2\NAI_proj\MASSDOT\2019\E2X691A7-Wrentham\600 Discipline Resource Files\610.05 Environmental\GIS\MXD\Figure 8 - Land Use Map.mxd

Prepared for: massDOT Highway Division

Prepared by: Jacobs

FIGURE 8 - LAND USE MAP

ROUTE I-495 AND ROUTE 1A RECONSTRUCTION
WRENTHAM, NORFOLK COUNTY, MASSACHUSETTS

APRIL 2022

E2X691A7

Attachment A – Site Plans

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	17
PROJECT FILE NO.	603739		

TITLE SHEET

PLAN AND PROFILE OF

ROUTE 1A (SOUTH STREET)
AND I-495

IN THE TOWN OF

WRENTHAM

NORFOLK COUNTY

FEDERAL AID PROJECT NO.

ENVIRONMENTAL PLANS

THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2021, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED SEPTEMBER 30, 2021, 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.

INDEX

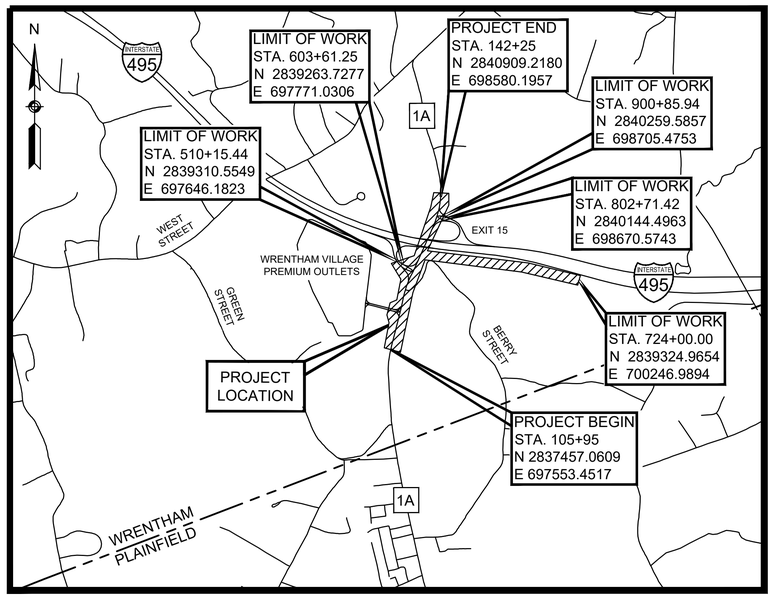
RDA PLANS LEGEND:

PERMANENT TEMPORARY

IMPACT TO 100' BUFFER ZONE TO BVW

EXISTING BANK OR BVW

100' BUFFER ZONE TO BVW



0 1500 3000 6000

SCALE: 1" = 1500'

LENGTH OF PROJECT (ROUTE 1A) = 3,630 FEET = 0.688 MILES
LENGTH OF PROJECT (I-495 SOUTHBOUND ENTRANCE RAMP) = 2,396.6 FEET = 0.454 MILES

DESIGN DESIGNATION (ROUTE 1A)

DESIGN SPEED	45 MPH
ADT (2020)	25,004
ADT (2040)	33,676
K	8%
D	51%
T (PEAK HOUR)	5%
T (AVERAGE DAY)	7%
DHV	2,857
DDHV	1,471
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

DATE	DESCRIPTION	REV #

Jacobs

COMMONWEALTH OF MASSACHUSETTS
JOHN R. BLACKBURN
CIVIL
NO. 46946
REGISTERED PROFESSIONAL ENGINEER

6/29/2022

massDOT
Massachusetts Department of Transportation
Highway Division

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER DATE

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

APPROVED

HIGHWAY ADMINISTRATOR DATE

603739_H001(TITLE SHEET).DWG Plotted on 27-Apr-2022 10:04 AM

RDA PLANS LEGEND:

PERMANENT TEMPORARY

IMPACT TO 100' BUFFER ZONE TO BVW

EXISTING BANK OR BVW

100' BUFFER ZONE TO BVW

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	17
PROJECT FILE NO.		603739	

OVERVIEW PLAN

N

I-495 SOUTHBOUND

I-495 NORTHBOUND

LIMIT OF WORK
STA. 603+61.25
N: 2839263.7277
E: 697771.0306
MATCH EXISTING

LIMIT OF WORK
STA. 510+15.44
N: 2839310.5549
E: 697648.1823
MATCH EXISTING

LIMIT OF WORK
STA. 105+95
N: 2837457.0809
E: 697553.4517
MATCH EXISTING

LIMIT OF WORK
STA. 900+85.94
N: 2840259.3957
E: 698705.4753
MATCH EXISTING

LIMIT OF WORK
STA. 602+71.42
N: 2840144.4963
E: 698670.5743
MATCH EXISTING

LIMIT OF WORK
STA. 724+00.00
N: 2839324.9654
E: 700246.0894
MATCH EXISTING

SHEET 1
SHEET 2
SHEET 3
SHEET 4
SHEET 5
SHEET 6
SHEET 7
SHEET 8
SHEET 9
SHEET 10
SHEET 11
SHEET 12
SHEET 13

ROUTE 1A

EXIT 15 SB RAMPS

EXIT 15 NB RAMPS

I-495 SB ENTRANCE RAMP

I-495 NORTHBOUND

WRENTHAM VILLAGE PREMIUM OUTLETS BOUTI EYARD

NICKERSON LANE

WRENTHAM CROSSING

PC-1 PC-1A PC-2 PC-3 PC-4 PC-5 PC-6

TP-1A/1B TP-4A/4B

B-101(OW) B-102 B-103 B-104 B-105 B-106 B-107

P-1 P-1A P-2

0 150 300 450 600

SCALE: 1" = 150'

603739_HD02(OVERVIEW PLAN).DWG Plotted on 27-Apr-2022 12:48 PM

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	17
PROJECT FILE NO.	603739		

ENVIRONMENTAL PLANS
SHEET 1 OF 13

603739_HDO3(ENVIORNMENTAL PLANS).DWG Plotted on 27-Apr-2022 9:58 AM

N

INTERMITTENT STREAM 1
FLOW

IS1-1 IS1-2 IS1-3 IS1-4 IS1-5 IS1-6 IS1-7 IS1-8 IS1-9 IS1-10

WETLAND 3

W3-3 W3-4 W3-5 W3-6 W3-7 W3-8 W3-9

ZONE X (EL XXX)

N/F
PRESTON FAMILY TRUST
BK/PG 5986/298
PLAN 175 OF 1980
1130 SOUTH ST
MAP/LOT K-03-1-9

N/F
SPRING POND ASSOCIATES REALTY TRUST
BK/PG 5986/297
PLAN 175 OF 1980
1100 SOUTH ST
MAP/LOT K-04-1-1

LIMIT OF WORK
STA. 105+95
N: 2837457.0609
E: 697553.4517
MATCH EXISTING

2103
N: 2837496.635'
E: 697530.327'
EL: 274.177'
MAG

2102
N: 2837583.052'
E: 697546.316'
EL: 274.629'
REBAR

107+69.95 ROUTE 1A (SOUTH ST)=
3000+00.00 WRENTHAM CROSSING

PROP SEDIMENT CONTROL BARRIER (TYP)
APPROX LIMIT OF GRADING (TYP)
PROP GUARDRAIL TL-2
PROP 10' HMA SIDEPATH
PROP 5.5' GRASS PANEL
PROP CEM CONC PCR #1
PROP TREE PROTECTION (TYP)
RIGHT LANE ENDS GRAPHIC
R&R HYDRANT
PROP CEM CONC BIKE RAMP #1
R&R UP(BO)
PROP HMA DRIVEWAY #1
PROP TEMP EASEMENT (TYP)
R&D EXIST GUARDRAIL
R&R UP (BO)
REM TREE
PROP 4" LOAM & SEED
PROP UTILITY EASEMENT (TYP)
100' WETLAND BUFFER
PROP HMA DRIVEWAY #3
REM PLANTINGS
PUSH BRACE EASEMENT (POLE T.121) BK/PG 32507/443
R&R UP (BO)
PROP 4" LOAM & SEED
R&R HYDRANT
R&R GRAN CURB STA. 109+27 TO STA. 110+00
R&D EXIST GUARDRAIL

100' BUFFER ZONE AREA OF TEMPORARY IMPACTS = 4633 SF
100' BUFFER ZONE AREA OF PERMANENT IMPACTS = 1470 SF
100' BUFFER ZONE AREA OF TEMPORARY IMPACTS = 202 SF

RET UP
1925 SHLO 2285
GUY
GRAVEL PATH
RB NO 2
12" DI WATER
ROUTE 1A (SOUTH STREET)
PT +77.98
104
105
106
107
108
109
110
PC-1
PC-1A
PC +69.95
3000+00
37.00
27.00
PROP RESURFACING
12" RCP
CRM
GRASS
TREELINE
HMA BERM
HMA DWY
BLDR
STONE WALL
MB
DR
SAWCUT
ROUTE 1A CONSTRUCTION B
R&S GRAN CURB
PROP GRAN CURB STA 106+84 TO STA 107+39
REM PORTION OF EXIST MEDIAN ISLAND
PROP GRAN CURB STA 106+51 TO STA 108+84
R&S BOULDERS
PROP GRAN CURB STA. 105+95 TO STA. 106+20
RET STONE WALL
RET MB
RET UP
100' WETLAND BUFFER
100' BUFFER TO BVW
PROP HMA DRIVEWAY #2
PROP CEM CONC BIKE RAMP #2
PROP CEM CONC PCR #3
PROP 4" LOAM & SEED
PROP 10' HMA SIDEPATH
APPROX LIMIT OF GRADING (TYP)
RET UP
PROP CEM CONC PCR #4
PROP GRAN CURB
PC +70.04
3001
3001+25.59
WRENTHAM CROSSING
8" DI WATER
"RIGHT LANE MUST TURN RIGHT" SIGN
"TO REQUEST GREEN WAIT FOR MAN ON BIKE (SYMBOL)"
LIMIT OF WORK
STA. 3007+70.04
N: 2837608.7682
E: 697663.7109
MATCH EXISTING
SAWCUT
R&S GRAN CURB
R&S GRAN CURB
PROP CEM CONC PCR #6
PROP CEM CONC PCR #5
PROP GRAN CURB STA 107+98 TO STA 110+00
R&D EXIST HMA BERM STA 108+52 TO STA 110+00
PROP 10' HMA SIDEPATH
APPROX LIMIT OF GRADING (TYP)
PROP 4" LOAM & SEED
PROP 5.5' GRASS PANEL (TYP)
MHD NO Z
MODULAR RET. WALL
N/F
THE SHOPS AT WRENTHAM, LLC
BK/PG 23578/440
BK/PG 26178/177
PLAN 875 OF 1985
PLAN 301 OF 2001
1007 SOUTH ST
MAP/LOT K-04-3-12

CONTINUED ON SHEET NO. 25

RDA PLANS LEGEND:

PERMANENT	TEMPORARY	
		IMPACT TO 100' BUFFER ZONE TO BVW
		EXISTING BANK OR BVW
		100' BUFFER ZONE TO BVW

0 20 40 60 80
SCALE: 1" = 20'

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	17
PROJECT FILE NO.	603739		

ENVIRONMENTAL PLANS
SHEET 2 OF 13

603739_-HDO3(ENVIORNMENTAL PLANS).DWG Plotted on 27-Apr-2022 9:58 AM

CONTINUED ON SHEET NO. 24

CONTINUED ON SHEET NO. 26

N

100' WETLAND BUFFER

100' BUFFER TO BVW

ROUTE 1A (SOUTH STREET)

N/F
1092 SOUTH STREET REALTY CORP.
BK/PG 16854/42
PLAN 1134 OF 1979
1092 SOUTH ST
MAP/LOT K-04-1-2

PROP UTILITY EASEMENT (TYP)
PROP TREE PROTECTION (TYP)
RET TREE
APPROX LIMIT OF GRADING (TYP)
PROP GUARDRAIL TL-2
R&D EXIST GUARDRAIL
PROP 10' HMA SIDEPATH
PROP 5.5' GRASS PANEL (TYP)
R&R GRAN CURB STA. 110+00 TO STA. 112+23
R&R UP (BO)
BOS
1925 SHLO 2285
2004 SHLO 7785
PC-1A
110
111
112
113
114
115
116
PROP RESURFACING
SAWCUT
ROUTE 1A CONSTRUCTION ℄
37.00
27.00
PROP GRAN CURB STA 112+67 TO STA 113+68
REM SLOPED GRAN EDGING
R&S EXIST GRAN EDGING
REM PLANTINGS
R&S STONE WALL
PROP TEMP EASEMENT (TYP)
PROP HMA DRIVEWAY #5
R&S STONE WALL
R&R PRIVATE SIGN (BO)
REM PLANTING
PROP 4" LOAM & SEED
R&R UP-BO
R&R GRAN CURB
PROP ICEM CONC BIKE RAMP #3
PROP SLOPED GRAN EDGING
REM EXIST CONC MEDIAN
PROP CEM CONC CHANNELIZING ISLAND
RET PRIVATE SIGN
PROP CEM CONC PCR #7
R&R HYDRANT
R&R UP-BO
TOS
2039
N: 2838252.525'
E: 697547.481'
EL: 279.420'
2105
N: 2838134.198'
E: 697676.064'
EL: 278.526'
MAG
LIMIT OF WORK
STA. 301+22.52
N: 2838276.4169
E: 697616.179
MATCH EXISTING
PREMIUM OUTLETS BOULEVARD
302
301
SAWCUT
LIMIT OF WORK
STA 301+81.22
N: 2838299.6685
E: 697561.2902
MATCH EXISTING
"NOTICE PRIVATE PROPRETY ...."
2149
N: 2838426.001'
E: 697616.396'
EL: 280.271'
MAG
N/F
PREMIUM OUTLET L.P.
BK/PG 11660/584
PLAN 18 OF 1997
1048 SOUTH ST
MAP/LOT K-04-1-3
R&R GRAN CURB STA 301+11 TO STA 301+81
PROP 5' CEM CONC SW
REM EXIST CONC ISLAND
PROP CEM CONC CHANNELIZING ISLAND
PROP CEM CONC PCR #8
PROP 10' HMA SIDEPATH
REM PLANTINGS AND MULCH
R&R UP-BO
R&R HYDRANT
1998 SHLO 7440
PC-2
PROP GRAN CURB STA 301+11 TO STA 120+92
R&D SLOPED GRAN EDGING
PROP SLOPED GRAN EDGING
REM PORTION OF EXIST MEDIAN ISLAND
114+10.14 ROUTE 1A (SOUTH ST)= 300+00.00 PREMIUM OUTLETS BLVD
300+00
200+00
114+09.14 ROUTE 1A (SOUTH ST)= 200+00.00 MOBIL GAS
R&D SLOPED GRAN EDGING
R&R GRAN CURB STA 114+61 TO STA 118+55
R&R LP (BO)
REM
REM GRAN CURB
REM PLANTINGS AND MULCH
PROP 4" LOAM & SEED
PROP 10' HMA SIDEPATH
2106
N: 2838336.670'
E: 697781.947'
EL: 279.850'
MAG
PROP CEM CONC PCR #12
PROP CEM CONC PCR #11
R&R PRIVATE SIGN (BO)
R&R SLOPED GRAN EDGING TRANSITION REVEAL FROM 0" TO 4" OVER 4' AT PCR #12
1999 SHLO 7555
MOBIL DRIVEWAY
201
201+25
LIMIT OF WORK
STA. 200+80.00
N: 2838231.3453
E: 697813.4852
MATCH EXISTING
R&R SLOPED GRAN EDGING
SAWCUT
PROP GRAN CURB STA 111+39 TO STA 113+84
PROP 10' HMA SIDEPATH
PROP 5.5' GRASS PANEL (TYP)
R&D EXIST HMA BERM
PROP HYDRANT
APPROX LIMIT OF GRADING (TYP)
PROP 4" LOAM & SEED
PROP HMA DRIVEWAY #4
PROP GRAN CURB STA. 110+00 TO STA. 110+93
R&D EXIST HMA BERM STA 110+00 TO STA 110+75
RET UP
2002
N: 2838134.843'
E: 697769.481'
EL: 277.653'
MAG
PROP CEM CONC PCR #9
PROP CEM CONC PCR #10
R&R SLOPED GRAN EDGING
"WRENTHAM CORPORATE BANK"
N/F
WRENTHAM CO-OPERATIVE BANK
BK/PG 13803/294
PLAN 181 OF 1999
1005 SOUTH ST
MAP/LOT K-04-3-15
N/F
WRENTHAM MOBIL NOMINEE TRUST
BK/PG 13858/79
PLAN 181 OF 1999
1001 SOUTH ST
MAP/LOT K-04-3-14
N/F
E SHOPS AT
ENTHAM, LLC
G 23578/440
G 26178/177
875 OF 1985
301 OF 2001
7 SOUTH ST
OT K-04-3-12

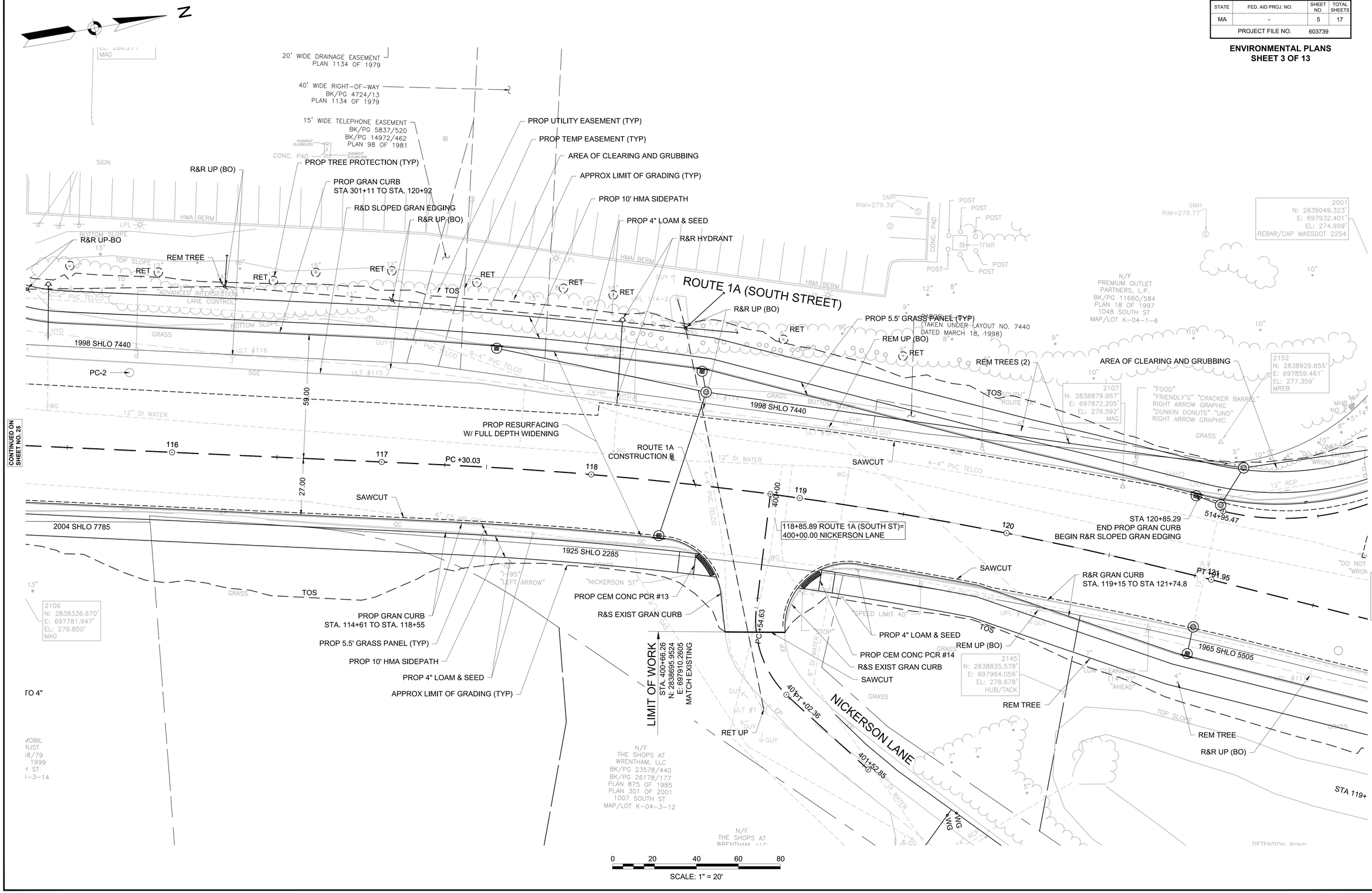
0 20 40 60 80
SCALE: 1" = 20'

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	17
PROJECT FILE NO.	603739		

ENVIRONMENTAL PLANS
SHEET 3 OF 13

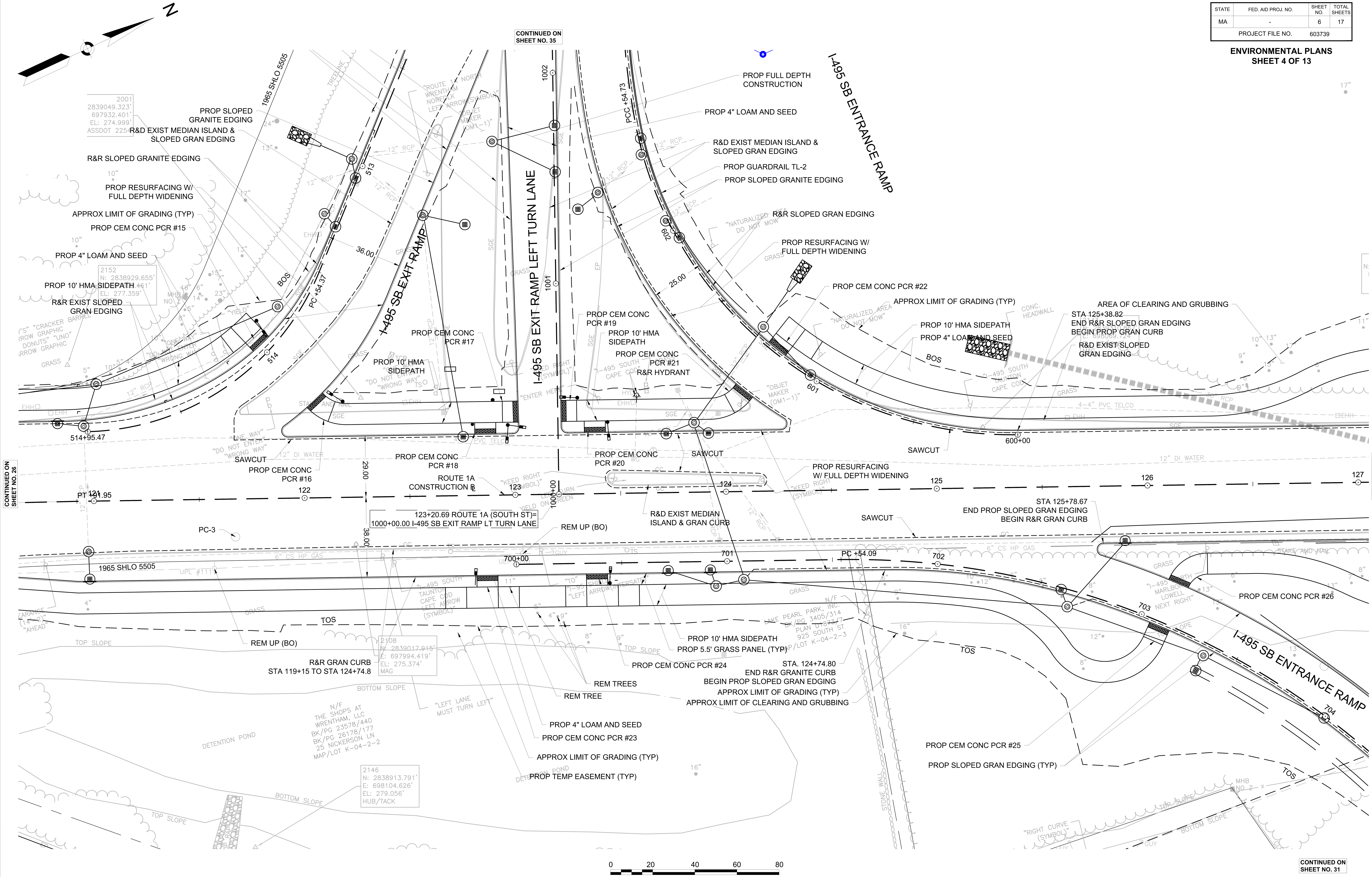
603739_HD03\ENVIRONMENTAL PLANS\.DWG Plotted on 27-Apr-2022 9:58 AM



WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	6	17
PROJECT FILE NO.	603739		

ENVIRONMENTAL PLANS
SHEET 4 OF 13

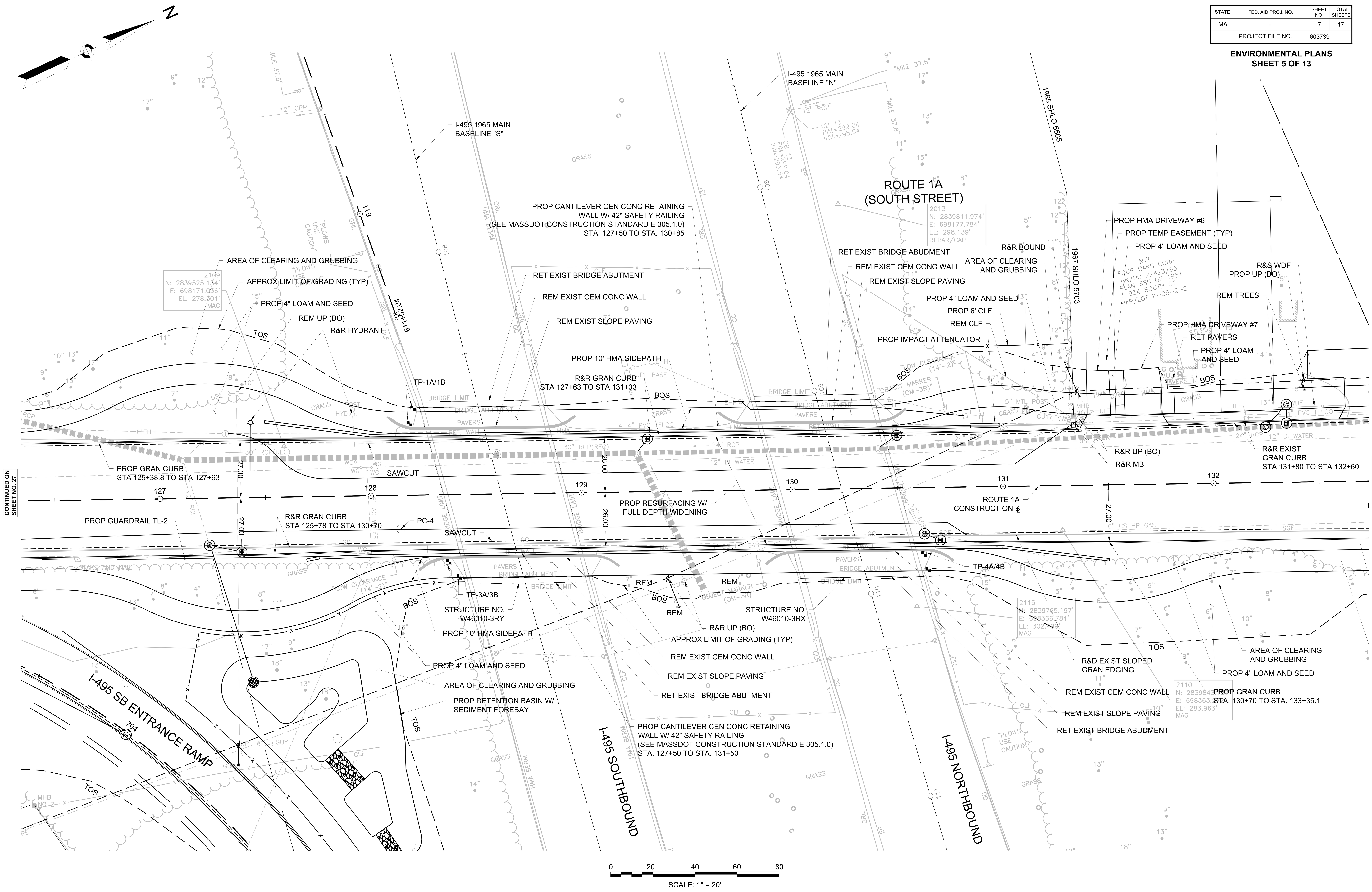


Plotted on 27-Apr-2022 9:58 AM
603739_HD03(ENVIRONMENTAL PLANS).DWG

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	17
	PROJECT FILE NO.	603739	

ENVIRONMENTAL PLANS
SHEET 5 OF 13

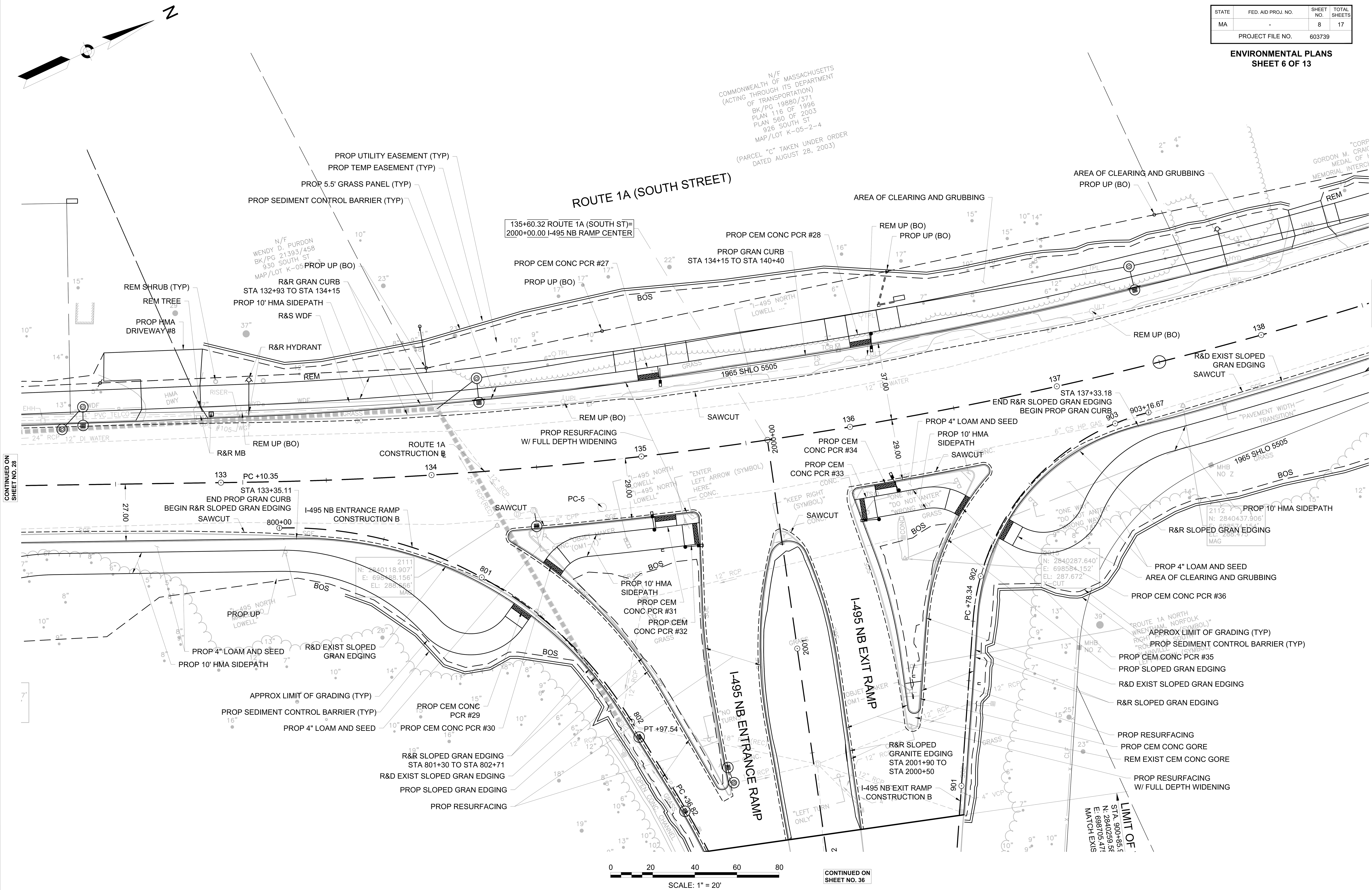


603739_HD03(ENVIRONMENTAL PLANS).DWG Plotted on 27-Apr-2022 9:58 AM

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	17
	PROJECT FILE NO.	603739	

ENVIRONMENTAL PLANS
SHEET 6 OF 13



603739_HD03(ENVIRONMENTAL PLANS).DWG Plotted on 27-Apr-2022 9:58 AM

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	17
PROJECT FILE NO.	603739		

ENVIRONMENTAL PLANS
SHEET 7 OF 13

CONTINUED ON SHEET NO. 29

N

N/F
COMMONWEALTH OF MASSACHUSETTS
(ACTING THROUGH ITS DEPARTMENT OF TRANSPORTATION)
BK/PG 26838/562
PLAN 1694 OF 1986
PLAN 89 OF 2009
922 SOUTH ST
MAP/LOT K-05-2-6
(PARCEL "F" TAKEN UNDER ORDER DATED JUNE 24, 2009)

N/F
COMMONWEALTH OF MASSACHUSETTS
(ACTING THROUGH ITS DEPARTMENT OF TRANSPORTATION)
BK/PG 26838/562
PLAN 1694 OF 1986
PLAN 89 OF 2009
920 SOUTH ST
MAP/LOT K-05-2-7
(PARCEL "E" TAKEN UNDER ORDER DATED JUNE 24, 2009)

N/F
FOUR OAKS CORP.
BK/PG 22510/587
808 SOUTH ST
MAP/LOT K-05-2-8-0

N/F
THOMAS W. DIPLACIDO, III
BK/PG 32434/342
800 SOUTH ST
MAP/LOT K-05-2-9-0

LIMIT OF WORK
STA. 142+25
N: 2840909.2180
E: 698580.1957
MATCH EXISTING

PROP UTILITY EASEMENT (TYP)
PROP UP (BO)
AREA OF CLEARING AND GRUBBING
R&R HYDRANT
AREA OF CLEARING AND GRUBBING
PROP HMA DRIVEWAY #9
REM
REM UP (BO)
PROP 10' HMA SIDEPATH
PROP 4" LOAM AND SEED
PROP UP (BO)
2113
N: 2840598.217'
E: 698550.654'
EL: 285.529'
MAG
RET
BOS
REM
PROP CEM CONC BIKE RAMP #5
R&R BOUND
PROP SEDIMENT CONTROL BARRIER (TYP)
APPROX LIMIT OF GRADING (TYP)
PROP 5' CEM CONC SIDEWALK
REM PRIVATE SIGN
PROP 5' GRASS PANEL
PROP HMA DRIVEWAY #10
RET UP
PROP HMA DRIVEWAY #11
PROP GRAN CURB
STA 141+10 TO STA 142+00
2051
N: 2840927.883'
E: 698562.837'
EL: 277.901'
SPK
1925 SHLO 2285
1965 SHLO 5505
ROUTE 1A (SOUTH STREET)
SAWCUT
SAWCUT
PROP GRAN CURB
STA 134+15 TO STA 140+40
ROUTE 1A
CONSTRUCTION ℄
PROP RESURFACING
W/ FULL DEPTH WIDENING
PCC +67.11
PROP GRAN CURB
STA 141+20 TO STA 141+50
SAWCUT
PROP GRAN CURB
STA 137+33.2 TO STA 140+92
903+16.67
1965 SHLO 5505
PROP 5' CEM CONC SIDEWALK
R&R MB
PROP HMA DRIVEWAY #12
REM BOULDERS
R&R MB
PROP HMA DRIVEWAY #13
REM BOULDERS
PROP GRAN CURB
STA. 141+80 TO STA. 142+25
R&R MB
2051
N: 2840900.886'
E: 698600.833'
EL: 279.579'
SPK
1925 SHLO 2285
R&D SLOPED GRAN EDGING
PROP CEM CONC BIKE RAMP #4
PROP 4" LOAM AND SEED
PROP 10' HMA SIDEPATH
AREA OF CLEARING AND GRUBBING
APPROX LIMIT OF GRADING
PROP SEDIMENT CONTROL BARRIER (TYP)
PROP TEMP EASEMENT (TYP)
R&R BOUND
2112
2840437.906'
698574.154'
EL: 288.475'
MAG
2050
N: 2840724.714'
E: 698609.267'
EL: 284.764'
SPK
N/F
BRIAN R. NADEAU AND CHERYL A. NADEAU
BK/PG 10252/593
PLAN 141 OF 1946
805 SOUTH ST
MAP/LOT K-05-4-5
N/F
801-803 SOUTH REALTY TRUST
BK/PG 26185/457
PLAN 141 OF 1946
803 SOUTH ST
MAP/LOT K-05-4-4-0
N/F
801-803 SOUTH REALTY TRUST
BK/PG 26185/455
PLAN 1283 OF 1965
801 SOUTH ST
MAP/LOT K-05-4-3-0

0 20 40 60 80
SCALE: 1" = 20'

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	17
PROJECT FILE NO.	603739		

ENVIRONMENTAL PLANS
SHEET 8 OF 13

603739_HD03(ENVIORNMENTAL PLANS).DWG Plotted on 27-Apr-2022 9:58 AM

N

CONTINUED ON SHEET NO. 28

I-495 SOUTHBOUND

I-495 1965 MAIN BASELINE "S"

611+52.04

ROUTE 1A (SOUTH STREET)

NEW I-495 SB ENTRANCE RAMP

NICKERSON LANE

R&D EXIST CLF

PROP DETENTION BASIN W/ SEDIMENT FOREBAY

PROP 4" LOAM AND SEED

PROP FULL DEPTH CONSTRUCTION

NEW I-495 SB ENTRANCE RAMP CONSTRUCTION

R&R UP (BO)

AREA OF CLEARING AND GRUBBING

PROP SLOPED GRANITE EDGING

APPROX LIMIT OF GRADING (TYP)

PROP SEDIMENT CONTROL BARRIER (TYP)

B-101(OW)

B-102

B-103

B-104

PT +86

1965 SHLO 5505

2029
N: 2939326.508'
E: 698328.633'
EL: 282.254'
MAG

CONTINUED ON SHEET NO. 27

CONTINUED ON SHEET NO. 32

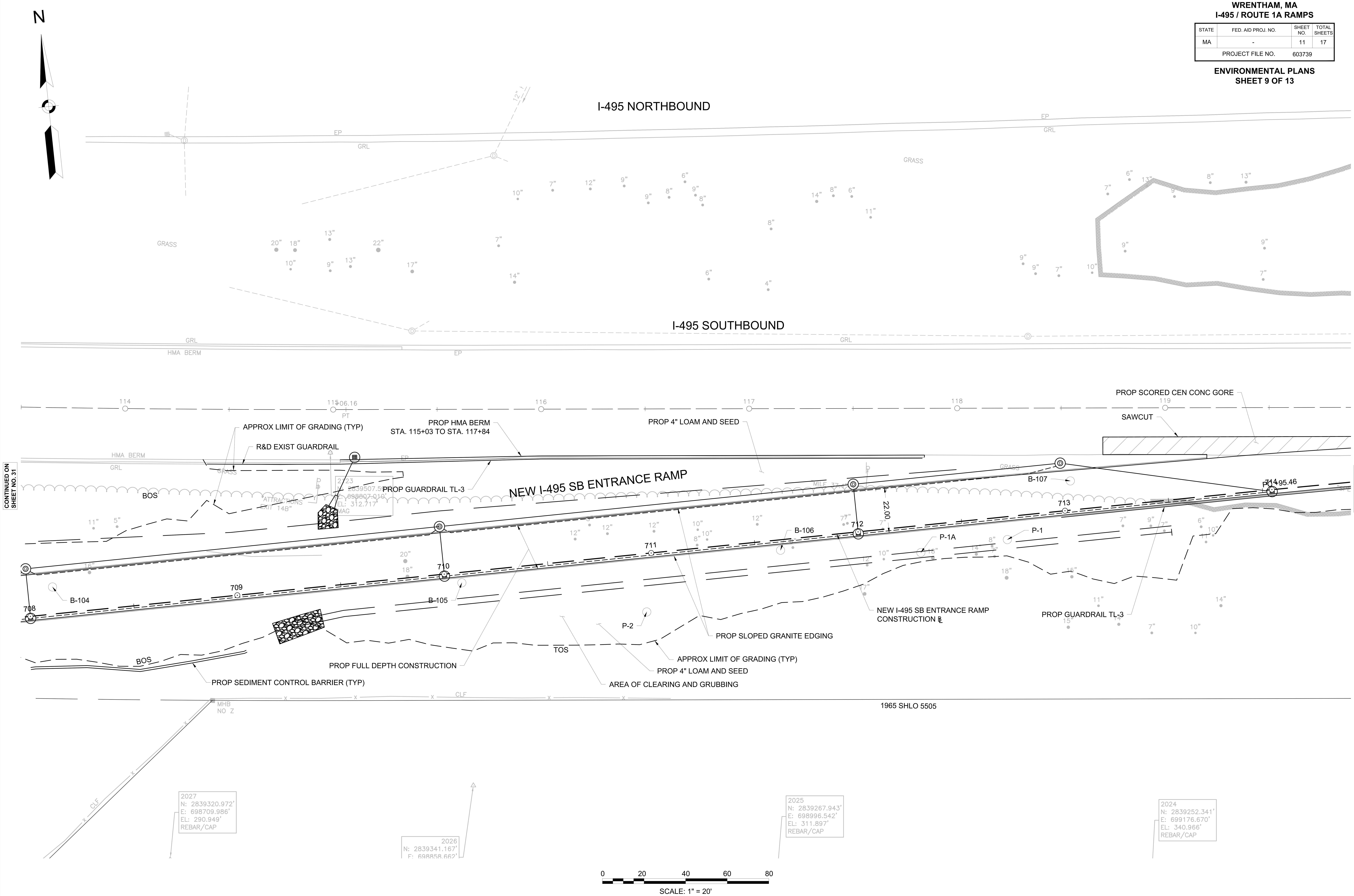
0 20 40 60 80

SCALE: 1" = 20'

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	17
PROJECT FILE NO.		603739	

ENVIRONMENTAL PLANS
SHEET 9 OF 13

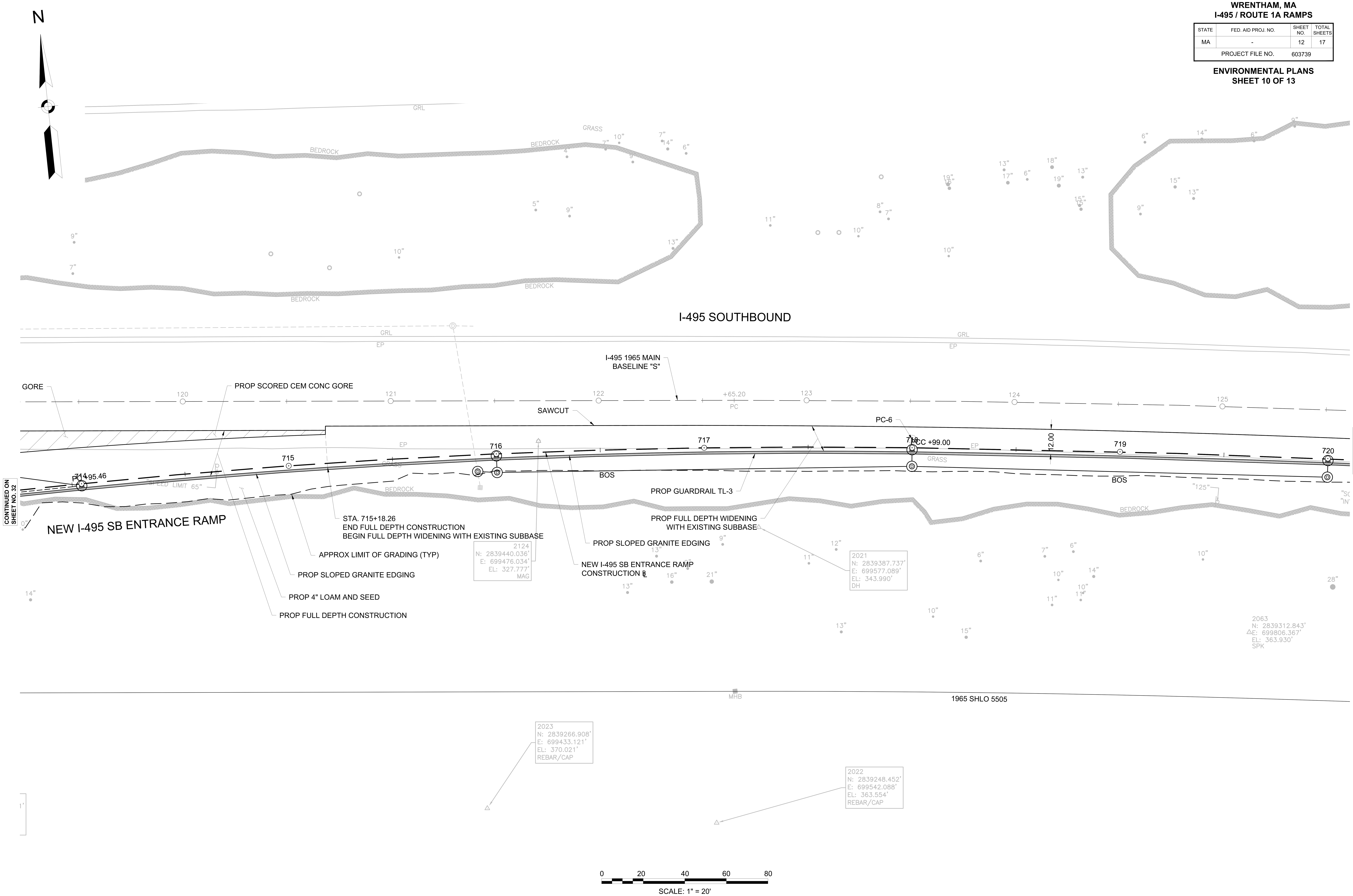


603739_HD03(ENVIORNMENTAL PLANS).DWG Plotted on 27-Apr-2022 9:58 AM

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	17
PROJECT FILE NO.		603739	

ENVIRONMENTAL PLANS
SHEET 10 OF 13



603739_HD03(ENVIRONMENTAL PLANS).DWG Plotted on 27-Apr-2022 9:58 AM

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	17
PROJECT FILE NO.	603739		

ENVIRONMENTAL PLANS
SHEET 11 OF 13

N

CONTINUED ON SHEET NO. 33

I-495 SOUTHBOUND

BEDROCK

GRL

EP

GRASS

LIMIT OF WORK
STA. 724+00
N: 2839324.9654
E: 700246.9894
MATCH EXISTING

END PROP SLOPED GRANITE EDGING
STA. 721+09

SAWCUT

I-495 1965 MAIN BASELINE "S"

+00.00
PCC

12.00

BOS

"SOUTH" "INTERSATE I-495"

PROP FULL DEPTH CONSTRUCTION WITH EXISTING SUBBASE

PROP 4" LOAM AND SEED

APPROX LIMIT OF GRADING (TYP)

PROP SLOPED GRANITE EDGING

PROP GUARDRAIL TL-3

NEW I-495 SB ENTRANCE RAMP CONSTRUCTION ℄

2125
N: 2839380.154'
E: 699950.
EL: 337.182'
MAG

2063
N: 2839312.843'
E: 699806.367'
EL: 363.930'
SPK

1965 SHLO 5505

1965 SHLO 5515

100' BUFFER TO BVW

WETLAND 4

W4-1
W4-2
W4-3
W4-4
W4-5
W4-6

SIGN

720 721 722 723 724 725

125 126 127 129 130 131

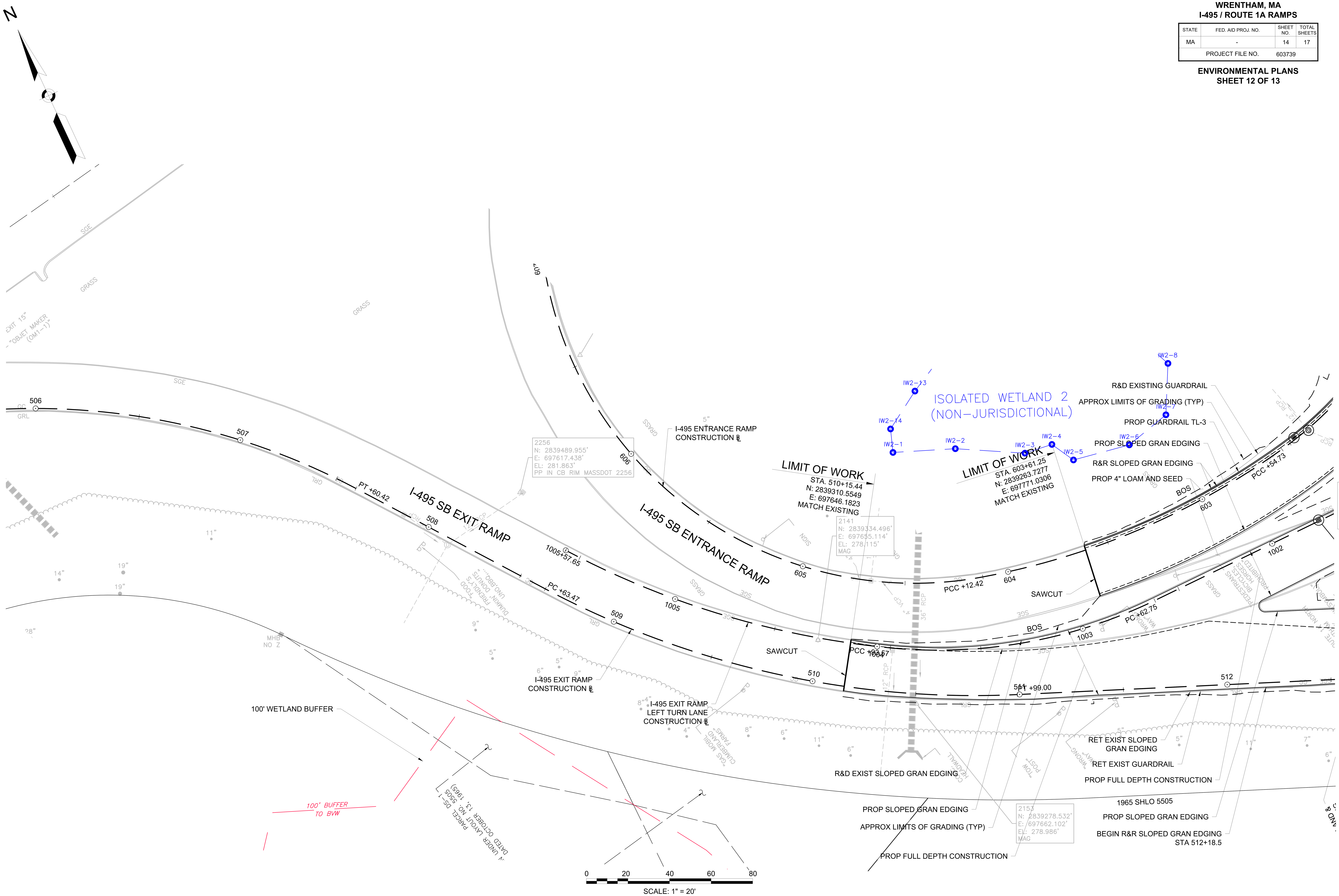
0 20 40 60 80

SCALE: 1" = 20'

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	17
PROJECT FILE NO.		603739	

ENVIRONMENTAL PLANS
SHEET 12 OF 13



WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	17
PROJECT FILE NO.	603739		

ENVIRONMENTAL PLANS
SHEET 13 OF 13

603739_HD03(ENVIORNMENTAL PLANS).DWG Plotted on 27-Apr-2022 9:59 AM

N

"RIGHT ARROW (SYMBOL)" ROUTE 1A SOUTH PLAINVILLE "LEFT ARROW (SYMBOL)"

LIMIT OF WORK
STA. 900+85.94
N: 2840259.5857
E: 698705.4753
MATCH EXISTING

2015
N: 2840287.640'
E: 698584.152'
EL: 297.672'
X-CUT

2016
N: 2840189.463'
E: 698871.374'
EL: 290.713'
REBAR/CAP

1965 SHLO 5505

I-495 NB EXIT RAMP CONSTRUCTION ℄

902 PC +78.34

901

900+00

I-495 NB EXIT RAMP

2001

2002

2002+85.60

"LEFT TURN ONLY"

"WRONG WAY"

"TO PREMIUM OUTLETS BLVD."

2142
N: 2840078.406'
E: 698954.722'
EL: 298.112'
MAG

N/F
GEORGE F. CAHILL TRUST
BK/PG 30773/320
807 SOUTH ST
MAP/LOT K-05-4-6

100' BUFFER TO BVW

I-495 NB ENTRANCE RAMP

803+64.22

803

PC +36.82

802 PT +97.54

I-495 NB ENTRANCE RAMP CONSTRUCTION ℄

OPEN CONC. CHANNEL

LIMIT OF WORK
STA. 802+71.42
N: 2840144.4963
E: 698670.5743
MATCH EXISTING

I-495 NB EXIT RAMP

"FOOD ETC."

MHB NO Z

HB

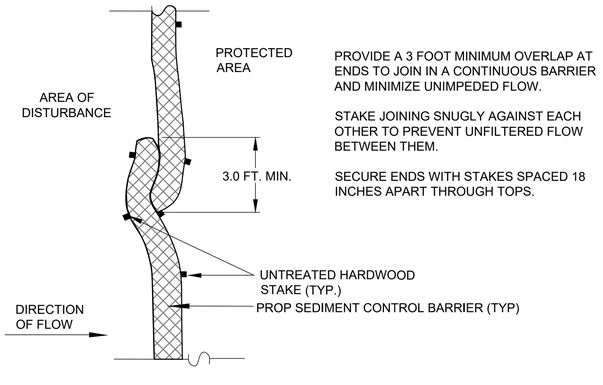
CONTINUED ON SHEET NO. 29

0 20 40 60 80
SCALE: 1" = 20'

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	17
PROJECT FILE NO.	603739		

ENVIRONMENTAL DETAILS
SHEET 1 OF 2

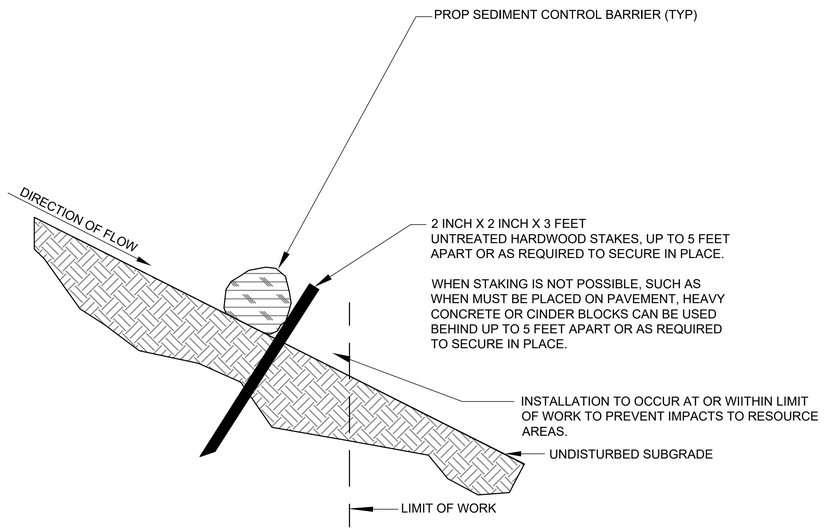


PROVIDE A 3 FOOT MINIMUM OVERLAP AT ENDS TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW.

STAKE JOINING SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.

SECURE ENDS WITH STAKES SPACED 18 INCHES APART THROUGH TOPS.

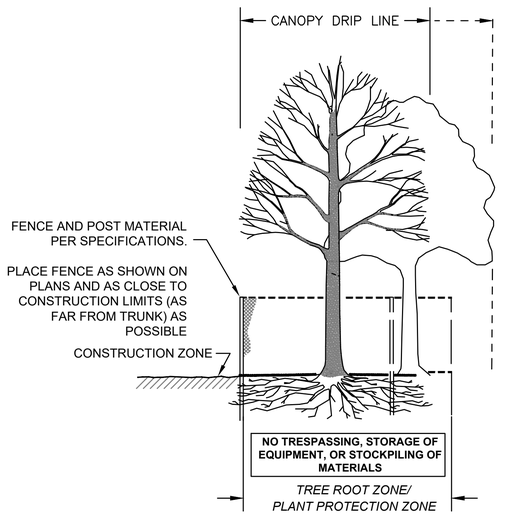
PLAN VIEW - JOIN DETAIL



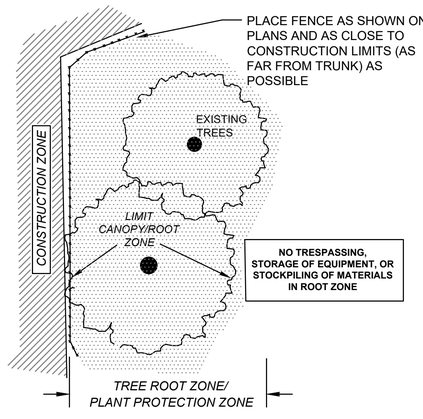
SECTION VIEW

SEDIMENT CONTROL SYSTEM

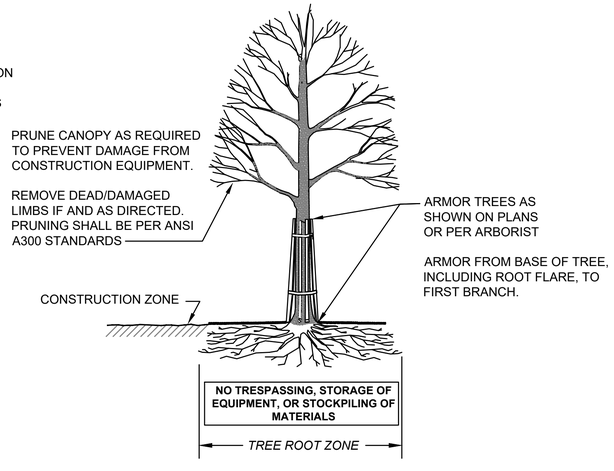
NOT TO SCALE



FENCE PROTECTION OF ROOT ZONE - SECTION VIEW



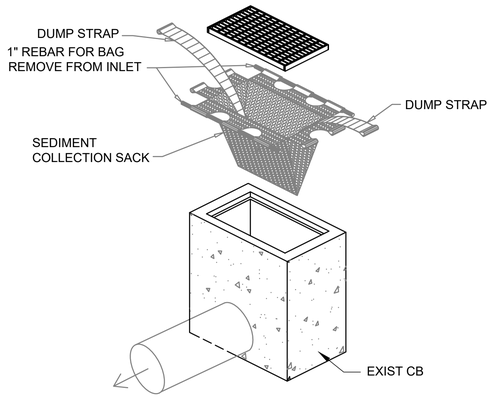
FENCE PROTECTION OF ROOT ZONE - PLAN VIEW



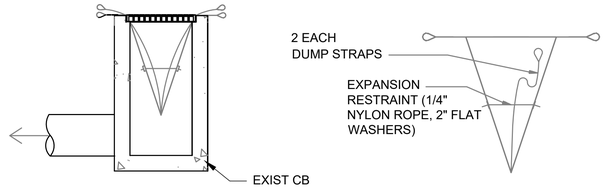
SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION

NOT TO SCALE



INSTALLATION DETAIL



BAG DETAIL

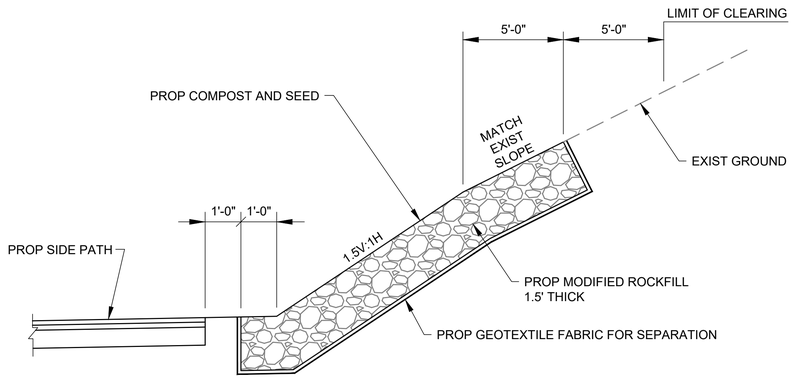
SILT SACK

NOT TO SCALE

WRENTHAM, MA
I-495 / ROUTE 1A RAMPS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	17
PROJECT FILE NO.	603739		

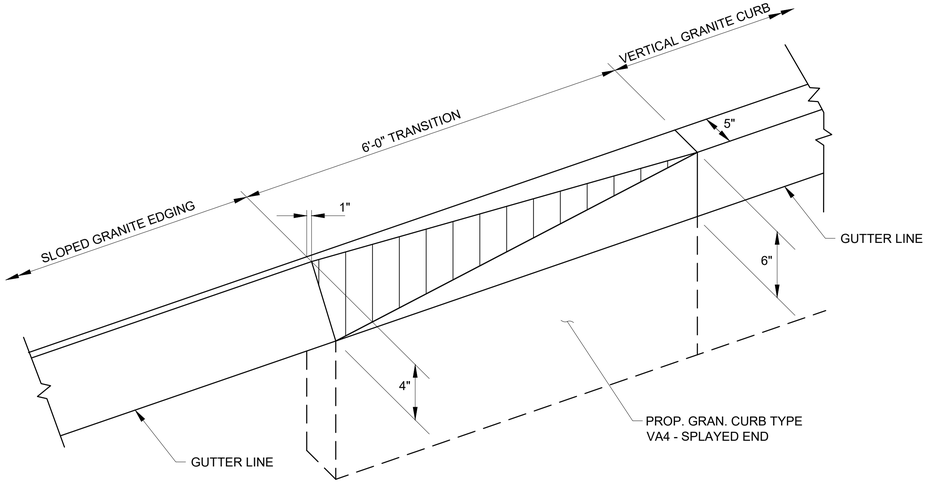
ENVIRONMENTAL DETAILS
SHEET 2 OF 2



ROUTE 1A STA 131+50 RT TO STA 132+75 RT

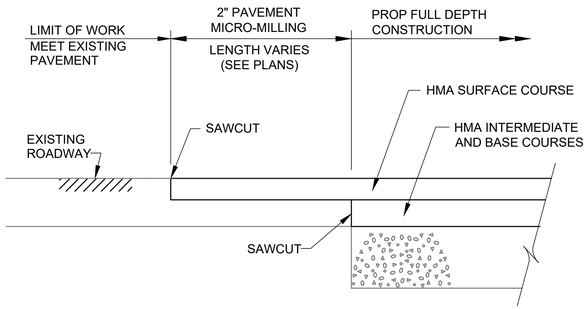
MODIFIED ROCKFILL SLOPE

NOT TO SCALE



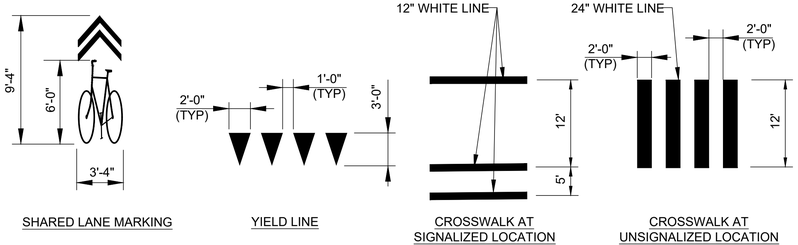
GRANITE CURB TYPE VA4 - SPLAYED END

NOT TO SCALE



PAVEMENT TRANSITION

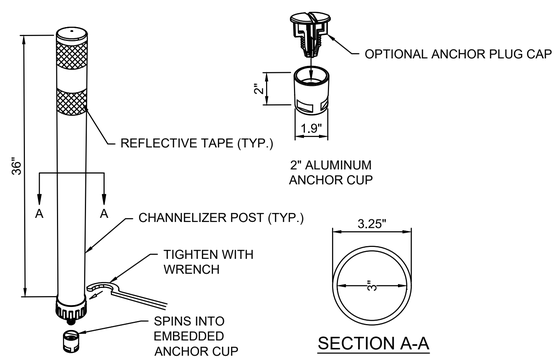
NOT TO SCALE



SHARED LANE MARKING | YIELD LINE | CROSSWALK AT SIGNALIZED LOCATION | CROSSWALK AT UNSIGNALIZED LOCATION

PAVEMENT MARKING DETAILS

NOT TO SCALE



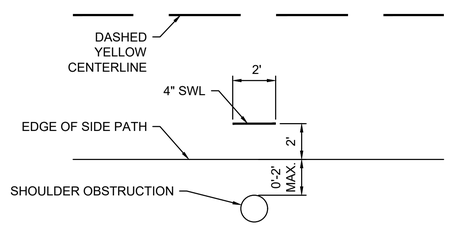
SECTION A-A

FLEXPOSTS NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DIMENSIONS, MATERIALS, AND ATTACHMENTS MAY VARY BETWEEN MANUFACTURES.
3. COLOR OF POST SHALL MATCH COLOR OF APPLICABLE PAVEMENT MARKING LINE PER MASSDOT SPECIFICATIONS.
4. INSTALLATION WILL BE LOCATED IN THE CENTER OF THE SIDEPATH, 1' BACK FROM THE EDGE OF THE BIKE RAMP.

36" CORED BASE FLEXPOST DETAIL

NOT TO SCALE



NOTE: THE SIDE PATH SHOULDER OBSTRUCTION MARKING SHALL BE APPLIED AT ANY OBSTRUCTION WHERE THERE IS LESS THAN 2' FROM EDGE OF SIDE PATH TO FACE OF THE OBSTRUCTION.

SIDE PATH SHOULDER OBSTRUCTION PAVEMENT MARKING DETAIL

NOT TO SCALE

Attachment B – Wetland Delineation Report

Jacobs

Delineation Report

120 Saint James Avenue, 5th Floor
Boston, MA 02116

www.jacobs.com

Subject	**Wetland Delineation Report**	**Project Name**	Construction of Route I-495/Route 1A Ramps
Attention	Hung Pham, Stormwater Program Coordinator Massachusetts Department of Transportation (MassDOT) Environmental Services	**Project Number**	603739
Prepared By	Kyle Purdy, Jacobs Engineering Group, Inc. (Jacobs) Jessica Rebholz, Jacobs		
Date	August 1, 2019		
Attachments	Figures A – Delineation Map B – USACE Data Forms C – Photographic Log		

Jacobs conducted a wetland delineation on July 16th and 17th, 2019 for the MassDOT Construction of Route I-495/Route 1A Ramps (Project), located along I-495 and Route 1A in Wrentham, Norfolk County, Massachusetts (Site). This report describes resource areas subject to protection under the Federal Clean Water Act (33 U.S.C. §1251 et seq), and the Massachusetts Wetlands Protection Act (WPA) (MGL Chapter 31, Section 40) that exist within and directly adjacent to the Site.

1. Site Location and Description

Route 1A runs north-south through the Town of Wrentham from the Norfolk town line to the Plainville town line. Route 1A provides access to residential areas and local roadways throughout Wrentham, while also supporting significant commercial and retail development both in and around the study area.

On the northern end of the Site, Route 1A is intersected by the I-495 overpass ramps at exit 15. In this area, there is sparse residential/commercial development. Moving south, Route 1A is heavily developed with multiple commercial outlet properties. The Wrentham Premium Outlets and the Wrentham Crossing Shopping Plaza both intersect Route 1A at signalized intersections. The Wrentham Premium Outlets is a major generator of traffic and congestion on Route 1A. The Wrentham Crossing Outlets are currently not developed, but there are plans for this property to open in the future.

Within the Site limits, Route 1A is typically a four-lane cross section with localized provision of additional lanes at intersections. The two-lane roadway widens to four lanes at the I-495 interchange and continues as four lanes through Wrentham Village Premium Outlets to Wrentham Crossing. South of the Wrentham Crossing intersection, it tapers down to two lanes to the Plainville town line. Route 1A through Wrentham is classified as an urban minor arterial and is under the jurisdiction of MassDOT. The travel lanes are typically 11 to 12 feet wide and the shoulders range from 1 to 5 feet wide.

2. Existing Conditions

According to the United States Geological Survey (USGS) topographic map, the approximate elevation for the Site ranges from 252 to 372 feet above mean sea level (**Figure 1**). Most of the area to be impacted by the proposed activities consists of the maintained, already cleared I-495 and Route 1A highway right-of-ways (ROW). The remaining portions of the Site is the commercial parking lot for the Wrentham Premium Outlets and associated commercial development buildings (**Figure 2**).

2.1 Desktop Review for Resource Areas

Based on reviews of the MassDEP Wetland Maps for Norfolk County, freshwater wetlands are mapped all around the I-495 and Route 1A ROWs (**Figure 2**). MassDEP classifies the wetlands to the southwest of the I-495/Route 1A intersection as open water (OW, located east of the electrical transmission line ROW) and deep marsh (DM, located west of the electrical transmission line ROW). Along the western side of Route 1A, in the southernmost portion of the survey area is a mapped OW pond. This pond has a hydrologic connection mapped running southward then eastward underneath Route 1A. Located along the southern portion of I-495, in the easternmost portion of the survey area is a mapped shrub swamp (SS) wetland. Located along the northern portion of I-495, in the easternmost portion of the survey area is a mapped DM wetland. Located northeast of the I-495 southbound exit ramp is a mapped SS wetland with a hydrologic connection continuing westward into a DM wetland.

Based on review of the National Wetland Inventory (NWI) map provided by the U.S. Fish and Wildlife Service, freshwater wetlands are mapped within and surrounding the Site, with similar boundaries as the mapped MassDEP wetlands (**Figure 3**). The wetland located along the southern portion of I-495 and east of the electric transmission line is classified as palustrine unconsolidated bottom, permanently flooded, diked/impounded (PUBHh). In a similar area, but to the west of the electrical transmission line is a mapped wetland characterized as palustrine unconsolidated bottom, semipermanently flooded, diked/impounded (PUBFh). Along the southernmost portion of the survey area, located along the western portion of Route 1A is a wetland mapped and characterized as PUBHh. Located along the easternmost portion of the survey area, along the southern portion of I-495 is a wetland mapped as palustrine scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated (PSS1E) and palustrine forested, broad-leaved deciduous, seasonally flooded/saturated (PFO1E). The mapped wetland located directly north, along the northern portion of I-495 is characterized as palustrine unconsolidated bottom/emergent, persistent, semipermanently flooded, diked/impounded (PUB/EM1Fh). To the west of this wetland are two additional mapped wetlands, one characterized as PSS1E and the other PUB/EM1Fh.

The most recently issued Flood Insurance Rate Map[1] for the area, produced by the Federal Emergency Management Agency (FEMA), indicates the Site is not mapped within a floodplain. The closest a mapped FEMA resource gets to the Site is approximately 92 feet west of the southwestern portion of Route 1A. This area is mapped as Zone X, which is classified as having a 0.2% annual chance flood hazard and is not located within the mapped floodplain for the 100-year flood event (**Figure 4**). Therefore, the Project is not anticipated to impact Bordering Land Subject to Flooding (BLSF) under the WPA.

[1] Federal Emergency Management Agency, October 2017, National Hazard Flood Layer, Digital Flood Insurance Rate Map. Maps 25021C0336E and 25021C0337E. Effective 7/17/2012. Accessed July 9, 2019.

The Natural Resources Conservation Service[2] soil survey for Norfolk County has mapped most of the Site as Udorthents, sandy (653). For a full listing of the mapped soils within and surrounding the Site, please refer to **Figure 5**.

According to the most recently available data provided by the Massachusetts Natural Heritage and Endangered Species Program[3], no Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife are mapped within or adjacent to the Site (**Figure 6**). There are no Certified Vernal Pools within the Site. The closest Certified Vernal Pool (CVP 7774) is located approximately 210 feet north of the northern edge of the I-495 pavement. Another Certified Vernal Pool (CVP 7397) is located approximately 230 feet south of the southern edge of the I-495 pavement. There is one Potential Vernal Pools located within the Site. This Potential Vernal Pool (PVP 29587) is in the westernmost portion of the Site just southwest of the I-495 northbound exit ramp. Another Potential Vernal Pool (PVP 29588) is located just east of the electrical transmission line. One Potential Vernal Pool (PVP 29596) is located approximately 134 feet east of CVP 7397. Another Potential Vernal Pool (PVP 29599) is located directly on top of CVP 7774. The last Potential Vernal Pool (PVP 29600) is located approximately 390 feet north of the I-495 southbound exit ramp.

No portion of the Site is within an Area of Critical Environmental Concern[4]. According to MassDEP, the easternmost portion of the Site is within an area designated as an Outstanding Resource Water[5] (ORW). This ORW is associated with Wading River, which is public water supply watershed of Taunton (PWS 4016000-05S3009000-01S). No portion of the Site is located within a Zone I or Interim Wellhead Protection Area[6]. The Site however is within a Zone II Wellhead Protection Area associated with the Wrentham Water Division (**Figure 7**).

2.2 Field Delineation, Resource Areas and Buffer Zones

Jacobs Wetland Scientists delineated the Site on July 16th and 17th, 2019 in accordance with methods developed by the MassDEP[7] and the U.S. Army Corps of Engineers[8] (USACE). The wetland resource areas identified on or near the Site include Bank and BVW. These resource areas are defined under the WPA as follows:

- **Bank:** As defined at 310 CMR 10.54(2), a Bank is the portion of the land surface, which normally abuts and confines a water body. The upper boundary of Bank is the first observable break in slope.
- **Bordering Vegetated Wetland (BVW):** As defined in 310 CMR 10.55(2), Bordering Vegetated Wetlands are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants.

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[2] Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey

[3] Massachusetts Natural Heritage and Endangered Species Program, Oct. 2017. Massachusetts Natural Heritage Atlas. 14th Edition.

[4] MassGIS (collaboration with DCR and CZM), Sept. 2017. Massachusetts ACECs.

[5] MassGIS, Dec. 2017. Designated Outstanding Resource Waters of Massachusetts.

[6] MassGIS, Oct. 2017. Approved Wellhead Protection Areas (Zone I and IWPAs).

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

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

A total of eight wetlands (two non-jurisdictional) and one waterbody were delineated within or adjacent to the Site.

2.2.1 Wetland 1

Wetland 1 was delineated in the western portion of the Site, just northeast of the Wrentham Village Premium Outlets parking lot. This wetland was observed to originate at a culvert pipe located between delineation flags W1-9 and W1-10. Wetland 1 was observed to be predominantly vegetated with silver maple (*Acer saccharinum*), silky dogwood (*Cornus amomum*), and creeping Jenny (*Lysimachia nummularia*). Hydrological indicators of wetland conditions included saturation, water table present at approximately 12-inches below grade, water marks, algal mat or crust, water-stained leaves and surface soil cracks. Soils were observed to be a silt loam with a 10YR 2/2 matrix color in the A-horizon (0-5") and a silty clay loam with a 10YR 4/2 matrix (80%) and 10YR 4/4 mottle (20%) color in the B-horizon (5-24"). Soils were observed to meet the depleted matrix (F3) hydric soil criteria.

2.2.2 Wetland 2

Wetland 2 was delineated southwest of the I-495/Route 1A interchange, just north of the Bloomingdale's Outlet parking lot. This isolated wetland was observed to be contained within the delineation flags. Wetland 2 was observed to be predominantly vegetated with swamp white oak (*Quercus bicolor*), American elm (*Ulmus Americana*), and sensitive fern (*Onoclea sensibilis*). Hydrological indicators of wetland conditions included inundation of approximately two-inches, high water table, saturation, sparsely vegetated concave surface, water-stained leaves and stunted or stressed plants. Soils were observed to be a silt loam with a 10YR 3/1 matrix color in the A-horizon (0-4") and a silty clay loam with a 10YR 4/1 matrix (70%) and a 10YR 4/4 mottle (30%) color in the B-horizon (4-24"). Soils were observed to meet the depleted matrix (F3) hydric soil criteria. NHESP has mapped the southeastern corner of Wetland 2 as a PVP and during the field delineation, signs of a vernal pool were observed in this area including forested wetland with potential habitat for vernal pool species and no outlet to other features/stagnant surface inundation. East of Wetland 2 was the observed detention basin for the Wrentham Village Premium Outlets, which had a five-foot-high fence surrounding the entire detention basin. No connection between the two features was observed.

2.2.3 Wetland 3

Wetland 3 was delineated as an open water/ponded feature located just south of the driveway to PW Preseton industrial facility, located off the western shoulder of Route 1A. The mean annual high water (MAHW) line of the pond was delineated with flagging labeled as W3-1 through W3-10. At delineation flag W3-9, an inlet to a 24-inch ductile iron culvert was observed to drain southward, connecting with Intermittent Stream 1 at delineation flag IS1-1.

2.2.4 Wetland 4

Wetland 4 was delineated in the eastern portion of the Site. This wetland was observed to continue both eastward, as well as southward from the delineated boundaries. Wetland 4 was observed to be predominantly vegetated with swamp white oak, red osier dogwood (*Cornus sericia*), and cattails (*Typha angustifolia*). Hydrological indicators of wetland conditions included inundation of approximately two-inches, high water table, saturation, sediment deposits, hydrogen sulfide odor, thin muck surface and drainage patterns. Soils were observed to be an organic silt with a 10YR2/1 matrix color in the A-horizon (0-6") and a silty clay loam with a 10YR 3/2 matrix (80%) and 10YR 3/4 mottle (20%) color in the B-horizon (6-24"). Soils were observed to meet both the hydrogen sulfide (A4) and thin dark surface (S9) hydric soil criteria. Wetland 4 was also observed to contain a mapped CVP and PVP located just east of the Project boundaries, but still within the same wetland complex.

2.2.5 Wetland 5

Wetland 5 was delineated northeast of the I-495 southbound exit ramp. This wetland was observed to contain a mapped PVP. The eastern portion of the wetland was observed to contain a small, less than 40-foot in diameter inundated depression area/pool that was shaded by larger tree species (greater than 8-inch diameter at breast height). The western portion of the wetland was observed to be more flatly sloped, saturated, and with little shading from the larger hydrophytic tree species. Two data points were taken within the differentiating areas of the same wetland; data point 5 (eastern portion) and data point 6 (western portion). Wetland 5 was observed to be predominately vegetated with silver maple, red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), and jewelweed (*Impatiens capensis*). Hydrological indicators of wetland conditions included high water table, saturation, inundation visible on aerial imagery, water-stained leaves and stunted or stressed plants. Soils in the eastern portion of the wetland were observed to meet the dark surface (S7) criteria, while the western portion were observed to meet the depleted matrix (F3) criteria.

2.2.6 Wetland 6

Wetland 6 was delineated northeast of the eastern portion of the Site and was observed to be a depression area (less than 12,000 square feet in size) located at the toe of a rock outcropping. This wetland was observed to contain a mapped CVP and PVP, but no inundation was observed within this wetland during the time of delineation. Wetland 6 was observed to be predominantly vegetated with silver maple, green ash and sensitive fern. Hydrological indicators of wetland conditions included saturation present at a depth of approximately eight-inches below grade, inundation visible on aerial imagery, water-stained leaves and surface soil cracks. Soils were observed to be a silty clay loam with a 10YR 2/2 matrix color in the A-horizon (0-6") and a silty clay loam with a 10YR 4/2 (90%) and 10YR 4/4 mottle (10%) color in the B-horizon (6-24"). Soils were observed to meet the depleted matrix (F3) hydric soil criteria.

2.2.7 Intermittent Stream 1

Intermittent Stream 1 was delineated south of Wetland 3, originating from the outlet of the 24-inch ductile iron culvert pipe and continuing southward then eastward underneath Route 1A. Intermittent Stream 1 was observed to enter a separate 24-inch ductile iron culvert pipe that crosses underneath Route 1A at delineation flag IS1-19 and outlets east of Route 1A at delineation flag IS1-20; the stream was then observed to extend northeastward outside the Project limits. The eastern/northern Bank of Intermittent Stream 1 was delineated, as the Project limits are located northeast/north of the stream. The western/southern Bank was not delineated, as this polyline was observed to be well outside the Project limits and the resource areas (i.e. Riverfront Area) extend into the Site from the eastern Bank and not the western. Intermittent Stream 1 was observed to vary in width with most of the stream (the portion located west of Route 1A) observed to be approximately three feet in width; the east side of Route 1A was observed to vary between 8-12 feet in width. During the time of delineation, no surfical flow was observed within the stream, but indicators of inundation were observed and the MAHW was flagged and surveyed appropriately as Bank.

2.2.8 Isolated Wetland 1

Isolated Wetland 1 was delineated as a non-jurisdictional resource area located in the median of I-495, north of the northbound off-ramp. This wetland was observed to originate from the outlet of a 12-inch culvert pipe located at delineation flag IS1-5. This wetland was not observed to extend further southward from the boundaries.

2.2.9 Isolated Wetland 2

Isolated Wetland 2 or also known as a portion of the "Naturalized Area – Do Not Mow" was delineated as a non-jurisdictional resource area which was also located in the median of I-495, north of the northbound off-

ramp. This area was observed to show indicators of a wetland; hydrology, hydrophytic vegetation and hydric soils. Isolated Wetland 2 is located directly adjacent (to the west) of the stormwater detention basin. The stormwater detention basin was observed to be collecting surface runoff from both the pavements of Route 1A and the I-495 northbound off-ramp. From the stormwater detention basin, surface water is anticipated to continue westward through a rip-rap overflow spillway into the area designated as Isolated Wetland 2 and surveyed along the wetland/upland boundary. As seen in the Photographic Log, Isolated Wetland 2 was observed to be predominantly vegetated with cattails. Both Isolated Wetland 1 and 2 are non-jurisdictional features, as they were created by the construction of the roadways. However, both areas present opportunities for enhancement and/or mitigation if other delineated resources within and adjacent to the Site are disturbed by the Project.

The Town of Wrentham Conservation Commission, in addition to the MassDEP wetland resource areas, establishes 100-foot buffer zones extending from BLSF and BVW. The Town of Wrentham Conservation Commission also depicts in page 3 of their *Notice of Intent and Abbreviated Notice of Intent* guidance, a 25-foot protected buffer strip extending from the boundary of BVW. As such, these areas are depicted in the Site Plans. The area of the 25-foot buffer strip was observed during the July 16th and 17th, 2019 field visit to not be in a naturally vegetated state. The area was observed to be covered by impervious surfaces or consist of maintained/mowed grass as seen in the Photographic Log (**Attachment D**). The 25-foot buffer strip was not observed to be a high-quality buffer zone.

2.3 100-foot Buffer Zones and Riverfront Area

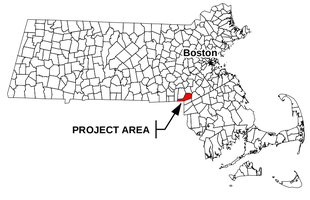
The WPA establishes 100-foot buffer zones extending from resources, including BVW. The WPA states that any activities that are undertaken within 100 feet of an area specified in 310 CMR 10.02(1)(a) (e.g. BVW) will be conducted per 310 CMR 10.02(2)(b), "*in a manner so as to reduce the potential for any adverse impacts to the resource area during construction, and with post-construction measures implemented to stabilize any disturbed areas.*"

Figures (Previously Included in Figures Section of RDA)

Attachment A – Delineation Map

Legend

- Jacobs Wetland Flags
- Data Plot
- Delineated Wetland Line
- Delineated Intermittent Stream
- Delineated Wetland Area
- Project Limits



0 625 1,250 2,500 Feet

1 inch = 192 feet

WETLAND DELINEATION MAP

MASSDOT HIGHWAY CONSTRUCTION OF ROUTE I-495/ROUTE 1A RAMPS
WRENTHAM, NORFOLK COUNTY, MASSACHUSETTS

Prepared for:

massDOT Massachusetts Department of Transportation Highway Division

Prepared by:

JACOBS

Attachment B – USACE Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/16/19

Applicant/Owner: MassDOT State: MA Sampling Point: DP1

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 8-15

Subregion (LRR or MLRA): LRR R Lat: 42.0403 Long: -71.3490 Datum: UTM 19T

Soil Map Unit Name: 422C Canton fine sandy loam, 8-15% slopes, extremely stony NWI classification: PUB Fh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	Wetland 1	

Remarks: (Explain alternative procedures here or in a separate report.)
DP1 taken approximatley 20 feet south of deliniation flag W1-11. Ductile iron culvert pipe observed between deliniation flags W1-9 and W1-10 (draining into wetland). Wetland observed to be ponded with greater than 2' of surface water in central portion. Area mapped by NHESP as a PVP with canopy cover, no waterbody outlet and inundation potentialy capable of inhabiting vernal pool species. Field visits performed outside beginning of growing season but conservatively labeled as vernal pool.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):	____
Water Table Present?	Yes X	No ____	Depth (inches):	~12
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	-

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DP1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	60	Yes	FACW
2. *Fraxinus pennsylvanica*	10	No	FACW
3. *Acer rubrum*	5	No	FAC
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus amomum*	30	Yes	FACW
2. *Fraxinus pennsylvanica*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Lysimachia nummularia*	35	Yes	FACW
2. *Polystichum acrostichoides*	5	No	FACU
3. *Onoclea sensibilis*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	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 =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100						Silt Loam
5-24	10YR 4/2	80	10YR 4/4	20	D	M		Silty Clay Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/16/19

Applicant/Owner: MassDOT State: MA Sampling Point: DP2

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 8-15

Subregion (LRR or MLRA): LRR R Lat: 42.0392 Long: -71.3482 Datum: UTM 19T

Soil Map Unit Name: 422C Canton fine sandy loam, 8-15% slopes, extremely stony NWI classification: PUB Hh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	Wetland 2	

Remarks: (Explain alternative procedures here or in a separate report.)
Data point taken ~5' southeast of deliniation flag W2-9. Isolated wetland not assumed to extend beyond deliniation borders. NHESP has mapped area as PVP. Area alongside eastern portion of wetland has observable shade from trees, fallen timber, and inundation potentially capable of supporting vernal pool species.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

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

Secondary Indicators (minimum of two required)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	~2
Water Table Present?	Yes X	No ____	Depth (inches):	-
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	-

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DP2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus bicolor*	55	Yes	FACW
2. *Acer saccharinum*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Ulmus americana*	30	Yes	FACW
2. *Cornus amomum*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Onoclea sensibilis*	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	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 =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100						Silt loam
4-24	10YR 4/1	70	10YR 4/4	30	D	M		Silty clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/16/19

Applicant/Owner: MassDOT State: MA Sampling Point: DP3

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): lowpoint between steep hillsides Local relief (concave, convex, none): Concave Slope (%): 0-15

Subregion (LRR or MLRA): LRR R Lat: 42.0388 Long: -71.3380 Datum: UTM 19T

Soil Map Unit Name: 104C Hollis-Rock outcrop-Charlton complex, 0-15% slopes NWI classification: PSS1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	Wetland 4	

Remarks: (Explain alternative procedures here or in a separate report.)
Data point taken southeast of deliniation flag W4-3. Wetland observed to continue both east from deliniation flag W4-1 and southeast from deliniation flag W4-10. Wetland located in low topography between two steep (>15% slope) hillsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- X Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- X Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	~2
Water Table Present?	Yes X	No ____	Depth (inches):	-
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	-

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DP3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus bicolor*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus sericia*	15	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Typha angustifolia*	60	Yes	OBL
2. *Leersia oryzoides*	10	No	OBL
3. *Carex lurida*	10	No	OBL
4. *Juncus effusus*	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	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 =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100						Organic silt
6-24	10YR 3/2	80	10YR 3/4	20	D	M		Silty clay loam

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X 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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- X Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/17/19

Applicant/Owner: MassDOT State: MA Sampling Point: DP4

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3-8

Subregion (LRR or MLRA): LRR R Lat: 42.0397 Long: -71.3468 Datum: UTM 19T

Soil Map Unit Name: 254B Merrimac fine sandy loam, 3-8 % NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	Isolated Wetland 1

Remarks: (Explain alternative procedures here or in a separate report.)
Isolated Wetland 1 observed to be formed within the perviously disturbed/man-made vegetated area located within the northbound and main portion of I-495. Wetland observed to meet all 3 criteria, but nonjurisdictional as not natural/man-made. Culvert pipe observed to drain into wetland at deliniation flag IS1-5. Wetlandnot observed to drain outside deliniated boundaries.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 8

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DP4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus sericea*	25	Yes	FACW
2. *Cornus amomum*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	30 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Leersia oryzoides*	75	Yes	OBL
2. *Onoclea sensibilis*	10	No	FACW
3. *Forma variegata*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	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 =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL Sampling Point: DP4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	100						Organic silt
6-24	10YR 4/2	90	10YR 5/2	10	D	M		Silty clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/17/19

Applicant/Owner: MassDOT State: MA Sampling Point: DP5

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Toe of large rock outcrops and ledge Local relief (concave, convex, none): Concave Slope (%): 0-15

Subregion (LRR or MLRA): LRR R Lat: 42.0410 Long: -71.3401 Datum: UTM 19T

Soil Map Unit Name: 104C Hollis-Rock outcrop-Charlton complex, 0-15% slopes NWI classification: PSS1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	Wetland 5	

Remarks: (Explain alternative procedures here or in a separate report.)
Data point taken 5 feet north of deliniation flag W5-5. Wetland observed to connect to mapped PVP located to the west (DP6 area). Wetland observed to contain mapped PVP with inundation, no waterbody outlet, shading, and potential to inhabit vernal pool species.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____		
Water Table Present?	Yes X	No ____	Depth (inches): ~14		
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): ~8	**Wetland Hydrology Present?**	**Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DP5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	55	Yes	FACW
2. *Acer rubrum*	40	Yes	FAC
3. *Fraxinus pennsylvanica*	10	No	FACW
4.			
5.			
6.			
7.			
	105	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Impatiens capensis*	40	Yes	FACW
2. *Onoclea sensibilis*	5	No	FACW
3. *Leersia oryzoides*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	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 =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100						Organic silt
4-24	10YR 3/1	70	10YR 3/3	30	D	M		organic silt

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- X Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/17/19

Applicant/Owner: MassDOT State: MA Sampling Point: DP6

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-15

Subregion (LRR or MLRA): LRR R Lat: 42.0413 Long: -71.3414 Datum: UTM 19T

Soil Map Unit Name: 104C Hollis-Rock outcrop-Charlton complex, 0-15% slopes NWI classification: PUB/EE2FH

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	Wetland 5	

Remarks: (Explain alternative procedures here or in a separate report.)
Data point taken 10 feet north from deliniation flag W5-25. Wetland observed to connect to mapped PVP to the east (DP5). Area mapped as PVP and observed to have shade, no waterbody outlet, and decaying/fallen timber to be suitable for vernal pool species.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): ~16
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): ~12

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DP6

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	60	Yes	FACW
2. *Fraxinus pennsylvanica*	55	Yes	FACW
3. *Quercus bicolor*	15	No	FACW
4.			
5.			
6.			
7.			
	130	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus sericea*	25	Yes	FACW
2. *Cornus amomum*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	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 =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL Sampling Point: DP6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/2	100						Silty clay loam
7-24	10YR 4/1	90	10YR 4/3	10	D	M		Silty clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/17/19

Applicant/Owner: MassDOT State: MA Sampling Point: DP7

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-15

Subregion (LRR or MLRA): LRR R Lat: 42.0401 Long: -71.3373 Datum: UTM 19T

Soil Map Unit Name: 104C Hollis-Rock outcrop-Charlton complex, 0-15% slopes NWI classification: PUB/EM1Fh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	Wetland 6	

Remarks: (Explain alternative procedures here or in a separate report.)
Data point taken approximately 5 feet north from deliniation flag W6-1. Isolated wetland observed at the base of a large rock outcropping/ledge.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): ~8

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DP7

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	55	Yes	FACW
2. *Fraxinus pennsylvanica*	50	Yes	FACW
3. *Acer rubrum*	15	No	FAC
4.			
5.			
6.			
7.			
	120	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Herb Stratum (Plot size: 5)			
1. *Onoclea sensibilis*	20	Yes	FACW
2. *Impatiens capensis*	2	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	22	=Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	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 =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	100						Silty clay loam
6-24	10YR 4/2	90	10YR 4/4	10	D	M		Silty clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/16/19

Applicant/Owner: MassDOT State: MA Sampling Point: UPDP1

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): None Slope (%): 8-15

Subregion (LRR or MLRA): LRR R Lat: 42.0404 Long: -71.3489 Datum: UTM 19T

Soil Map Unit Name: 422C Canton fine sandy loam, 8-15% slopes, extremely stony NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)
Upland data point taken ~8' north of deliniation flag W1-11; between culvert pipe and I-495. Not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPDP1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus alba*	50	Yes	FACU
2. *Acer saccharum*	40	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Pinus strobus*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals:	115 (A)		460 (B)
Prevalence Index = B/A =			4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL Sampling Point: UPDP1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/4	100						Sandy loam
8-24	10YR 5/3	100						Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/16/19

Applicant/Owner: MassDOT State: MA Sampling Point: UPDP2

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 8-15

Subregion (LRR or MLRA): LRR R Lat: 42.0391 Long: -71.3479 Datum: UTM 19T

Soil Map Unit Name: 422C Canton fine sandy loam, 8-15% slopes, extremely stony NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)
Data point taken approximately 10 feet northeast of deliniation flag W2-9. Not a wetland area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UPDP2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus alba*	60	Yes	FACU
2. *Quercus alba*	40	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	110	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Pinus strobus*	35	Yes	FACU
2. *Pinus resinosa*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	140	x 4 =	560
UPL species	0	x 5 =	0
Column Totals:	150 (A)		590 (B)
Prevalence Index = B/A =			3.93

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: UPDP2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/3	100						Sandy loam
11-24	10YR 4/4	100						Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/16/19

Applicant/Owner: MassDOT State: MA Sampling Point: UPDP3

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): None Slope (%): 0-15

Subregion (LRR or MLRA): LRR R Lat: 42.0391 Long: -71.3382 Datum: UTM 19T

Soil Map Unit Name: 104C Hollis-Rock outcrop-Charlton complex, 0-15% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)
Data point taken approximately 10 feet west of deliniation flag W4-4. Not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPDP3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus alba*	65	Yes	FACU
2. *Acer saccharum*	55	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	130	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Lonicera tatarica*	15	Yes	FACU
2. *Pinus resinosa*	2	No	FACU
3.			
4.			
5.			
6.			
7.			
	17	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	137	x 4 =	548
UPL species	0	x 5 =	0
Column Totals:	147 (A)		578 (B)

Prevalence Index = B/A = 3.93

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL Sampling Point: UPDP3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/4	100						Sandy loam
12-24	10YR 4/3	100						Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/17/19

Applicant/Owner: MassDOT State: MA Sampling Point: UPDP4

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Hillside of highway Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: 40.0399 Long: -71.3470 Datum: UTM 19T

Soil Map Unit Name: 653 Undorthents, sandy NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)
Data point taken approximately 25 feet north of deliniation flag IW1-6. Not a wetland.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPDP4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus resinosa*	70	Yes	FACU
2. *Pinus strobus*	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus florida*	35	Yes	FACU
2. *Rosa multiflora*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	130	x 4 =	520
UPL species	0	x 5 =	0
Column Totals:	130 (A)		520 (B)
Prevalence Index = B/A =			4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: UPDP4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 4/4	100						Sandy loam, rock refusal at 18"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/17/19

Applicant/Owner: MassDOT State: MA Sampling Point: UPDP5

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): None Slope (%): 0-15

Subregion (LRR or MLRA): LRR R Lat: 42.0407 Long: -71.3401 Datum: UTM 19T

Soil Map Unit Name: 401C Hollis-Rock outcrop-Charlton complex, 0-15% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)
Data point taken 5 feet south of deliniation flag W5-2. Not a wetland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPDP5

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus alba*	55	Yes	FACU
2. *Pinus resinosa*	50	Yes	FACU
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
	115	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Lonicera tatarica*	35	Yes	FACU
2. *Rosa multiflora*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	145	x 4 =	580
UPL species	0	x 5 =	0
Column Totals:	155 (A)		610 (B)
Prevalence Index = B/A =			3.94

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: UPDP5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 4/2	100						sandy loam
9-24	10YR 4/4	100						silty sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: MassDOT Wrentham: Construction of I-495/1A Ramps City/County: Wrentham/ Norfolk County Sampling Date: 7/17/19

Applicant/Owner: MassDOT State: MA Sampling Point: UPDP6

Investigator(s): Kyle Purdy, Jessica Rebholz Section, Township, Range: Town of Wrentham

Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0-15

Subregion (LRR or MLRA): LRR R Lat: 42.0399 Long: -71.3366 Datum: UTM 19T

Soil Map Unit Name: 401C Hollis-Rock outcrop-Charlton complex, 0-15% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)
Data point taken approximately 15 feet east of deliniation flag W6-1. Not a wetland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPDP6

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	45	Yes	FACU
2. *Pinus strobus*	5	No	FACU
3. *Pinus resinosa*	5	No	FACU
4.			
5.			
6.			
7.			
	55	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rosa multiflora*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals:	70 (A)		280 (B)
Prevalence Index = B/A =			4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: UPDP6

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/4	100						sandy loam
14-24	10YR 3/6	100						silty sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 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**)
- ___ 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 (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Attachment C – Photographic Log

Jacobs

PHOTOGRAPHIC LOG

Site Location: I-495/Route 1A Intersection, Wrentham, Massachusetts | Project No. E2X691A7

Photo No.	Date:
1	7/16/2019

Direction Photo Taken:
Southeast

Description:
View of the Wetland 1.

Photo No.	Date:
2	7/16/2019

Direction Photo Taken:
East

Description:
View of Wetland 1.

Jacobs

PHOTOGRAPHIC LOG

Site Location: I-495/Route 1A Intersection, Wrentham, Massachusetts | Project No. E2X691A7

Photo No.	Date:
3	7/16/2019

Direction Photo Taken:
Northeast

Description:
View of Wetland 2.

Photo No.	Date:
4	7/16/2019

Direction Photo Taken:
Southwest

Description:
View of Wetland 3.

Jacobs

PHOTOGRAPHIC LOG

Site Location: I-495/Route 1A Intersection, Wrentham, Massachusetts | Project No. E2X691A7

Photo No.	Date:
5	7/16/2019

Direction Photo Taken: Southwest

Description: View of forested area to the southeast of the concrete building to be demolished. Wooden fence in background (difficult to see) has Minuteman Commuter Bikeway located it.

Photo No.	Date:
6	7/16/2019

Direction Photo Taken: South

Description: View of Intermittent Stream 1 starting behind ponded area.

Jacobs

PHOTOGRAPHIC LOG

Site Location: I-495/Route 1A Intersection, Wrentham, Massachusetts | Project No. E2X691A7

Photo No.	Date:
7	9/21/2018

Direction Photo Taken: Southeast

Description: View of Intermittent Stream 1.

Photo No.	Date:
8	7/16/2019

Direction Photo Taken: North

Description: View of Wetland 4.

Jacobs

PHOTOGRAPHIC LOG

Site Location: I-495/Route 1A Intersection, Wrentham, Massachusetts | Project No. E2X691A7

Photo No.	Date:
9	7/17/2019

Direction Photo Taken:
Southeast

Description:
View of Isolated Wetland.

Photo No.	Date:
10	7/17/2019

Direction Photo Taken:
North

Description:
View of Naturalized Area (Isolated Wetland 2).

Jacobs

PHOTOGRAPHIC LOG

Site Location: I-495/Route 1A Intersection, Wrentham, Massachusetts | Project No. E2X691A7

Photo No.	Date:
11	7/17/2019

Direction Photo Taken: Southeast

Description: View of Wetland 5, western portion.

Photo No.	Date:
12	7/17/2019

Direction Photo Taken: North

Description: View of eastern portion of Wetland 5.

Jacobs

PHOTOGRAPHIC LOG

Site Location: I-495/Route 1A Intersection, Wrentham, Massachusetts | Project No. E2X691A7

Photo No.	Date:
13	7/17/2019

Direction Photo Taken: Southeast

Description: View of eastern portion of Wetland 5.

Photo No.	Date:
14	7/17/2019

Direction Photo Taken: North

Description: View of Wetland 6.

Jacobs

PHOTOGRAPHIC LOG

Site Location: I-495/Route 1A Intersection, Wrentham, Massachusetts | Project No. E2X691A7

Photo No.	Date:
15	7/17/2019

Direction Photo Taken: Southeast

Description: View of upland median area northeast of I-495/Route 1A intersection.

Photo No.	Date:
16	7/16/2019

Direction Photo Taken: North

Description: View of I-495, northwest corner.

Jacobs

PHOTOGRAPHIC LOG

Site Location: I-495/Route 1A Intersection, Wrentham, Massachusetts | Project No. E2X691A7

Photo No.	Date:
17	7/16/2019

Direction Photo Taken: Southeast

Description: View of northwest corner, utility right-of-way.

Photo No.	Date:
18	7/16/2019

Direction Photo Taken: North

Description: View of southeast median of I-495/Route 1A.