



September 8, 2023

John Reilly, Chair
Weymouth Conservation Commission
75 Middle Street
Weymouth, MA 02189

**Re: Request for Determination of Applicability
Dwyer Mountain Test Pits and Monitoring Well Installation
420 Rear Washington St, Weymouth, MA**

Dear Mr. Reilly and Commissioners:

On behalf of the Town of Weymouth, BETA Group, Inc. (BETA) respectfully submits this Request for a Determination of Applicability (RDA) for proposed test pits and groundwater monitoring well installation (the Project) at 420 Rear Washington Street in Weymouth, MA (the Site), an approximately 13-acre site made up of four (4) parcels located east of 440 Washington Street. Work proposed at the Site includes excavation of seventeen (17) test pits, installation of two (2) 1-inch diameter groundwater monitoring wells, and associated vegetation clearing necessary to allow for access to the work areas. Grubbing will not be required to complete the proposed work, which will minimize soil disturbance. The Project is proposed to determine existing and environmental conditions of the Site, including contaminants of concern, to inform future development (to be permitted separately once designed).

The Project will occur within Areas Subject to Protection and Jurisdiction under the Massachusetts Wetlands Protection Act (M.G.L. ch.131 s.40 – the Act) and its Regulations at 310 CMR 10.00, and the Town of Weymouth Wetland Protection Ordinance (Chapter 7, Section 301 of the Weymouth Code of Ordinances – the Bylaw), specifically, Bordering Vegetated Wetlands (BVW), Isolated Vegetated Wetlands (IVW) (local), and the 100-foot Buffer Zone to onsite Resource Areas. Within Buffer Zones, test pits are considered a minor activity under 310 CMR 10.02(2)(b)2.g and are therefore exempt from requiring a Notice of Intent. However, installation of one of the groundwater monitoring wells will require minor impacts to onsite BVW. Although work is proposed within Areas Subject to Protection and Jurisdiction under the Act and Bylaws, as detailed further in the attached narrative, the Project will not remove, fill, dredge or permanently alter these areas. A variance request from the *Town of Weymouth Wetlands Protection Regulations* has also been included in this Request in Section 4.1 of the Project narrative.

This RDA has been concurrently submitted to the Massachusetts Department of Environmental Protection (MassDEP) Southeast Regional Office. Abutter notifications has been sent to all abutters of the Project in accordance with the local Bylaw requirements, and legal advertisement will be submitted to the local newspaper by the Weymouth Conservation Department. As a municipal entity, the town is exempt from local filing fees.

We trust that the following application provides adequate information to facilitate the issuance of a Negative Determination stating that the filing of a Notice of Intent is not required under the Act or the Bylaw for the proposed test pits and installation of the proposed monitoring well.

Should you have any additional questions, please do not hesitate to contact us.

September 8, 2023

Page 2 of 2

Very truly yours,
BETA Group, Inc.



Elyse Tripp
Staff Scientist



Laura Krause
Project Manager

cc: Robert Luongo, Director of Planning and Development
MassDEP SERO, Division of Wetlands
Craig Ellis, BETA Project Manager

Job No: 23.10947.00

Weymouth, MA

Dwyer Mountain Test Pits and Monitoring Well Installation

420 Rear Washington Street

September 2023

REQUEST FOR DETERMINATION OF APPLICABILITY



BETA

89 Shrewsbury Street
Suite 300
Worcester, MA 01604
508.756.1600
www.BETA-Inc.com

Dwyer Mountain Test Pits and Monitoring Well Installation

Weymouth, MA

420 Rear Washington Street

REQUEST FOR DETERMINATION OF APPLICABILITY

Prepared by: BETA GROUP, INC.

Prepared for: Town of Weymouth

September 2023

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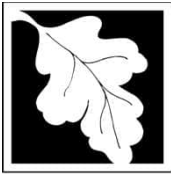
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Appendix B	Resource Area Boundary Delineation Report

Weymouth, MA

WPA FORM 1 – REQUEST FOR DETERMINATION OF APPLICABILITY



Massachusetts Department of Environmental Protection

Bureau of Water Resources - Wetlands

WPA Form 1- Request for Determination of Applicability Weymouth Municipality

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:

<u>Robert</u> First Name	<u>Luongo</u> Last Name
<u>75 Middle Street</u> Address	
<u>Weymouth</u> City/Town	<u>MA</u> State
<u>781-340-5015</u> Phone Number	<u>02189</u> Zip Code
<u>rluongo@weymouth.ma.us</u> Email Address	

2. Property Owner (if different from Applicant):

<u>Town of Weymouth</u> First Name	<u></u> Last Name
<u>75 Middle Street</u> Address	
<u>Weymouth</u> City/Town	<u>MA</u> State
<u></u> Phone Number	<u>02189</u> Zip Code
<u></u> Email Address (if known)	

3. Representative (if any)

<u>Elyse</u> First Name	<u>Tripp</u> Last Name
<u></u> Company Name	
<u>BETA Group, Inc - 89 Shrewsbury Street, Suite 300</u> Address	
<u>Worcester</u> City/Town	<u>MA</u> State
<u>844-800-2382 ex 7174</u> Phone Number	<u>01604</u> Zip Code
<u>etripp@beta-inc.com</u> Email Address (if known)	

B. Project Description

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

<u>420 Rear Washington Street</u> Street Address	<u>Weymouth</u> City/Town
<u>42.21077</u> Latitude (Decimal Degrees Format with 5 digits after decimal e.g. XX.XXXXX)	<u>-70.95514</u> Longitude (Decimal Degrees Format with 5 digits after decimal e.g. -XX.XXXXX)
<u>Map 25</u> Assessors' Map Number	<u>Block 328 Lots 4, 10, 11, and 12</u> Assessors' Lot/Parcel Number

[How to find Latitude and Longitude](#)

[and how to convert to decimal degrees](#)

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

The 13-acre Site is an existing historic dumping area. See attached narrative.

c. Plan and/or Map Reference(s): (use additional paper if necessary)

<u>Site Plan</u> Title	<u>7/11/2023</u> Date
<u></u> Title	<u></u> Date



Massachusetts Department of Environmental Protection

Bureau of Water Resources - Wetlands

WPA Form 1- Request for Determination of Applicability Weymouth

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

Municipality

B. Project Description (cont.)

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

Work proposed at the Site includes advancement of seventeen (17) test pits, installation of two (2) 1-inch diameter groundwater monitoring wells, and associated vegetation clearing necessary to allow for access to the work areas. Of the proposed work, seven (7) test pits and one monitoring well are proposed in the buffer zone to BVW and locally protected IVW, and one monitoring well is proposed within BVW. The objective of the proposed test pits and monitoring wells is to determine the contaminants of concern that currently exist within the soil and groundwater on the site.

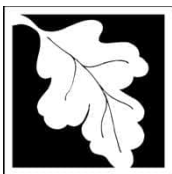
b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

310 CMR 10.02(2)(b)2.g

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.)



C. Determinations

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

- a. whether the **area** depicted on plan(s) and/or map(s) referenced above 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 above are accurately delineated.
- c. whether the **Activities** depicted on plan(s) referenced above is subject to the Wetlands Protection Act and its regulations.
- d. whether the area and/or Activities depicted on plan(s) referenced above is subject to the jurisdiction of any **municipal wetlands' ordinance or bylaw** of:

Weymouth
Name of Municipality

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

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.

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.

Signature of Applicant

Date

Signature of Representative (if any)

Date

Weymouth, MA

LOCAL FORMS AND REQUIREMENTS

SITE ACCESS AUTHORIZATION

DATE: September 7, 2023

PROJECT: Dwyer Mountain Test Pit and Monitoring Well Installation

TO: **Weymouth Conservation Commission and Conservation Administrator**

FROM: Town of Weymouth

LOCATION: Dwyer Mountain - 420 Rear Washington Street

(Hereafter referred to as the property)

I (We) hereby authorize the individual members of the Conservation Commission and its agents to enter upon the property for the purpose of gathering information prior to issuing a Determination of Applicability or an Order of Conditions and for the purpose of enforcing the Order of Conditions prior to the issuance of a Certificate of Compliance.

TIME: FROM THE PRESENT TO DATE OF ISSUANCE OF CERTIFICATE OF COMPLIANCE

PROPERTY OWNER: _____ **DATE:** _____

MOJ3 LLC
116 FALL LANE
FRANKLIN, MA, 02038

MEREDITH WOODS LLC
190 OLD DERBY STREET
HINGHAM, MA, 02043

DIVERSIFIED STORAGE FUND II
DEPT PT MA 26604
GLENDALE, CA, 91201-5025

MOJ3 LLC
116 FALL LANE
FRANKLIN, MA, 02038

RMLE REALTY LLC
P O BOX 333
WEYMOUTH, MA, 02188

NSTAR ELECTRIC COMPANY
P O BOX 270
HARTFORD, CT, 06141

MEREDITH WOODS LLC
190 OLD DERBY STREET
HINGHAM, MA, 02043

462 WASHINGTON ST, LLC
160 GREENTREE DR., SUITE 101
DOVER, DE, 19904

GUARDIAN LEDGES LLC
100 GRANDVIEW RD STE 205
BRAintree, MA, 02184

TOWN OF WEYMOUTH

NOTIFICATION TO ABUTTERS UNDER THE MASSACHUSETTS WETLANDS PROTECTION ACT AND LOCAL WETLANDS PROTECTION ORDINANCE, CHAPTER 7, SECTION 301

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, you are hereby notified of the following:

A. The name of the applicant is Town of Weymouth

B. The applicant has filed: Notice of Intent, *or* OOC Amendment Request, *or* Request for Determination with the Conservation Commission for the municipality of Weymouth seeking permission to remove, fill, dredge or alter an Area Subject to Protection under the Wetlands Protection Act (General Laws Chapter 131, Section 40).

C. The address of the lot where the activity is proposed and a brief description including square footage and/or dimensions of proposed project:

The Project is located at 420 Rear Washington Street, known as Dwyer Mountain, and consists of 4 parcels further identified as Weymouth Assessors Map 25, Block 328, Lots 4,10,11, and 12. The Project proposes test pits and installation of groundwater monitoring wells within Bordering Vegetated Wetlands (BVW) and within the buffer zone to BVW and Isolated Vegetated Wetlands (IVW) to determine the types of contaminants that currently exist within the soil and groundwater on the site

D. Copies of the Notice of Intent or OOC Amendment Request or Request for Determination may be examined at The Weymouth Conservation Commission Office, Weymouth Town Hall, between the hours of 8:30 and 4:30, Monday through Friday.

E. Copies of the Notice of Intent or OOC Amendment Request or Request for Determination may be obtained from (check one):

the Applicant **or** the Applicant's Representative

by calling this telephone number 844-800-2382 x 7174 contact person Elyse Tripp

between the hours of: 8am and 4pm on the following days of the week: M-F

F. Information regarding the date, time, and place of the public hearing may be obtained from:

Weymouth Conservation Commission

By calling this telephone number: 781-340-5007

Between the hours of: 8:30 – 4:30 Mon. though Friday

G. Check One: This is the Applicant
This is the Applicant's Representative
Other (specify) Town of Weymouth Conservation Commission

NOTE: Notice of the public hearing/meeting, including its date, time and place will be published at least five days in advance in the Patriot Ledger, and will also be posted on the Town website at www.weymouth.ma.us not less than forty-eight hours in advance. You may also contact the Weymouth Conservation Commission or the Department of Environment Protection Regional office for more information about this application or the Wetland Protection Act. To contact DEP, call 508-946-2700.

Weymouth, MA

NARRATIVE

1.0 INTRODUCTION

On behalf of the Town of Weymouth, BETA Group, Inc. (BETA) respectfully submits this Request for a Determination of Applicability (RDA) for proposed test pits and installation of 1-inch diameter groundwater monitoring wells (the Project) at 420 Rear Washington Street in Weymouth, MA (the Site).

Work proposed at the Site will include:

- Excavation of seventeen (17) test pits;
- Installation of (2) two groundwater monitoring wells; and
- Temporary vegetative clearing to facilitate access to the proposed test pits.

The Project will occur within Areas Subject to Protection and/or Jurisdiction under the Massachusetts Wetlands Protection Act (M.G.L. ch.131 s.40) and its Regulations at 310 CMR 10.00 (the Act) and the Town of Weymouth Wetland Protection Ordinance (Chapter 7, Section 301 of the Weymouth Code of Ordinances – the Bylaw), including Bordering Vegetated Wetlands (BVW – Act/Bylaw), and the 100-foot Buffer Zone to BVW (Act/Bylaw) and to Isolated Vegetated Wetlands (IVW – Bylaw).

These activities, as detailed further in this narrative, will occur within an existing landfill and historic dumping area, and are necessary to determine the types of contaminants that currently exist within the soil and groundwater on the Site. Test pits and monitoring wells proposed within the Buffer Zone to BVW are considered minor activities under the Act per 310 CMR 10.02(2)(b)2.g that have negligible impacts, and are necessary for planning and design purposes. Where work to install one groundwater monitoring well is proposed within the BVW, the work is not anticipated to result in any permanent adverse effects on the BVW. In consideration of the nature of the Project and the Site, it is anticipated that this RDA will preclude the Town of Weymouth from filing a Notice of Intent (NOI) through the issuance of a Negative 2 and Negative 6 Determination under the Act and Bylaw.

2.0 SITE DESCRIPTION

The Site is an approximately 13-acre town owned property located east of 440 Washington Street and consists of four (4) parcels (Figure 1—Site Locus). The Site is a partially vegetated plateau bisected by an electric easement and associated access road at its western side. It is bounded to the north, east, and south by a wetland complex and to the west by commercial development (Figure 2 – Environmental Resources Map). A portion of the Site was formerly used for sand and gravel quarry operations and has historically been used as a dumping area for fill, dredged sediments, and building debris. Due to Oil and Hazardous Material associated with historic fill, the Site has been listed by MassDEP as a disposal site under Release Tracking Number (RTN) 4-3000638. The Bureau of Waste Site Cleanup (BWCS) website lists the Site as adequately regulated.

2.1 WETLAND RESOURCE AREAS

On August 15th, 2023, BETA Wetland Scientists conducted a Site visit to identify and delineate the boundary of existing wetland Resource Areas on and in the immediate vicinity of the Site. Resource Area boundaries were identified and delineated in accordance with methods developed by the Massachusetts Department of Environmental Protection's *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act: Second Edition*, dated September 2022, as well as definitions set forth in the Wetland Regulations, 310 CMR 10.00.

State and local Jurisdictional Resource Areas identified at the Site include Bordering Vegetated Wetland (BVW) and Isolated Vegetated Wetland (IVW). A complete description of areas Subject to Protection under the Act is included in Appendix B – *Resource Area Boundary Delineation Report*.

2.2 BUFFER ZONES

Portions of the Project are located within the 100-foot buffer zone to BVW and IVW. Within the work area the buffer zone to BVW and IVW consists largely of meadow and shrub vegetation within previously disturbed areas associated with the power lines that run through the Site. The Project Plans in Appendix A show the locations of the proposed test pits, the closest of which is less than 25 feet from the delineated BVW.

2.3 NHESP HABITAT AND OTHER SENSITIVE AREAS

According to the latest MassGIS data, the Site is not located within Natural Heritage and Endangered Species Program (NHESP) mapped Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife. The Site is also not located within a mapped floodplain, an Area of Critical Environmental Concern, or within 200 feet of an NHESP mapped Certified Vernal Pool (CVP). The Site is located within 200 feet of two NHESP mapped Potential Vernal Pools (PVP) to the south, however, work associated with the Project is proposed over 200 feet away from the mapped PVP's. The Site is located partially within a mapped Public Water Supply Watershed Outstanding Resource Water (ORW) for Whitmans Pond located less than 1 mile southeast of the Project. The Site is not, however, located within groundwater (Zones I, II or Interim Wellhead Protection Areas) or any other surface water protection zones (Zones A or B) associated with a public water supply, or within proximity to a Coldwater Fishery.

3.0 DESCRIPTION OF WORK

The objective of the proposed test pits is to determine the types of contaminants that currently exist within the soil and groundwater on the site. A total of seventeen (17) test pits and (2) two groundwater monitoring wells are proposed, of which seven (7) test pits and both groundwater monitoring wells are proposed within Areas Subject to Protection and/or Jurisdiction under the Act and Bylaw.

The test pits and one groundwater monitoring well proposed within buffer zone are considered minor activities under 310 CMR 10.02(2)(b)2.g, and are therefore exempt from submitting a Notice of Intent under the Act. The groundwater monitoring well proposed within the BVW is not exempt as a minor activity under the Act and is further described in Section 3.2 below.

3.1 BUFFER ZONE

Work occurring within the buffer zone will be conducted to minimize impacts. An excavator will be used to complete the proposed test pits, which will be variable in width and depth but are anticipated to be approximately 6-8 feet deep and 4 feet by 4 feet wide. Excavated soils will be separated into two piles to prevent mixing of potentially contaminated material deeper in the soil profile with the cleaner surface level soil. Poly sheeting will be in place prior to the excavation of potentially contaminated soil to prevent direct contact of that soil with surface soils and vegetation. The anticipated method of installation of the groundwater monitoring well within buffer zone will follow the same procedures outlined in Section 3.2 below.

Vegetation clearing is proposed only as necessary to access locations of the proposed test pits and will not include any grubbing. Following completion of the proposed work, the cleared areas will be left to revegetate naturally, and disturbed soils from excavation will be seeded with a native seed mix.

3.2 BORDERING VEGETATED WETLAND

One (1) 1-inch diameter PVC groundwater monitoring well is proposed within the delineated BVW at the northern portion of the Site which will result in less than 1 square foot of impacts. This monitoring well is proposed within the BVW due to the observation of blue colored soil during prior Site visits interior of the wetland, indicative of contamination from prior dumping at the Site.

No heavy equipment or machinery will be required for the groundwater monitoring well installation. The well will be hand driven using a slide hammer or hammer drill to the depth required to reach groundwater. A 1-inch diameter PCV monitoring well will be installed in the borehole and the annular space will be surrounded by soil generated during the boring advancement to grade. Soil samples will also be collected during well installation for laboratory analysis of contaminants. The monitoring well is anticipated to remain in place for up to one year.

The work proposed within BVW is temporary in nature and although the work will temporarily alter the area, it will not destroy or otherwise impair any portion of the BVW per 310 CMR 10.55(4)(a). No vegetation clearing or grubbing within the BVW is proposed, and any vegetation impact would be temporary during the monitoring well installation process.

3.3 MITIGATION MEASURES

Best management practices (BMPs) will be in place during the Project to minimize adverse impacts to Jurisdictional and Protected Resource Areas. Work areas will be accessed using existing Site access roads and disturbed areas where feasible, and equipment and material staging will occur outside of all onsite buffer zones. Where test pits or wells are upgradient to Resource Areas or on a steep slope, erosion control measures such as compost filters tubes or straw wattles will be installed prior to the commencement of earthwork. Where test pits or wells are proposed within an existing vegetated area, clearing will occur only as necessary to access the area, and disturbed soils from excavation will be stabilized using a native seed mix.

A significant population of Japanese knotweed (*Fallopia japonica*), an invasive species, was observed by BETA at the northern portion of the Site. Clearing of the Japanese knotweed is anticipated for access to some test pit locations; however, BMPs will be employed to prevent the further spread of the species. Proposed BMPs include: completion of test pits within known Japanese knotweed populations last to prevent spread of the species elsewhere on the Site, and inspection of all Site equipment and removal of vegetative debris present on any equipment prior to demobilization from the Site. Where Japanese knotweed may be removed to access a work area, it will be left to degrade within the area of the Site where it was removed in an existing Japanese Knotweed population to prevent spread of the species.

4.0 REQUEST FOR DETERMINATION

The Town of Weymouth seeks a Determination from Weymouth Conservation Commission stating that the proposed work will not adversely impact the BVW or the 100-foot Buffer Zone, and that a Notice of Intent filing is not required.

4.1 VARIANCE REQUEST – BYLAW SECTION 5.01

The Town of Weymouth requests a waiver pursuant to Section 5.01 of the Bylaw from the regulations at Section 3.03(3)¹ to allow for the proposed work in the BVW, and within buffer zone to BVW and locally protected IVW.

4.2 DETERMINATION REQUEST B.1.C. & D. – WORK SUBJECT TO THE ACT

The Town of Weymouth is requesting a Negative 2 Determination to confirm that the work as described is within an area Subject to Protection under the Act but will not remove, fill, dredge, or alter that area. The provisions and mitigation measures outlined herein support this Request for Determination.

4.2.1 MITIGATION MEASURES

As outlined in Section 3.3, BMPs will be implemented during construction including the installation of erosion controls upgradient of Resource Areas as necessary, minimization of vegetation impacts, and prevention of the spread of invasive species through sequencing of work and equipment cleaning.

4.3 DETERMINATION REQUEST B.1.C. & D. – WORK SUBJECT TO THE BYLAW

The Town of Weymouth is additionally requesting a Negative 6 Determination to confirm that the work as described is within an area Subject to Jurisdiction and Protection under the Town of Weymouth Bylaw but is not subject to additional review or approval through the filing of a Notice of Intent.

5.0 SUMMARY

Portions of the Project meet regulatory criteria that preclude the requirement to submit an NOI. Due to the nature of the Project occurring within existing developed areas and implementation the BMPs described herein, the proposed work is not anticipated to adversely impact jurisdictional areas. The Town of Weymouth respectfully requests the issuance of the following Determination:

Negative 2: The work described in the Request is within an area subject to protection under the Act, but will not remove, fill, dredge, or alter that area. Therefore, said work does not require the filing of a Notice of Intent.

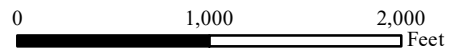
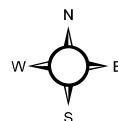
And

Negative 6: The area and/or work described in the Request is not subject to additional review and approval by the Town of Weymouth pursuant to the Town of Weymouth Wetland Protection Ordinance, Chapter 7, Section 301 of the Weymouth Code of Ordinances.

We trust that this RDA application provides sufficient information to facilitate the issuance the Determination described above. Should you have any questions, please do not hesitate to reach out to us at our office.

¹ *Town of Weymouth Wetlands Protection Regulations*, Section 3.03(3) “No activity, other than the maintenance of an already existing structure, which will result in the building within or upon, removing, filling, or altering of a vegetated wetland, or of land within 50 feet of a vegetated wetland, shall be permitted by the Conservation Commission, except for activity which is allowed under a waiver from these regulations granted pursuant to Section 5.01”.

FIGURES







1 inch = 1,000 feet

Figure 1
Site Locus
Dwyer Mountain
Weymouth, MA






Figure 2
Environmental Resources Map
Dywer Mountain
Weymouth, MA










DEP Wetlands Legend

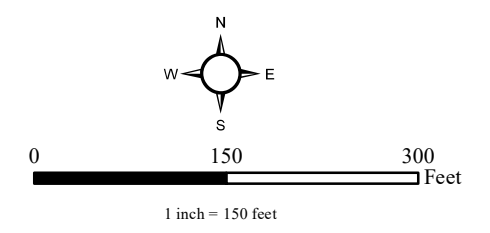
-  MassDEP Hydrologic Feature
-  Marsh/Bog
-  Wooded marsh
-  Open Water

Wildlife Habitat Legend

-  NHESP Priority Habitats of Rare Species
-  NHESP Estimated Habitats
-  NHESP Certified Vernal Pool
-  Potential Vernal Pool
-  Area of Critical Environmental Concern

Drinking Water Protection Areas

-  Zone A
-  Zone B
-  Zone C
-  MassDEP IWPA
-  MassDEP Zone I
-  MassDEP Zone II
-  Outstanding Resource Water



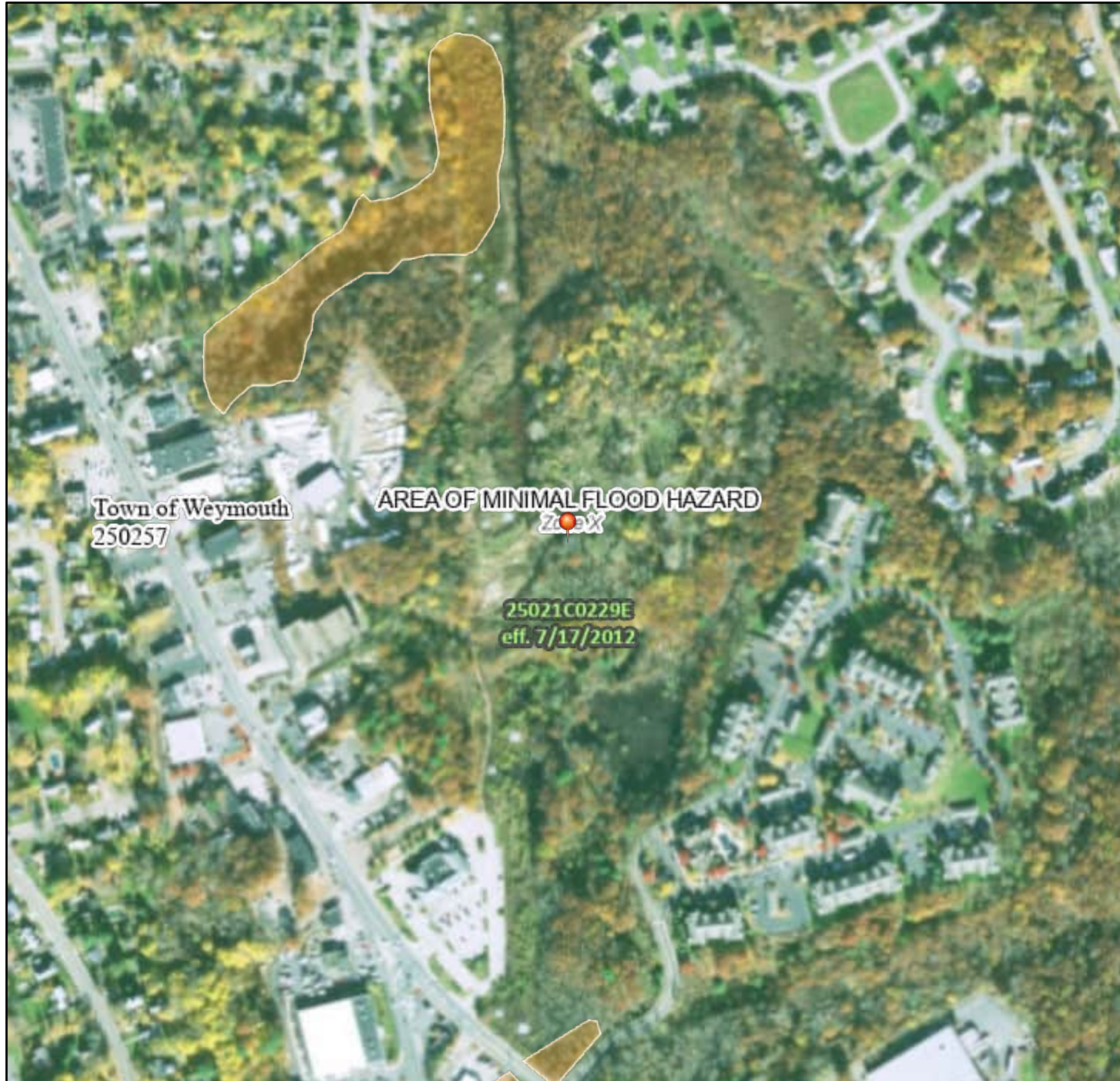
Data Source: MassGIS USGS Color Ortho Imagery (2014), MassDEP Wetlands (1:12000) (2009), NHESP Potential Vernal Pools (2000), NHESP Certified Vernal Pools, NHESP Priority Habitats of Rare Species (2008), NHESP Estimated Habitats of Rare Species (2008), Areas of Critical Environmental Concern (2009), FEMA National Flood Hazard Layer (2014).



National Flood Hazard Layer FIRMMette



70°57'37"W 42°12'49"N



Legend

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

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

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **7/10/2023 at 4:07 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

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

70°57'W 42°12'23"N

PHOTOGRAPHIC DOCUMENTATION

Photo 1



Typical view of wetland conditions within the WF1 series—facing east.

Photo 2



View of vegetation within the WF 1 series—facing southeast.

PHOTOGRAPHIC DOCUMENTATION

Dwyer Mountain

Weymouth, Massachusetts

Photographs Documented August 15, 2023

Photo 3



Typical view of upland vegetation near the WF1 series—facing south.

Photo 4



Typical view of conditions within the WF2 wetland series—facing south.

PHOTOGRAPHIC DOCUMENTATION

Dwyer Mountain

Weymouth, Massachusetts

Photographs Documented August 15, 2023

Photo 5



View of vegetation within the WF2 wetland series— facing north.

Photo 6



View of the WF2 wetland line with both wetland and upland conditions—facing north.

PHOTOGRAPHIC DOCUMENTATION

Dwyer Mountain

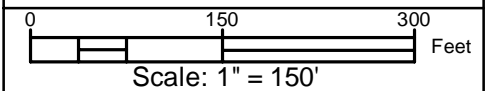
Weymouth, Massachusetts

Photographs Documented August 15, 2023

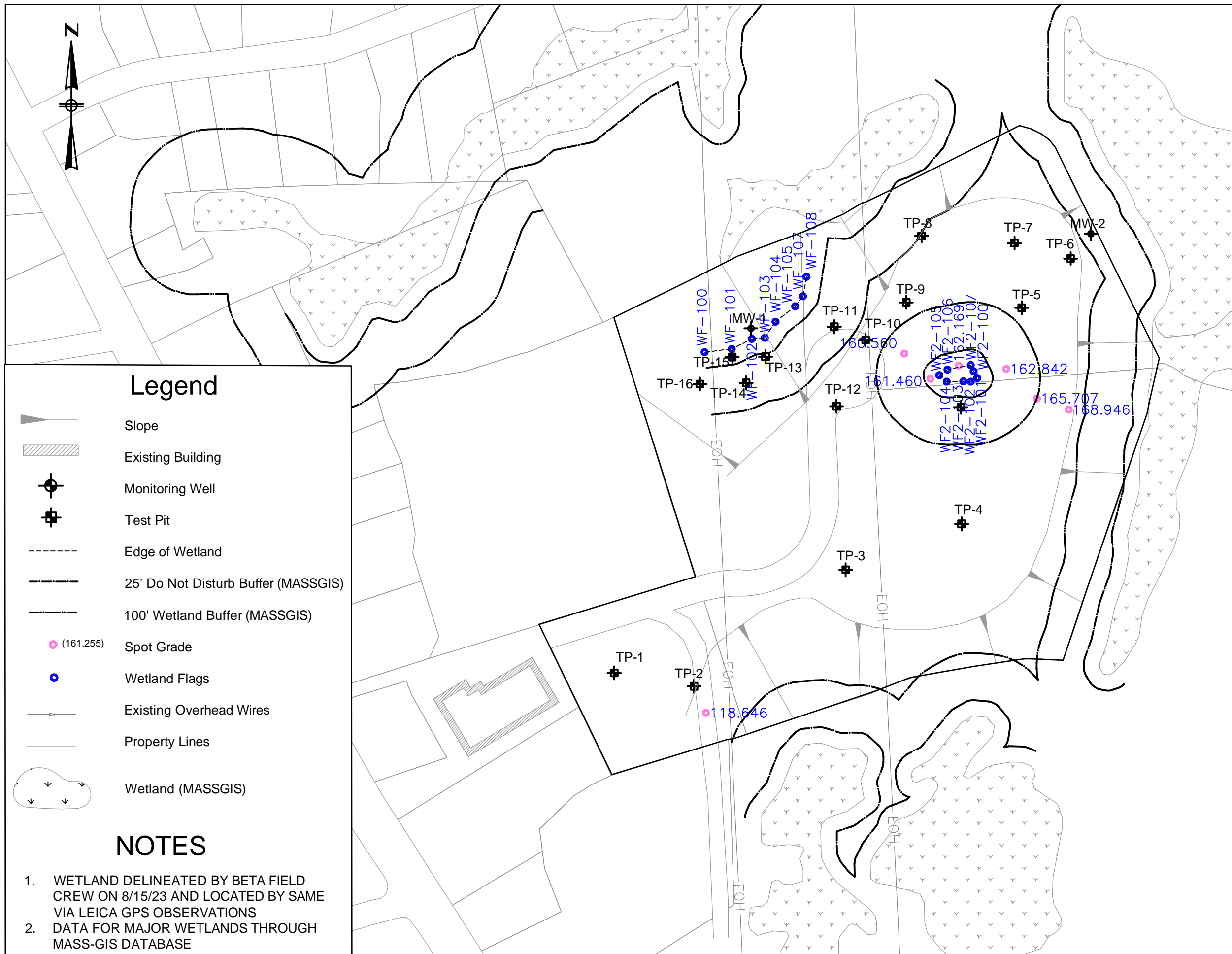
APPENDIX A – Site Plans

Dwyer Mountain

Weymouth, MA



SITE PLAN

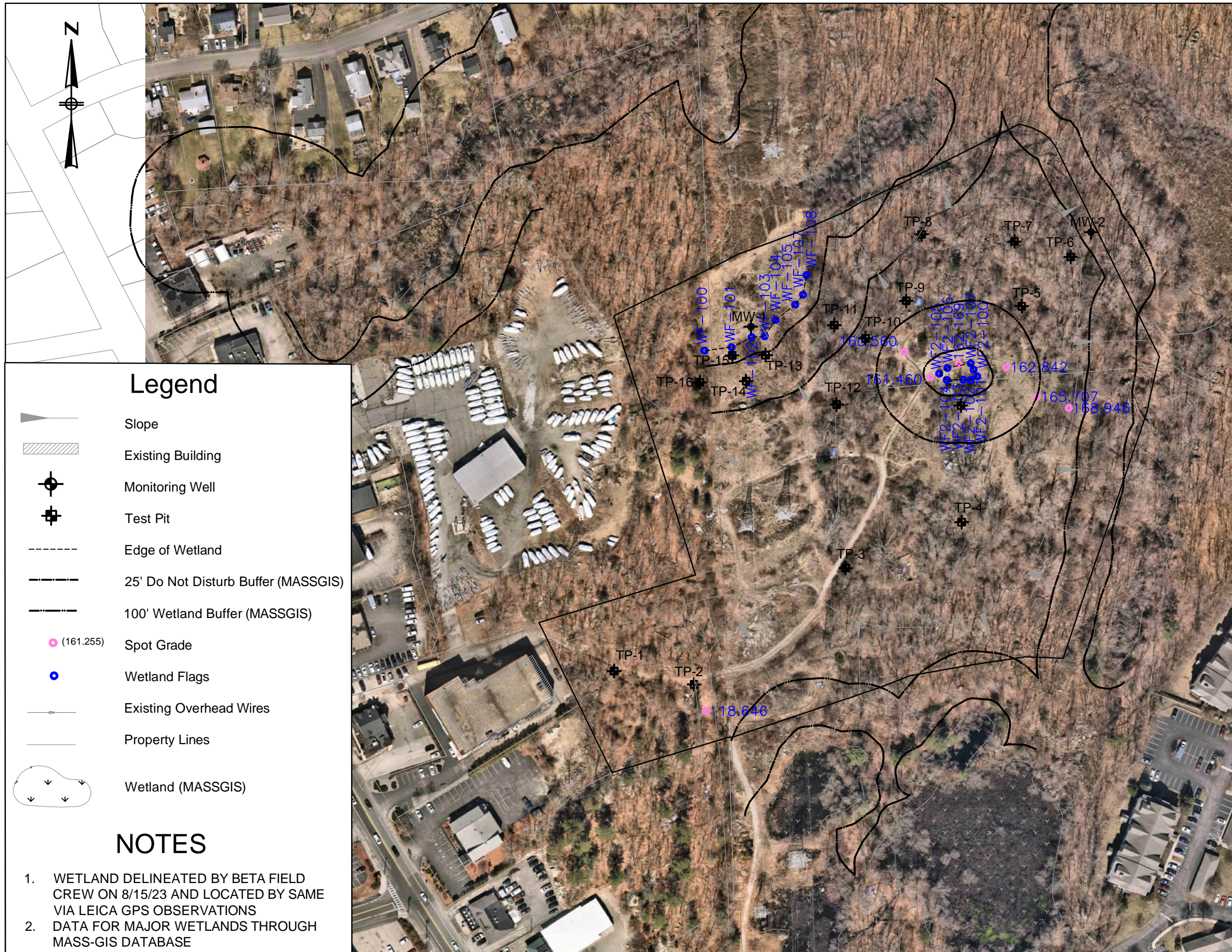


Legend





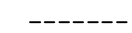

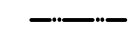




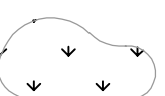
- Slope
- Existing Building
- Monitoring Well
- Test Pit
- Edge of Wetland
- 25' Do Not Disturb Buffer (MASSGIS)
- 100' Wetland Buffer (MASSGIS)
- Spot Grade
- Wetland Flags
- Existing Overhead Wires
- Property Lines
- Wetland (MASSGIS)

NOTES

1. WETLAND DELINEATED BY BETA FIELD CREW ON 8/15/23 AND LOCATED BY SAME VIA LEICA GPS OBSERVATIONS
2. DATA FOR MAJOR WETLANDS THROUGH MASS-GIS DATABASE



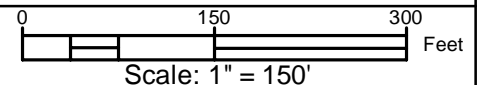
Legend

-  Slope
-  Existing Building
-  Monitoring Well
-  Test Pit
-  Edge of Wetland
-  25' Do Not Disturb Buffer (MASSGIS)
-  100' Wetland Buffer (MASSGIS)
-  (161.255) Spot Grade
-  Wetland Flags
-  Existing Overhead Wires
-  Property Lines
-  Wetland (MASSGIS)

NOTES

1. WETLAND DELINEATED BY BETA FIELD CREW ON 8/15/23 AND LOCATED BY SAME VIA LEICA GPS OBSERVATIONS
2. DATA FOR MAJOR WETLANDS THROUGH MASS-GIS DATABASE

Dwyer Mountain Weymouth, MA



SITE PLAN

APPENDIX B – Resource Area Boundary Delineation Report



**Resource Area Boundary Delineation Report
Dwyer Mountain
Weymouth, Massachusetts**

September 6, 2023

BETA Group, Inc. (BETA) Wetland Scientists conducted resource area delineations at Dwyer Mountain located at 420 Rear Washington Street in Weymouth, Massachusetts (the Site) on August 15, 2023. This report describes resource areas Subject to Protection under the Massachusetts Wetlands Protection Act (M.G.L. Chapter 131 Section 40 – the Act), the federal Clean Water Act (33 U.S.C. §1251 et seq (1972)), the Massachusetts Clean Waters Act (MGL Chapter 21 Section 26-53), and the Weymouth Wetlands Protection Ordinance (Chapter 7, Section 301 of the Weymouth Code of Ordinances – the Ordinance) that exist on or within 100 feet of the Site and the methodologies used to delineate their boundaries.

Site Description

The Site consists of four (4) parcels totaling approximately 13-acres in size, located east of the property at 440 Washington Street (Figure 1 – Site Locus). Currently, the Site is a partially vegetated plateau bisected by an electric easement and associated access road along its western side. The Site is bounded to the north, east, and south by a wetland complex and to the west by commercial development (Figure 2 – Environmental Resources Map). A portion of the Site was formerly used for sand and gravel quarry operations and has historically been used as a dumping area for fill, dredged sediment, and demolition debris. Due to the presence of Oil and/or Hazardous Material associated with the fill, the Site has been listed by MassDEP as a disposal site under Release Tracking Number (RTN) 4-3000638. The Bureau of Waste Site Cleanup (BWCS) website lists the Site as adequately regulated.

According to the USDA Natural Resources Conservation Service – Soil Survey, mapped soils on Site in the vicinity of the Site are classified generally as Udorthents, Rock outcrop, and Swansea muck. Field observations generally confirmed the soil types at the Site. The *Custom Soil Resource Report for Norfolk and Suffolk Counties, Massachusetts*, is attached.

State and local jurisdictional resource areas identified within 100 feet of the Site include Bordering Vegetated Wetlands (BVW) and Isolated Vegetated Wetlands (IVW). The MassGIS database was used as the initial step in identifying critical areas on or within proximity to the Site that would be examined more closely if construction activities are proposed. The table below describes selected environmentally critical categories as determined through MassGIS.

Table 1. Selected MassGIS Environmental Data Layers

Mapped Resource on or Within Proximity to the Site	Yes	No
Area of Critical Environmental Concern		✓
NHESP Certified Vernal Pool		✓
NHESP Potential Vernal Pool	✓	
NHESP Estimated Habitat of Rare Wildlife		✓
NHESP Priority Habitat of Rare Species		✓
Outstanding Resource Waters	✓	
FEMA Flood Zones		✓
Surface Water Protection Area (Zones A and/or B)		✓
Interim Wellhead Protection Area		✓
Zone I Wellhead Protection Area		✓

Mapped Resource on or Within Proximity to the Site	Yes	No
Zone II Wellhead Protection Area		✓
Wild and Scenic River		✓
Coldwater Fisheries Resource		✓
DCR Dams		✓

Source: MassGIS

Jurisdictional Wetland Resource Areas – Massachusetts Wetlands Protection Act

A site visit was conducted by BETA’s Wetland Scientists on August 15, 2023 to identify and delineate the boundaries of resource areas at the Site and in its immediate vicinity. Resource area boundaries were identified and delineated in accordance with methods developed by the Massachusetts Department of Environmental Protection’s *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act*, second edition dated September 2022, as well as definitions set forth in the Wetland Regulations, 310 CMR 10.00. One Area Subject to Protection under the Act exist along the Site and is described below.

Bordering Vegetated Wetlands (BVW) – 310 CMR 10.55

According to 310 CMR 10.55(2), the definition of BVW are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes and are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The boundary of BVW is the line within which 50% or more of the vegetation community consists of wetland indicator plants and saturated or inundated conditions exist.

BETA identified one (1) area of BVW within or adjacent to the Site. US Army Corps of Engineers’ *Vegetated Wetland Boundary Delineation Field Data Sheets* documenting BETA’s observed evidence of hydrology, soils, and hydrophytic vegetation at specific data plots are attached.

Table 1: BVW Boundary Descriptions

Flag Series	Location	Description / Notes
WF1 Series Flags WF1-100 to 108	Powerline easement, on the western side of the property	The WF1 Series is an emergent wetland, located within a powerline easement at the toe of slope. The boundary of this wetland was determined based on evidence of hydrology (including hydric soils and saturation). The attached U.S. Army Corps of Engineers Field Data Sheets describe observations of hydrophytic vegetation, hydric soils, and indicators of hydrology made at a specific data plot.

Jurisdictional Wetland Resource Areas – Town of Weymouth

The Town of Weymouth protects resource areas through the Weymouth Wetland Protection Ordinance and its accompanying regulations in Chapter 7, Section 301 of the Weymouth Code of Ordinances (the Ordinance). In some instances, these regulations provide additional jurisdiction and protection beyond what is set forth in the Wetlands Regulations at 310 CMR 10.00. Jurisdiction relating to coastal resource areas are not reviewed in this section, as the Site is not within a coastal area.



Isolated Vegetated Wetlands

The Ordinance protects all freshwater wetlands, whether or not they border surface waters¹. One (1) area meeting the definition of a freshwater wetland as defined in the Ordinance was identified at the Site as described in Table 2.

Table 2: IVW Boundary Descriptions

Flag Series	Location	Description / Notes
WF2 Series Flags WF2-100 to 107	Vegetated plateau, on the northern side of the property	The WF2 Series is an emergent isolated wetland with no observable hydrological connection to other wetlands or resource areas. The boundary of this wetland was determined based on evidence of hydrology (including hydric soils and saturation). The attached U.S. Army Corps of Engineers Field Data Sheets describe observations of hydrophytic vegetation, hydric soils, and indicators of hydrology made at a specific data plot.

Bank

Bank is defined as the land area which normally abuts and confines a water body; the lower boundary being the mean annual low flow level, and the upper boundary being the first observable break in the slope or the mean annual flood level, *whichever is higher*. No Resource Areas with Bank were identified at the Site.

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

The BVW located at the Site is considered a “water of the United States,” and is therefore subject to the federal Clean Water Act, 33 U.S.C. §1251 et seq (1972). The boundary to “waters of the United States” is the Vegetated Wetlands boundary, or, in the absence of Vegetated Wetlands, is the Ordinary High Water Mark (OHWM) for non-tidal rivers and streams, as specified at 33 CFR §328.4.

According to 33 CFR §328.3(c)(4), Vegetated Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” The BVW boundary previously described in this report was delineated in accordance with this definition. The US Army Corps of Engineers’ *Vegetated Wetland Boundary Delineation Field Data Sheets* are attached documenting BETA’s observed evidence of hydrology, soils, and hydrophytic vegetation at specific data plots.

Work conducted below the boundary of Vegetated Wetlands or the OHWM is Subject to Jurisdiction under Section 404 of the Clean Water Act. At this Site, the WF1 Series Vegetated Wetland boundary is the extent of federal Jurisdiction.

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

The limit of jurisdiction under Massachusetts Clean Waters Act (Section 401), as specified in 314 CMR 9.00, is the limit of Waters of the Commonwealth. The delineated IVW is a “water of the Commonwealth” as defined in 314 CMR 9.02. Exceedances of the jurisdictional threshold under 314 CMR 9.00 require filing for a Water Quality Certification under Section 401.

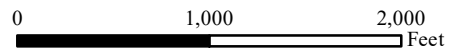
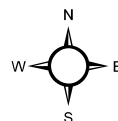
¹ Per §7-301 (b)1 jurisdiction extends to “Any freshwater or coastal wetland, riverine wetland, marsh, wet meadow, bog, swamp or kettle hole, whether bordering on surface waters or isolated, or whether annual or seasonal”.

Findings and Recommendations

BETA has identified areas Subject to Protection and/or Jurisdiction under the Massachusetts Wetlands Protection Act, the federal Clean Water Act, the Weymouth Wetland Protection Ordinance and the Massachusetts Clean Waters Act located on or within 100 feet of the Site and has delineated the boundaries BVW and IVW that exist at the Site. In order to definitively determine the extent of Conservation Commission jurisdiction, Army Corps jurisdiction, and MassDEP jurisdiction, the boundary flags would need to be located and depicted on a to-scale plan of the Site.

Attachments: Figure 1 – Site Locus
Figure 2 – Environmental Resources Map
Figure 3 – FEMA FIRMette
Photographic Documentation
US Army Corps of Engineers' *Vegetated Wetland Boundary Delineation Field Data Sheets*
Custom Soil Report for Norfolk and Suffolk Counties, Massachusetts

Job No: 23.10947.00







1 inch = 1,000 feet

Figure 1
Site Locus
Dwyer Mountain
Weymouth, MA






Figure 2
Environmental Resources Map
Dywer Mountain
Weymouth, MA










DEP Wetlands Legend

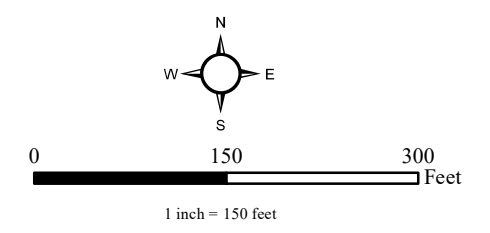
-  MassDEP Hydrologic Feature
-  Marsh/Bog
-  Wooded marsh
-  Open Water

Wildlife Habitat Legend

-  NHESP Priority Habitats of Rare Species
-  NHESP Estimated Habitats
-  NHESP Certified Vernal Pool
-  Potential Vernal Pool
-  Area of Critical Environmental Concern

Drinking Water Protection Areas

-  Zone A
-  Zone B
-  Zone C
-  MassDEP IWPA
-  MassDEP Zone I
-  MassDEP Zone II
-  Outstanding Resource Water



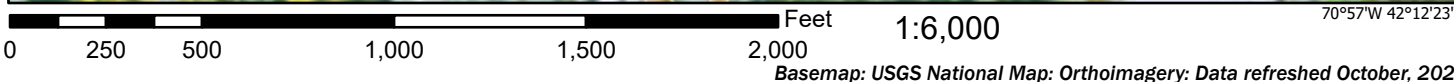
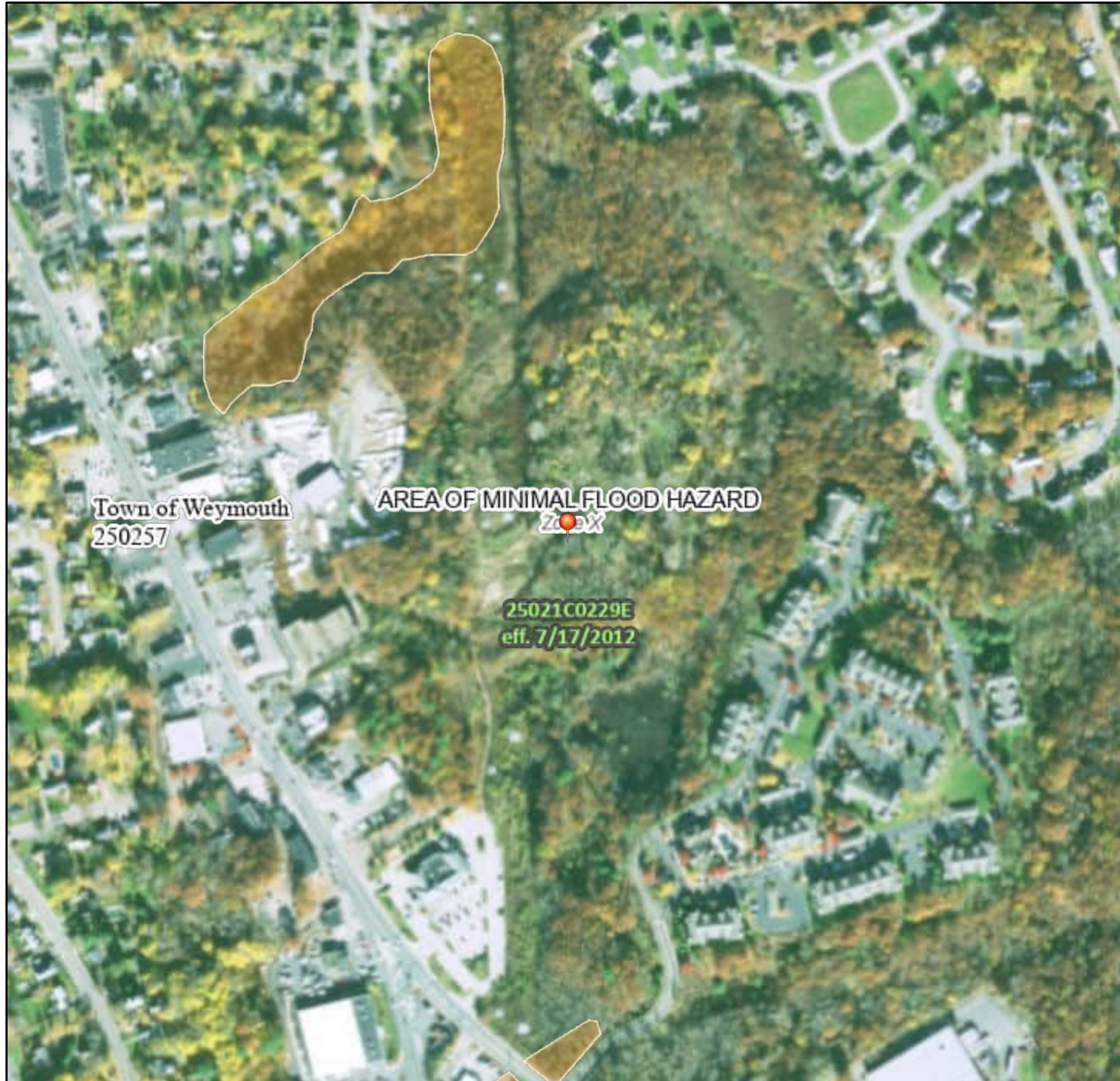
Data Source: MassGIS USGS Color Ortho Imagery (2014), MassDEP Wetlands (1:12000) (2009), NHESP Potential Vernal Pools (2000), NHESP Certified Vernal Pools, NHESP Priority Habitats of Rare Species (2008), NHESP Estimated Habitats of Rare Species (2008), Areas of Critical Environmental Concern (2009), FEMA National Flood Hazard Layer (2014).



National Flood Hazard Layer FIRMMette



70°57'37"W 42°12'49"N



Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>

OTHER AREAS OF FLOOD HAZARD		Area with Flood Risk due to Levee <i>Zone D</i>
		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>

OTHER AREAS		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study

OTHER FEATURES		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **7/10/2023 at 4:07 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dwyer Mountain City/County: Weymouth Sampling Date: 8/15/2023
 Applicant/Owner: Town of Weymouth State: MA Sampling Point: WF1-101-WET
 Investigator(s): Anna Haznar, Jonathan Niro Section, Township, Range: Norfolk County
 Landform (hillside, terrace, etc.): toe of slope Local relief (concave, convex, none): Concave Slope %: 0-25
 Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.210841 Long: -70.956148 Datum: WGS84
 Soil Map Unit Name: Udorthents, loamy 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>WF1 Series</u>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WF1-101-WET

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30' radius</u>)				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
	=Total Cover			
Sapling/Shrub Stratum (Plot size: <u>N/A</u>)				
1.	<u>Spiraea alba</u> 5	Yes	FACW	
2.	_____	_____	_____	
3.	_____	_____	_____	
4.	_____	_____	_____	
5.	_____	_____	_____	
6.	_____	_____	_____	
7.	_____	_____	_____	
	5 =Total Cover			
Herb Stratum (Plot size: <u>5' radius</u>)				
1.	<u>Phragmites australis</u> 20	No	FACW	
2.	<u>Dichanthelium clandestinum</u> 80	Yes	FACW	
3.	<u>Solidago rugosa</u> 10	No	FAC	
4.	<u>Fallopia japonica</u> 20	No	FACU	
5.	<u>Cynanchum louiseae</u> 5	No	UPL	
6.	_____	_____	_____	
7.	_____	_____	_____	
8.	_____	_____	_____	
9.	_____	_____	_____	
10.	_____	_____	_____	
11.	_____	_____	_____	
12.	_____	_____	_____	
	135 =Total Cover			
Woody Vine Stratum (Plot size: <u>N/A</u>)				
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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>105</u>	x 2 = <u>210</u>
FAC species <u>10</u>	x 3 = <u>30</u>
FACU species <u>20</u>	x 4 = <u>80</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column Totals: <u>140</u> (A)	<u>345</u> (B)
Prevalence Index = B/A = <u>2.46</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes No

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

SOIL

Sampling Point WF1-101-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/1	100						loamy sand
3-14	10YR 4/1	85	10YR 5/8	15	C	PL		gravely

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7)</p>	<p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)</p> <p><input type="checkbox"/> High Chroma Sands (S11) (LRR K, L)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input checked="" type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Marl (F10) (LRR K, L)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)</p> <p><input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)</p> <p><input type="checkbox"/> Red Parent Material (F21)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (F22)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: _____	
Depth (inches): _____	

Remarks:
 This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dwyer Moutain City/County: Weymouth Sampling Date: 8/15/2023
 Applicant/Owner: Town of Weymouth State: MA Sampling Point: WF1-101-UP
 Investigator(s): Anna Haznar, Jonathan Niro Section, Township, Range: Norfolk County
 Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Concave Slope %: 0-25
 Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.210829 Long: -7.955782 Datum: WGS84
 Soil Map Unit Name: Udorthents, loamy 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WF1-101-UP

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30' radius</u>)				
1.	_____	_____	_____	
2.	_____	_____	_____	
3.	_____	_____	_____	
4.	_____	_____	_____	
5.	_____	_____	_____	
6.	_____	_____	_____	
7.	_____	_____	_____	
	=Total Cover			
Sapling/Shrub Stratum (Plot size: <u>N/A</u>)				
1.	_____	_____	_____	
2.	_____	_____	_____	
3.	_____	_____	_____	
4.	_____	_____	_____	
5.	_____	_____	_____	
6.	_____	_____	_____	
7.	_____	_____	_____	
	=Total Cover			
Herb Stratum (Plot size: <u>5' radius</u>)				
1.	<u><i>Phragmites australis</i></u>	5	No	FACW
2.	<u><i>Dichanthelium clandestinum</i></u>	80	Yes	FACW
3.	<u><i>Holcus lanatus</i></u>	20	No	FACU
4.	<u><i>Fallopia japonica</i></u>	50	Yes	FACU
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
	155 =Total Cover			
Woody Vine Stratum (Plot size: <u>N/A</u>)				
1.	<u><i>Celastrus orbiculatus</i></u>	10	Yes	UPL
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
	10 =Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)				

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>85</u>	x 2 =	<u>170</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>70</u>	x 4 =	<u>280</u>
UPL species	<u>10</u>	x 5 =	<u>50</u>
Column Totals:	<u>165</u> (A)		<u>500</u> (B)
Prevalence Index = B/A =			<u>3.03</u>

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes No X

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/3	100						loamy sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: 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 Soils³:

- 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 (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Contaminated soils

Depth (inches): 4

Hydric Soil Present? Yes No

Remarks:
 This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dwyer Mountain City/County: Weymouth Sampling Date: 8/15/2023
 Applicant/Owner: Town of Weymouth State: MA Sampling Point: WF2-100-WET
 Investigator(s): Anna Haznar, Jonathan Niro Section, Township, Range: Norfolk County
 Landform (hillside, terrace, etc.): top of plateau Local relief (concave, convex, none): concave Slope %: 0-25
 Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.03076 Long: -71.23313 Datum: WGS84
 Soil Map Unit Name: Undorthents, refuse substratum 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>WF2 Series</u>
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ Water-Stained Leaves (B9) ___ High Water Table (A2) ___ Aquatic Fauna (B13) <u>X</u> Saturation (A3) ___ Marl Deposits (B15) ___ Water Marks (B1) ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3) ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5) ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7) ___ Other (Explain in Remarks) ___ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: WF2-100-WET

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30' radius</u>)				
1.	_____	_____	_____	
2.	_____	_____	_____	
3.	_____	_____	_____	
4.	_____	_____	_____	
5.	_____	_____	_____	
6.	_____	_____	_____	
7.	_____	_____	_____	
	=Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)				
1.	_____	_____	_____	
2.	_____	_____	_____	
3.	_____	_____	_____	
4.	_____	_____	_____	
5.	_____	_____	_____	
6.	_____	_____	_____	
7.	_____	_____	_____	
	=Total Cover			
Herb Stratum (Plot size: <u>5' radius</u>)				
1.	<u>Phragmites australis</u>	40	Yes	FACW
2.	<u>Lythrum salicaria</u>	30	No	OBL
3.	<u>Holcus lanatus</u>	80	Yes	FACU
4.	<u>Juncus tenuis</u>	30	No	FAC
5.	_____	_____	_____	
6.	_____	_____	_____	
7.	_____	_____	_____	
8.	_____	_____	_____	
9.	_____	_____	_____	
10.	_____	_____	_____	
11.	_____	_____	_____	
12.	_____	_____	_____	
	180 =Total Cover			
Woody Vine Stratum (Plot size: <u>15' radius</u>)				
1.	_____	_____	_____	
2.	_____	_____	_____	
3.	_____	_____	_____	
4.	_____	_____	_____	
	=Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)				

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	<u>30</u>	x 1 =	<u>30</u>	
FACW species	<u>40</u>	x 2 =	<u>80</u>	
FAC species	<u>30</u>	x 3 =	<u>90</u>	
FACU species	<u>80</u>	x 4 =	<u>320</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>180</u>	(A)	<u>520</u>	(B)
Prevalence Index = B/A =				<u>2.89</u>

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 X 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

SOIL

Sampling Point WF2-100-WET

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 5/1	100						sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1) Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- Histic Epipedon (A2) Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- Black Histic (A3) High Chroma Sands (S11) (**LRR K, L**)
- Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (**LRR K, L**)
- Stratified Layers (A5) Loamy Gleyed Matrix (F2)
- Depleted Below Dark Surface (A11) Loamy Gleyed Matrix (F2)
- Thick Dark Surface (A12) Depleted Matrix (F3)
- Sandy Mucky Mineral (S1) Redox Dark Surface (F6)
- Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7)
- Sandy Redox (S5) Redox Depressions (F8)
- Stripped Matrix (S6) Marl (F10) (**LRR K, L**)
- Dark Surface (S7)

Indicators for Problematic Hydric Soils³:

- 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 (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No _____

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dwyer Mountain City/County: Weymouth Sampling Date: 8/15/2023
 Applicant/Owner: Town of Weymouth State: MA Sampling Point: WF2-100-UP
 Investigator(s): Anna Haznar, Jonathan Niro Section, Township, Range: Bristol County
 Landform (hillside, terrace, etc.): top of plateau Local relief (concave, convex, none): Convex Slope %: 0-25
 Subregion (LRR or MLRA): LRR R, MLRA 144A Lat: 42.210864 Long: -70.954472 Datum: WGS84
 Soil Map Unit Name: Udorthents, refuse substratum 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WF2-100-UP

	Absolute % Cover	Dominant Species?	Indicator Status																									
Tree Stratum (Plot size: <u>30' radius</u>)																												
1. <u>Populus grandidentata</u>	<u>15</u>	<u>No</u>		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																								
2. <u>Rhus hirta</u>	<u>55</u>	<u>Yes</u>	<u>UPL</u>																									
3. <u>Ailanthus altissima</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																									
4. _____																												
5. _____																												
6. _____																												
7. _____																												
	<u>80</u>	=Total Cover		Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"></td> <td style="width:30%; text-align:center;">Total % Cover of:</td> <td style="width:30%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 1 = <u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 2 = <u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 3 = <u>0</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>80</u></td> <td style="text-align:center;">x 4 = <u>320</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>135</u></td> <td style="text-align:center;">x 5 = <u>675</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u>215</u> (A)</td> <td style="text-align:center;"><u>995</u> (B)</td> </tr> <tr> <td colspan="3" style="text-align:center;">Prevalence Index = B/A = <u>4.63</u></td> </tr> </table>		Total % Cover of:	Multiply by:	OBL species	<u>0</u>	x 1 = <u>0</u>	FACW species	<u>0</u>	x 2 = <u>0</u>	FAC species	<u>0</u>	x 3 = <u>0</u>	FACU species	<u>80</u>	x 4 = <u>320</u>	UPL species	<u>135</u>	x 5 = <u>675</u>	Column Totals:	<u>215</u> (A)	<u>995</u> (B)	Prevalence Index = B/A = <u>4.63</u>		
	Total % Cover of:	Multiply by:																										
OBL species	<u>0</u>	x 1 = <u>0</u>																										
FACW species	<u>0</u>	x 2 = <u>0</u>																										
FAC species	<u>0</u>	x 3 = <u>0</u>																										
FACU species	<u>80</u>	x 4 = <u>320</u>																										
UPL species	<u>135</u>	x 5 = <u>675</u>																										
Column Totals:	<u>215</u> (A)	<u>995</u> (B)																										
Prevalence Index = B/A = <u>4.63</u>																												
Sapling/Shrub Stratum (Plot size: <u>N/A</u>)																												
1. <u>Cytisus scoparius</u>	<u>40</u>	<u>Yes</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is $\leq 3.0^1$ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																								
2. _____																												
3. _____																												
4. _____																												
5. _____																												
6. _____																												
7. _____																												
	<u>40</u>	=Total Cover																										
Herb Stratum (Plot size: <u>5' radius</u>)																												
1. <u>Daucus carota</u>	<u>30</u>	<u>Yes</u>	<u>UPL</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																								
2. <u>Holcus lanatus</u>	<u>80</u>	<u>Yes</u>	<u>FACU</u>																									
3. _____																												
4. _____																												
5. _____																												
6. _____																												
7. _____																												
8. _____																												
9. _____																												
10. _____																												
11. _____																												
12. _____																												
	<u>110</u>	=Total Cover																										
Woody Vine Stratum (Plot size: <u>N/A</u>)																												
1. _____				Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																								
2. _____																												
3. _____																												
4. _____																												
				=Total Cover																								
Remarks: (Include photo numbers here or on a separate sheet.)																												

SOIL

Sampling Point WF2-100-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/1	100						sandy loam
5-18	10YR 4/2	100						sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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 Soils³:

- 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 (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Photo 1



Typical view of wetland conditions within the WF1 series—facing east.

Photo 2



View of vegetation within the WF 1 series—facing southeast.

PHOTOGRAPHIC DOCUMENTATION

Dwyer Mountain

Weymouth, Massachusetts

Photographs Documented August 15, 2023

Photo 3



Typical view of upland vegetation near the WF1 series—facing south.

Photo 4



Typical view of conditions within the WF2 wetland series—facing south.

PHOTOGRAPHIC DOCUMENTATION

Dwyer Mountain

Weymouth, Massachusetts

Photographs Documented August 15, 2023

Photo 5



View of vegetation within the WF2 wetland series— facing north.

Photo 6



View of the WF2 wetland line with both wetland and upland conditions—facing north.

PHOTOGRAPHIC DOCUMENTATION

Dwyer Mountain

Weymouth, Massachusetts

Photographs Documented August 15, 2023



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Norfolk and Suffolk Counties, Massachusetts



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

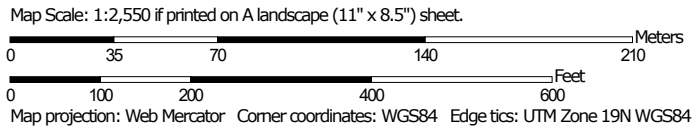
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
 Survey Area Data: Version 18, Sep 9, 2022

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

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
51	Swansea muck, 0 to 1 percent slopes	0.9	5.2%
104C	Hollis-Rock outcrop-Charlton complex, 0 to 15 percent slopes	0.7	3.8%
105D	Rock outcrop-Hollis complex, 3 to 25 percent slopes	1.4	7.6%
652	Udorthefts, refuse substratum	10.3	57.9%
654	Udorthefts, loamy	4.6	25.6%
Totals for Area of Interest		17.9	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Norfolk and Suffolk Counties, Massachusetts

51—Swansea muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2trl2
Elevation: 0 to 1,140 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Swansea and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Swansea

Setting

Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material over loose sandy and gravelly glaciofluvial deposits

Typical profile

Oa1 - 0 to 24 inches: muck
Oa2 - 24 to 34 inches: muck
Cg - 34 to 79 inches: coarse sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 16.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: B/D
Ecological site: F144AY043MA - Acidic Organic Wetlands
Hydric soil rating: Yes

Minor Components

Freetown

Percent of map unit: 10 percent
Landform: Bogs, swamps

Custom Soil Resource Report

Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

104C—Hollis-Rock outcrop-Charlton complex, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2w69p
Elevation: 0 to 1,270 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Hollis, extremely stony, and similar soils: 35 percent
Charlton, extremely stony, and similar soils: 25 percent
Rock outcrop: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis, Extremely Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

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Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: gravelly fine sandy loam
Bw - 7 to 16 inches: gravelly fine sandy loam
2R - 16 to 26 inches: bedrock

Properties and qualities

Slope: 0 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 8 to 23 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Charlton, Extremely Stony

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ridges, hills

Parent material: Igneous and metamorphic rock

Typical profile

R - 0 to 79 inches: bedrock

Properties and qualities

Slope: 0 to 15 percent

Depth to restrictive feature: 0 inches to lithic bedrock

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Hydric soil rating: No

Minor Components

Canton, extremely stony

Percent of map unit: 7 percent

Landform: Moraines, hills, ridges

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Side slope, crest

Down-slope shape: Convex, linear

Across-slope shape: Convex

Hydric soil rating: No

Chatfield, extremely stony

Percent of map unit: 6 percent

Landform: Ridges, hills

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Nose slope, side slope, crest

Down-slope shape: Convex

Across-slope shape: Linear, convex

Hydric soil rating: No

Montauk, extremely stony

Percent of map unit: 1 percent

Landform: Hills, recessional moraines, ground moraines, drumlins

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Side slope, crest

Down-slope shape: Convex, linear

Custom Soil Resource Report

Across-slope shape: Convex
Hydric soil rating: No

Scituate, extremely stony

Percent of map unit: 1 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

105D—Rock outcrop-Hollis complex, 3 to 25 percent slopes

Map Unit Setting

National map unit symbol: vkxr
Elevation: 0 to 620 feet
Mean annual precipitation: 32 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 120 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 65 percent
Hollis and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting

Parent material: Igneous and metamorphic rock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Description of Hollis

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Convex
Parent material: Shallow, friable loamy ablation till

Typical profile

H1 - 0 to 3 inches: fine sandy loam
H2 - 3 to 14 inches: gravelly fine sandy loam
H3 - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 25 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Minor Components

Chatfield

Percent of map unit: 7 percent
Hydric soil rating: No

Swansea

Percent of map unit: 2 percent
Landform: Bogs
Hydric soil rating: Yes

Whitman

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

652—Udorthents, refuse substratum

Map Unit Setting

National map unit symbol: vkyg
Elevation: 0 to 3,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F

Custom Soil Resource Report

Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Riser, tread
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Excavated and filled loamy land over made land, refuse

Typical profile

H1 - 0 to 6 inches: variable
H2 - 6 to 60 inches: variable

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: More than 80 inches
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 5 percent
Hydric soil rating: Unranked

654—Udorthents, loamy

Map Unit Setting

National map unit symbol: vkyb
Elevation: 0 to 3,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days

Custom Soil Resource Report

Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Landform position (two-dimensional): Shoulder, summit

Landform position (three-dimensional): Riser, tread

Down-slope shape: Convex, linear

Across-slope shape: Convex, linear

Parent material: Excavated and filled coarse-loamy human transported material

Typical profile

H1 - 0 to 6 inches: variable

H2 - 6 to 60 inches: variable

Properties and qualities

Slope: 0 to 25 percent

Depth to restrictive feature: More than 80 inches

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Hydric soil rating: Unranked

Minor Components

Udorthents,sandy

Percent of map unit: 8 percent

Hydric soil rating: Unranked

Udorthents,wet substr.

Percent of map unit: 8 percent

Hydric soil rating: Unranked

Urban land

Percent of map unit: 4 percent

Hydric soil rating: Unranked

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