# Conservation Commission
AGENDA

Thursday, May 28, 2026 - 6:00 PM

Regular Meeting
Agawam Senior Center
954 Main Street
Agawam, MA 01001

A. Conservation Commission

1) 6:00pm Request for Determination-15 Two-If-By Street-Dargie

2) 6:05pm Request for Determination-130 South Westfield Street-Tirone

3) 6:10pm-Notice of Intent-365 Main Street-O'Malley

4) Public Hearing Cont.-Notice of Intent-233 Main Street-HP Hood, LLC

5) Public Hearing Cont.-Abbreviated Notice of Resource Area Deineation-311 Shoemaker Lane-Ameresco, Inc.

6) Approval of Minutes-May 14, 2026

7) Correspondence and Complaints

**Massachusetts Department of Environmental Protection**
Bureau of Water Resources - Wetlands

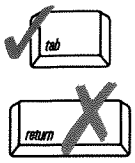
# WPA Form 1- Request for Determination of Applicability

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

Municipality

## 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:

Eric — First Name
Dargie — Last Name
15 Two if by st — Address
Feeding Hills — City/Town
MA — State
01030 — Zip Code
413 250 8891 — Phone Number
ejdargie@gmail.com — Email Address

2. Property Owner (if different from Applicant):

First Name | Last Name
Address
City/Town | State | Zip Code
Phone Number | Email Address (if known)

3. Representative (if any)

First Name | Last Name
Company Name
Address
City/Town | State | Zip Code
Phone Number | 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):

15 Two if by st — Street Address
Feeding Hills — City/Town
42.06079° N — Latitude (Decimal Degrees Format with 5 digits after decimal e.g. XX.XXXXX)
72.68370° W — Longitude (Decimal Degrees Format with 5 digits after decimal e.g. -XX.XXXXX)

How to find Latitude and Longitude

and how to convert to decimal degrees

Assessors' Map Number | Assessors' Lot/Parcel Number

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

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

Title | Date
Title | Date

## B. Project Description (cont.)

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

Construct 26x40 detached garage

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).

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 _____ make the following determination(s). Check any that apply:
   Conservation Commission

- [x] 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.
- [x] 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:

_____
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.

_____ May 7. 2026
Signature of Applicant Date

_____ _____
Signature of Representative (if any) Date

**SALVINI ASSOCIATES LLC**

Land Surveyors

Wetland Scientists

Land Use Consultants

Office Locations:

585 Route 20
P. O. Box 742
Chester, MA 01011
(413) 354-1032

www.SALVINIassociates.com

# REQUEST FOR DETERMINATION OF APPLICABILITY

Submitted To:

## Town Of Agawam Conservation Commission

**c/o Henry A. Kozloski, Chairperson**

**1000 Suffield Steet, Agawam, MA 01001**

Project Location:

## Parcel E8-1-8
## 130 South Westfield Rd
## Feeding Hills, MA 01030

| ITEM | SECTION |
|---|---|
| Title Page | |
| Cover Letter……..... | 1 |
| Request for Determination WPA Form 1..... | 2 |
| Resource Report …….... | 3 |
| Data Forms……..……..... | 4 |
| Site Photographs …… | 5 |
| Figures …….... | 6 |
| Figure No. 1 – Assessors Map | |
| Figure No. 2 – FEMA Flood Map | |
| Figure No. 3 – Natural Heritage | |
| Figure No. 4 – Owner's Deed | |
| Figure No. 5 – Site Plan | |

May 4, 2026

# Section 1 - Cover Letter

**SALVINI Associates, LLC**
**Land Surveyors & Land Use Consultants**
Surveying Western Massachusetts Since 1995

May 4, 2026

Agawam Conservation Commission
1000 Suffield Street
Agawam, MA 01001

RE: **Request for Determination of Applicability (RDA)**
**Parcel E8-1-8, 130 South Westfield St., Agawam, MA**

Dear Chairperson, Henry A. Kozloski:

On behalf of Giuseppe Tirone, Salvini Associates, LLC is submitting this Request for Determination of Applicability (RDA) for approval of delineated bordering and isolated vegetated wetlands on Parcel E8-1-8, 130 South Westfield Street in Feeding Hills. Direct access to the site is easiest from either Sunset Terrace or Hamilton Circle termini.

Enclosed please find the original and two copies of the RDA. As requested, we have emailed a pdf copy of the complete application submittal to your office. The completed application package has also been electronically filed with the Western Regional Office of the Massachusetts Department of Environmental Protection.

We look forward to presenting this RDA at the Commission's May 12 meeting. If you have any questions regarding this application or would like to schedule a site visit, please do not hesitate to contact me at email:steves@SALVINIassociates.com or (413)354-1032.

SALVINI Associates, LLC

Stephen A. Salvini
Professional Land Surveyor

# Section 2 Request for Determination of Applicability

**Massachusetts Department of Environmental Protection**
Bureau of Water Resources - Wetlands

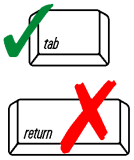
# WPA Form 1- Request for Determination of Applicability

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

Agawam
Municipality

## 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:

Joseph (First Name) | Tirone (Last Name)
36 Allison Lane (Address)
Feeding Hills (City/Town) | MA (State) | 01030 (Zip Code)
(413)330-8722 (Phone Number) | jtirone@comcast.net (Email Address)

2. Property Owner (if different from Applicant):

First Name | Last Name
Address
City/Town | State | Zip Code
Phone Number | Email Address (if known)

3. Representative (if any)

Jeff (First Name) | Smith (Last Name)
Company Name
585 Route 20 (Address)
Chester (City/Town) | MA (State) | 01011 (Zip Code)
413-354-1032 (Phone Number) | jeffs@salviniassociates.com (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):

130 South Westfield Street (Street Address) | Agawam - Feeding Hills (City/Town)

How to find Latitude and Longitude

42.06237 (Latitude (Decimal Degrees Format with 5 digits after decimal e.g. XX.XXXXX)) | 72.680413 (Longitude (Decimal Degrees Format with 5 digits after decimal e.g. -XX.XXXXX))

and how to convert to decimal degrees

E8 (Assessors' Map Number) | 1-8 (Assessors' Lot/Parcel Number)

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

Deciduous wood lot previously used agriculturally.

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

Survey For Edwin L Cook, Scale:1"=80', Feeding Hills, MA, James J Elasmar (Title) | 10/19/1972 (Date)

Title | Date

## B. Project Description (cont.)

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

No proposed work.

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).

N/A

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 Agawam Conservation Commission make the following determination(s). Check any that apply:

☐ 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:

City of Agawam
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

# Section 3 – Wetland Delineation Report

# WETLAND DELINEATION REPORT
# 130 SOUTH WESTFIELD STREET, FEEDING HILLS, MA

## Introduction

As requested by the applicant, Salvini Associates, LLC. conducted a site assessment and wetland delineations at 130 South Westfield Street, Feeding Hills, MA to determine if there are any resource areas subject to protection under Massachusetts Wetland Protection Act M.G.L. c. 131 § 40 or municipal wetlands regulation. The subject property is 19.20 acres located along the westerly side of South Westfield Street and south of Overlook Drive. It is listed as Parcel E8-1-8 on the Town of Agawam GIS. Please see Figure 1 in Section 5. Most of the property is forested upland. A portion of the property at the easterly end was previously used for crops and nursery planting. There are three wetlands located on the property.

Based on FEMA's GIS Flood Hazard mapping, none of the subject property is located within the 100 or 500-year flood zones. Please see Figure 2 in Section 5.

Utilizing Mass Mapper's Natural Heritage Endangered Species Program (NHESP) layer, there are no Priority Habitat of Rare Species, Natural Communities, Estimated Habitats of Rare Wildlife, or Vernal Pools located on the subject property. Please see Figure 3 in Section 5.

## Property Overview

The property is a wooded lot composed of both mature and early successional forest. The area formally used for agriculture is grown in with pioneer species. The property is located on a low-lying hilltop and is level to slightly sloping with small undulations except the east and west ends of the property which are steeper and slope downhill to the east and west. Most of the property drains to the south and west. There is a bordering vegetated wetland located along the south-central portion of the property and two smaller isolated wetlands located along the northerly part of the property. Most of the property is upland forest dominated by mature White Pine, Red Oak, and Sugar Maple.

Using USDA Web Soil Survey, most of the property is mapped as Paxton 305B and 305C fine sandy loams and Meckesville 327 B, C, and D fine sandy loams. A section along the west end of the property is mapped as Charlton soil and a portion of the central portion of the property is mapped as Ridgebury 70A fine sandy loam.

Paxton soils are classified as well drained fine sandy loams. The 305B modifier indicates the soil is on 0-8% slopes and very stony. The 305C modifier indicates the soil is on 8-15% slopes and is extremely stony. Paxton soils are derived from schist, gneiss, and granite and formed in lodgment till on hills, drumlins, till plains, and eskers.

Meckesville soils are classified as well drained fine sandy loam. The 3272B modifier indicates the soil is on 3-8% slopes and the D modifier indicates 15 to 25% slopes. Meckesville soils are formed on undulating glacial hilltops and slopes derived from eolian and colluvium deposits of red sandstone, siltstone, and shale.

Charlton soils are classified as well drained fine sandy loams. The 305B modifier indicates the soil is on 0-8% slopes. Charlton soils are derived from schist, gneiss, and granite and formed in melt-out till on hills, moraines, and ridges.

Ridgebury soils are classified as very deep poorly drained fine sandy loams. The A modifier indicates 0 to 3% slopes. Ridgebury soils are formed in lodgement till derived from schist, gneiss, granite in concave areas, and along the toe of slopes.

## Methodology

The site was assessed in October 2025 to determine if there are any resource areas protected by the Massachusetts Wetlands Protection Act or any local Wetland By-laws. Delineations were conducted following the methodology in the Massachusetts DEP Delineating Bordering Vegetated Wetlands under the Wetlands Protection Act Handbook (1995). Wetlands are flagged with blue consecutively numbered flags. Delineations were conducted under dryer than normal conditions. BVW Field Data forms listing vegetation, hydrology, and soils data for each of the wetland and adjacent upland plots are attached to this report in Section 5.

## Resource Area Descriptions Bordering Vegetated Wetland (BVW)

As stated in 310 CMR 10.55(2)(a) "*Bordering Vegetated Wetlands are freshwater wetlands which border on creeks, rivers, streams, ponds, and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps, and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and or inundated such that they support a predominance of wetland indicator plants*…"

The wetlands delineated on the property are classified as palustrine forested wetland (PFO), a subclass of palustrine wetlands, which *includes all nontidal wetlands dominated by trees, shrubs, persistent emergent, emergent mosses, or lichens*… according to Classification of Wetlands and Deepwater Habitats of the United States (1979).

### Wetland AB

Wetland AB is an isolated forested wetland located on a shallow slope along the north part of the property. Ground cover vegetation is dominated by Sensitive fern (*Onoclea sensibilis*), Jewelweed *(Impatians capensis),* and Yellow Sedge *(Carex flava)*. The shrub and understory layer are dominated by Red Maple (*Acer rubrum*) saplings and Red Chokeberry (*Aronia arbutifolia*). The canopy is dominated by mature Red Maple.

Hydrology is from groundwater seeps and precipitation. The Hydrologic indicators observed include trees with shallow root systems, drainage patterns, and water-stained leaves. The wetland drains north and east at the edge of the property to a storm drain at Hamilton Circle terminus. The wetland does not connect hydrologically with another resource area.

The soil profile from 0 to 4 inches is an O horizon composed of mineral muck with a matrix color of 10 YR 3/2. This overlays an AB horizon from 4 to 10 inches of sand with a matrix color of 10 YR 4/2 with blotches of 10YR 4/4. From 10 inches to 18 inches is a B horizon of sand and silt with a matrix color of 10YR 4/2 and 20% redox concentrations of 10YR 5/6. The soil was saturated to the surface at the time of the delineation.

Wetland AB is 6,967.0 square feet and does not meet the quarter acre/foot volume to be classified as isolated land subject to flooding under state regulations for Isolated Land Subject

to Flooding. The perimeter of the wetland is flagged with blue flagging marked Wetland AB is flagged with blue flagging marked WF A1 through WF A6 beginning at the edge of the property at the end of Hamilton Circle and extends west behind residential homes on Overlook Drive. The north side of the wetland begins at the Hamilton terminus and extends southwest into the woods and is flagged with blue flagging marked WF B1 through WF B8 closing with Wetland flag WF A6 .Soil bores are flagged with blue flagging marked Soil Bore.

**Wetland C**

Wetland C is a bordering vegetated forested wetland located in the central part of the property and extending south onto adjacent property. Ground cover in the interior of the wetland is sparse with sphagnum moss covered, cobble sized stones and Sensitive fern (*Onoclea sensibilis*) along the margins. The shrub and understory layer around the perimeter includes Red Maple (*Acer rubrum*) saplings, Speckled Alder (*Alnus rugosa*), Flowering Dogwood (*Cornus amomum*), and Red Chokeberry (*Aronia arbutifolia*). The canopy is dominated by Red Maple.

Hydrology is from seasonal high groundwater, runoff, and precipitation. The Hydrologic indicators observed include a sparsely vegetated concave surface, drainage patterns, and water-stained leaves. There was some standing water in places at the time of the delineation. The wetland drains south connecting to a series of wetlands.

The soil profile from 0 to 4 inches is composed of muck and peat with a matrix color of 10 YR 3/2. This overlays an O horizon from 4 to 9 inches of organic muck with a matrix color of 10 YR 3/1. From 9 to 17 inches is a B horizon with a matrix color of 10YR 5/3 and 10% redox concentrations of 5 YR 5/6. The soil profile was saturated at 8 inches with standing water at 6 inches in the test hole at the time of the delineation. The perimeter of the wetland is flagged with blue flagging marked WF C1 through WF C 15 open at the south property line.

**Wetland D**

Wetland D is an isolated vegetated wetland located in a small depression in the northcentral part of the property. Ground cover in the interior of the wetland is sparse, indicating seasonal flooding. The ground cover within the wetland is sparce with sphagnum moss, *and* Sensitive fern (*Onoclea sensibilis*) along the margins. The shrub and understory layer around the perimeter includes Red Maple (*Acer rubrum*), saplings, Flowering Dogwood (*Cornus amomum*), and Red Chokeberry (*Aronia arbutifolia*). The canopy is dominated by Red Maple.

Hydrology is from seasonal high groundwater and precipitation. The Hydrologic indicators observed include a sparsely vegetated concave surface and water-stained leaves. There was standing water in the wetland at an initial site visit but none at the time of the delineation. There is no inlet or outlet and the wetland does not connect with another resource area.

The soil profile from 0 to 10 inches is an O horizon composed of mineral muck with a matrix color of 10 YR 3/2. This overlays an AB horizon from 10 to 20 inches of organic muck with a matrix color of 10 YR 5/4. and redox concentrations of 5 YR 5/6. The soil profile was saturated at 12 inches with standing water in the test pit at 15 inches at the time of the delineation.

Wetland D is 2,499.5 square feet and does not meet the quarter acre/foot volume to be classified as isolated land subject to flooding under state regulations for Isolated Land Subject to Flooding. The perimeter of the wetland is flagged with blue flagging marked WF D1 through WF D 14.

**Upland Forest**

Most of the subject property is upland forest composed of a mix of hardwood and White Pine. Ground cover is dominated by Canada Mayflower (*Maianthemum canadense*), Christmas Fern (*Polystichum acrostichoides*), and Evergreen Woodfern (*Dryopteris intermedia*). The understory is dominated by White Pine *(Pinus strobus)* and Black Cherry saplings (*Prunus serotina*). In the early successional areas Multiflora rose (*Rosa multiflora*) and Honeysuckle are dominant. Goldenrod (*Solidago Spp.*) and Garlic mustard (*Alliara petiolata*) are dominant groundcover in the open areas. The canopy is dominated by White Pine *(Pinus strobus)* in the middle of the property area with Red Oak *(Quercus rubra)* and Sugar Maple *(Acer saccharum)* throughout the remainder of the property. Black Cherry (*Prunus serotina*), Elm (*Ulmus spp*), and Pignut Hickory (*Carya glabra*) are common throughout.

The soil profile from 0-7 inches is an A horizon of fine sandy loam with a matrix color of 10 YR 3/2. From 7 to 15 inches is an AB horizon of sandy loam with a matrix color of 10 YR 5/4. This overlays a B horizon composed of sandy gravel with a matrix color of 10YR 5/4. The soil was not saturated and there was no standing water in the soil test hole at the time of the delineation.

## Conclusion

In conclusion Salvini Associates, LLC completed wetland delineations on Parcel E8-1-8 located at 130 South Westfield Street, Feeding Hills, MA. There are three wetlands located within the subject property. Two of the wetlands are isolated and one is a BVW.

Wetland C is a jurisdictional wetland regulated under the MA Wetlands Protection Act 310 CMR 10.55(2).

Wetland AB does not connect directly to another resource area and therefore does not meet the definition under 10.55 (2). Furthermore, the area and volume calculations are also less than the ¼ acre foot threshold under 10.57(b) for Isolated Land Subject to Flooding.

Wetland D due to its isolation and size also does not meet the jurisdictional description of a regulated wetland under 310 CMR 10.55(2) and is not subject to state regulation.

BVW Field Data Forms are included for Wetland C and an adjacent upland plot. BVW Field Data Forms were not completed for the isolated wetlands.

**BORDERING VEGETATED WETLAND DETERMINATION FORM**

Project/Site: 130 South Westfield Street City/Town: Feeding Hills Sampling Date: 07-12-2025

Applicant/Owner: Joseph Tirone Sampling Point or Zone: Wetland C

Investigator(s): Jeff Smith, Salvini Associates, LLC Latitude / Longitude: 42.062377 / 72.680413

Soil Map Unit Name: Ridgebury 70A NWI or DEP Classification: , Wooded swamp Deciduous

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

Are Vegetation [ ], Soil [ ] , or Hydrology [ ] significantly disturbed? (If yes, explain in Remarks)

Are Vegetation [ ], Soil [ ] , or Hydrology [ ] naturally problematic? (If yes, explain in Remarks)

**SUMMARY OF FINDINGS – Attach site map and photograph log showing sampling locations, transects, etc.**

| | | |
|---|---|---|
| Wetland vegetation criterion met? | Yes [✔] No [ ] | **Is the Sampled Area within a Wetland?** **Yes [✔] No [ ]** |
| Hydric Soils criterion met? | Yes [✔] No [ ] | |
| Wetlands hydrology present? | Yes [✔] No [ ] | |

Remarks, Photo Details, Flagging, etc.:

Flagged WF-C1 to WF- C15 w blue flagging open to the south

**HYDROLOGY**

| **Field Observations:** | | | |
|---|---|---|---|
| Surface Water Present? | Yes [✔] | No [ ] | Depth (inches) 2.00 |
| Water Table Present? | Yes [ ] | No [✔] | Depth (inches) 0.00 |
| Saturation Present (including capillary fringe)? | Yes [✔] | No [✔] | Depth (inches) 0.00 |

**Wetland Hydrology Indicators**

| Reliable Indicators of Wetlands Hydrology | Indicators that can be Reliable with Proper Interpretation | Indicators of the Influence of Water |
|---|---|---|
| [✔] Water-stained leaves | [ ] Hydrological records | [ ] Direct observation of inundation |
| [ ] Evidence of aquatic fauna | [ ] Free water in a soil test hole | [✔] Drainage patterns |
| [ ] Iron deposits | [ ] Saturated soil | [ ] Drift lines |
| [ ] Algal mats or crusts | [ ] Water marks | [ ] Scoured areas |
| [ ] Oxidized rhizospheres/pore linings | [ ] Moss trim lines | [ ] Sediment deposits |
| [ ] Thin muck surfaces | [ ] Presence of reduced iron | [ ] Surface soil cracks |
| [ ] Plants with air-filled tissue (aerenchyma) | [ ] Woody plants with adventitious roots | [ ] Sparsely vegetated concave surface |
| [ ] Plants with polymorphic leaves | [✔] Trees with shallow root systems | [ ] Microtopographic relief |
| [ ] Plants with floating leaves | [ ] Woody plants with enlarged lenticels | [✔] Geographic position (depression, toe of slope, fringing lowland |
| [ ] Hydrogen sulfide odor | | |

Remarks (describe recorded data from stream gauge, monitoring well, aerial photos, previous inspections, if available):

Site was delineated in June and October 2025. There was standing water and water flowing from groundwater seeps in June.

This form is only for BVW delineations. Other wetland resource areas may be present and should be delineated according to the applicable regulatory provisions.

**VEGETATION –** Use both common and scientific names of plants.

Tree Stratum Plot size _____

| Common name | Scientific name | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indictor? (yes/no) |
|---|---|---|---|---|---|
| 1. Red maple | Acer rubrum | FAC | 38.0 | Yes | Yes |
| 2. Slippery elm | Ulmus rubra | FAC | 10.5 | Yes | Yes |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |

48.5 = Total Cover

Shrub/Sapling Stratum Plot size _____

| Common name | Scientific name | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indictor? (yes/no) |
|---|---|---|---|---|---|
| 1. Speckled alder | Alnus rugosa | FACW | 10.5 | Yes | Yes |
| 2. Red Maple | Acer rubrum | FAC | 20.5 | Yes | Yes |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |

31.0 = Total Cover

Herb Stratum Plot size _____

| Common name | Scientific name | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indictor? (yes/no) |
|---|---|---|---|---|---|
| 1. Sensitive Fern | Onoclea sensibilis | FACW | 10.5 | Yes | Yes |
| 2. Jewelweed | Inpatiens capensis | FACW | 10.5 | Yes | Yes |
| 3. Sphagnum moss | | OBL | 20.5 | Yes | Yes |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |

41.5 = Total Cover

**VEGETATION –** continued.

| Woody Vine Stratum | Plot size | | | | |
|---|---|---|---|---|---|
| Common name | Scientific name | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indictor? (yes/no) |
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| | | | 0.0 = Total Cover | | |

| Rapid Test: Do all dominant species have an indicator status of OBL or FACW? | | | | Yes ☐ No ☑ |
|---|---|---|---|---|
| Dominance Test: | Number of dominant species | Number of dominant species that are wetland indicator plants | | Do wetland indicator plants make up ≥ 50% of dominant plant species? |
| | 7 | 7 | | Yes ☑ No ☐ |
| Prevalence Index: | | Total % Cover (all strata) | Multiply by: | Result |
| | OBL species | 21 | X 1 | = 20.50 |
| | FACW species | 32 | X 2 | = 63.00 |
| | FAC species | 69 | X 3 | = 207.00 |
| | FACU species | 0 | X 4 | = 0.00 |
| | UPL species | | X 5 | = 0.00 |
| | Column Totals | (A) 121 | | (B) 290.5 |
| Prevalence Index | | B/A = 2.40 | | Is the Prevalence Index ≤ 3.0? Yes ☑ No ☐ |
| **Wetland vegetation criterion met?** | | **Yes** ☑ | **No** ☐ | |

**Definitions of Vegetation Strata**

Tree - Woody plants 3 in. (7.62 cm) or more in diameter at breast height (DBH), regardless of height

Shrub / Sapling - Woody plants less than 3 in. (7.62 cm) DBH and greater than or equal to 3.3 ft. (1 m) tall

Herb - All herbaceous (non-woody plants, regardless of size, and woody plants less than 3.3 ft. (1 m) tall

Woody vines - All woody vines greater than 3.3 ft. (1 m) in height

| **Cover Ranges** | |
|---|---|
| Range | Midpoint |
| 1-5 % | 3.0 % |
| 6-15 % | 10.5 % |
| 15-25 % | 20.5 % |
| 26-50 % | 38.0 % |
| 51-75 % | 63.0 % |
| 76-95 % | 85.5 % |
| 96-100 % | 98.0 % |

**SOIL**

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | Color (moist) | % | Color (moist) | % | Type[1] | Location[2] | | |
| 0-4 | 10YR3/2 | 100.00 | | | | | mineral muck | |
| 4-9 | 10YR3/3 | 100.00 | | | | | | |
| 9-17 | 10YR5/3 | 80.00 | 10YR5/6 | 20.00 | C | M | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

| **Hydric Soil Indicators** (Check all that apply) | | **Indicators for Problematic Hydric Soils** |
|---|---|---|
| ☐ Histosol (A1) | ☐ Polyvalue Below Surface (S8) | ☐ 2 cm Muck (A10) |
| ☐ Histic Epipedon (A2) | ☐ Thin Dark Surface (S9) | ☐ 5 cm Mucky Peat or Peat (S3) |
| ☐ Black Histic (A3) | ☐ Loamy Gleyed Matrix (F2) | ☐ Iron-Manganese Masses (F12) |
| ☐ Hydrogen Sulfide (A4) | ☐ Depleted Matrix (F3) | ☐ Mesic Spodic (A17) |
| ☐ Stratified Layers (A5) | ☐ Redox Dark Surface (F6) | ☐ Red Parent Material (F21) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) | ☐ Very Shallow Dark Surface (F22) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) | |
| ☑ Sandy Mucky Mineral (S1) | | |
| ☐ Sandy Gleyed Matrix (S4) | | |
| ☐ Sandy Redox (S5) | | ☐ Other (Include Explanation in Remarks) |
| ☐ Stripped Matrix (S6) | | |
| ☐ Dark Surface (S7) | | |

**Restrictive Layer (if observed)** Type: _____ Depth (inches): _____

Remarks:

**Hydric Soils criterion met?** **Yes** ☑ **No** ☐

**BORDERING VEGETATED WETLAND DETERMINATION FORM**

Project/Site: 130 South Westfield Street City/Town: Feeding Hills Sampling Date: 07-12-2025

Applicant/Owner: Joseph Tirone Sampling Point or Zone: Wetland C

Investigator(s): Jeff Smith, Salvini Associates, LLC Latitude / Longitude: 42.062377 / 72.680413

Soil Map Unit Name: Ridgebury 70A NWI or DEP Classification: , Wooded swamp Deciduous

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

Are Vegetation [ ], Soil [ ] , or Hydrology [ ] significantly disturbed? (If yes, explain in Remarks)

Are Vegetation [ ], Soil [ ] , or Hydrology [ ] naturally problematic? (If yes, explain in Remarks)

**SUMMARY OF FINDINGS – Attach site map and photograph log showing sampling locations, transects, etc.**

| | | | |
|---|---|---|---|
| Wetland vegetation criterion met? | Yes [✔] No [ ] | **Is the Sampled Area within a Wetland?** | **Yes [✔] No [ ]** |
| Hydric Soils criterion met? | Yes [✔] No [ ] | | |
| Wetlands hydrology present? | Yes [✔] No [ ] | | |

Remarks, Photo Details, Flagging, etc.:

Flagged WF-C1 to WF- C15 w blue flagging open to the south

**HYDROLOGY**

| **Field Observations:** | | | |
|---|---|---|---|
| Surface Water Present? | Yes [✔] | No [ ] | Depth (inches) 2.00 |
| Water Table Present? | Yes [ ] | No [✔] | Depth (inches) 0.00 |
| Saturation Present (including capillary fringe)? | Yes [✔] | No [✔] | Depth (inches) 0.00 |

**Wetland Hydrology Indicators**

| Reliable Indicators of Wetlands Hydrology | Indicators that can be Reliable with Proper Interpretation | Indicators of the Influence of Water |
|---|---|---|
| [✔] Water-stained leaves | [ ] Hydrological records | [ ] Direct observation of inundation |
| [ ] Evidence of aquatic fauna | [ ] Free water in a soil test hole | [✔] Drainage patterns |
| [ ] Iron deposits | [ ] Saturated soil | [ ] Drift lines |
| [ ] Algal mats or crusts | [ ] Water marks | [ ] Scoured areas |
| [ ] Oxidized rhizospheres/pore linings | [ ] Moss trim lines | [ ] Sediment deposits |
| [ ] Thin muck surfaces | [ ] Presence of reduced iron | [ ] Surface soil cracks |
| [ ] Plants with air-filled tissue (aerenchyma) | [ ] Woody plants with adventitious roots | [ ] Sparsely vegetated concave surface |
| [ ] Plants with polymorphic leaves | [✔] Trees with shallow root systems | [ ] Microtopographic relief |
| [ ] Plants with floating leaves | [ ] Woody plants with enlarged lenticels | [✔] Geographic position (depression, toe of slope, fringing lowland |
| [ ] Hydrogen sulfide odor | | |

Remarks (describe recorded data from stream gauge, monitoring well, aerial photos, previous inspections, if available):

Site was delineated in June and October 2025. There was standing water and water flowing from groundwater seeps in June.

This form is only for BVW delineations. Other wetland resource areas may be present and should be delineated according to the applicable regulatory provisions.

**VEGETATION –** Use both common and scientific names of plants.

Tree Stratum Plot size _____

| Common name | Scientific name | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indictor? (yes/no) |
|---|---|---|---|---|---|
| 1. Red maple | Acer rubrum | FAC | 38.0 | Yes | Yes |
| 2. Slippery elm | Ulmus rubra | FAC | 10.5 | Yes | Yes |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |

48.5 = Total Cover

Shrub/Sapling Stratum Plot size _____

| Common name | Scientific name | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indictor? (yes/no) |
|---|---|---|---|---|---|
| 1. Speckled alder | Alnus rugosa | FACW | 10.5 | Yes | Yes |
| 2. Red Maple | Acer rubrum | FAC | 20.5 | Yes | Yes |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |

31.0 = Total Cover

Herb Stratum Plot size _____

| Common name | Scientific name | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indictor? (yes/no) |
|---|---|---|---|---|---|
| 1. Sensitive Fern | Onoclea sensibilis | FACW | 10.5 | Yes | Yes |
| 2. Jewelweed | Inpatiens capensis | FACW | 10.5 | Yes | Yes |
| 3. Sphagnum moss | | OBL | 20.5 | Yes | Yes |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |

41.5 = Total Cover

**VEGETATION –** continued.

| Woody Vine Stratum Plot size _____ | | | | | |
|---|---|---|---|---|---|
| Common name | Scientific name | Indicator Status | Absolute % Cover | Dominant? (yes/no) | Wetland Indictor? (yes/no) |
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| | | | 0.0 = Total Cover | | |

| Rapid Test: Do all dominant species have an indicator status of OBL or FACW? | | | | Yes ☐ No ☑ |
|---|---|---|---|---|
| Dominance Test: | Number of dominant species | Number of dominant species that are wetland indicator plants | | Do wetland indicator plants make up ≥ 50% of dominant plant species? |
| | 7 | 7 | | Yes ☑ No ☐ |
| Prevalence Index: | | Total % Cover (all strata) | Multiply by: | Result |
| | OBL species | 21 | X 1 | = 20.50 |
| | FACW species | 32 | X 2 | = 63.00 |
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| | FACU species | 0 | X 4 | = 0.00 |
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| | Column Totals | (A) 121 | | (B) 290.5 |
| Prevalence Index | | B/A = 2.40 | | Is the Prevalence Index ≤ 3.0? Yes ☑ No ☐ |
| **Wetland vegetation criterion met?** | | **Yes** ☑ **No** ☐ | | |

**Definitions of Vegetation Strata**

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| **Cover Ranges** | |
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| 26-50 % | 38.0 % |
| 51-75 % | 63.0 % |
| 76-95 % | 85.5 % |
| 96-100 % | 98.0 % |

**SOIL**

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| | Color (moist) | % | Color (moist) | % | Type[1] | Location[2] | | |
| 0-4 | 10YR3/2 | 100.00 | | | | | mineral muck | |
| 4-9 | 10YR3/3 | 100.00 | | | | | | |
| 9-17 | 10YR5/3 | 80.00 | 10YR5/6 | 20.00 | C | M | | |
| | | | | | | | | |
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| | | | | | | | | |

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

| **Hydric Soil Indicators** (Check all that apply) | | **Indicators for Problematic Hydric Soils** |
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| ☐ Histic Epipedon (A2) | ☐ Thin Dark Surface (S9) | ☐ 5 cm Mucky Peat or Peat (S3) |
| ☐ Black Histic (A3) | ☐ Loamy Gleyed Matrix (F2) | ☐ Iron-Manganese Masses (F12) |
| ☐ Hydrogen Sulfide (A4) | ☐ Depleted Matrix (F3) | ☐ Mesic Spodic (A17) |
| ☐ Stratified Layers (A5) | ☐ Redox Dark Surface (F6) | ☐ Red Parent Material (F21) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) | ☐ Very Shallow Dark Surface (F22) |
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| ☑ Sandy Mucky Mineral (S1) | | |
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| ☐ Sandy Redox (S5) | | ☐ Other (Include Explanation in Remarks) |
| ☐ Stripped Matrix (S6) | | |
| ☐ Dark Surface (S7) | | |

**Restrictive Layer (if observed)** Type: _____ Depth (inches): _____

Remarks:

**Hydric Soils criterion met?** **Yes** ☑ **No** ☐

# 130 South Westfield Street, Feeding Hills MA
# Site Photographs, June and October,2025

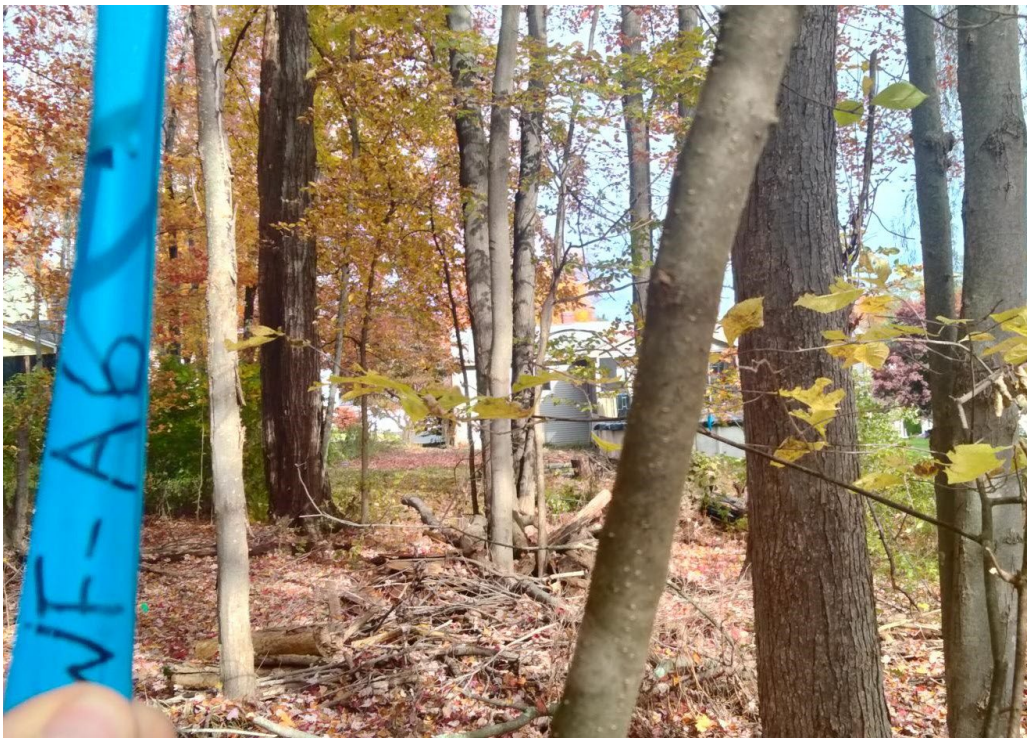


View north of Wetland AB.



View south at the terminus of Hamilton circle where Wetland AB drains to a storm drain.

**130 South Westfield Street, Feeding Hills MA**
**Site Photographs, June and October,2025**




View northwest  Wetland AB.



View west at the edge of the woods  Wetland AB.

**130 South Westfield Street, Feeding Hills MA**
**Site Photographs, June and October,2025**



View north of Wetland C.




View south along Wetland C.

**130 South Westfield Street, Feeding Hills MA**
**Site Photographs, June and October,2025**




View north along Wetland C.




View south at the property line where Wetland C continues onto adjacent property.

**130 South Westfield Street, Feeding Hills MA**
**Site Photographs, June and October,2025**



View south Wetland D.



View north of Wetland D.

**130 South Westfield Street, Feeding Hills MA**
**Site Photographs, June and October,2025**



.
View south of Wetland D.



View southwest of Wetland D.

**130 South Westfield Street, Feeding Hills MA**
**Site Photographs, June and October,2025**



View east of Wetland D.



Adjacent upland along the northerly property line.

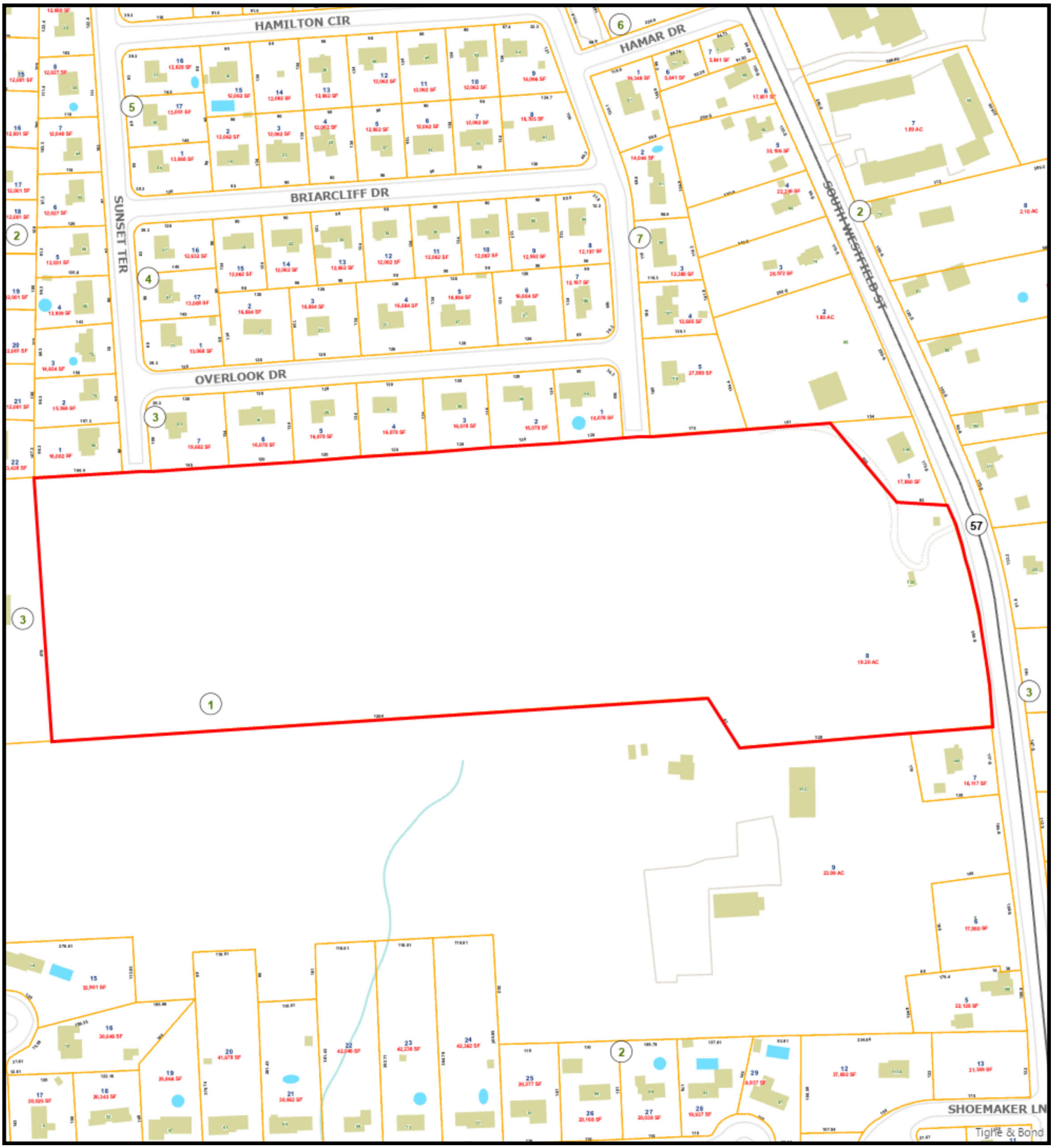
**130 South Westfield Street, Feeding Hills MA**
**Site Photographs, June and October,2025**



Upland area at the terminus of Sunset Avenue.



View of overgrown fields.




# 130 South Westfield St,

5/1/2026 10:50:02 AM

Scale: 1"=250'

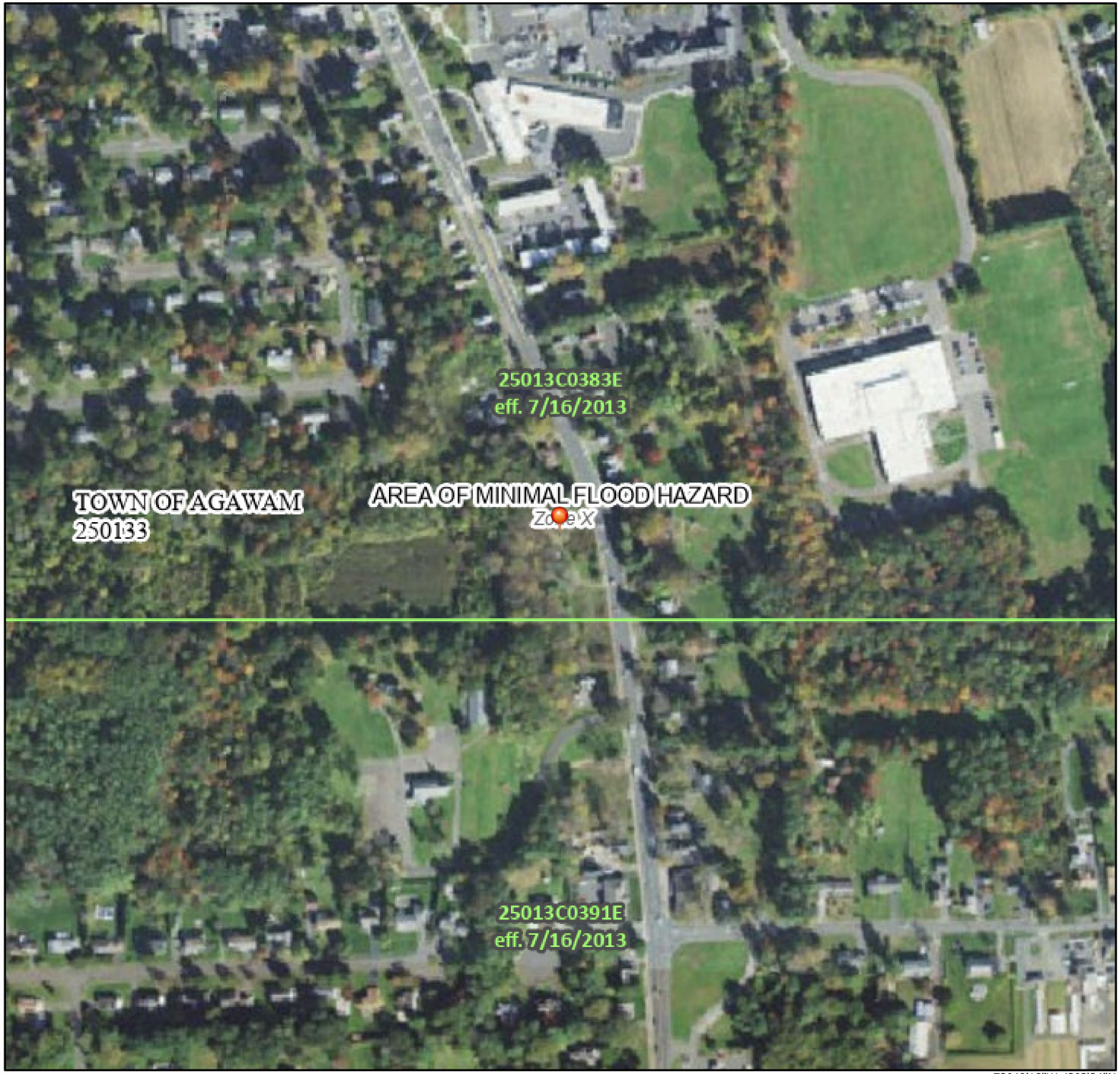
Scale is approximate

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

# National Flood Hazard Layer FIRMette

FEMA

72°40'56"W 42°4'N




72°40'18"W 42°3'34"N

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

1:6,000

**Figure No. 2**

*Basemap Imagery Source: USGS National Map 2023*

## Legend

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

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- 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 *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

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

**OTHER FEATURES**
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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 5/1/2026 at 3:30 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.

# Natural Heritage




Potential Vernal Pools

NHESP Natural Communities

NHESP Certified Vernal Pools

NHESP Ecoregions

NHESP Priority Habitats of Rare Species

NHESP Estimated Habitats of Rare Wildlife

Property Tax Parcels

PROJECT NO: A005-25-142

SALVINI Associates, LLC

Land Surveyors - Wetland Scientist -Land Use Consultants

585 Route 20 - P. O. Box 742

Chester, MA 01011 (413)-354-1032

www.SALVINIAssociates.com

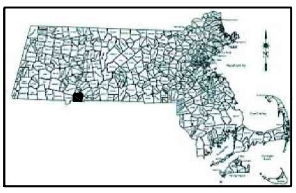
FIGURE NO. 3

Natural Heritage

Parcel E8-1-8

130 South Westfield Street

Agawam, MA



Latitude: N42.062377

Longitude: W72.680413

SCALE: N.T.S.

May 1, 2026

N

*Affected Premises:*
130 South Westfield Street
Agawam (Feeding Hills), MA

MASSACHUSETTS STATE EXCISE TAX
HAMPDEN COUNTY REGISTRY OF DEEDS
Date: 06-30-2025 @ 02:00pm
Ctl#: 373 Doc#: 29567
Fee: $2,736.00 Cons: $600,000.00

# ***QUITCLAIM DEED***

KNOW ALL PERSONS BY THESE PRESENTS THAT I, ***STEPHEN M. NACEWICZ,*** of 200 Wildwood Avenue, Springfield, Hampden County, Massachusetts

for consideration paid and in full consideration of ***SIX HUNDRED THOUSAND AND no/100 ($600,000.00) DOLLARS,***

grant to ***GIUSEPPE TIRONE and GERALDINE TIRONE,*** a married couple, of 36 Allison Lane, Agawam, Hampden County, Massachusetts, as Tenants by the Entirety,

with ***Quitclaim Covenants,***

Certain real estate, with the buildings thereon, located in Agawam, Hampden County, Massachusetts, and shown on a Plan of Lots entitled "Survey for Edwin I. Cook" and recorded with Hampden County Registry of Deeds in Book of Plans 141, Page 108, said real estate more particularly bounded and described as follows:

Beginning at an iron pin at the Northwesterly corner of land now or formerly of Stephanie Shaker located One Hundred Thirty-six and 26/100 (136.26) feet from an iron pin on the westerly side of South Westfield Street, Agawam, Hampden County, Massachusetts, as shown on said Plan, thence running SOUTHEASTERLY along the westerly side of said land, One Hundred Eighty and 56/100 (180.56) feet to an iron pipe; thence running Southeasterly at an angle along the southwesterly side of said land now or formerly of said Stephanie Shaker, Ninety-one and 60/100 (91.60) feet to an iron pipe at South Westfield Street; thence SOUTHERLY along the westerly side of said South Westfield Street, Four Hundred (400) feet, more or less, to a point; thence NORTHWESTERLY along land of owner unknown, Four Hundred Sixty (460) feet to a point; thence at an angle running NORTHWESTERLY, Eighty-five (85) feet to a point; thence at an angle running NORTHWESTERLY along land of owner unknown, Seven Hundred Eighty (780) feet, more or less, to an iron pin at the southeasterly corner of land now or formerly of Hope Farms, Inc.; thence NORTHEASTERLY N. 9° 47' 37" E., Four Hundred Seventy-eight and 08/100 (478.08) feet to an iron pin; thence SOUTHEASTERLY 80° 35' 32', One Thousand Twenty (1,020) feet, more or less, to the place of beginning.

Subject to Taking by Commonwealth of Massachusetts for street layout dated September 8, 1993 and recorded in the Hampden County Registry of Deeds in Book 8568, Page 505.

BEING the same premises conveyed to Edward S. Nacewicz, Lillian M. Nacewicz, Robert L. Nacewicz and Stephen M. Nacewicz by Deed of Joyce M. Bodak, Anthony I. Shaker, Edward Nacewicz, Viola Bishop, Richard F. Nacewicz, Thomas R. Shaker, Helen Krupienski, and Raymond E. Nacewicz dated November 22, 1982 and recorded November 23, 1982 with Hampden County Registry of Deeds in Book 5344, Page 340.

Edward S. Nacewicz died December 14, 1999. Death Certificate filed in Hampden County Probate and Family Court Docket HD01P1166EP1. Lillian M. Nacewicz died October 23, 1990. M792 is recorded in Hampden County Registry of Deeds in Book 8593, Page 353. Robert L. Nacewicz died on April 10, 2025. Death Certificate and Estate Tax Certificate to be recorded simultaneously herewith.

As per M.G.L. Chapter 188, sect. 13, the Grantor, under oath and subject to the pains and penalties of perjury, does hereby depose, state and certify that: (i) I release all rights of Homestead in the subject realty, (ii) that no spouse, nonowner spouse, former spouse, or any other person resides in the home, and (iii) at the time of delivery of this deed, no spouse, former spouse, or any other person is entitled to claim the benefit of an existing estate of homestead.

Executed as a sealed instrument under the pains and penalties of perjury this 27th day of June, 2025

***STEPHEN M. NACEWICZ***

## *COMMONWEALTH OF MASSACHUSETTS*

*Hampden County* *June 27th, 2025*

On this 27th day of June, 2025, before me, the undersigned notary public, personally appeared, ***STEPHEN M. NACEWICZ,*** proved to me through satisfactory evidence of identification, being (check whichever applies): ☒ MA driver's license ☐ oath or affirmation of a credible witness known to me who knows the above signatory, or ☐ my own personal knowledge of the identity of the signatory, to be the person whose name is signed above, and acknowledged the foregoing to be signed by him voluntarily for its stated purpose.

David G. Carlson
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
October 30, 2026

Notary Public, David G. Carlson
My commission expires: 10/30/2026
Seal

Bk 25924 Pg249 #29567
06-30-2025 @ 02:00p

***Affected Premises:***
130 South Westfield Street
Agawam (Feeding Hills), MA

MASSACHUSETTS STATE EXCISE TAX
HAMPDEN COUNTY REGISTRY OF DEEDS
Date: 06-30-2025 @ 02:00pm
Ctl#: 373 Doc#: 29567
Fee: $2,736.00 Cons: $600,000.00

# ***QUITCLAIM DEED***

KNOW ALL PERSONS BY THESE PRESENTS THAT I, ***STEPHEN M. NACEWICZ,*** of 200 Wildwood Avenue, Springfield, Hampden County, Massachusetts

for consideration paid and in full consideration of ***SIX HUNDRED THOUSAND AND no/100 ($600,000.00) DOLLARS,***

grant to ***GIUSEPPE TIRONE and GERALDINE TIRONE,*** a married couple, of 36 Allison Lane, Agawam, Hampden County, Massachusetts, as Tenants by the Entirety,

with ***Quitclaim Covenants,***

Certain real estate, with the buildings thereon, located in Agawam, Hampden County, Massachusetts, and shown on a Plan of Lots entitled "Survey for Edwin I. Cook" and recorded with Hampden County Registry of Deeds in Book of Plans 141, Page 108, said real estate more particularly bounded and described as follows:

Beginning at an iron pin at the Northwesterly corner of land now or formerly of Stephanie Shaker located One Hundred Thirty-six and 26/100 (136.26) feet from an iron pin on the westerly side of South Westfield Street, Agawam, Hampden County, Massachusetts, as shown on said Plan, thence running SOUTHEASTERLY along the westerly side of said land, One Hundred Eighty and 56/100 (180.56) feet to an iron pipe; thence running Southeasterly at an angle along the southwesterly side of said land now or formerly of said Stephanie Shaker, Ninety-one and 60/100 (91.60) feet to an iron pipe at South Westfield Street; thence SOUTHERLY along the westerly side of said South Westfield Street, Four Hundred (400) feet, more or less, to a point; thence NORTHWESTERLY along land of owner unknown, Four Hundred Sixty (460) feet to a point; thence at an angle running NORTHWESTERLY, Eighty-five (85) feet to a point; thence at an angle running NORTHWESTERLY along land of owner unknown, Seven Hundred Eighty (780) feet, more or less, to an iron pin at the southeasterly corner of land now or formerly of Hope Farms, Inc.; thence NORTHEASTERLY N. 9° 47' 37" E., Four Hundred Seventy-eight and 08/100 (478.08) feet to an iron pin; thence SOUTHEASTERLY 80° 35' 32', One Thousand Twenty (1,020) feet, more or less, to the place of beginning.

Subject to Taking by Commonwealth of Massachusetts for street layout dated September 8, 1993 and recorded in the Hampden County Registry of Deeds in Book 8568, Page 505.

BEING the same premises conveyed to Edward S. Nacewicz, Lillian M. Nacewicz, Robert L. Nacewicz and Stephen M. Nacewicz by Deed of Joyce M. Bodak, Anthony I. Shaker, Edward Nacewicz, Viola Bishop, Richard F. Nacewicz, Thomas R. Shaker, Helen Krupienski, and Raymond E. Nacewicz dated November 22, 1982 and recorded November 23, 1982 with Hampden County Registry of Deeds in Book 5344, Page 340.

Edward S. Nacewicz died December 14, 1999. Death Certificate filed in Hampden County Probate and Family Court Docket HD01P1166EP1. Lillian M. Nacewicz died October 23, 1990. M792 is recorded in Hampden County Registry of Deeds in Book 8593, Page 353. Robert L. Nacewicz died on April 10, 2025. Death Certificate and Estate Tax Certificate to be recorded simultaneously herewith.

As per M.G.L. Chapter 188, sect. 13, the Grantor, under oath and subject to the pains and penalties of perjury, does hereby depose, state and certify that: (i) I release all rights of Homestead in the subject realty, (ii) that no spouse, nonowner spouse, former spouse, or any other person resides in the home, and (iii) at the time of delivery of this deed, no spouse, former spouse, or any other person is entitled to claim the benefit of an existing estate of homestead.

Executed as a sealed instrument under the pains and penalties of perjury this 27th day of June, 2025

***STEPHEN M. NACEWICZ***

## *COMMONWEALTH OF MASSACHUSETTS*

*Hampden County* *June 27th, 2025*

On this 27th day of June, 2025, before me, the undersigned notary public, personally appeared, ***STEPHEN M. NACEWICZ,*** proved to me through satisfactory evidence of identification, being (check whichever applies): ☒ MA driver's license ☐ oath or affirmation of a credible witness known to me who knows the above signatory, or ☐ my own personal knowledge of the identity of the signatory, to be the person whose name is signed above, and acknowledged the foregoing to be signed by him voluntarily for its stated purpose.

David G. Carlson
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
October 30, 2026

Notary Public, David G. Carlson
My commission expires: 10/30/2026
Seal

C:\Users\Steve\OneDrive\SALVINI Associates\1-All PROJECTS\ACTIVE PROJECTS\AGAWAM\2025\A005-25-142-Tirone 130 South Westfield Street\Untitled.png

Locus Map
N.T.S.

N

Massachusetts State Plane
Coordinate System

Now or Formerly
Richard Gomez
Amanda L. Gomez
Book 23274, Page 86

SUNSET TERRACE

OVERLOOK DRIVE

Now or Formerly
Edward J. Lavoie
Catherine R. Lavoie
Book 8431, Page 317

Now or Formerly
Valerie L. Liptak
Book 22649, Page 519

Now or Formerly
Joseph P. Fitzgerald
Mary Louise Fitzgerald
Book 22209, Page 348

Now or Formerly
Nancy J. Klueh
Book 24745, Page 124

Now or Formerly
Samuel J. Lucci
Elaine P. Lucci
Book 24943, Page 463

Now or Formerly
Diane C. Thibodeau
John J. Thibodeau
Book 4863, Page 324

Now or Formerly
Thomas C. Niziolek
Judith L. Niziolek
Book 9971, Page 119

HAMILTON CIRCLE

Now or Formerly
Donald H. Vermette
Rebecca A. Vermette
Book 7488, Page 220

Now or Formerly
Multi Cultural Community Services
Of Pioneer Valley
Book 25685, Page 561

Now or Formerly
Michael V. Clinton
Karen M. Clinton
Book 7576, Page 93

SOUTH WESTFIELD STREET

STONE FOUNDATION

SHED

164.50'
50.00'
109.00'
145.00'
554.39'
120.00'
134.00'
120.00'
120.00'
120.00'
120.00'
120.00'
120.00'
134.00'
109.00'
50.00'
174.89'
N 83° 31' 12" E 167.23'
S 38° 26' 32" E 180.56'
145.03'
S 88° 08' 52" E
91.60'
L=212.71'
R=786.02'
L=214.24'
S 06° 36' 40" E 233.95'
N 86° 47' 29" E
N 02° 05' 47" W
480.66'
S 87° 10' 38" W
554.37'
S 87° 10' 38" W 755.63'
N 29° 13' 38" W
89.10'
244.45'
S 89° 32' 56" W
134.08'
S 84° 40' 23" W

Total Lot Area
19.25 Acres+/-

100 Foot Wetland Buffer
50 Foot Wetland Buffer
100 Foot Wetland Buffer
50 Foot Wetland Buffer

Now or Formerly
Jack Elliot Yasgar
Dede Anne Yasgar
Book 25572, Page 538

Now or Formerly
Hope Community Church
Book 18305, Page 179

Now or Formerly
Eilene A. Kane
Book 22386, Page 386


**SALVINI Associates, LLC**

Land Surveyors - Wetland Scientists - Land Use Consultants

585 Route 20 ~ P. O. Box 742, Chester, MA 01011

Phone: (413) 354-1032

www.SALVINIAssociates.com


COMMONWEALTH OF MASSACHUSETTS
STEPHEN A. SALVINI
No. 38392
REGISTERED PROFESSIONAL LAND SURVEYOR

Professional Land Surveyor

SWS PCS
PWS
JEFFREY K SMITH
3577 PWS
PROFESSIONAL WETLAND SCIENTIST

Professional Wetland Scientist

Request For Determination Of Applicability

# 130 South Westfield Street
# Agawam, Massachusetts

**PLAN DATE:** May 5, 2026

Project Number: A005-25-142

Scale: 1" = 40'

0' 40' 80

| DRAWING # | REV. |
|---|---|
| RDA-1 | 0 |

Prepared For:

Giuseppe Tirone

Geraldine Tirone

36 Allison Lane, Agawam, MA

**Tunison Environmental Consultants, LLC**

May 6, 2026

Agawam Conservation Commission
1000 Suffield Street
Agawam, Massachusetts 01001

**RE: Notice of Intent for Wetland Resource Area Restoration at 365 Main in Agawam, Massachusetts**

Dear Agent and Members of the Commission:

On behalf of Mr. Joseph O'Malley, Tunison Environmental Consultants, LLC is pleased to submit two copies of this Notice of Intent (NOI), including project plans at the above referenced site for the ecological restoration of a Bordering Vegetated Wetland and Bordering Land Subject to Flood. Some trees and shrubs were cut from an approximately 2.5-acre area that consists of wetland and floodplain. Most of the vegetation has begun to grow back in this area. The proposed restoration will consist of planting approximately 136 shrubs and 48 trees. The abutter's mailings have been prepared and will be immediately sent out upon receiving the information for the proposed Agawam Conservation Commission hearing.

As requested in WPA Form 3-Notice of Intent, Section D, Additional Information, all additional information is included in the narrative or attachments (see Table of Contents) to the enclosed NOI. The attached plan set has not been revised.

Please call me (508) 737-7104 or email me garretttunison@gmail.com if you have any questions or concerns.

Sincerely,

Garrett M. Tunison

Garrett M. Tunison, PWS
Principal
Tunison Environmental Consultants, LLC

Cc: Mr. Joseph O'Malley
TEC File #: 2308-001

Tunison Environmental Consultants, LLC

# Notice of Intent for Wetland Resource Area Restoration at 365 Main Street in Agawam, Massachusetts

Prepared for:

**Mr. Joseph O'Malley**
361 Main Street
Agawam, MA 01001

Prepared by:

Tunison Environmental Consultants, LLC
P.O. Box 992
Plymouth, Massachusetts 02362

May 6, 2026

TEC #: 2308-001

Tunison Environmental Consultants, LLC

# Table of Contents

WPA Form 3- Notice of Intent Form

Attachments

Appendix A Invasive Plant Species Eradication and Wetland Restoration Plan
Appendix B Abutters' Notification
Appendix C Affidavit of Service

# Commonwealth of Massachusetts
# Department of Environmental Protection
# Notice of Intent Form (WPA Form 3)

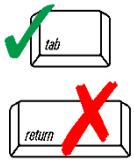
**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Agawam
City/Town

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




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

## A. General Information

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

365 Main Street — a. Street Address
Agawam — b. City/Town
01001 — c. Zip Code

Latitude and Longitude:
42.083 N — d. Latitude
-72.612 W — e. Longitude

L131 & L13 — f. Assessors Map/Plat Number
1/5 & 1/3 — g. Parcel /Lot Number

2. Applicant:

Joseph — a. First Name
O'Malley — b. Last Name
Property owner — c. Organization
351 Main Street — d. Street Address
Agawam — e. City/Town
MA — f. State
01001 — g. Zip Code
(413) 626-8212 — h. Phone Number
N/A — i. Fax Number
xtremepbma@yahoo.com — j. Email Address

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

Same as above — a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Garrett — a. First Name
Tunison — b. Last Name
Tunison Environmental Consultants, LLC — c. Company
P.O. Box 992 — d. Street Address
Plymouth — e. City/Town
MA — f. State
02362 — g. Zip Code
(508) 737-7104 — h. Phone Number
N/A — i. Fax Number
garretttunison@gmail.com — j. Email address

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

$2,500.00 — a. Total Fee Paid
$1,237.50 — b. State Fee Paid
$1,262.50 — c. City/Town Fee Paid

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

## A. General Information (continued)

6. General Project Description:

The applicant was clearing land remvoed 8 to 10 trees and cut the shrub layer) for a tree farm that turned out to be Bordering Land Subject to Flooding and Bordering Vegetated Wetland. He received a WPA-9 Form and stopped cutting. A wetland restoration has been proposed and is included in the attached Wetland Restoration Plan and additional details are provided in the attached narrative.

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

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

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

1. ☒ Yes ☐ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

310 CMR 10.53
2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

| | |
|---|---|
| Hampden | N/A |
| a. County | b. Certificate # (if registered land) |
| 24430 & 25309 | 259 & 166 |
| c. Book | d. Page Number |

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

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

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

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

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

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

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| a. ☐ Bank | N/A (1. linear feet) | N/A (2. linear feet) |
| b. ☒ Bordering Vegetated Wetland | 80,031 +/- (cut shrubs & trees) (1. square feet) | 80,031 +/- restoration (2. square feet) |
| c. ☐ Land Under Waterbodies and Waterways | N/A (1. square feet)<br>N/A (3. cubic yards dredged) | N/A (2. square feet) |

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| d. ☒ Bordering Land Subject to Flooding | (1. square feet)<br>N/A (3. cubic feet of flood storage lost) | (2. square feet)<br>N/A (4. cubic feet replaced) |
| e. ☐ Isolated Land Subject to Flooding | N/A (1. square feet)<br>N/A (2. cubic feet of flood storage lost) | N/A (3. cubic feet replaced) |
| f. ☐ Riverfront Area | N/A (1. Name of Waterway (if available) - **specify coastal or inland**) | |

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: N/A square feet

4. Proposed alteration of the Riverfront Area:

| a. total square feet | b. square feet within 100 ft. | c. square feet between 100 ft. and 200 ft. |
|---|---|---|
| N/A | N/A | N/A |

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

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

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

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

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

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

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

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

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| a. ☐ Designated Port Areas | Indicate size under Land Under the Ocean, below | |
| b. ☐ Land Under the Ocean | N/A (1. square feet); N/A (2. cubic yards dredged) | |
| c. ☐ Barrier Beach | Indicate size under Coastal Beaches and/or Coastal Dunes below | |
| d. ☐ Coastal Beaches | N/A (1. square feet) | N/A (2. cubic yards beach nourishment) |
| e. ☐ Coastal Dunes | N/A (1. square feet) | N/A (2. cubic yards dune nourishment) |

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| f. ☐ Coastal Banks | N/A (1. linear feet) | |
| g. ☐ Rocky Intertidal Shores | N/A (1. square feet) | |
| h. ☐ Salt Marshes | N/A (1. square feet) | N/A (2. sq ft restoration, rehab., creation) |
| i. ☐ Land Under Salt Ponds | N/A (1. square feet); N/A (2. cubic yards dredged) | |
| j. ☐ Land Containing Shellfish | N/A (1. square feet) | |
| k. ☐ Fish Runs | Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above | |
| | N/A (1. cubic yards dredged) | |
| l. ☐ Land Subject to Coastal Storm Flowage | N/A (1. square feet) | |

4. ☐ Restoration/Enhancement

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

N.A
a. square feet of BVW

N/A
b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

N/A
a. number of new stream crossings

N/A
b. number of replacement stream crossings

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

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Agawam
City/Town

## C. Other Applicable Standards and Requirements

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

### Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

a. ☐ Yes ☒ No

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

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

August 2021
b. Date of map

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

c. Submit Supplemental Information for Endangered Species Review*

1. ☐ Percentage/acreage of property to be altered:

(a) within wetland Resource Area — N/A (percentage/acreage)

(b) outside Resource Area — N/A (percentage/acreage)

2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

(a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

(b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review).
Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

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

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands
# WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Agawam
City/Town

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

(c) ☐ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

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

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

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

2. ☐ Separate MESA review ongoing. N/A (a. NHESP Tracking #) N/A (b. Date submitted to NHESP)

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

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

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

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

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

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

North Shore - Plymouth to New Hampshire border:

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

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

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

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

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

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

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

N/A
b. ACEC

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

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

2. ☐ A portion of the site constitutes redevelopment

3. ☐ Proprietary BMPs are included in the Stormwater Management System.

b. ☐ No. Check why the project is exempt:

1. ☐ Single-family house

2. ☐ Emergency road repair

3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

## D. Additional Information

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

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

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

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

## D. Additional Information (cont'd)

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

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

Wetland Filing Plan
a. Plan Title

R Levesque Associates, Inc.
b. Prepared By

c. Signed and Stamped by

2/20/24
d. Final Revision Date

1" = 50'
e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

## E. Fees

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

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

1092
2. Municipal Check Number

05/04/26
3. Check date

1091
4. State Check Number

05/04/26
5. Check date

Joseph
6. Payor name on check: First Name

O'Malley
7. Payor name on check: Last Name

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

## F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant

2. Date: 5/4/26

3. Signature of Property Owner (if different)

4. Date

Barbett M. Timm

5. Signature of Representative (if any)

6. Date: 5/6/26

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

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

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

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

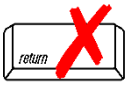
**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# NOI Wetland Fee Transmittal Form

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

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




## A. Applicant Information

1. Location of Project:

| | |
|---|---|
| 365 Main Street | Agawam |
| a. Street Address | b. City/Town |
| 1091 | $1,237.50 |
| c. Check number | d. Fee amount |

2. Applicant Mailing Address:

| | | | |
|---|---|---|---|
| Joseph | | O'Malley | |
| a. First Name | | b. Last Name | |
| Property owner | | | |
| c. Organization | | | |
| 351 Main Street | | | |
| d. Mailing Address | | | |
| Agawam | | MA | 01001 |
| e. City/Town | | f. State | g. Zip Code |
| (413) 626-8212 | N/A | xtremepbma@yahoo.com | |
| h. Phone Number | i. Fax Number | j. Email Address | |

3. Property Owner (if different):

| | | | |
|---|---|---|---|
| Same as above | | | |
| a. First Name | | b. Last Name | |
| c. Organization | | | |
| d. Mailing Address | | | |
| e. City/Town | | f. State | g. Zip Code |
| h. Phone Number | i. Fax Number | j. Email Address | |

## B. Fees

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

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

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

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

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

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

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

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

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# NOI Wetland Fee Transmittal Form

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

## B. Fees (continued)

| Step 1/Type of Activity | Step 2/Number of Activities | Step 3/Individual Activity Fee | Step 4/Subtotal Activity Fee |
|---|---|---|---|
| Cat. 2, j. Cutting vegetation | 1 | $500 | $500 |
| Cat. 6 Wetland Delineation | 1 @ $2/ln. ft. | | $2,000 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Step 5/Total Project Fee:**

**Step 6/Fee Payments:**

| | |
|---|---|
| Total Project Fee: | $2,500.00 (a. Total Fee from Step 5) |
| State share of filing Fee: | $1,237.50 (b. 1/2 Total Fee **less $**12.50) |
| City/Town share of filling Fee: | $1,262.50 (c. 1/2 Total Fee **plus** $12.50) |

## C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

# Appendix A

# Invasive Plant Species Eradication and Wetland Restoration Plan

Tunison Environmental Consultants, LLC

# Invasive Plant Species Eradication and Wetland Restoration Plan for 365 Main Street in Agawam, Massachusetts

Prepared for:

**Mr. Joseph O'Malley**
361 Main Street
Agawam, MA 01001

Prepared by:

Tunison Environmental Consultants, LLC
P.O. Box 992
Plymouth, Massachusetts 02362

February 26, 2026

TEC #: 2308-001

# Table of Contents


1.0 Introduction 1
2.0 Wetland Resource Areas 3
3.0 Cutting of Vegetation 3
4.0 Wetland Restoration 4
4.1 Goals of the Wetland Restoration 4
4.2 Invasive Plant Species Eradication or Management Plan 4
4.3 Invasive Plant Species Eradication 5
4.6 Invasive Plants 6
4.3.1 Oriental Bittersweet 7
4.3.2 Glossy Buckthorn 9
4.3.3 Multiflora Rose 10
4.3.4 Tartarian Honeysuckle 11
4.3.5 Autumn Olive 12
4.3.6 Tree of Heaven 13
4.3.7 Black Locust 14
4.5 Invasive Plant Species Removal 15
4.6 Herbicide Use 16
4.7 Solarization and Disposal 17
4.8 Decontamination Plan 17
5.0 Wetland Restoration Plan 18
5.1 Existing Conditions and Functions 19
5.2 Vegetation 19
5.3 Wildlife Habitat 22
5.4 Plan 22
5.5 Stormwater Management 23
5.6 Erosion Control 23
5.7 Considerations During Construction 23
5.8 Schedule & Sequencing 23
5.8.1 Invasive Plant Species Eradication 23
5.8.1.1 Construction Sequencing 24

5.9 Ecological Restoration Area Monitoring 26

## Figures

Figure 1 Site Locus Map 2

## Tables

Table 1 Wetland Restoration Area Planting Table 20
Table 2 Floodplain Restoration Area Planting Table 21

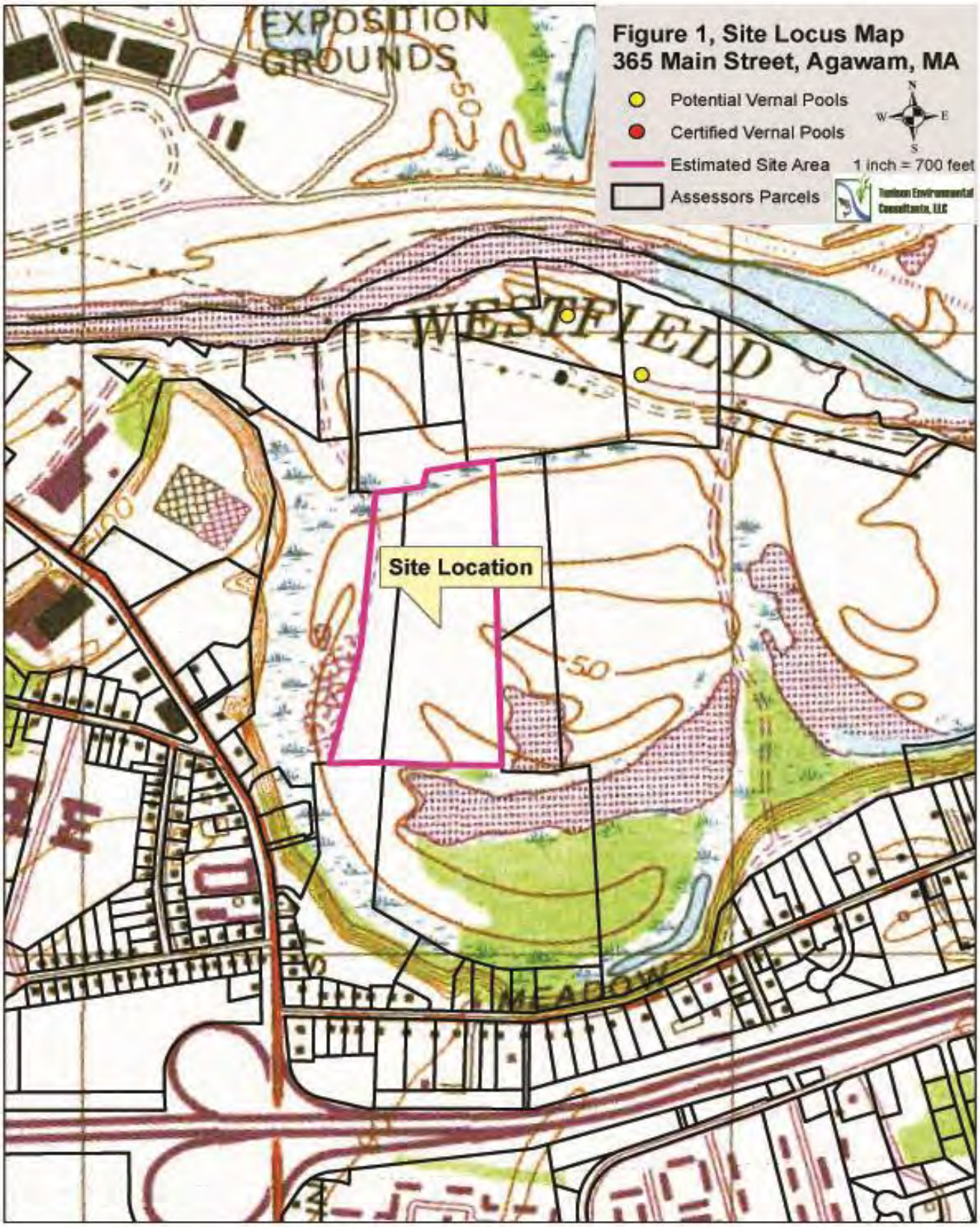
## Attachments

Attachment 1 Agawam Conservation Commission Violation Letter
Attachment 2 Site Photographs
Attachment 3 Wetland Resource Areas Delineation Report
Attachment 4 Restoration Planting Plan

## 1.0 Introduction

On August 23, 2023, Garrett M. Tunison, PWS of Tunison Environmental Consultants, LLC, visited the property at 365 Main Street (Assessor's Parcel ID Numbers: L 131/ 1/ 5 & L13/ 1/ 3), Agawam, Massachusetts (refer to Figure 1, Site Locus Map) to inspect the wetland alterations under a current Agawam Conservation Commission Wetlands Violation (refer to Attachment 1, Agawam Conservation Commission Violation Letter). The soils and ground cover within the area where the vegetation was cut appeared to be intact except for a few tire marks in the wetland (refer to Attachment 2, Site Photographs, Photos 1 through 4). The wetland alterations consisted of cutting vegetation including many herbs, shrubs and some trees. TEC identified the cutting of 17 trees including 2 Red Maple (*Acer rubrum*), 1 Eastern White Pine (*Pinus strobus*), 2 Quaking Aspens (*Populus tremuloides*), 2 Pin Oaks (*Quercus palustris*), 3 Tree of Heaven (*Ailanthus altissima*) and 7 Black Locust (*Robinia pseudoacacia*). The cutting occurred in the southern half of the site with the 16 cut trees that were mostly visible but there could be 1 or 2 additional trees in the pile of removed trees that weren't visible. Most of the trees were from the 100 yr. floodplain and not the delineated vegetated wetlands. Almost all of the vines cut on the site were invasive Oriental Bittersweet. The shrubs were mostly Blackberries, Black Raspberry, Multiflora Rose, Glossy Buckthorn and Common Buckthorn with a few of the native shrubs mentioned above with some sporadic Common Witch Hazels (*Hamamelis virginiana*) and Smooth Sumacs (*Rhus glabra*). At the time of the wetland delineation, many of the cut stalks were beginning to regrow, including most of the cut tree stumps. Hundreds of invasive plant stalks were observed at the site and in the attached photographs that were cut. These invasive plant stalks were mostly Oriental Bittersweet (*Celastrus orbiculata*) and Common Mugwort (*Artemisia vulgaris*). These species have begun to regrow on the site and are dominating the western portion of the cut area between the access drive, Wetland C and along the western edge of Wetland A. The area where shrubs had been cut along with the 17 trees occurred is approximately 1.8 ac. of Wetland A and the adjacent floodplain to the east. Many of these areas have sprouted new herbs, shrubs and trees along with new sprouts on the basal areas of the cut shrubs and trees. This is the same for the 100-yr. floodplain. Native wetland vegetation is thriving within the cut areas of Wetland A and B.

The site is approximately 25.3 acres and appears to be relatively flat with only a slight slope from north to south and east to west. All areas of the site are highly disturbed and appeared to have been cleared in the past. Most areas of the site lack an "O" and "A" Horizon soils and there is a lot of trash and debris on the site that likely came from the old landfill and previous paintball playing fields (Attachment 2, Site Photographs, Photos 5 through 12). There are many invasive plants including Garlic Mustard (*Alliaria petiolata*), Common Mugwort and Oriental Bittersweet in the herbaceous layer; Glossy Buckthorn (*Frangula alnus*), Multiflora Rose (*Rosa multiflora*), Tartarian Honeysuckle and an occasional Autumn Olive (*Elaeagnus umbellata*) in the shrub layer and Tree-of-


Figure 1, Site Locus Map
365 Main Street, Agawam, MA
Potential Vernal Pools
Certified Vernal Pools
Estimated Site Area
Assessors Parcels
1 inch = 700 feet
Tunison Environmental Consultants, LLC
N
W
E
S
EXPOSITION GROUNDS
WESTFIELD
Site Location
MEADOW
50
100

Heaven and Black Locust in the tree layer (refer to the attached Site Plant List within Attachment 3, Wetland Resource Areas Delineation Report). The site is highly disturbed including garbage, yard debris, and fill materials (asphalt, brick and concrete chunks) scattered throughout the western portion of the site (refer to Attachment 2, Photos 5 through 12). Please note, these areas of trash and debris precede the current ownership of property and the wetland violation. The northern portions of the site consist of an existing paintball and air-soft facility that also precede the current owner.

## 2.0 Wetland Resource Areas

Three wetland resource areas were delineated on the site as Wetlands A, B and C. A Wetland Resource Area Report has been prepared and is included as an attachment to this Wetland Restoration Plan (Attachment 3). Wetlands A and B likely connect east of the site along the drainage wetlands to the adjacent farm fields. Wetland C is an isolated wetland that appears to have been dug and is a drainage ditch that connects to a larger stormwater basin. The entire site is within the 100 yr. floodplain or Bordering Land Subject to Flooding to the Westfield River. Wetlands A and B are gently sloping where water appears to occur within 12 in. of the soil surface during periods of substantial precipitation. The area of the wetlands has likely occurred in recent years as soil matrix colors mostly ranged from 10YR 6/1 to 10YR 6/4 in the "B" Horizon with depletions that were approximately 10YR 6/1 or 10YR 6/2 in color. There were many upland plants (UPL) or facultative upland (FACU) occurring in the delineated wetlands and most wetland plants were facultative (FAC). There were a few pockets of mostly dominant facultative wetland (FACW) plants such as Sensitive Fern (*Onoclea sensibilis*) in the herbaceous layer and Silky Dogwood (*Cornus amomum*) in the shrub layer. Sensitive Fern appeared to be popping up throughout Wetland A after the tree and shrub layers had been cut along with a few patches of Oriental Bittersweet.

## 3.0 Cutting of Vegetation

Invasive plant species exist along the eastern and northeastern edge of Wetland A and the 100 yr. floodplain. Most of these invasive plants in the wetland included Oriental Bittersweet in the vine layer; Common Buckthorn, Glossy Buckthorn and Multiflora Rose in the shrub layer and Black Locust and Tree-of-Heaven in the tree layer. The majority or approximately 60% to 70% of the vegetation cut was invasive plants and only the remaining vegetation consisting of native herbs, shrubs and trees (refer to Attachment 2, Site Photographs, Photos 13 through 17). The native plant species that occurred within the wetland area and surrounding 100 yr. floodplain included Wild or False Lily-of-the-Valley (*Maianthemum canadense*), Thin-leaved Sunflower (*Helianthus divaricalus*), Purple or Red Clover (*Trifolium pratense*), White Heath Aster (*Symphyotrichum ericoides*), several species of goldenrods (*Solidago spp.*), Sensitive Fern, Cinnamon Fern (*Osmundastrum cinnamomeum*), a few Royal Fern (*Osmunda spectabilis*), Hay-scented Fern (*Dennstaedtia punctilobula*) and upland and wetland

grasses (*Gramineae spp.*) in the herbaceous layer; Poison Ivy (*Toxicodendron radicans*), Virginia Creeper (*Parthenocissus quinquefolia*) in the vine layer; Silky Dogwood, Blackberries (*Rubus spp.*), Black Raspberry (*Rubus occidentalis*), Highbush Blueberry(*Vaccinium corymbosum*), Southern Arrowwood (*Viburnam dentatum*) and some Common Winterberry (*Ilex verticillata*) and Northern Spicebush (*Lindera benzoin*).

## 4.0 Wetland Restoration

Restoration of the tree and shrub layers is proposed within the cut area along with seeding of the herbaceous layer with native wetland vegetation found within Wetland A in areas of bare soils or where the majority of the herbaceous layer was removed since it was mostly invasive plants. Wetland C has not been cut or disturbed but contain some invasive plants and Wetland B has only been partially cut within the northern 2/3's of the delineated aera. Wetland B only contains a few invasive plants that will be weeded first. Prior to the restoration, the invasive plant species will be removed as part of an Invasive Plant Species Eradication or Management Plan.

### 4.1 Goals of the Wetland Restoration

Our goals resulting from the invasive plant species eradication plan and the wetlands and restoration of the naturally forested 100-yr. floodplain area are to: 1) removal and eradicate any invasive plant species from identified within or adjacent to the disturbed areas; 2) restore the areas of cut wetland vegetation with native vegetation; and 3) ensure the wetland restoration area flourishes with native vegetation. This wetland restoration area should contain native vegetation observed on the site that provides significant wildlife habitat. It is anticipated the wetland restoration area and remaining ecological restoration area (including impacted 100-yr. floodplain area) will contain at least 75% native vegetation from planting and seeding after two growing seasons if this plan is followed.

### 4.2 Invasive Plant Species Eradication or Management Plan

Invasive plant species eradication is discussed below that has been prepared from our site visits. This document has been developed to ensure success of the eradication or management of invasive plant species and wetland restoration to occur within the areas that have been recently disturbed by cutting and removing vegetation (mostly invasive plant species) without a permit. A few additional areas of invasive plants have been identified along the western and northern portions of the site that will need to be addressed under this plan (refer to Attachment 2, Photographs, Photos 13 through 15). This document will provide a guide for the landscaper or contractor to complete the invasive plant species eradication and wetland restoration properly and successfully.

It is the experience of TEC to prioritize the removal all of the invasive plants during the first year of the wetland restoration. There has been extensive invasive plant growth in the disturbed portions of the wetlands and 100-yr. floodplain areas for many years. We recommend removing the remaining invasive plant species from the wetland and natural 100-yr. floodplain areas on the site. This will benefit the restoration efforts and the property owner as the eradication or management of these species will be complete or manageable once the below restoration plan is followed which will result in minimal costs and a successful wetland and floodplain area restoration. Without removing the remaining invasive plants, weeding and cut-and-treating the remaining large invasive plants; the invasive plants will remain and dominate the site as they have for years.

## 4.3 Invasive Plant Species Eradication

This Restoration Plan has been designed to first remove the majority of the remaining plants through weeding and using the "cut-and-treat" method of invasive plant eradication for large shrubs and trees. This plan is designed for complete eradication of the invasive plant species over numerous growing seasons with the bulk of this work occurring during the first one to three growing seasons with only light maintenance thereafter. There are invasive plants located on the properties to the north and west of the subject property so it is uncertain if we can fully eradicate the invasive plants on the site or almost eliminate them with light annual maintenance after the first three years. Regardless if eradication or light maintenance is needed, the removal of the invasive plants will benefit both the wetlands and the site as the invasive plants will need to be addressed from both a conservation and land management prospectives. This work should be done regardless of the wetland resource area protection.

This eradication program is structured to begin in the summer (late August to September) and/or fall of 2024 (September and/or October) and continue through at least the 2027 growing season. Upon completion of the initial eradication of invasive plant species removal and treatment, the restoration area will be evaluated in the following spring to determine if a significant amount of the invasive plants (80% to 85% reduction or greater) have been removed. The invasive plant species eradication plan will continue throughout the planting and monitoring of the wetlands and floodplain restoration. These areas will be weeded in the summer for any seedlings and will be weeded and if they have root systems that are difficult to remove such as large woody shrubs and vines, they will also be cut and treated or pulled and the remaining roots will be treated. Invasive plant species make up approximately 30% to 95+% coverage within the wetland (eastern portion of Wetland A) and floodplain restoration areas. Areas of invasive plants within the current tree line contain fewer invasive plants (approximately 10% to 40% invasive plants) than areas such as the

northern and eastern portions of Wetland A (approximately 95+% invasive plants).

## 4.4 Invasive Plants

Ten invasive plant species were observed on the site (refer to Attachment 2, Photographs, Photos 13 through 17). Most were woody shrubs or vines. Nine of these species will be targeted which include Garlic Mustard, Common Mugwort, Oriental Bittersweet, Glossy Buckthorn, Multiflora Rose, Tartarian Honeysuckle, Autumn Olive, Tree-of-Heaven and Black Locust. Three other invasive plant species observed on the site and within the wetlands and floodplain which included Curly Dock, Common Mugwort and Climbing Nightshade will not be further discussed as they will be weeded from the site. These three invasive plant species will not be discussed further in this document as they will be weeded and discarded into plastic contractor's bags as they are encountered in the wetlands and floodplain area. All invasive plants that are weeded and cut will be placed on large tarps and cut up and put into large contractor's black bags for solarization.

There are a few large Oriental Bittersweets, Glossy Buckthorns, Multiflora Roses, Autumn Olives, Tree-of-Heavens and Black Locust that will need to be cut down and their stumps/stalks treated. There are only patches of Garlic Mustard that can easily weeded and there is a lot of Common Mugwort in large patches or areas but it can also be easily weeded. All weeded plants will immediately be placed in 5 gal. buckets, contractor's bags or on tarps to be placed into black contractor's bags to be removed from the forested area of the site and placed in an open area for solarization.

The seven of the ten invasive plants listed above are described below in detail in Sections 4.3.1 through 4.3.7. Information provided below for each plant species was acquired from publications (such as factsheets, invasive plant books or booklets) and websites from the Plant Conservation Alliance's Alien Plant Working Group, Penn State University, University of Connecticut, National Park Service, The Nature Conservancy, the NRCS, U.S. Fish and Wildlife Plant Data Base (online) and the Massachusetts Natural Heritage Program.

Invasive plants become established and can often dominate landscapes causing over $120 billion dollars in damages in the U.S. alone each year. The plants typically have very few native or natural enemies and as a result often thrive in our local environments. They are spread by: 1) animals though their waste, on their skin, fur or feathers; 2) by treads on shoes, tires, tracked vehicles, or other machinery; 3) being transported down streams, other waterways, water bodies, or coastal waters; 4) airborne seeds; 5) people's clothes; 6) yard or construction debris; 7) soils containing seed banks; or even by 8) landscapers or being supplied by plant nurseries. Invasive plants alter natural habitats often reducing

the numbers and diversities of native plants and animals. This can be detrimental to our natural environment and significantly alter ecosystems.

### 4.4.1 Oriental Bittersweet

Oriental Bittersweet (refer to Attachment 2, Photographs, Photo 25) is a deciduous woody vine that was introduced to the United States in the mid-1800's and has spread throughout much of the Country. This species grows around the trunks, stems and stalks of surrounding vegetation and chokes them out. They can change the natural nutrient cycling systems that take place in our natural environments. These plants can be found along roadsides, trails, fields, wastelands, landscaped areas, sand dunes, and forest interiors.

Oriental Bittersweet looks similar to native American Bittersweet (*Celastrus scandens*) but it can be distinguished by their leaves and fruit. Oriental Bittersweet has fruit and flowers located within the leaf axils along the length of the stem. Their fruit ripen in the fall and have yellow capsules. American Bittersweet only has fruit and flowers in terminal clusters. Their fruit also ripen in the fall as do Oriental Bittersweet but their capsules are orange. Leaves are used as the most distinguishable feature to tell the difference between Oriental Bittersweet and American Bittersweet throughout their life cycle (seedling to maturity). The best time and way to identify the difference between these two species is to observe them at leaf out when two sides of the leaf of the Oriental Bittersweet are folded against each other (conduplicate) and tightly packed in the bud when they emerge in the spring. The leaves of the American Bittersweet have leaf margins rolled in like a scroll (involute) and are not as tightly packed in the bud. An additional method to distinguish the leaves, although not as reliable, is to use the ratio of length-to-width of the leaves which is often greatest for American Bittersweet (90% chance) when it is equal to or greater than 2. If the ratio is less than or equal to 1.4, it is likely (90% chance) Oriental Bittersweet.

Hand pulling (weeding), cutting, and herbicides work best, especially in conjunction with each other. When hand weeding, make sure to get all of the roots to avoid re-growth. Any remaining roots that can't be removed should be treated with a direct (apply directly with a cotton swab, small paint brush or dabbing wand applicator) application of herbicide. Cutting should include cutting the vine near its base (within 2 inches of the ground) and removing the vine from surrounding vegetation, followed by treating the basal area of the vine with herbicide containing 25% glyphosate (such as Accord or Roundup Pro) works best. Remove all cut vines including any berries observed to reduce local seeding by placing them in containers or large plastic bags from where

they were cut. These methods will likely require 2 to 3 years of repeat efforts to ensure full removal of these plants.

This woody vine occurs throughout the wetland and riverfront area restoration and makes up approximately 70% to 80% of the invasive plant species at the site. The largest densities of this vine occur in the southeastern portion of the site in and around Wetland C.
Tartarian Honeysuckle (refer to Attachment 2, Invasive Plant Photographs, Photo 21) is a tall rounded or upright oval deciduous shrub that can reach heights of 7 to 12 feet. This plant often is one of the first shrubs to leaf out in the spring and one of the last to lose its leaves in the fall holding an advantage over other native shrubs. It often grows with a few to several stems occurring from the base that are spreading. It has a shallow woody root system that prefers mesic loamy soils but often grows in sandy loam to sandy soils. Leaves are rounded to slightly ovulate in shape and smooth along their margins. The base of each leaf is rounded to slightly cordate but the tip tapers to a blunt point. The upper leaf surface is a medium green color while the lower surface is light green. Leaves grow in opposite pairs along their shoots and rain from 1-½ in. to 2 in. long and ¾ to 1-½ in. wide. Their bark is gray to brown with narrow ridges that develop vertically shredded strips of bark as they age. Young shoots appear light green to reddish brown that are predominantly smooth. Its branches are quite fragile as they are hollow. These branches appear glabrous with a brownish to grey color in winter and a yellow to tannish color during spring and summer. The fruit is small in size (average 0.25 in. or 0.6 cm. in diameter) and range in color from orange to red that may persist throughout the winter. Each berry contains several small seeds. Its flowers appear in mid-spring (May through June) that form in pairs in the axils of the leaves. The flowers are tubular and pink to red and white in color and bloom for approximately three weeks. These flowers have a sweet fragrance common to other honeysuckles and are approximately ¾ in. long and across. The flowers consist of a corolla with five long and narrow petals containing five stamens of white filaments and yellow anthers with a pistil carrying a single style.

This plant was introduced to the United States in 1752 as an ornamental plant from central China. It is native to Siberia and other parts of eastern Asia. It grows in uplands along roadsides and trails, in old fields, thickets, fencerows, woodland edges, woodlands, and disturbed areas. Once these plants become established and produce fruit, they infiltrate into the naturally vegetated areas very quickly and are moderately difficult to remove once in large numbers due to their seed base.

Hand pulling (weeding), cutting, and herbicides work best, especially in conjunction with each other. Hand weeding only works with newly established seedlings that are not part of an older, established plant or its

roots. Make sure to get all of the roots to avoid re-growth when weeding any seedlings. Any remaining roots that can't be removed should be treated with a direct (apply directly with a cotton swab, small paint brush or dabbing wand applicator) application of herbicide. Mowing or cutting the stalks or stems near its base (within 2 inches of the ground), removing the plant in large contractor's bags followed by treating the remaining basal area of the plant with herbicide containing glyphosate (such as Roundup Pro) seem to work best. Mowing will not occur on this project. These methods will likely require 2 to 3 years of repeat efforts to ensure full removal of these plants.

This vine occurs along the western and northern portions of the site and makes up approximately 8% to 10% of the invasive plants in the areas identified to contain invasive plant species. The property owner was trying to remove these vines when they were stopped under the violation.

### 4.4.2 Glossy Buckthorn

Glossy Buckthorn is a tall deciduous shrub or small tree that can reach heights of 20 to 25 feet and have a trunk up to 10 inches in diameter. It often grows with a few to several stems occurring from the base that are spreading with loosely branched crowns. Leaves are thin and glossy with an oval or elliptical shape (not toothed). The upper leaf surface is shiny while the lower leaf surface can be hairy or smooth. Their bark is gray to brown with prominent elongated and light-colored lenticels. The fruit is small in size and range in color from green to red to blackish.

This plant was introduced in Wisconsin in 1849 as an ornamental plant to be used in a hedgerow where it spread across Canada and the northern United States. It grows in wetlands and uplands, along roadsides and trails, in old fields, and in woodlands. Once these plants become established and produce fruit, they infiltrate into the naturally vegetated areas very quickly and are difficult to remove once in large numbers.

Hand pulling (weeding), cutting, and herbicides work best, especially in conjunction with each other. Hand weeding only works with newly established seedlings that are not part of an older, established plant or its roots. Make sure to get all of the roots to avoid re-growth when weeding any seedlings. Any remaining roots that can't be removed should be treated with a direct (apply directly with a cotton swab, small paint brush or dabbing wand applicator) application of herbicide. Mowing or cutting the stalks or stems near its base (within 2 inches of the ground), removing the plant in large contractor's bags followed by treating the remaining basal area of the plant with herbicide containing glyphosate (such as Roundup Pro) seem to work best. Mowing will not occur on this

project. These methods will likely require 2 to 3 years of repeat efforts to ensure full removal of these plants.

Glossy Buckthorn was observed scattered throughout the wetland areas making up approximately 5% to 7% of the invasive plant species.

### 4.4.3 Multiflora Rose

Multiflora Rose is a large deciduous, woody shrub that was introduced in 1866 from rootstock sent from Japan for ornamental roses. Its use was promoted in the 1930's for use in erosion control and "live fences" for livestock. It occurs along roadsides, paths, in disturbed lands or wastelands, adjacent to and within fields, forest edges and light gaps in forest areas. Most of these plants develop from seeds in the soil and are often spread by wildlife that feed on the rose fruits which are called, "hips". They can also form new plants when long branches touch the ground and get covered with dirt which start to grow roots. They can be dispersed over long distances and seeds can remain viable for up to 10 to 20 years in the soil.

These rose bushes are thorny with arching brown (mature stems) to greenish and/or reddish stems. The leaves are divided into five to eleven sharply toothed leaflets with a pair of fringed bracts at the base of each leaf stalk. Beginning in May or June this rose has abundant small (about an inch across) white to pinkish showy flowers. Small rose hips develop in summer, become leathery in the fall, and remain on the plant through winter. These roses can grow up to 10 feet high and 10 feet wide. The closest relatives to this rose are the Scott Rose (*Rosa spinosissima*) and the Memorial Rose (*Rosa wichuraiana*) which are not present on the site.

Hand pulling (weeding), cutting, and herbicides work best, especially in conjunction with each other. Hand weeding only works with newly established seedlings that are not part of an older established plant or its roots. Make sure to get all of the roots to avoid re-growth when weeding any seedlings. Any remaining roots that can't be removed should be treated with a direct (apply directly with a cotton swab) application of herbicide. Mowing or cutting the stalks or stems near its base (within 2 inches of the ground), removing the plant in large contractor's bags followed by treating the remaining basal area of the plant with herbicide containing glyphosate (such as Roundup Pro) seem to work best. Mowing works well were applicable but often requires 6 to 8 times a year over 4 to 6 years to achieve complete removal but this method will not be used in this eradication plan as there will not be any mowing in the buffer zone area. These methods will likely require 2 to 3 years of repeat efforts to ensure full removal of these plants.

This shrub makes up approximately 2% to 3% of the invasive plant species at the site and was observed along the western portion of the site.

### 4.4.4 Tartarian Honeysuckle

Tartarian Honeysuckle is a tall rounded or upright oval deciduous shrub that can reach heights of 7 to 12 feet (refer to Attachment 2, Site Photographs, Photo 16). This plant often is one of the first shrubs to leaf out in the spring and one of the last to lose its leaves in the fall holding an advantage over other native shrubs. It often grows with a few to several stems occurring from the base that are spreading. It has a shallow woody root system that prefers mesic loamy soils but often grows in sandy loam to sandy soils. Leaves are rounded to slightly ovulate in shape and smooth along their margins. The base of each leaf is rounded to slightly cordate but the tip tapers to a blunt point. The upper leaf surface is a medium green color while the lower surface is light green. Leaves grow in opposite pairs along their shoots and rain from 1-½ in. to 2 in. long and ¾ to 1-½ in. wide. Their bark is gray to brown with narrow ridges that develop vertically shredded strips of bark as they age. Young shoots appear light green to reddish brown that are predominantly smooth. Its branches are quite fragile as they are hollow. These branches appear glabrous with a brownish to grey color in winter and a yellow to tannish color during spring and summer. The fruit is small in size (average 0.25 in. or 0.6 cm. in diameter) and range in color from orange to red that may persist throughout the winter. Each berry contains several small seeds. Its flowers appear in mid-spring (May through June) that form in pairs in the axils of the leaves. The flowers are tubular and pink to red and white in color and bloom for approximately three weeks. These flowers have a sweet fragrance common to other honeysuckles and are approximately ¾ in. long and across. The flowers consist of a corolla with five long and narrow petals containing five stamens of white filaments and yellow anthers with a pistil carrying a single style.

This plant was introduced to the United States in 1752 as an ornamental plant from central China. It is native to Siberia and other parts of eastern Asia. It grows in uplands along roadsides and trails, in old fields, thickets, fencerows, woodland edges, woodlands, and disturbed areas. Once these plants become established and produce fruit, they infiltrate into the naturally vegetated areas very quickly and are moderately difficult to remove once in large numbers due to their seed base.

Hand pulling (weeding), cutting, and herbicides work best, especially in conjunction with each other. Hand weeding only works with newly established seedlings that are not part of an older, established plant or its

roots. Make sure to get all of the roots to avoid re-growth when weeding any seedlings. Any remaining roots that can't be removed should be treated with a direct (apply directly with a cotton swab, small paint brush or dabbing wand applicator) application of herbicide. Mowing or cutting the stalks or stems near its base (within 2 inches of the ground), removing the plant in large contractor's bags followed by treating the remaining basal area of the plant with herbicide containing glyphosate (such as Roundup Pro) seem to work best. Mowing will not occur on this project. These methods will likely require 2 to 3 years of repeat efforts to ensure full removal of these plants.

This shrub occurs along the western edge and within Wetland A and is only about 1% to 2% of the invasive plants on the site. Several of these shrubs were cut down during the violation by the property owner.

### 4.4.5 Autumn Olive

Autumn Olive is a deciduous shrub that can grow to 20 feet in height. Leaves are alternate and egg or lance-shaped and smooth margined. The leaves are dull green on the upper surface and often silvery with brownish scales on the underside. The stems and buds are often silvery to rusty colored with scales. Autumn Olive have dense clusters of pale-yellow flowers that occur in June and July. Small reddish brown to pink fruit dotted with brown or silvery scales are produced in August through October. This plant was introduced to the United States in 1830 and was widely planted as an ornamental and in clusters as a windbreak.

Hand pulling (weeding), cutting, and the use of herbicides work best, especially in conjunction with each other. Hand weeding only works with newly established seedlings that are not part of an older, established plant or its roots. It is best to pull these seedlings after recent rains when the soil is loose. Make sure to get all of the roots to avoid re-growth when weeding any seedlings. Any remaining roots that can't be removed should be treated with a direct (apply directly with a cotton swab) application of herbicide. Mowing or cutting the stalks or stems near its base (within 2 inches of the ground), removing the plant in large contractor's bags followed by treating the remaining basal area of the plant with herbicide containing glyphosate (such as Roundup Pro) seem to work best. These methods will likely require 2 to 3 years of repeat efforts to ensure full removal of these plants.

Autumn Olive was observed scattered in the western portion of the site and consists of approximately 1% to 2% percent of the invasive plant species. Most of these shrubs were cut down by the property owner during the violation.

### 4.4.6 Tree of Heaven

Tree of Heaven is a fast growing deciduous tree that can reaches heights of 80 to 100 ft. with a diameter of 3 to 6 ft. It was introduced to the United States in the Philadelphia, PA area in 1784 and was later introduced to the West Coast in the 1850's by immigrants. It was initially used as an urban street tree and has been well documented to have been used along the streets in Baltimore and Washington D.C. This tree is native to northeast and central China and Taiwan. A single female tree can produce up to 300,000 seeds which are often wind spread and they can produce seeds once a sapling becomes two years old. These trees are not only prolific but have allelopathic chemicals in their roots, leaves, and bark that can limit or prevent other native plants from becoming established. If the roots, leaves, twigs, bark or any other portion of this tree are crushed or damaged, they will give off a strong odor. This tree's sap can affect human health resulting in skin irritation, dermatitis, and may even lead to myocarditis (inflammation of the heart muscle) in rare occasions if any portions of the plant puncture skin. It is recommended that gloves and protective clothing be wore when removing this tree. Tree of Heaven can be found along roadsides, parking lots, railways, trails, fencerows, woodland edges, wastelands, fields, logging sites, mining sites, and forest openings.

Tree of Heaven looks similar to Black Walnut (*Juglans nigra*) and Sumacs (*Rhus spp.*) but it can be distinguished by their leaves, fruit, and bark. Their leaves are pinnately compound having a central stem with leaflets that are attached on each side. A leaf can range from approximately 1 to 4 ft. in length with 10 to 40 leaflets. These leaflets are lance shaped with smooth margins and one or two protruding bumps known as glandular teeth. The bark of this tree is smooth and green when it is young turning light brown to grey resembling the skin of a cantaloupe as it ages. Their twigs are brittle and alternate on the tree with a greenish to brown color. They lack a terminal bud but have large "v" or heart shaped leaf scars. Once their twigs are broken, a large spongy brown center or pith is exposed. The Tree of Heaven has small yellowish-green flowers that occur in June. Seeds appear during summer as 1 to 2 in. long twisted samara or wings with one seed per samara. Samaras occur in clusters which can be produced in the hundreds of thousands on a single tree and persist through winter.

Hand pulling (weeding), cutting, and herbicides work best, especially in conjunction with each other. When hand weeding, make sure to get all of the roots to avoid re-growth. Any remaining roots that can't be removed should be treated with a direct (apply directly with a cotton swab, small paint brush or dabbing wand applicator) application of herbicide. Cutting should include cutting the vine near its base (within 2 inches of the ground) and removing the vine from surrounding

vegetation, followed by treating the basal area of the vine with herbicide containing 25% glyphosate (such as Accord or Roundup Pro) works best. Remove all cut vines including any berries observed to reduce local seeding by placing them in containers or large plastic bags from where they were cut. These methods will likely require 2 to 3 years of repeat efforts to ensure full removal of these plants.

This tree species occurred in the tree and sapling layers but only makes up approximately 2% to 3% of the restoration area. Several of these trees were cut down by the property owner during the violation.

### 4.4.7 Black Locust

Black Locust is a medium sized deciduous tree that is originally from the southeastern (southern Appalachia) and central (Ozarks) United States and some areas of Europe (refer to Attachment 2, Site Photographs, Photo 17). It has spread north throughout the northeastern and northern central United States. Black Locust was used in construction projects since their root systems are great for stabilizing soils. Seedlings and sprouts of this tree can grow rapidly and can be identified by their long paired thorns. They can rapidly overtake an area creating a dense tree layer that crowds or shades out native plants by blocking sun light and depleting soil moisture. This tree produces many seeds that seldom germinate but they spread from root suckering. Their nitrogen-fixing root nodules allow these plants to grow just about anywhere, even areas with little nutrients. They grow best in well drained soils with full sunlight. These trees are most often found along woodland edges, in abandoned fields, pastures, wastelands, and along roadsides.

The Black Locust typically grows between 40 to 50 feet tall but can grow from 70 to 100 feet in height. This tree grows relatively upright with a somewhat narrow crown that is widest at the top. Its bark can be a dark greyish brown to a greenish brown to a yellowish brown with distinctive thick rope-like ridges with furrows interlaced. The trunk is long and straight and its branches are often upright to irregular. Leaves are alternate along the stem with smaller oval or elliptical leaflets. Leaves are 6 to 14 inches long and include 7 to 19 leaflets. The leaflets are dark dull green to bluish green above and yellow below. This tree produces clusters of pea-like flowers that are creamy white in color with a yellow patch on the uppermost petal and are very fragrant. Its flower clusters are 4 to 8 inches long that occur in late May through early June for approximately one week. This tree's fruit consists of flat long smooth pods that is approximately 2 to 4 inches in length which mature in October and persist as a dried brown fruit. Each pod contains 4 to 8 seeds.

This species was observed scattered along the western and northern areas of the site in the floodplain and in Wetland A. This tree is approximately 8% to 10% of the invasive plant species on the site. Several of these trees were cut down by the property owner during the violation.

## 4.5 Invasive Plant Species Removal

The invasive plant species removal or eradication will be considered to be the first part of the Wetland Restoration Plan.

Removal of the invasive plants will begin along the northeastern portion of the site and continue south and then west to the driveway until all invasive plants have been weeded and/or cut-and-treated. The ecologist or wetland scientist will identify the invasive plants and show the landscapers how to identify each species seen. They will also show the landscapers how to cut, tell them which plants to weed or pull, and how to bag the plant waste to avoid seed dispersion. The plants will be weeded, cut, plant waste removed, and the basal area of large shrubs, saplings and trees will be treated with herbicide as the team moves along the site from east to west. The majority of the invasive plants that are immature or easy to extricate from the soil will be weeded/hand pulling such as young Glossy Buckthorn, Japanese Honeysuckle, Tartarian Honeysuckle, Eastern Burning Bush, Multiflora Rose, Japanese Barberry, Oriental Bittersweet, and Autumn Olive. Seedling Japanese Knotweed will also be weeded.

Common Mugwort, Curly Dock, Garlic Mustard and Climbing Nightshade plants identified that will only be weeded and not cut-and-treated. Plants with a stem or stalk that is greater than ½ in. diameter may be cut and treated with herbicide but weeding them from the site will also be attempted prior or in place of the cut-and-treat method. Any plant with a stem or trunk greater than 1-½ in. will but cut and treated with herbicide dabbed on its cut stem or trunk (with a dabbing brush or dapping wand) by an herbicide applicator with a MA Herbicide Applicator's License under the direct supervision of a wetland scientist or ecologist. The wetland and floodplain area to be restored may be divided into transects to aid with coverage of the area and to avoid additional movement within the restoration area that could damage native vegetation. The team will consist of at least three individuals. These individuals include: 1) the ecologist; 2) a landscaper who is cutting/weeding and possibly bagging; 3) a landscaper (who has an MA Herbicide Applicator's License) that is treating the cut basal area of large shrubs under the guidance of the ecologist; and 4) possibly an additional landscaper that is cutting/weeding and bagging the plant waste. Once a contractor's bag is full of plant waste, it will be tied closed and placed on the lawn edge by the driveway to be picked up by the landscapers once a transect is completed and placed in a truck bed. Mowing of invasive shrubs and herbs will not occur on this site as all work is within wetland resource areas. After a section or transect of the restoration is completed, the site ecologist or wetland

scientist will inspect each section or transect to ensure that all invasive plants have been removed.

All invasive plant species above will be weeded except for large Oriental Bittersweet, Glossy Buckthorn, Multiflora Roses, Tartarian Honeysuckle, Autumn Olive and Black Locust as stated above. The small to medium sized invasive plant species will be weeded and discarded in black contractor's bags for offsite removal or in an open area outside of the forested area of the site for solarization.

## 4.6 Herbicide Use

Herbicide use has been designed into this plan with the intention of using it as infrequently or as sparingly as possible. It is the opinion of this office as a result of several recently published studies that large-scale use of herbicides, including those with glyphosate, negatively impact the environment. Glyphosate that enters surface waters has been linked to DNA damage in fish and other species. Glyphosate is a heavy salt that does breakdown organically into natural elements over time. No spraying release of this herbicide over large areas will occur under this plan. Two brands of glyphosate based herbicides may be used one is Accord XRT II for any aquatic invasive plant stalks or roots and the other will be either RoundUp Pro or Roundup Custom. This herbicide will be applied directly and sparingly to cut basal areas or visible roots only when physical removal of the plant is not possible or is more damaging to surrounding natural vegetation. Herbicide application will occur through the use of cotton swabs, paintbrushes and/or dabbing wands. Dapping wands are typically sheaths of material that are secured to the sprayer tip and metal shaft of the sprayer to become soaked with herbicide that can be gently placed on the cut basal area of the plant where is will accumulate on the cut area.

Three brands of herbicide have been mentioned within this plan. All three brands contain the active ingredient glyphosate. Accord XRT II is a brand/product that is typically used in aquatic settings to control emergent vegetation. Roundup Pro or Roundup Custom and Accord XRT II contain surfactants which help the herbicide stick to the plant surface where it is applied. This helps it penetrate into the plants tissue, especially when it is a hard woody surface and may be exposed to rain within 3 to 6 days of application. Without the surfactants, the life of the herbicide is greatly reduced and may not be effective. This is especially true when dealing with areas where rainfall may occur within 3 to 6 days after the application of the herbicide.

The application method chosen in this plan (direct basal area application) was determined based on experience and research to provide the most effective manner of application with the highest level of protection for the environment. The time of application has been based upon the end of the growing season so that the plant will absorb the herbicide and store the herbicide in its root system

with its sugars to draw from when it needs energy to grow in the spring. This provides a high rate of efficiency for eliminating invasive plant species within 2 to 3 years if proper weeding programs are in place and areas surrounding the Restoration Area are also free of invasive. Targeting the basal and exposed root areas of shrubs and trees minimizes the herbicide application so that it is almost completely absorbed by the plant unlike foliar spraying. Our Company's experience and research of herbicides that contain glyphosate are that it is harmful to fish and other aquatic organisms if it enters a waterway, waterbody, or coastal waters. It can act as a bio-inhibiter impacting fish reproduction. This is why we have the herbicide applied to the basal area of invasive plants and not sprayed. It is likely that RoundUp Pro or Roundup Custom will be the herbicide chosen to be applied on the cut basal areas of the invasive plant species. The majority of the proposed cut-and-treat method will occur west or north of the wetlands with a few potential spots in the wetlands. Please note, these wetlands rarely contain water but contain high groundwater that reaches the upper 12 in. of the soil.

## 4.7 Solarization and Disposal

Once the invasive plants are placed in large black contractor's bags, they will be removed from the forested area of the site at the end of each work day and placed along the parking lot of the site. The bags of invasive plant material will either be removed from the site for offsite solarization or kept in an open area of the site for solarization. Solarization will occur over 6 months to ensure the plant material (roots, small branches that could contain seeds, fruits and seeds) will be dead and rotting to ensure no invasive plants can't spread. The best method of disposal is to bring them to a transfer station or place them in a dumpster that is picked up by a contracted waste disposal company that takes its waste to a facility with an incinerator but this process has become unfeasible as costs have risen sharply ($4,000+ per roll-off dumpster). Burying the plant waste deep such as in a landfill or other location is also a potential solution is the next best option following solarization but taking them anywhere where them can be used for mulch, compost or future top soil should be prohibited. This method of disposal will ensure that no invasive plants will be allowed to spread or resurface in the surrounding environment. It is recommended that a contractor who performs the invasive plant species eradication or is a disposal company that either transfers the plant waste and any refuse from the site follows the decontamination processes discussed below in Section 4.7 Decontamination Plan to a private or public incinerator.

## 4.8 Decontamination Plan

The spread of invasive plants can occur as a result of the distribution of seeds, roots, and even stem fragments from invasive plant species and can occur on many different sources such as personnel clothing, vehicles and/or machinery.

Any of these sources, such as clothing, tools, or vehicles, need to be inspected and likely cleaned daily prior to leaving the site and at the end of the project or any time before or after leaving the site. Vehicles and mechanical equipment shouldn't be an issue at this site so they will not be part of the decontamination. The decontamination protocols will only apply to workers clothing, footwear and mechanical cutting or treatment equipment.

Inspections should be carried out on a staging area dedicated to cleaning personnel, equipment, and vehicles (on the driveway). Effective inspections require good lighting conditions, personnel trained to look for problem areas that are not apparent upon casual observation, and development of protocols and lists of priority invasive species. Effective inspections also require persons who have the task of inspecting vehicles, equipment, and personnel to be dedicated and accountable for their actions. Inspections should include personnel, vehicles, and equipment that are used in locations known to be infested with invasive species. The equipment should undergo a pre-inspection, followed by thorough cleaning and a post-inspection before being allowed to leave the site.

Decontamination of any and all: 1) clothes; 2) shoes, boots, and any other footwear worn on the site; 3) vehicles; 4) trailers; 5) mowing equipment, 6) any earth-moving equipment; and 7) any other machinery or object brought onto the site that may make contact with the ground or site vegetation during the proposed ecological restoration. Decontamination will occur when anything leaves the site at the end of the work day or when work is completed and will include the removal of seeds, fruits, soils, mud, and plant cuttings/fragments from any of the seven itemized categories listed above. Numerous cleaning methods are available to decontaminate workers and equipment of invasive species. A lint roller and whisk broom or small broom works best with a dust pan. Materials removed from each site worker should be swept up or off personnel, boots, and equipment and placed in one of the black contractor's bags containing the plant waste. The use of mowing and construction equipment is unlikely to occur during the times the invasive plant species eradication program will be executed at the site.

## 5.0 Wetland Restoration Plan

The success of the ecological restoration can only be accomplished with a well-developed and thoroughly followed restoration plan. Portions of the ecological restoration plan described below has been developed from the Massachusetts Department of Environmental Protection, Massachusetts Inland Wetland Replacement Guidelines, September 2022 such as planting densities and percent coverage of restored plants for qualification of the restoration area after two years of monitoring. All activities identified within the ecological restoration area will be supervised by a qualified wetland scientist. Restoration of Wetland A and B and the floodplain area will not occur until approximately 80% to 85% reduction in invasive plant species occurs within the

restoration area. Once the majority of the invasive plants have been removed from the restoration area, the restoration plantings will commence. This will likely occur in the spring (April to early May) or fall of 2025 when the regrowth or sprouting of invasive plants can be evaluated prior to planting.

## 5.1 Existing Conditions and Functions

The site consists of an area that was recently disturbed from the removal of invasive plants and some native vegetation that was cut in the process within the eastern portion of the site. The remaining portions of the site consist of forested wetland and mixed forested upland that occur within the 100-yr. floodplain to the Westfield River. The areas of the wetland and floodplain restoration include areas of invasive plant species.

## 5.2 Vegetation

All vegetation chosen to be planted in the ecological restoration areas was observed on or adjacent to the site. Other dominant native vegetation that contains high wildlife habitat value throughout the forested areas of the site will be used for the ecological restoration as described below. The purpose of revegetating the areas where the invasive plant species are being eradicated is to avoid these areas from becoming re-infested with invasive plant species. Re-vegetating areas once occupied by invasive plant species has shown these areas can be ecologically restored and will become re-established with native plants instead of invasive species (invasive plant species numbers typically dwindle to near zero in a few growing seasons). This results in effective restorations that cost less and are successful which occurs in a much shorter period of time, typically within one to two growing seasons for dominant nave plants when compared to just treating the invasive plant species.

The planting sequence will include planting the trees first at approximately 10 to 15 ft. on-center, then shrubs will be planted approximately 8 to 12 ft. on-center, followed by seeding. The spacing for most of the wetland restoration area and many portions of the floodplain will be at these planting densities but will not reflect this due to the existing shrubs and trees that have regrown or sprouted on their stumps. The proposed Planting Plan (refer to Attachment 4, Restoration Planting Plan) reflects the general locations of the new or regrowth of native shrubs and trees at the site. Once the plant stock is delivered to the site, the plants will be evaluated to ensure they are the proposed plants, they are delivered with the requested quantities of each plant species, and that they are healthy. The plants will be laid out within the ecological restoration area prior to planting. When all nursery stock is planted, the New England Wetmix will be applied to Wetland A in the areas where the invasive herbs have been removed and any other areas where the herbaceous layer has been damaged from the invasive plant species eradication. New England Conservation/Wildlife Seed Mix

will be applied to 100-yr. floodplain within the restoration area. The same native plant species that are located within the existing buffer zone with high wildlife habitat value will be planted in the restoration area.

There are numerous native trees, shrubs, and many herbs in the restoration area that have been estimated in our planting plan (refer to Attachment 4, Restoration Planting Plan). The densities of native plants have been estimated conservatively as any significant open areas in the vegetative cover following the two years of invasive plant species eradication plan will allow the invasive plants to repopulate and dominate these open patches. This would create additional time, costs, and effort to eradicate the invasive plant species from the restoration area.

The wetland restoration area will be seeded with New England Wetmix in the herbaceous layer within the boundaries of Wetland A and B where the herbaceous layer has been weeded or damaged from the invasive plant species eradication and with New England Conservation/Wildlife Seed Mix in the herbaceous layer in the remaining 100-yr. floodplain of the ecological restoration area where the invasive plant species have been removed. The proposed wetland restoration area will include 13 Silky Dogwoods, 12 Highbush Blueberries, 18 Northern Spicebushes, 13 Southern Arrowwoods, 7 Common Witch Hazels, and 7 Common Winterberry in the shrub layer; and 8 Red Maples and 2 Pin Oaks trees for the tree layer (Refer to Table 1 below).

| Table 1 Wetland Restoration Areas Planting Table | | | | |
|---|---|---|---|---|
| Plant Species | # of Plants | Plant On Center | Plant Height | Size |
| New England Wetmix Seed Mix application rates to bare wetland restoration areas: 1 lb./1,200 sq. ft. | | | | |
| Northern Spicebush (*Lindera benzoin*) | 18 | 8 – 10 ft. | 18 - 24 in. | 2 - 4 gal. container |
| Highbush Blueberry (*Vaccinium corymbosum*) | 12 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| Southern Arrowwood (*Viburnam dentatum*) | 15 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| Silky Dogwood (*Cornus amomum*) | 13 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| Common Winterberry (*Ilex verticillata*) | 7 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| Pin Oaks (*Quercus palustris*) | 2 | 10 – 15 ft. | 24-30 in. | 2 - 4 gal. container |
| Red Maple (*Acer rubrum*) | 8 | 10 – 15 ft. | 24-30 in. | 2 - 4 gal. container |
| The altered area of Wetlands A and B will include planting of 10 trees and 65 shrubs. | | | | |

| Table 2 Floodplain Restoration Area Planting Table | | | | |
|---|---|---|---|---|
| Plant Species | # of Plants | Plant On Center | Plant Height | Size |
| New England Conservation/Wildlife Seed Mix application rates to bare 100-yr. Floodplain areas: 1 lb./1,200 sq. ft. | | | | |
| Highbush Blueberry (*Vaccinium corymbosum*) | 7 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| Common Witch Hazel (*Hamamelis virginiana*) | 32 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| Southern Arrowwood (*Viburnam dentatum*) | 32 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| Pin Oaks (*Quercus palustris*) | 19 | 10 – 15 ft. | 24 – 30 in. | 2 - 4 gal. container |
| Red Maple (*Acer rubrum*) | 19 | 10 – 15 ft. | 24 – 30 in. | 2 - 4 gal. container |
| The altered floodplain restoration area will include planning of 38 trees and 71 shrubs. | | | | |

The proposed floodplain restoration area will include 7 Highbush Blueberries, 32 Southern Arrowwoods, and 32 Common Witch Hazels in the shrub layer; and 19 Red Maples and 19 Pin Oaks trees for the tree layer (Refer to Table 1 below).

New England Wetmix seed mix will be used for the native herbaceous layer within Wetland A and B where invasive plants have been removed. This seed mix contains Fox Sedge (*Carex vulpiniodea*), Hop Sedge (*Carex lupullina*), Bearded Sedge (*Carex comosa*), Lurid Sedge (*Carex lurida*), Nodding Bur Marigold (*Bidens cernua*), Soft Rush (*Juncus effusus*), Grass-leaved Goldenrod (*Solidago graminifolia*), Blue Vervain (*Verbana hastata*), Boneset (*Eupatorium perfoliatum*), Flat-top Aster (*Aster umbellatus*), Hard-stem Bulrush (*Scirpus acutus*), Green Bulrush (*Scirpus atrovirens*), Woolgrass (*Scirpus cyperinus*), Sensitive Fern (*Onoclea sensibilis*), Spotted Joe-Pye Weed (*Eupatorium maculatum*), Water Plantain (*Alisma plantago-aquatica*), Soft-Stem Bulrush (*Scirpus validus*), and Ditch Stonecrop (*Penthorum sedoides*). The New England Wetmix will be applied at a rate of 800 sq. ft./lb. to Wetlands A and C.

New England Conservation/Wildlife Seed Mix will be used in the 100-yr. floodplain where invasive plants have been removed which includes: Virginia Wild Rye (*Elymus virginicus*), Little Bluestem (*Schizachyrium scoparium*), Big Bluestem (*Andropogon gerardii*), Red Fescue (*Festuca rubra*), Switch Grass (*Panicum virgatum*), Partridge Pea (*Chamaecrista fasciculata*), Panicledleaf Tick Trefoil (*Desmodium paniculatum*), Indian Grass (*Sorghastrum nutans*), Blue Vervain (*Verbena hastata*), Butterfly Milkweed (*Asclepias tuberosa*), Black Eyed Susan (*Rudbeckia hirta*), Common Sneezeweed (*Helenium autunale*), Heath Aster (*Asterpilosus/Symphyotrichum pilosum*), Early Goldenrod (*Solidago juncea*), and Upland Bentgrass (*Agrostis perennans*). The New England Erosion Control/Restoration Mix for Dry Sites includes: Red Fescue (*Festuca rubra*), Canada Wild Rye (*Elymus canadensis*), Annual Ryegrass (*Lolium multiflorum*), Perennial Ryegrass (*Lolium perenne*), Little Bluestem (*Schizachyrium scoparium*), Indian Grass (*Sorghastrum nutans*), Switch Grass (*Panicum virgatum*), Upland

Bentgrass (*Agrostis perennans*). The Conservation Mix will be applied at a rate of 800 sq. ft./lb. to the riverfront area restoration.

Planting of the restoration area will follow the invasive plant species eradication plan and will likely occur in spring or fall 2025 following the reduction in invasive plant species by at least 80% to 85%. The seeding for the ecological restoration area will only be spread in the spring as the seed mix contains plant seeds that are food sources for native animals and will often be eaten before they can germinate. The ecological restoration area will be planted with shrubs will be planted 8 to 12 ft. on center and trees will be planted 10 to 15 ft. on center. It is anticipated that the vegetation within the ecological restoration area will thrive (establishment of 75% or greater of the native plant species planted in the ecological restoration area) after two consecutive growing seasons. The success of the ecological restoration area will depend upon whether or not predicted conditions, such as normal or average seasonal weather, occur and are met within the ecological restoration area, and that the planting plan is closely followed.

An invasive plant species prevention plan is proposed to continue after the restoration plantings to ensure that the vegetation within the restoration area takes hold and is not dominated by invasive or opportunistic vegetation, a weeding program will be incorporated into this planting plan for all new seedlings. Potential sources of new infestations of invasive vegetation are onsite construction/maintenance equipment, local wildlife populations, or airborne seeds. Invasive plant species have been identified not only on the site in the existing buffer zone but also on the surrounding properties.

Watering of the vegetation is a concern for the success of the ecological restoration. Watering will likely need to occur if planting occurs in the fall or in the spring if we have a dry spring and/or summer.

## 5.3 Wildlife Habitat

All of the eight native plant species that are to be used in the ecological restoration area are native to the area and site and contain significant wildlife habitat value. According to Readington 1994 and DeGraaf 2002, small mammals, birds, reptiles, amphibians, and insects use these native plant species for feeding, breeding, and shelter.

## 5.4 Plan

A planting plan has been included as Attachment 7, Restoration Planting Plan that shows the location of the ecological restoration area plantings.

## 5.5 Stormwater Management

The ecological restoration areas will not receive storm water discharge from the proposed stormwater management system.

## 5.6 Erosion Control Plan

No sediment or erosion controls are currently proposed as the site is completely vegetated. Areas where invasive plants will be removed will be planted with shrubs and trees and seeded with herbaceous seed mixes.

## 5.7 Considerations During Construction

Proper scheduling and sequencing of events to prepare and complete work associated with the restoration area will be necessary for the wetland and floodplain restorations to be successful. This includes the eradication plan and planting within the restoration area as described below. The invasive plant species eradication plan will be conducted for the first one to two years to ensure that when the proposed restoration plants are planted, they aren't overtaken by invasive plant species. Prior to planting, the restorations areas will be inspected to ensure that most of the invasive plants have been eradicated. If 80% to 85% or greater removal of the invasive plant species has occurred, the planting of the ecological restoration area will commence. Proposed planting orders will be submitted to the restoration plant suppliers once it is determined that enough of the invasive plants have been eradicated in late summer and/or early fall of 2024. The proposed ecological restoration plantings will be ordered in late winter/early spring 2025 to ensure the availability of the plant stock for the restoration area.

## 5.8 Schedule & Sequencing

The restoration area must be constructed in a sequenced plan to ensure its success. The construction sequencing for the restoration area is listed below.

### 5.8.1 Invasive Plant Eradication

Weeding of the invasive plants will commence at the end of summer or early fall of 2024. The way in which the ecological restoration plan will be executed is described below in Section 5.8.1.1 Construction Sequencing.

#### 5.8.1.1 Construction Sequencing

This section will be followed closely by the site's wetland scientist and the landscaping crew to ensure each task is completed in proper sequence and thoroughly to avoid additional contamination on and off the site of invasive plant species. If each step of the construction sequencing is performed fully and accurately, the ecological restoration should be successful.

1. In late summer and/or early fall of 2024, the wetland scientist will instruct the landscaping crew on how to identifying each invasive plant species at the seedling, juvenile and adult plant stages at the site. Each person's task(s) will be conveyed so that everyone will know who is weeding, cutting and removing the slash or plant matter and placing it in black contractor's bags. The location for the placement of full bags is along on the edge of the access drive where they will be picked up and either placed in an open area along the existing parking lot or move to another offsite location for solarization.
2. Once the instruction is completed, the eradication of invasive plant species will begin with weeding and cut-and-treat of larger woody plants along the northern and eastern extent of the site moving (moving south to west) around and in Wetland A and removal of the few invasive plants from the cut area of Wetland B.
3. A transect that is approximately 20 ft. wide will be established to keep trampling of the native vegetation to a minimum and to focus on the invasive plants in the transect so none are missed.
4. The herbicide applicator with the MA Herbicide Applicator's License will dab the cut stalk or stump of the invasive plants along the path of the transect as needed.
5. Upon completion of the invasive plant species removal and treatment, all slash or plant waste (except for the trunks and large branches from the trees and shrubs that don't contain any seeds or fruits) will be collected and put into black contractor's bags. All personnel that have been in the field will have to be inspected for any plant materials, especially seeds, berries, and roots. Once all personnel have been inspected and cleaned off with a lint roller and nylon brush. Any dirt from

boots, lint rollers, and brushes and dust pans will be discarded into the remaining plant materials bag.

6. In spring 2025, the area will be inspected in late April or early May to determine the extent of regrowth or new invasive plant species. If less than 20% are present, planting could begin.
7. If a fall 2025 planting is proposed, the areas of invasive plants will be inspected at the end of August to determine if another treatment is necessary prior to planting and what level of weeding, cutting and treatment is needed to eradicate new and plants with regrowth.
8. Planting will include coordinating the plant stock ordering, establishing a staging area, evaluating plant stock once it arrives on the site.
9. Prior to planting, the shrubs and trees will be laid out in the locations by the site's wetland scientist and proper planting procedures will be discussed and monitoring of planting will occur by the wetland scientist to ensure the plants are planted properly according to the Restoration Planting Plan.
10. Shrubs will be planted 8 to 12 ft. apart and trees will be planted 10 to 15 ft. apart.
11. The seed mixes for the herbaceous area will be cast across the bare areas of the ecological restoration areas at a rate of 1 lb./1,200 sq. ft.
12. All plants will be watered immediately following planting.
13. The restored ecological restoration areas will be inspected by the wetland scientist following planting.
14. All activities described in #1 through #12 will be supervised and authorized by the wetland scientist until completed and approved.
15. Activities listed above are subject to change due to site conditions, weather, failure of equipment or other unforeseen issues that may arise and will be addressed by the supervising wetland scientist. If any changes do occur, they will be documented and discussed in full detail in the first report to the Conservation Commission, MassDEP and the U.S. Army Corps of Engineers following completion of the restoration area.

## 5.9 Ecological Restoration Monitoring

Monitoring of the restoration area will occur twice (during spring and fall) following planting to observe the health of the plantings and to determine when watering is necessary during the first growing season and if there are any issues with the plants. A quick monitoring will be performed twice in the first one to two weeks following the planting to ensure the plants aren't in shock (are healthy) and there isn't any evidence of animals eating the plants. Monitoring at the end of the growing seasons for both years will include observing the health of the plantings and to evaluate any replaced plantings. This monitoring will include evaluating the location of each shrub and tree planted, health of the vegetation, the overall success of the wetland restoration and riverfront area, and to set two sample plot monitoring locations to evaluate the wetland restoration area based on percent coverage of wetland vegetation and to sample soils in the center of each sample plot. One sample plot location will be established within the riverfront area restoration. The plots will be marked in the field with flagging tape and marked "TEC Sample Plot 1", "TEC Sample Plot 2" and "TEC Sample Plot 3". Any dead or significantly stressed vegetation will be marked with flagging tape and will be photographed and discussed in the monitoring report. The area of the wetland restoration will be documented for hydrology, wetland vegetated coverage, soils, potential for erosion, colonizing wetland plant species, any evidence of invasive plants, signs or observation of wildlife utilization, and the ability of the wetland restoration to blend into or become part of the adjacent existing wetland system. The 100-yr. floodplain will be monitored for all parameters of the wetland restoration area minus the hydrology. If any plantings are dead, they will be marked with flagging tape, their location within the restoration area will be marked on a plan and the plant species will be documented both in field notes and in the monitoring report.

Access to the restoration area will be limited to prevent damage to the vegetation and disturbance of the soils. Water will be obtained onsite and vegetation will be watered by hose or by buckets during the first month after planting if necessary. If a drought or extreme wet weather occurs, monitoring will be increased and necessary action taken to prevent damage or stress to the plantings. The restoration area will also be monitored to ensure invasive or unwanted plant species from becoming established during the two site visits. If invasive or unwanted species are found in the restoration area, a weeding program will be implemented to remove these species.

The first year of monitoring will include two site visits during the first full growing season, in early summer and late September. Each site visit will involve inspecting and documenting any changes in the health and growth of the planted vegetation. Photographs of the restoration area will be taken to show how the vegetation throughout these areas has fared. The locations of where the photos were taken will be marked for subsequent site visits. Photos of planted vegetation and volunteer species will be taken and included in the monitoring reports. A qualified wetland scientist will conduct all inspections of the

restoration area for plant vitality, vegetational coverage, and any potential erosion or sedimentation in the restoration area. A report regarding the inspection will be completed and submitted to the Agawam Conservation Commission, MassDEP and the Army Corps of Engineers after every inspection. A yearly monitoring report will be prepared after each growing season to document the yearly success.

# Attachment 1

# Agawam Conservation Commission
# Violation Letter

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

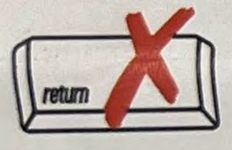
# WPA Form 9 – Enforcement Order

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

DEP File Number: _____

## A. Violation Information

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




This Enforcement Order is issued by:

Agawam — Conservation Commission (Issuing Authority)

8/11/2023 — Date

To:

Joseph O'Malley — Name of Violator

351 Main Street, Agawam, MA 01001 — Address

1. *Location of Violation:*

Tree House S LLC — Property Owner (if different)

"Meadow Lot & Kirkland," "Meadow Lot," "Rear Meadow Lot" — Street Address

Agawam — City/Town

01001 — Zip Code

L13 — Assessors Map/Plat Number

1/3,1/4, 1/5 — Parcel/Lot Number

2. Extent and Type of Activity (if more space is required, please attach a separate sheet):

The Agawam Conservation Commission received an anonymous complaint of clear cutting on Saturday, August 5, 2023 and a second complaint on Monday, August 6, 2023 stating acres of the wooded area have been cut down. The Conservation Commission went onsite and verified the tree cutting. See attached pictures. They were told that the area would be replanted with tomatoes and that they would be starting a Christmas tree farm. This area is in Bordering Land Subject to Flooding.

## B. Findings

The Issuing Authority has determined that the activity described above is in a resource area and/or buffer zone and is in violation of the Wetlands Protection Act (M.G.L. c. 131, § 40) and its Regulations (310 CMR 10.00), because:

☒ the activity has been/is being conducted in an area subject to protection under c. 131, § 40 or the buffer zone without approval from the issuing authority (i.e., a valid Order of Conditions or Negative Determination).

# Attachment 2

# Site Photographs



Photo 1. Area that was clearcut with trees cut down east and north of Wetland A.



Photo 2. Cut area east of Wetland A, note ground cover is intact and Oriental Bittersweet vines on tree.



Photo 3. Cut stumps of Pin Oak and Tree of Heaven east of Wetland A.



Photo 4. Cleared area of Wetland A and floodplain to the upper left of photograph.



Photo 5. A few of the many tires observed on the site within the cut or cleared area.



Photo 6. Tire and metal cylinder between Wetland A and Wetland C.



Photo 7. Tires and vehicle parts just southwest of Wetlands A and C.



Photo 8. Piles of trash and debris west of Wetland C and north of Wetland A.



Photo 9. Plastic debris, tires, plastic drums, etc. west of Wetland C and north of Wetland A.



Photo 10. Tires, trash and other debris just west of Wetland C and the eastern most portion of Wetland A.



Photo 11. Trash and debris strewn across the western edge of the site.



Photo 12. Another image of the trash and debris along the western edge of the site.



Photo 13. Area along the southwestern edge of the site, note the Common Mugwort.



Photo 14. Area just west of Wetland A and C along the western edge of the site, note C. Mugwort.



Photo 15. Area on the edge of Wetland A, note Black Locust and Quaking Aspen saplings re-growth.



Photo 16. Tartarian Honeysuckle along the eastern edge of Wetland A.



Photo 17. Black Locust with Fox Grape and goldenrods east of Wetland A.



Photo 18. Native grasses, goldenrods and Eastern Poison Ivy just east of Wetland A.



Photo 19. White Heath Aster, goldenrods and Purple Clover southeast of Wetland A.



Photo 20. White Heath Asters east of Wetland A.



Photo 21. Cut area of Wetland A, note Sensitive Fern and goldenrods in the cut area.



Photo 22. Area southeast of Wetland A, note White Heath Asters and goldenrods.



Photo 23. Area to the east of Wetland A in the southern most portion of the cut area of floodplain.



Photo 24. Raspberry bush near the edge of Wetland A.



Photo 25. Quaking Aspen, Virginia Creeper, goldenrod, Purple Clover, blackberries, Poison Ivy and a couple of Oriental Bittersweets in the 100-yr. floodplain.

# Attachment 3

# Wetland Resource Areas

# Delineation Report

Tunison Environmental Consultants, LLC

# Wetland Resource Area Delineation Report for 365 Main Street in Agawam, Massachusetts

Prepared for:

**Mr. Joseph O'Malley**
351 Main Street
Agawam, MA 01001

Prepared by:

Tunison Environmental Consultants, LLC
P.O. Box 992, 11 South Park Avenue
Plymouth, Massachusetts 02362

July 12, 2024

TEC #: 2308-001

Tunison Environmental Consultants, LLC

# TABLE OF CONTENTS


| Section | Page# |
|---|---|
| 1.0 Introduction | 1 |
| 2.0 Wetland Resource Areas | 1 |
| 3.0 Definitions of Wetland Resource Areas Normally Delineated in the Field | 3 |
| 4.0 Methodologies Delineation of BVW | 4 |
| 4.1 Description of Criteria | 4 |
| 4.1.1 Wetland Indicator Plants | 5 |
| 4.1.2 Indicators of Hydrology | 5 |
| 4.2 Field Methodology | 6 |
| 4.2.1 Boundary Flagging | 7 |
| 4.2.2 Boundary Documentation | 7 |
| 4.2.2.1 Vegetation | 8 |
| 4.2.2.2 Hydrology | 9 |
| 5.0 Site Description and Wetland Delineation | 10 |
| 5.1 Wetland Resources Delineated on the Site | 10 |
| 5.1.1 Wetland A | 11 |
| 5.1.2 Wetland B | 11 |
| 5.1.3 Wetland C | 12 |
| 5.2 Regulations that Apply to Delineated Resource Areas | 12 |
| 5.2.1 Massachusetts Wetlands Protection Act (310 CMR 10.00) | 12 |
| 5.2.2 Federal Clean Water Act | 13 |
| 5.2.3 Local Regulations and Bylaws | 13 |
| 6.0 Rare Species | 14 |


**Figures**


Figure 1 Site Locus


**Attachments**


Attachment 1 Site Plant List
Attachment 2 DEP Bordering Vegetated Wetland Delineation Field Data Forms
Attachment 3 Natural Heritage and Endangered Species Program Estimated Habitat of Rare Wildlife and Certified Vernal Pools, Springfield South Quadrangle Map
Attachment 4 ACOE Wetland Determination Data Forms – Northcentral and Northeast Region
Attachment 5 NRCS Soil Report
Attachment 6 Wetland Plan

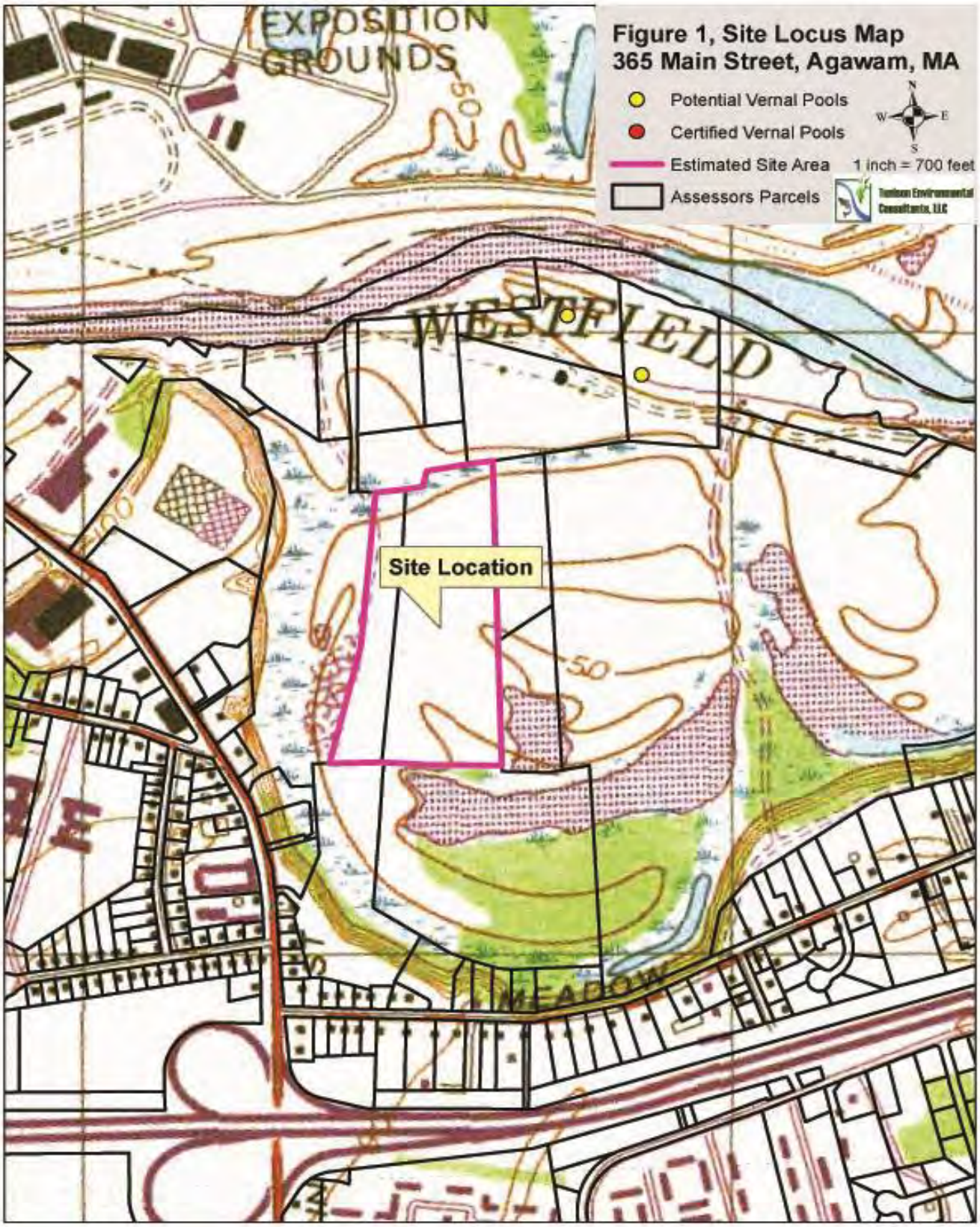
## 1.0 Introduction

This document presents the methodologies that were used to delineate and identify wetland resources at the property at 365 Main Street (Assessor's Parcel ID Numbers: L 131/ 1/ 5 & L13/ 1/ 3) in Agawam, Massachusetts (refer to Figure 1, Site Locus). The wetlands at this site were delineated on August 23, 2023 by Garrett M. Tunison, of Tunison Environmental Consultants, LLC who applied the methodologies described below.

## 2.0 Wetland Resource Areas

Under the Massachusetts Wetlands Protection Act (MWPA) (M.G.L. Ch. 131, S.40) and its implementing regulations (310 CMR 10.00), five freshwater resource area categories are defined. These categories are: (1) Bank, (2) Bordering Vegetated Wetlands (BVW), (3) Land Under Water Bodies and Waterways, (4) Land Subject to Flooding (Bordering and Isolated), and (5) Riverfront Area.

Bank, BVW, and Riverfront Area can be delineated in the field. The boundaries of Land Under Water Bodies and Waterways and Land Subject to Flooding are typically not physically delineated on a site for the following reasons. 310 CMR 10.56(2)(c) states: "The boundary of Land Under Water Bodies and Waterways is the mean annual low water level." As a result, this resource is not present within intermittent streams and is below bank resources in perennial streams. 310 CMR 10.57(2)(a)3 states: "The boundary of Bordering Land Subject to Flooding is the


Figure 1, Site Locus Map
365 Main Street, Agawam, MA
Potential Vernal Pools
Certified Vernal Pools
Estimated Site Area
Assessors Parcels
1 inch = 700 feet
N
W
E
S
EXPOSITION GROUNDS
WESTFIELD
Site Location
MEADOW

estimated maximum lateral extent of flood water which will theoretically result from statistical 100-year frequency storm." As such, this boundary is normally obtained from NFIP Profile data or by calculation and is represented on a site plan based upon elevation. The boundary of Isolated Land Subject to Flooding is based upon the "Perimeter of the largest observed or recorded volume of water confined in said area." (310 CMR 10.57(2)(b)). Often historical data is lacking and the boundary is determined by calculation using the extent of flood water which will result from the statistical 100-year frequency storm.

## 3.0 Definitions of Wetland Resource Areas Normally Delineated in the Field

BVW is defined 310 CMR 10.55(2) as:

> "…freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants…" The boundary of BVW is defined in 310 CMR 10.55(2)(c) as "…the line within which 50% or more of the vegetated community consists of wetland indicator plants and saturated or inundated conditions exist."

Bank is defined in 310 CMR 10.54(2)(a) as:

> "…the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, it occurs between a water body and an upland." The boundary of the Bank is defined in 310 CMR 10.54(2)(c) as "the upper boundary of the Bank is the first observable break in slope or the mean annual flood level, whichever

is lower. The lower boundary of a Bank is the mean annual low flow level."

River is defined in 310.CMR 10.58(2)(a) as:

"...any natural flowing body of water that empties to any ocean, lake, pond or other river and which flows throughout the year."

Riverfront is defined in 310 CMR 10.58(2)(a)3 as:

"...the area between a river's mean annual high-water line measured horizontally outward from the river and a parallel line located 200 feet[1] away..." 310 CMR 10.58(2)(a)2 states: "Mean Annual High-Water Line of a river is the line that is apparent from visible markings or changes in the character of soils or vegetation due to the prolonged presence of water and that distinguishes between predominantly aquatic and predominately terrestrial land."

## 4.0 Methodologies for Delineation of BVW

Bordering Vegetated Wetlands were delineated in accordance with the methodology set forth in the document entitled "Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act: A Handbook," dated March 1995, produced by the Massachusetts Department of Environmental Protection, Division of Wetlands and Waterways. Vegetated wetlands are defined by the presence of 50% or more of wetland indicator plants and saturated or inundated conditions.

[1]In some instances, the riverfront area may extend outward less than 200 feet.

## 4.1 Description of Criteria

### 4.1.1 Wetland Indicator Plants

Wetland indicator plants are defined in the MWPA regulations as any of the following:

1. Plant species listed in the Wetlands Protection Act
2. Plants listed in the National List of Plant Species That Occur in Wetlands, published by the U.S. Army Corps of Engineers, 2012, with an indicator category of: OBL, FACW, and FAC.
3. Individual plants that exhibit morphological or physiological adaptations of life in saturated or inundated conditions.

Wetland indicator species categories are defined as:

OBL: Obligate Wetland. Occur almost always (estimated probability >99%) under natural conditions in wetlands.

FACW: Facultative Wetland. Usually occur in wetlands (estimated probability 67%-99%) but occasionally found in non-wetlands.

FAC: Facultative. Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).

Morphological adaptations are evident in the form or shape of a plant. Two examples of a morphological adaptation are a shallow root system and a flared or buttress tree trunk.

### 4.1.2 Indicators of Hydrology

While wetlands must have saturated or inundated conditions, these conditions do not have to be present throughout the year. Saturation or inundation can be as short as two weeks if it occurs in the right type of soil during the growing season. As a result, indicators of hydrology can be used to satisfy the hydrology criterion when no flooding or saturation is observed.

The presence of hydric soil is an indicator of hydrology. Hydric soil is defined in Appendix D of "Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetland Protection Act: A Handbook," as "…a soil that is saturated, ponded, or flooded long enough during the growing season to cause anaerobic conditions at or near the surface." Soils with at least 8 inches of organic material measured from the ground surface are hydric soils. Anaerobic conditions create physical and chemical changes in hydric mineral soils that are observable primarily by color mottling.

Other evidence of hydrology includes "groundwater, including the capillary fringe, within a major portion of the root zone;" and "observation of prolonged or frequent flowing or standing surface water" (310 CMR 10.55(2)(c)2). Examples of evidence for surface water are watermarks on trees and rocks, water-stained leaves, or drainage patterns. Examples of soil saturation include free water in the test hole and saturated soil within 12 inches of the ground surface.

## 4.2 Field Methodology

When conducting delineations, it is important to know if the wetland is isolated or borders on a creek, river, stream, pond or lake. This information is used to classify the resource area as either an Isolated Wetland of Bordering Vegetated Wetland. 310 CMR 10.04 states: "Bordering means touching. An area listed in 310 CMR 10.02(1)(a) is bordering on a water body listed in 310 CMR 10.02(1)(a) if some portion of the area is touching the water body or if some portion of the area is touching another area listed in 310 CMR 10.02(1)(a) some portion of which is in turn touching the water body." In practice, the "bordering" test is passed if the wetland somehow extends without a break to the bank of a creek, river, stream, pond or lake.

### 4.2.1 Boundary Flagging

A search for wetlands is made on a site by walking throughout the site with special attention paid to low lying areas and areas along streams, ponds and lakes. Visual inspection of vegetation allows for a preliminary determination as to the presence of a wetland[2]. Once an area is suspected of being a wetland, detailed observations of vegetation and hydrology indicators are made to confirm that the area qualifies as a vegetated wetland. Once confirmed, observations are made along a transect that extends into adjacent uplands. When the composition of the vegetation changes such that less than 50% of the vegetation is composed of wetland indicator plants, or when indicators of wetland hydrology are lost, the wetland boundary is marked (usually with numbered flagging). This procedure is repeated along the wetland boundary frequently enough so that, when the flag locations are mapped, the resulting line accurately reflects the wetland boundary.

### 4.2.2 Boundary Documentation

At representative boundary locations data is collected sufficient to complete Department of Environmental Protection Agency (DEP) delineation field data forms. These data support the accurate placement of boundary flags. At a representative boundary location data are collected concerning vegetation, soils and other hydrology indicators from each of two sets of plots. One plot set is located just down gradient of the boundary while the second plot set is located just up gradient of the boundary.

[2]Disturbed situations require special procedures that are not discussed in this document.

### 4.2.2.1 Vegetation

Vegetation is evaluated on a layer by layer basis. Vegetation layers consist of ground cover (non-woody vegetation and all woody vegetation less than three feet in height), shrubs (woody vegetation greater than or equal to 3 feet, but less than 20 feet in height), saplings (woody vegetation over 20 feet in height with a diameter at breast height (dbh) greater than or equal to 0.4 inches to less than 5 inches), climbing woody vines, and trees (woody plants with a dbh of 5 inches or greater and a height of 20 feet of more). To be included in the analysis, a layer must contain at least 5 percent plant coverage.

The abundance of each species in a layer is evaluated by estimating percent coverage over a standard plot size. To be included in this analysis, a species must provide over 2 percent coverage within a plot. Generally, circular plots are established for each layer. Ground cover is evaluated using a 5' radius plot. Shrubs and saplings are evaluated using a 15' radius plot. Climbing woody vines and trees are evaluated utilizing a 30' radius plot. The size and shape of the plots may vary based on field conditions.

The dominance of each plant species within each layer is then calculated. This calculation is made by dividing the abundance of a species within a layer by the total plant abundance within that layer and multiplying by 100 to obtain a percent dominance. Those species that individually provide at least 20 percent dominance to the layer are always designated as "dominated species". The species within a layer are arranged by percent dominance in descending order. Those species that cumulatively provide 50% of the percent dominance for the layer, regardless as to whether or not they provide a minimum of 20 percent are designated "dominant species". This is often referred to as the "20/50" rule. Once the dominant species within each layer are determined, the number of dominant wetland indicator species are compared with the number of dominant

non-wetland indicator species. The vegetative criterion is met if at least half of the dominant species are wetland indicator species.

#### 4.2.2.2 Hydrology

The presence of hydric soil is commonly used to indicate the presence of wetland hydrology. To identify whether hydric soils are present, the soil horizons within a test pit are evaluated. Hydric soil indicators as identified in "Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetland Protection Act: A Handbook," include:

- Histosols (organic soils). Histosols are soils with at least 16 inches of organic material measured from the soil surface.
- Histic epipedons. These are soils with 8 to 16 inches of organic material measured from the soil surface.
- Sulfidic material. A strong 'rotten egg' smell generally is noticed immediately after the soil test hold is a dug.
- Gleyed soils. Soils that are predominately neutral gray, or occasionally greenish or bluish gray in color within 12 inches from the bottom O-horizon. (The Munsell Soil color charts have special pages for gleyed soils.)
- Soils with a matrix chroma of 0 or 1 and values of 4 or higher within 12 inches from the bottom of O-horizon.
- Within 12 inches from the bottom of the O-horizon, soils with a chroma of 2 or less and values of 4 or higher in the matrix, and mottles with a chroma of 3 or higher.
- Within 12 inches from the bottom of the O-horizon, soils with a matrix chroma of 3 and values of 4 or higher, with 10 percent or more low-chroma mottles, as well as indicators of saturation (i.e. mottles, oxidized rhizospheres, concretions, nodules) within 6 inches of the soil surface."

Other indicators of wetland hydrology include the presence of surface water flooding, groundwater (including the capillary fringe) within a major portion of the root zone in the test pit, water marks on trees, water-stained leaves, sediment deposits, drift lines, scoured areas, and/or drainage patterns.

## 5.0 Site Description and Wetland Delineation

The site is approximately 25.3 acres in size and is located at 365 Main Street (Assessor's Parcel ID Numbers: L 131/ 1/ 5 & L13/ 1/ 3) in Agawam, Massachusetts (refer to Figure 1, Site Locus). The property is bound by forested upland and a paintball playing field to the north; forested upland, forested wetland and farm fields to the east; forested upland and farm fields to the South; and a dirt access road and a capped landfill with a solar array on top of it to the west. A cell tower is also located just west of the site or south of the paintball fields parking area.

The site appears to be relatively flat with only a slight slope from north to south and east to west. All areas of the site are highly disturbed and appeared to have been cleared in the past. Most areas of the site lack an "O" and "A" Horizon soils and there is a lot of trash and debris on the site that likely came from the old landfill and previous paintball playing fields. There are many invasive plants including Garlic Mustard (*Alliaria petiolata*), Common Mugwort (*Artemisia vulgaris*) and Oriental Bittersweet (*Celastrus orbiculata*) in the herbaceous layer; Glossy Buckthorn (*Frangula alnus*), Multiflora Rose (*Rosa multiflora*) and an occasional Autumn Olive (*Elaeagnus umbellata*) in the shrub layer and Tree-of-Heaven (*Ailanthus altissima*) and Black Locust (*Robinia pseudoacacia*) in the tree layer (refer to Attachment 1, Plant List). The site is highly disturbed including garbage, yard debris, and fill materials (asphalt, brick and concrete chunks) scattered throughout the western portion of the site.

## 5.1 Wetland Resources Delineated on the Site

Three wetland resource areas have been delineated on the site which consists of two areas of BVW to bank of an intermittent stream and an isolated wetland.

Wetlands A and B likely join together offsite as one wetland just east of the site property.

### 5.1.1 Wetland A

Flagging series A-1 through A-9, A-11 through A-28, A-50 through A-78 and A-82 through A-101 delineates a BVW. Flags A-9 through A-11 and A-78 through A-82 delineate bank to an intermittent stream. This intermittent stream appears to have been dug a long time ago and was likely constructed or expanded for farm drainage. Dominant wetland vegetation includes Sensitive Fern (*Solidago gigantea*) in the herbaceous layer and Red Maple (*Acer rubrum*) in the tree layer. The herbaceous and shrub layers in many areas were thin or missing in areas where cutting has occurred. Dominant vegetation in areas outside of our sample plots in addition to the dominant species within our sample plots consisted of sedges (*Carex spp.*), Cinnamon Fern (*Osmundastrum cinnamomeum*), and some Royal Fern (*Osmunda spectabilis*) in the herbaceous layer; Northern Spicebush (*Lindera benzoin*), Glossy Buckthorn (*Frangula alnus*), Silky Dogwood (*Cornus amomum*) and some Highbush Blueberry (*Vaccinium corymbosum*) in the shrub layer; Poison Ivy (Toxicodendron radicans) in the vine layer and Box Elder (*Acer negundo*), American Elm (*Ulmus americana*), Pin Oak (*Quercus palustris*) in the tree layer. Evidence of hydrology includes hydric soils (refer to Attachment 2, DEP Bordering Vegetated Wetland Delineation Field Data Forms).

### 5.1.2 Wetland B

Flagging series B-1 through B-10 delineates a BVW just south of Wetland A to bank of an intermittent stream. Dominant wetland vegetation includes Sensitive Fern in the herbaceous layer and American Elm (*Ulmus*

*americana*) and Red Maple in the tree layer. Evidence of hydrology includes hydric soils (refer to Attachment 2, DEP Bordering Vegetated Wetland Delineation Field Data Forms).

### 5.1.3 Wetland C

Flagging series C-1 through C-13 and C-50 through C-54 delineates an isolated wetland west of Wetland A, east of the dirt road and paintball playing field. Dominant wetland vegetation includes Sensitive Fern in the herbaceous layer; Grey Willow (*Salix bebbiana*) and Silky Dogwood (*Cornus amomum*) in the shrub layer and Red Maple in the tree layer. Evidence of hydrology includes hydric soils (refer to Attachment 2, DEP Bordering Vegetated Wetland Delineation Field Data Forms).

## 5.2 Regulations that Apply to Delineated Resources Areas

The interests and functions of wetland resources areas are protected as defined by federal, state, and local regulations. Depending upon the type of wetland present, federal, state and local regulations may all apply to the wetland resources delineated and described above in this report, or only local and/or federal regulations may apply to wetland resources such as small isolated wetlands. The wetland resources delineated on the attached plans and described above in this report are discussed below as they relate to state, federal and local regulations.

### 5.2.1 Massachusetts Wetlands Protection Act (310 CMR 10.00)

Under the Massachusetts Wetlands Protection Act, 310 CMR 10.55, flag series Flags A-9 through A-11 and A-78 through A-82 delineates bank to

an intermittent stream. Flags A-1 through A-9, A-11 through A-28, A-50 through A-78, A-82 through A-101 and B-1 through B-10 delineate BVW. Both bank (310 CMR 10.54) and BVW (310 CMR 10.55) have a 100 ft. buffer zone extending horizontally outward from the BVW line (refer to Attachment 5, Wetland Plan).

Massachusetts Department of Environmental Protection (DEP) Bordering Vegetated Wetland Delineation Field Data Forms were completed for observation plots located in the wetlands and uplands along each wetland transect discussed above and are presented as Attachment 2.

### 5.2.2 Federal Clean Water Act

Wetlands A and B drain to intermittent streams east and south of the site that discharge into the Westfield River that drains to the Connecticut River which is a tributary that flows into Long Island Sound. Since the wetland listed above (Wetland E) discharge into coastal waters, it is considered as contiguous to a tributary to "waters of the U.S.", and regulated by the U.S. Army Corps of Engineers under the Clean Water Act.

### 5.2.3 Local Regulations and Bylaws

The Town of Agawam, MA, doesn't have any wetlands bylaw, regulations or policies.

## 6.0 Rare Species and Other Environmental Resources

This evaluation also included a review of the MA Natural Heritage Atlas, 2021, 15th edition, published by MA Natural Heritage and Endangered Species Program, Division of Fisheries and Wildlife, Westborough, MA. Based on review of the Springfield South Quadrangle, the site property is **not** within Priority or Estimated Habitats of Rare Species (refer to Attachment 3, Environmental Resources Map) Based on review of the Weymouth Quadrangle, the site is **not** within an area designated as Priority/Estimated Habitat of Rare Wildlife or within any Certified Vernal Pools. Mass/GIS data layers, including Priority/Estimated Habitat of rare species (updated August, 2021), certified vernal pools (updated continually), and potential vernal pools (July 2013) have been layered on an ortho-photo of the site that has been included as Attachment 3.

# Attachment 1

# Site Plant List

# Attachment 1

# List of Plants Observed in Field

The following species were observed growing on site. They are listed classified relative to their affinity for wetland habitats. Classifications are based upon the U.S. Army Corps of Engineers, NWPL-National Wetland Plant List, Northcentral and Northeast 2020 Regional Wetland Plant List. This publication does not list all plants that grow in New England. "NL" which represents "not listed" or listed as "NA" which indicates "no agreement" indicates species not listed in the publication. Plant species listed as "NL" or "NA" below should be considered upland (UPL) plants since they are not included in the 2020 National Wetland Plant List for the Northcentral and Northeast Region.

In certain cases, plants may have been identified only on the family or genus level. In these cases, the indicator status, SESW (wetland) or SESU (upland), is listed by the most typical status of the genus or based upon characteristics of the plant as observed in the field.

Not withstanding classifications, it must be emphasized that individual plants of almost any species may be found in almost any habitat. It is not uncommon to find individual plants of OBL species growing in uplands or individual plants of UPL species growing in wetlands. For this reason, the total vegetation best serves as an indicator of wetlands rather than any individual species.

INDICATOR CATEGORIES AS DEFINED BY THE U.S. Army Corps of Engineers:

OBL: Obligate Wetland (OBL). Occur almost always (estimated probability > 99%) under natural conditions in wetlands.

FACW: Facultative Wetland (FACW). Usually occur in wetlands (estimated probability 67%-99%) but occasionally found in non-wetlands.

FAC: Facultative (FAC). Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).

FACU: Facultative Upland (FACU). Usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).

UPL: Obligate Upland (UPL). Occur in wetlands in another region, but occur almost always (estimated probability >99%) under natural conditions in non-wetlands in the region specified.

HABIT: The plant characteristics and life forms assigned to each species.

A: Annual
B: Biennial
C: Clubmoss
E: Emergent
@: Epiphytic
F: Forb
/: Floating
F3: Fern
G: Grass
GL: Grasslike
H: Partly woody
HS: Half shrub
H2: Horsetail
I: Introduced
N: Native
P: Perennial
+: Parasitic
P3: Pepperwort
Q: Quillwort
S: Shrub
- : Saprophytic
Z: Submerged
$: Succulent
T: Tree
V: Herbaceous Vine
W: Waterfern
WV: Woody Vine

## Plant List for 365 Main Street in Agawam, MA

| Scientific Name | Common Name | MA Ind | Habit |
|---|---|---|---|
| Acer negundo | BOX-ELDER OR ASH-LEAF MAPLE | FAC | NT |
| Acer platanoides | MAPLE, NORWAY | UPL | IT |
| Acer rubrum | MAPLE, RED | FAC | NT |
| Achillea millefolium | YARROW, COMMON | FACU | PNF |
| Agrostis penennans | UPLAND BENT GRASS | FACU | PIG |
| Ailanthus altissima | TREE-OF-HEAVEN | UPL | IT |
| Alliaria petiolata | MUSTARD, GARLIC | FACU | BIF |
| Allium canadense | ONION, MEADOW GARLIC OR | FACU | PNF |
| Alnus incana | ALDER, SPECKLED | FACW | NS |
| Ambrosia artemisiifolia | RAGWEED, ANNUAL | FACU | ANF |
| Artemisia vulgaris | MUGWORT, COMMON | FACU | ANF |
| Betula alleghaniensis | BIRCH, YELLOW | FAC | NT |
| Betula papyrifera | BIRCH, PAPER | FAC | NTS |
| Betula populifolia | BIRCH, GRAY | FAC | NT |
| Bidens frondosa | BEGGAR-TICK, DEVIL'S | FACW | ANF |
| Brassica rapa | MUSTARD, FIELD OR RAPE | UPL | ANF |
| Carex flava | SEDGE, YELLOW-GREEN | OBL | PNGL |
| Carex blanda | SEDGE, EASTERN WOODLAND | FAC | PNGL |
| Carex crinita | SEDGE, FRINGED | OBL | PNEGL |
| Carex digitalis | SEDGE, SLENDER WOOD | UPL | PNGL |
| Carex flava | SEDGE, YELLOW-GREEN | OBL | PNGL |
| Carex leptonervia | SEDGE, NERVELESS WOOD | FAC | PNGL |
| Carex lupulina | SEDGE, HOP | OBL | PNEGL |
| Carex lurida | SEDGE, SHALLOW | OBL | PNEGL |
| Carex novae-angliae | SEDGE, NEW ENGLAND | FACU | PNGL |
| Carex scoparia | SEDGE, POINTED BROOM | FACW | PNGL |
| Carex stricta | SEDGE, UPTIGHT OR TUSSOCK | OBL | PNEGL |
| Carex sylvatica | SEDGE, EUROPEAN WOODLAND | FACU | PNEGL |
| Carex vulpinoidea | SEDGE, COMMON FOX | OBL | PNEGL |
| Catalpa speciosa | CATALPA, NORTHERN | FACU | NT |
| Celastrus orbiculata | BITTER-SWEET ORIENTAL OR ASIAN | UPL* | IWV |
| Comptonia peregrina | FERN, SWEET | NL | NS |
| Cornus amomum | DOGWOOD, SILKY | FACW | NS |
| Daucus carota | QUEEN ANNE'S LACE | UPL | F |
| Dennstaedtia punctilobula | FERN, HAYSCENTED | UPL | F3 |

| Scientific Name | Common Name | MA Ind | Habit |
|---|---|---|---|
| Dichanthelium clandestinum | GRASS, DEER-TONGUE ROSETTE | FACW | PNG |
| Dryopteris carthusiana | FERN, SPINULOSE WOOD | FACW | F3 |
| Echinochloa crusgalli | GRASS, BARNYARD, LARGE | FAC | AIG |
| Elaeagnus umbellata | AUTUMN OLIVE | NL | |
| Eurybia divaricata | ASTER, WHITE WOOD | NL | PNF |
| Frangula alnus | BUCKTHORN, FALSE GLOSSY | FAC | IS |
| Gramineae (Hydrophilic) | GRASSES, HYDROPHILIC | SESW | G |
| Gramineae (Upland) | GRASSES, UPLAND | SESU | G |
| Hamamelis virginiana | WITCH-HAZEL, COMMON OR AMERICAN | FACU | NST |
| Hypericum perforatum | ST. JOHN'S-WORT, COMMON | UPL | PNF |
| Ilex verticillata | WINTERBERRY, COMMON | FACW | NST |
| Impatiens capensis | TOUCH-ME-KNOT, SPOTTED | FACW | ANF |
| Lepidium virginicum | PEPPER-WORT, POORMAN'S | FACU | ABNF |
| Lespedeza capitata | BUSH-CLOVER, ROUND-HEAD | FACU | PNF |
| Ligustrum sinense | PRIVET, CHINESE | FACU | NS |
| Linaria vulgaris | BUTTER & EGGS | NL | IP |
| Lindera benzoin | SPICEBUSH, NORTHERN | FACW | NST |
| Lonicera tatarica | HONEYSUCKLE, TWINSISTERS OR TARTARIAN | FACU* | IS |
| Lythrum salicaria | LOOSESTRIFE, PURPLE | OBL | PIF |
| Maianthemum canadense | LILY-OF-THE-VALLEY, WILD-OR FALSE | FACU | PNF |
| Melilotus alba | SWEETCLOVER, WHITE | FACU | ABIF |
| Medicago lupulina | MEDIC, BLACK | FACU | AIF |
| Musci | MOSSES | NL | |
| Nyssa sylvatica | TUPELO, BLACK | FAC | NT |
| Oenothera parviflora | EVENING-PRIMROSE, NORTHERN | FACU | BIF |
| Onoclea sensibilis | FERN, SENSITIVE | FACW | PNEF3 |
| Osmundastrum cinnamomeum | FERN, CINNAMON | FACW | PNEF3 |
| Osmunda claytoniana | FERN, INTERUPTED | FAC | PNEF3 |
| Osmunda spectabilis | FERN, ROYAL | OBL | PNF3 |
| Oxalis stricta | WOODSORREL, UPRIGHT YELLOW | FACU | PIF |
| Parthenocissus quinquefolia | CREEPER, VIRGINIA | FACU | NWV |
| Plantago lanceolata | PLANTAIN, ENGLISH | FACU | ABPIF |
| Plantago major | PLANTAIN, COMMON OR GREAT | FACU | PIF |
| Pinus strobus | PINE, EASTERN WHITE | FACU | NT |
| Polygonum pensylvanicum | SMARTWEED, PENNSYLVANIA | FACW | ANEF |
| Populus grandidentata | ASPEN, BIG-TOOTH | FACU | NT |
| Populus tremula | ASPEN, QUAKING | FACU | IT |
| Potentilla simplex | CINQUEFOIL, OLD FIELD | FACU | PNF |

| Scientific Name | Common Name | MA Ind | Habit |
|---|---|---|---|
| Prunus serotina | CHERRY, BLACK | FACU | NT |
| Pteridium aquilinum | FERN, BRACKEN | FACU | PNF3 |
| Pyrus malus | APPLE | NL | IT |
| Quercus alba | OAK, NORTHERN WHITE | FACU- | NT |
| Quercus palustris | OAK, PIN | FACW | NT |
| Quercus rubra | OAK, NORTHERN RED | FACU | NT |
| Rhamnus cathartica | BUCKTHORN, COMMON OR ALDERLEAF | UPL | IT |
| Rhexia virginica | MEADOW-BEAUTY OR HANSOME-HARRY | OBL | PNF |
| Robinia pseudoacacia | LOCUST, BLACK | FACU | NT |
| Rosa multiflora | ROSE, MULTIFLORA OR RAMBLER | FACU | IS |
| Rudbeckia hirta | SUSAN, BLACK-EYED | FACU | BPNF |
| Rubus allegheniensis | BLACKBERRY, ALLEGHENY | FACU | NS |
| Rubus alumnus | BLACKBERRY, OLD FEILD | FACU | NS |
| Rubus flagellaris | DEWBERRY, WHIPLASH | FACU | NS |
| Rubus hispidus | DEWBERRY, BRISTLY | FACW | NS |
| Rubus semisetosus | BLACKBERRY, NEW ENGLAND | FAC | NS |
| Rumex crispus | DOCK, CURLY | FAC | PIF |
| Salix bebbiana | WILLOW, BEBB OR GREY | FACW | NS |
| Salix daphnoides | WILLOW, VIOLET | FAC | IT |
| Salix discolor | WILLOW, PUSSY | FACW | NS |
| Salix nigra | WILLOW, BLACK | OBL | NT |
| Sambucus nigra | ELDER, BLACK | FACW | NS |
| Saxifraga virginiensis | SAXIFRAGE, VIRGINIA | FAC | PNF |
| Smilax rotundifolia | GREENBRIER, COMMON OR HORSE | FAC | NWV |
| Solanum dulcamara | NIGHTSHADE, CLIMBING | FAC | PIF |
| Solidago altissima | GOLDENROD, TALL | FACU | PNF |
| Solidago canadensis | GOLDEN-ROD, CANADIAN | FACU | PNF |
| Solidago gigantea | GOLDEN-ROD, GIANT OR LATE | FACW | PNF |
| Solidago rugosa | GOLDEN-ROD, WRINKLED-LEAF | FAC | PNF |
| Sparganium americanum | BURREED, AMERICAN | OBL | PNEF |
| Spiraea alba | MEADOW-SWEET, WHITE | FACW | NS |
| Symphyotrichum ericoides | ASTER, WHITE HEATH AMERICAN | FACU | PNF |
| Symphyotrichum laevis | ASTER, SMOOTH BLUE | NL | PNF |
| Taraxacum officinale | DANDELION, COMMON | FACU | PIF |
| Toxicodendron radicans | IVY, EASTERN POISON | FAC | NWVS |
| Trientalis borealis | STARFLOWER, MAYSTAR OR AMERICAN | FAC | PNF |
| Trifolium pratense | CLOVER, RED | FACU | BPIF |
| Trifolium repens | CLOVER, WHITE | FACU | PIF |

| Scientific Name | Common Name | MA Ind | Habit |
|---|---|---|---|
| Ulmus americana | ELM, AMERICAN | FACW | NT |
| Ulmus rubra | ELM, SLIPPERY | FAC | NT |
| Urtica dioica | NETTLE, STINGING | FAC | PIF |
| Vaccinium corymbosum | BLUEBERRY, HIGHBUSH | FACW | NS |
| Verbascum thapsus | MULLEIN, COMMON OR GREAT | UPL | F |
| Viburnum dentatum | ARROW-WOOD, SOUTHERN | FAC | NTS |
| Viburnam lentago | NANNY-BERRY OR WILD RASIN | FAC | NTS |
| Viola septentrionalis | VIOLET, NORTHERN WOODLAND | FACU | PNF |
| Viola papilionacea | VIOLET, COMMON | FAC | PNF |
| Vitis labrusca | GRAPE, FOX | FACU | NWV |
| Vitis riparia | GRAPE, RIVER-BANK | FAC | NWV |

# Attachment 2

# DEP Bordering Vegetated Wetland Delineation Field Data Forms

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: A-4, Wet

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 5.006 N Long: -72 36.704 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Partial FEW*

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

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

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

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

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** Yes X No _____ |
| Hydric Soil Present? | Yes X | No _____ | |
| Wetland Hydrology Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland A (northeastern lobe) |

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland. The northwestern corner of this wetland appears to be in the edge of the cut area were some shrubs and herbs were cut. The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

The majority of the soils in Wetland A are spodosols with a 2.5 to 4.5 inch ("B2" Horizon) that is 10YR 6/2 to 10YR 6/3 with mottles and depletions as indicated in the "Soil" section below. Hydrophyllic vegetation was observed to be dominant within Wetland A and hydric soils were present. It is likely that this wetland has a relatively short hydroperiod after large precepitiation events as the spodosol horizon slowly infiltrates water. The soils in the wetland and surrounding floodplain were similar minus the spodosol horizon in the wetland.

**VEGETATION** – Use scientific names of plants.

Sampling Point: A-4, Wet

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Red Maple (Acer rubrum) | 63 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 63% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Sensitive Fern (Onoclea sensibilis) | 63 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 63% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Eastern Poison Ivy (Toxicodendron radicans) | 3 | No | FAC |
| 2. Virginia Creeper (Parthenocissus quinquefolia) | 38 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| | 41% | = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 126 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | 63 | x 2 = | 126.00 |
| FAC species | 63 | x 3 = | 189.00 |
| FACU species | 38 | x 4 = | 152.00 |
| UPL species | | x 5 = | |
| Column Totals: | 164 | (A) | 467 (B) |

Prevalence Index = B/A = 2.85

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

The northwestern portion of Wetland A is mostly a mix of FACW, FAC, FACU and UPL plant species.

**SOIL**

Sampling Point: A-4, Wet

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Redox Features Type[1] | Redox Features Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 4/1 | 100 | None | | | M | FSL* | "B1" Horizon |
| 3-7 | 10YR 6/2 | 55 | 10YR 6/6 | 35 | C | M | FSL | "B2" Horizon |
| 3-7 | 10YR 6/2 | 55 | 10YR 5/1 | 10 | D | M | FSL | "B2" Horizon |
| 7-21 | 10YR 6/8 | 100 | None | | | M | FSL | "B3" Horizon |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: Spodosol

Depth (inches): 4.5

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B2" Horizon was 10YR 6/2 with 10YR 6/8 mottles (35+/-%) and 10YR 5/1 (10 +/-%) depletions. The soils are highly disturbed and missing "O" and "A" Horizons are missing in most areas. There are some areas of a 10YR 2/2 FSL "A" Horizon. The other closest surface soils to an "A" or "O" layer are a mineral soil of 10YR 4/1 FSL with an approximately 30% silt content. The delineated wetlands contained a spodosol that occurred approximately 3 to 4 in. below the soil surface and was approximately 2.5 to 4.5 in. thick. The soil below the hydric layer was typically a "B" Horizon of 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: A-4, Up

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 5.006 N Long: -72 36.704 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Not applicable

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland.The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: A-4, Up

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Quaking Aspen (Populus tremula) | 63 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 63% = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 15 ft. radius) | | | |
| 1. Multiflora Rose (Rosa rugosa) | 3 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 3% = Total Cover | | |
| **Herb Stratum** (Plot size: 5 ft. radius) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 0% = Total Cover | | |
| **Woody Vine Stratum** (Plot size: 30 ft. radius) | | | |
| 1. Eastern Poison Ivy (Toxicodendron radicans) | 3 | No | FAC |
| 2. Virginia Creeper (Parthenocissus quinquefolia) | 63 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| | 66% = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 126 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | | x 2 = | 126.00 |
| FAC species | | x 3 = | 189.00 |
| FACU species | 129 | x 4 = | 152.00 |
| UPL species | | x 5 = | |
| Column Totals: | 129 (A) | | 516 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

The northwestern portion of Wetland A is mostly a mix of FACW, FAC, FACU and UPL plant species.

**SOIL**

Sampling Point: A-4, Up

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 4/1 | 100 | None | | | M | FSL* | "B1" Horizon |
| 3-7 | 10YR 6/2 | 55 | 10YR 6/6 | 35 | C | M | FSL | "B2" Horizon |
| 3-7 | 10YR 6/2 | 55 | 10YR 5/1 | 10 | D | M | FSL | "B2" Horizon |
| 7-21 | 10YR 6/8 | 100 | None | | | M | FSL | "B3" Horizon |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: None

Depth (inches): ___

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B" Horizon soils were mostly 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: A-62, Wet

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 5.006 N Long: -72 36.704 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Partial FEW*

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland. The northwestern corner of this wetland appears to be in the edge of the cut area were some shrubs and herbs were cut. The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

The majority of the soils in Wetland A are spodosols with a 2.5 to 4.5 inch ("B2" Horizon) that is 10YR 6/2 to 10YR 6/3 with mottles and depletions as indicated in the "Soil" section below. Hydrophyllic vegetation was observed to be dominant within Wetland A and hydric soils were present. It is likely that this wetland has a relatively short hydroperiod after large precepitiation events as the spodosol horizon slowly infiltrates water. The soils in the wetland and surrounding floodplain were similar minus the spodosol horizon in the wetland.

**VEGETATION** – Use scientific names of plants.

Sampling Point: A-62, Wet

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Big-Tooth Aspen (Populus grandidentata) | 20.5 | Yes | FACU |
| 2. Red Maple (Acer rubrum) | 63 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 83.5% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Sensitive Fern (Onoclea sensibilis) | 38 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 38% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 0.0% | = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 121.5 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | 38 | x 2 = | 76.00 |
| FAC species | 63 | x 3 = | 189.00 |
| FACU species | 20.5 | x 4 = | 82.00 |
| UPL species | | x 5 = | |
| Column Totals: | 121.5 (A) | | 347 (B) |

Prevalence Index = B/A = 2.86

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

**SOIL**

Sampling Point: A-62, Wet

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | None | | | M | FSL* | "A" Horizon |
| 2-7 | 10YR 6/2 | 55 | 7.5YR 4/6 | 35 | C | M | FSL | "B1" Horizon |
| 7-21 | 10YR 6/6 | 100 | | | | M | FSL | "B2" Horizon |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: Spodosol

Depth (inches): 4.5

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B2" Horizon was 10YR 6/2 with 10YR 6/8 mottles (35+/-%) and 10YR 5/1 (10 +/-%) depletions. The soils are highly disturbed and missing "O" and "A" Horizons are missing in most areas. There are some areas of a 10YR 2/2 FSL "A" Horizon. The other closest surface soils to an "A" or "O" layer are a mineral soil of 10YR 4/1 FSL with an approximately 30% silt content. The delineated wetlands contained a spodosol that occurred approximately 3 to 4 in. below the soil surface and was approximately 2.5 to 4.5 in. thick. The soil below the hydric layer was typically a "B" Horizon of 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: A-62, Up

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 4.998 N Long: -72 36.636 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Not applicable

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland.The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: A-62, Up

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Red Maple (Acer rubrum) | 20.5 | Yes | FACU |
| 2. Quaking Aspen (Populus tremula) | 63 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 83.5% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Sensitive Fern (Onoclea ordiculata) | 10.5 | Yes | FACW |
| 2. Oriental Bittersweet (Celastrus orbiculata) | 10.5 | Yes | UPL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 21% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Virginia Creeper (Parthenocissus quinquefolia) | 10.5 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10.5% | = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 126 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | | x 2 = | 126.00 |
| FAC species | 31 | x 3 = | 189.00 |
| FACU species | 74 | x 4 = | 152.00 |
| UPL species | | x 5 = | |
| Column Totals: | 105 (A) | | 387 (B) |

Prevalence Index = B/A = 3.70

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

**SOIL**

Sampling Point: A-62, Up

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Redox Features Type[1] | Redox Features Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | None | | | M | FSL* | "A" Horizon |
| 2-20 | 10YR 6/6 | 100 | None | | | M | FSL | "B" Horizon |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: None

Depth (inches): _____

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B" Horizon soils were mostly 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: B-4, Wet

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 4.981 N Long: -72 36.651 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: FEW*

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* The area is listed as a NWI wetland identified as a Freshwater Emergent Wetland. The northwestern corner of this wetland appears to be in the edge of the cut area were some shrubs and herbs were cut. The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

The majority of the soils in Wetland A are spodosols with a 2.5 to 4.5 inch ("B2" Horizon) that is 10YR 6/2 to 10YR 6/3 with mottles and depletions as indicated in the "Soil" section below. Hydrophyllic vegetation was observed to be dominant within Wetland A and hydric soils were present. It is likely that this wetland has a relatively short hydroperiod after large precepitiation events as the spodosol horizon slowly infiltrates water. The soils in the wetland and surrounding floodplain were similar minus the spodosol horizon in the wetland.

**VEGETATION** – Use scientific names of plants. Sampling Point: B-4, Wet

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Apple (Pyrus malus) | 3.0 | Yes | FAC |
| 2. American Elm (Ulmus americana) | 38 | Yes | FAC |
| 3. Red Maple (Acer rubrum) | 38 | Yes | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 79% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Oriental Bittersweet (Celastrus orbiculata) | 3 | Yes | UPL |
| 2. Sensitive Fern (Onoclea sensibilis) | 63 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 66% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Eastern Poison Ivy (Toxicodendron radicans) | 3 | No | FAC |
| 2. Virginia Creeper (Parthenocissus quinquefolia) | 38 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| | 41% | = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 126 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | 63 | x 2 = | 126 |
| FAC species | 76 | x 3 = | 228 |
| FACU species | | x 4 = | |
| UPL species | | x 5 = | |
| Column Totals: | 139 (A) | | 354 (B) |

Prevalence Index = B/A = 2.55

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

**SOIL**

Sampling Point: B-4, Wet

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 4/1 | 100 | None | | | M | FSL* | "B1" Horizon |
| 2-6 | 10YR 6/2 | 55 | 10YR 6/6 | 35 | C | M | FSL | "B2" Horizon |
| 6-21 | 10YR 6/6 | 100 | | | | M | FSL | "B3" Horizon |

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

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: Spodosol

Depth (inches): 4

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B2" Horizon was 10YR 6/2 with 10YR 6/8 mottles (35+/-%) and 10YR 5/1 (10 +/-%) depletions. The soils are highly disturbed and missing "O" and "A" Horizons are missing in most areas. There are some areas of a 10YR 2/2 FSL "A" Horizon. The other closest surface soils to an "A" or "O" layer are a mineral soil of 10YR 4/1 FSL with an approximately 30% silt content. The delineated wetlands contained a spodosol that occurred approximately 3 to 4 in. below the soil surface and was approximately 2.5 to 4.5 in. thick. The soil below the hydric layer was typically a "B" Horizon of 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: B-4, Up

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 4.981 N Long: -72 36.651 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Not applicable

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland.The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: B-4, Up

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Pin Oak (Quercus palustris) | 3 | No | FAC |
| 2. Red Maple (Acer rubrum) | 38 | Yes | FAC |
| 3. Quaking Aspen (Populus tremula) | 38 | Yes | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 83.5% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Oriental Bittersweet (Celastrus orbiculata) | 63 | Yes | UPL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 63% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Virginia Creeper (Parthenocissus quinquefolia) | 10.5 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10.5% | = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 126 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | | x 2 = | 126.00 |
| FAC species | 31 | x 3 = | 189.00 |
| FACU species | 74 | x 4 = | 152.00 |
| UPL species | | x 5 = | |
| Column Totals: | 105 (A) | | 387 (B) |

Prevalence Index = B/A = 3.70

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

Please note, Oriental Bittersweet was included as an herb and not a woody vine as all plants were seedlings and not growing as a vine during our evaluation. We have listed this plant in the herbaceous layer on other data forms as it was also growing as an herb and not vine like during its early stages of life.

**SOIL**

Sampling Point: A-62, Up

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | None | | | M | FSL* | "A" Horizon |
| 2-21 | 10YR 6/8 | 100 | None | | | M | FSL | "B" Horizon |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

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

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: None

Depth (inches): ___

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B" Horizon soils were mostly 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: C-2, Wet

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 5.016 N Long: -72 36.727 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Partial FEW*

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland. The northwestern corner of this wetland appears to be in the edge of the cut area were some shrubs and herbs were cut. The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: C-2, Wet

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Red Maple (Acer rubrum) | 38 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 38% = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 15 ft. radius) | | | |
| 1. Grey Willow (Salix bebbiana) | 20.5 | Yes | FACW |
| 2. Silky Dogwood (Cornus amomum) | 63 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 83.5% = Total Cover | | |
| **Herb Stratum** (Plot size: 5 ft. radius) | | | |
| 1. Sensitive Fern (Onoclea sensibilis) | 20.5 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 38% = Total Cover | | |
| **Woody Vine Stratum** (Plot size: 30 ft. radius) | | | |
| 1. Oriental Bittersweet (Celastrus orbiculata) | 10.5 | Yes | UPL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10.5% = Total Cover | | |

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | 104 | x 2 = | 208.00 |
| FAC species | 38 | x 3 = | 114.00 |
| FACU species | | x 4 = | 00.00 |
| UPL species | 11 | x 5 = | 52.50 |
| Column Totals: | 152.5 (A) | | 347.5 (B) |

Prevalence Index = B/A = 2.46

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

**SOIL**

Sampling Point: C-2, Wet

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | None | | | M | FSL* | "A" Horizon |
| 2-20 | 10YR 5/1 | 85 | 7.5YR 4/6 | 15 | C | M | FSL | "B" Horizon |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

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

Remarks: * FSL stands for Fine Sandy Loam soils. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: C-2, Up

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 5.016 N Long: -72 36.727 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Not applicable

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland.The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: C-2, Up

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Red Maple (Acer rubrum) | 38 | Yes | FAC |
| 2. Tree-of-Heaven (Ailanthus altissima) | 38 | Yes | UPL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 83.5% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Sensitive Fern (Onoclea ordiculata) | 10.5 | Yes | FACW |
| 2. Oriental Bittersweet (Celastrus orbiculata) | 20.5 | Yes | UPL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 31% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Oriental Bittersweet (Celastrus orbiculata) | 10.5 | Yes | UPL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10.5% | = 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | 11 | x 2 = | 21.00 |
| FAC species | 38 | x 3 = | 114.00 |
| FACU species | | x 4 = | 00.00 |
| UPL species | 69 | x 5 = | 345.00 |
| Column Totals: | 117.5 (A) | | 480 (B) |

Prevalence Index = B/A = 4.09

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

**SOIL**

Sampling Point: A-62, Up

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | None | | | M | FSL* | "A" Horizon |
| 2-20 | 7.5YR 4/6 | 100 | None | | | M | FSL | "B" Horizon |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |

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

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: None

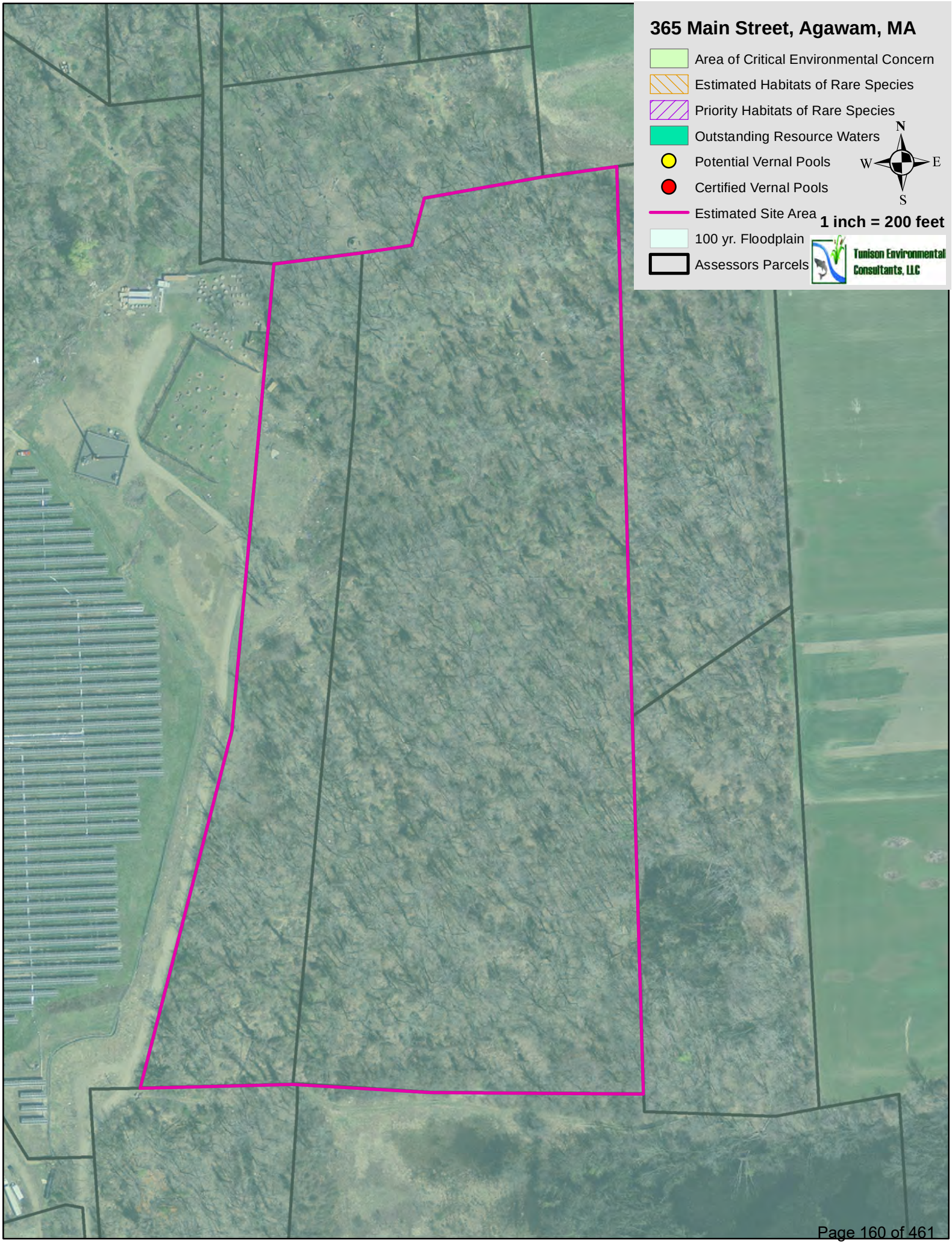
Depth (inches): ___

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

# Attachment 3

# Natural Heritage and Endangered Species Program Estimated Habitat of Rare Wildlife and Certified Vernal Pools, Springfield South Quadrangle Map


365 Main Street, Agawam, MA
Area of Critical Environmental Concern
Estimated Habitats of Rare Species
Priority Habitats of Rare Species
Outstanding Resource Waters
Potential Vernal Pools
Certified Vernal Pools
Estimated Site Area
100 yr. Floodplain
Assessors Parcels
N
W
E
S
1 inch = 200 feet
Tunison Environmental Consultants, LLC

# Attachment 4

# ACOE Wetland Determination Data Form – Northcentral and Northeast Region

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: A-4, Wet

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 5.006 N Long: -72 36.704 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Partial FEW*

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

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

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

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

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X No _____ | **Is the Sampled Area within a Wetland?** | **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X No _____ | If yes, optional Wetland Site ID: | Wetland A (northeastern lobe) |
| Wetland Hydrology Present? | Yes X No _____ | | |

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland. The northwestern corner of this wetland appears to be in the edge of the cut area were some shrubs and herbs were cut. The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

The majority of the soils in Wetland A are spodosols with a 2.5 to 4.5 inch ("B2" Horizon) that is 10YR 6/2 to 10YR 6/3 with mottles and depletions as indicated in the "Soil" section below. Hydrophyllic vegetation was observed to be dominant within Wetland A and hydric soils were present. It is likely that this wetland has a relatively short hydroperiod after large precepitiation events as the spodosol horizon slowly infiltrates water. The soils in the wetland and surrounding floodplain were similar minus the spodosol horizon in the wetland.

**VEGETATION** – Use scientific names of plants.

Sampling Point: A-4, Wet

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Red Maple (Acer rubrum) | 63 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 63% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Sensitive Fern (Onoclea sensibilis) | 63 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 63% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Eastern Poison Ivy (Toxicodendron radicans) | 3 | No | FAC |
| 2. Virginia Creeper (Parthenocissus quinquefolia) | 38 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| | 41% | = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 126 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | 63 | x 2 = | 126.00 |
| FAC species | 63 | x 3 = | 189.00 |
| FACU species | 38 | x 4 = | 152.00 |
| UPL species | | x 5 = | |
| Column Totals: | 164 (A) | | 467 (B) |

Prevalence Index = B/A = 2.85

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

The northwestern portion of Wetland A is mostly a mix of FACW, FAC, FACU and UPL plant species.

**SOIL**

Sampling Point: A-4, Wet

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Redox Features Type[1] | Redox Features Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 4/1 | 100 | None | | | M | FSL* | "B1" Horizon |
| 3-7 | 10YR 6/2 | 55 | 10YR 6/6 | 35 | C | M | FSL | "B2" Horizon |
| 3-7 | 10YR 6/2 | 55 | 10YR 5/1 | 10 | D | M | FSL | "B2" Horizon |
| 7-21 | 10YR 6/8 | 100 | None | | | M | FSL | "B3" Horizon |

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

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: Spodosol

Depth (inches): 4.5

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B2" Horizon was 10YR 6/2 with 10YR 6/8 mottles (35+/-%) and 10YR 5/1 (10 +/-%) depletions. The soils are highly disturbed and missing "O" and "A" Horizons are missing in most areas. There are some areas of a 10YR 2/2 FSL "A" Horizon. The other closest surface soils to an "A" or "O" layer are a mineral soil of 10YR 4/1 FSL with an approximately 30% silt content. The delineated wetlands contained a spodosol that occurred approximately 3 to 4 in. below the soil surface and was approximately 2.5 to 4.5 in. thick. The soil below the hydric layer was typically a "B" Horizon of 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: A-4, Up

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 5.006 N Long: -72 36.704 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Not applicable

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland.The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: A-4, Up

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Quaking Aspen (Populus tremula) | 63 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 63% = Total Cover | | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. Multiflora Rose (Rosa rugosa) | 3 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 3% = Total Cover | | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 0% = Total Cover | | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Eastern Poison Ivy (Toxicodendron radicans) | 3 | No | FAC |
| 2. Virginia Creeper (Parthenocissus quinquefolia) | 63 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| | 66% = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 126 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | | x 2 = | 126.00 |
| FAC species | | x 3 = | 189.00 |
| FACU species | 129 | x 4 = | 152.00 |
| UPL species | | x 5 = | |
| Column Totals: | 129 (A) | | 516 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

The northwestern portion of Wetland A is mostly a mix of FACW, FAC, FACU and UPL plant species.

**SOIL**

Sampling Point: A-4, Up

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 4/1 | 100 | None | | | M | FSL* | "B1" Horizon |
| 3-7 | 10YR 6/2 | 55 | 10YR 6/6 | 35 | C | M | FSL | "B2" Horizon |
| 3-7 | 10YR 6/2 | 55 | 10YR 5/1 | 10 | D | M | FSL | "B2" Horizon |
| 7-21 | 10YR 6/8 | 100 | None | | | M | FSL | "B3" Horizon |

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

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: None

Depth (inches): ___

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B" Horizon soils were mostly 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: A-62, Wet

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 5.006 N Long: -72 36.704 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Partial FEW*

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland. The northwestern corner of this wetland appears to be in the edge of the cut area were some shrubs and herbs were cut. The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

The majority of the soils in Wetland A are spodosols with a 2.5 to 4.5 inch ("B2" Horizon) that is 10YR 6/2 to 10YR 6/3 with mottles and depletions as indicated in the "Soil" section below. Hydrophyllic vegetation was observed to be dominant within Wetland A and hydric soils were present. It is likely that this wetland has a relatively short hydroperiod after large precepitiation events as the spodosol horizon slowly infiltrates water. The soils in the wetland and surrounding floodplain were similar minus the spodosol horizon in the wetland.

**VEGETATION** – Use scientific names of plants.

Sampling Point: A-62, Wet

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Big-Tooth Aspen (Populus grandidentata) | 20.5 | Yes | FACU |
| 2. Red Maple (Acer rubrum) | 63 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 83.5% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Sensitive Fern (Onoclea sensibilis) | 38 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 38% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 0.0% | = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 121.5 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | 38 | x 2 = | 76.00 |
| FAC species | 63 | x 3 = | 189.00 |
| FACU species | 20.5 | x 4 = | 82.00 |
| UPL species | | x 5 = | |
| Column Totals: | 121.5 (A) | | 347 (B) |

Prevalence Index = B/A = 2.86

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

**SOIL**

Sampling Point: A-62, Wet

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | None | | | M | FSL* | "A" Horizon |
| 2-7 | 10YR 6/2 | 55 | 7.5YR 4/6 | 35 | C | M | FSL | "B1" Horizon |
| 7-21 | 10YR 6/6 | 100 | | | | M | FSL | "B2" Horizon |

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

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: Spodosol

Depth (inches): 4.5

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B2" Horizon was 10YR 6/2 with 10YR 6/8 mottles (35+/-%) and 10YR 5/1 (10 +/-%) depletions. The soils are highly disturbed and missing "O" and "A" Horizons are missing in most areas. There are some areas of a 10YR 2/2 FSL "A" Horizon. The other closest surface soils to an "A" or "O" layer are a mineral soil of 10YR 4/1 FSL with an approximately 30% silt content. The delineated wetlands contained a spodosol that occurred approximately 3 to 4 in. below the soil surface and was approximately 2.5 to 4.5 in. thick. The soil below the hydric layer was typically a "B" Horizon of 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: A-62, Up

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 4.998 N Long: -72 36.636 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Not applicable

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland.The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: A-62, Up

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Red Maple (Acer rubrum) | 20.5 | Yes | FACU |
| 2. Quaking Aspen (Populus tremula) | 63 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 83.5% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Sensitive Fern (Onoclea ordiculata) | 10.5 | Yes | FACW |
| 2. Oriental Bittersweet (Celastrus orbiculata) | 10.5 | Yes | UPL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 21% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Virginia Creeper (Parthenocissus quinquefolia) | 10.5 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10.5% | = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 126 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | | x 2 = | 126.00 |
| FAC species | 31 | x 3 = | 189.00 |
| FACU species | 74 | x 4 = | 152.00 |
| UPL species | | x 5 = | |
| Column Totals: | 105 (A) | | 387 (B) |

Prevalence Index = B/A = 3.70

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

**SOIL**

Sampling Point: A-62, Up

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

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Redox Features Type[1] | Redox Features Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | None | | | M | FSL* | "A" Horizon |
| 2-20 | 10YR 6/6 | 100 | None | | | M | FSL | "B" Horizon |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: None

Depth (inches): ____

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B" Horizon soils were mostly 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: B-4, Wet

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 4.981 N Long: -72 36.651 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: FEW*

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* The area is listed as a NWI wetland identified as a Freshwater Emergent Wetland. The northwestern corner of this wetland appears to be in the edge of the cut area were some shrubs and herbs were cut. The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

The majority of the soils in Wetland A are spodosols with a 2.5 to 4.5 inch ("B2" Horizon) that is 10YR 6/2 to 10YR 6/3 with mottles and depletions as indicated in the "Soil" section below. Hydrophyllic vegetation was observed to be dominant within Wetland A and hydric soils were present. It is likely that this wetland has a relatively short hydroperiod after large precepitiation events as the spodosol horizon slowly infiltrates water. The soils in the wetland and surrounding floodplain were similar minus the spodosol horizon in the wetland.

**VEGETATION** – Use scientific names of plants.

Sampling Point: B-4, Wet

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Apple (Pyrus malus) | 3.0 | Yes | FAC |
| 2. American Elm (Ulmus americana) | 38 | Yes | FAC |
| 3. Red Maple (Acer rubrum) | 38 | Yes | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 79% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Oriental Bittersweet (Celastrus orbiculata) | 3 | Yes | UPL |
| 2. Sensitive Fern (Onoclea sensibilis) | 63 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 66% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Eastern Poison Ivy (Toxicodendron radicans) | 3 | No | FAC |
| 2. Virginia Creeper (Parthenocissus quinquefolia) | 38 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| | 41% | = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 126 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | 63 | x 2 = | 126 |
| FAC species | 76 | x 3 = | 228 |
| FACU species | | x 4 = | |
| UPL species | | x 5 = | |
| Column Totals: | 139 (A) | | 354 (B) |

Prevalence Index = B/A = 2.55

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

**SOIL** Sampling Point: B-4, Wet

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 4/1 | 100 | None | | | M | FSL* | "B1" Horizon |
| 2-6 | 10YR 6/2 | 55 | 10YR 6/6 | 35 | C | M | FSL | "B2" Horizon |
| 6-21 | 10YR 6/6 | 100 | | | | M | FSL | "B3" Horizon |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: Spodosol

Depth (inches): 4

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B2" Horizon was 10YR 6/2 with 10YR 6/8 mottles (35+/-%) and 10YR 5/1 (10 +/-%) depletions. The soils are highly disturbed and missing "O" and "A" Horizons are missing in most areas. There are some areas of a 10YR 2/2 FSL "A" Horizon. The other closest surface soils to an "A" or "O" layer are a mineral soil of 10YR 4/1 FSL with an approximately 30% silt content. The delineated wetlands contained a spodosol that occurred approximately 3 to 4 in. below the soil surface and was approximately 2.5 to 4.5 in. thick. The soil below the hydric layer was typically a "B" Horizon of 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: B-4, Up

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 4.981 N Long: -72 36.651 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Not applicable

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland.The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: B-4, Up

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Pin Oak (Quercus palustris) | 3 | No | FAC |
| 2. Red Maple (Acer rubrum) | 38 | Yes | FAC |
| 3. Quaking Aspen (Populus tremula) | 38 | Yes | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 83.5% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Oriental Bittersweet (Celastrus orbiculata) | 63 | Yes | UPL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 63% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Virginia Creeper (Parthenocissus quinquefolia) | 10.5 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10.5% | = 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 126 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | | x 2 = | 126.00 |
| FAC species | 31 | x 3 = | 189.00 |
| FACU species | 74 | x 4 = | 152.00 |
| UPL species | | x 5 = | |
| Column Totals: | 105 (A) | | 387 (B) |

Prevalence Index = B/A = 3.70

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

Please note, Oriental Bittersweet was included as an herb and not a woody vine as all plants were seedlings and not growing as a vine during our evaluation. We have listed this plant in the herbaceous layer on other data forms as it was also growing as an herb and not vine like during its early stages of life.

**SOIL**

Sampling Point: A-62, Up

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | None | | | M | FSL* | "A" Horizon |
| 2-21 | 10YR 6/8 | 100 | None | | | M | FSL | "B" Horizon |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: None

Depth (inches): ___

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The "B" Horizon soils were mostly 10YR 6/6 to 10YR 6/8. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: C-2, Wet

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 5.016 N Long: -72 36.727 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Partial FEW*

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland. The northwestern corner of this wetland appears to be in the edge of the cut area were some shrubs and herbs were cut. The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: C-2, Wet

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Red Maple (Acer rubrum) | 38 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 38% = Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 15 ft. radius) | | | |
| 1. Grey Willow (Salix bebbiana) | 20.5 | Yes | FACW |
| 2. Silky Dogwood (Cornus amomum) | 63 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 83.5% = Total Cover | | |
| **Herb Stratum** (Plot size: 5 ft. radius) | | | |
| 1. Sensitive Fern (Onoclea sensibilis) | 20.5 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 38% = Total Cover | | |
| **Woody Vine Stratum** (Plot size: 30 ft. radius) | | | |
| 1. Oriental Bittersweet (Celastrus orbiculata) | 10.5 | Yes | UPL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10.5% = Total Cover | | |

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | 104 | x 2 = | 208.00 |
| FAC species | 38 | x 3 = | 114.00 |
| FACU species | | x 4 = | 00.00 |
| UPL species | 11 | x 5 = | 52.50 |
| Column Totals: | 152.5 (A) | | 347.5 (B) |

Prevalence Index = B/A = 2.46

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

**SOIL**

Sampling Point: C-2, Wet

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | None | | | M | FSL* | "A" Horizon |
| 2-20 | 10YR 5/1 | 85 | 7.5YR 4/6 | 15 | C | M | FSL | "B" Horizon |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

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

Remarks: * FSL stands for Fine Sandy Loam soils. The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 365 Main Street City/County: Agawam Sampling Date: 8/23/23

Applicant/Owner: Joseph O'Malley State: MA Sampling Point: C-2, Up

Investigator(s): Garrett M. Tunison Section, Township, Range: Agawam

Landform (hillslope, terrace, etc.): Gental slope 0-3% Local relief (concave, convex, none): concaved Slope (%): 0-3%

Subregion (LRR or MLRA): _____ Lat: 42 5.016 N Long: -72 36.727 W Datum: NAD83

Soil Map Unit Name: Hadley fine sandy loam, 0 to 3 percent slopes NWI classification: Not applicable

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

* A portion of the site contains an NWI wetland identified as a Freshwater Emergent Wetland.The site has previously been disturbed for agriculture and the western and northern portions of the site have been used as a dump and a paintball and airsoft playing field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

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

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

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: C-2, Up

| Tree Stratum (Plot size: 30 ft. radius) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Red Maple (Acer rubrum) | 38 | Yes | FAC |
| 2. Tree-of-Heaven (Ailanthus altissima) | 38 | Yes | UPL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 83.5% | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15 ft. radius) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 0.0% | = Total Cover | |

| Herb Stratum (Plot size: 5 ft. radius) | | | |
|---|---|---|---|
| 1. Sensitive Fern (Onoclea ordiculata) | 10.5 | Yes | FACW |
| 2. Oriental Bittersweet (Celastrus orbiculata) | 20.5 | Yes | UPL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 31% | = Total Cover | |

| Woody Vine Stratum (Plot size: 30 ft. radius) | | | |
|---|---|---|---|
| 1. Oriental Bittersweet (Celastrus orbiculata) | 10.5 | Yes | UPL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10.5% | = 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: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | 11 | x 2 = | 21.00 |
| FAC species | 38 | x 3 = | 114.00 |
| FACU species | | x 4 = | 00.00 |
| UPL species | 69 | x 5 = | 345.00 |
| Column Totals: | 117.5 (A) | | 480 (B) |

Prevalence Index = B/A = 4.09

**Hydrophytic Vegetation Indicators:**

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

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

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

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

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

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

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

**SOIL**

Sampling Point: A-62, Up

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

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/1 | 100 | None | | | M | FSL* | "A" Horizon |
| 2-20 | 7.5YR 4/6 | 100 | None | | | M | FSL | "B" Horizon |
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[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: None

Depth (inches): _____

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

Remarks: * FSL stands for Fine Sandy Loam soils. ** The soils were classified as "fine sandy loam" but contained approximately 30% to 35% silt.

# Attachment 5

# NRCS Soil Report

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 Hampden County, Massachusetts, Central Part




March 3, 2024

# 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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# Contents

**Preface**.....2
**How Soil Surveys Are Made**.....5
**Soil Map**.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....12
Map Unit Descriptions.....12
Hampden County, Massachusetts, Central Part.....14
8A—Limerick silt loam, 0 to 3 percent slopes, frequently flooded.....14
95A—Podunk fine sandy loam, 0 to 3 percent slopes, occasionally flooded.....15
96A—Hadley very fine sandy loam, 0 to 3 percent slopes.....16
98A—Winooski silt loam, 0 to 3 percent slopes, occasionally flooded.....17
602—Urban land.....19
718A—Saco Variant silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded.....19
**References**.....21

# 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

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.

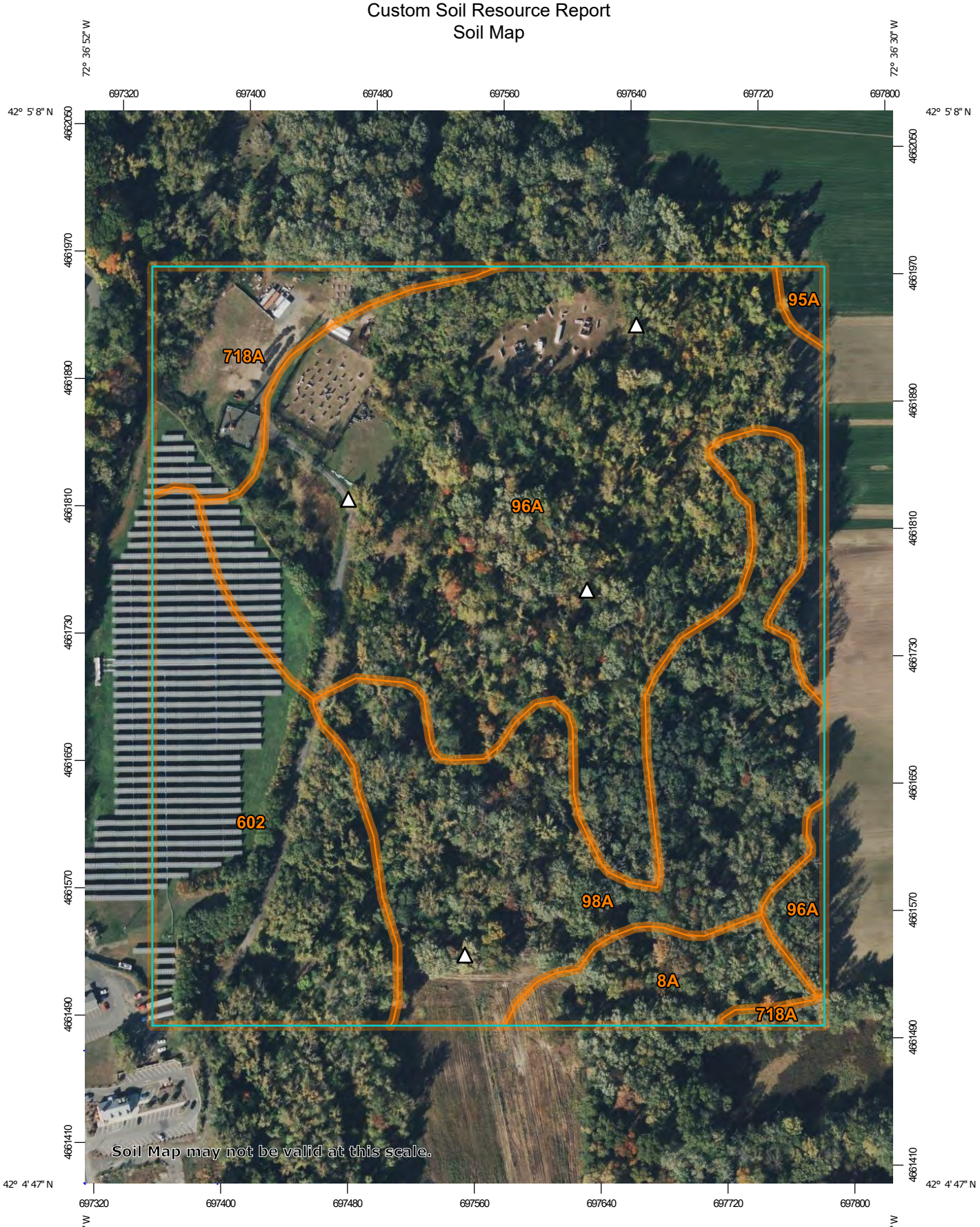
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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

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.




Map Scale: 1:3,280 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

## 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 1:15,800.

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: Hampden County, Massachusetts, Central Part
Survey Area Data: Version 17, Sep 10, 2023

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

Date(s) aerial images were photographed: Oct 15, 2020—Oct 31, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## MAP LEGEND

## MAP INFORMATION

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 |
|---|---|---|---|
| 8A | Limerick silt loam, 0 to 3 percent slopes, frequently flooded | 2.2 | 4.3% |
| 95A | Podunk fine sandy loam, 0 to 3 percent slopes, occasionally flooded | 0.3 | 0.6% |
| 96A | Hadley very fine sandy loam, 0 to 3 percent slopes | 23.3 | 46.4% |
| 98A | Winooski silt loam, 0 to 3 percent slopes, occasionally flooded | 12.0 | 23.9% |
| 602 | Urban land | 8.8 | 17.5% |
| 718A | Saco Variant silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded | 3.7 | 7.3% |
| **Totals for Area of Interest** | | **50.1** | **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.

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.

# Hampden County, Massachusetts, Central Part

## 8A—Limerick silt loam, 0 to 3 percent slopes, frequently flooded

### Map Unit Setting

*National map unit symbol:* 2zvdd
*Elevation:* 50 to 500 feet
*Mean annual precipitation:* 32 to 50 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 140 to 240 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Limerick and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Limerick

#### Setting

*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Coarse-silty alluvium

#### Typical profile

*H1 - 0 to 12 inches:* silt loam
*H2 - 12 to 24 inches:* silt loam
*H3 - 24 to 60 inches:* stratified very fine sand to very fine sandy loam to silt

#### Properties and qualities

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)
*Depth to water table:* About 6 to 10 inches
*Frequency of flooding:* Frequent
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Very high (about 13.4 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* B/D
*Ecological site:* F144AY015NY - Wet Silty Low Floodplain
*Hydric soil rating:* Yes

### Minor Components

#### Winooski

*Percent of map unit:* 10 percent
*Landform:* Flood plains
*Landform position (two-dimensional):* Toeslope
*Down-slope shape:* Linear

*Across-slope shape:* Linear
*Hydric soil rating:* No

**Saco variant**

*Percent of map unit:* 5 percent
*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

## 95A—Podunk fine sandy loam, 0 to 3 percent slopes, occasionally flooded

**Map Unit Setting**

*National map unit symbol:* 2zvdf
*Elevation:* 10 to 2,000 feet
*Mean annual precipitation:* 32 to 50 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 140 to 240 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Podunk and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Podunk**

**Setting**

*Landform:* Flood plains
*Landform position (two-dimensional):* Toeslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Sandy alluvium

**Typical profile**

*H1 - 0 to 9 inches:* fine sandy loam
*H2 - 9 to 24 inches:* fine sandy loam
*H3 - 24 to 60 inches:* sandy loam

**Properties and qualities**

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 6.00 in/hr)
*Depth to water table:* About 18 to 36 inches
*Frequency of flooding:* Occasional
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2w
*Hydrologic Soil Group:* B
*Ecological site:* F144BY110ME - Broad Floodplain Riparian Complex
*Hydric soil rating:* No

**Minor Components**

**Rumney**

*Percent of map unit:* 10 percent
*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

**Saco variant**

*Percent of map unit:* 5 percent
*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

## 96A—Hadley very fine sandy loam, 0 to 3 percent slopes

**Map Unit Setting**

*National map unit symbol:* 99p7
*Elevation:* 50 to 100 feet
*Mean annual precipitation:* 32 to 50 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 140 to 240 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Hadley and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Hadley**

**Setting**

*Landform:* Flood plains
*Landform position (two-dimensional):* Toeslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Friable coarse-silty alluvium

**Typical profile**

*H1 - 0 to 12 inches:* very fine sandy loam
*H2 - 12 to 26 inches:* very fine sandy loam

*H3 - 26 to 66 inches:* very fine sand

**Properties and qualities**

*Slope:* 0 to 3 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 high to high (0.60 to 2.00 in/hr)
*Depth to water table:* About 39 to 67 inches
*Frequency of flooding:* Common
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 9.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 1
*Hydrologic Soil Group:* B
*Ecological site:* F145XY001MA - Silty High Floodplain
*Hydric soil rating:* No

**Minor Components**

**Winooski**

*Percent of map unit:* 10 percent
*Landform:* Flood plains
*Landform position (two-dimensional):* Toeslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

**Suncook**

*Percent of map unit:* 5 percent
*Landform:* Flood plains
*Landform position (two-dimensional):* Toeslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

## 98A—Winooski silt loam, 0 to 3 percent slopes, occasionally flooded

**Map Unit Setting**

*National map unit symbol:* 2zvdk
*Elevation:* 50 to 500 feet
*Mean annual precipitation:* 32 to 50 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 140 to 240 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Winooski and similar soils:* 80 percent

*Minor components:* 20 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Winooski

#### Setting

*Landform:* Flood plains
*Landform position (two-dimensional):* Toeslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Coarse-silty alluvium

#### Typical profile

*H1 - 0 to 12 inches:* silt loam
*H2 - 12 to 21 inches:* silt loam
*H3 - 21 to 60 inches:* stratified very fine sand to silt

#### Properties and qualities

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 6.00 in/hr)
*Depth to water table:* About 22 to 24 inches
*Frequency of flooding:* Occasional
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* High (about 10.4 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2w
*Hydrologic Soil Group:* B
*Ecological site:* F145XY002MA - Silty Low Floodplain
*Hydric soil rating:* No

### Minor Components

#### Limerick

*Percent of map unit:* 10 percent
*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

#### Hadley

*Percent of map unit:* 10 percent
*Landform:* Flood plains
*Landform position (two-dimensional):* Toeslope
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

## 602—Urban land

### Map Unit Setting

*National map unit symbol:* 99rq
*Frost-free period:* 150 to 195 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Urban land:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Urban Land

#### Setting

*Landform position (two-dimensional):* Toeslope

## 718A—Saco Variant silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded

### Map Unit Setting

*National map unit symbol:* 2zvdh
*Elevation:* 0 to 3,280 feet
*Mean annual precipitation:* 32 to 50 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 140 to 240 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Saco variant and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Saco Variant

#### Setting

*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Coarse-silty alluvium

#### Typical profile

*H1 - 0 to 10 inches:* silt loam
*H2 - 10 to 22 inches:* silt loam
*H3 - 22 to 60 inches:* silt loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)
*Depth to water table:* About 0 to 2 inches
*Frequency of flooding:* Frequent
*Frequency of ponding:* Frequent
*Available water supply, 0 to 60 inches:* Very high (about 13.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6w
*Hydrologic Soil Group:* B/D
*Ecological site:* F144AY016MA - Very Wet Low Floodplain
*Hydric soil rating:* Yes

**Minor Components**

**Swansea**

*Percent of map unit:* 10 percent
*Landform:* Bogs
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Hydric soil rating:* Yes

**Limerick**

*Percent of map unit:* 5 percent
*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

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# Attachment 6

# Wetland Plan

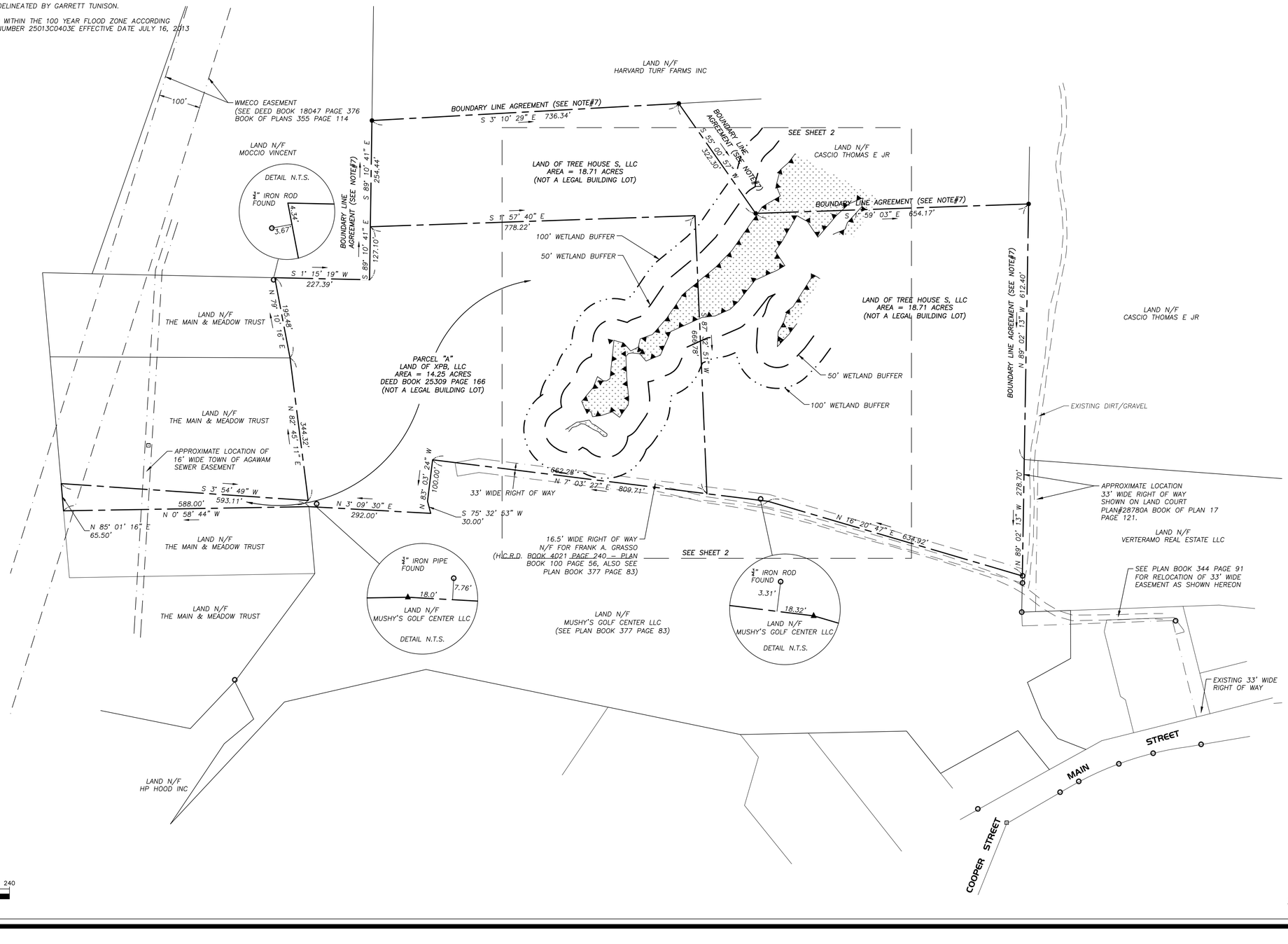
Titled: Wetland Filing Plan

Prepared by: R Levesque Associates Inc.

Dated: February 20, 2024

NOTES

1. THE RECORD OWNERS OF THE SUBJECT PARCEL ARE TREE HOUSE S, LLC. AND XPB, LLC SEE HAMPDEN COUNTY REGISTRY OF DEEDS BOOK 24430 PAGE 259 ALSO BOOK 25309 PAGE 166.
2. BOUNDARY SURVEY PREPARED BY THIS OFFICE AND RECORDED IN PLAN BOOK 399 PAGE 102.
3. THE SUBJECT PROPERTIES SHOWN HEREON MAY BE SUBJECT TO RIGHTS AND EASEMENTS AS CONTAINED IN THE VARIOUS DEEDS OF RECORD DESCRIBING SAID PROPERTIES. THE LOCATION AND EXTENT OF ANY SUCH RIGHTS AND EASEMENTS IS NOT THE SUBJECT OF THIS PLAN.
4. ADJACENT PROPERTY LINES AND ABUTTERS SHOWN HEREON ARE REFERENCED FROM THE TOWN OF AGAWAM GIS MAPPING.
7. BOUNDARY LINE AGREEMENT IS RECOMMENDED ALONG THESE LINE DUE TO LACK OF PHYSICAL EVIDENCE
8. THIS PLAN IS PREPARED FOR CONSERVATION FILING ONLY SHALL NOT BE USED FOR CONVEYANCE.
9. WETLAND RESOURCE AREAS WERE DELINEATED BY GARRETT TUNISON.
9. THE SUBJECT PARCEL IS LOCATED WITHIN THE 100 YEAR FLOOD ZONE ACCORDING TO FLOOD INSURANCE RATE MAP NUMBER 25013C0403E EFFECTIVE DATE JULY 16, 2013 100 YEAR FLOOD ELEVATION 60.0.




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SCALE: 1"=120'

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SHEET 1 OF 2

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RLA
R LEVESQUE ASSOCIATES INC
Landscape Architects
Civil Engineers · Land Surveyors
Environmental Consultants
ph: 413.568.0985 fax: 413.568.0986
40 School Street
Westfield, MA 01085
rlaland.com


# WETLAND FILING PLAN

## Northerly of Main Street Agawam, MA

**PREPARED FOR:**

Mr. Joseph O'Malley

Xtreme Paintball
351 Main Street
Agawam, MA 01001

**ISSUANCE DATE:** 02-20-2024

| REVISIONS: | DATE: |
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**DRAFTED BY:** t.a.


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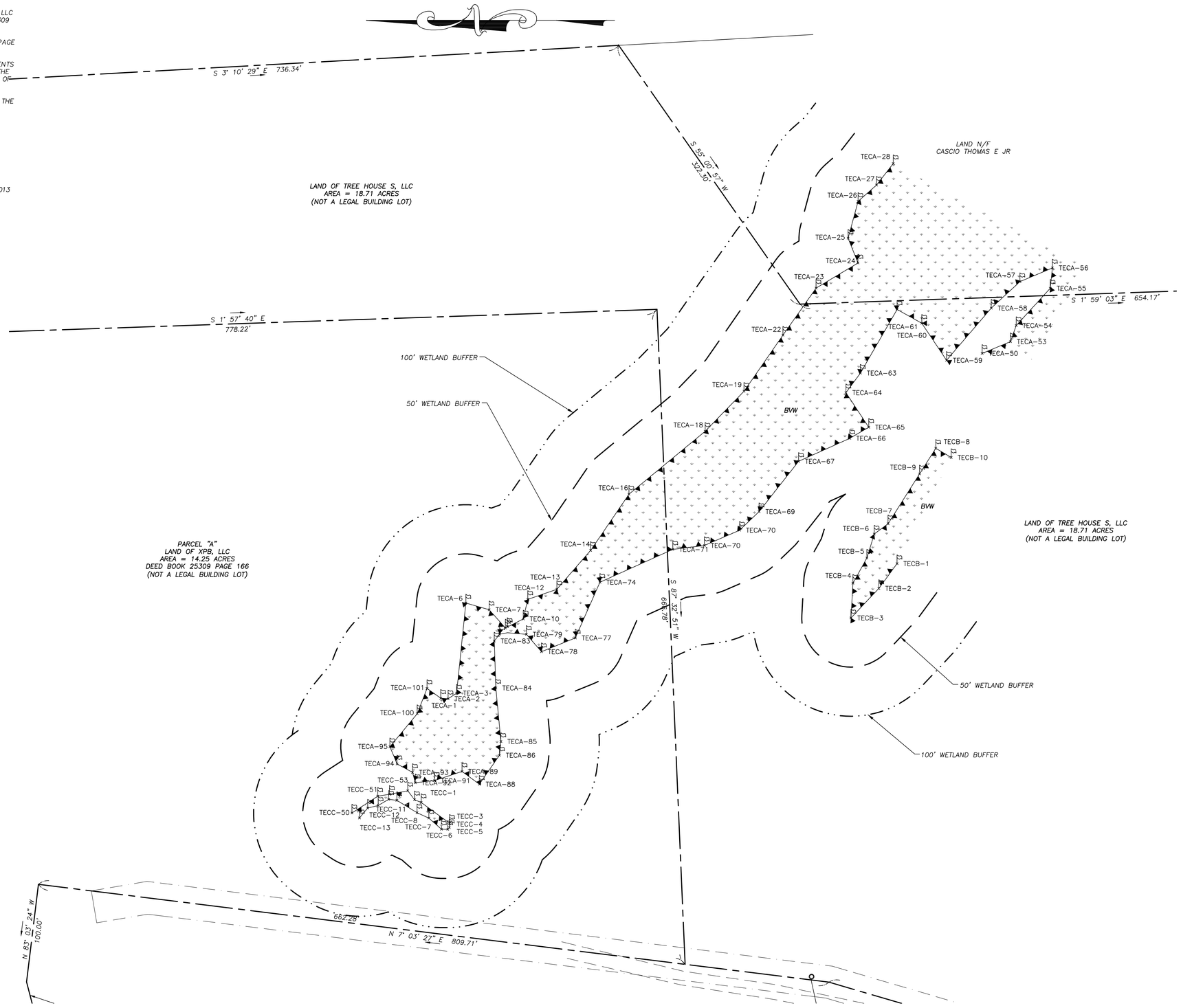

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SCALE: 1"=50'

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**SHEET 2 OF 2**

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Civil Engineers · Land Surveyors
Environmental Consultants
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40 School Street
Westfield, MA 01085
rlaland.com


# WETLAND FILING PLAN

## Northerly of Main Street
## Agawam, MA

**PREPARED FOR:**

Mr. Joseph O'Malley

Xtreme Paintball
351 Main Street
Agawam, MA 01001

**ISSUANCE DATE:** 02-20-2024

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# Attachment 4

# Restoration Planting Plan

Base Plan Titled:

Wetland Filing Plan – Draft (Sheet 2 of 2)

Base Plan Prepared by:

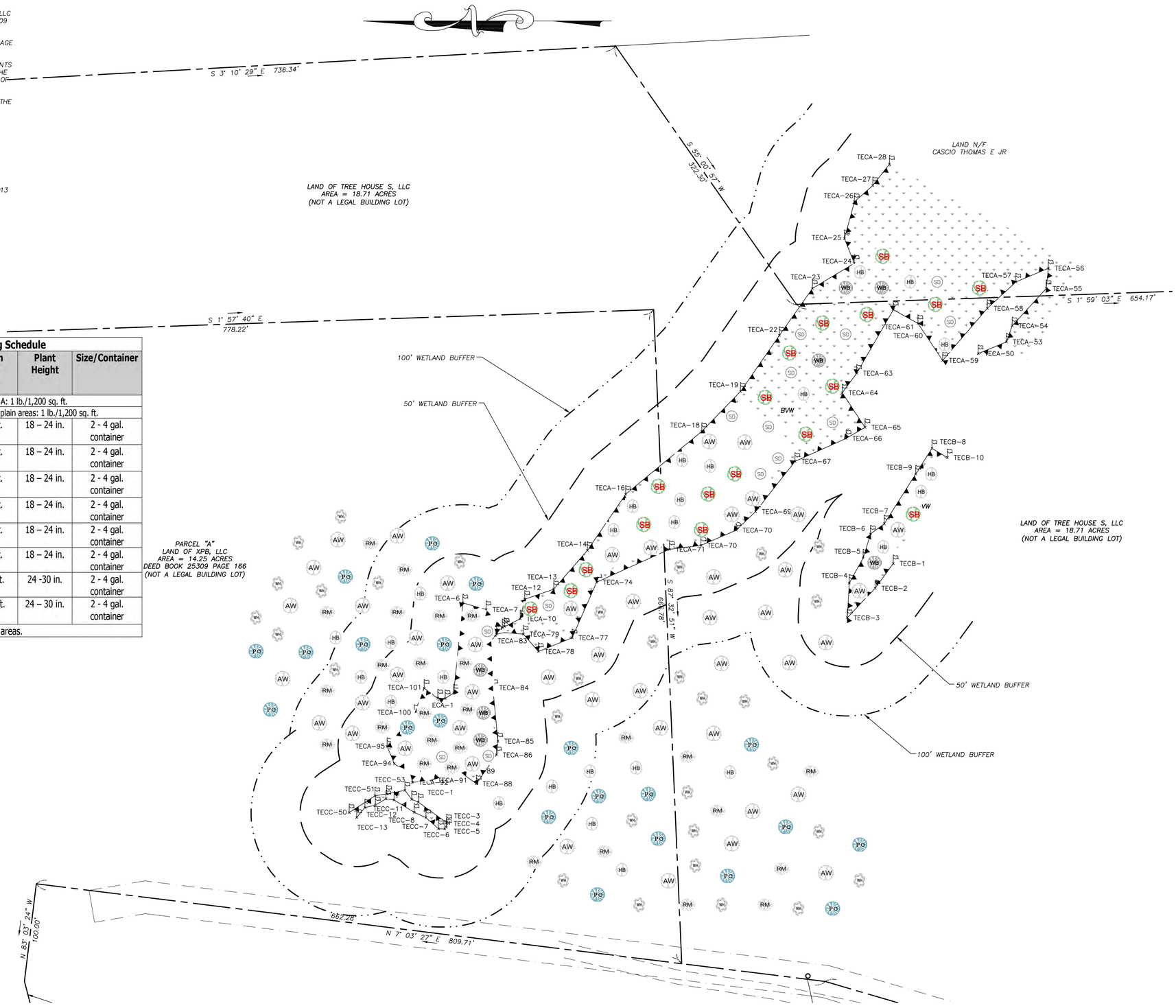
R Levesque Associates Inc.

NOTES

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**Wetland Restoration Area and Floodplain Planting Schedule**

| Plant Symbol | Plant Species | # of Plants | Plant on Center | Plant Height | Size/Container |
|---|---|---|---|---|---|
| New England Wetmix Seed Mix application rates to bare areas of Wetland A: 1 lb./1,200 sq. ft. | | | | | |
| New England Conservation/Wildlife Seed Mix application rates to bare 100-yr. Floodplain areas: 1 lb./1,200 sq. ft. | | | | | |
| SB | Northern Spicebush (*Lindera benzoin*) | 18 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| HB | Highbush Blueberry (*Vaccinium corybosum*) | 19 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| WH | Common Witch Hazel (*Hamamelis virginiana*) | 37 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| AW | Southern Arrowwood (*Viburnam dentatum*) | 46 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| SD | Silky Dogwood (*Cornus amomum*) | 13 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| WB | Common Winterberry (*Ilex verticillata*) | 7 | 8 – 10 ft. | 18 – 24 in. | 2 - 4 gal. container |
| PO | Pin Oaks (*Quercus palustris*) | 21 | 10 - 15 ft. | 24 -30 in. | 2 - 4 gal. container |
| RM | Red Maple (*Acer rubrum*) | 27 | 10 – 12 ft. | 24 – 30 in. | 2 - 4 gal. container |
| There are a total of 140 shrubs and 48 trees proposed to be planted in the restoration areas. | | | | | |




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SCALE: 1"=50'

# Restoration Planting Plan

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SHEET 2 OF 2


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WETLAND FILING PLAN

Northerly of Main Street
Agawam, MA

PREPARED FOR:

Mr. Joseph O'Malley
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| ISSUANCE DATE: | 02-20-2024 |
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SCALE: As Noted

RLA PROJ. NUMBER: 230818

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# Appendix B

# **Abutters' Notification**

## Notification to Abutters

By Hand Delivery, Certified Mail (return receipt requested), or Certificates of Mailing

*This is a notification required by law. You are receiving this notification because you have been identified as the owner of land abutting another parcel of land for which certain activities are proposed. Those activities require a permit under the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40).*

In accordance with the second paragraph of the Massachusetts Wetlands Protection Act, and 310 CMR 10.05(4)(a) of the Wetlands Regulations, you are hereby notified that:

A. A Notice of Intent was filed with the Milton Conservation Commission on May 6, 2026 seeking permission to remove, fill, dredge, or alter an area subject to protection under M.G.L. c. 131 §40. The following is a description of the proposed activity/activities:

| |
|---|
| An ecological restoration within a portion of Bordering Vegetated Wetland (BVW) under 310 CMR 10.55 to bank (310 CMR 10.54) of an intermittent stream and within the 100-year floodplain also known as Bordering Land Subject to Flooding (BLSF) under 310 CMR 10.57. |

B. The name of the applicant is: Joseph O'Malley.

C. The address of the land where the activity is proposed is: 365 Main Street, Agawam, MA.

D. Copies of the Notice of Intent may be examined or obtained at the office of the Agawam Conservation Commission, located at the Public Works and Municipal Annex, 1000 Suffield Street, Agawam, MA 01001. The regular business hours of the Commission are Monday through Friday, 7:30 a.m. to 4 p.m., and the Commission may be reached at (413) 726-9737.

E. Copies of the Notice of Intent may be obtained from the applicant or their representative by calling Tunison Environmental Consultants, LLC at (508) 737-7104. An administrative fee may be applied for providing copies of the NOI and plans.

F. Information regarding the date, time, and location of the public hearing regarding the Notice of Intent may be obtained from the Agawam Conservation Commission. Notice of the public hearing will be published at least five business days in advance, in the Agawam Advisor.

Notification provided pursuant to the above requirement does not automatically confer standing to the recipient to request Departmental Action for the underlying matter. See 310 CMR 10.05(7)(a)4.

# Appendix C

# Affidavit of Service

**Affidavit of Service**

**Under the Massachusetts Wetlands Protection Act**

(to be submitted to the Massachusetts Department of
Environmental Protection and the Conservation Commission
when filing a Notice of Intent (NOI)

I, **Garrett M. Tunison** hereby certify under the pains and penalties of perjury that on **May 67 2026** I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the **DEP Guide to Abutter Notification** dated April 8, 1994, in connection with the following matter:
**Notice of Intent (NOI) for invasive plant species eradication and wetland restoration at 365 Main Street in Agawam, Massachusetts.**

A Notice of Intent (NOI) filed under the Massachusetts Wetlands Protection Act by **Joseph O'Mallay** with the **Agawam** Conservation Commission on **May 7, 2025** for the property at 365 Main Street in Agawam, Massachusetts.

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

Garrett M. Tunison
Name

05/07/26
Date

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE
436 DWIGHT STREET, SPRINGFIELD, MA 01103 413-784-1100

MAURA T. HEALEY
Governor

KIMBERLEY DRISCOLL
Lieutenant Governor

REBECCA L. TEPPER
Secretary

BONNIE HEIPLE
Commissioner

DATE: May 6, 2026

Municipality AGAWAM
(city/town)

RE: NOTIFICATION OF WETLANDS PROTECTION ACT FILE NUMBER

The Department of Environmental Protection has received a Notice of Intent filed in accordance with the Wetlands Protection Act (M.G.L. c. 131, §40):

| | | | |
|---|---|---|---|
| Applicant: | HP HOOD, LLC | Owner: | HP HOOD, INC. |
| Address: | 6 KIMBALL LANE<br>LYNNFIELD, MA 01940 | Address: | 6 KIMBALL LANE<br>LYNNFIELD, MA, 01940 |
| LOCUS: | 233 MAIN STREET | | |

**This project has been assigned the following file # : WE 087-0713**

**A FILE NUMBER ONLY INDICATES THAT THE APPLICATION CONTAINS THE MINIMAL SUBMITTAL REQUIREMENTS AND IS ADMINISTRATIVELY COMPLETE - NOT THAT THE INFORMATION IN THE APPLICATION IS ADEQUATE FOR ISSUANCE OF AN ORDER OF CONDITIONS.**

Although a file # is being issued, please note the following:

[1] Where a Buffer Zone has already been developed, the Issuing Authority may consider the extent of existing development in its review of subsequent proposed work and, where prior development is extensive, may consider measures such as the restoration of natural vegetation adjacent to a Resource Area to protect the interest of M.G.L. c. 131, § 40.

[2] The commission should review Volume 2, Chapter 3 of the Stormwater Management Handbook, which is a checklist to be used when reviewing stormwater redevelopment projects.

If you have any questions regarding this letter, please contact: MARK STINSON @ (413)-961-9583

Cc: Agawam Conservation Commission, DPW Inspection Services 1000 Suffield Street, Agawam, MA, 01001
Owner: HP HOOD, INC., 6 KIMBALL LANE, LYNNFIELD, MA, 01940
Representative: R LEVESQUE ASSOCIATES, INC., 40 SCHOOL STREET, WESTFIELD, MA, 01085

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD# 1-866-539-7622 or 1-617-574-6868.
http://www.mass.gov/dep
Printed on Recycled Paper

HP HOOD, LLC
6 KIMBALL LANE
LYNNFIELD, MA 01940

DPW
1000 Suffield Street
Agawam, MA 01001
Phone: 413-821-0600
Fax: 413-821-0631

# Town of Agawam
## Department Of Public Works

MEMORANDUM

| | |
|---|---|
| To: | Conservation Commission |
| CC: | File |
| From: | Engineering Division |
| Date: | May 14, 2026 |
| Subject: | SP 603 – Proposed Building Addition – 233 Main Street |

Per your request, we have reviewed the revised Site Plans and Stormwater Drainage Report for the proposed building addition to be located at 233 Main Street; prepared by R. Levesque Associates and submitted on April 28, 2026. Based on our review, Engineering has the following comments:

1. There is a callout note on Sheet C-3 of the Site Plans indicating the existing catch basin on the eastern side of the project area will be replaced with a water quality unit. However, a note on Sheet C-5 states the catch basin will remain and a hood will be installed. The Developer will need to clarify if the catch basin is to remain or be replaced.

2. Engineering requests the Developer verify if the utility connections for the new building addition will be through the existing building.

3. Some of the existing contour lines appear to be missing from the northerly area of the project site on the Site Plans.

4. The Site Plans indicate there are two (2) new water quality units to be installed, but during the team meeting, it was suggested there may be only one (1) WQU proposed. Please clarify.

5. Based on the Hydraflow model, it appears that all the roof runoff from the proposed building addition will be collected through Pipe #12 (PCO-1 to PDMH-1). However, the drainage design on Sheet C-5 shows there will be connections from the downspouts to the subsurface piping network on the northern and eastern building corners, flowing into Pipe #9 and Pipe #4 respectively. The Developer shall clarify which pipes are intended to convey the roof runoff and revise the Hydraflow model accordingly.

6. The proposed 6-inch PVC pipe from the southern trench drain to PCB-1 is not modelled in the Hydraflow calculations.

7. Engineering has noted the following discrepancies in the Hydraflow calculations:
    a. Pipe #4 – The upstream ground elevation (downspout connection) is listed as 80.23 in Hydraflow. That elevation appears to be too high based on the proposed grades shown on Sheet C-5.
    b. Pipe #6 – The upstream invert elevation (PCB-1) is listed as 75.85 in Hydraflow, but is shown as 75.75 on the Site Plans.
    c. Pipe #8 – The upstream rim elevation (Exist. CB) is listed as 76.87 in Hydraflow, but is shown as 77.77 on the Site Plans.

# Town of Agawam
## Department Of Public Works

DPW
1000 Suffield Street
Agawam, MA 01001
Phone: 413-821-0600
Fax: 413-821-0631


d. Pipe #9 – The upstream ground elevation (downspout connection) is listed as 80.27 in Hydraflow. That elevation appears to be too high based on the proposed grades shown on Sheet C-5.
e. Pipe #12 – This pipe is modeled as a 12-inch pipe in Hydraflow, but is listed as an 8-inch pipe on the Site Plans. The upstream invert elevation (PCO-1) is listed as 74.81 in Hydraflow, but is shown as 74.75 on the Site Plans.

8. The abbreviation information for "PCO" is not noted on Sheet C-1.

9. The invert information for PCO – 2 has a typo for the "12" OUT". It reads as PCO – 2 but it should say PCO – 3 as shown on Sheet C-5.

10. Engineering request a detail for the PCO(s) to be shown on Sheet D-1.

11. Engineering in requesting clarification on whether parking will be allowed in the area that will not be restriped across from the southeast side of the proposed building addition.

12. Engineering and the Fire Department are requesting travel and turning movements that demonstrate fire truck access along southeast side of the proposed building addition, if parking is allowed (as per the team meeting).

Engineering reserves the right to make additional comments as new information is submitted. If you have any questions, please do not hesitate to contact this division.

Sincerely,

Michelle C. Chase, P.E.
Town Engineer

Michael F. Albro, P.E.
Assistant Town Engineer

Benjamin D. Ashley Jr., P.E.
Civil Engineer II

# Chapter 3

# Checklist for Redevelopment Projects

***Standard 7: A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.***

Redevelopment is defined to include

- Maintenance and improvement of existing roadways, including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving;
- Development rehabilitation, expansion and phased projects on previously developed sites, provided the redevelopment results in no net increase in impervious area; and
- Remedial projects specifically designed to provide improved stormwater management, such as projects to separate storm drains and sanitary sewers, and stormwater retrofit projects.

Components of redevelopment projects that include development of previously undeveloped sites do not meet this definition. The portion of the project located in a previously developed area must meet Standard 7, but project components within undeveloped areas must meet all the Standards.

MassDEP recognizes that site constraints often make it difficult to comply with all the Standards at a redevelopment site. These constraints are as follows:

**Lack of space**. Because of the presence of existing structures, on-site subsurface sewage disposal systems, stormwater best management practices, and water bodies and wetlands, and easements, the space available for the installation of additional stormwater BMPs may be quite limited. On many suites it may be difficult or impossible to use space-intensive BMPs such as wet detention basins.

**Soils**: The presence of bedrock or clay can limit the effectiveness of infiltration or detention BMPs. Often soils at redevelopment sites have been compacted by buildings and heavy traffic, impairing their ability to infiltrate stormwater into the ground.

**Underground utilities**. The presence of underground utilities including gas and water mains, sewer pipes and electric cable conduits can greatly reduce the amount of land available for BMPs.

This chapter provides specific guidance and checklists to ensure that the applicant has met his/her obligations under Standard 7. Because it may be difficult for a redevelopment project to comply with all the Stormwater Management Standards, Standard 7 provides that a redevelopment project is required to comply with the following Standards only "to the maximum extent practicable": Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing outfalls shall be brought into compliance with Standard 1 only to the maximum extent practicable.

As set forth in Standard 7, the phrase "to the maximum extent practicable" means that:

(1) Proponents of redevelopment projects have made all reasonable efforts to meet the requirements of Standards 2 and 3 and the pretreatment and structural stormwater best management practices requirements of Standards 4, 5, and 6 and to bring existing outfalls into compliance with Standard 1.

(2) They have made a complete evaluation of possible stormwater management measures, including environmentally sensitive site design that minimizes land disturbance and impervious surfaces, low impact development techniques and structural stormwater BMPs; and

(3) If not in full compliance with Standard 1 for existing outfalls, Standards 2 and 3 and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6, they are implementing the highest practicable level of stormwater management.

Generally, an alternative is practicable if it can be implemented within the site being redeveloped, taking into consideration cost, land area requirements, soils and other site constraints. However, offsite alternatives may also be practicable. Proponents must document the evaluation of practicable alternatives with sufficient information to support the conclusions of the analysis.

At the same time, stormwater runoff from redevelopment projects must be properly managed. To this end, Standard 7 provides that redevelopment projects shall comply with all other requirements of the Stormwater Management Standards, including, without limitation, the pollution prevention requirements of Standards 4, 5, and 6, the erosion and sedimentation control requirements of Standard 8, the operation and maintenance requirements of Standard 9, and the prohibition of illicit discharge set forth in Standard 10. Proponents must also improve existing conditions.

Proponents of redevelopment projects shall document their compliance with these requirements. To assist proponents and reviewers in determining whether a redevelopment project complies with Standard 7, MassDEP has prepared the following redevelopment checklist.

[*Proponents of MassHighway redevelopment projects and Conservation Commissions reviewing such projects may follow the guidelines for redevelopment provided in the MassHighway Stormwater Handbook for Highways and Bridges (May 2004 or latest version) in lieu of the guidance set forth in this chapter.*[1] *The MassHighway Stormwater Handbook was developed by the Massachusetts Highway Department and issued by joint correspondence of May 7, 2004 by MassHighway and MassDEP. It provides detailed guidance on the evaluation and implementation of stormwater management practices for MassHighway road and bridge redevelopment projects, including a methodology for screening and selecting Best Management Practices (BMPs). Proponents and reviewers of other public roadway redevelopment projects may find useful information in the MassHighway Stormwater Handbook.*]

[1] The MassHighway Handbook published in 2004 must be revised to make it consistent with this Handbook.

## *Redevelopment Checklist*

Existing Conditions

- On-site: For all redevelopment projects, proponents should document existing conditions, including a description of extent of impervious surfaces, soil types, existing land uses with higher potential pollutant loads, and current onsite stormwater management practices.
- Watershed: Proponents should determine whether the project is located in a watershed or subwatershed, where flooding, low streamflow or poor water quality is an issue.

The Project

Is the project a redevelopment project?

- Maintenance and improvement of existing roadways
- Development of rehabilitation, expansion or phased project on redeveloped site, or
- Remedial stormwater project

For non-roadway projects, is any portion of the project outside the definition of redevelopment?

- Development of previously undeveloped area
- Increase in impervious surface

If a component of the project is not a redevelopment project, the proponent shall use the checklist set forth below to document that at a minimum the proposed stormwater management system fully meets each Standard for that component. The proponent shall also document that the proposed stormwater management system meets the requirements of Standard 7 for the remainder of the project.

**The Stormwater Management Standards**

The redevelopment checklist reviews compliance with each of the Stormwater Management Standards in order.

Standard 1: (Untreated discharges)
***No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.***
Same rule applies for new developments and redevelopments.

Full compliance with Standard 1 is required for new outfalls.

- What BMPs are proposed to ensure that all new discharges associated with the discharge are adequately treated?
- What BMPs are proposed to ensure that no new discharges cause erosion in wetlands or waters of the Commonwealth?
- Will the proposed discharge comply with all applicable requirements of the Massachusetts Clean Waters Act and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00?

Existing outfalls shall be brought into compliance with Standard 1 to the maximum extent practicable.

- Are there any existing discharges associated with the redevelopment project for which new treatment could be provided?
- If so, the proponent shall specify the stormwater BMP retrofit measures that have been considered to ensure that the discharges are adequately treated and indicate the reasons for adopting or rejecting those measures. (See Section entitled "Retrofit of Existing BMPs".)
- What BMPs have been considered to prevent erosion from existing stormwater discharges?

Standard 2: (Peak rate control and flood prevention)

***Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for land subject to coastal storm flowage.***

Full compliance for any component that is not a redevelopment

Compliance to the Maximum Extent Practicable:

- Does the redevelopment design meet Standard 2, comparing post-development to pre-development conditions?
- If not, the applicant shall document an analysis of alternative approaches for meeting the Standard. (See Menu of Strategies to Reduce Runoff and Peak Flows and/or Increase Recharge Menu included at the end of this chapter.)

Improvement of existing conditions:

- Does the project reduce the volume and/or rate of runoff to less than current estimated conditions? Has the applicant considered all the alternatives for reducing the volume and/or rate of runoff from the site? (See Menu.)
- Is the project located within a watershed subject to damage by flooding during the 2-year or 10-year 24-hour storm event? If so, does the project design provide for attenuation of the 2-year and 10-year 24-hour storm event to less than current estimated conditions? Have measures been implemented to reduce the volume of runoff from the site resulting from the 2 year or 10 year 24 hour storm event? (See Menu.)
- Is the project located adjacent to a water body or watercourse subject to adverse impacts from flooding during the 100-year 24-hour storm event? If so, are portions of the site available to increase flood storage adjacent to existing Bordering Land Subject to Flooding (BLSF)?
- Have measures been implemented to attenuate peak rates of discharge during the 100-year 24-hour storm event to less than the peak rates under current estimated conditions? Have measures been implemented to reduce the volume of runoff from the site resulting from the 100-year 24-hour storm event? (See Menu.)

Standard 3: (Recharge to Ground water)

***Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures, including environmentally sensitive site design, low impact development techniques, best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusettss Stormwater Handbook.***

Full compliance for any component that is not a redevelopment

Compliance to the Maximum Extent Practicable:

- Does the redevelopment design meet Standard 3, comparing post-development to pre-development conditions?
- If not, the applicant shall document an analysis of alternative approaches for meeting the Standard?
- What soil types are present on the site? Is the site is comprised solely of C and D soils and bedrock at the land surface?
- Does the project include sites where recharge is proposed at or adjacent to an area classified as contaminated, sites where contamination has been capped in place, sites that have an Activity and Use Limitation (AUL) that precludes inducing runoff to the groundwater, pursuant to MGL Chapter 21E and the Massachusetts Contingency Plan 310 CMR 40.0000; sites that are the location of a solid waste landfill as defined in 310 CMR 19.000; or sites where groundwater from the recharge location flows directly toward a solid waste landfill or 21E site?[2]
- Is the stormwater runoff from a land use with a higher potential pollutant load?
- Is the discharge to the ground located within the Zone II or Interim Wellhead Protection Area of a public water supply?
- Does the site have an infiltration rate greater than 2.4 inches per hour?

Improvements to Existing Conditions:

- Does the project increase the required recharge volume over existing (developed) conditions? If so, can the project be redesigned to reduce the required recharge volume by decreasing impervious surfaces (make building higher, put parking under the building, narrower roads, sidewalks on only one side of street, etc.) or using low impact development techniques such as porous pavement?
- Is the project located within a basin or sub-basin that has been categorized as under high or medium stress by the Massachusetts Water Resources Commission, or where there is other evidence that there are rivers and streams experiencing low flow problems? If so, have measures been considered to replace the natural recharge lost as a result of the prior development? (See Menu.)
- Has the applicant evaluated measures for reducing site runoff? (See Menu.)

Standard 4: (80% TSS Removal)

***Stormwater management systems must be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This standard is met when:***

***a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan and thereafter are implemented and maintained;***

***b. Stormwater BMPs are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and***

***c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.***

Full compliance for any component that is not a redevelopment
Full compliance with the long-term pollution plan requirement for new developments and redevelopments.

- Has the proponent developed a long-term pollution plan that fully meets the requirements of Standard 4?
- Does the pollution prevention plan include the following source control measures?
    - Street sweeping

[2] A mounding analysis is needed if a site falls within this category. See Volume 3.

- Proper management of snow, salt, sand and other deicing chemicals
- Proper management of fertilizers, herbicides and pesticides
- Stabilization of existing eroding surfaces

Compliance to the Maximum Extent Practicable for the other requirements:

- Does the redevelopment design provide for treatment of all runoff from existing (as well as new) impervious areas to achieve 80% TSS removal? If 80% TSS removal is not achieved, has the stormwater management system been designed to remove TSS to the maximum extent practicable?
- Have the proposed stormwater BMPs been properly sized to capture the prescribed runoff volume?
  - One inch rule applies for discharge
    - within a Zone II or Interim Wellhead Protection Area,
    - near or to another critical area,
    - from a land use with a higher potential pollutant load
    - to the ground where the infiltration rate is greater than 2.4 inches per hour
- Has adequate pretreatment been proposed?
  - 44% TSS Removal Pretreatment Requirement applies if:
    - Stormwater runoff is from a land use with a higher potential pollutant load
    - Stormwater is discharged
      - To the ground within the Zone II or Interim Wellhead Protection Area of a Public Water Supply
      - To the ground with an infiltration rate greater than 2.4 inches per hour
      - Near or to an Outstanding Resource Water, Special Resource Water, Cold-Water Fishery, Shellfish Growing Area, or Bathing Beach.

- If the stormwater BMPs do not meet all the requirements set forth above, the applicant shall document an analysis of alternative approaches for meeting the these requirements. (See Section on Retrofitting Existing BMPs (the "Retrofit Section").

Improvements to Existing Conditions:

- Have measures been provided to achieve at least partial compliance with the TSS removal standard?
- Have any of the best management practices in the Retrofit Section been considered?
- Have any of the following pollution prevention measures been considered?
  - Reduction or elimination of winter sanding, where safe and prudent to do so
  - Tighter controls over the application of fertilizers, herbicides, and pesticides
  - Landscaping that reduces the need for fertilizer, herbicides and pesticides
  - High frequency sweeping of paved surfaces using vacuum sweepers
  - Improved catch basin cleaning
  - Waterfowl control programs
- Are there any discharges (new or existing) to impaired waters? If so, see TMDL section.

<u>Standard 5 (Higher Potential Pollutant Loads (HPPL)</u>

***For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot***

***be completely protected from exposure to rain, snow, snow melt and stormwater runoff, the proponent shall use the specific stormwater BMPs determined by the Department to be suitable for such use as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.***
Full compliance for any component that is not a redevelopment.
Full compliance with pollution prevention requirements for new developments and redevelopments.

Pollution Prevention

- Has the proponent considered any of the following operational source control measures?
    - Formation of a pollution prevention team,
    - Good housekeeping practices,
    - Preventive maintenance procedures,
    - Spill prevention and clean up,
    - Employee training, and
    - Regular inspection of pollutant sources.

- Has the proponent considered implementation of any of the following operational changes to reduce the quantity of pollutants on site?
    - Process changes,
    - Raw material changes,
    - Product changes, or
    - Recycling.

- Has the proponent considered making capital improvements to protect the land uses with higher potential pollutant loads from exposure to rain, snow, snow melt, and stormwater runoff?

    - Enclosing and/or covering pollutant sources (e.g. placing pollutant sources within a building or other enclosure, placing a roof over storage and working areas, placing tarps under pollutant source)

    - Installing a containment system with an emergency shutoff to contain spills?

    - Physically segregating the pollutant source to prevent run-on of uncontaminated stormwater?

Treatment

- If applicable, compliance with the treatment and pretreatment requirements of Standard 5 only to the Maximum Extent Practicable by directing the stormwater runoff from land uses with higher potential pollutant loads to appropriate stormwater BMPs?

    - Are the BMPs selected capable of removing the pollutants associated with the higher potential pollutant load land ("LUHPPL") use?

    - Is the land use likely to generate stormwater with high concentrations of oil and grease? If so has an oil grit separator, sand filter, filtering bioretention area or equivalent been proposed for pretreatment?

Improvement of Existing Conditions.

- If the redevelopment converts a site from a non-LUHPPL use to a LUHPPL use, the applicant shall document how the stormwater BMPs shall be modified or replaced to come into compliance with Standard 5.

- What specific measures have been considered to offset the anticipated impacts of land uses with higher potential pollutant loads?

- If the redevelopment proposal is a brownfield project, the applicant shall demonstrate how the stormwater management measures have been designed to prevent mobilization or remobilization of soil and groundwater contamination. (See Brownfield section)

Other Requirements

- Does the discharge comply with all applicable requirements of the Massachusetts Clean Waters Act, 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00?

Standard 6 (Critical Areas)

***Stormwater discharges to a Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or any other critical area require the use of the specific source control and pollution prevention measures and the specific stormwater best management practices determined by the Department to be suitable for managing discharges to such area, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters or Special Resource Waters shall be set back from the receiving water and receive the highest and best practical method of treatment. A "stormwater discharge," as defined in 314 CMR 3.04(2)(a)1. or (b), to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of the public water supply.***

Full compliance for component of project that is not a redevelopment
Full compliance with pollution prevention requirements for new developments and redevelopments.

If applicable, compliance to the Maximum Extent Practicable with the pretreatment and treatment requirements of Standard 6:

- Does the redevelopment project utilize the pretreatment, treatment and infiltration BMPs approved for discharges near or to critical areas?
- If the redevelopment project does not comply with Standard 6, the applicant shall document an analysis of alternative measures for meeting Standard 6. (See Section on Specific Redevelopment Projects.)

Improvements to Existing Conditions:

- Have measures to protect critical areas been considered, including additional pollution prevention measures and structural and non-structural BMPs?

Other Requirements

- Does the discharge comply with the Massachusetts Clean Waters Act, 314 CMR 3.00, 314 CMR 4.00, and 314 CMR 5.00?

Standard 8: (Erosion, Sediment Control)

***A plan to control construction-related impacts, including erosion sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan), must be developed and implemented***.

All redevelopment projects shall fully comply with Standard 8.

- Has the proponent submitted a construction period erosion, sedimentation and pollution prevention plan that meets the requirements of Standard 8?

Standard 9: (Operation and Maintenance)
***A long-term operation and maintenance plan must be developed and implemented to ensure that stormwater management systems function as designed***.
All redevelopment projects shall fully comply with Standard 9.

- Has the proponent submitted a long-term Operation and Maintenance plan that meets the requirements of Standard 9?

Standard 10 (Illicit Discharges)
***All illicit discharges to the stormwater management system are prohibited.***
All redevelopment projects shall fully comply with Standard 10.

- Are there any known or suspected illicit discharges to the stormwater management system at the redevelopment project site?
- Has an illicit connection detection program been implemented using visual screening, dye or smoke testing?
- Have an Illicit Discharge Compliance Statement and associated site map been submitted verifying that there are no illicit discharges to the stormwater management system at the site?

Improvements to Existing Conditions:

- Once all illicit discharges are removed, has the proponent implemented any measures to prevent additional illicit discharges?

**Figure 5-1**

**Menu of Strategies to Reduce Runoff or Peak Flows and/or Increase Recharge**

- Rehabilitate the soils
- Plant trees and other vegetation
- Install a green roof
- Maximize naturally vegetated areas
- Reduce impervious surfaces
- Disconnect roof runoff from direct discharge to the drainage system
- Disconnect other existing paved areas from direct discharge to the drainage system, allowing controlled flow over pervious areas or through BMPs providing at least partial recharge
- Install porous pavement and/or other recharge measures (where sustainable and maintainable for promoting infiltration)
- Apply LID techniques for runoff reduction
- Install additional structural BMPs that are appropriate for redevelopment sites including infiltration trenches, subsurface structures, oil-grit separators, proprietary BMPs
- Retrofit existing BMPs

### *Retrofitting Existing BMPs*

Many BMPs can be effectively retrofitted depending on site conditions and the water quantity or quality objectives trying to be achieved.[3] The objective of stormwater retrofitting is to remedy problems associated with, and improve water quality mitigation functions of, older, poorly designed, or poorly maintained stormwater management systems. Prior to the development of the stormwater standards, site drainage design did not require stormwater detention for controlling post-development peak flows. As a result, drainage, flooding, and erosion problems can be common in many older developed areas of the state. Furthermore, a majority of the dry detention basins throughout the state have been designed to control peak flows, without regard to water quality mitigation. Therefore, many existing dry detention basins provide only minimal water quality benefit. Incorporating stormwater retrofits into existing developed sites or into redevelopment projects can reduce the adverse impacts of uncontrolled stormwater runoff.

*Bioretention Area Retrofits* - can be used as a stormwater retrofit, by modifying existing landscaped areas, or if a parking lot is being resurfaced. In highly urban watersheds, they are one of the few practical retrofit options.

*Catch Basin Retrofits or Reconstruction* - Older catch basins without sumps can be replaced with catch basins having four foot-deep sumps. Sumps provide storage volume for coarse sediments, assuming that accumulated sediment is removed on a regular basis. Hooded outlets, which are covers over the catch basin outlets that extend below the standing water line, can also be used to trap litter and other floatable materials. Leaching catch basins can be installed adjacent to deep sump catch basins to achieve 80% TSS removal. Be aware, however, that many products are being touted as catch basin inserts, but the effectiveness of these devices can vary significantly.

*Dry Detention Basin Retrofits* - Traditional dry detention basins can be modified to become extended dry detention basins, wet basins, or constructed stormwater wetlands for enhanced pollutant removal. This is one of the most commonly and easily implemented retrofits, since it typically requires little or no additional land area, capitalizes on an existing facility for which there is already some resident acceptance of stormwater management, and involves minimal impacts to environmental resources (Claytor, Center for Watershed Protection, 2000).

There are numerous retrofit options that will enhance the removal of pollutants in detention basins:

- Excavate the basin bottom to create more permanent pool storage.
- Raise the basin embankment to obtain additional storage for extended detention.
- Modify the outfall structure to create a two-stage release to better control small storms while not significantly compromising flood control detention for large storms.
- Increase the flow path from inflow to outflow and eliminate short-circuiting by using baffles, earthen berms or micro-pond topography to increase residence time.
- Incorporate stilling basins at inlets and outlets.
- Regrade the basin bottom to create a wetland area near the basin outlet or revegetate parts of the basin bottom with wetland vegetation to enhance pollutant removal, reduce mowing, and improve aesthetics.
- Create a wetland shelf along the perimeter of a wet basin to improve shoreline stabilization, enhance pollutant filtering, and enhance aesthetic and habitat functions.
- Create a low maintenance “no-mow” wildflower ecosystem in the drier portions of the basin.

[3] Additional information on retrofitting stormwater BMPs can be found in the Urban Stormwater Retrofit Practices Manual. See http://www.cwp.org/Downloads/ELC_USRM3app.pdf.

- Provide a high flow bypass to avoid resuspension of captured sediments/pollutants during high flows.
- Eliminate low-flow bypasses.

*Drainage Channel Retrofits* - Existing channelized streams and drainage conveyances such as drainage channels can be modified to reduce flow velocities and enhance pollutant removal. Weir walls or riprap check dams placed across a channel create opportunities for ponding, infiltration, and establishment of wetland vegetation upstream of the retrofit. In-stream retrofit practices include stream bank stabilization of eroded areas and placement of habitat improvement structures (i.e., flow deflectors, boulders, pools/riffles, and low-flow channels) in natural streams and along stream banks. In-stream retrofits may require an evaluation of potential flooding and floodplain impacts resulting from altered channel conveyance, as well as requirements for local, state, or federal approval for work in wetlands and watercourses.

*Parking Lots and Roadways*- Parking lots offer ideal opportunities for a wide range of stormwater retrofits:

1. Incorporate bioretention areas into parking lot islands and landscaped areas; tree planter boxes can be converted into functional bioretention areas, rain gardens, or treebox filters to reduce and treat stormwater runoff.
2. Remove curbing and add slotted curb stops. Curbs along the edges of parking lots can sometimes be removed or slotted to re-route runoff to vegetated filter strips, water quality swales, grass channels, or bioretention facilities. The capacity of existing swales may need to be evaluated and expanded as part of this retrofit option.
3. Incorporate new treatment practices such as bioretention areas, sand filters, and constructed stormwater wetlands at the edges of parking lots.
4. In overflow parking or other low-traffic areas, asphalt can be replaced with porous pavement.

*Sand Filter Retrofits* - are suitable where space is limited, because they consume little surface space and have few site restrictions. Since sand filters cannot treat large drainage areas, retrofitting many small individual sites may be the only option. This option may be expensive.

*Storm Drain Outfalls* - New stormwater treatment practices can be constructed at the outfalls of existing drainage systems. The new stormwater treatment practices are commonly designed as *off-line devices* to treat the first flush volume and bypass larger storms. Water quality swales, bioretention areas, sand filters, constructed stormwater wetlands, and wet basins are commonly used for this type of retrofit. Other stormwater treatment practices may also be used if there is enough space for construction and maintenance.

### *Specific Redevelopment Projects*

Redevelopment projects present unique challenges for controlling stormwater. It is possible that site constraints may prevent a redevelopment project from complying with one or more of the Stormwater Management Standards. Even if a redevelopment project cannot meet all of the Standards, there may be ample opportunity to improve existing site conditions depending on the other water quality or quantity issues in the watershed. The following special considerations provide unique opportunities for identifying how existing conditions may be improved:

A. Groundwater Recharge Areas - Redevelopment projects located within these areas (Zone II, Interim Wellhead Protection Areas (IWPA), aquifer protection districts, etc.) should place a high priority on ground water recharge BMPs.
   1) Disconnecting Rooftop Runoff – In some instances, building roof drains connected to the stormwater drainage system can be disconnected and re-directed to vegetated filter strips, bioretention facilities, or infiltration structures (dry wells or infiltration trenches).
   2) Use of Porous Paving Materials - Existing impermeable pavement in overflow parking or other low-traffic areas can sometimes be replaced with alternative permeable materials such as modular concrete paving blocks, modular concrete or plastic lattice, or cast-in-place concrete grids. Site-specific factors including traffic volumes, soil permeability, maintenance, sediment loads, and land use must be carefully considered prior to selection.

B. Cold-Water Fisheries - Redevelopment projects adjacent to these areas should place a high priority on mitigating potential thermal impacts. Techniques to consider include:

   1) Maintain Time of Concentration - Time of concentration (Tc) is based on the flow path and length, ground cover, slope and channel shape. When development occurs, Tc is often shortened due to the impervious area, causing greater flows to occur over a shorter period of time. Increasing the Tc will help to reduce the thermal impact of stormwater runoff from warm surface areas. Options to consider include:
      - Increasing the length of the runoff flow path
      - Increasing the surface roughness of the flow path
      - Detaining flows on site
      - Minimizing land disturbance
      - Creating flatter slopes.
   2) Disconnecting impervious areas – Breaking up large impervious expanses with vegetated zones will reduce the potential temperature increases of stormwater flowing across hot pavement.

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C. Brownfield Redevelopment – Redeveloping urban and non-urban brownfield sites (which in Massachusetts includes most "disposal sites" under the Massachusetts Contingency Plan [MCP]) are a Commonwealth priority, with ramifications for urban sprawl as well as the remediation of historically contaminated properties. Proponents of brownfield redevelopment projects should evaluate BMPs that will prevent the significant uncontrolled mobilization or remobilization of soil or ground water contamination. BMP considerations at these sites should consider such factors as:
   - The location of stormwater infiltration units with respect to contaminated areas
   - Ground water mounding effects on the rate and direction of migration of ground water contaminants
   - The location of outfalls
   - Water quality BMPs.

D. Runoff to Impaired Water Bodies – If MassDEP has issued a Total Maximum Daily Load (TMDL) that establishes a waste load allocation for stormwater discharge and/or a TMDL Implementation Plan that identifies remedies aimed at reducing the amount of pollutants from stormwater discharges, proponents may be required to install stormwater BMPs that are consistent with the TMDL.

E. Runoff to Areas of Localized Flooding – Project proponents must also understand the potential impacts of stormwater runoff in areas prone to localized flooding. When completing the checklist, proponents should consider the capacity of the receiving water and/or storm drainage system. When evaluating discharges to areas subject to localized flooding, the proponent should evaluate the ability to maintain and/or improve existing site cover and reduce runoff volume.

# Notice of Intent

***Under the Wetlands Protection Act 310 CMR 10.00***

# Proposed Building Addition

## Project Location:

233 Main Street
Agawam, Massachusetts 01001
(Parcel ID: K14-2-8)

## Submitted to:

Town of Agawam Conservation Commission
1000 Suffield Street
Agawam, Massachusetts 01001

## Applicant:

HP Hood, LLC
6 Kimball Lane
Lynnfield, Massachusetts 01940

## Property Owner:

HP Hood, Inc.
6 Kimball Lane
Lynnfield, Massachusetts 01940

RLA Project File No. 201016

**April 28, 2026**


R LEVESQUE ASSOCIATES, INC.

A LAND PLANNING SERVICES COMPANY

40 School Street, Westfield, MA 01085

p 413.568.0985 · f 413.568.0986 · www.rlaland.com

# TABLE OF CONTENTS

## SECTIONS


1. COVER LETTER
2. ADMINISTRATIVE FORMS
   - 2.1 WPA FORM 3 – NOTICE OF INTENT
   - 2.2 NOI WETLAND FEE TRANSMITTAL FORM
3. PROJECT NARRATIVE
4. FIGURES
   - 4.1 FIGURE 1 – USGS TOPOGRAPHIC MAP
   - 4.2 FIGURE 2 – FEMA FLOODPLAIN MAP
   - 4.3 FIGURE 3 – NRCS SOILS MAP
5. PUBLIC NOTICE
   - 5.1 ABUTTER NOTIFICATION LIST – 100'
   - 5.2 ABUTTER NOTIFICATION LETTER


# LIST OF APPENDICES


APPENDIX A: SITE PLAN SET

APPENDIX B: STORMWATER REPORT

# I. COVER LETTER

R LEVESQUE ASSOCIATES, INC.
40 School Street, P.O. BOX 640, Westfield, MA 01085
p 413.568.0985 · f 413.568.0986 · www.rlaland.com

April 28, 2026

Mr. Henry A. Kozloski, Chairman
Town of Agawam Conservation Commission
1000 Suffield Street
Agawam, Massachusetts 01001

**RE: Notice of Intent Application**
**233 Main Street**
**Agawam, Massachusetts 01001**
**(Parcel ID: K14-2-8)**
**RLA Project File No. 201016**

Dear Chairman Kozloski and Commissioners:

On behalf of the applicant, HP Hood, LLC, please find the requisite number of copies of a Notice of Intent application and supporting documentation. The applicant proposes the construction of a building addition with associated site improvements. Portions of the site improvements are within the buffer zone to Bank of an intermittent stream.

Included within this submission package is the requisite filing fee. As required, a copy of this application has been submitted electronically via email to the Town of Agawam Conservation Commission and through eDEP to the Massachusetts Department of Environmental Protection.

We are requesting to be placed on the Commission's next available agenda. Should you have any questions or comments regarding this filing, please do not hesitate to contact our office at your earliest convenience.

Sincerely,
R LEVESQUE ASSOCIATES, INC.

Ryan Nelson
Wetland/Soil Scientist & Project Manager

# 2. ADMINISTRATIVE FORMS

2.1 WPA FORM 3 – NOTICE OF INTENT

2.2 NOI WETLAND FEE TRANSMITTAL FORM

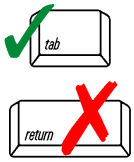
**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Agawam
City/Town

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




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

## A. General Information

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

233 Main Street — a. Street Address
Agawam — b. City/Town
01001 — c. Zip Code

Latitude and Longitude:
42.085102 — d. Latitude
72.612290 — e. Longitude

K14 — f. Assessors Map/Plat Number
2-8 — g. Parcel /Lot Number

2. Applicant:

Bob — a. First Name
Hale — b. Last Name
HP Hood, LLC — c. Organization
6 Kimball Lane — d. Street Address
Lynnfield — e. City/Town
MA — f. State
01940 — g. Zip Code
540-868-7760 — h. Phone Number
i. Fax Number
bob.hale@hphood.com — j. Email Address

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

Gary — a. First Name
Kaneb — b. Last Name
HP Hood, Inc. — c. Organization
6 Kimball Lane — d. Street Address
Lynnfield — e. City/Town
MA — f. State
01940 — g. Zip Code
540-868-7760 — h. Phone Number
i. Fax Number
bob.hale@hphood.com — j. Email address

4. Representative (if any):

Robert — a. First Name
Levesque — b. Last Name
R Levesque Associates, Inc. — c. Company
40 School Street — d. Street Address
Westfield — e. City/Town
MA — f. State
01085 — g. Zip Code
(413) 568-0985 — h. Phone Number
i. Fax Number
robl@rlaland.com — j. Email address

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

$1,050.00 — a. Total Fee Paid
$512.50 — b. State Fee Paid
$537.50 — c. City/Town Fee Paid

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

## A. General Information (continued)

6. General Project Description:

The applicant proposes the construction of a building addition with associated site improvements, portions of which are within the buffer zone to Bank of an intermittment stream. Please refer to the attached project narrative for greater detail.

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

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

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

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

| a. County | b. Certificate # (if registered land) |
|---|---|
| Hampden | |
| c. Book | d. Page Number |
| 13330 | 509 |

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

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

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

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

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

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

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| a. ☐ Bank | 1. linear feet | 2. linear feet |
| b. ☐ Bordering Vegetated Wetland | 1. square feet | 2. square feet |
| c. ☐ Land Under Waterbodies and Waterways | 1. square feet<br>3. cubic yards dredged | 2. square feet |

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| d. ☐ Bordering Land Subject to Flooding | 1. square feet | 2. square feet |
| | 3. cubic feet of flood storage lost | 4. cubic feet replaced |
| e. ☐ Isolated Land Subject to Flooding | 1. square feet | |
| | 2. cubic feet of flood storage lost | 3. cubic feet replaced |
| f. ☐ Riverfront Area | 1. Name of Waterway (if available) - **specify coastal or inland** | |

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

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

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

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

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

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

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

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

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

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| a. ☐ Designated Port Areas | Indicate size under Land Under the Ocean, below | |
| b. ☐ Land Under the Ocean | 1. square feet<br>2. cubic yards dredged | |
| c. ☐ Barrier Beach | Indicate size under Coastal Beaches and/or Coastal Dunes below | |
| d. ☐ Coastal Beaches | 1. square feet | 2. cubic yards beach nourishment |
| e. ☐ Coastal Dunes | 1. square feet | 2. cubic yards dune nourishment |

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| f. ☐ Coastal Banks | 1. linear feet | |
| g. ☐ Rocky Intertidal Shores | 1. square feet | |
| h. ☐ Salt Marshes | 1. square feet | 2. sq ft restoration, rehab., creation |
| i. ☐ Land Under Salt Ponds | 1. square feet<br>2. cubic yards dredged | |
| j. ☐ Land Containing Shellfish | 1. square feet | |
| k. ☐ Fish Runs | Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above<br>1. cubic yards dredged | |
| l. ☐ Land Subject to Coastal Storm Flowage | 1. square feet | |

4. ☐ Restoration/Enhancement

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

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

## C. Other Applicable Standards and Requirements

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

### Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

   a. ☐ Yes ☒ No

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

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

   02/23/2026
   b. Date of map

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

   c. Submit Supplemental Information for Endangered Species Review*

      1. ☐ Percentage/acreage of property to be altered:

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

      2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

   (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

   (b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review).
Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

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

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands
# WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Agawam
City/Town

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

(c) ☐ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

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

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

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

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

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

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

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

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

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

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

North Shore - Plymouth to New Hampshire border:

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

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

c. ☐ Is this an aquaculture project? d. ☐ Yes ☒ No

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

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

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

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

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☒ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☒ Proprietary BMPs are included in the Stormwater Management System.

   b. ☐ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

## D. Additional Information

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

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

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

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

## D. Additional Information (cont'd)

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

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

"Proposed Building Addition"
a. Plan Title

R Levesque Associates, Inc.
b. Prepared By

Robert M. Levesque, RLA, ASLA & Filipe J. Cravo, P.E.

04-28-2026
d. Final Revision Date

As shown
e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

## E. Fees

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

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

1240
2. Municipal Check Number

04/13/2026
3. Check date

4423609
4. State Check Number

4/15/2026
5. Check date

Robert
6. Payor name on check: First Name

Hale
7. Payor name on check: Last Name

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

## F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

| | |
|---|---|
| 1. Signature of Applicant | 2. Date 4/15/26 |
| 3. Signature of Property Owner (if different) | 4. Date 4/15/26 |
| 5. Signature of Representative (if any) Nina Fazio<br>On behalf of R Levesque Associates, Inc. | 6. Date 04-23-2026 |

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

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

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

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

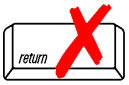
**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# NOI Wetland Fee Transmittal Form

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

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




## A. Applicant Information

1. Location of Project:

| | |
|---|---|
| 233 Main Street | Agawam |
| a. Street Address | b. City/Town |
| 4423609 | $512.50 |
| c. Check number | d. Fee amount |

2. Applicant Mailing Address:

| | | | |
|---|---|---|---|
| Bob | | Hale | |
| a. First Name | | b. Last Name | |
| HP Hood, LLC | | | |
| c. Organization | | | |
| 6 Kimball Lane | | | |
| d. Mailing Address | | | |
| Lynnfield | MA | 01940 | |
| e. City/Town | f. State | g. Zip Code | |
| 540-868-7760 | | bob.hale@hphood.com | |
| h. Phone Number | i. Fax Number | j. Email Address | |

3. Property Owner (if different):

| | | | |
|---|---|---|---|
| Gary | | Kaneb | |
| a. First Name | | b. Last Name | |
| HP Hood, Inc. | | | |
| c. Organization | | | |
| 6 Kimball Lane | | | |
| d. Mailing Address | | | |
| Lynnfield | MA | 01940 | |
| e. City/Town | f. State | g. Zip Code | |
| 540-868-7760 | | bob.hale@hphood.com | |
| h. Phone Number | i. Fax Number | j. Email Address | |

## B. Fees

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

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

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

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

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

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

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

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

## B. Fees (continued)

| Step 1/Type of Activity | Step 2/Number of Activities | Step 3/Individual Activity Fee | Step 4/Subtotal Activity Fee |
|---|---|---|---|
| Category 3b | 1 | $1,050.00 | $1,050.00 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Step 5/Total Project Fee:** $1,050.00

**Step 6/Fee Payments:**

| | |
|---|---|
| Total Project Fee: | $1,050.00 (a. Total Fee from Step 5) |
| State share of filing Fee: | $512.50 (b. 1/2 Total Fee **less $**12.50) |
| City/Town share of filling Fee: | $537.50 (c. 1/2 Total Fee **plus** $12.50) |

## C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

# 3. PROJECT NARRATIVE

# PROJECT NARRATIVE TO NOTICE OF INTENT

For

PROPOSED BUILDING ADDITION
233 MAIN STREET
AGAWAM, MASSACHUSETTS 01001
(PARCEL ID: K14-2-8)

## INTRODUCTION

On behalf of the applicant, HP Hood, LLC, R Levesque Associates, Inc. is providing this Project Narrative as a supplement to the Notice of Intent application. The applicant proposes the construction of a building addition with associated site improvements adjacent to the existing building at 233 Main Street. Portions of the proposed project are located within the buffer zone to Bank of an intermittent stream. All proposed work is located within existing impervious area.

## PROPERTY DESCRIPTION

The subject property is located northeast of Main Street and consists of approximately 16.7 ± acres as shown on the associated site plan prepared by R Levesque Associates, Inc. The subject property is owned by HP Hood, Inc. and is recorded in the Hampden County Registry of Deeds in Book 13330, Page 509.

Examination of GIS information from the Massachusetts Natural Heritage Atlas revealed the subject property is not located within Natural Heritage and Endangered Species Program jurisdiction.

## EXISTING CONDITIONS & TOPOGRAPHY

The subject property is currently improved with an existing industrial building with associated site improvements. The topography of the project area is generally flat, gradually sloping from the west to east. Steep embanked exists east of the intermittent stream. A USGS Topographic Map of the site is included within this application packet under Section 4, as Figure 1.

## SOILS

According to the NRCS Web Soil Survey, the soil types mapped in the general area of the proposed project consist of Merrimac fine sandy loam, 8 to 15 percent slopes (254C) and Urban Land (602). Please see the attached NRCS Web Soil Survey in Section 4, as Figure 3, of this application packet which depicts the location of the defined soils below.

The Merrimac series consists of very deep, somewhat excessively drained soils formed in outwash. They are nearly level through very steep soils on outwash terraces and plains and other glaciofluvial landforms. Slope ranges from 0 through 35 percent.

## PROJECT DESCRIPTION

The applicant proposes the construction of a building addition with associated site improvements. Associated site improvements include, but are not limited to, stormwater management, utility connections, and site landscaping. All proposed work is located within existing impervious area.

The proposed project work will proceed in the following general sequence:

1. Installation of erosion controls along the permitted limit of work;
2. Demolition and removal of existing site improvements, as needed;
3. Extension of existing utility connections from existing infrastructure;
4. Installation of stormwater management structures;
5. Construction of a 7,900 ± SF building addition;
6. Construction of new concrete truck pad; and
7. Site stabilization and removal of erosion controls at the direction of the Town of Agawam Conservation Commission.

## WETLAND RESOURCE AREAS

Wetland resource areas were delineated by R Levesque Associates, Inc. in Spring 2021 and have previously been determined as accurate under MassDEP File #087-0671. The definition of each applicable resource area is presented below in *italic text* followed by a description of the project presented below in **boldface text**.

*Please note any resource areas delineated off-site have been shown to accurately portray Riverfront Area onto the subject property and the determination of such is not the subject of this filing.*

Bank

In 310 CMR 10.54(2) it states, "*A Bank is the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, it occurs between a water body and an upland.*"

Bank is associated with an intermittent stream located easterly of the subject property and has been marked in the field with sequentially numbered flagging labeled "BNK-100" through "BNK-131" and "BNK-200" through "BNK-247". Said stream originates off-site to the south and flows northerly to its confluences within the Westfield River. There are no proposed disturbances to Bank.

Bordering Vegetated Wetlands (BVW)

As defined in 310 CMR 10.55 (2) (a), "*Bordering Vegetated Wetlands are freshwater wetlands which border on creeks, rivers, streams, ponds, and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps, and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants…*".

A Bordering Vegetated Wetland (BVW) is present within the rear of 233 Main Street and has been marked in the field with sequentially numbered flagging labeled "A-100" through "A-131". The BVW series is located within a deeply incised ravine adjacent to the intermittent stream. The BVW has not been shown on the associated site plan due to its distance from the proposed site improvements. There are no proposed disturbances to the BVW.

Buffer Zone

Buffer Zone as defined in 310 CMR 10.04 is *"the area of land extending 100 feet horizontally outward from the boundary of any areas specified in 310 CMR 10.02(1)(a)".*

Buffer Zone associated with the Bordering Vegetated Wetland (BVW) and Bank has been shown offset 50' and 100' from the outermost boundary of the delineated resource area,

which is Bank in this instance. Portions of the proposed building addition and associated site improvements are located within the 100' buffer zone of Bank. Proposed site improvements are not located closer to the resource area than existing degraded area.

Bordering Land Subject to Flooding (BLSF)

As stated in 310 CMR 10.57(2)(a), *"Bordering Land Subject to Flooding is an area with low, flat topography adjacent to and inundated by flood waters rising from creeks, rivers, streams, ponds, or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland."* .

A portion of the subject property is located within the 100-year Flood Hazard Zone AE according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Hampden County, Massachusetts, Map Number 25013C0403E, effective date of July 16, 2013. The 100-year Flood Zone Elevation for the site is 60.2 The FEMA Floodplain Map is included as Figure 2 in Section 4 of this application packet. However, BLSF is located outside the project site area, therefore no disturbance to BLSF is proposed as part of this project.

EROSION CONTROL

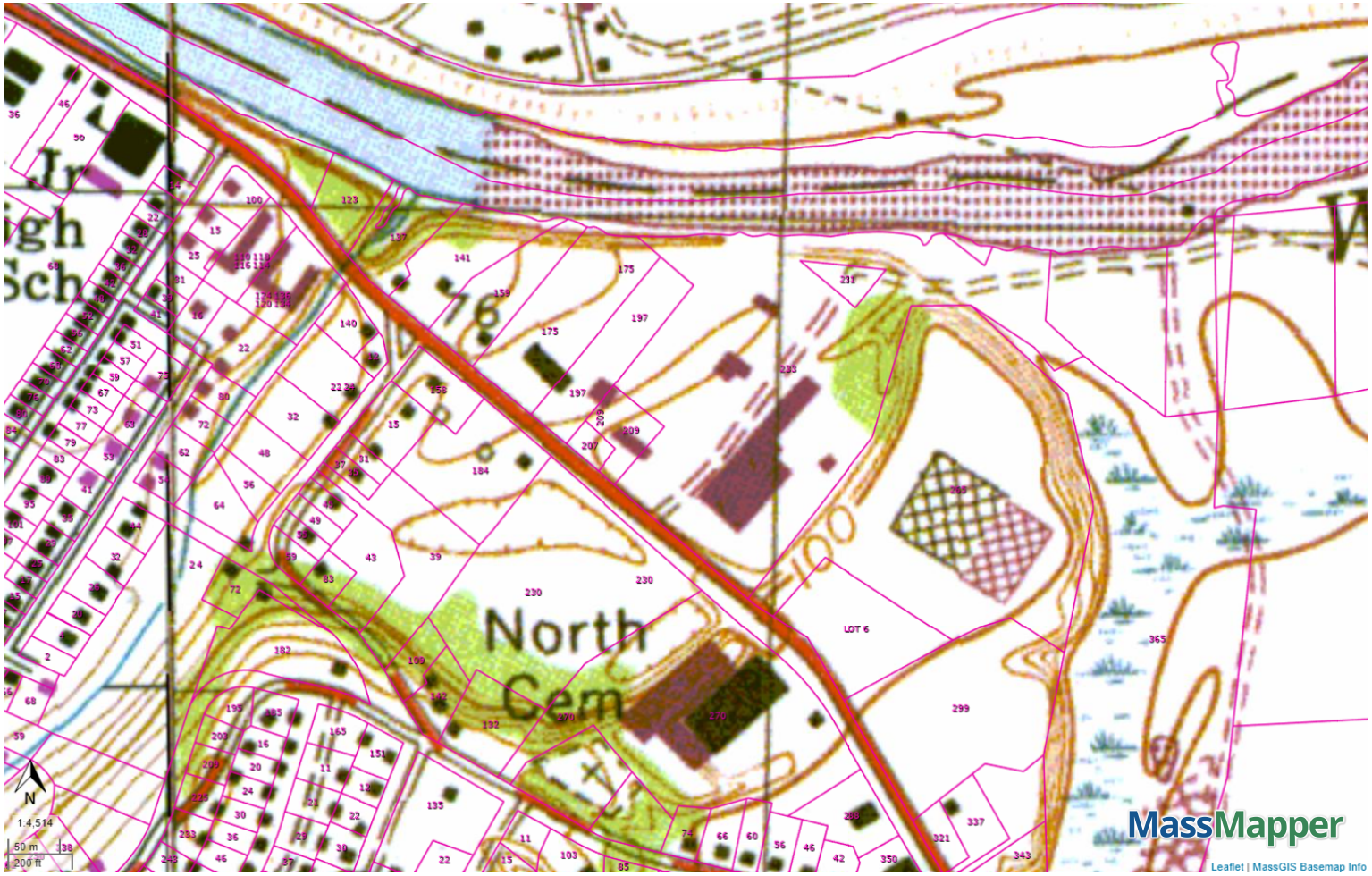
Erosion controls are proposed to protect the site against soil migration and to protect the Resource Area from siltation. All exposed soils on the site will be stabilized as soon as possible. Barrier controls will not be removed until a Certificate of Compliance has been issued by the Town of Agawam Conservation Commission. Please see the accompanying project plan which depicts the location of barrier controls in greater detail.

[ END OF PROJECT NARRATIVE ]

# 4. FIGURES

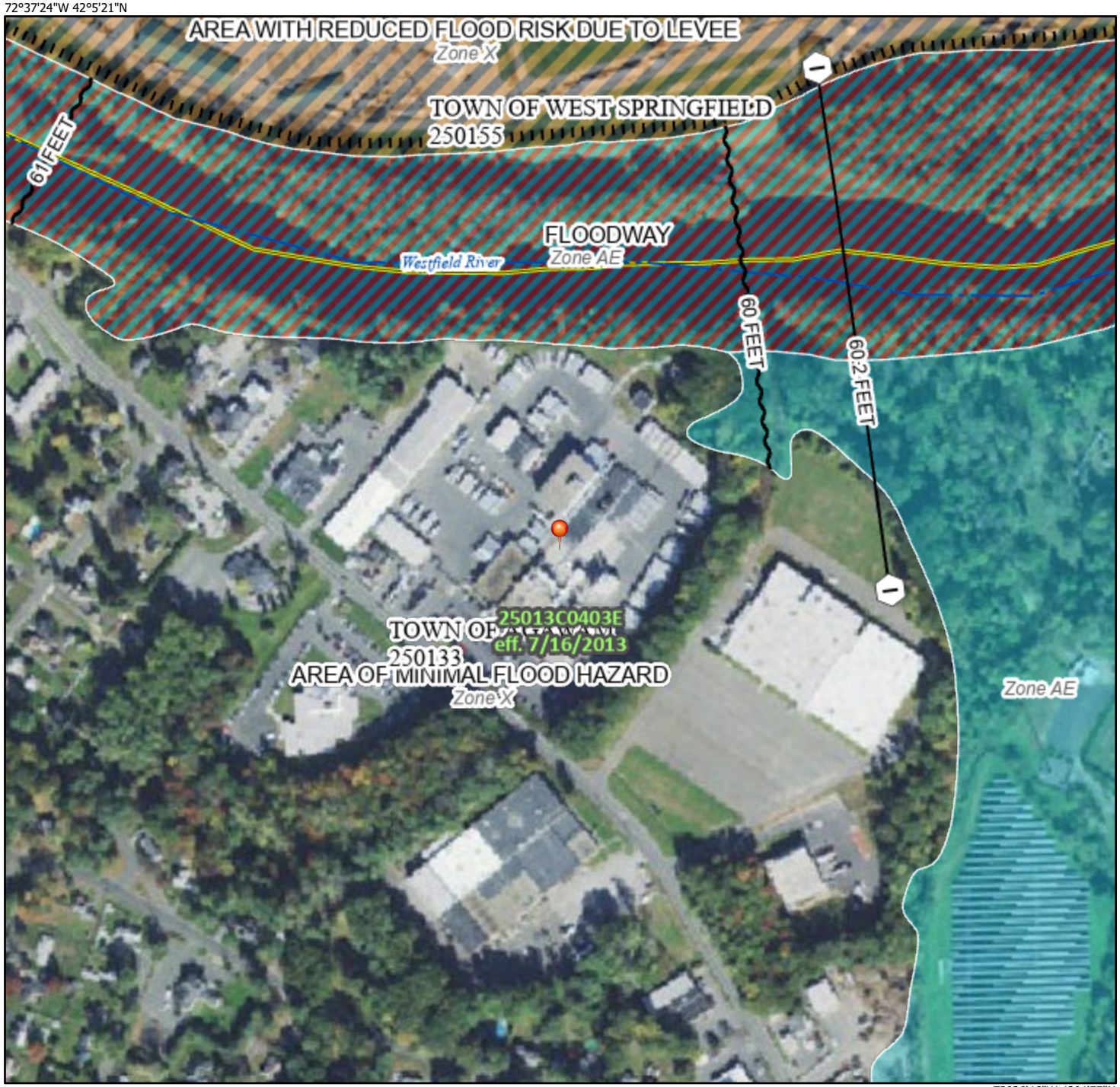
4.1 FIGURE 1 – USGS TOPOGRAPHIC MAP
4.2 FIGURE 2 – FEMA FLOODPLAIN MAP
4.3 FIGURE 3 – NRCS SOILS MAP

# USGS Topographic Map




Property Tax Parcels
USGS Topographic Maps

# National Flood Hazard Layer FIRMette




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

1:6,000

*Basemap Imagery Source: USGS National Map 2023*

## Legend

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

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- 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 *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

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

**OTHER FEATURES**
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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 2/25/2026 at 9:11 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.

Soil Map—Hampden County, Massachusetts, Central Part
(GISDATA_L3_TAXPAR_POLY_ASSESSPolygon)




Map Scale: 1:2,870 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

## 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 1:15,800.

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: Hampden County, Massachusetts, Central Part
Survey Area Data: Version 19, Sep 5, 2025

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

Date(s) aerial images were photographed: Oct 15, 2020—Oct 31, 2020

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

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 8A | Limerick silt loam, 0 to 3 percent slopes, frequently flooded | 0.1 | 0.5% |
| 225B | Belgrade silt loam, 0 to 8 percent slopes | 4.7 | 26.9% |
| 230B | Unadilla very fine sandy loam, 3 to 8 percent slopes | 1.0 | 5.8% |
| 254C | Merrimac fine sandy loam, 8 to 15 percent slopes | 1.9 | 10.7% |
| 265A | Enfield silt loam, 0 to 3 percent slopes | 0.4 | 2.4% |
| 602 | Urban land | 9.3 | 53.4% |
| 718A | Saco Variant silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded | 0.1 | 0.3% |
| **Totals for Area of Interest** | | **17.4** | **100.0%** |

# 5. PUBLIC NOTICE

5.1 ABUTTER NOTIFICATION LIST – 100'

5.2 ABUTTER NOTIFICATION LETTER

K14 2 7
BISCALDI MICHAEL L
301 PEASE RD
EAST LONGMEADOW, MA

K14 2 5
CARANDO GOURMET FROZEN
175 MAIN ST
AGAWAM, MA 01001 1804

K13 1 5
DRAGON PARADISE LLC
90 MERRILL RD
SPRINGFIELD, MA 01119

K14 3 1
EPC HAMMES LLC
4500 DORR ST
TOLEDO, OH 43615

K14 2 8
HP HOOD INC
6 KIMBALL LN
LYNNFIELD, MA 01940

K14 2 8
HP HOOD INC
6 KIMBALL LN
LYNNFIELD, MA 01940

K13 2 1
HP HOOD LLC
6 KIMBALL LN
LYNNFIELD, MA 01940

K14 2 12
HP HOOD LLC
6 KIMBALL LN
LYNNFIELD, MA 01940

K13 2 11
HP HOOD LLC
6 KIMBALL LN
LYNNFIELD, MA 01940

K14 2 6
MCLEAN REALTY CO
197 MAIN ST
AGAWAM, MA 01001

K13 2 9
MUSHY`S GOLF CENTER LLC
369 MAIN ST
AGAWAM, MA 01001

L14 1 11
O`MALLEY JOSEPH CO-TR
29 CONLIN RD
OXFORD, MA 01540

K14 2 9
TOWN OF AGAWAM
36 MAIN ST
AGAWAM, MA 01001 1837

K14 2 13
TOWN OF AGAWAM
36 MAIN ST
AGAWAM, MA 01001 1837

**Notification to Abutters**

By Hand Delivery, Certified Mail (return receipt requested), or Certificates of Mailing

*This is a notification required by law. You are receiving this notification because you have been identified as the owner of land abutting another parcel of land for which certain activities are proposed. Those activities require a permit under the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40).*

In accordance with the second paragraph of the Massachusetts Wetlands Protection Act, and 310 CMR 10.05(4)(a) of the Wetlands Regulations, you are hereby notified that:

A. A Notice of Intent was filed with the Town of Agawam Conservation Commission on or about April 28, 2026 seeking permission to remove, fill, dredge, or alter an area subject to protection under M.G.L. c. 131 §40. The following is a description of the proposed activity/activities:

| |
|---|
| The applicant proposes the construction of a building addition with associated site improvements. Portions of the site improvements are within the buffer zone to Bank of an intermittent stream. |

B. The name of the applicant is: HP Hood, LLC

C. The address of the land where the activity is proposed is: 233 Main Street, Agawam, MA 01001 (Parcel ID: K14-2-8)

D. Copies of the Notice of Intent may be examined or obtained at the office of the Town of Agawam Conservation Commission office, located at 1000 Suffield Street, Agawam, MA 01001. The regular business hours of the Commission are Monday-Friday 8:30am-4:30pm, and the Commission may be reached at 413-786-0400.

E. Copies of the Notice of Intent may be obtained from the applicant or their representative by calling R Levesque Associates, Inc. at 413-569-0985. An administrative fee of $95.00 is applied for providing copies of the application materials and site plans.

F. Information regarding the date, time, and location of the public hearing regarding the Notice of Intent may be obtained from the Town of Agawam Conservation Commission. Notice of the public hearing will be published at least five business days in advance, in the local newspaper.

Notification provided pursuant to the above requirement does not automatically confer standing to the recipient to request Departmental Action for the underlying matter. See 310 CMR 10.05(7)(a)4.

# APPENDIX A: SITE PLAN SET

SITE PLAN SET ENTITLED “PROPOSED BUILDING ADDITION”

PREPARED FOR HP HOOD, LLC

PREPARED BY R LEVESQUE ASSOCIATES, INC.

DATED APRIL 28, 2026

# APPENDIX B: STORMWATER REPORT

STORMWATER DRAINAGE REPORT

PREPARED FOR HP HOOD, LLC

PREPARED BY R LEVESQUE ASSOCIATES, INC.

DATED APRIL 28, 2026

# Stormwater Drainage Report

## Proposed Building Addition

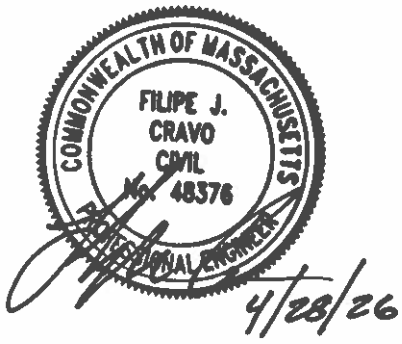
233 Main Street
Agawam, MA 01001
(Parcel ID: K14-2-8)

### Submitted To:

Town of Agawam Planning Board
1000 Suffield Street
Agawam, MA 01001

### Applicant/Owner:

HP Hood, LLC
6 Kimball Lane
Lynnfield, MA 01940




RLA Project File #:201016
**April 28, 2026**


**R LEVESQUE ASSOCIATES, INC**
A LAND PLANNING SERVICES COMPANY
40 School Street · Westfield, MA 01085
p 413.568.0985 · f 413.568.0986 · www.rlaland.com

# TABLE OF CONTENTS

SECTION PAGE NO.

I. INTRODUCTION....1-1

2. SITE DESCRIPTION....2-1

2.1 Predevelopment Conditions....2-1
2.2 Resource Areas....2-1
2.2.1 Floodplain....2-1
2.2.2 Natural Heritage and Endangered Species Program....2-1
2.2.3 Zone II – Wellhead Protection Area....2-2
2.3 Soils....2-2
2.4 Post Development Conditions....2-3

3. STORMWATER MANAGEMENT SYSTEM....3-1

3.1 Hydraulic Analysis....3-1
3.2 MassDEP Stormwater Management Standards....3-1
3.3 Stormwater Best Management Practices....3-4
3.3.1 Deep Sump Catch Basins....3-4
3.3.2 Proprietary Sedimentation Devices....3-4
3.4 Protection of Stormwater Best Management Practices during Construction....3-4
3.5 Inspection and Maintenance of Stormwater Best Management Practices....3-5
3.6 Illicit Discharge Compliance Statement....3-5

4. CONCLUSION....4-1

## List of Tables

Table Page No.

Table 2.4: Hydrologic Soil Group Classification.... 2-2

## List of Figures

Figure

Figure 1: Site Locus – USGS Map
Figure 2: FEMA Flood Map
Figure 3: NHESP & Zone II Map
Figure 4: Inlet Area Plan

# Appendices

APPENDIX A: CHECKLIST FOR STORMWATER REPORT
APPENDIX B: SOILS INFORMATION
APPENDIX C: HYDRAULIC ANALYSIS
APPENDIX D: MASSDEP CALCULATIONS
APPENDIX E: CONSTRUCTION PERIOD EROSION CONTROL PLAN
APPENDIX F: LONG-TERM OPERATION AND MAINTENANCE PLAN
APPENDIX G: ILLICIT DISCHARGE COMPLIANCE STATEMENT

## I. INTRODUCTION

The applicant, HP Hood, LLC, is proposing to construct an addition to the existing industrial facility on Parcel K14-2-8 in Agawam, Massachusetts. The proposed project will include the construction of a 7,900 square foot building addition at the southeastern corner of the main building, a loading dock area and modifications to the existing stormwater management system to accommodate the building addition and enhance water quality. Parcel K14-2-8 is the current site for Hood and is developed with various buildings, parking areas, drive aisles and other associated site improvements. There are existing stormwater best management practices consisting of catch basins, yard drains, trench drains and subsurface piping networks to mitigate stormwater runoff from the existing impervious areas. For the purposes of this report, reference to the project site shall mean only the area to be improved.

The entirety of the project site has been historically developed and is entirely impervious. Due to the site maintaining existing impervious areas, the project qualifies as a redevelopment project and is only subject to the MassDEP Stormwater Handbook standards to the maximum extent practicable. Under current conditions, stormwater generated from the paved areas in the vicinity of the proposed addition sheet flows to one of several inlet structures at intermediate low points. The existing roof leaders also connect directly into the subsurface stormwater management system. The inlet structures are interconnected via a subsurface piping network which eventually discharge to one of several outfalls tributary to the Westfield River. The proposed site improvements will generally maintain the existing drainage patterns of the site, sending stormwater runoff from the impervious areas to the various surrounding drainage structures. The existing stormwater management system will be modified to enhance water quality through the use of new proprietary sedimentation devices.

The proposed site improvements include:

- Construction of a 7,900± square foot building addition;
- Construction of a loading dock area associated with the building addition within the existing paved area;
- Modifications to the existing stormwater management system to accommodate the building addition and enhance water quality.

The purpose of this report is to present information regarding the technical aspects of the stormwater management system for the proposed project. All work is intended to be in full compliance with the Agawam Stormwater Management Ordinance as well as the Massachusetts Department of Environmental Protection Stormwater Management Handbook. The stormwater management system includes approved best management practices (BMPs) to meet the requirements.

# 2. SITE DESCRIPTION

## 2.1 Predevelopment Conditions

The project site is located at 233 Main Street and the area to be redeveloped is in the southeastern corner of Parcel K14-2-8 as listed by the Chicopee Assessor's Office. For the purposes of this report, reference to the project site shall mean only the area to be improved. The entirety of the project site is zoned Industrial A as referenced from the Town of Agawam's GIS database. The parcel is bounded to the north by the Westfield River, to the East and west by industrially developed properties and to the south by Main Street. The total project site is approximately 16.9 acres in size. Figure 1 – USGS Map illustrates the location of the project.

The site has been previously developed with various industrial buildings and associated site improvements including paved driveway and parking areas. Existing utility services including water service, sewer service, gas service, and electric/telecommunication services are connected to the site via frontage on Main Street. The existing topography is characterized by gentle slopes that direct surface runoff away from the buildings and towards the on-site stormwater management systems. Grades range from 78 to 80 in the area to be developed. Please refer to the existing conditions plan submitted herewith for more detailed topographical information and Figure 4 "Pre-Development Watershed Plan" for sub-catchment area boundaries.

## 2.2 Resource Areas

Portions of the proposed site improvements are located within jurisdictional buffer zone area associated with the intermittent stream located along the base of the slope to the east of the area to be developed. Please refer to the Notice of Intent filing with the conservation commission for additional information pertaining to the on-site resource areas.

### 2.2.1 Floodplain

R. Levesque Associates, Inc. performed due diligence research on the property in regard to FEMA flood zone mapping. As demonstrated by the most recent FEMA Flood Insurance Rate Maps, portions of the property are located within the flood hazard areas as defined by the most recent FEMA Flood Insurance Rate Maps, see Figure 2 – FEMA FIRM Map. No impact to the flood elevations are proposed as part of this project.

### 2.2.2 Natural Heritage and Endangered Species Program

R. Levesque Associates, Inc. performed due diligence research on the property in regard to Natural Heritage and Endangered Species Program (NHESP) areas. The parcel is not located within an area delineated by NHESP as priority habitat of endangered species; see Figure 3 – NHESP & Zone II Map.

### 2.2.3 Zone II – Wellhead Protection Area

R. Levesque Associates, Inc. performed due diligence research on the property in regard to wellhead protection overlay districts. The parcel is not located within an area delineated as a Zone II Wellhead Protection Area; see Figure 3 – NHESP & Zone II Map.

## 2.3 Soils

R. Levesque Associates, Inc. researched the soils located on site with information readily available by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). Based on a review of the USDA Soil Survey of Hampden County, Massachusetts, Central Part, the site is comprised of the following soil types:

Table 2.4: Hydrologic Soil Group Classification

| Soil Description | Map Unit Symbol | Hydrologic Soil Group |
|---|---|---|
| Limerick Silt Loam | 8A | B/D |
| Belgrade Silt Loam | 225B | C |
| Unadilla Very Fine Sandy Loam | 230B | C |
| Merrimac Fine Sandy Loam | 254C | A |
| Enfield Silt Loam | 265A | B |
| Urban Land | 602 | D |
| Saco Variant Silt Loam | 718A | B/D |

See Appendix B - Soils Information for supplemental information.

## 2.4 Post Development Conditions

The proposed project involves the construction of a 7,900-square-foot building addition at the southeastern corner of the existing Hood facility, along with a new loading dock area to support operations. All improvements will occur within the limits of the existing paved footprint; thereby, classifying the proposed site improvements as a redevelopment project. Per the MassDEP Stormwater Handbook, a redevelopment project is required to meet the standards to the maximum extent practicable. Notwithstanding this allowance, the proposed design has been developed with the intent of fully meeting applicable standards wherever feasible.

Redevelopment of this area will incorporate several stormwater management measures designed to control runoff from the disturbed surfaces, improve water quality, and enhance overall site conditions. The proposed stormwater management system will include the following components:

- Trench drains
- Yard drain
- Deep-sump hooded catch basin
- Proprietary sedimentation devices

Construction of the building addition will introduce several new low points around the structure. To address these conditions, a yard drain will be installed at the low point near the base of the existing ramp west of the addition. A trench drain will be installed along the northern side of the addition at the base of the loading dock, and a deep-sump hooded catch basin will be installed on the southern side. In addition, the existing trench drain between the silo area and the southern side of the addition will be replaced with a new trench drain.

All proposed inlet structures will collect and convey runoff to one of two new proprietary sedimentation devices for treatment prior to discharge into the existing stormwater management system. Roof drainage will also be updated, with existing and proposed roof leader connections modified or constructed to tie into the existing system.

Overall, the proposed improvements will maintain the site's general drainage patterns while providing enhanced stormwater treatment and water quality benefits. Additional details are provided in the accompanying site plans.

# 3. STORMWATER MANAGEMENT SYSTEM

R. Levesque Associates, Inc. has prepared the following drainage system calculations for the proposed project site. These calculations were performed to document compliance with the guidelines set forth by the Agawam Stormwater Management Ordinance as well as the Massachusetts Department of Environmental Protection Stormwater Management Handbook (MassDEP Handbook).

## 3.1 Hydraulic Analysis

R. Levesque Associates, Inc. utilized the Hydraflow Storm Sewer Extension for AutoCAD Civil 3D 2022 software program, developed by Autodesk, Inc., in order to analyze the hydraulic capacity of the proposed underground infrastructure. The analysis was conducted in order to verify that the proposed conveyance piping has sufficient capacity to convey up to and including the 24-hour, 10-year storm event. The data from the analysis was used to properly size the conveyance piping such that there is no surcharge of stormwater above the rim elevations within the paved areas. As part of the input parameter required for the hydraulic analysis, the tributary inlet areas were delineated based on topography and any additional connected discharges. Additionally, the characteristic land use coverages and flow paths were identified. Please refer to Appendix C for the hydraulic analysis of the proposed stormwater management system.

## 3.2 MassDEP Stormwater Management Standards

R. Levesque Associates, Inc. has designed the proposed stormwater management system to be in compliance with the MassDEP Stormwater Management Standards. Chapter 1, Volume 3 of the MassDEP Handbook outlines specific calculations, and other information, that must be submitted with each report to document compliance. The following summary highlights elements of the proposed project and how they apply to each standard.

- *Standard #1 - No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*

  The proposed project provides best management practices designed to the guidelines of the MassDEP Handbook. Therefore, no new untreated stormwater is discharged.

- *Standard #2 – Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.*

  A redevelopment project is required to meet Standard 2 only to the maximum extent practicable. The proposed project replaces existing impervious surfaces with new impervious surfaces of similar extent. As a result, contributing drainage areas and time of concentration

remain effectively unchanged. Therefore, post-development peak discharge rates are expected to be equivalent to pre-development conditions, and the project meets the requirements of this standard.

- *Standard #3 - Loss of annual recharge to groundwater shall be eliminated or minimized through the use of environmentally sensitive site design, low impact development techniques, stormwater BMPs, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required volume as determined in accordance with the Massachusetts Stormwater Handbook.*

  As a redevelopment project, compliance with this standard is required only to the maximum extent practicable. Since there is no new impervious area, no new infiltration practices are proposed as part of the project; however, site constraints associated with the existing developed conditions limit the feasibility of incorporating such measures.

- *Standard #4 – Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of TSS. It is presumed that this standard is met when:*

  *a. Suitable practices for source control and pollution prevention are identified in a long term pollution prevention plan, and thereafter are implemented and maintained;*

  *b. Structural stormwater BMPs practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*

  *c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook*

  While redevelopment projects are required to comply with Standard 4 only to the maximum extent practicable, measures have been incorporated to improve the quality of runoff from the affected portion of the site. The proposed stormwater management system includes the installation of two proprietary sedimentation devices to provide treatment prior to discharge to the existing system. Refer to Appendix D for the Water Quality Volume calculations.

- *Standard #5 - For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by MassDEP to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land*

*uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.*

This standard is not applicable.

- *Standard #6 – Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater BMPs determined by MassDEP to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.*

  This standard is not applicable.

- *Standard #7 – A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural BMPs requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*

  The proposed site improvements classify as a redevelopment project and proprietary sedimentation devices are being installed to enhance water quality and improve existing conditions.

- *Standard #8 – A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention) shall be developed and implemented.*

  A Construction Period Erosion Control Plan has been provided in Appendix E.

- *Standard #9 – A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.*

A Long-term Operation & Maintenance Plan has been provided in Appendix F.

- *Standard #10 - All illicit discharges to the stormwater management system are prohibited.*

  An illicit discharge statement will be provided prior to discharge of stormwater to post-construction BMPs. See Appendix G for a copy of the Illicit Discharge Statement.

## 3.3 Stormwater Best Management Practices

The proposed stormwater management system was designed utilizing stormwater best management practices (BMP) as set forth by the MassDEP Handbook. The BMPs utilized as part of the stormwater management system include deep-sump hooded catch basins and proprietary sedimentation devices. All of the BMPs were designed to meet the requirements of the MassDEP Handbook and will provide water quality treatment in order to mitigate the impacts of the proposed site improvements. See Appendix D – MassDEP Calculations for the calculations required to document compliance. The following section provides a description of the best management practices (BMPs) being utilized on site.

### 3.3.1 Deep Sump Catch Basins

Deep-sump catch basins equipped with an oil/gas hoods are being utilized as structural pretreatment devices within the proposed stormwater management system. The catch basins will be constructed with a 4'-0" deep sumps to act as settling chambers and allow for adequate storage of collected sediments. Catch basins are typically first in the line of water quality treatment.

### 3.3.2 Proprietary Sedimentation Devices

Proprietary sedimentation devices are being utilized on site for the pretreatment of stormwater runoff, in addition to the catch basins, prior to discharging off-site. Treatment of the stormwater runoff is essential to improve water quality. Maintenance of the proprietary device is crucial to the long-term effectiveness of the stormwater management system. The stormwater management system is utilizing proprietary treatment devices in order to ensure that the amount of sediment reaching the outfalls is minimal.

## 3.4 Protection of Stormwater Best Management Practices during Construction

Protection of the stormwater best management practices during construction will ensure the proper functioning of the stormwater management system and provide protection to the undisturbed areas until the site has been stabilized. Certain specific erosion and sedimentation controls and good practices to be performed by the site contractor have been documented in a Construction Period Erosion Control Plan. See Appendix E – Construction Period Erosion Control Plan.

## 3.5 Inspection and Maintenance of Stormwater Best Management Practices

Frequent maintenance of the stormwater best management practices is essential to ensuring that the stormwater management system will function properly long-term. The MassDEP provides guidelines for the regular inspection and maintenance of the proposed stormwater best management practices. A Long-Term Stormwater Operation and Maintenance Plan has been prepared which dictates the inspection frequency and maintenance operations for each BMP. See Appendix F – Long-Term Operation and Maintenance Plan.

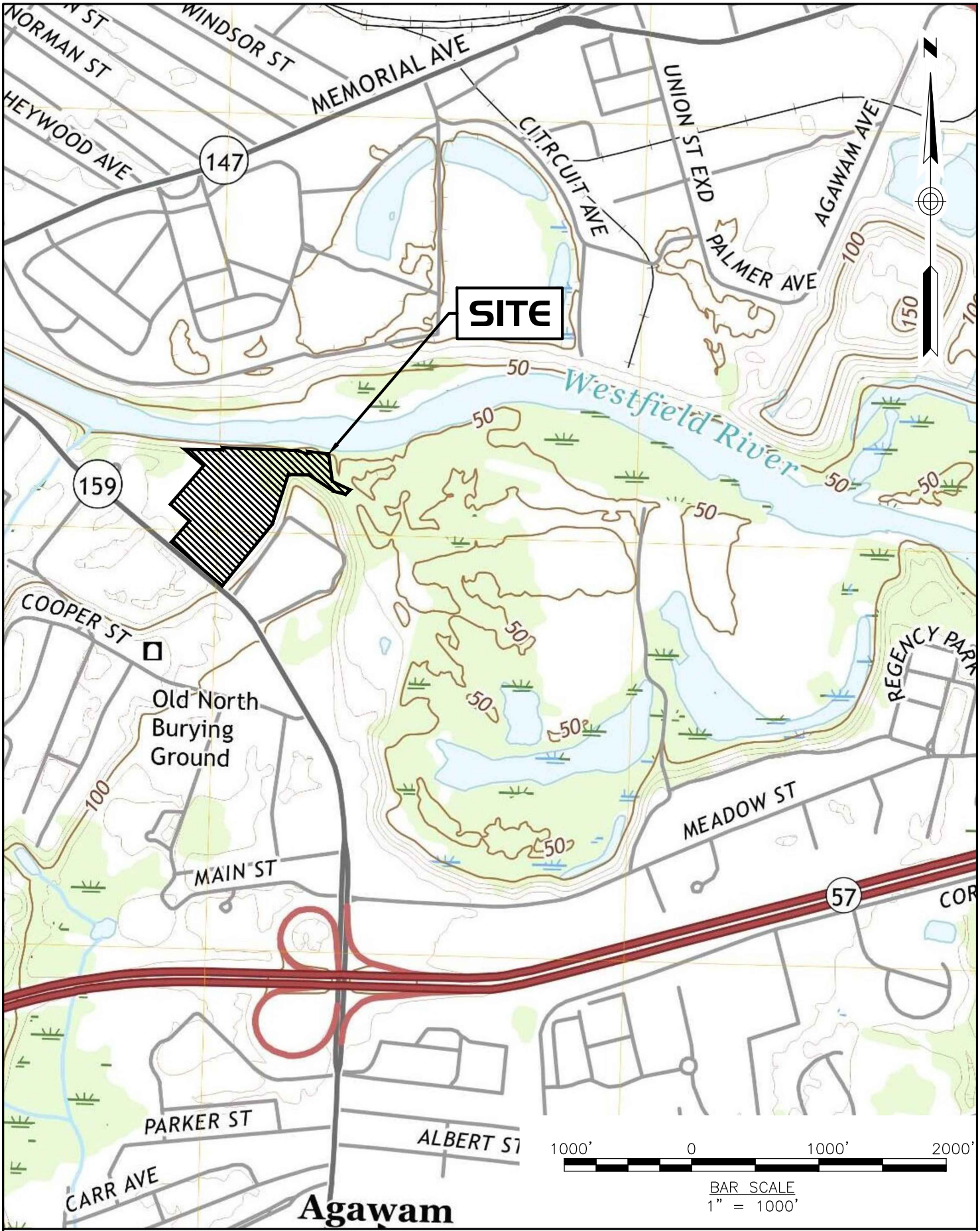
## 3.6 Illicit Discharge Compliance Statement

RLA has prepared an Illicit Discharge Compliance Statement to document compliance with the Massachusetts Department of Environmental Protection Stormwater Management Handbook, see Appendix G.

## 4. CONCLUSION

Since all improvements will occur within the limits of the existing paved footprint, this project is classified as a redevelopment project per the MassDEP Stormwater Handbook and is required to meet the standards to the maximum extent practicable. Notwithstanding this allowance, the proposed design has been developed with the intent of fully meeting applicable standards wherever feasible. The proposed modifications to the existing stormwater management system have been designed to mitigate the impacts of the proposed site improvements by providing a control for runoff water quality and water quantity. The proposed site improvements, including the stormwater management system, will utilize best management practices approved by the MassDEP Stormwater Handbook. The best management practices have been incorporated to provide water quality treatment. Implementation of stormwater best management practices such as deep-sump hooded catch basins and proprietary sedimentation devices allow for a stormwater drainage design that is in conformance with the criteria set forth in the Agawam Stormwater Management Ordinance as well as the Massachusetts Department of Environmental Protection Stormwater Management Handbook.

# Figure 1: Site Locus – USGS Map




R LEVESQUE ASSOCIATES, INC
A Land Planning Services Company
40 School Street · P.O. Box 640 · Westfield, MA 01085
ph: 413.568.0985 fax: 413.568.0986 rlaland.com

SITE LOCUS
USGS MAP

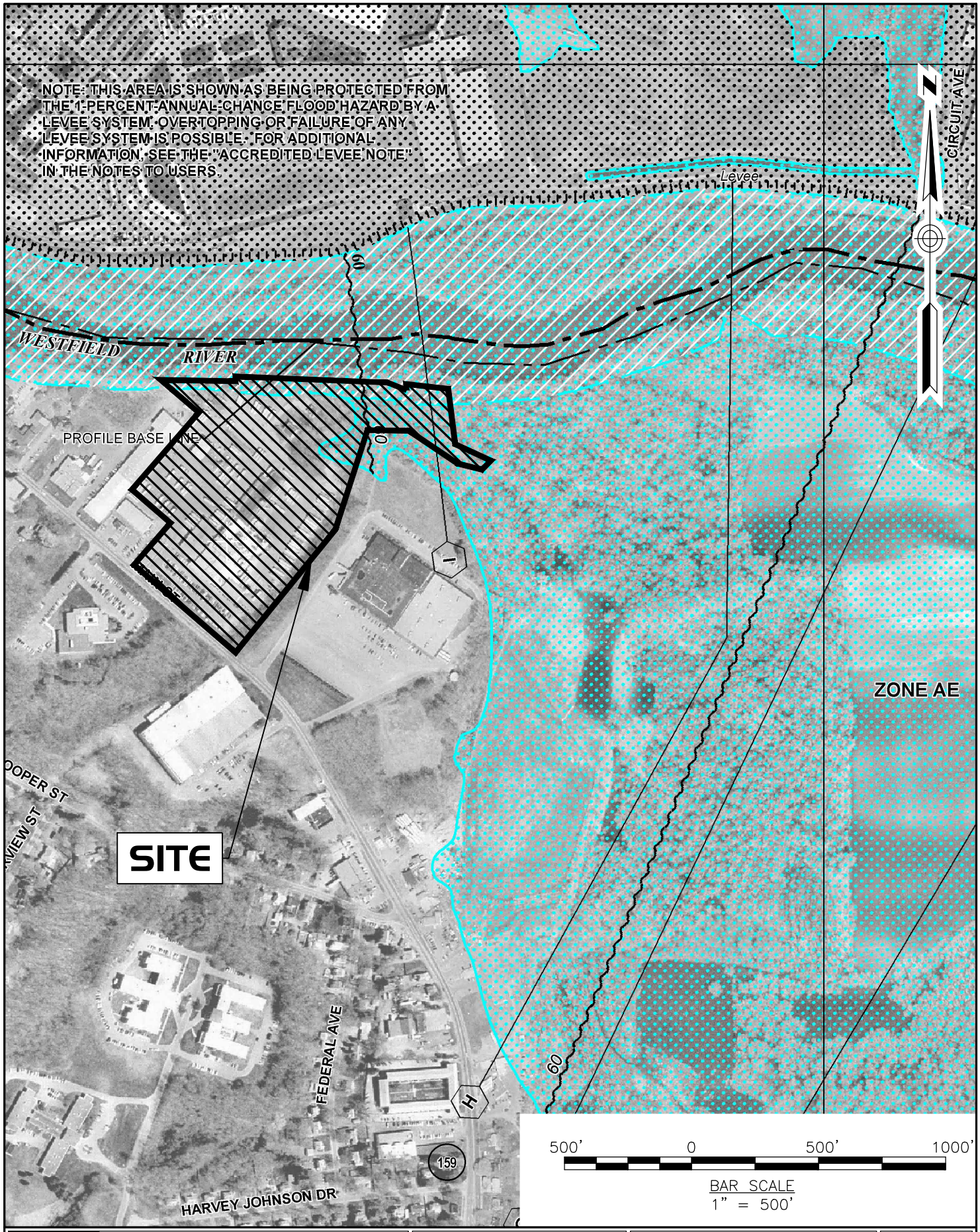
H.P. Hood LLC
Six Kimball Lane
Lynnfield, MA 01940

Proposed Building Addition
233 Main Street
Agawam, MA

JOB NO: 201016
DATE: 4/28/26
SCALE: AS NOTED

FIG-1

# Figure 2: FEMA Flood Map




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FLOOD RATE INSURANCE MAP

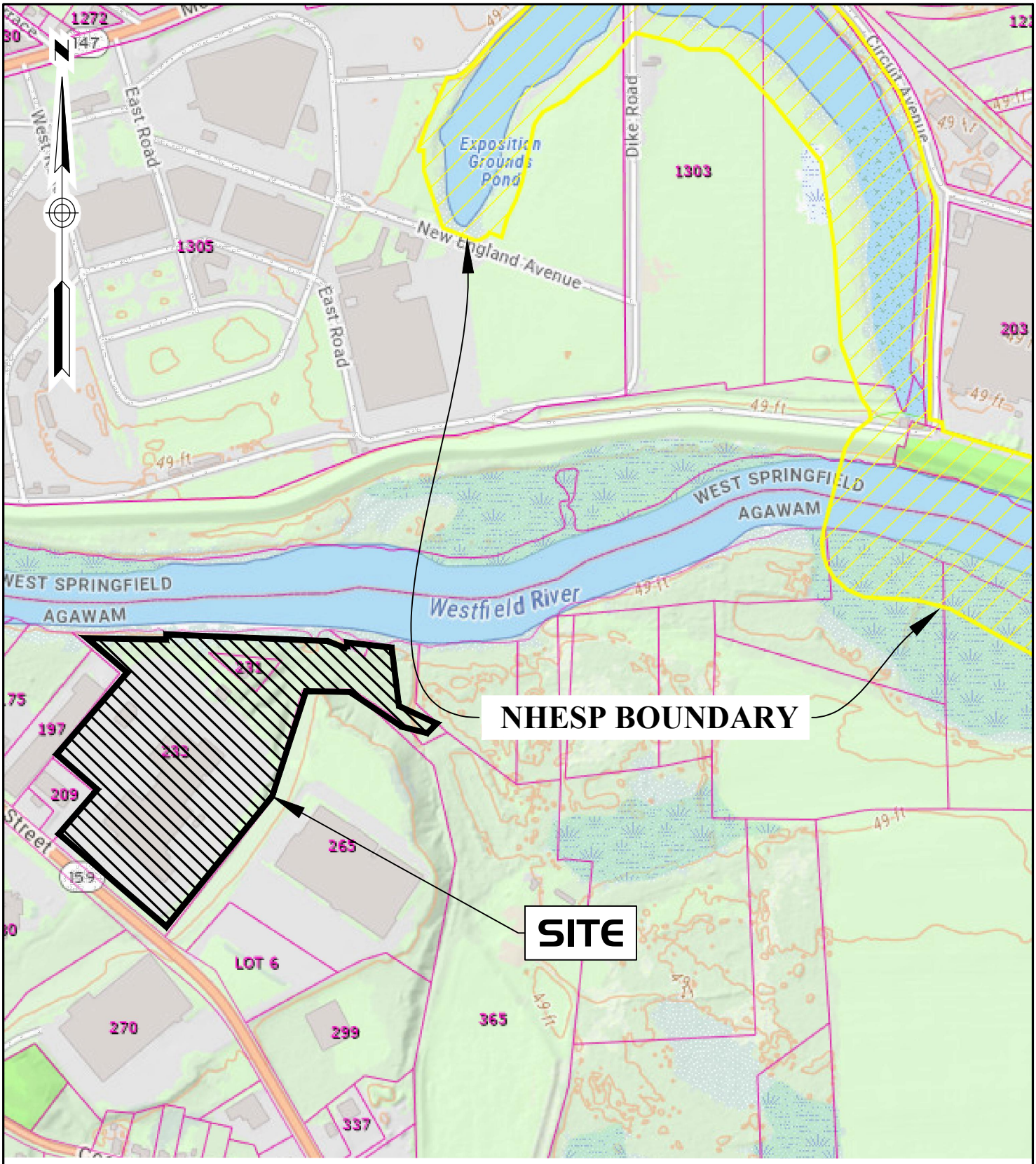
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233 Main Street
Agawam, MA

JOB NO: 201016
DATE: 4/28/26
SCALE: AS NOTED

FIG-2

# Figure 3: NHESP & Zone II Map

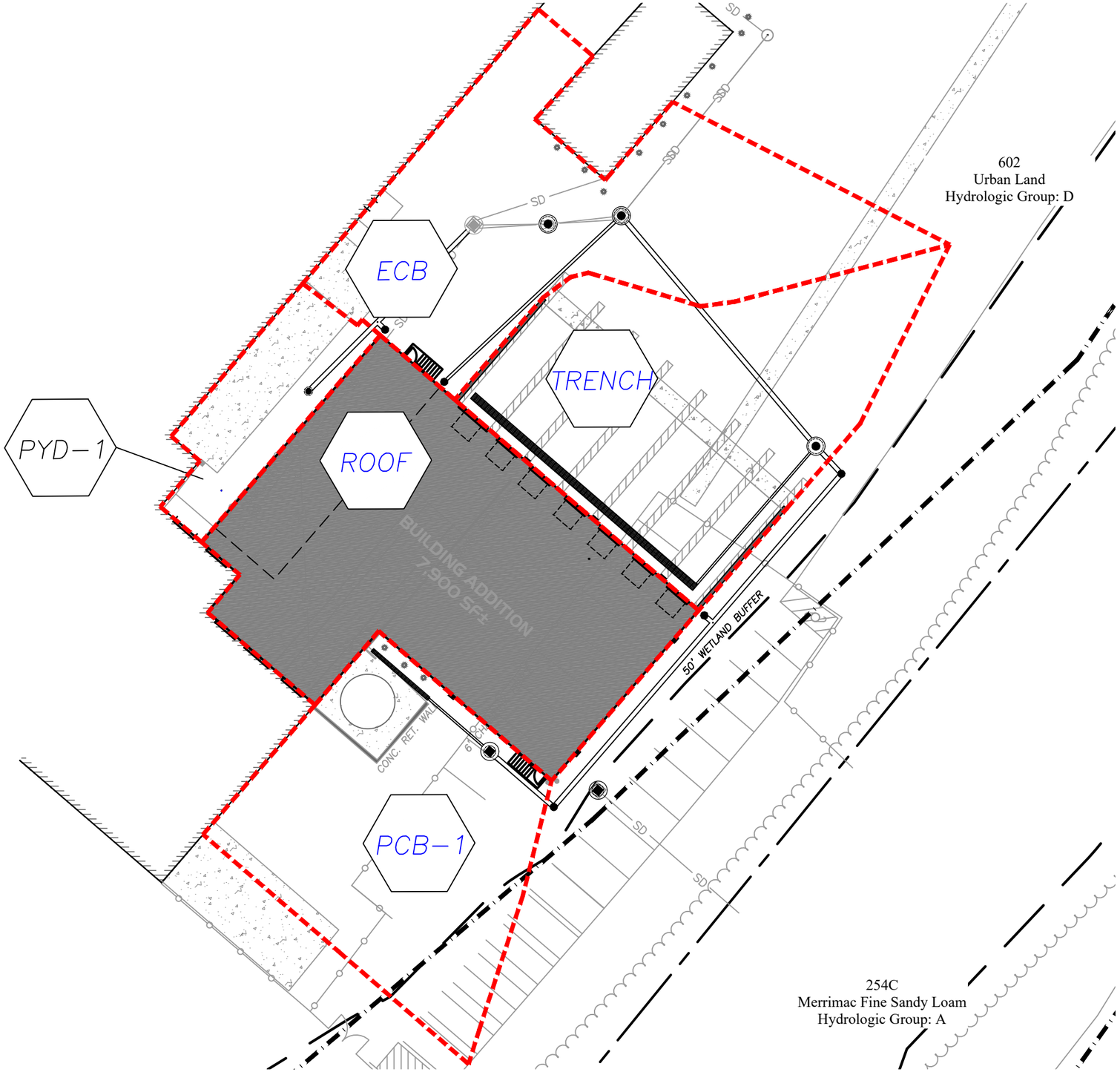



500’ 0 500’ 1000’

BAR SCALE
1” = 500’

| | | | |
|---|---|---|---|
| R LEVESQUE ASSOCIATES, INC<br>A Land Planning Services Company<br>40 School Street · P.O. Box 640 · Westfield, MA 01085<br>ph: 413.568.0985 fax: 413.568.0986 rlaland.com | NHESP & Zone II Map | H.P. Hood LLC<br>Six Kimball Lane<br>Lynnfield, MA 01940<br>Proposed Building Addition<br>233 Main Street<br>Agawam, MA | JOB NO: 201016<br>DATE: 4/28/26<br>SCALE: AS NOTED<br>FIG-3 |

# Figure 4: Inlet Area Plan




LEGEND

PCB–1 STRUCTURE NAME

INLET AREA BOUNDARY

1" =30'

15 0 30

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# Inlet Area Plan

**Proposed Building Addition**
**233 Main Street**
**Agawam, Massachusetts**

H.P. Hood LLC
Six Kimball Lane
Lynnfield, MA 01940

**JOB NO.:** 200116

**DATE:** 4/28/26

**SCALE:** As Noted

FIG-4

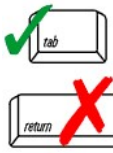
# Appendix A: Checklist for Stormwater Report

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands Program

# Checklist for Stormwater Report

## A. Introduction

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




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

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

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

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

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

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

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

# Checklist for Stormwater Report

## B. Stormwater Checklist and Certification

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

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

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

## Registered Professional Engineer's Certification

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

Registered Professional Engineer Block and Signature




Signature and Date 4/28/26

## Checklist

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

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

# Checklist for Stormwater Report

## Checklist (continued)

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

☒ No disturbance to any Wetland Resource Areas

☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)

☐ Reduced Impervious Area (Redevelopment Only)

☒ Minimizing disturbance to existing trees and shrubs

☐ LID Site Design Credit Requested:

- ☐ Credit 1
- ☐ Credit 2
- ☐ Credit 3

☐ Use of "country drainage" versus curb and gutter conveyance and pipe

☐ Bioretention Cells (includes Rain Gardens)

☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)

☐ Treebox Filter

☐ Water Quality Swale

☐ Grass Channel

☐ Green Roof

☒ Other (describe): Proprietary Sedimentation Devices

**Standard 1: No New Untreated Discharges**

☒ No new untreated discharges

☐ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth

☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

# Checklist for Stormwater Report

## Checklist (continued)

**Standard 2: Peak Rate Attenuation**

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☒ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

**Standard 3: Recharge**

☐ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

☐ Site is comprised solely of C and D soils and/or bedrock at the land surface

☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000

☐ Solid Waste Landfill pursuant to 310 CMR 19.000

☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

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

# Checklist for Stormwater Report

## Checklist (continued)

**Standard 3: Recharge** (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

**Standard 4: Water Quality**

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

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

# Checklist for Stormwater Report

## Checklist (continued)

**Standard 4: Water Quality** (continued)

☒ The BMP is sized (and calculations provided) based on:

☐ The ½" or 1" Water Quality Volume or

☒ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☒ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

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

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

**Standard 6: Critical Areas**

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

# Checklist for Stormwater Report

## Checklist (continued)

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

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

☐ Limited Project

☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.

☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area

☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff

☐ Bike Path and/or Foot Path

☒ Redevelopment Project

☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

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

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

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

# Checklist for Stormwater Report

## Checklist (continued)

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

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☒ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

**Standard 9: Operation and Maintenance Plan**

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☒ Description and delineation of public safety features;
- ☒ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

**Standard 10: Prohibition of Illicit Discharges**

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

# Appendix B: Soils Information

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 Hampden County, Massachusetts, Central Part



# 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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# Contents

**Preface**.....2
**How Soil Surveys Are Made**.....5
**Soil Map**.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....12
Map Unit Descriptions.....12
Hampden County, Massachusetts, Central Part.....14
8A—Limerick silt loam, 0 to 3 percent slopes, frequently flooded.....14
225B—Belgrade silt loam, 0 to 8 percent slopes.....15
230B—Unadilla very fine sandy loam, 3 to 8 percent slopes.....16
254C—Merrimac fine sandy loam, 8 to 15 percent slopes.....17
265A—Enfield silt loam, 0 to 3 percent slopes.....19
602—Urban land.....21
718A—Saco Variant silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded.....21
**References**.....23

# 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

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

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.




Map Scale: 1:2,870 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 40 80 160 240

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

## 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 1:15,800.

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: Hampden County, Massachusetts, Central Part
Survey Area Data: Version 19, Sep 5, 2025

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

Date(s) aerial images were photographed: Oct 15, 2020—Oct 31, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## MAP LEGEND

## MAP INFORMATION

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 |
|---|---|---|---|
| 8A | Limerick silt loam, 0 to 3 percent slopes, frequently flooded | 0.1 | 0.5% |
| 225B | Belgrade silt loam, 0 to 8 percent slopes | 4.7 | 26.9% |
| 230B | Unadilla very fine sandy loam, 3 to 8 percent slopes | 1.0 | 5.8% |
| 254C | Merrimac fine sandy loam, 8 to 15 percent slopes | 1.9 | 10.7% |
| 265A | Enfield silt loam, 0 to 3 percent slopes | 0.4 | 2.4% |
| 602 | Urban land | 9.3 | 53.4% |
| 718A | Saco Variant silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded | 0.1 | 0.3% |
| **Totals for Area of Interest** | | **17.4** | **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.

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.

# Hampden County, Massachusetts, Central Part

## 8A—Limerick silt loam, 0 to 3 percent slopes, frequently flooded

### Map Unit Setting

*National map unit symbol:* 2zvdd
*Elevation:* 50 to 500 feet
*Mean annual precipitation:* 32 to 50 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 140 to 240 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Limerick and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Limerick

#### Setting

*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Coarse-silty alluvium

#### Typical profile

*H1 - 0 to 12 inches:* silt loam
*H2 - 12 to 24 inches:* silt loam
*H3 - 24 to 60 inches:* stratified very fine sand to very fine sandy loam to silt

#### Properties and qualities

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)
*Depth to water table:* About 6 to 10 inches
*Frequency of flooding:* Frequent
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Very high (about 13.4 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3w
*Hydrologic Soil Group:* B/D
*Ecological site:* F144AY015NY - Wet Silty Low Floodplain
*Hydric soil rating:* Yes

### Minor Components

#### Winooski

*Percent of map unit:* 10 percent
*Landform:* Flood plains
*Landform position (two-dimensional):* Toeslope
*Down-slope shape:* Linear

*Across-slope shape:* Linear
*Hydric soil rating:* No

**Saco variant**

*Percent of map unit:* 5 percent
*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

## 225B—Belgrade silt loam, 0 to 8 percent slopes

**Map Unit Setting**

*National map unit symbol:* 99mt
*Elevation:* 50 to 1,800 feet
*Mean annual precipitation:* 32 to 50 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 140 to 240 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

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

**Description of Belgrade**

**Setting**

*Landform:* Lakebeds (relict)
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Friable coarse-silty eolian deposits over soft coarse-silty glaciolacustrine deposits

**Typical profile**

*H1 - 0 to 12 inches:* silt loam
*H2 - 12 to 28 inches:* silt loam
*H3 - 28 to 60 inches:* stratified very fine sand to silt

**Properties and qualities**

*Slope:* 0 to 8 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.06 to 2.00 in/hr)
*Depth to water table:* About 18 to 42 inches
*Frequency of flooding:* None
*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* High (about 9.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C
*Ecological site:* F145XY006CT - Semi-Rich Moist Lake Plain
*Hydric soil rating:* No

**Minor Components**

**Raynham**

*Percent of map unit:* 10 percent
*Landform:* Depressions
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

**Unadilla**

*Percent of map unit:* 10 percent
*Landform:* Lakebeds (relict)
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

## 230B—Unadilla very fine sandy loam, 3 to 8 percent slopes

**Map Unit Setting**

*National map unit symbol:* 99rn
*Elevation:* 50 to 1,800 feet
*Mean annual precipitation:* 32 to 50 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 140 to 240 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

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

**Description of Unadilla**

**Setting**

*Landform:* Lakebeds (relict)
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Hard coarse-silty glaciolacustrine deposits

**Typical profile**

*H1 - 0 to 10 inches:* very fine sandy loam
*H2 - 10 to 23 inches:* very fine sandy loam
*H3 - 23 to 60 inches:* stratified very fine sand to silt

**Properties and qualities**

*Slope:* 3 to 8 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Runoff class:* High
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 5 percent
*Available water supply, 0 to 60 inches:* High (about 11.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* C
*Ecological site:* F144AY024NY - Well Drained Eolian Outwash
*Hydric soil rating:* No

**Minor Components**

**Belgrade**

*Percent of map unit:* 10 percent
*Landform:* Lakebeds (relict)
*Landform position (two-dimensional):* Toeslope
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* No

**Raynham**

*Percent of map unit:* 10 percent
*Landform:* Depressions
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

## 254C—Merrimac fine sandy loam, 8 to 15 percent slopes

**Map Unit Setting**

*National map unit symbol:* 2tyqt
*Landscape:* Valleys, outwash plains
*Elevation:* 0 to 1,030 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:* Farmland of statewide importance

**Map Unit Composition**

*Merrimac and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Merrimac**

**Setting**

*Landscape:* Valleys, outwash plains
*Landform:* Eskers, Outwash plains, Moraines, Kames, Outwash terraces
*Landform position (two-dimensional):* Backslope, footslope, summit, shoulder
*Landform position (three-dimensional):* Side slope, crest, riser, tread
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Parent material:* Loamy glaciofluvial deposits derived from granite, schist, and gneiss over sandy and gravelly glaciofluvial deposits derived from granite, schist, and gneiss

**Typical profile**

*Ap - 0 to 10 inches:* fine sandy loam
*Bw1 - 10 to 22 inches:* fine sandy loam
*Bw2 - 22 to 26 inches:* stratified gravel to gravelly loamy sand
*2C - 26 to 65 inches:* stratified gravel to very gravelly sand

**Properties and qualities**

*Slope:* 8 to 15 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat excessively drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to very high (1.42 to 99.90 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum content:* 2 percent
*Maximum salinity:* Nonsaline (0.0 to 1.4 mmhos/cm)
*Sodium adsorption ratio, maximum:* 1.0
*Available water supply, 0 to 60 inches:* Low (about 4.6 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2s
*Hydrologic Soil Group:* A
*Ecological site:* F145XY008MA - Dry Outwash
*Hydric soil rating:* No

**Minor Components**

**Hinckley**

*Percent of map unit:* 5 percent
*Landscape:* Outwash plains, valleys
*Landform:* Deltas, Kames, Eskers, Outwash plains
*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Head slope, nose slope, side slope, crest, rise
*Down-slope shape:* Convex
*Across-slope shape:* Convex, linear
*Hydric soil rating:* No

**Sudbury**

*Percent of map unit:* 5 percent
*Landscape:* Lake plains, valleys
*Landform:* Deltas, Terraces, Outwash plains
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Tread, dip
*Down-slope shape:* Concave
*Across-slope shape:* Linear
*Hydric soil rating:* No

**Windsor**

*Percent of map unit:* 5 percent
*Landscape:* Valleys
*Landform:* Outwash plains, Dunes, Deltas, Outwash terraces
*Landform position (two-dimensional):* Backslope
*Landform position (three-dimensional):* Tread, riser
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear, convex
*Hydric soil rating:* No

## 265A—Enfield silt loam, 0 to 3 percent slopes

**Map Unit Setting**

*National map unit symbol:* 99nw
*Elevation:* 0 to 2,100 feet
*Mean annual precipitation:* 32 to 50 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 140 to 240 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

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

**Description of Enfield**

**Setting**

*Landform:* Terraces
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Riser
*Down-slope shape:* Linear
*Across-slope shape:* Convex

*Parent material:* Friable coarse-silty eolian deposits over loose sandy and gravelly glaciofluvial deposits derived from granite and gneiss

**Typical profile**

*H1 - 0 to 6 inches:* silt loam
*H2 - 6 to 25 inches:* silt loam
*H3 - 25 to 60 inches:* stratified sand to very gravelly fine sand

**Properties and qualities**

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* 18 to 40 inches to strongly contrasting textural stratification
*Drainage class:* Well drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 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:* Low (about 5.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 1
*Hydrologic Soil Group:* B
*Ecological site:* F145XY009CT - Well Drained Outwash
*Hydric soil rating:* No

## Minor Components

**Ninigret**

*Percent of map unit:* 10 percent
*Landform:* Terraces
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Hydric soil rating:* No

**Sudbury**

*Percent of map unit:* 10 percent
*Landform:* Terraces
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Tread
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Hydric soil rating:* No

## 602—Urban land

### Map Unit Setting

*National map unit symbol:* 99rq
*Frost-free period:* 150 to 195 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Urban land:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Urban Land

#### Setting

*Landform position (two-dimensional):* Toeslope
*Anthropogenic Feature:* Urban land

## 718A—Saco Variant silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded

### Map Unit Setting

*National map unit symbol:* 2zvdh
*Elevation:* 0 to 3,280 feet
*Mean annual precipitation:* 32 to 50 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 140 to 240 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Saco variant and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Saco Variant

#### Setting

*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Coarse-silty alluvium

#### Typical profile

*H1 - 0 to 10 inches:* silt loam
*H2 - 10 to 22 inches:* silt loam
*H3 - 22 to 60 inches:* silt loam

**Properties and qualities**

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Very poorly drained
*Runoff class:* Very high
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)
*Depth to water table:* About 0 to 2 inches
*Frequency of flooding:* Frequent
*Frequency of ponding:* Frequent
*Available water supply, 0 to 60 inches:* Very high (about 13.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 6w
*Hydrologic Soil Group:* B/D
*Ecological site:* F144AY016MA - Very Wet Low Floodplain
*Hydric soil rating:* Yes

**Minor Components**

**Swansea**

*Percent of map unit:* 10 percent
*Landform:* Bogs
*Down-slope shape:* Linear
*Across-slope shape:* Concave
*Hydric soil rating:* Yes

**Limerick**

*Percent of map unit:* 5 percent
*Landform:* Alluvial flats
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Hydric soil rating:* Yes

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# Appendix C: Hydraulic Analysis

**NOAA Atlas 14, Volume 10, Version 3**
**Location name: Agawam, Massachusetts, USA***
**Latitude: 42.0856°, Longitude: -72.618°**
**Elevation: 78 ft****
* source: ESRI Maps
** source: USGS

## POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

# PF tabular

**PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]**

| Duration | Average recurrence interval (years) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | **0.338** (0.261-0.433) | **0.406** (0.314-0.522) | **0.518** (0.398-0.668) | **0.612** (0.468-0.793) | **0.740** (0.549-1.01) | **0.837** (0.609-1.16) | **0.937** (0.663-1.36) | **1.05** (0.704-1.56) | **1.21** (0.780-1.86) | **1.33** (0.844-2.11) |
| 10-min | **0.478** (0.370-0.614) | **0.576** (0.445-0.739) | **0.735** (0.566-0.947) | **0.867** (0.664-1.12) | **1.05** (0.778-1.42) | **1.18** (0.862-1.65) | **1.33** (0.939-1.92) | **1.49** (0.998-2.21) | **1.71** (1.11-2.64) | **1.89** (1.20-2.98) |
| 15-min | **0.563** (0.435-0.722) | **0.677** (0.523-0.870) | **0.864** (0.666-1.11) | **1.02** (0.780-1.32) | **1.23** (0.915-1.68) | **1.39** (1.01-1.94) | **1.56** (1.10-2.26) | **1.75** (1.18-2.60) | **2.01** (1.30-3.10) | **2.22** (1.41-3.51) |
| 30-min | **0.760** (0.588-0.975) | **0.916** (0.708-1.18) | **1.17** (0.901-1.51) | **1.38** (1.06-1.79) | **1.67** (1.24-2.27) | **1.89** (1.38-2.63) | **2.12** (1.50-3.07) | **2.37** (1.60-3.53) | **2.73** (1.77-4.22) | **3.02** (1.91-4.77) |
| 60-min | **0.958** (0.741-1.23) | **1.16** (0.892-1.48) | **1.48** (1.14-1.90) | **1.74** (1.34-2.26) | **2.11** (1.57-2.87) | **2.39** (1.74-3.32) | **2.68** (1.89-3.87) | **3.00** (2.01-4.46) | **3.45** (2.23-5.33) | **3.81** (2.41-6.02) |
| 2-hr | **1.22** (0.953-1.56) | **1.47** (1.14-1.87) | **1.87** (1.45-2.39) | **2.20** (1.70-2.84) | **2.66** (1.99-3.60) | **3.00** (2.20-4.17) | **3.36** (2.40-4.88) | **3.79** (2.55-5.61) | **4.42** (2.87-6.80) | **4.95** (3.14-7.79) |
| 3-hr | **1.40** (1.10-1.78) | **1.69** (1.32-2.14) | **2.15** (1.67-2.74) | **2.53** (1.96-3.25) | **3.06** (2.30-4.14) | **3.45** (2.55-4.80) | **3.88** (2.79-5.64) | **4.39** (2.97-6.48) | **5.17** (3.36-7.94) | **5.84** (3.71-9.16) |
| 6-hr | **1.76** (1.38-2.21) | **2.13** (1.68-2.69) | **2.75** (2.15-3.48) | **3.26** (2.54-4.16) | **3.96** (3.00-5.35) | **4.48** (3.34-6.21) | **5.05** (3.68-7.35) | **5.76** (3.91-8.48) | **6.89** (4.50-10.5) | **7.88** (5.03-12.3) |
| 12-hr | **2.15** (1.70-2.69) | **2.66** (2.10-3.33) | **3.49** (2.76-4.40) | **4.19** (3.28-5.30) | **5.14** (3.92-6.91) | **5.84** (4.38-8.08) | **6.61** (4.86-9.62) | **7.61** (5.17-11.1) | **9.20** (6.02-14.0) | **10.6** (6.79-16.5) |
| 24-hr | **2.53** (2.02-3.14) | **3.18** (2.53-3.96) | **4.24** (3.37-5.31) | **5.13** (4.05-6.45) | **6.34** (4.88-8.50) | **7.23** (5.46-9.97) | **8.22** (6.09-12.0) | **9.52** (6.50-13.9) | **11.6** (7.63-17.6) | **13.5** (8.67-20.9) |
| 2-day | **2.88** (2.31-3.55) | **3.65** (2.93-4.51) | **4.91** (3.92-6.09) | **5.96** (4.73-7.44) | **7.40** (5.72-9.86) | **8.44** (6.42-11.6) | **9.61** (7.18-14.0) | **11.2** (7.66-16.2) | **13.8** (9.08-20.8) | **16.1** (10.4-24.8) |
| 3-day | **3.15** (2.54-3.87) | **3.99** (3.21-4.91) | **5.36** (4.30-6.63) | **6.50** (5.18-8.09) | **8.07** (6.27-10.7) | **9.20** (7.04-12.6) | **10.5** (7.87-15.2) | **12.2** (8.39-17.7) | **15.1** (9.95-22.7) | **17.7** (11.4-27.1) |
| 4-day | **3.39** (2.74-4.15) | **4.28** (3.46-5.25) | **5.74** (4.62-7.08) | **6.95** (5.56-8.63) | **8.62** (6.72-11.4) | **9.83** (7.53-13.4) | **11.2** (8.41-16.2) | **13.0** (8.96-18.8) | **16.1** (10.6-24.1) | **18.8** (12.1-28.8) |
| 7-day | **4.04** (3.29-4.93) | **5.05** (4.10-6.16) | **6.69** (5.41-8.20) | **8.05** (6.47-9.93) | **9.92** (7.76-13.1) | **11.3** (8.67-15.3) | **12.8** (9.64-18.4) | **14.8** (10.2-21.3) | **18.2** (12.0-27.1) | **21.1** (13.7-32.2) |
| 10-day | **4.70** (3.83-5.70) | **5.76** (4.69-7.00) | **7.49** (6.08-9.15) | **8.94** (7.21-11.0) | **10.9** (8.56-14.3) | **12.4** (9.51-16.7) | **14.0** (10.5-19.9) | **16.1** (11.1-23.0) | **19.4** (12.9-28.9) | **22.4** (14.5-34.1) |
| 20-day | **6.74** (5.54-8.12) | **7.86** (6.46-9.50) | **9.70** (7.94-11.8) | **11.2** (9.12-13.7) | **13.3** (10.5-17.2) | **14.9** (11.4-19.7) | **16.6** (12.4-23.0) | **18.6** (13.0-26.4) | **21.7** (14.5-32.1) | **24.4** (15.9-36.9) |
| 30-day | **8.46** (6.98-10.2) | **9.62** (7.93-11.6) | **11.5** (9.44-13.9) | **13.1** (10.7-15.9) | **15.2** (12.0-19.4) | **16.8** (12.9-22.1) | **18.5** (13.8-25.4) | **20.5** (14.3-28.9) | **23.3** (15.6-34.3) | **25.6** (16.7-38.7) |
| 45-day | **10.6** (8.79-12.7) | **11.8** (9.77-14.1) | **13.8** (11.3-16.5) | **15.4** (12.6-18.6) | **17.6** (13.9-22.3) | **19.3** (14.9-25.1) | **21.1** (15.6-28.4) | **22.9** (16.1-32.2) | **25.3** (17.0-37.1) | **27.2** (17.8-41.0) |
| 60-day | **12.4** (10.3-14.8) | **13.6** (11.3-16.3) | **15.7** (13.0-18.8) | **17.4** (14.3-21.0) | **19.7** (15.6-24.8) | **21.5** (16.5-27.7) | **23.3** (17.2-31.1) | **25.0** (17.6-35.0) | **27.2** (18.3-39.8) | **28.8** (18.8-43.2) |

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

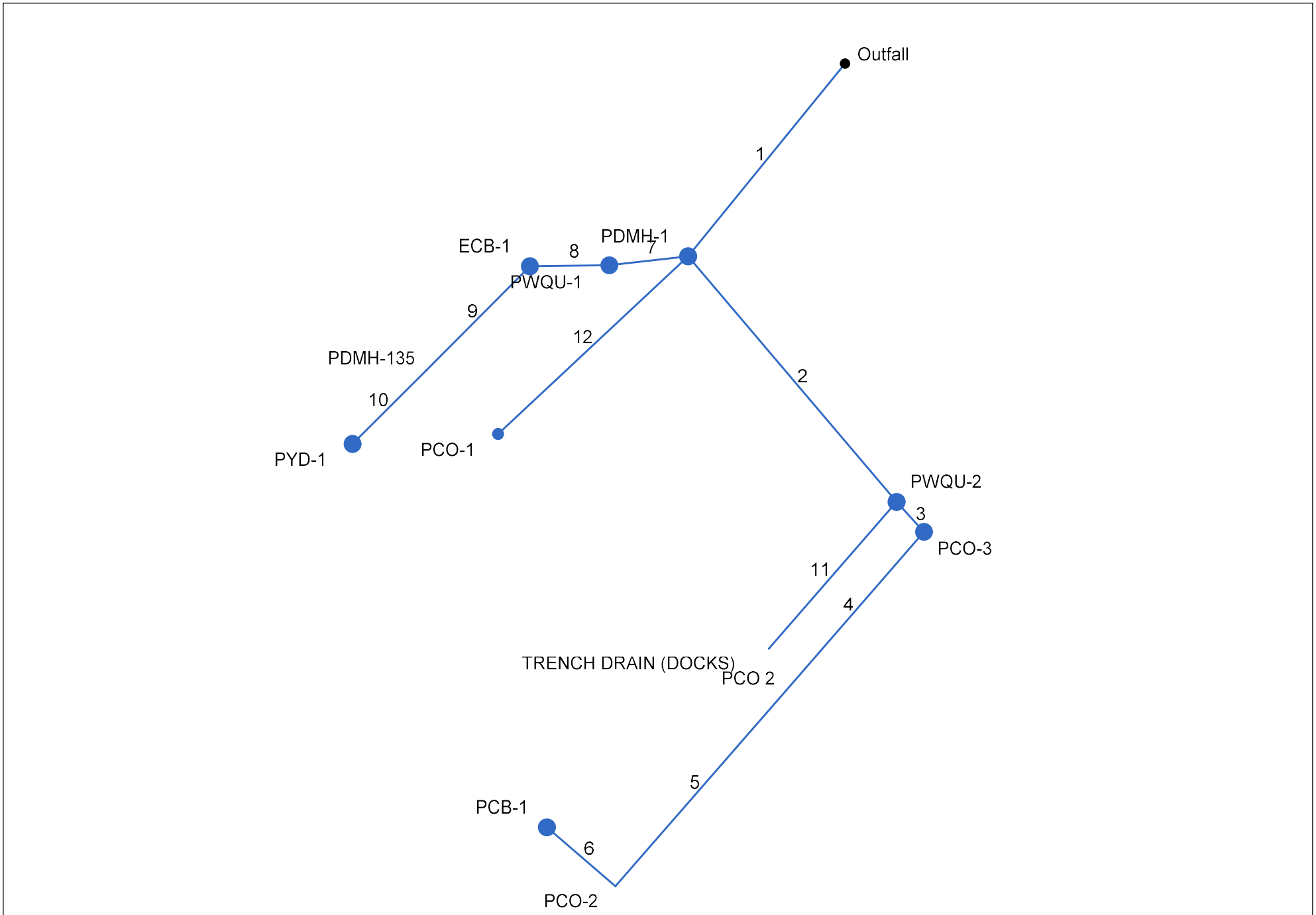
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

# PF graphical

# Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan




| Project File: CAD export.stm | Number of lines: 12 | Date: 4/29/2026 |
|---|---|---|

# Storm Sewer Tabulation

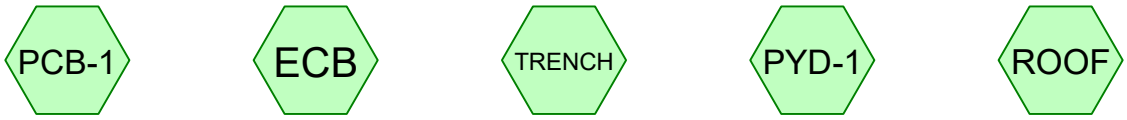
| Station | | Len | Drng Area | | Rnoff coeff | Area x C | | Tc | | Rain (I) | Total flow | Cap full | Vel | Pipe | | Invert Elev | | HGL Elev | | Grnd / Rim Elev | | Line ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Line | To Line | (ft) | Incr (ac) | Total (ac) | (C) | Incr | Total | Inlet (min) | Syst (min) | (in/hr) | (cfs) | (cfs) | (ft/s) | Size (in) | Slope (%) | Dn (ft) | Up (ft) | Dn (ft) | Up (ft) | Dn (ft) | Up (ft) | |
| 1 | End | 62.092 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 10.6 | 0.0 | 3.20 | 0.64 | 4.22 | 12 | 0.03 | 74.36 | 74.38 | 75.24 | 75.76 | 78.71 | 78.70 | P-D-PIPE-(131) |
| 2 | 1 | 80.448 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 9.3 | 0.0 | 1.30 | 2.51 | 1.66 | 12 | 0.50 | 74.48 | 74.88 | 76.01 | 76.12 | 78.70 | 79.59 | P-D-PIPE-(123) (1 |
| 3 | 2 | 10.060 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 9.1 | 0.0 | 0.60 | 2.97 | 0.76 | 12 | 0.70 | 74.98 | 75.05 | 76.16 | 76.16 | 79.59 | 79.55 | P-D-PIPE-(123) |
| 4 | 3 | 52.505 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 7.9 | 0.0 | 0.60 | 2.55 | 0.80 | 12 | 0.51 | 75.05 | 75.32 | 76.17 | 76.19 | 79.55 | 80.23 | P-D-PIPE-(121) (1 |
| 5 | 4 | 64.937 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 6.5 | 0.0 | 0.60 | 2.55 | 1.08 | 12 | 0.51 | 75.32 | 75.65 | 76.19 | 76.21 | 80.23 | 76.59 | P-D-PIPE-(121) |
| 6 | 5 | 22.584 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.0 | 6.0 | 0.0 | 0.60 | 3.35 | 2.00 | 12 | 0.89 | 75.65 | 75.85 | 76.23 | 76.17 | 76.59 | 78.82 | P-D-PIPE-(120) |
| 7 | 1 | 19.704 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 10.4 | 0.0 | 1.00 | 2.41 | 1.27 | 12 | 0.46 | 74.48 | 74.57 | 76.01 | 76.03 | 78.70 | 78.64 | P-D-PIPE-(130) |
| 8 | 7 | 19.775 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.0 | 10.1 | 0.0 | 1.00 | 2.53 | 1.27 | 12 | 0.51 | 74.67 | 74.77 | 76.03 | 76.05 | 78.64 | 76.87 | P-D-PIPE-(129) |
| 9 | 8 | 36.497 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0 | 7.7 | 0.0 | 0.20 | 3.57 | 0.26 | 12 | 1.01 | 74.77 | 75.14 | 76.06 | 76.07 | 76.87 | 80.27 | P-D-PIPE-(119) (1 |
| 10 | 9 | 26.056 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.0 | 6.0 | 0.0 | 0.20 | 3.56 | 1.15 | 12 | 1.00 | 75.14 | 75.40 | 76.07 | 75.58 | 80.27 | 78.05 | P-D-PIPE-(119) |
| 11 | 2 | 48.612 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.0 | 6.0 | 0.0 | 0.70 | 0.72 | 3.57 | 6 | 0.99 | 74.98 | 75.46 | 76.16 | 76.61 | 79.59 | 77.56 | P-D-PIPE-(124) |
| 12 | 1 | 64.789 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.0 | 6.0 | 0.0 | 0.90 | 2.54 | 1.15 | 12 | 0.51 | 74.48 | 74.81 | 76.01 | 76.05 | 78.70 | 79.00 | P-D-PIPE-(127) |

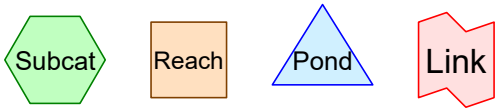
Project File: CAD export.stm

Number of lines: 12

Run Date: 4/29/2026

NOTES:Known Qs only ; c = cir e = ellip b = box




**Routing Diagram for 201016 - INLET**
Prepared by R Levesque Associates, Printed 4/28/2026
HydroCAD® 10.20-8a s/n 02175 © 2025 HydroCAD Software Solutions LLC

## Summary for Subcatchment ECB:

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 2,829 cf, Depth= 4.89"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.13"

| Area (sf) | CN | Description |
|---|---|---|
| 6,938 | 98 | Paved parking, HSG D |
| 6,938 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PCB-1:

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 2,279 cf, Depth= 4.89"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.13"

| Area (sf) | CN | Description |
|---|---|---|
| 709 | 98 | Paved parking, HSG A |
| 4,881 | 98 | Paved parking, HSG D |
| 5,590 | 98 | Weighted Average |
| 5,590 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment PYD-1:

Runoff = 0.2 cfs @ 12.09 hrs, Volume= 648 cf, Depth= 4.89"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.13"

| Area (sf) | CN | Description |
|---|---|---|
| 1,588 | 98 | Paved parking, HSG D |
| 1,588 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment ROOF:

Runoff = 0.9 cfs @ 12.09 hrs, Volume= 3,221 cf, Depth= 4.89"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.13"

| Area (sf) | CN | Description |
|---|---|---|
| 7,899 | 98 | Roofs, HSG D |
| 7,899 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

## Summary for Subcatchment TRENCH:

Runoff = 0.7 cfs @ 12.09 hrs, Volume= 2,655 cf, Depth= 4.89"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.13"

| Area (sf) | CN | Description |
|---|---|---|
| 6,510 | 98 | Paved parking, HSG D |
| 6,510 | 98 | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 6.0 | | | | | **Direct Entry,** |

# Appendix D: MassDEP Calculations

- Water Quality Flow Rate – PWQU-1
- Water Quality Flow Rate – PWQU-2
- Water Quality Flow Rate Conversion Table
- Barracuda Max Info Sheet

# Standard 4: Water Quality - PWQU-I

## Water Quality Volume Conversion to Flow Rate

Note: Required water quality volume based on 0.5-inch of runoff

$$Q = (qu)\,(A)\,(WQV)$$

where: Q = peak flow rate associated with first 0.5-inch of runoff (c.f.s.)

qu = unit peak discharge (csm/in) - value taken from table based on $t_c$

A = impervious surface drainage area (sq. mi.)

WQV = water quality volume in watershed inches (0.5-inch)

· Proposed Water Quality Unit (PCB-1)

| | | | |
|---|---|---|---|
| $t_c$ = | 0.100 | hrs | |
| qu = | 752 | csm/in | (from table) |
| A = | 0.00031 | sq. mi.* | |
| WQV = | 0.5 | inch | |

$Q_{0.5}$ = 0.11 c.f.s

The Barracuda Max Model S4 provides treatment of flows up to 1.52 c.f.s

* Only inlcudes impervious area tributary to PWQU-1

# Standard 4: Water Quality - PWQU-2

## Water Quality Volume Conversion to Flow Rate

Note: Required water quality volume based on 0.5-inch of runoff

$$Q = (qu)\ (A)\ (WQV)$$

where: Q = peak flow rate associated with first 0.5-inch of runoff (c.f.s.)

qu = unit peak discharge (csm/in) - value taken from table based on $t_c$

A = impervious surface drainage area (sq. mi.)

WQV = water quality volume in watershed inches (0.5-inch)

· Proposed Water Quality Unit (PCB-1)

| | | | |
|---|---|---|---|
| $t_c$ = | 0.100 | hrs | |
| qu = | 752 | csm/in | (from table) |
| A = | 0.00043 | sq. mi.* | |
| WQV = | 0.5 | inch | |

$Q_{0.5}$ = 0.16 c.f.s

The Barracuda Max Model S4 provides treatment of flows up to 1.52 c.f.s

* Only inlcudes impervious area tributary to PWQU-2

**Figure 2: For First ½-inch of Runoff, Table of qu values for Ia/P Curve = 0.0.058, listed by tc, for Type III Storm Distribution**

| Tc (Hours) | qu (csm/in) |
|---|---|
| 0.01 | 821 |
| 0.03 | 821 |
| 0.05 | 813 |
| 0.067 | 794 |
| 0.083 | 773 |
| 0.1 | 752 |
| 0.116 | 733 |
| 0.133 | 713 |
| 0.15 | 694 |
| 0.167 | 677 |
| 0.183 | 662 |
| 0.2 | 646 |
| 0.217 | 632 |
| 0.233 | 619 |
| 0.25 | 606 |
| 0.3 | 572 |
| 0.333 | 552 |
| 0.35 | 542 |
| 0.4 | 516 |
| 0.416 | 508 |
| 0.5 | 472 |
| 0.583 | 443 |
| 0.6 | 437 |
| 0.667 | 417 |
| 0.7 | 408 |
| 0.8 | 383 |
| 0.9 | 361 |
| 1 | 342 |
| 1.1 | 325 |
| 1.2 | 311 |
| 1.3 | 297 |
| 1.4 | 285 |
| 1.5 | 274 |
| 1.6 | 264 |
| 1.7 | 254 |
| 1.8 | 246 |
| 1.9 | 238 |
| 2 | 230 |
| 2.1 | 223 |
| 2.2 | 217 |
| 2.3 | 211 |
| 2.4 | 205 |
| 2.5 | 200 |
| 2.6 | 194 |
| 2.7 | 190 |
| 2.8 | 185 |
| 2.9 | 181 |
| 3 | 176 |
| 3.1 | 173 |
| 3.2 | 169 |
| 3.3 | 165 |
| 3.4 | 162 |
| 3.5 | 158 |
| 3.6 | 155 |
| 3.7 | 152 |
| 3.8 | 149 |
| 3.9 | 147 |
| 4 | 144 |
| 4.1 | 141 |
| 4.2 | 139 |
| 4.3 | 136 |
| 4.4 | 134 |
| 4.5 | 132 |
| 4.6 | 130 |
| 4.7 | 128 |
| 4.8 | 126 |
| 4.9 | 124 |
| 5 | 122 |
| 5.1 | 120 |
| 5.2 | 118 |
| 5.3 | 116 |
| 5.4 | 115 |
| 5.5 | 113 |
| 5.6 | 112 |
| 5.7 | 110 |
| 5.8 | 109 |
| 5.9 | 107 |
| 6 | 106 |
| 6.1 | 104 |
| 6.2 | 103 |
| 6.3 | 102 |
| 6.4 | 100 |
| 6.5 | 99 |
| 6.6 | 98 |
| 6.7 | 97 |
| 6.8 | 96 |
| 6.9 | 94 |
| 7 | 93 |
| 7.1 | 92 |
| 7.2 | 91 |
| 7.3 | 90 |
| 7.4 | 89 |
| 7.5 | 88 |
| 7.6 | 87 |
| 7.7 | 86 |
| 7.8 | 85 |
| 7.9 | 84 |
| 8 | 84 |
| 8.1 | 83 |
| 8.2 | 82 |
| 8.3 | 81 |
| 8.4 | 80 |
| 8.5 | 79 |
| 8.6 | 79 |
| 8.7 | 78 |
| 8.8 | 77 |
| 8.9 | 76 |
| 9 | 76 |
| 9.1 | 75 |
| 9.2 | 74 |
| 9.3 | 74 |
| 9.4 | 73 |
| 9.5 | 72 |
| 9.6 | 72 |
| 9.7 | 71 |
| 9.8 | 70 |
| 9.9 | 70 |
| 10 | 69 |

# Barracuda® Max

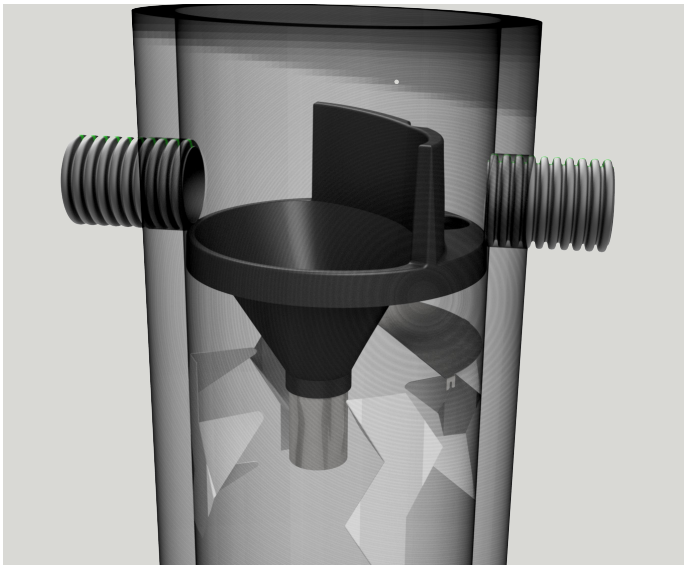
The Barracuda Max is market-changing stormwater quality technology. This high-performance vortex hydrodynamic separator is designed to remove total suspended solids in order to protect our precious receiving waters. The Barracuda Max is also an outstanding value that offers multiple pipe configurations, and quick installation. The “Max” version of the Barracuda is built on the base platform of the original ADS Barracuda with improved removal efficiencies and installation components.

**Features**

- Single manhole design
- No elevation loss between the inlet and outlet
- Variable inlet/outlet angle configurations (not just 180 degree orientation)
- Internal bypass for inline installation (where applicable)
- Revolutionary, patent pending “teeth” mitigate turbulence in the sump area to prevent resuspension of captured contaminants
- Available with grated drop inlet configuration
- Available with trash and/or oil capture add-ons

**Benefits**

- Internal components are in stock for quick delivery
- The S3, S4, S6, and S8 can be installed in a standard 36” (900 mm), 48” (1200 m), 72” (1800 m), and 96” (2400 m) precast manhole, respectively
- The S3 & S4 can be provided factory installed within a 36” (900 mm) and 48” (1200 mm) ADS HP manhole and delivered to the jobsite
- The Barracuda Max “teeth” and deflector plate apparatus are fabricated and designed for quick and easy field assembly
- Designed for easy maintenance using a vacuum truck or similar equipment.
- Inspection and maintenance are performed from the surface with no confined space entry





ADS™

# Barrucuda Specification

### Materials and Design

- Concrete Structures: Designed for H-20 traffic loading and applicable soil loads or as otherwise determined by a Licensed Professional Engineer. The materials and structural design of the devices shall be per ASTM C857 and ASTM C858.
- 36” (900 mm) and 48” (1200 mm) HP Manhole Structures: Made from an impact modified copolymer polypropylene meeting the material requirements of ASTM F2764. The eccentric cone reducer shall be manufactured from polyethylene material meeting ASTM D3350 cell class 213320C. Gaskets shall be made of material meeting the requirements of ASTM F477.
- Separator internals shall be substantially constructed of stainless steel, polyethylene or other thermoplastic material approved by the manufacturer.

### Performance

- The stormwater treatment unit shall be an inline unit capable of conveying 100% of the design peak flow. If peak flow rates exceed maximum hydraulic rate, the unit shall be installed offline.
- The Barracuda Max unit shall be designed to remove at least 80% of the suspended solids on an annual aggregate removal basis. Said removal shall be based on full-scale third party testing using OK-110 media gradation or equivalent and 300 mg/L influent concentration. Said full scale testing shall have included sediment capture based on actual total mass collected by the stormwater treatment unit.

  - OR -

  The Barracuda Max unit shall be designed to remove at least 50% of TSS using a media mix with $d_{50}$=75 micron and 200 mg/L influent concentration.

  - OR -

  The Barracuda Max unit shall be designed to remove at least 50% of TSS per current NJDEP/NJCAT HDS protocol.
- The stormwater treatment unit internals shall consist of (1) separator cone assembly, and (1) sump assembly, which includes the “teeth”.

| Barracuda Max Model | Manhole Diameter | OK-110 (80% removal) | Pretreatment for Infiltration[1] |
|---|---|---|---|
| S3 | 36” (900 mm) | 0.86 CFS (24.1 L/s) | 1.65 CFS (46.7 L/s) |
| S4 | 48” (1200 mm) | 1.52 CFS (43.0 L/s) | 2.94 CFS (83.3 L/s) |
| S6 | 72” (1800 mm) | 3.42 CFS (96.8 L/s) | 6.62 CFS (187.5 L/s) |
| S8 | 96” (2400 mm) | 6.08 CFS (172.2 L/s) | 11.76 CFS (333.0 L/s) |

* Peak bypass flows are dependent on final design

[1] 50% removal of OK-110.

### Installation

Installation of the stormwater treatment unit(s) shall be performed per manufacturer’s installation instructions. Such instructions can be obtained by calling Advanced Drainage Systems at 800-821-6710 or by logging on to www.adspipe.com.

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# Appendix E: Construction Period Erosion Control Plan

# Construction Period Erosion Control Plan

## Proposed Building Addition

233 Main Street
Agawam, MA 01001
(Parcel ID: K14-2-8)

### Submitted To:

Town of Agawam Planning Board
1000 Suffield Street
Agawam, MA 01001

### Applicant/Owner:

HP Hood, LLC
6 Kimball Lane
Lynnfield, MA 01940

RLA Project File #:201016
**April 28, 2026**


R LEVESQUE ASSOCIATES, INC
A LAND PLANNING SERVICES COMPANY
40 School Street · Westfield, MA 01085
p 413.568.0985 · f 413.568.0986 · www.rlaland.com

The project shall implement a construction period erosion control plan. The following provides descriptions and guidelines to ensure that the areas surrounding the project site will be protected from excessive sedimentation and runoff during construction.

## 1.1 Construction Period Pollution Prevention And Erosion Control Measures

### 1.1.1 Preconstruction Notifications And Meetings

Prior to the start of construction, the contractor shall call together a pre-construction meeting including a representative from the Town, the design engineer, contractor, and any pertinent persons that should be in attendance. These requirements shall be the responsibility of the Contractor to arrange, attend, and document.

### 1.1.2 Sediment Barrier And Work Limit

Before installation of the sediment barriers, the location shall be staked in the field for review and approval by the owner or their representative. To facilitate sediment barrier installation, woody vegetation may then be removed and any required trench may be cut by machine, provided all other ground cover is left intact. No excavation, grading, filling, or removal of vegetative ground cover shall begin until sediment barriers have been installed as shown on the plans and have been inspected by the owner or their representative.

### 1.1.3 Silt Fence

The bottom of the fence shall be trenched into the ground a minimum of 6" and back-filled with compacted soil. Where trenching is not feasible, silt fence skirt shall be covered with compacted soil or crushed stone. The top of the fabric shall be stretched as tightly as is practical, with intermediate stakes added to correct excessive sags. Stakes shall be driven at least 12" into the ground. Splices between sections shall be made by rolling end stakes together one complete turn and driving into the ground together.

### 1.1.4 Straw Bales

Straw bales may be used as temporary and moveable control measures, temporary check dams, or as reinforcement for silt fence in areas of concentrated runoff or high fills. Bales shall be tightly butted and staked 12" into the ground. Where used without silt fence in front, the bales shall be trenched 4" into the ground, back-filled with compacted soil, and the spaces between bales shall be chinked with loose hay.

### 1.1.5 Filter Sock (Filtrexx Or Equivalent)

In areas of expected sheet flow, filter sock may be placed directly on the ground without trenching or stakes. In areas of expected concentrated flow, mulch or crushed stone shall be placed along the up-slope face to control and filter underflow. Additional layers of Filter Sock may be required for adequate freeboard. The filter sock shall be staked at 10 feet on-center or in cases where they cannot be staked, utilize heavy concrete blocks to hold in place.

### 1.1.6 Temporary Sedimentation Basins

Temporary sediment basins may be excavations or bermed stormwater detention structures (depending on grading) that will retain runoff for a sufficient period of time to allow suspended soil particles to settle out prior to discharge. These temporary basins will be located based on construction needs as determined by the contractor and outlet devices will be designed to control velocity and sediment. Points of discharge from sediment basins will be stabilized to minimize erosion. If the temporary basin is to be located within an area of future infiltration as part of the stormwater management system, the excavation for the temporary sedimentation basin shall be limited to one foot above final grade of the infiltration structure.

### 1.1.7 Stocking Additional Materials

A stock of additional erosion control materials shall be available on the site for emergency repairs and temporary measures. Stock shall be replenished when decreased to 50% of the numbers below. Stock shall include:

Straw Bales – 10 (kept dry) with 20 oak stakes

Or

Silt Fence – 30 Linear feet.

Or

Filter Sock – 4 – 8 foot sections (kept dry)

Washed Stone – One (1) cubic yard, ¾" to 2" diameter

### 1.1.8 Trench Protection

Open trenches shall be protected from accumulation of surface water or groundwater that could result in erosion of the trench and discharge of sediment. Where feasible, spoil shall be stockpiled on the up-slope side of the trench to prevent entrance of surface runoff. Backfill shall be crowned to allow for settlement and to avoid concentration of runoff on top of the trench.

### 1.1.9 Site Stabilization – Temporary

Where a portion of the site will not be subject to construction activity for over 14 days, measures shall be taken to provide temporary stabilization of that inactive portion of the site, within 14 days of the cessation of construction activity. Stabilization measures may include seeding for temporary cover, mulching, or other measures to protect exposed soil from erosion and prevent sediment movement.

### 1.1.10 Site Stabilization – Permanent

Within 14 days of completion of loaming and finish grading on any portion of the site, that area shall be seeded or planted for permanent cover (season permitting) in accordance with USDA NRCS guidelines or equivalent.

### 1.1.11 Roadway Sweeping

The entrance to the site and affected portions of the access drive or paved project areas shall be swept as needed to control sediment runoff into storm drains or waterways and to control blowing dust.

## 1.2 Short-Term Erosion Control Maintenance

The following provides short-term erosion control maintenance guidelines and requirements.

1. The contractor or subcontractor will be responsible for implementing each control shown on the sedimentation and erosion control plan.
2. All erosion and sediment control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control measures will be installed during construction in order to control erosion and/or off-site sedimentation if deemed necessary by on-site inspection.
3. Effective erosion control measures shall be initiated prior to the commencement of clearing, grading, excavation, or other operations that will disturb the natural protection.
4. All sediment and erosion control devices shall be inspected at least once every seven (7) calendar days and after any storm event greater than 0.5 inches of precipitation during any 24-hour period, and the inspection shall be documented in writing. Damaged or ineffective devices shall be repaired or replaced, as necessary.
5. The contractor shall take all reasonable precautions to avoid excess erosion of the site due to the construction of this project.
6. Silt shall be removed from behind barriers if greater than 6-inches deep or as needed. Sediment that is collected in structures shall be disposed of properly and covered if stored on-site
7. Damaged or deteriorated items will be repaired immediately after identification.
8. All ditches shall be stabilized as soon as is practicable to minimize erosion.
9. The contractor shall maintain all erosion control devices in a good, working state of repair. Upon complete stabilization of any tributary areas, the erosion control devices shall be removed and disposed of so as to cause no off-site siltation.
10. Inspect and maintain construction entrance stone such that sediment does not track onto the street. Any sediment tracked onto the street shall be swept daily.
11. After catch basins have been constructed, the contractor shall protect the inlets by constructing inlet protection as shown on the plans.
12. Once the site has been paved, all catch basin inlets shall receive a silt sack type protection.
13. Erosion control measures shall remain in place until all disturbed earth has been substantially stabilized. After removal of structures, disturbed areas shall be regraded and stabilized as necessary.

# Appendix F: Long-Term Operation and Maintenance Plan

- Long-Term Operation & Maintenance Plan Narrative
- O&M Checklist
- Barracuda Max Maintenance Guide

# Long-Term Operation & Maintenance Plan

## Proposed Building Addition

233 Main Street
Agawam, MA 01001
(Parcel ID: K14-2-8)

### Submitted To:

Town of Agawam Planning Board
1000 Suffield Street
Agawam, MA 01001

### Applicant/Owner:

HP Hood, LLC
6 Kimball Lane
Lynnfield, MA 01940

RLA Project File #:201016

**April 28, 2026**


R LEVESQUE ASSOCIATES, INC

A LAND PLANNING SERVICES COMPANY

40 School Street · Westfield, MA 01085

p 413.568.0985 · f 413.568.0986 · www.rlaland.com

# I. Long-Term Stormwater Maintenance Program:

This Long-Term Operation and Maintenance Plan (O&M) identifies inspection and maintenance requirements for the proposed stormwater management system. The O&M references guidelines set forth by the Stormwater Management Handbook developed by the Massachusetts Department of Environmental Protection.

Owner/Responsible Party*:

HP Hood, LLC
6 Kimball Lane
Lynnfield, MA 01940

*The party listed shall be responsible for implementation and record keeping of the requirements listed in this operation and maintenance plan. Upon sale of property or any other transition of ownership, the responsible party shall be reinstated as the new owner or any other group created as determined by the owner.

## 2. Inspection and Maintenance Program:

Regular inspection and routine maintenance are necessary to ensure that the stormwater management system continues to control and treat runoff. The following lists the inspection schedule and maintenance procedures for the proposed stormwater Best Management Practices:

| BMP | Inspection Schedule | Maintenance Schedule | Maintenance Procedures |
|---|---|---|---|
| Bituminous Concrete Pavement | Four times per year | Twice per year | • Roadway to be swept in March or April following snow melt and again in late November or early December to remove fallen leaves and debris |
| Deep-Sump Catch Basins | Four times per year | Four times per year | • Remove sediment once deposits reach one half the depth from the bottom sump to the lowest invert. |
| Stormwater Piping | Once per year | Once per year | • Inspect pipe entrances in catch basins and manholes and remove any blockages |
| Roof Leaders | Once per year | Once per year | • Inspect downspout connections at grade and remove any blockages<br>• Open and inspect cleanout locations and remove any blockages |
| Proprietary Sedimentation Device* | As specified by the manufacturer | As specified by the manufacturer | • Clean the unit using the method specified by the manufacturer. Vactor trucks are typically used to clean these units. |
| Yard Drains | Four times per year | As necessary | • Remove debris from inlet grate;<br>• Inspect and remove sediment from bottom of unit and clear any pipe blockage. |
| Trench Drain | Four times per year | As necessary | • Remove debris from inlet grate;<br>• Inspect and remove sediment from bottom of trench and clear any pipe blockage. |

*See attached Device Operation and Maintenance Guide

See the attached Long-Term O&M Inspection Checklist for record keeping purposes.

# 3. Additional Long-Term Operation and Maintenance Items

The following is a list of additional operation and maintenance items to be implemented by the owner/governing group to maintain the features proposed in this project.

A. Proper storage, use, and disposal of hazardous chemicals, including automobile fluids, pesticides, paints, solvents, etc. shall be required. Information should be provided on chemicals of concern, proper use, and disposal options. Recycling programs for used motor oil, antifreeze, and other products should be developed.

B. Vehicle Washing. This management measure involves educating the owner on the water quality impacts of the outdoor washing of vehicles and how to avoid allowing polluted runoff to enter the storm drain system. Outdoor vehicle washing has the potential to result in high loads of nutrients, metals, and hydrocarbons which is conveyed by the detergent-rich water into storm drains.

C. Recycling, spill prevention and response plans, and proper material storage and disposal of potentially hazardous materials shall be implemented. It will be the responsibility of the owner to contain and legally remove any materials that are spilled onsite. The use of dry floor cleaners and absorbent materials and limiting the use of water to clean pavement is encouraged. Care should be taken to avoid accidental disposal of hazardous materials.

D. Provisions for storing trash and waste products shall be implemented. The waste materials shall be collected by the owner and all materials shall be properly disposed of.

E. Requirements for routine inspections and maintenance of stormwater best management practices. Routine inspections shall be performed to ensure the correct functioning of stormwater best management practices. See the specific maintenance criteria for detail regarding inspections and maintenance frequency.

F. Requirements for Storage and Use of Fertilizers, Herbicides, and Pesticides. Fertilizers, pesticides, herbicides, lawn care chemicals, or other leachable materials shall be used in accordance with the Lawn Care Regulations of the Massachusetts Pesticide Board, 33 CMR 10.03 (30,31), as amended, with manufacturer's label instructions and all other necessary precautions to minimize adverse impacts on surface and groundwater. The storage of any such materials shall be within structure designed to prevent the escape of contaminated runoff or leachate.

G. Provisions for prevention of illicit discharges to the stormwater management system shall be implemented. Any illicit discharges to the stormwater management system shall be prohibited. It will be the owner's responsibility to ensure compliance with the legal disposal of all materials and containment/cleanup of any illicit discharges.

H. Training for staff or personnel involved with implementation of the Long-Term Pollution Prevention Plan shall be required. The owner/governing group will be responsible for the implementation of the measures set forth in the Long-Term Pollution Prevention Plan. Documentation that personnel and owners involved with the implementation of the Long-Term Pollution Prevention Plan have been trained to conduct such tasks shall be documented.

## 4. Winter and Snow Conditions

The following is a list of additional operation and maintenance items to be implemented by the owner during winter and snow conditions.

A. Snowfall shall be stored on the grassed areas surrounding the pavement areas, excluding any areas utilized for stormwater management practices. As needed, any snow that cannot be stored on site shall be trucked off site and disposed of properly.

B. Winter road salt and/or sand use and storage restrictions shall be implemented based on any restrictions issued for the project. Sodium chloride for ice control shall be used at the minimum salt to sand ratio which is consistent with the Massachusetts Department of Environmental Protections guidelines. Sodium chloride, calcium chloride, chemically treated abrasives or other chemicals used for the removal of ice and snow on roads/drives shall not be stored on site.

## 5. Public Safety Features

The proposed site design utilizes the following features which have been incorporated to ensure the safety of the public:

A. Control and collection of stormwater runoff through positive drainage and curbing directing it towards the drainage inlets;

B. Heavy-duty stormwater drain manhole covers and catch basin grates have been designed to withstand H20 loading;

C. Reduction of peak discharge rates from the site in the post-development condition as compared to the pre-developed conditions;

D. Development and implementation of an Operations & Maintenance Plan to ensure the stormwater management system continues to function as designed.

# 6. Estimated Cost of Maintenance

The following budget was prepared as an estimate of inspection and maintenance costs for the stormwater management system. The budget is an estimate only as the costs may vary depending on the level of sediment accumulation and frequency of maintenance tasks required.

| BMP Inspections | Number of Occurrences | Maintenance Cost | Number of Structures | Sum |
|---|---|---|---|---|
| Catch Basin | 4/year | $50 | 1 | $200 |
| Proprietary Sedimentation Device | 2/year | $100 | 2 | $400 |
| Trench Drain | 4/year | $50 | 2 | $400 |
| Yard Drain | 4/year | $50 | 1 | $200 |
| Total Estimated Annual Cost of Inspections | | | | $1,200 |

| BMP Maintenance | Number of Occurrences | Maintenance Cost | Number of Structures | Sum |
|---|---|---|---|---|
| Catch Basin | 4/year | $200 | 1 | $800 |
| Proprietary Sedimentation Device | 2/year | $200 | 2 | $800 |
| Trench Drain | 4/year | $100 | 2 | $800 |
| Yard Drain | 4/year | $100 | 1 | $400 |
| Total Estimated Annual Cost of Maintenance | | | | $2,800 |

Project: Proposed Building Addition

Address: 233 Main Street, Agawam, MA 01001

BPM Name:

Responsible Party:

Date:

Page: 1 of 1

## Operation & Maintenance Inspection Checklist

| BMP Element: | Potential Problem: | Resolution: | Pass | Fail | Recommended Remediation |
|---|---|---|---|---|---|
| Bituminous Concrete Roadway | Build-up of sediment over the winter months and collection of leaves during the fall months. | Sweep roadway using a high-efficiency street sweeper. | | | |
| Stormwater Piping | Blockage of inlet/outlet pipes due to debris or sediment accumulation. | Remove any debris and sediment via proper means. Dispose of debris/sediment in accordance with local & state regulations | | | |
| Proprietary Treatment Device | Sediment has accumulated to a depth greater than the original design depth for sediment storage. | Remove sediment and disposed of in accordance with local and state regulations. | | | |
| Roof Leaders | Downspout connections have been damaged or disconnected. | Repair and reconnect downspout connections. | | | |
| | Roof leaders are surcharging at the downspout connections | Open and insepct at cleanout locations and remove any blockages. | | | |
| Deep-Sump Catch Basins | Sediment has accumulated to a depth greater than the original design depth for sediment storage, approximately 2-feet of sediment. | Remove the sediment and dispose of in accordance with local and state regulations. | | | |
| Yard Drain | Blockage of inlet grate due to debris or vegetation. | Remove debris from inlet grate and cut back vegetation around frame. | | | |

Inspector's Signature

Date

# Barracuda® Max & Barracuda Maintenance Guide

One of Barracuda's advantages is the ease of maintenance. Like any system that collects pollutants, the Barracuda must be maintained for continued effectiveness. Maintenance is a simple procedure performed using a vacuum truck or similar equipment. The systems were designed to minimize the volume of water removed during routine maintenance, reducing disposal costs.

Contractors can access the pollutants stored in the manhole through the manhole cover. This allows them to gain vacuum hose access to the bottom of the manhole to remove sediment and trash. There is no confined space entry necessary for inspection or maintenance.

The entire maintenance procedure typically takes 2 to 4 hours, depending on the system's size, the captured material, and the vacuum truck's capacity.

Local regulations may apply to the maintenance procedure. Safe and legal disposal of pollutants is the responsibility of the maintenance contractor. Maintenance should be performed only by a qualified contractor.

## Inspection and Cleaning Cycle

Periodic inspection is needed to determine the need for and frequency of maintenance. You should begin inspecting as soon as construction is complete and then on an annual basis. Typically, the system needs to be cleaned every 1-3 years.

Excessive oils, fuels or sediments may reduce the maintenance cycle. Periodic inspection is important.

## Determining When to Clean

To determine the sediment depth, the maintenance contractor should lower a stadia rod into the manhole until it contacts the top of the captured sediment and mark that spot on the rod. Then push the probe through to the bottom of the sump and mark that spot to determine sediment depth.

Maintenance should occur when the sediment has reached the levels indicated in the Storage Capacity Chart.

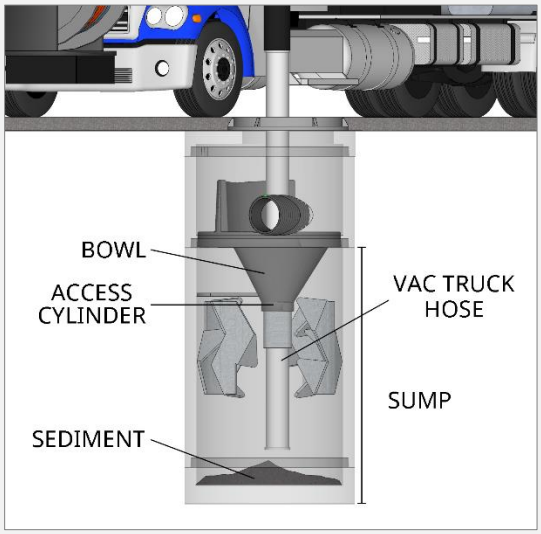
## Barracuda Storage Capacities

| Model | Manhole Diameter in. (mm) | Total System Volume Gallons (Liters) | Treatment Chamber Capacity Gallons (Liters) | Standard Sediment Capacity (20" depth) Yards$^3$ (meters$^3$) | NJDEP Sediment Capacity (50% of standard depth) Yards$^3$ (meters$^3$) |
|---|---|---|---|---|---|
| S3 | 36 (900) | 264 (999) | 212 (803) | 0.44 (0.34) | 0.22 (0.17) |
| S4 | 48 (1200) | 665 (2517) | 564 (2135) | 0.78 (0.60) | 0.39 (0.30) |
| S6 | 72 (1800) | 1497 (5667) | 1269 (4804) | 1.75 (1.34) | 0.88 (0.67) |
| S8 | 96 (2400) | 4196 (15884) | 3835 (14517) | 3.10 (2.37) | 1.55 (1.19) |

## Maintenance Instructions

1. Remove the manhole cover to provide access to the pollutant storage. Pollutants are stored in the sump, below the bowl assembly visible from the surface. Access this area through the 8" (200 mm), 10" (250 mm), 15" (375 mm) or 20" (500 mm) diameter access cylinder.
2. Use a vacuum truck or other similar equipment to remove all water, debris, oils and sediment. See figure 1.
3. Use a high pressure hose to clean the manhole of all the remaining sediment and debris. Then, use the vacuum truck to remove the water.
4. Fill the cleaned manhole with water until the level reaches the invert of the outlet pipe.
5. Replace the manhole cover.
6. Dispose of the polluted water, oils, sediment and trash at an approved facility.
    a. Local regulations prohibit the discharge of solid material into the sanitary system. Check with the local sewer authority for authority to discharge the liquid.
    b. Some localities treat the pollutants as leachate. Check with local regulators about disposal requirements.
    c. Additional local regulations may apply to the maintenance procedure.

**Figure 1**




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# Appendix G: Illicit Discharge Compliance Statement

## Illicit Discharge Compliance Statement

The owners of the land/responsible party will be responsible for prohibiting illicit discharges to the stormwater management system during construction and during its life of operation. The stormwater management system is comprised of the components for conveying, treating, and infiltrating stormwater runoff on-site, including stormwater best management practices and any pipes intended to transport stormwater to the groundwater, a surface water, or municipal separate storm sewer system. An illicit discharge shall constitute any connection or discharge to the stormwater management system including, but not limited to, wastewater discharges, discharge of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, oil, or grease.

Responsible Party*:

HP Hood, LLC
c/o Bob Hale
6 Kimball Lane
Lynnfield, MA 01940

*The party listed shall be responsible for implementation and record keeping of the requirements listed in this operation and maintenance plan. Upon sale of property or any other transition of ownership, the responsible party shall be reinstated as the new owner or any other group created as determined by the owner.

Signature of Responsible Party Representative — Date: 4/22/26

Signature of Responsible Party Representative** — Date

**Required upon transfer of ownership

Site Plans

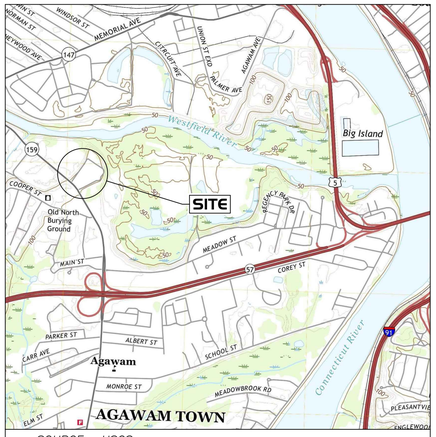
# Proposed Building Addition

## 233 Main Street
## Agawam, MA 01001
## Parcel ID: K14-2-8

AS PREPARED FOR:

**H.P. Hood LLC**

**Six Kimball Lane**
**Lynnville, MA 01940**




SOURCE: USGS

**April 28, 2026**

| DRAWING INDEX | | |
|---|---|---|
| SHEET NO. | SHEET NAME | ISSUE DATE |
| T-1 | TITLE SHEET | 4/28/26 |
| EX-1 | EXISTING CONDITIONS PLAN | 4/7/26 |
| C-1 | NOTES, SYMBOL & LINE LEGEND, AND ABBREVIATIONS | 4/28/26 |
| C-2 | CONSTRUCTION NOTES | 4/28/26 |
| C-3 | DEMOLITION AND REMOVALS PLAN | 4/28/26 |
| C-4 | LAYOUT AND MATERIALS PLAN | 4/28/26 |
| C-6 | GRADING, EROSION & SEDIMENTATION PLAN | 4/28/26 |
| SL-1 | PHOTOMETRIC PLAN | 4/16/26 |
| SL-2 | LIGHTING FIXTURE DETAILS | 4/16/26 |
| D-1 | DETAILS | 4/28/26 |

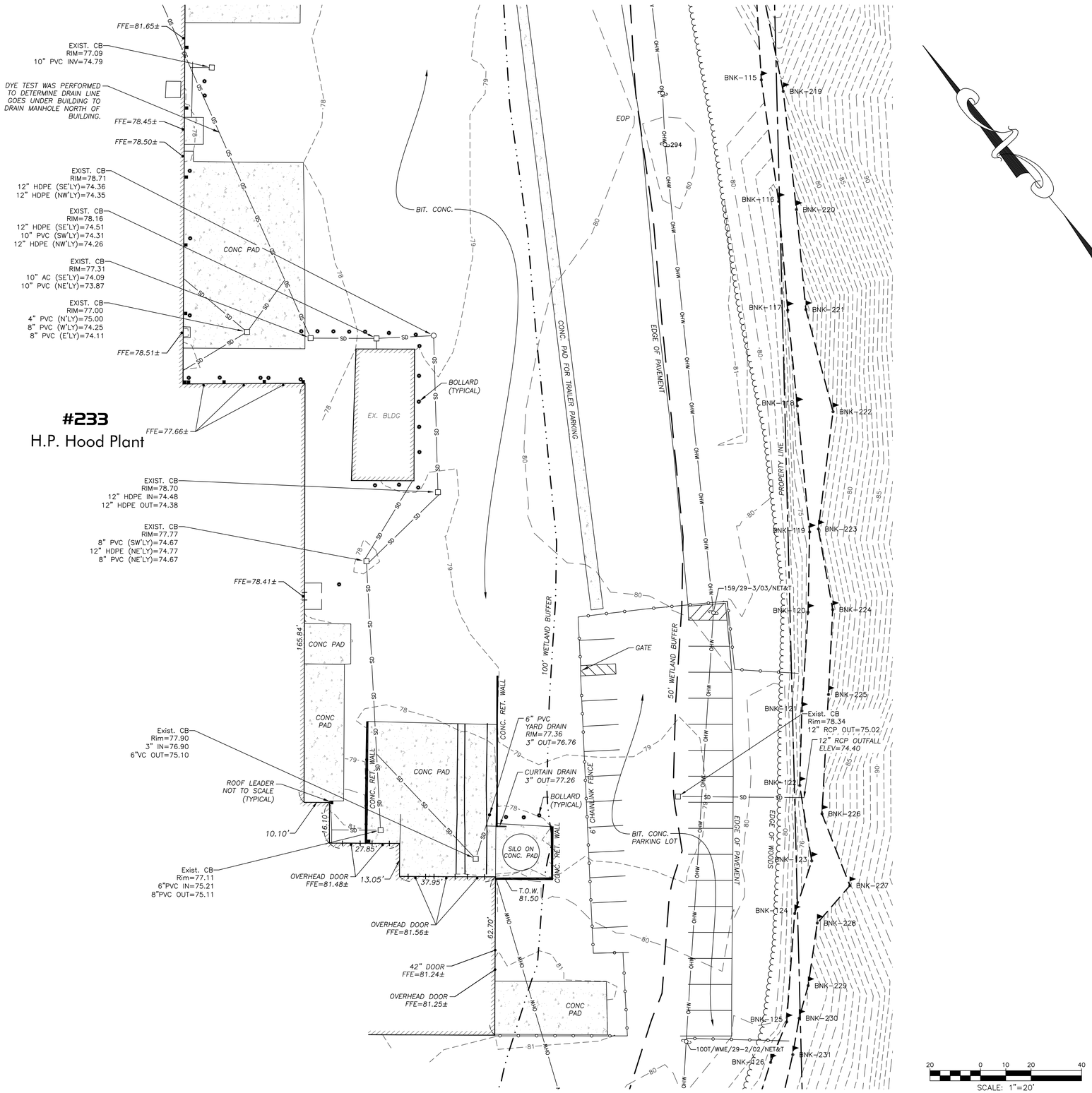
BY


R LEVESQUE ASSOCIATES INC
A LAND PLANNING SERVICES COMPANY

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www.rlaland.com


**RLA Project Number: 201016**

**PERMITTING**
**NOT FOR CONSTRUCTION**




## NOTES

1. THE RECORD OWNERS OF THE SUBJECT PARCELS ARE:
   265 MAIN STREET – HP HOOD, LLC (L.C. CTF. #39127 & DEED BK. 23606 PG. 527)
   233 MAIN STREET – H.P. HOOD, INC. (L.C. CTF. #25079 & DEED BK. 13330 PG. 509)
2. THE PROPERTY LINES SHOWN HEREON ARE BASED UPON THE FOLLOWING PLANS:
   LAND COURT PLAN #1369A – #1369E
   PLAN BOOK 305 PAGES 118+119
   AND OTHER UNRECORDED PLANS AS FURNISHED BY THE CLIENT
3. THE EXISTING BUILDING(S) SHOWN HEREON ARE BASED ON AN APPROXIMATE MEASUREMENT OF THE OUTSIDE PERIMETER OF THE EXISTING STRUCTURES. THE ACTUAL LOCATION OF THE EXISTING BUILDING WALLS AND CORNERS SHOULD BE VERIFIED IN THE FIELD PRIOR TO ANY CONSTRUCTION WORK THAT WOULD ABUT OR TAKE PLACE ADJACENT TO THE EXISTING BUILDING(S). IF THE PLAN HEREON IS USED FOR CONSTRUCTION LAYOUT PURPOSES, THE PARTIES CONDUCTING LAYOUT SHALL CONTACT R. LEVESQUE ASSOCIATES INC. PRIOR TO SAID LAYOUT TO DETERMINE PROPER CONTROL. PLEASE NOTE WHILE THE BUILDING(S) ARE SHOWN TO BE SQUARE, IT SHOULD NOT BE ASSUMED THAT THE WALLS ARE SQUARE OR PLUMB. R. LEVESQUE ASSOCIATES TAKES NO RESPONSIBILITY FOR THIRD PARTY LAYOUT OF THE PLAN SHOWN HEREON.
4. THIS PLAN HAS BEEN PREPARED FOR SITE PLANNING PURPOSES AND SHALL NOT BE USED FOR THE CONVEYANCE OF LAND OR FOR ANY OTHER USE.
5. SUBJECT PARCELS CONTAIN APPROXIMATELY 16.74 ACRES (TOTAL).
6. THE SUBJECT PROPERTIES SHOWN HEREON MAY BE SUBJECT TO RIGHTS AND EASEMENTS AS CONTAINED IN THE VARIOUS DEEDS OF RECORD DESCRIBING SAID PROPERTIES. THE LOCATION AND EXTENT OF ANY SUCH RIGHTS AND EASEMENTS IS NOT THE SUBJECT OF THIS PLAN.
7. RESOURCE AREA FLAGGING WAS PERFORMED BY R LEVESQUE ASSOCIATES, INC. IN DECEMBER 2020.
8. ABUTTERS SHOWN HEREON ARE REFERENCED FROM THE TOWN OF AGAWAM MUNICIPAL GIS WEBSITE GIS.
9. SUBJECT PARCELS ARE ZONED INDUSTRIAL A (IA) ACCORDING TO THE AGAWAM ZONING MAP.
10. A PORTION OF THE SUBJECT PARCEL IS LOCATED WITHIN THE ESTABLISHED FLOOD HAZARD ZONE AE ACCORDING TO FLOOD INSURANCE RATE MAP #25013C0403E DATED 07/16/2013. THE FLOOD ZONE ELEVATION FOR THE SITE IS 60.2.
11. THE SUBJECT PROPERTY IS NOT LOCATED WITHIN NATURAL HERITAGE & ENDANGERED SPECIES PROGRAM (NHESP) JURISDICTION.

RLA
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Civil Engineers · Land Surveyors
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# PARTIAL EXISTING CONDITIONS PLAN

**233 MAIN ST.**
**Paecel ID: K14-2-8**
**AGAWAM, MA**

COMMONWEALTH OF MASSACHUSETTS
MARC E. SHUTE
No. 33610
PROFESSIONAL LAND SURVEYOR

**PREPARED FOR:**

H.P. Hood, LLC
Six Kimball Lane
Lynnfield, MA 01940

**ISSUANCE DATE:** April 7, 2026

| REVISIONS: | DATE: |
|---|---|
| | |

**DRAFTED BY:** t.a.

UNAUTHORIZED ALTERATION OF THIS DOCUMENT IS A VIOLATION OF MASSACHUSETTS STATE LAW

**SCALE:** AS NOTED

**RLA PROJ. NUMBER:** 201016

| DRAWING# | REV. |
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| EX-1 | - |

S:\Projects\2020\201016 - Hood - 233 & 265 Main St, Agawam\Civil 3D\201016 - EXIST.dwg

## SYMBOL & LINE LEGEND

- IRON PIPE FOUND
- IRON PIPE TO BE SET
- CONCRETE BOUND FOUND
- CONCRETE BOUND TO BE SET
- COMPUTED POINT
- EXISTING SIGN
- EXISTING MAILBOX
- MW EXISTING MONITORING WELL
- EXISTING LIGHT POLE
- UTILITY POLE
- GUY ANCHOR
- EXISTING ELECTRIC MANHOLE
- EXISTING TELEPHONE MANHOLE
- EXISTING CABLE TV BOX
- EXISTING WELL LOCATION
- WV EXISTING WATER VALVE
- EXISTING WATER SHUT-OFF
- EXISTING HYDRANT
- PROPOSED WATER VALVE
- PROPOSED HYDRANT
- EXISTING GAS VALVE
- EXISTING SANITARY SEWER MANHOLE
- EXISTING CATCH BASIN
- EXISTING DRAIN MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- SB-1 SOIL BORING LOCATION
- TP-1 TEST PIT LOCATION
- P-1 PERC TEST LOCATION
- WF-1 WETLAND FLAG LOCATION
- R-1 M.A.H.W. FLAG LOCATION
- EXISTING STONE WALL
- TREE LINE
- × 102.4 EXISTING SPOT GRADE
- 219 EXISTING CONTOUR
- × 94.7 PROPOSED SPOT GRADE
- 214 PROPOSED CONTOUR
- EDGE OF WETLAND
- FENCE LINE
- GUARDRAIL
- OHW OHW EXISTING OVERHEAD WIRES
- UEL UEL EXISTING UNDERGROUND ELECTRIC
- TEL TEL EXISTING TELEPHONE LINE
- G G EXISTING GAS LINE
- W W EXISTING WATER LINE
- SD SD EXISTING STORM DRAIN
- SS SS EXISTING SANITARY SEWER
- LOW LOW LIMIT OF WORK LINE
- SF SF SF SILT FENCE LINE

## ABBREVIATIONS

| | | |
|---|---|---|
| A.F.F. | – | ABOVE FINISHED FLOOR |
| A.F.S. | – | ABOVE FINISHED SLAB |
| APPROX. | – | APPROXIMATE |
| A.T.F. | – | ABOVE TOP OF FOUNDATION |
| BLDG. | – | BUILDING |
| BLK. | – | BLOCK |
| BOT. | – | BOTTOM |
| B.O.W. | – | BOTTOM OF WALL |
| BRG. | – | BEARING |
| CB. | – | CATCH BASIN |
| CL | – | CENTERLINE |
| C.I. | – | CAST IRON |
| CLR. | – | CLEAR |
| CONC. | – | CONCRETE |
| CONT. | – | CONTINUOUS |
| CONTR. | – | CONTRACTOR |
| DBL. | – | DOUBLE |
| DET. | – | DETAIL |
| D.I. | – | DUCTILE IRON |
| DIA. | – | DIAMETER |
| DIM. | – | DIMENSION |
| DT'L. | – | DETAIL |
| DWG. | – | DRAWING |
| EA. | – | EACH |
| ELEC. | – | ELECTRIC |
| ELEV. | – | ELEVATION |
| EXIST. | – | EXISTING |
| EXT. | – | EXTERIOR |
| FFE | – | FINISH FLOOR ELEVATION |
| FIN. | – | FINISH |
| FLR. | – | FLOOR |
| FOUND. | – | FOUNDATION |
| FT. | – | FOOT OR FEET |
| INSTL. | – | INSTALLED |
| LT. | – | LIGHT |
| MAX. | – | MAXIMUM |
| M.A.H.W. | – | MEAN ANNUAL HIGH WATER |
| MH. | – | MANHOLE |
| MIN. | – | MINIMUM |
| MISC. | – | MISCELLANEOUS |
| N.T.S. | – | NOT TO SCALE |
| O.A. | – | OVERALL |
| O.C. | – | ON CENTER |
| PCB | – | PROPOSED CATCH BASIN |
| PDMH | – | PROPOSED DRAIN MANHOLE |
| PFES | – | PROP. FLARED END SECTION |
| POCS | – | PROP. OUTLET CONTROL STRUCT. |
| PROP. | – | PROPOSED |
| PSMH | – | PROP. SANITARY SEWER MANHOLE |
| PWQU | – | PROP. WATER QUALITY UNIT |
| P.S.I. | – | POUNDS PER SQUARE INCH |
| REINF. | – | REINFORCING |
| R.H. | – | RIGHT HAND |
| SHT. | – | SHEET |
| SPEC. | – | SPECIAL OR SPECIFICATIONS |
| SQ. | – | SQUARE |
| ST. | – | STEEL |
| STA. | – | STATION |
| T.O.F. | – | TOP OF FOUNDATION |
| T.O.W. | – | TOP OF WALL |
| T.S. | – | TOP OF STEEL |
| TYP. | – | TYPICAL |
| W/ | – | WITH |
| WTR. | – | WATER |
| W.W.M. | – | WELDED WIRE MESH |

## EROSION & SEDIMENT CONTROL NOTES

### MANAGEMENT STRATEGIES

1. CONSTRUCTION TRAFFIC SHALL BE LIMITED TO THE CONSTRUCTION ENTRANCE.
2. CONSTRUCTION SEQUENCE SHALL BE PHASED TO AVOID LEAVING LARGE AREAS EXPOSED FOR LONG PERIODS OF TIME.
3. TEMPORARY SEED AND MULCH SHALL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING.
4. SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED CONTINUOUSLY, ESPECIALLY FOLLOWING STORM EVENTS TO LOCATE FAILING CONTROL MEASURES AND CONDUCT ROUTINE MAINTENANCE OPERATIONS.
5. THE CONSTRUCTION SUPERINTENDENT SHALL INFORM ALL ON-SITE WORKERS OF THE SEDIMENTATION CONTROL PROGRAM.

### VEGETATIVE CONTROL PRACTICES

1. TOPSOIL STOCKPILING: TOPSOIL SHALL BE STRIPPED FROM AREAS TO BE DISTURBED AND STOCKPILED FOR LATER USE. STOCKPILE LOCATION SHALL BE APPROVED BY THE OWNER AND ENGINEER AND BE WITHIN LIMIT OF WORK.
2. TEMPORARY SEEDING: THE TEMPORARY SEDIMENT BASIN, TOPSOIL STOCKPILE AND ROUGH GRADED AREAS SHALL BE SEEDED WITH WINTER RYE AT A RATE OF 30 LBS. PER ACRE ANY SOILS THAT ARE LEFT EXPOSED AND UNDISTURBED FOR MORE THAN 30 DAYS SHALL BE TEMPORARILY SEEDED.

A. SITE PREPARATION
- COMPLETE ALL ROUGH GRADING ACTIVITIES
- REMOVE ALL ROCKS AND DEBRIS LARGER THAN 3" IN DIAMETER FROM AREAS TO BE TEMPORARILY SEEDED. -EVENLY APPLY LIME TO ACHIEVE A PH VALUE OF 6.0.
- EVENLY APPLY 14 LBS. OF 5-10-10 ANALYSIS FERTILIZER TO A DEPTH OF 4" USING SUITABLE EQUIPMENT.
- SEEDBED IS TO BE LEFT IN FIRM AND SMOOTH CONDITION.
- THE LAST TILLAGE OPERATION SHALL BE PERFORMED ACROSS THE SLOPE.

B. ESTABLISHMENT
- EVENLY APPLY SEED IN ACCORDANCE WITH THE SPECIES AND RATE INDICATED ABOVE BY MEANS OF BROADCASTING OR HYDROSEEDING.
- UNLESS HYDROSEEDED, COVER SEED WITH 1/4" TO 1/2" OF TOPSOIL
- APPLY MULCH OR EROSION CONTROL BLANKET IMMEDIATELY FOLLOWING SEEDING.
- VERIFY SEEDING DATES WITH ENGINEER/LANDSCAPE ARCHITECT. IF ENGINEER/LANDSCAPE ARCHITECT DETERMINES THAT SEED CANNOT BE APPLIED DUE TO CLIMATE, TOPSOIL SHALL NOT BE SPREAD AND MULCHING SHALL BE APPLIED TO THE EXPOSED SURFACE TO STABILIZE SOILS UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
- PERMANENT SEEDING SHALL BE APPLIED BETWEEN APRIL 15 AND SEPTEMBER 30. TEMPORARY SEEDING SHALL BE APPLIED TO ALL DISTURBED AREAS OUTSIDE THIS TIME FRAME, UPON APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT.

C. MAINTENANCE
- ALL SEEDED/MULCHED AREAS SHALL BE INSPECTED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE REPAIRED AS NECESSARY.

### NONSTRUCTURAL CONTROL PRACTICES

1. SCARIFICATION: EXPOSED SLOPES EXCEEDING 4:1 SHALL BE SCARIFIED AT RIGHT ANGLES TO THE SLOPE. PROVIDE PERIODIC UPGRADING OF SERRATIONS DURING EXPOSED PERIOD UNTIL VEGETATION IS ESTABLISHED. PROVIDE VEGETATIVE COVER AS SOON AS POSSIBLE.
2. STRAW MULCH: STRAW MULCH SHALL BE APPLIED IN CONJUNCTION WITH TEMPORARY/PERMANENT SEEDING AND TO GRADED AREAS WHICH REMAIN EXPOSED OUTSIDE OF RECOMMENDED SEEDING DATES. MULCH SHALL BE APPLIED AT 90 LBS. PER 1000 S.F. CONTRACTOR SHALL PERIODICALLY INSPECT AND REAPPLY AS NECESSARY, PARTICULARLY FOLLOWING SIGNIFICANT STORM EVENTS.
3. TOPSOIL: DISTURBED AREAS SHALL BE TOPSOILED PRIOR TO SEED APPLICATION. APPLICATION STANDARDS:
- REMOVE ALL ROCKS AND DEBRIS OVER 1"-1 1/2" IN DIAMETER.
- SCARIFY SURFACE PRIOR TO SEED APPLICATION.
- APPLY 6" DEPTH OF TOPSOIL.
4. SILT FENCE: SILT FENCE SHALL BE INSTALLED AROUND THE PERIMETER OF THE SITE, AT CULVERT OUTLET LOCATIONS, OR AS INDICATED ON THE DRAWINGS. SILT FENCE SHALL BE INSPECTED AND REPAIRED ROUTINELY, ESPECIALLY FOLLOWING STORM EVENTS UNTIL THE SITE HAS BEEN STABILIZED (COVER > 70%) BY VEGETATION.

### STRUCTURAL CONTROL PRACTICES

1. RIP-RAP OUTLET PROTECTION: RIP-RAP SHALL BE PROVIDED AT ALL PIPE OUTLETS. MATERIAL SHALL BE HARD, DURABLE FIELD OR QUARRY STONE WHICH IS ANGULAR AND RESISTS BREAKING DOWN WHEN EXPOSED TO WATER OR WEATHERING.
2. CONSTRUCTION ENTRANCE: CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DRAWINGS.
3. DUST CONTROL: A WATER TRUCK SHOULD BE LOCATED ON-SITE FOR DUST CONTROL WHILE WORK IS PROCEEDING. MAINTENANCE SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT. THE FOLLOWING ITEMS SHALL BE CHECKED IN PARTICULAR:
   A. RIP-RAP OUTLET PROTECTION SHALL BE CHECKED REGULARLY FOR SEDIMENT ACCUMULATION. IF SIGNIFICANT AMOUNTS OF SEDIMENT ACCUMULATE, RIP-RAP SHALL BE REMOVED AND REPLACED.
   B. SILT FENCING SHALL BE INSPECTED REGULARLY FOR UNDERMINING AND DETERIORATION. REMOVE SEDIMENT FROM BEHIND FENCE WHEN IT BECOMES 6 INCHES DEEP.
   C. SEEDED/MULCHED AREAS SHALL BE INSPECTED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE REPAIRED AS NECESSARY.

## SILT FENCE INSTALLATION NOTES

1. THIS SEDIMENT BARRIER UTILIZES MIRAFI ENVIROFENCE (100X) OR EQUAL. IT IS DESIGNED FOR SITUATIONS IN WHICH ONLY SHEET OR OVERLAND FLOWS ARE EXPECTED.
2. THE HEIGHT OF THE BARRIER SHALL NOT EXCEED 36 INCHES (HIGHER BARRIERS MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE). IDEALLY THE FILTER FENCE SHALL BE PLACED 10 FEET AWAY FROM THE TOE OF SLOPE.
3. WHEN JOINTS ARE NECESSARY, FILTER FABRICS SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT STAKES WITH A MINIMUM 6-INCH OVERLAP, AND SECURELY SEALED. SEE MANUFACTURER'S RECOMMENDATION.
4. STAKES SHALL BE SPACED A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES). IN APPLICATIONS WHERE HEAVY FLOWS ARE EXPECTED SUCH AS IN-STREAM INSTALLATIONS STAKE SPACING SHALL BE PER MANUFACTURER'S RECOMMENDATIONS AND/OR THE ENGINEERS RECOMMENDATIONS.
5. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF STAKES AND UPSLOPE FROM THE BARRIER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
6. THE PRE ASSEMBLED SILT FENCE SYSTEM SHALL BE UNROLLED, POSITION THE STAKES ON THE DOWNHILL SIDE OF THE TRENCH AND HAMMER THE STAKES AT LEAST 12 INCHES INTO THE GROUND.
7. THE BOTTOM SIX (6) INCHES OF THE FABRIC SHALL BE LAID INTO THE TRENCH TO PREVENT UNDERMINING BY STORM WATER RUNOFF.
8. BACKFILL THE TRENCH OVER THE FILTER FABRIC AND COMPACT SUFFICIENTLY TO PREVENT THE RUNOFF FROM ERODING THE BACKFILL.
9. THE FABRIC SHALL NOT EXTEND MORE THAT 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES OR SUPPORTS OTHER THAN THE STANDARD STAKES.
10. INSTALLED SILT FENCE BARRIERS SHALL BE MAINTAINED ON A REGULAR SCHEDULE WHICH MAY BE PRESCRIBED BY THE LOCAL, STATE OF FEDERAL REGULATORY AUTHORITY; BUT, AT MINIMUM SHALL BE CHECKED WEEKLY AS WELL AS AFTER EACH STORM EVENT. MAINTENANCE SHALL CONSIST OF AN INSPECTION OF THE ENTIRE LENGTH OF THE BARRIER TO DETERMINE IF IT IS FUNCTIONING AS INTENDED. ALL BREAKS, DETACHED FABRIC, SLUMPED FABRIC, CLOGGED FABRIC, AND UNDERMINED AREAS SHALL BE FIXED THE DAY THAT THEY ARE DISCOVERED.
11. WHEN A MAXIMUM OF SIX (6) INCHES OF SEDIMENT HAS ACCUMULATED BEHIND THE SILT FENCE THIS SEDIMENT SHALL BE REMOVED AND THE FENCE SHALL BE INSPECTED FOR TEARS, CLOGGING OF BREAKS. ALL DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY EITHER BY REPAIR OF REPLACEMENT OF THE SILT FENCE BARRIER AND/OR STAKES AS NEEDED.
12. SILT FENCE BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN CLEANED OF SILT AND PERMANENTLY STABILIZED.

## HAY BALE INSTALLATION & MAINTENANCE (AS REQ'D)

1. HAY BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
2. ALL BALES SHALL BE EITHER WIRE BOUND OR STRING TIES. BALES SHALL BE INSTALLED SO THAT BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES TO PREVENT DETERIORATION OF THE BINDINGS.
3. THE BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF FOUR (4) INCHES AND A MAXIMUM DEPTH OF SIX (6) INCHES. AFTER THE BALES ARE STAKED AND CHINKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER. BACKFILL SOIL SHALL CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE AND SHALL BE BUILT UP TO FOUR (4) INCHES AGAINST THE UPHILL SIDE OF THE BARRIER.
4. EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO (2) STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. STAKES OR REBARS SHALL BE DRIVEN DEEP ENOUGH INTO THE GROUND TO SECURELY ANCHOR THE BALES.
5. THE GAPS BETWEEN BALES SHALL BE CHINKED (FILLED BY WEDGING) WITH STRAW TO PREVENT WATER FROM ESCAPING BETWEEN THE BALES. (LOOSE STRAW SCATTERED OVER THE AREA IMMEDIATELY UPHILL FROM A STRAW BALE BARRIER TENDS TO INCREASE BARRIER EFFICIENCY.)
6. HAY BALES GENERALLY DETERIORATE IN 2-6 MONTHS AND THUS NEED REPLACEMENT.
7. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
8. BALE BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.

## SITE PREP

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATION, INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH.
2. CONTRACTOR SHALL ERECT AND MAINTAIN SAFETY BARRICADES AND POST PROPER NOTICES PRIOR TO THE COMMENCEMENT OF WORK.
3. CONTRACTOR SHALL PROTECT EXISTING SITE IMPROVEMENTS, APPURTENANCES, AND LANDSCAPING TO REMAIN.
4. CONTRACTOR SHALL MAINTAIN EXISTING UTILITIES TO REMAIN IN SERVICE AND PROTECT THEM FROM DAMAGE DURING DEMOLITION OPERATIONS.
5. DO NOT DAMAGE EXISTING UTILITIES TO REMAIN WITHIN PROJECT AREA. ALL DAMAGE TO EXISTING UTILITIES TO REMAIN SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE UTILITY OWNER.
6. THERE SHALL BE NO BURNING OF DEMOLISHED MATERIAL ALLOWED ON SITE.
7. CONTRACTOR SHALL COORDINATE WITH OWNER FOR ANY ITEMS TO BE TURNED OVER TO OWNER.
8. DEMOLISH AND REMOVE ALL PAVEMENT, SLABS, FOOTINGS, SUBSURFACE ELEMENTS, MISCELLANEOUS DEBRIS, ETC. WITHIN PROPERTY LINES UNLESS NOTED OTHERWISE.
9. CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST SO THAT DUST DOES NOT CREATE A NUISANCE ON ADJACENT ROADS OR PROPERTIES. SITE CONTRACTOR SHALL BE RESPONSIBLE FOR STREET SWEEPING AND CATCH BASIN CLEANING AFTER EACH PHASE OF CONSTRUCTION AND AS NEED IS DETERMINED BY THE ENGINEER.
10. CONTRACTOR SHALL REMOVE AND DISPOSE OF ANY ABANDONED SUBSURFACE SOIL ABSORPTION SYSTEM (SAS) AND MISCELLANEOUS DEBRIS.
11. NO ACTIVITY OTHER THAN NORMAL MAINTENANCE SHALL OCCUR OUTSIDE OF LIMIT OF WORK LINES AS SHOWN ON PLAN WITHOUT THE APPROVAL OF THE ENGINEER.
12. THE CONTRACTOR SHALL NOTIFY DIG SAFE @ 1-888-344-7233 PRIOR TO COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITY.

## LANDSCAPE NOTES

1. THE CONTRACTOR SHALL VERIFY FINAL SELECTION OF PLANT MATERIALS WITH THE LANDSCAPE ARCHITECT AND OWNER PRIOR TO INSTALLATION.
2. NO PLANT MATERIAL WILL BE ACCEPTED WHICH DISPLAYS MAJOR IRREGULARITIES OR DAMAGE. THE OWNER/LANDSCAPE ARCHITECT RETAINS THE RIGHT TO REJECT ANY PLANT MATERIAL DEEMED UNFIT.
3. WARRANTEE: FOR A PERIOD OF TWO GROWING SEASONS FROM THE DATE THAT THE WORK UNDER THIS CONTRACT IS CERTIFIED AS SUBSTANTIALLY COMPLETE, THE CONTRACTOR SHALL: 1) WARRANTEE ALL PLANTS AND SEEDED AREAS UNDER THIS CONTRACT; 2)REMOVE AND REPLACE DURING THIS GUARANTEE PERIOD PLANTS WHICH DIE OR ARE IN POOR CONDITION AS DETERMINED BY THE OWNER; 3) REPLANT WITH STOCK OF SAME SIZE AND QUALITY AS ORIGINALLY SPECIFIED; 4) GUY AND MAINTAIN AS SPECIFIED HEREIN AT NO ADDITIONAL COST TO THE OWNER.
4. ALL NEW LAWN AREAS SHALL RECEIVE A MINIMUM OF 4 INCHES TOPSOIL OF THE PROPER pH AND ORGANIC CONTENT SUITABLE FOR THE HEALTHY GROWTH OF LAWNS. THESE AREAS SHALL BE SEEDED WITH A FINE BLADE LAWN GRASS SEED OR SODDED. ADDITIONAL OFF-SITE TOPSOIL MAY BE REQUIRED.
5. ALL AREAS TO BE MULCHED SHALL RECEIVE 4 INCHES MINIMUM 100% SHREDDED BARK MULCH WITHIN 48 HOURS OF PLANTING UNLESS OTHERWISE NOTED IN PLANTING DETAILS.
6. ALL TREE AND SHRUB PITS SHALL BE AT LEAST 2 FEET WIDER AND 1 FOOT DEEPER THAN THE TREE OR SHRUB ROOT BALL TO BE PLANTED IN IT. BACKFILL SHALL BE HIGH QUALITY LOAM OF THE PROPER pH AND ORGANIC CONTENT SUITABLE FOR THE HEALTHY GROWTH OF PLANT MATERIALS.
7. ALL PLANTS SHALL BE NURSERY GROWN AND CONFORM TO THE LATEST EDITION OF "ANSI Z60.1, AMERICAN STANDARD FOR NURSERY STOCK".
8. EACH PLANT TO BE FREE FROM DISEASE, INSECT INFESTATION, MECHANICAL INJURIES, AND IN ALL RESPECTS BE SUITABLE FOR FIELD PLANTING.
9. EACH PLANT TO BE IN THE TOP OF ITS SIZE CLASS AFTER SHEARING AND PRUNING.
10. ADJACENT TO THE TOP OF ANY WALLS OVER 36" A FENCE OR WALL SHALL BE CONSTRUCTED PER PLAN THAT MEETS LOCAL BUILDING CODE AND ALL OTHER APPLICABLE STATE AND FEDERAL LAWS.
11. SEE DETAIL SHEETS FOR ADDITIONAL DETAILS & SPECIFICATIONS.
12. SHOULD GC OR ANY SUBCONTRACTOR ENCOUNTER A DISCREPANCE/CONFLICT IN THE PLAN AN THE ACTUAL LOCATION OF A SITE FEATURE, THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT/ENGINEER AND OWNER IMMEDIATELY.
13. ALL AREAS DISTURBED DURING CONSTRUCTION NOT DESIGNATED TO RECEIVE OTHER TREATMENT SHALL BE LOAMED TO A MINIMUM DEPTH OF 4" AND SEEDED IN ACCORDANCE WITH THE FOLLOWING:
   A. INCORPORATE GROUND LIMESTONE INTO ALL AREAS TO BE SEEDED AT A RATE OF 50 LBS/1,000 S.F.
   B. APPLY 10-6-4 FERTILIZER TO ALL AREAS TO BE SEEDED AT A RATE OF 2 LBS/1,000 S.F.
   C. THOROUGHLY INCORPORATE LIME AND FERTILIZER INTO SEED BED TO DEPTH OF 3" BY DISCING OR OTHER APPROVED METHOD.
   D. SEED WITH THE FOLLOWING MIXTURE, APPLIED AT A RATE OF 10 LBS/1,000 S.F. SEED MIX:

| NAME OF SEED | % BY WEIGHT IN MIXTURE | MIN. % PURITY | MIN. GERMINATION |
|---|---|---|---|
| POS PRETENSES "BARON" BARON BLUEGRASS | 50 | 90 | 75 |
| FESTUCA RUBRA "PENNLAWN" PENNLAWN FESCUE | 25 | 95 | 85 |
| LOLIUM PERENNE "PENNFINE" PENNFINE | 25 | 98 | 95 |

   E. MULCH ALL SEEDED AREAS WITH STRAW AT A RATE OF 5 LBS/1,000 S.F.UNLESS HYDROSEEDING WAS USED.
   F. ALL SLOPES OF 3:1 OR GREATER AFTER BEING LOAMED, SEEDED AND MULCHED IN ACCORDANCE WITH THE ABOVE SHALL SECURED WITH EROSION CONTROL BLANKETS (NO. AMERICAN GREEN S150 OR EQUAL). OVERLAP ALL NETTING JOINTS A MINIMUM OF 6" AND SECURE WITH DOUBLE ROW OF STAPLES.

**PERMITTING**
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Civil Engineers · Land Surveyors
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# NOTES, SYMBOL & LINE LEGEND AND ABBREVIATIONS

233 Main Street
Agawam, MA
Parcel ID: K14-2-8

COMMONWEALTH OF MASSACHUSETTS
FILIPE J. CRAVO
CIVIL
No. 48376
REGISTERED PROFESSIONAL ENGINEER
4/28/26

**PREPARED FOR:**
H.P. Hood LLC
Six Kimball Lane
Lynnfield, MA 01940

**ISSUANCE DATE:** April 28, 2026

| REVISIONS: | DATE: |
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**DRAFTED BY:** R.E.L.


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**SCALE:** AS NOTED

**RLA PROJ. NUMBER:** 201016

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## GENERAL CONSTRUCTION NOTES

1. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR OR HIS AUTHORIZED REPRESENTATIVE SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE BETWEEN THE CITY/TOWN REPRESENTATIVES, CONSULTING ENGINEER/LANDSCAPE ARCHITECT, UTILITY COMPANY REPRESENTATIVES, AND ANY OTHER AFFECTED PARTIES.

2. THE OWNER AND R LEVESQUE ASSOCIATES, INC. AND/OR THEIR REPRESENTATIVES, IN PREPARING THESE PLANS HAVE ATTEMPTED TO LOCATE ALL EXISTING UTILITIES IN THE PROJECT AREA. HOWEVER, THERE MAY BE UTILITIES THAT WERE NOT OR COULD NOT BE LOCATED. UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL CALL ALL APPROPRIATE UTILITY COMPANIES FOR LOCATIONS OF THEIR UTILITIES AT LEAST 48 HOURS BEFORE COMMENCING EXCAVATION. IN THE EVENT THAT A UTILITY IS SITUATED SUCH THAT CONSTRUCTION CANNOT PROCEED AS SHOWN ON THE PLANS, THE PROJECT ENGINEER/LANDSCAPE ARCHITECT AND OWNER SHALL BE NOTIFIED IMMEDIATELY.

3. THE SITE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR DUE TO HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.

4. ALL FILL WORK REQUIRED TO BRING THE PROPOSED ROADWAY UP TO SUB-GRADE LEVEL SHALL CONFORM TO MHD SPECIFICATIONS SECTION 150.

5. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.

6. ALL WORK IN THE CITY/TOWN RIGHT-OF-WAY AND EASEMENTS SHALL BE IN ACCORDANCE WITH THE CITY/TOWN SPECIFICATIONS AND MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

7. THE CONTRACTOR SHALL GIVE THE CITY/TOWN A MINIMUM OF 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION.

8. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING IMPROVEMENTS DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.

9. ALL WORK SHALL BE PERFORMED IN CONFORMANCE WITH THE CONDITIONS OF APPROVAL OUTLINED IN ALL STATE AND LOCAL PERMITS. COPIES OF THE CONDITIONS ARE INCLUDED WITHIN THE PROJECTS TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THIS INFORMATION PRIOR TO CONSTRUCTION AND CONFORMING TO THE CONDITIONS AS REQUIRED DURING CONSTRUCTION.

10. THE CONTRACTOR SHALL MAINTAIN THE JOB CLEAR OF TRASH AND DEBRIS. THE WORK AREAS ARE TO BE PICKED UP AT THE END OF EACH WORK DAY.

11. ANY TEMPORARY FACILITIES FOR THE STORAGE OR PROTECTION OF TOOLS, EQUIPMENT OR MATERIALS SHALL CONFORM TO LOCAL REGULATIONS AND SHALL BE THE GENERAL CONTRACTORS RESPONSIBILITY. THESE DOCUMENTS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. SAFETY, CARE OF ADJACENT PROPERTIES DURING CONSTRUCTION, AND COMPLIANCE WITH STATE AND FEDERAL REGULATIONS REGARDING SAFETY SHALL BE THE GENERAL CONTRACTORS RESPONSIBILITY.

12. THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS PRIOR TO SUBMITTING HIS PROPOSAL. NO EXTRAS DUE TO UNFAMILIARITY WITH THE EXISTING SITE OR WORKING CONDITIONS WILL BE ALLOWED.

13. CONTRACTOR SHALL BE REQUIRED TO PERFORM FINAL CLEANUP CONSISTING OF CLEANING THE PROPOSED DRAINAGE AND SEWER SYSTEMS OF ALL DEBRIS PRIOR TO THE ACCEPTANCE BY THE OWNER. ADDITIONALLY, THE PROPOSED ROADWAY SHALL BE CLEANED AND SWEPT BY THE CONTRACTOR PRIOR TO ACCEPTANCE.

14. ALL EXCAVATION SHALL COMPLY WITH OSHA'S LATEST STANDARDS. ALL REQUIREMENTS OF OSHA'S EXCAVATION STANDARDS SHALL BE PROVIDED BY THE CONTRACTOR INCLUDING, BUT NOT LIMITED TO, THE PROVISION FOR A COMPETENT PERSON ON SITE MANAGER AND ANY REQUIRED DOCUMENTATION THAT MAY REQUIRE CERTIFICATION BY A PROFESSIONAL ENGINEER. THE OWNER, THROUGH ITS ENGINEER, SHALL EXPRESSLY NOT PROVIDE ANY OF THE ABOVE REQUIREMENTS DESIGNATED BY OSHA'S EXCAVATION STANDARD.

15. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE COST OF LAYING OUT ALL ITEMS OF THE WORK BASED ON CERTAIN HORIZONTAL CONTROL AND BENCHMARK SUPPLIED BY THE SURVEYOR OF RECORD. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.

16. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, PERMITS AND APPURTENANCES NECESSARY TO PROVIDE A COMPLETE PROJECT AS INDICATED ON THE PLANS AND IN THESE SPECIFICATIONS.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A THOROUGH SITE EXAMINATION IN ORDER TO PREPARE SITE FOR CONSTRUCTION.

18. ANY AND ALL DEMOLISHED TREES, STRUCTURES AND OTHER RUBBLE MATERIAL PERTAINING TO THIS PROJECT SHALL BE DISPOSED OF BY THE CONTRACTOR OFF-SITE AT HIS EXPENSE IN ACCORDANCE WITH ALL OF THE CITY/TOWN ORDINANCES AND ALL APPLICABLE STATE AND FEDERAL ENVIRONMENTAL REGULATIONS.

19. ALL PAVEMENT DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.

20. ALL STREET EXCAVATIONS SHALL BE COMPLETELY CLOSED AT THE END OF EACH WORKING DAY BY BACKFILLING OR COVERING WITH STEEL PLATES.

21. ALL MATERIALS AND METHODS ARE TO COMPLY WITH THE CITY/TOWN DPW STANDARDS OR MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT) (WHERE APPLICABLE), UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

22. PERMITS WILL BE REQUIRED BY CONTRACTOR WHEN WORKING WITHIN OR OCCUPYING PUBLIC WAY. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED WORK PERMITS AND MAINTAINING A COPY OF ALL PERMITS IN A THREE RING BINDER OR PROJECT BOOK AND ON-SITE AT ALL TIMES.

23. BACKFILL WILL BE PLACED IN SUCCESSIVE LAYERS NOT MORE THAN TWELVE INCHES IN THICKNESS AND SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY DETERMINED BY STANDARD PROCTOR TEST (ASTM 698) FOR ALL APPLICABLE TYPES OF BACKFILL MATERIAL. NO FROZEN MATERIAL SHALL BE USED AS BACKFILL. IF, IN THE OPINION OF THE ENGINEER OR THE DPW, THE EXCAVATED MATERIAL IS UNSUITABLE, THE ENTIRE MATERIAL FOR BACKFILLING SHALL CONSIST OF APPROVED GRAVEL OR APPROVED BORROW, AS DIRECTED. AFTER THOROUGH TAMPING AROUND AND BENEATH THE UTILITY, A SIX-INCH LAYER OF BACKFILL WILL BE THOROUGHLY COMPACTED AS FOLLOWS: IF DRY, SHALL BE MOISTENED AND THEN COMPACTED WITH MECHANICAL TAMPERS OR BY HAND TAMPERS HAVING A TAMPING FACE NOT EXCEEDING 25 SQUARE INCHES IN AREA. THE FINAL TWELVE INCHES OF FILLING WILL, IN ALL CASES, CONSIST OF APPROVED GRAVEL THOROUGHLY TAMPED.

24. CONTRACTOR SHALL PROVIDE FIELD COMPACTION VERIFICATION UTILIZING ASTM D5195-02, STANDARD TEST METHOD FOR DENSITY OF SOIL & ROCK IN-PLACE AT DEPTHS BELOW THE SURFACE BY NUCLEAR METHODS.

25. CONTRACTOR SHALL PROVIDE FIELD COMPACTION RESULTS TO ENGINEER WITHIN 24-HOURS PRIOR TO PLACEMENT OF INFRASTRUCTURE OR BITUMINOUS BINDER.

26. ALL FILL TO BRING PROPOSED ROADWAY UP TO THE SUB-GRADE LEVEL SHALL EXTEND PAST THE EDGE OF THE RIGHT-OF-WAY AT A 2:1 SLOPE. THIS IS TO PROVIDE ADEQUATE SUPPORT FOR THE RIGHT-OF-WAY.

## LAYOUT NOTES

1. ALL CONSTRUCTION IN CITY/TOWN RIGHT-OF-WAYS AND/OR EASEMENTS SHALL BE IN ACCORDANCE WITH THE CITY/TOWN STANDARD SPECIFICATIONS.

2. IN THE EVENT OF DISCREPANCIES BETWEEN LOCAL SPECIFICATIONS AND SITE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL GOVERN.

3. SITE CONTRACTOR SHALL PROTECT ALL BENCHMARKS AND PROPERTY MONUMENTATION AND SHALL REPLACE OR REPAIR, AT HIS OWN EXPENSE, BENCHMARKS AND MONUMENTATION DISTURBED DURING CONSTRUCTION.

4. ALL STRIPING, PAVEMENT MARKINGS, AND TRAFFIC SIGNAGE SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, UNLESS OTHERWISE NOTED ON THE PLANS.

5. ALL WORK SHALL COMPLY WITH FEDERAL, STATE AND LOCAL CODES AND ORDINANCES INCLUDING BUT NOT LIMITED TO: AASHTO, OSHA, EPA, DEP, MASSDOT , ETC. THE GENERAL CONTRACTOR SHALL APPLY FOR ALL PERMITS AND SHALL PAY ALL PERMIT RELATED FEES. ALL NECESSARY PERMITS SHALL BE OBTAINED PRIOR TO THE START OF WORK.

6. ALL DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS ARE TO BE VERIFIED BY THE CONTRACTOR. IF FIELD CONDITIONS VARY SIGNIFICANTLY ENOUGH TO REQUIRE A CHANGE TO THE CONTRACT DOCUMENTS, THE PROJECT PROPONENT AND ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

7. THE SITE/GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL CONTACT THE OWNER AND ENGINEER SHOULD HE FIND ANY CONFLICT OR INCONSISTENCY BETWEEN THE WORK SHOWN ON THE DRAWINGS AND NORMAL ACCEPTED CONSTRUCTION PRACTICES, OR HE SHALL ASSUME RESPONSIBILITY FOR ALL CORRECTIONS.

8. ANY CORRECTIONS REQUIRED FOR REVISIONS TO THE CONTRACT DRAWINGS INITIATED BY THE GENERAL CONTRACTOR OR SUBCONTRACTORS WITHOUT PRIOR APPROVAL OF THE OWNER AND OR THE ENGINEER SHALL BE ACCOMPLISHED AT THE CONTRACTORS RISK.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL & LEGAL DISPOSAL OF ALL MATERIAL NECESSARY TO PREPARE THE SITE FOR THE NEW CONSTRUCTION AS SHOWN ON THE SITE DRAWINGS.

10. REPAIR DAMAGED CITY/TOWN ROADS AND CURBS IN ACCORDANCE WITH MASSDOT AND/OR THE CITY/TOWN REGULATIONS.

11. CONTRACTOR SHALL SAWCUT PAVEMENT EDGE WHERE PAVEMENT TO REMAIN IS ADJACENT TO PAVEMENT TO BE REMOVED.

12. CONTRACTOR SHALL PREPARE SITE AS NECESSARY FOR CONSTRUCTION SHOWN ON THE PLANS.

## EARTHWORK NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

2. ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.

3. STORM PIPE SHALL BE AS NOTED ON PLANS.

4. EXISTING DRAINAGE STRUCTURES TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.

5. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT INTERVALS.

6. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT INTERVALS.

7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.

8. ALL STORM PIPE ENTERING STRUCTURES SHALL BE SEALED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.

9. ALL STORM SEWER MANHOLES FRAMES AND GRATES ARE TO BE SET EQUAL TO FINISH GRADES, AND SHALL HAVE TRAFFIC BEARING RING & COVERS (H20).

10. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.

11. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.

12. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL GRASS DISTURBED AREAS IN ACCORDANCE WITH THE SPECIFICATIONS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.

13. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.

14. IF CONTRACTOR RELOCATES OR SETS NEW BENCHMARKS, THE VERTICAL ELEVATIONS OF THE BENCHMARKS SHALL BE SET WITHIN A TOLERANCE OF 0.010 FT.

15. CONTRACTOR SHALL LEAVE GRADE BEHIND CURB IN ALL PLANTER AREAS A MINIMUM OF 4" LOW FOR THE PLACEMENT OF SUITABLE TOPSOIL OR PLANTING MIX.

## SITE UTILITY NOTES

GENERAL:

1. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.

2. TOPS OF EXISTING MANHOLES SHALL BE SET EQUAL TO FINISH GRADE. IN GRASSED LANDSCAPED AREAS WITH WATER TIGHT LIDS.

3. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 P.S.I.

4. DRAWINGS DO NOT PURPORT TO SHOW ALL EXISTING UTILITIES.

5. EXISTING UTILITIES SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION OF ANY NEW LINES.

6. SITE/GENERAL CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL AUTHORITIES AT THE CITY WITH REGARD TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER LINES.

7. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

8. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.

9. CONTRACTOR SHALL COORDINATE INSPECTION OF UTILITY LINES WITH APPROPRIATE AUTHORITIES PRIOR TO BACKFILLING TRENCHES.

10. CONTRACTOR SHALL COMPLY WITH THE LATEST OSHA STANDARDS OR DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND MAINTENANCE OF ALL SUPPORT SYSTEMS, SLOPING, BENCHING, AND OTHER MEANS OF PROTECTION.

11. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES WITH LOCAL COMPANIES TO AVOID CONFLICTS AND TO ASSURE THAT PROPER DEPTHS ARE ACHIEVED. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANIES FOR EXACT LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.

12. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. DUE TO THE LACK OF AVAILABLE DOCUMENTATION. ALL UTILITIES, INCLUDING CURB BOXES, MAY NOT BE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL CALL THE "DIG SAFE CENTER" TO HAVE ALL UTILITIES MARKED ON THE GROUND PRIOR TO THE START OF CONSTRUCTION

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR DUE TO HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

14. DO NOT INTERRUPT EXISTING UTILITIES WITHOUT AUTHORIZATION FROM THE OWNER, OWNERS OF ADJACENT PROPERTIES, AND THE CORRESPONDING UTILITY OWNER. CONTRACTOR SHALL ARRANGE TO SHUT OFF UTILITIES, AS REQUIRED, WITH THE UTILITY OWNERS.

15. COORDINATE UTILITY TERMINATION WITH UTILITY OWNERS.

**PERMITTING**
**NOT FOR CONSTRUCTION**

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# CONSTRUCTION NOTES

233 Main Street
Agawam, MA
Parcel ID: KI4-2-8

COMMONWEALTH OF MASSACHUSETTS
FILIPE J. CRAVO
CIVIL
No. 48376
REGISTERED PROFESSIONAL ENGINEER
4/28/26

**PREPARED FOR:**
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Six Kimball Lane
Lynnfield, MA 01940

**ISSUANCE DATE:** April 28, 2026

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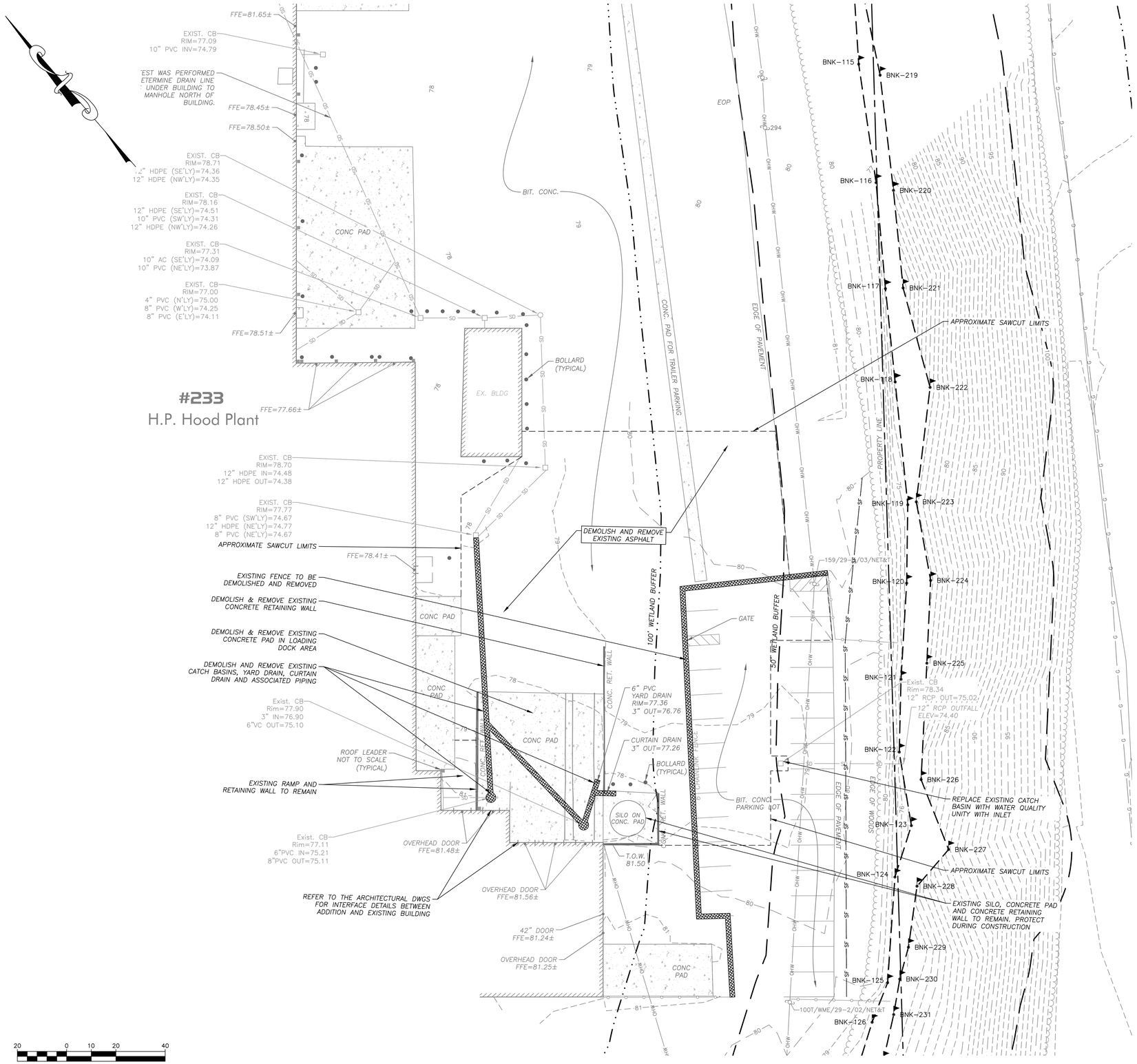
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## DEMOLITION NOTES

1. THE INFORMATION SHOWN HEREON IS NOT INTENDED TO BE AN EXHAUSTIVE SURVEY OF ALL APPURTENANCES THAT MAY OR MAY NOT BE IN PLACE TO SERVE THE EXISTING ON-SITE STRUCTURES AND USE. SEPTIC SYSTEM COMPONENTS, UNDERGROUND TANKS, AND OTHER SUB-SURFACE STRUCTURES MAY BE IN PLACE AND MAY REQUIRE ATTENTION BEFORE CONSTRUCTION MAY PROCEED.
2. CONTRACTOR SHALL CONDUCT A PRE-DEMOLITION SURVEY TO IDENTIFY ANY AND ALL UTILITIES AND UTILITY COMPONENTS TO BE DISCONTINUED, REMOVED, OR DEMOLISHED IN PLACE AND THE PRESENCE OR ABSENCE OF ANY HAZARDOUS MATERIALS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION, REMOVAL OR RELOCATION, INCLUDING BUT NOT LIMITED TO: ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES' SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COSTS SHALL BE INCLUDED IN BASE BID.
4. CONTRACTOR SHALL ERECT AND MAINTAIN SAFETY BARRICADES AND POST PROPER NOTICES PRIOR TO THE COMMENCEMENT OF WORK.
5. CONTRACTOR SHALL PROTECT EXISTING SITE IMPROVEMENTS, APPURTENANCES AND LANDSCAPING TO REMAIN.
6. CONTRACTOR SHALL MAINTAIN EXISTING UTILITIES TO REMAIN IN SERVICE AND PROTECT THEM FROM DAMAGE DURING DEMOLITION OPERATIONS. ANY DAMAGE TO EXISTING UTILITIES TO REMAIN SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE UTILITY OWNER.
7. ALL UTILITY DISCONNECTION SHALL BE PERFORMED TO THE SATISFACTION OF THE RELEVANT UTILITY COMPANY AND COMPLY WITH ANY LOCAL, STATE AND/OR FEDERAL REGULATORY AGENCIES.
8. CONTRACTOR SHALL PROMPTLY TRANSPORT AND LEGALLY DISPOSE OF DEMOLISHED MATERIALS OFF OWNERS PROPERTY. DO NOT ALLOW DEMOLISHED MATERIAL TO COLLECT ON SITE. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DISPOSAL.
9. THERE SHALL BE NO BURNING OF DEMOLISHED MATERIAL ALLOWED ON SITE.
10. CONTRACTOR SHALL COORDINATE WITH OWNER FOR ANY ITEMS TO BE TURNED OVER TO OWNER.
11. CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST SO THAT DUST DOES NOT CREATE A NUISANCE ON ADJACENT ROADS OR PROPERTIES. SITE CONTRACTOR SHALL BE RESPONSIBLE FOR STREET SWEEPING AND CATCH BASIN CLEANING AFTER EACH PHASE OF CONSTRUCTION AND AS NEED IS DETERMINED BY THE LANDSCAPE ARCHITECT/ENGINEER.
12. NO ACTIVITY SHALL OCCUR OUTSIDE OF LIMIT OF WORK LINE AS SHOWN ON PLAN WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT/ENGINEER AND LANDOWNER.
13. THE CONTRACTOR SHALL NOTIFY DIG SAFE @ 1-888-344-7233 A MINIMUM OF 72 HOURS (M-F) PRIOR TO COMMENCEMENT OF ANY DEMOLITION/CONSTRUCTION ACTIVITY.
14. THE LANDSCAPE ARCHITECT/ENGINEER IS NOT RESPONSIBLE FOR ANY ITEMS THAT MAY BE DISCOVERED ON-SITE DURING DEMOLITION OR CONSTRUCTION THAT WAS NOT PREVIOUSLY INDICATED ON THE SURVEYS OR INFORMATION PROVIDED.
15. PAVEMENT SHALL BE SAWCUT AT THE LIMIT OF WORK. ALL PAVING, FOOTINGS, UTILITIES, CURBING AND OTHER EXISTING IMPROVEMENTS SHALL BE REMOVED OR SUITABLY MILLED TO THE SATISFACTION OF THE OWNER AND GENERAL CONTRACTOR.

## CONSTRUCTION SEQUENCE

1. THE CONTRACTOR/OWNER/DEVELOPER TO BE AWARE THAT A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND AN ILLICIT DISCHARGE COMPLIANCE STATEMENT ARE REQUIRED PRIOR TO ANY LAND DISTURBANCE.
2. CONTACT THE TOWN OF AGAWAM AT LEAST FORTY-EIGHT HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION, OR EARTHWORK ACTIVITY ON THIS PROJECT.
3. CONSTRUCT ANTI-TRACKING PAD AT ENTRANCES AND INSTALL ANY REQUIRED INLET PROTECTION AS DEPICTED ON THE PLAN.
4. INSTALL SILT FENCE AS SHOWN ON THE PLANS.
5. UPON COMPLETION OF EROSION CONTROL MEASURES, CLEARING AND GRUBBING AND EARTHWORK MAY COMMENCE.
6. CLEAR AND GRUB SITE. STOCKPILE ANY CHIPPING OR TOPSOIL MATERIAL TO REMAIN ON SITE FOR LONGER THAN 14 DAYS AND INSTALL SILT FENCE AROUND THE PERIMETER OF THE STOCKPILE.
7. COMMENCE EARTHWORK BY EXCAVATING FOR THE CUT/FILL SLOPES AS SHOWN ON THE PLANS. STABILIZE/SEED ANY SLOPES THAT HAVE ACHIEVED FINAL GRADE.
8. INSTALL UTILITIES AS SHOWN ON PLANS INCLUDING WATER SERVICE, SEWER SERVICE, GAS SERVICE, ELECTRICAL SERVICE AND STORMWATER MANAGEMENT SYSTEM.
9. GRADE THE ALIGNMENT OF THE ROADWAY TO ACCEPT PAVEMENT SECTION MATERIALS.
10. INSTALL PAVEMENT AS SPECIFIED ON THE PLANS.
11. UPON INSTALLATION OF PAVEMENT SURFACE, INSTALL INLET PROTECTION AS REQUIRED ON ANY NEW INLET STRUCTURES.
12. FINAL GRADING AND STABILIZATION OF ANY REMAINING EXPOSED AREAS.
13. AT THE DIRECTION OF THE TOWN OF AGAWAM, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED.

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# DEMOLITION & REMOVALS PLAN

**233 Main Street**
**Agawam, MA**
**Parcel ID: K14-2-8**

FILIPE J. CRAVO CIVIL No. 48376 COMMONWEALTH OF MASSACHUSETTS PROFESSIONAL ENGINEER
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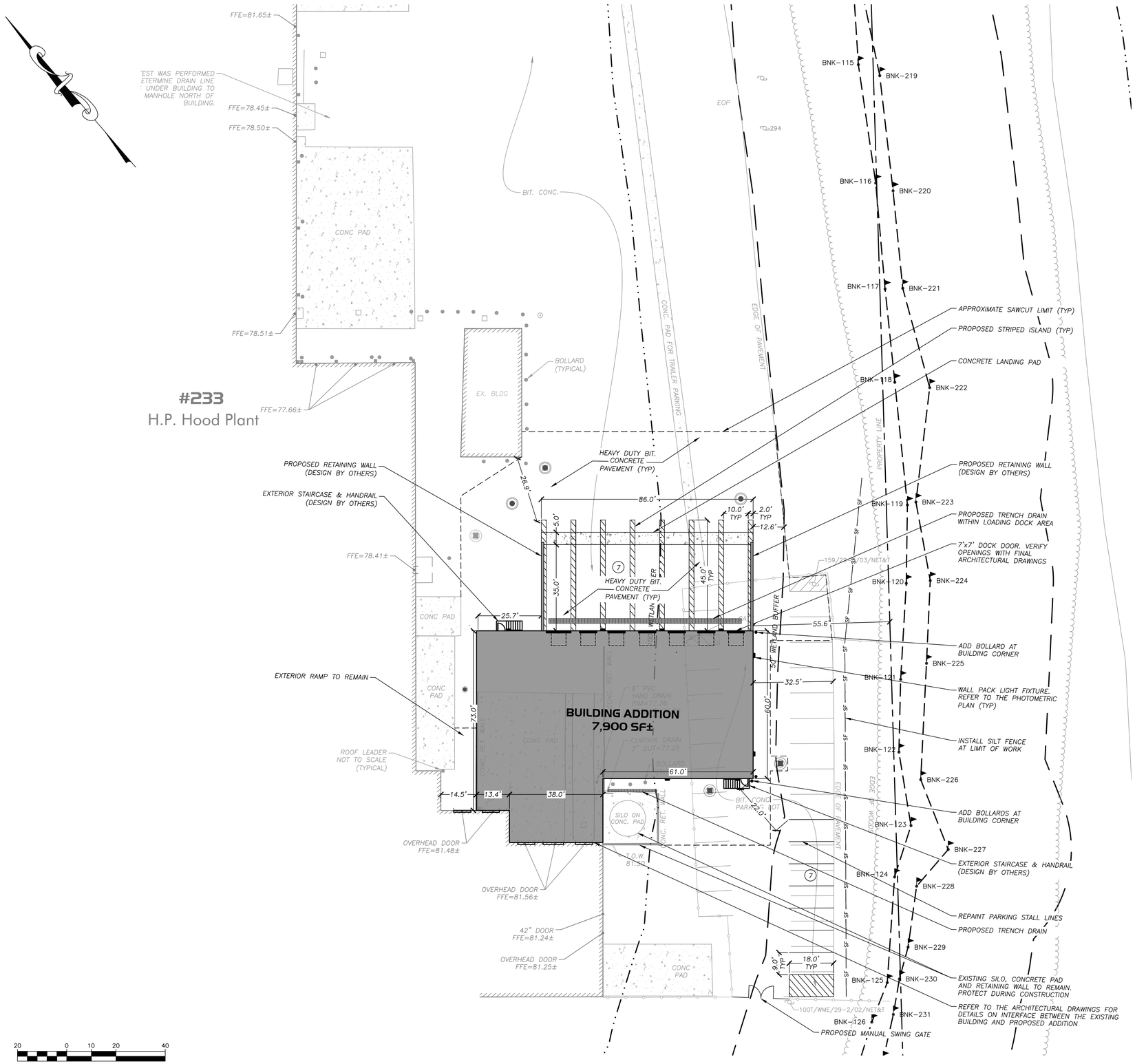
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## ZONING REVIEW - Industrial A (IA)

| TYPE (MINIMUM) | REQUIRED | EXISTING/PROPOSED |
|---|---|---|
| AREA | 40,000 FT$^2$ | 729,194 FT$^2$± |
| FRONTAGE | 100 FT | 527.5 FT± |
| FRONT YARD | 40 FT | 151 FT± |
| SIDE YARD | 25 FT | 55.6 FT± |
| REAR YARD | 25 FT | 331 FT± |
| BUILDING HEIGHT / STORIES (MAX) | 40 FT / 2 STORIES | < 30 FT± / 1 STORY |
| LOT COVERAGE BY BUILDING (MAX) | 50% | 15.6%±/16.6%± |
| PARKING* | 95 | 192 / 170 |

* PARKING CALCULATION
PER THE TOWN OF AGAWAM PARKING GUIDELINES:
ONE (1) PARKING SPACE FOR EACH ONE AND ONE-HALF (1 ½) EMPLOYEES ON MAJOR SHIFT, AND ONE (1) SPACE FOR EVERY VEHICLE USED IN CONNECTION WITH THE BUSINESS, PLUS SUFFICIENT ADDITIONAL PARKING FOR CUSTOMERS AND VISITORS AS REASONABLY DETERMINED BY THE PLANNING BOARD.
1 SPACE X 112 EMPLOYEES/1.5 = 75 SPACES
10 PASSENGER BUSINESS VEHICLES = 10 SPACES
10 VISITOR/CUSTOMER PARKING SPACES
TOTAL REQUIRED PARKING = 95 SPACES

### LAYOUT NOTES

1. SITE CONTRACTOR SHALL REFER TO REMAINING PLAN SET FOR INFORMATION REGARDING SITE LAYOUT.
2. IT SHALL BE THE SITE CONTRACTORS RESPONSIBILITY TO CROSS REFERENCE INFORMATION CONTAINED IN OTHER SHEETS WITH SITE INFORMATION SHOWN HEREON.
3. PRIOR TO SUBMITTING THEIR BID FOR CONSTRUCTION, THE SITE CONTRACTOR SHALL COMMUNICATE ANY DISCREPANCIES BETWEEN THE PROPOSED DESIGN AND THE SAID SPECIFICATIONS WITH THE PROJECT PROPONENT AND LANDSCAPE ARCHITECT/ENGINEER. SHOULD THE SITE CONTRACTOR FAIL TO COMMUNICATE ANY DISCREPANCIES, HE/SHE SHALL BE RESPONSIBLE FOR ANY COSTS RESULTING FROM SAID DISCREPANCY.

### SIGNAGE AND PAVEMENT MARKING NOTES

1. STRIPE ALL PARKING AREAS AS SHOWN, INCLUDING PARKING SPACES, STOP BARS, CROSSWALKS, AND ACCESSIBLE ROUTE MARKINGS AND SYMBOLS USING WHITE TRAFFIC PAINT. PAINTED ISLANDS, FIRE LANES, AND TRAVEL WAY CENTERLINES SHALL BE PAINTED USING YELLOW TRAFFIC PAINT. ALL TRAFFIC PAINT SHALL CONFORM TO AASHTO M248 TYPE "N".
2. STOP BARS SHALL BE 12" WIDE (WHITE).
3. ALL PARKING STALL LINES SHALL BE 4" WIDE (WHITE).
4. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS", MASSDOT, STATE BUILDING CODE AND ADA REQUIREMENTS, AND AS SHOWN ON THE PLANS & DETAILS.

### ACCESSIBILITY NOTES

1. ALL ACCESSIBLE ROUTES, TRANSITIONS, AND ACCESSIBLE PARKING/LOADING AREAS, INCLUDING ALL ENTRANCES TO BUILDING, SHALL ADHERE TO 521 CMR.
2. SHOULD THE ARCHITECT PROVIDE ADDITIONAL ENTRANCES OR MEANS OF EGRESS, ADDITIONAL ACCESSIBLE ROUTES MAY BE REQUIRED.
3. IT IS THE RESPONSIBILITY OF THE ARCHITECT AND CONTRACTOR TO NOTIFY THE ENGINEER AND LANDSCAPE ARCHITECT OF ANY CHANGES TO THE PROPOSED BUILDING THAT WOULD AFFECT THE ACCESSIBILITY REQUIREMENTS OF THE PROPOSED SITE.
4. THE CONTRACTOR SHALL REVIEW IN DETAIL THE REQUIREMENTS OF 521 CMR AND SHALL BE RESPONSIBLE FOR CONFORMANCE WITH SAID REGULATIONS.

**PERMITTING**
**NOT FOR CONSTRUCTION**

RLA
R LEVESQUE ASSOCIATES INC
Landscape Architects
Civil Engineers · Land Surveyors
Environmental Consultants
ph: 413.568.0985 fax: 413.568.0986
40 School Street
Westfield, MA 01085
rlaland.com

# LAYOUT & MATERIALS PLAN

233 Main Street
Agawam, MA
Parcel ID: K14-2-8

COMMONWEALTH OF MASSACHUSETTS
FILIPE J. CRAVO
CIVIL
48376
REGISTERED PROFESSIONAL ENGINEER
4/28/26

**PREPARED FOR:**
H.P. Hood LLC
Six Kimball Lane
Lynnfield, MA 01940

**ISSUANCE DATE:** April 28, 2026

| REVISIONS: | DATE: |
|---|---|
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**DRAFTED BY:** R.E.L.

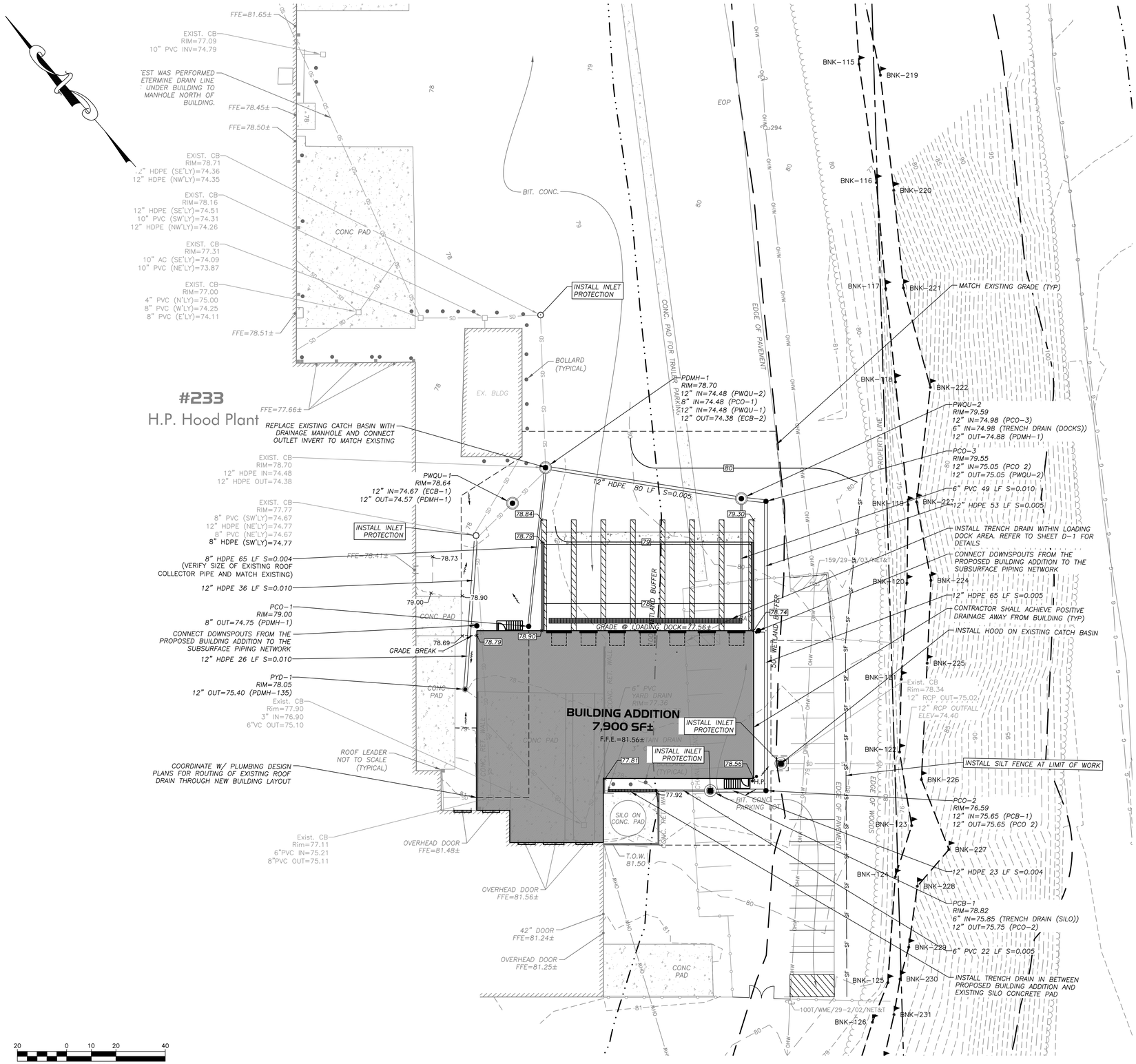
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**SCALE:** AS NOTED

**RLA PROJ. NUMBER:** 201016

| DRAWING# | REV. |
|---|---|
| C-4 | - |

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## SHORT-TERM EROSION CONTROL MAINTENANCE

1. THE CONTRACTOR OR SUBCONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING EACH CONTROL SHOWN ON THE SEDIMENTATION AND EROSION CONTROL PLAN.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFF-SITE SEDIMENTATION IF DEEMED NECESSARY BY ON-SITE INSPECTION.
3. EFFECTIVE EROSION CONTROL MEASURES SHALL BE INITIATED PRIOR TO THE COMMENCEMENT OF CLEARING, GRADING, EXCAVATION, OR OTHER OPERATIONS THAT WILL DISTURB THE NATURAL PROTECTION.
4. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF PRECIPITATION DURING ANY 24-HOUR PERIOD, AND THE INSPECTION SHALL BE DOCUMENTED IN WRITING. DAMAGED OR INEFFECTIVE DEVICES SHALL BE REPAIRED OR REPLACED, AS NECESSARY.
5. THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO AVOID EXCESS EROSION OF THE SITE DUE TO THE CONSTRUCTION OF THIS PROJECT.
6. SILT SHALL BE REMOVED FROM BEHIND BARRIERS IF GREATER THAN 6-INCHES DEEP OR AS NEEDED. SEDIMENT THAT IS COLLECTED IN STRUCTURES SHALL BE DISPOSED OF PROPERLY AND COVERED IF STORED ON-SITE.
7. DAMAGED OR DETERIORATED ITEMS WILL BE REPAIRED IMMEDIATELY AFTER IDENTIFICATION.
8. ALL DITCHES SHALL BE STABILIZED AS SOON AS IS PRACTICABLE TO MINIMIZE EROSION.
9. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES IN A GOOD, WORKING STATE OF REPAIR UNTIL THEIR USE IS NO LONGER WARRANTED. AT THAT TIME, THE EROSION CONTROL DEVICES SHALL BE REMOVED AND DISPOSED OF SO AS TO CAUSE NO OFF-SITE SILTATION.
10. INSPECT AND MAINTAIN CONSTRUCTION ENTRANCE STONE SUCH THAT SEDIMENT DOES NOT TRACK ONTO THE STREET. ANY SEDIMENT TRACKED ONTO THE STREET SHALL BE CLEANED DAILY.
11. AFTER CATCH BASINS HAVE BEEN CONSTRUCTED AND THE SITE HAS BEEN PAVED, THE CONTRACTOR SHALL PROTECT THE INLETS BY CONSTRUCTING INLET PROTECTION AS SHOWN ON THE PLANS. INLET PROTECTION TO REMAIN IN PLACE AND MAINTAINED UNTIL DISTURBED AREAS HAVE BEEN STABILIZED, LOAMED AND SEEDED.
12. EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL ALL DISTURBED EARTH HAS BEEN SUBSTANTIALLY STABILIZED. AFTER REMOVAL OF MEASURES, DISTURBED AREAS SHALL BE REGRADED AND STABILIZED AS NECESSARY.
13. THIS PLAN IS PROVIDED AS A BASIS FOR THE INITIAL SEDIMENTATION AND EROSION CONTROL MEASURES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UPDATE AND EXPAND THIS PLAN AS SITE CONDITIONS DICTATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PREVENT THE OCCURRENCE OF SILTATION TO WETLAND RESOURCE AREAS AND THE MOVEMENT OF SEDIMENT BEYOND THE SITE BOUNDARIES.

## GRADING & DRAINAGE NOTES

1. SITE CONTRACTOR SHALL REFER TO REMAINING PLAN SET FOR INFORMATION REGARDING GRADING AND DRAINAGE.
2. PRIOR TO SUBMITTING A BID FOR CONSTRUCTION, THE SITE CONTRACTOR SHALL COMMUNICATE ANY DISCREPANCIES BETWEEN THE PROPOSED DESIGN AND THE SPECIFICATIONS WITH THE PROJECT PROPONENT AND LANDSCAPE ARCHITECT/ENGINEER. SHOULD THE SITE CONTRACTOR FAIL TO COMMUNICATE ANY DISCREPANCIES, HE/SHE SHALL BE RESPONSIBLE FOR ANY COSTS RESULTING FROM SAID DISCREPANCY.
3. CONTRACTOR SHALL NOTIFY DESIGNER/ENGINEER OF ANY UNEXPECTED CONDITIONS THAT ARE ENCOUNTERED DURING CONSTRUCTION.
4. ONCE DRAINAGE SYSTEM IS INSTALLED AND FUNCTIONING, THE OWNER/SITE CONTRACTOR SHALL COORDINATE WITH R LEVESQUE ASSOCIATES, INC. (RLA) TO CONDUCT A POST-CONSTRUCTION ANALYSIS OF THE DRAINAGE SYSTEM DURING ACTUAL STORM EVENTS TO DETERMINE THE FUNCTIONALITY OF THE INSTALLED DRAINAGE SYSTEM DURING SAID EVENTS. SHOULD THE DRAINAGE SYSTEM NOT FUNCTION AS DESIGNED UNDER REAL WORLD CONDITIONS, RLA WILL RECOMMEND ADJUSTMENTS TO THE DRAINAGE SYSTEM TO BE IMPLEMENTED BY THE OWNER/SITE CONTRACTOR.
5. ALL UTILITY CONSTRUCTION SHALL CONFORM TO THEIR RESPECTIVE CITY/TOWN DEPARTMENT SPECIFICATIONS.

## ACCESSIBILITY NOTES

1. ALL ACCESSIBLE ROUTES, TRANSITIONS, AND ACCESSIBLE PARKING/LOADING AREAS, INCLUDING ALL ENTRANCES TO BUILDING, SHALL ADHERE TO 521 CMR.
2. SHOULD THE ARCHITECT PROVIDE ADDITIONAL ENTRANCES OR MEANS OF EGRESS, ADDITIONAL ACCESSIBLE ROUTES MAY BE REQUIRED.
3. IT IS THE RESPONSIBILITY OF THE ARCHITECT AND CONTRACTOR TO NOTIFY THE ENGINEER AND LANDSCAPE ARCHITECT OF ANY CHANGES TO THE PROPOSED BUILDING THAT WOULD AFFECT THE ACCESSIBILITY REQUIREMENTS OF THE PROPOSED SITE.
4. THE CONTRACTOR SHALL REVIEW IN DETAIL THE REQUIREMENTS OF 521 CMR AND SHALL BE RESPONSIBLE FOR CONFORMANCE WITH SAID REGULATIONS.

## CONSTRUCTION NOTES

1. THE CONTRACTOR/OWNER/DEVELOPER TO BE AWARE THAT A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND AN ILLICIT DISCHARGE COMPLIANCE STATEMENT ARE REQUIRED PRIOR TO ANY LAND DISTURBANCE.
2. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON SURFACE FEATURES AS LOCATED BY SURVEY AND AVAILABLE RECORD DATA AND ARE APPROXIMATE. ACTUAL FIELD LOCATIONS SHOULD BE VERIFIED WITH THE APPROPRIATE UTILITY COMPANY AND/OR MUNICIPAL DEPARTMENT PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO NOTIFY DIG SAFE A MINIMUM OF 72 HOURS PRIOR TO START OF CONSTRUCTION ACCORDING TO MA GENERAL LAWS.
4. APPROVED PLANS TO BE ON SITE AT ALL TIMES.
5. CHANGES TO THIS PLAN MAY OCCUR AS UNFORESEEN CONDITIONS ARISE. ALL CHANGES TO BE APPROVED BY DESIGN ENGINEER, FIELD INSPECTOR AND CITY/TOWN ENGINEER.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND SAFETY OF TRAFFIC ON THE PUBLIC AND PRIVATE WAYS AFFECTED BY THE CONSTRUCTION OF THIS PROJECT.
7. CONTRACTOR SHALL PROTECT ALL SLOPES, VEGETATION, PAVING, WALKS, AND IMPROVEMENTS OUTSIDE THE AREAS TO BE AFFECTED BY THE CONSTRUCTION OF THIS PROJECT.
8. TREES, BRUSH AND STUMPS REMOVED BY CLEARING AND GRUBBING OPERATIONS SHALL BE TRANSPORTED OFF THE PROJECT SITE TO AN APPROVED DISPOSAL LOCATION.
9. ALL PAVEMENT MARKINGS CHANGED, ALTERED OR REMOVED SHALL BE REAPPLIED.
10. ALL CONSTRUCTION METHODS TO CONFORM TO AGAWAM PLANNING BOARD REGULATIONS AND BOARD OF PUBLIC WORKS SPECIFICATIONS.
11. AGAWAM DEPARTMENT OF PUBLIC WORKS APPROVAL IS NOT TO BE CONSTRUED AS AN ALL INCLUSIVE APPROVAL AS OTHER APPROVALS MAY BE NECESSARY, i.e. TOWN ENGINEER, CONSERVATION, FIRE DEPARTMENT, WATER DEPARTMENT, ETC.
12. EROSION CONTROL MEASURES TO BE IN PLACE PRIOR TO START OF CONSTRUCTION.

**PERMITTING**
**NOT FOR CONSTRUCTION**

RLA
R LEVESQUE ASSOCIATES INC
Landscape Architects
Civil Engineers · Land Surveyors
Environmental Consultants
ph: 413.568.0985 fax: 413.568.0986
40 School Street
Westfield, MA 01085
rlaland.com

# GRADING, EROSION & SEDIMENTATION CONTROL PLAN

233 Main Street
Agawam, MA
Parcel ID: KI4-2-8

COMMONWEALTH OF MASSACHUSETTS
FILIPE J. CRAVO
CIVIL
48376
REGISTERED PROFESSIONAL ENGINEER
4/28/26

**PREPARED FOR:**
H.P. Hood LLC
Six Kimball Lane
Lynnfield, MA 01940

**ISSUANCE DATE:** April 28, 2026

| REVISIONS: | DATE: |
|---|---|
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**DRAFTED BY:** R.E.L.

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**SCALE:** AS NOTED

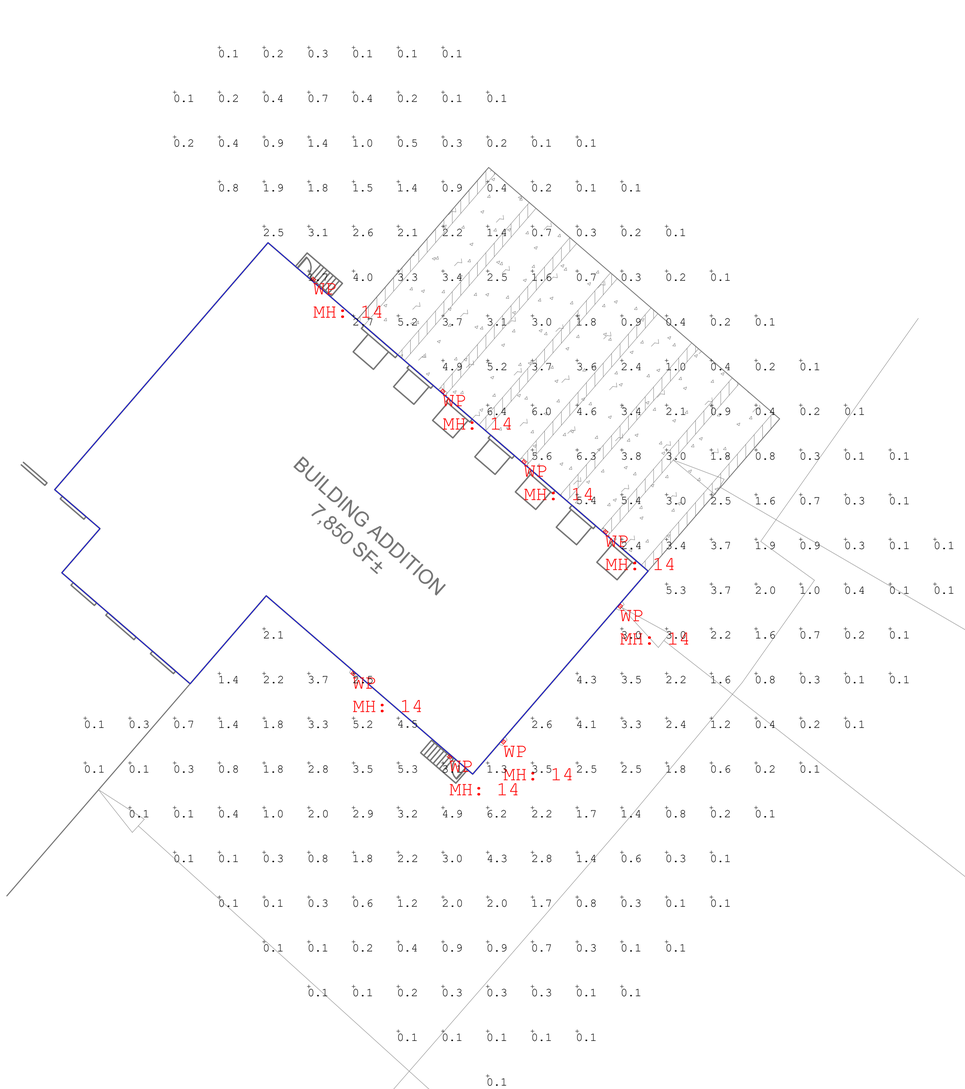
**RLA PROJ. NUMBER:** 201016

| DRAWING# | REV. |
|---|---|
| C-5 | - |

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| Calculation Summary | | | | | | | |
|---|---|---|---|---|---|---|---|
| Label | Units | Avg | Max | Min | Avg/Min | Max/Min | Grid Height |
| Building Addition | Fc | 1.48 | 6.4 | 0.1 | 14.80 | 64.00 | 0 |

| Luminaire Schedule | | | | | | |
|---|---|---|---|---|---|---|
| Qty | Label | Watts | Arrangement | LLF | Description | Tag |
| 8 | WP | 46.5 | Single | 0.900 | BEACON RWL1-48L-45-3K7-4W-U-finishTBD | |




LOA


Project:
26090 - 233 Main Street, Agawam

Contact:
Myles Simon
Specification Sales
(860) 655-8099
msimon@illuminatene.com

Detail: Photometric Calculation
Date: 4-14-2026
Revision:----
Scale: 3/4" = 1'-0"
Drawn By: SB

illuminate
263 Winn Street
Burlington, MA 01803
(781) 935-8500

333 Pleasant Valley Road
South Windsor, CT 06074
(860) 282-0597


Drawing Number:

SL-1

Sheet 1 of 2

WP - WALL PACK

BEACON design . performance . technology

# RATIO Wall

RWL1/RWL2 LED WALLPACK

DATE: LOCATION:

TYPE: PROJECT:

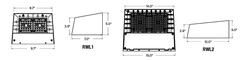
CATALOG #:

MICRO STRIKE | OPTICS STRIKE

## FEATURES

- Low profile LED wall luminaire with a variety of IES distributions for lighting applications such as retail, commercial and industrial building mount
- Featuring Strike and Micro Strike Optics which maximizes target zone illumination with minimal losses at the house-side, reducing light trespass issues
- Visual comfort standard
- Control options including photo control, occupancy sensing, NX Distributed Intelligence™, LightGRID+ and 7-Pin with networked controls
- Battery Backup options available for emergency code compliance
- Quick-mount adapter allows easy installation/maintenance
- 347V and 480V versions for industrial applications and Canada






## CONTROL TECHNOLOGY

NX | LIGHTGRID+

## SERVICE PROGRAM

QS10

| | Weight |
|---|---|
| RWL1 | 6.5 lbs / 2.95 kg |
| RWL2 | 16.5 lbs / 7.48 kg |

## SPECIFICATIONS

### CONSTRUCTION

- Die-cast housing with hidden vertical heat fins that are optimal for heat dissipation while keeping a clean smooth outer surface
- Corrosion resistant, die-cast aluminum housing with powder coat paint finish
- Powder paint finish provides durability in outdoor environments. Tested to meet 1000 hour salt spray rating

### OPTICS

- Entire optical aperture illuminates to create a larger luminous surface area resulting in a low glare appearance without sacrificing optical performance
- 48 or 160 midpower LEDs
- 3000K, 4000K or 5000K (70 CRI/80 CRI) CCT
- Zero uplight distributions
- LED optics provide IES type II, III and IV distributions. Type II only available in RWL2 configurations

### INSTALLATION

- Quick-mount adapter provides easy installation to wall or to recessed junction boxes (4" square junction box)
- Designed for direct J-box mount.
- Integral back box contains 1/2" conduit hubs
- Integral backbox provided as standard with selection of some options

### ELECTRICAL

- 120V-277V universal voltage 50/60Hz 0-10V dimming drivers
- 347V and 480V dimmable driver option for all wattages above 35W
- Ambient operating temperature -40°C to 40°C
- Driver RoHS and IP66

### ELECTRICAL (CONTINUED)

- 10kV Surge Protector optional
- Drivers have greater than .90 power factor and less than 20% Total Harmonic Distortion
- Dual Driver option provides 2 drivers within luminaire but only one set of leads exiting the luminaire, where Dual Power Feed provides two drivers which can be wired independently as two sets of leads are extended from the luminaire. Both options can not be included in one same fixture.
- Dimming drivers are standard and dimming leads are extended out of the luminaire unless control options require connection to the dimming leads. Must specify if wiring leads are to be greater than 6" standard.

### CONTROLS

- Photo control, occupancy sensor and wireless available for complete on/off and dimming control
- Button photocontrol is suitable for 120-277V operation
- 7-pin ANSI C136.41-2013 photocontrol receptacle option available for twist lock photocontrols or wireless control modules (control accessories sold separately)
- NX Distributed Intelligence™ available with in fixture wireless control module, features dimming and occupancy sensor LightGRID+ available with in fixture wireless control module, features dimming and occupancy sensor
- Integral Battery Backup provides emergency lighting for the required 90 minute path of egress
- Battery Backup suitable for operating temperatures -25°C to 40°C. RWL1 battery is 12.5W RWL2 battery is 18W

### CONTROLS (CONTINUED)

- Dual Driver and Dual Power Feed options creates product configuration with 2 internal drivers for code compliance
- Please consult brand or sales representative when combining control and electrical options as some combinations may not operate as anticipated depending on your application.
- LightGRID+ available with in fixture wireless control module, features dimming and occupancy sensor. Also available in 7-pin configuration

### CERTIFICATIONS

- Certified to UL 1598 and CSA 22.2#250.0-24 for wet locations
- IP65 rated housing
- DLC® (DesignLights Consortium Qualified), with some Premium Qualified configurations. Not all product variations listed in this document are DLC® qualified. Refer to http://www.designlights.org for the most up-to-date list.
- Emergency battery backup options are California Energy Commission (CEC) Title 20 Compliant
- Meets IDA requirements using 3K CCT configuration at 0 degrees or tilt

### WARRANTY

- 5 year limited warranty

Current

currentlighting.com/beacon

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BEACON design . performance . technology

RATIO Wall

RWL1/RWL2 LED WALLPACK

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

Gray Shading = Service Program Limit of 15 luminaires QS10

## ORDERING GUIDE

CATALOG # _____

**Example:** RWL1–48L-10–3K7–2–UNV–BLS–E

| Series | # LEDs - Wattage | CCT/CRI | Distribution | Voltage | Color |
|---|---|---|---|---|---|
| **RWL1** Micro Strike Optics | **48L-10** 1,000 Lumens | **3K7** 3000K, 70 CRI | **2** IES TYPE II | **UNV** 120-277V | **BLT** Black Matte Textured |
| | **48L-15** 2,000 Lumens | **4K7** 4000K, 70 CRI | **3** IES TYPE III | **120** 120V | **BLS** Black Gloss Smooth |
| | **48L-20** 2,500 Lumens [5,6] | **5K7** 5000K, 70 CRI | **4F** IES TYPE IV Forward | **208** 208V | **DBT** Dark Bronze Matte Textured |
| | **48L-25** 3,500 Lumens | **3K8** 3000K, 80 CRI | **4W** IES TYPE IV Wide | **240** 240V | **DBS** Dark Bronze Gloss Smooth |
| | **48L-35** 4,500 Lumens | **4K8** 4000K, 80 CRI | | **277** 277V | **GTT** Graphite Matte Textured |
| | **48L-45** 5,500 Lumens [5,6] | **5K8** 5000K, 80 CRI | | **347** 347V | **LGS** Light Grey Gloss Smooth |
| **RWL2** Micro Strike Optics | **160L-45** 6,500 Lumens | | | **480** 480V | **LGT** Light Grey Matte Textured |
| | **160L-50** 7,500 Lumens | | | | **PSS** Platinum Silver Smooth |
| | **160L-65** 9,500 Lumens | | | | **WHT** White Matte Textured |
| | **160L-80** 11,000 Lumens | | | | **WHS** White Gloss Smooth |
| | **160L-95** 13,000 Lumens | | | | **VGT** Verde Green Textured |
| | **160L-115** 15,000 Lumens | | | | **Color Option** |
| | **160L-135** 17,500 Lumens | | | | **CC** Custom Color |
| | **160L-155** 19,500 Lumens | | | | |
| **RWL2** Strike Optics | **36L-35** 5,500 Lumens, Strike | | | | |
| | **36L-55** 7,500 Lumens, Strike | | | | |
| | **36L-85** 10,000 Lumens, Strike | | | | |
| | **36L-105** 12,500 Lumens, Strike | | | | |
| | **36L-120** 14,000 Lumens, Strike | | | | |

| Control Options Network | |
|---|---|
| **NXW** | NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor [4,7,12] |
| **NXWS16F** | NX Networked Wireless Enabled Integral NXSMP2 LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [4,7,12] |
| **NXWS40F** | NX Networked Wireless Enabled Integral NXSMP2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [4,7,12] |
| **WIR** | LightGRID+ In-Fixture Module [4,8] |
| **Stand Alone Sensors** | |
| **SCP-8F** | Remote control programmable line voltage sensor [4,5,6,8] |
| **SCP-20F** | Remote control programmable line voltage sensor [4,5,6,8] |
| **BTS-14F** | Bluetooth® Programmable, PIR Occupancy/Daylight Sensor [4,5,6,7,8] |
| **BTS-40F** | Bluetooth® Programmable, PIR Occupancy/Daylight Sensor [4,5,6,7,8] |
| **BTSO-12F** | Bluetooth® Programmable, PIR Occupancy/Daylight Sensor, up to 12' mounting height [4,5,6,7,8] |
| **Control Options** | |
| **7PR_** | 7-Pin Receptacle [8,9] |

| Distribution | |
|---|---|
| **F** | Fusing [4] |
| **E** | Emergency Battery Backup [3,8,9] |
| **EH** | Emergency Battery w/ Heater Option [3,8,9] |
| **2DR** | Dual Driver [8,9,10] |
| **2PF** | Dual Power Feed [8,9,10] |
| **PC** | Button Photocontrol [5,6,11] |
| **SP** | 10kA Surge Protector [11] |

Notes:
1 Not available in RWL1
2 Cannot be combined with E, EH, 2DR, 2PF due to space constraints
3 Cannot be combined with Controls due to space constraints
4 Must specify voltage
5 Not available in 347V
6 Not available in 480V
7 Available in 480V in 95W, 115W, 155W only
8 Cannot be combined with 2DR or 2PF
9 Located in integral backbox which will be automatically added to the fixture if selected
10 Not available in RWL1-48L in 10W, 15W, or 20W
11 SP and PC cannot be combined due to space constraints
12 SP and PC cannot be combined due to space constraints
* Based on space limitations, some options may not be combined. Consult Factory.

## CONTROLS

| Control Options | |
|---|---|
| Standalone | |
| **SCPREMOTE** | Order at least one per project location to program and control |

## ACCESSORIES AND REPLACEMENT PARTS - MADE TO ORDER

| | Catalog Number | Description |
|---|---|---|
| ☐ | **WP-BB-XXX** | Accessory for conduit entry [1] |

Notes:
1 replace "xxx" with color option

Current

currentlighting.com/beacon

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Project:
26090 - 233 Main Street, Agawam

Contact:
Myles Simon
Specification Sales
(860) 655-8099
msimon@illuminatene.com

Detail: Photometric Calculation
Date: 4-14-2026
Revision:----
Scale:
Drawn By: SB

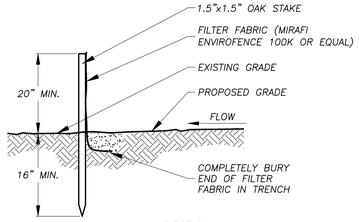
illuminate
263 Winn Street
Burlington, MA 01803
(781) 935-8500

333 Pleasant Valley Road
South Windsor, CT 06074
(860) 282-0597

Drawing Number:

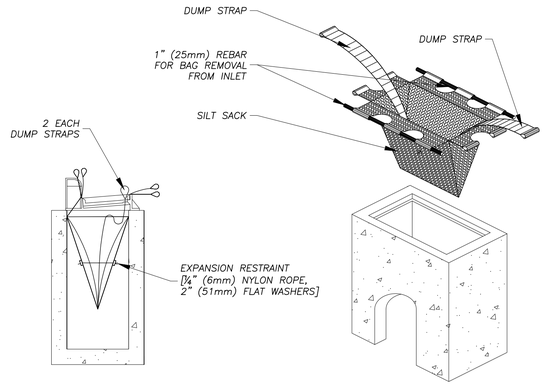
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Sheet 2 of 2



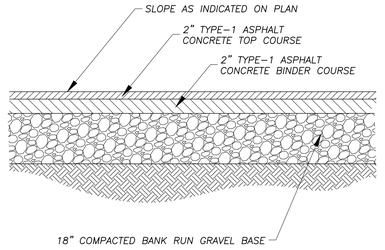

## SILT FENCE DETAIL

NO SCALE




## INLET PROTECTION - SEDIMENT FILTER SACK

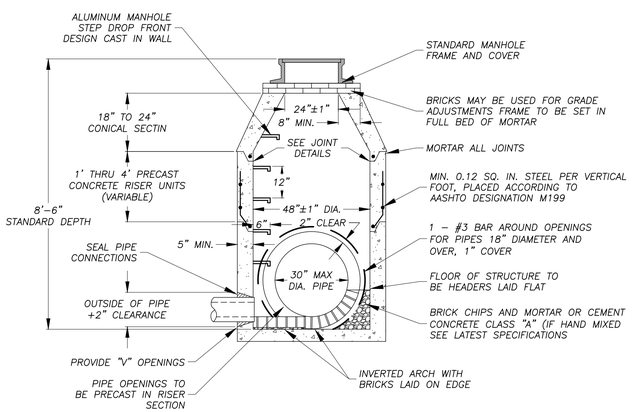
NO SCALE




NOTE:
PAVING CROSS-SECTION TO BE USED IN TRUCK PARKING/ MANEUVERING AREAS - SEE PLAN SET FOR LOCATIONS

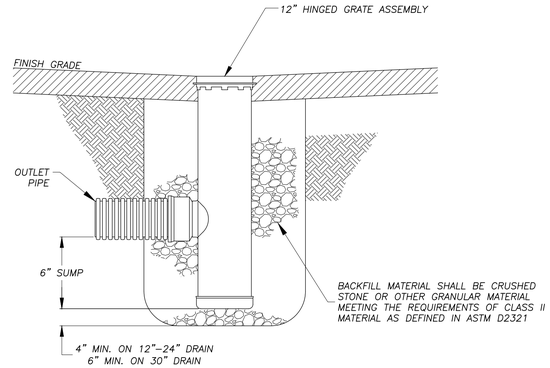
## 'HEAVY DUTY' BIT. CONC. PAVING DETAIL

NO SCALE



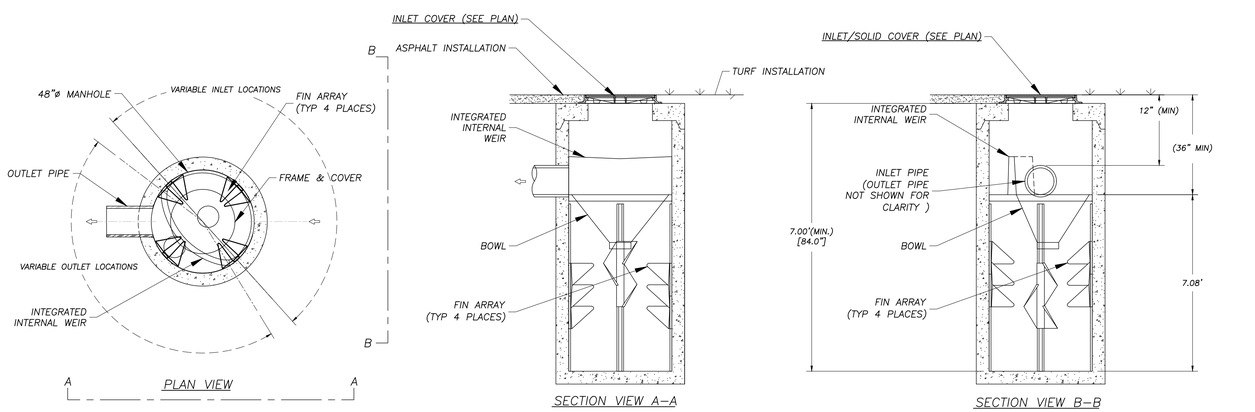

## PRECAST CONCRETE MANHOLE

NO SCALE



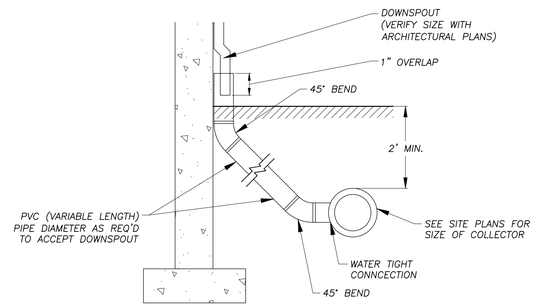

## ADS NYLOPLAST YARD DRAIN BASIN

NO SCALE




## WATER QUALITY UNIT - BARRACUDA S4 (PWQU-1 & PWQU-2)

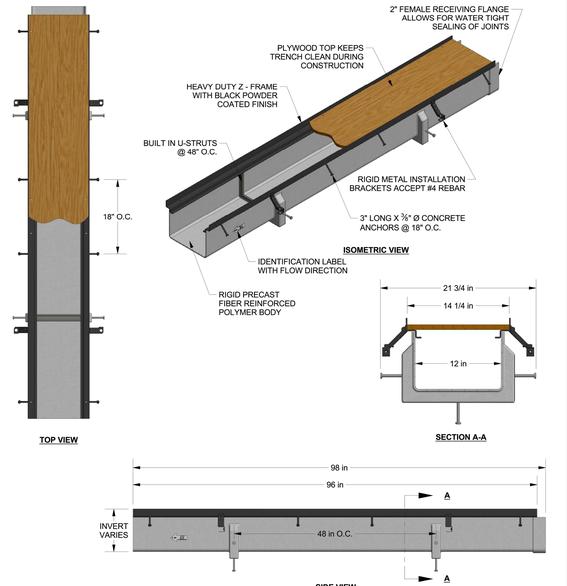
NO SCALE




## DOWNSPOUT COLLECTOR DETAIL

NO SCALE

**DTUTPF12-HDBP15ZJA** — **12" UTILITY TRENCH** — R1




| | |
|---|---|
| TRENCH MATERIAL | FIBER REINFORCED POLYESTER |
| FRAME MATERIAL | STEEL PER ASTM A-36 |
| FRAME COATING | BLACK POWDER COATED |
| ANCHOR STUDS | 3" X 3/8" Ø |
| INSTALL DEVICE | RIGID STAMPED METAL FOR #4 BARS |
| LOAD RATING | HEAVY DUTY |
| SLOPE | 0.5% TYP (CUSTOM SLOPE AVAILABLE) |

STANDARD TOLERANCES
0 +-0.25
0.0 +-0.25
0.00 +-0.13

NOTE:
ALL TRENCHES ARE FACTORY ASSEMBLED AND READY FOR SITE INSTALLATION

Dura Trench manufactured by Ellis Pipe

574c Industrial Way N.
Dallas, GA 30132
PH: 770-505-6575
www.trenchdrain.net

NOTE: CONTRACTOR MAY SUBSTITUTE WITH AN EQUAL PRODUCT

## LOADING DOCK - TRENCH DRAIN DETAIL

NOT TO SCALE

**PERMITTING**
**NOT FOR CONSTRUCTION**


RLA
R LEVESQUE ASSOCIATES INC
Landscape Architects
Civil Engineers · Land Surveyors
Environmental Consultants
ph: 413.568.0985 fax: 413.568.0986
40 School Street
Westfield, MA 01085
rlaland.com


# DETAILS

233 Main Street
Agawam, MA
Parcel ID: KI4-2-8

COMMONWEALTH OF MASSACHUSETTS
FILIPE J. CRAVO
CIVIL
No. 46376
REGISTERED PROFESSIONAL ENGINEER
4/28/26

**PREPARED FOR:**

H.P. Hood LLC
Six Kimball Lane
Lynnfield, MA 01940

**ISSUANCE DATE:** April 28, 2026

| REVISIONS: | DATE: |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |

**DRAFTED BY:** R.E.L.


UNAUTHORIZED ALTERATION OF THIS DOCUMENT IS A VIOLATION OF MASSACHUSETTS STATE LAW


**SCALE:** AS NOTED

**RLA PROJ. NUMBER:** 201016

| DRAWING# | REV. |
|---|---|
| D-1 | - |

S:\Projects\2020\201016 - Hood - 233 & 265 Main St, Agawam\Civil 3D\201016 - SITE.dwg

Stockman Associates LLC

April 27, 2026

Mr. Henry Kozloski, Chair
Town of Agawam Conservation Commission
750 Cooper Street
Agawam, MA 01001

Re: Abbreviated Notice of Resource Area Delineation (ANRAD)
Ameresco, Inc.
311 Shoemaker Lane
Agawam, MA 01001
Parcel G4 1_11
MassDEP File # 087-0711
Wetland Consultant Peer Review

Dear Ms. Kozloski and Commissioners:

Per request of the Agawam Conservation Commission, Stockman Associates LLC has performed a wetland consultant peer review of an Abbreviated Notice of Resource Area Delineation (ANRAD) submitted by Fleetwood Environmental Solutions (Fleetwood) on behalf of their client, Ameresco, Inc., for the review of delineated resource area boundaries located at 311 Shoemaker Lane (Parcel G4 1_11) in Agawam, MA. Based on the WPA Form 4A prepared by Fleetwood dated February 24, 2026, the review consisted of approximately 5,762 linear feet of Bordering Vegetated Wetland (BVW) boundary and approximately 1,082 linear feet of Bank. The review also included an inspection of the subject property to determine whether additional unmapped protected wetland resource areas and/or Buffer Zone are present.

***Materials Reviewed***

- ANRAD WPA Form 4A and supporting documents within the February 24, 2026 submittal prepared by Fleetwood.
- March 5, 2026 MassDEP File Number Comment Letter
- 2021 ANRAD application prepared by PrimeAE including August 8, 2021 revised site plans. (Note: The 2021 ANRAD was withdrawn by the applicant with the withdrawal accepted by the Agawam Conservation Commission by vote during their October 14, 2021 meeting.)
- Final plans of record "*Site Development Plans for Shoemaker Lane Solar Project*" Sheets 1 through 7, scale varied, dated July 25, 2018 prepared Atlantic Design Engineers, Inc. (Note: The OOC for this project (MassDEP File # 087-0628) was issued on August 9, 2018 and the MassDEP Comment Letter indicates that a Certificate of Compliance (CoC) was issued. A recorded copy of the CoC was not located during a search of the Registry of Deeds database.)

***Site Visit***

- Emily Stockman (Stockman Associates) and David Cameron (Fleetwood) performed a site visit on April 20, 2026 and reviewed the delineated BVW and Mean Annual High Water Line boundaries and project area. The site inspection occurred during the early

growing season. The previous year's corn crop had been harvested, providing visibility to the ground surface, gentle slopes, and microtopography. Woody plants as well as several herbaceous plants were identifiable to species. Areas of inundation and saturated soils at/near the ground surface were observed at various locations throughout the site. The project site is within the Connecticut River Valley Region, which is within a declared Mild Drought (L1), declaration date April 8, 2026, effective date March 1, 2026.

***Review Comments***

The Commission and the applicant should note that the peer review included an assessment of past delineations approved by or submitted to the Agawam Conservation Commission for review. The 2018 approved delineation has expired. The 2021 delineation was withdrawn by the applicant prior to the completion of the peer review and recommended boundary adjustments. While these materials aid in the review of the current boundary it is important to note that past delineations are expired. The current delineation and review must address current conditions; as a result, the 2026 boundaries may differ.

*Mean Annual High Water Line (Philo Brook)*

1) During the site visit, Fleetwood confirmed that the ANRAD materials would be revised to indicate that Philo Brook is a perennial stream, withdrawing the attempt to overcome the perennial presumption due to observations made by GZA during July 2016 drought conditions. Fleetwood also stated that at the time of the delineation (prior to receiving the GZA materials), Philo Brook had been accessed as perennial (indicated by the "M" series labeling) and MAHWL was flagged.

2) At the time of the site visit, the majority of the MAHWL M-series delineation flags were clearly visible, and the labels were legible. Fleetwood replaced the following flags, which were missing or downed: M1-102, M1-105, M1- 110, M1-122, M1-123, M1-125. Downed flags M1-103 and M1-106, which are not depicted on the ANRAD site plan were also found and replaced. Flag M1-111A was added by Fleetwood.

*BVW W2 Series*

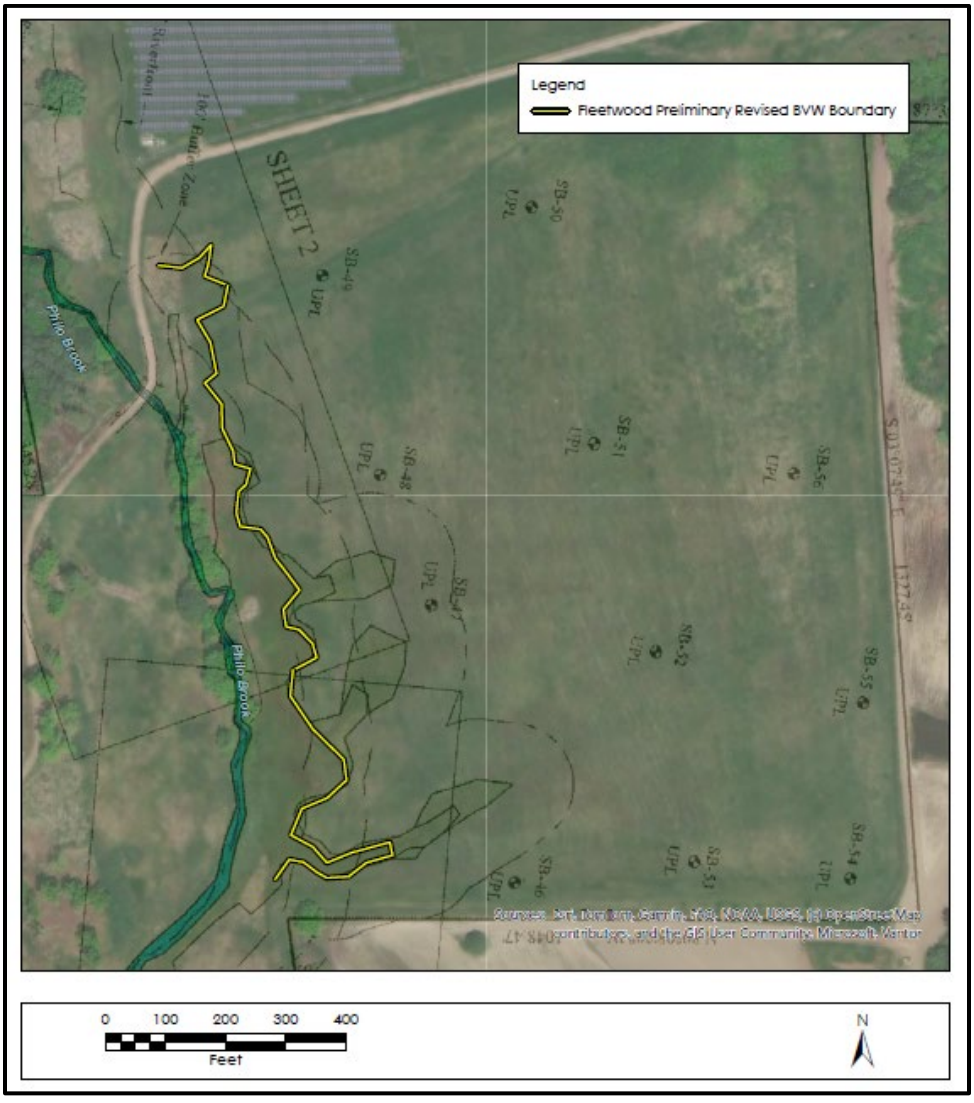
3) At the time of the site visit, many of the W2-series delineation flags were clearly visible, and the labels were legible. Flags locations had been further marked with orange stakes, which aided in the review. Fleetwood refreshed flags that were down and/or lacked legible labels.

4) Areas of inundation, saturated soils at/near the ground surface, and hydric soils were observed beyond the delineated W2-series BVW boundary within the cornfield to the north and east. With the exception of remnant cut corn stalks, vegetation was lacking due to the recent agricultural management. Stockman Associates discussed the prior 2021 ANRAD delineation that had been submitted by AEPrime and ultimately withdrawn by the applicant.

   Fleetwood and Stockman Associates reviewed areas previously delineated by AEPrime utilizing a handheld Submeter GNSS unit (Eos Arrow 100 and Esri field Maps). Note: The AEPrime delineation (plans dated 8-12-21) depicts the BVW boundary prior to the completed peer review and any revisions thereafter.

   As previously discussed, the landscape differed from the conditions during Fleetwood's September and October 2025 assessment. With the benefit of increased visibility and

early season growing conditions, Fleetwood reassessed the W2-series boundary. Fleetwood indicated that *preliminary* revised delineation flagging was being placed and additional assessment and refinement would be performed at a later date. Stockman Associates located the revised *preliminary* flagging using sub-meter GPS to aid in further future peer review. At the request of Fleetwood, the resultant map has been provided below. The map depicts Esri World Imagery overlaid by the 2021 AE Prime delineation (black) and the preliminary revised BVW boundary flagged by Fleetwood (yellow).




5) As discussed during the site visit, Stockman Associates recommends the collection of transect data during the reassessment of the W2-series BVW boundary, especially in areas where the boundary differs from the 2021 PrimeAE boundaries. Due to altered conditions, data collection should be performed following the procedures under 310 CMR 10.55(2)(c)3., the Massachusetts DEP Handbook: Delineating Bordering Vegetated Wetlands, Second Edition, 2022, as well as the 2012 Regional Supplement to the Corps of Engineers Delineation Manual: NC/NE Region Chapter 5 Difficult Wetland Situation.

*BVW W1 Series*

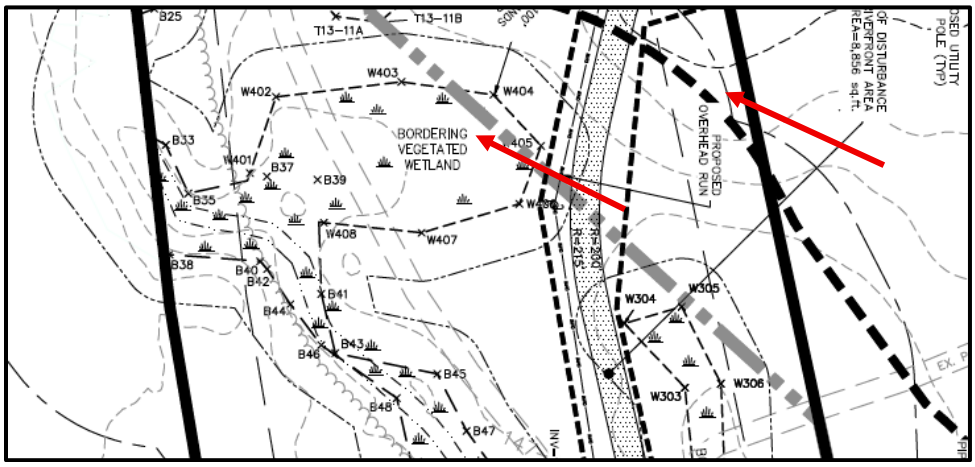
6) The vast majority of the W1-series BVW delineation flags were missing or downed during the site visit. The W1-series flagging demarcates the boundary of an anthropogenic agricultural BVW swale. The distinct features of the swale (topography and vegetation) were compared to the boundaries depicted on the surveyed site plan. Based on this comparison, Stockman Associates concurs with the general boundary of the W1-series BVW. The Commission should note that individual flags were not present for review and consensus.

*Subject Site Review*

7) Stockman Associates traversed the subject property to inspect for the presence of any additional unmapped, protected wetland resource areas and/or jurisdictional Buffer Zones.

8) During the review of the MAHWL a wetland system was observed to the east of the upper reach of Philo Brook. This area is located outside of the ANRAD subject site but had been reviewed to assess the projection of Riverfront Area and Buffer Zone into the subject site.

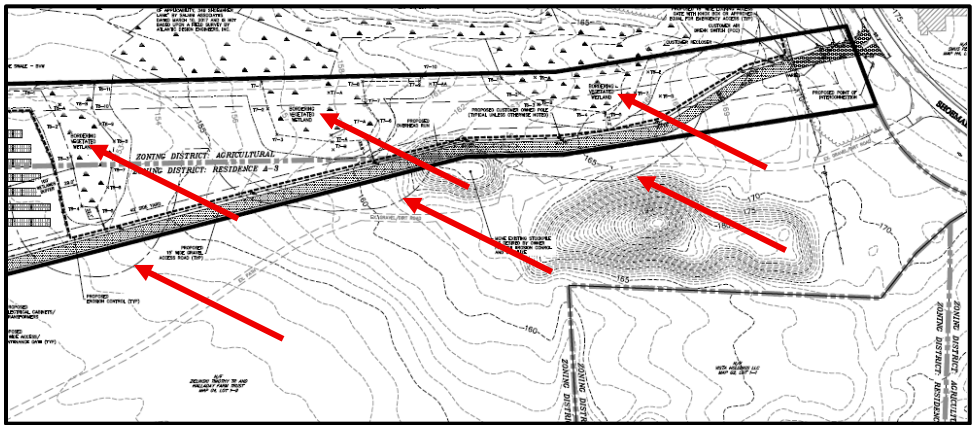
   a. Based on prior site visits and a review of the BVW delineation previously approved by the Commission in 2018 (Atlantic Design Engineers, Inc.), the observed wetland was classified as a BVW in 2018, with Buffer Zone projecting into the current 2026 subject site. See below.




   b. Stockman Associates recommends further review of the area to address the potential presence of additional Buffer Zone within the subject site.

9) During the site visit, Stockman Associates and Fleetwood discussed the presence of BVW located outside of the subject site to the north and the potential for Buffer Zone projecting south into the subject site.

   c. Subsequently, Stockman Associates reviewed the BVW delineation previously approved by the Commission in 2018 (Atlantic Design Engineers, Inc.). The 2018 site plans depict BVW to the north with Buffer Zone projecting into the current subject site. See below.




d. Stockman Associates recommends further review of the area to address the potential presence of additional BVW and/or Buffer Zone within the subject site, including the northeast portion of the field which contains wetness signatures raised in the MassDEP comment letter and buried hydric soils observed in 2021.

*SITE PLAN REVIEW*

10) At this time Stockman Associates has performed an interim review of the 2-3-2026 site plan submitted with the February 2026 ANRAD application. Submittal of a revised site plan and additional review are anticipated after revisions by Fleetwood have been completed.

11) The Riverfront Area associated with Philo Brook should be depicted on a revised site plan.

12) The legend would benefit from specific symbology related to BVW flags, MAHWL flags, BVW boundary, and MAHWL. Currently the site plan indicates the same line type for BVW and MAHWL and lacks point symbology for BVW flags and MAHWL flags.

13) The site plan identifies the subject property as G4-1-9 which differs from the ANRAD submittal which identifies the parcel as G4 1_11. The applicant should confirm the correct parcel number.

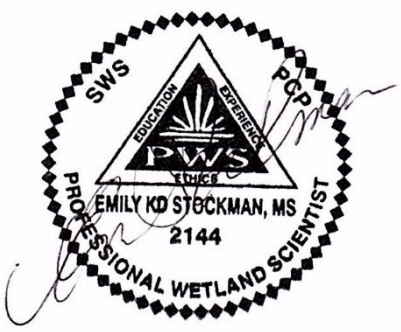
14) Stockman Associates suggests that the Commission require a written response to the MassDEP comments as well as the peer review comments.

I trust that the above comments will assist the Commission in their review of the previously referenced ANRAD application. Please do not hesitate to contact me with any questions.

Sincerely,

Emily Stockman

Emily Stockman, M.S., P.W.S.
Senior Scientist/Principal
Stockman Associates LLC



## Stefanie Kesecker

**From:** David Cameron <david@fleetwoodenv.com>
**Sent:** Wednesday, April 22, 2026 11:16 AM
**To:** Stefanie Kesecker
**Subject:** Fwd: Public Meeting Continuance Request

Hi Stefanie,

Please see below. Can you please confirm receipt of this email message and request? Thank you!

David

---------- Forwarded message ---------
From: **David Cameron** <david@fleetwoodenv.com>
Date: Wed, Apr 22, 2026 at 11:14 AM
Subject: Public Meeting Continuance Request
To: Taryn Egerton <tegerton@agawam.ma.us>
Cc: Emily Stockman (emily@stockmanassociates.com) <emily@stockmanassociates.com>, Pollis, Nikkie <npollis@ameresco.com>

Good morning Taryn,

On behalf of Ameresco, Inc., Fleetwood E.S. requests a continuance to the Commission's first public meeting in May. I had a productive site walk with Stockman Associates Monday, but I do not believe Emily will have sufficient time to complete her report prior to the meeting tomorrow evening. Can you please confirm receipt of this email and let men know what the next public meeting date is? Thank you in advance for your help.

--

David Cameron, SPWS, Principal

Fleetwood Environmental Solutions, LLC

P.O. Box 1016

Belchertown, MA 01007

413.325.7372

david@fleetwoodenv.com

www.fleetwoodenv.com

# Town of Agawam
## Conservation Commission

Conservation Commission
1000 Suffield Street
Agawam, MA 01001
Ph: 413-786-0400 ext. 8737
Fax: 413-786-9927

March 27, 2026

Ameresco, Inc
c/o Nikki Pollis
20 Winthrop Square
Boston, Ma 02110

Dear Ms. Pollis:

At its duly called meeting held on March 26, 2026, the Agawam Conservation Commission voted to accept the Peer Review proposal submitted by Stockman Associates for the amount of $2,860.00 for an Abbreviated Notice of Resource Area Delineation on property at 311 Shoemaker Lane. Review by Stockman Associates will not commence until this Peer Review fee is submitted to the Conservation Commission in its entirety. The Commission shall be responsible for expenditures.

Sincerely,

Henry A. Kozloski, Chairman
Agawam Conservation Commission

Cc: David Cameron - Fleetwood Environmental
Town Clerk
File

Stockman Associates LLC

March 23, 2026

Mr. Henry Kozloski, Chairman
Town of Agawam Conservation Commission
750 Cooper Street
Agawam, MA 01001

Re: Abbreviated Notice of Resource Area Delineation (ANRAD)
Ameresco, Inc.
311 Shoemaker Lane
Agawam, MA 01001
Parcel G4 1_11
Wetland Consultant Peer Review Proposal

Dear Mr. Kozloski:

Foremost, thank you for considering Stockman Associates LLC. It is our understanding that the Agawam Conservation Commission is seeking an estimate for a wetland consultant peer review of an Abbreviated Notice of Resource Area Delineation (ANRAD) submitted by Fleetwood Environmental Solutions (Fleetwood) on behalf of their client, Ameresco, Inc., for the review of delineated resource area boundaries located at 311 Shoemaker Lane (Parcel G4 1_11) in Agawam, MA. Based on the WPA Form 4A prepared by Fleetwood dated February 24, 2026, approximately 5,762 linear feet of Bordering Vegetated Wetland (BVW) boundary and approximately 1,082 linear feet of Bank will be reviewed. It is our understanding that the scope will also include a review of the subject property to confirm that there are no additional unmapped protected wetland resource areas.

## *Scope of Work*

**Field Work**

***Site Visit:*** to review and confirm field work performed by Fleetwood and submitted under the February 24, 2026 ANRAD submittal, including the review of the delineated Bordering Vegetated Wetland and Bank boundaries and data plots. It is anticipated that boundary delineation flagging will be clearly visible and labeled in the field. Any observation plots utilized by Fleetwood to evaluated soils, vegetation, and hydrology should also be clearly marked on a site plan and in the field for review.

Furthermore, it is anticipated that a representative from Fleetwood as well as members of the Agawam Conservation Commission may be present during the site visits.

***Estimated 1 Field Day***

**Materials Review**

**Abbreviated Notice of Resource Area Delineation (ANRAD) Review:** including the review of the ANRAD WPA Form 4A and other supporting site plans and documents within the February 24, 2026 submittal prepared by Fleetwood.

The review will be performed under the Massachusetts Wetlands Protect Act (MA WPA) regulations (310 CMR 10.00). It is our understanding that the Town of Agawam does not have a local wetland protection bylaw.

**Reporting**

**Review Findings:** including a findings report and recommendations based on the materials review and the site visit. The report will specifically address concurrence and non-concurrence with resource area boundaries as presented in the ANRAD prepared by Fleetwood.

**Meetings**

Attendance: This proposal includes attendance at one (1) Agawam Conservation Commission meeting.

## *Total Cost Estimate*

***Estimated Hours (including travel) 26 hours***
***$2,860***

Please note that the above cost estimate has been provided based on the ANRAD submittal dated February 24, 2026 and excludes any follow-up review. Any additional submittals, additional site visits, and/or public hearings would be considered extra work beyond the proposed scope. If additional review is requested during the process, Stockman Associates LLC will bill for those services at the rates provided below.

| | |
|---|---|
| **Hourly Rates (including travel):** | Wetland Scientist $110/hour<br>Field Technician $65/hour |

This proposal is valid for 30 days. Our receipt of a signed copy of this proposal will serve to authorize Stockman Associates LLC to proceed with the work outlined above in our Scope of Services and on the attached General Contract Conditions.

Work will commence after receipt of a signed authorization to proceed and confirmation of funding. It is anticipated that work will begin with a materials review. It is anticipated that the fieldwork will be scheduled during the growing season. The fieldwork will be scheduled upon coordination with the applicant and/or the applicant's representative and the Conservation Commission. Please note that aspects of the proposed timeline are subject to the scheduling and availability of others as well as site conditions and, therefore, may be subject to change.

I look forward to working with you on this project. Thank you for considering Stockman Associates LLC.

If you have any questions regarding the above estimate, please do not hesitate to contact me at emily@stockmanassociates.com or at 413-743-1372.

Sincerely,



Emily Stockman, M.S., P.W.S.
Senior Scientist/Principal
Stockman Associates LLC

**AUTHORIZATION TO PROCEED**

**Agawam Conservation Commission**

**Abbreviated Notice of Resource Area Delineation (ANRAD)**
**Ameresco, Inc.**
**311 Shoemaker Lane**
**Agawam, MA 01001**
**Parcel G4 1_11**
**Wetland Consultant Peer Review Proposal**

I hereby authorize Stockman Associates LLC to proceed with the above-referenced project in accordance with the Scope of Services described herein.

**Agawam Conservation Commission**

| | |
|---|---|
| Printed Name | Date |
| Signature | Title |

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE
436 DWIGHT STREET, SPRINGFIELD, MA 01103 413-784-1100

MAURA T. HEALEY
Governor

KIMBERLEY DRISCOLL
Lieutenant Governor

REBECCA L. TEPPER
Secretary

BONNIE HEIPLE
Commissioner

DATE: March 5, 2026

Municipality AGAWAM
(city/town)

RE: NOTIFICATION OF WETLANDS PROTECTION ACT FILE NUMBER

The Department of Environmental Protection has received a Notice of Intent filed in accordance with the Wetlands Protection Act (M.G.L. c. 131, §40):

| | | | |
|---|---|---|---|
| Applicant: | AMERESCO, INC. | Owner: | TIMOTHY ZIELINSKI |
| Address: | 20 WINTHROP SQUARE<br>BOSTON, MA 02110 | Address: | 85026 BARSONAGE CT<br>FERNANDINA BEACH, FL, 32034 |
| LOCUS: | 311 SHOEMAKER LANE | | |

**This project has been assigned the following file # : WE 087-0711**

**A FILE NUMBER ONLY INDICATES THAT THE APPLICATION CONTAINS THE MINIMAL SUBMITTAL REQUIREMENTS AND IS ADMINISTRATIVELY COMPLETE - NOT THAT THE INFORMATION IN THE APPLICATION IS ADEQUATE FOR ISSUANCE OF AN ORDER OF CONDITIONS.**

Although a file # is being issued, please note the following:

[1] The commission might review the approved wetlands delineation (since expired as the OOC received a COC) from file number 087-0628, near the boundary with this lot. That file number did approve Riverfront alteration when the OOC was issued though the applicant in this case is attempting to overcome the perennial presumption. Guidance will be provided to the commission regarding overcoming said perennial presumption.

[2] The commission should make sure the correct map/parcel ID is correct.

[3] The applicant is only requesting approval of BVW and Bank (for the 100 foot buffer).

[4] Regarding the July 16, 2016 dry observation date, that date was considered to be in a drought watch, therefore it could not be used. Please review https://www.mass.gov/info-details/history-of-drought-declarations-in-massachusetts#drought-tables-before-2019

[5] Much of the field does show hydric soil like conditions. See Section 4.0 of the narrative. Aerial photos will be provided.

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD# 1-866-539-7622 or 1-617-574-6868.
http://www.mass.gov/dep
Printed on Recycled Paper

AMERESCO, INC.
20 WINTHROP SQUARE
BOSTON, MA 02110

[6] To help ensure that conservation commissions have sufficient expertise available to address specific issues regarding an applicant's filing, M.G.L. c. 44, section 53g gives Commissions authority to charge a fee for the employment of outside consultants that allow for the use of the fee to ensure that they have the necessary information for them to make a decision pursuant to the Wetlands Protection Act, M.G.L. c. 131, sec. 40 and 310 CMR 10.00.

If you have any questions regarding this letter, please contact: MARK STINSON @ (413)-961-9583

Cc: Agawam Conservation Commission, DPW Inspection Services 1000 Suffield Street, Agawam, MA, 01001
Owner: Timothy Zielinski, 85026 Barsonage CT, FERNANDINA BEACH, FL, 32034
Representative: Fleetwood Environmental Solutions, LLC, 84 Russell Street, HADLEY, MA, 01035

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD# 1-866-539-7622 or 1-617-574-6868.
http://www.mass.gov/dep
Printed on Recycled Paper

# *Abbreviated Notice of Resource Area Delineation*

## Related to Property ID:

## G4_1_11

## at

## 311 Shoemaker Lane
## Agawam, Massachusetts

## February 24, 2026

**Prepared on Behalf of:**

Ameresco, Inc.
20 Winthrop Square
Boston, MA 02110
npollis@ameresco.com

**Prepared by:**

fleetwood
ENVIRONMENTAL SOLUTIONS
84 Russell Street
Hadley, MA 01035
413.325.7372
www.fleetwoodenv.com

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 4A – Abbreviated Notice of Resource Area Delineation

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

## A. General Information

1. Project Location (**Note:** electronic filers will click on button for GIS locator):

311 Shoemaker Lane (a. Street Address) | Agawam (b. City/Town) | 01001 (c. Zip Code)

Latitude and Longitude: 42.041429 (d. Latitude) | -72.653405 (e. Longitude)

G4 (f. Assessors Map/Plat Number) | 1_11 (g. Parcel /Lot Number)

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

2. Applicant:

Nikki (a. First Name) | Pollis (b. Last Name)

Ameresco, Inc. (c. Organization)

20 Winthrop Square (d. Mailing Address)

Boston (e. City/Town) | MA (f. State) | 02110 (g. Zip Code)

508.598.3254 (h. Phone Number) | (i. Fax Number) | npollis@ameresco.com (j. Email Address)

3. Property owner (if different from applicant): ☐ Check if more than one owner (attach additional sheet with names and contact information)

Timothy (a. First Name) | Zielinski (b. Last Name)

(c. Organization)

85026 Barsonage CT (d. Mailing Address)

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

Fernandina Beach (e. City/Town) | FL (f. State) | 32034 (g. Zip Code)

413.246.7311 (h. Phone Number) | (i. Fax Number) | timzie218@gmail.com (j. Email Address)

4. Representative (if any):

David (a. Contact Person First Name) | Cameron (b. Contact Person Last Name)

Fleetwood Environmental Solutions, LLC (c. Organization)

35 Russell Street (d. Mailing Address)

Hadley (e. City/Town) | MA (f. State) | 01035 (g. Zip Code)

413.325.7372 (h. Phone Number) | (i. Fax Number) | david@fleetwoodenv.com (j. Email Address)

Fees will be calculated for online users.

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

$2,000.00 (a. Total Fee Paid) | $987.50 (b. State Fee Paid) | $1012.50 (c. City/Town Fee Paid)

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 4A – Abbreviated Notice of Resource Area Delineation

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

## B. Area(s) Delineated

1. Bordering Vegetated Wetland (BVW) ~ 5,762 Linear Feet of Boundary Delineated

2. Check all methods used to delineate the Bordering Vegetated Wetland (BVW) boundary:

   a. ☐ MassDEP BVW Field Data Form (attached)

   b. ☒ Other Methods for Determining the BVW boundary (attach documentation):

      1. ☒ 50% or more wetland indicator plants
      2. ☒ Saturated/inundated conditions exist
      3. ☐ Groundwater indicators
      4. ☒ Direct observation
      5. ☒ Hydric soil indicators
      6. ☒ Credible evidence of conditions prior to disturbance

3. Indicate any other resource area boundaries that are delineated:

| a. Resource Area | b. Linear Feet Delineated |
|---|---|
| Bank (off-site - just for the purposes of Buffer Zone projections) | ~1,082 |
| c. Resource Area | d. Linear Feet Delineated |
| | |

## C. Additional Information

Applicants must include the following plans with this Abbreviated Notice of Resource Area Delineation. See instructions for details. **Online Users:** Attach the Document Transaction Number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ ANRAD (Delineation Plans only)
2. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
3. ☒ Plans identifying the boundaries of the Bordering Vegetated Wetlands (BVW) (and/or other resource areas, if applicable).
4. ☒ List the titles and final revision dates for all plans and other materials submitted with this Abbreviated Notice of Resource Area Delineation.

## D. Fees

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 4A – Abbreviated Notice of Resource Area Delineation

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

The fees for work proposed under each Abbreviated Notice of Resource Area Delineation must be calculated and submitted to the Conservation Commission and the Department (see Instructions and Wetland Fee Transmittal Form).

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

Applicants must submit the following information (in addition to the attached Wetland Fee Transmittal Form) to confirm fee payment:

| | |
|---|---|
| 254 | 2/9/26 |
| 2. Municipal Check Number | 3. Check date |
| 255 | 2/9/26 |
| 4. State Check Number | 5. Check date |
| David | Cameron |
| 6. Payor name on check: First Name | 7. Payor name on check: Last Name |

## E. Signatures

I certify under the penalties of perjury that the foregoing Abbreviated Notice of Resource Area Delineation and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 4A – Abbreviated Notice of Resource Area Delineation

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

I hereby grant permission, to the Agent or member of the Conservation Commission and the Department of Environmental Protection, to enter and inspect the area subject to this Notice at reasonable hours to evaluate the wetland resource boundaries subject to this Notice, and to require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.

I acknowledge that failure to comply with these certification requirements is grounds for the Conservation Commission or the Department to take enforcement action.

| 1. Signature of Applicant | 2. Date |
|---|---|
| 3. Signature of Property Owner (if different) | 4. Date |
| 5. Signature of Representative (if any) | 6. Date |

**For Conservation Commission:**
Two copies of the completed Abbreviated Notice of Resource Area Delineation (Form 4A), including supporting plans and documents; two copies of the ANRAD Wetland Fee Transmittal Form; and the city/town fee payment must be sent to the Conservation Commission by certified mail or hand delivery.

**For MassDEP:**
One copy of the completed Abbreviated Notice of Resource Area Delineation (Form 4A), including supporting plans and documents; one copy of the ANRAD Wetland Fee Transmittal Form; and a copy of the state fee payment must be sent to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery. (E-filers may submit these electronically.)

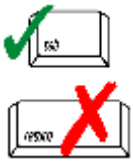
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# ANRAD Wetland Fee Transmittal Form

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

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



## A. Applicant Information

1. Location of Project:

| | |
|---|---|
| 311 Shoemaker Lane | Agawam |
| a. Street Address | b. City/Town |
| $987.50 | 255 |
| c. Fee amount | d. Check number |

2. Applicant:

| | | |
|---|---|---|
| Nikki | Pollis | Ameresco, Inc. |
| a. First Name | b. Last Name | c. Company |

20 Winthrop Square
d. Mailing Address

| | | |
|---|---|---|
| Boston | MA | 02110 |
| e. City/Town | f. State | g. Zip Code |

508.598.3254
h. Phone Number

3. Property Owner (if different):

| | | |
|---|---|---|
| Timothy | Zielinski | |
| a. First Name | b. Last Name | c. Company |

85026 Barsonage CT
d. Mailing Address

| | | |
|---|---|---|
| Fernandina | FL | 32034 |
| e. City/Town | f. State | g. Zip Code |

413.246.7311
h. Phone Number

## B. Fees

The fee is calculated as follows for each Resource Area Delineation included in the ANRAD (check applicable project type). The maximum fee for each ANRAD, regardless of the number of Resource Area Delineations, is $200 activities associated with a single-family house and $2,000 for any other activity.

☐ **Online users:** check box if fee exempt.

Bordering Vegetated Wetland Delineation Fee:

| | | | | |
|---|---|---|---|---|
| 1. ☐ | single family house project | a. feet of BVW | x $2.00 = 2 | b. Fee for BVW |
| 2. ☒ | all other projects | 5,762 a. feet of BVW | x $2.00 = | 11,524 b. Fee for BVW |

Other Resource Area (e.g., bank, riverfront area, etc.):

| | | | | |
|---|---|---|---|---|
| 3. ☐ | single family house project | a. linear feet | x $2.00 = | b. Fee |
| 4. ☒ | all other projects | 1,082 a. linear feet | x $2.00 = 2 | 2,164 b. Fee |

Total Fee for all Resource Areas: $2,000 Fee

State share of filing fee: $987.50 5. 1/2 of total fee **less** $12.50

City/Town share of filing fee: 1012.50 6. 1/2 of total fee **plus** $12.50

## C. Submittal Requirements

a.) Send a copy of this form, with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts, to:

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

c.) **To DEP Regional Office**: Send one copy of the Abbreviated Notice of Resource Area Delineation (and any additional documentation required as part of a Simplified Review Buffer Zone Project); a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 4A – Abbreviated Notice of Resource Area Delineation

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Agawam
City/Town

understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

I hereby grant permission, to the Agent or member of the Conservation Commission and the Department of Environmental Protection, to enter and inspect the area subject to this Notice at reasonable hours to evaluate the wetland resource boundaries subject to this Notice, and to require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.

I acknowledge that failure to comply with these certification requirements is grounds for the Conservation Commission or the Department to take enforcement action.

| | |
|---|---|
| 1. Signature of Applicant Timothy Richter Trustee | 2. Date 2/20/2026 |
| 3. Signature of Property Owner (if different) | 4. Date 2-5-2026 |
| 5. Signature of Representative (if any) | 6. Date |

**For Conservation Commission:**
Two copies of the completed Abbreviated Notice of Resource Area Delineation (Form 4A), including supporting plans and documents; two copies of the ANRAD Wetland Fee Transmittal Form; and the city/town fee payment must be sent to the Conservation Commission by certified mail or hand delivery.

**For MassDEP:**
One copy of the completed Abbreviated Notice of Resource Area Delineation (Form 4A), including supporting plans and documents; one copy of the ANRAD Wetland Fee Transmittal Form; and a copy of the state fee payment must be sent to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery. (E-filers may submit these electronically.)

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

Taryn Egerton, Conservation Officer
Conservation Commission
1000 Suffield Street
Agawam, MA 01001

February 24, 2026

**Subject:** ***Abbreviated Notice of Resource Area Delineation*** **for 311 Shoemaker Lane, Agawam, MA.**

Dear Ms. Egerton:

On behalf of Ameresco, Inc., Fleetwood Environmental Solutions, LLC ("Fleetwood") conducted a field evaluation of resource areas subject to the Massachusetts Wetlands Protection Act ("WPA) at the address referenced above. The following provides the background of this Abbreviated Notice of Resource Area Delineation ("ANRAD"), as well as Fleetwood's methods and findings regarding the evaluation.

## BACKGROUND

Fleetwood understands the subject property ("property", "parcel" or "Site") is presently designated as Assessors Map G4 Lot 1_11 (see site locus at Figure 1, below). The parcel is 36.4 acres in size, and owned by Timothy Zielinski (see Site Plan at Appendix B). The parcel is presently and has been an agricultural field for many decades. This ANRAD is seeking confirmation of the Resource Areas delineated on the parcel.

**Figure 1. USGS Topographic/Site Locus Map (asterisk denotes Site location)**






84 Russell Street
Hadley, MA 01035
413.325.7372

## EVALUATION METHODS

During September and October of 2025, Fleetwood conducted a visual inspection of the Site, which entailed a meander survey throughout the parcel. These field investigations were preceded by a desktop evaluation of publicly-accessible maps, historic aerial images and related resources. A detailed description of the methods employed are outlined in the Wetland Delineation report provided at Appendix C.

### *Previous Evaluations*

In 2015 and 2016 the property owner retained GZA to conduct a natural resources evaluation, including a streamflow assessment for a small stream immediately west of the subject parcel. The report that summarizes the methods and findings of that investigation is provided at Appendix D.

## FINDINGS

The investigation resulted in the identification of the parcel being a large cornfield (Figure 2, below).

**Figure 2. 2023 Aerial Image of Site**



Three separate areas along its periphery were flagged as Resource Area boundaries: 1) a man-made ditch along the eastern and southern limits of the cornfield, which was designated as a linear Bordering Vegetated Wetland ("BVW"); 2) another BVW along much of the cornfield's western boundary; and 3) the Bank of an intermittent stream just off-site to the west, which partially projects 100-foot Buffer Zone onto the subject parcel. This stream was determined to have no flow at least four days within a consecutive 12-month period through an evaluation conducted by GZA in 2015 and 2016, and documentation of these conditions is provided in the aforementioned report at Appendix D. Ameresco is seeking the Commission's confirmation of the BVW boundaries, and those portions of Buffer Zone from the off-site stream that project into the parcel.



84 Russell Street
Hadley, MA 01035
413.325.7372

Thank you for your attention to this ANRAD. Do contact me with any questions.

Sincerely,

David Cameron

David Cameron, PWS, Principal
Fleetwood Environmental Solutions, LLC

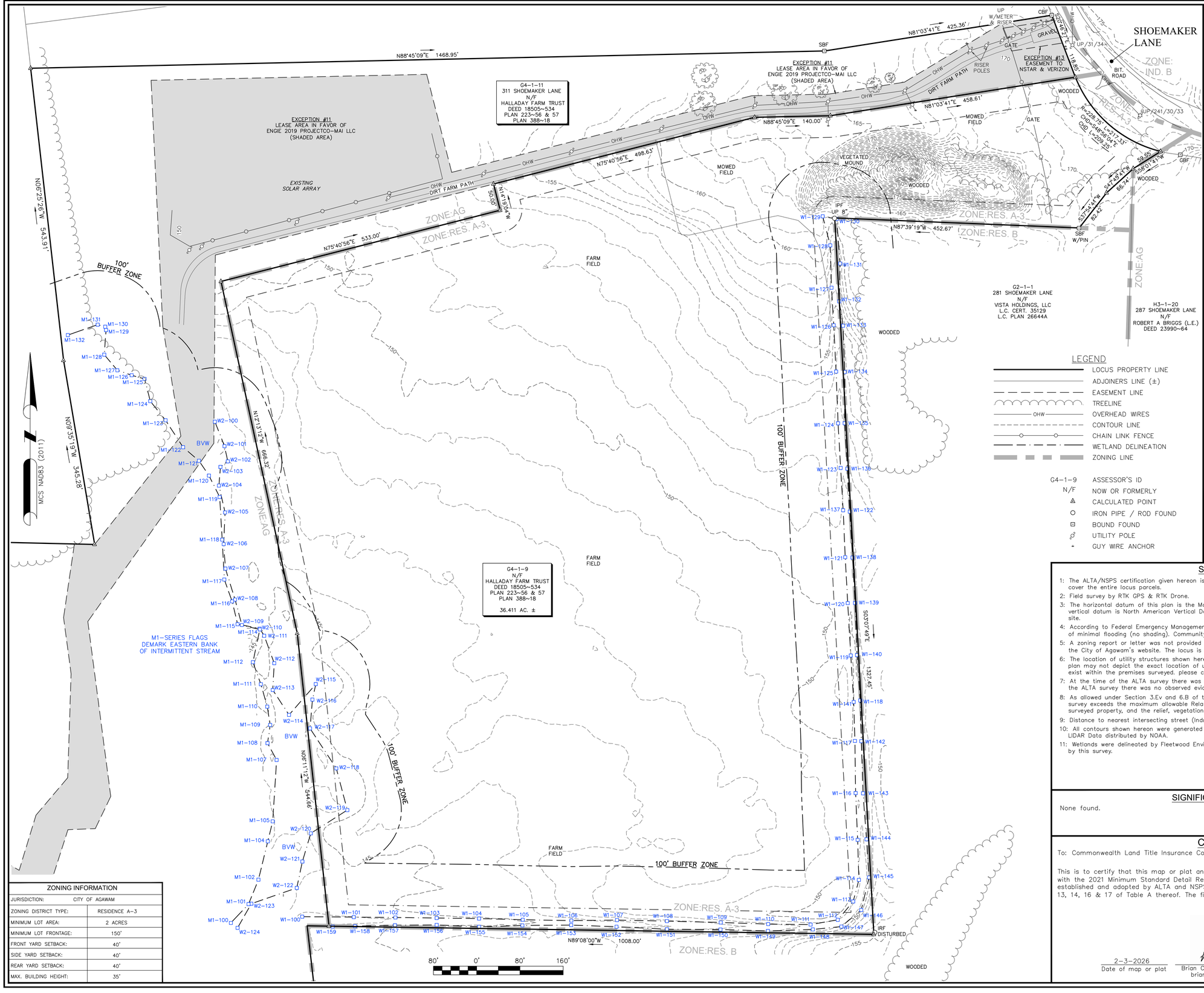
Copy: Nikki Pollis, Ameresco, Inc.
MassDEP, WERO



84 Russell Street
Hadley, MA 01035
413.325.7372

# APPENDIX B

## Site Plan




## LEGEND

- LOCUS PROPERTY LINE
- ADJOINERS LINE (±)
- EASEMENT LINE
- TREELINE
- OHW — OVERHEAD WIRES
- CONTOUR LINE
- CHAIN LINK FENCE
- WETLAND DELINEATION
- ZONING LINE

- G4-1-9 — ASSESSOR'S ID
- N/F — NOW OR FORMERLY
- CALCULATED POINT
- IRON PIPE / ROD FOUND
- BOUND FOUND
- UTILITY POLE
- GUY WIRE ANCHOR

## ZONING INFORMATION

| JURISDICTION: | CITY OF AGAWAM |
|---|---|
| ZONING DISTRICT TYPE: | RESIDENCE A-3 |
| MINIMUM LOT AREA: | 2 ACRES |
| MINIMUM LOT FRONTAGE: | 150' |
| FRONT YARD SETBACK: | 40' |
| SIDE YARD SETBACK: | 40' |
| REAR YARD SETBACK: | 40' |
| MAX. BUILDING HEIGHT: | 35' |

## TITLE EXCEPTIONS:

The following exceptions were taken from a title commitment prepared by Commonwealth Land Title Insurance Company, file #BOS-250073-MS, commitment date 2/20/2025.

1. Rights or claims of persons in possession. **(not a survey matter)**
2. Easements or claims of easements not shown by the public records, boundary-line disputes, overlaps, encroachments, title to filled lands (if any) and any matters not of record which would be disclosed by an accurate survey and inspection of the premises. **(see Significant Observations for any such matters disclosed by this survey)**
3. Any lien, or right to a lien, for services, labor or material, heretofore or hereafter furnished, imposed by law and not shown by the public records. **(not a survey matter)**
4. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I-Requirements are met. **(not a survey matter)**
5. Liens for taxes and municipal charges which become due and payable subsequent to the date of said policy. **(not a survey matter)**
6. Order of Conditions by the Agawam Conservation Commission, recorded in Book 7605, Page 74; as affected by a Certificate of Compliance, recorded in Book 7863, Page 324. **(not a survey matter; pertains to locus)**
7. Order of Conditions by the Agawam Conservation Commission, recorded in Book 4850, Page 241; as affected by a Certificate of Compliance, recorded in Book 9155, Page 489. **(not a survey matter; non-locus)**
8. Consent Agreement by and between Zielinski Brothers II and Tennessee Gas Pipeline Company, dated December 23, 1997, recorded in Book 10563, Page 447. **(non-locus; not plotted)**
9. Order of Conditions by the Agawam Conservation Commission, recorded in Book 22315, Page 489; as affected by a Certificate of Compliance, recorded in Book 24050, Page 101. **(not a survey matter; pertains to locus)**
10. Solar Real Estate Lease Option Agreement, dated June 19, 2017, recorded in Book 22570, Page 231; as affected by Landowner Estoppel Certificate, dated December 18, 2018, recorded in Book 22570, Page 260; as further affected by Assignment and Assumption of Option to Lease, dated March 7, 2019, recorded in Book 22579, Page 157; as further affected by Assignment and Assumption of Option to Lease, dated June 3, 2019, recorded in Book 22713, Page 253. **(said option was exercised in #11 below)**
11. Notice of Lease by and between Timothy Zielinski, as Trustee of the Halladay Farm Trust, and ENGIE 2019 ProjectCo.-MA1 LLC, a Delaware limited liability company, dated November 12, 2019, recorded in Book 22981, Page 275; as affected by Amended and Restated Notice of Lease, dated February 21, 2020, recorded in Book 23129, Page 281. **(plotted)**
12. Temporary Construction Staging Easement Agreement, dated November 26, 2019, recorded in Book 23030, Page 228; as affected by First Amendment to Temporary Construction Staging Easement, dated January 23, 2020, recorded in Book 23080, Page 199. **(said easement once impacted the locus parcel, but is not plotted because it has expired)**
13. Easement to NStar Electric Company d/b/a Eversource Energy and Verizon New England, Inc., dated February 27, 2020, recorded in Book 23140, Page 193. **(plotted)**

## SURVEY NOTES:

1: The ALTA/NSPS certification given hereon is for the proposed solar facility and access only and does not cover the entire locus parcels.
2: Field survey by RTK GPS & RTK Drone.
3: The horizontal datum of this plan is the Massachusetts Coordinate System North American Datum 1983, the vertical datum is North American Vertical Datum 1988, both are based on RTK GPS observations taken on site.
4: According to Federal Emergency Management Agency maps, the majority of the property is in Zone X, areas of minimal flooding (no shading). Community-panel number 25013C 0392 E, effective date 7/16/2013.
5: A zoning report or letter was not provided to the surveyor. All zoning information given hereon is taken from the City of Agawam's website. The locus is located in the "Residence A-3" zoning district.
6: The location of utility structures shown hereon are from observed field evidence & record plans only, this plan may not depict the exact location of underground utilities & does not show all of the utilities which exist within the premises surveyed. please contact dig-safe at 1-888-344-7233 before excavation.
7: At the time of the ALTA survey there was no observed evidence of active earth moving work. At the time of the ALTA survey there was no observed evidence of building construction or building additions.
8: As allowed under Section 3.Ev and 6.B of the 2021 ALTA/NSPS Minimum Standard Detail Requirements, this survey exceeds the maximum allowable Relative Positional Precision due to the size and configuration of the surveyed property, and the relief, vegetation and improvements on the surveyed property.
9: Distance to nearest intersecting street (Industrial Lane) is 1,450'±.
10: All contours shown hereon were generated in ArcMap from digital elevation models of the 2015 QL1 & QL2 LIDAR Data distributed by NOAA.
11: Wetlands were delineated by Fleetwood Environmental Solutions, LLC in September 2025. Flags were located by this survey.

## SIGNIFICANT OBSERVATIONS:

None found.

## CERTIFICATION:

To: Commonwealth Land Title Insurance Company

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 2, 3, 4, 5, 6a, 6b, 7a, 7b1, 8, 11a, 13, 14, 16 & 17 of Table A thereof. The fieldwork was completed on 10/14/2025.

2-3-2026
Date of map or plat

Brian C. Franetovich PLS #54258
brian@northeastsurvey.com

COMMONWEALTH OF MASSACHUSETTS
BRIAN C. FRANETOVICH NO. 54258
REGISTERED PROFESSIONAL LAND SURVEYOR


NORTHEAST SURVEY CONSULTANTS
3 FERRY STREET
STUDIO 1 EAST
EASTHAMPTON, MA 01027
(413) 203-5144


EXISTING CONDITIONS

| | | | |
|---|---|---|---|
| SURVEYOR: | BCF | ENGINEER: | - |
| DRAFTING: | BCF | DESIGN: | - |
| FIELD WORK: | NAE | HORZ. SCALE: | 1" = 80' |
| PROJECT NUMBER: | 25-161 | VERT. SCALE: | - |
| DRAWING NAME: | 25-161 ALTA.DWG | DATE: | 2-3-2026 |

ALTA/NSPS LAND TITLE SURVEY
OF LAND IN AGAWAM, MA
SHOEMAKER LANE
PREPARED FOR
WESTON & SAMPSON ENGINEERS, INC.

SHEET NO. 1 OF 1

# APPENDIX C

## Wetland Delineation Report

# *Natural Resources Evaluation and Wetland Determination Report*

**for**

## 311 Shoemaker Lane
## Agawam, Massachusetts

**October 25, 2025**

**Prepared for:**

Ameresco
20 Winthrop Square
Boston, MA 02110

**Prepared by:**

fleetwood
ENVIRONMENTAL SOLUTIONS
84 Russell Street
Hadley, MA 01035
413.325.7372
www.fleetwoodenv.com

## 1.0 INTRODUCTION AND BACKGROUND

Per Ameresco's request, Fleetwood Environmental Solutions, LLC ("Fleetwood") conducted a natural resources-based evaluation for a parcel of land at 311 Shoemaker Lane in Agawam, Massachusetts, identified by MassMapper as property G4_1_9 per MassMapper (screenshot below, with parcel centered):




This property (the "Site", "parcel" or "property") is 36.4 acres in size. Ameresco is assessing the feasibility of a developing commercial solar array project at the Site, which is currently in agricultural use. The assessment was intended to provide detail regarding jurisdictional wetland determinations conducted by Fleetwood and the wetlands permitting implications for development at the Site.

## 2.0 REVIEW METHODS

### 2.1 *Desktop Analysis*

Fleetwood initially conducted a desktop investigation for the Site. The following project file was provided by Ameresco for Fleetwood's use:

- Conceptual design plan (Sheet E-100), prepared by Ameresco and dated May 9, 2024 (Appendix A).

Fleetwood additionally consulted historic and contemporary aerial imagery and resource maps depicting topography, elevation, land use, wetlands, floodplains, hydrologic connections, linear [hydrographic] features soils, Estimated Habitats of Rare Wildlife ("EH"), Priority Habitats of Rare Species ("PH"), Certified Vernal Pools ("CVPs"), Potential Vernal Pools ("PVP"), Areas of Critical Environmental Concern ("ACECs"), Outstanding Resource Waters ("ORWs"), Coldwater Fisheries Resources ("CFRs"), and the U.S. Geological Survey's ("USGS") StreamStats Program, as part of the desktop exercise.

### *2.2 Field-Based Analysis*

Field evaluations were conducted by Fleetwood on September 12, 2025; September 26, 2025; and October 21, 2025. These evaluations initially entailed a meander survey to search for Resource Areas regulated under the Massachusetts Wetlands Protection Act ("WPA") and its implementing regulations (310 CMR 10.00), followed by the placement of survey flags along jurisdictional wetland features discovered on and immediately adjacent to the parcel. The requisite state and federal criteria were followed in order to delineate jurisdictional features, including plant communities, soils, and indicators of hydrology. Approximately 45 acres ("Study Area") were visually inspected during the field survey.

## 3.0 FINDINGS

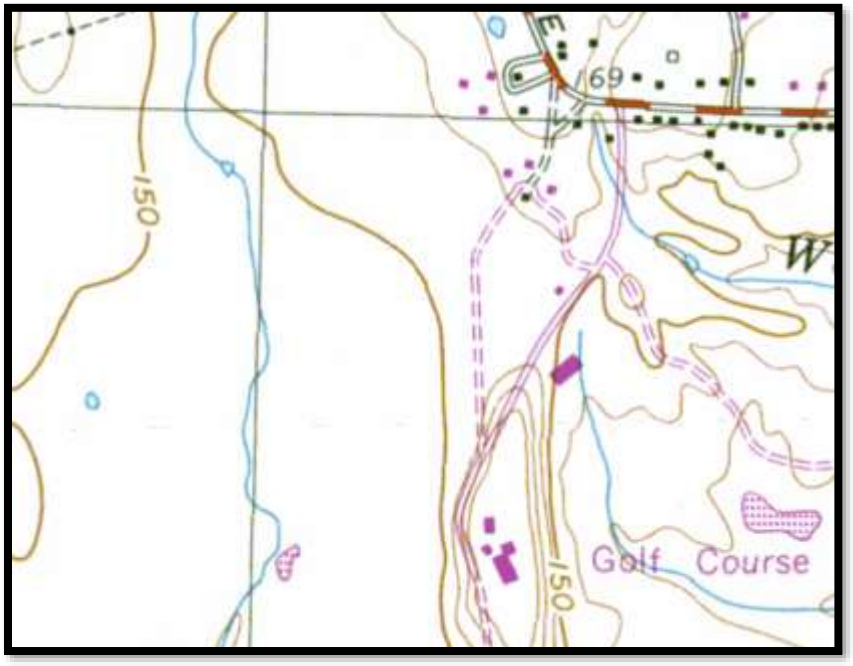
### 3.1 *General*

According to MassMapper data the Site is comprised of one parcel totaling 36.4 acres and is owned by Timothy Zielinski. Mr. Zielinski also owns the parcel to the immediate west. The Site consists of a large agricultural field, which was serving as an active corn crop during the time of the field evaluation.

### 3.2 *Historic and Contemporary Aerial Imagery, Topography, Elevation, and Land Use*

Elevation at this property is relatively homogenous, and ranges from 44-46 meters (~144-151) feet, with elevation gains occurring mainly from southwest to northeast. Based upon review of historic aerial images and maps, as well as anecdotal information provided by the property owner, the Site has been in substantially the same state (i.e., agricultural land) for at least several decades.

Current USGS topographic maps depict one stream very close to the western boundary of the Site, originating from the northwest and flowing off-site toward the south, ultimately discharging to Philo Brook. An image is provided below depicting an asterisk near the center of the subject parcel.

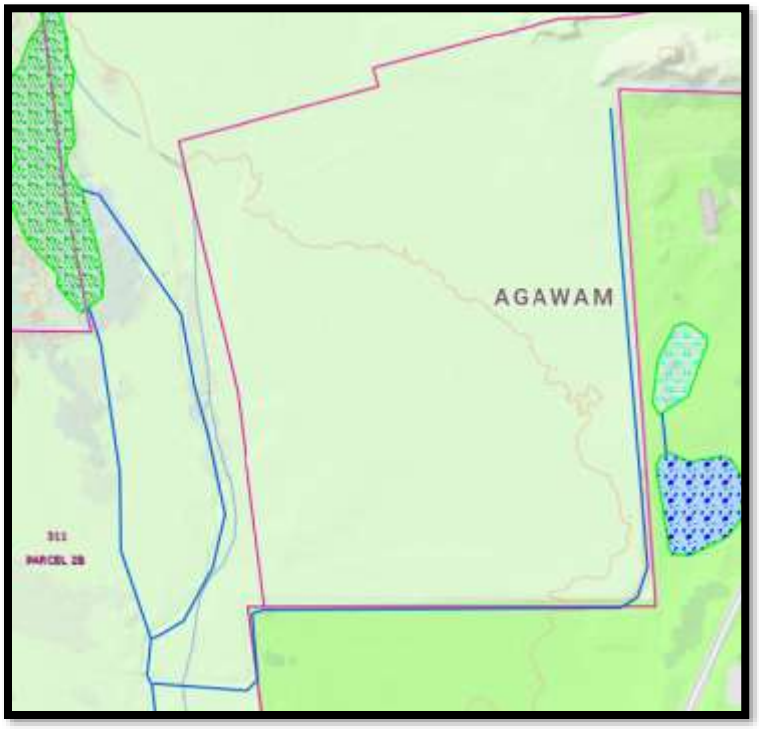



### 3.3 *Wetlands and Hydrologic Connections*

According to MassMapper's "DEP Wetlands" data layer the Study Area contains two wetland features:

- A hydrologic connection [stream] that wraps the property's eastern and southern boundaries; and
- Another stream along the property's western boundary

These features are depicted in the image below:




MassMapper does not indicate any polygons of "Wetlands Change" or "2005 Human Altered Areas" that have been detected on the Site, meaning no illicit alterations of wetlands have been detected by state regulatory agencies via remote sensing.

Based on Fleetwood's on-site investigations, the following additional information was obtained:

- The wetland features identified by USGS mapping and MassMapper exist and are located generally consistent with said mapping;
- The stream depicted by MassMapper along the eastern and southern property boundaries is a made-made drainage swale that is maintained as mowed herbaceous plants along its channel bottom and embankments. Given it is primarily a long, linear vegetated feature with no scoured channel bottom, it would be best characterized as a linear Bordering Vegetated Wetland ("BVW"), given it discharges to the aforementioned stream near the property's southwestern corner. This feature has an associated 100-foot Buffer Zone;
- An additional wetland along the western edge of the property was discovered, and is composed exclusively of herbaceous plant species, since it is within an active pasture. This wetland is hydrologically connected to the stream to the immediate west, and thus qualifies as a BVW, with an associated 100-foot Buffer Zone; and
- An isolated wetland near the northwestern corner of the parcel that was not flagged by Fleetwood.

The field-located and verified wetlands and streams were flagged accordingly:

- **Wetland 1**: BVW which is the grassy swale along the eastern and southern property boundaries (pink wire pin flags labeled W1-100 through W1-160);

- **Wetland 2**: BVW between the corn field and stream along the property's western boundary (pink tape flags affixed to fiberglass rods labeled W2-100 through W2-124); and
- **Stream**: the apparent Bank/mean annual high-water line ("MAHWL") along the eastern side of the stream was flagged with blue tape and blue wire pin flags labeled M1-100 through M1-132.

### 3.4 *Floodplain*

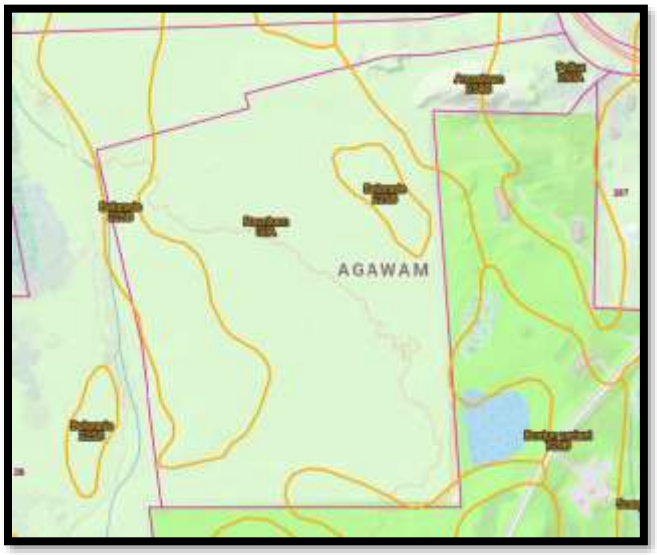
MassGIS does not depict any portion of the project footprint as encompassed by a 100-year [i.e., "Zone A"] floodplain. Neither does the corresponding Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Panel (Appendix C). This means that none of the conceptual solar array would fall within Bordering Land Subject to Flooding ("BLSF")---a Resource Area regulated under the WPA, short of credible documentation being provided by the Agawam Conservation Commission ("Commission") or a third party.

### 3.5 *Soils*

Four distinct soil types are mapped on the portion of the Site which encompasses the anticipated solar array footprint, per the Natural Resources Conservation Service's Hampden County Soil Survey (Central Part) and MassMapper, as summarized in Table 3-1, and depicted in the image, below.

**Table 3-1. Soil Types Mapped within the Vicinity of the Anticipated Proposed Solar Project Footprint**

| Map Symbol and Unit Name | Portion of Site | Slopes | Hydric? | Prime or Statewide Important Farmland? | Drainage Class |
|---|---|---|---|---|---|
| 250A Pollux fine sandy loam | northeastern | 0-3% | No | Yes | Well drained |
| 258B Amostown fine sandy loam | northeastern | 0-6% | No | Yes | Moderately well drained |
| 225B Belgrade silt loam | western | 0-8% | No | Yes | Moderately well drained |
| 30A Raynham silt loam | majority of project site | 0-3% | Yes | No | poorly drained |




Fleetwood's opinion is that the soil survey mapping appears to match the conditions observed in the field, but for the fact that the Raynham soil unit did not display contemporary hydrology (surface water nor groundwater), and was comprised primarily of a healthy corn crop---an agricultural commodity that is generally stunted when growing in wetlands at the margins of corn fields. This may be the result of the significant drainage that has occurred at the property due to the grassy swale.

### 3.6 *Estimated Habitats of Rare Wildlife*

According to MassGIS there is no EH on the Site.

### 3.7 *Priority Habitats of Rare Species*

According to MassGIS there is no PH on the Site.

### 3.8 *Certified Vernal Pools*

According to MassGIS there are no CVPs on the Site.

### 3.9 *Potential Vernal Pools*

According to MassGIS there are no PVPs on the Site.

### 3.10 *Areas of Critical Environmental Concern*

According to MassGIS the Site is not within or encompassed by any ACECs.

### 3.11 *Outstanding Resource Waters*

According to MassGIS there are no ORWs on the Site.

### 3.12 *Coldwater Fisheries Resources*

According to MassGIS there are no CFRs on the Site.

### 3.13 *U.S. Geological Survey's StreamStats Program*

StreamStats was consulted to assess the contributing drainage area and percentage of underlying stratified drift soils associated with the stream along the property's western boundary. The StreamStats report for this watercourse is provided at Appendix D, and these data indicate the contributing watershed to the stream is 0.60 square mile with 55% underlying stratified drift. While there is a presumptive perennial status for this stream, a previous streamflow monitoring evaluation by others (GZA) documented at least four days within a consecutive, non-drought period whereupon the stream exhibited no flow. Thus, it does not have an associated 200-Foot Riverfront Area.

Representative Site photographs are provided at Appendix E.

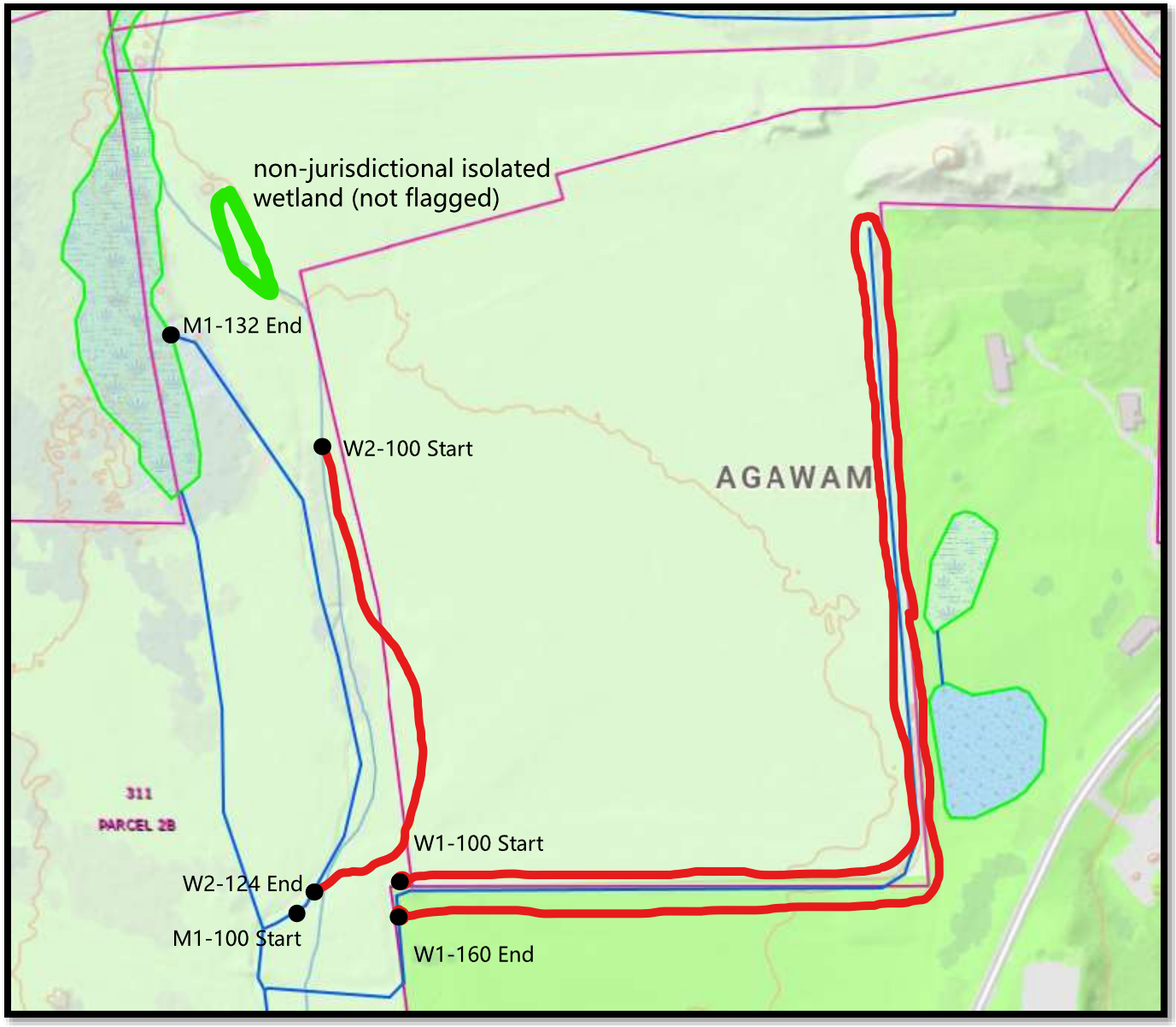
## 4.0 DISCUSSION AND RECOMMENDATIONS

It is important to note the hydric soil characterization over much of the site, despite it being able to sustain a robust corn crop. As previously discussed, Fleetwood did not flag the majority of this site as a wetland, given: 1) the lack of such a characterization on MassMapper by DEP; 2) the grass swale (Wetland 1) that was constructed to provide significant drainage of the farm field; and 3) anecdotal information from the property owner indicating a significant soils and hydrology investigation was conducted by the Agawam Conservation Commission in the past ruling out the field is a wetland.

# APPENDIX B

## Wetland Delineation Sketch

Approximate location of wetland flags placed at 311 Shoemaker Lane by Fleetwood Environmental Solutions, LLC - September 2025




W1 Flags = pink wire pin flags on either side of grassy swale [BVW] that are labeled "WETLAND DELINEATION"

W2 Flags = pink tape flags affixed to fiberglass driveway edge stakes that are labeled "WETLAND BOUNDARY" that demarcate the eastern edge of a Bordering Vegetated Wetland ("BVW")

M1 flags = blue wire pin and tape flags that demarcate the eastern mean annual high-water line of an unnamed tributary to Philo Brook

# APPENDIX C

## Flood Insurance Rate Map

# National Flood Hazard Layer FIRMette

FEMA

72°39'28"W 42°2'52"N




72°38'51"W 42°2'25"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

*Basemap Imagery Source: USGS National Map 2023*

## Legend

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

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- 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 *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

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

**OTHER FEATURES**
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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 10/24/2025 at 8:34 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.

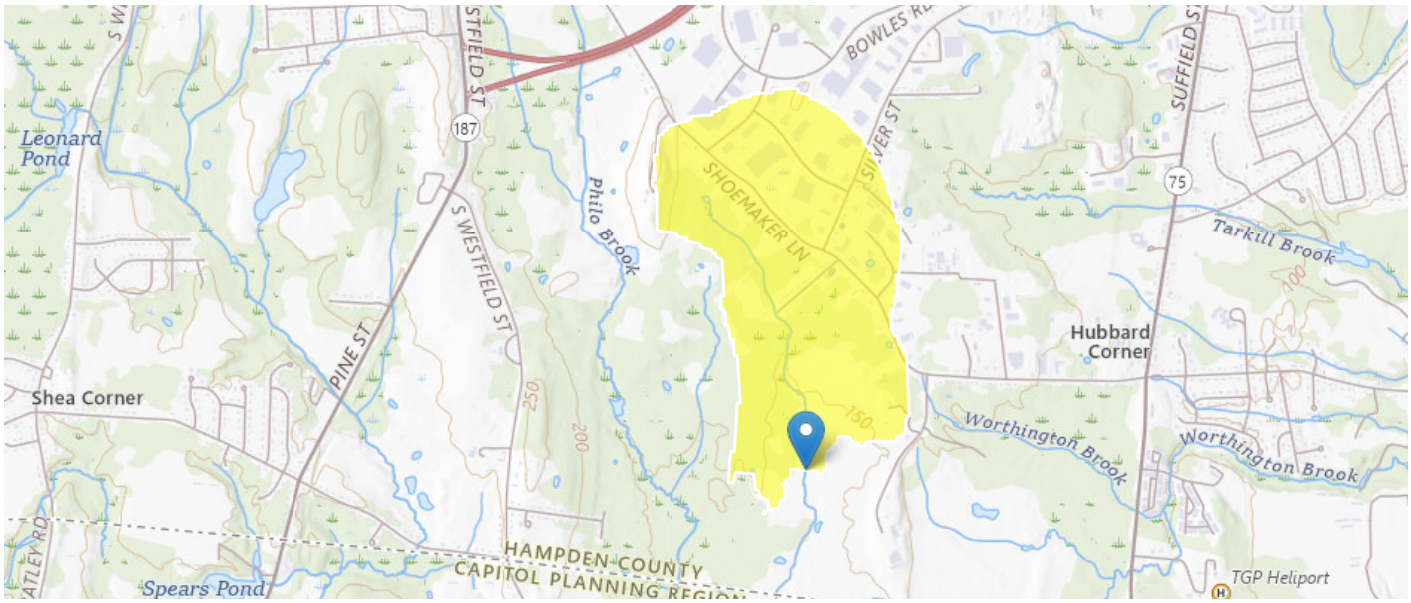
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory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

# APPENDIX D

## USGS StreamStats Report

# StreamStats Report

**Region ID:** MA
**Workspace ID:** MA20250929141929673000
**Clicked Point (Latitude, Longitude):** 42.03902, -72.65579
**Time:** 2025-09-29 10:19:51 -0400




Collapse All

## Basin Characteristics

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| DRNAREA | Area that drains to a point on a stream | 0.6 | square miles |
| PCTSNDGRV | Percentage of land surface underlain by sand and gravel deposits | 54.65 | percent |

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

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.29.3
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

# APPENDIX E

Site Photographs from September 26, 2025



*Representtaive view of property---view southeast*



*Wetland 1 (farm ditch) at eastern edge of Site---view south*



*Wetland 1 (farm ditch) at southern edge of Site---view west*



*Stream near where it enters the property toward northwestern corner of Site---view west*



*Isolated wetland (not flagged) toward northwestern corner of Site---view north*



*Stream along the parcel's western property boundary---view downstream/southwest*



*Wetland 2 along the edge of cornfield near Site's western property boundary---view north*



*Wetland 2 near southwestern corner of property---view north*

# APPENDIX D

## GZA Streamflow Monitoring Report



Proactive by Design

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

1350 Main Street
Suite 1400
Springfield, MA 01103
413.726.2100
www.gza.com

5/31/2017

GZA File No.: 15.0166503.00

Note: annotations in red were made by Fleetwood Environmental Solutions, LLC upon confirmation of typos/errors in the original report upon discussion with the field scientist (Steven Riberdy) that conducted the evaluation.

Tim Zielinski
218 Shoemaker Lane
Agawam, MA 01001

Re: Shoemaker Lane-Intermittent Stream Monitoring 2014-2016

Dear Tim:

This letter report documents our on-site observations of the stream on your Shoemaker Lane property (see Figure 1) in order to document no-flow conditions in support of overturning the DEP map-based presumption of perennial status. The site was visited 5 occasions between August 2014 and July 2016 (8/15/14, 9/8/15, 9/9/15, 9/10/15, and 7/7/16). Figure 1 also depicts the location of stream monitoring stations that were visited during this timeframe. Photos of each station by date are included in this report.

(This was intended to say "within a consecutive 12-month period" vs. "calendar year.")

In summation, during the course of our site survey the stream was observed completely dry on three consecutive days between 9/8/15 and 9/~~10~~10/15 as well as a fourth date within the same calendar year on 7/7/16. Low flow was observed on our first observation in August 2014. The site was also visited on other occasions between 8/2014 and 7/2016 when some steam flow was observed. In general the upper potions of the stream (up-gradient of Station 6) were observed dry on other dates however the lower sections were observed wet and flowing, albeit in diminished capacity. There is a change in soil type between stations 5 and 7 where sandy soils of the upper stream reach transitions to glacio-lacustrine soils and hold water longer and contribute base-flow for longer in the year.

If you have any questions or concerns, please contact our office at your convenience.

Very truly yours,

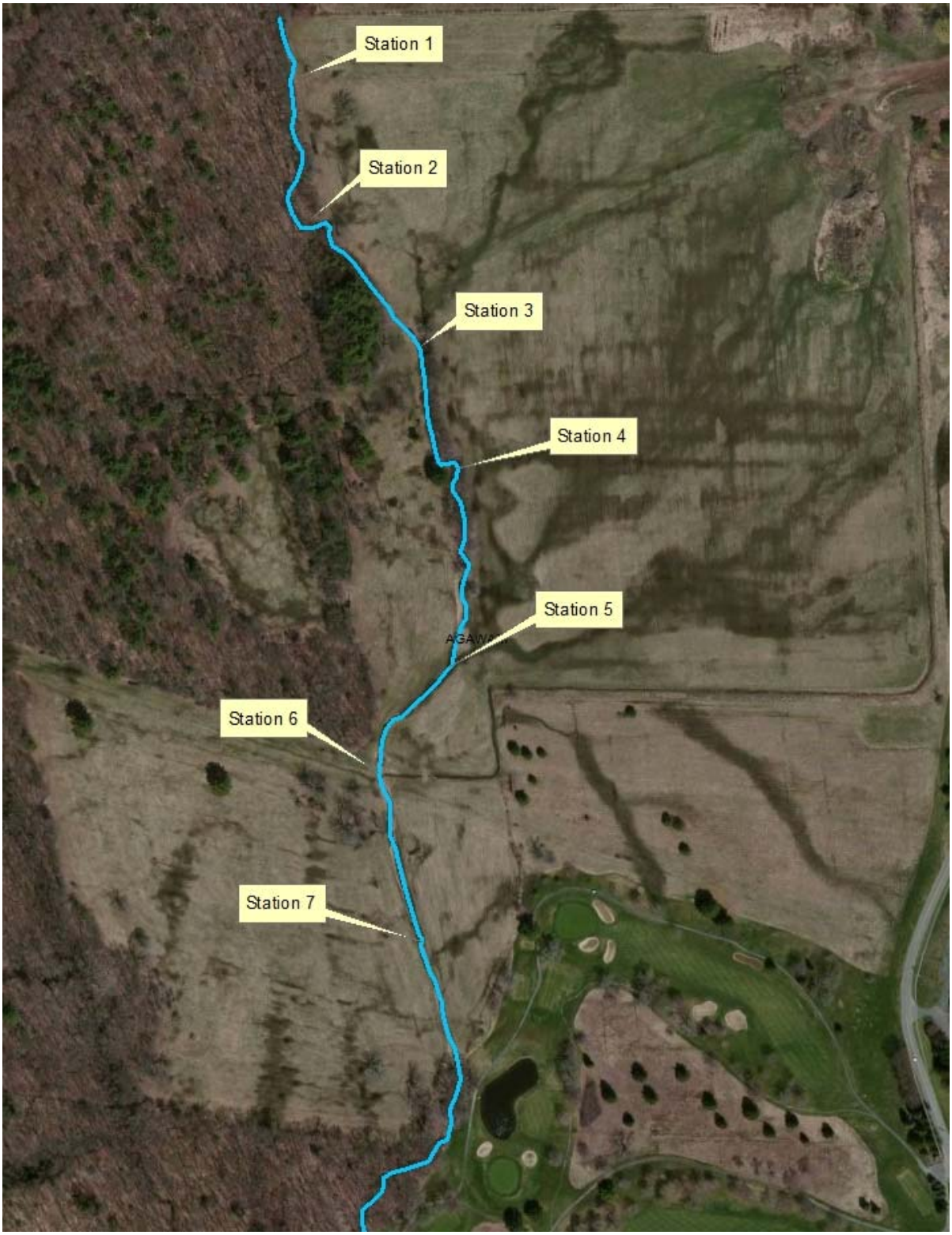
GZA, Inc.

Steven D. Riberdy, MS, PWS, CWB, CE
Senior Ecologist

*Attached: Figure 1: Stream Monitoring Stations*

*Site Photos*

*Proactive by Design*



SITE PHOTOS



8/15/14 Station 1: Wet



8/15/14 Station 2: Wet

SITE PHOTOS



8/15/14 Station 3: Wet



8/15/14 Station 4: Wet

SITE PHOTOS



8/15/14 Station 6: Wet



8/15/14 Station 7 downstream: wet

SITE PHOTOS



8/15/14 Station 7 Upstream: Wet



9/8/15 Station 1: Dry

SITE PHOTOS



9/8/15 Station 2: Dry



9/8/15 Station 2: Dry

SITE PHOTOS



9/8/15 Station 3 Upstream: Dry



9/8/15 Station 3 Downstream: Dry

SITE PHOTOS



9/8/15 Station 4: Dry



9/8/15 Station 4: Dry

SITE PHOTOS



9/8/15 Station 5: Dry



9/8/15 Station 5: Dry

SITE PHOTOS



9/8/15 Station 6: Dry



9/8/15 Station 7: Dry

SITE PHOTOS



9/9/17 Station 1: Dry (caption should be 9/9/15)



9/9/17 Station 2: Dry (caption should be 9/10/15)

SITE PHOTOS



9/9/17 Station 3: Dry (caption should be 9/9/15)



9/9/17 Station 3: Dry (caption should be 9/9/15)

SITE PHOTOS



9/9/17 Station 4: Dry (caption should be 9/9/15)



9/9/17 Station 4: Dry (caption should be 9/9/15)

SITE PHOTOS



9/9/17 Station 5: Dry (caption should be 9/9/15)



9/9/17 Station 6: Dry (caption should be 9/9/15)

SITE PHOTOS



9/10/16 Station 1: Dry (caption should be 9/10/15)



9/10/16 Station 2: Dry (caption should be 9/10/15)

SITE PHOTOS



9/10/16 Station 2: Dry (caption should be 9/10/15)



9/10/16 Station 2: Dry (caption should be 9/10/15)

SITE PHOTOS



9/10/16 Station 3: Dry (caption should be 9/10/15)



9/10/16 Station 3: Dry (caption should be 9/10/15)

SITE PHOTOS



9/10/16 Station 4: Dry (caption should be 9/10/15)



9/10/16 Station 4: Dry (caption should be 9/10/15)

SITE PHOTOS



9/10/16 Station 5: Dry (caption should be 9/10/15)



9/10/16 Station 5: Dry (caption should be 9/10/15)

SITE PHOTOS



9/10/16 Station 6: Dry (caption should be 9/10/15)



9/10/16 Station 7: Dry (caption should be 9/10/15)

SITE PHOTOS



9/10/16 Station 7: Dry



7/7/16 Station 1: Dry

SITE PHOTOS



7/7/16 Station 2: Dry



7/7/16 Station 2: Dry

SITE PHOTOS



7/7/16 Station 3: Dry



7/7/16 Station 4: Dry

SITE PHOTOS



7/7/16 Station 5: Dry



7/7/16 Station 5: Dry

SITE PHOTOS



7/7/16 Station 6: Dry



7/7/16 Station 7: Dry

# APPENDIX E

## Certified Abutters List and Abutter Notification

# Town of Agawam


## Assessor's Office

36 Main St, Agawam, MA 01001-1837
Tel: 413-786-0400 x 8701 Fax: 413-726-2828
Email: assessor@agawam.ma.us


## CERTIFIED LIST OF ABUTTERS

| SUBJECT PROPERTY MAP, BLOCK + LOT | LOCATION OF SUBJECT PROPERTY | OWNERS AND MAILING ADDRESS |
|---|---|---|
| G4-01-0009 | 311 Shoemaker Ln. | Timothy Zielenski Tr<br>Halladay Farm Trust<br>85026 Barsonage Ct.<br>Fernandina Beach, FL 32034 |

PLEASE SEE ATTACHED LIST OF ABUTTERS

Per the Assessors records I certify that the attached lists of persons are the abutters of record for the subject properties within 100 feet of the outer perimeter.

To the best of our knowledge, this list represents the most current owners of the properties. The accuracy of this listing is based solely on the information currently available in our database.

**Please note that this parcel borders another community. Some of the abutters are not located in Agawam, and are not listed in the enclosed report. You will need to contact the bordering community for any additional abutter information required.*

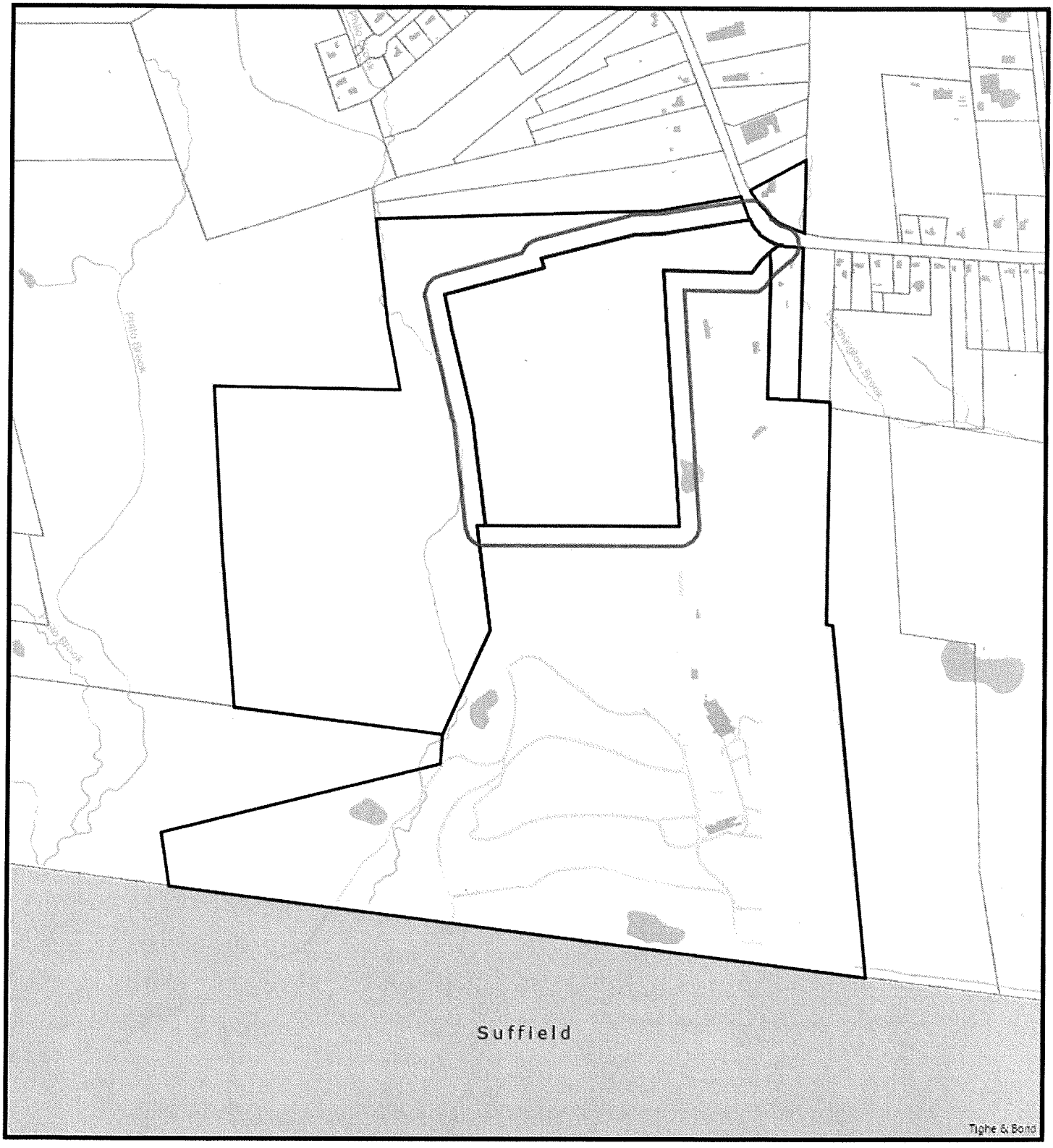
Kelly McCormick
Kelly McCormick, MAA
Agawam Assessor

2/9/24
Date

**311 SHOEMAKER LN**

100'

| Parcel ID | Address | Owner | Owner 2 | Owner Address | City | State | Zip |
|---|---|---|---|---|---|---|---|
| H3 1 20 | 287 SHOEMAKER LN | BRIGGS ROBERT A L/E | | 287 SHOEMAKER LN | AGAWAM | MA | 01001 |
| H4 2 15 | 318 SHOEMAKER LN | SMUS PETER J | | 318 SHOEMAKER LN | AGAWAM | MA | 01001 |
| G2 1 1 | 281 SHOEMAKER LN | VISTA HOLDINGS LLC | | 281 SHOEMAKER LN | AGAWAM | MA | 01001 |
| G4 1 11 | PARCEL 2B SHOEMAKER LN | ZIELINSKI TIMOTHY TR | HALLADAY FARM TRUS | 85026 BARSONAGE CT | FERNANDINA BEACH | FL | 32034 |




## 311 SHOEMAKER LN 100'

2/3/2026 10:15:47 AM

Scale: 1"=700'

Scale is approximate

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

**Notification to Abutters**
**Under the Massachusetts Wetlands Protection Act**

*This is a notification required by law. You are receiving this notification because you have been identified as the owner of land abutting another parcel of land for which certain activities are proposed. Those activities require a permit under the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40).*

In accordance with the second paragraph of the Massachusetts Wetlands Protection Act, and 310 CMR 10.05(4)(a) of the Wetlands Regulations, you are hereby notified that:

A. An Abbreviated Notice of Resource Area Delineation ("ANRAD") was filed with the Agawam Conservation Commission on February 24, 2026 seeking confirmation of the boundaries of areas subject to protection under M.G.L. c. 131 §40.). The work proposed is:

| |
|---|
| No work proposed at this time. |

B. The name of the applicant is: Ameresco, Inc.

C. The address of the land where the activity is proposed is: 311 Shoemaker Lane.

D. Copies of the ANRAD may be examined at the Public Works Municipal Annex, 1000 Suffield Street, between the hours of 9:00 a.m. and 3:00 p.m., Monday – Friday, and online at: www.agawam.ma.us/169/Conservation-Commission (see "Pending Applications").

E. Copies of the ANRAD may be obtained from the applicant's representative (Fleetwood Environmental Solutions, LLC) by calling 413.325.7372. An administrative fee may be applied for providing copies of the ANRAD and plans.

F. Information regarding the date, time, and place of the public hearing may be obtained by calling the Conservation Officer at 413.786.0400 x. 8245. Conservation Commission agendas are also posted at: www.agawam.ma.us/169/Conservation-Commission

Notification provided pursuant to the above requirement does not automatically confer standing to the recipient to request Departmental Action for the underlying matter. See 310 CMR 10.05(7)(a)4.

AGAWAM CONSERVATION COMMISSION
May 14, 2026

MEMBERS PRESENT:
Henry Kozloski, Chair
Magda Galiatsos
Keven Brown
Laura Fallon
Sheryl Becker (6:08pm)
Frank Meagher

MEMBERS ABSENT:
Jill Ward

ALSO PRESENT:
Taryn Egerton

Mr. Kozloski called the meeting to order at 6:00pm.

1. 6:00pm Public Hearing-Amendment to Order of Conditions-184 River Road-Kanegsberg

Rob Levesque, R. Levesque Associates was present for this agenda item. He stated this is a revision to the single-family home. Mr. Kozloski stated this is an amendment to the Order of Conditions and the house is above the flood plain. Mr. Kozloski asked about the garage. Mr. Levesque said it would be 1ft. above base elevation. Ms. Egerton sent the plan to Engineering and they had no comments.

Mr. Kozloski opened the hearing for public comments and there were none.

Motion was made by Mr. Brown and seconded by Ms. Galiatsos to approve the Plan changes for 184 River Road-Kanesgsberg.

VOTE 5-0-0

Motion was made by Mr. Brown and seconded by Ms. Galiatsos to issue the Amended Order of Conditions for 184 River Road-Kanegsberg.

VOTE 5-0-0

2. 6:05pm Public Hearing-Notice of Intent-233 Main Street-HP Hood, LLC

Rob Levesque, R. Levesque Associates and Bob Hale, Plant Engineer with HP Hood, Inc., were present for this agenda item. Mr. Levesque stated this is an approximately 7,900 sq. ft. addition, at the back of the building in a paved area. The footprint of the addition has loading docks on existing asphalt. They will be tying into the existing drainage with minor upgrades. Mr. Hale

stated there is a sister plant in Vermont that is closing so this plant is taking on more volume and the addition will be used for storage space. He stated no equipment will be in the building, just racking for storage. Mr. Kozloski asked what would happen to the parking spaces. Mr. Hale stated they will not be part of the new addition. Mr. Kozloski asked about the retaining walls. Mr. Levesque stated it will be completed by a structural engineer as part of the building design and provided to the Building Inspector. Mr. Kozloski asked about mitigation. Mr. Levesque stated stormwater report addresses all stormwater requirements. He went on to say the impacts in the buffer zone are not being increased.
Mr. Levesque then went over Engineering comments received May 14, 2026, and how they will anticipate handling the comments. Mr. Kozloski asked about parking spaces. Mr. Hale stated it would be dependent upon if the Fire Department can access the location.
Ms. Fallon asked if parking would be eliminated or moved. Mr. Hale stated eliminated.
Mr. Levesque requested to continue this agenda item to the May 28th, 2026 to respond to Engineering comments and get Fire Department approval.

Mr. Kozloski open the hearing for public comment and there was none.

Motion was made by Ms. Galiatsos and seconded by Mr. Brown to continue the Public Hearing for the Notice of Intent for 233 Main Street-HP Hood, Inc., to the May 28, 2026 meeting as requested.

VOTE 6-0-0

3. Discussion-Plan Changes-Lot 2 Suffield Street (Formerly 1298 Suffield Street) TCR Properties, LLC

Rob Levesque, R. Levesque Associates was present for this agenda item. He stated the petitioner would like to amend the Plan to allow for sheds on site. The building is the same as previously proposed. He state the dumpster location has been changed, but the stormwater components have not changed. Mr. Kozloski stated all the work is being performed outside the Commission's jurisdiction. Mr. Levesque stated yes.

Motion was made by Mr. Brown and seconded by Ms. Galiatsos that an Amended Order of Conditions is not necessary as the proposed work is outside of the Commission's jurisdiction and is De Minimis, conditional upon receiving an as-built plan.

VOTE 6-0-0

4. Discussion-Plan Changes-497 South Westfield Street-Bretta

Rob Levesque, R. Levesque Associates and Developer Tom Bretta were present for this agenda item. Mr. Levesque stated the original plan had a mail kiosk and a visitor center. He stated when they were looking at traffic patterns during rush hour, it was determined stacking would occur with cars on South Westfield Street. The mail is now proposed where the visitor center

previously was to allow for better traffic flow into the site and this reduces the impervious surface by 2,000 sq. ft. He stated the visitor center is not proposed now, due to functionality. He stated all the drainage would remain in the same spot.
Mr. Kozloski stated there is less impervious material and more green space, and elimination of any backup on South Westfield Street. Mr. Bretta stated he has been working with the Post Master on the location of the mail kiosk, and the new location allows for more parking.
Mr. Brown asked if there would be any drainage features in the parking lot. Mr. Levesque stated very minor adjustments only and overall the impervious surface is reduced. Mr. Brown asked if the catch basin was still connecting to the main drainage system. Mr. Levesque stated yes.
Mr. Meagher asked about the entrance and exits. Mr. Levesque stated there is a two-way access at the mail kiosk. There is also another one way in and one way out. Mr. Levesque stated there would be signage.

Motion was made by Mr. Brown and seconded by Ms. Galiatsos an Amended Order of Conditions was not needed for 497 South Westfield Street for Bretta as the changes are De Minimus.

VOTE 6-0-0

5. Public Hearing Cont.-Abbreviated Notice of Resource Area Delineation-311Shoemaker Lane-Ameresco, Inc.

The Commission received a request to continue this agenda item to the May 28, 2026 meeting.

Motion was made by Mr. Meagher and seconded by Ms. Galiatsos to continue the Public Hearing for the Abbreviated Notice of Resource Area Delineation for 311 Shoemaker Lane-Ameresco, Inc., to the May 28, 2026 meeting as requested.

VOTE 6-0-0

6. Request for Certificate of Compliance-24 Sequoia Drive

Mr. Kozloski stated an onsite will be performed on May 15, 2026 to check the retaining wall.

Motion was made by Mr. Meagher and seconded by Ms. Galiatsos to Issue a Certificate of Compliance for 24 Sequoia Drive, based on an onsite.

VOTE 6-0-0

7. Request for Certificate of Compliance-4 Hunter’s Greene Circle

Mr. Kozloski was onsite May 14, 2026 and there are no resource areas.

Motion was made by Mr. Brown and seconded by Ms. Galiatsos to issue a Certificate of Compliance for 4 Hunter’s Greene Circle.

VOTE 6-0-0

8. Approval of Minutes-April 23, 2026

Motion was made by Ms. Galiatsos and seconded by Mr. Brown to approve the April 23, 2026 as written.

VOTE 4-0-2(Meagher/Becker)

9. Correspondence and Complaints

The Commission received a complaint concerning 148 Edgewater Road, at Silver Lake in regards to a retaining wall that is cracking and the Association is worried about the inground pool water and debris going into the Lake. The pool is 30 to 40 ft. away from the retaining wall. Ms. Egerton stated she informed the Association this did not appear to be a violation, but that she would advise the Commission. The Commission discussed this complaint and stated the Association should speak to the homeowner.

699 Silver Street-requested to do silt socks instead of silt fences.

Motion was made by Mr. Brown and seconded by Ms. Galiatsos to approve the 8" silt socks for 699 Silver Street.

VOTE 6-0-0

Pynchon Point-an Eagle Scout wants to do a clean-up and construct a bench. He would like to come to the next meeting to discuss this.

Motion was made by Mr. Brown and seconded by Ms. Galiatsos to adjourn the meeting.

Meeting adjourned at 7:10pm.