TEC, Inc.
282 Merrimack Street, 2nd Floor
Lawrence, MA 01843
978.794.1792

Mr. Fred Zackon
Conservation Commission, Chair
City of Amesbury
1 Market Street
Amesbury, MA 01913

October 13, 2026

Re: Request for Determination of Applicability
T1607 – Clarks Road from Main Street to Route 110.

Dear Mr. Fred Zackon, and Members of the Commission:

On behalf of the Applicant, the Director of Public Works for the City of Amesbury, Massachusetts, TEC, Inc. is submitting the enclosed Request for Determination of Applicability (RDA) for the proposed infrastructure improvements along Clarks Road from Main Street to Route 110. The goal of the Clarks Road project is to increase safety for all roadway users within the area through the introduction of a sidewalk, vertical traffic calming devices and upgraded infrastructure. Adjacent to the project limits, inland bank associated with the Merrimack River was identified and delineated. No work is being proposed within the riverbank area, although work is proposed within the 200-foot riverfront area. This application is being submitted to determine whether the work shown on the attached plans is subject to the Wetlands Protection Act and the Amesbury Wetlands Protection Bylaw.

This Request for Determination of Applicability contains the following documents:

- Project Narrative
- RDA (WPA Form-1)
- Location Maps
- RDA Plans
- Special Provisions
- Wetland Delineation Report

On behalf of the City of Amesbury, TEC submits this RDA for review by the Conservation Commission. Please do not hesitate to contact me directly if you have any questions concerning our application at (603) 660-4378 or dskinner@tecinc.com. Thank you for your consideration.

Sincerely,
TEC, Inc.
*"**T**he **E**ngineering **C**orp"*

Dylan Skinner, PE
Project Manager

T1607 – Amesbury – Clarks Road
RDA
October 13, 2026

Project Narrative

Project Area

The project site is located along Clarks Road, beginning at the intersection of Main Street in the southwest and extending approximately 2,575 feet northeasterly towards the intersection with Macy Street (Route 110). The Merrimack River is adjacent to the intersection of Clarks Road and Main Street. Inland bank associated with the Merrimack River was delineated and surveyed and is identified on the enclosed plans (bank flags BA 100-117).

Work Description

The proposed project is being completed as a part of a Massworks Infrastructure Project. The proposed work within the 200' Riverfront Area includes full depth pavement reconstruction, HMA pavement mill and overlay, reconstruction of cement concrete and HMA sidewalk, vertical granite curbing, construction of ADA-compliant pedestrian curb ramps, walkway reconstruction, bark mulch, minor drainage improvements, tree protection, pavement markings and signage. The proposed footprint of the roadways, inclusive of the sidewalks, within the 200' Riverfront Area remains the same and there are no changes in elevation. All proposed work is within "previously disturbed" Riverfront Area and the project does not result in an increase in impervious area within the Riverfront Area. Minor drainage improvements include the installation of two deep sump catch basins and one manhole that connect to an existing catch basin. These improvements are necessary to upgrade the City's aging infrastructure and to accommodate the slightly modified curblines that result from the construction of an ADA-compliant sidewalk. No changes in drainage patterns and no new outfalls are proposed within the 200' Riverfront Area.

Regulatory Compliance

The work qualifies as a minor activity not otherwise subject to regulation under the following 310 CMR 10.02(2)(b) – Activity Within the Buffer Zone guidelines:

- 2.i – Installation of underground utilities (e.g., electric, gas, water) within existing paved or unpaved roadways and private roadways/driveways, provided that all work is conducted within the roadway or driveway and that all trenches are closed at the completion of each workday;
- 2.o – Installation, repair, replacement or removal of signs, signals, sign and signal posts and associated supports, braces, anchors, and foundations along existing paved roadways and their shoulders, provided that work is conducted as far from resource areas as practicable, and is located a minimum of ten feet from a resource area, any excess soil is removed from the project location, and any disturbed soils are stabilized as appropriate;
- 2.p – Pavement repair, resurfacing, and reclamation of existing roadways within the right-of-way configuration provided that the roadway and shoulders are not widened, no staging or stockpiling of materials, all disturbed road shoulders are stabilized within 72 hours of completion of the resurfacing or reclamation, and no work on the drainage system is performed, other than adjustments and/or repairs to respective structures within the roadway.

Impacts and Mitigation

The project involves approximately 12,600 square feet of work within the 200-foot Riverfront Area. All of this area can be considered "previously disturbed" riverfront area.

To prevent secondary impacts during construction, biodegradable sediment control barriers will be positioned upstream of the Merrimack River and catch basin inlet protection (silt sacks) will be installed in all existing and proposed catch basins. Furthermore, excavation and construction activities will remain limited to the existing footprint of the roadway/sidewalk, with only minor regrading at the back of sidewalk that will be stabilized through aged pine bark mulch, matching the existing conditions. Minor drainage improvements are included within the 200-foot Riverfront Area that include two deep sump catch basins and one manhole, these improvements serve as an upgrade to the City's aging infrastructure. These improvements maintain existing drainage patterns and connect into an existing catch basin at the northern corner of the intersection of Clarks Road and Main Street. No new drainage outfalls are proposed within the 200-foot Riverfront Area.

According to the Natural Heritage and Endangered Species Program (NHESP) online mapping system, the proposed work is not located in an area of Estimated Habitat of Rare Species or Priority Habitat of Rare Species. The boundary for the NHESP is located adjacent to the Merrimack River. The proposed work is not anticipated to impact the priority habitat. See Location Map 2: "NHESP Estimated Habitats of Rare Wildlife" within.

Alternatives Analysis

The following alternatives were taken into consideration when determining the most effective action while requiring the least amount of impact to achieve the project goals:

1. No Action – The alternative would result in maintaining the existing pavement, sidewalk, and pedestrian curb ramps at the intersection of Main Street at Clarks Road. The project goals at this location are to increase pedestrian accessibility and safety, and to upgrade deteriorating infrastructure. The no action alternative may result in a risk to public safety and potential for more expensive repairs with larger impacts within the 200-foot riverfront area in the future.

2. Preferred Alternative – The attached RDA plans show the scope of work for the preferred alternative that satisfies the projects goals (which are stated above) at the intersection of Main Street at Clarks Road. The preferred alternative will achieve the project goals in the most cost-effective way for the residents of Amesbury with no significant negative impacts to resource areas. The scope of work is classified minor activity under the Massachusetts WPA and Amesbury Wetland Protection Ordinance.

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RDA (WPA Form -1)

Massachusetts Department of Environmental Protection
Bureau of Water Resources - Wetlands

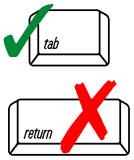
WPA Form 1- Request for Determination of Applicability

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

Amesbury
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	Buckley	
First Name	Last Name	
39 South Hunt Road		
Address		
Amesbury	MA	01913
City/Town	State	Zip Code
978-225-9574	buckleyj@amesburyma.gov	
Phone Number	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)

Dylan	Skinner	
First Name	Last Name	
TEC, INC.		
Company Name		
282 Merrimack Street		
Address		
Lawrence	MA	01843
City/Town	State	Zip Code
978-794-1792	dskinner@tecinc.com	
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):

Clarks Road at Main Street	Amesbury
Street Address	City/Town
42.84287	70.91443
Latitude (Decimal Degrees Format with 5 digits after decimal e.g. XX.XXXXX)	Longitude (Decimal Degrees Format with 5 digits after decimal e.g. XX.XXXXX)
N/A	N/A
Assessors' Map Number	Assessors' Lot/Parcel Number

How to find Latitude and Longitude

and how to convert to decimal degrees

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

Project begins at the intersection of Clarks Road at Main Street and spans the entire length of Clarks Road to Route 110.

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

T1607 - Amesbury Clarks Road RDA Plans (8 Sheets)	October 13th, 2026
Title	Date
U.S Geologic Survey (USGS) Location Map	September 30th, 2026
Title	Date

B. Project Description (cont.)

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

The proposed work includes earth excavation, HMA pavement mill and overlay, full depth pavement, cement concrete sidewalk, vertical granite curbing, hot mix asphalt sidewalk, guardrail, drainage upgrades, waterline upgrades, tree protection, raised crosswalk, signage, striping, and erosion/sediment control. The proposed work within the jurisdiction of the Wetlands Protection Act (WPA) is located at the intersection of Main Street at Clarks Road. Within the project limits, inland bank associated with the perennial Merrimack River was identified and delineated by wetland flags.

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).

Work within jurisdiction of the WPA qualifies as a minor activity not otherwise subject to regulation under 310 CMR 10.02(2)(b), 2.i, 2.o, and 2.p.

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

- ☐ Single family house on a lot recorded on or before 8/1/96
- ☐ Single family house on a lot recorded after 8/1/96
- ☐ Expansion of an existing structure on a lot recorded after 8/1/96
- ☐ Project, other than a single-family house or public project, where the applicant owned the lot before 8/7/96
- ☐ New agriculture or aquaculture project
- ☐ Public project where funds were appropriated prior to 8/7/96
- ☐ Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- ☐ Residential subdivision; institutional, industrial, or commercial project
- ☒ Municipal project
- ☐ District, county, state, or federal government project
- ☐ Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

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

N/A

C. Determinations

1. I request the Amesbury 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:

  Amesbury
  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.

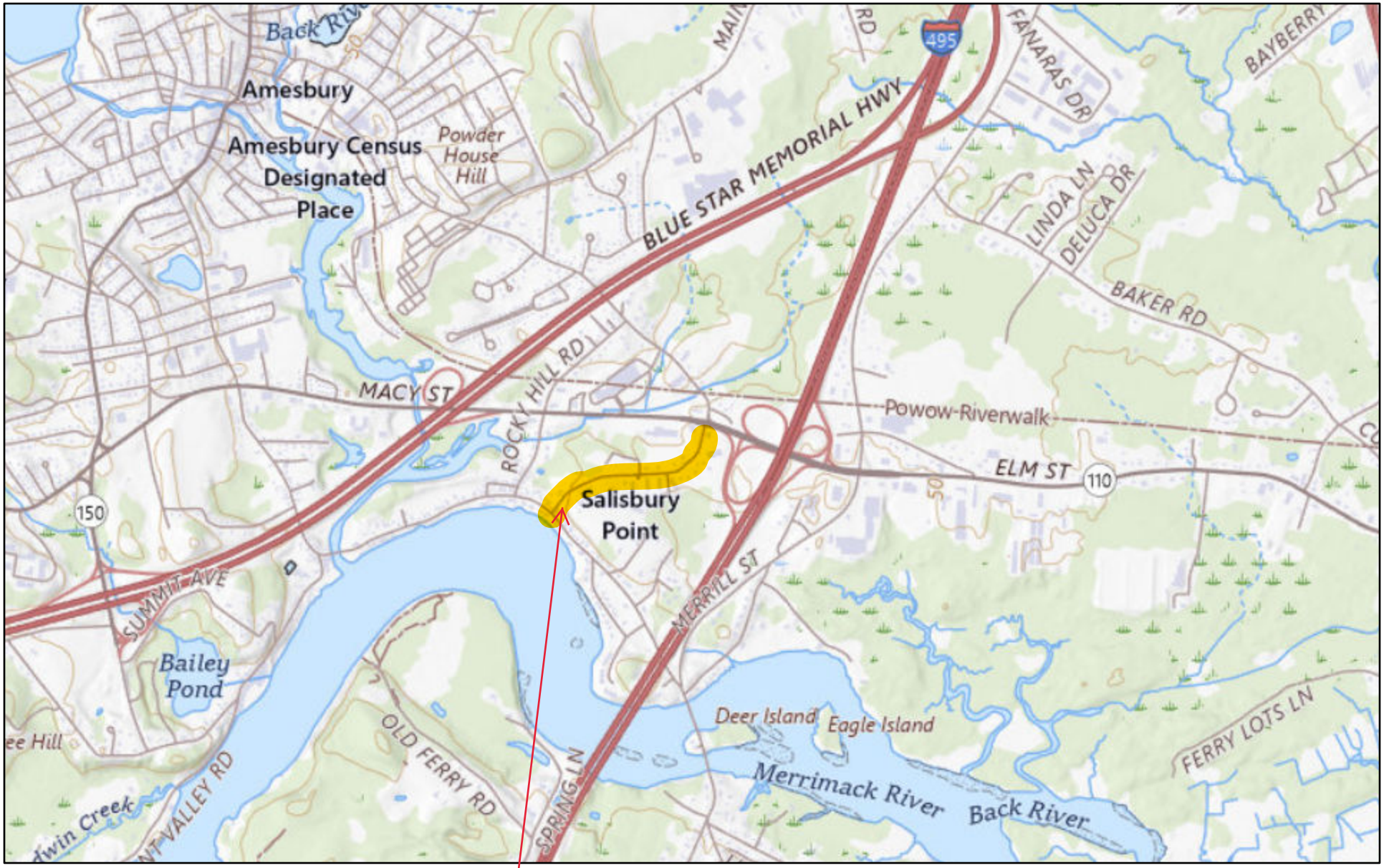
Joseph W. Bulley III — 10-9-2026
Signature of Applicant — Date

Dylan Skinner — 10-09-2026
Digitally signed by Dylan Skinner
DN: C=US, E=dskinner@theengineeringcorp.com, CN=Dylan Skinner
Reason: I have reviewed this document
Date: 2026.10.13 08:54:35-04'00'
Signature of Representative (if any) — Date

TEC, Inc.
282 Merrimack Street, 2nd Floor
Lawrence, MA 01843
978.794.1792

Location Maps

Location Map 1 - Clarks Road Project Area



9/30/2026

PROJECT LOCATION

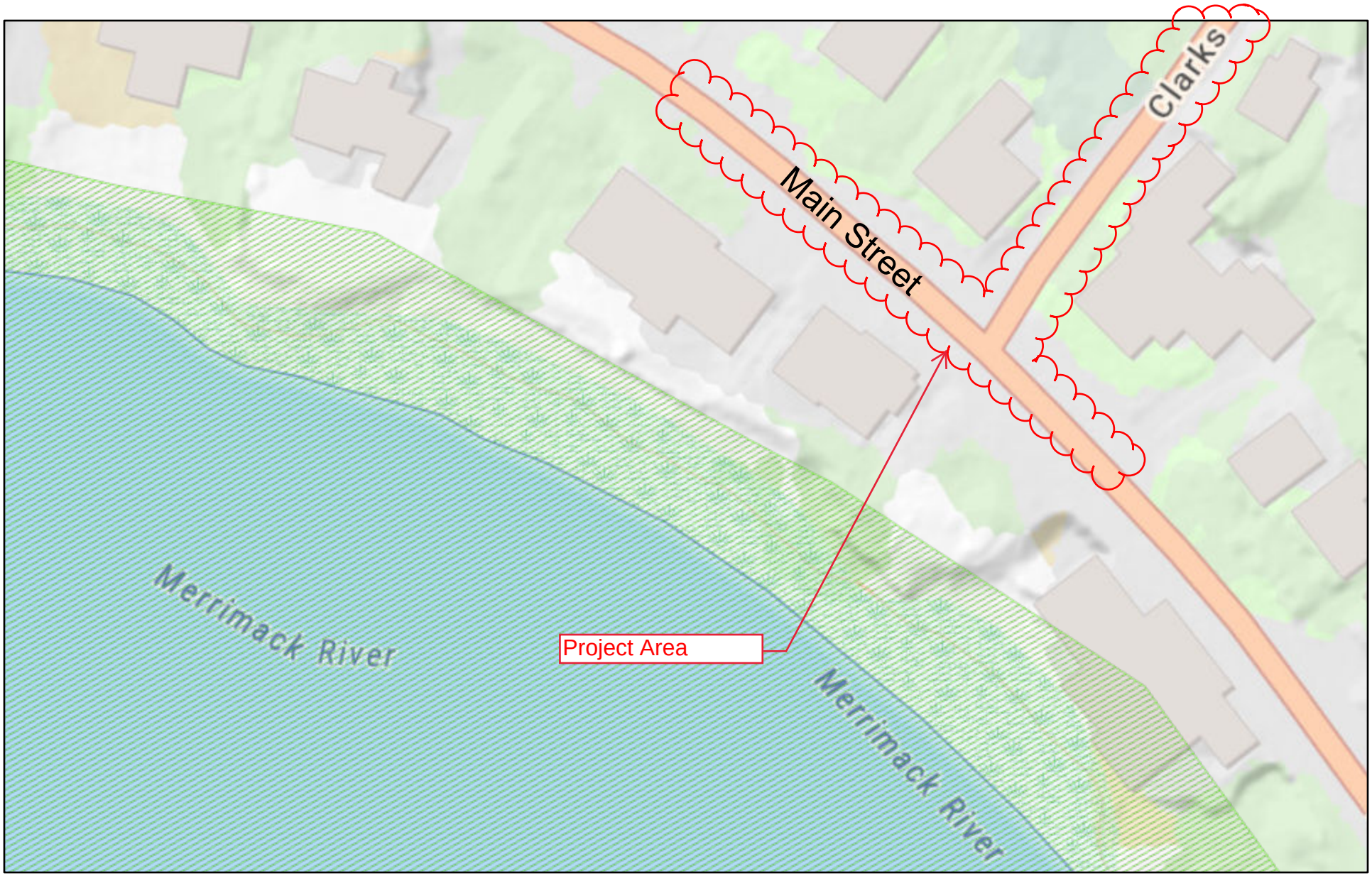
1:30,000

0 0.17 0.35 0.7 mi

0 0.3 0.6 1.2 km

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography

Location Map 2 - NHESP Estimated Habitats of Rare Wildlife



10/7/2026

1:986

NHESP Estimated Habitats of Rare Wildlife

MassGIS_Basemap_20260717

Red: Band_1

Green: Band_2

Blue: Band_3

0 0.01 0.01 0.02 mi

0 0.01 0.01 0.03 km

NHESP, MassGIS, MassGIS

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Lawrence, MA 01843
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RDA Plans

MASSWORKS INFRASTRUCTURE PROJECT

AMESBURY
CLARKS ROAD
RDA PLANS
TITLE SHEET & INDEX
SHEET 1 OF 3

PLAN AND PROFILE OF

CLARKS ROAD

IN THE CITY OF

AMESBURY

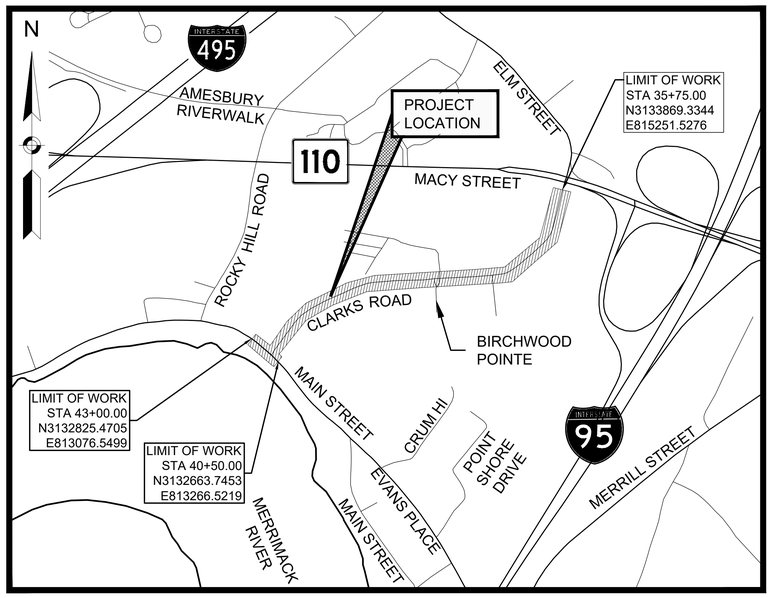
ESSEX COUNTY

RDA PLANS

THESE PLANS ARE SUPPLEMENTED BY THE LATEST EDITIONS OF THE FOLLOWING PUBLICATIONS, AS IDENTIFIED IN THE CONTRACT SPECIAL PROVISIONS: THE MASSDOT CONSTRUCTION STANDARD DETAILS, THE MASSDOT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE MASSDOT STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, THE MASSDOT OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, THE MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, AND THE ANSI AMERICAN STANDARD FOR NURSERY STOCK.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	CONSTRUCTION PLAN
3	CONSTRUCTION DETAILS



0 500 1000 1500

SCALE 1" = 500'

TOTAL LENGTH OF PROJECT = 2,825.00 FEET = 0.535 MILES
MAIN STREET = 250.00 FEET = 0.047 MILES
CLARKS ROAD = 2,575.00 FEET = 0.488 MILES

DESIGN DESIGNATION (CLARKS ROAD)

DESIGN SPEED	25 MPH
ADT (2026)	2,382
ADT (2046)	2,912
K	9.8%
D	51.3%
T (PEAK HOUR)	0.0%
T (AVERAGE DAY)	1.6%
DHV	285
DDHV	146
FUNCTIONAL CLASSIFICATION	URBAN MAJOR COLLECTOR

10/08/2026	RDA PLANS	-
DATE	DESCRIPTION	REV #

TEC The Engineering Corp

282 Merrimack St
2nd Floor
Lawrence, MA 01843
978-794-1792

100 Front Street
10th Floor
Worcester, MA 01608
508-868-5104

2 Monument Square
Suite 301
Portland, ME 04101
207-370-5838

www.TECinc.com

T1607_HD1(TITLE SHEET) - RDA.DWG Plotted on 6-Oct-2026 1:33 PM

AMESBURY
CLARKS ROAD
RDA PLANS
CONSTRUCTION PLAN
SHEET 2 OF 3

T1607_HD8(CONSTRUCTION PLANS) - RDA.DWG Plotted on 7-Oct-2026 12:52 PM

MERRIMACK RIVER

CLARKS ROAD (PUBLIC - VARIABLE WIDTH)

MAIN STREET (PUBLIC - VARIABLE WIDTH)

1966 TOWN LAYOUT

TOWN LAYOUT

ANTONIO J. & CHERYL A. YEMMA
BK/PG 8416/319
PB/PL 155/1978
441 MAIN STREET

443 MAIN STREET NOMINEE TRUST
BK/PG 36668/218
PB/PL 155/1978
443 MAIN STREET

ENNO K. TJALSMA
BK/PG 37867/49
447 MAIN STREET

LOWELL MARITIME FOUNDATION INC
BK/PG 33534/601
451 MAIN STREET

ANTONIO J. & CHERYL A. YEMMA
BK/PG 8416/319
PLAN 155 OF 1978
446 MAIN STREET

THE JESSICA AND LUIS GATGENS LIVING TRUST
BK/PG 42007/53
PLAN 155 OF 1978
448 MAIN STREET

LEAVY FAMILY TRUST
BK/PG 42220/165
450 MAIN STREET

THOMAS R. HALL
BK/PG 6123/775
PB/PL 291/66
1 CLARKS ROAD

BENORA L. HAYES
BK/PG 40612/507
PB/PL 133/5
452 MAIN STREET

MICHAEL GALLANT
BK/PG 38381/416
PLAN 434 OF 1970
454 MAIN STREET

JOHN J. BOLAND JR.
BK/PG 7361/503
PB/PL 316/86
4 CLARKS ROAD

ELIZABETH HENNESSY
BK/PG 16873/492
PB/PL 133/5
3 CLARKS ROAD

GREGORY L NOYES
BK/PG 6598/272
PB/PL 316/86
8 CLARKS ROAD

WF#BA106
WF#BA107
WF#BA108
WF#BA109
WF#BA110
WF#BA111
WF#BA112

MEAN ANNUAL HIGH WATER (MAHW)

FEMA FLOOD ZONE AE

100' INNER RIPARIAN ZONE (INZ)

200' RIVERFRONT AREA (RFA)

LIMIT OF WORK
STA 43+00.00
N3132825.4705
E813076.5499

PROP LIMIT OF HMA MILL & OVERLAY
STA 42+82

LIMIT OF WORK
STA 40+50.00
N3132663.7453
E813266.5219

PROP LIMIT OF HMA MILL & OVERLAY
STA 40+55

9+99.02 CLARKS ROAD= 41+30.00 MAIN STREET

PC +86.78
PT +12.10
PC +64.48
PT +19.65
PC +40.71
PC +26.18
PT +81.4975

MEET EXIST DWY
RET WALL
R&R GATE IN PLACE
R&R BRICK WALK TO MEET EXIST
PROP CITY LAYOUT ALTERATION
PROP FDP <4'
PROP AGED PINE BARK MULCH
PROP 6' (MIN) CEM CONC SW (TYP)
RET WOOD FENCE & GATE
MEET EXIST DWY (SAWCUT)
PROP HMA DWY
RET GATE; R&R BRICK WALK TO MEET EXIST
PROP AGED BARK MULCH
RET EXIST BULKHEAD;
R&R COBBLE PAVERS IN PLACE; SEE INSET B ON SHEET 11
PROP GRAVEL DRIVEWAY
PROP CC PCR (TYP)
PROP SEDIMENT CONTROL BARRIER (TYP)
PROP AGED PINE BARK MULCH
R&R MONUMENT & COBBLE PAVERS IN PLACE
RET GATE
R&R FLAGSTONE WALK TO MEET EXIST
PROP 5.5' CEM CONC SW (TYP)
R&R EXIST BACK CURB IN PLACE (5" REVEAL) (TYP)
RET PICKET FENCE
MEET EXIST DWY
R&R FLAGSTONE WALK; RET EXIST STEP; SEE XSECT, SHEET 54
RET STONE WALL
RET TREE
PROP FDP
RET TREE; PROP TREE PROTECTION
RET VINYL FENCE
MEET EXIST DWY (SAWCUT)
PROP HMA DWY (TYP)
MEET EXIST DWY (SAWCUT)
R&S EXIST COBBLE PAVERS
PROP GRAVEL DWY
MEET EXIST DWY (SAWCUT)
R&R BRICK DWY (PAID FOR UNDER ITEM 706.1)
RET TREE
RET WOOD FENCE
PROP 4.5' (MIN) HMA SW (STA 10+40 TO 12+65)
PROP CITY LAYOUT ALTERATION
PROP CRUSHED STONE
R&R WOOD FENCE
RET EXIST GRANITE STEP; RET EXIST WOOD STEPS
PROP CC WALK TO MEET TOP OF EXIST GRANITE STEP
RET TREE; PROP TREE PROTECTION
RET FENCE
RET TREE
PROP CRUSHED STONE
APPROX LOG (TYP)
PROP 4" LOAM & SEED (TYP)
RET STONE WALL
PROP INLET PROTECTION SILT SACK (TYP)
PROP VGC (6" REVEAL); TYPE VB (TYP)
PROP DRAINAGE DITCH; SEE XSECTS
PROP PERM DRAINAGE EASEMENT
PROP 4" LOAM & SEED (TYP)
RET TREE; PROP TREE PROTECTION
RET STUMP
MEET EXIST DWY (SAWCUT)
PROP HMA DWY (TYP)
PROP AGED BARK MULCH
RET LSA
PROP 5.5' HMA SW (TYP)
PROP TEMP EASEMENT (TYP)
MEET EXIST DWY (SAWCUT)
REM TREE
RET STUMPS
REM STUMP
PROP CITY LAYOUT ALTERATION
R&R BRICK WALK TO MEET EXIST
RET TREE; PROP TREE PROTECTION
MEET EXIST DWY (SAWCUT)
MEET EXIST DWY
PROP GRAVEL DWY

CONTINUED ON SHEET NO. 3

LEGEND

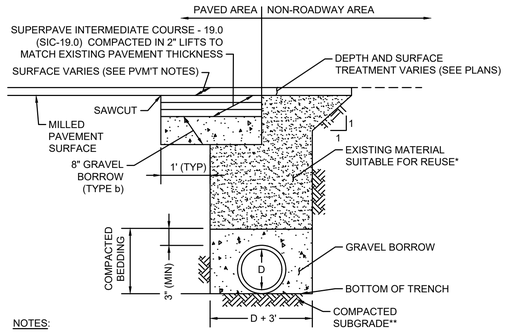
- # = DRIVEWAY NUMBER
- # = PEDESTRIAN CURB RAMP NUMBER
- = INLET PROTECTION SILT SACK
- = SEDIMENT CONTROL BARRIER
- = 200' RIVERFRONT AREA (RFA)
- = 100' INNER RIPARIAN ZONE (INZ)
- = FEMA FLOOD ZONE AE
- = WETLAND FLAGS

0 20 50 100

SCALE: 1" = 20'

AMESBURY
CLARKS ROAD
RDA PLANS
CONSTRUCTION DETAILS
SHEET 3 OF 3

T1607_HD12(CONSTRUCTION DETAILS) - RDA.DWG Plotted on 6-Oct-2026 1:34 PM



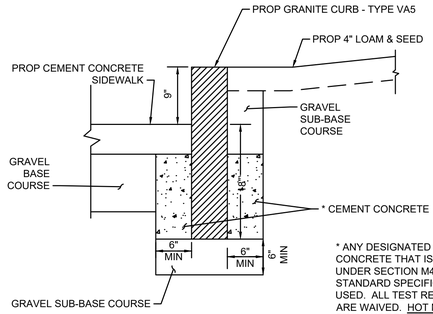
NOTES:

* EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6" IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2' OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3".

**SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE REQUIRED BEDDING GRADE SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SAND, GRAVEL, CRUSHED STONE OR OTHER SUITABLE MATERIAL AND THOROUGHLY COMPACTED.

DRAINAGE TRENCH

N.T.S.

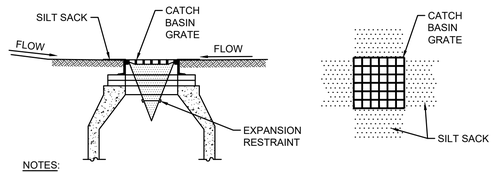


STA 33+35 RT TO 33+56 RT

GRANITE BACK CURB

N.T.S.

* ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR VARIOUS GRANITE CURB ITEMS FOR 6" OFFSET FROM FACE OF CURB.

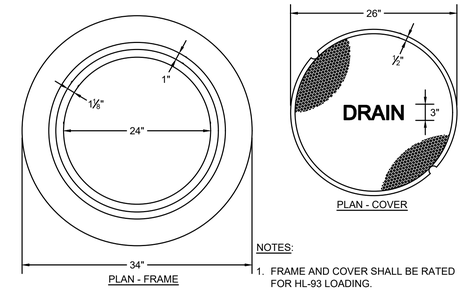


NOTES:

1. INSTALL SILT SACK IN EXISTING CATCH BASINS BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL INTERMEDIATE COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

INLET PROTECTION SILT SACK IN CATCH BASIN

N.T.S.

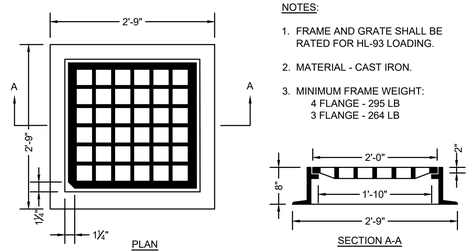


NOTES:

1. FRAME AND COVER SHALL BE RATED FOR HL-93 LOADING.
2. MATERIAL - CAST IRON.
3. MINIMUM MASS - 265 LBS.
4. ALL MH FRAMES AND COVERS SHALL BE ADA AND AAB COMPLIANT.
5. MANHOLE COVERS SHALL HAVE A DIAMOND PATTERN, PICK HOLES, AND THE WORD "DRAIN" OR "SEWER" CAST IN 3-INCH LETTERS.

MANHOLE FRAME & COVER

N.T.S.

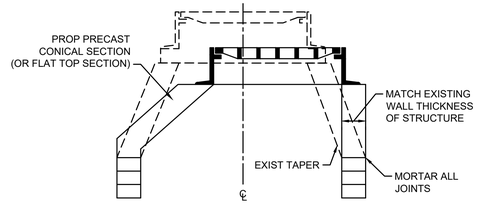


NOTES:

1. FRAME AND GRATE SHALL BE RATED FOR HL-93 LOADING.
2. MATERIAL - CAST IRON.
3. MINIMUM FRAME WEIGHT:
   4 FLANGE - 295 LB
   3 FLANGE - 264 LB

CATCH BASIN FRAME & GRATE (MUNICIPAL STANDARD)

N.T.S.

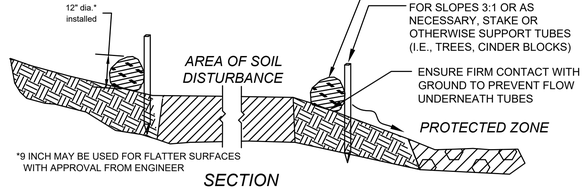


STRUCTURE REMODEL

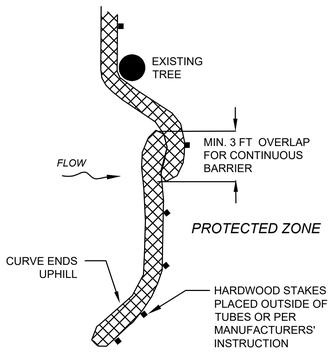
N.T.S.

REDUCE HIGH WATER FLOW ONTO WORK ZONE

CAPTURE SEDIMENT AND PREVENT FLOW OFF SITE



SECTION



PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

PLACE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE.

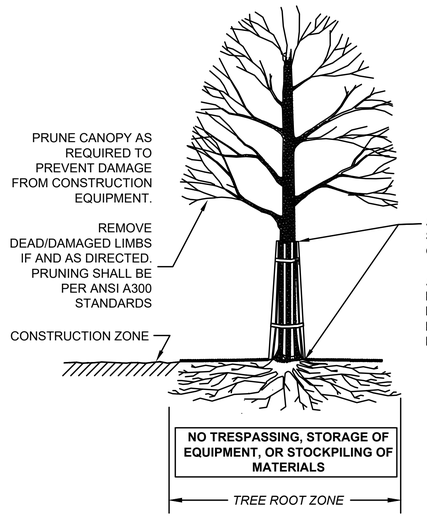
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

PLAN VIEW

SEDIMENT CONTROL BARRIER - COMPOST FILTER TUBES

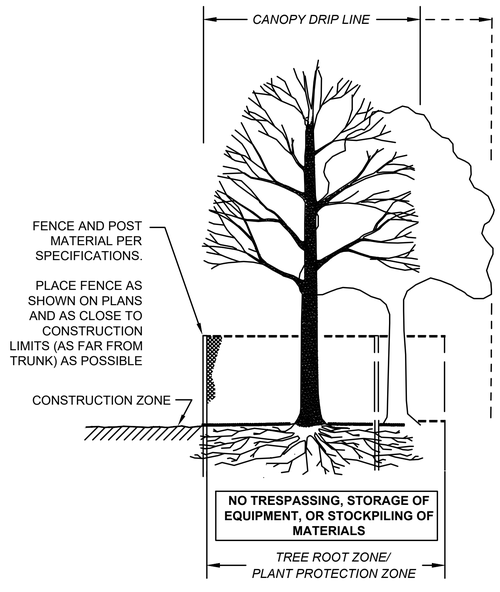
N.T.S.



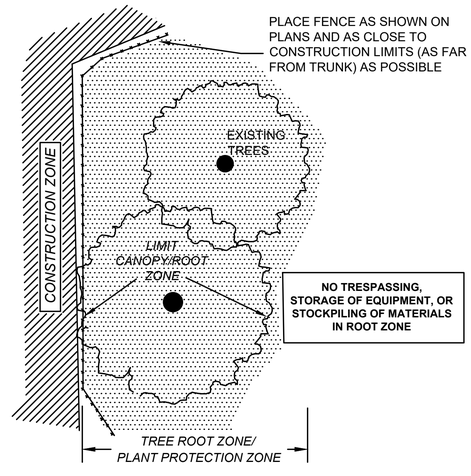
SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION - TRUNK

N.T.S.



SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

TREE PROTECTION - ROOT ZONE

N.T.S.

TEC, Inc.
282 Merrimack Street, 2nd Floor
Lawrence, MA 01843
978.794.1792

Special Provisions

SPECIAL PROVISIONS

ITEM 102.511 TREE PROTECTION – ARMORING & PRUNING EACH

The work under this item shall conform to the relevant provisions of Section 771 of the MassDOT Standard Specifications for Highways and Bridges and the following:

Tree protection – armoring and pruning shall be used for instances where construction activity (the use of heavy equipment), comes within proximity to potentially damage tree trunk(s) or limbs.

The work shall include the furnishing and installing of temporary tree trunk protection, minor limb pruning, or removal of lower tree limbs to prevent injury to the tree from construction equipment and activities; as shown on the Drawings; and/or as required by the Engineer.

REFERENCES

If requested, the Contractor shall provide to the Engineer one copy of the latest edition of the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance: Part 1-Pruning and Part 5-Construction Management Standard. Provision of reference shall be incidental to this item.

MATERIALS

Trunk armoring shall be such that it prevents damage to the trunk from construction equipment. Material used for trunk armoring or mounting shall be such that installation and removal shall not damage the trunk.

Acceptable trunk armoring materials shall include two by four (2x4) wood cladding, mounted with wire or metal strapping, or when duration of construction activities is less than three months, slotted corrugated plastic pipe, mounted with duct tape. Eight (8) once untreated burlap shall be used to wrap the tree trunk prior to installation of cladding.

Alternative armoring methods or materials may be acceptable if approved by the Engineer.

The height of tree trunk cladding shall be measured from the base of the tree (including root flare) to the bottom of the first branch, or to a height of eight (8) feet, or as may be required by the Engineer.

METHODS OF WORK

Prior to construction activities, the Engineer, the Contractor, and the City Tree Warden, shall review trees noted on the Drawings to be protected. Final decision as to trees armored and/or pruned shall be per the Engineer.

ITEM 102.511 (Continued)

Care shall be taken to avoid damage to the bark during installation and removal of armoring. Trunk armoring shall be maintained such that it is effective for as long as required or replaced when materials are found to be damaged or ineffective, as determined by the Engineer. Replacement, if required, shall be incidental to the work. Armoring shall be removed immediately upon completion of work activities adjacent to the protected tree(s).

Pruning of limbs shall conform to the techniques and standards of the most recent ANSI A300 standards.

DAMAGES OR LOSS

If trees designated for protection under this item are damaged, including root damage from unapproved trespassing onto the root zone, the Contractor shall, at his own expense, secure the services of an Arborist. The Arborist shall be approved by the Engineer.

If, based on the recommendations of the Arborist, the Engineer determines that damages can be remedied by corrective measures, such as repairing trunk or limb injury, soil compaction remediation, pruning, and/or watering, the damage will be repaired as soon as possible within the appropriate season for such work and according to industry standards.

If, based on the recommendation of the Arborist, the Engineer determines that damages are irreparable, or that the damages are such that the tree is sufficiently compromised to pose a future safety hazard, the tree shall be removed. Tree removal shall include cleanup of all wood, grinding of the stump to a depth sufficient to plant a replacement tree or plant, removal of all chips from the stump site, and filling the resulting hole with topsoil. Such tree removal(s), grinding, debris removal, and topsoil filling, shall be at the Contractor's expense.

Tree removal from improper or inadequate tree protection shall result in the Engineer assessing the Contractor monetary damages consistent with industry standards for assessed value and/or replacement.

ITEM 102.511 (Continued)

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 102.511 will be measured and paid at the contract unit price per EACH tree to be armored and pruned. This will include full compensation for all labor, equipment, materials, and incidentals for the satisfactory completion of the work and the subsequent removal and satisfactory disposal of the protective materials upon completion of the contract or as required by the Engineer.

Payment for work under this item will be scheduled as follows:

- 40% of the value shall be paid upon installation of trunk armoring and completion of pruning work, if required.

- 60% of the value shall be paid at the end of construction operations that would potentially damage the tree and after protection materials have been removed and properly disposed of by the Contractor. In the event of repairable damages, payment shall be made after the completion of remediation measures.

No separate payment will be made for costs of remedial actions, including Arborist services, tree removal, but all costs in connection therewith shall be included in the Contract unit price bid.

Tree damages assessed, due to lack of or improper tree and plant protective measures being taken, shall be deducted from the contract price of the work.

ITEM 697.1 **SILT SACK** **EACH**

Work under this item shall conform to the relevant provisions of Subsections 227 and 670 of the MassDOT Standard Specifications for Highways and Bridges and the following:

The work includes the furnishing, installation, maintenance and removal of a reusable fabric sack to be installed in drainage structures for the protection of wetlands and other resource areas and the prevention of silt and sediment from the construction site from entering the storm water collection system. Devices shall be sourced from ACF Environmental; Dandy Products; Fabco Industries, Inc.; New Pig Corporation; or approved equal.

CONSTRUCTION

Silt sacks shall be installed in retained existing and proposed catch basins and drop inlets within the project limits and as required by the Engineer.

The silt sack shall be as manufactured to fit the opening of the drainage structure under regular flow conditions and shall be mounted under the grate. The insert shall be secured from the surface such that the grate can be removed without the insert discharging into the structure. The filter material shall be installed and maintained in accordance with the manufacturer's written literature and as required by the Engineer.

Silt sacks shall remain in place until the placement of the pavement overlay or surface course and the graded areas have become permanently stabilized by vegetative growth. All materials used for the filter fabric shall become the property of the Contractor and shall be removed from the site.

The Contractor shall inspect the condition of silt sacks after each rainstorm and during major rain events. Silt sacks shall be cleaned periodically to remove and dispose of accumulated debris as required. Silt sacks, which become damaged during construction operations, shall be repaired or replaced immediately at no additional cost.

When emptying the silt sack, the Contractor shall take all due care to prevent sediment from entering the structure. Any silt or other debris found in the drainage system at the end of construction shall be removed at the Contractor's expense. The silt and sediment from the silt sack shall be legally disposed of off-site. Under no circumstance shall silt and sediment from the insert be deposited on site and used in construction.

All curb openings shall be blocked to prevent stormwater from bypassing the device.

All debris accumulated in silt sacks shall be handled and disposed of as approved by the Engineer.

ITEM 697.1 (Continued)

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Silt Sack will be measured and paid at the Contract unit price per each, complete in place, which price shall include all labor, materials, equipment and incidental costs required to complete the work.

No separate payment will be made for removal and disposal of the sediment from the insert, regardless of the frequency of removal and disposal, but all costs in connection therewith shall be included in the Contract unit price bid.

ITEM 767.121 SEDIMENT CONTROL BARRIER FOOT

The work under this item shall conform to the relevant provisions of Subsections 670, 751 and 767 of the Standard Specifications and shall include the furnishing and placement of a sediment control barrier. Sediment control barrier shall be installed prior to disturbing upslope soil.

The purpose of the sediment control barrier is to slow runoff velocity and filter suspended sediments from storm water flow. Sediment barrier may be used to contain stockpile sediments, to break slope length, and to slow or prevent upgradient water or water off road surfaces from flowing into a work zone. Contractor shall be responsible for ensuring that barriers fulfill the intent of adequately controlling siltation and runoff.

Twelve-inch diameter (after installation) compost filter tubes with biodegradable natural fabric (i.e., cotton, jute, burlap) are intended to be the primary sedimentation control barrier. Photo-biodegradable fabric shall not be used.

For small areas of disturbance with minimal slope and slope length, the Engineer may approve the following sediment control methods:

- 9-inch compost filter tubes
- Straw bales which shall be trenched

No straw wattles may be used. Additional compost filter tubes (adding depth or height) shall be used at specific locations of concentrated flow such as at gully points, steep slopes, or identified failure points in the sediment capture line.

When required by permits, additional sediment barrier shall be stored on-site for emergency use and replacement for the duration of the contract.

Where shown on the plans or when required by permits, sedimentation fence shall be used in addition to compost filter tubes and straw bales and shall be compensated under that item.

Sediment control barriers shall be installed in the approximate location as shown on the plans and as required so that no excavated or disturbed soil can enter mitigation areas or adjacent wetlands or waterways. If necessary to accommodate field conditions and to maximize effectiveness, barrier locations may be shifted with approval from the Engineer. Barriers shall be in place prior to excavation work. No work shall take place outside the barriers.

MATERIALS AND CONSTRUCTION

Prior to initial placement of barriers, the Contractor and the Engineer shall review locations specified on the plans and adjust placement to ensure that the placement will provide maximum effectiveness.

Barriers shall be staked, trenched, and/or wedged as specified herein and according to the Manufacturer's instructions. Barriers shall be securely in contact with existing soil such that there is no flow beneath the barrier.

Compost Filter Tube

Compost material inside the filter tube shall meet M1.06.0, except for the following: no peat, manure or bio-solids shall be used; no kiln-dried wood or construction debris shall be allowed; material shall pass through a 2-inch sieve; and the C:N ratio shall be disregarded.

Outer tube fabric shall be made of 100% biodegradable materials (i.e., cotton, hemp or jute) and shall have a knitted mesh with openings that allow for sufficient water flow and effective sediment capture.

Tubes shall be tamped, but not trenched, to ensure good contact with soil. When reinforcement is necessary, tubes shall be stacked as shown on the detail plans.

Straw Bales

Straw bales shall be used if shown on the plans or when specified by Orders of Condition or other permit requirements.

Bales should be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another. All bales should be either wire-bound or string-tied. Straw bales should be installed so that bindings are oriented around the sides (rather than along the tops and bottoms) of the bales in order to prevent deterioration of the bindings.

The barrier should be entrenched and backfilled. A trench should be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. The trench must be deep enough to remove all grass and other material which might allow underflow. After the bales are staked and chinked (filled by wedging), the excavated soil should be backfilled against the barrier. Backfill soil should conform to the ground level on the downhill side and should be built up to 4 inches against the uphill side of the barrier.

Each bale should be securely anchored by at least 2 stakes or re-bars driven through the bale. The first stake in each bale should be driven toward the previously laid bale to force the bales together. Stakes or re-bars should be driven deep enough into the ground to securely anchor the bales. For safety reasons, stakes should not extend above the bales but should be driven in flush with the top of the bale.

The gaps between the bales should 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. Wedging must be done carefully in order not to separate the bales.

When used in a swale, the barrier should be extended to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale to assure that sediment-laden runoff will flow either through or over the barrier but not around it.

ITEM 767.121 (Continued)

Sedimentation Fence

Materials and Installation shall be per Section 670.40 and 670.60 of the Standard Specifications and the following:

Sedimentation fence shall only be used if shown on the plans or when specified by Orders of Condition or other permit requirements and shall be done at no additional cost.

When used with compost filter tubes, the tube shall be placed on a minimum of 8 inches of folded fabric on the upslope side of the fence. Fabric does not need to be trenched.

When used with straw bales, an 8-inch deep and 4-inch wide trench or V-trench shall be dug on the upslope side of the fence line. One foot of fabric shall be placed in the bottom of the trench followed by backfilling with compacted earth or gravel. Stakes shall be on the down slope side of the trench and shall be spaced such that the fence remains vertical and effective.

Width of fabric shall be sufficient to provide a 36-inch high barrier after fabric is folded or trenched. Sagging fabric will require additional staking or other anchoring.

MAINTENANCE

Maintenance of the sediment control barrier shall be per Section 670.60 of the Standard Specifications or per the Stormwater Pollution Prevention Plan (SWPPP), whichever is more restrictive.

The contractor shall inspect the sediment barrier in accordance with relevant permits. At a minimum, barriers shall be inspected at least once every 7 calendar days and after a rain event resulting in 0.25 inches or more of rainfall. Contractor shall be responsible for ensuring that an effective barrier is in place and working effectively for all phases of the Contract.

Barriers that decompose such that they no longer provide the function required shall be repaired or replaced as directed. If the resulting berm of compost within the fabric tube is sufficiently intact (despite fabric decay) and continues to provide effective water and sediment control, barrier does not necessarily require replacement.

DISMANTLING & REMOVING

Barriers shall be dismantled and/or removed, as required, when construction work is complete and upslope areas have been permanently stabilized and after receiving permission to do so from the Engineer.

Regardless of site context, nonbiodegradable material and components of the sediment barriers, including plastic netting, nylon twine, and sedimentation fence, shall be removed and disposed off-site by the Contractor.

ITEM 767.121 (Continued)

For naturalized areas, biodegradable, natural fabric and material may be left in place to decompose on-site. In urban, residential, or other locations where aesthetics is a concern, the following shall apply:

- Compost filter tube fabric shall be cut and removed, and compost shall be raked to blend evenly (as would be done with a soil amendment or mulch). No more than a 2-inch depth shall be left on soil substrate.
- Straw bales shall be removed and disposed off-site by the Contractor. Areas of trenching shall be raked smooth and disturbed soils stabilized with a seed mix matching adjacent seeding or existing grasses (i.e., lawn or native grass mix).
- Sedimentation fence, stakes, and other debris shall be removed and disposed off-site. Site shall be restored to a neat and clean condition.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 767.121 will be measured and paid for at the contract unit price per foot of sediment control barrier which price shall include all labor, equipment, materials, maintenance, dismantling, removal, restoration of soil, and all incidental costs required to complete the work.

Additional barrier, such as double or triple stacking of compost filter tubes, will be paid for per foot of tube installed.

Barriers that have been driven over or otherwise damage by construction activities shall be repaired or replaced as directed by the Engineer at the Contractors expense.

Sedimentation fence used in conjunction with compost filter will be considered incidental to this item.

TEC, Inc.
282 Merrimack Street, 2nd Floor
Lawrence, MA 01843
978.794.1792

Wetland Delineation Report

Client: TEC, Dylan Skinner, PE
Wetland Delineation Report
Hancock Project #: 28616
Address: Clark's Road, Amesbury MA
Date: September 25, 2025

In execution of TEC Contract, a Wetland Professional in Training (WPIT) field delineated all jurisdictional wetlands within 100-feet of Clark's Road in Amesbury, MA. Based on this delineation, Inland Bank associated with perennial Merrimack River was identified and delineated.

Prior to performing field wetland observations, an environmental constraints desktop assessment of the subject property was performed through review of MassGIS data layers, USGS 7.5-minute quadrangle maps, NRCS soil maps, and Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs). Based on this review, the focus of the delineation was the bank of the Merrimack River.

The following report summarizes the findings of this delineation, which was conducted on September 23, 2025, in accordance with MassDEP wetland delineation standards.

Inland Bank

As defined in 310 CMR 10.54 (2)(a) &(c), a Bank is "... *the portion of the land surface that normally abuts and confines a waterbody*." This land surface "... *may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, or stone*." "*The upper boundary of a Bank is delineated as the first observable break in the slope or the mean annual flood level, whichever is lower.*" Bank is present between a perennial river, lake, or pond and the adjacent BVW or upland and within intermittent streams.

Bank was delineated with one (1) flag series labeled as BA100 as follows:

BA100

The BA100 series represents Mean Annual High Water (MAHW) and runs along the bank of the river. The bank was delineated to the extent that it broadcasts onto the area of proposed work on Site. The limit of the bank was demarcated with one (1) series of flags, labeled BA (100 through 117).

Bank full Width

The edge of the bankfull channel typically corresponds to the start of the floodplain. A floodplain receives floodwaters in most years but is vegetated by perennial plants and trees. This vegetation often reflects repeated flow-related disturbance and may not support mature trees. Field determination of the bankfull channel edge of streams rely on where the substrate is dominated by boulders or bedrock or where the channel is tightly confined, a distinct floodplain may not exist. In these situations, you will have to rely on secondary indicators, such as vegetation or other evidence of flood flows to determine the bankfull width. These indicators may include:

- A change in vegetation from bare surfaces or annual water-tolerant species to perennial upland or water-tolerant shrubs and trees;
- Bare areas associated with scour around woody debris or other obstructions.
- The top of point bars; or
- The lowest elevation at which fine organic debris is caught on brush or trees

Due to field conditions, field measurements were not performed. If necessary bankfull width should be confirmed with stream stats and during field topographic land surveying services.

Bordering Land Subject to Flooding (BLSF)

According to 310 CMR 10.57, "*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."*

According to the FEMA map 25009C0106G (effective 07/08/2025) there are portions of the Site associated with the Merrimack River within special flood zone AE with elevation 10.5 feet. This area is associated with the jurisdictional wetland resource area, BLSF.

Buffer Zone and Setback Zones

Buffer Zone is defined in 310 CRM 10.04 as *"that area of land extending 100 feet horizontally outward from the boundary of any area specified in 310 CMR 10.02(1)(a)."*

Work within the Buffer Zones to Inland Bank falls under the jurisdiction of both the MA WPA and the town of Amesbury Wetlands Protection Ordinance. Inland Bank has a 100-foot Buffer Zone horizontally off the limits of resource area as well as a 200-foot Riverfront Area (RFA). Proposed projects within these areas must adhere to certain regulatory performance standards.

Additional Areas Investigated

The roadside adjacent to the cemetery was investigated on October 2, 2026. During this investigation, soils were examined with a hand auger to determine if hydric soil characteristics were present. Auger holes were excavated to a depth that confirmed the presence of hydric soils in wetland areas, or that eliminated the possibility of hydric soils in uplands. Soils were observed to be 10YR 2/2 approximately 4 inches below the surface then transitioning to 10YR 5/6 below which is indicative of an upland matrix. The area was primarily vegetated with grass (*Poa pratensis,* FACU), English plantain (*Plantago lanceolata,* FACU), common yarrow (*Achillea spp.,* FACU*),* and red oak (*Quercus rubra,* FACU). Some roadside drainage patterns were observed but otherwise all field evidence supports this area to be upland.

If you have any questions regarding the delineation, please contact me at cwhite@hancockassociates.com or 978-777-3050 ext. 406.

Caitlin White, WPIT
Project Wetland Scientist
Hancock Associates

Attachments:

A – Figures

National Flood Hazard Layer FIRMette

FEMA

70°55'6"W 42°50'51"N



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

1:6,000

70°54'29"W 42°50'25"N

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

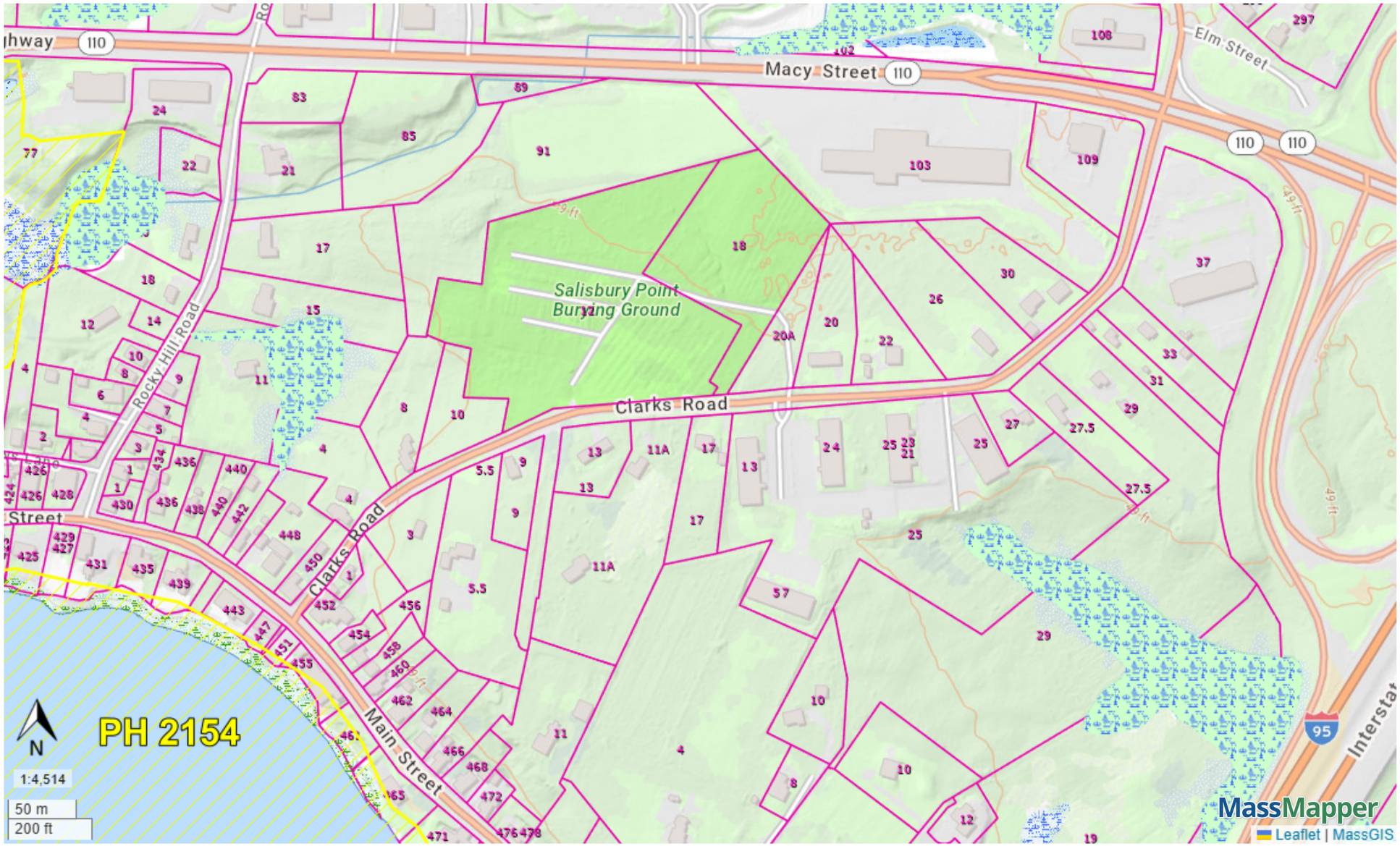
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The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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 9/30/2026 at 9:07 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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



Mouth of the River (MOR) Lines

Public Water Supplies

- Communtiy Groundwater Well
- Non-Communtiy Groundwater Well
- Surface Water Intake
- Emergency Surface Water Intake
- Community Labels
- Non-Community Labels

Areas of Critical Environmental Concern ACECs

NHESP Priority Habitats of Rare Species

NHESP Estimated Habitats of Rare Wildlife

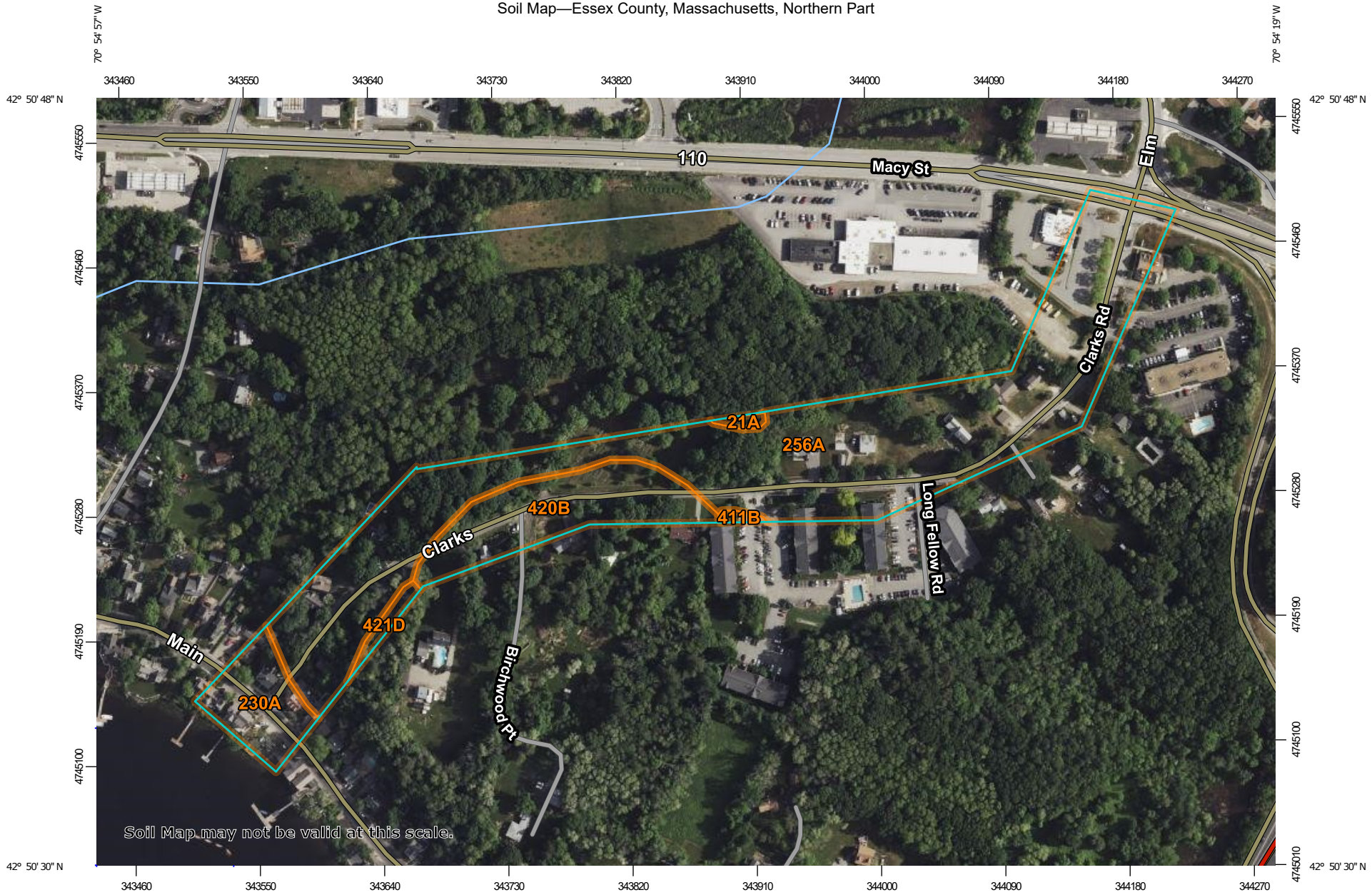
NHESP Certified Vernal Pools

DEP Wetlands General Categories

- MARSH/BOG
- WOODED MARSH
- CRANBERRY BOG
- SALT MARSH
- OPEN WATER
- RESERVOIR (WITH PWSID)
- TIDAL FLATS
- BEACH/DUNE

Property Tax Parcels

Printed Sep 30, 2026



Map Scale: 1:3,900 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N 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: Essex County, Massachusetts, Northern Part
Survey Area Data: Version 21, 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: May 22, 2022—Jun 5, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
21A	Walpole variant fine sandy loam, 0 to 3 percent slopes	0.1	0.5%
230A	Unadilla very fine sandy loam, 0 to 3 percent slopes	1.1	7.7%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	10.8	75.2%
411B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	0.1	0.4%
420B	Canton fine sandy loam, 3 to 8 percent slopes	2.2	15.0%
421D	Canton fine sandy loam, 15 to 25 percent slopes, very stony	0.2	1.1%
Totals for Area of Interest		**14.3**	**100.0%**