

NOTICE OF INTENT

For

Proposed Commercial Building Access
116 Northeast Cutoff
Worcester, Massachusetts

October 2, 2023

Prepared for Owner/Applicant:
115 Northeast Cutoff Realty Trust, LLC
1 West Boylston Street, Suite LL05
Worcester, MA 01605

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T_{LA} THOMPSON-LISTON
ASSOCIATES, INC.
Professional Engineers Professional Land Surveyors
Erosion Control Specialists
P O Box 570, Boylston MA 01505
info@tlainc.net (508) 869-6151

October 2, 2023

City of Worcester Conservation Commission
c/o Division of Planning & Regulatory Services
City Hall
455 Main Street, Room 404
Worcester, MA 01608

Re: Notice of Intent for Access Drive Proposed Commercial Building
116 Northeast Cutoff, Worcester, MA

Dear Members of the Commission:

We enclose herewith a Notice of Intent pursuant to 310CMR10.00, and the City's Wetlands Protection Ordinance and Wetlands Protection Regulations, for the Commission's consideration. 115 Northeast Cutoff Realty Trust, LLC, proposes to construct two new commercial buildings on a site located between Holden Street in Shrewsbury and Northeast Cutoff in Worcester. One of the lots, comprising approximately 9 acres of land, mostly in Shrewsbury, is proposed to have an access driveway at 116 Northeast Cutoff in Worcester. Land uses in the surrounding area include a community health center, school transportation parking and Public Works on the west side of Northeast Cutoff.

Wetland Resource Areas:

A bordering vegetated wetland area and a watercourse flowing southward along Northeast Cutoff were identified and delineated by EBT Environmental Consultants, Inc., as of April 17, 2023. A copy of the Wetland Report is included herewith.

Scope of the Project:

The proposed access driveway at 116 Northeast Cutoff crosses the stream bed and adjacent wetland resource area. A box culvert, meeting DEP standards, is proposed for the crossing.

Development of Lot 2 will have a new 50,000 sq. ft. building, with parking for 37 typical vehicles and six loading docks; the development is proposed in Shrewsbury, except for its access drive and services proposed at 116 Northeast Cutoff, Worcester.

Utilities:

Water for both lots will be provided from the City of Worcester water system, fed from Northeast Cutoff. Natural gas, electricity and telecommunications for each lot will be provided from Holden Street, Shrewsbury. An on-site septic system for each lot will be provided as part of the proposed project.

Stormwater:

Stormwater will be managed in accordance with the Massachusetts DEP Stormwater Standards. The main features of the stormwater mitigation system in Lot 2 include infiltration of roof runoff in a surface infiltration basin, collection and pretreatment of parking lot runoff using hydrodynamic separators, a subsurface infiltration pond, and treated parking lot runoff directed to a surface infiltration basin.

Please review the enclosed Notice of Intent, Site Plans (titled Two Proposed Buildings), and Stormwater Report and supporting materials. If you would like to schedule a site visit prior to the meeting, we are available to do so. We look forward to presenting this proposed project to the Commission. Thank you.

Very truly yours,

THOMPSON-LISTON ASSOCIATES, INC.



Patrick J. Healy, P.E.
Vice President



David P. Buchanan II
Engineer

cc: DEP Central Regional Office
115 Northeast Cutoff, LLC
EBT Environmental Consultants, Inc.
Shrewsbury Conservation Commission

STREAM CROSSING STANDARDS COMPLIANCE

116 Northeast Cutoff, Worcester, MA

September 19, 2023

The proposed project includes an access driveway from Northeast Cutoff, Worcester, MA, crossing an existing stream bed. The proposed construction meets the Massachusetts DEP standards for a stream crossing. Images on the reverse of this page show a plan view of the proposed crossing, and a detail view of the culvert structure.

1. TYPE OF CROSSING

The crossing proposed is a three-sided concrete box culvert, one of the preferred types in the standard.

2. EMBEDMENT

The proposed culvert is embedded 4 feet into the stream bank, exceeding the minimum standard of two feet.

3. CROSSING SPAN

The proposed culvert is 20 feet wide (interior dimension), or 4.0 times the width of the stream at bank full, which is 5 feet wide. This exceeds the minimum width of 1.2 times the bank width, and provides ample dry passage for wildlife.

4. OPENNESS

The proposed culvert is 35 feet long. The cross-sectional area of the culvert is 1.5 feet high x 20 feet wide = 30 sq. ft. The openness is 30 sq. ft. ÷ 35 ft. = 0.86 ft. This exceeds the minimum openness of the standards, which is 0.82 ft. The minimum clear height of 1.5 feet provides ample passage space for wildlife.

5. SUBSTRATE

Construction of the proposed structure will disturb the natural substrate of the existing stream bed. The substrate will be replaced with material consistent with the existing substrate and the substrate upstream and downstream of the culvert, and to preclude erosion. Culvert headwalls will preclude displacement of substrate during flood conditions.

6. WATER DEPTH AND VELOCITY

As the natural stream bed geometry will be preserved within the culvert, with approximately 7 feet of bench provided on each side of the stream, water depth and velocity will not differ from pre-construction flows.

Each of the DEP Stream Crossing standards is met or exceeded, as described above and depicted on the included images.

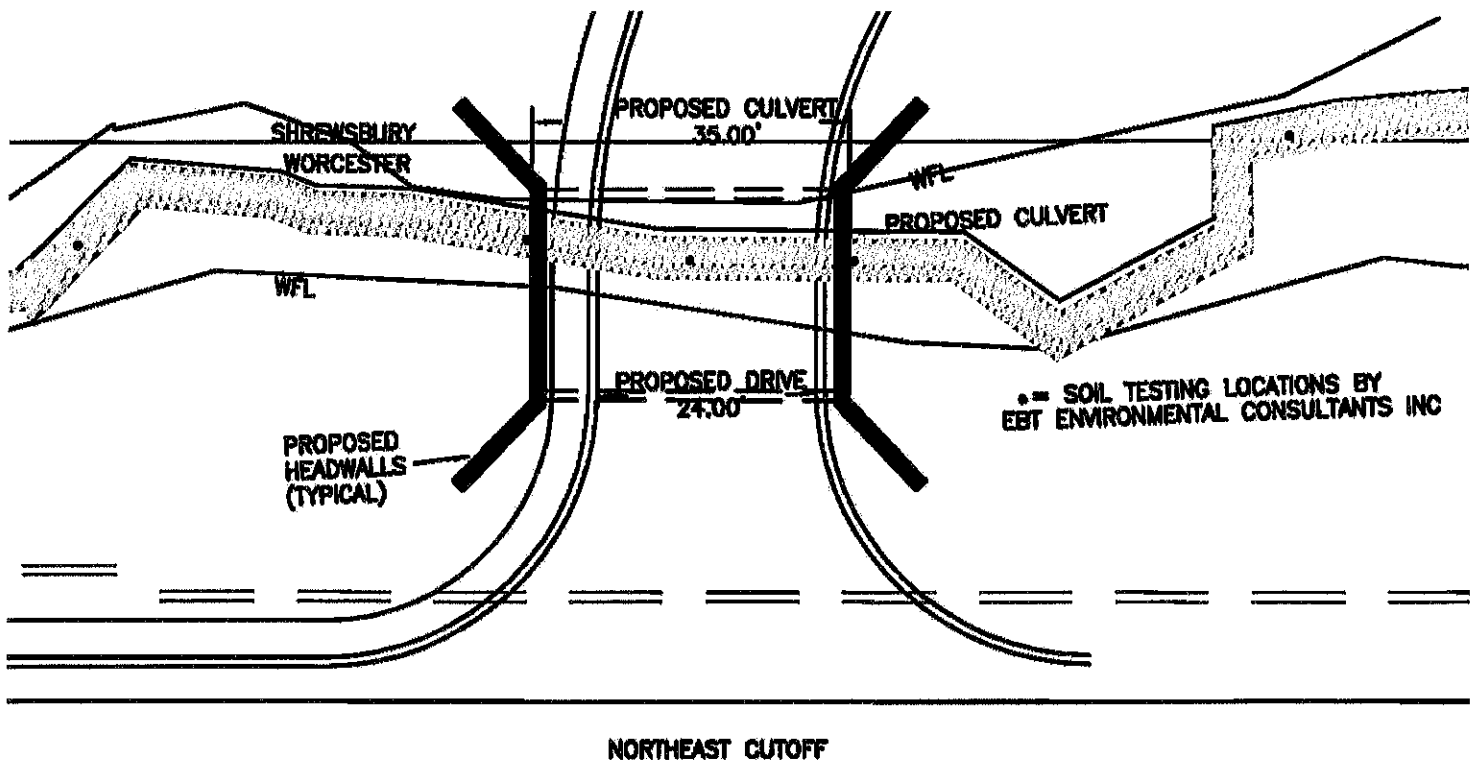
Respectfully submitted,
THOMPSON-LISTON ASSOCIATES, INC.



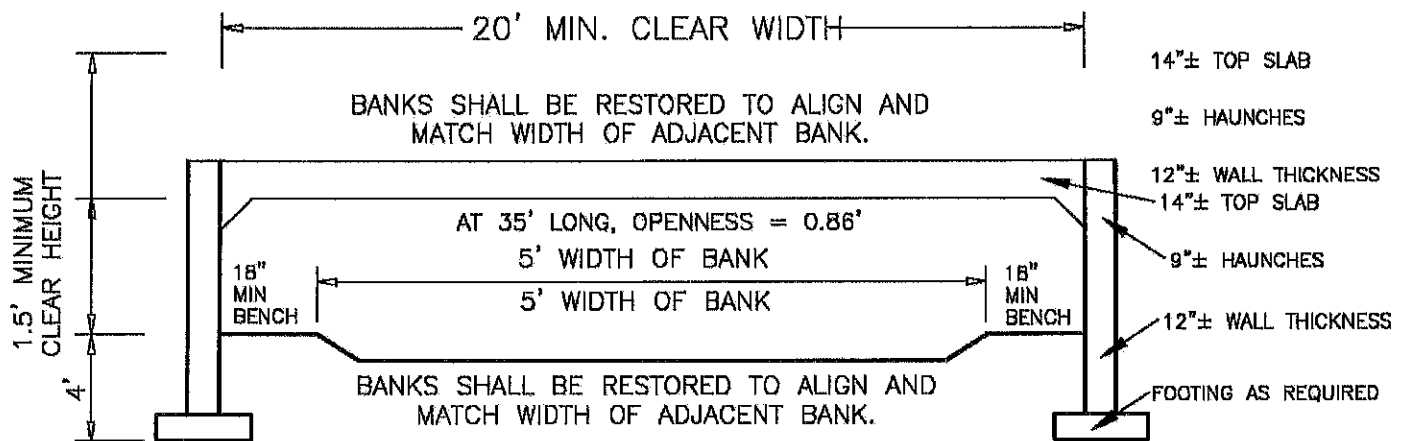
Patrick J. Healy, P.E.
Vice President



David P. Buchanan II
Engineer



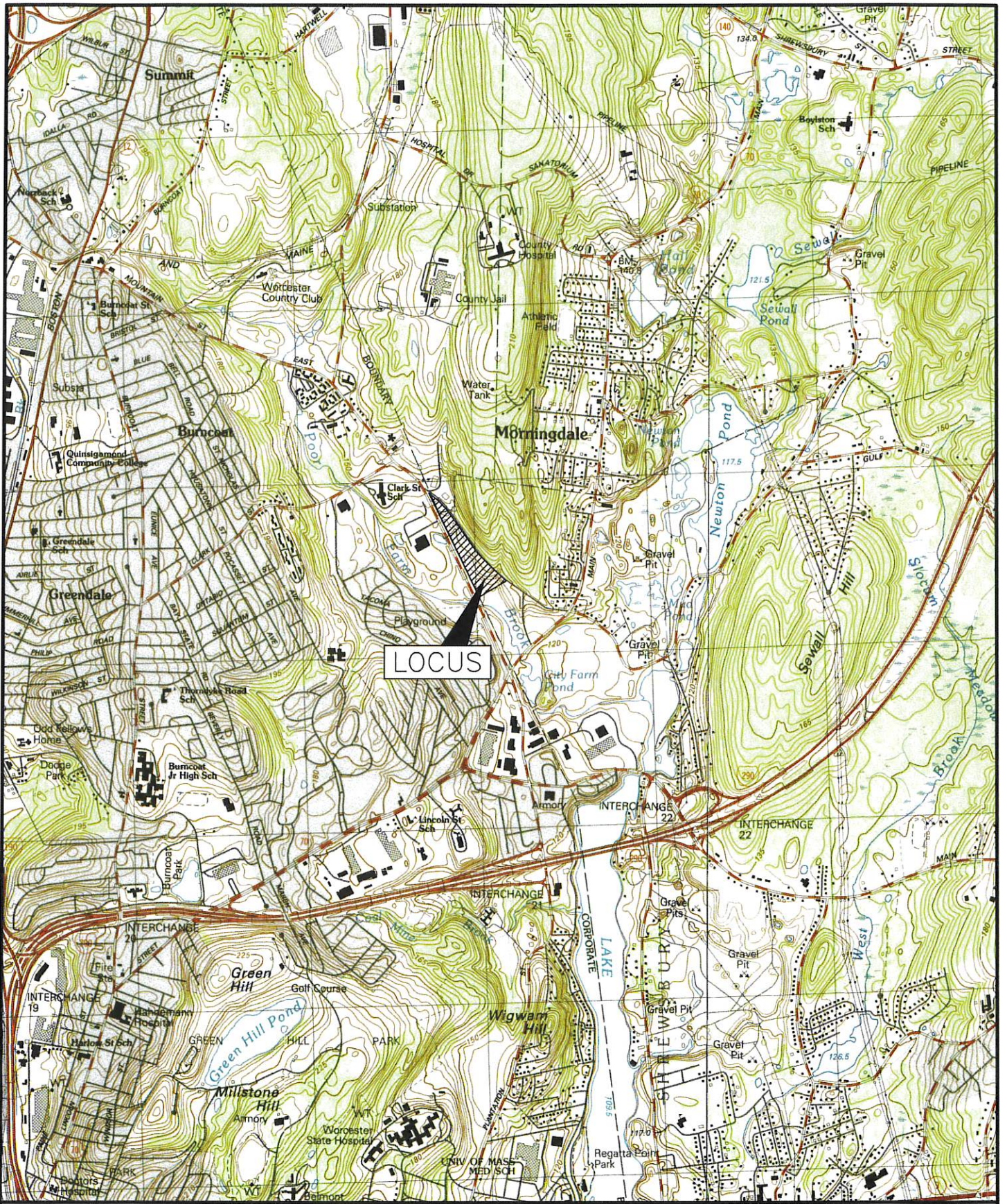
PLAN VIEW OF PROPOSED CROSSING
SCALE: 1" = 20' ±



**DETAIL OF PRE-CAST CONCRETE BOX CULVERT
AS MANUFACTURED BY ARROW CONCRETE OR EQUAL**

MINIMUM DIMENSIONS AND OPENNESS RATIO ARE SHOWN. LARGER BOX CULVERTS OR PRECAST CONCRETE ARCHES MAY BE SUBSTITUTED WITH LARGER AREAS.

(NOT TO SCALE)



THOMPSON-LISTON
ASSOCIATES, INC.

Professional Engineers Professional Land Surveyors
51 Main Street, Post Office Box 370
Worcester, Massachusetts 01505-0370
Telephone 508-569-6151 www.thompsonliston.com



LOCUS MAP FROM USGS MAP
COMMERCIAL BUILDINGS
369 HOLDEN ST.
SHREWSBURY, MA

0 1000 2000 FT



1/2 MILE



SOURCE: 1:25,000 USGS QUADRANGLES (MASSGIS)



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Provided by MassDEP:

WPA Form 3 – Notice of Intent

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

MassDEP File Number

Document Transaction Number
Worcester

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):

116 Northeast Cutoff	Worcester	0160652
a. Street Address	b. City/Town	c. Zip Code
Latitude and Longitude:	42.310352	-71.767871
Map 52	d. Latitude	e. Longitude
f. Assessors Map/Plat Number	Block 006, Lot 00008	
	g. Parcel /Lot Number	

2. Applicant:

Zachary	Curzan	
a. First Name	b. Last Name	
115 Northeast Cutoff Realty Trust		
c. Organization		
1 West Boylston Street, Suite LL05		
d. Street Address		
Worcester	MA	01605
e. City/Town	f. State	g. Zip Code
	N/A	
h. Phone Number	i. Fax Number	j. Email Address

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

a. First Name	b. Last Name	
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):

Patrick	Healy	
a. First Name	b. Last Name	
Thompson-Liston Associates, Inc.		
c. Company		
51 Main Street		
d. Street Address		
Boylston	MA	01505
e. City/Town	f. State	g. Zip Code
508-869-6151	N/A	Patrick.Healy@tlainc.net
h. Phone Number	i. Fax Number	j. Email address

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

\$1,050.00	\$512.50	\$537.50
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid



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A. General Information (continued)

6. General Project Description:

A proposed access driveway for a commercial building will be located in the City of Worcester, at 116 Northeast Cutoff. The proposed driveway crosses a stream and associated Wetlands Resource Area. The building, approximately 50,000 sq. ft., is to be constructed, with parking and commercial loading areas, a stormwater BMP and a surface infiltration pond, on a 9 acre lot in Shrewsbury.

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:

Worcester South

18181

a. County

b. Certificate # (if registered land)

91

181

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

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

MassDEP File Number _____

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input checked="" type="checkbox"/> Bank	70 1. linear feet	70 2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet	2. square feet
c. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	2,380 1. square feet 166 3. cubic yards dredged	2,380 2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input type="checkbox"/> Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. <input type="checkbox"/> Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. <input type="checkbox"/> 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:

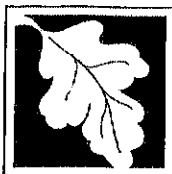
a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

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.



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

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

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

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	_____	
	1. square feet	

	2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	_____	_____
	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	_____	_____
	1. square feet	2. cubic yards dune nourishment

	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	_____	
	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	_____	
	1. square feet	
h. <input type="checkbox"/> Salt Marshes	_____	_____
	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	_____	
	1. square feet	

	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	_____	
	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	

	1. cubic yards dredged	
l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	_____	
	1. square feet	

4. 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

1

a. number of new stream crossings

b. number of replacement stream crossings



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C. Other Applicable Standards and Requirements

- This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration 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**

February 23, 2023
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/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

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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 - Cohasset 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 - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

Email: dmf.envreview-north@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).



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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.



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D. Additional Information (cont'd)

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

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

Plan to Accompany Notice of Intent for Two Proposed Buildings

a. Plan Title

Thompson-Liston Associates, Inc.

Patrick Healy, P.E.

b. Prepared By

c. Signed and Stamped by

August 22, 2023

1"=40'

d. Final Revision Date

e. Scale

Stormwater Report for Two Proposed Buildings

September 5, 2023

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:

1691

2. Municipal Check Number

9/19/23

3. Check date

1692

4. State Check Number

9/19/23

5. Check date

115 Northeast Cutoff Realty Trust

6. Payor name on check: First Name

115 Northeast Cutoff Realty Trust LLC

7. Payor name on check: Last Name

4. State Check Number
115 Northeast Cutoff Realty Trust

5. Check date

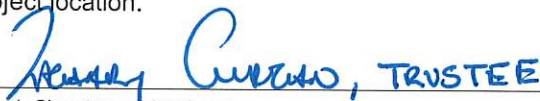
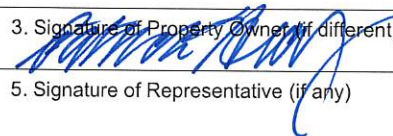
6. Payor name on check: First Name

7. Payor name on check: Last Name

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	<u>9/19/23</u> 2. Date
 3. Signature of Property Owner (if different) 5. Signature of Representative (if any)	<u>9/19/23</u> 4. Date 6. Date

For Conservation Commission:

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

For MassDEP:

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

Other:

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

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



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
NOI Wetland Fee Transmittal Form
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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



A. Applicant Information

1. Location of Project:

116 Northeast Cutoff		Worcester
a. Street Address		b. City/Town
1690		\$512.50
c. Check number		d. Fee amount

2. Applicant Mailing Address:

Zachary		Curzan
a. First Name		b. Last Name
115 Northeast Cutoff Reality Trust		
c. Organization		
1 West Boylston Street, Suite LL05		
d. Mailing Address		
Worcester	MA	01605
e. City/Town	f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

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

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.

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
3.b.	1	\$1,050.00	\$1,050.00

Step 5/Total Project Fee: \$1,050.00

Step 6/Fee Payments:

Total Project Fee:	<u>\$1,050</u>
State share of filing Fee:	<u>\$512.50</u>
City/Town share of filing Fee:	<u>\$537.50</u>
	<u>c. 1/2 Total Fee plus \$12.50</u>

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.)

Statement of Fee Calculation
 City of Worcester Wetlands Protection Ordinance & Regulations

Project: 116 Northeast Cutoff, Worcester

Date: September 13, 2023

7.2.3 Fees

Step 1/Type of Activity	Step 2/Number Of Activities	Step 3/Individual Fee	Step 4/Subtotal Activity Fee
Category 4)	1	750.00	750.00
Advertising Fee	1	25.00	25.00

Step5/Total Project Fee: \$ 775.00

Payments:

Make Checks Payable to the City of Worcester.



TLA THOMPSON-LISTON
ASSOCIATES, INC.

Professional Engineers Professional Land Surveyors

Erosion Control Specialists

P O Box 570, Boylston MA 01505

info@tlainc.net (508) 869-6151

October 2, 2023

Notice to Abutters

Re: Proposed Construction of Commercial Building Driveway
116 Northeast Cutoff
Assessor's Map 52, Parcel 006-00008

Dear Sir or Madam:

Please be advised that 115 Northeast Cutoff LLC has filed a Notice of Intent with the City of Worcester Conservation Commission and the Massachusetts Department of Environmental Protection pursuant to the requirements of the Massachusetts Wetlands Protection Act and Worcester Wetlands Protection Ordinance.

The applicant is seeking permission to construct a driveway for a commercial building, crossing a streambed and a wetland resource area.

Copies of the Notice of Intent and are on file with the City of Worcester Conservation Commission located in Planning & Regulatory Services, City Hall, Room 404, 455 Main Street, Worcester, MA.

Copies may also be examined or obtained at the office of the applicant's representative, Thompson-Liston Associates, Inc., 51 Main Street, Boylston, Massachusetts, by appointment, between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday. For additional information about this application, you may call me at 508-869-6151.

The Conservation Commission will conduct a Public Hearing on the proposed project and the Notice of Intent at 5:30 p.m. on October 23, 2023, at Worcester City Hall, 455 Main Street, in the Levi Lincoln Chamber (Room 309). You are invited to attend this meeting to hear a presentation of the plans and to present the Conservation Commission with any questions or comments you may have.

For additional information about the application or the Wetlands Protection Act, you may contact me at (508) 869-6151, or you may also contact the Conservation Commission's Agent at (508) 841-8329 or the Massachusetts DEP at (508) 792-7650.

Sincerely

THOMPSON-LISTON ASSOCIATES, INC.



Patrick Healy, P.E.

cc Shrewsbury Conservation Commission
DEP - CERO



Assessing Division
 Samuel E. Konleozny, MAA, City Assessor
 City Hall, 455 Main Street, Worcester, MA 01608
 P | 508-799-1098 F | 508-799-1021
 assessing@worcesterma.gov

Certified Abutters List

A list of 'parties in interest' shall be attached to the application form and shall include the names and addresses. All such names and addresses shall be obtained from the most recent applicable tax list maintained by the City's Assessing Department. The Assessing Department certifies the list of names and addresses.

Total Count: 6

Parcel Address: 116 NORTHEAST CUTOFF
 Assessor's Map-Block-Lot(s): 52-006-00008
 Owner: CHACHARONE & CURZAN TRUST
 Owner Mailing: 1 WEST BOYLSTON ST, SUITE LLO5
WORCESTER, MA 01605
 Petitioner (if other than owner): GLENN KREVOSKY
 Petitioner Mailing Address: 601 MAIN STREET
NORTH OXFORD, MA 01537
 Petitioner Phone: 508-769-3659

Planning: _____ Zoning: _____ License Commission: _____ Conservation Commission: X

Historical: _____ Cannabis: _____ Other: _____

52-006-01+02	CHACHARONE MELETIOS D +	0001 W BOYLSTON STREET STE LLO5	WORCESTER MA 01605
52-007-02+2C	CITY OF WORCESTER CITY MANAGER	455 MAIN STREET	WORCESTER MA 01608
52-006-0006A	CITY OF WORCESTER PARKS DEPT	455 MAIN STREET	WORCESTER MA 01608
52-006-00008	CHACHARONE MELETIOS D +	0001 WEST BOYLSTON ST #LLO5	WORCESTER MA 01605

The City of Worcester
Administration & Finance

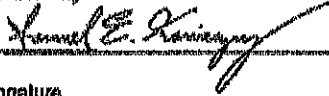
53-002-0001D ST PIERRE LINDA M
52-INX-0001D CITY OF WORCESTER PARKS DEPT

0311 MOUNTAIN ST EAST
455 MAIN STREET

WORCESTER MA 01606
WORCESTER MA 01608

This is to certify that the above is a list of abutters to Assessor's Map-Block-Lot's 52-006-00008 as cited above.

Certified by:



Signature

09/07/2023

Date



Abutters List Report

West Boylston, MA
August 08, 2023

Subject Property:

Parcel Number: 182/001/000
CAMA Number: 182/001/000/000
Property Address: EAST MOUNTAIN STREET

Mailing Address: CHACHARONE MELETIOS D TRS
CURZAN ZACHARY M TRS
ONE WEST BOYLSTON STREET SUITE
LL05
WORCESTER, MA 01605

Abutters:

Parcel Number: 182/001/000
CAMA Number: 182/001/000/000
Property Address: EAST MOUNTAIN STREET

Mailing Address: CHACHARONE MELETIOS D TRS
CURZAN ZACHARY M TRS
ONE WEST BOYLSTON STREET SUITE
LL05
WORCESTER, MA 01605

Parcel Number: 182/002/000
CAMA Number: 182/002/000/000
Property Address: EAST MOUNTAIN STREET

Mailing Address: ST PIERRE LINDA M
311 EAST MOUNTAIN STREET
WORCESTER, MA 01606

Parcel Number: 182/003/000
CAMA Number: 182/003/000/000
Property Address: 317 EAST MOUNTAIN STREET

Mailing Address: ST PIERRE MFG CORP
317 E MOUNTAIN STREET
WORCESTER, MA 01605

Parcel Number: 182/004/000
CAMA Number: 182/004/000/000
Property Address: EAST MOUNTAIN STREET

Mailing Address: ST PIERRE MFG CORP
317 E MOUNTAIN STREET
WORCESTER, MA 01605



www.cai-tech.com

Data shown on this report is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this report.

8/8/2023

Page 1 of 1



CERTIFIED ABUTERS LIST
369-377 HOLDEN ST 300 FT

TOWN OF SHREWSBURY
Richard D. Conroy, Municipal Office Building
100 Maple Avenue
Shrewsbury, Massachusetts 01545-5398

Parcel ID	Location	Grantor	Co. grantor's Name	Mailing Address	Mailing Address 2	City	State	Zip
07 001000	369-377 HOLDEN ST	CHACARONE MELITIOS D TRUSTEE	CURZAN ZACHARY M TRUSTEE	133 PEARL ST	SUITE 1105	WORCESTER	MA	01605
07 002000	274-378 HOLDEN ST	180 HOLDEN STREET LLC		P O BOX 71870		BOSTON	MA	02110
18 069000	59 CLAYTON ST	STORAGE PORTFOLIO LLC		C/O BUSINESS MANAGER	6890 S 2300 E	SALT LAKE CITY	UT	84171
13 070000	215 BASS HOLDEN ST	WORCESTER CITY OF COMM OF PUBLIC WORKS	DEPT OF PUBLIC WORKS		20 EAST WORCESTER ST	WORCESTER	MA	01604-3620

This is to certify that the owners listed above are as shown in the latest Assessor's records.

Tiffany Peters
TIFFANY PETERS, ASSISTANT TO THE ASSESSOR
Date 6/21/2023

EBT Environmental Consultants, Inc.
GLENN E. KREVOSKY, CONSULTANT

601 Main Street
North Oxford, MA 01537
glenn.krevosky@charter.net
Cell: (508)769-3659 Office: (508)987-0979

Shrewsbury Conservation Commission
100 Maple Avenue
Shrewsbury, MA 01545

September 8, 2023

Re: 116 Northeast Cutoff, Worcester, 369-377 Holden Street, Shrewsbury & (182-1) East Mountain Street, West Boylston - Wetland Report

BORDERING VEGETATED WETLANDS

Glenn E. Krevosky of EBT Environmental Consultants, Inc. delineated the wetland boundaries in June and April 2023 with the below listed wetland flags, utilizing soils, vegetation, and indicators of hydrology according to 310 CMR 10.55 (2) (c) (see attached MA DEP BVW Data forms).

102 "A" Series Wetland Flags	63 "B" Series Wetland Flags
------------------------------	-----------------------------

BANK

Bank associated with an intermittent stream on the property is located within the bordering vegetated wetland. No work in Shrewsbury will involve bank alteration. Though the access into the southern 50,000 square foot building through the Worcester parcel will involve stream crossing standards to access over the man-created flow path.

RIVERFRONT AREA

Based upon a review of the current USGS Map, Worcester North Quadrangle, dated 2021, and site review, Poor Farm Brook, a perennial stream, is offsite, but within 200 feet of the property line. The southern property corner associated with the 50,000 square foot building is located within the outer riparian zone and all riverfront area on the subject parcel is located within the bordering vegetated wetland. No work is taking place in the riverfront area – the closest point of work to Poor Farm Brook is approximately 555 feet.

RARE SPECIES & VERNAL POOLS

Based upon a review of MassMapper GIS on 8/8/2023, the site area is not located within a mapped Priority Habitats of Rare Species nor Estimated Habitats of Rare Species polygons [per MA Endangered Species Act (MGL Ch. 131A) and MESA Regulations (321 CMR 10.00)]. Additionally, the site does not contain any NHESP Certified Vernal Pools nor Potential Vernal Pools [per MA Endangered Species Act (MGL Ch. 131A) and MESA Regulations (321 CMR 10.00)].

FLOOD PLAIN

A portion of 100-year flood plain is located along the southeastern property line. The flood plain is located within the bordering vegetated wetland on the property.

WELLHEAD PROTECTION AREAS

EBT Environmental Consultants, Inc.
GLENN E. KREVOSKY, CONSULTANT

601 Main Street

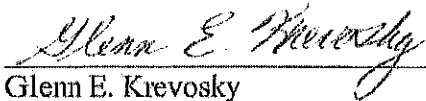
North Oxford, MA 01537

glenn.krevosky@charter.net

Cell: (508)769-3659 Office: (508)987-0979

Based upon a review of MassMapper GIS on 8/8/2023, the site area is entirely located within a Zone II wellhead protection area. The southeastern portion of the property is located within an interim wellhead protection area, extending approximately 200' into the property at its deepest point.

Respectfully,



Glenn E. Krevosky

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Chacharone Properties
 DEP File #: _____
 Check all that apply:

Prepared by: Glenn E. Krevosky
 EBT Environmental Consultants, Inc.

Project location: 369-377 Holden Street, Shrewsbury,
 116 Northeast Cutoff, Worcester &
 (182-1) East Mountain Street, West Boylston,

- Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
 Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
 Method other than dominance test used (attach additional information)

Center of Observation Plot and Transect are located 5' upgradient & 12' east of WF 85A

Section I. Vegetation	Observation Plot Number: Plot 1U	Transect Number: TP-1U	Date of Delineation: 4/17/2023	D. Dominant Plant (Yes or No)	E. Wetland Indicator Category*
A. Sample Layer and Plant Species (by common/scientific name)	B1. Percent Cover (or Basal Area)	B2. Percent Cover (Mid Point)	C. Percent Dominance	D. Dominant Plant (Yes or No)	E. Wetland Indicator Category*
TREES					
Northern Red Oak (<i>Quercus rubra</i>)	35	38.0	78.4	Yes	FACU
Black Cherry (<i>Prunus serotina</i>)	15	10.5	21.6	Yes	FACU
SAPLINGS					
Northern Red Oak (<i>Quercus rubra</i>)	20	20.5	39.8	Yes	FACU
Wild Apple (<i>Malus sylvestris</i>)	20	20.5	39.8	Yes	UPL
Eastern White Pine (<i>Pinus strobus</i>)	10	10.5	20.4	Yes	FACU
SHRUBS					
Highbush Blueberry (<i>Vaccinium corymbosum</i>)	10	10.5	33.3	Yes	FACW*
Northern Red Oak (<i>Quercus rubra</i>)	10	10.5	33.3	Yes	FACU
Wild Apple (<i>Malus sylvestris</i>)	15	10.5	33.3	Yes	UPL
HERB					
Early Lowbush Blueberry (<i>Vaccinium vitellans</i>)	20	20.5	40.6	Yes	UPL
White Ash (<i>Fraxinus americana</i>)	10	10.5	20.8	Yes	FACU
Pipsissewa (<i>Chimaphila umbellata</i>)	5	3.0	5.9	No	Not Rated
Bristly Dewberry (<i>Rubus hispatus</i>)	7	10.5	20.8	Yes	FACW*
Rough-stemmed Goldenrod (<i>Solidago rugosa</i>)	5	3.0	5.9	No	FAC*
Northern Red Oak (<i>Quercus rubra</i>)	5	3.0	5.9	No	FACU
VINE					
None					

* Use an asterisk to mark wetland indicator plants; plant species listed in the Wetlands Protection Act (MGL c.131, s.4); plants in the genus *Sphagnum*; plants listed as FAC, FACW, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:
 Number of dominant wetland indicator plants: 2 Number of dominant non-wetland indicator plants: 9
 Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? Yes No X

Client: Chacharone Properties
Section II. Indicators of Hydrology
5' upgradient & 12' east of WF 85A

Other Indicators of Hydrology: (check all that apply and describe)

- Site inundated: _____
- Depth to free water in observation hole: _____
- Depth to soil saturation in observation hole: _____
- Water marks: _____
- Drift lines: _____
- Sediment deposits: _____
- Drainage patterns in BVW: _____
- Oxidized rhizospheres: _____
- Water-stained leaves: _____
- Recorded data (stream, lake, or tidal gauge; aerial photo; other): _____

Other: _____

Hydric Soil Interpretation

1. Soil Survey

Is there a pub soil survey for this site? Yes No
 title/date: Worcester County, MA, Northeastern Part
 map number: MA613
 soil type mapped: Sudbury fine sandy loam
 hydric soil inclusions: Yes
 Are field observations consistent with soil survey? Yes No

Remarks:

2. Soil Description

Horizon	Depth	Matrix Color	Mottles Color
A	0"-5"	10YR 3/2	None
B	5"-15"	10YR 4/4	None

Remarks:

3. Other:

Conclusion: Is soil hydric? Yes No

Vegetation and Hydrology Conclusion		Yes	No
Number of wetland indicator plants			
≥ number of non-wetland indicator plants:			<input checked="" type="checkbox"/>
Wetland hydrology present:			
hydric soil present:			<input checked="" type="checkbox"/>
other indicators of hydrology present:			<input checked="" type="checkbox"/>
Sample location is in a BVW:			<input checked="" type="checkbox"/>

Submit this form with the Request for Determination of Applicability or Notice of Intent.

DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: Chacharone Properties
 DEP File #: _____
 Check all that apply:

Prepared by: Glenn E. Krevosky
 EBT Environmental Consultants, Inc.

Project location: 369-377 Holden Street, Shrewsbury,
 116 Northeast Cutoff, Worcester &
 (182-1) East Mountain Street, West Boylston,

X Vegetation alone presumed adequate to delineate BVW boundary: fill out Section I only
 ___ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
 ___ Method other than dominance test used (attach additional information)

Center of Observation Plot and Transect are located 6' down-gradient & 12' east of WF 85A

Section I. Vegetation	Observation Plot Number: Plot 1W	Transect Number: TP-1W	Date of Delineation: 4/17/2023
A. Sample Layer and Plant Species (by common/scientific name)	B1. Percent Cover (or Basal Area)	B2. Percent Cover (Mid Point)	C. Percent Dominance
D. Dominant Plant (Yes or No)	E. Wetland Indicator Category*		
TREES			
Northern Red Oak (<i>Quercus rubra</i>)	30	38.0	100.0
SAPLINGS			
American Elm (<i>Ulmus americana</i>)	15	10.5	25.3
Speckled Alder (<i>Alnus rugosa</i>)	20	20.5	49.4
Wild Apple (<i>Malus sylvestris</i>)	10	10.5	25.3
SHRUBS			
Highbush Blueberry (<i>Vaccinium corymbosum</i>)	15	10.5	33.3
Speckled Alder (<i>Alnus rugosa</i>)	15	10.5	33.3
Northern Red Oak (<i>Quercus rubra</i>)	7	10.5	33.3
HERBS			
Tussock Sedge (<i>Carex stricta</i>)	20	20.5	33.1
Sensitive Fern (<i>Onoclea sensibilis</i>)	20	20.5	33.1
Rough-stemmed Goldenrod (<i>Solidago rigosa</i>)	15	10.5	16.9
Late Lowbush Blueberry (<i>Vaccinium angustifolium</i>)	10	10.5	16.9
VINES			
None			

* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c. 131, s. 4); plants in the genus *Sphagnum*; plants listed as FAC, FACW, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

Vegetation conclusion:
 Number of dominant wetland indicator plants: 6 Number of dominant non-wetland indicator plants: 3
 Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? Yes X No

If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent. MA DEP: 3/95

Client: Chacharone Properties

Section II. Indicators of Hydrology

6' downgradient & 12' east of WF 85A

Hydric Soil Interpretation

1. Soil Survey

Is there a pub soil survey for this site? Yes X No

title/date: Worcester County, MA, Northeastern Part

map number: MA613

soil type mapped: Saco silt loam, frequently flooded

hydric soil inclusions: Yes

Are field observations consistent with soil survey? Yes X No

Remarks:

Other Indicators of Hydrology: (check all that apply and describe)

Site inundated: _____

Depth to free water in observation hole: 9"

Depth to soil saturation in observation hole: 5"

Water marks: _____

Drift lines: _____

Sediment deposits: _____

Drainage patterns in BVW: _____

Oxidized rhizospheres: _____

Water-stained leaves: Yes

Recorded data (stream, lake, or tidal gauge; aerial photo; other) : _____

Other: _____

2. Soil Description

Horizon	Depth	Matrix Color	Mottles Color
A	0"-10"	10YR 2/1	
B	10"-15"	10YR 4/3	>10% 7.5Y 4/2

Remarks:

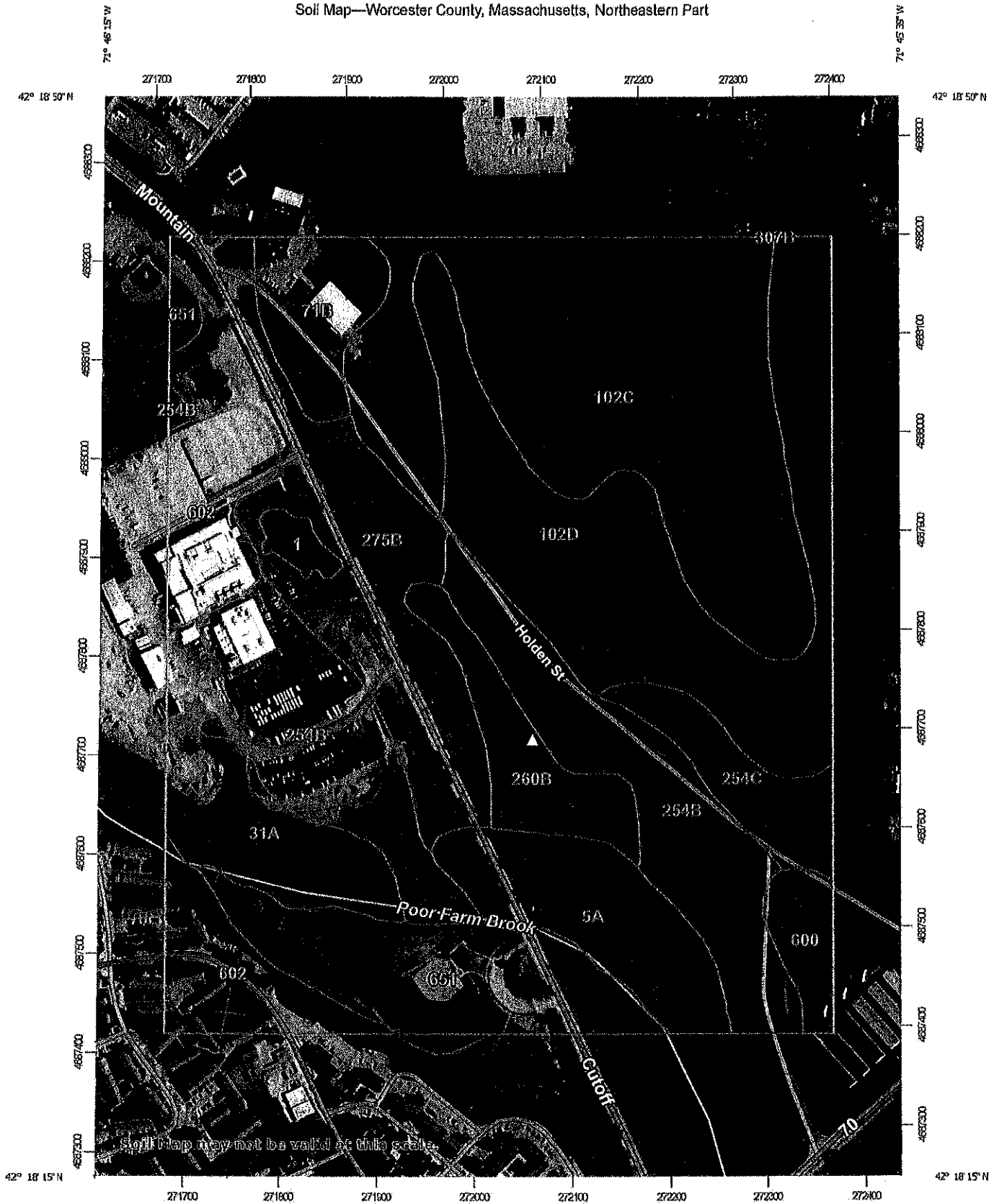
3. Other:

Vegetation and Hydrology Conclusion	Yes	No
Number of wetland indicator plants ≥ number of non-wetland indicator plants:	<u>X</u>	_____
Wetland hydrology present: hydric soil present:	<u>X</u>	_____
other indicators of hydrology present:	<u>X</u>	_____
Sample location is in a BVW:	<u>X</u>	_____

Submit this form with the Request for Determination of Applicability or Notice of Intent.

Conclusion: Is soil hydric? Yes X No _____

Soil Map—Worcester County, Massachusetts, Northeastern Part



Map Scale: 1:5,320 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge ticks: UTM Zone 19N WGS84

MAP LEGEND

- 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
- Story Spot
- Very Story 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 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Worcester County, Massachusetts, Northeastern Part
 Survey Area Data: Version 17, Sep 9, 2022

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Water	0.8	0.6%
5A	Saco silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded	7.5	5.6%
31A	Walpole sandy loam, 0 to 3 percent slopes	6.3	4.6%
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	4.5	3.3%
102C	Chaffield-Hollis-Rock outcrop complex, 0 to 15 percent slopes	28.6	20.8%
102D	Chaffield-Hollis-Rock outcrop complex, 15 to 36 percent slopes	21.2	15.5%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	21.7	15.8%
254C	Merrimac fine sandy loam, 8 to 15 percent slopes	4.0	2.9%
260B	Sudbury fine sandy loam, 3 to 8 percent slopes	4.6	3.4%
275B	Agawam fine sandy loam, 3 to 8 percent slopes	16.1	11.8%
307B	Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony	0.0	0.0%
600	Pits, gravel	2.1	1.5%
602	Urban land	9.6	7.0%
851	Udorthents, smoothed	10.2	7.4%
Totals for Area of Interest		137.2	100.0%

Worcester County, Massachusetts, Northeastern Part

5A—Saco silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2zvfp
Elevation: 210 to 790 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Saco and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saco

Setting

Landform: Alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Friable coarse-silty alluvium derived from schist

Typical profile

H1 - 0 to 12 inches: silt loam
H2 - 12 to 37 inches: very fine sandy loam
H3 - 37 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

Map Unit Description: Saco silt loam, frequently ponded, 0 to 2 percent slopes, frequently flooded—Worcester County, Massachusetts, Northeastern Part

Hydric soil rating: Yes

Minor Components

Limerick

Percent of map unit: 10 percent

Landform: Alluvial flats

Hydric soil rating: Yes

Swansea

Percent of map unit: 5 percent

Landform: Bogs

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Worcester County, Massachusetts, Northeastern Part

Survey Area Data: Version 17, Sep 9, 2022

Worcester County, Massachusetts, Northeastern Part

254B—Merrimac fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyqs

Elevation: 0 to 1,290 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: All areas are prime farmland

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

Landform: Outwash plains, outwash terraces, moraines, eskers, kames

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

Landform position (three-dimensional): Crest, side slope, 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: 3 to 8 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

Sudbury

Percent of map unit: 5 percent

Landform: Deltas, terraces, outwash plains

Landform position (two-dimensional): Foothlope

Landform position (three-dimensional): Tread, dip

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent

Landform: Deltas, kames, eskers, outwash plains

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

Landform position (three-dimensional): Head slope, nose slope,
crest, side slope, rise

Down-slope shape: Convex

Across-slope shape: Convex, linear

Hydric soil rating: No

Windsor

Percent of map unit: 3 percent

Landform: Outwash terraces, dunes, deltas, outwash plains

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Tread, riser

Down-slope shape: Linear, convex

Across-slope shape: Linear, convex

Hydric soil rating: No

Agawam

Percent of map unit: 2 percent

Landform: Outwash plains, outwash terraces, moraines, stream
terraces, eskers, kames

Landform position (three-dimensional): Rise

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Data Source Information

Soil Survey Area: Worcester County, Massachusetts, Northeastern Part

Survey Area Data: Version 17, Sep 9, 2022

Worcester County, Massachusetts, Northeastern Part

260B—Sudbury fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: w3pw
Elevation: 0 to 2,100 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 145 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Sudbury

Setting

Landform: Depressions
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Friable coarse-loamy eolian deposits over loose sandy glaciofluvial deposits

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 18 inches: fine sandy loam
H3 - 18 to 25 inches: gravelly loamy sand
H4 - 25 to 60 inches: gravelly sand

Properties and qualities

Slope: 3 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): High (2.00 to 6.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 5 percent
Hydric soil rating: No

Walpole

Percent of map unit: 5 percent
Landform: Terraces
Hydric soil rating: Yes

Agawam

Percent of map unit: 5 percent
Hydric soil rating: No

Ninigret

Percent of map unit: 5 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Worcester County, Massachusetts, Northeastern Part
Survey Area Data: Version 17, Sep 9, 2022

Worcester County, Massachusetts, Northeastern Part

275B—Agawam fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyqx

Elevation: 0 to 820 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 250 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Agawam and similar soils: 85 percent

Minor components: 15 percent

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

Description of Agawam

Setting

Landform: Outwash plains, kames, kame terraces, outwash terraces, moraines

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

Landform position (three-dimensional): Crest, side slope, riser, tread, rise, dip

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from gneiss, granite, schist, and/or phyllite

Typical profile

Ap - 0 to 11 inches: fine sandy loam

Bw1 - 11 to 16 inches: fine sandy loam

Bw2 - 16 to 26 inches: fine sandy loam

2C1 - 26 to 45 inches: loamy fine sand

2C2 - 45 to 55 inches: loamy fine sand

2C3 - 55 to 65 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 15 to 35 inches to strongly contrasting textural stratification

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to high (0.14 to 14.17 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 5 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope,
crest, side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent
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

Merrimac

Percent of map unit: 3 percent
Landform: Outwash plains, outwash terraces, moraines, eskers,
kames
Landform position (two-dimensional): Summit, shoulder, backslope,
footslope
Landform position (three-dimensional): Crest, side slope, riser,
tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Windsor

Percent of map unit: 2 percent
Landform: Dunes, outwash plains, deltas, outwash terraces
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear

Hydric soil rating: No

Data Source Information

Soil Survey Area: Worcester County, Massachusetts, Northeastern Part
Survey Area Data: Version 17, Sep 9, 2022