SECTION 6

SUPPORTING INFORMATION

- Order of Resource Area Delineation issued by Billerica Conservation Commission
- Wetlands Delineation Report and Supplemental Reports
- Site Photos

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 4B - Order of Resource Area Delineation
Massachusetts Wetlands Protection Act M.G.L. c. 131 S40

Provided by MassDEP:
MassDEP File #:109-1603
eDEP Transaction #:1954917
City/Town:BILLERICA

A. General Information

1. Conservation Commission BILLERICA
2. This Issuance is for (Check one):
   a. ☑ Order of Resource Area Delineation
   b. ☐ Amended Order of Resource Area Delineation

2025 00041183
Bk: 39750 Pg: 95 Page: 1 of 6
Recorded: 12/18/2025 02:11 PM

3. Applicant Details

a. First Name	JON		b. Last Name	SHATTUCK	
c. Organization	W.L FRENCH EXCAVATING CORPORATION				
d. Mailing Address	14 STERLING ROAD				
e. City/Town	BILLERICA	f. State	MA	g. ZIP	01862

4. Property Owner (if different from applicant):

a. First Name	JON		b. Last Name	SHATTUCK	
c. Organization	W.L FRENCH EXCAVATING CORPORATION				
d. Mailing Address	14 STERLING ROAD				
e. City/Town	BILLERICA	f. State	MA	g. ZIP	01862

5. Project Location

a. Street Address	14 STERLING ROAD		
b. City/Town	BILLERICA	c. Zip	01862
d. Assessors Map/Plat#	38	e. Parcel/Lot#	28-3
f. Latitude	42.56288N	g. Longitude	71.30506W

6. Dates

a. Date ANRAD Filed	7/28/2025	b. Date Public Hearing Closed	10/27/2025	c. Date Of Issuance	11/17/2025

7. Final Approved Plans and Other Documents

Plan Title	Plan Prepared By	Plan Signed By	Plan Final Date	Plan Scale
EXISTING SITE PLAN, ABBREVIATED NOTICE OF RESOURCE AREA DELINEATION, W.L. FRENCH EXCAVATING CORPORATION, 14 STERLING ROAD NORTH BILLERICA, MASSACHUSETTS.	CIVIL & ENVIRONMENTAL CONSULTANTS, INC	KYLE F. HAMPTON, CIVIL NO. 59202	10/7/2025	1"=60'
WETLANDS PEER REVIEW: REVIEW OF 14 STERLING ROAD ANRAD & EMAIL DATED OCTOBER 14, 2025 CONCLUDING WETLANDS PEER REVIEW.	PATRICK C. GARNER - PLS, WETLANDS SCIENTIST, HYDROLOGIST		09/5/2025	

B. Order of Delineation

1. The Conservation Commission has determined the following (check whichever is applicable)
a. ☐ **Accurate:** The boundaries described on the referenced plan(s) above and in the Abbreviated Notice of Resource Area Delineation are accurately drawn for the following resource area(s):

30618-113
30617-115

1. ☐ Bordering Vegetated Wetlands
2. ☐ Other resource area(s), specifically
   a.

b. ☑ **Modified:** The boundaries described on the plan(s) referenced above, as modified by the Conservation Commission from the plans contained in the Abbreviated Notice of Resource Area Delineation, are accurately drawn from the following resource area(s):

1. ☑ Bordering Vegetated Wetlands
2. ☑ Other resource area(s), specifically
   a.AS MODIFIED PER WETLANDS PEER REVIEW (REFER TO PEER REVIEW LETTER DATED SEPTEMBER 5, 2025) AND DEPICTED ON THE PLAN OF RECORD.

c. ☐ **Inaccurate::** The boundaries described on the referenced plan(s) and in the Abbreviated Notice of Recource Area Delineation were found to be inaccurate and cannot be confirmed for the following resource area(s):

1. ☐ Bordering Vegetated Wetlands
2. ☐ Other resource area(s), specifically
   a.
3. The boundaries were determined to be inaccurate because:

C. Findings

This Order of Resource Area Delineation determines that the boundaries of those resource areas noted above, have been delineated and approved by the Commission and are binding as to all decisions rendered pursuant to the Massachusetts Wetlands Protection Act (M.G.L. c.131, S 40) and its regulations (310 CMR 10.00). This Order does not, however, determine the boundaries of any resource area or Buffer Zone to any resource area not specifically noted above, regardless of whether such boundaries are contained on the plans attached to this Order or to the Abbreviated Notice of Resource Area Delineation. This Order must be signed by a majority of the Conservation Commission. The Order must be sent by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate DEP Regional Office (see http://www.mass.gov/dep/about/region/findyour.htm).

D. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate DEP Regional Office to issue a Superseding Order of Resource Area Delineation. When requested to issue a Superseding Order of Resource Area Delineation, the Department's review is limited to the objections to the resource area delineation(s) stated in the appeal request. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant. Any appellants seeking to appeal the Department?s Superseding Order of Resource Area Delineation will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order or Determination, or providing written information to the Department prior to issuance of a Superseding Order or Determination. The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act, (M.G.L. c. 131, S 40) and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal bylaw or ordinance, and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.

E. Signatures

1. Date of Original Order
2. No. of Signatures required 5

Christine Aras _____

Diane DePaso _____

Jack Bowen _____

JoAnne Giovino _____

Jeff Connell _____

_____

_____

This Order is valid for three years from the date of issuance.

If this Order constitutes an Amended Order of Resource Area Delineation, this Order does not extend the issuance date of the original Final Order, and the Amended Order will expire on the date of the Original Final Order unless extended in writing by the Department.

This Order is issued to the applicant and the property owner (if different) as follows:

3. ☐ By hand delivery on

a. Date _____

4. ☐ By certified mail, return receipt requested on

a. Date _____

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 4B – Order of Resource Area Delineation

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

Provided by MassDEP:
109-1603/BBL1603
MassDEP File Number
1954917
eDEP Transaction Number
Billerica
City/Town

E. Signatures

11-17-2025
Date of Issuance

Please indicate the number of members who will sign this form.

5
1. Number of Signers

Signatures

Signature of Conservation Commission Member	Printed Name
	JEFF CONNELL
	CHRISTINE ARAS
	JACK BOWIEN
	JO ANNE GIOVINO
	Diane T. DePeso

This Order is valid for three years from the date of issuance.

If this Order constitutes an Amended Order of Resource Area Delineation, this Order does not extend the issuance date of the original Final Order, which expires on unless extended in writing by the issuing authority.

This Order is issued to the applicant and the property owner (if different) as follows:

2. ☐ By hand delivery on

a. Date

3. ☐ By certified mail, return receipt requested on

a. Date

ATTACHMENT A

Unless otherwise specified, all documents of record and findings included in this Attachment A are applicable under both the Massachusetts Wetlands Protection Act and Town of Billerica Wetlands Protection Bylaw.

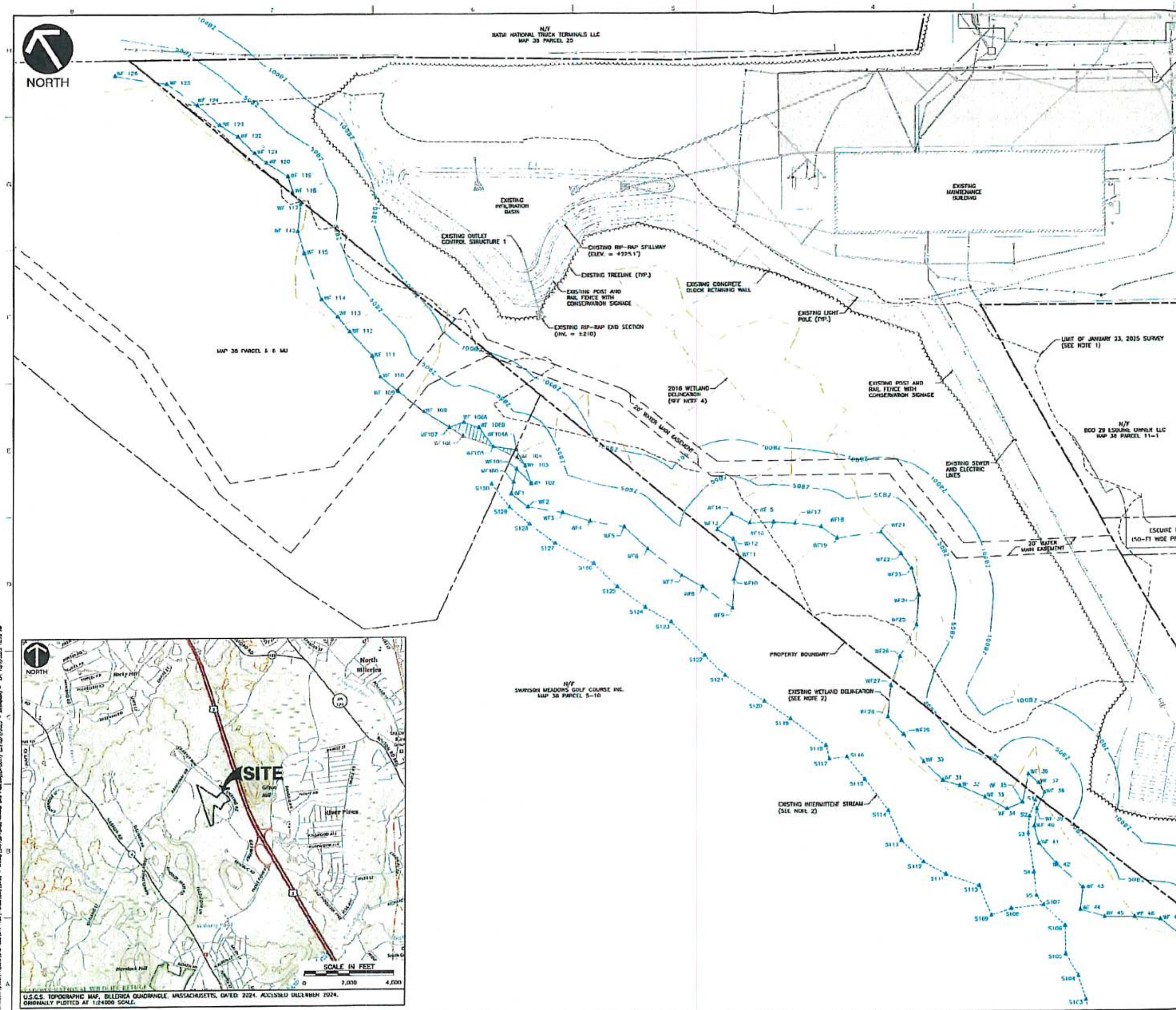
DOCUMENTS OF RECORD:

- Abbreviated Notice of Resource Area Delineation with attachments – 14 Sterling Road, North Billerica, Massachusetts; Prepared by: Civil & Environmental Consultants, Inc; Date: July 2025.
- Plan of Record (1): Existing Site Plan, Abbreviated Notice of Resource Area Delineation, W.L. French Excavating Corporation, 14 Sterling Road North Billerica, Massachusetts; Prepared by: Civil & Environmental Consultants, Inc.; Signed/Stamped by: Kyle F. Hampton, Civil No. 59202; Date: July 2025; **Final Revised Date: October 7, 2025.**
- Supplemental information: Prepared By: Civil & Environmental Consultants, Inc, RE: Response to Comments Date: October 7, 2025.
- Correspondence: Peer Review (2); RE: Review of 14 Sterling Road ANRAD; Prepared by: Patrick C. Garner; Letter Date: September 5, 2025, and Final email correspondence date October 14, 2025.

SUMMARY OF FINDINGS:

A. The Conservation Commission finds that the applicant submitted an Abbreviated Notice of Resource Area Delineation to clarify jurisdictional wetland resource area under both the Massachusetts Wetlands Protection Act and the Town of Billerica Wetlands Protection Bylaw.

B. The Conservation Commission finds that an Order of Conditions and a Certificate of Compliance were issued for the subject property under DEP File No. 109-1324/BBL-1324. During the wetlands hearing, the Commission referenced the visual-barrier requirement contained in these permits, which stipulates that the post-and-rail fence and environmental signage serving as a visual barrier shall remain in place and be maintained in perpetuity in accordance with the Plan of Record and the approved As-Built Plan under DEP File No. 109-1324/BBL-1324.



LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING INDEX (5-FOOT) CONTOUR
- EXISTING INTERMEDIATE (1-FOOT) CONTOUR
- EXISTING CURB
- EXISTING ASPHALT PAVEMENT
- EXISTING STRUCTURE
- EXISTING STORM PIPE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING GAS LINE
- EXISTING ELECTRIC LINE
- EXISTING TREELINE
- EXISTING WETLAND PROTECTION FENCE
- EXISTING WETLAND DELINEATION (SEE NOTE 2)
- INDICATES WETLAND DELINEATION AND WETLAND AREA TO BE ELIMINATED (SEE NOTE 2)
- EXISTING INTERMITTENT STREAM (SEE NOTE 2)
- EXISTING 50-FOOT NO ALTERATION ZONE
- EXISTING 100-FOOT BUFFER ZONE
- 2018 WETLAND DELINEATION (SEE NOTE 4)

REFERENCE

1. LIGHT DASHED 1 AND 5 FOOT EXISTING CONTOURS REPRESENT EXISTING TOPOGRAPHY FROM A UAV SURVEY PERFORMED BY W.L. FRENCH EXCAVATING CORPORATION (W.L. FRENCH) ON JANUARY 23, 2025. EXISTING GRADES ARE SUPPLEMENTED WITH AN AERIAL SURVEY PERFORMED BY W.L. FRENCH IN APRIL 2022. CEC HAS NOT VERIFIED THE ACCURACY OF THE INFORMATION.
2. THE EXISTING WETLAND DELINEATION (WF1–WF52 AND WF100–WF126) WAS PREPARED BY THREE OAKS ENVIRONMENTAL ON OCTOBER 17, 2024 AND PRESENTED IN A WETLAND DELINEATION REPORT DATED OCTOBER 24, 2024, SUPPLEMENTED ON APRIL 25, 2025 AND JUNE 5, 2025. THE WETLAND DELINEATION SHOWN INCORPORATES COMMENTS ON THE DELINEATION FROM THE THIRD PARTY PEER REVIEW PERFORMED BY PATRICK C. GARNER COMPANY, INC., PRESENTED IN A LETTER DATED SEPTEMBER 5, 2025, WITH RESPONSE PROVIDED BY THREE OAKS ENVIRONMENTAL IN A LETTER DATED SEPTEMBER 12, 2025. WETLAND FLAG LOCATIONS WERE SURVEYED BY W.L. FRENCH AND WERE PROVIDED TO CEC IN ELECTRONIC FORMAT. THE SURVEY WORK WAS COMPLETED USING GPS ON THE ASSUMED COORDINATE SYSTEM FOR THE PROJECT.
3. EXISTING SITE FEATURES AND UNDERGROUND UTILITIES REPRESENT AS-BUILT INFORMATION PREPARED BY W.L. FRENCH AND PROVIDED TO CEC IN ELECTRONIC FORMAT. CEC HAS NOT VERIFIED THE ACCURACY OF THE INFORMATION. THE EXISTING AS-BUILT DATA WAS PROVIDED TO CEC IN ELECTRONIC FORMAT, AND ARE BASED ON THE FOLLOWING PLANS:
   3.1. "AS-BUILT DRAINAGE PLAN" DATED NOVEMBER 26, 2019.
   3.2. "AS-BUILT WATER PLAN" DATED NOVEMBER 26, 2019.
   3.3. "AS-BUILT SEPTIC/SEWER PLAN" DATED NOVEMBER 26, 2019.
   3.4. "AS-BUILT PAVEMENT & CLEARING PLAN" DATED APRIL 8, 2022.
   3.5. "AS-BUILT GAS/ELECTRIC PLAN" DATED NOVEMBER 25, 2019.
4. THE 2018 BORDERING VEGETATED WETLAND (BVW) DELINEATION SHOWN ON THIS PLAN WAS DELINEATED BY TIGHE & BOND, INC. ON MAY 18, 2018 AND AUGUST 5, 2018. THE DELINEATION WAS APPROVED BY THE BILLERICA CONSERVATION COMMISSION WITH THE ISSUANCE OF AN ORDER OF RESOURCE AREA DELINEATION ON NOVEMBER 1, 2018. THE DELINEATION WAS PROVIDED TO CEC BY W.L. FRENCH IN ELECTRONIC FORMAT.

REVISION RECORD

NO	DATE	DESCRIPTION
1	[illegible]	[illegible]

CEC
Civil & Environmental Consultants, Inc.
31 Bellows Road
Raynham, MA 02767
Ph: 774.501.2176
www.cecinc.com

ABBREVIATED NOTICE OF RESOURCE AREA DELINEATION
W.L. FRENCH EXCAVATING CORPORATION
14 STERLING ROAD
NORTH BILLERICA, MASSACHUSETTS

EXISTING SITE PLAN

DATE:	JULY 2025	DRAWN BY:	KFH
DWG SCALE:	1" = 60'	CHECKED BY:	KFH
PROJECT NO:	347-159		
APPROVED BY:	BYV		

DRAWING NO.: 1
SHEET 1 OF 1

Three Oaks Environmental

P.O. Box 404 Hubbardston, MA 01452

(978) 855-3180

October 24, 2024

Jarret Everton
W.L.French
jeverton@wlfrench.com

Re: 14 Sterling Rd Billerica
Wetlands Delineation Report

I conducted a site inspection to determine the presence of Bordering Vegetated Wetlands and possibly areas subject to the Town of Billerica's wetlands bylaw. I began at an existing stormwater detention basin outlet (photos below) where wetland plants, including sensitive fern and soft rush, were present. Upland vegetation was dominant, however.

I continued through the pine grove to a slight break and slope to a dry, rocky stream channel (photo below) and began the BVW delineation with pink flags beginning with W1 (Data sheets are attached).

Vegetation observed in the upland includes: Canada mayflower, hay-scented fern, Wintergreen, partridgeberry, white pine, shagbark hickory, red oak, chestnut oak, lowbush blueberry, and sarsaparilla, with some glossy buckthorn and cinnamon fern mixed in but less than 50%.

Vegetation observed in the wetland includes: cinnamon fern, red maple, sensitive fern, Highbush blueberry, sphagnum moss, with glossy buckthorn on both sides of the line.

The NRCS soil mapping for the site indicates that the soil on the upland portion of the site is Paxton and Woodbridge, fine sandy loams (see attached). The soil in the wetland is depicted as Ridgebury, fine sandy loam. This is consistent with my observations.

I researched MassGIS data layers further (see attached) and determined that there are no Natural Heritage rare species or priority habitats, and no certified or potential vernal pools on the site or within 100 feet. The wetland is not considered to be an Outstanding Resource Water (ORW) or an Area of Critical Environmental Concern (ACEC). There is no FEMA 100-year floodplain associated with the site.

Please contact me if you have any questions about this report.

Sincerely,

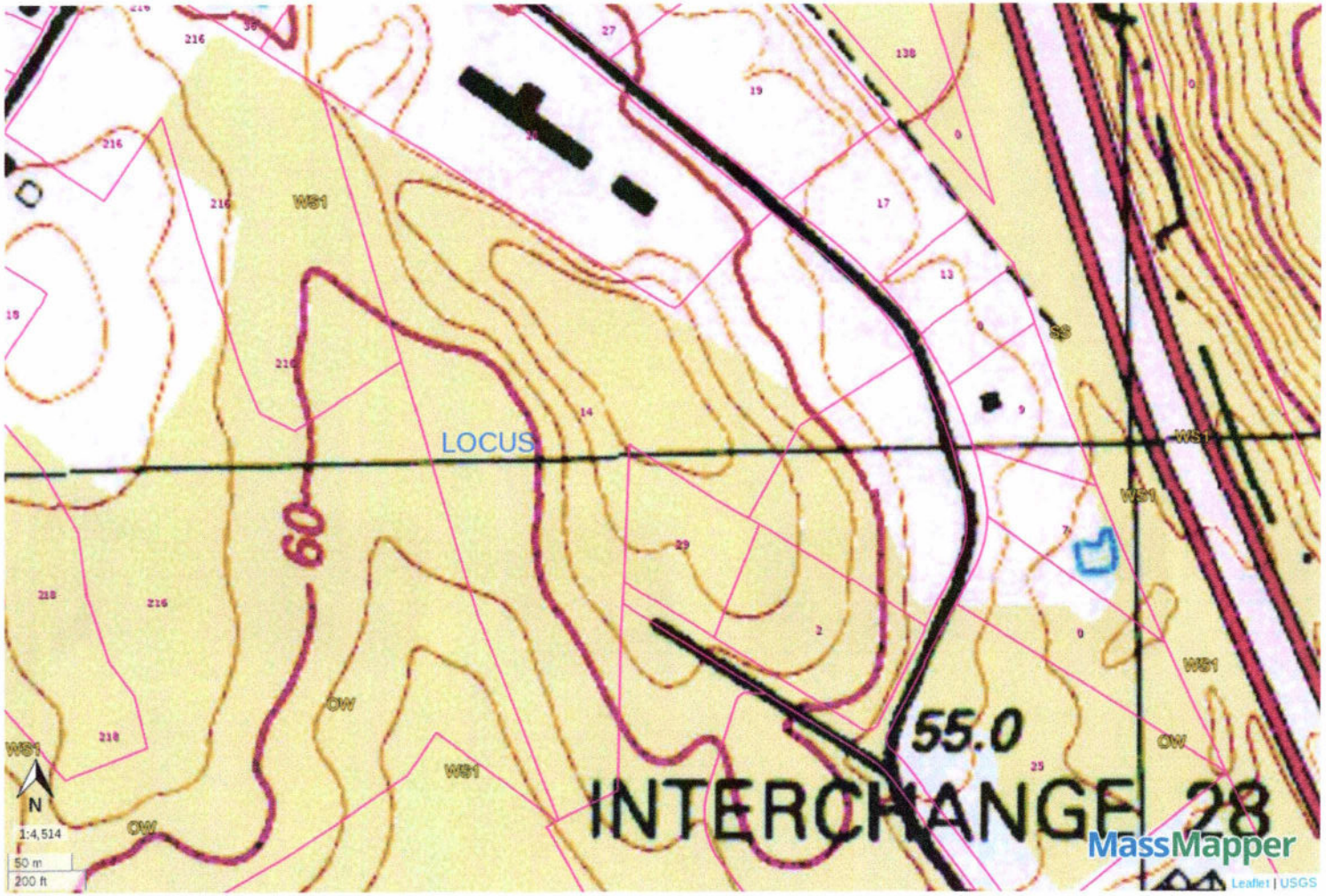
MaryAnn DiPinto, PWS #227
threeoaksenvironmental@gmail.com

attachments

MaryAnn DiPinto 10/24/24

SWS ACP EDUCATION EXPERIENCE PWS REGISTER MARYANN C. DIPINTO 227 PROFESSIONAL WETLAND SCIENTIST

14 Sterling Rd Billerica Locus map



DEP Wetlands Labels

Property Tax Parcels

14 Sterling Rd Billerica - Wetland Resources

NHESP Estimated Habitats of Rare Wildlife

NHESP Priority Habitats of Rare Species

Potential Vernal Pools

NHESP Certified Vernal Pools

FEMA National Flood Hazard Layer Polygons

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee
- Area Not Included

Outstanding Resource Waters

- ACEC
- Cape Cod National Seashore
- Protected Shoreline
- Public Water Supply Watershed
- Retired Public Water Supply
- Scenic/Protected River
- Wildlife Refuge

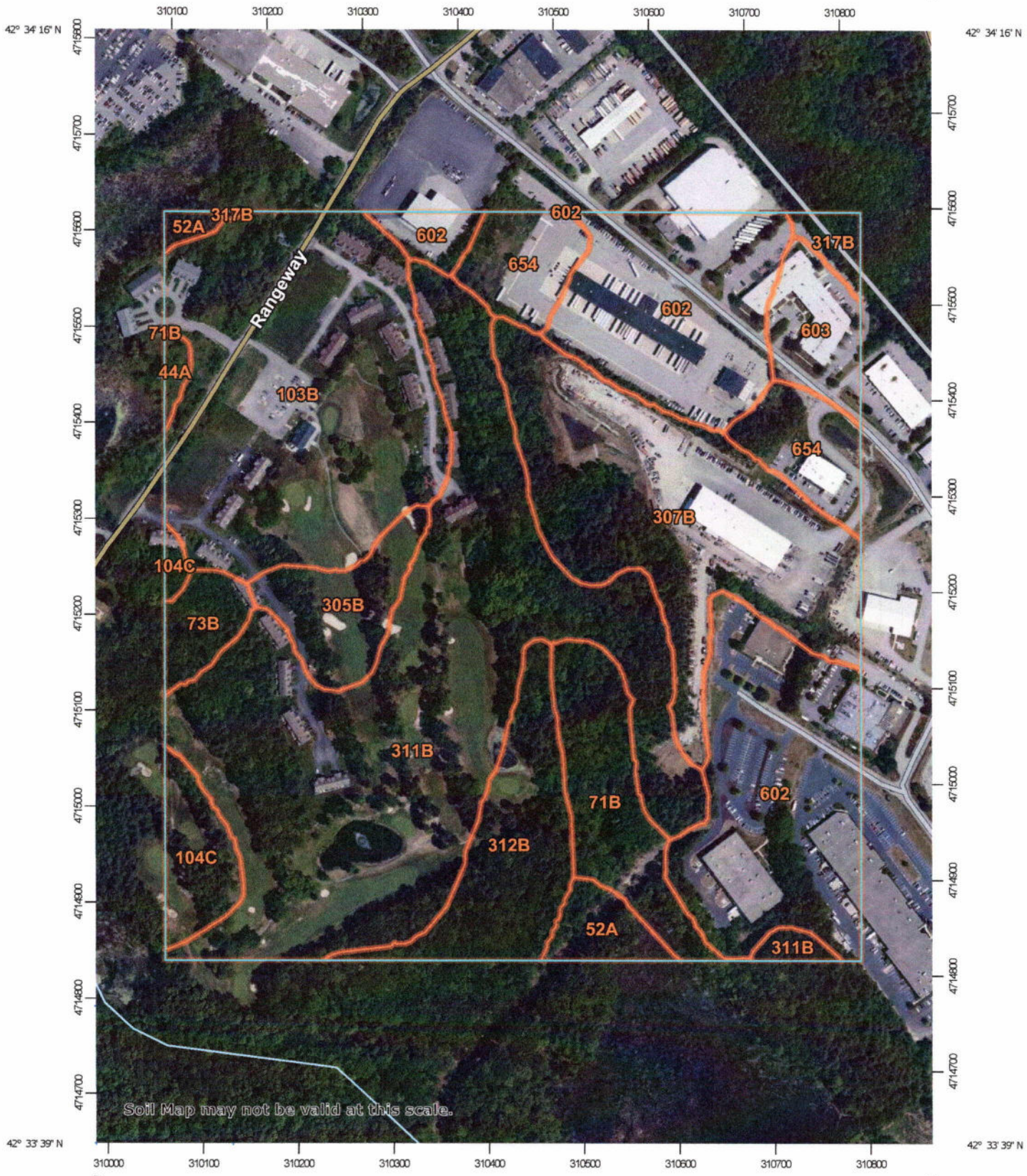
DEP Wetlands Labels

DEP Wetlands Linear Features

- SHORELINE
- HYDROLOGIC CONNECTION
- MEAN WATER LINE
- APPARENT WETLAND LIMIT
- CLOSURE LINE
- EDGE OF INTERPRETED AREA

Property Tax Parcels

Soil Map—Middlesex County, Massachusetts
(14 Sterling Rd Billerica)



Map Scale: 1:5,650 if printed on A portrait (8.5" x 11") sheet.

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
44A	Birdsall mucky silt loam, 0 to 1 percent slopes	0.5	0.3%
52A	Freetown muck, 0 to 1 percent slopes	2.3	1.6%
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	6.1	4.3%
73B	Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony	2.0	1.4%
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes	23.5	16.6%
104C	Hollis-Rock outcrop-Charlton complex, 0 to 15 percent slopes	3.2	2.3%
305B	Paxton fine sandy loam, 3 to 8 percent slopes	4.1	2.9%
307B	Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony	18.1	12.8%
311B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	37.8	26.8%
312B	Woodbridge fine sandy loam, 0 to 8 percent slopes, extremely stony	7.3	5.1%
317B	Scituate fine sandy loam, 3 to 8 percent slopes, extremely stony	1.0	0.7%
602	Urban land	25.9	18.4%
603	Urban land, wet substratum	3.3	2.3%
654	Udorthents, loamy	6.2	4.4%
Totals for Area of Interest		**141.1**	**100.0%**

Middlesex County, Massachusetts

307B—Paxton fine sandy loam, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w675
Elevation: 0 to 1,580 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Paxton, Extremely Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 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 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge, extremely stony

Percent of map unit: 10 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Charlton, extremely stony

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 4 percent
Landform: Drumlins, drainageways, depressions, ground moraines, hills
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman, extremely stony

Percent of map unit: 1 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 24, Aug 27, 2024

Middlesex County, Massachusetts

311B—Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2t2qr
Elevation: 0 to 1,440 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Woodbridge, very stony, and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Very Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 9 inches: fine sandy loam
Bw1 - 9 to 20 inches: fine sandy loam
Bw2 - 20 to 32 inches: fine sandy loam
Cd - 32 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 19 to 27 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 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton, very stony

Percent of map unit: 10 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 8 percent
Landform: Hills, drainageways, drumlins, depressions, ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 24, Aug 27, 2024

Middlesex County, Massachusetts

71B—Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w69c
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: Not prime farmland

Map Unit Composition

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

Description of Ridgebury, Extremely Stony

Setting

Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 6 inches: fine sandy loam
Bw - 6 to 10 inches: sandy loam
Bg - 10 to 19 inches: gravelly sandy loam
Cd - 19 to 66 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 15 to 35 inches to densic material
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 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 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Minor Components

Woodbridge, extremely stony

Percent of map unit: 10 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Whitman, extremely stony

Percent of map unit: 8 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Paxton, extremely stony

Percent of map unit: 2 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 24, Aug 27, 2024

BORDERING VEGETATED WETLAND DETERMINATION FORM

Project/Site: 14 Sterling Rd City/Town: Billerica Sampling Date: 10/17/24

Applicant/Owner: W.L. French Sampling Point or Zone: flag W21 wetland

Investigator(s): MaryAnn DiPinto - Three Oaks Environmental Latitude / Longitude: 42.56457 -71.30691

Soil Map Unit Name: ridgebury NWI or DEP Classification:

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

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

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

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

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

Remarks, Photo Details, Flagging, etc.:
drought conditions over the past month, stream channel was dry

HYDROLOGY

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

Wetland Hydrology Indicators

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

Remarks (describe recorded data from stream gauge, monitoring well, aerial photos, previous inspections, if available):
Massmapper wetlands data layer shows wetland boundary off-site

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

Form Revised July 2023

VEGETATION – Use both common and scientific names of plants.

Tree Stratum Plot size 30

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. Red Maple	Acer rubrum	FAC	80.0	Yes	Yes
2. White pine	Pinus strobus	FACU	20.0	Yes	No
3.					
4.					
5.					
6.					
7.					
8.					
9.					

100.0 = Total Cover

Shrub/Sapling Stratum Plot size 15

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. red oak	Quercus rubra	FACU	10.5	No	
2. white pine	Pinus strobus	FACU	10.5	No	
3. winterberry holly	Ilex verticillata	FACW	26.0	Yes	Yes
4. glossy buckthorn	Frangula alnus	FAC	53.0	Yes	Yes
5.					
6.					
7.					
8.					
9.					

100.0 = Total Cover

Herb Stratum Plot size 5

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. hay-scented fern	Dennstaedtia punctilobula	FACU	28.0	Yes	No
2. swamp dewberry	Dryopteris intermedia	FACW	44.0	Yes	Yes
3. partridgeberry	Mitchella repens	FACU	6.0	No	
4. sphagnum moss	sphagnum spp.	OBL	22.0	Yes	Yes
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

100.0 = Total Cover

VEGETATION – continued.

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

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

Definitions of Vegetation Strata

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

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

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

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

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

SOIL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Location[2]	Texture	Remarks
0-8	10YR2/1							
8 -	10YR4/1		10YR4/6				fsl	

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

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

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

Remarks:

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

BORDERING VEGETATED WETLAND DETERMINATION FORM

Project/Site: 14 Sterling Rd City/Town: Billerica Sampling Date: 10/17/24

Applicant/Owner: W.L. French Sampling Point or Zone: flag W21 upland

Investigator(s): MaryAnn DiPinto - Three Oaks Environmental Latitude / Longitude: 42.56457 -71.30691

Soil Map Unit Name: Woodbridge (spodosol) NWI or DEP Classification: _____

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

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

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

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

Wetland vegetation criterion met?	Yes ☐	No ☑	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soils criterion met?	Yes ☐	No ☑	
Wetlands hydrology present?	Yes ☐	No ☑	

Remarks, Photo Details, Flagging, etc.:

HYDROLOGY

Field Observations:			
Surface Water Present?	Yes ☐	No ☑	Depth (inches)_____
Water Table Present?	Yes ☐	No ☑	Depth (inches)_____
Saturation Present (including capillary fringe)?	Yes ☐	No ☑	Depth (inches)_____

Wetland Hydrology Indicators

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

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

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

Form Revised July 2023

VEGETATION – Use both common and scientific names of plants.

Tree Stratum Plot size 30

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. Red Maple	Acer rubrum	FAC	45.5	Yes	Yes
2. White pine	Pinups strobus	FACU	45.5	Yes	No
3. red oak	Quercus rubra	FACU	9.0	No	
4.					
5.					
6.					
7.					
8.					
9.					

100.0 = Total Cover

Shrub/Sapling Stratum Plot size 15

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. red oak	Quercus rubra	FACU	38.5	Yes	No
2. shagbark hickory	Carya ovata	FACU	15.0	No	
3. highbush blueberry	Vaccinium corybosum	FACW	8.0	No	
4. glossy buckthorn	Frangula alnus	FAC	38.5	Yes	Yes
5.					
6.					
7.					
8.					
9.					

100.0 = Total Cover

Herb Stratum Plot size 5

Common name	Scientific name	Indicator Status	Absolute % Cover	Dominant? (yes/no)	Wetland Indictor? (yes/no)
1. hay-scented fern	Dennstaedtia punctilobula	FACU	84.0	Yes	Yes
2. intermediate fern	Dryopteris intermedia	FACU	11.0	No	
3. partridgeberry	Mitchella repens	FACU	5.0	No	
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

100.0 = Total Cover

VEGETATION – continued.

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

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

Definitions of Vegetation Strata

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

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

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

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

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

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Location[2]		

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

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

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

Remarks:

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

Three Oaks Environmental

P.O. Box 404 Hubbardston, MA 01452

(978) 855-3180

April 25, 2025

Jarrett Everton
W.L.French
jeverton@wlfrench.com

Re: Wetland delineation supplement
14 Sterling Rd. Billerica

I returned to the above-referenced site on April 22, 2025 to extend the Bordering Vegetated Wetland line, delineated in October 2024, an additional 100 feet in either direction. This is an addendum to the original report dated 10/17/24. The data sheets remain valid for the additional flagging. I began at the last pink W-series flag, W30 (photo below) At flag W34 the BVW line extends uphill along a seep.
I continued the wetland line ending with flag W38 where the boundary continues away from the site.

The rocky soil is causing many trees to be shallow-rooted in both the upland and wetland. There is a clear break in the slope with skunk cabbage and indian poke in the lower area and canada mayflower, partridgeberry, witch hazel, wintergreen and white pine in the upland. There is cinnamon fern on both sides of the line, with bracken and hay-scented fern on the upland side.

I then returned to the beginning of the prior delineation at flag W1. I then extended the wetland line by adding flags W100 through W115. It includes a pocket of wetland vegetation and hydric soil extending into a low area within the upland.

The data sheets and site maps submitted with the original report are valid for the additional area delineated. Please contact me if you have any questions regarding this supplemental report.

Sincerely,
MaryAnn DiPinto, PWS #0227
threeoaksenvironmental@gmail.com
attachments

Three Oaks Environmental

P.O. Box 404 Hubbardston, MA 01452

(978) 855-3180

April 25, 2025 - revised June 5, 2025

Jarrett Everton
W.L.French
jeverton@wlfrench.com

Re: Wetland delineation supplement
14 Sterling Rd. Billerica

I returned to the above-referenced site on April 22, 2025, and June 5, 2025, to extend the Bordering Vegetated Wetland line, delineated in October 2024, an additional 100 feet in either direction on each of those dates. This is an addendum to the original report dated 10/17/24 and the earlier revision dated 4/25/25. The data sheets remain valid for the additional flagging. I began at the last pink W-series flag, W38, and continued the line along an existing swale that discharges to the main wetland. The swale contains skunk cabbage, cinnamon fern, and royal fern, while the upland is dominated by black cherry, hay-scented fern, Canada mayflower, Christmas fern, bracken fern, and witch hazel

The wetland line crosses the powerline easement in the center of this photo

The rocky soil is causing many trees to be shallow-rooted in both the upland and wetland. There is a clear break in the slope with skunk cabbage and indian poke in the lower area and Canada mayflower, partridgeberry, witch hazel, wintergreen, and white pine in the upland. There is cinnamon fern on both sides of the line, with bracken and hay-scented fern on the upland side. I ended with flag W52 on the opposite side of the powerline easement where the wetland line turns away down the hill toward the abutting property.

I then returned to the beginning of the prior delineation at flag W1, where I had extended the wetland line in April by adding flags W100 through W115. It included a pocket of wetland vegetation and hydric soil extending into a low area within the upland. On June 5, 2025, I began at flag W115 and extended the delineation up to flag W126 near a chain link fence on the adjacent property. Vegetation in the wetland area includes highbush blueberry, red maple, white oak, and cinnamon fern, though the cinnamon fern can be found on both sides of the line. The upland vegetation includes lowbush blueberry, white pine, sarsaparilla, chestnut oak, and hay-scented fern.

The wetland line at the north side of the site is well-defined by vegetation and a break in the slope.

The data sheets and site maps submitted with the original report are valid for the additional area delineated. Please contact me if you have any questions regarding this supplemental report.

Sincerely,
MaryAnn DiPinto, PWS #0227
threeoaksenvironmental@gmail.com
attachments

Three Oaks Environmental

P.O. Box 404 Hubbardston, MA 01452

(978) 855-3180

September 12, 2025

Jarrett Everton
Jeverton@WLFrench.com

Re: Response to Peer review
Sterling Rd. Billerica

I conducted a site visit of the above-referenced property on September 11th in response to the peer review comments by Patrick Garner dated September 5.
In response to the comments in section 3 of his letter, I offer the following:

- I agree with the flag relocations as specified in the letter, including 106b and 104b and the replacement of flag w14. I was able to locate flag W37 on a small pine tree at the beginning of the intermittent stream channel noted in the next paragraph of the peer review. Two large pine blow-downs were obscuring the flag on the smaller tree. I removed one of the extra W38 Flags (there were 2 flags there to remind me where to begin when I returned to the site the next day). Flag W37 is upgradient of flag W38, which corresponds to the wetland bordering on that intermittent channel.

- I flagged the centerline of the small stream channel beginning just below flag W37 (photo below). I used pink flags S1 through S5 to depict that channel within the existing delineated Bordering Vegetated Wetland. I don't typically delineate a stream channel if it is within a wetland unless the stream is perennial, where the riverfront area measurements are made from the bank. In this case, buffer zone measurements will be made from the edge of the BVW rather than the bank of the stream.

The small stream channel is about the width of the letter in this photo.

- I crossed over the stone wall near flag W48 and began to flag the bank of the intermittent stream that runs parallel to the BVW boundary. I began with flag S100. The stream channel becomes braided in places. I therefore delineated the bank of the channel lying closest to the BVW line. The entire stream channel is contained within the delineated BVW, so Buffer Zone measurements should be made from the BVW line rather than the bank. The smaller channel enters the larger channel between flags S107 and S108, where flag S5 connects to flag S108. I ended with flag S130 just beyond and downgradient of wetland flag W1. The stream meanders quite a bit through the wetland so I placed flags on the meanders closest to the property, without flagging the sections that are further away (photo below).

.

This photo was taken on the bank of a meander closest to the site

Please do not hesitate to contact me if you have any questions regarding this report.

Sincerely,
MaryAnn DiPinto, PWS #227
threeoaksenvironmental@gmail.com

SITE PHOTOGRAPHS
14 STERLING ROAD, BILLERICA, MA

Photo 1: Existing Conservation Fencing

Photo 2: Existing Conservation Fencing

Photo 3: Existing Conservation Fencing Along SAS Access Road

Photo 4: Existing Outer Slope

Photo 5: Existing Concrete Block Wall

Photo 6: View into woods near SAS