

# ABBREVIATED NOTICE OF RESOURCE AREA DELINEATION

Filing Under the Massachusetts Wetlands Protection Act M.G.L. Chapter 131, Section 40 and the Town of Shutesbury Wetland Bylaw

# **Montague Road Project Carver Road West** Shutesbury, Massachusetts

Submitted to:

**Shutesbury Conservation Commission** Shutesbury Town Hall 1 Cooleyville Road

Shutesbury, Massachusetts 01072

Filed by:

W.D. Cowls, Inc. P.O. Box 9677 North Amherst, Massachusetts 01059

Prepared by:

**TRC Companies** 650 Suffolk Street Lowell, Massachusetts 01854

**July 2021** 



July 23, 2021

Town of Shutesbury Conservation Commission Shutesbury Town Hall 1 Cooleyville Road Shutesbury, MA 01072

RE: Montague Road Project (MassDEP File #286-0274)
Carver Road West
Abbreviated Notice of Resource Area Delineation (ANRAD)
Updated Plans & Other Requested Items

#### **Dear Commissioners:**

On behalf of W.D. Cowls, Inc., TRC Companies (TRC) is pleased to submit updated wetland resource delineation plans and other materials related to the ANRAD for an approximately 160-acre portion of the parcel off Carver Road West listed by the Shutesbury tax assessor as Parcel ID ZD-37 in Shutesbury, MA (Site). The attached materials are based on the following meetings, site visits, documents, and emails:

- Shutesbury Conservation Commission (SCC) meetings January 9 and October 8, 2020;
- Site visits with Stockman Associates on April 8 and June 1, 2020;
- Stockman Associates Peer Review Comments dated April 16 and July 21, 2020; and
- SCC email dated July 25, 2020.

Since that time, TRC delineated wetland resources on an additional portion of the parcel south of the original study area. This new portion comprises approximately 90 acres beyond the original 67 acres that were reviewed.

The following items are attached:

- 1. Attachment A Figure 1: Delineated Resources Map (June 2021)
- 2. Attachment B Figure 2: Montague Road Project (June 2021)
- 3. Attachment C Additional Wetland Delineation Forms
- 4. Attachment D Updated Abutter List
- 5. Attachment E NHESP Certified Vernal Pool Documentation
- 6. Attachment F Additional Vernal Pool Photographs

Attachment A shows the delineated wetland resources at the Site based on the site visits with Stockman Associates and the additional delineation in the new study area. Edits to the original study area have been made based on the peer review comments.

The new study area is shown on Figure 2 in Attachment B. In the new study area, TRC significantly expanded wetlands W-MBF-10, W-GR-1, and W-GR-2. Additionally, new wetlands W-GR-16, W-GR-17, W-GR-18, W-GR-19, and W-GR-20 and a new stream S2 were delineated. Wetland delineation forms for these new features are included in Attachment C.

Attachment D includes an updated abutter list which will be used to re-notify abutters at the next SCC meeting for this Project due to the significant expansion of the study area.

Attachment E includes the original documentation for the NHESP certified vernal pool within the original study area. This vernal pool was located in NHESP's database based on an estimated location northeast of W-GR-2 and W-MBF-11. TRC and Stockman Associates confirmed that NHESP's location does not accurately reflect the pool's true location. Based on the original documentation, TRC has determined that the certified vernal pool corresponds with the vernal pool located within W-GR-2 north of Carver Road and updated the certified vernal pool symbol on the plans accordingly.

Attachment F includes photo documentation of the vernal pools identified during the site visits with Stockman Associates. On the plans, these areas were delineated based on observed high water during the 2020 vernal pool breeding season. W-MBF-15 is not included as a potential vernal pool because it dried out before the observed egg masses could hatch; thus, it is a biological sink rather than a functional vernal pool.

We very much appreciate your review of this information and trust this letter and the attached documents meet the needs of the SCC to request further peer review from Stockman Associates and, ultimately, to issue an Order of Resource Area Delineation. If you should have any questions, please do not hesitate to contact Maria Firstenberg at 978-735-3425 or via email at <a href="MFirstenberg@trccompanies.com">MFirstenberg@trccompanies.com</a> or Jeff Brandt at 978-656-3662 or via email at <a href="JBrandt@TRCcompanies.com">JBrandt@TRCcompanies.com</a>.

Sincerely,

**TRC Companies** 

Jeff Brandt

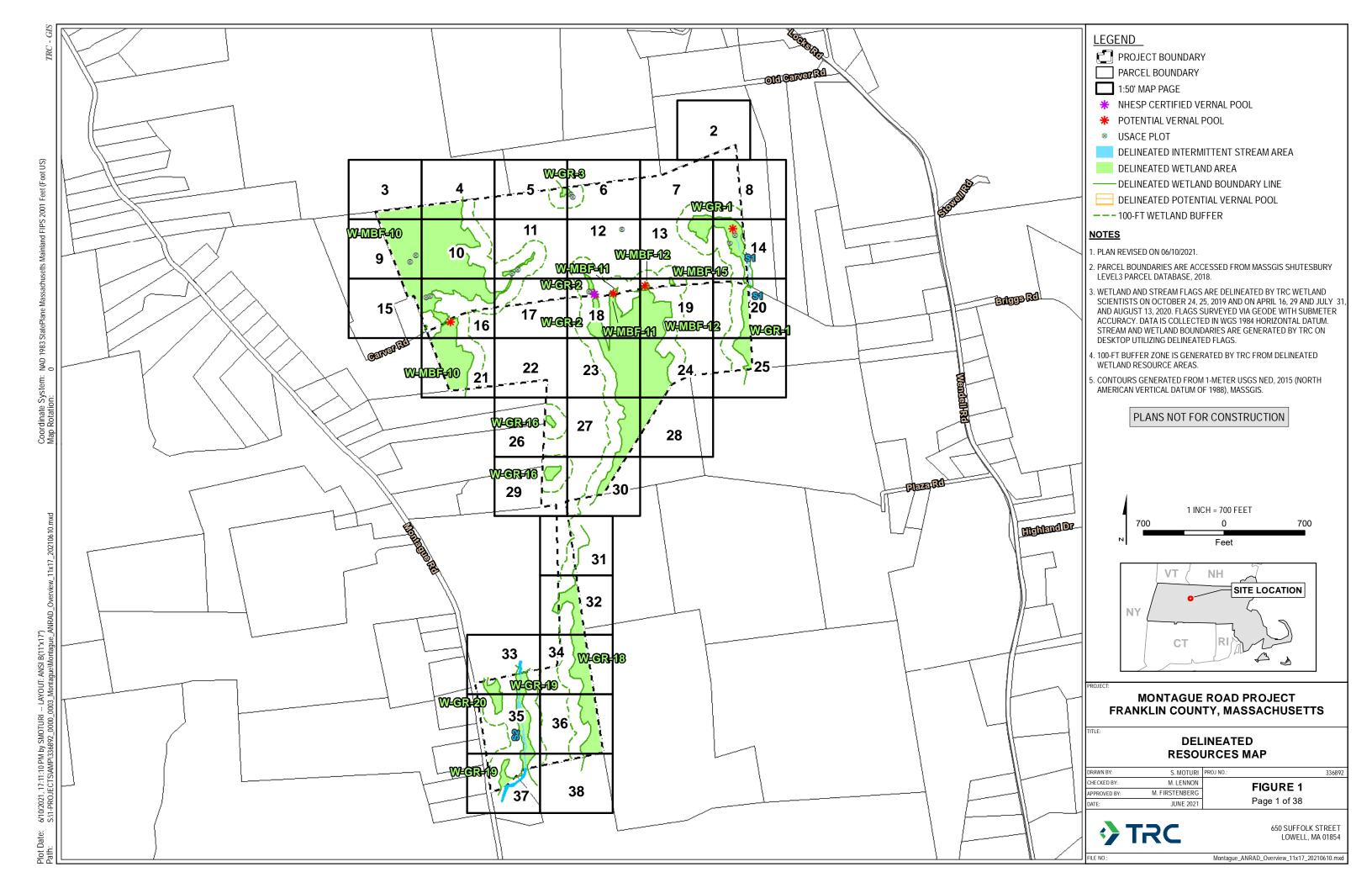
Senior Project Manager

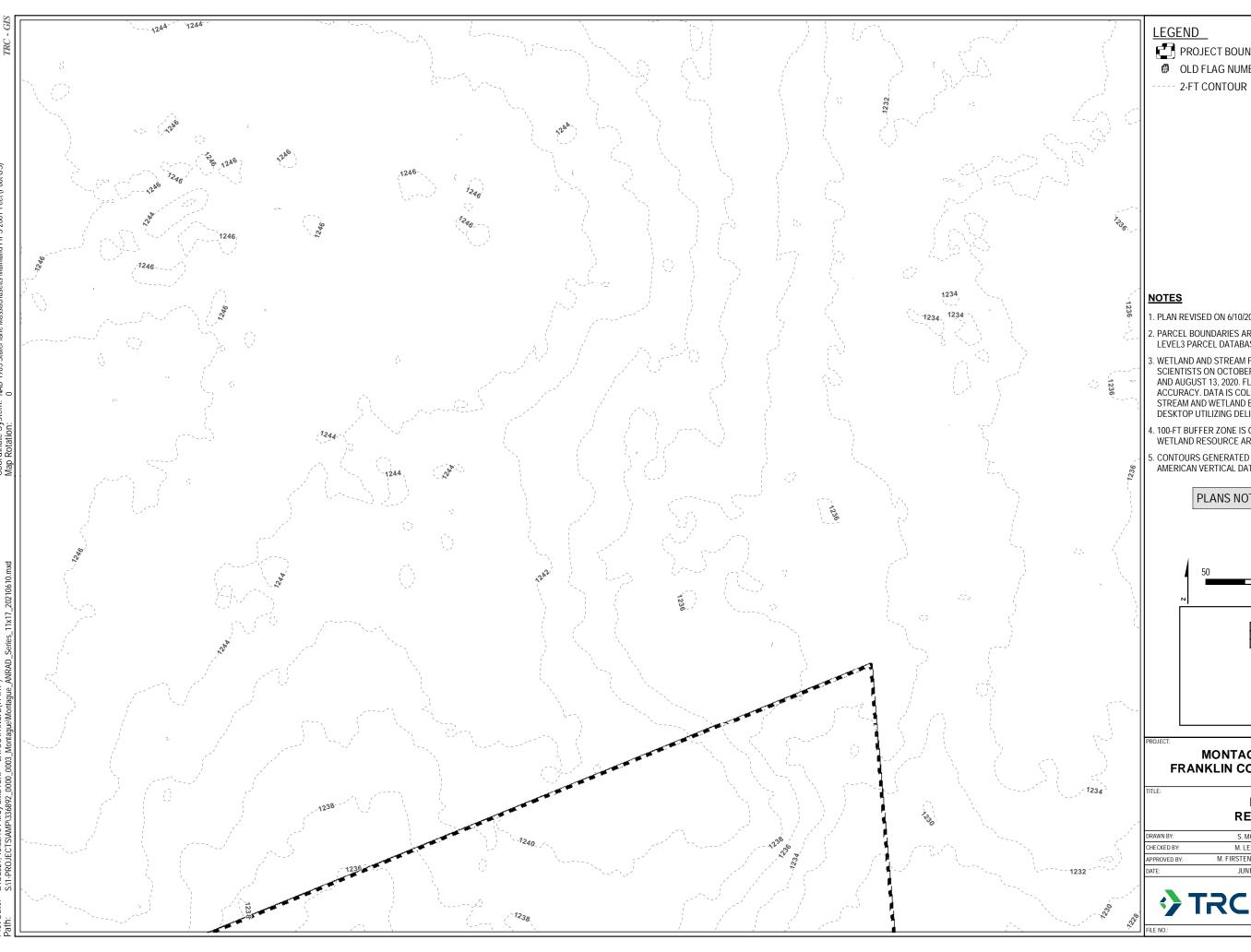
Brandt



# ATTACHMENT A Figure 1: Delineated Resources Map (July 2021)







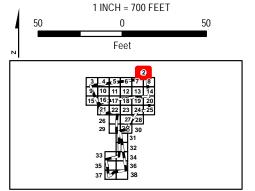
PROJECT BOUNDARY

OLD FLAG NUMBER

2-FT CONTOUR

- 1. PLAN REVISED ON 6/10/2021.
- 2. PARCEL BOUNDARIES ARE ACCESSED FROM MASSGIS SHUTESBURY LEVEL3 PARCEL DATABASE, 2018.
- 3. WETLAND AND STREAM FLAGS ARE DELINEATED BY TRC WETLAND SCIENTISTS ON OCTOBER 24, 25, 2019 AND ON APRIL 16, 29 AND JULY 31 ACCURACY. DATA IS COLLECTED IN WGS 1984 HORIZONTAL DATUM.
  STREAM AND WETLAND BOUNDARIES ARE GENERATED BY TRC ON
  DESKTOP UTILIZING DELINEATED FLAGS.
- 4. 100-FT BUFFER ZONE IS GENERATED BY TRC FROM DELINEATED WETLAND RESOURCE AREAS.
- 5. CONTOURS GENERATED FROM 1-METER USGS NED, 2015 (NORTH AMERICAN VERTICAL DATUM OF 1988), MASSGIS.

# PLANS NOT FOR CONSTRUCTION



MONTAGUE ROAD PROJECT FRANKLIN COUNTY, MASSACHUSETTS

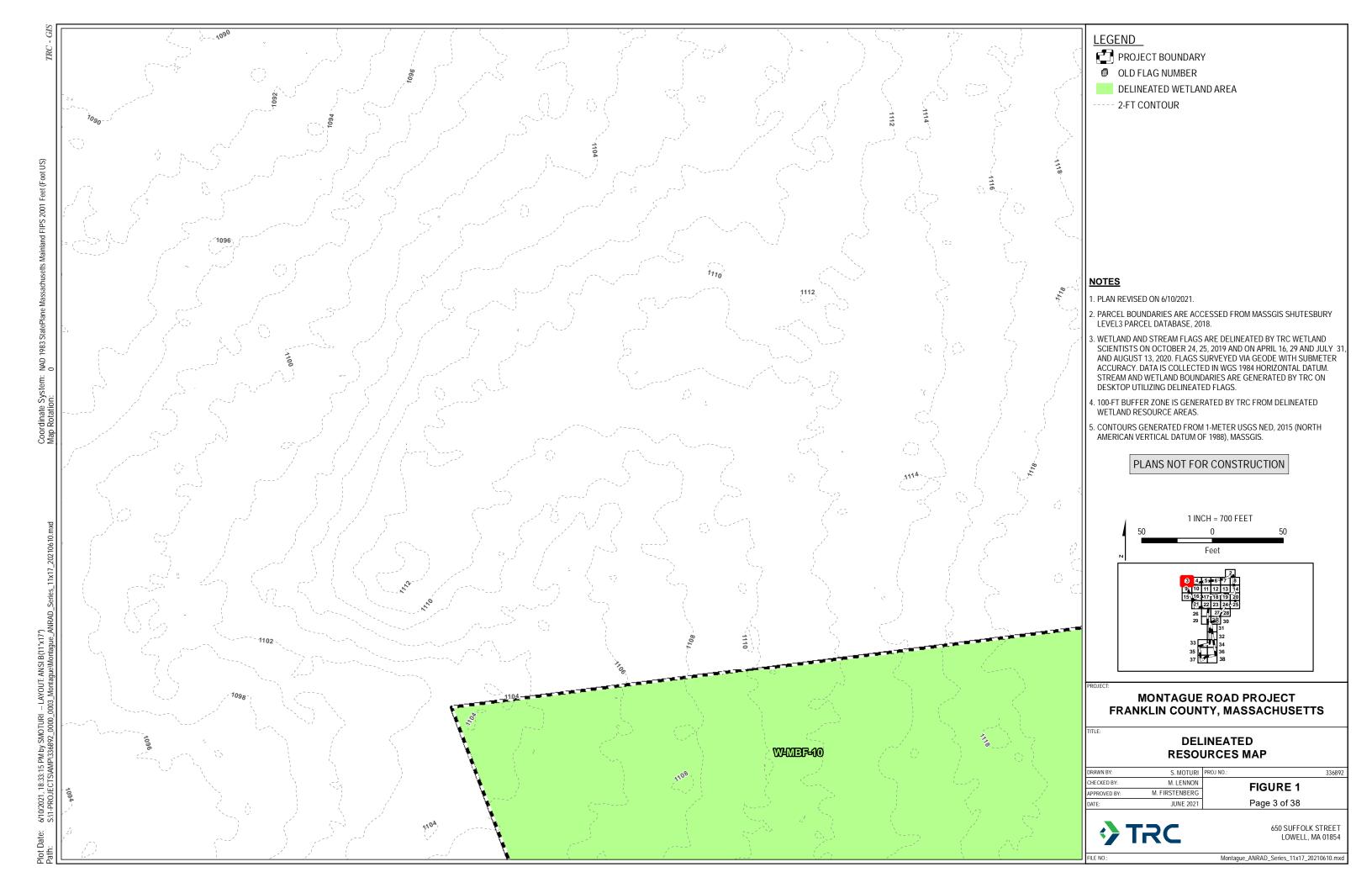
### **DELINEATED RESOURCES MAP**

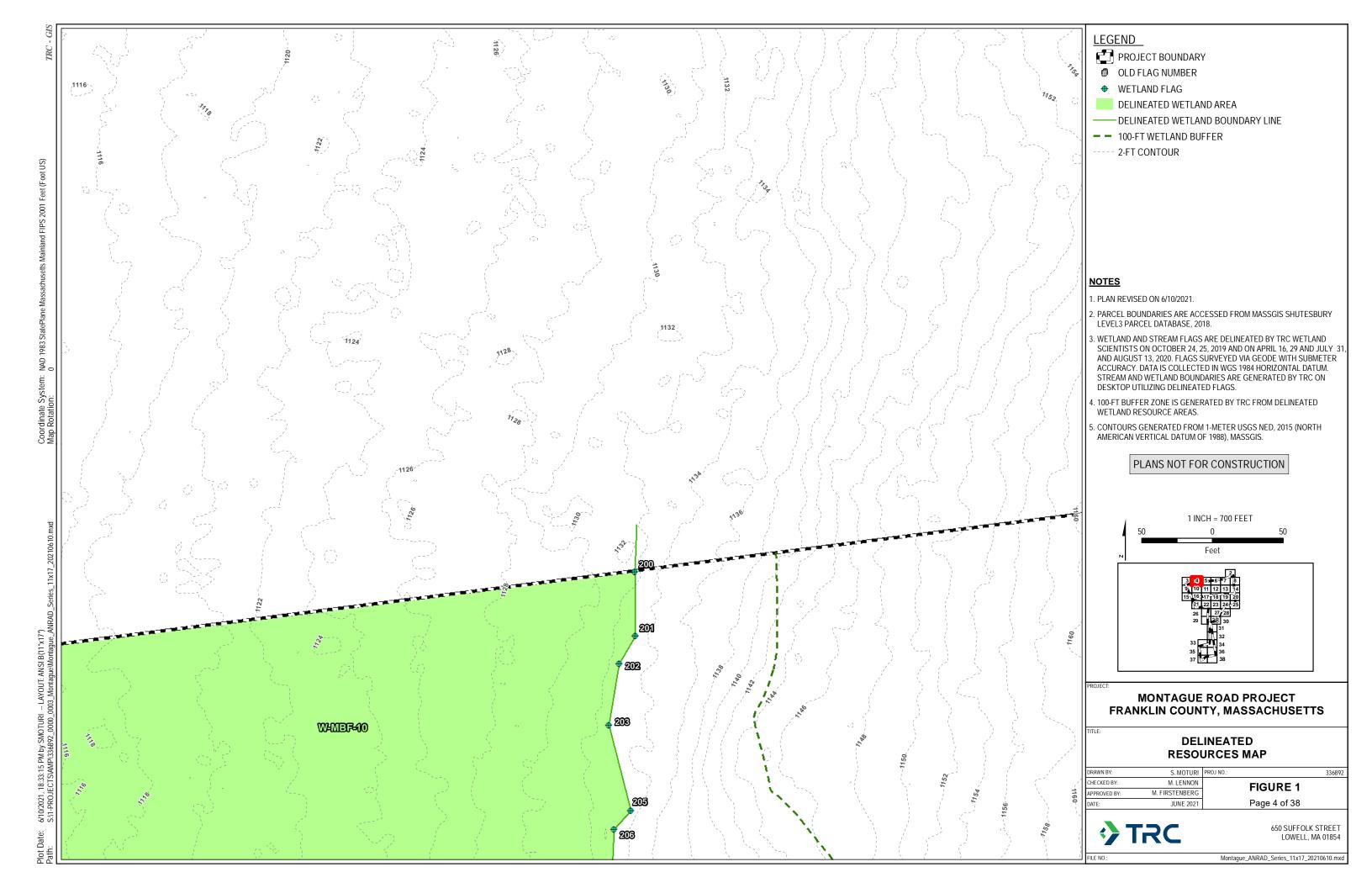
DRAWN BY:	S. MOTURI	F
CHECKED BY:	M. LENNON	
APPROVED BY:	M. FIRSTENBERG	
DATE:	JUNE 2021	

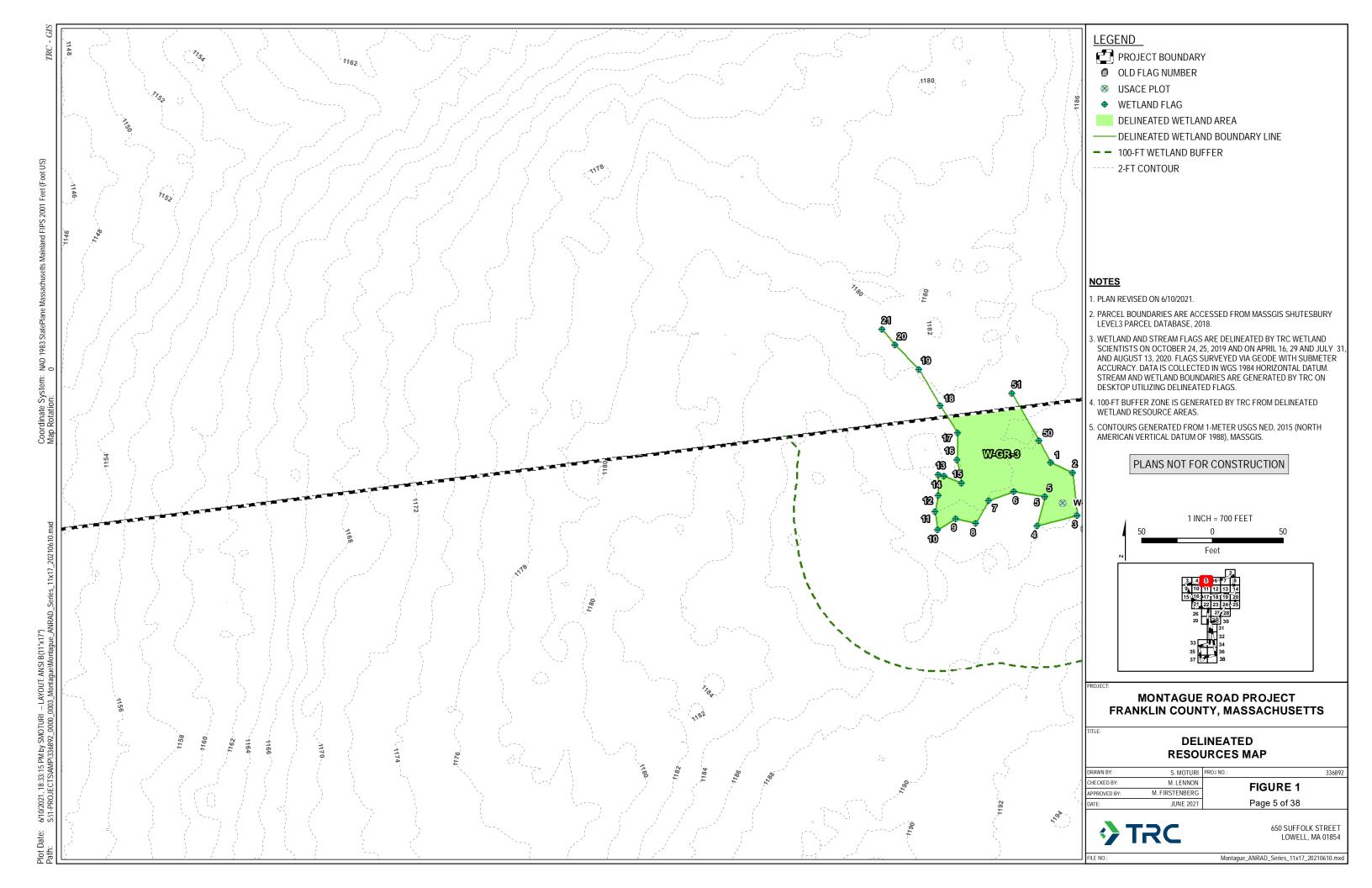
FIGURE 1

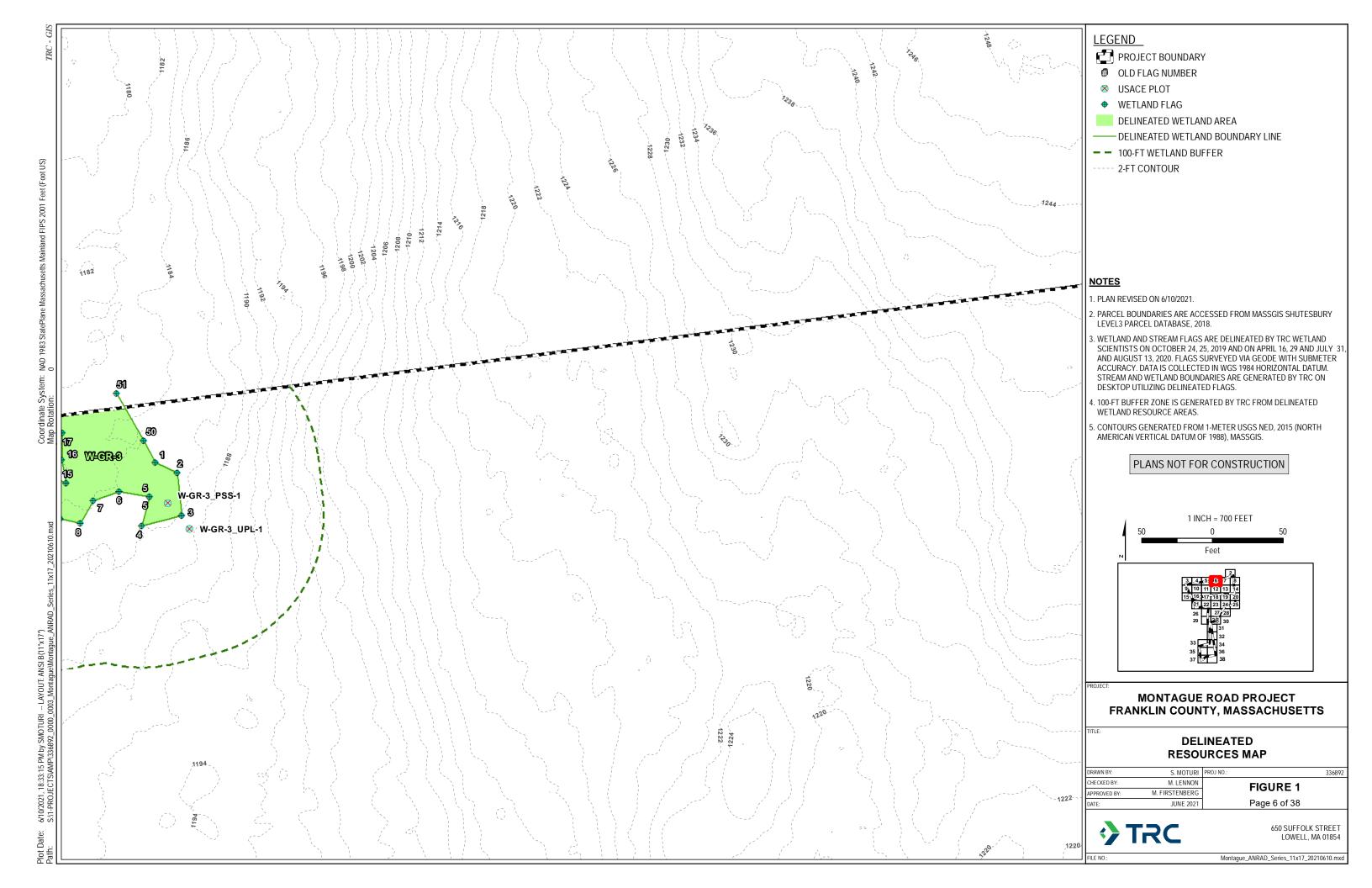
Page 2 of 38

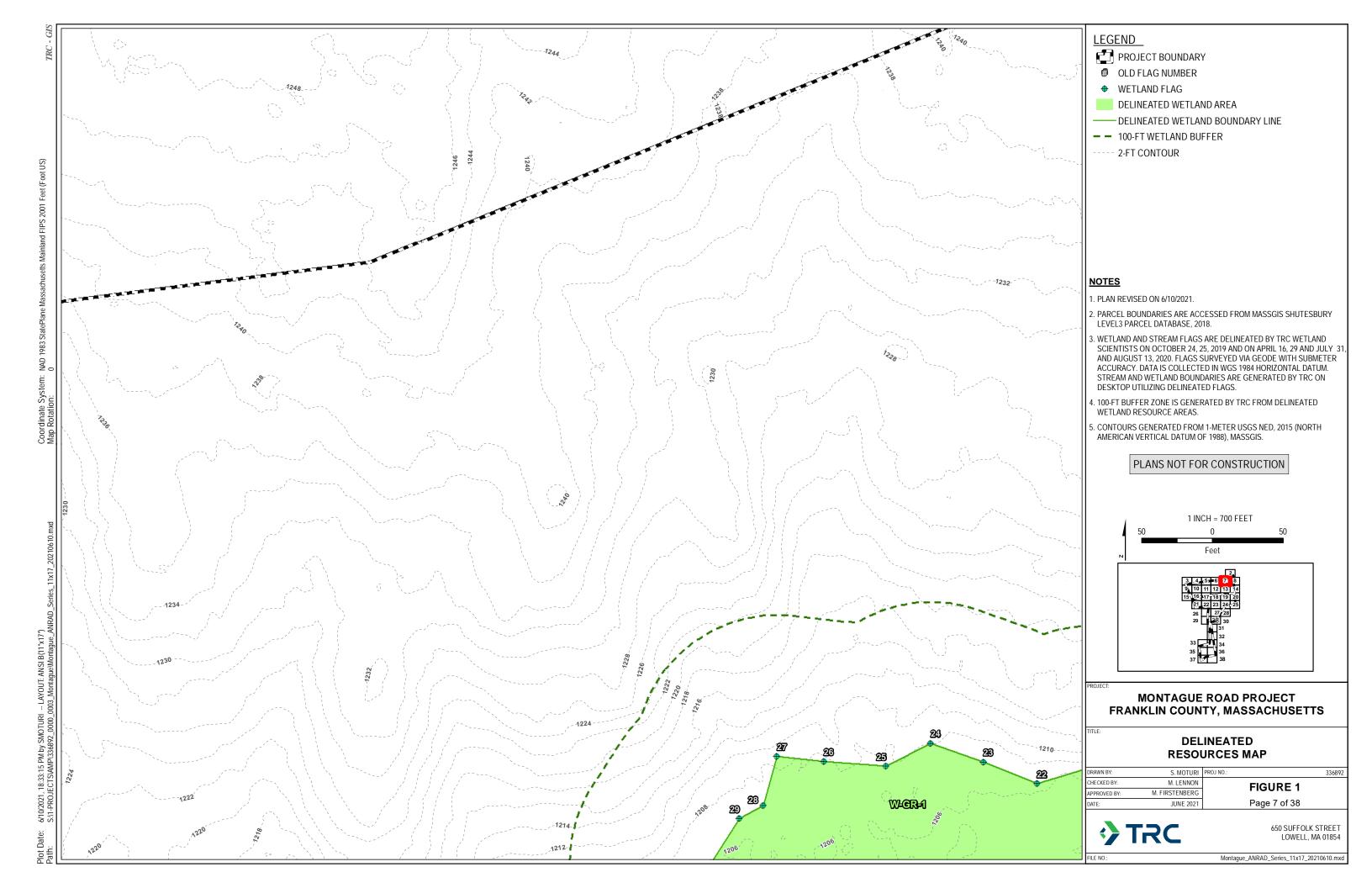
650 SUFFOLK STREET LOWELL, MA 01854

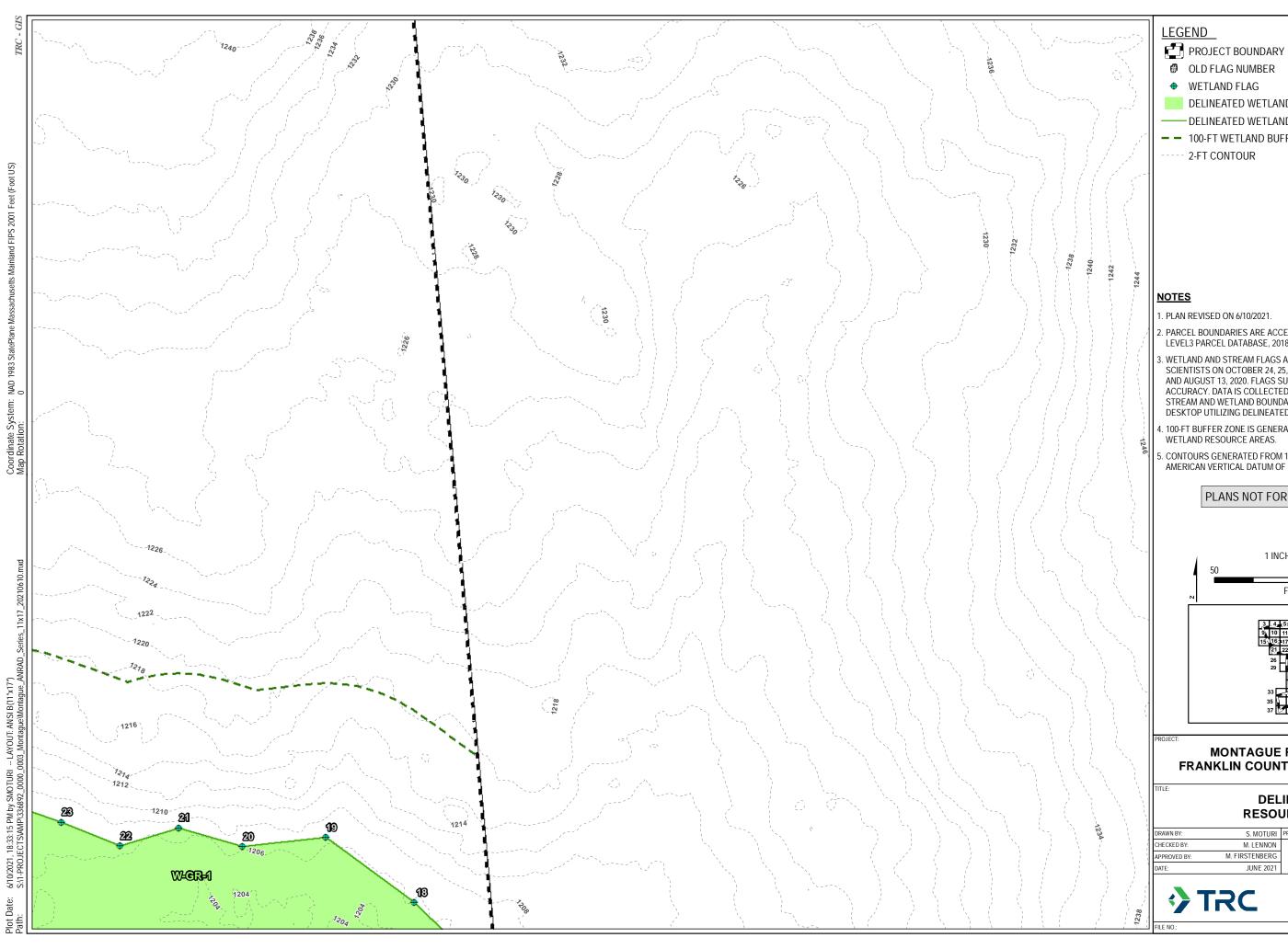






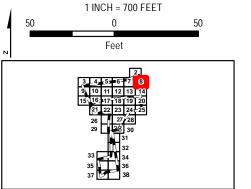






- OLD FLAG NUMBER
- WETLAND FLAG
- DELINEATED WETLAND AREA
- —— DELINEATED WETLAND BOUNDARY LINE
- 100-FT WETLAND BUFFER

- 1. PLAN REVISED ON 6/10/2021.
- 2. PARCEL BOUNDARIES ARE ACCESSED FROM MASSGIS SHUTESBURY LEVEL3 PARCEL DATABASE, 2018.
- 3. WETLAND AND STREAM FLAGS ARE DELINEATED BY TRC WETLAND SCIENTISTS ON OCTOBER 24, 25, 2019 AND ON APRIL 16, 29 AND JULY 31 AND AUGUST 13, 2020. FLAGS SURVEYED VIA GEODE WITH SUBMETER ACCURACY. DATA IS COLLECTED IN WGS 1984 HORIZONTAL DATUM.
  STREAM AND WETLAND BOUNDARIES ARE GENERATED BY TRC ON
  DESKTOP UTILIZING DELINEATED FLAGS.
- 4. 100-FT BUFFER ZONE IS GENERATED BY TRC FROM DELINEATED WETLAND RESOURCE AREAS.
- 5. CONTOURS GENERATED FROM 1-METER USGS NED, 2015 (NORTH AMERICAN VERTICAL DATUM OF 1988), MASSGIS.



**MONTAGUE ROAD PROJECT** FRANKLIN COUNTY, MASSACHUSETTS

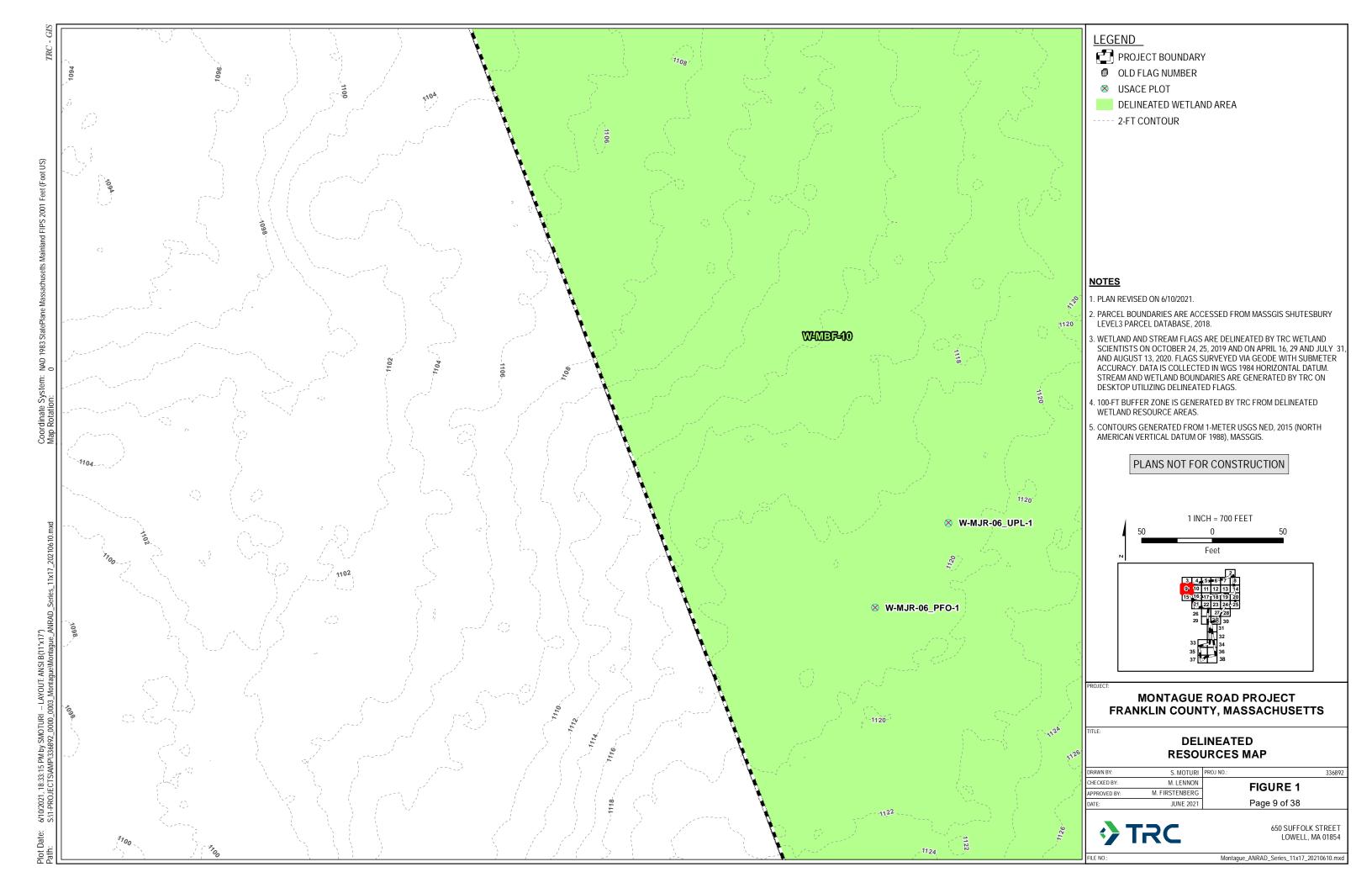
### **DELINEATED RESOURCES MAP**

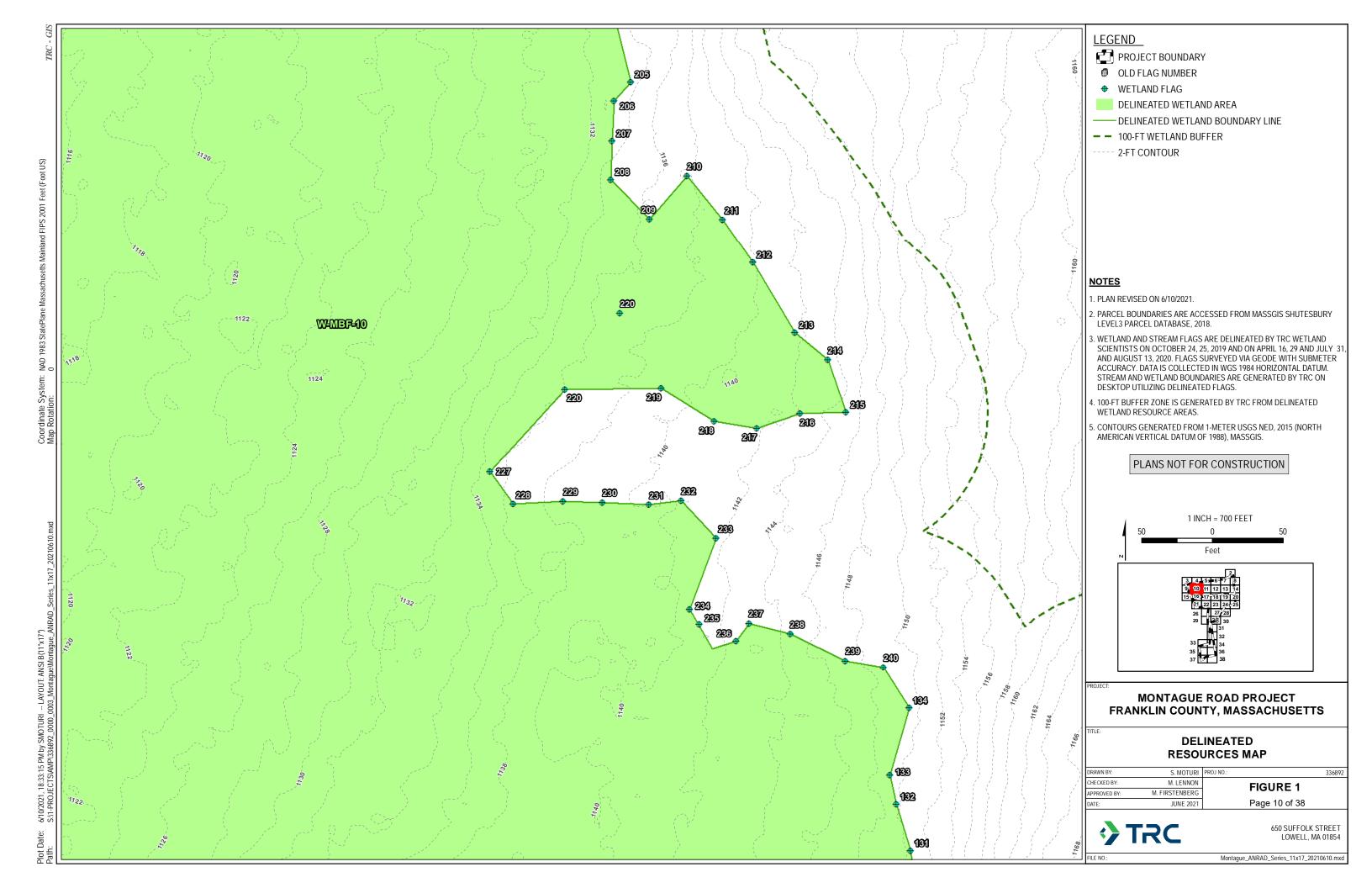
1	DRAWN BY:	S. MOTURI	PROJ NO.:
í	CHECKED BY:	M. LENNON	
1	APPROVED BY:	M. FIRSTENBERG	
١	DATE:	ILINE 2021	

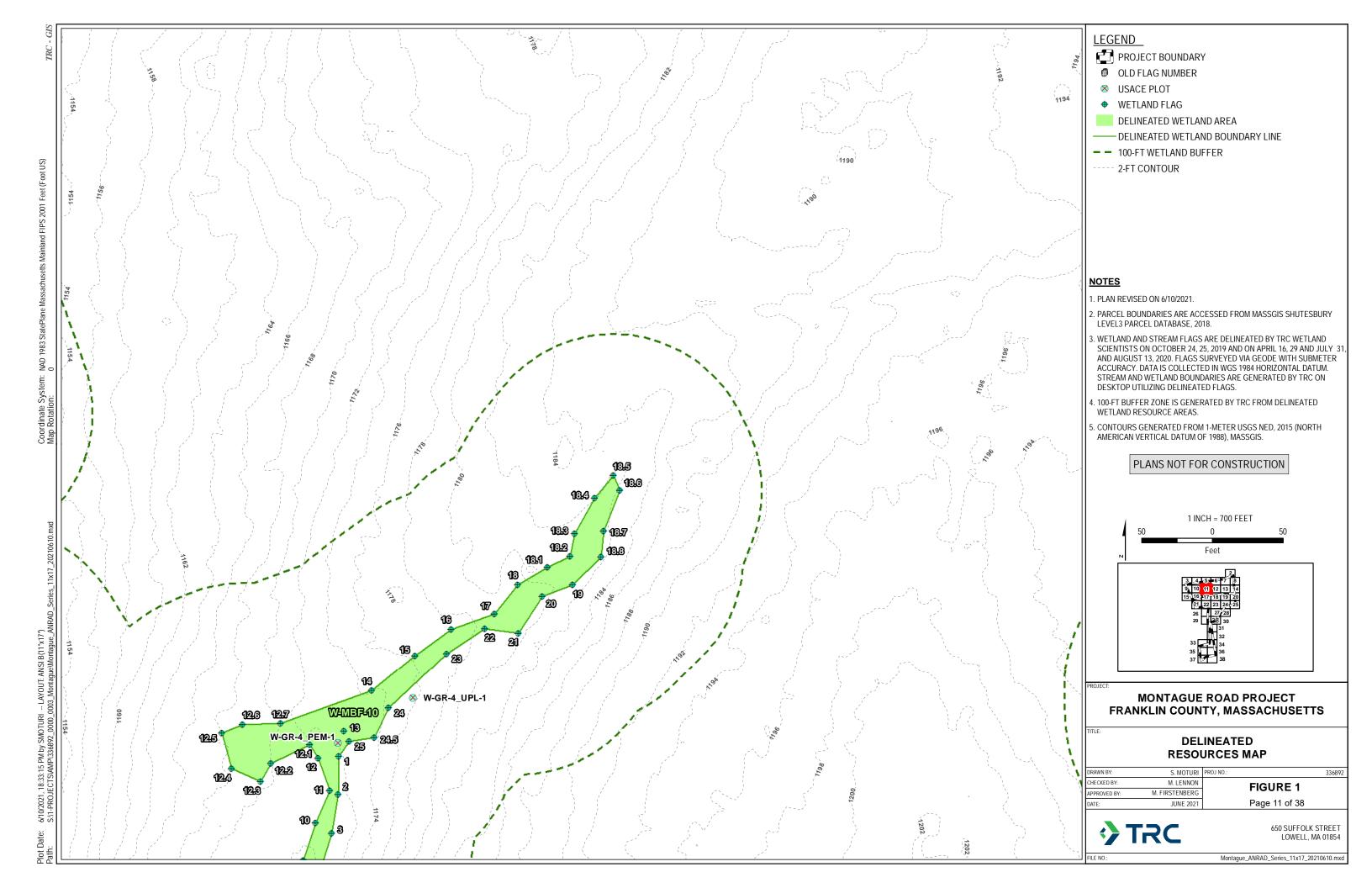
FIGURE 1

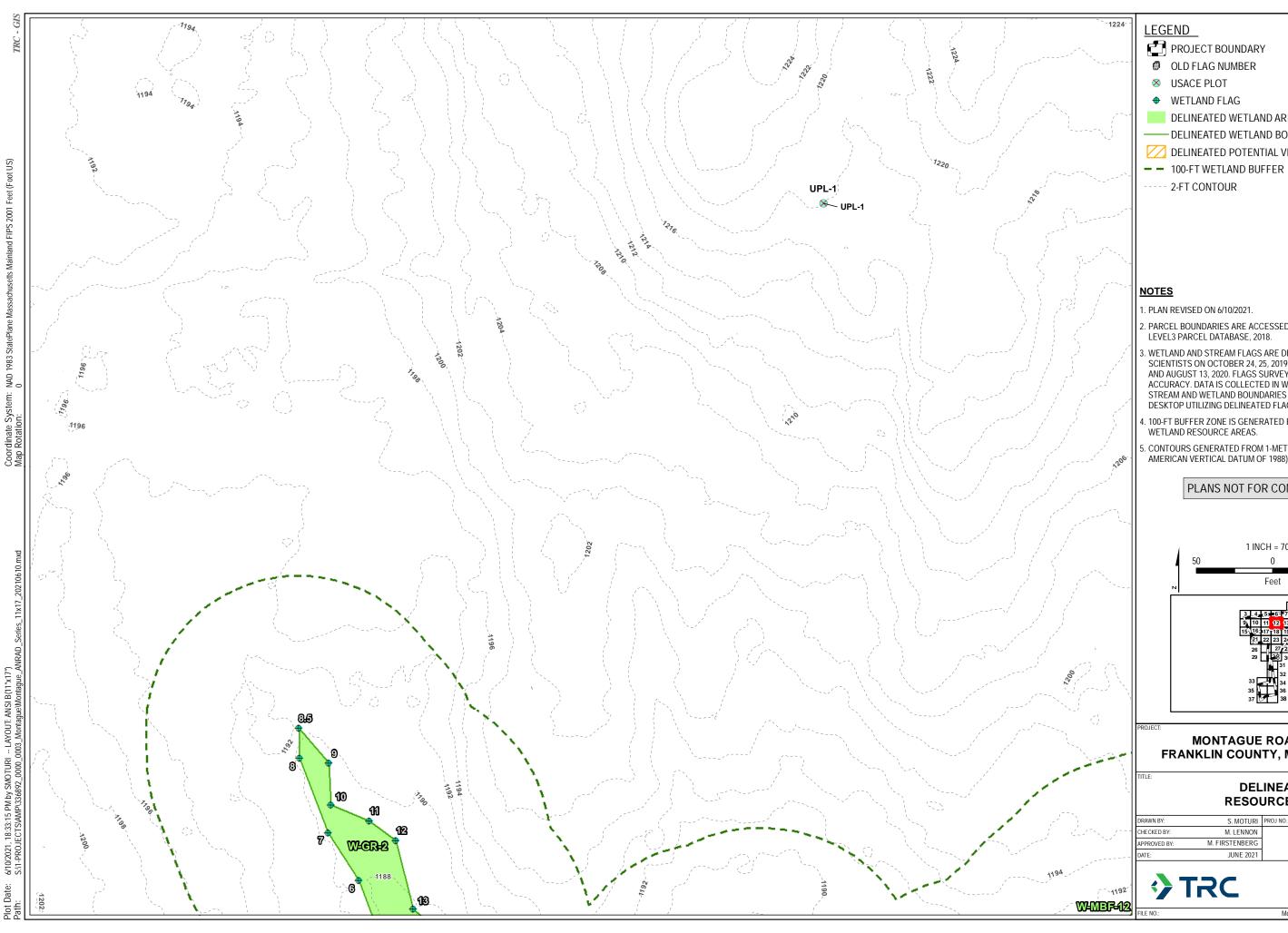
Page 8 of 38

650 SUFFOLK STREET LOWELL, MA 01854



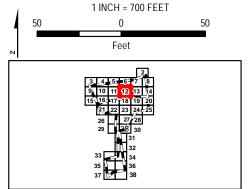






- DELINEATED WETLAND AREA
- DELINEATED WETLAND BOUNDARY LINE
- DELINEATED POTENTIAL VERNAL POOL

- 2. PARCEL BOUNDARIES ARE ACCESSED FROM MASSGIS SHUTESBURY LEVEL3 PARCEL DATABASE, 2018.
- 3. WETLAND AND STREAM FLAGS ARE DELINEATED BY TRC WETLAND SCIENTISTS ON OCTOBER 24, 25, 2019 AND ON APRIL 16, 29 AND JULY 31 ACCURACY. DATA IS COLLECTED IN WGS 1984 HORIZONTAL DATUM.
  STREAM AND WETLAND BOUNDARIES ARE GENERATED BY TRC ON
  DESKTOP UTILIZING DELINEATED FLAGS.
- 4. 100-FT BUFFER ZONE IS GENERATED BY TRC FROM DELINEATED WETLAND RESOURCE AREAS.
- 5. CONTOURS GENERATED FROM 1-METER USGS NED, 2015 (NORTH AMERICAN VERTICAL DATUM OF 1988), MASSGIS.



**MONTAGUE ROAD PROJECT** FRANKLIN COUNTY, MASSACHUSETTS

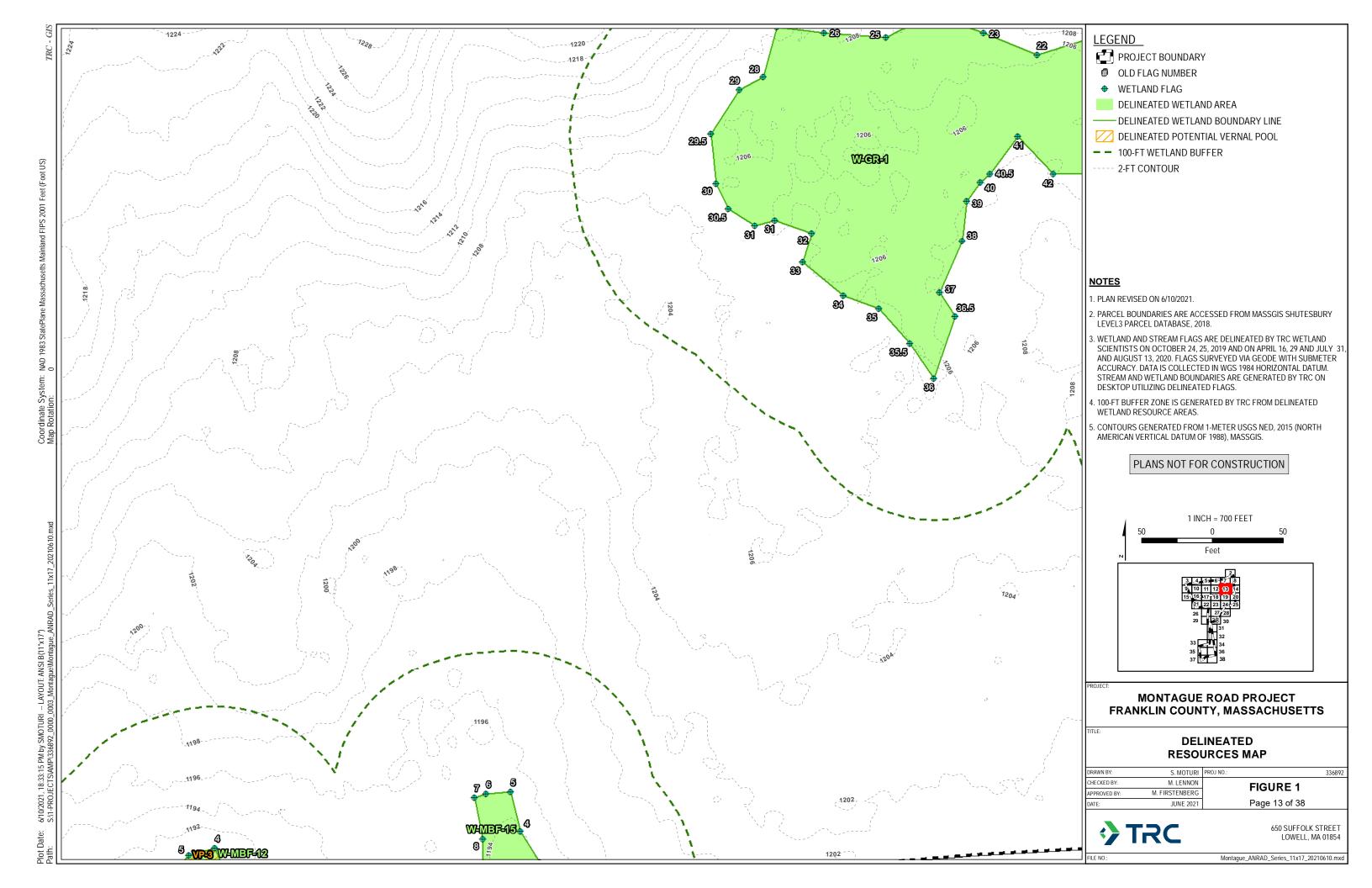
#### **DELINEATED RESOURCES MAP**

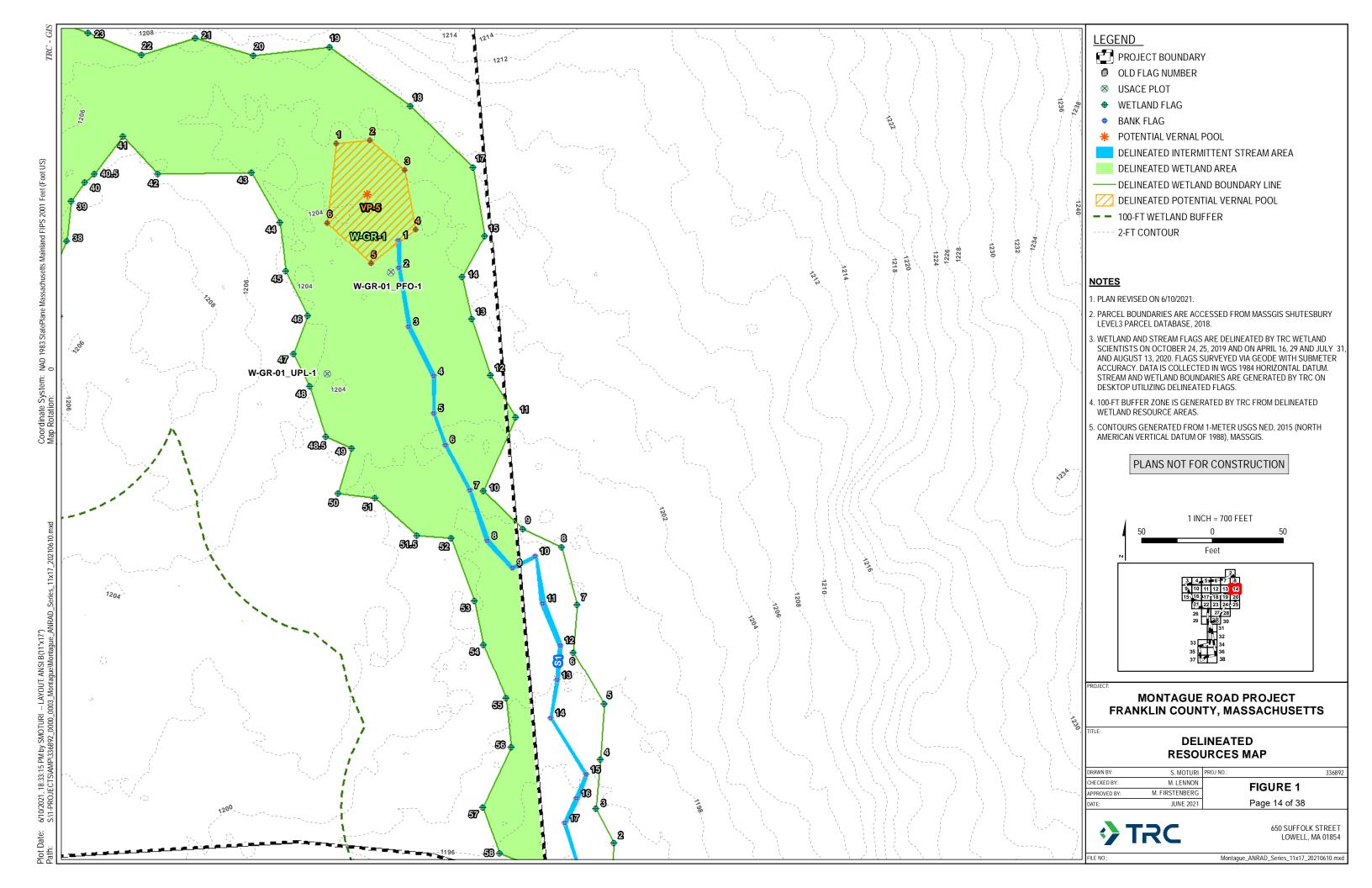
DRAWN BY:	S. MOTURI
 CHECKED BY:	M. LENNON
APPROVED BY:	M. FIRSTENBERG
DATE:	IIINE 2021

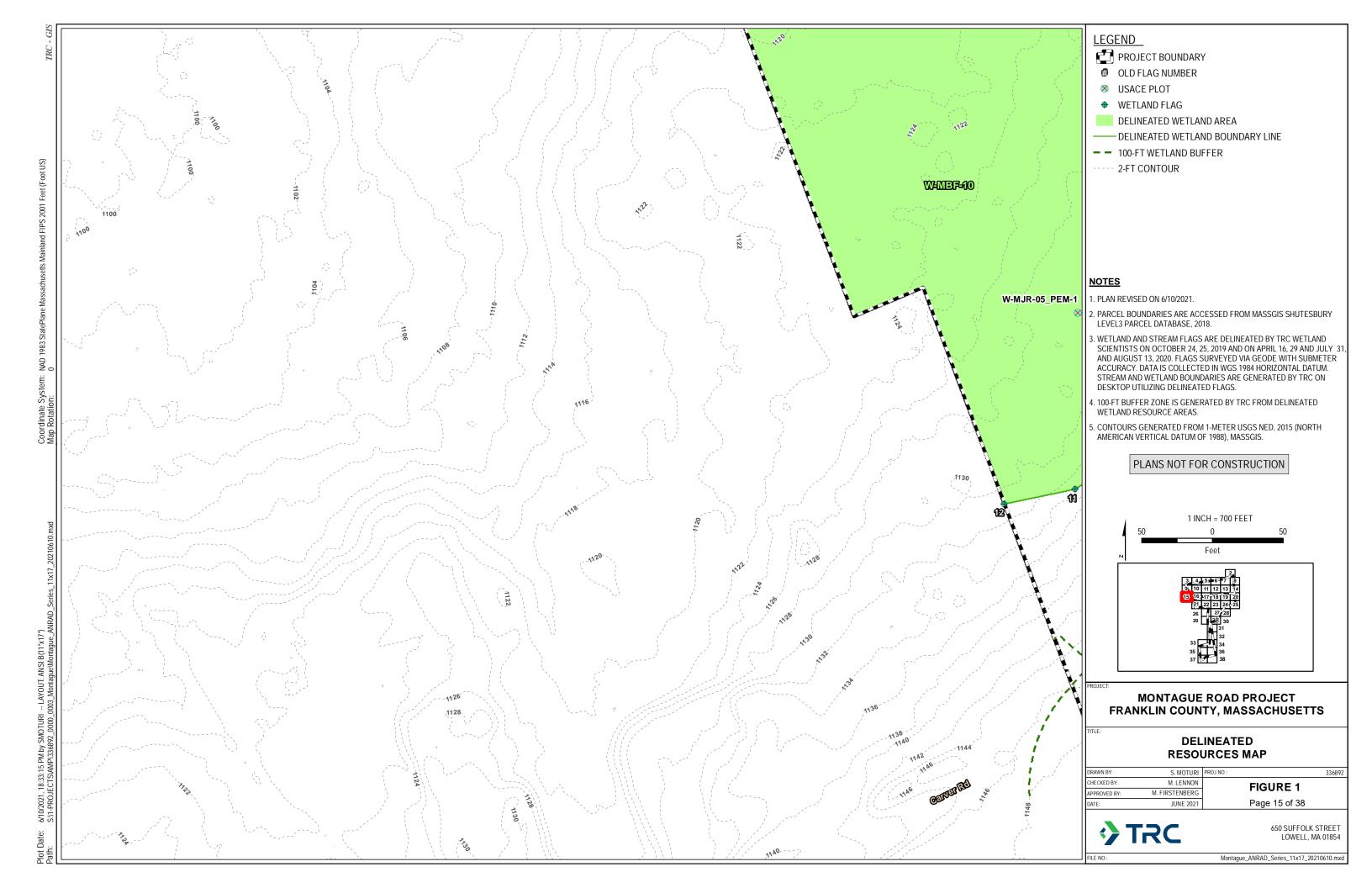
FIGURE 1

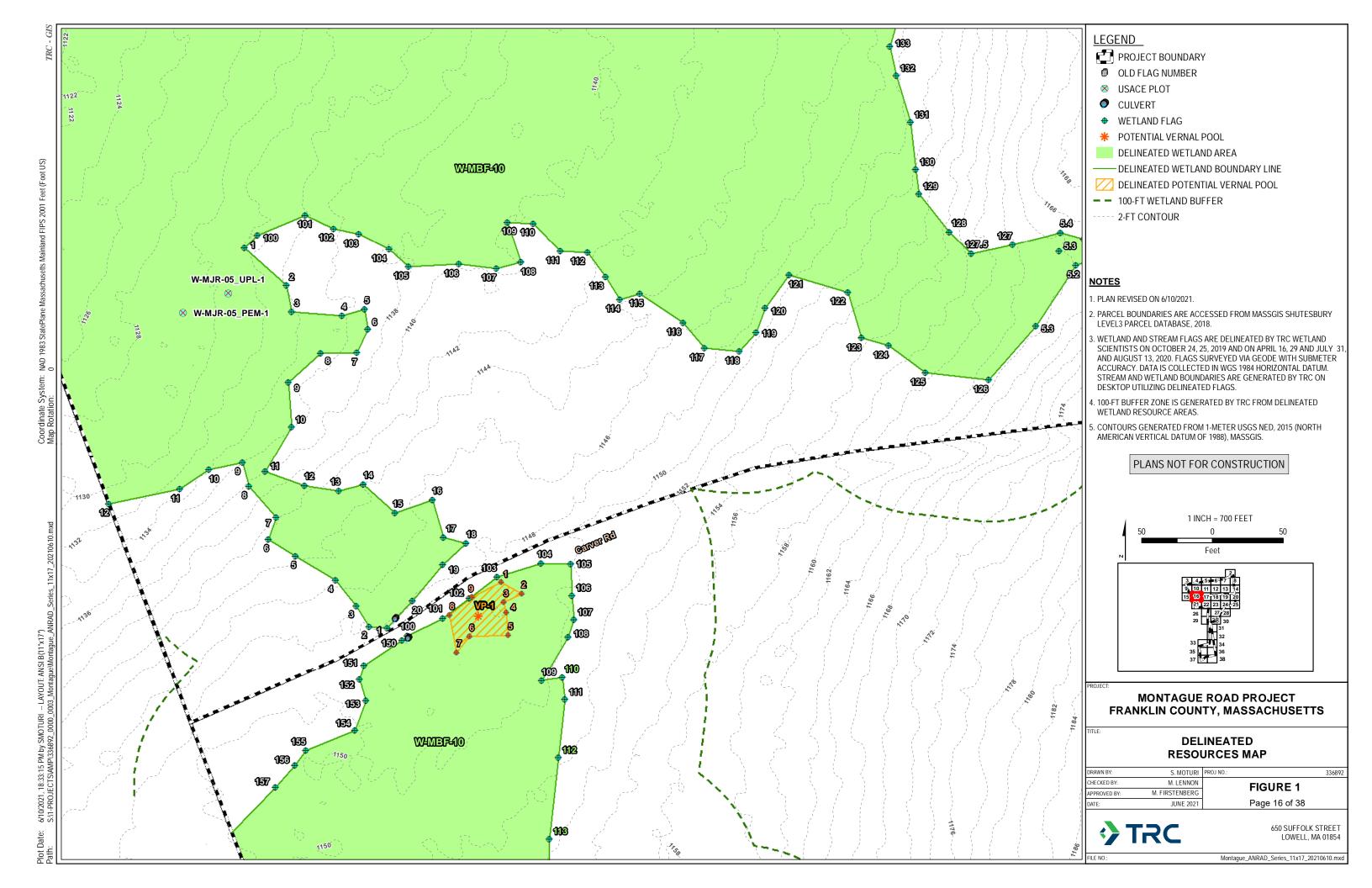
Page 12 of 38

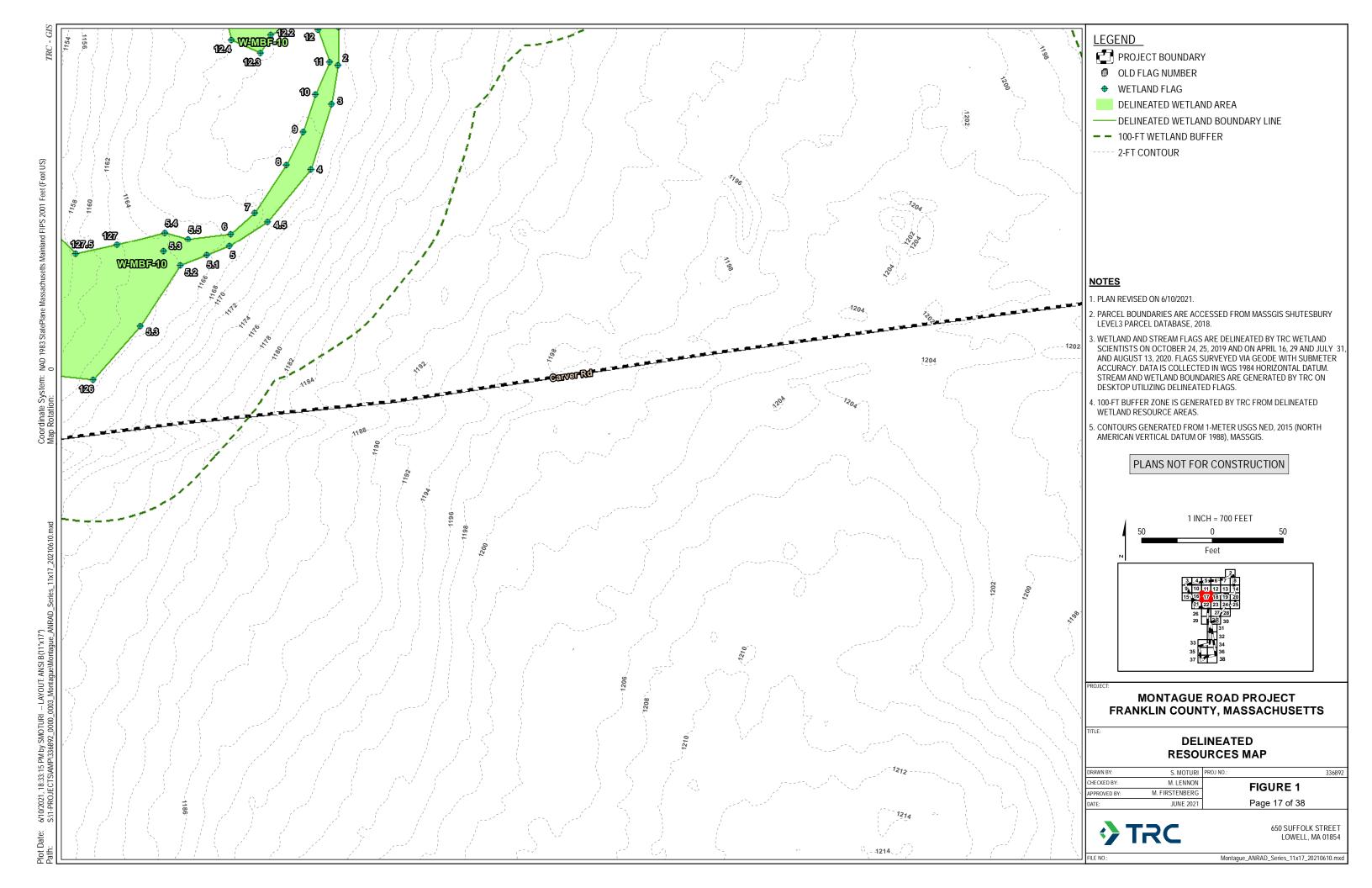
650 SUFFOLK STREET LOWELL, MA 01854

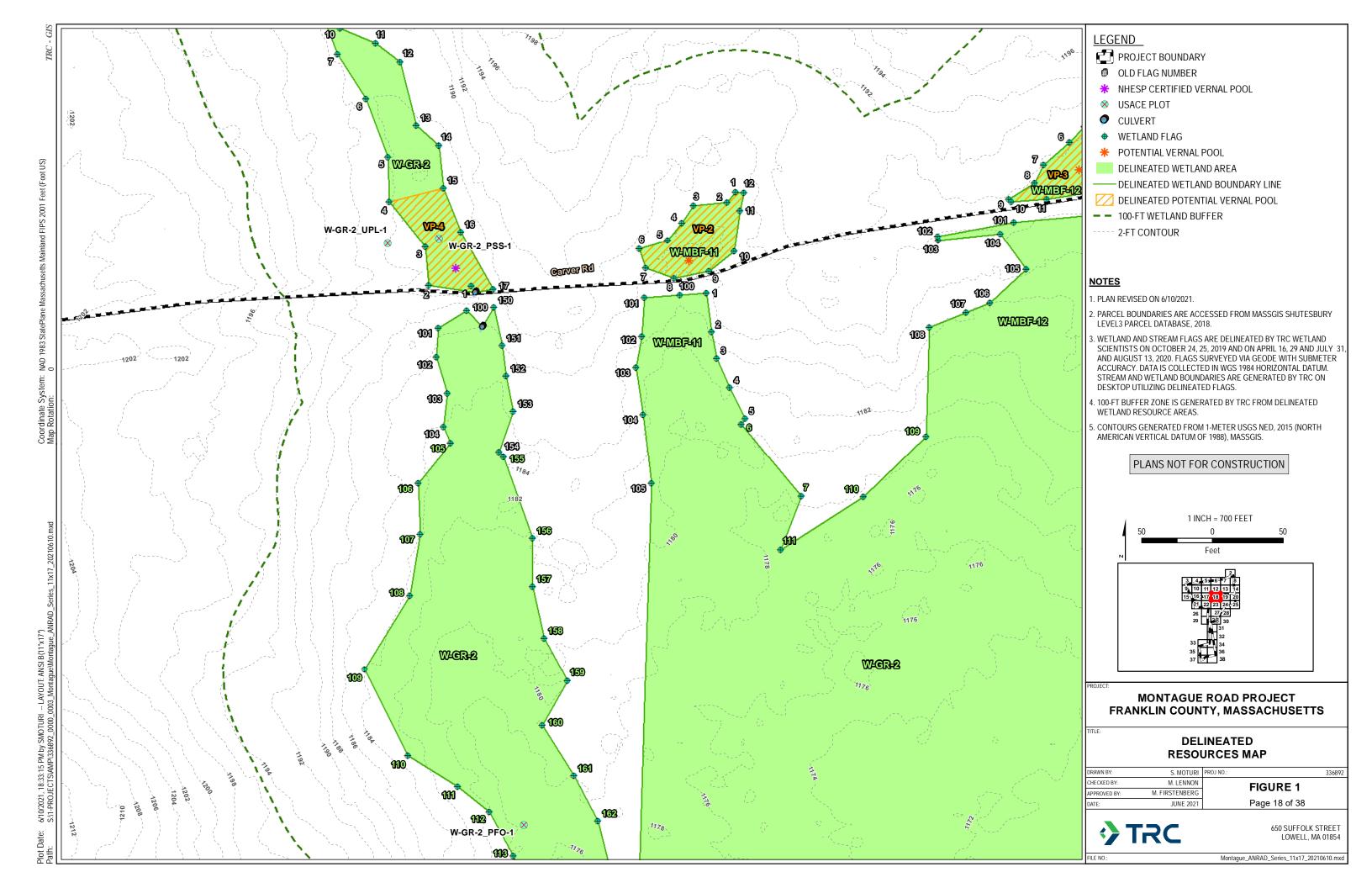


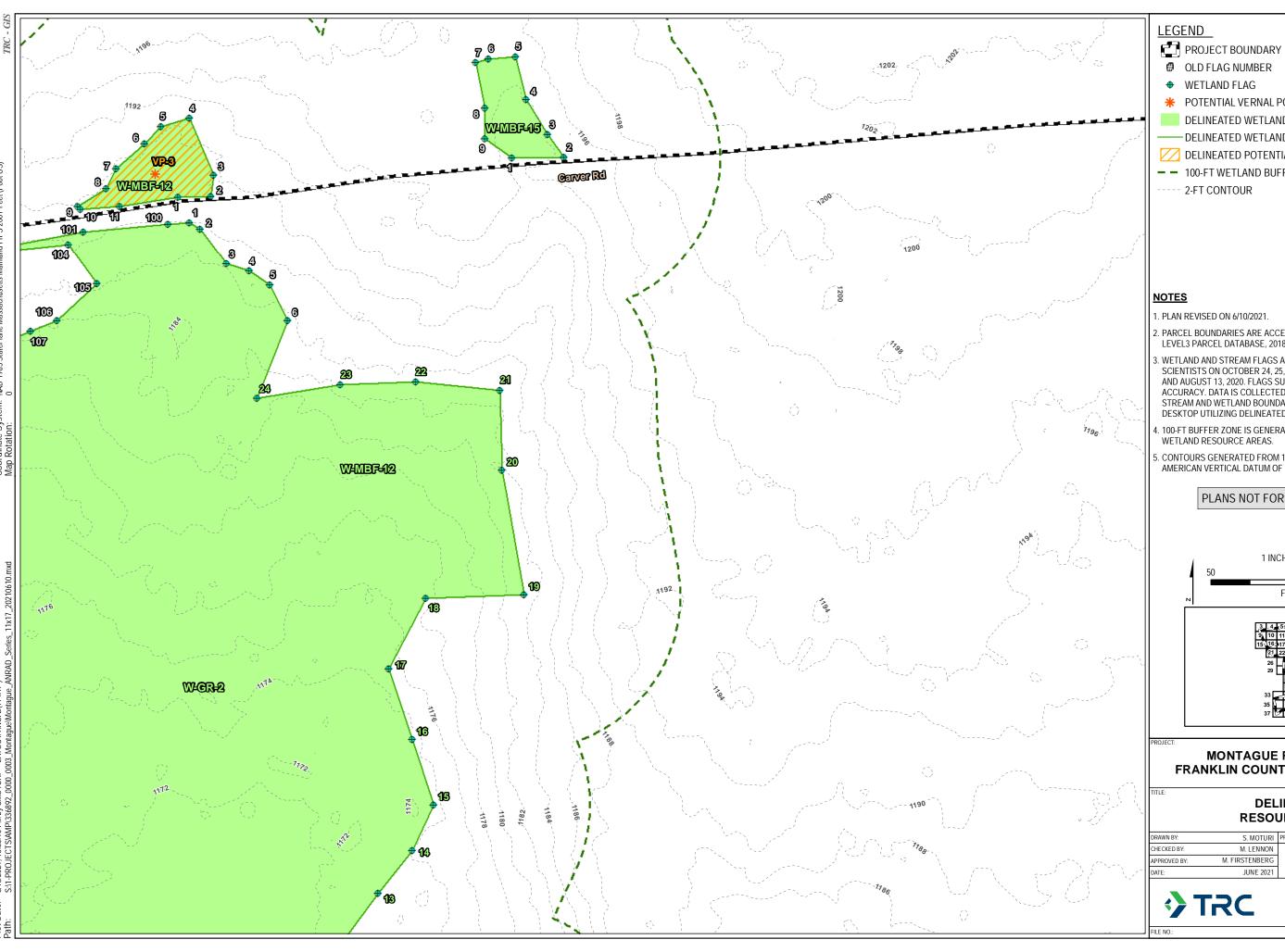






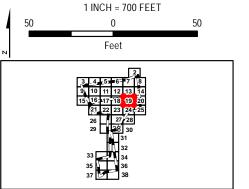






- **\*** POTENTIAL VERNAL POOL
- DELINEATED WETLAND AREA
- DELINEATED WETLAND BOUNDARY LINE
- DELINEATED POTENTIAL VERNAL POOL
- ─ 100-FT WETLAND BUFFER

- 2. PARCEL BOUNDARIES ARE ACCESSED FROM MASSGIS SHUTESBURY LEVEL3 PARCEL DATABASE, 2018.
- 3. WETLAND AND STREAM FLAGS ARE DELINEATED BY TRC WETLAND SCIENTISTS ON OCTOBER 24, 25, 2019 AND ON APRIL 16, 29 AND JULY 31 ACCURACY. DATA IS COLLECTED IN WGS 1984 HORIZONTAL DATUM. STREAM AND WETLAND BOUNDARIES ARE GENERATED BY TRC ON DESKTOP UTILIZING DELINEATED FLAGS.
- 4. 100-FT BUFFER ZONE IS GENERATED BY TRC FROM DELINEATED WETLAND RESOURCE AREAS.
- 5. CONTOURS GENERATED FROM 1-METER USGS NED, 2015 (NORTH AMERICAN VERTICAL DATUM OF 1988), MASSGIS.



MONTAGUE ROAD PROJECT FRANKLIN COUNTY, MASSACHUSETTS

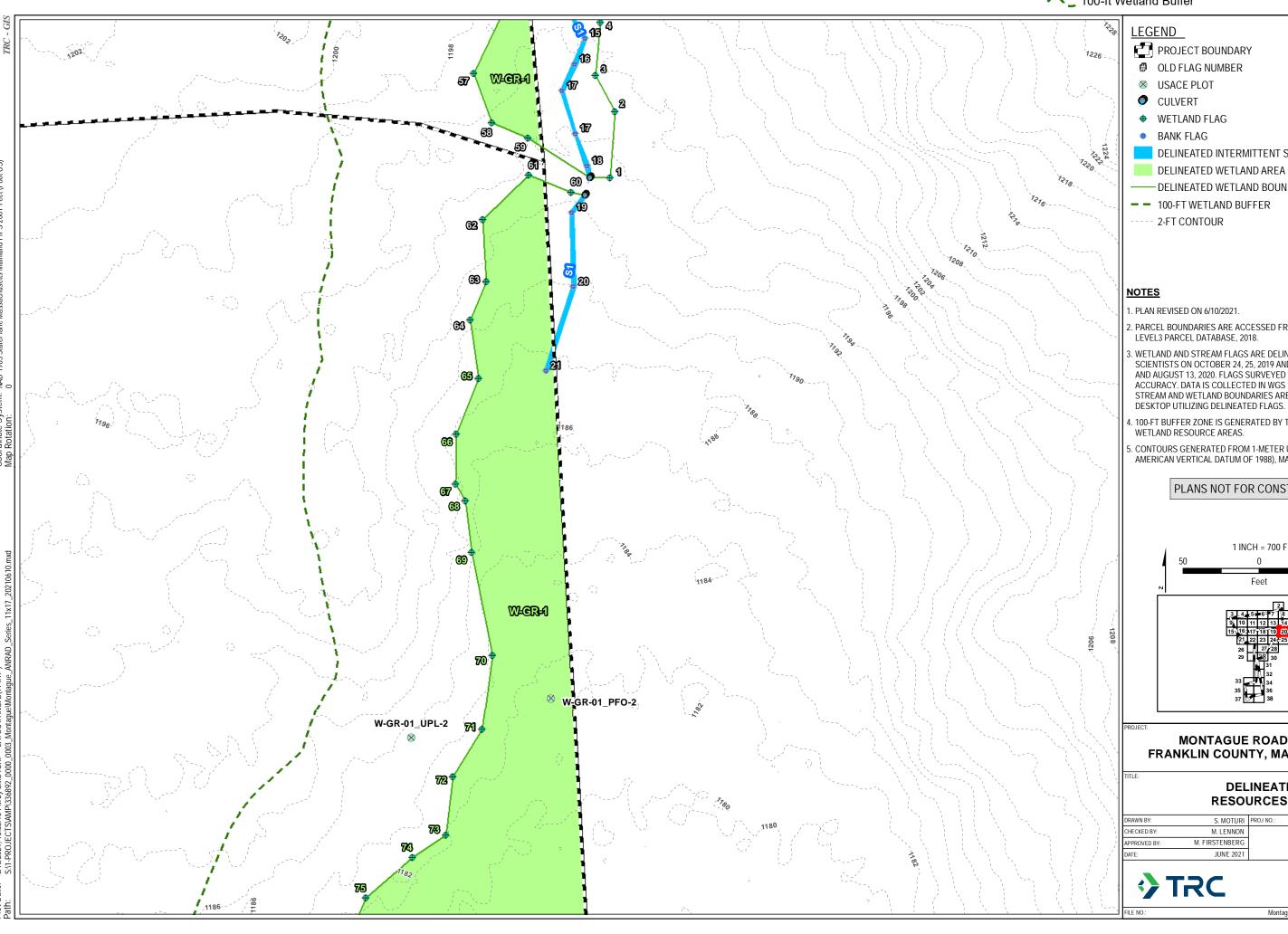
#### **DELINEATED RESOURCES MAP**

	DRAWN BY:	S. MOTURI	PROJ NO.:
	CHECKED BY:	M. LENNON	
	APPROVED BY:	M. FIRSTENBERG	
- 1	DATE:	IIINE 2021	

FIGURE 1

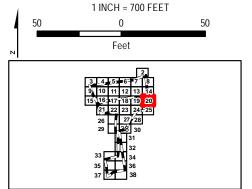
Page 19 of 38

650 SUFFOLK STREET LOWELL, MA 01854



- DELINEATED INTERMITTENT STREAM AREA
- DELINEATED WETLAND BOUNDARY LINE

- 2. PARCEL BOUNDARIES ARE ACCESSED FROM MASSGIS SHUTESBURY LEVEL3 PARCEL DATABASE, 2018.
- B. WETLAND AND STREAM FLAGS ARE DELINEATED BY TRC WETLAND SCIENTISTS ON OCTOBER 24, 25, 2019 AND ON APRIL 16, 29 AND JULY 31 ACCURACY. DATA IS COLLECTED IN WGS 1984 HORIZONTAL DATUM.
  STREAM AND WETLAND BOUNDARIES ARE GENERATED BY TRC ON
  DESKTOP UTILIZING DELINEATED FLAGS.
- 4. 100-FT BUFFER ZONE IS GENERATED BY TRC FROM DELINEATED WETLAND RESOURCE AREAS.
- 5. CONTOURS GENERATED FROM 1-METER USGS NED, 2015 (NORTH AMERICAN VERTICAL DATUM OF 1988), MASSGIS.



# MONTAGUE ROAD PROJECT FRANKLIN COUNTY, MASSACHUSETTS

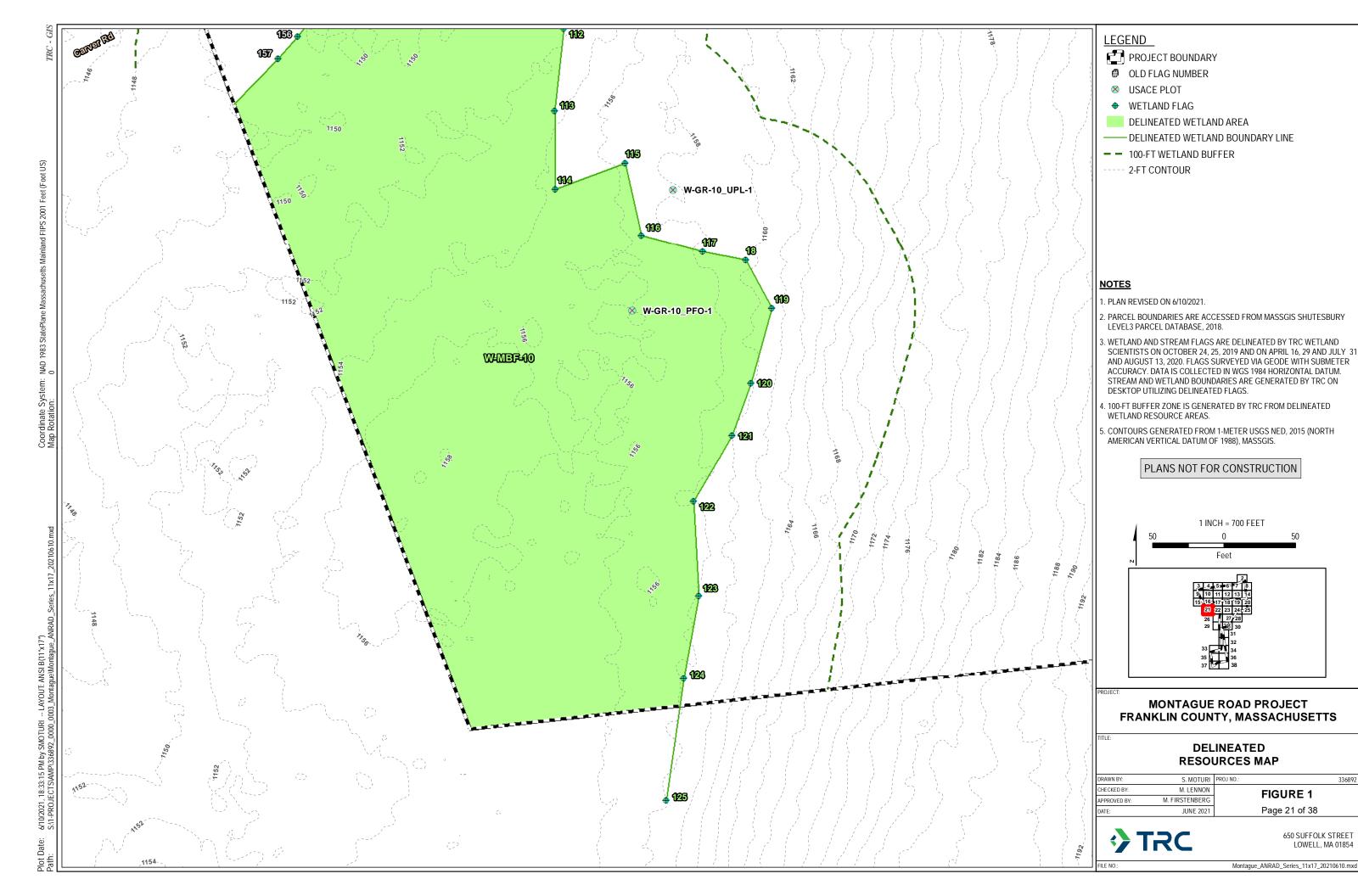
#### DELINEATED **RESOURCES MAP**

v	DRAWN BY:	S. MOTURI	F
1	CHECKED BY:	M. LENNON	Γ
,	APPROVED BY:	M. FIRSTENBERG	
	DATE:	IUNE 2021	l

FIGURE 1

Page 20 of 38

650 SUFFOLK STREET LOWELL, MA 01854





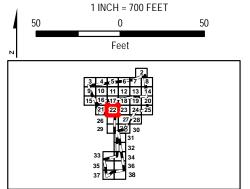
PROJECT BOUNDARY

OLD FLAG NUMBER

2-FT CONTOUR

- 1. PLAN REVISED ON 6/10/2021.
- 2. PARCEL BOUNDARIES ARE ACCESSED FROM MASSGIS SHUTESBURY LEVEL3 PARCEL DATABASE, 2018.
- 3. WETLAND AND STREAM FLAGS ARE DELINEATED BY TRC WETLAND SCIENTISTS ON OCTOBER 24, 25, 2019 AND ON APRIL 16, 29 AND JULY 31 AND AUGUST 13, 2020. FLAGS SURVEYED VIA GEODE WITH SUBMETER ACCURACY. DATA IS COLLECTED IN WGS 1984 HORIZONTAL DATUM.
  STREAM AND WETLAND BOUNDARIES ARE GENERATED BY TRC ON
  DESKTOP UTILIZING DELINEATED FLAGS.
- 4. 100-FT BUFFER ZONE IS GENERATED BY TRC FROM DELINEATED WETLAND RESOURCE AREAS.
- 5. CONTOURS GENERATED FROM 1-METER USGS NED, 2015 (NORTH AMERICAN VERTICAL DATUM OF 1988), MASSGIS.

# PLANS NOT FOR CONSTRUCTION



MONTAGUE ROAD PROJECT FRANKLIN COUNTY, MASSACHUSETTS

#### **DELINEATED RESOURCES MAP**

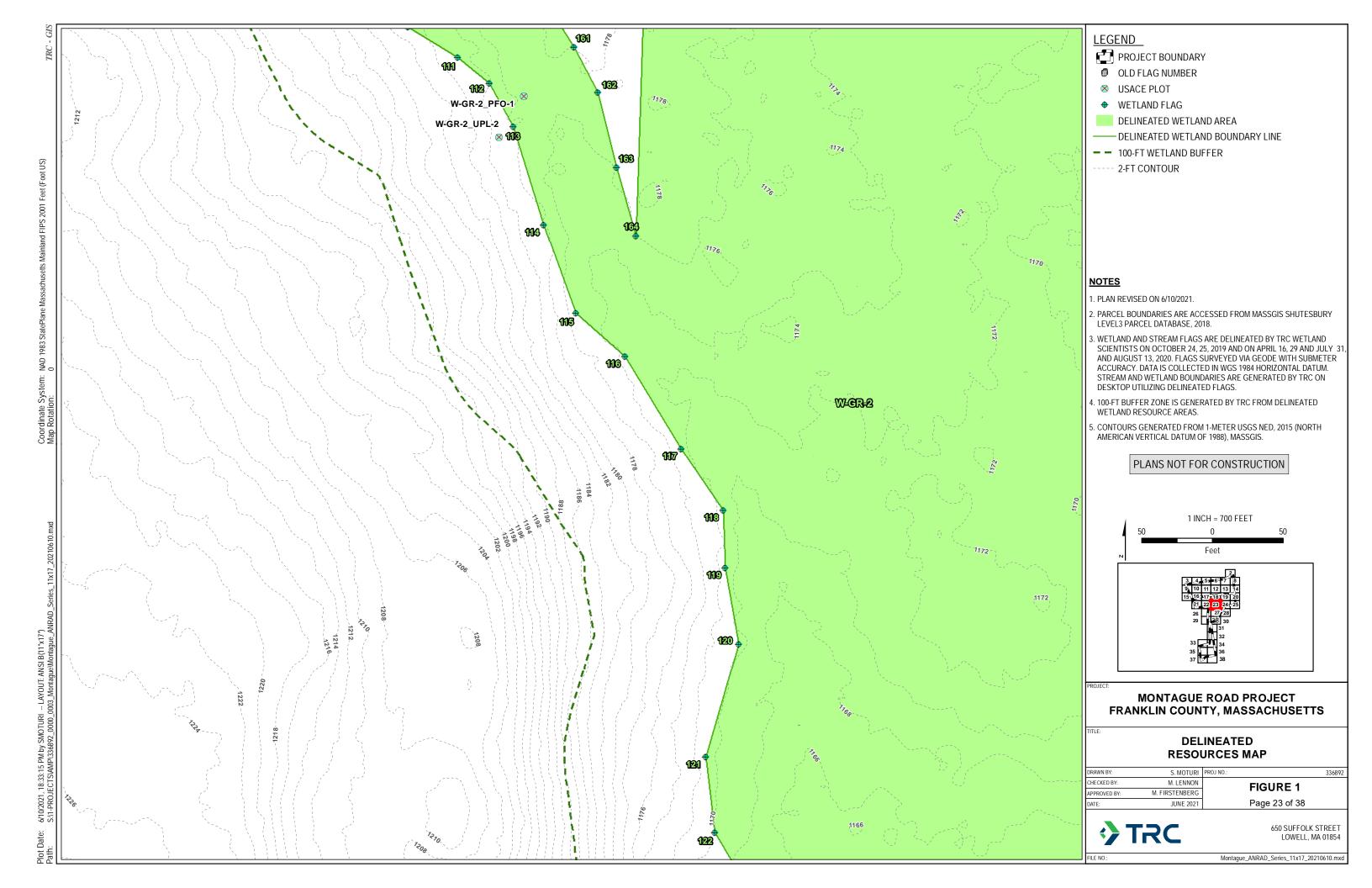
DRAWN BY:	S. MOTURI
CHECKED BY:	M. LENNON
APPROVED BY:	M. FIRSTENBERG
DATE:	JUNE 2021

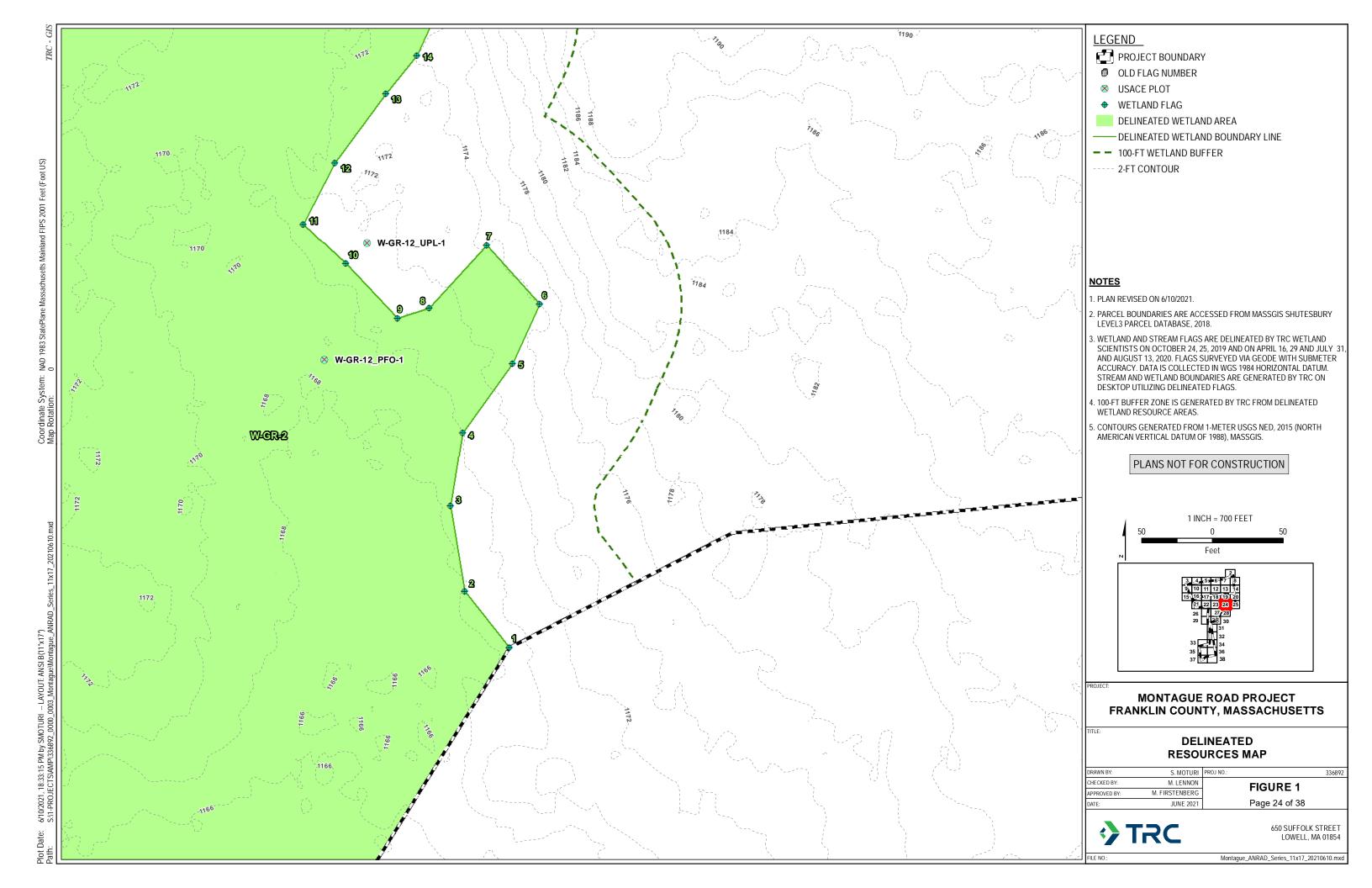
FIGURE 1

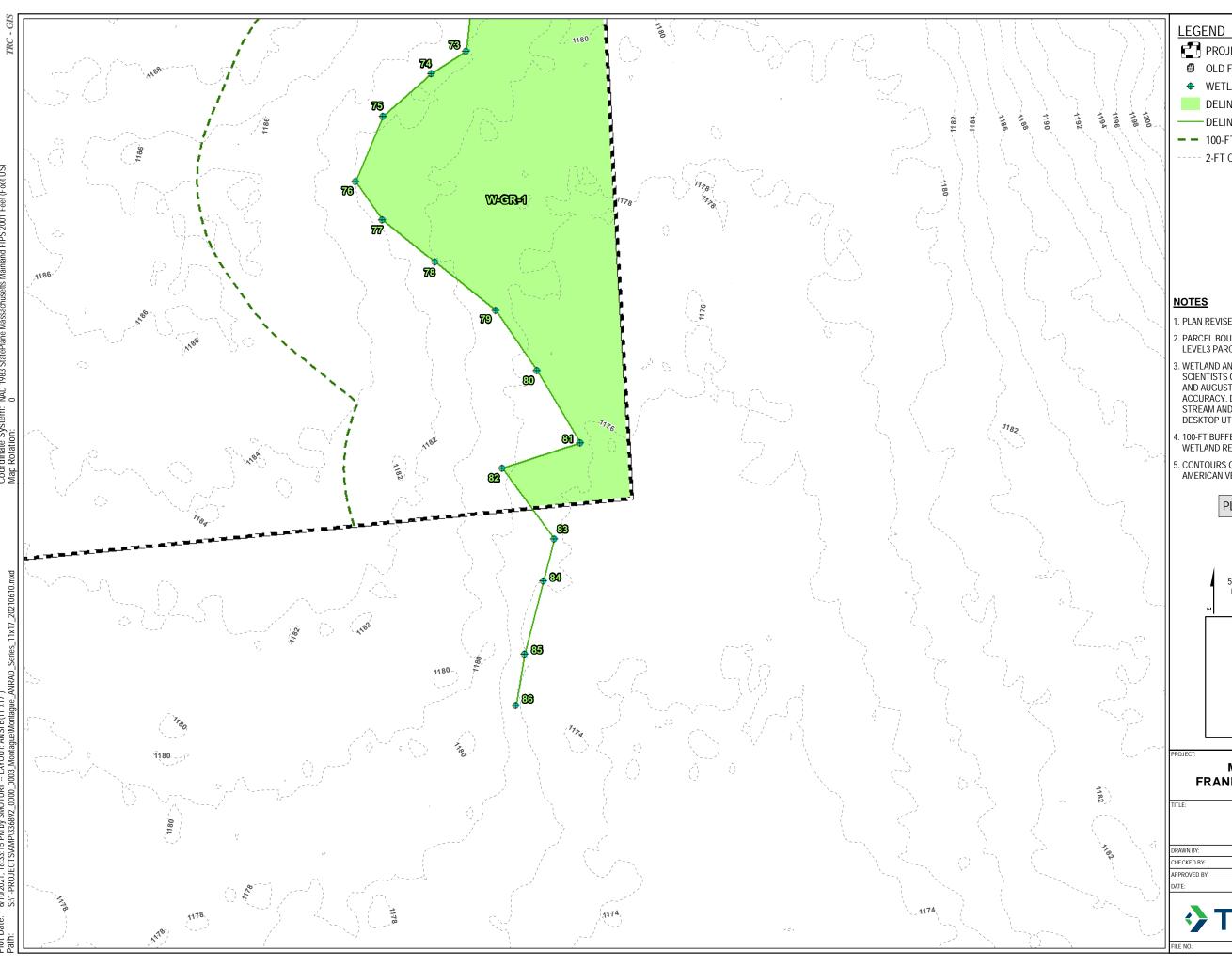
Page 22 of 38

**♦** TRC

650 SUFFOLK STREET LOWELL, MA 01854







PROJECT BOUNDARY

OLD FLAG NUMBER

WETLAND FLAG

DELINEATED WETLAND AREA

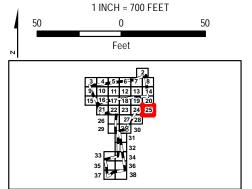
— DELINEATED WETLAND BOUNDARY LINE

**− −** 100-FT WETLAND BUFFER

---- 2-FT CONTOUR

- 1. PLAN REVISED ON 6/10/2021.
- 2. PARCEL BOUNDARIES ARE ACCESSED FROM MASSGIS SHUTESBURY LEVEL3 PARCEL DATABASE, 2018.
- 3. WETLAND AND STREAM FLAGS ARE DELINEATED BY TRC WETLAND SCIENTISTS ON OCTOBER 24, 25, 2019 AND ON APRIL 16, 29 AND JULY 31 AND AUGUST 13, 2020. FLAGS SURVEYED VIA GEODE WITH SUBMETER ACCURACY. DATA IS COLLECTED IN WGS 1984 HORIZONTAL DATUM.
  STREAM AND WETLAND BOUNDARIES ARE GENERATED BY TRC ON
  DESKTOP UTILIZING DELINEATED FLAGS.
- 4. 100-FT BUFFER ZONE IS GENERATED BY TRC FROM DELINEATED WETLAND RESOURCE AREAS.
- 5. CONTOURS GENERATED FROM 1-METER USGS NED, 2015 (NORTH AMERICAN VERTICAL DATUM OF 1988), MASSGIS.

# PLANS NOT FOR CONSTRUCTION



MONTAGUE ROAD PROJECT FRANKLIN COUNTY, MASSACHUSETTS

### **DELINEATED RESOURCES MAP**

PROJ NO.:

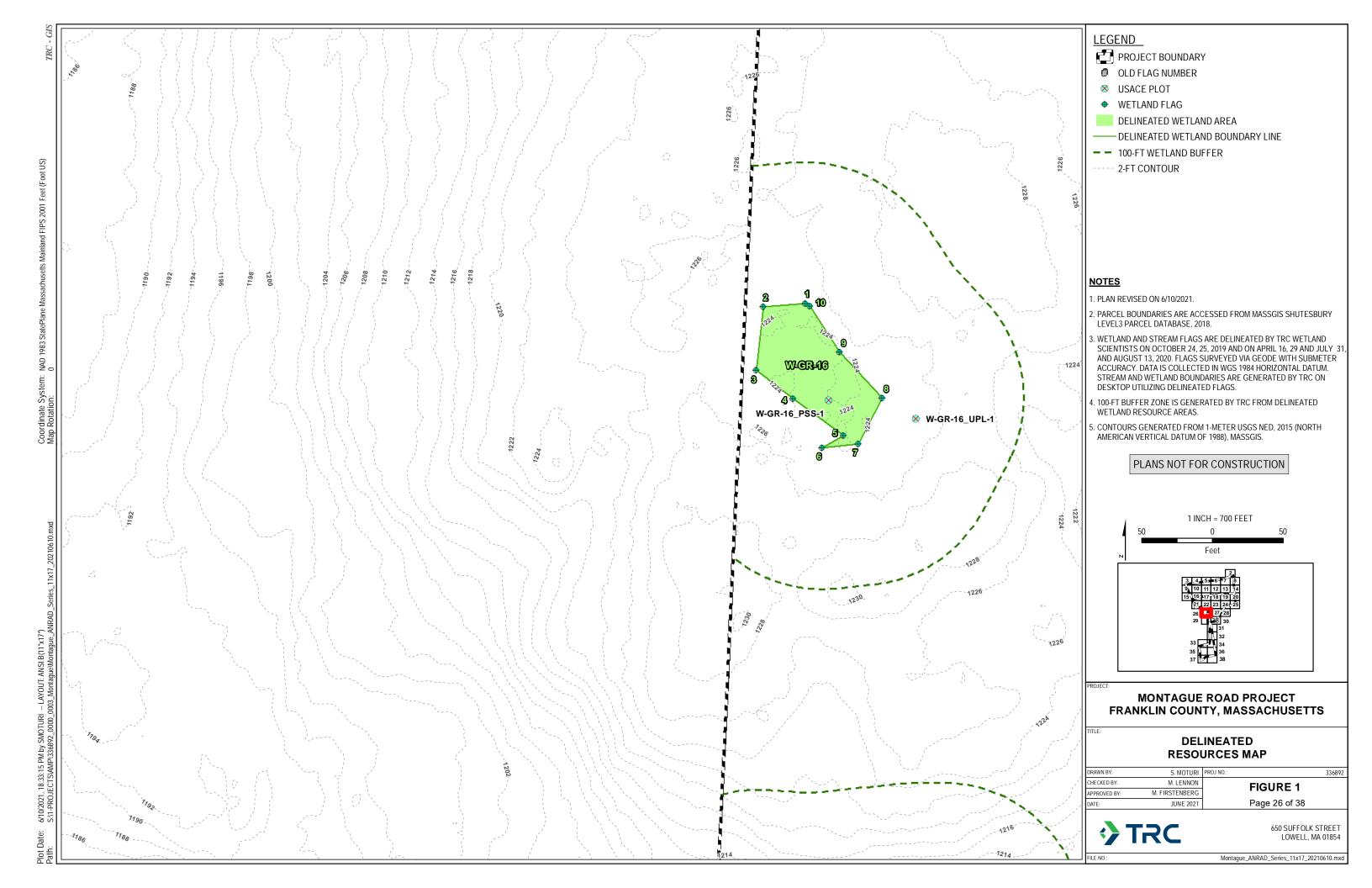
	DRAWN BY:	S. MOTURI
	CHECKED BY:	M. LENNON
	APPROVED BY:	M. FIRSTENBERG
١,	DATE:	IUNE 2021

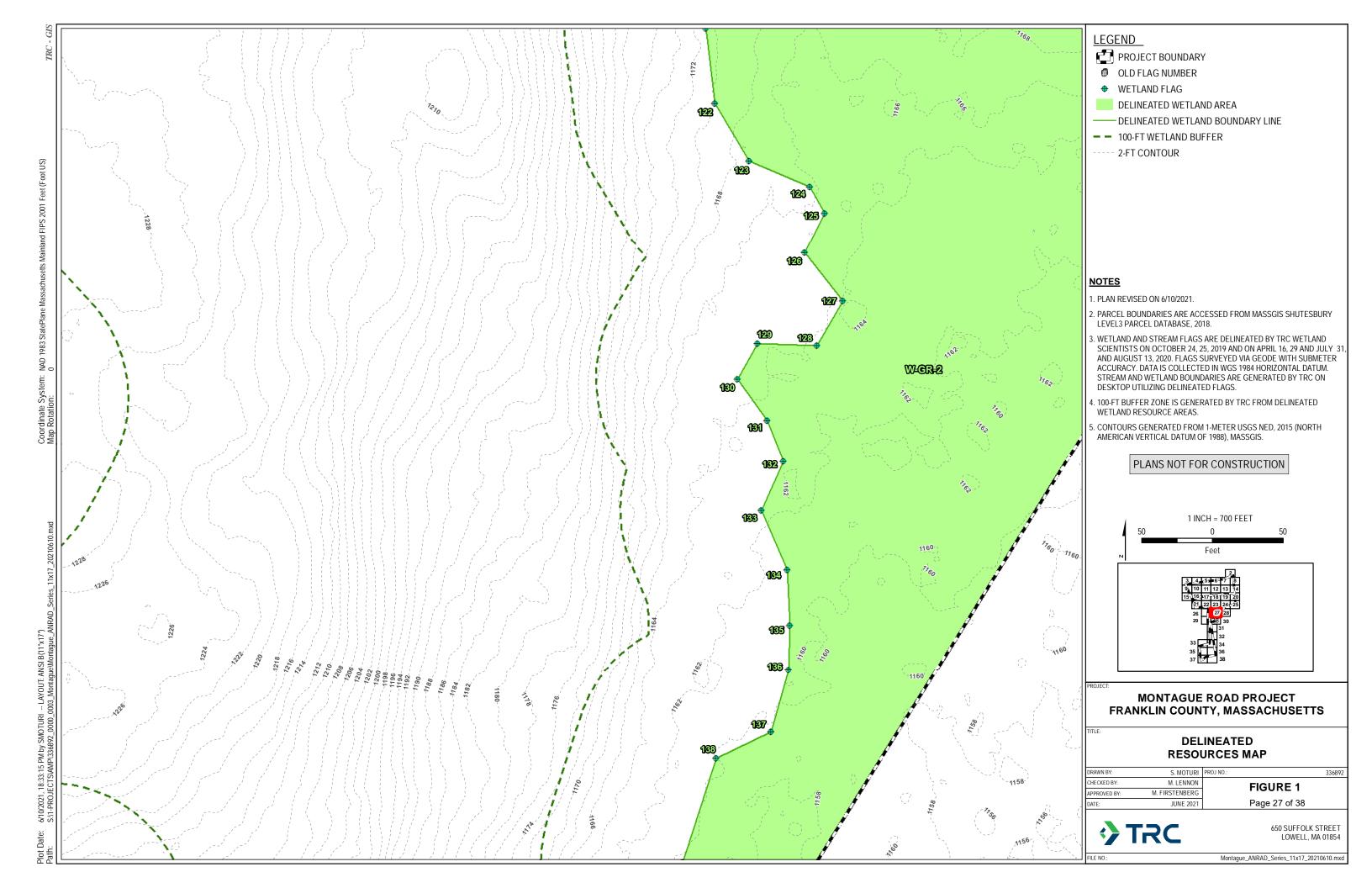
FIGURE 1

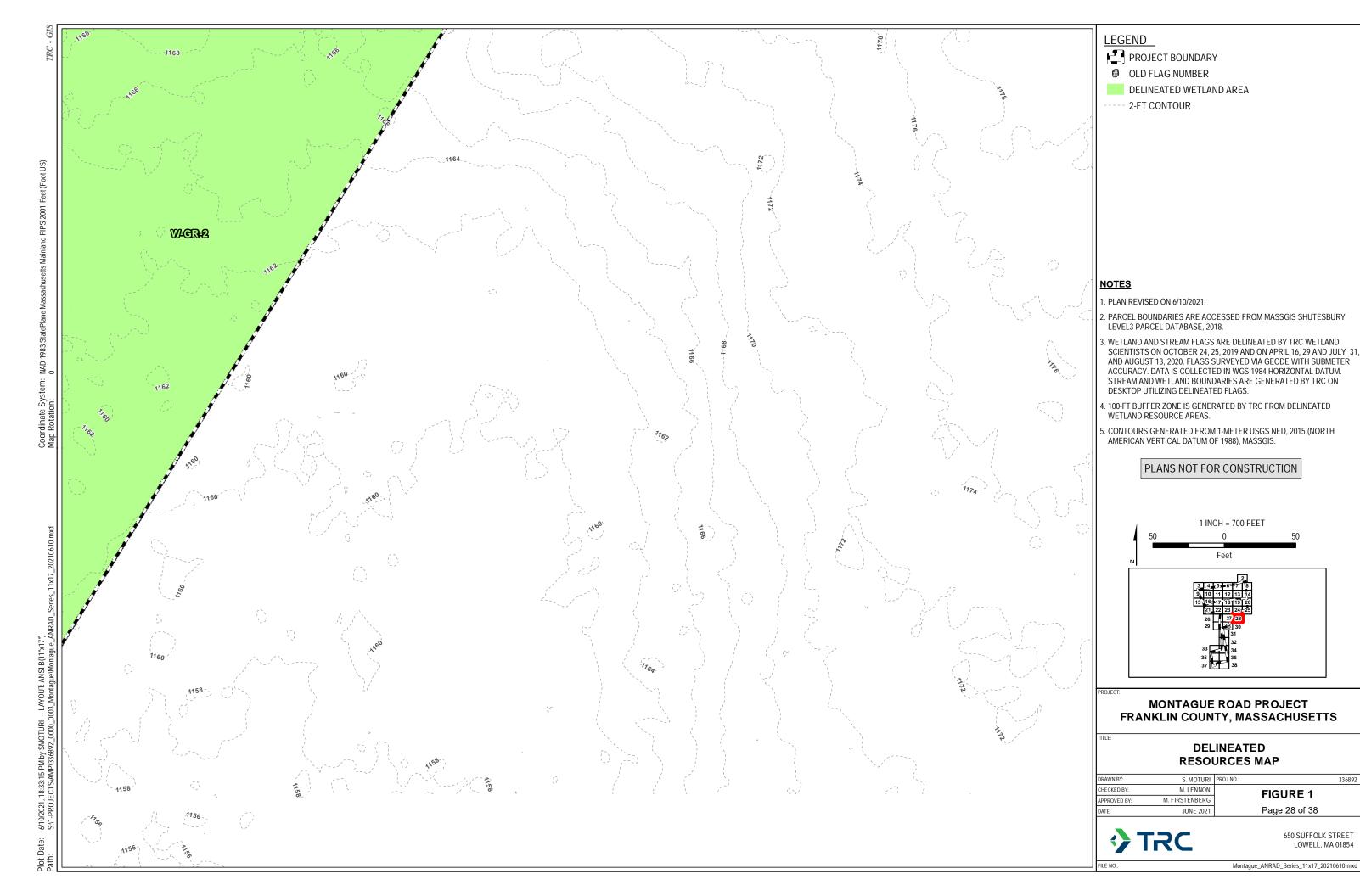
Page 25 of 38

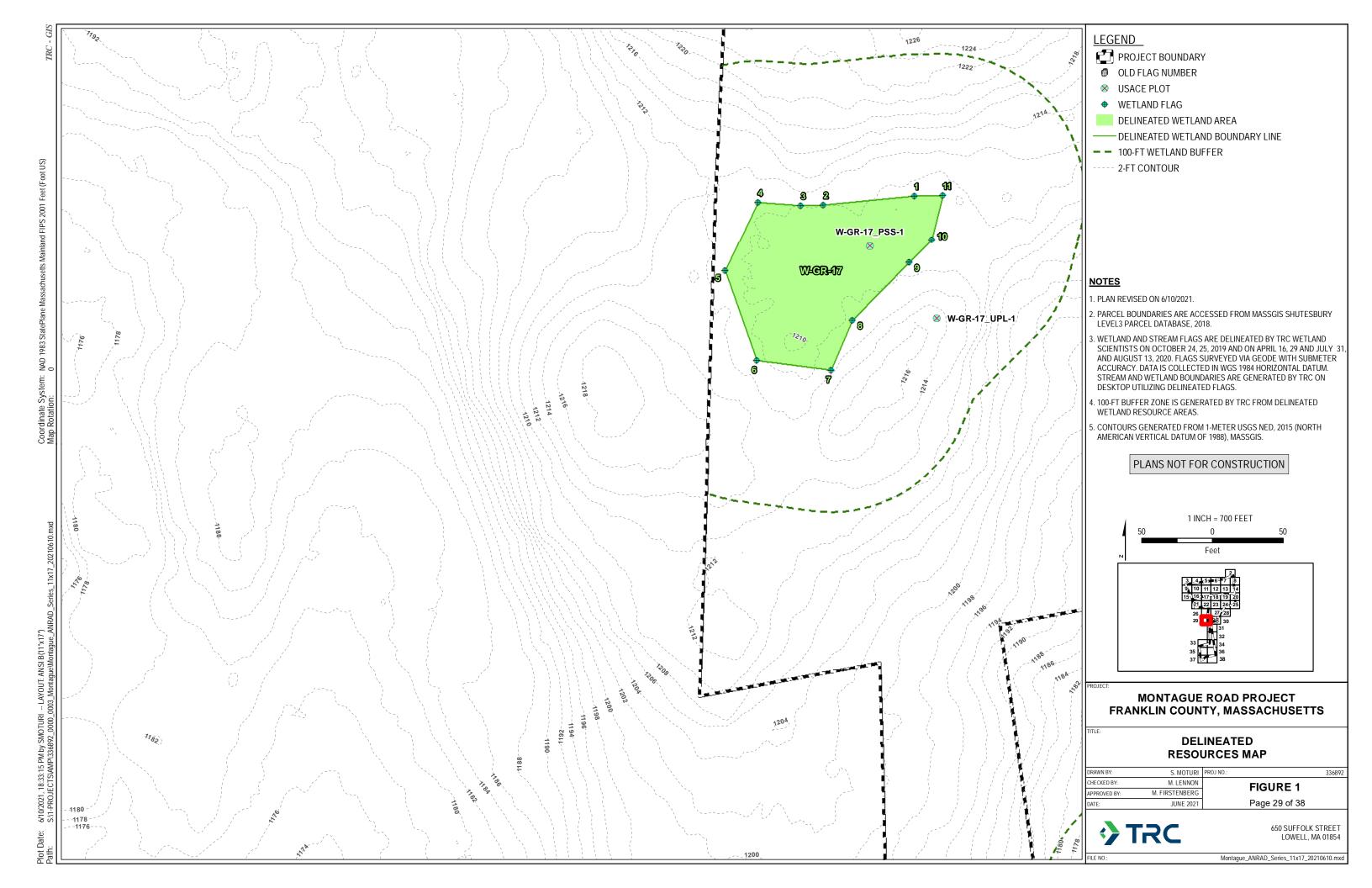
**♦** TRC

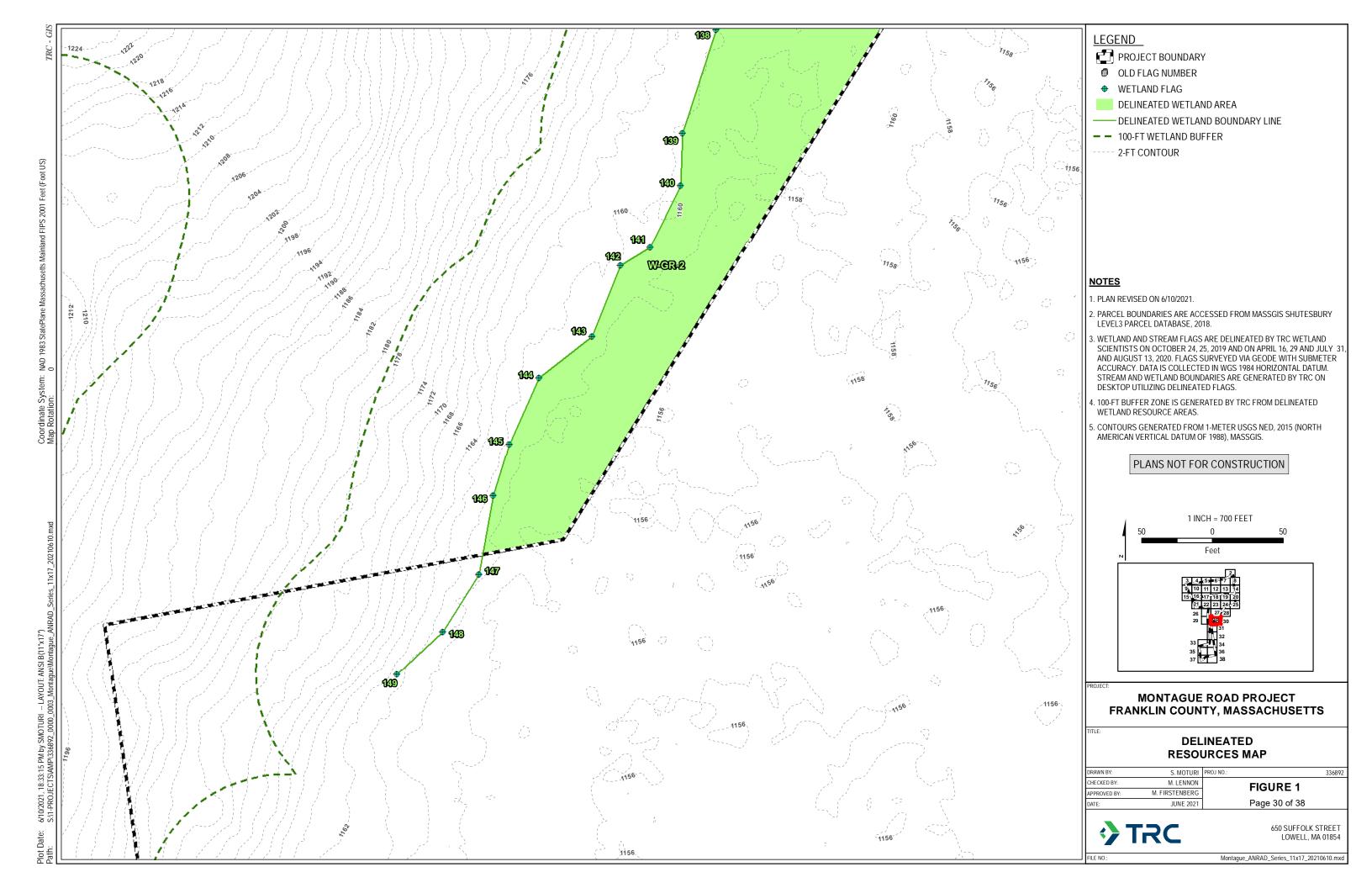
650 SUFFOLK STREET LOWELL, MA 01854

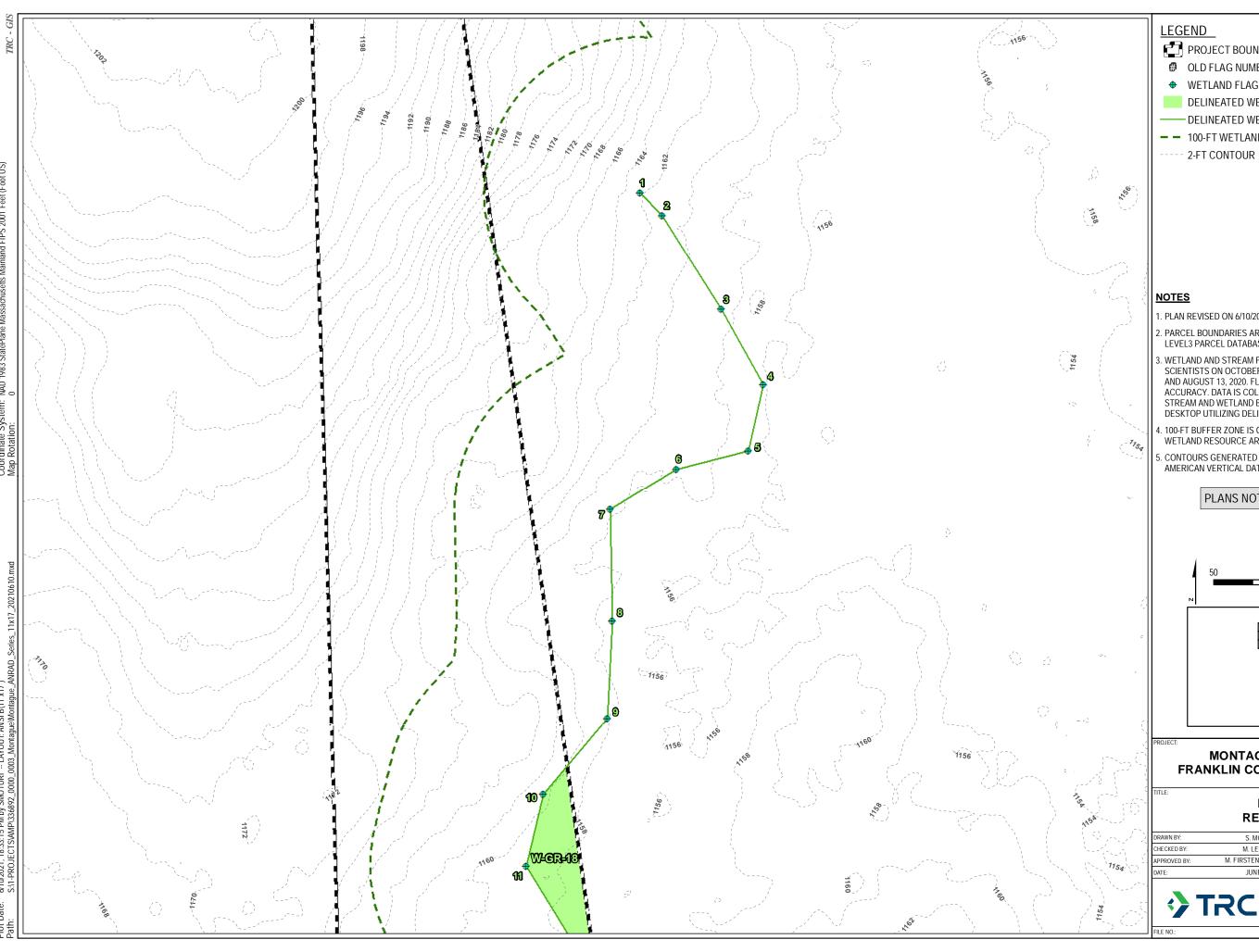






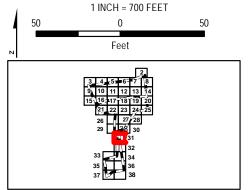






- PROJECT BOUNDARY
- OLD FLAG NUMBER
- WETLAND FLAG
- DELINEATED WETLAND AREA
- —— DELINEATED WETLAND BOUNDARY LINE
- **–** 100-FT WETLAND BUFFER
- ---- 2-FT CONTOUR

- 1. PLAN REVISED ON 6/10/2021.
- 2. PARCEL BOUNDARIES ARE ACCESSED FROM MASSGIS SHUTESBURY LEVEL3 PARCEL DATABASE, 2018.
- 3. WETLAND AND STREAM FLAGS ARE DELINEATED BY TRC WETLAND SCIENTISTS ON OCTOBER 24, 25, 2019 AND ON APRIL 16, 29 AND JULY 31 AND AUGUST 13, 2020. FLAGS SURVEYED VIA GEODE WITH SUBMETER ACCURACY. DATA IS COLLECTED IN WGS 1984 HORIZONTAL DATUM.
  STREAM AND WETLAND BOUNDARIES ARE GENERATED BY TRC ON
  DESKTOP UTILIZING DELINEATED FLAGS.
- 4. 100-FT BUFFER ZONE IS GENERATED BY TRC FROM DELINEATED WETLAND RESOURCE AREAS.
- 5. CONTOURS GENERATED FROM 1-METER USGS NED, 2015 (NORTH AMERICAN VERTICAL DATUM OF 1988), MASSGIS.



MONTAGUE ROAD PROJECT FRANKLIN COUNTY, MASSACHUSETTS

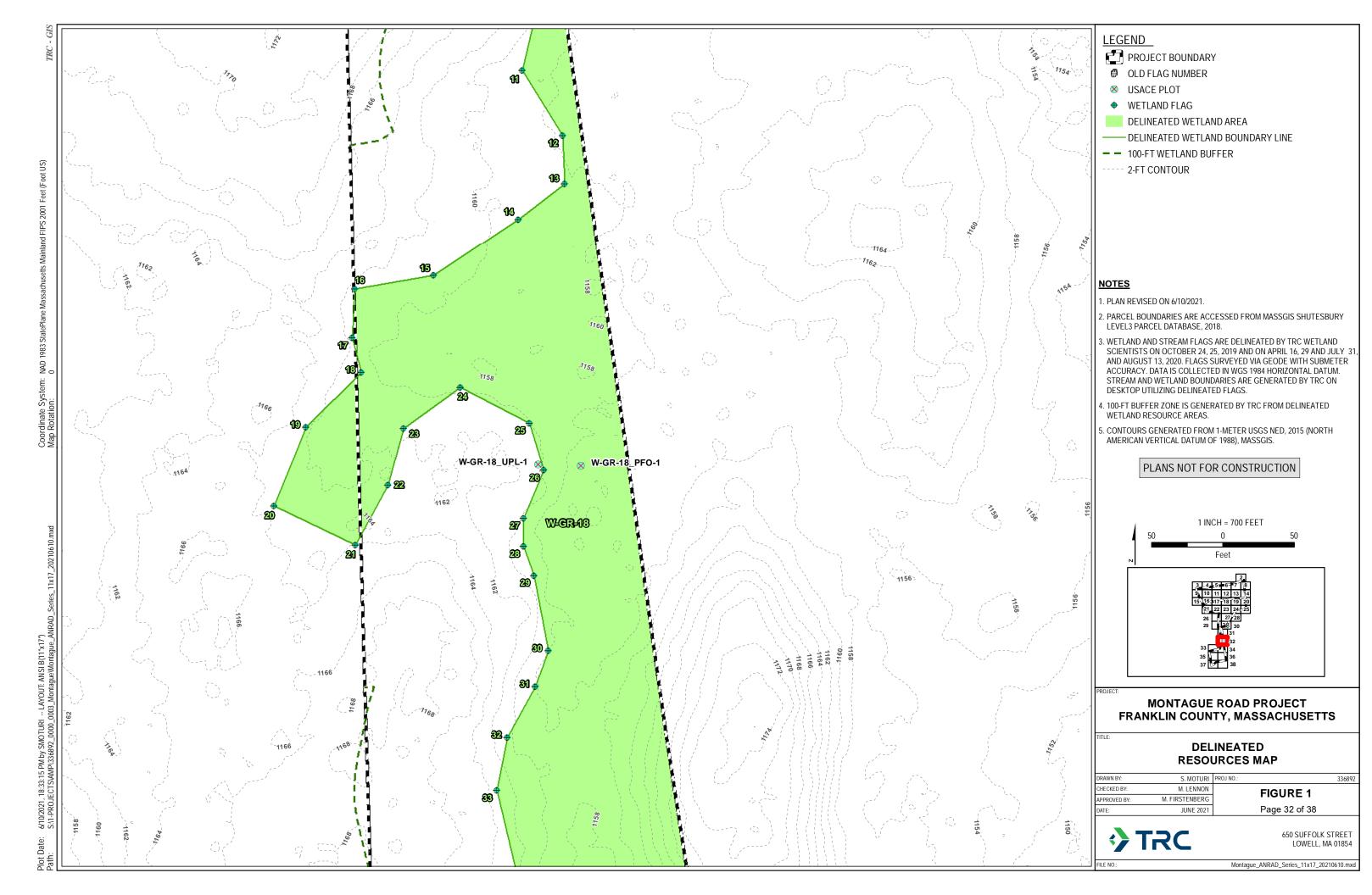
#### **DELINEATED RESOURCES MAP**

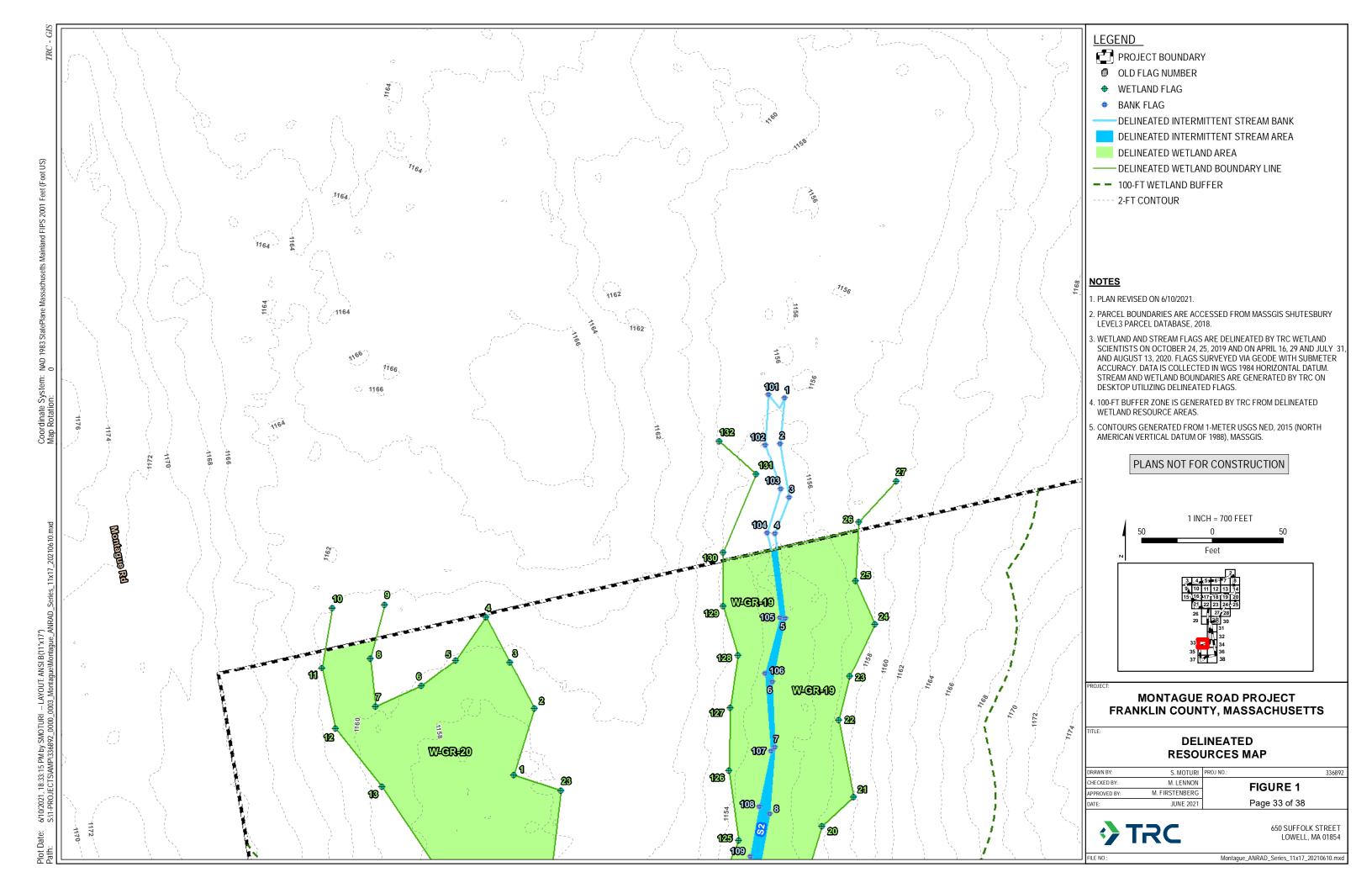
Ż	DRAWN BY:	S. MOTURI	F
J	CHECKED BY:	M. LENNON	Γ
Ĺ	APPROVED BY:	M. FIRSTENBERG	
	DATE:	JUNE 2021	l

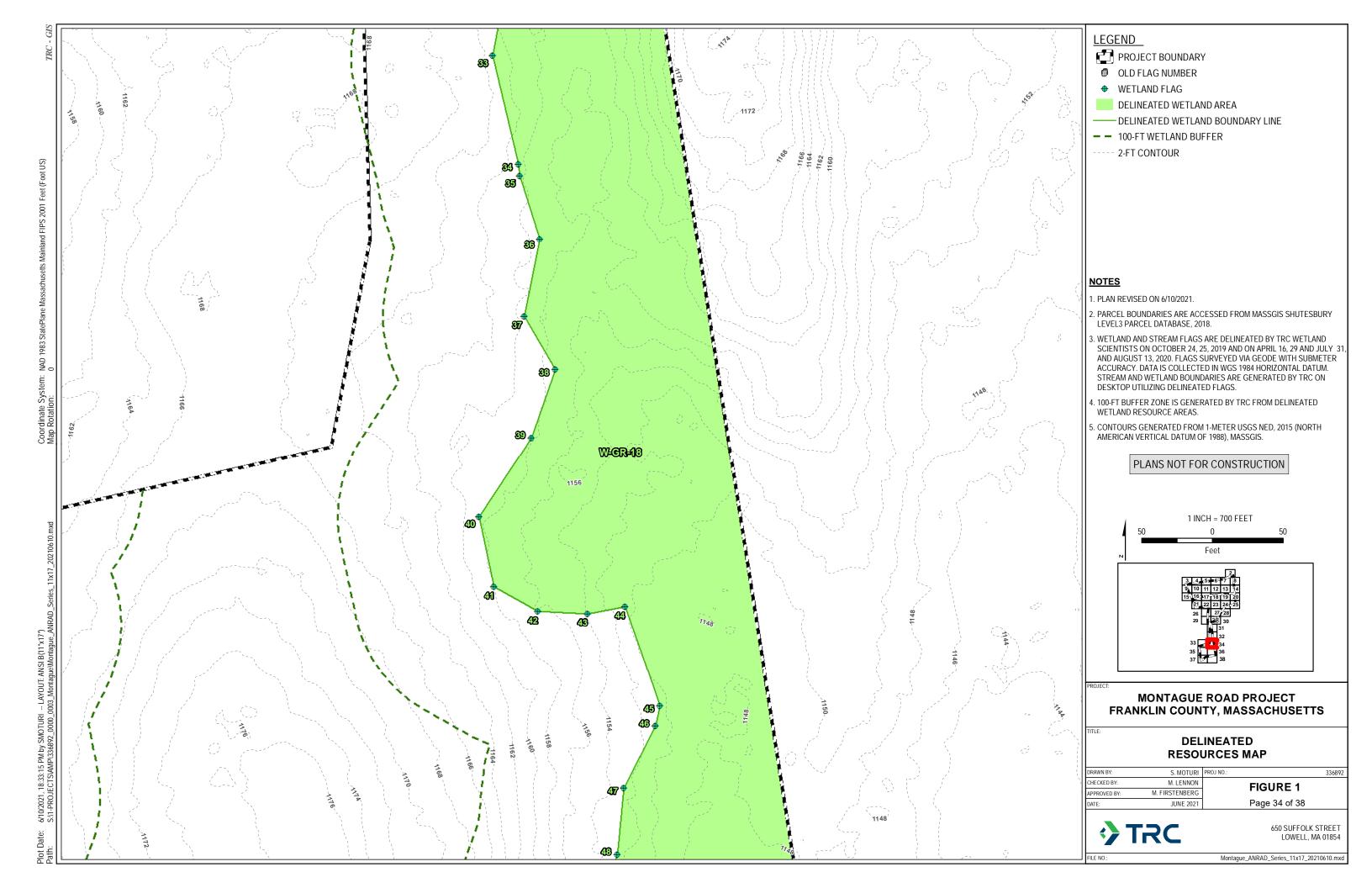
FIGURE 1

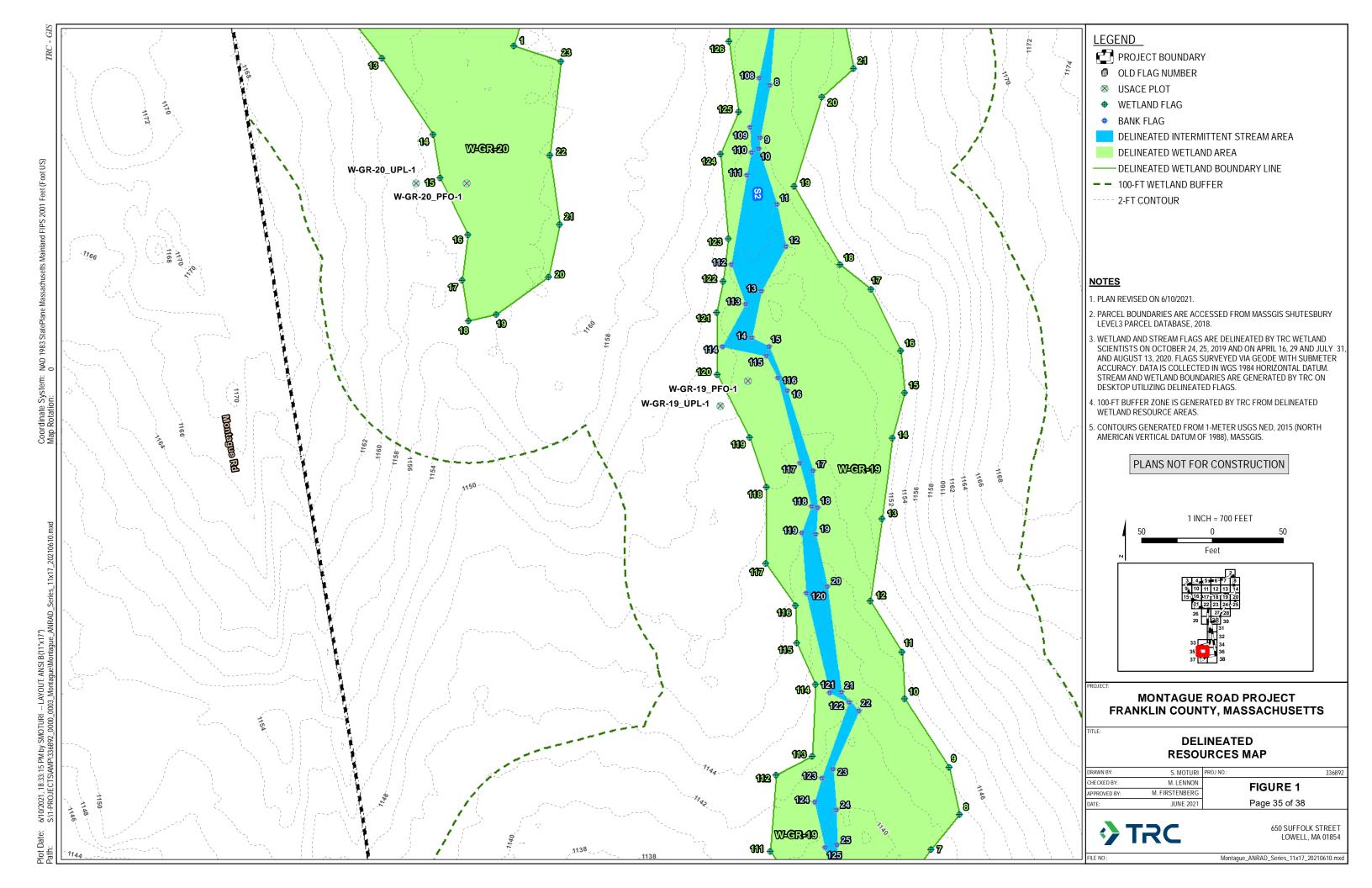
Page 31 of 38

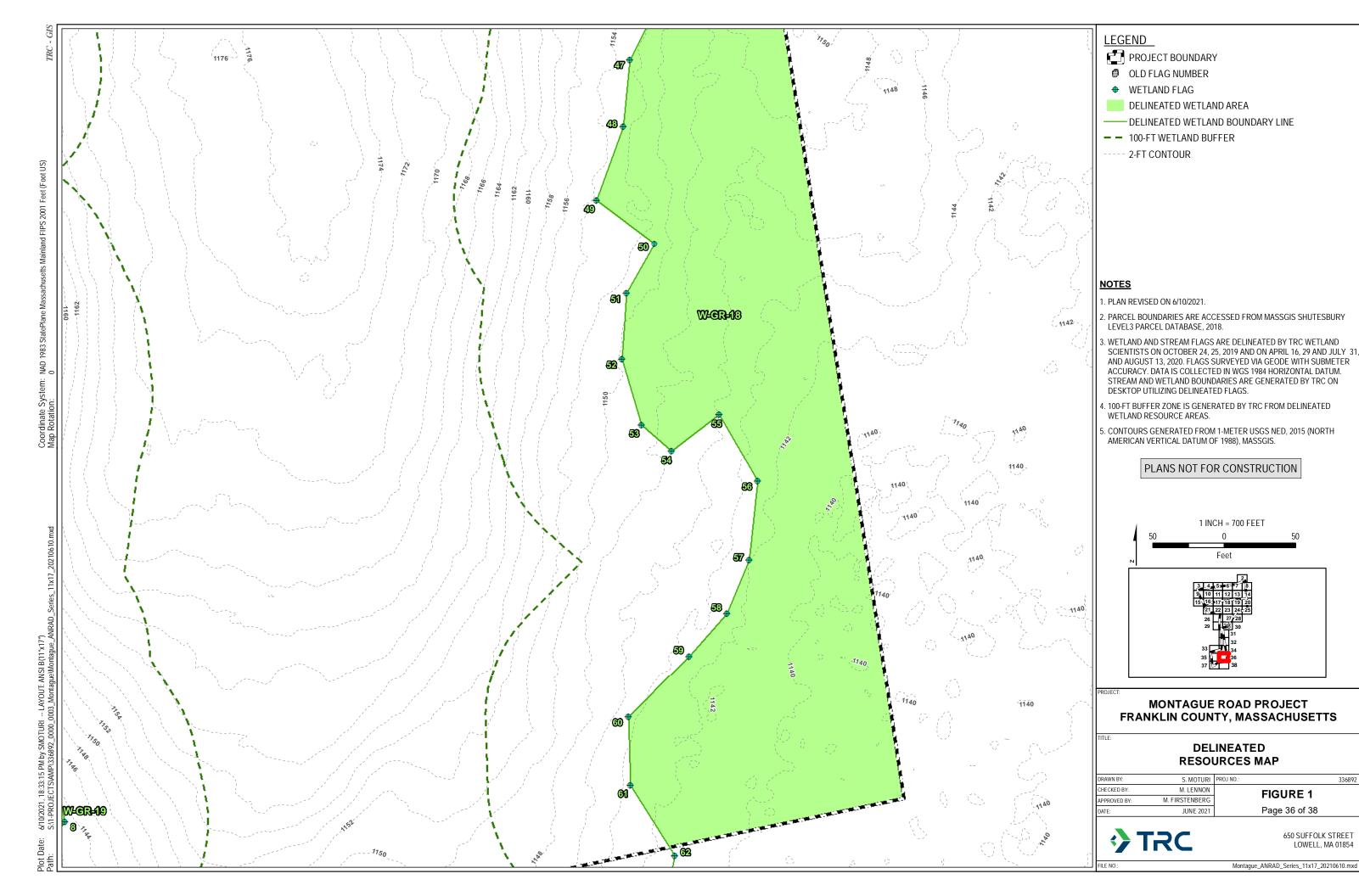
650 SUFFOLK STREET LOWELL, MA 01854

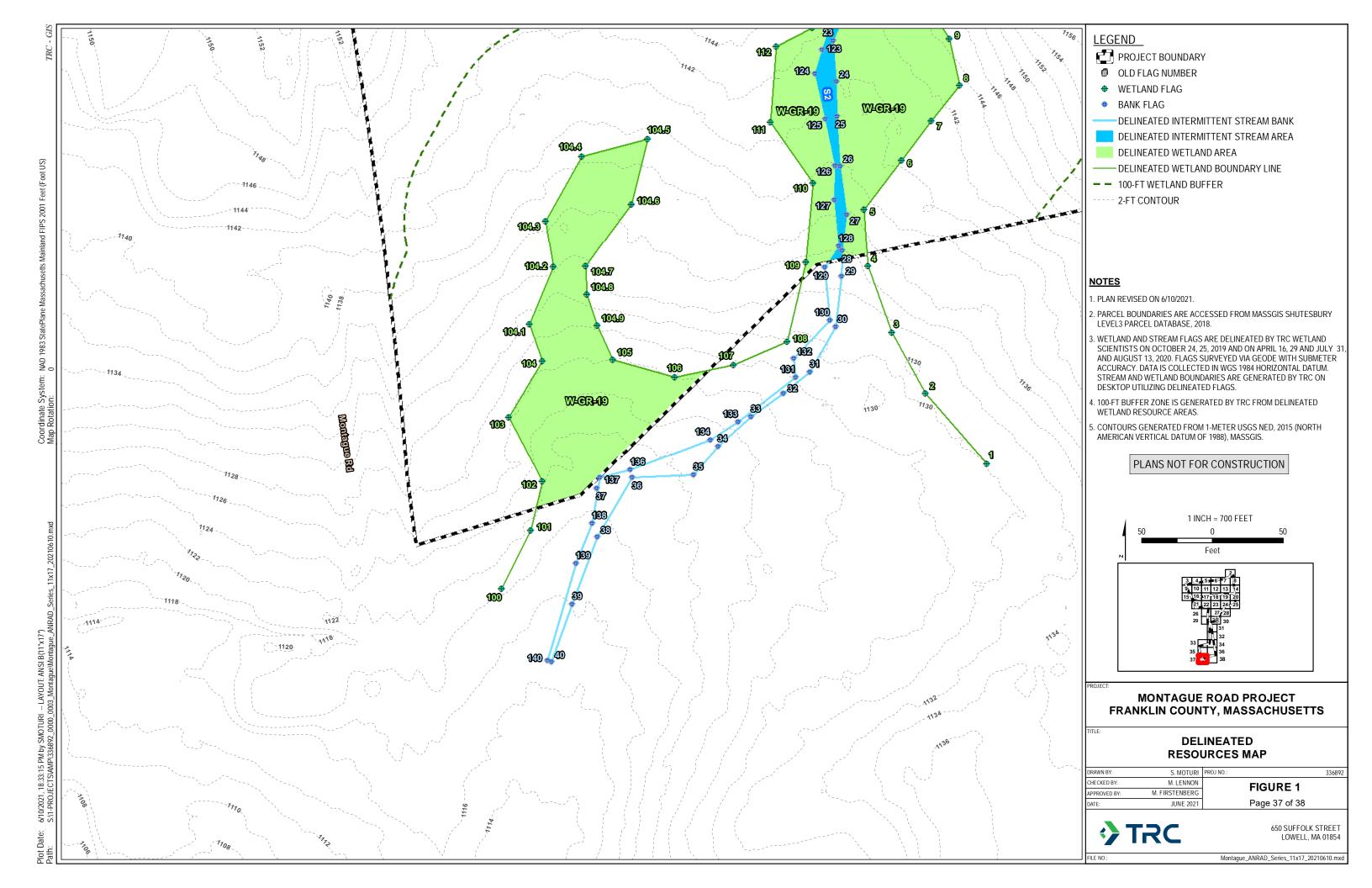


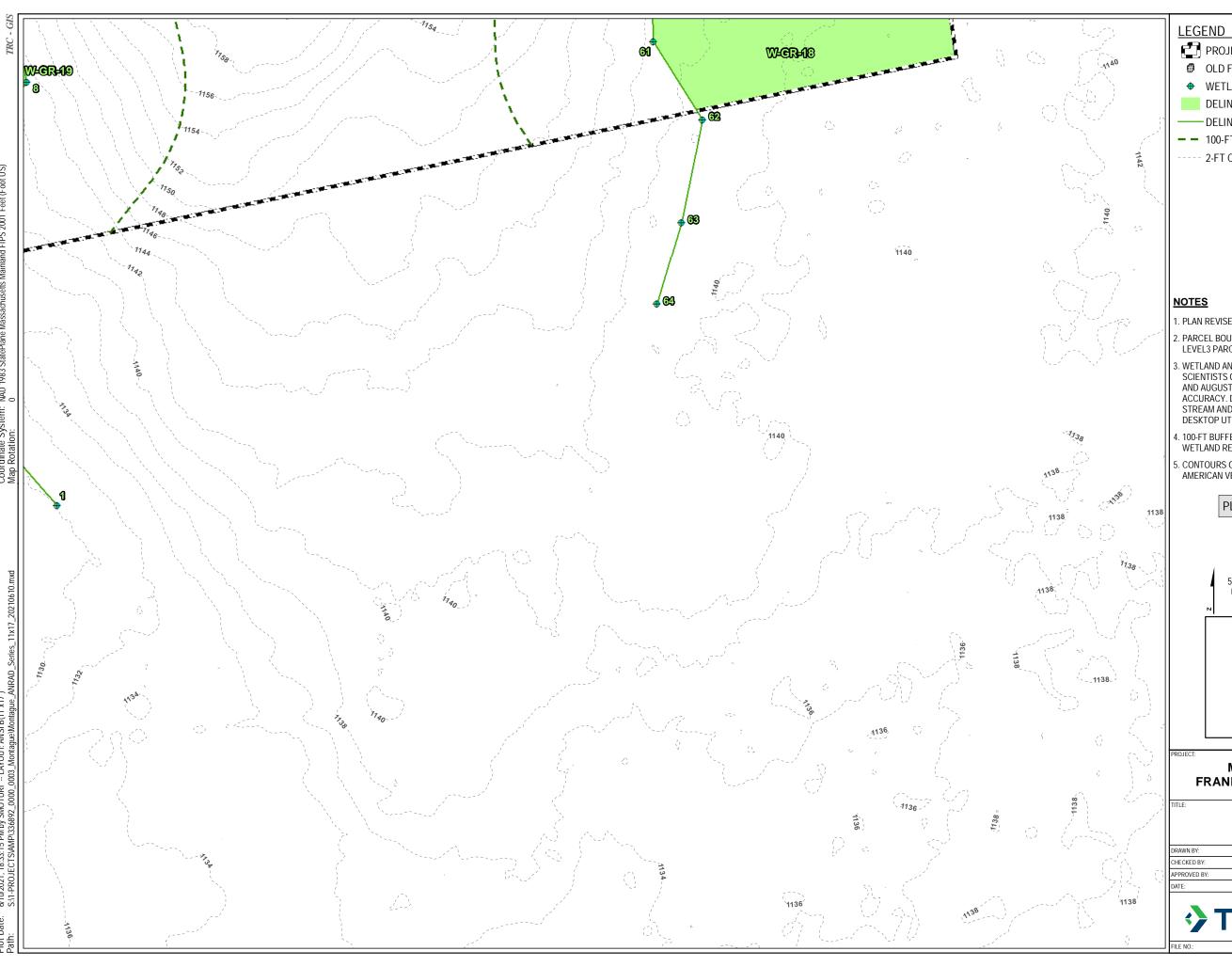








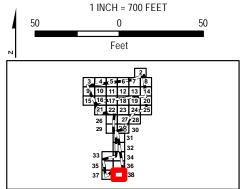




- PROJECT BOUNDARY
- OLD FLAG NUMBER
- WETLAND FLAG
- DELINEATED WETLAND AREA
- DELINEATED WETLAND BOUNDARY LINE
- **− −** 100-FT WETLAND BUFFER
- ---- 2-FT CONTOUR

- 1. PLAN REVISED ON 6/10/2021.
- 2. PARCEL BOUNDARIES ARE ACCESSED FROM MASSGIS SHUTESBURY LEVEL3 PARCEL DATABASE, 2018.
- 3. WETLAND AND STREAM FLAGS ARE DELINEATED BY TRC WETLAND SCIENTISTS ON OCTOBER 24, 25, 2019 AND ON APRIL 16, 29 AND JULY 31 ACCURACY. DATA IS COLLECTED IN WGS 1984 HORIZONTAL DATUM. STREAM AND WETLAND BOUNDARIES ARE GENERATED BY TRC ON DESKTOP UTILIZING DELINEATED FLAGS.
- 4. 100-FT BUFFER ZONE IS GENERATED BY TRC FROM DELINEATED WETLAND RESOURCE AREAS.
- 5. CONTOURS GENERATED FROM 1-METER USGS NED, 2015 (NORTH AMERICAN VERTICAL DATUM OF 1988), MASSGIS.

## PLANS NOT FOR CONSTRUCTION



MONTAGUE ROAD PROJECT FRANKLIN COUNTY, MASSACHUSETTS

#### **DELINEATED RESOURCES MAP**

l	DRAWN BY:	S. MOTURI
l	CHECKED BY:	M. LENNON
l	APPROVED BY:	M. FIRSTENBERG
l	DATE:	IUNE 2021

FIGURE 1

Page 38 of 38

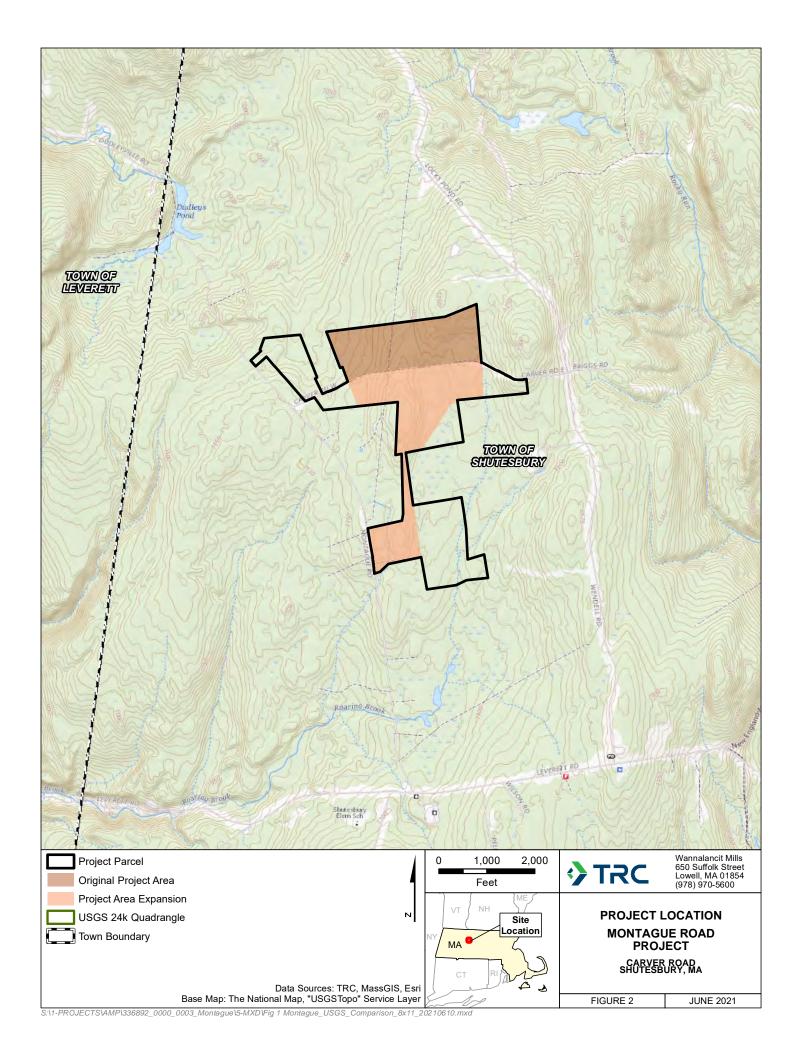
**♦** TRC

650 SUFFOLK STREET LOWELL, MA 01854

Montague\_ANRAD\_Series\_11x17\_20210610.mxd

# ATTACHMENT B Figure 2: Montague Road Project (July 2021)





## ATTACHMENT C Additional Wetland Delineation Forms



Project/Site: Montague	City/County: Shu	tesbury, Franklin		SamplingDate: 2020-July-30		
Applicant/Owner: W.D. Cowle	s	State: MA		SamplingPoint: W-GR-01_PFO-2		
Investigator(s): Greg Russo, M	atas R	Section, Township,	Range:			
Landform(hillslope,terrace,etc.):	Valley	Local relief (concave, conv	/ex, none):(	Concave	Slope (%): 1 to 3	
Subregion (LRR or MLRA):	MLRA 144A of LRR R	Lat: 42.473918683	9 Long: -	72.4205453788	Datum: WGS84	
SoilMapUnitName: Pillsbury fi	ine sandy loam, 0 to 8 percent slopes, very s	tony		NWI classification	: PFO	
, ,	ns on the site typical for this time of ye			explain in Remarks.)		
Are Vegetation, Soil,	or Hydrology significantly di			•	′es _ <b>∠</b> No	
Are Vegetation, Soil,	or Hydrology naturally prob	lematic? (If needed,	explain any	answers in Remarks.)		
SUMMARY OF FINDINGS – A	Attach site map showing sampli	ng point locations, trar	nsects, imp	oortant features, e	tc.	
Hydrophytic Vegetation Present	? Yes _ 🗸 No					
Hydric Soil Present?	Yes _ 🗸 No	Is the Sampled Area within	in a Wetland	? Yes _	No	
Wetland Hydrology Present?	Yes No	If yes, optional Wetland Si	ite ID:	W-GF	R-01	
	<del></del>		ite ib.	<del>W-GI</del>	<b>Y-01</b>	
Remarks: (Explain alternative pr	ocedures here or in a separate report	t)				
Covertype is PFO. Area is wetlan	d, all three wetland parameters are p	resent.				
HYDROLOGY						
Wetland Hydrology Indicators:						
	one is required; check all that apply)		Secondary I	Indicators (minimum o	of two required)	
•			-	Soil Cracks (B6)	or two required,	
✓ Surface Water (A1)	Water-Stained Le		Drainage Patterns (B10)			
High Water Table (A2) Saturation (A3)	Aquatic Fauna (B´ Marl Deposits (B1		Moss Tri			
Water Marks (B1)	Hydrogen Sulfide		Dry-Season Water Table (C2)			
Sediment Deposits (B2)	, ,	heres on Living Roots (C3)	-	_ Crayfish Burrows (C8)		
Scamene Deposits (B2)	Oxidized Kilizosp	ricies on Living Roots (cs)	-	on Visible on Aerial Im	nagery (C9)	
Drift Deposits (B3)	Presence of Redu	iced Iron (C4)	Stunted	or Stressed Plants (D	1)	
Algal Mat or Crust (B4)		ction in Tilled Soils (C6)	Geomor	rphic Position (D2)		
Iron Deposits (B5)	<u></u> Thin Muck Surfac	e (C7)	Shallow	Aquitard (D3)		
Inundation Visible on Aerial I	Imagery (B7) Other (Explain in	Remarks)		pographic Relief (D4)		
Sparsely Vegetated Concave	Surface (B8)		∕ FAC-Neu	utral Test (D5)		
Field Observations:						
Surface Water Present?	Yes No Depth	(inches): 2				
Water Table Present?	Yes No Depth	(inches): 0	Wetland Hy	drology Present?	Yes No	
Saturation Present?	Yes <u></u> ✓ No Depth	(inches): 0	-			
(includes capillary fringe)		<u> </u>	-			
	a gauge monitoring well perial photo	s provious inspections) if :	available.			
Describe Recorded Data (stream	n gauge, monitoring well, aerial photo	s, previous irispections), ii a	avaliable.			
Remarks:						
The criterion for wetland hydrol	ogy is met.					
-						

<u>'</u>				T		
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Dominant		Dominance Test worksheet:		
		Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC:	6	(A)
1. Tsuga canadensis	40	Yes	FAC	Total Number of Dominant Species		
2. Betula alleghaniensis	20	Yes	FAC	Across All Strata:	7	(B)
3. Acer rubrum	10	No	FAC	Percent of Dominant Species That		
4				Are OBL, FACW, or FAC:	85.7	(A/B)
5				Prevalence Index worksheet:		
6				Total % Cover of:	Multiply	Bv:
7				OBL species 10	x 1 =	10
	70	= Total Cov	er	FACW species 30	x 2 =	60
Sapling/Shrub Stratum (Plot size: 15 ft )				FAC species 80	x 3 =	240
1. Kalmia latifolia	10	Yes	FACU	FACU species 10	x 4 =	40
2. Vaccinium corymbosum	5	Yes	FACW	UPL species 0	x 5 =	0
3				Column Totals 130	(A)	350 (B)
4				Prevalence Index = B/A =	2.69	330 (B)
5				Hydrophytic Vegetation Indicators:		<del></del>
6				1- Rapid Test for Hydrophytic	Vegetation	
7				2 - Dominance Test is >50%	regetation	
	15	= Total Cov	er	$\checkmark$ 3 - Prevalence Index is $\le 3.0^{\circ}$		
Herb Stratum (Plot size:5 ft)				4 - Morphological Adaptations	1 (Provide	supporting
1. Osmundastrum cinnamomeum	20	Yes	FACW	data in Remarks or on a separate sh		3upporting
2. <i>Parathelypteris noveboracensis</i>	10	Yes	FAC	Problematic Hydrophytic Vege	•	(plain)
3. Carex gynandra	10	Yes	OBL	¹Indicators of hydric soil and wetlan		•
4. Vaccinium corymbosum	5	No	FACW	present, unless disturbed or proble	, ,	<b>6</b> 3
5				Definitions of Vegetation Strata:		
6				Tree – Woody plants 3 in. (7.6 cm) o	r more in (	diameter at
7				breast height (DBH), regardless of h	ieight.	
8				Sapling/shrub – Woody plants less t	.han 3 in. Γ	DBH and
9				greater than or equal to 3.28 ft (1 m		
10				Herb – All herbaceous (non-woody)		gardless of
11.				size, and woody plants less than 3.2		
12.				Woody vines – All woody vines grea	ter than 3.	.28 ft in
	45	= Total Cov	er	height.		
Woody Vine Stratum (Plot size: 30 ft )		-		Hydrophytic Vegetation Present?	Yes 🔽 N	lo
1.						
2.						
3.						
4.						
	0	= Total Cov	er			
Demayles (Include whate numbers have as an a const		-				
Remarks: (Include photo numbers here or on a separa	-		enacies indo	aved as ORL FACW or EAC) Por the M	MΔ \M/DΛ ~	astern
A positive indication of hydrophytic vegetation was observed	•		•	•	AA VVPA, E	asieiii
hemlock is considered a wetland indicator species. There	iore, it lias	neen assigr	icu ali Illuica	ator status or FAC IIISteau or FACU.		

Profile Des	cription: (Describe	to the d	lepth needed to d	ocum	ent the i	indicato	r or confirm the	absence of indicator	s.)
Depth	Matrix	Redox Features							
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	T	exture	Remarks
0 - 6	10YR 2/1	100					Muck	y Silt Loam	
6 - 20	2.5Y 5/1	90	2.5Y 4/4	10	C	M	Loa	my Sand	
							-		
							-		
¹Type: C = 0	Concentration, D =	Depleti	on, RM = Reduced	l Matı	rix, MS =	Masked	Sand Grains.	<sup>2</sup> Location: PL = Pore I	Lining, M = Matrix.
Hydric Soil	Indicators:							Indicators for Pro	oblematic Hydric Soils³:
Histoso			Polyvalue Be		-			2 cm Muck (A	10) (LRR K, L, MLRA 149B)
	pipedon (A2)		Thin Dark Su						Redox (A16) <b>(LRR K, L, R)</b>
l ——	istic (A3)		Loamy Muck	-		(LRR K, I	L)	5 cm Mucky F	Peat or Peat (S3) (LRR K, L, R)
	en Sulfide (A4)		Loamy Gleye					Dark Surface	(S7) <b>(LRR K, L)</b>
	ed Layers (A5) ed Below Dark Surf	face (A1°	Depleted Ma					Polyvalue Bel	ow Surface (S8) (LRR K, L)
	ark Surface (A12)	iace (Ai	Depleted Da			١			face (S9) <b>(LRR K, L)</b>
	Mucky Mineral (S1)	)	Redox Depre						ese Masses (F12) (LRR K, L, R)
_	Gleyed Matrix (S4)								odplain Soils (F19) (MLRA 149B)
	Redox (S5)								(TA6) (MLRA 144A, 145, 149B)
Strippe	d Matrix (S6)							Red Parent M	Dark Surface (TF12)
Dark Su	ırface (S7) <b>(LRR R,</b> I	MLRA 14	19B)					Other (Explain	
								•	THI Nemarks)
		_	and wetland hyd	rology	y must be	e preser	nt, unless distur	bed or problematic.	
Restrictive	Layer (if observed)	):				l	5 11 P 12		v
	Type:		None			Hyaric	Soil Present?		Yes No
	Depth (inches):								
Remarks:									
A positive i	ndication of hydric	soil wa	s observed.						

Project/Site: Montague	City/County: Shu	tesbury, Franklin	s	SamplingDate: 2020-July-30		
Applicant/Owner: W.D. Cowls		State: MA	Sar	SamplingPoint: W-GR-01_UPL-2		
Investigator(s): Greg Russo, Mar	tas R	Section, Township, F	Range:			
Landform(hillslope,terrace,etc.):	Hillslope	Local relief (concave, conve	ex, none): Un	dulating	Slope (%): 2 to 5	
Subregion (LRR or MLRA): MI	LRA 144A of LRR R	Lat: 42.4740011618	Long: -72	2.4208690879	Datum: WGS84	
SoilMapUnitName: Pillsbury fin	e sandy loam, 0 to 8 percent slopes, very s	tony		NWI classification	: None	
	on the site typical for this time of ye		(If no, ex	plain in Remarks.)		
Are Vegetation, Soil,	or Hydrology significantly di		l Circumstanc	•	′es No	
Are Vegetation, Soil,	or Hydrology naturally prob	lematic? (If needed, e	explain any an	nswers in Remarks.)		
SUMMARY OF FINDINGS – At	tach site map showing sampli	ng point locations, tran	sects, impo	rtant features, e	tc.	
Hydrophytic Vegetation Present?	Yes No <b>_</b> ✓					
Hydric Soil Present?	Yes No <b></b> ∕_	Is the Sampled Area within	a Wetland?	Yes	No	
Wetland Hydrology Present?	Yes No _ <b>_</b>	If yes, optional Wetland Sit				
			CID.			
	cedures here or in a separate report					
Covertype is UPL. Area is upland,	not all three wetland parameters ar	e present.				
HYDBOLOCY						
HYDROLOGY						
Wetland Hydrology Indicators:						
Primary Indicators (minimum of o	one is required; check all that apply)	:	Secondary Inc	dicators (minimum	of two required)	
Surface Water (A1)	Water-Stained Lea	aves (B9)	Surface So	oil Cracks (B6)		
High Water Table (A2)	Aquatic Fauna (B1	13)	Drainage F	Patterns (B10)		
Saturation (A3)	Marl Deposits (B1	5)		Lines (B16)		
Water Marks (B1)	Hydrogen Sulfide	Odor (C1)	-	_ Dry-Season Water Table (C2)		
Sediment Deposits (B2)	Oxidized Rhizosp	heres on Living Roots (C3)	-	Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)		
- 16 - 11 - 12					0 ,	
Drift Deposits (B3)	Presence of Redu			r Stressed Plants (D	1)	
Algal Mat or Crust (B4) Iron Deposits (B5)		ction in Tilled Soils (C6)		hic Position (D2)		
Iron Deposits (B5) Inundation Visible on Aerial In	Thin Muck Surfact nagery (B7) Other (Explain in		quitard (D3) ographic Relief (D4)			
Sparsely Vegetated Concave S	• • • • • • • • • • • • • • • • • • • •	Remarks)		ral Test (D5)		
Field Observations:	diface (DO)		TAC-Neuti	al lest (D5)		
Surface Water Present?	Yes No <u></u> ✓ Depth	(inches):				
Water Table Present?			Matland Lluda	rolom/Drocont?	Voc. No. 4	
	·	<del></del>	weuana Hyar	rology Present?	Yes No	
Saturation Present?	Yes No Depth	(inches):				
(includes capillary fringe)						
Describe Recorded Data (stream	gauge, monitoring well, aerial photo	s, previous inspections), if a	vailable:			
Remarks:						
The criterion for wetland hydrolog	gy is not met.					
	<del></del>					

Tree Stratum (Plot size:30 ft)		Dominant	Indicator	Dominance Test worksheet:		
	% Cover	Species?	Status	Number of Dominant Species That	1	(A)
1. Tsuga canadensis	75	Yes	FAC	Are OBL, FACW, or FAC:		
2. <i>Quercus alba</i>	25	Yes	FACU	Total Number of Dominant Species	3	(B)
3.				Across All Strata:		
4.				Percent of Dominant Species That	33.3	(A/B)
5.				Are OBL, FACW, or FAC:		<del></del>
6.				Prevalence Index worksheet:	N. A Hadisa Is	D
7.				Total % Cover of:	Multiply	-
	100	= Total Cov	er	OBL species 0	x 1 = _	0
Sapling/Shrub Stratum (Plot size:15 ft)	-	=		FACW species 0	x 2 =	0
1. Kalmia latifolia	70	Yes	FACU	FAC species 75	x 3 = _	225
2.		103	17100	FACU species 95	x 4 =	380
3.				UPL species 0	x 5 =	0
				Column Totals 170	(A)	605 (B)
4.				Prevalence Index = B/A =	3.55	
5				Hydrophytic Vegetation Indicators:		
6.				1- Rapid Test for Hydrophytic	Vegetation	
7				2 - Dominance Test is > 50%	8	
	70	= Total Cov	er	3 - Prevalence Index is ≤ 3.0¹		
Herb Stratum (Plot size:5 ft)				4 - Morphological Adaptations	1 (Provide	supporting
1				data in Remarks or on a separate sl	-	supporting
2.				Problematic Hydrophytic Vege		rnlain)
3.				¹Indicators of hydric soil and wetlar	-	
4.				present, unless disturbed or proble	,	Бу тазс вс
5.				Definitions of Vegetation Strata:		
6.				Tree – Woody plants 3 in. (7.6 cm) o	r more in (	diameter at
7.				breast height (DBH), regardless of h		ulailletei at
8.				Sapling/shrub – Woody plants less t	_	ORH and
-				greater than or equal to 3.28 ft (1 m		DDIT and
9.				Herb – All herbaceous (non-woody)		ardless of
10.				size, and woody plants less than 3.2		gar aress or
11.				Woody vines – All woody vines grea		28 ft in
12				height.		.20
	0	_= Total Cov	er		\/aa \	
Woody Vine Stratum (Plot size: 30 ft )				Hydrophytic Vegetation Present?	res iv	10
1						
2						
3.						
4.						
	0	= Total Cov	er			
Remarks: (Include photo numbers here or on a separation No positive indication of hydrophytic vegetation was obserconsidered a wetland indicator species. Therefore, it has	ved (≥50%	of dominant	•	,	PA, eastern	n hemlock is

	cription: (Describe	to the de	•			ndicato	or confirm the al	osence of indicato	rs.)
Depth	Matrix		Redox			12	Taud		Damanka
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Text	-	Remarks
0 - 6	10YR 2/1	100	10YR 2/1				Silty Clay Loam		
6 - 10	7.5YR 2.5/3	100		_			Silty Clay Loam Silty Clay Loam		
10 - 20	10YR 4/6	100		_			Slity Cla	y Loam	
				-					
				-					
				_					
				- —					
		- —		_					
		- —		_					
				_					
				_					
				_					
	Concentration, D =	Depletio	n, RM = Reduced	Mati	rix, MS =	Masked	Sand Grains. <sup>2</sup> Lo	ocation: PL = Pore	Lining, M = Matrix.
Hydric Soil	Indicators:							Indicators for Pro	oblematic Hydric Soils³:
Histoso							R, MLRA 149B)	2 cm Muck ( <i>A</i>	A10) (LRR K, L, MLRA 149B)
	oipedon (A2)		Thin Dark Su					Coast Prairie	Redox (A16) (LRR K, L, R)
	istic (A3)		Loamy Mucky			(LRR K, I	-)	5 cm Mucky l	Peat or Peat (S3) (LRR K, L, R)
	en Sulfide (A4) d Layers (A5)		Loamy Gleye Depleted Ma					Dark Surface	(S7) <b>(LRR K, L)</b>
	d Below Dark Surfa	ace (A11)							low Surface (S8) (LRR K, L)
	ark Surface (A12)	acc (/ tri)	Depleted Dar			ı			rface (S9) <b>(LRR K, L)</b>
	Mucky Mineral (S1)		Redox Depre						ese Masses (F12) (LRR K, L, R)
	Gleyed Matrix (S4)				. ,				oodplain Soils (F19) (MLRA 149B)
-	Redox (S5)								: (TA6) (MLRA 144A, 145, 149B)
_	d Matrix (S6)							Red Parent N	
	rface (S7) (LRR R, N	/ILRA 149	9B)						Dark Surface (TF12)
								Other (Explai	iii iii keiiiaiks)
	of hydrophytic veg Layer (if observed):		and wetland hydr	olog	y must be	e preser	it, unless disturbe	d or problematic.	
itesti ictive	Type:	•	None			Hydric	Soil Present?		Yes No/_
	Depth (inches):		None			liyunc	John resent:		163 NO <u></u>
Remarks:	Depti (inches).					1			
	indication of bydr	ic coile w	as observed						
No positive	indication of hydr	ic soils w	as observed.						
İ									

Project/Site: Montague	City/County: Shut	tesbury, Franklin	SamplingD	SamplingDate: 2020-July-30		
Applicant/Owner: W.D. Cowls		State: MA	SamplingPoi	SamplingPoint: W-GR-02_PFO-1		
Investigator(s): Greg Russo, Ma	itas R	Section, Township,	Range:			
Landform(hillslope,terrace,etc.):	Depression	Local relief (concave, conv	ex, none): Concave	<b>Slope (%):</b> 1 to 3		
Subregion(LRRorMLRA): ML	RA 144A of LRR R	Lat: 42.473664921	7 <b>Long:</b> -72.42519406	Datum: WGS84		
SoilMapUnitName: Peacham mu	acky peat, 0 to 8 percent slopes, very stony	•	NWI clas	sification: PFO		
Areclimatic/hydrologiccondition	sonthesitetypicalforthistimeofyea	r? Yes 🟒 No	(If no, explain in Re	marks.)		
Are Vegetation, Soil,	or Hydrology significantly dis	sturbed? Are "Norm	al Circumstances" presen	nt? Yes 🟒 No		
Are Vegetation, Soil,	or Hydrology naturally probl	ematic? (If needed,	explain any answers in R	emarks.)		
SUMMARY OF FINDINGS – At	tach site map showing samplir	ng point locations, trai	nsects, important fea	tures, etc.		
Hydrophytic Vegetation Present?	Yes _ <b>✓</b> _ No					
Hydric Soil Present?	Yes No	Is the Sampled Area withi	n a Wetland?	Yes No		
Wetland Hydrology Present?	Yes No	If yes, optional Wetland S		W-GR-02		
	<del></del>		ite iD.			
· ·	cedures here or in a separate report					
Covertype is PFO. Area is wetland,	, all three wetland parameters are pr	resent.				
HYDROLOGY						
Mada and Hudunian undinateur						
Wetland Hydrology Indicators:	and is required; shock all that apply		Cocondany Indicators (m	inimum of two required)		
•	one is required; check all that apply)		•	inimum of two required)		
Surface Water (A1)	_ <u> ✓</u> Water-Stained Lea		Surface Soil Cracks (E	•		
High Water Table (A2)	Aquatic Fauna (B1		✓ Moss Trim Lines (B16	Drainage Patterns (B10) Moss Trim Lines (B16)		
✓ Saturation (A3)	Marl Deposits (B1:			Dry-Season Water Table (C2)		
Water Marks (B1)	Hydrogen Sulfide		•	Crayfish Burrows (C8)		
Sediment Deposits (B2)	Oxidized Rilizospi	neres on Living Roots (C3)	•	ation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)	Presence of Reduc	ced Iron (C4)	Stunted or Stressed			
Algal Mat or Crust (B4)		ction in Tilled Soils (C6)	Geomorphic Position			
Iron Deposits (B5)	Thin Muck Surface		Shallow Aquitard (D3			
Inundation Visible on Aerial Im			Microtopographic Re			
Sparsely Vegetated Concave S	urface (B8)		FAC-Neutral Test (D5			
Field Observations:						
Surface Water Present?	Yes No _ <b>_/</b> Depth	(inches):				
Water Table Present?	Yes No Depth	(inches):	Wetland Hydrology Pres	sent? Yes No		
Saturation Present?		(inches): 0				
(includes capillary fringe)	·		•			
	gauge, monitoring well, aerial photos	c provious inspections) if	vailable:			
Describe Recorded Data (stream)	gauge, monitoring well, aeriai priotos	s, previous irispections), ir	avallable.			
Remarks:						
The criterion for wetland hydrolog	રુy is not met.					

<u>Tree Stratum</u> (Plot size:30 ft)		Dominant		Dominance Test worksheet:		
	% Cover	Species?	Status	Number of Dominant Species That	4	(A)
1. Betula alleghaniensis	55	Yes	FAC	Are OBL, FACW, or FAC:		
2. Tsuga canadensis 3.	40	Yes	FAC	Total Number of Dominant Species Across All Strata:	5	(B)
4.				Percent of Dominant Species That	00	(A (D)
5.				Are OBL, FACW, or FAC:	80	(A/B)
6.				Prevalence Index worksheet:		
·				Total % Cover of:	Multiply	By:
7		T-t-LC-		OBL species 0	x 1 =	0
Carolina (Charolin Chartery (Diet siene 45 ft )	95	= Total Cov	er	FACW species 25	x 2 =	50
Sapling/Shrub Stratum (Plot size:15 ft)	20	.,	E4.611	FAC species 180	x 3 =	540
1. Kalmia latifolia	20	Yes	FACU	FACU species 20	x 4 =	80
2.				UPL species 0	x 5 =	0
3				Column Totals 225	(A)	670 (B)
4				Prevalence Index = B/A =	2.97	
5				HydrophyticVegetationIndicators:		
6				1- Rapid Test for Hydrophytic	√egetatior	า
7				✓ 2 - Dominance Test is >50%	-8	
	20	= Total Cov	er			
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				_X_ 3 - Prevalence Index is ≤ 3.01	1 (Duanida	
1. Parathelypteris noveboracensis	80	Yes	FAC	4 - Morphological Adaptations data in Remarks or on a separate sl		supporting
2. <i>Coptis trifolia</i>	25	Yes	FACW	Problematic Hydrophytic Vege	-	vnlain)
3. Toxicodendron radicans	5	No	FAC	¹Indicators of hydric soil and wetlan		•
4				present, unless disturbed or proble	-	, g,ast 20
5.				Definitions of Vegetation Strata:		
6.				Tree – Woody plants 3 in. (7.6 cm) or	r more in	diameter at
7.				breast height (DBH), regardless of h		
8.				Sapling/shrub – Woody plants less t	han 3 in. ſ	DBH and
9.				greater than or equal to 3.28 ft (1 m	) tall.	
10.				Herb – All herbaceous (non-woody)	plants, re	gardless of
11.				size, and woody plants less than 3.2	8 ft tall.	
12.				Woody vines – All woody vines grea	ter than 3	.28 ft in
·	110	= Total Cov	er	height.		
Woody Vine Stratum (Plot size:30 ft)	- 110	- rotal cov	Ci	Hydrophytic Vegetation Present?	Yes <u>√</u> N	No
1.						
2.						
3.						
· · ·						
4		- Total Cov	or			
	0	= Total Cov	eı			
Remarks: (Include photo numbers here or on a separa	te sheet.)					
A positive indication of hydrophytic vegetation was observe	ed (>50% d	of dominant	species inde	exed as OBL, FACW, or FAC). Per the M	1A WPA, e	eastern
hemlock is considered a wetland indicator species. Theref	ore, it has	been assigr	ned an indica	ator status of "FAC" instead of "FACU."		

Profile Des	cription: (Describe Matrix	to the d	•	locum x Feat		ndicator	or confirm the al	osence of indicators.)	
(inches)	Color (moist)	%	Color (moist)	% %	Type <sup>1</sup>	Loc <sup>2</sup>		Texture	Remarks
0 - 14	10YR 2/1	100	Color (Inolst)		1960			er Silty Clay Loam	Remarks
14 - 20	2.5Y 4/1	90	5YR 4/6	10				dy Clay Loam	_
14 20	2.51 471		311(4/0				San	dy cidy Louin	_
								_	_
			-					_	_
				- —					
				- —					
				- —					
1Type: C = 0	oncontration D =	Dopletic	n DM = Poducos	d Matr	iv MC – I	Mackad	Fand Grains 21	acation: DI - Doro Lining A	4 – Matrix
	Concentration, D =	Debietit	Jii, Kivi – Keducec	ıvıatr	ix, ivi5 = 1	viasked	Sanu Grains. 4L0	ocation: PL = Pore Lining, N	
Hydric Soil			Dobarde o Da	Nov. C	urfaca (C	י חחו) (ס	D MIDA 140D)	Indicators for Problemat	•
Histoso	oipedon (A2)		Polyvalue Be				R, MLRA 149B) A 149B)	2 cm Muck (A10) (LRF	
	istic (A3)		Loamy Muck				<u>-</u>	Coast Prairie Redox (	
	en Sulfide (A4)		Loamy Gleye	-		(	-,	5 cm Mucky Peat or F	
	d Layers (A5)		Depleted Ma					Dark Surface (S7) <b>(LR</b> Polyvalue Below Surf	
<u></u> ✓ Deplete	d Below Dark Surf	face (A11	) Redox Dark	Surfac	e (F6)			Thin Dark Surface (S	
	ark Surface (A12)		Depleted Da					Iron-Manganese Mas	
	lucky Mineral (S1)	)	Redox Depre	ession	s (F8)			Piedmont Floodplain	
-	Gleyed Matrix (S4)							Mesic Spodic (TA6) (N	
-	Redox (S5)							Red Parent Material (	
	d Matrix (S6)							Very Shallow Dark Su	
Dark Su	rface (S7) <b>(LRR R,</b> l	MLRA 14	·9B)					Other (Explain in Ren	narks)
3Indicators	of hydrophytic ve	getation	and wetland hyd	rology	must be	presen	t, unless disturbe	d or problematic.	
Restrictive	Layer (if observed)	):							
	Type:		None	_		Hydric	Soil Present?		Yes No
-	Depth (inches):								
Remarks:									
A nositive i	ndication of hydric	r soil was	s observed						
A positive i	idication of flydric	. Jon was	observed.						

Project/Site: Montague			City/County: Shut	esbury, Franklin	SamplingDate: 2020-July-30			
Applicant/Owner: W.D. Cowl	s			State: MA		SamplingPoint: W-0	GR-2_UPL-2	
Investigator(s): Greg Russo, N	√atas R			Section, Township,	Range:			
Landform(hillslope,terrace,etc	.): Hillslop	e		Local relief (concave, conv	/ex, none):_	Convex	Slope (%): 2 to 5	
Subregion(LRRorMLRA): N	MLRA 144A of I	LRR R		Lat: 42.473603230	9 <b>Long:</b>	-72.4253687449	Datum: WGS84	
SoilMapUnitName: Pillsbury f	ìne sandy loam,	0 to 8 pe	ercent slopes, very st	ony		NWI classification	n: None	
Areclimatic/hydrologiccondition			-		(If no	, explain in Remarks.)		
Are Vegetation, Soil,			significantly dis		al Circumsta	ances" present?	Yes No	
Are Vegetation, Soil,	or Hydrol	ogy	naturally proble	ematic? (If needed,	explain any	y answers in Remarks.	)	
SUMMARY OF FINDINGS – A			nowing samplir	ng point locations, tra	nsects, im	portant features, e	etc.	
, , , ,				la tha Carrellad Area with	: \A/-+	d2 Va-	. Na ć	
Hydric Soil Present?			No _ <b>_</b> _	Is the Sampled Area with	ın a welland	u? Yes	i No _∠	
Wetland Hydrology Present?		Yes	No _ <b>_</b>	If yes, optional Wetland S	ite ID:			
HYDROLOGY Wetland Hydrology Indicators:								
Primary Indicators (minimum of	one is require	ed; che	ck all that apply)		Secondary	Indicators (minimum	of two required)	
Surface Water (A1)		v	Water-Stained Lea	ives (B9)	Surface	e Soil Cracks (B6)		
High Water Table (A2)		A	Aquatic Fauna (B1	3)		ge Patterns (B10)		
Saturation (A3)		N	Marl Deposits (B15	5)		Moss Trim Lines (B16)		
Water Marks (B1)			Hydrogen Sulfide (		-	Ory-Season Water Table (C2) Crayfish Burrows (C8)		
Sediment Deposits (B2)			Oxidized Rhizosph	neres on Living Roots (C3)	-	n Burrows (C8) tion Visible on Aerial II	magany (C9)	
Drift Deposits (B3)			Presence of Reduc	red Iron (CA)				
Algal Mat or Crust (B4)				duced Iron (C4) Stunted or Stressed Plants (D1) luction in Tilled Soils (C6) Geomorphic Position (D2)				
Iron Deposits (B5)			Thin Muck Surface			w Aquitard (D3)		
Inundation Visible on Aerial	Imagery (B7)	0	Other (Explain in R	Remarks)	Microto	opographic Relief (D4)	1	
Sparsely Vegetated Concave	Surface (B8)				FAC-Ne	eutral Test (D5)		
Field Observations:								
Surface Water Present?	Yes	No 🟒	_ Depth (	(inches):	_			
Water Table Present?	Yes	No 🟒	Depth (	(inches):	Wetland H	lydrology Present?	Yes No <b>∠</b>	
Saturation Present?	Yes	No 🟒	Depth (	inches):				
(includes capillary fringe)					=			
Describe Recorded Data (stream	n gauge, moni	toring v	well. aerial photos	s. previous inspections), if	available:			
Sesenbe necorded Bata (Stream	gaage,		ren, deriai priocos	, previous inspections, ii	avanabic.			
Remarks:								
The criterion for wetland hydrol	logy is not met	t.						

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Species?	Status	Number of Dominant Species That	-	(4)
1. Quercus rubra	15	Yes	FACU	Are OBL, FACW, or FAC:	2	(A)
2. Pinus strobus	15	Yes	FACU	Total Number of Dominant Species	6	(B)
3. Acer rubrum	15	Yes	FAC	Across All Strata:		(D)
4.				Percent of Dominant Species That	33.3	(A/B)
5.				Are OBL, FACW, or FAC:		`
6.				Prevalence Index worksheet:		
7.				Total % Cover of:	Multiply I	-
	45	= Total Cov	er	OBL species 0	x 1 = _	0
Sapling/Shrub Stratum (Plot size:15 ft)	-	=		FACW species 40	x 2 =	80
1. Kalmia latifolia	40	Yes	FACU	FAC species 25	x 3 = _	75
2. Hamamelis virginiana	25	Yes	FACU	FACU species 100	x 4 =	400
3.				UPL species 0	x 5 =	0
4.	· <del></del>			Column Totals 165	(A)	555 (B)
5.				Prevalence Index = B/A =	3.4	
6.	· <del></del>			Hydrophytic Vegetation Indicators:		
7.				1- Rapid Test for Hydrophytic	Vegetation	
	65	= Total Cov		2 - Dominance Test is > 50%		
Herb Stratum (Plot size: 5 ft )			<b>-</b> 1	$3$ - Prevalence Index is $\leq 3.0^{\circ}$		
1. Coptis trifolia	40	Yes	FACW	4 - Morphological Adaptations	-	supporting
Osmunda claytoniana	10	No	FAC	data in Remarks or on a separate s		
3. Acer pensylvanicum	5	No	FACU	Problematic Hydrophytic Vege		•
4.			17100	¹Indicators of hydric soil and wetlar	, .	gy must be
5.				present, unless disturbed or proble	matic	
6.				Definitions of Vegetation Strata:		
7.	· ——			Tree – Woody plants 3 in. (7.6 cm) of breast height (DBH), regardless of h		liameter at
8.	· ——			Sapling/shrub – Woody plants less	_	NRH and
9.	· ——			greater than or equal to 3.28 ft (1 n		birana
10.				Herb – All herbaceous (non-woody)		ardless of
				size, and woody plants less than 3.2		54. 4.655 6.
11.				Woody vines – All woody vines grea		28 ft in
12		- Tatal Cau		height.		
Manda Vina Chrotium (Diat sina) 20 ft	55	_= Total Cov	er	Hydrophytic Vegetation Present?	Yes N	lo 🗸
Woody Vine Stratum (Plot size: 30 ft )				J. I. J. I.		- <del></del> -
1.						
2	· ——					
3.	· <del></del>					
4						
	0	_= Total Cov	er ———			
Remarks: (Include photo numbers here or on a separat	te sheet.)					
No positive indication of hydrophytic vegetation was ol	oserved (≥	:50% of dom	inant specie	es indexed as FAC– or drier).		

Sampling Point: W-GR-2\_UPL-2

	•	to the de	•			indicato	r or confirm the ab	sence of indicators.)
Depth	Matrix		Redox					
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 1	10YR 2/2	100		_				
1 - 5	10YR 3/4	100		_			Silt Loam	
5 - 20	10YR 4/6	100		_			Silt Loam	
				_				
				_				
				_				
				_				
				_				
				_				
				_				
				_				
				_				
	Concentration, D =	Depletio	n, RM = Reduced	Mat	rix, MS =	Masked	Sand Grains. <sup>2</sup> Lo	ocation: PL = Pore Lining, M = Matrix.
Hydric Soil								Indicators for Problematic Hydric Soils <sup>3</sup> :
Histoso			•				R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)
	pipedon (A2)		Thin Dark Su					Coast Prairie Redox (A16) (LRR K, L, R)
	istic (A3) en Sulfide (A4)		Loamy Muck			(LKK K,	L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	d Layers (A5)		Depleted Ma					Dark Surface (S7) (LRR K, L)
	d Below Dark Surf	ace (A11)						Polyvalue Below Surface (S8) (LRR K, L)
'	ark Surface (A12)		Depleted Dar			)		Thin Dark Surface (S9) (LRR K, L)
Sandy N	Mucky Mineral (S1)		Redox Depre					Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy C	Gleyed Matrix (S4)							Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy F	Redox (S5)							Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
_	d Matrix (S6)							Red Parent Material (F21)
	rface (S7) (LRR R, N	/ILRA 149	9B)					Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
		_						
	of hydrophytic veg Layer (if observed):		and wetland hydr	olog	y must b	e preser 	nt, unless disturbed	d or problematic.
	Type:		None			Hydric	Soil Present?	Yes No _ <b>_</b> /_
			None			пуштс	Soli Fresent:	res NO _ <del>/</del> _
Remarks:	Depth (inches):							<del></del>
	indication of hydr	ic soils w	vas observed.					
1								

Project/Site: Montague	City/County: Sho	utesbury, Franklin		SamplingDate: 2020-July-31		
Applicant/Owner: W.D. Cowls		State: MA	<u> </u>	SamplingPoint: W-GR-10_PFO-2		
Investigator(s): Greg Russo, Ma	atas R	Section, Township,	Range:			
Landform(hillslope,terrace,etc.):	Depression	Local relief (concave, conv	ex, none):	Concave	Slope (%): 1 to 3	
<u> </u>	RA 144A of LRR R	Lat: 42.473316276	5 <b>Long:</b> -	72.4298226368	Datum: WGS84	
·	fine sandy loam, 0 to 8 percent slope			NWI classification	: None	
• •	s on the site typical for this time of ye			explain in Remarks.)		
Are Vegetation, Soil,	or Hydrology significantly di			•	′es No	
Are Vegetation, Soil,	or Hydrology naturally prob	lematic? (If needed,	explain any	answers in Remarks.)		
SUMMARY OF FINDINGS – A	ttach site map showing sampli	ng point locations, trar	nsects, imp	ortant features, e	tc.	
Hydrophytic Vegetation Present?	Yes <u></u> No					
Hydric Soil Present?	Yes No	Is the Sampled Area withi	n a Wetland?	? Yes _	✓_ No	
Wetland Hydrology Present?	Yes _ <b>.</b> ✓_ No	If yes, optional Wetland Si	d Site ID: W-GR-10			
	ocedures here or in a separate report					
· ·	•					
Covertype is PFO. Area is wetland	d, all three wetland parameters are p	resent.				
HYDROLOGY						
Wetland Hydrology Indicators:						
"	one is required; check all that apply)		Secondary I	Indicators (minimum o	of two required)	
	• • • • • • • • • • • • • • • • • • • •		-		or two required)	
Surface Water (A1)	Water-Stained Lea			Soil Cracks (B6) e Patterns (B10)		
<u>✓</u> High Water Table (A2)	Aquatic Fauna (B1		_			
∕ Saturation (A3)	Marl Deposits (B1	5)	Moss Trim Lines (B16)			
Water Marks (B1)	Hydrogen Sulfide	Odor (C1)	Dry-Season Water Table (C2)			
Sediment Deposits (B2)	Oxidized Rhizosp	heres on Living Roots (C3)	-	Burrows (C8)	(50)	
				on Visible on Aerial Im		
Drift Deposits (B3)	Presence of Redu			or Stressed Plants (D	1)	
Algal Mat or Crust (B4)		ction in Tilled Soils (C6)		phic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface			Aquitard (D3)		
Inundation Visible on Aerial Ir	magery (B7) Other (Explain in I	Remarks)	Microto	pographic Relief (D4)		
Sparsely Vegetated Concave S	Surface (B8)		FAC-Neu	utral Test (D5)		
Field Observations:						
Surface Water Present?	Yes No _ <b>_/</b> Depth	(inches):				
Water Table Present?	Yes <u></u> ✓ No Depth	(inches): 8	Wetland Hy	drology Present?	Yes No	
Saturation Present?	Yes <u></u> ✓ No Depth	(inches): 0				
(includes capillary fringe)		· · · · · · · · · · · · · · · · · · ·	•			
<u> </u>					<del>-</del>	
Describe Recorded Data (stream	gauge, monitoring well, aerial photo	s, previous inspections), if a	available:			
Remarks:						
The criterion for wetland hydrolo	ngv is met					
The chieffort for wedand hydroic	/63 13 IIICC					

Tsuga canadensis Acer rubrum	60 15	Yes Yes	FAC FAC	Are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species That	5	(A) (B)			
		Yes	FAC	Across All Strata: Percent of Dominant Species That	5	(B)			
		<u> </u>		'					
				Are OBL, FACW, or FAC:	80	(A/B)			
				Prevalence Index worksheet:					
					N. A I Ation Is .	D			
_				Total % Cover of:	Multiply	•			
	75	= Total Cov	/er	OBL species 0	x 1 = _	0			
apling/Shrub Stratum (Plot size:15 ft)	-	=		FACW species 85	x 2 =	170			
Kalmia latifolia	15	Yes	FACU	FAC species 75	x 3 =	225			
nama atrona		103	17100	FACU species 35	x 4 =	140			
				UPL species 0	x 5 =	0			
·				Column Totals 195	(A)	535 (B)			
				Prevalence Index = B/A =	2.74				
			Hydrophytic Vegetation Indicators:	-	·				
				1- Rapid Test for Hydrophytic	/egetation	1			
·				2 - Dominance Test is >50%	vegetation	Į.			
	15	= Total Cov	er er	$\frac{7}{X}$ 3 - Prevalence Index is $\leq 3.0^{\circ}$					
erb Stratum (Plot size: <u>5 ft</u> )		_			1 (Dura dala				
Osmundastrum cinnamomeum	60	Yes	FACW	4 - Morphological Adaptations		supporting			
Coptis trifolia	25	Yes	FACW	data in Remarks or on a separate sheet)					
Mitchella repens	20	No	FACU	Problematic Hydrophytic vegetation (Explain)					
michena repens			17100	<sup>1</sup> Indicators of hydric soil and wetlar	-	gy must be			
				present, unless disturbed or proble	matic				
				Definitions of Vegetation Strata:					
				Tree – Woody plants 3 in. (7.6 cm) o		diameter at			
-				breast height (DBH), regardless of h	-				
				Sapling/shrub – Woody plants less		DBH and			
·				greater than or equal to 3.28 ft (1 n					
D				Herb – All herbaceous (non-woody)		gardless of			
1.				size, and woody plants less than 3.2					
2.				Woody vines – All woody vines grea	ter than 3	.28 ft in			
	105	= Total Cov	er	height.					
oody Vine Stratum (Plot size: <u>30 ft</u> )		_		Hydrophytic Vegetation Present?	Yes 🔽 N	10			
· <u></u>									
		= Total Cov		•					
emarks: (Include photo numbers here or on a se positive indication of hydrophytic vegetation was obs emlock is considered a wetland indicator species. Th	erved (>50%	of dominant	•		MA WPA, e	eastern			

	•	to the de	epth needed to do Redox			indicato	r or confirm the	absence of indicator	rs.)
Depth	Matrix					12	т.		Damanka
(inches)	Color (moist)		Color (moist)	9/0	Type <sup>1</sup>	Loc <sup>2</sup>		exture	Remarks
0 - 8	10YR 2/1	100		_				/ Silt Loam	
8 - 20	5Y 6/1	100		_			Loar	my Sand	
	-			_			-		
				_					
				_					
				_					
				_					
								_	
				_					
	-			_			-		
¹Type: C = 0	Concentration, D =	Depletio	n. RM = Reduced	— Mati	rix. MS =	Masked	Sand Grains	<sup>2</sup> Location: PL = Pore	Lining, M = Matrix
Hydric Soil			.,		,				oblematic Hydric Soils³:
Histoso			Polyvalue Bel	OW/ S	urface (S	(8) <b>(I RR</b> I	R. MI RA 149R\		•
	pipedon (A2)		Thin Dark Sur		-				.10) (LRR K, L, MLRA 149B)
	istic (A3)		Loamy Mucky						Redox (A16) (LRR K, L, R)
	en Sulfide (A4)		Loamy Gleyed			. ,	•		Peat or Peat (S3) (LRR K, L, R)
Stratifie	ed Layers (A5)		Depleted Mat					Dark Surface	
_✓ Deplete	ed Below Dark Surf								ow Surface (S8) <b>(LRR K, L)</b> rface (S9) <b>(LRR K, L)</b>
	ark Surface (A12)		Depleted Dar	k Sui	rface (F7)	)			ese Masses (F12) (LRR K, L, R)
Sandy N	Mucky Mineral (S1)		Redox Depre	ssior	ıs (F8)				odplain Soils (F19) <b>(MLRA 149B)</b>
Sandy 0	Gleyed Matrix (S4)								(TA6) (MLRA 144A, 145, 149B)
Sandy F	Redox (S5)							Red Parent M	
Strippe	d Matrix (S6)								Dark Surface (TF12)
Dark Su	ırface (S7) <b>(LRR R, N</b>	MLRA 149	9B)					Other (Explain	
21 1: +	-£    +:							•	,
			and wettand nydr	olog	y must be	e preser	it, uniess disturi	bed or problematic.	
Restrictive	Layer (if observed)		Maria			l la calcata	C-!  D12		Ver ( No
	Type:	-	None			Hyaric	Soil Present?		Yes No
	Depth (inches):								
Remarks:									
A positive i	ndication of hydric	soil was	observed.						
	, , . , , , , , , , , , , ,								

Project/Site: Montague	City/County: Shut	esbury, Franklin	Sampling Date: 2020-July-31			
Applicant/Owner: AMP		State: MA	Sampling Point: W-	MON-10_UPL-2		
Investigator(s): Greg Russo, M	atas R	Section, Township,	Range:			
Landform (hillslope, terrace, etc.)	): Hillslope	Local relief (concave, conv	ex, none): Undulating	Slope (%): 1 to 3		
Subregion (LRR or MLRA):	MLRA 144A of LRR R	Lat: 42.473481609	5 Long: -72.4295980856	Datum: WGS84		
Soil Map Unit Name: Pillsbury	fine sandy loam, 0 to 8 percent slopes	, very stony	NWI classificat	ion: None		
Are climatic/hydrologic condition	ns on the site typical for this time of yea	ır? Yes <u>✓</u> No	(If no, explain in Remarks	5.)		
Are Vegetation, Soil,	or Hydrology significantly dis		al Circumstances" present?	Yes No		
Are Vegetation, Soil,	or Hydrology naturally proble	ematic? (If needed,	explain any answers in Remarl	ks.)		
SUMMARY OF FINDINGS – A	Attach site map showing samplin	g point locations, trar	sects, important features	s, etc.		
Hydrophytic Vegetation Present	? Yes ✓_ No					
Hydric Soil Present?	Yes No	Is the Sampled Area with	in a Wetland?	/es No/_		
		·		.cs		
Wetland Hydrology Present?	Yes No	If yes, optional Wetland S	ite ID:	_		
•	ocedures here or in a separate report)					
Covertype is UPL. Area is upland	d, not all three wetland parameters are	present.				
I						
I						
HYDROLOGY						
Watland Hydrology Indicators:						
Wetland Hydrology Indicators:	one is required; shock all that apply)		Secondary Indicators (minimu	um of two required)		
•	one is required; check all that apply)		Secondary Indicators (minimu	im or two required)		
Surface Water (A1)	Water-Stained Leav		<ul><li>Surface Soil Cracks (B6)</li><li>Drainage Patterns (B10)</li></ul>			
High Water Table (A2)	Aquatic Fauna (B13		Moss Trim Lines (B16)			
Saturation (A3)	Marl Deposits (B15		Moss min Lines (616) Dry-Season Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide (	eres on Living Roots (C3)				
Sediment Deposits (B2)	Oxidized Rilizospii	eres on Living Roots (C3)	Saturation Visible on Aeria	l Imagery (C9)		
Drift Deposits (B3)	Presence of Reduc	ed Iron (C4)	Stunted or Stressed Plants			
Algal Mat or Crust (B4)		tion in Tilled Soils (C6)	Geomorphic Position (D2)	, (51)		
Iron Deposits (B5)	Thin Muck Surface		Shallow Aquitard (D3)			
Inundation Visible on Aerial			Microtopographic Relief (D	04)		
Sparsely Vegetated Concave		·	FAC-Neutral Test (D5)	•		
Field Observations:						
Surface Water Present?	Yes No <u></u> Depth (i	inches):				
Water Table Present?	Yes No Depth (i	<del></del>	Wetland Hydrology Present?	Yes No		
		<del></del>	. Wedand Hydrology Fresent:	163 110		
Saturation Present?	Yes No Depth (i	nches):				
(includes capillary fringe)						
Describe Recorded Data (stream	n gauge, monitoring well, aerial photos	, previous inspections), if a	available:			
	_					
Remarks:						
The criterion for wetland hydrol	ogy is not met.					

VEGETATION 03e sciencific frames of plant		Dominant	Indicator	Dominance Test worksl	neet.				
Tree Stratum (Plot size: 30 ft )		Species?	Status	Number of Dominant S					
1. Tsuga canadensis	75	Yes	FAC	Are OBL, FACW, or FAC:		3	(A)		
Betula alleghaniensis	25	Yes	FAC	Total Number of Domir	nant Species	5	(D)		
3. Acer rubrum	15	No	FAC	Across All Strata:			(B)		
4. Pinus strobus		No	FACU	Percent of Dominant S	oecies That	60	(A/B)		
	<del>_</del>		17100	Are OBL, FACW, or FAC:			(/ (/ D)		
				Prevalence Index works	sheet:				
7				Total % Cover		<u>Multiply</u>	<u>' By:</u>		
	125	= Total Cov	er	OBL species	0	x 1 =	0		
Sapling/Shrub Stratum (Plot size:15 ft)	123	- 10101 COV	Ci	FACW species	25	x 2 =	50		
1. Kalmia latifolia	75	Yes	FACU	FAC species	115	x 3 =	345		
2.		163	FACO	FACU species	120	x 4 =	480		
3.	<del></del>			- UPL species	0	x 5 =	0		
				- Column Totals	260	(A)	950 (B)		
4				Prevalence In	idex = B/A =	3.36			
5.				Hydrophytic Vegetation	Indicators:				
6.				1- Rapid Test for H		/egetatior	า		
7				X 2 - Dominance Test is > 50%					
	75	= Total Cov	er	3 - Prevalence Index is ≤ 3.0¹					
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				4 - Morphological		¹ (Provide	supporting		
1. <i>Mitchella repens</i>	25	Yes	FACU	data in Remarks or on a			11 0		
2. <i>Coptis trifolia</i>	25	Yes	FACW	Problematic Hydrophytic Vegetation¹ (Explain)					
3. <i>Maianthemum racemosum</i>	10	No	FACU	Indicators of hydric soil and wetland hydrology must be					
4				present, unless disturbed or problematic					
5				Definitions of Vegetation Strata:  Tree – Woody plants 3 in. (7.6 cm) or more in diameter a					
6									
7.				breast height (DBH), regardless of height.					
8.				Sapling/shrub – Woody	plants less t	han 3 in.	DBH and		
9.				greater than or equal to	o 3.28 ft (1 m	) tall.			
10.				Herb – All herbaceous (	non-woody)	plants, re	gardless of		
11.				size, and woody plants	less than 3.2	8 ft tall.			
12.				Woody vines – All wood	ly vines grea	ter than 3	3.28 ft in		
	60	= Total Cov	er	height.					
Woody Vine Stratum (Plot size: 30 ft )		_		Hydrophytic Vegetatio	n Present? `	Yes <u>√</u> I	No		
1.									
2.				=					
3				-					
4.				-					
*·		= Total Cov	or	=					
		_ 10tal C0V	eı						
Remarks:(Includephotonumbershereoronasepa	ratesheet.)								
Hydrophytic vegetation is dominant in this area.									

	cription: (Describe	to the d	•			indicato	r or confirm the	e absence of indi	icators.)
Depth	Matrix		Redox				_	_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>		ture	Remarks
0 - 10	10YR 2/1	100		_				oam	
10 - 20	10YR 4/1	100		_			Loam	y Sand	
				_					
				_					
	_			_					
	_			_					
				_					
				_					
¹Type: C = 0	Concentration, D =	Depletio	n, RM = Reduced	Mat	rix, MS =	Masked	Sand Grains.	<sup>2</sup> Location: PL = I	Pore Lining, M = Matrix.
Hydric Soil	Indicators:							Indicators fo	or Problematic Hydric Soils³:
Histoso	l (A1)		Polyvalue Bel	ow S	Surface (S	88) <b>(LRR</b>	R, MLRA 149B)	2 cm Mu	ıck (A10) <b>(LRR K, L, MLRA 149B)</b>
Histic E	pipedon (A2)		Thin Dark Sur	face	(S9) <b>(LRF</b>	R R, MLR	A 149B)		rairie Redox (A16) (LRR K, L, R)
l ——	istic (A3)		Loamy Mucky			(LRR K,	L)	<del></del>	icky Peat or Peat (S3) (LRR K, L, R)
	en Sulfide (A4)		Loamy Gleye						rface (S7) (LRR K, L)
	ed Layers (A5)		Depleted Mat						e Below Surface (S8) (LRR K, L)
	ed Below Dark Surf	ace (ATT				`		Thin Dar	rk Surface (S9) <b>(LRR K, L)</b>
	ark Surface (A12) Mucky Mineral (S1)		Depleted Dar Redox Depre			)		Iron-Mai	nganese Masses (F12) (LRR K, L, R)
_	-		Redox Depre	55101	15 (FO)			Piedmor	nt Floodplain Soils (F19) (MLRA 149B)
	Gleyed Matrix (S4) Redox (S5)							Mesic Sp	oodic (TA6) <b>(MLRA 144A, 145, 149B)</b>
	d Matrix (S6)								ent Material (F21)
	u Matrix (56) irface (S7) <b>(LRR R, I</b>	MI DA 14	DR)					-	allow Dark Surface (TF12)
Daik 30	111ace (37) (LKK K, 1	VILION 14	90)					Other (E	xplain in Remarks)
3Indicators	of hydrophytic veg	getation	and wetland hydr	olog	y must b	e preser	nt, unless distur	bed or problem	atic.
Restrictive	Layer (if observed)	:							
	Type:		None			Hydric	Soil Present?		Yes No
	Depth (inches):	·							
Remarks:									
A positivo i	ndication of hydric	coil was	obsorved						
A positive i	ndication of flydric	. 5011 Was	observed.						

Project/Site: Montague	City/County: Shu	tesbury, Franklin		SamplingDate: 2020-July-30		
Applicant/Owner: W.D. Cowls	s	State: MA		SamplingPoint: W-GR-12_PFO-1		
Investigator(s): Greg Russo, M	atas R	Section, Township,	Range:			
Landform(hillslope,terrace,etc.):	Depression	Local relief (concave, conv	ex, none):_	Concave	Slope (%): 1 to 3	
Subregion (LRR or MLRA):	ALRA 144A of LRR R	Lat: 42.473169802	7 Long:	-72.4233890232	Datum: WGS84	
Soil Map Unit Name: Metacom	net fine sandy loam, 3 to 8 percent slo	pes		NWI classificatio	n: PFO	
Are climatic/hydrologic condition	ns on the site typical for this time of ye	ear? Yes <u>✓</u> No	(If no,	, explain in Remarks.)		
Are Vegetation, Soil,	or Hydrology significantly di	sturbed? Are "Norma	al Circumsta	ances" present?	Yes No	
Are Vegetation, Soil,	or Hydrology naturally prob	lematic? (If needed,	explain any	answers in Remarks	.)	
SUMMARY OF FINDINGS - A	Attach site map showing sampli	ng point locations, trar	nsects, im	portant features,	etc.	
Hydrophytic Vegetation Present	? Yes No					
Hydric Soil Present?	Yes _ <b>✓</b> _ No	Is the Sampled Area withi	n a Wetland	d? Yes	No	
		·			GR-12	
Wetland Hydrology Present?	Yes No	If yes, optional Wetland Si	ite ib.		5K-12	
	ocedures here or in a separate report					
Covertype is PFO. Area is wetlan	d, all three wetland parameters are p	resent.				
HYDROLOGY						
Wetland Hydrology Indicators:						
Primary Indicators (minimum of	one is required; check all that apply)		Secondary	Indicators (minimum	of two required)	
Surface Water (A1)	✓ Water-Stained Lea	aves (B9)	Surface	Soil Cracks (B6)	·	
High Water Table (A2)	Aquatic Fauna (B1		Drainag			
✓ Saturation (A3)	Marl Deposits (B1		_✓ Moss Ti			
Water Marks (B1)	Hydrogen Sulfide		Dry-Season Water Table (C2)			
Sediment Deposits (B2)	, ,	heres on Living Roots (C3)	Crayfish Burrows (C8)			
			Saturat	tion Visible on Aerial I	magery (C9)	
Drift Deposits (B3)	Presence of Redu	ced Iron (C4)	Stunted	d or Stressed Plants (I	D1)	
Algal Mat or Crust (B4)	Recent Iron Redu	ction in Tilled Soils (C6)	Geomo	orphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surface			v Aquitard (D3)		
Inundation Visible on Aerial I	Imagery (B7) Other (Explain in	Remarks)		opographic Relief (D4	)	
Sparsely Vegetated Concave	Surface (B8)		FAC-Ne	eutral Test (D5)		
Field Observations:						
Surface Water Present?	Yes No Depth	(inches):	_			
Water Table Present?	Yes No Depth	(inches):	Wetland H	ydrology Present?	Yes No	
Saturation Present?	Yes No Depth	(inches): 0				
(includes capillary fringe)			-			
	n gauge, monitoring well, aerial photo	s. previous inspections), if a	available:		<del></del>	
	. 80080,	o, p. eeasop eed.eo,, e				
Remarks:						
The criterion for wetland hydrol	ogy is met.					

	Dominant Species?	Indicator Status	Dominance Test works Number of Dominant		,	(A)
80	Yes	FAC	Are OBL, FACW, or FAC	:	4	(A)
20	Yes	FAC	Total Number of Dom Across All Strata:	inant Species	5	(B)
				'	80	(A/B
			-		-	
					Multiply	Bv:
			- OBL species	0		0
100	= Total Cov	er	FACW species	40	x 2 =	80
			FAC species	120	-	360
25	Yes	FACU	· ·		-	100
			·		-	0
			· '		-	620 (E
					-	620 (1
			HydrophyticVegetationIndicators:			
			*		Vegetatio	n
25	= Total Cov	er	2 - Dominance To	est is >50%		
	•		3 - Prevalence In	dex is $\leq 3.0^1$		
40	Yes	FACW	4 - Morphologica	l Adaptations	¹ (Provide	supporti
			data in Remarks or or	a separate sh	neet)	
	103	17.00	•			
			-		-	gy must
					matic	
			_			
			-			diameter
			-	_	_	
			-   ' -			DBH and
			_   ~			
						gardless
						20.6:
			_	dy vines great	ter than 3	.28 Tt IN
60	= Total Cov	er	height.			
	•		Hydrophytic Vegetation	on Present?	Yes <u>√</u> N	/o
			_			
			-			
			-			
	= Total Cov	or	-			
	25 40 20 60	80 Yes 20 Yes  100 = Total Cov 25 Yes  25 = Total Cov 40 Yes 20 Yes  60 = Total Cov	80	80 Yes FAC  20 Yes FAC  20 Yes FAC  Total Number of Dominant SAre OBL, FACW, or FAC  Percent of Dominant SAre OBL, FACW, or FACW, or FACW  Prevalence Index work  Total % Cover  OBL species  FACW species  FACU Sp	Are OBL, FACW, or FAC:   Total Number of Dominant Species Across All Strata:   Percent of Dominant Species That Are OBL, FACW, or FAC:   Prevalence Index worksheet:   Total % Cover of:	Are OBL, FACW, or FAC:   4

	•	to the d	•			ndicator	or confirm the al	osence of indicator	s.)
Depth	Matrix	04	Redox			1002	Tour	tura	Domarks
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Text	-	Remarks
0 - 8	10YR 2/1	100						ilt Loam	
8 - 16	2.5Y 4/1	100	10)/D 1/6				Loamy		
16 - 20	5Y 5/1	70	10YR 4/6	30	C	M	Sandy Cl	ay Loam	
	-			. —					
	-			. —					
	-			. —					
	-			. —					
		- —							
	-			-					
				· —					
1Tupo: C = 1	Concontration D =	Doplotic	n DM = Poduco		iv MC –	Mackad	Sand Grains 21	ocation: DL - Doro L	ining M - Matrix
	Concentration, D = Indicators:	Depletit	on, Rivi – Reduced	ıvıatı	IX, IVIS –	iviaskeu	Sand Grains. *Lo	ocation: PL = Pore L	
-			Dobavaluo Po	Jour C	urfaca (S	0) <b>/I DD I</b>	R, MLRA 149B)		blematic Hydric Soils <sup>3</sup> :
Histoso Histic E	pipedon (A2)		Thin Dark Su		-		•		10) (LRR K, L, MLRA 149B)
	listic (A3)		Loamy Muck					· <del></del>	Redox (A16) (LRR K, L, R)
	en Sulfide (A4)		Loamy Gleye	-				Dark Surface	eat or Peat (S3) (LRR K, L, R)
Stratifie	ed Layers (A5)		Depleted Ma	itrix (f	3)				ow Surface (S8) (LRR K, L)
	ed Below Dark Surf	ace (A11							face (S9) <b>(LRR K, L)</b>
	ark Surface (A12)		Depleted Da						ese Masses (F12) (LRR K, L, R)
	Mucky Mineral (S1)		Redox Depre	essior	IS (F8)				odplain Soils (F19) <b>(MLRA 149B)</b>
-	Gleyed Matrix (S4)							Mesic Spodic	(TA6) <b>(MLRA 144A, 145, 149B)</b>
_	Redox (S5) d Matrix (S6)							Red Parent M	
	urface (S7) <b>(LRR R, I</b>	ΜΙ <b>R</b> Δ 1 <i>Δ</i>	.9R)					-	Dark Surface (TF12)
Dark 30	arrace (37) (Link it, i	VILIO ( I -	36)					Other (Explair	n in Remarks)
-	of hydrophytic veg		and wetland hyd	rolog	y must be	e presen	t, unless disturbe	d or problematic.	
Restrictive	Layer (if observed)	:				l			
	Type:		None	-		Hydric	Soil Present?		Yes No
	Depth (inches):								
Remarks:									
A positive i	ndication of hydric	soil was	s observed.						
	-								
1									
1									
İ									

Applicant/Owner: W.D. Cowls State:	SamplingDate: 2020-July-30			
	MA SamplingPoint: W-GR-12_UPL-1			
Investigator(s): Greg Russo, Matas R Section, Townsh	nip, Range:			
Landform(hillslope,terrace,etc.): Hillslope Local relief (concave, co	onvex, none): Undulating Slope (%): 1 to 3			
Subregion (LRR or MLRA): MLRA 144A of LRR R Lat: 42.473375	9556 <b>Long:</b> -72.4232659769 <b>Datum:</b> WGS84			
Soil Map Unit Name: Metacomet fine sandy loam, 3 to 8 percent slopes	NWI classification: None			
	No (If no, explain in Remarks.)			
	rmal Circumstances" present? Yes 🟒 No			
Are Vegetation, Soil, or Hydrology naturally problematic? (If need	ed, explain any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, t	ransects, important features, etc.			
Hydrophytic Vegetation Present? Yes No _ <b>_</b> ✓				
Hydric Soil Present? Yes No _ <b>_</b> ✓ Is the Sampled Area w	ithin a Wetland? Yes No/			
Wetland Hydrology Present? Yes No/ If yes, optional Wetlan	d Site ID:			
Remarks: (Explain alternative procedures here or in a separate report)	- Jacobs			
Covertype is UPL. Area is upland, not all three wetland parameters are present.				
Covertype is OPL. Area is upland, not all three welland parameters are present.				
HYDROLOGY				
IIIDROLOGI				
Wetland Hydrology Indicators:				
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)			
Surface Water (A1) Water-Stained Leaves (B9)	Surface Soil Cracks (B6)			
High Water Table (A2) Aquatic Fauna (B13)	Drainage Patterns (B10)			
Saturation (A3) Marl Deposits (B15)	Moss Trim Lines (B16)			
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Dry-Season Water Table (C2) 3) Crayfish Burrows (C8)			
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C	3) Crayiish Burrows (Co) Saturation Visible on Aerial Imagery (C9)			
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)			
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)			
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)			
Field Observations:				
Surface Water Present? Yes No Depth (inches):				
	Wetland Hydrology Present? Yes No			
Water Table Present? Yes No _∠ Depth (inches):	Wetland Hydrology Present? Yes No✓			
Water Table Present? Yes No _ ✓ Depth (inches):  Saturation Present? Yes No _ ✓ Depth (inches):	Wetland Hydrology Present? Yes No✓			
Water Table Present? Yes No _ ✓ Depth (inches):  Saturation Present? Yes No _ ✓ Depth (inches):  (includes capillary fringe)				
Water Table Present? Yes No _ ✓ Depth (inches):  Saturation Present? Yes No _ ✓ Depth (inches):				
Water Table Present? Yes No _ ✓ Depth (inches):  Saturation Present? Yes No _ ✓ Depth (inches):  (includes capillary fringe)				
Water Table Present? Yes No / Depth (inches):  Saturation Present? Yes No / Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)				
Water Table Present? Yes No / Depth (inches):  Saturation Present? Yes No / Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)  Remarks:				
Water Table Present? Yes No / Depth (inches):  Saturation Present? Yes No / Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)				
Water Table Present? Yes No / Depth (inches):  Saturation Present? Yes No / Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)  Remarks:				
Water Table Present? Yes No / Depth (inches):  Saturation Present? Yes No / Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)  Remarks:				
Water Table Present? Yes No / Depth (inches):  Saturation Present? Yes No / Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)  Remarks:				
Water Table Present? Yes No / Depth (inches):  Saturation Present? Yes No / Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections)  Remarks:				

	A l l 4 -	Danisant	la di catan	Dominance Test worksh	· oot:		
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Dominant Species?	Status	Number of Dominant S			
1 Touga canadoncio	80	•		Are OBL, FACW, or FAC:		1	(A)
Tsuga canadensis 2.		Yes	FAC	Total Number of Domin			
				Across All Strata:		2	(B)
3.				Percent of Dominant Sp	ecies That		(4.45)
4				Are OBL, FACW, or FAC:		50	(A/B)
5				Prevalence Index works	heet:		<del></del>
6				Total % Cover of	of:	Multiply	By:
7				- OBL species	0	x 1 =	0
	80	_= Total Cov	er	FACW species	0	x 2 =	0
Sapling/Shrub Stratum (Plot size:15 ft)				FAC species	80	x 3 =	240
1. <i>Kalmia latifolia</i>	60	Yes	FACU	FACU species	60	x 4 =	240
2.				UPL species	0	x5=	0
3.				Column Totals		-	
4.				_	140	(A)	480 (B)
5.				Prevalence In		3.42	<u> </u>
6.				Hydrophytic Vegetation			
7.				1- Rapid Test for H		egetation/	1
··· =	60	= Total Cov		2 - Dominance Tes	t is > 50%		
Herb Stratum (Plot size: 5 ft )		- Total Cov	<b>-</b> 1	3 - Prevalence Inde	ex is $\leq 3.0^1$		
				4 - Morphological			supporting
2.				data in Remarks or on a			
				- Problematic Hydro			
3.				<sup>1</sup> Indicators of hydric soi		-	gy must be
4				present, unless disturbe	ed or probler	matic	
5				Definitions of Vegetation			
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter a			
7				breast height (DBH), reg		_	
8				Sapling/shrub - Woody			DBH and
9				greater than or equal to			
10				Herb – All herbaceous (i	-		gardless of
11.				size, and woody plants l			
12.				Woody vines – All wood	y vines great	ter than 3	.28 ft in
	0	= Total Cov	er	height.			
Woody Vine Stratum (Plot size: 30 ft )		_		Hydrophytic Vegetation	Present? \	/es	No <u></u>
1.							
2.				-			
3.				=			
4.				-			
<u> </u>		= Total Cov	or	-			
		_ 10tal C0V	<b>2</b> 1				
Remarks: (Include photo numbers here or on a se	parate sheet.)	)					
No positive indication of hydrophytic vegetation was ob-	served (≥50%	of dominan	species inc	dexed as FAC- or drier). Pe	er the MA WF	PA, easter	n hemlock is
considered a wetland indicator species. Therefore, it h	nas been assig	ned an indic	ator status o	of "FAC" instead of "FACU."	,		

Depth _	Matrix		Redox			ndicator	or confirm the al	bsence of indic	cators.)
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	e	Remarks
0 - 4	10YR 3/1	100	• • •	_			Sandy Lo	oam	
4 - 20	5YR 3/4	100		_			Silt Loa		
				_					
		· ——							
								<u> </u>	
								<u> </u>	
								<u> </u>	
								<u> </u>	
				_					
¹Type: C = (	Concentration, D =	Depletio	n, RM = Reduced	Matı	rix, MS =	Masked S	Sand Grains. <sup>2</sup> Lo	ocation: PL = P	ore Lining, M = Matrix.
Hydric Soil		•							r Problematic Hydric Soils³:
Histosol			Polyvalue Bel	low S	urface (S	8) <b>(LRR R</b>	, MLRA 149B)		ck (A10) <b>(LRR K, L, MLRA 149B)</b>
Histic Ep	oipedon (A2)		Thin Dark Su	rface	(S9) (LRR	R, MLRA	149B)		airie Redox (A16) (LRR K, L, R)
Black Hi			Loamy Mucky			(LRR K, L	)		cky Peat or Peat (S3) (LRR K, L, R)
	en Sulfide (A4)		Loamy Gleye					<del></del>	face (S7) <b>(LRR K, L)</b>
	d Layers (A5)	(A44)	Depleted Ma					Polyvalue	Below Surface (S8) (LRR K, L)
	d Below Dark Surfa ark Surface (A12)	ice (ATT	Redox Dark S Depleted Dar					Thin Dark	k Surface (S9) <b>(LRR K, L)</b>
	Mucky Mineral (S1)		Redox Depre					Iron-Man	ganese Masses (F12) (LRR K, L, R)
	Gleyed Matrix (S4)		Nedox Depre	331011	3 (1 0)				t Floodplain Soils (F19) <b>(MLRA 149B)</b>
-	Redox (S5)								odic (TA6) <b>(MLRA 144A, 145, 149B)</b>
-	d Matrix (S6)								nt Material (F21)
	rface (S7) <b>(LRR R, N</b>	1LRA 149	)B)					-	low Dark Surface (TF12)
	,		•					Other (Ex	plain in Remarks)
	of hydrophytic veg		and wetland hydr	ology	y must be	e present	, unless disturbe	d or problema	tic.
	Layer (if observed): 								
	Type:		None			Hydric	Soil Present?		Yes No
	Depth (inches):								
Remarks:		.,							
No positive	indication of hydri	c soils w	as observed.						

Project/Site: Montague	City/County:_ Shut	tesbury, Franklin	Samplir	ngDate: 2020-July-30
Applicant/Owner: W.D. Cowls		State: MA	Sampling	Point: W-GR-16_PSS-1
Investigator(s): Greg Russo, Ma	itas R	Section, Township,	Range:	
Landform(hillslope,terrace,etc.):	Depression	Local relief (concave, conv	ex, none): Concave	Slope (%): 1 to 3
Subregion(LRRorMLRA): M	LRA 144A of LRR R	Lat: 42.471541115	1 Long: -72.42687	12011 <b>Datum:</b> WGS84
SoilMapUnitName: Henniker	sandy loam, 8 to 15 percent slopes		NWI o	classification: PSS
Areclimatic/hydrologicconditions	onthesitetypicalforthistimeofyear?		(If no, explain in	Remarks.)
Are Vegetation, Soil,	or Hydrology significantly dis		al Circumstances" pre	
Are Vegetation, Soil,	or Hydrology naturally probl	lematic? (If needed,	explain any answers	n Remarks.)
SUMMARY OF FINDINGS – A	ttach site map showing samplii	ng point locations trai	nsects important (	features etc
Hydrophytic Vegetation Present?			, p	
Hydric Soil Present?	Yes No	Is the Sampled Area withi	n a Wetland?	Yes/_ No
Wetland Hydrology Present?	Yes No	If yes, optional Wetland S	ite ID:	W-GR-16
	ocedures here or in a separate report			
Wetland Hydrology Indicators: Primary Indicators (minimum of a surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	one is required; check all that apply)  Water-Stained Lea  Aquatic Fauna (B1  Marl Deposits (B1  Hydrogen Sulfide	13) 5)	Secondary Indicators  Surface Soil Crack Drainage Pattern Moss Trim Lines ( Dry-Season Wate	s (B10) B16)
Sediment Deposits (B2)	, ,	heres on Living Roots (C3)	Crayfish Burrows Saturation Visible	(C8) on Aerial Imagery (C9)
Drift Deposits (B3)     Algal Mat or Crust (B4)     Iron Deposits (B5)     Inundation Visible on Aerial Ir     ✓ Sparsely Vegetated Concave S	Thin Muck Surface magery (B7) Other (Explain in F	ction in Tilled Soils (C6) e (C7)	Stunted or Stress Geomorphic Posi Shallow Aquitard Microtopographic FAC-Neutral Test	tion (D2) (D3) c Relief (D4)
Field Observations:				
Surface Water Present?	•	(inches):		
Water Table Present?	Yes No/ Depth	(inches):	Wetland Hydrology F	Present? Yes No
Saturation Present?	Yes No Depth	(inches): 0		
(includes capillary fringe)				
Describe Recorded Data (stream	gauge, monitoring well, aerial photos	s, previous inspections), if a	available:	
Remarks:				
The criterion for wetland hydrolc	gy is met.			

	Abcoluto	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size: 30 ft )		Species?	Status	Number of Dominant Species T	hat	
	70 COVCI	эрсскоз.	Julus	Are OBL, FACW, or FAC:	1	(A)
1.				Total Number of Dominant Spe	ries	
2				Across All Strata:	1	(B)
3				Percent of Dominant Species Th		
4				- Are OBL, FACW, or FAC:	100	(A/B)
5				Prevalence Index worksheet:	·	
6				Total % Cover of:	Multiply	Rv.
7				- OBL species 5	x 1 =	5
	0	= Total Cov	er	FACW species 40	x2=	80
Sapling/Shrub Stratum (Plot size: 15 ft )	·	-		·		
1. Vaccinium corymbosum	40	Yes	FACW		x3=	0
2. Lonicera oblongifolia	5	No	OBL	FACU species 0	x 4 =	0
3.				- UPL species0	x 5 =	0
4.				- Column Totals 45	(A)	85 (B)
5.				Prevalence Index = B/	A = <u>1.9</u>	
6.				Hydrophytic Vegetation Indicate	ors:	
				1- Rapid Test for Hydrophy	tic Vegetation	
7		Takal Car		✓ 2 - Dominance Test is >509	6	
	45	_= Total Cov	er	3 - Prevalence Index is ≤ 3	.0 <sup>1</sup>	
Herb Stratum (Plot size:5 ft)				4 - Morphological Adaptat	ons¹ (Provide	supporting
1				data in Remarks or on a separa		
2				Problematic Hydrophytic	/egetation¹ (Ex	plain)
3				Indicators of hydric soil and we	tland hydrolog	gy must be
4				present, unless disturbed or pro	oblematic	
5	_			Definitions of Vegetation Strata		
6.				Tree – Woody plants 3 in. (7.6 ci	n) or more in a	diameter at
7.				breast height (DBH), regardless		
8.				Sapling/shrub - Woody plants le	ess than 3 in. [	BH and
9.				greater than or equal to 3.28 ft		
40				Herb – All herbaceous (non-woo	ody) plants, reg	gardless of
				size, and woody plants less that	າ 3.28 ft tall.	
11				Woody vines – All woody vines	greater than 3.	28 ft in
12.		- Tatal Car		height.		
W 1 15 5 4 491 4 5 20 6 3	0	= Total Cov	er	Hydrophytic Vegetation Preser	t? Yes 🗸 N	lo.
Woody Vine Stratum (Plot size: 30 ft )						
1				-		
2				-		
3				-		
4				_		
	0	= Total Cov	er			
Remarks: (Include photo numbers here or on a separa	ate sheet.)					
A positive indication of hydrophytic vegetation was ob		)% of domin	ant species	indexed as OBL. FACW. or FAC).		
The state in alcade of the september 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 1985 and 19	,50,700 ( 5	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	a species			

	Color (moist)	%	Color (moist)	% Type¹	Loc²	Texture	Remarks
0 - 4	10YR 2/1	100				Silt Loam	
4 - 8	2.5Y 4/1	100					
	Concentration, D =	Depletio	n, RM = Reduced	Matrix, MS	= Masked San	d Grains. <sup>2</sup> Lo	ocation: PL = Pore Lining, M = Matrix.
	Indicators:						Indicators for Problematic Hydric Soils <sup>3</sup> :
_ Histosol	` '		Polyvalue Bel				2 cm Muck (A10) <b>(LRR K, L, MLRA 149B)</b>
	oipedon (A2)		Thin Dark Sur		-	<del>1</del> R)	Coast Prairie Redox (A16) (LRR K, L, R)
_ Black Hi	en Sulfide (A4)		Loamy Mucky Loamy Gleyed			5 CITI Mucky Peat of Peat (55) (LKK I	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	d Layers (A5)		Depleted Mat				Dark Surface (S7) (LRR K, L)
	d Below Dark Surf	ace (A11)					Polyvalue Below Surface (S8) (LRR K, L)
	ark Surface (A12)		Depleted Dar		7)		Thin Dark Surface (S9) (LRR K, L) Iron-Manganese Masses (F12) (LRR K, L, R)
_Sandy M	lucky Mineral (S1)		Redox Depres	ssions (F8)			Piedmont Floodplain Soils (F12) (LRR K, L, R)
_ Sandy G	Gleyed Matrix (S4)						Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
_ Sandy R	tedox (S5)						Red Parent Material (F21)
_ Stripped	d Matrix (S6)						Very Shallow Dark Surface (TF12)
_ Dark Su	rface (S7) (LRR R, N	/ILRA 149	9B)				Other (Explain in Remarks)
ndicators	of hydrophytic veg	etation a	and wetland hvdr	ology must	be present, ur	less disturbe	d or problematic.
	Layer (if observed)						h
	Type:		Rock		Hydric Soil	Present?	Yes/_ No
	Depth (inches):		8		1		
marks:							
	adication of budgic	soil was	absantad				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
emarks: positive ir	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				
	ndication of hydric	soil was	observed.				

Project/Site: Montague	City/County: Shu	itesbury, Franklin	n SamplingDate: 2020-J			
Applicant/Owner: W.D. Cowls		State: MA		SamplingPoint: W-GR-16_UPL-1		
Investigator(s): Greg Russo, Ma	tas R	Section, Township,	Range:			
Landform(hillslope,terrace,etc.):	Hillslope	Local relief (concave, conv	ex, none):_	None	Slope (%): 1 to 3	
Subregion(LRRorMLRA): MLF	RA 144A of LRR R	Lat: 42.471670364	1 Long:	-72.4264880643	Datum: WGS84	
SoilMapUnitName: Henniker sa	andy loam, 3 to 8 percent slopes			NWI classification	on: None	
Areclimatic/hydrologicconditions	onthesitetypicalforthistimeofyear?	Yes No	(If no,	, explain in Remarks.	)	
Are Vegetation, Soil,	or Hydrology significantly di	sturbed? Are "Norma	al Circumsta	ances" present?	Yes No	
Are Vegetation, Soil,	or Hydrology naturally prob	lematic? (If needed,	explain any	answers in Remark	s.)	
SUMMARY OF FINDINGS – At	tach site map showing sampli	ng point locations, trar	nsects, im	portant features,	etc.	
Hydrophytic Vegetation Present?	Yes No <b>_</b> ✓_					
Hydric Soil Present?	Yes No	Is the Sampled Area withi	n a Wetland	d? Ye	es No⁄_	
_	Yes No	1				
Wetland Hydrology Present?		If yes, optional Wetland Si	ite ib.			
	cedures here or in a separate report					
Covertype is UPL. Area is upland,	not all three wetland parameters ar	e present.				
LIVEROLOGY						
HYDROLOGY						
Wetland Hydrology Indicators:						
Primary Indicators (minimum of c	one is required; check all that apply)		Secondary	Indicators (minimur	n of two required)	
Surface Water (A1)	Water-Stained Le	aves (B9)	Surface	e Soil Cracks (B6)		
High Water Table (A2)	Aquatic Fauna (B		Draina	ge Patterns (B10)		
Saturation (A3)	Marl Deposits (B1	15)	Moss T	rim Lines (B16)		
Water Marks (B1)	Hydrogen Sulfide	Odor (C1)	-	ason Water Table (C2	2)	
Sediment Deposits (B2)	Oxidized Rhizosp	heres on Living Roots (C3)	-	h Burrows (C8)		
				tion Visible on Aerial		
Drift Deposits (B3)	Presence of Redu			d or Stressed Plants	(D1)	
Algal Mat or Crust (B4)		ction in Tilled Soils (C6)		orphic Position (D2)		
Iron Deposits (B5) Inundation Visible on Aerial In	Thin Muck Surfac			v Aquitard (D3)	1)	
Inundation visible on Aeriai in Sparsely Vegetated Concave S	• • • • • • • • • • • • • • • • • • • •	Remarks)		opographic Relief (D4	<del>+</del> )	
Field Observations:	urrace (bo)		FAC-INE	eutral Test (D5)		
Surface Water Present?	Vos. No. / Donth	(inches):				
	· ·	(inches):	-[			
Water Table Present?	· ·	(inches):	- Wetland H	ydrology Present?	Yes No	
Saturation Present?	Yes No 🟒 Depth	(inches):	_			
(includes capillary fringe)						
Describe Recorded Data (stream	gauge, monitoring well, aerial photo	s, previous inspections), if a	available:			
Remarks:						
The criterion for wetland hydrolog	gy is not met.					
	<b>3</b>					

•	A h a a l	Daminant	Indiantan	Dominance Test workshop	nt•		
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Dominant Species?	Indicator Status	Dominance Test workshee Number of Dominant Spe			
1. Tsuga canadensis	50	Yes	FAC	Are OBL, FACW, or FAC:	icics mac	2	(A)
2. Acer rubrum	30	Yes	FAC	Total Number of Dominar	nt Species		(D)
3. Fagus grandifolia	10	No	FACU	Across All Strata:	·	3	(B)
4.		110	TACO	Percent of Dominant Spec	cies That	66.6	(A/B)
5.				Are OBL, FACW, or FAC:			(A/ b)
6.				Prevalence Index workshe	eet:		
7.				Total % Cover of:	<u>:</u>	<u>Multiply</u>	By:
·	90	= Total Cov	or	OBL species	0	x 1 =	0
Capling/Church Church up (Dich sings 15 ft )	90	10tai Cov	er	FACW species	0	x 2 =	0
Sapling/Shrub Stratum (Plot size:15 ft)	20	\/a-a	FACIL	FAC species	80	x 3 =	240
1. Kalmia latifolia	20	Yes	FACU	- FACU species	30	x 4 =	120
2.	- ——			UPL species	0	x 5 =	0
3.				- Column Totals	110	(A)	360 (B)
4				Prevalence Inde	ex = B/A =	3.27	_
5				HydrophyticVegetationInc	dicators:		
6	- ——			1- Rapid Test for Hyd		/egetatior	า
7				X 2 - Dominance Test		8	•
	20	_= Total Cov	er	3 - Prevalence Index			
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				4 - Morphological Ac		¹ (Provide	supporting
1				data in Remarks or on a s			11 5
2				Problematic Hydrop			xplain)
3				Indicators of hydric soil a	-		
4				present, unless disturbed	or proble	matic	
5				Definitions of Vegetation S	Strata:		
6.				Tree – Woody plants 3 in.		more in	diameter at
7.				breast height (DBH), regai			
8.				Sapling/shrub – Woody pl	ants less tl	han 3 in. I	DBH and
9.				greater than or equal to 3	.28 ft (1 m	) tall.	
10.				Herb – All herbaceous (no	n-woody)	plants, re	gardless of
11.				size, and woody plants les	ss than 3.2	8 ft tall.	
12.				Woody vines – All woody v	vines great	er than 3	.28 ft in
		= Total Cov	er	height.			
Woody Vine Stratum (Plot size:30 ft)			Ci	Hydrophytic Vegetation F	resent? \	/es N	No <u> </u>
1.							
				-			
3.				-			
4.				-			
<b>4.</b>		- Total Cov		=			
	0	_= Total Cov	er				
Remarks: (Include photo numbers here or on a sepa	rate sheet.	)					
No positive indication of hydrophytic vegetation was obse	erved (≥50%	6 of dominan	t species inc	dexed as FAC- or drier). But a	area lacks l	hydric soil	and signs of
hydrology. Per the MA WPA, eastern hemlock is consider	red a wetlar	nd indicator s	species. The	erefore, it has been assigned	an indicato	or status o	f "FAC"
instead of "FACU."							

		to the de				indicato	r or confirm the al	sence of indicators.)
Depth _	Matrix	0/	Redox			12	Tarahuma	Demonto
(inches)	Color (moist)	<u>%</u>	Color (moist)	9/0	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
<u>0 - 4</u> 4 - 7	10YR 3/1	100		- —			Silt Loam	<del></del>
	10YR 4/4	100		-			Silt Loam	
7 - 20	10YR 5/6	100		- —			Silt Loam	<del></del>
				-				
				-				
				-				
				-			-	
				-			-	
				-				
				-				
		- —		- —				
l <del></del> .				. —				
	Concentration, D =	Depletio	n, RM = Reduced	Mat	rix, MS =	Masked	I Sand Grains. <sup>2</sup> Lo	ocation: PL = Pore Lining, M = Matrix.
Hydric Soil								Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Polyvalue Bel					2 cm Muck (A10) (LRR K, L, MLRA 149B)
-	oipedon (A2)		Thin Dark Su					Coast Prairie Redox (A16) (LRR K, L, R)
Black Hi	en Sulfide (A4)		Loamy Mucky Loamy Gleye			(LKK K,	L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	d Layers (A5)		Depleted Ma					Dark Surface (S7) (LRR K, L)
	d Below Dark Surfa	ace (A11						Polyvalue Below Surface (S8) (LRR K, L)
	ark Surface (A12)		Depleted Dar		` '	)		Thin Dark Surface (S9) (LRR K, L)
Sandy N	lucky Mineral (S1)		Redox Depre					Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy G	ileyed Matrix (S4)							Piedmont Floodplain Soils (F19) (MLRA 149B)
_	edox (S5)							Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
_	d Matrix (S6)							Red Parent Material (F21)
	rface (S7) (LRR R, N	/ILRA 149	9B)					Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
l <del></del>	of hydrophytic veg _ayer (if observed):		and wetland hydr	olog	y must be	e preser	nt, unless disturbe	d or problematic.
Resultave i	=		None			Hydric	: Soil Present?	Yes No/_
	Type:		None	-		пушт	. Soil Fresent?	res NO <u>_</u> /_
	Depth (inches):							<del>.</del>
Remarks:								
No positive	indication of hydri	ic soils w	as observed.					
i .								

Project/Site: Montague	City/County: Shu	tesbury, Franklin		SamplingDate: 2020-July-30		
Applicant/Owner: W.D. Cowls		State: MA		SamplingPoint: W	-GR-17_PSS-1	
Investigator(s): Greg Russo, Ma	tas R	Section, Township,	Range:			
Landform(hillslope,terrace,etc.):	Depression	Local relief (concave, conv	ex, none):_	Concave	Slope (%): 1 to 3	
Subregion(LRRorMLRA): ML	RA 144A of LRR R	Lat: 42.470479421	4 Long:	-72.4267111906	Datum: WGS84	
SoilMapUnitName: Henniker s	andy loam, 3 to 8 percent slopes			NWI classificati	on: PFO	
Areclimatic/hydrologicconditions	onthesitetypicalforthistimeofyear?	Yes No	(If no	, explain in Remarks	.)	
Are Vegetation, Soil,	or Hydrology significantly di	sturbed? Are "Norm	al Circumst	ances" present?	Yes 🔽 No	
Are Vegetation, Soil,	or Hydrology naturally prob	lematic? (If needed,	explain any	y answers in Remark	s.)	
SUMMARY OF FINDINGS - At	ttach site map showing sampli	ng point locations, trar	nsects, im	portant features	, etc.	
Hydrophytic Vegetation Present?	Yes _ <b>✓</b> _ No					
Hydric Soil Present?	Yes No	Is the Sampled Area withi	n a Wetland	d? Ye	s/_ No	
-		·			-GR-17	
Wetland Hydrology Present?	Yes No	If yes, optional Wetland S	ite ib.	<u>vv</u>	-GR-17	
	cedures here or in a separate report					
Covertype is PSS. Area is wetland	, all three wetland parameters are p	resent.				
LIVEROLOGY						
HYDROLOGY						
Wetland Hydrology Indicators:						
Primary Indicators (minimum of o	one is required; check all that apply)		Secondary	Indicators (minimu	m of two required)	
Surface Water (A1)	Water-Stained Le	aves (B9)	Surface	e Soil Cracks (B6)		
High Water Table (A2)	Aquatic Fauna (B´		Draina	ge Patterns (B10)		
✓ Saturation (A3)	Marl Deposits (B1	5)		rim Lines (B16)		
Water Marks (B1)	Hydrogen Sulfide	Odor (C1)	-	ason Water Table (C	2)	
Sediment Deposits (B2)	Oxidized Rhizosp	heres on Living Roots (C3)	-	h Burrows (C8)		
				tion Visible on Aerial		
Drift Deposits (B3)	Presence of Redu			d or Stressed Plants	(D1)	
Algal Mat or Crust (B4)		ction in Tilled Soils (C6)		orphic Position (D2)		
Iron Deposits (B5)	Thin Muck Surfac			v Aquitard (D3)	4)	
Inundation Visible on Aerial In	· · · · · · · · · · · · · · · · · · ·	Remarks)		opographic Relief (D	4)	
Sparsely Vegetated Concave S	urrace (Bo)		FAC-NE	eutral Test (D5)		
Field Observations: Surface Water Present?	Vos No / Donth	(inches):				
	·	(inches):				
Water Table Present?	•	(inches):	Wetland H	lydrology Present?	Yes No	
Saturation Present?	Yes No Depth	(inches): 5	_			
(includes capillary fringe)						
Describe Recorded Data (stream	gauge, monitoring well, aerial photo	s, previous inspections), if a	available:			
Remarks:						
The criterion for wetland hydrolo	gv is met.					
	<u> </u>					

<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That		
1.	70 COVE	3pecies:	Status	Are OBL, FACW, or FAC:	3	(A)
2.				Total Number of Dominant Species	3	(B)
3.				Across All Strata:		
4.				Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)
5			-	Prevalence Index worksheet:		
6				Total % Cover of:	Multiply E	Bv:
7				OBL species 0	x 1 =	0
	0	= Total Co	ver	FACW species 80	x 2 =	160
Sapling/Shrub Stratum (Plot size: 15 ft )				FAC species 0	x 3 =	0
1. Vaccinium corymbosum	25	Yes	FACW	FACU species 0	x 4 =	0
2				UPL species 0	x 5 =	0
3				Column Totals 80	(A)	160 (B)
4				Prevalence Index = B/A =	2	
5				Hydrophytic Vegetation Indicators:		
6				1- Rapid Test for Hydrophytic \	/egetation	
7				✓ 2 - Dominance Test is >50%	-8	
	25	_= Total Co	ver	$\checkmark$ 3 - Prevalence Index is $\le 3.0^{\circ}$		
Herb Stratum (Plot size: <u>5 ft</u> )				4 - Morphological Adaptations	¹ (Provide s	supporting
1. Osmundastrum cinnamomeum	30	Yes	FACW	data in Remarks or on a separate sh		
2. Coptis trifolia	25	Yes	FACW	Problematic Hydrophytic Vege	tation¹ (Ex <sub>l</sub>	plain)
3.				landicators of hydric soil and wetlan	d hydrolog	gy must be
4				present, unless disturbed or proble	matic	
5				Definitions of Vegetation Strata:		
6				Tree – Woody plants 3 in. (7.6 cm) o		liameter at
7				breast height (DBH), regardless of h	_	
8				Sapling/shrub – Woody plants less t		BH and
9				greater than or equal to 3.28 ft (1 m		ardlass of
10				Herb – All herbaceous (non-woody) size, and woody plants less than 3.2		aruless of
11				Woody vines – All woody vines grea		28 ft in
12				height.		
	55	_= Total Co	ver	Hydrophytic Vegetation Present?	Yes / N	0
Woody Vine Stratum (Plot size: 30 ft )				Trydrophydic Vegetation Tresent.	10311	·
1.						
2.						
3.			-			
4						
	0	= Total Co	ver			
Remarks: (Include photo numbers here or on a separat	e sheet.)					
A positive indication of hydrophytic vegetation was obs	erved (>50	0% of domi	nant species	indexed as OBL, FACW, or FAC).		

Profile Des Depth	cription: (Describe t Matrix	to the de	epth needed to do Redox			ndicato	r or confirm the al	osence of indicators.)	
(inches)	Color (moist)	%	Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Te	exture	Remarks
0 - 20	10YR 2/1	100	color (molocy	· <u>~</u> · —				ter Silt Loam	
				_		<u> </u>			
				_		<u> </u>			
				_					
1Type: C = (	Concentration, D = 1	Doplatio	n PM – Paducad	Matr	iv MS –	Maskad	Sand Grains 21	ocation: PL = Pore Lini	og M – Matriy
Hydric Soil		pehieri0	ii, nivi – neuuceu	iviati	IA, IVIO -	iviasKEU	Janu Granis. *L	Indicators for Proble	
Histoso			Polyvalue Bel Thin Dark Sui					2 cm Muck (A10)	(LRR K, L, MLRA 149B) lox (A16) (LRR K, L, R)
Hydrog	∠ Black Histic (A3) _ Loamy Mucky Mineral (F1) (LRR K, L) _ Hydrogen Sulfide (A4) _ Loamy Gleyed Matrix (F2) _ Stratified Layers (A5) _ Depleted Matrix (F3)						L)		or Peat (S3) <b>(LRR K, L, R)</b>
Deplete	Stratified Layers (A5)							Thin Dark Surfac	
Sandy N	Mucky Mineral (S1) Gleyed Matrix (S4)		Redox Depre					Piedmont Floodp	Masses (F12) (LRR K, L, R)  plain Soils (F19) (MLRA 149B)
_	ledox (S5) d Matrix (S6)							Mesic Spodic (TA Red Parent Mate Very Shallow Dar	
	rface (S7) (LRR R, N							Other (Explain in	
	of hydrophytic veg		and wetland hydr	ology	/ must be	e preser	it, unless disturbe	d or problematic.	
Restrictive	Layer (if observed): Type: Depth (inches):		None			Hydric	Soil Present?		Yes No
Remarks:	Deptil (iliches).	_							
	ndication of hydric	soil was	observed.						

Project/Site: Montague		City/County: Shu	tesbury, Franklin	SamplingDat	e: 2020-July-30
Applicant/Owner: W.D. Cow	s		State: MA	SamplingPoint:	: W-GR-17_UPL-1
Investigator(s): Greg Russo, N	latas R		Section, Township,	Range:	
Landform(hillslope,terrace,etc.)	: Hillslope		Local relief (concave, conv	ex, none): None	Slope (%): 2 to 5
Subregion(LRRorMLRA): $\underline{\mathbb{N}}$	ILRA 144A of LRR I	R	Lat: 42.470404696	7 Long: -72.4265026488	Datum: WGS84
SoilMapUnitName: Henniker	sandy loam, 3 to	8 percent slopes		NWI classif	ication: None
Areclimatic/hydrologiccondition	sonthesitetypical	forthistimeofyear?	Yes No	(If no, explain in Rema	arks.)
Are Vegetation, Soil,	or Hydrology	significantly dis	sturbed? Are "Norm	al Circumstances" present?	Yes No
Are Vegetation, Soil,	or Hydrology	naturally probl	ematic? (If needed,	explain any answers in Ren	narks.)
SUMMARY OF FINDINGS – A	•	showing sampli	ng point locations, trai	nsects, important featu	res, etc.
Hydric Soil Present?	Yes	s No <b></b> _	Is the Sampled Area withi	n a Wetland?	Yes No/_
Wetland Hydrology Present?	Yes	s No <b>_</b> ✓	If yes, optional Wetland S	ite ID:	
Remarks: (Explain alternative proceedings) Covertype is UPL. Area is upland	rocedures here or	in a separate report	)		
HYDROLOGY Wetland Hydrology Indicators:					
Primary Indicators (minimum o	f one is required: (	check all that apply)		Secondary Indicators (mini	mum of two required)
	•		(DO)	Surface Soil Cracks (B6)	
Surface Water (A1) High Water Table (A2)	-	Water-Stained Lea Aquatic Fauna (B1		Drainage Patterns (B10	
Saturation (A3)	_	Aquatic Fadria (B1 Marl Deposits (B1		Moss Trim Lines (B16)	•
Water Marks (B1)	_	Hydrogen Sulfide		Dry-Season Water Table	e (C2)
Sediment Deposits (B2)	_		neres on Living Roots (C3)	Crayfish Burrows (C8)	
	_		0 . ,	Saturation Visible on A	erial Imagery (C9)
Drift Deposits (B3)	_	Presence of Redu	ced Iron (C4)	Stunted or Stressed Pla	ints (D1)
Algal Mat or Crust (B4)	_	Recent Iron Reduc	ction in Tilled Soils (C6)	Geomorphic Position (	02)
Iron Deposits (B5)	-	Thin Muck Surface	• •	Shallow Aquitard (D3)	
Inundation Visible on Aerial	• •	Other (Explain in I	Remarks)	Microtopographic Relie	f (D4)
Sparsely Vegetated Concave	Surface (B8)			FAC-Neutral Test (D5)	
Field Observations:					
Surface Water Present?	Yes No		(inches):	_	
Water Table Present?	Yes No	Depth	(inches):	Wetland Hydrology Presen	t? Yes No
Saturation Present?	Yes No	Depth	(inches):		
(includes capillary fringe)					
Describe Recorded Data (stream	n gauge, monitori	ng well, aerial photo	s, previous inspections), if a	available:	
Remarks:					
No positive indication of wetlan	d hydrology was o	observed.			
p = 1 1	, 2.36,				

	Abaaluta	Daminant	la di sata a	Dominance Test worksh	oot:		
Tree Stratum (Plot size:30 ft)		Dominant Species?	Status	Number of Dominant S			
1. Pinus strobus	15	Yes	FACU	Are OBL, FACW, or FAC:	occies mac	2	(A)
2. Quercus rubra	15	Yes	FACU	Total Number of Domin	ant Species	7	(D)
3. Tsuga canadensis	15	Yes	FAC	Across All Strata:			(B)
4. Betula alleghaniensis	10	No	FAC	Percent of Dominant Sp	ecies That	20 5	(A/B)
5.			1710	Are OBL, FACW, or FAC:		28.5	(/ (/ D)
6.				Prevalence Index works			
7.				Total % Cover of		Multiply	-
	55	= Total Cov	er	OBL species	0	x 1 =	0
Sapling/Shrub Stratum (Plot size:15 ft)		-		FACW species	0	x 2 =	0
1. Hamamelis virginiana	20	Yes	FACU	FAC species	65	x 3 =	195
2. Fagus grandifolia	20	Yes	FACU	FACU species	110	x 4 =	440
3.				- UPL species	0	x 5 =	0
4.				Column Totals	175	(A) _	635 (B)
5.				Prevalence In	dex = B/A =	3.62	
6.				Hydrophytic Vegetation	Indicators:		
7.	-			1- Rapid Test for H		egetation	
/·	40	= Total Cov	er	2 - Dominance Tes	t is > 50%		
Herb Stratum (Plot size: 5 ft )		- 10tal Cov	Ci	3 - Prevalence Inde	ex is $\leq 3.0^{1}$		
1. Pyrola americana	40	Yes	FAC	4 - Morphological	•	-	supporting
Mitchella repens	40	Yes	FACU	data in Remarks or on a	•	•	
3.		103	17100	- Problematic Hydro	. , .		
4.				¹Indicators of hydric soi		, ,	gy must be
5.				present, unless disturbe		natic	
6.				Definitions of Vegetation			
7.				Tree – Woody plants 3 in breast height (DBH), reg			nameter at
8.	-			Sapling/shrub – Woody		-	NRH and
9.				greater than or equal to			DIT and
10.	-			Herb – All herbaceous (i			ardless of
	-			size, and woody plants l			,
11.				Woody vines - All wood	y vines great	er than 3.	28 ft in
12		= Total Cov	or	height.			
Manda Nina Street un (Diet einer 20 ft.)	80	_ 10tal Cov	er	Hydrophytic Vegetation	Present?	′es N	0 /
Woody Vine Stratum (Plot size:30 ft)				, , , , , , , , ,			
1.				-			
2.				-			
3.	-			-			
4				-			
	0	_= Total Cov	er				
Remarks: (Include photo numbers here or on a separate	sheet.)						
No positive indication of hydrophytic vegetation was obser	ved (≥50%	of dominan	t species ind	dexed as FAC- or drier). Pe	er the MA WF	A, eastern	hemlock is
considered a wetland indicator species. Therefore, it has	been assig	ned an indic	ator status o	of "FAC" instead of "FACU."			

	Describe to the Matrix	depth needed to d	ocument the	indicator or conf	firm the absence o	f indicators.)
	moist) %	Color (moist)	% Type <sup>1</sup>	Loc²	Texture	Remarks
0 - 4 10YF					Silt Loam	
	3/4 100				Silt Loam	
	<del></del>	_	· — —			
			· <del></del>			
			· <del></del>			
			· <del></del>			
			· <del></del>			
			· <del></del>			
			· <del></del>			
		_	· — —			
		-	· <del></del>			
		_		<del></del>		
Type: C = Concentra	tion, D = Deple	tion, RM = Reduced	Matrix, MS =	Masked Sand G	rains. <sup>2</sup> Location:	PL = Pore Lining, M = Matrix.
Hydric Soil Indicators		,	,			ors for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)		Polyvalue Be	ow Surface (	S8) <b>(LRR R, MLRA</b>	1.40D)	•
Histic Epipedon (/	A2)			R R, MLRA 149B)	2 (	m Muck (A10) <b>(LRR K, L, MLRA 149B)</b> ast Prairie Redox (A16) <b>(LRR K, L, R)</b>
Black Histic (A3)		Loamy Muck	y Mineral (F1	) (LRR K, L)		m Mucky Peat or Peat (S3) (LRR K, L, R)
Hydrogen Sulfide		Loamy Gleye				rk Surface (S7) <b>(LRR K, L)</b>
Stratified Layers (	•	Depleted Ma				yvalue Below Surface (S8) (LRR K, L)
	-	11) Redox Dark S			Thi	n Dark Surface (S9) <b>(LRR K, L)</b>
Thick Dark Surfac Sandy Mucky Mir		Depleted Dar Redox Depre		)	Iroi	n-Manganese Masses (F12) (LRR K, L, R)
Sandy Mucky Mil Sandy Gleyed Ma		Redox Depre	5510115 (FO)		Pie	dmont Floodplain Soils (F19) (MLRA 149B)
Sandy Gleyed Ma Sandy Redox (S5)	u ix (54)				Me	sic Spodic (TA6) <b>(MLRA 144A, 145, 149B)</b>
Stripped Matrix (	56)					d Parent Material (F21)
Stripped Matrix (. Dark Surface (S7)		149R)				y Shallow Dark Surface (TF12)
Dark Sarrace (57)	(LINE IV, IVILIO	1436)			Oth	ner (Explain in Remarks)
Indicators of hydrop	<u> </u>	n and wetland hydr	ology must b	e present, unles	s disturbed or pro	blematic.
Restrictive Layer (if o	oserved):					
Type:		Rock	=	Hydric Soil Pre	sent?	Yes No <u>_</u> ✓
Depth (in	ches):	12				
No positive indicatio	n of hydric soil:	s was observed.				

Project/Site: Montague	City/County: Sh	utesbury, Franklin		SamplingDate: 20	020-July-31
Applicant/Owner: W.D. Cowls		State: MA		SamplingPoint: W-0	-
Investigator(s): Greg Russo, Mate	as R	Section, Township,	Range:		
Landform(hillslope,terrace,etc.):	Depression	Local relief (concave, conv	ex, none):	Concave	Slope (%): 1 to 3
Subregion(LRRorMLRA): MLR	A 144A of LRR R	Lat: 42.467275480	8 Long:	-72.4260031712	Datum: WGS84
Soil Map Unit Name: Pillsbury fin	ne sandy loam, 0 to 8 percent slop	es, very stony		NWI classificatio	n: PFO
Are climatic/hydrologic conditions	on the site typical for this time of y	ear? Yes <u>✓</u> No	(If no	, explain in Remarks.)	
Are Vegetation, Soil,	or Hydrology significantly d		al Circumst	ances" present?	Yes No
Are Vegetation, Soil,	or Hydrology naturally prob	olematic? (If needed,	explain any	y answers in Remarks	.)
SUMMARY OF FINDINGS – Att	ach site map showing sampl	ing point locations, trar	nsects, im	portant features,	etc.
Hydrophytic Vegetation Present?	Yes _ <b>✓</b> _ No				
Hydric Soil Present?	Yes 🗸 No	Is the Sampled Area withi	n a Wetland	d? Yes	No
Wetland Hydrology Present?	Yes No	If yes, optional Wetland S			
			ite ib.		JI(-10
Remarks: (Explain alternative proc	·				
Covertype is PFO. Area is wetland,	all three wetland parameters are p	present.			
LIVEROLOGY					
HYDROLOGY					
Wetland Hydrology Indicators:					
Primary Indicators (minimum of o	ne is required; check all that apply	1	Secondary	Indicators (minimum	of two required)
Surface Water (A1)	⁄ Water-Stained Le	eaves (B9)	Surface	e Soil Cracks (B6)	
High Water Table (A2)	Aquatic Fauna (B		Draina	ge Patterns (B10)	
✓ Saturation (A3)	Marl Deposits (B	15)		rim Lines (B16)	
Water Marks (B1)	Hydrogen Sulfide	e Odor (C1)		ason Water Table (C2)	
Sediment Deposits (B2)	Oxidized Rhizosr	oheres on Living Roots (C3)		h Burrows (C8)	(50)
				tion Visible on Aerial I	0 7
Drift Deposits (B3)	Presence of Redu			d or Stressed Plants (I	D1)
Algal Mat or Crust (B4)		uction in Tilled Soils (C6)		orphic Position (D2)	
Iron Deposits (B5)	Thin Muck Surface			w Aquitard (D3)	
Inundation Visible on Aerial Im		Remarks)		opographic Relief (D4)	)
✓ Sparsely Vegetated Concave Su	irrace (B8)		FAC-NE	eutral Test (D5)	_
Field Observations:					
Surface Water Present?	·	n (inches):			
Water Table Present?	Yes _✓ No Depti	n (inches):	Wetland H	lydrology Present?	Yes No
Saturation Present?	Yes No Depti	n (inches):			
(includes capillary fringe)					
Describe Recorded Data (stream g	gauge, monitoring well, aerial photo	os, previous inspections), if	available:		
Remarks:					
The criterion for wetland hydrolog	v is met.				
	<b>y</b>				

<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Dominant Species?	Indicator Status	Dominance Test workshown Number of Dominant Sp			(4)
1. Acer rubrum	40	Yes	FAC	Are OBL, FACW, or FAC:		4	(A)
2. Tsuga canadensis	25	Yes	FAC	Total Number of Domina	ant Species	5	(D)
3. Betula alleghaniensis	15	No	FAC	Across All Strata:			(B)
4.	<del></del>			Percent of Dominant Sp	ecies That	80	(A/B)
5.				Are OBL, FACW, or FAC:			
5.				Prevalence Index worksh			
7.				Total % Cover o		Multiply	•
·	80	= Total Cov	er	- OBL species	0	x 1 =	0
Sapling/Shrub Stratum (Plot size:15 ft)		. Total Cov	Ci	FACW species	45	x 2 =	90
1. Kalmia latifolia	25	Yes	FACU	FAC species	80	x 3 =	240
2. Vaccinium corymbosum	20	Yes	FACW	- FACU species	25	x 4 =	100
3.		163	TACV	- UPL species	0	x 5 =	0
4.	<del></del>			- Column Totals	125	(A)	130 (B)
·				Prevalence Inc	dex = B/A =	1.04	
5.				Hydrophytic Vegetation	Indicators:		
5.				1- Rapid Test for Hy	ydrophytic V	/egetatio	า
7				2 - Dominance Test	is >50%		
	45 = Total Cover ✓ 3 - Prevalence				x is ≤ $3.0^{1}$		
Herb Stratum (Plot size:5 ft)		.,		4 - Morphological Adaptations¹ (Provide su			
1. <u>Coptis trifolia</u>	25	Yes	FACW	data in Remarks or on a	separate sh	ieet)	
2				Problematic Hydro	phytic Vege	tation¹ (E	xplain)
3				- Indicators of hydric soil	and wetlan	d hydrolo	gy must be
4				present, unless disturbe	d or problei	matic	
5				Definitions of Vegetation	n Strata:		
6				_ Tree – Woody plants 3 in			diameter a
7				breast height (DBH), reg		-	
8				Sapling/shrub - Woody			DBH and
9				greater than or equal to			
10				Herb – All herbaceous (n			gardless of
11				size, and woody plants le			20.6
12				Woody vines – All woody	/ vines great	ter than a	3.28 ft in
	25	= Total Cov	er	height.			
Woody Vine Stratum (Plot size: 30 ft )				Hydrophytic Vegetation	Present? \	⁄es _ <b>_∕</b> _	No
1				_			
2.							
3.							
4.				-			
	0	= Total Cov	er	-			
		-		1			

Project/Site: Montague	City/County: Shu	tesbury, Franklin	SamplingDate	: 2020-July-31			
Applicant/Owner: W.D. Cowls		State: MA	State: MA SamplingPoint: W-GR-18_UPL-1				
Investigator(s): Greg Russo, Ma	ntas R	Section, Township, R	ip, Range:				
Landform(hillslope,terrace,etc.):	Hillslope	Local relief (concave, conve	x, none): None	Slope (%): 1 to 3			
Subregion(LRRorMLRA): ML	RA 144A of LRR R	Lat: 42.4672245188	Long: -72.4260922708	Datum: WGS84			
SoilMapUnitName: Pillsbury fin	e sandy loam, 0 to 8 percent slopes, very s	tony	NWI classific	ation: None			
Areclimatic/hydrologiccondition	sonthesitetypicalforthistimeofyea	ar? Yes 🟒 No _	(If no, explain in Rema	rks.)			
Are Vegetation, Soil,	or Hydrology significantly di	sturbed? Are "Normal	Circumstances" present?	Yes _ <b>✓</b> No			
Are Vegetation, Soil,	or Hydrology naturally prob	lematic? (If needed, e	xplain any answers in Rem	arks.)			
SUMMARY OF FINDINGS – At	tach site map showing sampli	ng point locations, trans	sects, important featur	es, etc.			
Hydrophytic Vegetation Present?	Yes No <b>_</b> ✓						
Hydric Soil Present?	Yes No	Is the Sampled Area within	a Wetland?	Yes No			
_	Yes No	·					
Wetland Hydrology Present?		If yes, optional Wetland Site	е ір.				
	cedures here or in a separate report						
Covertype is UPL. Area is upland,	not all three wetland parameters ar	e present.					
HYDROLOGY							
Wetland Hydrology Indicators:							
Primary Indicators (minimum of o	one is required; check all that apply)	9	Secondary Indicators (minir	num of two required)			
Surface Water (A1)	Water-Stained Lea	aves (B9)	Surface Soil Cracks (B6)				
High Water Table (A2)	Aquatic Fauna (B1		Drainage Patterns (B10)				
Saturation (A3)	Marl Deposits (B1		Moss Trim Lines (B16)				
Water Marks (B1)	Hydrogen Sulfide	Odor (C1)	Dry-Season Water Table (C2)				
Sediment Deposits (B2)	Oxidized Rhizosp	heres on Living Roots (C3)					
		-	Saturation Visible on Ae				
Drift Deposits (B3)	Presence of Redu		Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4)		ction in Tilled Soils (C6)	Geomorphic Position (D	2)			
Iron Deposits (B5) Inundation Visible on Aerial Im	Thin Muck Surface		Shallow Aquitard (D3)	(D4)			
Inundation visible on Aeriai in Sparsely Vegetated Concave S	· · · · · · · · · · · · · · · · · · ·	remarks) _	Microtopographic Relief	(D4)			
Field Observations:	urrace (Bo)		FAC-Neutral Test (D5)				
Surface Water Present?	Vos No / Donth	(inches):					
	•	(inches):					
Water Table Present?	•	(inches):	Wetland Hydrology Present	? Yes No			
Saturation Present?	Yes No _ <b>_/</b> Depth	(inches):					
(includes capillary fringe)							
Describe Recorded Data (stream g	gauge, monitoring well, aerial photo	s, previous inspections), if a	vailable:				
Remarks:							
The criterion for wetland hydrolog	gy is not met.						
	<i>2</i>						

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size: 30 ft )		Species?	Status	Number of Dominant Species That	_	
1. Quercus rubra	50	Yes	FACU	Are OBL, FACW, or FAC:	1	(A)
Betula alleghaniensis	30	Yes	FAC	Total Number of Dominant Species	5	(D)
3. Pinus strobus	10	No	FACU	Across All Strata:		(B)
4.			17100	Percent of Dominant Species That	20	(A/B)
5.				Are OBL, FACW, or FAC:		(A/B)
6.	· ——			Prevalence Index worksheet:		
7.	· ——			Total % Cover of:	<u>Multiply</u>	By:
/		- Tatal Car		OBL species 0	x 1 =	0
	90	= Total Cov	er	FACW species 0	x 2 =	0
Sapling/Shrub Stratum (Plot size: 15 ft )	50	.,	E4.611	FAC species 30	x 3 =	90
1. Kalmia latifolia	50	Yes	FACU	FACU species 145	x 4 =	580
2. Hamamelis virginiana	25	Yes	FACU	UPL species 0	x 5 =	0
3				Column Totals 175	(A)	670 (B)
4				Prevalence Index = B/A =	3.8	-
5				Hydrophytic Vegetation Indicators:		·
6				1- Rapid Test for Hydrophytic \	/egetation	•
7				2 - Dominance Test is > 50%	regetation	
	75	= Total Cov	er	3 - Prevalence Index is ≤ 3.0¹		
Herb Stratum (Plot size:5 ft)				4 - Morphological Adaptations	1 (Drovido	cupporting
1. Aralia nudicaulis	10	Yes	FACU	data in Remarks or on a separate sh		supporting
2.				Problematic Hydrophytic Vege		(nlain)
3.				Indicators of hydric soil and wetlan		-
4.				present, unless disturbed or proble		gy must be
5.				Definitions of Vegetation Strata:	Hatic	
6.	· ——			Tree – Woody plants 3 in. (7.6 cm) or	r more in	diameter at
7.	· ——			breast height (DBH), regardless of h		diameter at
8.				Sapling/shrub – Woody plants less t	_	ORH and
9.	· ——			greater than or equal to 3.28 ft (1 m		DDIT GITG
40	. ——			Herb – All herbaceous (non-woody)		gardless of
				size, and woody plants less than 3.2		Ba. a.ess o.
11.	<del></del>			Woody vines – All woody vines grea		.28 ft in
12				height.		
	10	= Total Cov	er	Hydrophytic Vegetation Present?	Voc N	do .
Woody Vine Stratum (Plot size: 30 ft )				Trydrophytic vegetation i resente	103 1	10 <u>v</u>
1						
2						
3						
4						
	0	= Total Cov	er			
Remarks: (Include photo numbers here or on a separa	te sheet.)					
No positive indication of hydrophytic vegetation was o		50% of dom	inant snecie	es indexed as FAC- or drier)		
The positive indication of flydropflytic vegetation was o	03C1VCU (=	30 % OF GOTE	mant speci	es macked as the of affer).		

1Type: C = Conce Hydric Soil Indica Histic Epiped Black Histic (A Hydrogen Su Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	n, RM = Reduced Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar Redox Depre	Matriz  Matriz  Matrix  Matrix  Matrix  Matrix  Matrix  Face (	x, MS = N  urface (St S9) (LRR eral (F1) (rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLRA (LRR K, L	Org mat Loa San Sand Grains. <sup>2</sup> Lo R, MLRA 149B)	texture  tter Silt Loam  my Sand  dy Loam  cocation: PL = Pore Lining, M  Indicators for Problemati  2 cm Muck (A10) (LRR  Coast Prairie Redox (A)  5 cm Mucky Peat or P  Dark Surface (S7) (LRI  Polyvalue Below Surface  Thin Dark Surface (S9)  Iron-Manganese Mas  Piedmont Floodplain	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) D) (LRR K, L)
1Type: C = Conce Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic (A) Hydrogen Su Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	2.5Y 4/1 10YR 4/4 10YR 4/4  entration, D = E ators: don (A2) A3) ulfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	100 100 100 	n, RM = Reduced Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	Matrizione Surface ( y Mine d Matrizione G Matrizione G Matrizione G Matrizione G Matrix (F3 6 c k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface k Surface	x, MS = N  Irface (St S9) (LRR eral (F1) (rix (F2) 3) e (F6) face (F7)	Masked B) (LRR F R, MLR/	Org mat Loa San Sand Grains. <sup>2</sup> Lo R, MLRA 149B)	ocation: PL = Pore Lining, M Indicators for Problemati  2 cm Muck (A10) (LRR  Coast Prairie Redox (A)  5 cm Mucky Peat or P  Dark Surface (S7) (LRI  Polyvalue Below Surfa  Thin Dark Surface (S9)  Iron-Manganese Mas	1 = Matrix. ic Hydric Soils³: R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) b) (LRR K, L) ses (F12) (LRR K, L, R)
3 - 6 6 - 9  Type: C = Conce Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	2.5Y 4/1 10YR 4/4  entration, D = E ators:  don (A2) A3) Ilfide (A4) Ilfide (A4) Ilfide (A4) Ilforers (A5) Ilforers (A12) Ilfo	100 100 100 100 100 100 100 100 100 100	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLRA (LRR K, L	Sand Grains. <sup>2</sup> Lo	ocation: PL = Pore Lining, M Indicators for Problemati 2 cm Muck (A10) (LRR Coast Prairie Redox (A) 5 cm Mucky Peat or P Dark Surface (S7) (LRI Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
1Type: C = Conce Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic (A) Hydrogen Su Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	antration, D = Eators:  Idon (A2)  A3)  Ilfide (A4)  Ilfide (A4)  Ilfide (A12)  Ilfide (A12)  Ilfide (A12)  Ilfide (A12)  Ilfide (A13)  Ilfide (A14)  Ilfide (A14)  Ilfide (A3)  Ilfide (A4)  Ilfide (A4)  Ilfide (A4)  Ilfide (A4)  Ilfide (A5)	100	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLRA (LRR K, L	Sand Grains. <sup>2</sup> Lo R, MLRA 149B)	ocation: PL = Pore Lining, M Indicators for Problemati 2 cm Muck (A10) (LRR Coast Prairie Redox (A) 5 cm Mucky Peat or P Dark Surface (S7) (LRI Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
1Type: C = Conce Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	entration, D = E ators: don (A2) A3) ulfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	Depletion	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLRA (LRR K, L	Sand Grains. <sup>2</sup> Lo R, MLRA 149B)	ocation: PL = Pore Lining, M Indicators for Problemati 2 cm Muck (A10) (LRR Coast Prairie Redox (A) 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark So Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLRA (LRR K, L	R, MLRA 149B) A 149B)	Indicators for Problemati  2 cm Muck (A10) (LRR Coast Prairie Redox (A10) (LRR 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLRA (LRR K, L	R, MLRA 149B) A 149B)	Indicators for Problemati  2 cm Muck (A10) (LRR Coast Prairie Redox (A10) (LRR 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark So Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLRA (LRR K, L	R, MLRA 149B) A 149B)	Indicators for Problemati  2 cm Muck (A10) (LRR Coast Prairie Redox (A10) (LRR 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark So Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLRA (LRR K, L	R, MLRA 149B) A 149B)	Indicators for Problemati  2 cm Muck (A10) (LRR Coast Prairie Redox (A10) (LRR 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark So Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLRA (LRR K, L	R, MLRA 149B) A 149B)	Indicators for Problemati  2 cm Muck (A10) (LRR Coast Prairie Redox (A10) (LRR 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark So Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLRA (LRR K, L	R, MLRA 149B) A 149B)	Indicators for Problemati  2 cm Muck (A10) (LRR Coast Prairie Redox (A10) (LRR 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLR/ (LRR K, L	R, MLRA 149B) A 149B)	Indicators for Problemati  2 cm Muck (A10) (LRR Coast Prairie Redox (A10) (LRR 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLR/ (LRR K, L	R, MLRA 149B) A 149B)	Indicators for Problemati  2 cm Muck (A10) (LRR Coast Prairie Redox (A10) (LRR 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLR/ (LRR K, L	R, MLRA 149B) A 149B)	Indicators for Problemati  2 cm Muck (A10) (LRR Coast Prairie Redox (A10) (LRR 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Hydric Soil Indica Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ators: don (A2) A3) Ilfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- - - ace (A11)	Polyvalue Bel Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	low Su rface ( y Mine d Matr trix (F3 Surface k Surf	urface (S8 S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	8) (LRR F R, MLR/ (LRR K, L	R, MLRA 149B) A 149B)	Indicators for Problemati  2 cm Muck (A10) (LRR Coast Prairie Redox (A10) (LRR 5 cm Mucky Peat or P Dark Surface (S7) (LRR Polyvalue Below Surface (S9) Iron-Manganese Mas	ic Hydric Soils <sup>3</sup> : R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Histosol (A1) Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark Su Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	don (A2) A3) ulfide (A4) vers (A5) low Dark Surfa urface (A12) v Mineral (S1) d Matrix (S4) k (S5)	- ace (A11)_ -	Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	rface ( y Mine d Matr trix (F3 Surface k Surf	S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) B) e (F6) face (F7)	R, MLR/ (LRR K, L	A 149B)	2 cm Muck (A10) (LRR Coast Prairie Redox (/ 5 cm Mucky Peat or P Dark Surface (S7) (LRF Polyvalue Below Surfa Thin Dark Surface (S9 Iron-Manganese Mas	R K, L, MLRA 149B) A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Histic Epiped Black Histic ( Hydrogen Su Stratified Lay Depleted Bel Thick Dark Su Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	don (A2) A3)  ulfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- ace (A11)_ -	Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	rface ( y Mine d Matr trix (F3 Surface k Surf	S9) <b>(LRR</b> eral (F1) <b>(</b> rix (F2) B) e (F6) face (F7)	R, MLR/ (LRR K, L	A 149B)	Coast Prairie Redox (/ 5 cm Mucky Peat or P Dark Surface (S7) (LRF Polyvalue Below Surfa Thin Dark Surface (S9 Iron-Manganese Mas	A16) (LRR K, L, R) Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) O) (LRR K, L) ses (F12) (LRR K, L, R)
Black Histic (/ Hydrogen Su Stratified Lay Depleted Bel Thick Dark Su Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	A3)  ulfide (A4)  yers (A5)  low Dark Surfa  urface (A12)  y Mineral (S1)  d Matrix (S4)  x (S5)	- ace (A11)_ -	Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	y Mine d Matr trix (F3 Surface k Surf	eral (F1) <b>(</b> rix (F2) 3) e (F6) face (F7)	(LRR K, L		5 cm Mucky Peat or P Dark Surface (S7) (LRF Polyvalue Below Surfa Thin Dark Surface (S9 Iron-Manganese Mas	Peat (S3) (LRR K, L, R) R K, L) ace (S8) (LRR K, L) o) (LRR K, L) ses (F12) (LRR K, L, R)
Hydrogen Su Stratified Lay Depleted Bel Thick Dark Su Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	ulfide (A4) yers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- ace (A11)_ -	Loamy Gleyed Depleted Mat Redox Dark S Depleted Dar	d Matr trix (F3 Surface k Surf	rix (F2) 3) e (F6) face (F7)		j	Dark Surface (S7) (LRI Polyvalue Below Surfa Thin Dark Surface (S9 Iron-Manganese Mas	R K, L) ace (S8) (LRR K, L) o) (LRR K, L) ses (F12) (LRR K, L, R)
Stratified Lay Depleted Bel Thick Dark St Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	vers (A5) low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) k (S5)	- ace (A11)_ -	Depleted Mat Redox Dark S Depleted Dar	trix (F3 Surface k Surf	3) e (F6) face (F7)			Polyvalue Below Surfa Thin Dark Surface (S9 Iron-Manganese Mas	ace (S8) <b>(LRR K, L)</b> 9) <b>(LRR K, L)</b> ses (F12) <b>(LRR K, L, R)</b>
Depleted Bel Thick Dark Su Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	low Dark Surfa urface (A12) y Mineral (S1) d Matrix (S4) ‹ (S5)		Redox Dark S Depleted Dar	Surface k Surf	e (F6) face (F7)			Thin Dark Surface (S9 Iron-Manganese Mas	e) (LRR K, L) ses (F12) (LRR K, L, R)
Sandy Mucky Sandy Gleyed Sandy Redox Stripped Mat	y Mineral (S1) d Matrix (S4) k (S5)		•					Iron-Manganese Mas	ses (F12) <b>(LRR K, L, R)</b>
Sandy Gleyed Sandy Redox Stripped Mat	d Matrix (S4) k (S5)	-	Redox Depre	ssions	s (F8)				
Sandy Redox Stripped Mat	k (S5)							Pleamont Floodplain	SOIIS (F19) (MILKA 149B)
Stripped Mat								·	ALDA 144A 14E 140D)
								Mesic Spodic (TA6) <b>(M</b> Red Parent Material (	
Dark Surface	trix (S6)							Very Shallow Dark Su	
	e (S7) <b>(LRR R, M</b>	ILRA 149	В)					Other (Explain in Rem	
<sup>3</sup> Indicators of hy	drophytic vege	etation a	nd wetland hydr	ology	must be	presen	t, unless disturbe	•	
Restrictive Layer						İ		'	
Type			Rock			Hydric	Soil Present?	Yes	s No⁄_
	th (inches):		9	•		'			- · <u>-</u>
Remarks:	(					-		·	
No positive indic	cation of hydric	c soils wa	as observed.						

Project/Site: Montague	City/County: Shu	tesbury, Franklin		SamplingDate: 20	20-July-31		
Applicant/Owner: W.D. Cowls		State: MA	S	SamplingPoint: W-GR-19_PFO-1			
Investigator(s): Greg Russo, Mat	as R	Section, Township,	Range:				
Landform(hillslope,terrace,etc.):	Flood Plain	Local relief (concave, conv	ex, none):C	Concave	Slope (%): 1 to 3		
Subregion (LRR or MLRA): ML	RA 144A of LRR R	Lat: 42.464613807	4 Long: -	72.4276969024	Datum: WGS84		
SoilMapUnitName: Pillsbury find	e sandy loam, 0 to 8 percent slopes, very s	tony		NWI classification	n: None		
Areclimatic/hydrologiccondition	sonthesitetypicalforthistimeofye	ar? Yes <u></u> ✓ No	(If no, e	explain in Remarks.)			
Are Vegetation, Soil,	or Hydrology significantly d	isturbed? Are "Norma	al Circumstaı	nces" present?	⁄es _ <b>_∕</b> _ No		
Are Vegetation, Soil,	or Hydrology naturally prob	olematic? (If needed,	explain any	answers in Remarks.)	)		
SUMMARY OF FINDINGS – At	tach site map showing sampli	ng point locations, trar	nsects, imp	ortant features, e	etc.		
Hydrophytic Vegetation Present?	Yes _ 🗸 No						
Hydric Soil Present?	Yes _ ✓ No	Is the Sampled Area withi	n a Wetlanda	yes Yes	No		
-		·					
Wetland Hydrology Present?	Yes No	If yes, optional Wetland Si	ite iD:		R-19		
	cedures here or in a separate report						
Covertype is PFO. Area is wetland,	, all three wetland parameters are p	resent.					
HYDROLOGY							
Wetland Hydrology Indicators:							
Primary Indicators (minimum of o	ne is required; check all that apply)		-	ndicators (minimum	of two required)		
Surface Water (A1)	<u></u> Water-Stained Lea	aves (B9)		Soil Cracks (B6)			
High Water Table (A2)	Aquatic Fauna (B1	13)	_	e Patterns (B10)			
✓ Saturation (A3)	Marl Deposits (B1	5)		m Lines (B16) son Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide	Odor (C1)					
Sediment Deposits (B2)	Oxidized Rhizosp	heres on Living Roots (C3)	n Living Roots (C3) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)				
					9 ,		
Drift Deposits (B3)	Presence of Redu			or Stressed Plants (D	1)		
Algal Mat or Crust (B4)		ction in Tilled Soils (C6)		Geomorphic Position (D2)			
Iron Deposits (B5)	Thin Muck Surface		•				
Inundation Visible on Aerial Im	· · · · · · · · · · · · · · · · · · ·	Remarks)		oographic Relief (D4)			
✓ Sparsely Vegetated Concave St	urface (B8)		∕ FAC-Neu	itral Test (D5)			
Field Observations:	V N 5 1						
Surface Water Present?	·	(inches):					
Water Table Present?		(inches):	Wetland Hy	drology Present?	Yes No		
Saturation Present?	Yes No Depth	(inches): 0					
(includes capillary fringe)							
Describe Recorded Data (stream g	gauge, monitoring well, aerial photo	s, previous inspections), if a	available:				
, ,		.,					
Remarks:							
The criterion for wetland hydrolog	gy is met.						

Tree Stratum (Plot size:30 ft)		Dominant		Dominance Test worksheet:		
		Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC:	5	(A)
1. Acer rubrum	50	Yes	FAC	Total Number of Dominant Species		<u> </u>
2. Betula alleghaniensis	50	Yes	FAC	Across All Strata:	5	(B)
3				Percent of Dominant Species That		
4				Are OBL, FACW, or FAC:	100	(A/B)
5				Prevalence Index worksheet:		
6	-			Total % Cover of:	Multiply I	By:
7				OBL species 0	x 1 =	0
	100	_= Total Cov	er	FACW species 125	x 2 =	250
Sapling/Shrub Stratum (Plot size: 15 ft )				FAC species 100	x 3 =	300
1. Vaccinium corymbosum	60	Yes	FACW	FACU species 0	x 4 =	0
2				UPL species 0	x 5 =	0
3.				Column Totals 225	(A)	550 (B)
4				Prevalence Index = B/A =	_	000 (2)
5						
6.				Hydrophytic Vegetation Indicators:	/tti	
7.				1- Rapid Test for Hydrophytic V	regetation	
	60	= Total Cov	er	2 - Dominance Test is >50%		
Herb Stratum (Plot size:5 ft)		_		3 - Prevalence Index is ≤ 3.0¹	1.6	
1. Coptis trifolia	50	Yes	FACW	4 - Morphological Adaptations		supporting
2. Osmundastrum cinnamomeum	15	Yes	FACW	<ul><li>data in Remarks or on a separate sh</li><li>Problematic Hydrophytic Vege</li></ul>		nlain)
3.				<sup>1</sup> Indicators of hydric soil and wetlan		
4.				present, unless disturbed or proble		gy must be
5.				Definitions of Vegetation Strata:	Hatic	
6.				Tree – Woody plants 3 in. (7.6 cm) or	r moro in c	diameter at
7.				breast height (DBH), regardless of h		ilameter at
8.				Sapling/shrub – Woody plants less t	_	)BH and
				greater than or equal to 3.28 ft (1 m		bir ana
				Herb – All herbaceous (non-woody)		ardless of
10.				size, and woody plants less than 3.2		<b>,</b>
11.				Woody vines – All woody vines great		28 ft in
12				height.		
	65	_= Total Cov	er	Hydrophytic Vegetation Present?	√es / N	10
Woody Vine Stratum (Plot size: 30 ft )				Trydrophydd Yegelddon i Yesenia		
1						
2						
3	-					
4						
	0	_= Total Cov	er			
Remarks: (Include photo numbers here or on a separat	e sheet.)					
A positive indication of hydrophytic vegetation was obs	erved (>50	0% of domin	ant species	indexed as OBL, FACW, or FAC).		

Profile Desc Depth	ription: (Describe t Matrix	o the de	epth needed to do			ndicato	r or confirm the al	bsence of indicators.)	
(inches)	Color (moist)	%	Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Te	exture	Remarks
0 - 8	10YR 2/1	100	color (moist)					ter Silt Loam	Kemarks
				_					
				_					
				_					
		_		_					
		<u> </u>		_					
	oncentration, D = [	 Depletio	n, RM = Reduced	Matr	ix, MS =	 Masked	Sand Grains. <sup>2</sup> Lo	ocation: PL = Pore Linin	
Hydric Soil			D	_		0) (1 = = :	D 141 D4 4 455	Indicators for Proble	matic Hydric Soils³:
Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 1498         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)							A 149B)	Coast Prairie Red	(LRR K, L, MLRA 149B) lox (A16) (LRR K, L, R)
Hydroge								Dark Surface (S7)	
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)								Polyvalue Below Thin Dark Surfac	Surface (S8) (LRR K, L)
	ark Surface (A12)		Depleted Dar						Masses (F12) <b>(LRR K, L, R)</b>
	lucky Mineral (S1)		Redox Depre	ssion	s (F8)				plain Soils (F19) <b>(MLRA 149B)</b>
-	ileyed Matrix (S4)								6) (MLRA 144A, 145, 149B)
Sandy R	edox (S5)							Red Parent Mate	
Stripped	d Matrix (S6)							Very Shallow Dar	
Dark Su	rface (S7) <b>(LRR R, M</b>	ILRA 149	9B)					Other (Explain in	
-	of hydrophytic vege	etation a	and wetland hydr	ology	/ must be	preser	it, unless disturbe	d or problematic.	
	_ayer (if observed): 		5 1				5 11 D 12		v
	Type:		Rock			Hydric	Soil Present?		Yes No
	Depth (inches):		8						
Remarks: A positive in	ndication of hydric	soil was	observed.						

Project/Site: Montague	City/County: ,			SamplingDate: 2	2020-July-31			
Applicant/Owner: W.D. Cowls		State:		SamplingPoint: W				
Investigator(s): Greg Russo, Mat	tas R	Section, Township,	Range:					
Landform(hillslope,terrace,etc.):	Hillslope	Local relief (concave, conve	ex, none):_	Convex	Slope (%): 2 to 5			
Subregion (LRR or MLRA): MLI	RA 144A of LRR R	Lat: 42.4645174575	Long:	-72.4278650433	Datum: WGS84			
SoilMapUnitName: Pillsbury fine	sandy loam, 0 to 8 percent slopes, very	stony		NWI classificati	on: None			
Areclimatic/hydrologicconditions	•••			, explain in Remarks	.)			
Are Vegetation, Soil,	or Hydrology significantly d			ances" present?	Yes No			
Are Vegetation, Soil,	or Hydrology naturally prob	olematic? (If needed,	explain an	y answers in Remark	S.)			
SUMMARY OF FINDINGS – Att	ach site map showing sampl	ing point locations, tran	sects, im	portant features,	etc.			
Hydrophytic Vegetation Present?	Yes No _ <b>_</b>							
Hydric Soil Present?	Yes No _ <b>_</b> _	Is the Sampled Area within a Wetland? Yes No/						
Wetland Hydrology Present?	Yes No _ <b>_</b> _	If yes, optional Wetland Site ID:						
Remarks: (Explain alternative proc								
· ·	not all three wetland parameters a							
Covertype is or E. Airea is apiana, i	Tot all timee wettaria parameters a	re present.						
HYDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of or	ne is required: check all that apply		Secondary	/ Indicators (minimur	n of two required)			
-			-	e Soil Cracks (B6)	n or two required)			
Surface Water (A1) High Water Table (A2)	Water-Stained Le Aquatic Fauna (B			ge Patterns (B10)				
Saturation (A3)	Aquatic radiia (B			Frim Lines (B16)				
Water Marks (B1)	Hydrogen Sulfide		Dry-Se	ason Water Table (C2	2)			
Sediment Deposits (B2)	, ,		sh Burrows (C8)					
			Satura	tion Visible on Aerial	Imagery (C9)			
Drift Deposits (B3)	Presence of Redu			d or Stressed Plants	(D1)			
Algal Mat or Crust (B4)		uction in Tilled Soils (C6)		orphic Position (D2)				
Iron Deposits (B5)	Thin Muck Surface			w Aquitard (D3)	4)			
Inundation Visible on Aerial Im-	· · · · · · · · · · · · · · · · · · ·	Remarks)		opographic Relief (De	4)			
Sparsely Vegetated Concave Su	iriace (bo)		FAC-N	eutral Test (D5)				
Field Observations: Surface Water Present?	Yes No <u></u> Depth	ı (inches):						
			M ( - 4)  1		V N-			
Water Table Present?	·	(inches):	wetland F	lydrology Present?	Yes No			
Saturation Present?	Yes No Depth	(inches):						
(includes capillary fringe)								
Describe Recorded Data (stream g	gauge, monitoring well, aerial photo	os, previous inspections), if a	vailable:					
Remarks:								
No positive indication of wetland h	nydrology was observed.							

Tree Stratum (Plot size:30 ft)		Dominant		Dominance Test worksheet:		
		Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
1. Pinus strobus	25	Yes	FACU	Total Number of Dominant Species		
2. Quercus rubra	25	Yes	FACU	Across All Strata:	5	(B)
3				Percent of Dominant Species That		
4				Are OBL, FACW, or FAC:	0	(A/B)
5				Prevalence Index worksheet:		
6				Total % Cover of:	Multiply	By:
7	-			OBL species 0	x 1 =	0
	50	= Total Cov	er	FACW species 7	x 2 =	14
Sapling/Shrub Stratum (Plot size: 15 ft )				FAC species 0	x 3 =	0
1. Fagus grandifolia	60	Yes	FACU	FACU species 190	x 4 =	760
2. Hamamelis virginiana	40	Yes	FACU	UPL species 0	x 5 =	0
3				Column Totals 197	(A)	774 (B)
4				Prevalence Index = B/A =	_	(5)
5						
6				Hydrophytic Vegetation Indicators:	/t-t:	
7.				1- Rapid Test for Hydrophytic V	egetation	
	100	= Total Cov	er	2 - Dominance Test is > 50%		
Herb Stratum (Plot size:5 ft)		<del>-</del>		3 - Prevalence Index is ≤ 3.0¹	l (Duran dala	
1. Mitchella repens	40	Yes	FACU	4 - Morphological Adaptations' data in Remarks or on a separate sh		supporting
2. Osmundastrum cinnamomeum	5	No	FACW	Problematic Hydrophytic Vege		(nlain)
3. <i>Coptis trifolia</i>	2	No	FACW	<sup>1</sup> Indicators of hydric soil and wetlan		•
4.				present, unless disturbed or proble	-	gy must be
5.				Definitions of Vegetation Strata:	TIACIC	
6.				Tree – Woody plants 3 in. (7.6 cm) or	more in	diameter at
7.				breast height (DBH), regardless of h		ulailletei at
8.	-			Sapling/shrub – Woody plants less t	-	OBH and
				greater than or equal to 3.28 ft (1 m		2 44
				<b>Herb</b> – All herbaceous (non-woody)		gardless of
10.	-			size, and woody plants less than 3.2		<b>5</b>
11.				Woody vines – All woody vines great		.28 ft in
12		- Total Cau		height.		
Manda Vina Charles and (District 20 ft )	47	= Total Cov	er	Hydrophytic Vegetation Present?	/es N	lo 🗸
Woody Vine Stratum (Plot size: 30 ft )				.,,,		
1.						
2.						
3						
4						
	0	= Total Cov	er			
Remarks: (Include photo numbers here or on a separat						
No positive indication of hydrophytic vegetation was ob	served (≥	50% of don	ninant specie	es indexed as FAC– or drier).		

Depth	cription: (Describe Matrix	to the de	pth needed to de Redox			ndicator o	or confirm the al	osence of indicato	rs.)
(inches)	Color (moist)	%	Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Text	ure	Remarks
0 - 12	10YR 2/2	100	20.0. (0.54)	. <u></u>	.,,,,,		Silty Cla		The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
12 - 16	7.5YR 4/6	100		_			Silty Cla		
12 10	7.511( 1/0	100		_			Sitty Cit	y Louin	
		. —		_					
		· —		_					
		· —		_					
				_					
				-					
		· —— ·		. —					
				_					
Type: C = C	Concentration, D =	Depletio	n, RM = Reduced	Matr	ix, MS =	Masked S	and Grains. <sup>2</sup> Lo	ocation: PL = Pore	Lining, M = Matrix.
Hydric Soil	Indicators:							Indicators for Pr	oblematic Hydric Soils³:
Histosol	. ,		Polyvalue Bel					2 cm Muck (A	A10) <b>(LRR K, L, MLRA 149B)</b>
'	Histic Epipedon (A2) Thin Dark Surface (S9) <b>(LRR R, MLRA 149B)</b>						149B)		Redox (A16) (LRR K, L, R)
Black Hi			Loamy Mucky			(LRR K, L)		5 cm Mucky	Peat or Peat (S3) <b>(LRR K, L, R)</b>
	gen Sulfide (A4) Loamy Gleyed Matrix (F2)						Dark Surface	(S7) <b>(LRR K, L)</b>	
	Stratified Layers (A5) Depleted Matrix (F3)							Polyvalue Be	low Surface (S8) (LRR K, L)
Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7)								Thin Dark Su	rface (S9) <b>(LRR K, L)</b>
	fucky Mineral (S1)		Redox Depre					Iron-Mangan	ese Masses (F12) <b>(LRR K, L, R)</b>
	Gleyed Matrix (S4)		Redox Depile	331011	3 (10)			Piedmont Flo	oodplain Soils (F19) (MLRA 149B)
-	•							Mesic Spodio	(TA6) (MLRA 144A, 145, 149B)
-	Redox (S5)							Red Parent N	/laterial (F21)
	d Matrix (S6)	41 DA 140	ND)					Very Shallow	Dark Surface (TF12)
Dark Su	rface (S7) (LRR R, N	ILKA 149	IB)					Other (Explai	in in Remarks)
3Indicators	of hydrophytic veg	etation a	and wetland hydr	ology	must be	e present,	unless disturbe	d or problematic.	
Restrictive I	Layer (if observed):								
	Type:		Rock			Hydric S	oil Present?		Yes No
	Depth (inches):		16						
Remarks:						•			
No positive	indication of hydr	c soils w	as observed.						

Project/Site: Montague	City/County: Shu	tesbury, Franklin	SamplingDa	ate: 2020-July-31
Applicant/Owner: W.D. Cowls	i .	State: MA	SamplingPoin	t: W-GR-20_PFO-1
Investigator(s): Greg Russo, M	latas R	Section, Township,	Range:	
Landform(hillslope,terrace,etc.)	): Depression	Local relief (concave, conv	ex, none): Concave	Slope (%): 1 to 3
Subregion (LRR or MLRA): M	ILRA 144A of LRR R	Lat: 42.465033363	6 Long: -72.428464181	8 Datum: WGS84
Soil Map Unit Name: Chicheste	er fine sandy loam, 8 to 15 percent sl	opes, very stony	NWI class	ification: PFO
Are climatic/hydrologic conditions	s on the site typical for this time of ye		(If no, explain in Ren	narks.)
Are Vegetation, Soil,	or Hydrology significantly di		al Circumstances" present	
Are Vegetation, Soil,	or Hydrology naturally prob	lematic? (If needed,	explain any answers in Re	emarks.)
SUMMARY OF FINDINGS – A	ttach site map showing sampli	ng point locations, trar	nsects, important feat	ures, etc.
Hydrophytic Vegetation Present?			<u> </u>	·
Hydric Soil Present?	Yes No	Is the Sampled Area withi	n a Wetland?	Yes No
Wetland Hydrology Present?	Yes _ <b>✓</b> _ No	If yes, optional Wetland Si	te ID:	W-GR-20
Covertype is PFO. Area is wetland	d, all three wetland parameters are p	resent.		
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	one is required; check all that apply)  Water-Stained Le.  Aquatic Fauna (B'  Marl Deposits (B1  Hydrogen Sulfide	13) 5) Odor (C1)	Secondary Indicators (min Surface Soil Cracks (Bi Drainage Patterns (B1 Moss Trim Lines (B16) Dry-Season Water Tab Crayfish Burrows (C8)	6) 0) ole (C2)
Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial II Sparsely Vegetated Concave S	Presence of Redu Recent Iron Redu Thin Muck Surfac magery (B7) Other (Explain in	ction in Tilled Soils (C6) e (C7)	Saturation Visible on A Stunted or Stressed P Geomorphic Position Shallow Aquitard (D3) Microtopographic Reli FAC-Neutral Test (D5)	Aerial Imagery (C9) lants (D1) (D2)
Field Observations:				
Surface Water Present?	Yes No 🟒 Depth	(inches):		
Water Table Present?	Yes No <u>_</u> Depth	(inches):	Wetland Hydrology Prese	ent? Yes 🚣 No
Saturation Present?	Yes <u></u> ✓ No Depth	(inches): 0		
(includes capillary fringe)		<del></del>		
. , , , , , , , , , , , , , , , , , , ,	gauge, monitoring well, aerial photo	s. previous inspections), if a	vailable:	
Sesence necorated said (see came	gauge, monitoring men, derial prioce	s, premous inspections,, in c	······································	
Remarks:				
The criterion for wetland hydrolo	ogy is met.			

·	Absolute	Dominant	Indicator	Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Species?	Status	Number of Dominant Species That		
1. Acer rubrum	60	Yes	FAC	Are OBL, FACW, or FAC:	3	(A)
2.		163	FAC	Total Number of Dominant Species		
				Across All Strata:	3	(B)
3.				Percent of Dominant Species That	400	(4 (5)
4.				Are OBL, FACW, or FAC:	100	(A/B)
5.				Prevalence Index worksheet:		
6				<u>Total % Cover of:</u>	Multiply	By:
7				OBL species 0	x 1 =	0
	60	= Total Cove	r	FACW species 65	x 2 =	130
Sapling/Shrub Stratum (Plot size: 15 ft)				FAC species 60	x 3 =	180
1. Vaccinium corymbosum	50	Yes	FACW	FACU species 0	x 4 =	0
2				UPL species 0	x 5 =	0
3	_			Column Totals 125	(A)	310 (B)
4.					-	310 (B)
5.				Prevalence Index = B/A =		-
6.				Hydrophytic Vegetation Indicators:		
7.				1- Rapid Test for Hydrophytic	√egetation •	
	50	= Total Cove	r	2 - Dominance Test is >50%		
Herb Stratum (Plot size:5 ft)		-		$\checkmark$ 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>		
1. Osmundastrum cinnamomeum	15	Yes	FACW	4 - Morphological Adaptations		supporting
2.		103	171011	data in Remarks or on a separate s		
3.				Problematic Hydrophytic Vege		-
				Indicators of hydric soil and wetlar		gy must be
4.				present, unless disturbed or proble	matic	
5				Definitions of Vegetation Strata:		
6				Tree – Woody plants 3 in. (7.6 cm) o		diameter at
7				breast height (DBH), regardless of h	_	
8				Sapling/shrub – Woody plants less		DBH and
9				greater than or equal to 3.28 ft (1 m		
10	_			Herb – All herbaceous (non-woody)		gardless of
11				size, and woody plants less than 3.2		
12.				Woody vines – All woody vines grea	iter than 3.	28 ft in
	15	= Total Cove	r	height.		
Woody Vine Stratum (Plot size:30 ft)	-	=		Hydrophytic Vegetation Present?	Yes 🟒 N	lo
1.						
2.				•		
3.				•		
4.				-		
4.		- Total Covo	<u> </u>			
	0	= Total Cove	ſ			
Remarks: (Include photo numbers here or on a separa	ate sheet.)					
A positive indication of hydrophytic vegetation was ob	served (>50	0% of domina	int species	indexed as OBL, FACW, or FAC).		

	cription: (Describe	to the d	•			ndicato	or confirm the al	bsence of indicat	tors.)
Depth _	Matrix		Redox				<b>-</b> .		
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Textu		Remarks
0 - 10	10YR 2/2	100					Silty Clay		
10 - 20	2.5Y 4/2	60	10YR 4/4	40	C	<u>M</u>	Silty Clay	/ Loam	
									· -
								_	
¹Type: C = 0	Concentration, D =	Depletio	on, RM = Reduced	d Mati	rix, MS =	Masked	Sand Grains. <sup>2</sup> Lo	ocation: PL = Por	re Lining, M = Matrix.
Hydric Soil									Problematic Hydric Soils <sup>3</sup> :
Histoso			Polyvalue Be	low S	urface (S	8) <b>(LRR</b>	R, MLRA 149B)		(A10) (LRR K, L, MLRA 149B)
	oipedon (A2)		Thin Dark Su					· <del></del>	ie Redox (A16) <b>(LRR K, L, R)</b>
Black H	istic (A3)		Loamy Muck	y Min	eral (F1)	(LRR K, I	_)		y Peat or Peat (S3) <b>(LRR K, L, R)</b>
, 0	en Sulfide (A4)		Loamy Gleye					-	ce (S7) <b>(LRR K, L)</b>
	d Layers (A5)		_✓ Depleted Ma						Below Surface (S8) <b>(LRR K, L)</b>
	d Below Dark Surf	ace (A11							Surface (S9) (LRR K, L)
	ark Surface (A12)		Depleted Da						anese Masses (F12) (LRR K, L, R)
	Mucky Mineral (S1)		Redox Depre	essior	IS (F8)				Floodplain Soils (F19) (MLRA 149B)
-	Gleyed Matrix (S4)							Mesic Spod	lic (TA6) <b>(MLRA 144A, 145, 149B)</b>
-	Redox (S5)							Red Parent	
	d Matrix (S6)							Very Shallo	w Dark Surface (TF12)
Dark Su	ırface (S7) <b>(LRR R, I</b>	MLRA 14	·9B)					Other (Expl	lain in Remarks)
3Indicators	of hydrophytic veg	getation	and wetland hyd	rolog	/ must be	e preser	it, unless disturbe	d or problematio	<u>.</u>
	Layer (if observed)		,	0.	<u>,                                      </u>	İ		'	
	Type:		None			Hvdric	Soil Present?		Yes No
	Depth (inches):			•					
Remarks:	Берен (птенев).					-			
Kerriai Ks.									
A positive i	ndication of hydric	soil was	s observed.						
ı									
l									

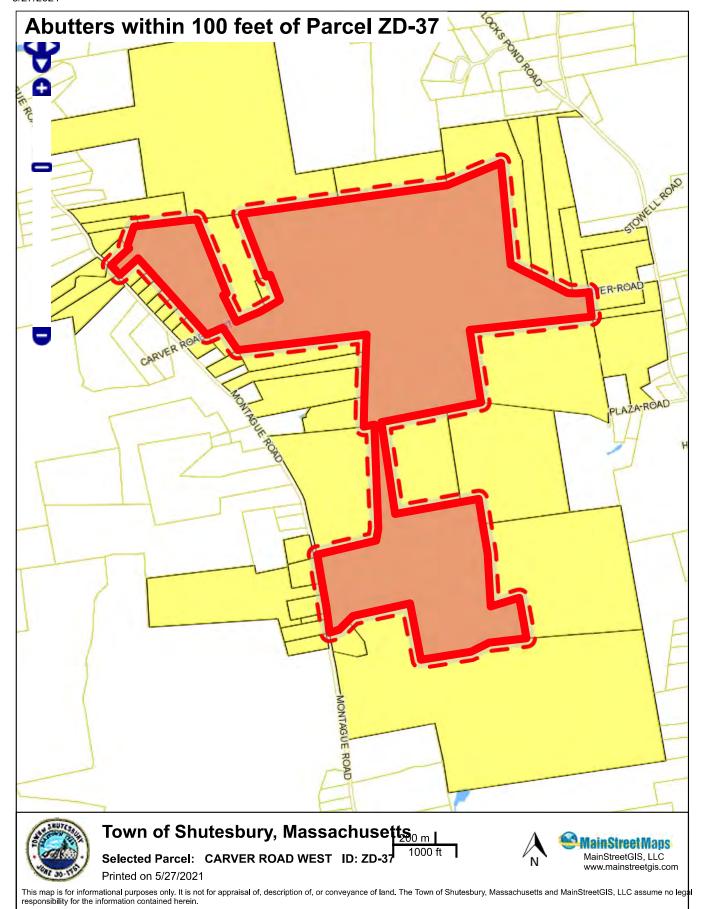
15 percent slopes, very stony  this time of year? Yes ✓ No significantly disturbed? Are "Norm.	, Range:  vex, none): None Slope (%): 1 to 3  31 Long: -72.4285676983 Datum: WGS84  NWI classification: None  D (If no, explain in Remarks.)  nal Circumstances" present? Yes✓ No , explain any answers in Remarks.)  nsects, important features, etc.
Local relief (concave, conv Lat: 42.464823313 15 percent slopes, very stony this time of year? Yes ✓ No significantly disturbed? Are "Norm naturally problematic? (If needed,  wing sampling point locations, tran No ✓ Is the Sampled Area withi No ✓ If yes, optional Wetland Separate report)	wex, none): None Slope (%): 1 to 3  31 Long: -72.4285676983 Datum: WGS84  NWI classification: None  O (If no, explain in Remarks.)  nal Circumstances" present? Yes No , explain any answers in Remarks.)  nsects, important features, etc.
Lat: 42.464823313 15 percent slopes, very stony this time of year? Yes ✓ No significantly disturbed? Are "Norm naturally problematic? (If needed,  wing sampling point locations, tran  No ✓ Is the Sampled Area withi No ✓ If yes, optional Wetland Separate report)	NWI classification: None  NWI classification: None  NWI classification: None  NWI classification: None  NWI classification: None  NWI classification: None  No (If no, explain in Remarks.)  No No  Rexplain any answers in Remarks.)  No welland? Yes No
15 percent slopes, very stony  this time of year? Yes ✓ No significantly disturbed? Are "Norm- naturally problematic? (If needed,  wing sampling point locations, tran  No ✓ Is the Sampled Area withi  No ✓ If yes, optional Wetland Separate report)	NWI classification: None  Do (If no, explain in Remarks.)  nal Circumstances" present? Yes No , explain any answers in Remarks.)  nsects, important features, etc.  in a Wetland? Yes No
this time of year? Yes No significantly disturbed? Are "Normaturally problematic? (If needed, wing sampling point locations, trans No Is the Sampled Area withing If yes, optional Wetland Suparate report)	o (If no, explain in Remarks.) nal Circumstances" present? Yes No , explain any answers in Remarks.) nsects, important features, etc. in a Wetland? Yes No
ignificantly disturbed? Are "Normaturally problematic? (If needed, wing sampling point locations, transition of the sampled Area withing the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the sampled Area withing of the s	nal Circumstances" present? Yes No, explain any answers in Remarks.)  nsects, important features, etc.  in a Wetland? Yes No
wing sampling point locations, tran  No _ ✓	nsects, important features, etc. in a Wetland?  Yes No
wing sampling point locations, tran  No _ ✓	nsects, important features, etc. in a Wetland?  Yes No/
No _ ✓ Is the Sampled Area within No _ ✓ If yes, optional Wetland Suparate report)	in a Wetland? Yes No/
No _ ✓ Is the Sampled Area within No _ ✓ If yes, optional Wetland Suparate report)	in a Wetland? Yes No/
No _∠ Is the Sampled Area within No _∠ If yes, optional Wetland Suparate report)	
No _∠ Is the Sampled Area within No _∠ If yes, optional Wetland Suparate report)	
No _/ If yes, optional Wetland S	
eparate report)	site ib.
•	
oarameters are present.	
all that apply)	Secondary Indicators (minimum of two required)
er-Stained Leaves (B9)	Surface Soil Cracks (B6)
atic Fauna (B13)	Drainage Patterns (B10)
l Deposits (B15)	Moss Trim Lines (B16)
rogen Sulfide Odor (C1)	Dry-Season Water Table (C2)
dized Rhizospheres on Living Roots (C3)	
55 1 11 (50)	Saturation Visible on Aerial Imagery (C9)
	Stunted or Stressed Plants (D1)
	Geomorphic Position (D2)
	Shallow Aquitard (D3) Microtopographic Relief (D4)
er (Explain in Remarks)	Microtopographic Relief (D4) FAC-Neutral Test (D5)
	TAC-Neutral rest (D3)
Denth (inches):	
· · · · · —	- Mother delivering Discourt?
· · · · · · · · · · · · · · · · · · ·	Wetland Hydrology Present? Yes No∠
Depth (inches):	_
	all that apply) ter-Stained Leaves (B9) latic Fauna (B13) 1 Deposits (B15) lrogen Sulfide Odor (C1) dized Rhizospheres on Living Roots (C3) sence of Reduced Iron (C4) ent Iron Reduction in Tilled Soils (C6) in Muck Surface (C7) ler (Explain in Remarks)  Depth (inches): Depth (inches):

	Abcoluto	Dominant	Indicator	Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )		Species?	Status	Number of Dominant Species That		
1. Pinus strobus	30	Yes	FACU	Are OBL, FACW, or FAC:	0	(A)
Fagus grandifolia	15	Yes	FACU	Total Number of Dominant Species	4	(D)
3. Tsuga canadensis	10	No	FAC	Across All Strata:		(B)
4.				Percent of Dominant Species That	0	(A/B)
5.				Are OBL, FACW, or FAC:		(,,,,,
6.				Prevalence Index worksheet:		
7.				Total % Cover of:	Multiply	-
	55	= Total Cov	er	OBL species 0	x 1 =	0
Sapling/Shrub Stratum (Plot size:15 ft)	-	•		FACW species 0	x 2 =	0
1. Fagus grandifolia	25	Yes	FACU	FAC species 10	x 3 =	30
2. Viburnum lantanoides	5	No	FACU	FACU species 105	x 4 =	420
3. <i>Quercus alba</i>	5	No	FACU	UPL species 0	x 5 = _	0
4.				Column Totals 115	(A) _	450 (B)
5.				Prevalence Index = B/A =	3.91	
6.				Hydrophytic Vegetation Indicators:		
7.				1- Rapid Test for Hydrophytic	Vegetation	l
	35	= Total Cov	er	2 - Dominance Test is > 50%		
Herb Stratum (Plot size: _ 5 ft)		- 10101 COV	Ci	3 - Prevalence Index is $\leq 3.0^{1}$		
1. Maianthemum canadense	25	Yes	FACU	4 - Morphological Adaptations	-	supporting
2.				data in Remarks or on a separate s	-	
3.				Problematic Hydrophytic Vege		
4.				<sup>1</sup> Indicators of hydric soil and wetlar present, unless disturbed or proble	,	gy must be
5.				<u> </u>	illatic	
6.				Definitions of Vegetation Strata:  Tree – Woody plants 3 in. (7.6 cm) of	r moro in	diameter at
7.				breast height (DBH), regardless of h		ulailletei at
8.				Sapling/shrub – Woody plants less	_	OBH and
9.				greater than or equal to 3.28 ft (1 m		2011 0110
10.				Herb – All herbaceous (non-woody)		gardless of
11.				size, and woody plants less than 3.2	28 ft tall.	
12.				Woody vines – All woody vines grea	iter than 3.	.28 ft in
	25	= Total Cov	er	height.		
Woody Vine Stratum (Plot size: _ 30 ft)		- 10tal Cov	Ci	Hydrophytic Vegetation Present?	Yes N	lo <u> </u>
1.						
2.				•		
3.				•		
4.				•		
	0	= Total Cov	er	•		
		-				
Remarks: (Include photo numbers here or on a separ	-					
No positive indication of hydrophytic vegetation was obser	,		•	,	PA, easterr	n hemlock is
considered a wetland indicator species. Therefore, it has	been assig	ned an indic	ator status o	of "FAC" instead of "FACU."		

Profile Desc Depth	cription: (Describe Matrix	to the d	epth needed to d Redox			indicato	or confirm the al	bsence of indicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 - 14	10YR 4/3	100		· <del>· · ·</del>	576-		Silt Loam	<del></del> : 3
14 - 20	2.5YR 5/6	100		_			Silt Loam	
				_				
				_				
				_				
				_				
	-		-	_			-	
				_			-	
				_				
				_				
				_				
				_				
 ¹Tvne: C = C	Concentration, D =	 Depletic	n RM = Reduced	Mat	rix MS =	Masked	Sand Grains 21.0	ocation: PL = Pore Lining, M = Matrix.
Hydric Soil		Depictio	ni, Kivi Kedacea	iviac	112, 1415	Waskea	Sana Grams.	Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Polyvalue Re	ow s	iurface (9	(8) <b>(I PP</b>	R, MLRA 149B)	·
	oipedon (A2)		Thin Dark Su				•	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Black Hi			Loamy Muck					Coast Prairie Redox (A16) (LRR K, L, R) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Hydroge	en Sulfide (A4)		Loamy Gleye	d Ma	trix (F2)			5 cm Mucky Peat of Peat (55) (LRR K, L, K) Dark Surface (S7) (LRR K, L)
Stratifie	d Layers (A5)		Depleted Ma	trix (l	F3)			Polyvalue Below Surface (S8) (LRR K, L)
	d Below Dark Surf	ace (A11						Thin Dark Surface (S9) (LRR K, L)
	ark Surface (A12)		Depleted Dar			)		Iron-Manganese Masses (F12) (LRR K, L, R)
	lucky Mineral (S1)		Redox Depre	ssior	ıs (F8)			Piedmont Floodplain Soils (F19) (MLRA 149B)
-	ileyed Matrix (S4)							Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
-	edox (S5)							Red Parent Material (F21)
	d Matrix (S6)							Very Shallow Dark Surface (TF12)
Dark Su	rface (S7) <b>(LRR R, N</b>	ILRA 14	9B)					Other (Explain in Remarks)
3Indicators	of hydrophytic veg	getation	and wetland hydr	olog	y must b	e preser	it, unless disturbe	d or problematic.
Restrictive I	_ayer (if observed)	:						
	Type:		None			Hydric	Soil Present?	Yes No <u>_</u> ✓
	Depth (inches):							
Remarks:	-					•		
No positive	indication of hydr	ic soils w	vas observed.					

# ATTACHMENT D Updated Abutter List





1/1

MAP	LOT	OWNER	MAILING ADDRESS	CITY	STATE	ZIP	LOCATION
D	27	ROGALSKI, STEPHEN J & ROGALSKI, MICHELE	429 MONTAGUE ROAD	SHUTESBURY	MA	01072	429 MONTAGUE ROAD
D	36	DOWNEY, JACQUELYN V	24 WILMETTE AVENUE	ORMOND BEACH	FL	32174	15 CARVER ROAD EAST
D	38	PICKERING, TIMOTHY A	829 MAIN STREET	AMHERST	MA	01002	CARVER ROAD WEST
D	42	MAKEPEACE, JUDITH A c/o MAKEPEACE-O'NEIL, MELISSA	P.O. BOX 215	SHUTESBURY	MA	01072	35 LADYSLIPER LANE
D	43	MAKEPEACE-O'NEIL, MELISSA	315 WEST PELHAM ROAD	SHUTESBURY	MA	01072	30 LADYSLIPPER LANE
D	44	DEMETRE, CAROLE A	P.O. BOX 678	SHUTESBURY	MA	01072	14 LADYSLIPPER LANE
D	47	CROWE, MICHAEL	140 LOVEFIELD STREET	EASTHAMPTON	MA	01027	401 MONTAGUE ROAD
D	48	FITZPATRICK, GREGORY & FITZPATRICK, ANDREA	397 MONTAGUE ROAD	SHUTESBURY	MA	01072	397 MONTAGUE ROAD
		c/o PERCIVAL, TYLER J & MCINTIRE, ALISON M					
D	50	DEVINE, DAVID RII	387 MONTAGUE ROAD	SHUTESBURY	MA	01072	387 MONTAGUE ROAD
D	51	ALDRICH, SARAH M & ALDRICH, MICHAEL R	383 MONTAGUE ROAD	SHUTESBURY	MA	01072	383 MONTAGUE ROAD
D	52	CAMBELL, MELISSA	375 MONTAGUE ROAD	SHUTESBURY	MA	01072	375 MONTAGUE ROAD
D	53	HOHOLIK, AARON P & GARCIA, MONICA	367 MONTAGUE ROAD	SHUTESBURY	MA	01072	367 MONTAGUE ROAD
D	54	JELLERETTE, TERU	361 MONTAGUE ROAD	SHUTESBURY	MA	01072	361 MONATGUE ROAD
D	55	FONTOS, CARLOS I c/o FONTES FAMILY TRUST	359 MONTAGUE ROAD	SHUTESBURY	MA	01072	359 MONTAGUE ROAD
D	56	SEMLER, MICHAEL G	6 CARVER ROAD WEST	SHUTESBURY	MA	01072	6 CARVER ROAD WEST
D	61	CZWEWONKA, KAREN (CUSTODIAN)	40 CARVER ROAD WEST	SHUTESBURY	MA	01072	CARVER ROAD WEST
		CZERWONKA, LEONARD & LYNDA			1		
D	94	MCGRATH, CHRISTINE	423 MONTAGUE ROAD	SHUTESBURY	MA	01072	421-423 MONTAGUE ROAD
F	26	KELLOGG, JEREMY G & RASKEVITZ, WENDY A	194 MONTAGUE ROAD	SHUTESBURY	MA	01072	194 MONTAGUE ROAD
F	73	KELLOG, JEREMY	194 MONTAGUE ROAD	SHUTESBURY	MA	01072	MONTAGUE ROAD
F	74	WALTER, JOHN F & WALTER, ALICIA	216 MONTAGUE ROAD	SHUTESBURY	MA	01072	216 MONTAGUE ROAD
F	79	BROSTROM, CARA E & OCKERBERG, CHRISTOPHER B	398 MONTAGUE ROAD	SHUTESBURY	MA	01072	398 MONTAGUE ROAD
F	80	SMITH, LESLEY A & REDONNET, EDWARD C	180 MONTAGUE ROAD	SHUTESBURY	MA	01072	180 MONTAGUE ROAD
-	80	TRUSTEES, THE EDWARD REDONNET REVOCABLE TRUST	180 MONTAGUE ROAD	SHUTESBURT	IVIA	01072	180 WONTAGUE ROAD
F	81	GURLEY, NORA L	196 MONTAGUE ROAD	SHUTESBURY	MA	01072	196 MONTAGUE ROAD
F	83	STONE, JANICE G	1523 LAIRD STREET	KEY WEST	FL	33040	390 MONTAGUE ROAD
-	03	TRUSTEE, JONES FAMILY TRUST	1323 LAIND STREET	KLT WLST	I L	33040	350 WONTAGUE ROAD
F	93	MONTTI, ROGER & REIL, JENNIFER L	226 MONTAGUE ROAD	SHUTESBURY	MA	01072	226 MONTAGUE ROAD
F	97	DONTA, CHRISTOPHER & JAMIE	204 MONTAGUE ROAD	SHUTESBURY	MA	01072	204 MONTAGUE ROAD
Н	102	NOONAN, ELIZABETH E & NOONAN, MARY K	6 CARVER ROAD EAST	SHUTESBURY	MA	01072	6 CARVER ROAD EAST
Н	107	BROUCEK, JOHN C	297 MONTAGUE ROAD	SHUTESBURY	MA	01072	297 MONTAGUE ROAD
H	116	WAHL, LARA	305 MONTAGUE ROAD	SHUTESBURY	MA	01072	305 MONTAGUE ROAD
Н	118	CAREY, KEVIN L & CAREY, KATHRYN A	P.O. BOX 21	SHUTESBURY	MA	01072	39 PLAZA ROAD
Н	125				-	19107	
H		STEVEN 168 LLC	222 NORTH CAMAC STREET	PHILADELPHIA	PA MA		16 CARVER ROAD EAST
	167	RICHARD, RENEE A	P.O. BOX 14	SHUTESBURY	_	01072	175 MONTAGUE ROAD
H	45 50	CAREY, KEVIN L & CAREY, KATHRYN A	P.O. BOX 21	SHUTESBURY	MA MA	01072 01002	WENDELL ROAD
		COOK, THOMAS J	13 EMERSON COURT	AMHERST			MONTAGUE ROAD
H	52	CAREY, KEVIN L & CAREY, KATHRYN A	P.O. BOX 21	SHUTESBURY	MA	01072	PLAZA ROAD
Н	53	HAYES, JOHANNA C/O HAYES, JOHANNA LIFE ESTATE	P.O. BOX 133	SHUTESBURY	MA	01072	PLAZA ROAD
H	56 61	PLAZA, NAME M & PLAZA, JANE L	P.O. BOX 511	SHUTESBURY	MA MA	01072 01072	314 WENDELL ROAD
H		STONE, RANDALL & STONE, JANICE	321 MONTAGUE ROAD	SHUTESBURY	_	_	MONTAGUE ROAD
Н	76 78	VLACH, PAUL A & VLACH, MARI L	325 MONTAGUE ROAD	SHUTESBURY	MA	01072	325 MONTAGUE ROAD
Н	/8	MCKENZIE, JOSEPH L & TRAVIS J.	330 COLEBROOK ROAD	FREDERICKSBVERG	VA	22405	341 MONTAGUE ROAD
<del></del>		MCKENZIE, MOLLY J	43 50401045 1 1115	ANALIEDET		04000	MACHITA CHE DO LO
H	79	KORZA, EDWARD JR	12 FOXGLOVE LANE	AMHERST	MA	01002	MONTAGUE ROAD
ZD	25	MILLER, HEATHER C	16 HILLS ROAD	AMHERST	MA	01002	MONTAGUE ROAD
ZD	37	W D COWLS INC	P.O. BOX 97677	NORTH AMHERST	MA	01059	CARVER ROAD WEST
ZD	59	CZERWONKA, KAREN L	40 CARVER ROAD WEST	SHUTESBURY	MA	01072	40 CARVER ROAD WEST
		TRUSTEE, CZERWONK, WILLIAM T & KAREN L				1	
ZD	80	LUCAS, TYLER B & FOGG, TANIA F	37 CARVER ROAD EAST	SHUTESBURY	MA	01072	37 CARVER ROAD EASR
ZF	82	SAPORITO, JOHN A & TIGHE-SAPORITO, MARGARET	394 MONTAGUE ROAD	SHUTESBURY	MA	01072	394 MONTAGUE ROAD
ZH	36	RICHTER, SCOTT S & RICHTER, VERONICA A	153 MONTAGUE ROAD	SHUTESBURY	MA	01072	153 MONTAGUE ROAD
ZH	74	BERNHARD JOHN GARY, TRUSTEE	315 MONTAGUE ROAD	SHUTESBURY	MA	01072	315 MONTAGUE ROAD
		JOHN GARY BERNHARDF DECLARATION OF TRUST		1	1		

100 FT ABUTTERS LIST TO PARCEL ZD-37 PREPARED FOR MOLLY LENNON

Hen M. Poller

Kevin Rudden Administrative Assessor

5/27/2021

# ATTACHMENT E NHESP Certified Vernal Pool Documentation





#### DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581 p: (508) 389-6300 | f: (508) 389-7890

MASS.GOV/MASSWILDLIFE

April 15, 2021

Molly Lennon **Environmental Scientist** TRC: 650 Suffolk St Lowell, MA 01854

Re: Certified Vernal Pool # 643 in Shutesbury, MA

Dear Molly Lennon,

The Massachusetts Natural Heritage and Endangered Species Program (NHESP) received your public documents request via email, on April 2, 2021 for information related to Certified Vernal Pool # 643 in Shutesbury; specifically, you requested:

1. documentation that led to the certification of the vernal pool

A search of NHESP files and records has been completed and attached are eight (8) pages of public records relative to your request. The records attached herein include the NHESP Vernal Pool Certification Forms and copies of the biological and physical documentation, and maps submitted for the certification of these pools. There were two projector slides submitted for this pool in the original documentation. Due to remote working and technology limitations, we are unable to convert these slides to digital format currently. We can attempt to make these slides available to you if necessary, please let us know.

Please note that personal phone numbers have been withheld pursuant to the privacy exemption in accordance with G.L. c. 4 s. (7)(26)(c).

If you have any questions about the enclosed materials or would like to request additional public records related to Certified Vernal Pools # 643, please contact Information Manager, Sarah Maier, at sarah.maier@mass.gov. Should you wish to challenge MassWildlife's response, you may appeal to the Supervisor of Public Records in accordance with 950 CMR 32.08(1), and you may seek judicial review of an unfavorable decision by commencing a civil action in the superior court.

Sincerely,

Everose Schlüter, Ph.D.

vase Schliete

Assistant Director

Massachusetts Division of Fisheries & Wildlife

Attached: CVP643\_CertForm.pdf, CVP643\_ObsForm\_Maps\_Redacted.pdf

# Natural Heritage & Endangered Species Program

#### VERNAL POOL CERTIFICATION FORM

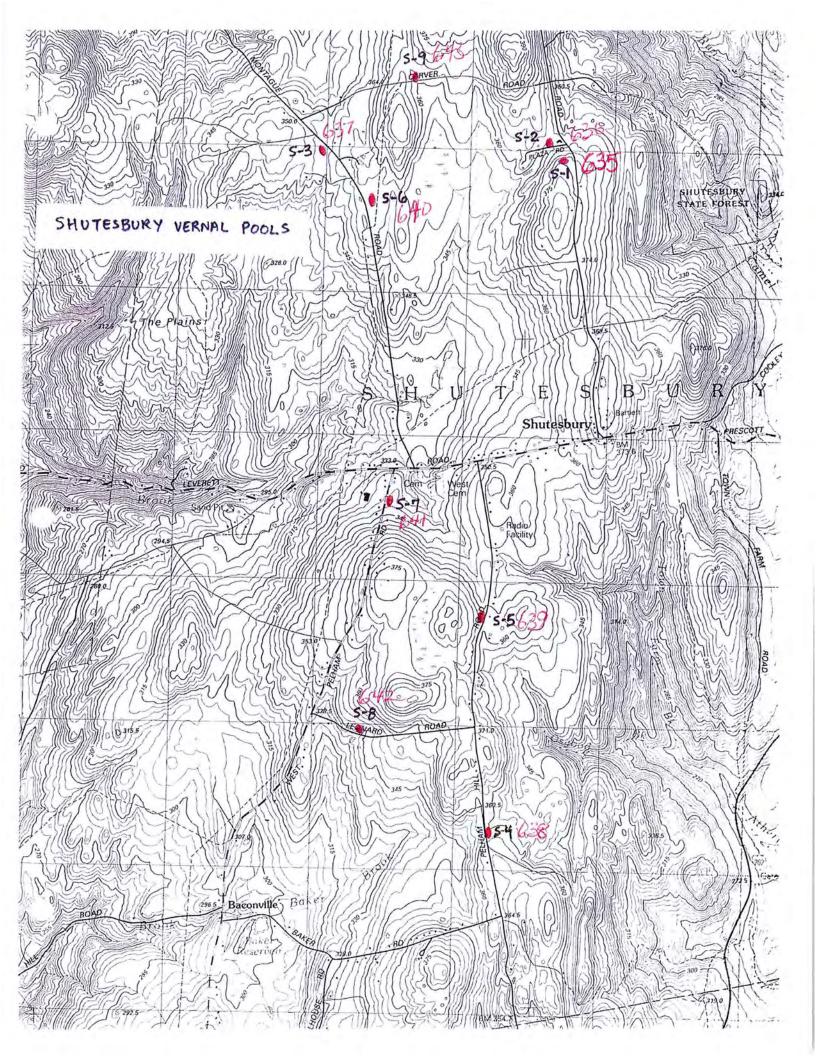
Cert	ified Pool Number <u>643</u>
Town/City: SHUTESBURY	Date of Certification: 9-9-94
USGS topographic	Date Documentation
map name: SHUTESBURY	Submitted: <u>4-28-94</u>
Date Conservation Commission an	d DEP notified: 9-12-94
Directions to site: N SIDE OF C LAST HOUSE (CZERWONKA) ON CARVE	ARVER RD, APPROXIMATELY 1500' E FROM 2ND AND R RD (NEAR MONTAGUE RD)
Name of property owner(s) as in	dicated on assessor's map: LOT #D-67
The following items are being a	ttached to this form
	ing location of the vernal pool
XX Assessor's map (or other	property map) showing location of the pool ances to the pool from permanent landmarks
	00 scale topographic map showing location
Professional survey showi	of the pool
XX Sketch map or description	of the immediate vicinity of the pool
Documented Biological Indicator	s Accepted by NHESP
XX Obligate amphibian specie	s (mole salamanders/wood frogs)
Obligate invertebrate spe Facultative amphibian/rep	cies (fairy shrimp)
Facultative invertebrate	species
Other wildlife	
XX Obligate amphibian specie Obligate invertebrate spe Facultative amphibian/rep Facultative invertebrate Other wildlife Wetland plants	
	of the presence of rare state-listed wildlife itat.
Wetland Resource Area Information	on (to be determined by Conservation Commission)
Land Subject to Flooding	(100-year floodplain)
Isolated Land Subject to	Flooding
Bordering Vegetated Wetla Land Under Water Body (pe	na rmanent nond)
Coastal Dune/Barrier Beac	h
Town Wetland Bylaw	
Land Subject to Flooding Isolated Land Subject to Bordering Vegetated Wetla Land Under Water Body (pe Coastal Dune/Barrier Beac Town Wetland Bylaw No jurisdiction	

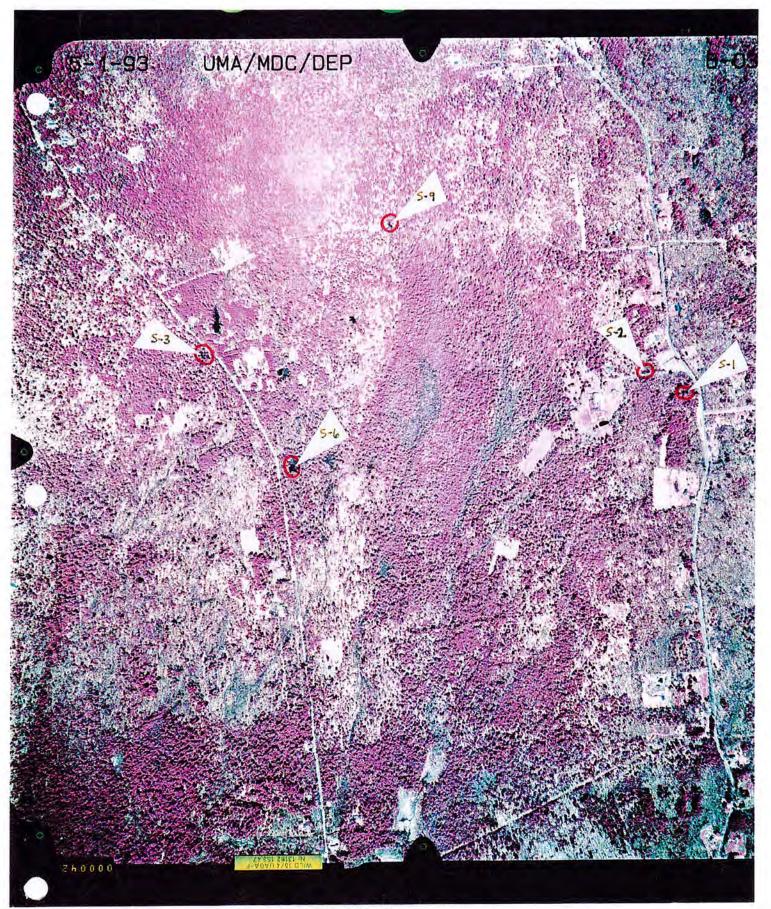
#### VERNAL POOL FIELD OBSERVATION FORM

IMPORTANT: This form <u>must</u> be signed on the back	prior to submittal.
Observer's name: Junice S. Stone	Qualifications of observer
Address: III Montagne Rd	<pre>(check all that apply) Amateur naturalist</pre>
Shutesbury , MA 01012	Yrs. of experience: Attended MA Audubon Soc. vernal pool training session Biology/science teacher
Telephone number:  Observation date(s): 5-7-93 4-10-49  Town/City containing vernal pool: Shutesbury	Environmental consultant Conserv. Comm. member Bachelor's in Biology Master's in Biology Ph. D. in Biology Other (specify below) Researched Ups for Mastheses
Name and address of landowner (if indicated on a W.D. Cowls? lut # 27	assessor's map):
Which of the following are you submitting in add a USGS 7-1/2' topographical map which shows the  Distance and direction to the pool from at  Aerial photograph  Professional survey	lition to an assessor's map and location of the vernal pool:
Optional material being submitted:  Sketch map or description of area in immedi	ate vicinity of vernal pool
What evidence are you presenting for the exister  Photograph of pool of standing water Shade Photograph of confined basin depression lace Statement of direct observation (sign approximately that on	# 18 king standing water priate statement below): -44 enter date) I observed a pool of et at the location of this proposed
I hereby certify that on ( lacking standing water at the location of t clearly contained a confined basin depressi (signature)	
Which of the following biological/physical crite Obligate vernal pool-breeding amphibians (se Fairy shrimp (obligate species) Facultative vernal pool amphibians/turtles/i (see guidelines for complete list of accept	e species list on back)

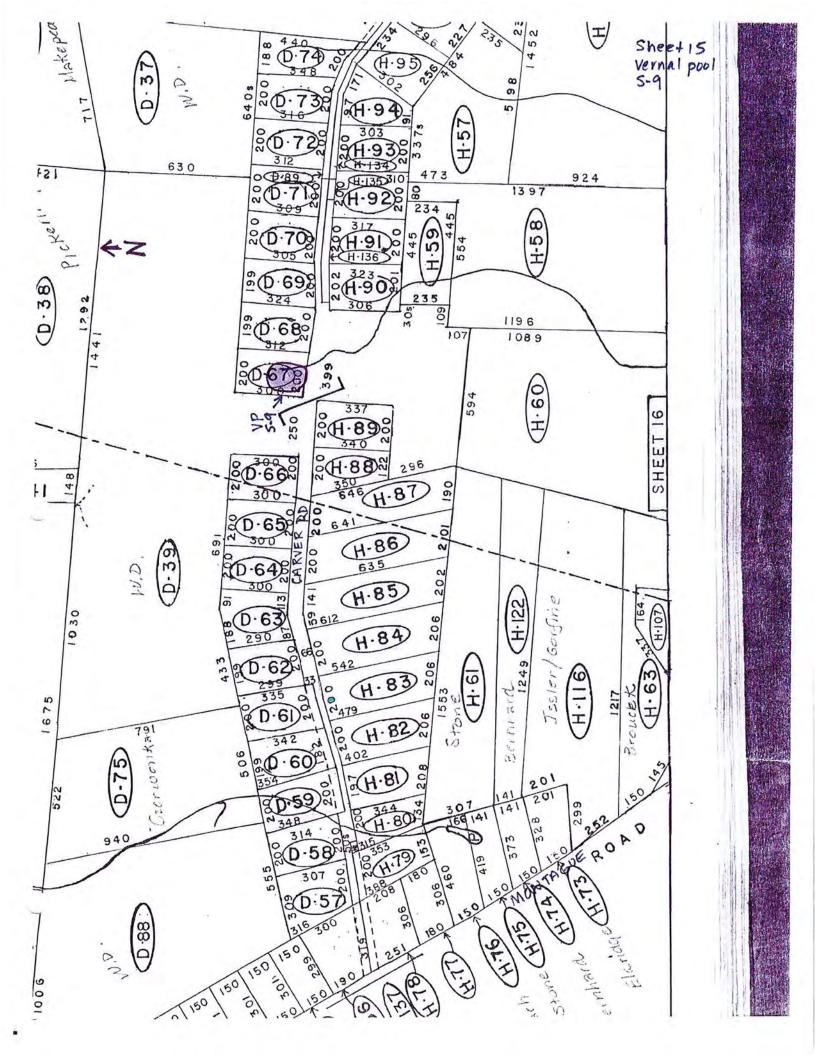
Photograph(s) (Preferred met Videotape recording Tape recording of frog breed Detailed description(s) Field notes (limited to biol Herbarium specimen(s) (plant Other (specify)	ling chorus ogists competent in speci	es identification)
How did you confirm that the propopulations (not required if evi I observed that the pool areI am submitting a photographOther (specify):	dence of obligate vernal pea was dry on	pool species is presente (indicate date)
Obligate vernal pool-breeding amphibian species observed:  Wood Frog Spotted Salamander Jefferson Salamander Blue-spotted Salamander Silvery Salamander Tremblay's Salamander Marbled Salamander Unidentified mole salamander If obligate vernal pool species that you observed in the propose	were not observed, list t	Breeding criteria: 1. Breeding chorus 2. Mated pairs 3. Courting adults 4. Spermatophores 5. Egg masses 6. Frog tadpoles 7. Salamander larvae 8. Transforming juveniles he facultative species
40		
I hereby certify under pains and contained in this report is true Signature	e and complete to the best	t the information of my knowledge.

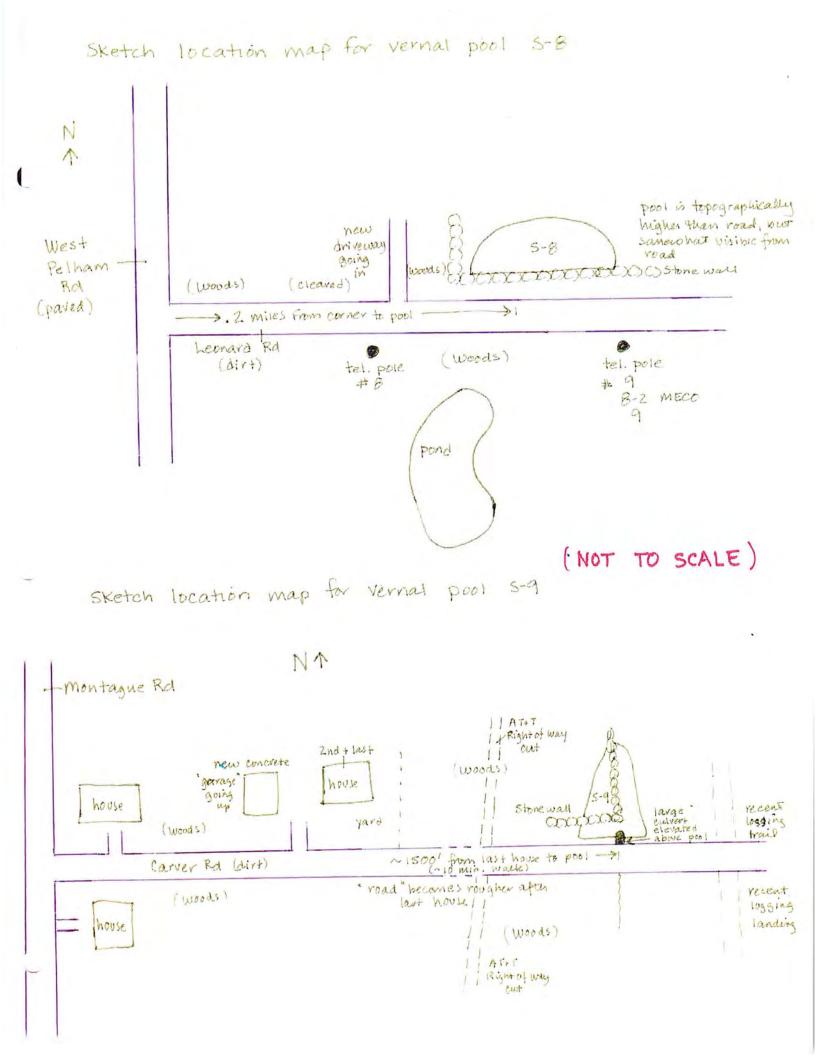
Vernal Pool Certification
Natural Heritage and Endangered Species Program
MA Division of Fisheries and Wildlife
100 Cambridge Street
Boston, MA 02202
617-727-9194





SHUTESBURY VERNAL POOLS
1:12,000 Scale CIR
Photo
taken 5-1-93





Vernal Pool S-9 detailed map A red maple tre NA 0 1993 spotted salamander egg masses (SEM) X 1993 wood frog egg masses (WFEM)(1 0 1994 SEM (2) Store Wall OCOOC X 00 black cutvert carver Rd Suspended above pool

Not a Auto

# ATTACHMENT F Additional Vernal Pool Photographs



Photograph: 2

Date: 4/29/2020

Direction: South

Description:

Typical conditions observed in vernal pool VP1. Several egg masses can be seen in this photo. Approximately eight egg masses were in the vernal pool, and they were all likely wood frog eggs.



Photograph: 2

Date: 4/17/2020

Direction: N/A

Description:

Wood frog egg mass in vernal pool VP1.





Photograph: 3

Date: 4/29/2020

Direction: North

Description:

Typical conditions observed in vernal pool VP2. A couple egg masses can be seen in this photo. There were approximately five egg masses that were likely all spotted salamander.



Photograph: 4

Date: 4/29/2020

Direction: North

Description:

Egg mass in vernal pool VP2. The egg mass is likely a spotted salamander mass.





Photograph: 5

Date: 4/29/2020

Direction: North

Description:

Typical conditions observed in vernal pool VP3. Several egg masses can be seen in this photo. Approximately four egg masses were found in vernal pool VP3 and were likely all spotted salamander.



Photograph: 6

Date: 4/29/2020

Direction: East

Description:

Typical conditions observed in vernal pool VP4. Multiple egg masses can be seen in this photo. Approximately 55 egg masses were found in vernal pool VP4 consisting primarily of spotted salamander egg masses and several wood frog egg masses.





Photograph: 7

Date: 4/29/2020

Direction: North

Description:

A clump of multiple spotted salamander egg masses in vernal pool VP4 can be seen in this photo.



Photograph: 8

Date: 4/29/2020

Direction: North

Description:

Typical conditions observed in vernal pool VP5. A clump of multiple egg masses can be seen in this photo.
Approximately 28 egg masses were found in vernal pool VP5 mostly consisting of spotted salamander egg masses and several wood frog egg masses.



