

April 19, 2024

South Main Street, Carver Cranberry Bog Historical Documents – Job No. 23-152

Reference Exhibits:

Pages 1 & 2:

1903 Town of Carver, Plymouth County from the 1903 Atlas of Plymouth County, Massachusetts

Pages 3, 4 & 5:

1912 Soil Survey of Plymouth County, Massachusetts by United States Natural Resources Conservation Service

Pages 6 & 7:

1916 USGS Massachusetts Middleboro Quadrangle Map by Corps of Engineers, U.S. Army

Pages 8 & 9:

1918 USGS Massachusetts Middleboro Quadrangle Grid Zone "A" Tactical Map by Corps of Engineers, U.S. Army

Pages 10, 11 & 12

2010 Plymouth County Soil Survey showing area of cranberry bog as Plymouth Carver Soil (not hydric or wetland soil)

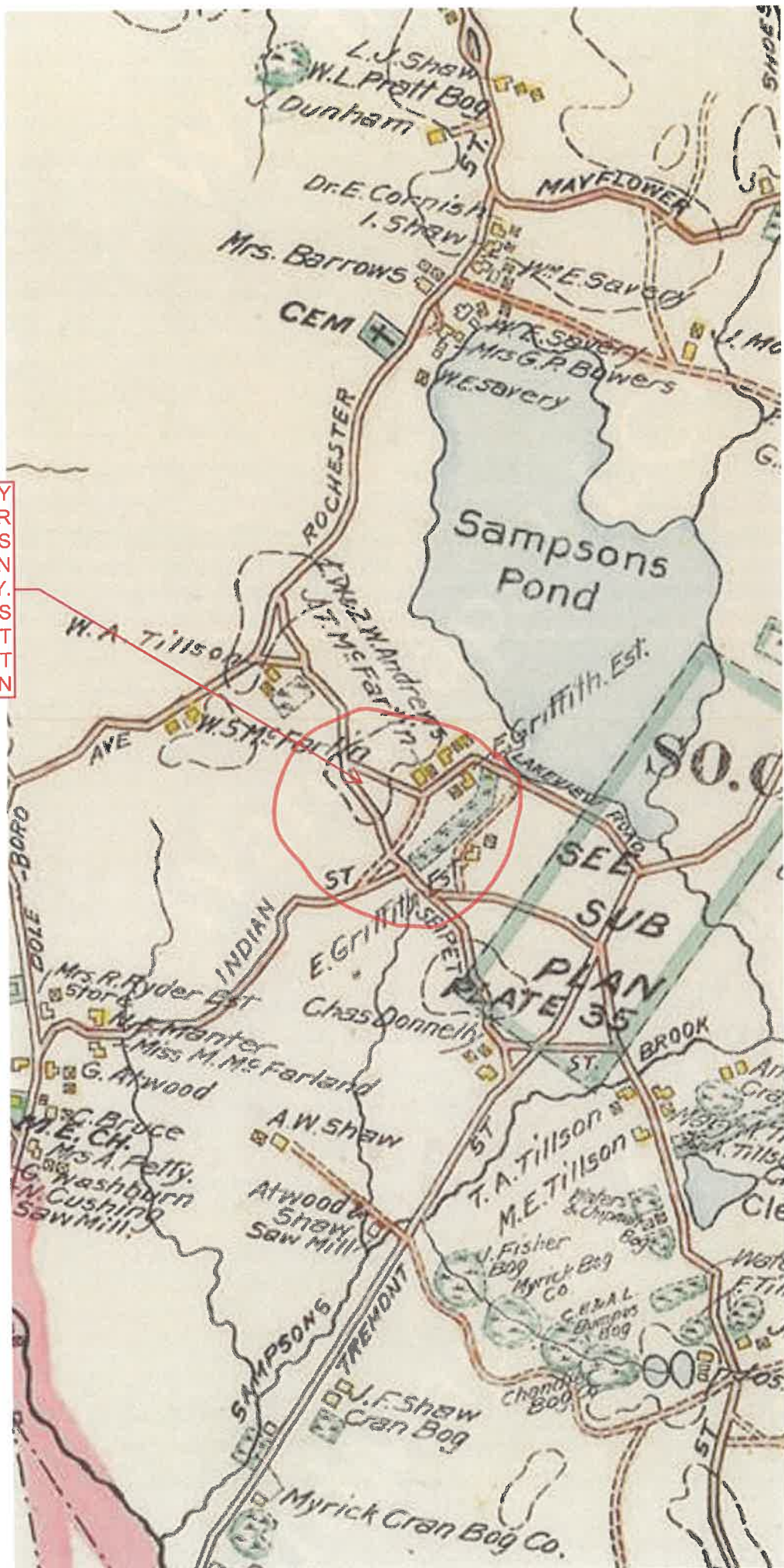
Pages 13, 14 & 15

Soil log confirming soil type without hydric soil as shown on Plymouth County Soil Survey

PERMITTING DEPT
2024 APR 22 PM 2:12
CARVER, MA



LOCUS PROPERTY
NO WETLAND OR
CRANBERRY BOGS
ARE SHOWN ON
OUR PROPERTY.
CRANBERRY BOGS
ARE CALLED OUT
THROUGHOUT
TOWN



SOIL MAP

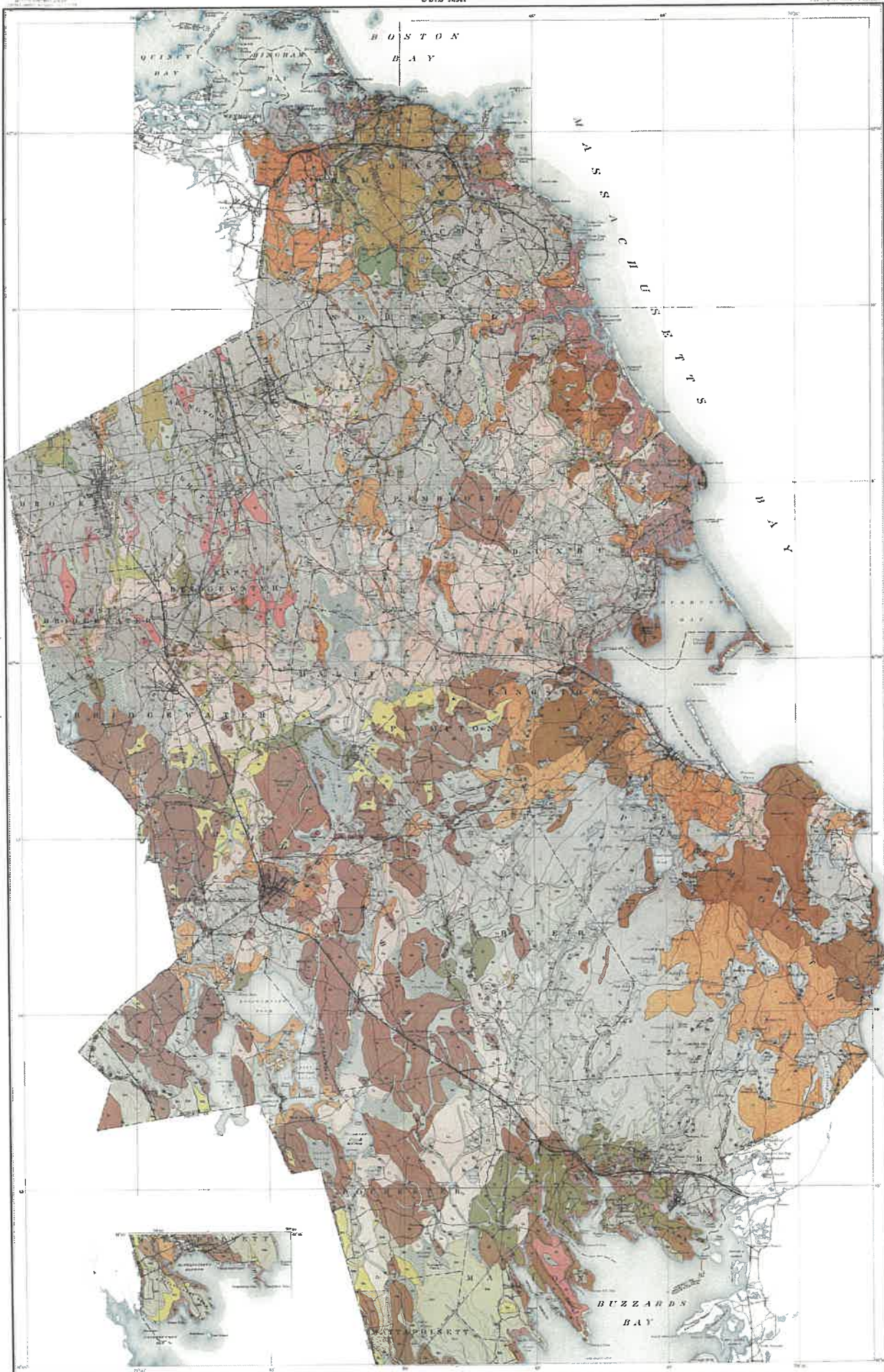
MASSACHUSETTS
COUNTY OF SUFFOLK

SOIL
PROFILES
3'-6" deep



LEGEND
1. Sand
2. Silty sand
3. Clayey sand
4. Sandy clay
5. Silty clay
6. Clay
7. Silty clay loam
8. Clay loam
9. Silty loam
10. Loam
11. Silty loam
12. Clay loam
13. Silty clay loam
14. Clay loam
15. Silty clay loam

LEGEND

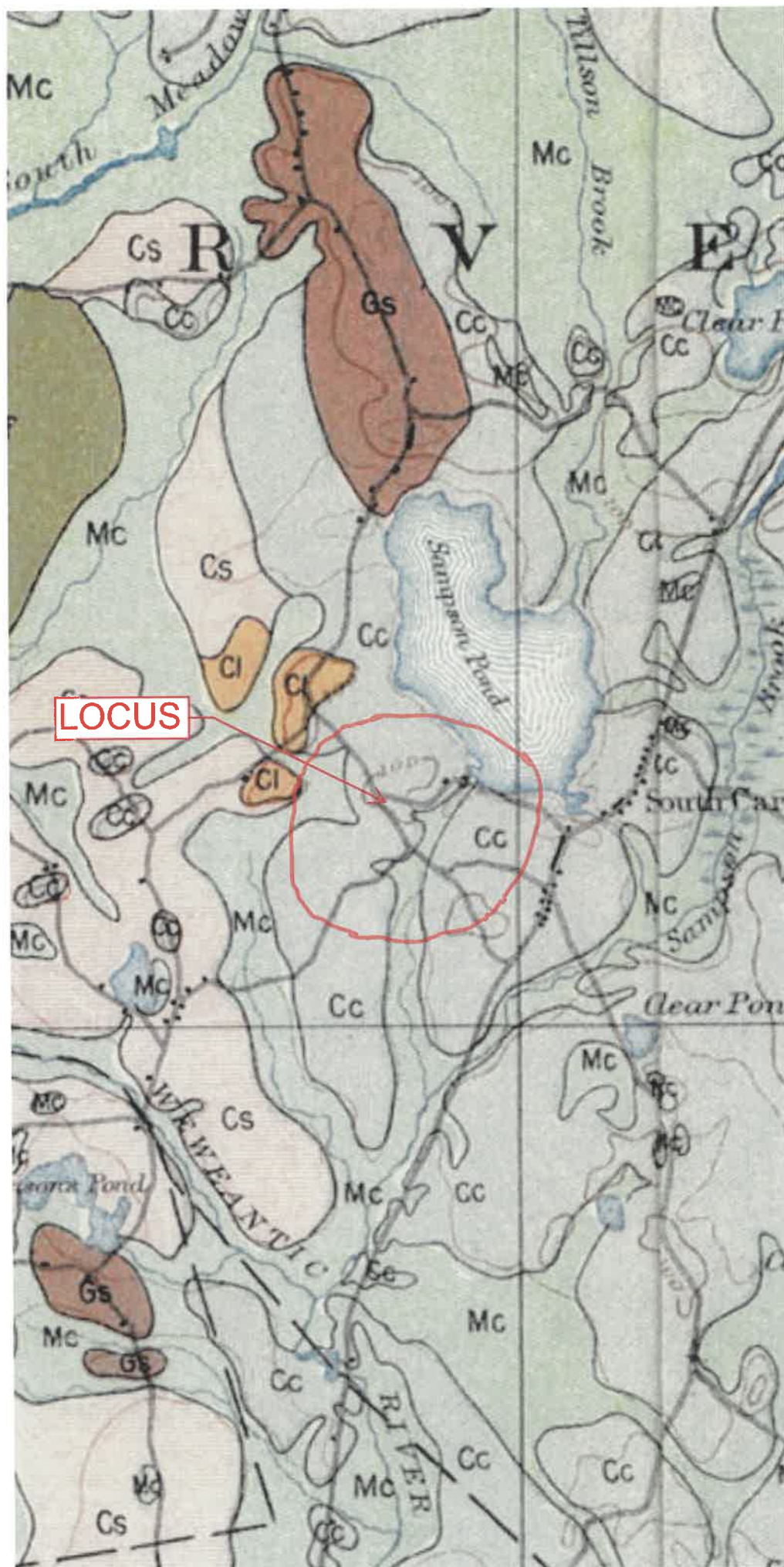


1. County of Suffolk, Massachusetts
2. County of Suffolk, Massachusetts

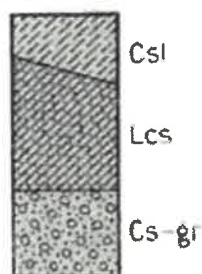
3. County of Suffolk, Massachusetts
4. County of Suffolk, Massachusetts

5. County of Suffolk, Massachusetts
6. County of Suffolk, Massachusetts

7. County of Suffolk, Massachusetts
8. County of Suffolk, Massachusetts



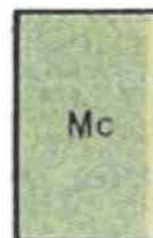
Carver
coarse sandy loam



Carver
coarse sandy loam



Muck



LEGEND

L	Loam
U	Light loam
Fsl	Fine sandy loam
Sl	Sandy loam
Lsl	Light sandy loam
Grsl	Gravelly sandy loam
S	Sand
Gr	Gravel
Csl	Coarse sandy loam
Lcs	Loamy coarse sand
Cs	Coarse sand
Lfsl	Light fine sandy loam
Fgr	Fine gravel

From U.S. Department of Agriculture Survey of Plymouth County, Massachusetts by W.E. McLendon and Grove B. Jones (1912) Legend on page 47

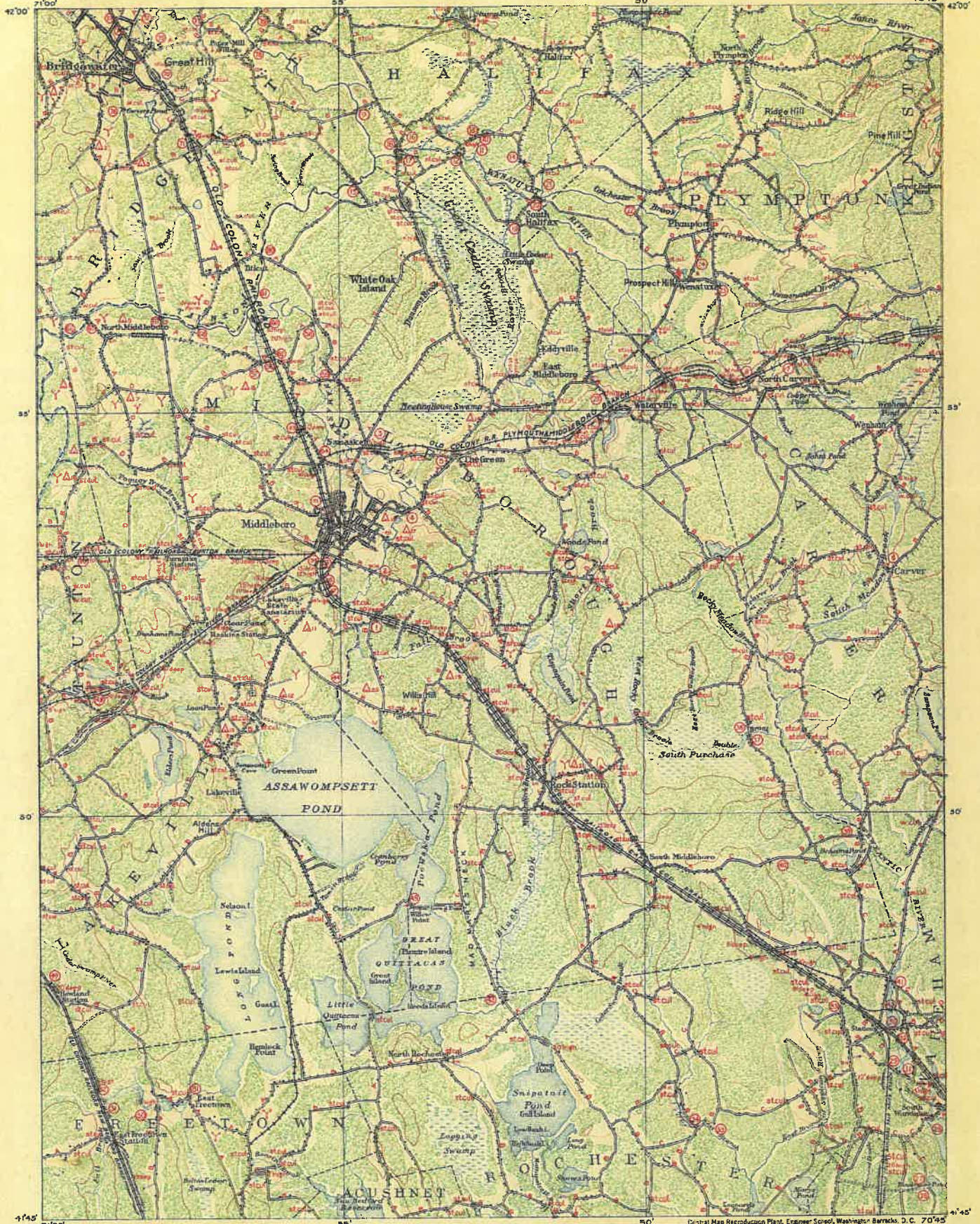
CORPS OF ENGINEERS, U.S. ARMY
PROGRESSIVE MILITARY MAP

FINAL SHEET
892-N-I-W/2

CONFIDENTIAL

MASSACHUSETTS
MIDDLEBORO QUADRANGLE

MAILED BY T.S.G. & M.



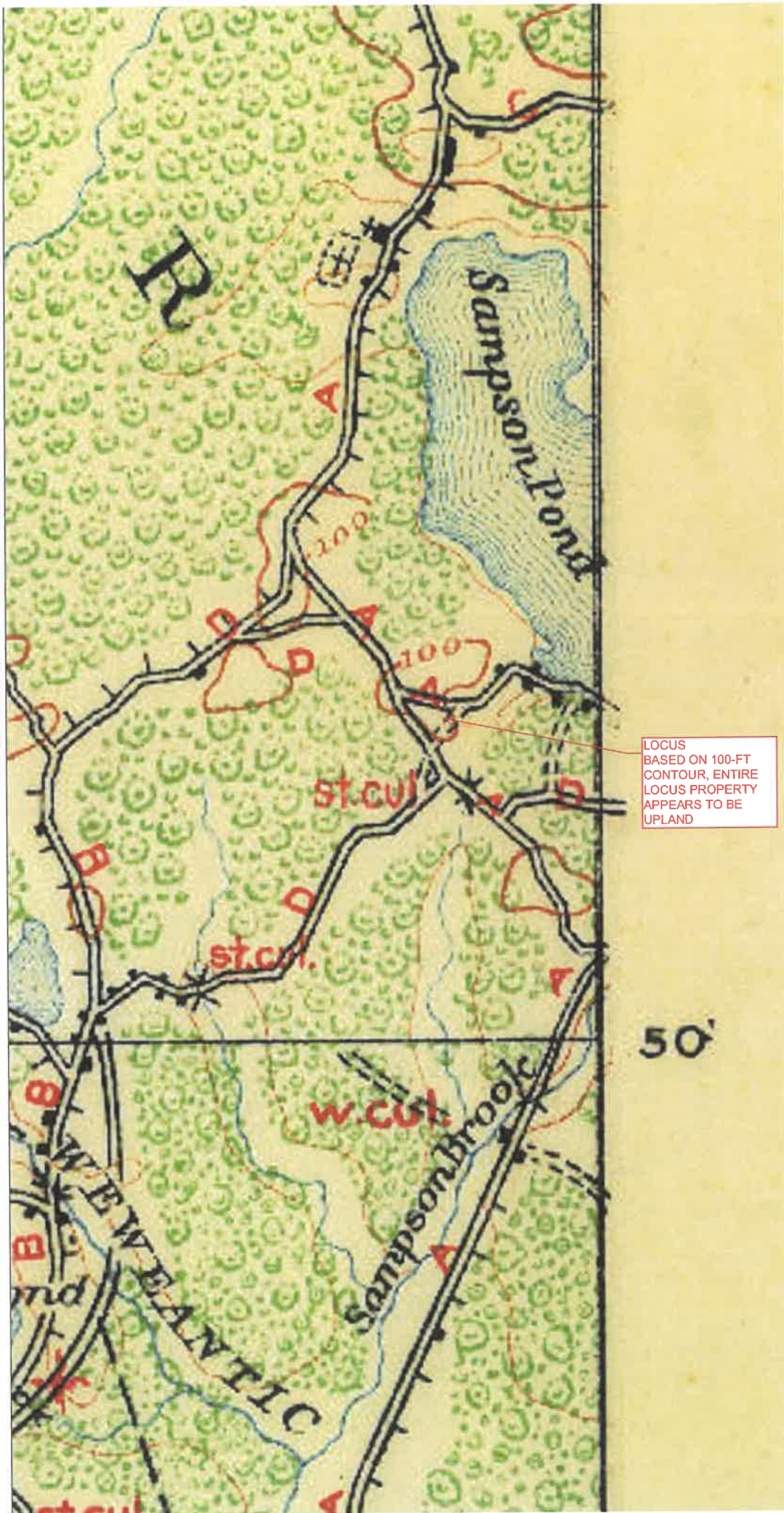
Field work and compilation under the direction of
Col. W. R. Shatt, Corps of Engineers, U.S.A.,
Department Engineer, Eastern Department,
Nov. 1915.
Field work under the immediate supervision of
Capt. J. N. Hodges, Corps of Engineers, U.S.A.
Base map from U.S.G.C. engravings.
Corrections and additions by Department
Engineer, Eastern Department.

Scale $\frac{1}{62,500}$
1 2 3 4 5 6 7 8 9 10 miles
1000 2000 3000 4000 5000 6000 7000 yards
0 1 2 3 4 5 kilometers
Contour Interval 20 feet
Datum is mean sea level

Central Map Reproduction Plant, Engineer School, Washington Barracks, D.C. 7045
July 1918

892
N I W
886
HISTORICAL FILES
(DO NOT REMOVE)
FILE COPY
RETURN TO COM

NOTE: OFFICERS USING THIS MAP WILL HAVE REASON CORRECTIONS AND ADDITIONS WHICH COME
IN FUTURE EDITIONS AND WILL BE PRINTED ON THE TOP SHEET OF THE SERIES WASHINGTON, D.C.



LOCUS
BASED ON 100-FT
CONTOUR, ENTIRE
LOCUS PROPERTY
APPEARS TO BE
UPLAND

CORPS OF ENGINEERS, U. S. ARMY
TACTICAL MAP

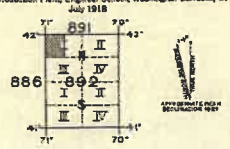
892 - N - I - W / 2

MASSACHUSETTS
MIDDLEBORO QUADRANGLE
GRID ZONE "A"



Base map from U. S. G. S. engineering.
Corrections and additions by Department Engineer,
Eastern Department.
Additional field work and compilation under the
direction of Col. W. M. Black, Corps of Engineers,
U. S. A., Department Engineer, Eastern Department,
Nov. 1915.
Additional field work under the immediate supervision
of Capt. J. H. Hodges, Corps of Engineers, U. S. A.

Scale 1:50,000
1 2 3 4 miles
1000 2000 3000 4000 5000 6000 7000 yards
Contour Interval 20 feet
Datum is mean sea level

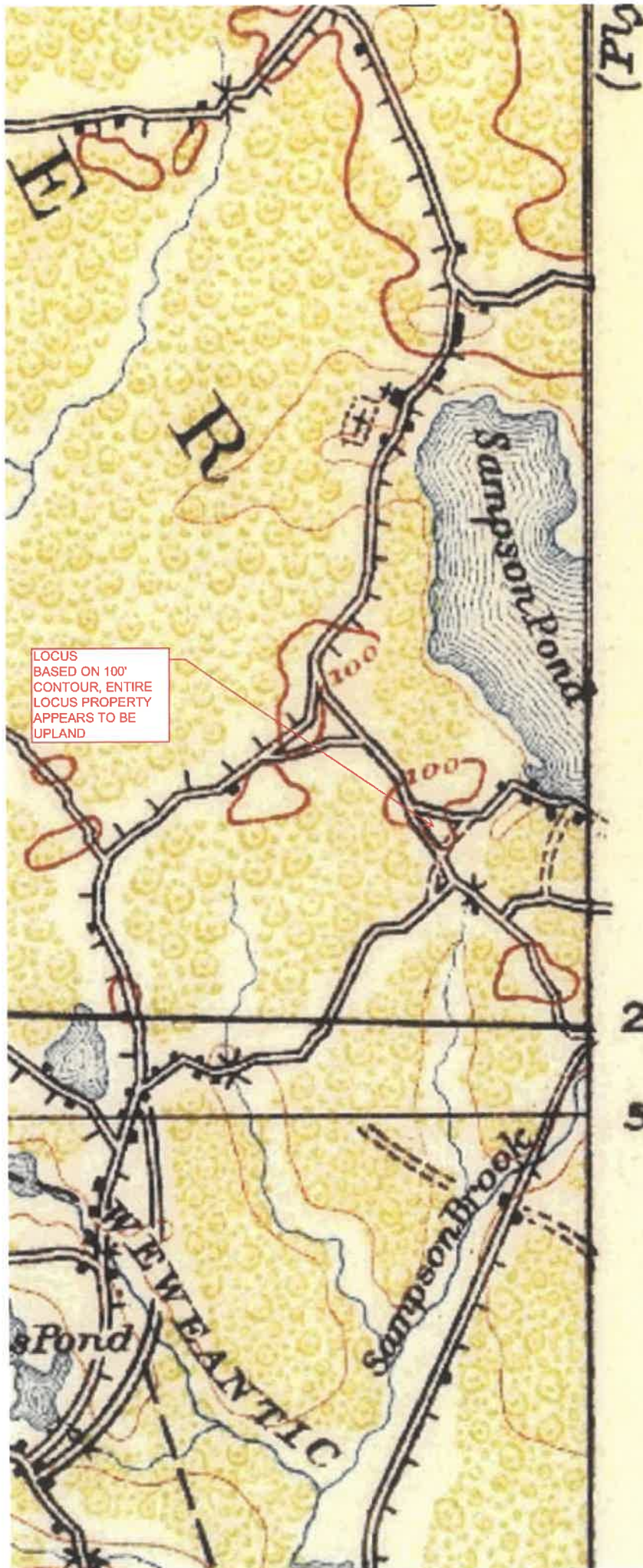


FIVE THOUSAND YARD GRID COMPUTED FROM "GRID SYSTEM FOR PROGRESSIVE MAPS
IN THE U. S. - ZONE A, U. S. G. S. & SPECIAL PUBLICATION NO. 98.
(THE LAST THREE DIGITS OF THE GRID NUMBERS ARE OMITTED)

NOTE: OFFICERS USING THIS MAP WILL MARK HEREIN CORRECTIONS AND ADDITIONS WHICH COME
TO THEIR ATTENTION AND SHALL DIRECT TO THE CHIEF OF ENGINEERS, WASHINGTON, D. C.

Reprint, E. R. F. 2021.

MIDDLEBORO, Mass.



LOCUS
BASED ON 100'
CONTOUR, ENTIRE
LOCUS PROPERTY
APPEARS TO BE
UPLAND

(PL)

2165

50'

▲ Map Unit Composition

45% - **Plymouth**

Geomorphic Position: moraines / Summit
moraines / Shoulder
outwash plains / Summit
outwash plains / Shoulder

40% - **Carver**

Geomorphic Position: moraines / Summit
moraines / Shoulder
pitted outwash plains / Summit
pitted outwash plains / Shoulder
outwash plains / Summit
outwash plains / Shoulder

10% - **Barnstable**

Geomorphic Position: moraines / Summit
moraines / Shoulder

5% - **Merrimac**

Geomorphic Position: kames / Summit
kames / Shoulder
terraces / Summit
terraces / Shoulder
outwash plains / Summit
outwash plains / Shoulder

▲ Map Unit Data

Map Unit Key: 309410 [\[Graphical Summary\]](#)

National Map Unit Symbol: 6072

Order of Mapping: Order 2 [?](#)

Map Unit Type: Complex [?](#)

Farmland Type: Not prime farmland

Available Water Storage (0-100cm): 5.87 cm

Flood Frequency (Dominant Condition): None

Flood Frequency (Maximum): None

Ponding Frequency: 0

Drainage Class (Dominant Condition): Excessively drained [?](#)

Drainage Class (Wettest Component): Excessively drained [?](#)

Proportion of Hydric Soils: 0% [?](#)

Min. Water Table Depth (Annual): *n/a*

Min. Water Table Depth (April-June): *n/a*

Min. Bedrock Depth: *n/a*

▲ Survey Metadata

Soil Survey Area: ma023 [?](#)

Scale: 1:12,000 [?](#)

Published: 2010 [?](#)

Last Export: Sep 10 2023 [?](#)



LOCATION CARVER

MA NY

Established Series
Rev. DGG-RBT-DCP
06/2019

CARVER SERIES

The Carver series consists of very deep, excessively drained sandy soils formed in glaciofluvial deposits of coarse and very coarse sands. They are nearly level through steep soils on outwash plains and moraines. Slope ranges from 0 through 45 percent. Saturated hydraulic conductivity is very high throughout. Mean annual precipitation is about 1,118 millimeters (44 inches) and mean annual temperature is about 9 degrees C (48 degrees F).

TAXONOMIC CLASS: Mesic, coated Typic Quartzipsamments

TYPICAL PEDON: Carver coarse sand - scrub forest (Colors are for moist soil.)

Oi -- 0 to 5 centimeters (0 to 2 inches); litter of pitch pine needles and scrub oak leaves.

Oe -- 5 to 8 centimeters (2 to 3 inches); very dark brown (10YR 2/2) decomposed organic matter. [Combined thickness of the O horizon is 0 to 13 centimeters (0 to 5 inches).]

A -- 8 to 18 centimeters (3 to 7 inches); black (10YR 2/1) coarse sand; weak medium granular structure; very friable; common fine and very fine roots; 1 percent fine gravel; extremely acid; abrupt wavy boundary. [0 to 15 centimeters (0 to 6 inches) thick]

E -- 18 to 25 centimeters (7 to 10 inches); dark gray (10YR 4/1) coarse sand; single grain; loose; common fine and very fine roots; 1 percent fine gravel; extremely acid; abrupt wavy boundary. [0 to 15 centimeters (0 to 6 inches) thick]

Bw1 -- 25 to 38 centimeters (10 to 15 inches); strong brown (7.5YR 5/6) coarse sand; weak fine granular structure; very friable; common fine and coarse roots; 1 percent fine gravel; extremely acid; clear smooth boundary.

Bw2 -- 38 to 71 centimeters (15 to 28 inches); yellowish brown (10YR 5/8) grades with depth to yellowish brown (10YR 5/6) coarse sand; single grain; loose; common fine and coarse roots; 10 percent fine gravel; very strongly acid; clear smooth boundary. [Combined thickness of the Bw horizon is 18 to 84 centimeters (7 to 33 inches).]

BC -- 71 to 81 centimeters (28 to 32 inches); brownish yellow (10YR 6/6) coarse sand; single grain; loose; few fine roots; 10 percent fine gravel; very strongly acid; clear smooth boundary. [0 to 56 centimeters (0 to 22 inches) thick]

C -- 81 to 170 centimeters (32 to 67 inches); light yellowish brown (2.5Y 6/4) coarse sand; single grain;

LOCATION PLYMOUTH

NY MA

Established Series

Rev. JWW-WEH-DAS

03/2010

PLYMOUTH SERIES

The Plymouth series consists of very deep, excessively drained sandy soils formed in glaciofluvial or deltaic deposits derived largely from siliceous rocks. They are nearly level through steep soils on plains and hilly moraines. Slope ranges from 0 through 35 percent. Saturated hydraulic conductivity is high or very high in the mineral solum and very high in the substratum. Mean annual temperature is 51 degrees F. (11 degrees C.), and mean annual precipitation is 46 inches (1168 millimeters).

TAXONOMIC CLASS: Mesic, coated Typic Quartzipsamments

TYPICAL PEDON: Plymouth loamy sand, on a nearly level slope in a wooded area. (Colors are for moist soil.)

A-- 0 to 4 inches (0 to 10 centimeters); very dark grayish brown (10YR 3/2) loamy sand; very weak medium granular structure; very friable; many fine roots; many clean white sand grains; 5 percent fine gravel; very strongly acid; clear wavy boundary. (1 to 4 inches (3 to 10 centimeters) thick.)

Bw1-- 4 to 10 inches (10 to 25 centimeters); yellowish brown (10YR 5/4) loamy sand; single grain and very weak medium subangular blocky structure; very friable; common fine roots; material like A horizon is 20 percent of the mass; 5 percent fine gravel; very strongly acid; gradual wavy boundary.

Bw2-- 10 to 17 inches (25 to 43 centimeters); yellowish brown (10YR 5/6) loamy sand; single grain; loose; common fine roots; 5 percent fine gravel; very strongly acid; gradual wavy boundary.

Bw3-- 17 to 27 inches (43 to 69 centimeters); brown (7.5YR 5/4) loamy sand; massive; very friable; few roots; 10 percent fine gravel; very strongly acid; clear wavy boundary. (Combined thickness of the Bw horizon is 19 to 32 inches (48 to 81 centimeters).)

2C-- 27 to 70 inches (69 to 178 centimeters); yellowish brown (10YR 5/6) gravelly coarse sand; 30 percent gravel 1 inch and less in diameter; single grain; loose; few very fine roots; very strongly acid.

TYPE LOCATION: Suffolk County, New York; Heckscher State Park.

RANGE IN CHARACTERISTICS: Thickness of the solum ranges from 20 through 40 inches (50 through 100 centimeters). Bedrock is at depths greater than 2 meters. The content of rock fragments, mostly gravel and cobbles, ranges from 0 through 30 percent in individual horizons of the solum and 2 through 50 percent in the substratum, more than 15 percent in the substratum above 40 inches (100 centimeters), but no more than 34 percent in an individual layer within a depth of 40 inches (100 centimeters). The soil ranges from extremely acid through strongly acid throughout.

Some pedons have an O horizon.

Commonwealth of Massachusetts

CARVER, MassachusettsSoil Suitability Assessment for On-site Sewage Disposal

Performed by: Richard Grady, P.E.
 GRADY CONSULTING, L.L.C.
 71 Evergreen Street, Suite 1
 Kingston, MA 02364
 Phone: (781) 585-2300 Fax: (781) 585-2378

Date: 4-19-24Witnessed by: N/A

Location Address or Lot #

LOT 1 SOUTH MAIN STREET

*Owner's Name

ZERO REALTY TRUST

*Address &

462 PLAIN STREET SUITE 204

*Telephone #

MARSHFIELD, MA 02050BOB GOSSELIN 781 585 5408New Construction ☒ Repair ☐Office ReviewPublished Soil Survey Available: No ☐ Yes ☒Year Published: 2010 Publication Scale: 1:12,000 Soil Map Unit: 480BDrainage Class: EXCESSIVELY DRAINED Soil Limitations: NONESurficial Geology Report Available: No ☒ Yes ☐Year Published: Publication Scale: Geologic Material (Map Unit): Landform: Flood Insurance Rate Map:Above 500 year flood boundary: No ☐ Yes ☒Within 500 year flood boundary: No ☒ Yes ☐Within 100 year flood boundary: No ☒ Yes ☐Wetland Area:National Wetland Inventory Map (map unit): N/A - ADJACENT TO UPLAND CRANBERRY BOGWetlands Conservancy Program Map (map unit): Current Water Resource Conditions (USGS):Month: * APRILRange: Above Normal ☒Normal ☐Below Normal ☐Other References Reviewed: * USGS REAL TIME DATA - DOK 79RDepth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?

N/A - NOT INTENDED FOR S.A.S. DESIGN

If not, what is the depth of naturally occurring pervious material?

Certification

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise, and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated on the attached soil evaluation form, are accurate and in accordance with CMR 15.100 through 15.107.

Signature: [Signature]Date: 4-19-24

TITLE 5 ON-SITE REVIEW

Deep Hole # 1-00 Date 4-19-24 Time 9:15 Weather 50° PARTLY CLOUDY
 Location(Identify on Site Plan) LOT 1 SOUTH MAIN ST
 Land Use RESIDENTIAL Slope(%) 2-10 Surface Stones NO
 Vegetation SAND NEXT TO CRANBERRY BKG Landform _____

Distances from: Open Water Body 7 ft. Possible Wet Area >100 ft. Drinking Water Well 100+ ft.

Drainageway >100 ft. Propertyline 10± ft Other _____

DEEP OBSERVATION HOLE LOG

Depth From Surface (Inches) Soil Horizon (USDA) Soil Texture (Munsell) Soil Color Soil Mottling Other: Structures, Stones, Boulders, Consistency, %Gravel

0"-8" FILL SANDY LOAM 10YR 4/2
8"-120" C MED-COARSE SAND 2.5Y 9/4 LOOSE STRUCTURELESS
5% GRAVEL

NO HYDRIC SOIL OBSERVED

Parent Material (geologic) OUTWASH 36" Depth to Bedrock
 Depth to Groundwater: Standing Water in Hole: 48" Weeping from Pit Face 36"
 Estimated Seasonal High Groundwater 30"

DETERMINATION FOR SEASONAL HIGH WATER TABLE

Method Used:

Depth observed standing in observation hole: _____ inches ☒ Depth to soil mottles: 30 inches
 Depth to weeping from side of observation hole: _____ inches Groundwater adjustment _____ ft
 Index Well # _____ Reading Date _____ Index well level _____ Adj.factor _____ Adj.Groundwater level _____

PERCOLATION TEST

Date _____ Time _____

Observation Hole # _____ Time at 9" _____
 Depth of Perc _____ Time at 6" _____
 Start Presoak _____ Time (9"-6") _____
 End Presoak _____ Rate Min/Inch _____

Site Suitability Assessment: Site Passed _____ Site Failed _____ Additional Testing Needed: _____

Performed By RICK GRADY

Certification # SE926

Witnessed By N/A

Comments: EXCAVATOR: KEVIN THOMPSON