TES ENVIRONMENTAL CONSULTANTS, L.L.C.

Environmental Planning and Permitting Soil and Wetlands Investigation

SITE-SPECIFIC SOIL SURVEY REPORT

performed at

City of Portsmouth, NH Prescott Park Project Tax Map 104, Lot 5; Marcy Street Portsmouth, New Hampshire

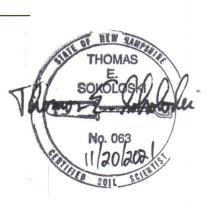
prepared for

Weston and Sampson, Inc. 55 Walkers Brook Drive Reading, MA 01867

TES Project # 21-0065

1494 Route 3A, Unit 1 Bow, NH 03304 (603) 856-8925

tom@tesenviro.comcastbiz.net



November 20, 2021

Mr. Dylan Erickson, PE Weston and Sampson, Inc. 55 Walkers Brook Drive Reading, MA 01867

RE: Site Specific Soil Map for City of Portsmouth, NH Prescott Park Project

Tax Map 104, Lot 5; Marcy Street, Portsmouth, New Hampshire

Dear Mr. Erickson:

On November 8, 2021 I performed field work on the above-referenced site in Portsmouth, New Hampshire to perform a Site Specific Soil Survey as you requested. This Site Specific Soil Survey was completed utilizing SSSNNE Special Publication No. 3; Site Specific Soil Mapping Standards for New Hampshire and Vermont, Version 7.0, July 2021. The soil legend used for this soil map conforms to the New Hampshire State-Wide Numerical Soils Legend, Issue #10, January 2011 established and maintained by the Natural Resources Conservation Service.

The Soil Survey encompassed approximately 2.5 of the 2.76-acre parcel, consisting generally of all of the park except for most of the garden area along Marcy Street and a portion of the waterfront. The area mapped was depicted on the existing conditions base map that you provided, at a scale of 1" = 20', with a 1/2-foot contour intervals, which served as the field base map for the soil survey. This soil survey was prepared to support a New Hampshire Alteration of Terrain permit application for a planned renovation of the park to protect it, its structures and Marcy Street from inundation from storms exacerbated by rising sea levels.

Field work for this survey included the examination of several soil profiles via hand dug test pits and auger borings taken at intervals sufficient to delineate the boundaries between soil map units. Four test pits were excavated and three were recorded during the field survey, both for soils information and for testing for saturated hydraulic conductivity (Ksat). The Soil Survey of Rockingham County, New Hampshire (via Web Soil Survey) was reviewed prior to site work, which indicated that the parcel was comprised entirely of soils identified as Urban Land (699). This general soil type was observed in the field, and the project archaeologist who was present for the excavations described the site as having originally been part of an estuary that was backfilled with refuse during the 19th and early part of the 20th century.

No New Hampshire-jurisdictional wetland resources, other than the banks of the Piscataqua River, exist on the parcel. Location control for this soil survey was provided by ample site development features. Much of the park consists of lawn and landscaped areas, with paved walkways, a performance stage, and historic structures along the south/east side of the site.

The following report includes a Site Specific Soil Map Key with accompanying Hydrologic Soil Groups and High Intensity Soil Survey codes, as well as soil map unit descriptions. The site is nearly level, with soil consisting of loamy backfill to depths of over 4 feet having a substantial

amount of refuse (bricks, ash, wood, glass, and other materials) intermixed with soil material. Underlying this fill is marine clay deeper than 40 inches below the ground surface. Portions of the mapping area requested consist of subtidal areas and riprap banks on the waterfront, which are labelled as such. Both such areas are inundated twice daily and should be considered to be open water for the purposes of drainage analysis.

If you have any questions regarding the soils on this site and the accompanying report, please contact our office.

Very truly yours,

Thomas E. Sokoloski Certified Soil Scientist #063

SITE SPECIFIC SOIL MAP UNIT KEY

		Slope	Drainage	HISS	Hydrologic
Symbol*	Map Unit		Class Class	Symbol	Soil Group
500B/ceacc	Udorthents, loamy	0-8%	Well	261BH	C
500B/deacc	Udorthents, loamy	0-8%	Moderately well	361BH	C
500B/hehcc	Udorthents, loamy	0-8%	Undeterminable**	761BH	C

^{*} Refer to accompanying report for 5-unit supplemental symbol explanation.

This detailed Site-Specific Soil Map, prepared on November 8, 2021 by Thomas E. Sokoloski, Certified Soil Scientist #063 of TES Environmental Consultants, L.L.C. in Bow, New Hampshire, conforms to the standards of SSSNNE Publication No. 3, Version 7.0, "Site-Specific Soil Mapping Standards for New Hampshire and Vermont", July 2021. This map has been prepared to comply with soil mapping requirements of RSA 485 A: 17 and NHDES Env-Wq 1500, Alteration of Terrain. See accompanying report for methodology, map symbol legend, and interpretations. Use of the map symbol denominators for disturbed or altered soils, where given, is at the discretion of the Certified Soil Scientist.

This map product is within the technical standards of the National Cooperative Soil Survey. It is a special purpose product, intended for use in support of a New Hampshire Alteration Terrain permit application. It was produced by a certified Soil Scientist, and is not a product of the USDA Natural Resources Conservation Service. There is a narrative report that accompanies this map.

^{**} Assumed to be well drained based on adjacent soils.

Supplemental Symbols

The five components of the Disturbed Soil Mapping Unit Supplement are as follows:

Symbol 1: Drainage Class

a-Excessively Well Drained

b-Somewhat Excessively Drained

c-Well Drained

d-Moderately Well Drained

e-Somewhat Poorly Drained

f-Poorly Drained

g-Very Poorly Drained

h-Not Determined

Symbol 2 -: Parent Material (of naturally formed soil only, if present)

a-No natural soil within 60"

b-Glaciofluvial Deposits (outwash/terraces of sand or sand and gravel)

c-Glacial Till Material (active ice)

d-Glaciolacustrine very fine sand and silt deposits (glacial lakes)

e-Loamy/sandy over silt/clay deposits

f-Marine Silt and clay deposits (ocean waters)

g-Alluvial Deposits (floodplains)

h-Organic Materials-Fresh water Bogs, etc

i- Organic Materials-Tidal Marsh

Symbol 3: Restrictive/Impervious Layers

a-None

b-Bouldery surface with more than 15% of the surface covered with boulders

c-Mineral restrictive layer(s) are present in the soil profile less than 40 inches below the soil surface such as hardpan, platy structure or clayey texture with consistence of at least firm, i.e. more than 20 newtons. For other examples of soil characteristics that qualify for restrictive layer, see "Soil Manual for Site evaluations in NH" 2_{nd}

Ed., page 3-17, figure 2-14

d-Bedrock in the soil profile 0-20 inches

e-Bedrock in the soil profile 20-60 inches

f-Areas where depth to bedrock is so variable that a single soil type cannot be applied, will be mapped as a complex of soil types

g-Subject to Flooding

h –man-made impervious surface including pavement, concrete, or built-up surfaces (i.e. buildings) with no morphological restrictive layer within control section

Symbol 4 Estimated Ksat* (most restrictive layer excluding symbol 3h above).

a- High

b-Moderate

c-Low

d-Not determined

*See "Guidelines for Ksat Class Placement" in Chapter 3 of the Soil Survey Manual, USDA

Symbol 5: Hydrologic Soil Group*

a-Group A

b-Group B

c-Group C

d-Group D

e-Not determined

^{*}excluding man-made impervious/restrictive layers

SITE SPECIFIC SOIL MAP UNIT DESCRIPTIONS

Map Unit Symbol:

500B/ceacc

Map Unit Name:

Udorthents, loamy

Landscape Settings:

Filled land surfaces

Surface Features:

None

Drainage Class:

Well

Parent Material:

Loamy backfill with mixed demolition materials and refuse

Complex:

Yes ()

No(X)

Nature of Dissimilar Inclusions, Locations and Estimated Percent:

None.

Additional Notes:

Lawn and landscaped areas.

Typical observed soil profile description:

<u>Depth</u>	<u>Horizon</u>	Color	<u>Texture</u>	Structure	Consistency	Redox	Notes
0-10"	Af	10YR 3/3	Fine sandy loam	Blocky	Friable	None	Fill
10-20"	Bw	10YR 5/4	Loam	Blocky	Friable	None	Fill
20-25"	Ab	10YR 2/2	Sandy loam	Blocky	Friable	None	Fill
25-40"	Cf	2.5Y 6/3 & 10YR 5/4	Sandy loam & Loam	Blocky	Friable	None	Fill

Tax Map 104, Lot 5.

Higher ground across mapping area.

Thomas E. Sokoloski

11/8/2021

SITE SPECIFIC SOIL MAP UNIT DESCRIPTIONS

Map Unit Symbol: 500B/deacc

Map Unit Name: Udorthents, loamy

Landscape Settings: Filled land surfaces

Surface Features: None

Drainage Class: Moderately well

Parent Material: Loamy backfill with mixed demolition materials and refuse

Complex: Yes () No (X)

Nature of Dissimilar Inclusions, Locations and Estimated Percent:

None.

Additional Notes:

Lawn and landscaped areas.

Typical observed soil profile description:

<u>Depth</u>	<u>Horizon</u>	Color	<u>Texture</u>	Structure	Consistency	Redox	Notes
0-10"	Af	10YR 3/3	Fine sandy loam	Blocky	Friable	None	Fill
10-15"	Bw	10YR 5/4	Loam	Blocky	Friable	None	Fill
15-20"	Ab	10YR 2/2	Sandy loam	Blocky	Friable	None	Fill
20-50"-	+ Cf	2.5Y 6/3 & 10YR 5/4	Sandy loam & Loam	Blocky	Friable	10YR 5/8 @ 24-36"	Fill

Tax Map 104, Lot 5. Lower ground in central portion of site nearing waterfront.

Thomas E. Sokoloski 11/8/2021

SITE SPECIFIC SOIL MAP UNIT DESCRIPTIONS

Map Unit Symbol:

500B/hehcc

Map Unit Name:

Udorthents, loamy

Landscape Settings:

Impervious surfaces; buildings, asphalt, brick walkways, stages

Surface Features:

None

Drainage Class:

Undeterminable (assumed to be Well drained like most adjacent soils)

Parent Material:

Loamy backfill with mixed demolition materials and refuse

Complex:

Yes ()

No(X)

Nature of Dissimilar Inclusions, Locations and Estimated Percent:

None.

Additional Notes:

Buildings, asphalt, brick walkways, performance stages.

Typical observed soil profile description:

Depth Horizon Color

Texture

Structure (

Consistency Redox

Notes

Not observed.

Tax Map 104, Lot 5.

Developed surfaces across mapping area.

Thomas E. Sokoloski

11/8/2021

