

CLA Engineers, Inc.

Civil • Structural • Survey

317 MAIN STREET

NORWICH, CT 06360

(860) 886-1966

(860) 886-9165 FAX

September 25, 2023

Ms. Maureen FitzGerald
Environmental Planner
Town of Waterford
15 Rope Ferry Road,
Waterford, CT 06385-2886

RE: CLA #7401
295 & 313 Willetts Avenue
16 & 18 Boston Post Road
Waterford CT

Dear Ms. FitzGerald:

CLA Engineers delineated inland wetlands and watercourses on the referenced parcel according to the State of Connecticut statutory definition as described in Section 22a of the State Statutes. CLA conducted fieldwork in January of 2023 and delineated the inland wetland boundary with sequentially numbered pink flagging tape. The work was done using a hand held Dutch auger.

This letter documents the wetland delineation and the soils encountered on the site. That delineation is depicted on a 13 sheet plan set titled "Woodspring Suites, 295 & 313 Willetts Avenue Waterford CT" that was provided as part of a permit application to the Waterford Conservation Commission.

Site Setting

At the time of the delineation, the 295&313 Willetts Avenue and 16 & 18 Boston Post Road site had existing commercial development and the remnants of development including buildings and pavement. As such, a significant portion of the site was covered by impervious surfaces. In addition, much of the pervious portion of the site contained rubble and debris. The area a mapped as wetland/watercourse comprises and isolated wooded swamp located to the northwest that receives local surface water runoff.

The current land use surrounding the site is predominantly dense commercial and residential development with recreational use (a baseball field) to the east. The site is completely surrounded by developed land with a significant proportion of impervious surface as shown in the attached soil map in Appendix A.

Throughout the site slopes vary from gentle on the east and west with steeper slopes in the center. The higher elevations (106 ft NAVD) occur at the eastern border while the lower

elevations (78 ft NAVD) are in the northeast corner. The surface water drains to the west either to the wetland or the adjacent property.

Surficial Geology and Soils

Southern New England was overlain by glacial ice as recently as 12,000-15,000 years ago. The materials that the glaciers deposited over top the local bedrock determine the surficial geology of the region and of the site. Glacial deposits are generally divided into three categories: glacial till (un-stratified sand, silt and rock), glaciofluvial (water sorted, stratified sand and gravel), and glaciolacustrine (stratified sand, silt and clay that settled out in lakebeds). The original type of glacial deposit present on the site was glacial till, however that material has been substantially re-worked for previous development. This finding is based on on-site observations and the NRCS mapping (attached) and on-site investigation, which revealed areas of disturbed soils

As noted above, the soils on the site has been thoroughly re-graded for the previous development and much of the site area has impervious surfaces.

Table 1 is a summary table of the soils found on the site.

Table 1 - Soil Types and Properties at the 295 & 313 Willetts Avenue Site*

<u>Soil Series</u>	<u>Parent Material</u>	<u>Drainage Class</u>	<u>Texture/Characteristics</u>
306 Udorthents Urban land complex	Variable – paved areas	variable	variable
50B Sutton	Glacial till	Well drained	Fine sandy loam
66B Narragansett	Eolian over till	Well drained	Silt loam

* Wetland soil types are not mapped by NRCS on site.

Three upland soils are mapped on the site per the data included in Appendix A. Udorthents and Urban Land have variable characteristics due to extensive alteration. The Sutton series consists of very deep, moderately well drained loamy soils formed in melt-out till. The

Narragansett soil series consists of well drained, loamy soils that formed in friable (ablation) glacial till mantled with a silty eolian (loess) cap. These soils are on uplands.

The wetland soil delineated on site is of the Ridgebury soil series, a poorly drained soil formed in glacial till. It has a sandy loam texture.

Wetland Description

This site has one wetland system that system that is not hydrologically connected to offsite wetlands. Under the USFWS system, the wetland system is classified as PFO1E. The USFWS description is as follows:

(Source:<https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>.)

Classification code: PFO1 E

System **Palustrine (P)** : The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.

Class **Forested (FO)** : Characterized by woody vegetation that is 6 m tall or taller.

Subclass **Broad-Leaved Deciduous (1)** : Woody angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold or dry season; e.g., black ash (*Fraxinus nigra*).

Water Regime **Seasonally Flooded/Saturated (E)** : Surface water is present for extended periods (generally for more than a month) during the growing season, but is absent by the end of the season in most years. When surface water is absent, the substrate typically remains saturated at or near the surface.

The dominant tree in this wetland is red maple (*Acer rubrum*) typically of 12-24 inches DBH. The shrub/sapling layer also has red maple as well as clammy azalea (*Rhodensron viscosum*) sweet pepperbush (*Clethra alnifolia*) and spicebush (*Lindera benzoin*).

Invasives such as Japanese barberry (*berberis thumbergii*) and multiflora rose (*Rosa multiflora*) occur as well. The herbaceous layer has a stand of invasive common reed (*Phragmites communis*) as well as cinnamon fern (*Osmunda cinnmomea*) and skunk cabbage (*Symplocarups foetidus*).

Per the June 23, 2023 CTDEEP NDDB maps, there are no known protected species present.

Assessment/Potential for Impacts

The wetland is surrounded by development, much of which has extensive areas of impervious surface. It is not connected to other wetland or upland habitats. The wetland receives storm water runoff and has significant stands of invasive species such as common reed. Based on its setting and hydrogeology this wetland serves to cleanse and retain storm water and provides minor wildlife habitat for tolerant species. The development proposal will not result in any filling of the wetland and the storm water design meets the CTDEEP storm water guidelines. CLA believes that if the development is constructed with the Best Management Practices (BMPs) specified on the plans, no adverse wetland impacts will result.

Please contact me if you have any questions.

Very truly yours,

Robert C Russo

Robert C. Russo
Soil Scientist

Appendix A

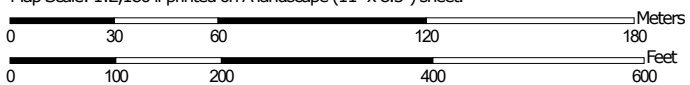
Soils Data

Soil Map—State of Connecticut
(295 & 313 Willetts Avenue)



Soil Map may not be valid at this scale.

Map Scale: 1:2,180 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

8/8/2023
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: State of Connecticut

Survey Area Data: Version 22, Sep 12, 2022

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

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	0.1	0.8%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	3.8	20.8%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	0.3	1.6%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	0.6	3.2%
66B	Narragansett silt loam, 2 to 8 percent slopes	1.9	10.6%
306	Udorthents-Urban land complex	6.9	37.8%
307	Urban land	4.6	25.2%
Totals for Area of Interest		18.3	100.0%