

CLAEngineers, Inc.

Civil • Structural • Survey

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April 23, 2024

Joe Wren, PE
Principal
Indigo Land Design, LLC
40 Elm Street, 2nd Floor

Re: 430 Mohegan Avenue Parkway
23B Old Norwich Rd
Waterford CT
CLA-7572

Dear Mr. Wren:

At your request, CLA Engineers delineated inland wetlands on the referenced parcel according to the State of Connecticut statutory definition as described in C.G.S. Section 22a. CLA conducted fieldwork in February, March and April of 2024 and delineated the inland wetland boundary with sequentially numbered pink flagging tape. This letter documents the wetland delineation and the soils encountered on the site.

Site Setting

The site is currently undeveloped except for a sanitary sewer that runs along the northerly side from Roberts Court to Mohegan Avenue Parkway. The vegetation is in an early stage of old field succession and dominant vegetation includes multiflora rose (*Rosa multiflora*) barberry (*Berberis thunbergii*) reasberry (*Rubus spp.*) Where trees occur, they include red maple (*Acer rubrum*) tree of heaven (*Ailanthus altissima*) hickories (*Carya spp.*) and black walnut (*Juglans nigra*).

The current land use surrounding the site is predominantly residential to the west, north and east. Connecticut College is located to the south.

The topography of the site features moderate to gentle hillslopes with high elevations of approximately 168' NAVD on the southwestern side of the site down to elevation approximately 118' in a bowl like depression on the eastern edge of the site. Surface water flows offsite to east under Mohegan Avenue Parkway via a culvert. The water eventually flows into Mamacoke Cove. Fill, in the form of boulders, was historically placed along upland edge of wetland and subsurface flow emanates from boulder fill area.

Soils

Southern New England was overlain by glacial ice as recently as 12,000-15,000 years ago during the Wisconsin glaciation. The materials that the glaciers deposited over top the local bedrock determine the surficial geology of the region and of the site. These 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 is glacial till. This finding is based on on-site observations and the NRCS mapping (attached) that shows the soil series mapped as (51) Sutton, (61) Canton and Charlton and (84) Paxton and Montauk.

The soils on the site have been re-graded for the existing site development within the sewer easement. The slopes down to the wetlands reflect past grading and filling.

Table 1 is a summary table of the soils found on the site. Appendix A provides additional soil data

Table 1 - Soil Types and Properties at the 430 Mohegan Avenue Parkway Site

<u>Soil Series</u>	<u>Parent Material</u>	<u>Drainage Class</u>	<u>Texture/Characteristics</u>
3 Ridgebury, Leicester, Whitman*	Glacial till with dense layer	Somewhat Poorly to very poorly drained	Sandy loam
51 Sutton	Glacial till	Moderately well drained	Sandy loam
61 Canton and Charlton	Glacial till	Well Drained	Sandy loam
84 Paxton and Montauk	Glacial till	Well Drained	Sandy Loam

* Wetland soil types on site, not mapped by NRCS

The Ridgebury, Leicester and Whitman series consists of very deep, somewhat poorly to poorly drained soils formed in lodgment till derived mainly from granite, gneiss and/or

schist. They are commonly shallow to a densic contact. They are nearly level to gently sloping soils in depressions in uplands.

The Sutton series consists of very deep, moderately well drained loamy soils formed in melt-out till. They are nearly level to strongly sloping soils on hills, low ridges, and ground moraines, typically on footslopes, lower backslopes and in slight depressions.

The Canton and Charlton series consists of very deep, well drained soils formed in a loamy mantle underlain by sandy till. They are on nearly level to very steep moraines, hills, and ridges.

The Paxton and Montauk series consists of well drained loamy soils formed in lodgment till. The soils are very deep to bedrock and moderately deep to a densic contact. They are nearly level to steep soils on hills, drumlins, till plains, and ground moraines. (Source: NRCS <https://soilseries.sc.egov.usda.gov>)

Wetland Description

This site has one wooded wetland system that system that continues to the east. Citation: (<https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>.)

I. Classification code: PFO1E

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 on-site wetland has predominantly of red maple trees in the canopy. The understory is a dense tangle of multiflora rose and Japanese barberry. Also present were jewelweed (*Impatiens capensis*) and skunk cabbage (*Symplocarpus foetidus*).

Vernal Pool Investigation

CLA conducted on-site investigations of the wetland on March 15, 2024 and April 8 2024. These dates coincided with site visits to other, known vernal pools in coastal southeastern Connecticut, which had wood frog and spotted salamander egg masses present. No wood frog or spotted salamander egg masses were found at the site, nor was there any other evidence of reproduction of vernal pool species. The maximum depth of water present in the wetland was six inches. Given this hydrology, it is not surprising that the wetland does not support vernal pool species.

Potential for Wetland Impacts

CLA understands that the proposed development, as designed by Indigo land Design LLC, has the following characteristics:

- A 75-foot vegetated buffer will be maintained around the inland wetland.
- The stormwater treatment system is designed to meet the CTDEEP 2004 Manual as revised to 2024.
- The Erosion and Sedimentation controls have been designed to be consistent with the CTDEEP 2002 Manual as revised to 2024.

Given that lack of direct wetland impacts and the three factors mentioned above, CLA believes that the project can be constructed without adverse impacts to inland wetlands.

Please contact me if you have any questions.

Sincerely,

Robert C Russo

Robert C. Russo CSS

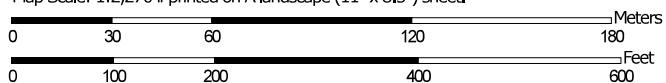
Appendix A

Soils Data

Soil Map—State of Connecticut, Eastern Part (Roberts Ct)



Map Scale: 1:2,270 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

1/16/2024
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Soil Map—State of Connecticut, Eastern Part
(Roberts Ct)

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, Eastern Part

Survey Area Data: Version 1, Sep 15, 2023

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
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	4.1	21.6%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	0.8	4.1%
60D	Canton and Charlton soils, 15 to 25 percent slopes	1.1	5.6%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	5.4	28.0%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	3.9	20.2%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	1.1	5.6%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	2.9	15.0%
Totals for Area of Interest		19.2	100.0%