

WATERFORD APARTMENT COMMUNITY 969 HARTFORD TURNPIKE

Wetland Delineation Report

Prepared for:

Hendels, Inc.

Client Ref: 15901.00004

June 2021



Wetland Delineation Report

Prepared for:
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This document has been prepared by SLR International Corporation (SLR). The material and data in this report were prepared under the supervision and direction of the undersigned.



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1. INTRODUCTION

On behalf of the applicant, Hendels, Inc., SLR International Corporation (SLR) investigated a 35.6-acre site to locate and delineate wetlands and watercourses on the site, and to assess existing wetland functions and values. Wetland resources areas were delineated by SLR soil scientists on March 22, 2017.

The project site is an undeveloped piece of land with frontage on Hartford Turnpike across from Cross Road. The site is forested with areas of steep slopes and rocky outcrops. There is a perennial watercourse north of the site and a cleared right-of-way to the east. A gas station and convenience store abut the property on the northwest side. There is another commercial development to the south. One palustrine, forested slope wetland exists in the southern portion of the subject parcel. No watercourses were observed on site.

2. GENERAL SITE DESCRIPTION

The subject parcel comprises 35.6 acres located in a moderately settled commercial and residential area of north-central Waterford (Figure 1). The property is undeveloped and forested and contains 1,850 linear feet of frontage on Hartford Turnpike (Route 85). Utility corridors exist to the east, south, and north of the site. A gas station and convenience store abut the site to the northwest. Hartford Commons exists south of the site past the utility corridor.

The property occupies the top and southern flank of two drumloidal features. Elevations range from 150 feet in the northern and eastern portions of the site to 100 feet in the southwestern section. Soils of the site are derived from glacial till. The majority of the site is composed of upland deciduous forest, with one forested wetland area in the southern portion of the site.

A review of historical topographic maps reveals the site has remained relatively undeveloped for the last century, though grading for and maintenance of the bordering utility right-of-way have likely introduced some disturbance along the parcel boundaries. Current CT-DEEP Natural Diversity Database (NDDDB) mapping from December 2020 shows a small area in the western portion of the parcel is within a mapped habitat area for state-listed threatened, endangered, or special concern species associated with Jordan Brook.

The site is located within a 4.7 square mile local watershed associated with Jordan Brook, which flows north to south approximately 250 feet west of the parcel boundary. Jordan Brook is a first-order, perennial stream with its headwaters in northern Waterford east of Lake Konomoc, approximately 1.75 miles north of the subject property. The watercourse has been rated by CT DEEP as Class A and has a Federal Emergency Management Agency (FEMA) regulated 100-year floodplain and floodway that are outside of the subject parcel. From the general area of the project site, Jordan Brook flows south approximately 5.25 miles to discharge to Long Island Sound via Jordan Cove in southern Waterford.

3. WETLAND DELINEATION

Wetland boundaries on site were delineated by William Root, registered soil scientist, and Kelly Kerrigan, soil scientist in training, both with Milone & MacBroom, Inc. (now SLR) on March 22, 2017.

On the day of the investigation, weather conditions were clear and sunny and soils were frost free.

Wetlands on site consist of approximately 5.5 acres of palustrine forested slope wetland, comprising 15% of the total site area (Figure 2). The wetland area is diffuse, occupying depressional areas within the southern portion of the site, and is bound to the west by Route 85 and to the east by a maintained transmission corridor. Vegetation in the wetland consists of a red maple (*Acer rubrum*) and black birch (*Betula lenta*) canopy, with saplings of American beech (*Fagus grandifolia*) and an understory comprised of Christmas fern (*Polystichum acrostichoides*), skunk cabbage (*Symplocarpus foetidus*), and tussock sedge (*Carex stricta*). The wetland surface is strewn with medium to large mossy boulders, and on the day of the site survey a high water table was present with several inches of standing water filling open depressions and the spaces between boulders. The wetland is primarily supported by this seasonal high water table and groundwater discharge, though surface runoff features and rills were also observed connecting segments of the wetland. No vernal pools or other special wetland types were located on site during the investigation.

No perennial or intermittent watercourses were delineated on site. Jordan Brook flows approximately 250 feet west of the site boundary.

3.1 REGULATORY DEFINITIONS

The Inland Wetlands and Watercourses Act (Connecticut General Statutes §22a-38) defines inland wetlands as "land, including submerged land...which consists of any soil types designated as poorly drained, very poorly drained, alluvial, and floodplain." Watercourses are defined in the act as "rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon the state or any portion thereof."

Upland Review Area, per the Town of Waterford Inland Wetlands and Watercourses Regulations, includes any area within 100 feet of the boundary of wetlands and/or watercourses.

3.2 METHODOLOGY

In accordance with the principles and practices noted in the United States Department of Agriculture (USDA) publication *Soil Survey Manual* (1993), a second-order soil survey was completed at the subject site in June 2018. The classification system of the National Cooperative Soil Survey was used in this investigation. Soil map units identified at the project site generally correspond to those included in the *Soil Survey of the State of Connecticut* (USDA, 2005).

Wetland determinations were completed based on the presence of poorly drained, very poorly drained, alluvial, or floodplain soils and submerged land (e.g., a pond). Soil types were identified by observation of soil morphology (soil texture, color, structure, etc.). To observe the morphology of the property's soils, test pits and/or borings (maximum depth of 2 feet) were completed at the site.

Intermittent watercourse determinations were made based on the presence of a defined permanent channel and bank and the occurrence of two or more of the following characteristics: A) evidence of scour or deposits of recent alluvium or detritus, B) the presence of standing or flowing water for a duration longer than a particular storm incident, and C) the presence of hydrophytic vegetation.

Wetland boundaries were demarcated (flagged) with pink surveyor's tape (hung from vegetation) or small flags (on wire stakes) that are generally spaced a maximum of every 50 feet. Complete boundaries are located along the lines that connect these sequentially numbered flags. The wetland boundaries are subject to change until adopted by local, state, or federal regulatory agencies. Wetland areas are depicted on Figure 2 and shown as wetland flags wr-1 through wr-54, and wx-1 through wx-24, wx-50 through wx-59, wx-80 through wx-86, and wx-100 through wx-117.

3.3 SOIL MAPPING

Five soil map units were identified on the property according to the Natural Resources Conservation Service (NRCS) Web Soil Survey (one wetland and four upland; Figure 3). Each map unit represents a specific area on the landscape and consists of one or more soils for which the unit is named. Other soils (inclusions that are generally too small to be delineated separately) may account for 10 to 15 percent of each map unit. The mapped units are by name, symbol, and typical characteristics (parent material, drainage class, high water table, depth to bedrock, and slope) (Table 3-1). These characteristics are generally the primary characteristics to be considered in land use planning and management. A complete description of each soil map unit can be found in the *Soil Survey of the State of Connecticut* (USDA, 2005).

TABLE 3-1
Soil Unit Properties

<u>Map Unit</u>		<u>Parent Material</u>	<u>Slope (%)</u>	<u>Drainage Class</u>	<u>High Water Table</u>			<u>Depth To Bedrock (in)</u>
<u>Sym</u>	<u>Name</u>				<u>Depth (ft)</u>	<u>Kind</u>	<u>Mos.</u>	
<u>Upland Soil</u>								
52	Sutton fine sandy loam	Coarse-loamy melt-out till	2-15	Moderately well drained	1-2.25	-	-	>80
62	Canton and Charlton fine sandy loam	Sandy melt-out till	3-15	Well drained	6	-	-	>80
73	Charlton-Chatfield complex	Coarse-loamy melt-out till	0-45	Well drained	6	-	-	>80
75	Hollis-Chatfield-Rock outcrop complex	Coarse-loamy melt-out till	15-45	Somewhat excessively drained	1.5-2.5			>80
<u>Wetland Soil</u>								
3	Ridgebury, Leicester & Whitman soils	Coarse-loamy lodgment till	0-8	Poorly drained	0-0.5	Perched	-	15-35

3.4 WETLAND FUNCTIONAL ASSESSMENT

A functional evaluation of onsite wetlands based on SLR field observations is summarized (Table 3-2). The first column lists the functions and values generally ascribed to wetlands while the second column summarizes the rationale used to determine whether these functions and values are being performed within the subject wetland and/or watercourse. The identified wetlands contribute to the majority of recognized wetland functions.

TABLE 3-2
Wetland Functions and Values Assessment – Palustrine Forested Slope Wetland

Functions and Values		Comments
	Groundwater Recharge/Discharge	Yes – Groundwater discharge supports the hydrology of this wetland.
	Flood Flow Alteration (Storage & Desynchronization)	No – The wetland is not located within a mapped FEMA 100-year floodplain.
	Fish & Shellfish Habitat	No – No watercourse is associated with this wetland area supporting fish or shellfish.
	Sediment/Toxicant Retention	Somewhat – The wetland provides some sediment/toxicant retention due to geomorphology.
	Nutrient Removal/Retention/Transformation	Yes – The wetland provides nutrient removal/retention due to structural complexity and dense vegetation.
	Production Export (Nutrient)	Yes – Structural diversity of wetland vegetation contributes to this function.
	Sediment/Shoreline/Watercourse Bank Stabilization	No – There is no shoreline or bank to stabilize.
	Wildlife Habitat	Yes – Structural complexity and vegetative diversity provides opportunities for wildlife habitat utilization, and evidence of wildlife habitat was observed.
	Recreation (Consumptive & Non-Consumptive)	No – Presently, a lack of access minimizes contribution to this value.
	Educational Scientific Value	No – These wetlands do not presently provide educational opportunities.
	Uniqueness/Heritage	No – There are no unique features.
	Visual Quality/Aesthetics	No – This area does not contain particularly high value aesthetics.
ES	Endangered Species	No – This area is not mapped within a NDDDB area as outlined by CT DEEP (CT DEEP, December 2020).

The principal functions of the wetlands include the following:

- Groundwater discharge
- Nutrient removal/retention
- Wildlife habitat

4. CONCLUSION

SLR wetland scientists visited the site at 969 Hartford Turnpike in Waterford to delineate boundaries and assess functions and values of onsite wetlands across the 35.6-acre forested site. The site is relatively undisturbed, surrounded largely by upland deciduous forest. One palustrine forested wetland system, occupying approximately 5.5 acres in the southern portion of the site, was identified and delineated. No watercourses were delineated on the site.

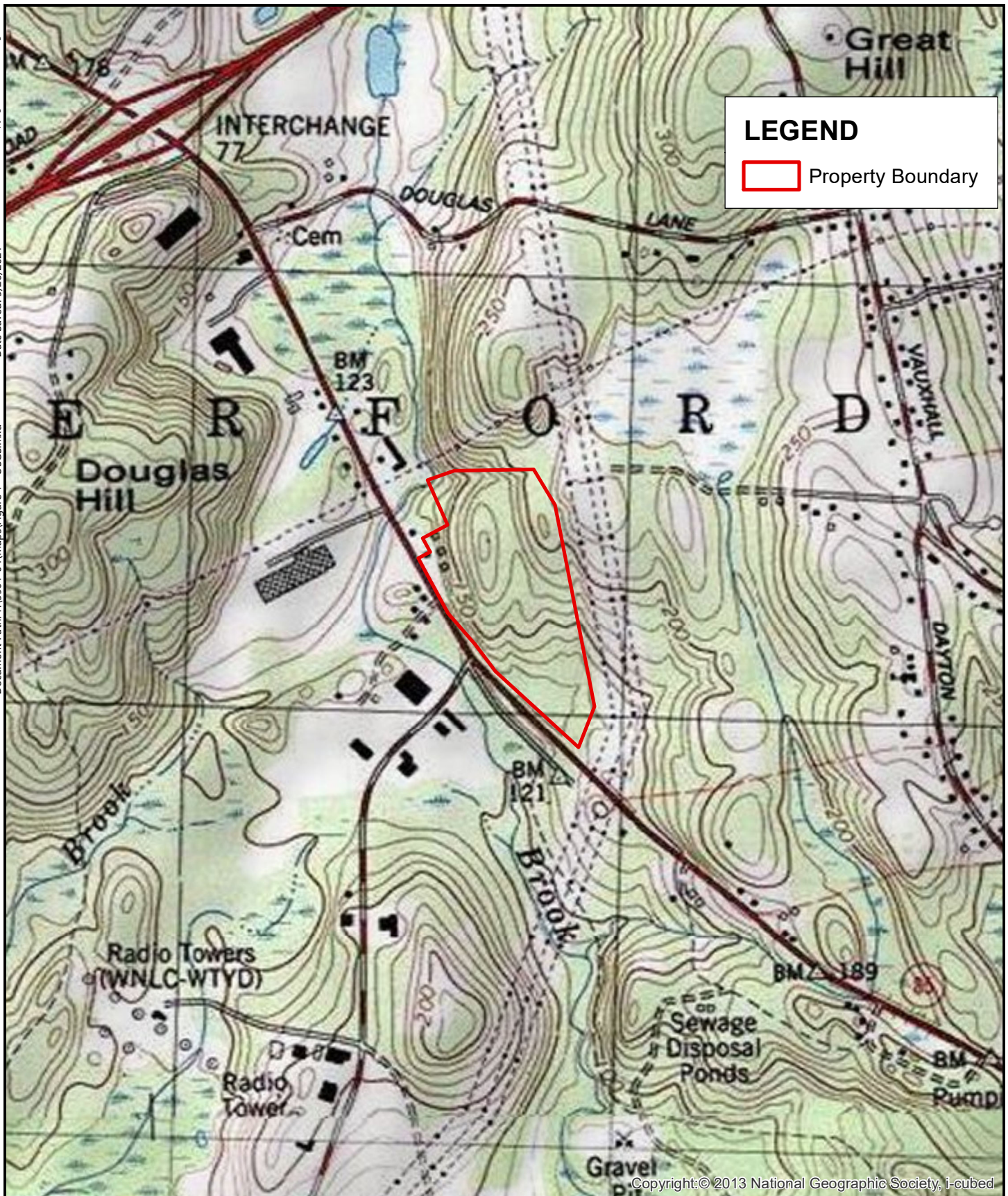
If there are any questions regarding this report or the wetlands on this site, I may be reached at (203) 344-7889 or mraymond@slrconsulting.com.

Sincerely,

SLR International Corporation



Megan B. Raymond, MS, PWS, CFM
Principal Scientist, Wetlands & Waterways Lead



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SITE LOCATION

WATERFORD APARTMENT COMMUNITY
HENDELS, INC.

969 HARTFORD TURNPIKE
WATERFORD, CONNECTICUT

SOURCE: 2016 AERIAL PHOTO, CTDEEP, 2016



0 500 1,000
Feet

SCALE 1" = 1,000'

DATE 5/26/2021

PROJ. NO. 15901.00004

FIG. 1



LEGEND

- Property Boundary
- Wetland Flags
- Wetland Boundary
- Wetland Area



195 CHURCH STREET
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WETLAND AND WATERCOURSE MAP

WATERFORD APARTMENT COMMUNITY
HENDELS, INC.

969 HARTFORD TURNPIKE
WATERFORD, CONNECTICUT

SOURCE: 2016 AERIAL PHOTO, CTDEEP, 2016



0 260
Feet

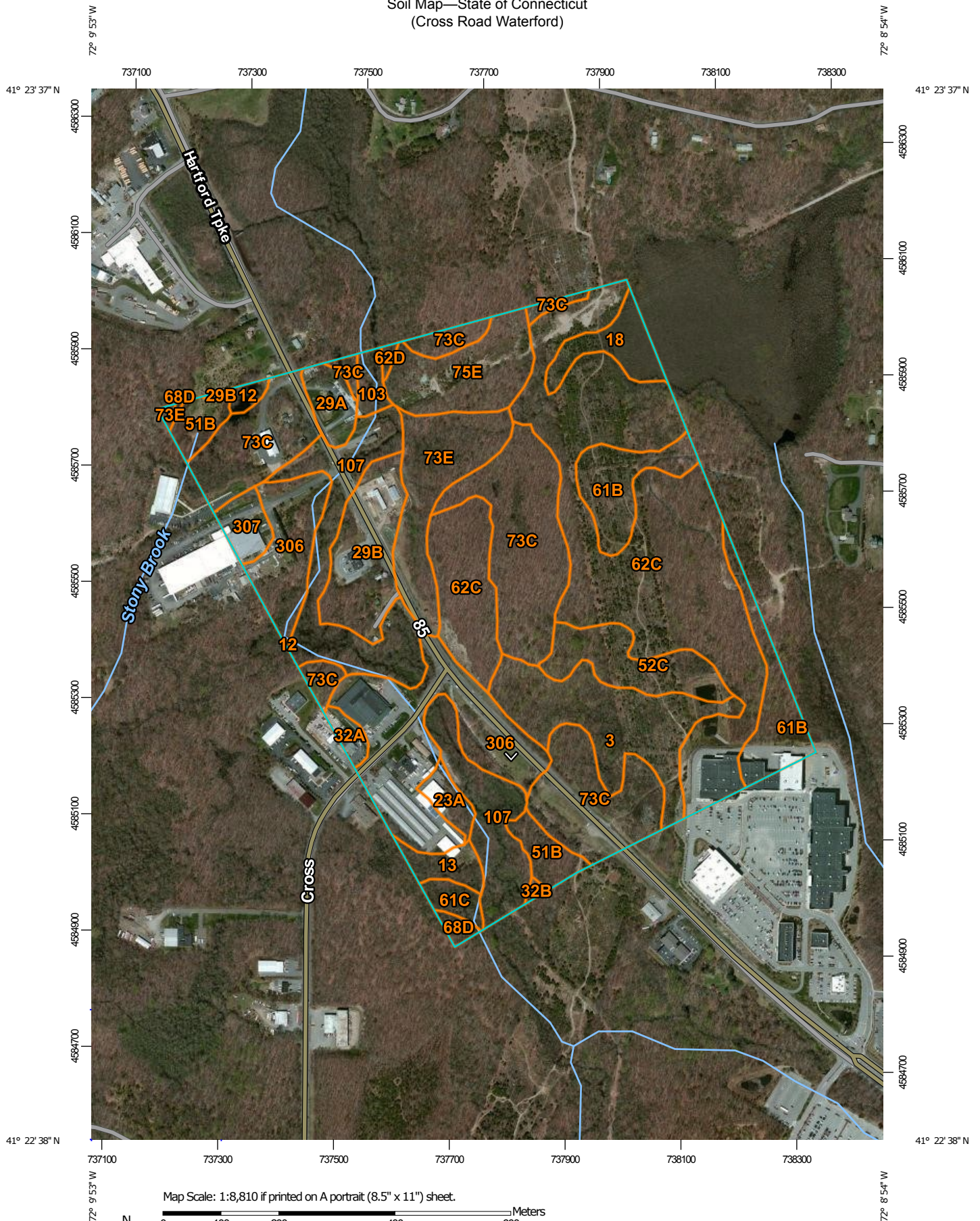
SCALE 1" = 250'

DATE 5/27/2021

PROJ. NO. 15901.00004

FIG. 2

Soil Map—State of Connecticut
(Cross Road Waterford)



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.

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 15, Sep 28, 2016

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

Date(s) aerial images were photographed: Mar 28, 2011—May 12, 2011

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

State of Connecticut (CT600)			
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	11.7	6.4%
12	Raypol silt loam	0.6	0.4%
13	Walpole sandy loam, 0 to 3 percent slopes	1.8	1.0%
18	Catden and Freetown soils, 0 to 2 percent slopes	3.3	1.8%
23A	Sudbury sandy loam, 0 to 5 percent slopes	1.5	0.8%
29A	Agawam fine sandy loam, 0 to 3 percent slopes	2.3	1.2%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	7.7	4.2%
32A	Haven and Enfield soils, 0 to 3 percent slopes	1.0	0.5%
32B	Haven and Enfield soils, 3 to 8 percent slopes	0.2	0.1%
51B	Sutton fine sandy loam, 2 to 8 percent slopes, very stony	3.9	2.1%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	5.8	3.2%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	9.6	5.3%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	1.3	0.7%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	43.7	23.9%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	0.3	0.1%
68D	Narragansett silt loam, 15 to 25 percent slopes, extremely stony	0.6	0.3%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	30.5	16.7%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	8.8	4.8%

State of Connecticut (CT600)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	7.4	4.0%
103	Rippowam fine sandy loam	1.3	0.7%
107	Limerick and Lim soils	17.2	9.4%
306	Udorthents-Urban land complex	20.5	11.2%
307	Urban land	2.0	1.1%
Totals for Area of Interest		182.9	100.0%