

December 10, 2020

Ms. Jolene Stefura
William W. Seymour & Associates, P.C.
170 Noroton Ave
Darien, CT 06820

Re: Wetland and Watercourse Delineation
Cranbury School, 10 Knowalot Lane, Norwalk, Connecticut

Dear Ms. Stefura:

As requested, we visited the Cranbury School property to determine the presence or absence of wetlands and/or watercourses, to demarcate (flag) the boundaries of wetlands and watercourses identified, and to identify onsite soil types. This letter includes the methods and results of our investigation, which we completed, December 9 and 10, 2020. In summary, nine inland wetland and watercourse systems were identified and delineated. The systems are primarily located in the northern and southwestern portions of the subject properties and are generally forested wetlands with several small streams.

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.” The Act defines Intermittent Watercourses as having 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.

Methodology

A second order soil survey in accordance with the principles and practices noted in the USDA publication *Soil Survey Manual* (1993) was completed at the subject site. 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. 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 two 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) labeled "William Kenny Associates" 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.

Results

The approximate 60.4-acre institutional property is Cranbury School located at 10 Knowalot Lane in Norwalk, Connecticut. Knowalot Lane bisects the property, Grumman Avenue borders the western property boundary and Field Street borders the eastern property boundary. Property improvements, which are located in the western central portion of the property, include a school building and an asphalt driveway and parking area. The vegetative cover in the southern, northern and eastern portions of the property is a broadleaved deciduous forest. Areas of lawn with other ornamentals and some shade trees are present in the western portion of the property and meadow is present along the utility corridor that borders the property's northern boundaries. On the days of the review, the sky was clear and air temperatures were in the 30's ° F to 50's ° F.

Nine inland wetland and watercourse systems were identified and delineated. The systems are primarily located in the northern and southwestern portions of the subject properties and are generally forested wetlands with several small streams. Wetland soils are primarily poorly drained and formed from glacial till deposits or formed from alluvial deposits or are forming in human altered deposits. The approximate locations of the systems are shown on the attached map. The boundaries of the systems were marked at the site with flags numbered 1 to 29, 30 to 34, 40 to 190, 200 to 222, 230 to 235, 240 to 247, 250 to 255, 260 to 264, 270 to 275, 1005 to 1016, 1020 to 1101, 1110 to 1118, 1120 to 1129, 1130 to 1135, 1140 to 1149 and 1150 to 1164.

Eight soil map units were identified on the property (three wetland and five upland). 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 identified in the following table by name and symbol and typical characteristics (parent material, drainage class, high water table, depth to bedrock, and slope). These characteristics are generally the primary characteristics to be considered in land use planning and management. A description of each characteristic and their land use implications follows the table. A complete description of each soil map unit can be found in the *Soil Survey of the State of Connecticut* (USDA 2005), and at <https://soilseries.sc.egov.usda.gov/osdname.aspx>. On the days of the review, the upland soil was moist and wetland soil was wet to inundated.

<u>Sym.</u>	<u>Map Unit Name</u>	<u>Parent Material</u>	<u>Slope (%)</u>	<u>Drainage Class</u>	<u>High Water Table</u>			<u>Depth To Bedrock (in)</u>
					<u>Depth (ft)</u>	<u>Kind</u>	<u>Mos.</u>	
<u>Upland Soil</u>								
50	Sutton fine sandy loam	Loose Glacial Till	3-8	Moderately Well Drained	1.5-3.5	Apparent	Nov-Apr	>60
60	Canton and Charlton soils	Loose Glacial Till	0-15	Well Drained	>6.0	--	--	>60
		Loose Glacial Till	0-15	Well Drained	>6.0	--	--	>60
73	Charlton	Loose Glacial Till	0-50	Well Drained	>6.0	--	--	>60
	Chatfield	Loose Glacial Till	0-70	Well Drained	>6.0	--	--	20-40
Fine sandy loam								
306	Udorthents - Urban Land Complex	Excavated or Filled Soil (>2 feet) Pavement & structures account for 85% or more of the area. Additional investigations required to determine characteristics	0-45	Well Drained to Somewhat Poorly Drained	1.5->6.0	Apparent	Nov-May	>60
308	Udorthents, Smoothed	Excavated or Filled Soil (>2 feet)	0-45	Well Drained to Somewhat Poorly Drained	1.5->6.0	Apparent	Nov-May	>60
<u>Wetland Soil</u>								
1	Aquents	Excavated or Filled Soil (>2 feet)	0-3	Very Poorly Drained	0.0-1.5	Apparent	Nov-May	>60
3	Ridgebury	Compact Glacial Till	0-8	Poorly Drained	0.0-1.5	Perched	Nov-May	>60
	Leicester	Loose glacial Till	0-3	Poorly Drained	0.0-1.5	Apparent	Nov-May	>60
	Whitman	Compact Glacial Till	0-3	Very Poorly Drained	0.0-1.5	Perched	Sep-Jun	>60
extremely stony fine sandy loam								
108	Saco silt loam	Alluvium	0-3	Very Poorly Drained	0.0-0.5	Apparent	Sep-June	>60

Parent material is the unconsolidated organic and mineral material in which soil forms. Soil inherits characteristics, such as mineralogy and texture, from its parent material. Glacial till is unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice. Glacial outwash consists of gravel, sand, and silt, which are commonly stratified and

deposited by glacial melt water. Alluvium is material such as sand, silt, or clay, deposited on land by streams. Organic deposits consist of decomposed plant and animal parts.

A soil's texture affects the ease of digging, filling, and compacting and the permeability of a soil. Generally sand and gravel soils, such as outwash soils, have higher permeability rates than most glacial till soils. Soil permeability affects the cost to design and construct subsurface sanitary disposal facilities and, if too slow or too fast, may preclude their use. Outwash soils are generally excellent sources of natural aggregates (sand and gravel) suitable for commercial use, such as construction sub base material. Organic layers in soils can cause movement of structural footings. Compacted glacial till layers make excavating more difficult and may preclude the use of subsurface sanitary disposal systems or increase their design and construction costs if fill material is required.

Generally, soils with steeper slopes increase construction costs, increase the potential for erosion and sedimentation impacts, and reduce the feasibility of locating subsurface sanitary disposal facilities.

Drainage class refers to the frequency and duration of periods of soil saturation or partial saturation during soil formation. Seven classes of natural drainage classes exist. They range from excessively drained, where water is removed from the soil very rapidly, to very poorly drained, where water is removed so slowly that free water remains at or near the soil surface during most of the growing season. Soil drainage affects the type and growth of plants found in an area. When landscaping or gardening, drainage class information can be used to assure that proposed plants are adapted to existing drainage conditions or that necessary alterations to drainage conditions (irrigation or drainage systems) are provided to assure plant survival.

High water table is the highest level of a saturated zone in the soil in most years. The water table can affect the timing of excavations; the ease of excavating, constructing, and grading; and the supporting capacity of the soil. Shallow water tables may preclude the use of subsurface sanitary disposal systems or increase design and construction costs if fill material is required.

The depth to bedrock refers to the depth to fixed rock. Bedrock depth affects the ease and cost of construction, such as digging, filling, compacting, and planting. Shallow depth bedrock may preclude the use of subsurface sanitary disposal systems or increase design and construction costs if fill material is required.

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Conclusions

We investigated the Cranbury School property at 10 Knowalot Lane in Norwalk, Connecticut and identified and delineated nine inland wetland and watercourse systems. Thank you for the opportunity to assist you. If you should have any questions or comments, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink that reads "William L. Kenny". The signature is written in a cursive, flowing style with a large, prominent 'W' and 'K'.

William L. Kenny, PWS, PLA
Soil Scientist

Enclosure

Ref. No. 4668

SOIL LEGEND

UPLAND

- 50 SUTTON FINE SANDY LOAM
- 60 CANTON AND CHARLTON SOILS
- 73 CHARLTON-CHATFIELD COMPLEX
- 306 UDORTHENTS-URBAN LAND COMPLEX
- 308 UDORTHENTS, SMOOTHED

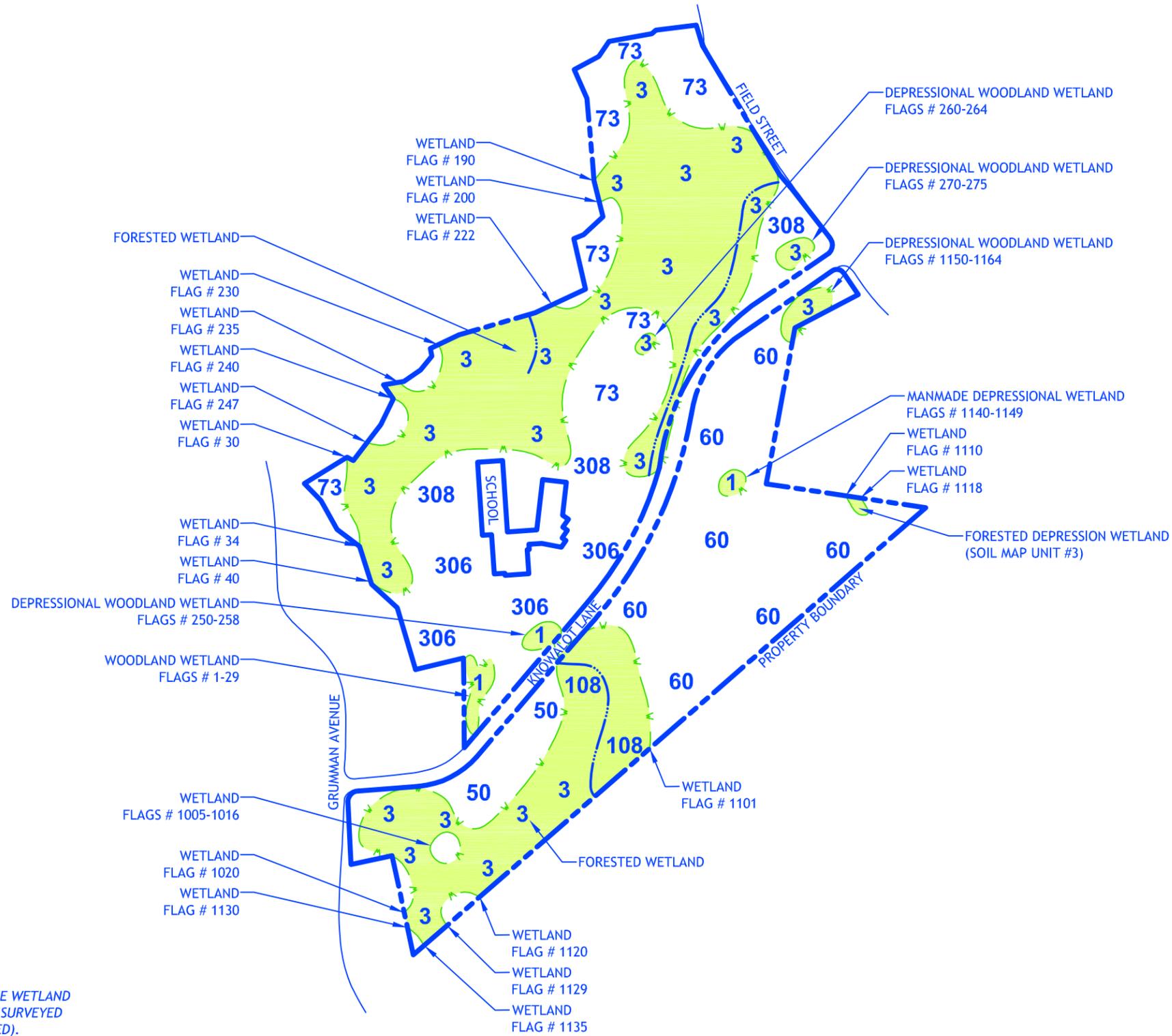
WETLAND

- 1 AQUENTS
- 3 RIDGEBURY, LEICESTER AND WHITMAN SOILS
- 108 SACO SILT LOAM

**WILLIAM KENNY
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NOTES:

- INFORMATION SHOWN ON THIS DRAWING, INCLUDING THE WETLAND BOUNDARY, IS APPROXIMATE. THE BOUNDARY IS NOT A SURVEYED REPRESENTATION OF WHAT WAS FIELD MARKED (FLAGGED).
- WETLAND AND SOIL INFORMATION PROVIDED BY WILLIAM KENNY ASSOC. OTHER INFORMATION TAKEN FROM A CITY OF NORWALK GIS MAP.
- 50, 60, 73, 306, 308, 1, 3 AND 108 ARE SOIL MAPPING UNIT SYMBOLS. SEE WETLAND DELINEATION REPORT FOR THE SOIL MAP UNIT NAMES AND ADDITIONAL RELATED INFORMATION.

I CERTIFY THAT THIS WETLAND MAP
SUBSTANTIALLY REPRESENTS THE SOILS
AND WETLANDS MAPPED IN THE FIELD

William L. Kenny
WILLIAM L. KENNY, SOIL SCIENTIST

WETLAND & WATERCOURSE MAP

**CRANBURY SCHOOL
10 KNOWALOT LANE
NORWALK, CONNECTICUT**

SCALE: NOT TO SCALE
DATE: DECEMBER 10, 2020

Ref. No. 4668

