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October 26, 2020

Ms. Jennifer Staple Clark
Slate School
124 Mansfield Road
North Haven, CT 06473

RE: Wetland and Watercourse Delineation
5100 Ridge Road
North Haven, Connecticut
MMI #6156-03

Dear Ms. Staple Clark:

As requested, I visited the 3.27-acre property at 5100 Ridge Road in North Haven, Connecticut in order to determine the presence or absence of wetlands and/or watercourses, to demarcate (flag) the boundaries of wetlands and watercourses identified, and to identify on-site soil types. This letter includes the methods and results of my investigation, which was completed on June 6, 2020. In summary, no inland wetlands and/or watercourses were identified on the subject parcel. However, a wetland system and intermittent watercourse is located off site to the north and west. This system extends west and feeds the headwaters of the Mill River.

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.

The Tidal Wetlands Act (Connecticut General Statutes §22a-28) defines wetlands as "those areas which border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marsh, swamps, meadows, flats, or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters and whose surface is at or below an elevation of 1 foot above local extreme high water; and upon which may grow or be capable of growing hydrophytic vegetation as identified in the Statutes."

Per the Town of North Haven Inland Wetlands and Watercourses Regulations, Upland Review Area means any area within 50' of the boundary of any wetland or watercourse. Additionally, any activity that occurs in uplands outside of this area that is likely to impact or affect inland wetlands or watercourses may be reviewed by the Inland Wetlands Commission.

Methodology

A second-order soil survey in accordance with the principles and practices noted in the United States Department of Agriculture (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 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.

On the day of the review, the sky was partly cloudy, and air temperatures were in the 80s (Fahrenheit). The soil conditions ranged from moist to dry.

Site Description and Existing Soils

Accessed to the west from Ridge Road, the subject parcel is located in a lightly settled mixed-use neighborhood, approximately 400 feet south of Mount Carmel Avenue (Figure 1). Previously used as the Mount Carmel Church property, the dwelling is developed and contains a church building, parking lot, and associated appurtenances surrounded by manicured lawn. The property slopes gently to the west and north and is underlain by glacial till parent material. The property is located within a level A aquifer protection area that was adopted in 2012 and serviced by South Central Connecticut Regional Water Authority.

Two upland and one wetland soil map units were identified on the property from the USA Natural Resources Conservation Service web soil survey mapping (Figure 2). However, the wetland soil was not identified on the property during the wetland delineation. 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 1). These characteristics are generally the primary characteristics to be considered in land use planning and management. A description of each characteristic and its 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 http://soils.usda.gov/technical/classification/osd/index.

TABLE 1
Soil Unit Properties

Map Unit		Parent Material	Slope (%)	Drainage Class	High Water Table			Depth to Bedrock (in)
Sym	Name				Depth (ft)	Kind	Mos.	
Upland Soil								
69C	Yalesville fine sandy loam		8-15	Well drained	>80"	-	-	>20
77D	Cheshire-Holyoke	Glacial till	15-35	Well drained	>80"	-	-	>10
Wetland Soil								
5	Wilbraham silt loam	Red lodgment till	0-3	Poorly drained	0-1	-	-	>70

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 while nonstratified glacial drift, consisting of clay, silt, sand, and boulders, is transported and deposited by glacial ice. Glacial outwash consists of gravel, sand, and silt, which are commonly stratified, deposited by glacial meltwater. 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 its use. Outwash soils are generally excellent sources of natural aggregates (sand and gravel).

No wetlands were identified on subject parcel, though a wetland corridor is located off site to the north and west (Figure 3). This off-site wetland is bounded by a row of mature pine trees at the western property line and fed by a cross culvert beneath Ridge Road that carries intermittent flows. The wetland extends west as a broad palustrine emergent meadow, underlain by poorly drained silt loams, amidst a thin canopy. The wetland is hydrologically connected to the Mill River corridor.

Conclusions

On June 6, 2020, I evaluated 5100 Ridge Road to determine the presence or absence of inland wetlands and/or watercourses. No wetlands or watercourses were identified on the property. Soils on the subject parcel are derived from well drained or moderately well drained glacial till. A wetland corridor, located within the Mill River watershed, was identified off site to the north and west.

Thank you for the opportunity to assist you. If you should have any questions or comments, please do not hesitate to contact me.

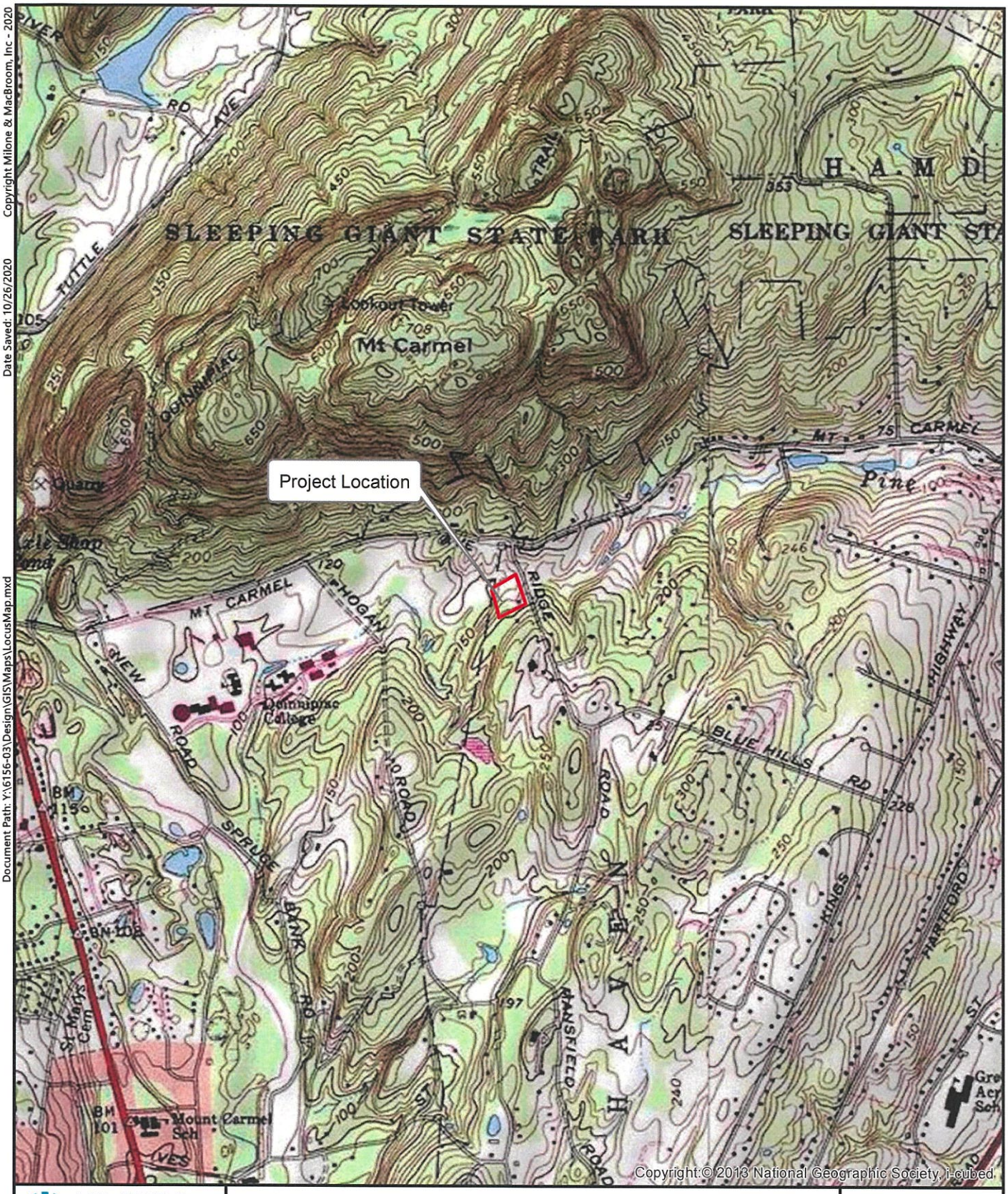
Very truly yours,

MILONE & MACBROOM, INC.

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

Enclosures: Wetland Map, Soil Map

6156-03-o2620-ltr



MILONE & MACBROOM
99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773
WWW.MMINC.COM

USGS LOCUS MAP

SLATE SCHOOL

5100 Ridge Road
NORTH HAVEN, CONNECTICUT

N

0 500 1,000
Feet

SCALE	1 " = 2,000 '
DATE	10/26/2020
PROJ. NO.	6156-03

FIG. 1

MXD: Y:\6156-03\Design\GIS\Maps\SoilMap.mxd

MILONE & MACBROOM
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773
www.mminc.com

NRCS SOIL MAP

SLATE SCHOOL

5100 RIDGE ROAD
NORTH HAVEN, CONNECTICUT

SOURCE: 2013, NATIONAL GEOGRAPHIC SOCIETY

DATE: OCTOBER 16, 2020		
SCALE: 1"=100'		
PROJ. NO.: 6156-03		
DESIGNED ATB	DRAWN ATB	CHECKED MBR

DRAWING NAME:

FIG. 2

MXD: Y:\6156-03\Design\GIS\Maps\wetland_delineation.mxd

MILONE & MACBROOM
99 Realty Drive
Cheshire, Connecticut 06410
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WETLAND DELINEATION

SLATE SCHOOL

5100 RIDGE ROAD
NORTH HAVEN, CONNECTICUT

SOURCE: 2013, NATIONAL GEOGRAPHIC SOCIETY

DATE: OCTOBER 16, 2020		
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FIG. 3