



ENGINEERING MEMORANDUM

To: Town of Montville
Land Use & Development Department
Liz Burdick / Director

From: Casey J. Burch / Solli Engineering

Subject: Proposed 2-Lot Subdivision of 958 Route 163
958 Route 163, Montville, CT (MBL: 046-008-000)

Date: July 21, 2023

Solli Engineering, LLC has prepared this memorandum to provide an analysis of the site layout, zoning compliance, grading design, soil erosion control measures, and subsurface sewage disposal design associated with the proposed site improvements of 958 Route 163, Montville, Connecticut. The proposed subdivision and associated design elements are in compliance with applicable Town of Montville regulations as well as other applicable state and federal requirements. The following summarizes the proposed project activities.

Property Description:

The property of 958 Route 163 is located along Connecticut Route 163, approximately 800 feet south of Raymond Hill Road in Montville, Connecticut. The current residence is located along the eastern edge of the property and is accessed via an existing bituminous concrete driveway fronting Route 163. The project and surrounding neighborhood are presently within a Residential (R-120) Zone. The property is approximately 30.66 acres and has a property frontage of approximately 969 linear feet along Route 163.

The 30.66-acre site currently consists of a 1,809 square-foot (footprint) residential dwelling, detached garage, and associated site improvements. Electric, telephone, and cable services are provided from Route 163 via overhead wires. The residence consists of an existing sanitary sewer system, located to the west of the dwelling. Water is provided by an on-site well.

A site visit was conducted on January 26, 2023 by James M. McManus of JMM Wetland Consulting Services, LLC. According to his observations, wetlands were found in the northwestern portion of the property and at the southeastern boundary between this property and Route 163, approximately 900 linear feet from the existing dwelling and 580 linear feet from the existing dwelling, respectively. The site consists of approximately 1.62 acres of on-site wetland area.

According to the FEMA Flood Map Service Center (MSC), flood map number 09011C0331G, effective on 7/18/2011, the project site falls within "Zone X" as defined by FEMA. Zone X is defined as "the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood". This indicates that the project site is not within a flood zone and requires no special considerations relative to flooding for its implementation.

According to information taken from ARCGIS Public Water Supply Watersheds, the property is not located within a Public Drinking Water Supply Watershed. The Town of Montville does not have any existing aquifer protection areas, therefore the project is also not located within an Aquifer Protection Area.

Project Narrative:

The applicant, The Nevar Company, seeks to subdivide the existing property of 958 Route 163 into two lots (Lot 1 & Lot 2). Lot 1 will be approximately 9.803 acres and will be comprised of the existing residential dwelling and associated driveway, septic system, and well service. The frontage of Lot 1 will be 515.2 linear feet along Route 163. Lot 2 will be approximately 20.853 acres and will consist of the existing farmland and wooded area to the west. The frontage of Lot 2 will be 454.1 linear feet along Route 163. Refer to the Subdivision Plans (Sheet 1 of 2 & Sheet 2 of 2) submitted as part of this application for more information regarding the subdivision layout, areas, and frontages.

Lot 1 will retain its electrical service via existing overhead wires from Route 163. The existing well and septic system will also be maintained as part of this subdivision. The project provides the design and layout of a new reserve leaching system area for the existing dwelling located on Lot 1. Refer to the Potential Development Plan (Sheet 2.11) for more information regarding the utility design and infrastructure associated with Lot 1.

For the purposes of this application Lot 2 will be designed for residential use. The application proposes a 1,275 square-foot (footprint), four-bedroom, multi-story residential dwelling with associated driveway, earthwork, subsurface sewage disposal system, and utility infrastructure. The proposed house located on Lot 2 will receive utilities from Route 163. Electrical, cable, and telephone will be provided with overhead connections to an existing utility pole along Route 163 then travel via an underground connection, along the proposed driveway, to the proposed dwelling. The proposed dwelling will also require a subsurface sewage disposal system to accommodate a four-bedroom effluent generation. For more information regarding the proposed subsurface disposal system refer to the *Subsurface Sewage Disposal* section below.

Subsurface Sewage Disposal:

The proposed residential dwelling on Lot 2 has been designed with a subsurface sewage disposal system comprised of a series of sewer drains, septic tank, distribution box, primary leaching area, and reserve leaching area. The subsurface sewage disposal system proposed for the subdivision was designed in accordance with the technical standards established in the “Connecticut Public Health Code; On-site Sewage Disposal Regulations, and Technical Standards for Subsurface Sewage Disposal Systems” published by the Commissioner of Public Health, dated January 2018.

A representative from Solli Engineering performed test pits and percolation tests on June 6, 2023, for the proposed reserve leaching area of Lot 1, and the proposed primary leaching area and reserve leaching area of Lot 2. These observation pits and testing were observed by Michael Kirby with the Uncas Health District. A total of nine test pits were observed. The soils in each pit were, for the most part, consistent throughout. Topsoil (A horizon) ranged from 6 inches to 18 inches and was observed as a sandy loam, dark brown in color. The B horizon, below the topsoil, was generally 2 to 3 feet in depth, and was observed to be a sandy loam, medium brown in color. The C horizon was observed below the B horizon at depth to a depth of 6 to 9 feet deep; this layer consisted of a loamy sand, medium brown in color. Some pits had an additional C horizon that lay directly beneath the B horizon that was tan in color and had a consistency similar to loamy sand.

Four percolation tests were performed within the proposed leaching areas; two within the primary leaching area and one for each of the reserve leaching areas. The majority of the percolation rates were calculated to be 1-10 minutes

per inch with one of the test resulting in a percolation rate of 10.1-20 minutes per inch. The subsurface sewage disposal system was designed utilizing the Mantis 536-8 leaching chamber, which provides an ELA of 11.0 SF/LF. The four-bedroom residential dwelling will include a primary leaching system consisting of 75 LF of the Mantis 536-8 leaching chambers. For more information regarding the septic system design please refer to the Potential Development Plan (Sheet 2.11) included as part of this submission.

Soil Erosion & Sediment Control:

The soil erosion and sediment control measures proposed for this project have been developed in accordance with the Town of Montville Subdivision Regulations, as well as the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, prepared by the Connecticut Council on Soil and Water Conservation in cooperation with the Connecticut Department of Environmental Protection.

The soil erosion and sediment control measures that will be proposed as part of this project include geotextile silt fences, a construction entrance, dust control measures, and inlet protection on existing drainage structures.

The anticipated starting date for construction is Fall 2023 with completion anticipated by Spring 2024 (approximately 6 months). Appropriate erosion control measures as described herein shall be installed by the contractor prior to the commencement of site clearing or construction activity.

All sedimentation and erosion control measures, including the construction of stone construction entrance anti-tracking pads, will be installed prior to the start of clearing and grubbing operations. Following installation of all sedimentation and erosion control measures, the contractor shall not proceed with grading, filling, or other construction operations until the Engineer of Record (or representative of Engineering of Record) has inspected and approved the installations. The contractor shall take extreme care during clearing and grubbing operations so as not to disturb unprotected wetland areas or sedimentation and erosion control devices. Following the completion of clearing and grubbing operations, all areas shall be stabilized with topsoil and seeding or processed aggregate stone as soon as practical. All removed invasive plant species material shall be fully removed from the site and taken to an approved and/or acceptable disposal location.

During the removal and/or placement of earth as indicated on the Potential Development Plan (Sheet 2.11), topsoil shall be stripped and appropriately stockpiled for reuse. All stockpiled topsoil shall be seeded, mulched with hay, and enclosed by a siltation fence.

Prior to excavation/filling, all sedimentation and erosion control devices shall be properly implemented, maintained, and fully installed, as directed by the engineer and as shown on the permitting plans. All fill material adjacent to any wetland areas, if applicable to this project, shall be good quality, with less than 5% fines passing through a #200 sieve (bank run), shall be placed in lift thickness not greater than that specified in project specifications. Lifts shall be compacted to 95% max. dry density modified proctor. As general grading operations progress, any temporary diversion ditches shall be raised or lowered, as necessary, to divert surface runoff to the sediment traps.

Silt fences shall be installed at the downhill sides of mud pump discharges and utility trench material stockpiles. Hay bales may be used if shown on the erosion control plans or if directed by the Engineer of Record.

No cut or fill slopes shall exceed 2:1 except where stabilized by rock faced embankments or erosion control blankets, jute mesh and vegetation. All slopes shall be seeded, and any road or driveway shoulder and banks shall be stabilized immediately upon completion of final grading until turf is established. After construction of topsoil, final seed, mulch

and landscaping, remove all temporary erosion control devices only after all areas have been paved and/or grass has been well established, and the site has been inspected and approved by the Town of Montville Land Use Agent.

For the installation of the proposed siltation fence, the Contractor shall dig a six-inch trench on the uphill side of the designated fence line location. Position the post at the back of the trench (downhill side) and hammer the post at least 1.5 feet into the ground. Lay the bottom six inches of the fabric into the trench to prevent undermining by storm water runoff. Backfill the trench and compact. All siltation fences shall be inspected as a minimum weekly or after each rainfall. All deteriorated fabric and damaged posts shall be replaced and properly repositioned in accordance with this plan. Sediment deposits shall be removed from behind the fence when they exceed a height of one foot.

Refer to the Soil Erosion & Sediment Control Plan (Sheet 2.31) for more detail regarding layout and design of the soil erosion and sediment control measures implemented as part of this project.

SUPPORTING DOCUMENTS

FIGURES

Figure 1 - Site Location Map

Figure 2 - FEMA Flood Map

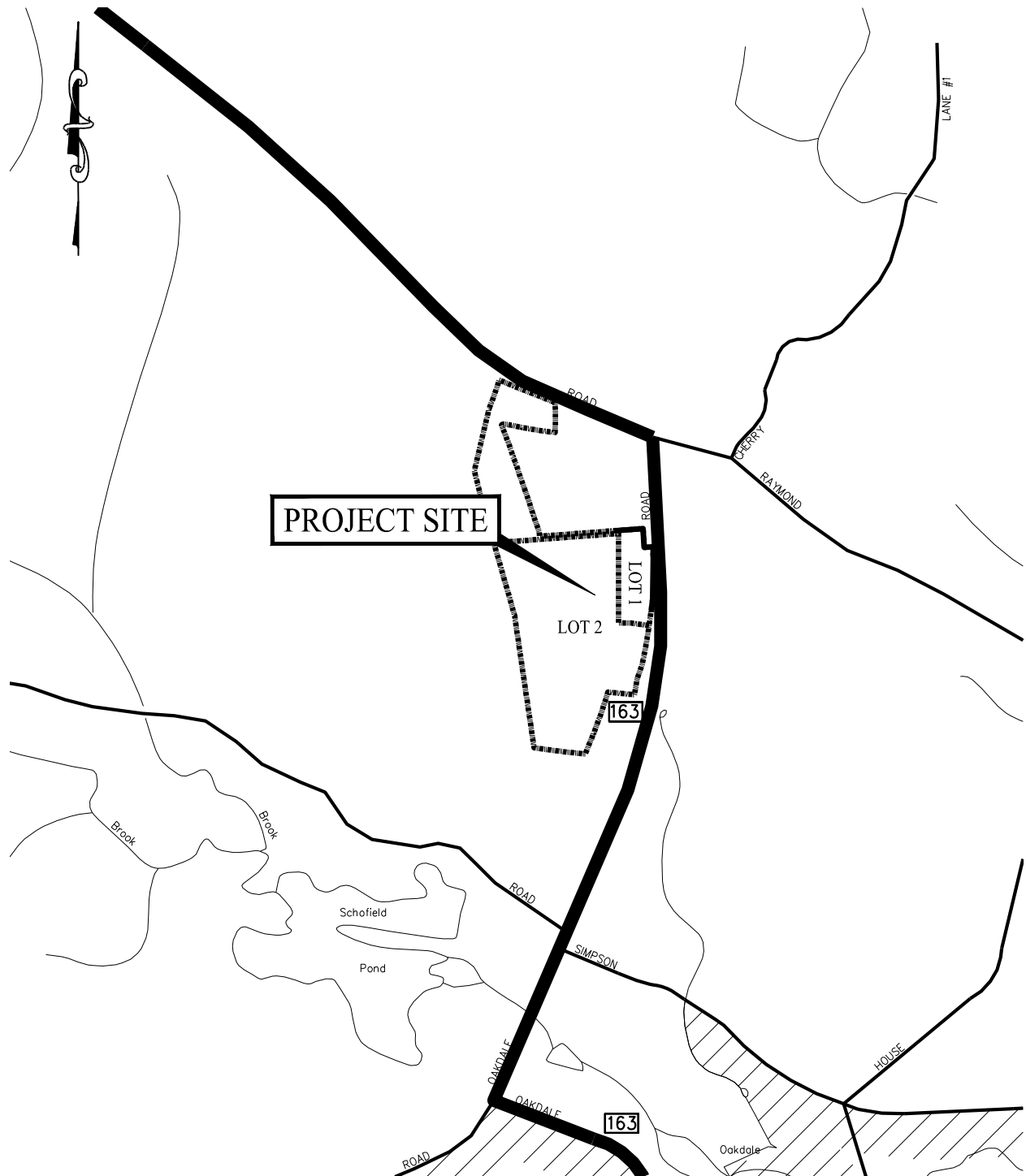
Figure 3 - Soil Survey Map

Figure 4 – Public Water Supply Watershed Map

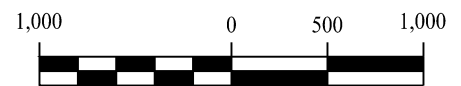
PLANS

See under separate cover the Civil Permitting Set titled “Proposed 2-Lot Subdivision of 958 Route 163”, dated July 17th, 2023; prepared by Solli Engineering.

- Sheet 0.00 – Cover Sheet
- Sheet 1 of 2 – Property & Topographic Survey
- Sheet 2 of 2 – Property & Topographic Survey
- Sheet 1.11 – Subdivision Plan (Sheet 1 of 2)
- Sheet 1.12 – Subdivision Plan (Sheet 2 of 2)
- Sheet 1.40 – 100’ Radius Map
- Sheet 2.11 – Potential Development Plan
- Sheet 2.31 – Soil Erosion & Sediment Control, Notes & Details
- Sheet 3.01 – Construction Details
- Sheet 3.02 – Construction Details



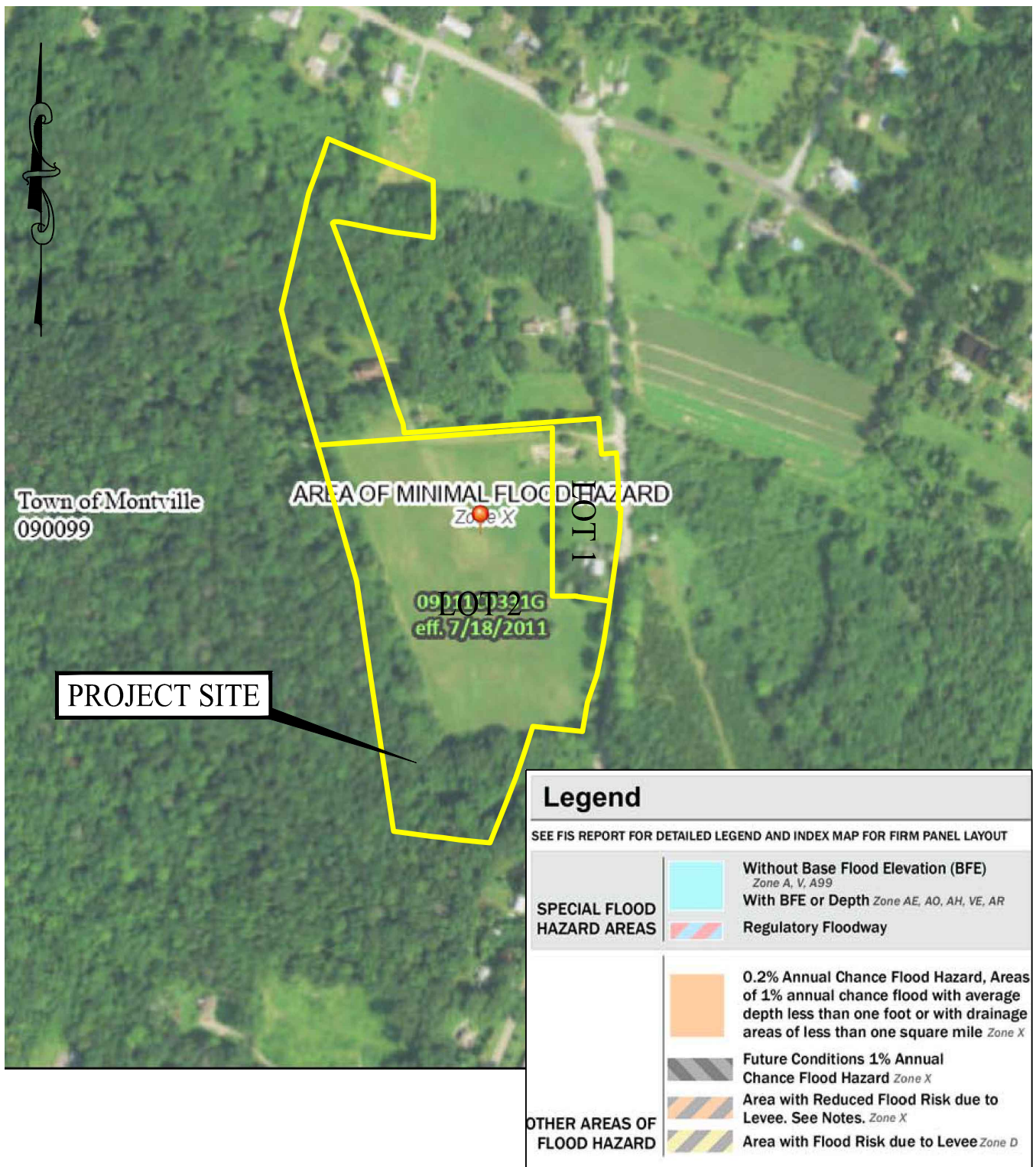
NOTE: BASE MAP INFORMATION TAKEN
FROM CT DOT TRU MAP NUMBER 084



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SITE LOCATION MAP
958 ROUTE 163
MONTVILLE, CONNECTICUT




Project #:	22109401
Plan Date:	07/17/23
Scale:	1" = 1,000'
Figure:	1







Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

-  Without Base Flood Elevation (BFE)
Zone A, V, A99
-  With BFE or Depth Zone AE, AO, AH, VE, AR
-  Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

-  0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
-  Future Conditions 1% Annual Chance Flood Hazard Zone X
-  Area with Reduced Flood Risk due to Levee. See Notes, Zone X
-  Area with Flood Risk due to Levee Zone D

NOTE: BASE MAP INFORMATION TAKEN FROM
FEMA FLOOD INSURANCE RATE MAP, MAP
NUMBER 09011C0331G, EFFECTIVE 07/18/2011.



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FEMA FLOOD MAP

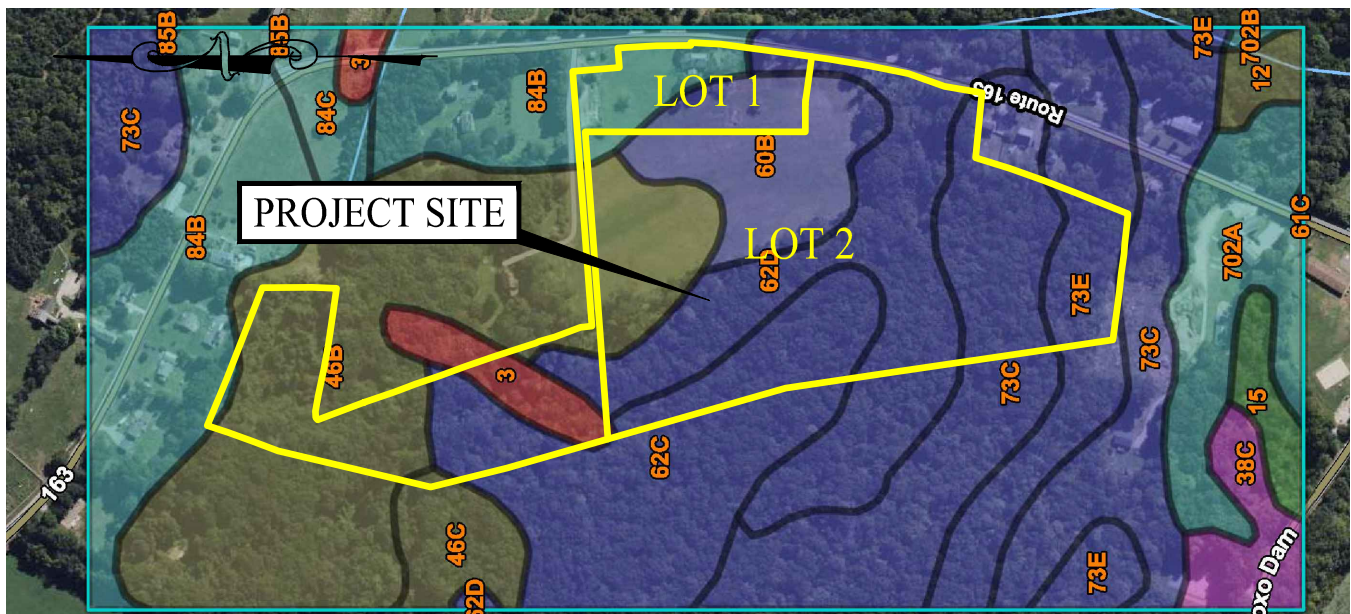
958 ROUTE 163
MONTVILLE, CONNECTICUT

Project #: 22109401

Plan Date: 07/17/23

Scale: 1" = 500'

Figure: 2



Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	3.7	4.1%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	C/D	19.0	20.8%
46C	Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony	C/D	2.0	2.2%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	5.3	5.8%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	B	10.8	11.9%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B	12.9	14.1%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	10.0	10.9%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	2.2	2.4%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	16.7	18.3%

NOTE: BASE MAP RESOURCES TAKEN FROM THE
NATURAL RESOURCES CONSERVATION SERVICE, URL:
<https://websoilsurvey.sc.egov.usda.gov>



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SOIL SURVEY MAP

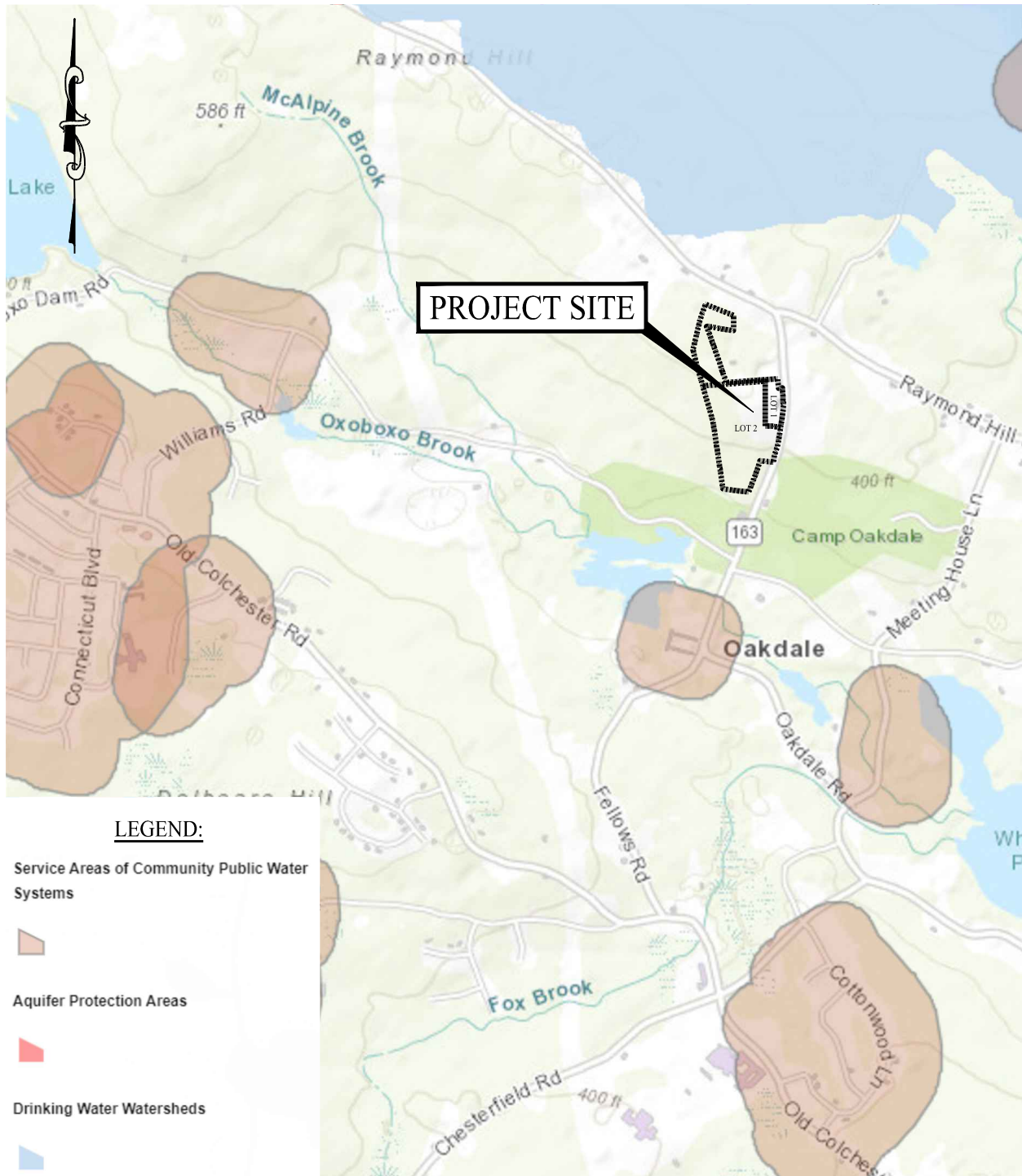
958 ROUTE 163
MONTVILLE, CONNECTICUT

Project #: 22109401

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Scale: 1" = 500'

Figure: 3



NOTE: BASE MAP INFORMATION TAKEN FROM
CONNECTICUT STATE DEPARTMENT OF
PUBLIC HEALTH GIS MAP



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**PUBLIC SUPPLY
WATERSHED MAP**
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MONTVILLE, CONNECTICUT

Project #:	22109401
Plan Date:	07/17/23
Scale:	1" = 2,000'
Figure:	4