



Ian Cole LLC

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February 1, 2026

Mr. Peter Gardner, P.L.S.
Dieter & Gardner, Inc.
Land Surveying Planning Engineering
P.O. Box 335
Gales Ferry, CT 06335

**RE: WETLAND EVALUATION REPORT
HOLDRICH PROPERTY
MBL: 40-490-31
31 CHURCH HILL ROAD
LEDYARD, CONNECTICUT**

Dear Mr. Gardner:

At Dieter & Gardner Inc's request, I completed both the wetland delineation and prepared this letter report which details an evaluation of the on-site wetland resources and the development impacts that potentially could result from the proposed plans to construct a new driveway including 2 wetland crossings and associated site improvements to service a single family residence located in the northern portion of the site.

I offer the following comments for consideration in evaluating the proposed project.

PROPOSED ACTIVITIES

The applicant is proposing to develop a new single-family residential dwelling and associated appurtenances on the northern sandy portion of the overall 3.37-acre lot. The new proposed dwelling would be accessed by a standard 12-foot wide paved driveway and will be serviced by on-site septic and drilled well. The new driveway will need to cross two narrow flagged wetland areas associated with the source of concentrated flow that forms two ephemeral intermittent watercourses that flow west, bisecting the middle of the site.

Prior to construction erosion and sediment control barriers installed at the limits of disturbance. These site protection measures will be maintained throughout construction and will be removed once the site is stabilized. Clearing limits have been minimized to the extent it is practical to develop the lot. The site work proposed will not significantly impact on the wetlands and will preserve the bulk of the 100-foot upland review area in its existing natural undisturbed state. Details of the location and extent of the proposed regulated activities are illustrated on the subject site plans.

WETLAND and UPLAND REVIEW AREA RESOURCES

The inland wetland and watercourse boundaries were delineated on July 26 of 2024. The wetland boundary is accurately represented on the proposed development plans prepared by Dieter & Gardner Inc. Dated January 28, 2026.

The property is wooded, dominated by a mixed hardwood forest overstory with stony ground conditions. The building site is situated on a sandy knoll. The on-site soils originated from several sources of parent material including glacial melt-out till and pockets of sandy outwash. The site is not located in an aquifer protection area. The site drains to the west towards Joe Clark Brook and falls within the Poquetanuck Brook subregional drainage basin (CTDEEP #3003).

A forested wetland system was flagged in the vicinity of the proposed development. To access the development site the new driveway will need to cross two narrow intermittent wetlands that flows west through the middle of the site. The hydrology regime supporting the intermittent watercourse is very ephemeral and flows are carried in a narrow, shallow, stony channel. The wetland system receives untreated stormwater runoff from a 24" CMP that discharges from Church Hill Road onto the property. Because of the low-gradient watercourse channel, narrow configuration and rocky ground conditions, during the dry season portions of this system are nearly unrecognizable as a wetland to the layperson.

Overall, the wetlands system west of the development is seasonally flooded, with a longer hydro period compared to the wetland crossing the driveway must traverse. The wetland boundary is located along a distinct break in slope and is confined to the stony and boulder-field conditions that characterize the wetland floor in the drainageway. The wetland community exhibits classic Red Maple swamp vegetation, including:

Trees: Red Maple, yellow birch and shagbark hickory.

Shrubs: Highbush blueberry, spicebush, sweet pepperbush, and Japanese barberry.

Herbaceous: Sphagnum moss, marsh fern, cinnamon fern, and skunk cabbage.

The above is not an exhaustive list, but a sample of commonly encountered vegetation that characterizes the on-site wetland community. Representative photos of the site are attached below.

SOIL SURVEY

The soils identified on-site are a refinement of the Natural Resources Conservation Service (NRCS) Websoil Soil Survey.

Wetland Soils

The wetlands soils are classified as (3) Ridgebury, Leicester, and Whitman fine sandy loams. The poorly drained soils along the wetland boundary belong to the Ridgebury and Leicester soil series. Ridgebury and Leicester soils are found within drainageways and depressions on glacial till landscapes. Ridgebury and Leicester soils have a seasonal high-water table at a depth of about 6 inches. Very poorly drained Whitman soils are found in the lowest lying areas within the wetland system where the water table is at the surface thought most of the growing season.

Upland Soils

The portions of the uplands within development envelope for the planned homesite are mapped and classified as excessively well drained Hinckley sands and gravel. The soils along the proposed driveway alignment from the site's access at the road through the second wetland crossing are mapped and classified as Charlton-Chatfield fine sandy loams. Charlton soils are well drained fine sandy loams and are generally unrestricted for development purposes. Chatfield soils are associated with shallow depth to ledge and rocky ground conditions.

WETLAND FUNCTIONS AND VALUES ANALYSIS

The assessment of wetlands and watercourses functions and values is based on the US Army Corps of Engineers' (USACE) *The Highway Methodology Workbook, A Descriptive Approach* (1995) methodology, and on best professional judgment.

The functions and values of the wetland corridor is summarized in Table 1. The *Highway Methodology* recognizes 13 separate wetland functions and values. The degree to which a wetland provides each of these functions is determined by one or more of the following factors: landscape position, substrate, hydrology, vegetation, history of disturbance, and size. Each wetland may provide one or more of the listed functions at significant levels. The determining factors that affect the level of function provided by a wetland can often be broken into two categories. The effectiveness of a wetland to provide a specified function is generally dependent on factors within the wetland whereas the opportunity to provide a function is often influenced by the wetland's position in the landscape as well as adjacent land uses. For example, a depressed wetland with a restricted outlet may be considered highly effective in trapping sediment due to the long residence time of runoff water passing through the system. If this wetland is located in gently sloping woodland, however, there is no significant source of sediment in the runoff therefore the wetland is considered to have a small opportunity of providing this function.

Wetland Functions and Values	Groundwater Recharge/Discharge	Sediment/Shoreline Stabilization	Floodflow Alteration	Fish & Shellfish Habitat	Sediment/Toxicant/Pathogen Retention	Nutrient Removal/Attenuation	Production Export	Wildlife Habitat	Recreation	Educational/Scientific Value	Uniqueness/Heritage	Visual Quality/Aesthetics	Listed Species Habitat
WETLAND	P	U	U	U	S	S	S	S	U	U	U	U	U
<u>Suitability</u> P = principal function S = secondary function U = function unlikely to be provided at a significant level N/A = not applicable or unknown													

Table:1 Wetland Functions and Values

The wetland system provides groundwater discharge at the principal level. The water course is an expression of discharge and helps maintain downstream baseflows. The wetlands that will be crossed with the driveway entrance have functions and values that are limited due to the narrow confines of the wetland, lack of open water, lack of deep organic soils or thick topsoil to provide residency and retention of water, pollutants and sediments and private ownership of the site. The upper edge of the wetlands and the upland review area closest to the development are not as highly functioning in comparison to the interior / downgradient portion of the wetland and where the hydrology is more persistent throughout the year and there are pockets of organic soils accompanied by a diversity of wetland vegetation; it is within this interior downstream wetland zone the system is more sensitive and includes the more beneficial part of the overall wetland system.

IMPACT ASSESSMENT

To access the building lot will require crossing both wetland fingers that span across the middle portion of the parcel. There is no less impactful way to access the building site then the two selected crossing points. Construction of the driveway will be short duration, taking just a few days. The short duration of construction will reduce the overall risk of sedimentation or hydraulic disruption to the wetland systems.

The both crossings will use a 24" pipe cross the ephemeral features creating a permanent disturbance of less than 3,500 SF. The culvert will maintain the existing flow dynamics and function of the intermittent watercourse. The proposed driveway pipes match capacity of the 24" CMP that collects untreated roadside drainage and discharges onto the site.

The proposed wetland fill will not change the overall character of the wetlands and watercourses in a negative or adverse way. Post development the watercourse will still maintain the same capacity to convey stormwater and seasonal groundwater runoff.

Because of the limited disturbances associated with the driveway crossings and the fact there is no loss of wetland functionality; no physical mitigation is proposed, as it would be counterproductive to clear and grade additional established forested areas to install plantings. Due to the extents of the wetlands and limited uplands available on-site requires unavoidable activities within the 100-foot upland review area. Activities in the upland review area generally include only those activities to construct the driveway entrances. The bulk of the development(s) falls outside the 100-foot upland review area.

Stormwater runoff and grading has been designed to promote sheet flow and infiltration into the ground. There will be no substantial changes to hydrology or watershed of the wetland feature. There will be no changes in the wetland vegetation community or overall species composition of the wetlands as a result of the proposed development(s). The applicant will mitigate construction related impacts by implementing standard construction Best Management Practices (BMPs) and conforming to permit conditions.

The proposed activities are not likely to have a significant effect on the environment for the following reasons:

1. There is minor filling of an inland wetland and/or watercourse to facilitate two driveway crossings, one of which is at a location where a driveway previously crossed the wetlands and was removed.
2. The project will not substantially change the natural channel or negatively inhibit the natural dynamics of the wetland system.
3. The proposed activities within the uplands will not diminish the capacity of the wetland. The wetland will provide the same wetland functions and values post development.
4. The erosion and sediment controls will protect the environment from the proposed activities and if appropriately installed, monitored and maintained will not likely cause or have the potential to cause substantial turbidity, siltation or sedimentation in a wetland or watercourse.
5. No activities will cause a substantial diminution of flow of a natural watercourse or groundwater levels of the regulated area.
6. The site development will have health department approval and is unlikely to cause or have the potential to cause pollution of the wetland.
7. The wetland features are not unique, nor do they provide demonstrable scientific or educational value.

In considering feasible and prudent alternatives, the current proposal respects the integrity of the environment, has minimal wetland impact, and implements best management practices that will protect the adjacent resource areas. There are no less impactful ways to access the homesite and therefore, the proposal is the most feasible and prudent alternative for the development of this property, giving due consideration to balancing the protection of the inland wetlands and watercourses while fostering reasonable development and use of the site.

In my professional opinion there will be no significant adverse impacts resulting from the development of the project as currently proposed. The activities required to facilitate the development will not result in any loss of function to wetlands and watercourses. Post development the wetlands and watercourses will still have the same ability to perform the existing functions currently provided.

Please do not hesitate to contact me at itcole@gmail.com or (860) 514-5642 if you have any questions or need any additional information.

If you have any questions or comments, please do not hesitate to contact me at itcole@gmail.com or (860) 514-5642.

Sincerely,



Ian T. Cole
Professional Registered Soil Scientist
Professional Wetland Scientist #2006

ATTACHMENTS

SITE PHOTOS

GIS MAP

SOIL MAP

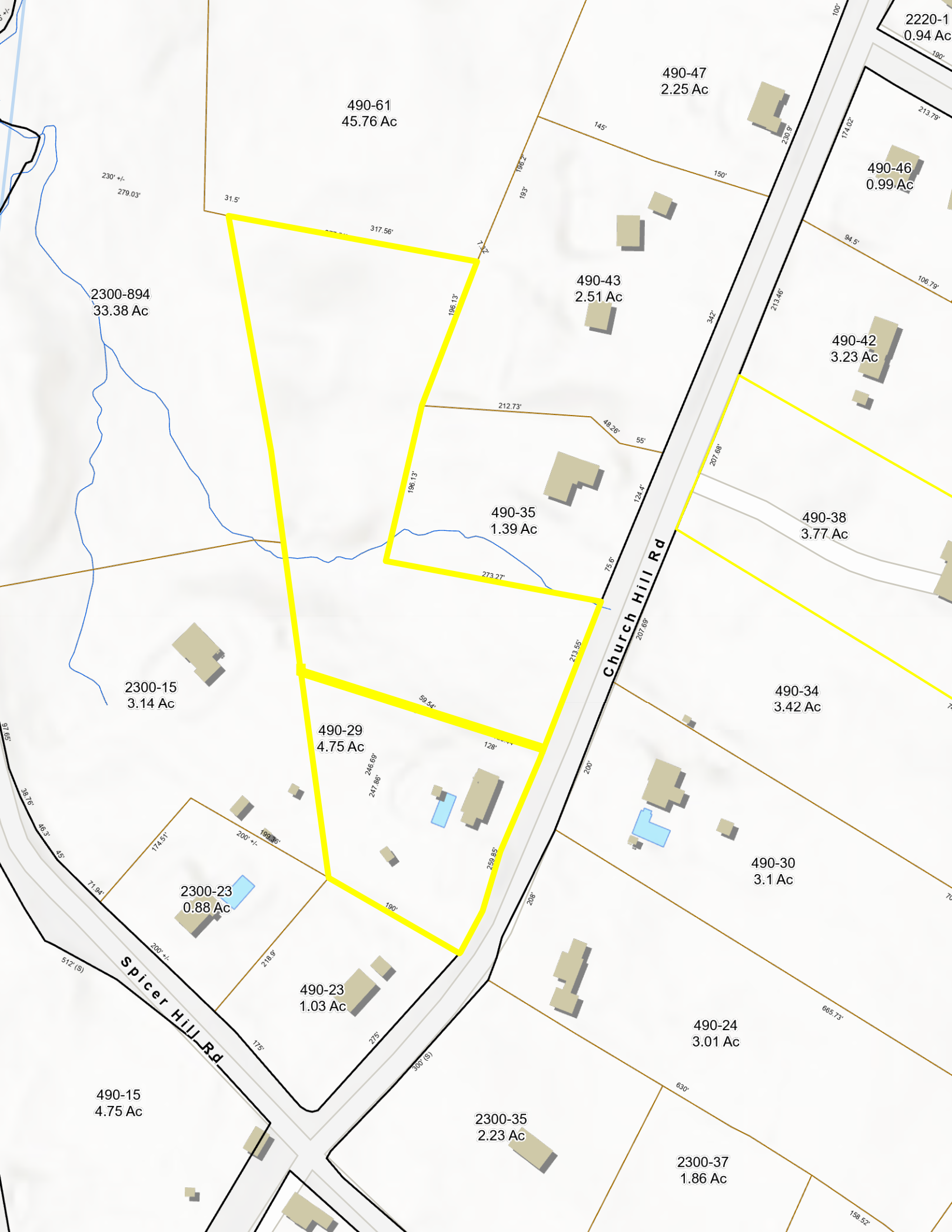
SITE PHOTOS TAKE JULY 26, 2024
31 CHURCH HILL ROAD, LEDYARD CT



Photo 1: Typical conditions of the flagged wetlands that need to be crossed.



Photo 2: General upland conditions of at the building site.



2220-1
0.94 Ac

490-47
2.25 Ac

490-61
45.76 Ac

490-46
0.99 Ac

2300-894
33.38 Ac

490-43
2.51 Ac

490-42
3.23 Ac

490-35
1.39 Ac

490-38
3.77 Ac

2300-15
3.14 Ac

490-34
3.42 Ac

490-29
4.75 Ac

2300-23
0.88 Ac

490-30
3.1 Ac

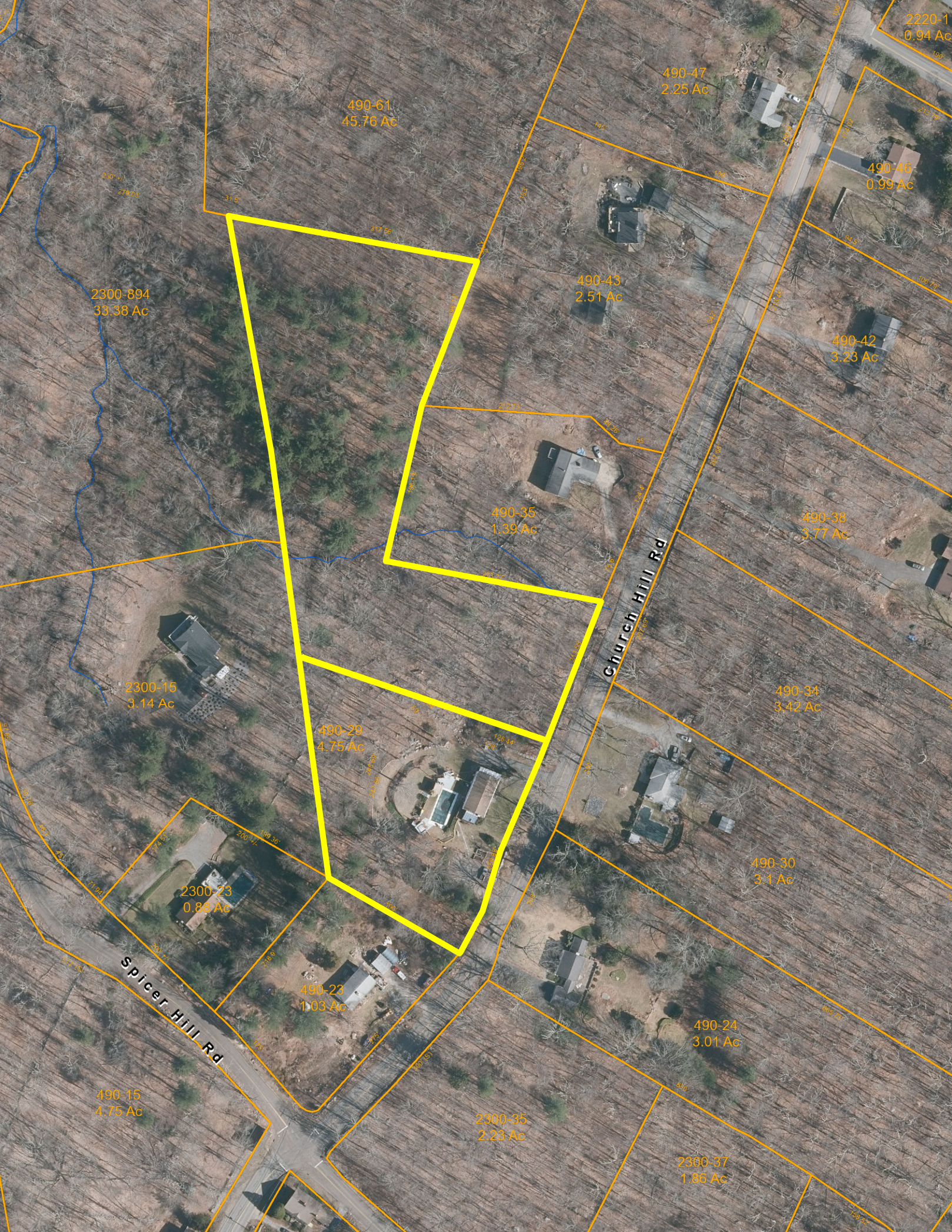
490-23
1.03 Ac

490-24
3.01 Ac

490-15
4.75 Ac

2300-35
2.23 Ac

2300-37
1.86 Ac



2220-1
0.94 Ac

490-47
2.25 Ac

490-61
45.76 Ac

490-46
0.99 Ac

490-42
3.23 Ac

490-43
2.51 Ac

490-38
3.77 Ac

490-35
1.39 Ac

2300-15
3.14 Ac

490-34
3.42 Ac

490-29
4.75 Ac

490-30
3.1 Ac

2300-23
0.88 Ac

490-23
1.03 Ac

490-24
3.01 Ac

490-15
4.75 Ac

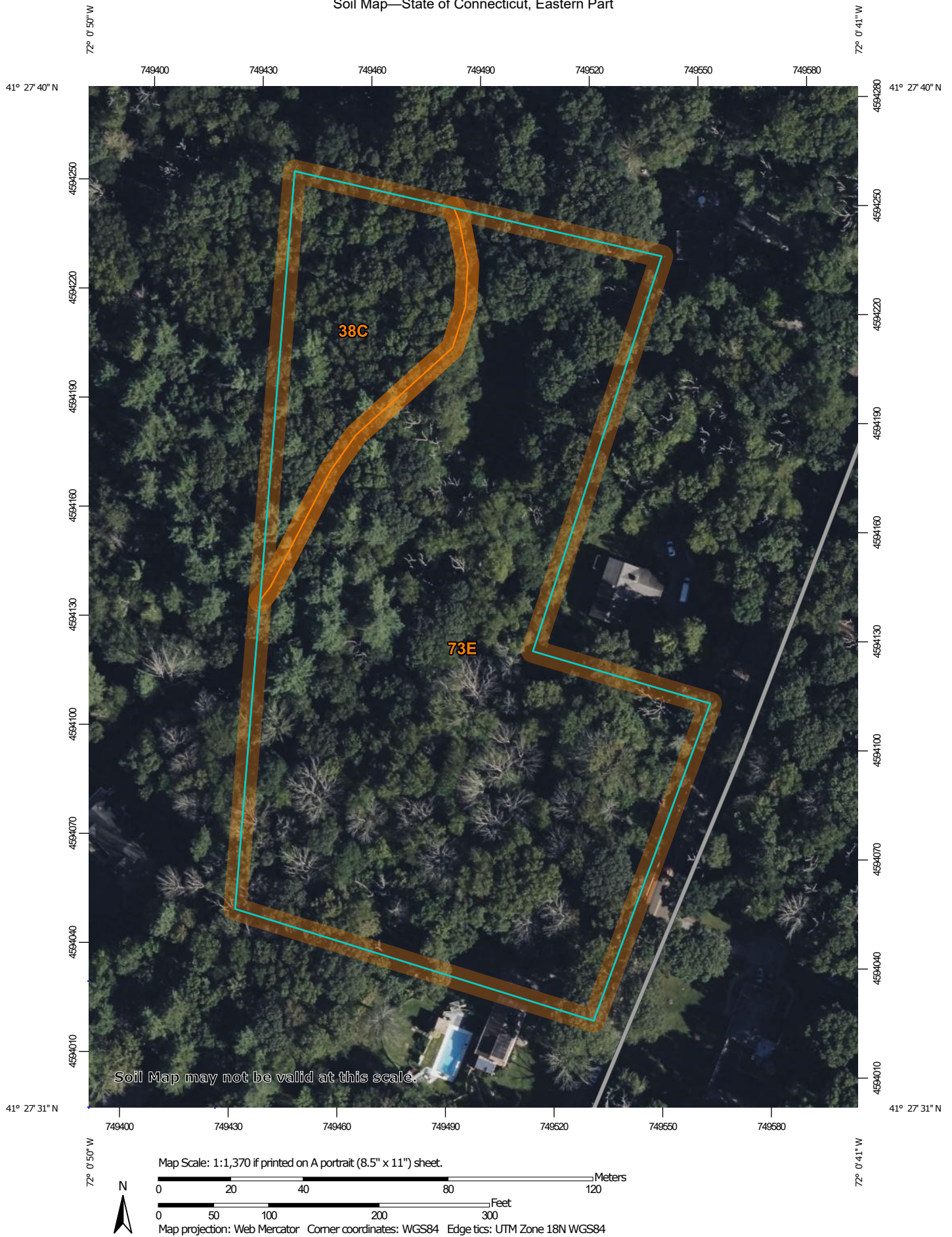
2300-35
2.23 Ac

2300-37
1.86 Ac

Spicer Hill Rd

Church Hill Rd

Soil Map—State of Connecticut, Eastern Part



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

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

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 6, Sep 16, 2025

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
38C	Hinckley loamy sand, 3 to 15 percent slopes	0.9	16.5%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	4.3	83.5%
Totals for Area of Interest		5.2	100.0%