



Chairman
Justin DeBrod

TOWN OF LEDYARD CONNECTICUT

741 Colonel Ledyard Highway
Ledyard, Connecticut 06339

Inland Wetland and Water Courses Commission

~ AGENDA ~

Regular Meeting

Tuesday, April 7, 2026

7:00 PM

Council Chambers -Hybrid Format

REMOTE MEETING INFORMATION

Join Zoom Meeting

<https://ledyardct.zoom.us/j/89510601208?pwd=GQ6oCVa9Daa6Bwz1pihzKpIDWxD2S.1>

Meeting ID: 895 1060 1208 Passcode: 942328

One tap mobile

+13092053325,,89510601208#,,,,*942328# US

- I. CALL TO ORDER
- II. PLEDGE OF ALLEGIANCE
- III. ROLL CALL AND APPOINTMENT OF ALTERNATES
- IV. APPROVAL OF ADDITIONS TO AND/OR CHANGES TO THE ORDER OF THE AGENDA
- V. CITIZENS PETITIONS (NON-AGENDA ITEMS ONLY)
- VI. PRE APPLICATION DISCUSSION AND/OR WORKSHOP

None.

VII. PUBLIC HEARINGS/APPLICATIONS

- A. Public Hearing: IWWC#26-3SITE - 25 Harvard Terrace (MAP ID: 9/910/25) & 39 Military Hwy (MAP ID: 92/1590/39), Gales Ferry CT,- Applicant/Agent, Town of Ledyard, - Property Owners, Avalonia Land Conservancy Inc. & C.R Klewin LLC, for regulated activities, including maintenance and repair of existing stormwater inlet and outlet infrastructure, and removal of a beaver dam and other obstructions at both locations to improve drainage and reduce flooding. (Submitted 2/26/26, Date of Receipt 3/3/26, PH set for 4/7/26, PH close by 5/11/26, DRD-35-days from close of PH)

- Attachments:** [FD#1 IWWC#26-3SITE ApplicationForm Rec022626](#)
[FD#2 IWWC#26-3SITE ApplicationNarrative Rec022626](#)
[FD#3 IWWC#26-3SITE Hydrologic&HydraulicReport Rec022626](#)
[FD#4 IWWC#26-3SITE](#)
[SoutheasternCTRoadStreamCrossingAssessment Rec022626](#)
[FD#5 IWWC#26-3SITE DamInspectionReportForm Rec022626](#)
[FD#6 IWWC#26-3SITE AbuttersList&Map25HarvardTerrace
rec022626](#)
[FD#7 IWWC#26-3SITE AbuttersList&Map39MilitaryHwy
Rec022626](#)
[FD#8 IWWC#26-3SITE MapDemonstratingOutlet&InletAreas
rec022626](#)
[EX#9 IWWC#26-3SITE AvaloniaLandConservancyPermissionEmail
Rec030226](#)
[EX#10 IWWC#26-3SITE CRKlewinPermissionEmail Rec030226](#)
[EX#11 IWWC#26-3 SITE NoticePHDay Rec030926](#)
[EX#12 IWWC#26-3SITE TheDayConfirmation Rec032926](#)

- B.** Discussion & Decision: IWWC#26-3SITE - 25 Harvard Terrace (MAP ID: 9/910/25) & 39 Military Hwy (MAP ID: 92/1590/39), Gales Ferry CT,- Applicant/Agent, Town of Ledyard, - Property Owners, Avalonia Land Conservancy Inc. & C.R Klewin LLC, for regulated activities, including maintenance and repair of existing stormwater inlet and outlet infrastructure, and removal of a beaver dam and other obstructions at both locations to improve drainage and reduce flooding. (Submitted 2/26/26, Date of Receipt 3/3/26, PH set for 4/7/26, PH must close by 5/11/26, DRD 35-days from close of PH)

VIII. OLD BUSINESS

None.

IX. NEW BUSINESS

- A.** IWWC#26-6RESUB - 84 Silas Deane Road (MAP ID: 42-2220-84) & 58 & 59 Seabury Avenue (MAP ID: 42-2200-58) (MAP ID: 42-2200-59), Owner/Applicant - 84 Silas Deane Road, LLC - Agent, Dieter & Gardner, LLC for regulated activities associated with a proposed 23-Lot Resubdivision, including the construction of a new public road, stormwater drainage system and installation of a dry hydrant (Submitted 3/26/26, Date of Receipt 4/7/26, DRD 6/10/26)

Attachments: [FD#1 IWWC#26-6RESUB - Application Rec032626](#)
[FD#2 IWWC#26-6RESUB AbbuttersList Rec032626](#)
[FD#3 IWWC#26-6RESUB DEEPReportingForm Rec032626](#)
[FD#4 IWWC#26-6RESUB LLHDComments Rec032626](#)
[FD#5 IWWC#26-6RESUB AuthorizationLetter Rec032626](#)
[FD#6 IWWC#26-6RESUB LedyardFireCoLtrSupport Rec032626](#)
[FD#7 IWWC#26-6RESUB IanColeWetlandsEvaluation Rec032626](#)
[FD#8 IWWC#26-6RESUB LBMEngineeringLLCEngineeringReport Rec032626](#)
[FD#9 IWWC#26-6RESUB ResubdivsionPlan Rec032626](#)

- B. IWWC#26-7SITE-1947 Center Groton Road (Map ID:67-430-1947), Ledyard CT,-Applicant, EG Home LLC-Agent, William Sweeney, Esq.- Property Owners, 1947 Center Groton Road LLC, for regulated activities associated with construction of a 72-unit multifamily development & associated site improvements. (Submitted 4/1/26, Date of receipt 4/7/26, DRD 6/10/26)
- C. IWWC#26-2SITE - 31 Church Hill Road, (Map ID: 40-490-31) Ledyard, CT - Agent, Peter Gardner, L.S. - Property Owners, David & Sara Holdridge, for regulated activities associated with the construction of a driveway, including two wetland crossings and associated site improvements, to serve a future single-family residence. Application APPROVED WITH CONDITIONS by the IWWC on 3/3/26. Applicant requests Transfer of the Approved Permit to Ty Curtis per Section 11.9.

Attachments: [FD#1 IWWC#26-2SITE ApplicationForm Rec012826](#)
[FD#2 IWWC#26-2SITE DEEPReportingForm Rec012826](#)
[FD#3 IWWC#26-2SITE PermissionToAccessSite Rec012826](#)
[FD#4 IWWC#26-2SITE SitePlan Rec012826](#)
[FD#5 IWWC#26-2SITE WETLAND EVALUATION REPORT-REC 2-2-26](#)
[FD#6 IWWC#26-2SITE TransmittalLtrTownStaff Rec020326](#)
[FD#7 IWWC#26-2SITE-31 Church Hill Rd WEOComments 203026](#)
[FD#8 IWWC#26-2SITE TownEngineerComments Rec021026](#)
[FD#9 IWWC#26-2SITE WEOComments Rec030326](#)
[FD#10 IWWC#26-2SITE IanColeApproximateWorkLocationDocuments Rec030326](#)
[IWWC#26-2SITE NODApplicantLetter Rec030426](#)
[IWWC#26-2SITE NOD Rec030426](#)
[IWWC#26-2SITE NODTheDayConfirmation Rec030426](#)

X. APPROVAL OF THE MINUTES OF PREVIOUS MEETINGS

- A. IWWC Regular Meeting Minutes of March 3, 2026

Attachments: [IWWC Regular Meeting Minutes 3-3-2026 FINAL](#)

XI. CORRESPONDENCE

Memorandum: Ledyard Agriculture Commission Request for Joint Meeting (Dated 3/19/26)

Attachments: [Memo-LedyardAgricultureCommission-JointMeetingRqst Rec033026](#)

XII. REPORTS

A. Wetlands Report, dated April 7, 2026

XIII. ADJOURNMENT

DISCLAIMER: Although we try to be timely and accurate these are not official records of the Town.



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-0286

Agenda Date: 3/3/2026

Agenda #: A.

LAND USE APPLICATION

Subject/Application:

Public Hearing: IWWC#26-3SITE - 25 Harvard Terrace (MAP ID: 9/910/25) & 39 Military Hwy (MAP ID: 92/1590/39), Gales Ferry CT,- Applicant/Agent, Town of Ledyard, - Property Owners, Avalonia Land Conservancy Inc. & C.R Klewin LLC, for regulated activities, including maintenance and repair of existing stormwater inlet and outlet infrastructure, and removal of a beaver dam and other obstructions at both locations to improve drainage and reduce flooding. (Submitted 2/26/26, Date of Receipt 3/3/26, PH set for 4/7/26, PH close by 5/11/26, DRD-35-days from close of PH)

Background:

(type text here)

Land Use Director/Town Planner:

(type text here)

FD#11

Street No./Name: 25 Harvard Ter. ? 39 Military Hwy

**TOWN OF LEDYARD
INLAND WETLANDS AND WATERCOURSES COMMISSION (IWWC)
APPLICATION FOR PERMIT (Or Commission ruling that a permit is not needed)**

Application No. IWWC#26-3SITE
Receipt Date 3/3/26

Date Submitted 2/26/26

Applicant/Agent Town of Ledyard - DPW Owner (if different) See Application Form Page 2

Address 741 Colonel Ledyard Hwy, Ledyard, CT 06339 Address of Owner _____

Phones 860-464-8740 / cell Phone _____

RECEIVED
FEB 26 2026

- I have received information on the Army Corps of Engineers permit procedure.
- I have read and have included all the application and site plan requirements in Section 7 of the IWWC Regulations

Land Use Department

Steven E. Wilson
Signature of Applicant/ Agent

Location of Property 25 Harvard Terrace/39 Military Hwy

Tax Assessor's Map No. 91 Zoning District R-20

Written Description of Proposed Activity Removal of beaver dam, other obstructions, and other infrastructure maintenance work related to flooding relief and stormwater/drainage flow improvements.

Proposed Erosion/ Sediment Control Measures: Not anticipated to be req'd. Install as necessary during construction.

Total Area of Site See Application Pg 2 Total Area of Wetlands per Official Inventory Map See Application Pg 2

Amount of Fill, in Cubic Yards 0 Disturbed Area, in Square Feet 400 or in Acres _____

Area Increase/Decrease in Wetlands 400 sq ft increase (For Map Amendment Only*)

Soil Types from USDA Soil Survey n/a

General Description of Vegetative Cover native scrub brush, a few trees

Name and Address of Adjacent Property Owners See Attachment 1

Anticipated Start Date TBD Completion Date TBD

List previous IWWC application #'s _____

IWW Commission Disposition: IWWC Regulations; Section _____ Classification _____

Signature of Chair _____

FEE: [] + \$60.00 State Fee = [] DATE PAID [] RECEIPT # []

RECEIVED

FEB 26 2026

Land Use Department

25 Harvard Terrace:

Property Owner: Avalonia Land Conservancy,
Address: 756 Colonel Ledyard Highway, Ledyard CT, 06339
Phone: 860-884-3500

Total Area of Site – 5.45+/-acres

Total Area of Wetlands – Per Town GIS, the majority of the site appears to consist of regulated areas (wetlands, watercourses, upland review areas).

Previous IWWC application for emergency work - IWWC#25-27AR (approved 12/2/25).

39 Military Highway:

Property Owner: C.R Klewin LLC
Address: 3 Johnny Cake Hill Rd, Old Lyme Ct, 06371
Phone: 860-275-8224

Total Area of Site – 18 +/-acres

Total Area of Wetlands – 4.2-acres (per previous 2024 & 2025 IWWC application/map).

Previous IWWC applications unrelated to the current application are IWWC#24-9 (withdrawn) and IWWC#25-5SITE (denied w/out prejudice 8/5/25).



TOWN OF LEDYARD
CONNECTICUT
PUBLIC WORKS DEPARTMENT

FD#2
RECEIVED

FEB 26 2026

Land Use Department
741 Colonel Ledyard Highway
Ledyard, CT 06339
(860) 464-3238
pwd@ledyardct.org

February 25, 2026

Pine Swamp Brook Pond Drainage Remediation (IWWC#26-3SITE)

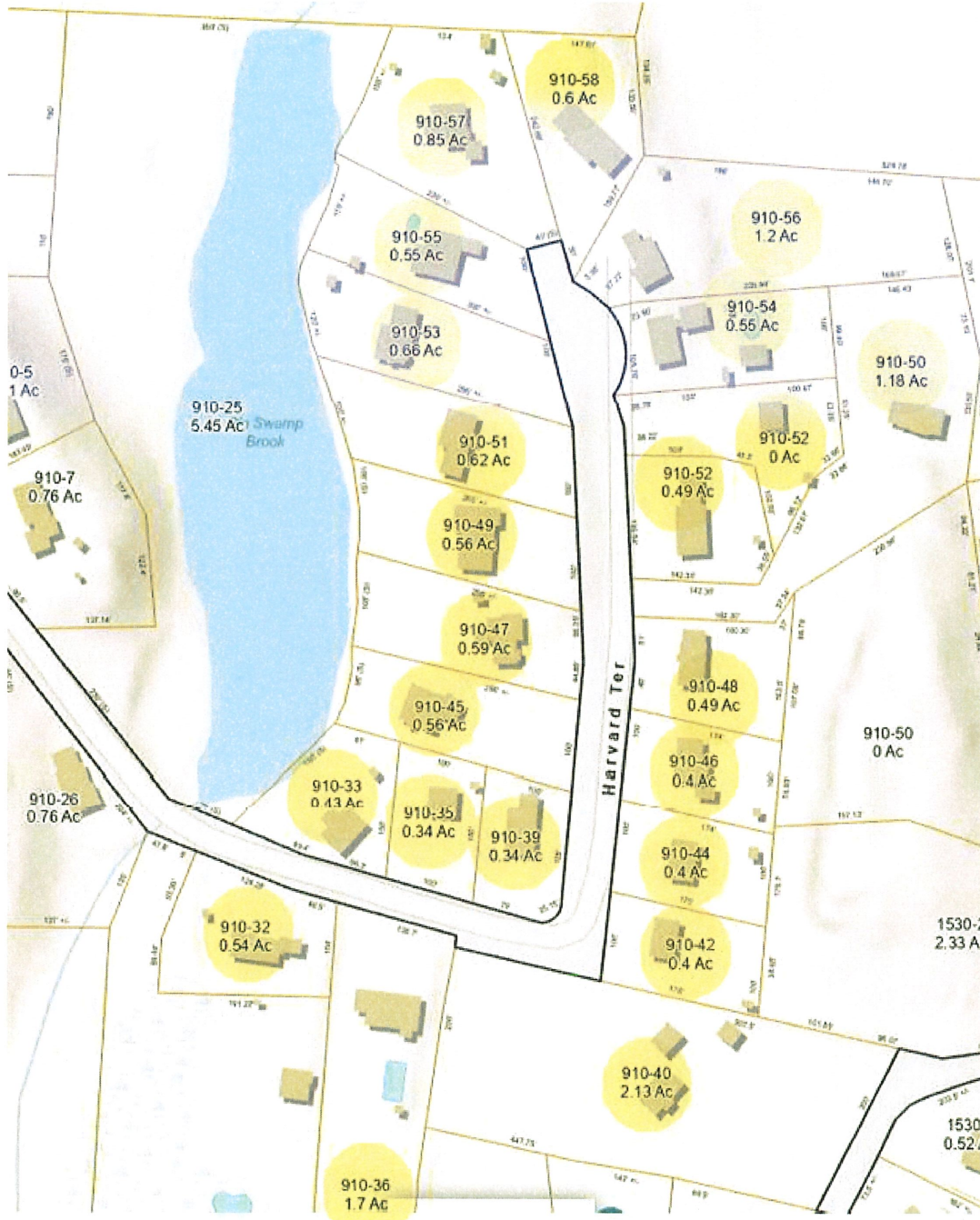
Background

The proposed work associated with this project is follow-up to emergency measures that were taken last summer and approved as of right according through application IWWC#25-27AR. The actions taken that were the subject of this previous application centered around immediate relief within the watershed of impacts caused by a beaver dam in Pine Swamp Brook at the inlet to the pond. The beaver activity was also dealt with, but the beaver dam itself was not readily accessible for removal and remains.

This application addresses this and other needs to provide further flooding protection at the Pine Swamp Brook Pond dam at Harvard Terrace. One of the outlets of the pond has been at least partially obstructed by an earthen berm, which was further reinforced by unauthorized activity last summer. This has only exacerbated a condition of inadequate capacity of discharge flow, leaving the dam further vulnerable to overtopping. This is not a hypothetical concern; flooding has occurred in at least two instances, one in May 1989 and the most recent (photos below) in March 2010.



The overtopping of Harvard Terrace at the Pine Brook Swamp Pond dam poses particular threat to several properties on Harvard Terrace that would be effectively isolated by a dam failure leading to road washout (see below). Additionally, a dam failure could sever public water supply provided to these (and other homes) on Harvard Terrace.



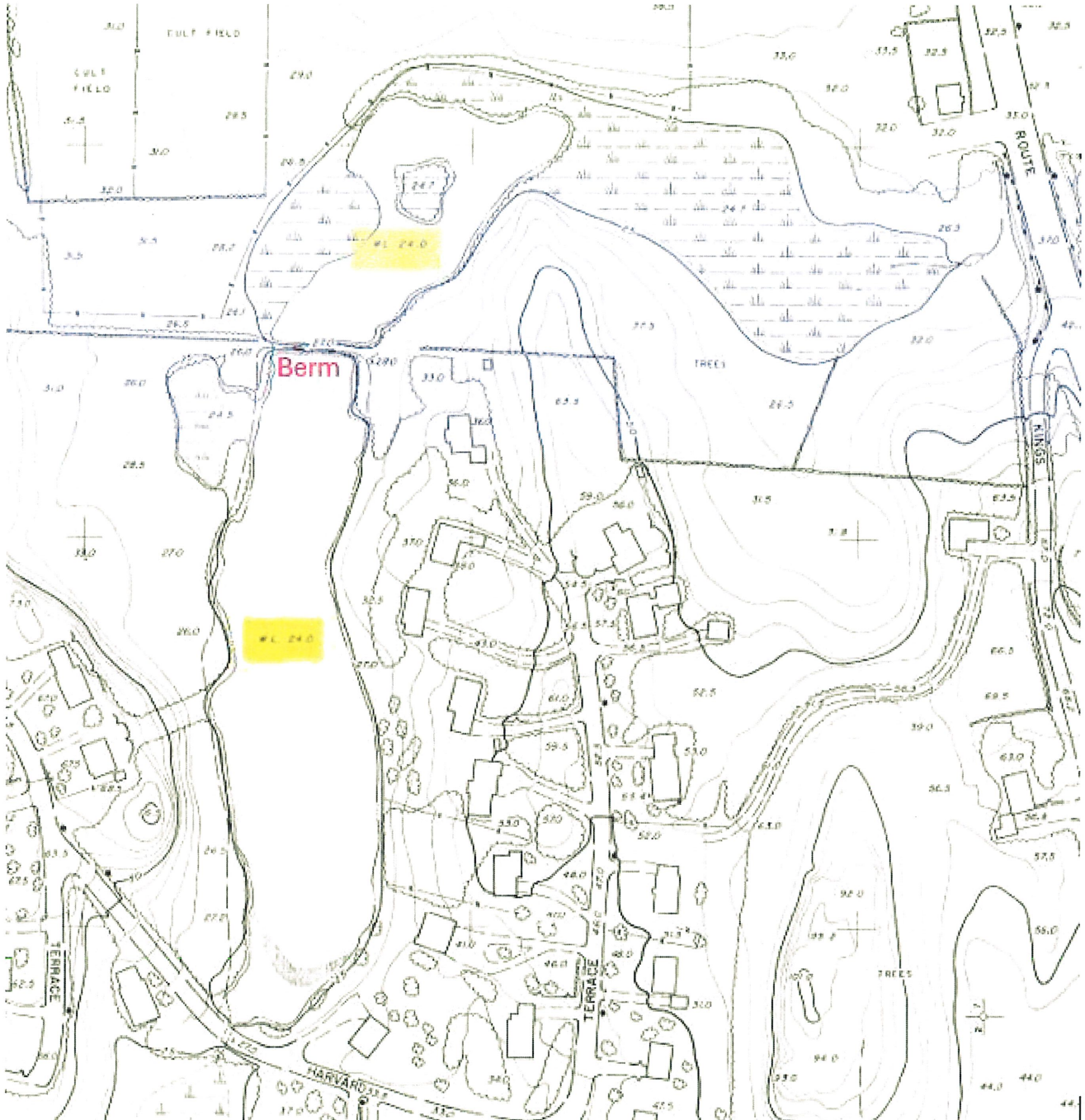
Most recently, even apart from extreme flooding situations, beaver activity (see below photo) had compromised the flow capacity in the vicinity of the pond to the point that water was backing up all the way beyond the brook crossing at Route 12 to properties north of Christy Hill Road. This was a primary basis for immediate rectification.



After the beavers were removed, because the beaver dam itself was inaccessible, Public Works Personnel were dispatched to relieve the flooding by cutting two trenches through a berm that separated the pond proper from the wetlands area in the watershed above it that was flooded by the beaver activity. The trenches were cut in two locations of additional activity (see photo below for one of these).



This restored the historical equalized water level in the area, as depicted below from the Town Assessor's Topographic Map 91 (circa 1971).



An application was subsequently submitted to the Inland Wetlands and Watercourses Commission to consideration and approval of this activity as an appropriate emergency measure. Authorization was granted:

IWWC#25-27AR- 25 Harvard Terrace & 39 Military HWY, Gales Ferry CT- Applicant/Agent, Town of Ledyard - Property Owner: Avalonia Land Conservancy Inc. & C.R Klewin LLC for an after the fact as of right determination for emergent work to cut a trench into an existing berm topped with a beaver dam to immediately alleviate flooding along CT Route 12 & Christy Hill Rd. **APPROVED**

Also, in advance of any further work in the watershed, the Town secured the services of an engineering consultant to provide a detailed analysis of the prevailing hydraulic conditions and assessment of inherent flooding vulnerability. The results of this are submitted as an attachment 2.

For additional context, a 2023 study by Save the Sound (attachment 3) includes both culvert crossings under Harvard Terrace as safety concerns with “crossing condition” as poor and “constriction severity” as severe. And a December 12, 2024, Dam Inspection Report (attachment 4) rendered an overall condition assessment of fair.

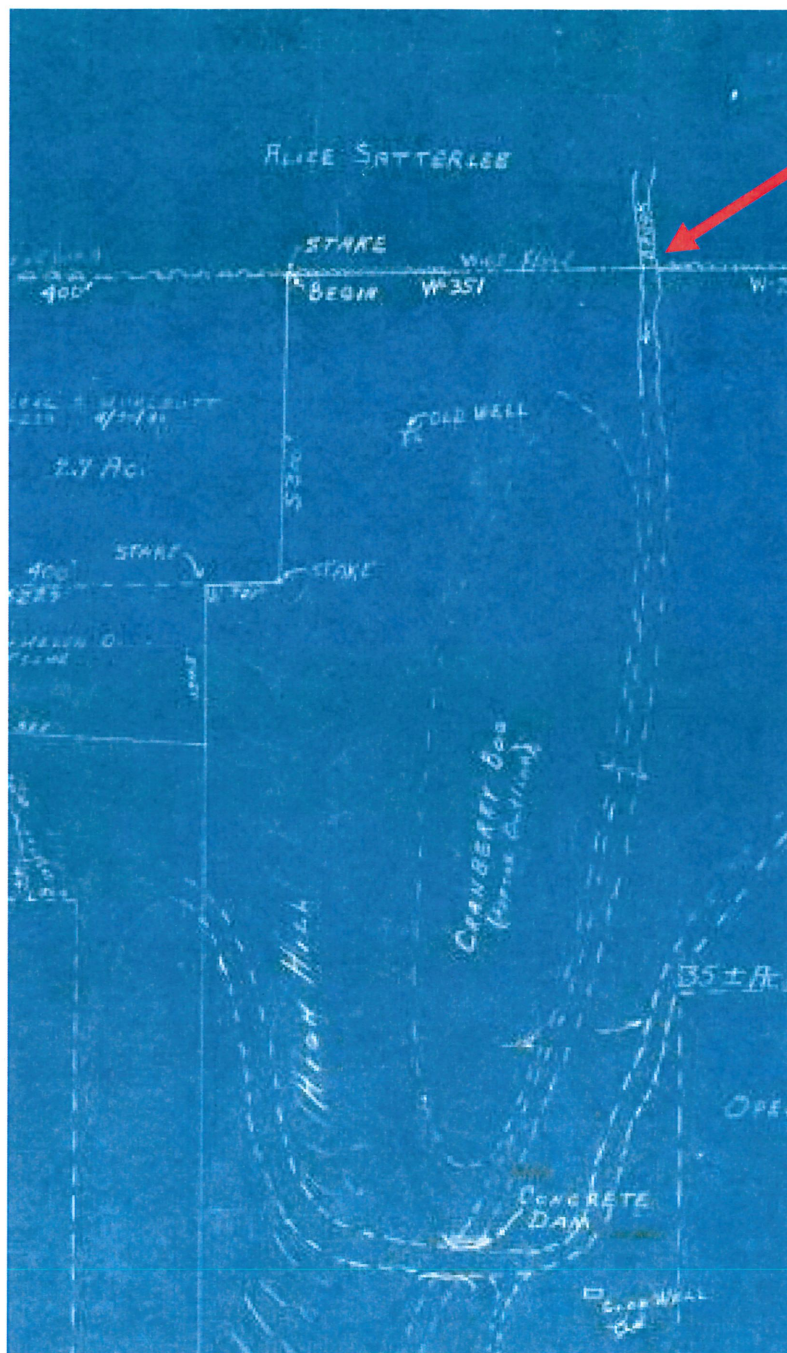
There are a number of implications of these analyses that must be considered for extensive repair and/or replacement activity, but this application seeks to take actions at the inlet and outlet areas of the pond to appropriately mitigate flooding in the watershed that may be undertaken in advance of this.

Present Conditions

There are two remaining issues of primary present concern, one at the inlet and one at the outlet of the pond. At the inlet, the beaver dam remains as an obstruction in Pine Swamp Brook (see below).



We do not know how long the beaver dam had been in place and altered the flow path over the berm, but the historic flow path to the pond has been through the brook at the east edge of the pond. This is confirmed by map #27A filed in the Town’s records that shows conditions as recorded in June 1948. (Excerpt below)



On the outlet side, the drop inlet (one of the two pond discharges) has been effectively blocked off by a berm for some indeterminate time, by actions that do not appear to be by the Town. During routine maintenance, in addressing one of the safety concerns cited in the Save the Sound report, Town forces replaced a homemade wooden cover over the concrete vault with a tailored metal grate that would also allow greater flow.

Concurrently, the crew removed what appeared to be a blow down over a gap in the berm to improve discharge flow according to obvious original intent. Subsequently, local

residents without due authority or permission filled this gap. The photo below shows the berm in its present condition with this “plug.”



As detailed in attachment 2, this berm compromises the discharge capacity at the dam, which in its unhindered state is already inadequate.

Proposal

The Town proposes targeted actions at the two locations cited above, as depicted below:



Inlet: In order to remove the beaver dam, suitable equipment will be needed. Access is presently expected to be through 39 Military Highway and across the berm from west to east. This will require a small track excavator that would be able to navigate the narrow berm. The Town would also have to conduct brush and tree (several already dead) removal to clear an adequate path.

Outlet: The Town will remove the illicit “plug” and an additional section of the berm to open the drop inlet to normal pond flows. The total length of removal (including and in immediate proximity to the “plug”) will be about fifteen to twenty feet. The Town will conduct repair work at each of the two outlet structures to ensure maximum function.

With the relief trenches in place, barring any further beaver activity, and though presenting somewhat of a vulnerability to high storm-related flows, there is no present urgency. Thus, the proposed actions will contemplate prevailing and seasonal conditions to mitigate wetlands impacts as much as possible.

Steven E. Masalin, P.E.
Public Works Director

Hydrologic and Hydraulic Analysis of Road Crossing Culverts Tributary to Pine Swamp Brook Dam

**Harvard Terrace
Ledyard, Connecticut**

Prepared For:

**Town of Ledyard
741 Colonel Ledyard Highway
Ledyard, Connecticut 06339**

December 15, 2025

Prepared By:

CLA Engineers, Inc.

Consulting Engineers

317 Main Street

Norwich, CT 06360

Ph: 860-886-1966 F: 860-886-9165

www.claengineers.com

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Figures

- Figure 1 - Pine Swamp Brook Hydrology
- Figure 2 - Christy Hill Road Culvert (Tributary to Local Basin 300-07)
- Figure 3 - Christy Hill Road Watershed Plan (Tributary to Local Basin 300-08)
- Figure 4 - Route 12 Watershed Plan
- Figure 5 - Pine Swamp Brook Watershed Plan

Sketch Plans

- SK-1 Christy Hill Road (1-Pipe)
- SK-2 Christy Hill Road (4-Pipes)
- SK-3 Route 12
- SK-4 Pine Swamp Brook Dam

Appendices

- Appendix 1 - Peak Flow Statistics
- Appendix 2 - Hydraulic Capacity Analysis

Introduction

Harvard Terrace is a local residential road that crosses Pine Swamp Brook, which is a named watercourse providing the outlet for Pine Swamp; a large wetland complex to the northeast. The road crossing comprises the dam of Moulthrop Pond (Dam #7212). Two 36" diameter culverts pass through the dam conveying Pine Swamp Brook beneath Harvard Terrace downstream. Beyond the dam, the road has no outlet and provides the only access to a residential neighborhood comprising approximately 23 residences.

In May 1989, a rain event caused overtopping of Harvard Terrace by approximately 1-foot, stranding residents from access and emergency vehicles. In March 2010, another rain event caused overtopping of Harvard Terrace by approximately 6-inches of water. Prior to the 2010 event, damage to the road edge was temporarily repaired by the Town using a steel plate.

The Southeast Connecticut Road-Stream Crossing Assessment for Community and Wildlife Resilience produced by Save the Sound also listed numerous safety concerns for the community citing fall hazards around structures and guardrail.

The town has retained CLA Engineers, Inc to analyze the hydraulic capacity of the Harvard Terrace culverts to determine if they are sufficiently sized, and the extent to which they may be impacting the frequency and severity of the overtopping of Harvard Terrace.

Three other road crossing culverts immediately upstream of Moulthrop Pond will also be analyzed. Specifically, this report aims to:

1. Locate and obtain critical dimensions and elevations at the above-mentioned locations.
2. Investigate the Pine Swamp Brook watershed and determine peak flows at the following road crossing locations:
 - a. Christy Hill Road (tributary to Local Basin 3000-06)
 - b. Christy Hill Road (tributary to Local Basin 3000-07)
 - c. CT Rte 12
 - d. Harvard Terrace (Pine Swamp Brook Dam)
3. Perform hydraulic analysis to determine capacity of each road crossing to determine available freeboard and overtopping depths for various design storm frequencies.

Pine Swamp Brook Hydrology

Pine Swamp is a wetland complex approximately 100 acres in area and serves as an important groundwater recharge area and flood mitigation feature. It is located in southwest Ledyard and is at the hydrological head of CTDEEP Local Drainage Basin 3000-06; a 1.56 square mile watershed that eventually discharges to the Thames River (See Figure 1).

The outlet from Pine Swamp is Pine Swamp Brook which originates at the west side of Pine Swamp and flows west and south through a series of other wetlands and beneath several roadways. The brook crosses beneath Christy Hill Road and is conveyed some 285 feet via 4 24" reinforced concrete pipes before daylighting to the immediate east of CT Route 12.

At this point, flow from an adjacent Local Drainage Basin (3000-07) merges with the brook before flowing beneath CT Route 12. Local Drainage Basin 3000-07 is approximately 309 acres in area comprising mostly of undeveloped woodlands with some residential development and stormwater infrastructure.

The Brook continues west before entering Moulthrop Pond which is an impoundment caused by Pine Swamp Brook Dam (#7212) located at the pond's southern end. Two 36" corrugated metal pipes beneath the dam serve as the primary and secondary outlets of Moulthrop Pond. Pine Swamp Brook continues south approximately 800 feet before entering Smith Pond; a slightly larger pond also impounded by a dam (Smith Pond Dam #7213). The Brook then flows a short distance until it discharges into a tidal inlet of the Thames River.

Culvert Capacity Analysis

This investigation aims to assess and compare the existing hydraulic capacity of the culverts subject to investigation, to that of current hydraulic design criteria for culverts. Analysis of the crossroad culverts was performed using two separate computer software applications. Analysis of the Pine Brook Swamp Dam was performed using Hydraflow Hydrographs Extension (HHE) for Autodesk. The dam has two separate outlets, one of which is multi-staged, meaning outlet type varies based on water elevation. Water elevation at the dam is also influenced by the stage storage characteristics of Moulthrop Pond. HHE can model multi-stage outlets and include upstream storage capacity.

The culverts on Route 12 and Christy Hill Road were analyzed using Hydraflow Express, which follows the procedures outlined in FHWA's Hydraulic Design of Highway Culverts (HDS-5). It uses sophisticated energy-based methods to compute the hydraulic grade line (HGL), which can be used to determine the theoretical peak flow at which roadway overtopping will occur. Flow volume can be increased incrementally to determine optimum flow conditions and critical conditions such as overtopping. It should be noted the analysis does not consider upstream or downstream flow conditions or storage. Outlet tailwater conditions have been considered in the analysis.

CLA visited the culvert on October 6, 2025 during a particularly dry period, allowing collection of specific topographic information about the culverts and their immediate surroundings. Pertinent data including pipe inverts, structure dimensions and water elevations were observed and recorded. Horizontal information was oriented to CT NAD 83 and vertical information is NAVD 88 based on field GPS observations. Sketch Plans are included at the end of this Report.

Peak Flow

To compare flow capacity of the road crossings with current design standards, an understanding of the peak flow for various storm return events immediately upstream of each road crossing must be determined. Streamflow statistics for any user defined point along named streams in Connecticut can be determined from the web-based Geographic Information System application StreamStats, developed by the U.S. Geological Survey. Statistics for three of the four road crossing locations were determined using this application. Peak flows were determined for the 2-year, 10-year, 25, year, 50-year and the 100-years storm events. Output data from StreamStats is shown in **Appendix 1**. An estimate of peak flow associated with the minor 1-pipe road crossing on Christy Hill Road was determined by using the Rational Method.

Design Standards

The CTDOT Drainage Design Manual stipulates the flood frequency used to design or review culverts. CTDOT states that flood frequency used to design or review culverts shall be based on human risk factors and economic assessment, and the following design criteria listed in Table 8-4 (from the CTDOT Drainage Design Manual).

Table 8-4

SUMMARY OF HYDRAULIC DESIGN CRITERIA FOR CULVERTS

CONNDOT STRUCTURE CLASS ***	DRAINAGE AREA km ² (mi ²)	DESIGN FREQUENCY (year)	CHECK FREQUENCY (year)	BACKWATER m (ft)	MINIMUM ** FREEBOARD m (ft)
Minor	< 2.59 (1) (no established watercourse)	25	-	-	0.3 (1)
Small	< 2.59 (1)	50	100	-	0.3 (1)
Intermediate *	≥ 2.59(1) < 25.9(10)	100	500	≤ 0.3 (1)	0.3 (1)
Large *	≥ 25.9(10) < 2590(1000)	100	500	0.3 (1)	0.6 (2)

Results from the hydraulic capacity analysis conducted as part of this report will be compared to the CTDOT design standards, specifically those presented in Table 8-4 above.

Christy Hill Road (Tributary to CT Local Basin 3000-07)

This culvert is located on Christy Hill Road on the west side of the intersection with Crest View Drive. It is part of the Town of Ledyard's drainage system and conveys runoff beneath Christy Hill Road from an area to the northeast including a portion of Crest View Drive. The watershed contributing to this culvert lies within local drainage basin 3000-07, which merges with local drainage basin 3000-08 before the Route 12 road crossing. The culvert watershed was approximated using the Connecticut 5-foot contours (2023) and determined to be approximately 3.6 acres (**See Fig. 2**).

The culvert comprises a single 12" corrugated metal pipe with no observed headwalls. The contributing watershed has no established watercourse, making this a 'Minor' structure class according to CTDOT criteria (See Fig. 2). According to Table 8.4, the design flood frequency for this culvert is the 25-year event.

Dense brush and vegetation prevented the inlet from being observed. The outlet discharges on the south side of Christy Hill Road into a depressed area that would collect water before reaching an elevation that would force the water south and west, around the perimeter of the former Kartway entertainment facility before merging with Pine Swamp Brook. The culvert showed signs of sediment deposition. According to town officials, downstream beaver activity to the west of Route 12 has been impounding water, restricting flow through the culvert and flooding property on the north side of Christy Hill Road. The Town has since taken action to relieve the effects of the beaver activity.

The centerline road elevation of Christy Hill Road at this location is approximately 30.8 with the upstream invert being 27.04 (3.76' Difference).



Christy Hill Road Outlet Pipe

Since peak flow information is not available from StreamStats, an estimate of peak flow for the design storm events was obtained using the Rational Method. At the time of inspection, no water was flowing through the pipe. Analysis of the culvert was performed using Hydraflow Express assuming tailwater conditions equal to Critical depth + Rise) / 2. A summary of the results is shown in the table below.

Christy Hill Road (1-Pipe)				
Storm Return Period	Peak Flow (cfs)	Headwater Elevation	Headwater Depth (ft)	Freeboard (ft)
2-Year	3.1	28.5	1.5	2.3
10-Year	4.5	30.0	2.9	0.8
Overtopping Occurs	5.2	30.8	3.8	0.0
25-Year	5.5	-	-	-
50-Year	6.2	-	-	-
100-Year	6.9	-	-	-

The analysis estimated the culvert can pass flow associated with the 2-yr and 10-yr storm events without overtopping Christy Hill Road. Flow volume was increased incrementally until the headwater elevation reached the elevation of the roadway. It was estimated flow volume causing overtopping of the road is approximately 5.2 c.f.s., equivalent to a storm return period of between 10 and 25 years. It should be noted the analysis assumes the pipe is not restricted with sediment or debris. Given the size of the upstream watershed, it can be concluded the culvert does not have the hydraulic capacity to meet current design standards. Detailed hydraulic capacity analysis results are presents in **Appendix 1**.

Christy Hill Road (Tributary to CT Local Basin 3000-08)

The Christy Hill Road culvert is part of the Town of Ledyard's drainage system and conveys flow from the Pine Swamp Brook beneath Christy Hill Road and through the parking lot of the former Kartway entertainment facility. The contributing watershed is approximately 1.02 square miles, making this an 'Intermediate' structure according to CTDOT criteria (**See Fig. 3**). According to Table 8.4, the design flood frequency for this culvert is the 100-Year event.

At the inlet, the culvert comprises a simple, straight concrete headwall with four, squared end 24" pipes. Two of the pipes are reinforced concrete (RCP) while the remaining two are corrugated metal pipe (CMP). The two CMPs transition to RCP at some point downstream. The pipes convey the Pine Swamp Brook south approximately 285 feet before discharging through a similar headwall configuration into a natural channel.



Christy Hill Road Inlet Structure

According to town officials, during heavy rain events, the culvert becomes inundated, allowing flow to overtop Christy Hill Road. The centerline road elevation of Christy Hill Road is approximately 28.75 in the vicinity of the culvert with the average pipe invert being 24.35 (4.4' Difference). At the time of inspection, the water elevation was just below the invert elevation of all four pipes. No flow was observed discharging from the downstream outlet structure. Analysis of the culvert was performed using Hydraflow Express assuming no tailwater conditions. A summary of the results is shown in the table below.

Christy Hill Road (4-Pipes)				
Storm Return Period	Peak Flow (cfs)	Headwater Elevation	Headwater Depth (ft)	Freeboard (ft)
2-Year	39	26.1	1.7	2.7
10-Year	79	28.0	3.6	0.8
Overtopping Occurs	90	28.8	4.4	-0.1
25-Year	107	-	-	-
50-Year	130	-	-	-
100-Year	156	-	-	-

The culvert was able to pass flow associated with the 2-yr and 10-yr storm events without overtopping the road. Flow volume was increased incrementally until the headwater elevation reached the elevation of the roadway. It was estimated the flow volume to cause overtopping of the road is approximately 90 c.f.s., equivalent to a storm return period of between 10 and 25 years. Given the size of the upstream watershed, it can be concluded the culvert does not have the hydraulic capacity to meet current design standards. Detailed hydraulic capacity analysis results are presents in **Appendix 2**.

Route 12

Flow from Pine Swamp Brook crosses Christy Hill Road and runs beneath the parking lot of the abandoned Kartway entertainment facility and discharges to a wetland channel that runs parallel to CT Route 12 for approximately 85 feet before converging with flow from Local Drainage Basin 300-07. This combined flow passes beneath Route 12 in a southwesterly direction via a 48” reinforced concrete pipe before continuing towards Maulthrop Pond.

The contributing watershed is approximately 1.52 square miles, making this an ‘Intermediate’ structure according to CTDOT criteria (**See Fig. 4**). According to Table 8.4, the design flood frequency for this culvert is the 100-Year event. The road crossing inlet takes the form of concrete, winged headwall which retains the embankment supporting Route 12.



Route 12 Road Crossing Inlet

During inspection, water was present along the channel feeding the inlet and within the pipe itself. The water elevation was observed as being approximately half the depth of the culvert. Given the severity of the dry spell, it is likely this water is a constant presence and sediment accumulation in the pipe is likely. The observed water exhibited no signs of stagnation and showed signs of movement through the pipe however, these conditions are an indication that water flow downstream of the culvert is restricted, due in part to the impoundment of Moulthrop Pond by Pine Brook Swamp Dam.

The water elevation at the entrance to 48" culvert was measured at approximately 23.7 feet, while at the outlet of Moulthrop Pond the water elevation was observed at approximately 21.7 (2-Foot elevation difference over a 2,130-foot flow path, which equates to an average grade of approximately 1/10th of 1%). While this does not technically compromise the capacity of the 48" culvert, it does impact the hydrology of the watershed upstream and east of Route 12, particularly if additional impediments such as beaver activity is left uncontrolled.

This is also likely the case for the 36" culvert associated with the multi-stage outlet at the dam at Harvard Terrace. The downstream baseline watercourse elevation level is also approximately half the depth of the culvert, which is likely controlled by the impoundment of water by Smith Pond Dam.

Hydrologic and Hydraulic Analysis

Pine Swamp Brook Dam and Associated Culverts
Town of Ledyard

CLA Engineers, Inc.

The road crossing outlet takes the form of a similar concrete winged headwall. Water was also present at the outlet.



Route 12 Crossing Outlet

According to CTDOT criteria, the culvert is classified as an Intermediate Structure, since it provides a waterway for a drainage area of more than 1 square mile but less than 10 square miles. Intermediate structures should be designed to pass a discharge equal to the 100-year flood and a backwater usually not to exceed 0.3m (1 ft) above that which would have been obtained in the natural channel. Analysis of the culvert was performed using Hydraflow Express assuming tailwater conditions equal to Critical depth + Rise) / 2. A summary of the results is shown in the table below.

Route 12 Culvert				
Storm Return Period	Peak Flow (cfs)	Headwater Elevation	Headwater Depth (ft)	Freeboard (ft)
2-Year Storm Event	55	25.0	3.3	11.0
10-Year Storm Event	110	27.4	5.7	8.6
25-Year Storm event	148	29.9	8.2	6.1
50-Year Storm event	181	32.6	10.9	3.4
Overtopping Occurs	191	36.0	14.3	0.0
100-Year Storm Event	216	-	-	-

Analysis shows the culvert able to pass flows up to the 50-year storm event without overtopping the road. Flow volume was added incrementally until the headwater elevation reached the elevation of the roadway. It was estimated the flow volume to cause overtopping of the road is approximately 191 c.f.s., equivalent to a storm return period of between 50 and 100 years. Given the size of the upstream watershed, it can be concluded the culvert does not have the hydraulic capacity to meet current design standards. Detailed hydraulic capacity analysis results are presents in **Appendix 2**.

Pine Swamp Brook Dam

Moulthrop Pond is owned by Avalonia Land Trust. The pond is roughly 3-acres in area and is the first of two water bodies that are fed by Pine Swamp Brook. The second body of water is Smith Pond which is slightly larger and lies approximately 850 feet downstream to the south.

The pond's impoundment is created by Pine Swamp Brook Dam. The dam is owned and maintained by the Town of Ledyard and has a Hazard Classification A – a low hazard potential dam. The most recent dam inspection report of December 18, 2024, prepared by WMC Consulting Engineers, reported the dam as being in 'Fair' condition. It is understood a water main that supplies the neighborhood crosses the dam, passing either under or over the two culverts. The watershed area contributing to Moulthrop Pond is approximately 1.52 square miles (**See Fig. 5**).

By virtue that Harvard Road is located directly on the embankment, the dam has no engineered spillway. The dam has two outlets, both of which are in the form of piped culverts passing through the dam's embankment. Located at the left abutment, is a three-sided rectangular concrete drop inlet with a steel grate installed on the top. The upstream side of the structure has been cast with slots and has timber stop boards installed, presumably to control the level of the pond.

The grate is at elevation 23.6. At the time of inspection, water was seeping through the stop logs at elevation 20.6. Flow drops vertically to a stone channel which is lined with a 36" corrugated metal pipe (CMP). Observed flow seeping through the boards was approximately 1 c.f.s. or less. The CMP was observed in poor condition.

The second outlet is located at the right abutment and comprises a 36" CMP. The invert elevation of the pipe is 21.8. At the time of inspection, the pond water elevation was too low to allow flow through this pipe (21.7). The pipe's leading edges at its invert are corroded and deformed, which could easily trap debris and restrict flow entering the pipe. Under the CTDOT hydraulic design criteria, the two outlets combined should accommodate flows associated with the 100-year storm event, (Intermediate Structure).



Multi-Stage Outlet Structure (Upstream)



36" Corrugated Metal Pipe Inlet (Upstream)

Spillways or outlets from dams are typically referenced as principal or auxiliary based on the order in which they discharge. In its current condition, the 36" corrugated metal pipe is functioning as the principal outlet since this is the lowest outlet.

The concrete inlet structure can function as both the principal and auxiliary outlet since the discharge elevation can be adjusted by the stop boards. During inspection, it did not appear the stop boards are actively managed.



36" Corrugated Metal Pipe Outlet (Downstream)



Multi-Stage Structure Outlet (Downstream)



Internal Photo of 36" Culvert (Multi-Stage Outlet) with Flow Seen Penetrating Stop Boards at Head of Pipe.

At some point in the past, a stone and earthen berm has been constructed upstream of the left abutment. The berm forms an arc shape in plan and is constructed of earth and stone. The berm is relatively old given the size and maturity of the trees and vegetation established on the berm. More recently, a concrete retaining wall and timber backboard have been constructed, presumably to eliminate a gap in the berm.



Earthen and Concrete Berm Separating the two Outfalls

At the time of observation, the water elevation on both sides of the berm was equal and given that flow was observed passing through the stop logs of the concrete inlet structure, it is acknowledged that berm has a negative impact on the combined hydraulic capacity of the outlets during low flow conditions. During periods of increased flow, it is likely the berm would restrict flow to the inlet structure, directing more water to the 36" CMP until such time the berm is overtopped.

The berm is not believed to be original to the dam construction and is thought to have possibly been constructed by residents of the neighborhood, presumably to manage the pond elevation for recreational and/or aesthetic purposes. However, the invert elevation of the 36" pipe at the right abutment is approximately 1.8 feet lower than the grate of concrete inlet elevation, suggesting water elevations would typically be regulated by the 36" pipe and not the concrete inlet structure.

Computational Hydraulic Analysis

Combined outlet capacity through the dam was analyzed using Hydraflow Hydrographs Extension (HHE) for Autodesk. The software allows flow from a specified watershed to be routed through a pond that has multi-stage outlets and calculates pond storage and elevation characteristics that can be used to estimate when and to what extent overtopping of the pond occurs.

To simulate the design return flood events, a hydrograph was created with a watershed area equal to that determined by StreamStats and precipitation characteristics determined from NOAA Atlas 14 Precipitation Frequency Data Server for Ledyard. A curve number of 60 was used from Table 2-2a of the NRCS report Urban hydrology for small watersheds (TR-55) and the time of concentration was adjusted to generate peak flows equaling those determined by StreamStats.

A pond having similar characteristics to Moulthrop Pond was created by tracing its outline using aerial imagery. The software considers pond stage storage in its analysis and therefore it is important to set the pond bottom equal to the pond water elevation during 'normal' conditions.

The dam and culverts were originally observed on October 6th, 2025, during an exceptional dry spell. At this time, the water level of the pond was below the 36" RCP invert and considered lower than normal. The dam was revisited on November 17, 2025, after several rain events. The water elevation was observed as being approximately 8-inches above the 36" RCP invert. Consequently, the pond's bottom elevation was set at elevation 22.5.



Inlet (10/6/25)



Inlet (11/17/25)

Although it is acknowledged that the stone and earth berm has a negative impact on the combined hydraulic discharge conditions of the pond during low flow conditions, it was not considered as part of the analysis. It is understood the Town of Ledyard is currently pursuing efforts to modify the berm to ensure outlet capacity is not adversely impacted. Results of the hydraulic analysis are as follows:

Pine Swamp Brook Dam				
Storm Return Period	Peak Flow In (cfs)	Peak Flow Out (cfs)	Pond Elevation	Freeboard (ft)
2-Year	60.0	59.1	24.1	1.9
10-Year	118.0	111.4	25.0	1.0
25-Year	159.0	155.7	26.4	-0.4
50-Year	194.0	-	-	-
100-Year	231.0	-	-	-

The culverts were able to pass flow associated with the 2-yr and 10-yr storm events without overtopping Harvard Terrace. Results for the 25-Year storm event show the culverts not having sufficient capacity to prevent the road being overtopped. Once flow reaches the top of the road, the software calculates the depth of overtopping, assuming a simple broad crested weir of specified length (10-feet). Flow depths across the road are difficult to predict given the parabolic nature of the road profile and the complicated nature of how flow will spread. Of importance is that overtopping is predicted to occur during a storm event of between 10-year and 25-year return period and therefore, it can be concluded the culverts do not meet current design standards for the size of watershed. Detailed analysis results are presented in **Appendix 2**.

Summary

The culverts regulating Moulthrop Pond (Pine Swamp Brook Dam) and three culverts upstream were investigated to determine their hydraulic capacity and under what conditions overtopping of the roadway might be expected to occur. Theoretical capacity of each culvert was determined using hydraulic modeling software using available peak flow data for the 2-year, 10-year, 25-year, 50-year and 100-year storm events.

	Culvert Classification	CTDOT Hydraulic Design Frequency	Peak Flow for Design Frequency (cfs)	Peak Flow at Overtopping (cfs)	Does Culvert have Sufficient Capacity?
Christy Hill Road (1-Pipe)	Minor	25	5.5	5.2	No
Christy Hill Road (4-Pipes)	Intermediate	100	156	90	No
Route 12	Intermediate	100	216	191	No
Pine Swamp Brook Dam	Intermediate	100	231	159	No

The 12" CMP single culvert at Christy Hill Road is classified as a minor structure and should be capable of passing flow associated with the 25-year storm event (5.5 cfs). Analysis showed the allowable capacity to be approximately 5.2 cfs before the upstream water elevation reached the top of the road. Although this is somewhat close to the required criteria, the culvert does not meet the minimum freeboard requirement of 1-foot.

The 24" RCP, four-pipe culvert arrangement at Christy Hill Road is classified as an Intermediate structure and should be capable of passing flow associated with the 100-year storm event (156 cfs). Analysis showed the allowable capacity to be approximately 90 cfs, before the upstream water elevation reached the top of the road. Culvert capacity was determined to be between the 10-year and 25-year storm events (79 cfs and 107 cfs respectively).

The 48" RCP culvert beneath Route 12 is classified as an Intermediate structure and should be capable of passing flow associated with the 100-year storm event (216 cfs). Analysis showed the allowable capacity to be approximately 191 cfs, before the upstream water elevation reached the top of the road. Culvert capacity was determined to be between the 50-year and 100-year storm events (181 cfs and 216 cfs respectively).

The Pine Swamp Brook Dam is responsible for impounding Moulthrop Pond. The inlet to the Pond is the Pine Swamp Brook. The pond's outlet comprises two 36" corrugated metal pipes that convey flow simultaneously through the dam embankment and beneath Harvard Terrace. The two culverts act as both primary and auxiliary spillways in that they are the only means of regulating the pond's water elevation.

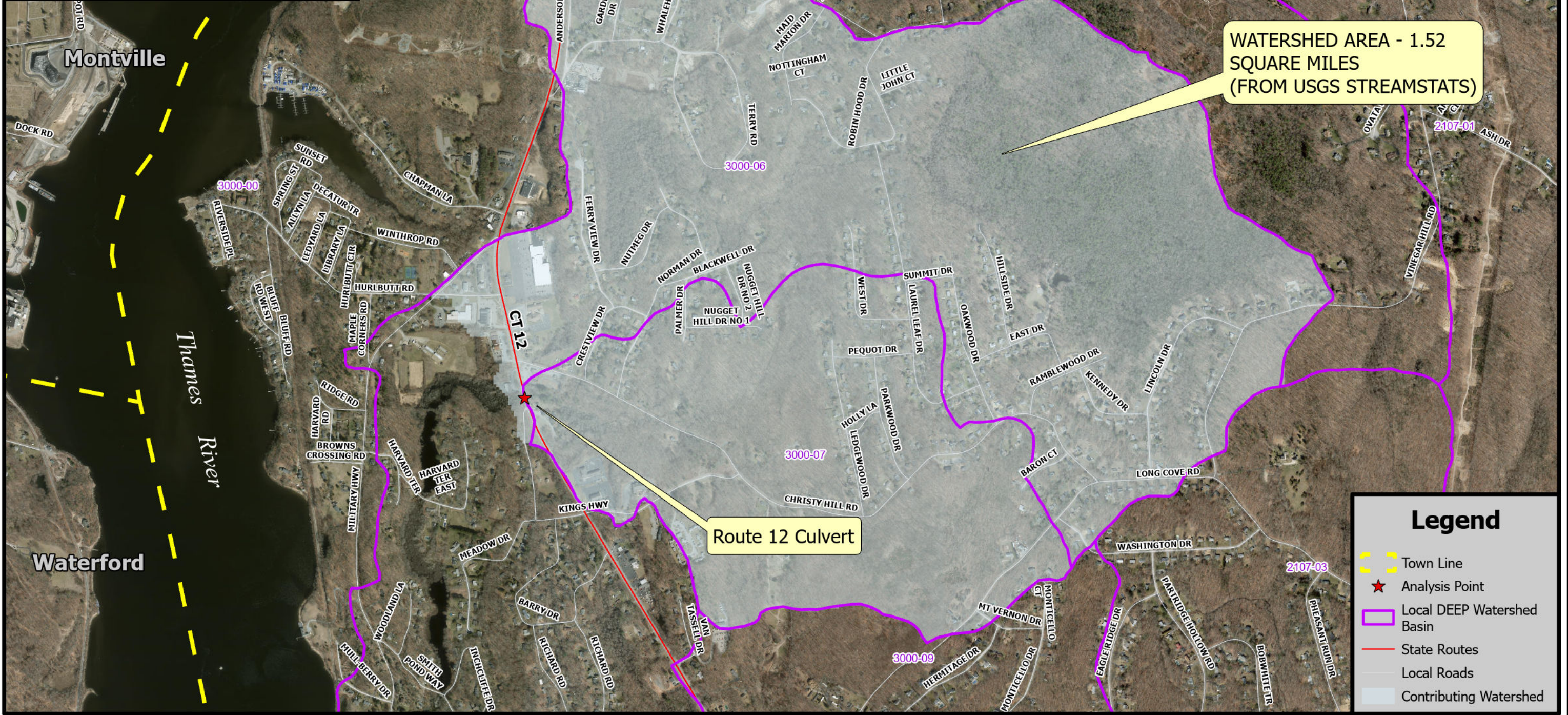
The culverts combined are classified as an Intermediate structure and should be capable of passing flow associated with the 100-year storm event (231 cfs). Analysis showed that overtopping of the Harvard Terrace is expected to occur during the 25-year storm event, which was determined to produce a peak flow of 159 cfs.

While the effect of the stone and earthen berm surrounding the concrete inlet structure was not analyzed, it is our belief that its presence restricts flow to this structure during heavier rain events, which ultimately negatively impacts the culverts combined hydraulic capacity. Nonetheless, the combined hydraulic capacity of both culverts is not sufficient to pass the 25-year storm event and therefore, it can be concluded that overtopping of Harvard Terrace will likely occur more frequently than current design standards recommend.

This will result in the dam and roadway being more frequently exposed to hydraulic forces that will cause erosion and damage like that experienced in recent years. This will ultimately increase the risk that the temporary measures installed to reinforce the dam will fail which could lead to more serious implications and possible dam failure. While dam failure may not result in significant damage or loss of life due to the dam's classification, it would result in the loss of direct access into and out of the neighborhood and the possible loss of potable water.

Figures

Route 12 Culvert		
StreamStats Peak Flow Statistics		
2-Year Storm Event	55	c.f.s.
10-Year Storm Event	110	c.f.s.
25-Year Storm event	148	c.f.s.
50-Year Storm event	181	c.f.s.
100-Year Storm Event	216	c.f.s.



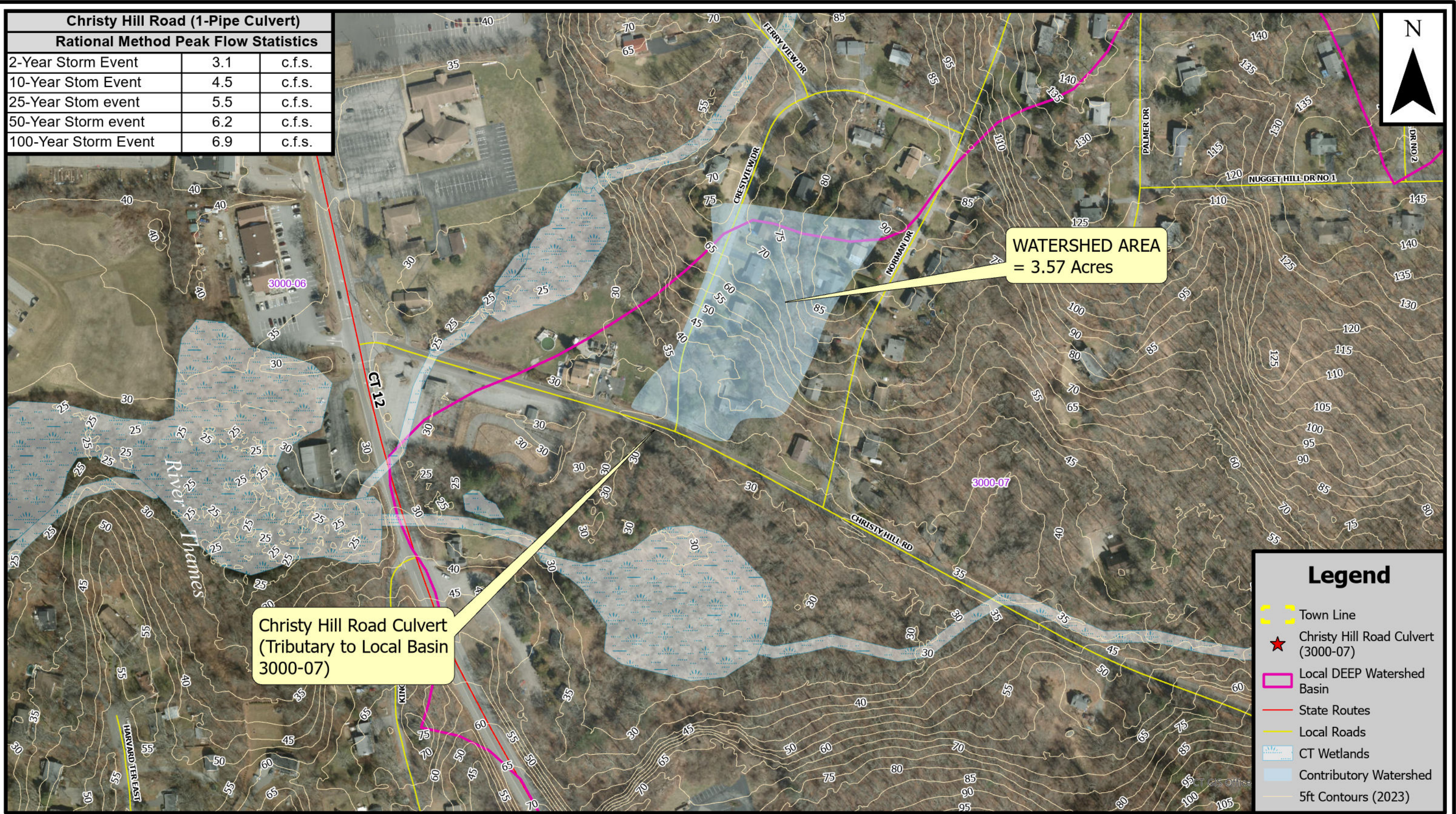
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 CIVIL • STRUCTURAL • SURVEYING
 317 Main Street Norwich, Connecticut
 (860) 886-1966 Fax (860) 886-9165
 e-mail: cla@claengineers.com

Route 12 Watershed Plan

ROUTE 12 CUVERT
 TOWN OF LEDYARD

CLA No: 8282
 DATE: 12/8/2025
 SCALE: 1"=1,000'

FIGURE
4



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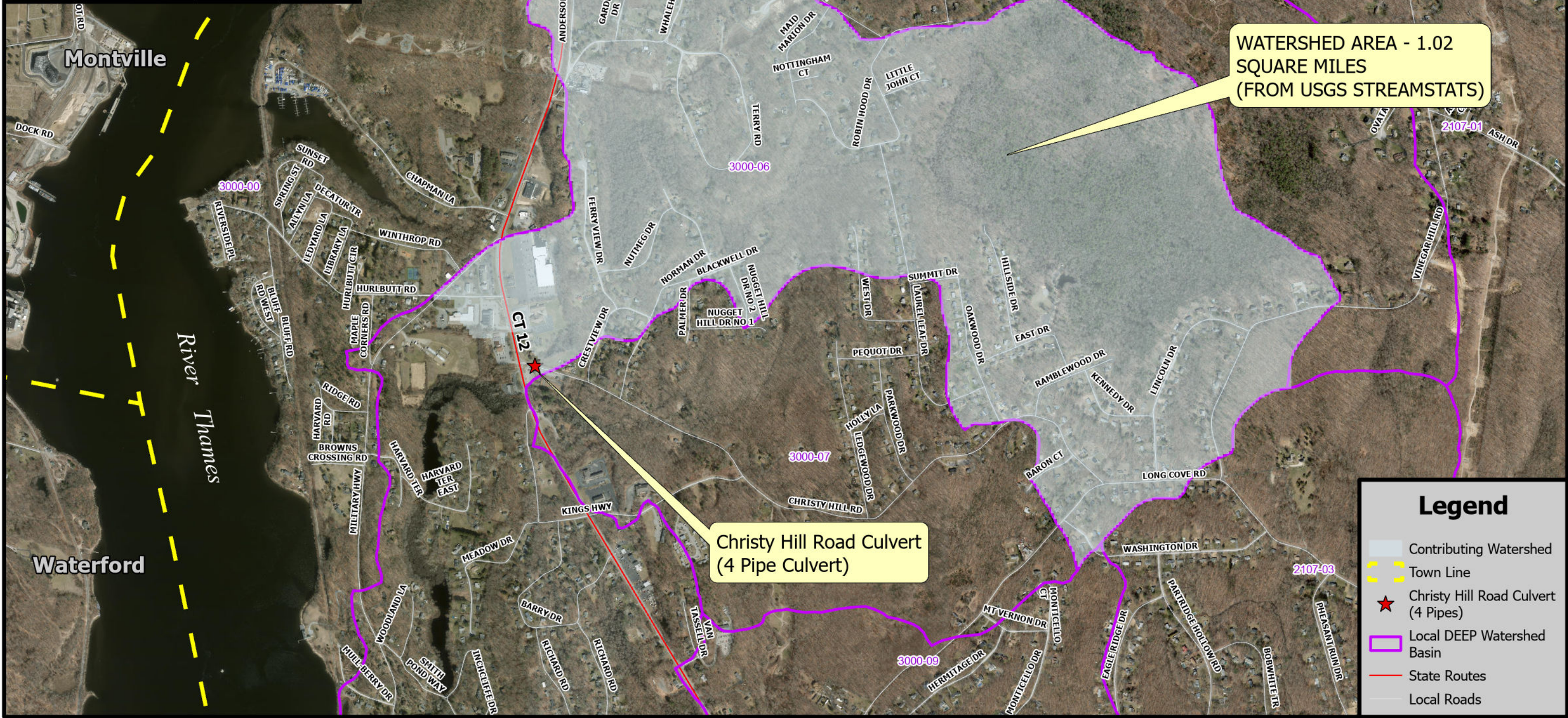
Christy Hill Road (1-Pipe) Watershed Plan

CHRISTY HILL ROAD CULVERT
 (TRIBUTARY TO LOCAL BASIN 3000-07)
 TOWN OF LEDYARD

CLA No: 8282
 DATE: 12/3/2025
 SCALE: 1"=200'

FIGURE
2

Christy Hill Road (4-Pipe Culvert)		
StreamStats Peak Flow Statistics		
2-Year Storm Event	39	c.f.s.
10-Year Storm Event	79	c.f.s.
25-Year Storm event	107	c.f.s.
50-Year Storm event	130	c.f.s.
100-Year Storm Event	156	c.f.s.



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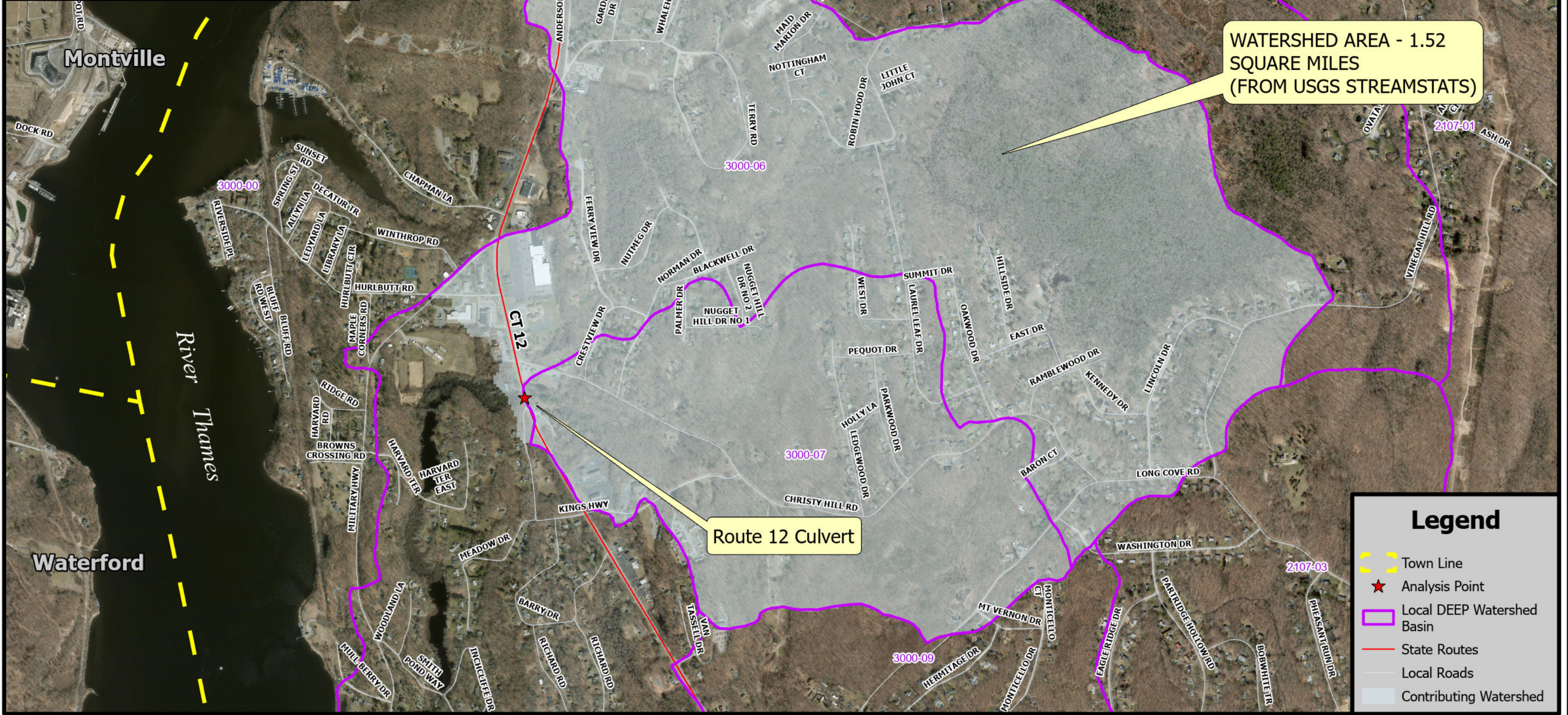
Christy Hill Road (4-Pipes) Watershed Plan

CHRISTY HILL ROAD (4-PIPE CULVERT)
 TOWN OF LEDYARD

CLA No: 8282
 DATE: 12/3/2025
 SCALE: 1"=1,000'

FIGURE
3

Route 12 Culvert		
StreamStats Peak Flow Statistics		
2-Year Storm Event	55	c.f.s.
10-Year Storm Event	110	c.f.s.
25-Year Storm event	148	c.f.s.
50-Year Storm event	181	c.f.s.
100-Year Storm Event	216	c.f.s.



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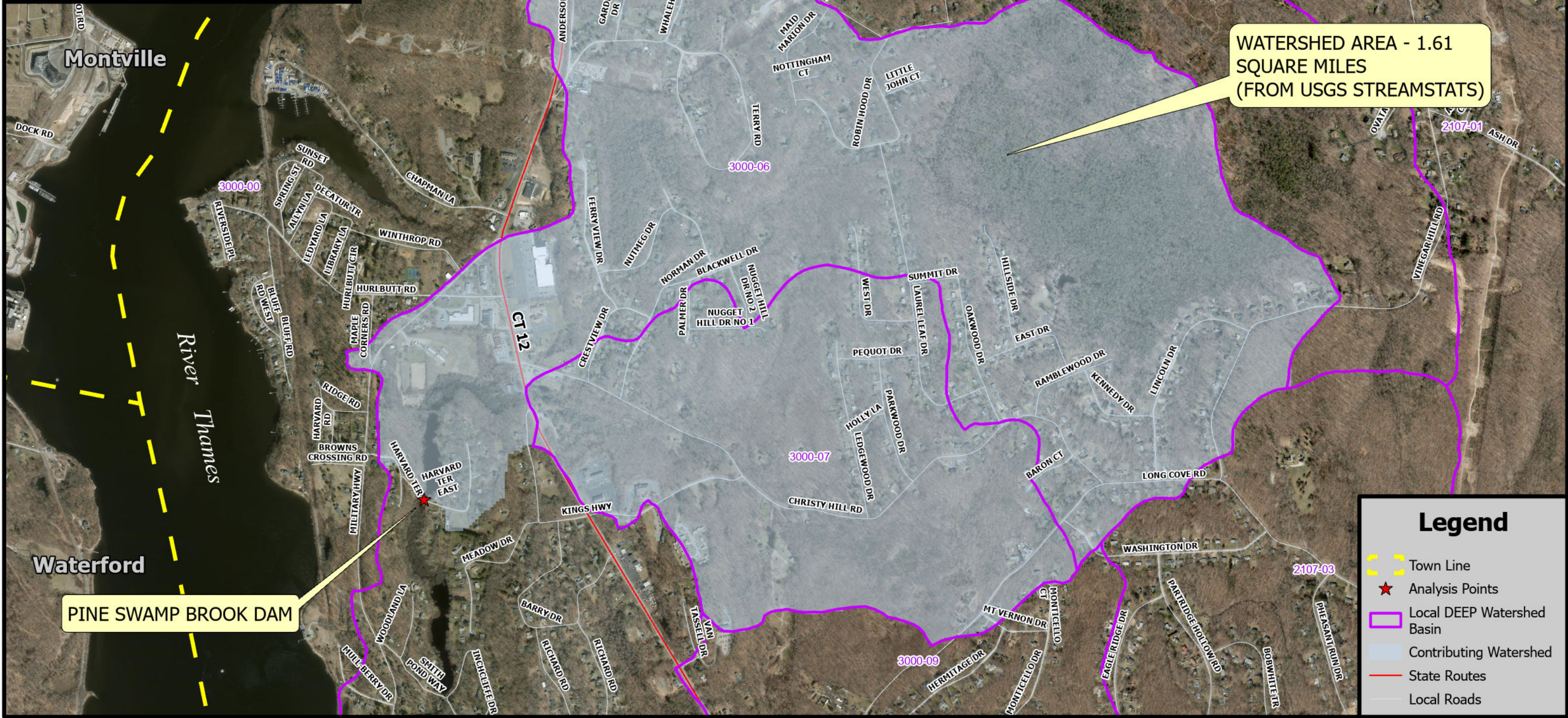
Route 12 Watershed Plan

ROUTE 12 CUVERT
 TOWN OF LEDYARD

CLA No:	8282
DATE:	12/3/2025
SCALE:	1"=1,000'

FIGURE
4

Pine Swamp Brook Dam		
StreamStats Peak Flow Statistics		
2-Year Storm Event	60	c.f.s.
10-Year Storm Event	118	c.f.s.
25-Year Storm event	159	c.f.s.
50-Year Storm event	194	c.f.s.
100-Year Storm Event	231	c.f.s.



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Pine Swamp Brook Dam Watershed Plan

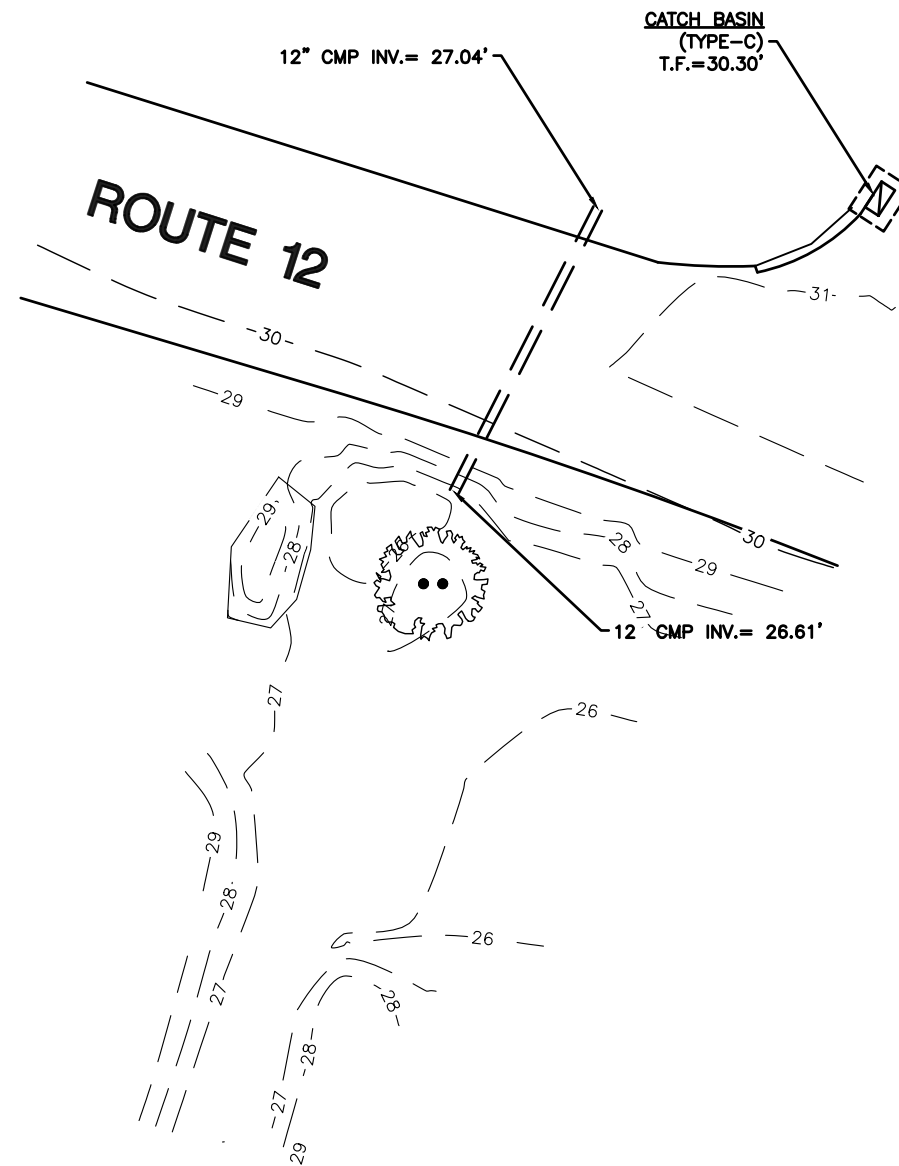
PINE BROOK SWAMP DAM
 TOWN OF LEDYARD

CLA No: 8282
 DATE: 12/3/2025
 SCALE: 1"=1,000'

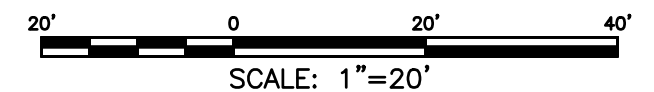
FIGURE
5

Sketch Plans

Christy Hill Road (1-Pipe)				
Strom Return Period	Peak Flow (cfs)	Headwater Elevation	Headwater Depth (ft)	Freeboard (ft)
2-Year	3.1	28.5	1.5	2.3
10-Year	4.5	30.0	2.9	0.8
Overtopping Occurs	5.2	30.8	3.8	0.0
25-Year	5.5	-	-	-
50-Year	6.2	-	-	-
100-Year	6.9	-	-	-



OUTLET (12" CMP)

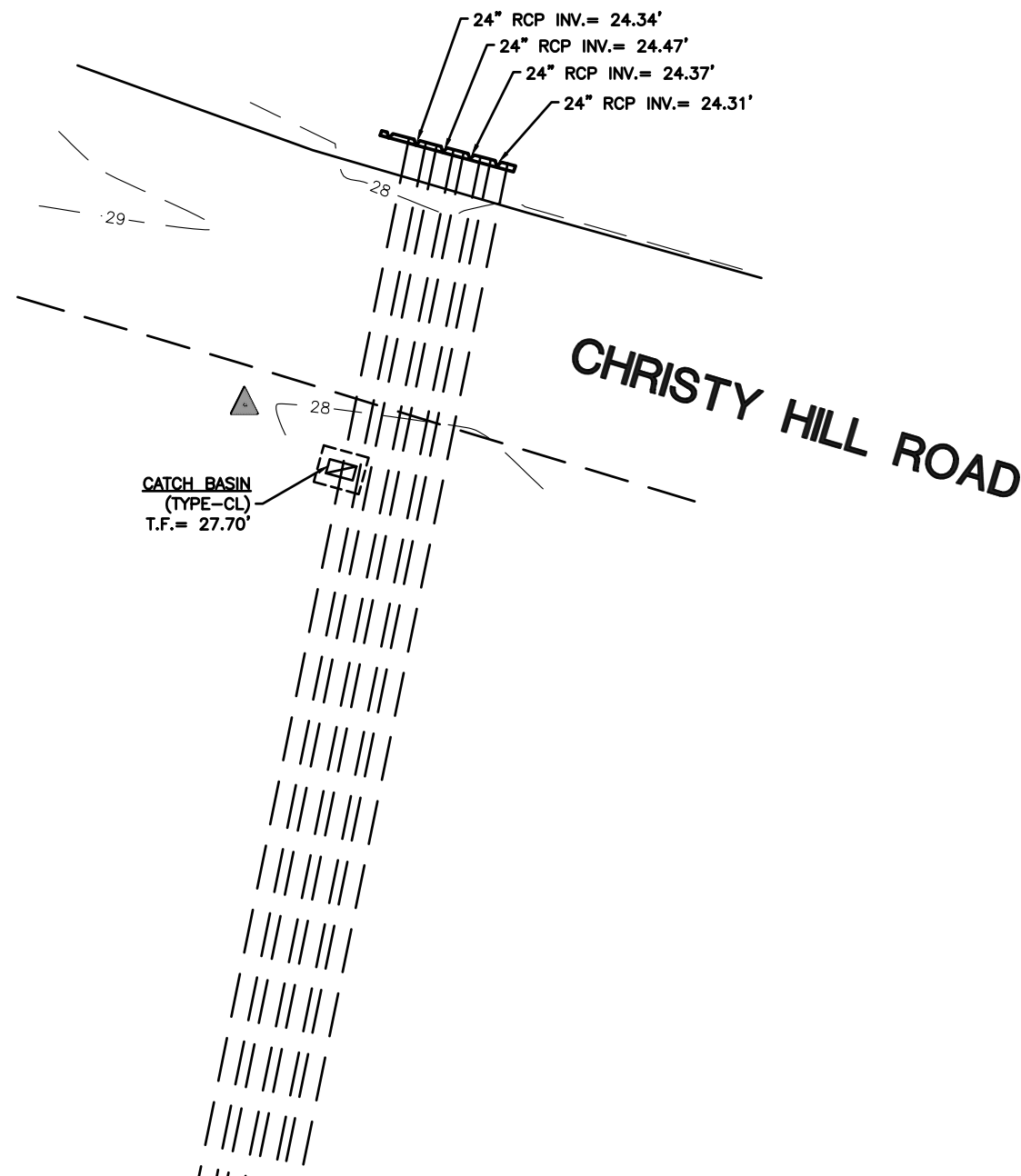


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No.	DATE	REVISION	Project No. CLA-8282
		TOWN OF LEDYARD	
		FINE BROOK SWAMP DAM	
		Date: 12/05/25	
		Sheet No. SK-1	
		CHRISTY HILL ROAD (1 PIPE)	

Christy Hill Road (4-Pipes)				
Strom Return Period	Peak Flow (cfs)	Headwater Elevation	Headwater Depth (ft)	Freeboard (ft)
2-Year	39	26.1	1.7	2.7
10-Year	79	28.0	3.6	0.8
Overtopping Occurs	90	28.8	4.4	-0.1
25-Year	107	-	-	-
50-Year	130	-	-	-
100-Year	156	-	-	-



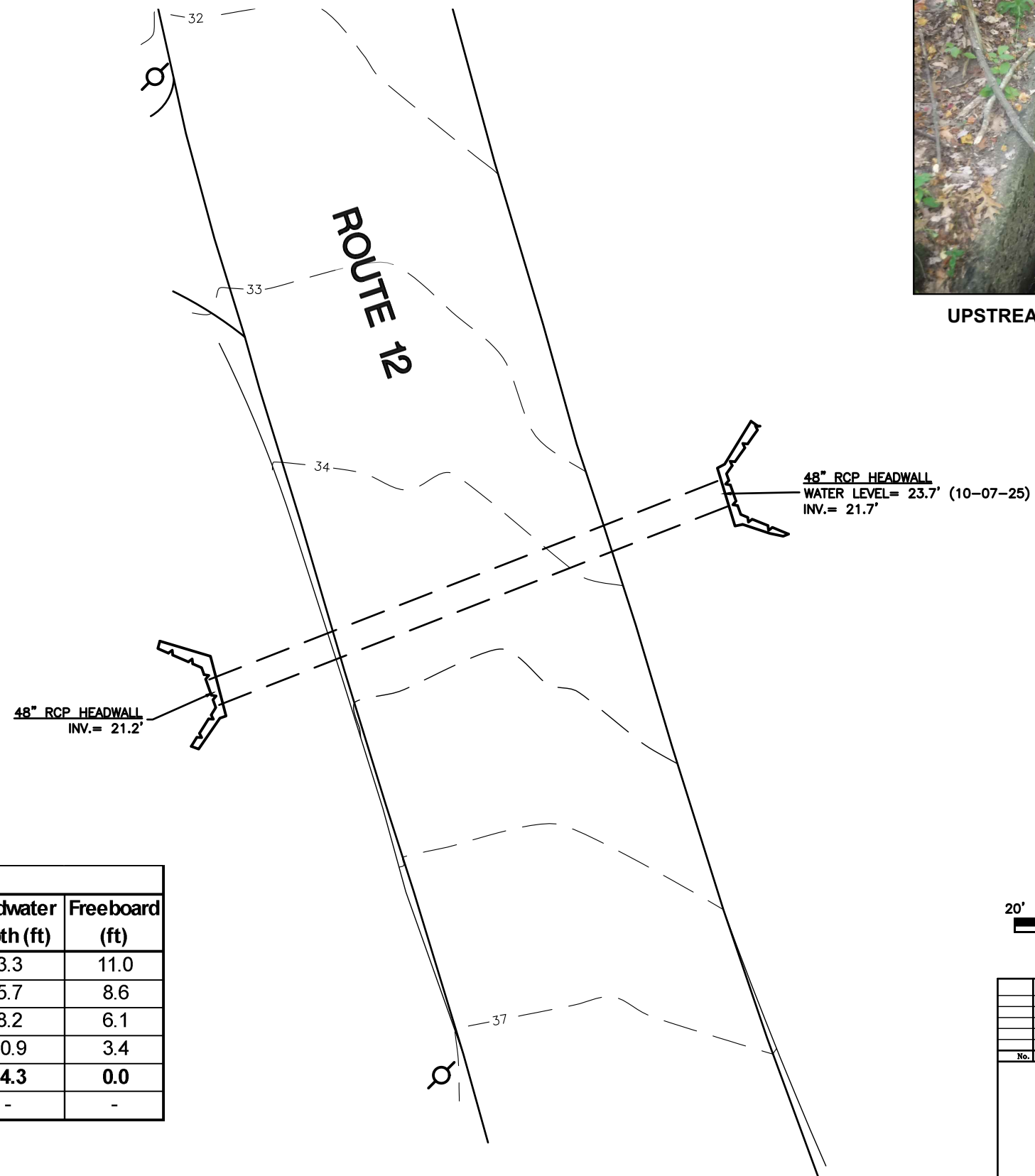
UPSTREAM (4 x 24" RCP SQUARE EDGE WITH HEADWALL)



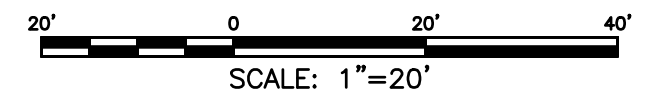
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No.	DATE	REVISION	Project No. CLA-8282
		TOWN OF LEDYARD	Proj. Engineer D.P.H.
		PINE BROOK SWAMP DAM	Date: 12/05/25
		CHRISTY HILL ROAD (4 PIPES)	Sheet No. SK-2



UPSTREAM (48" RCP SQUARE EDGE WITH HEADWALL)



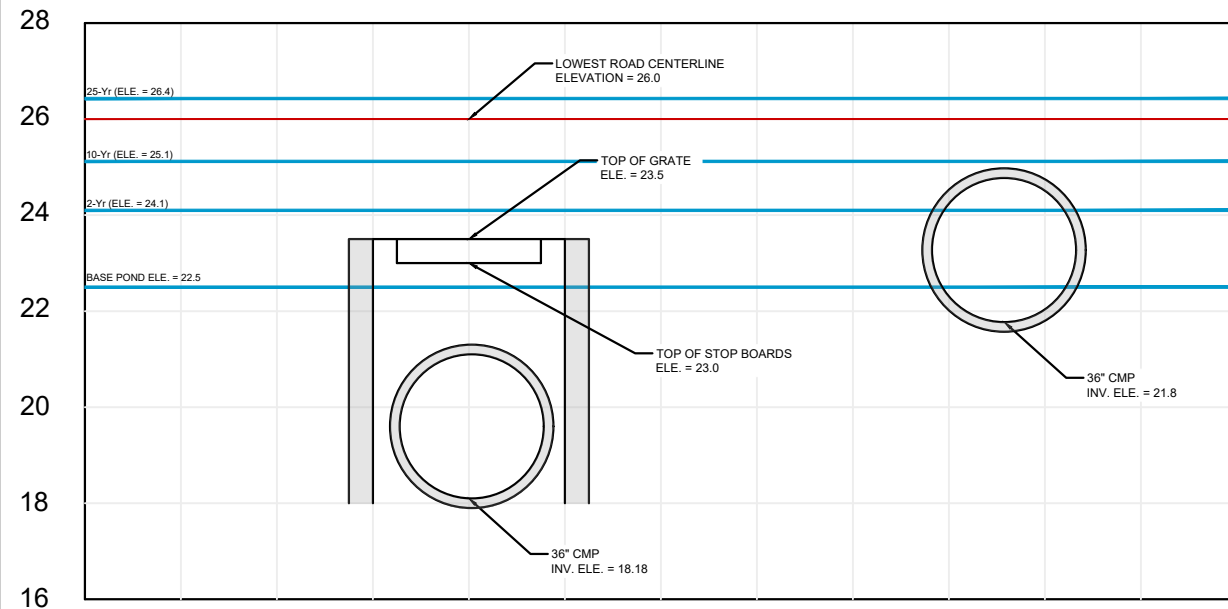
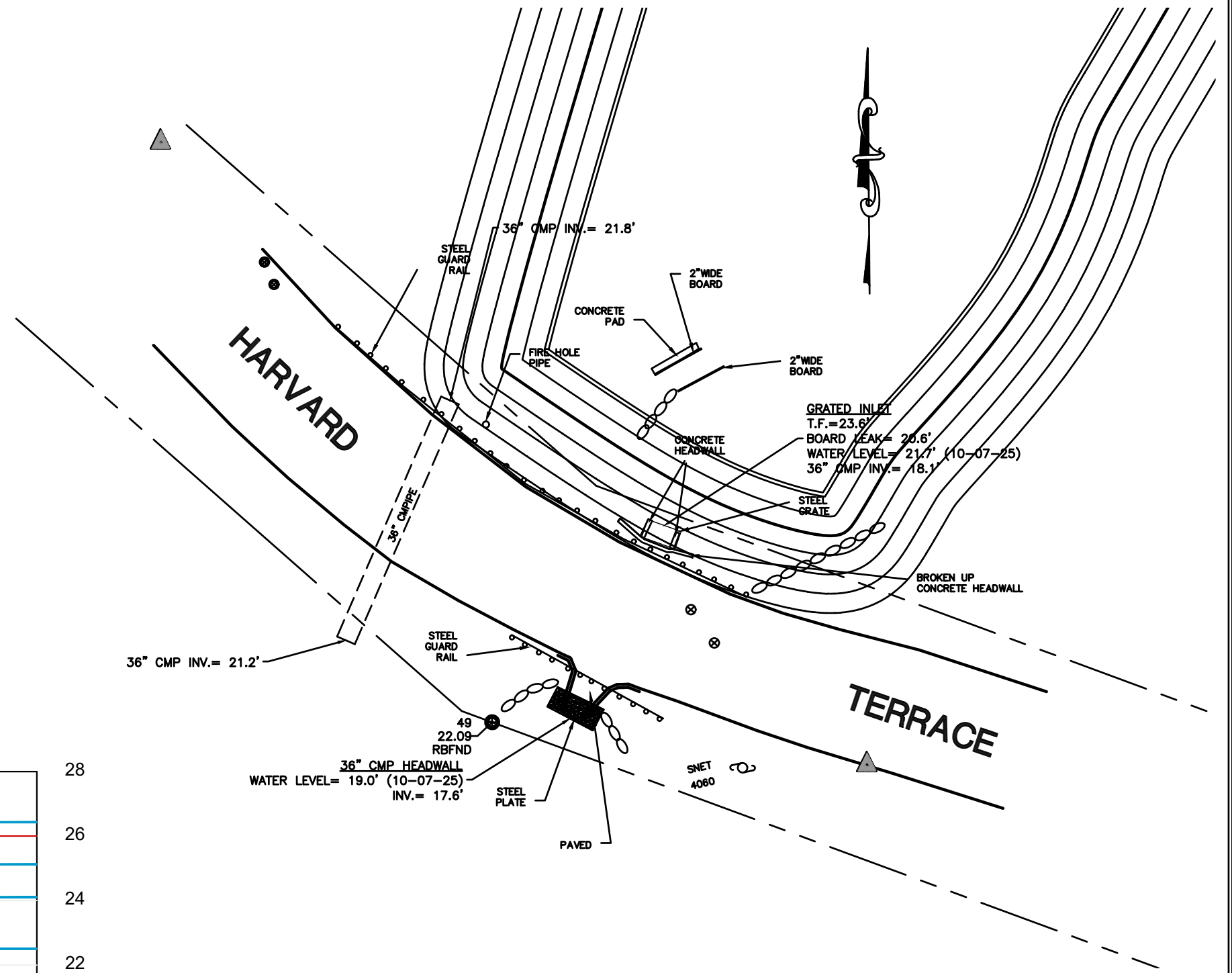
Route 12 Culvert				
Strom Return Period	Peak Flow (cfs)	Headwater Elevation	Headwater Depth (ft)	Freeboard (ft)
2-Year Storm Event	55	25.0	3.3	11.0
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50-Year Storm event	181	32.6	10.9	3.4
Overtopping Occurs	191	36.0	14.3	0.0
100-Year Storm Event	216	-	-	-



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No.	DATE	REVISION	
		TOWN OF LEDYARD	
		PINE BROOK SWAMP DAM	
		ROUTE 12	
		Project No. CLA-8282	Proj. Engineer D.P.H.
		Date: 12/05/25	Sheet No.
		SK-3	



VIEW LOOKING SOUTHWEST FROM BERM TOWARDS DAM AND OUTLETS



CROSS SECTION
(Horizontal Axis Not to Scale)

Pine Swamp Brook Dam				
Strom Return Period	Peak Flow In (cfs)	Peak Flow Out (cfs)	Pond Elevation	Freeboard (ft)
2-Year	60	59.1	24.09	1.91
10-Year	118	111.4	24.99	1.01
25-Year	159	155.68	26.43	-0.43
50-Year	194	-	-	-
100-Year	231	-	-	-



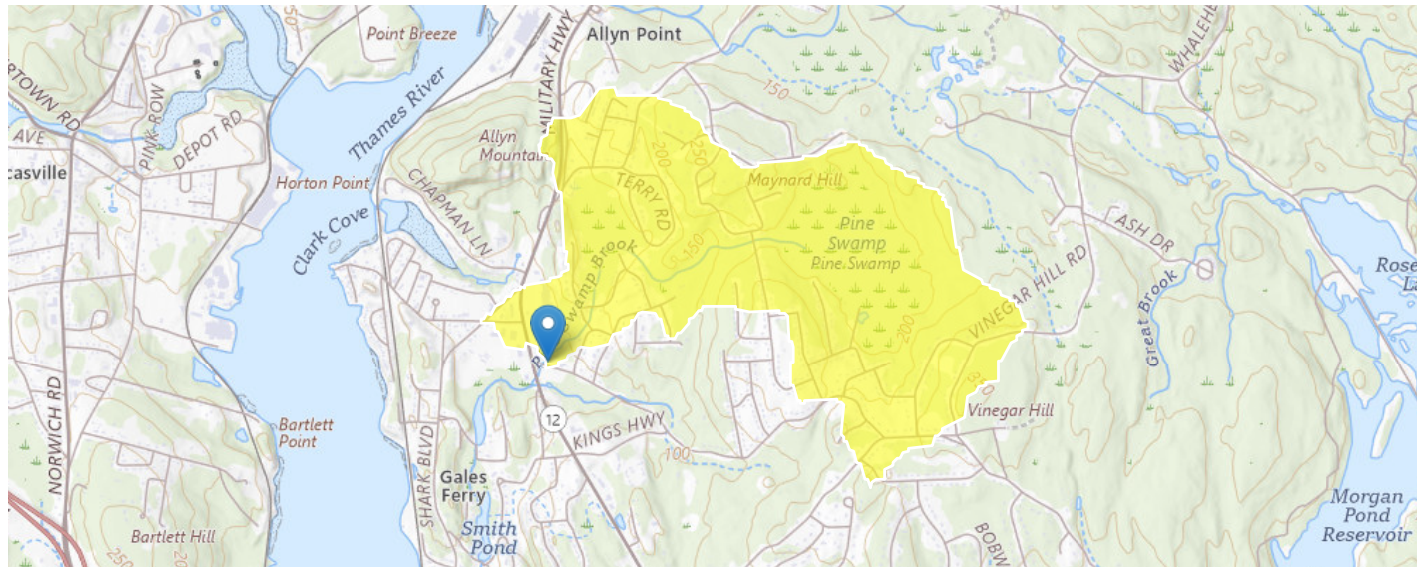
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		Proj. Engineer D.P.H.
TOWN OF LEDYARD PINE BROOK SWAMP DAM		Date: 12/05/25
PINE SWAMP BROOK DAM		Sheet No. SK-4

Appendix 1

StreamStats Peak Flow Statistics

StreamStats Report - Christy Hill Road (4 Pipes)

Region ID: CT
 Workspace ID: CT20251006193022862000
 Clicked Point (Latitude, Longitude): 41.42638, -72.08085
 Time: 2025-10-06 15:30:44 -0400



[+ Collapse All](#)

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.02	square miles
I24H100Y	Maximum 24-hour precipitation that occurs on average once in 100 years	7.74	inches
I24H10Y	Maximum 24-hour precipitation that occurs on average once in 10 years	5.06	inches
I24H200Y	Maximum 24-hour precipitation that occurs on average once in 200 years	8.81	inches
I24H25Y	Maximum 24-hour precipitation that occurs on average once in 25 years	6.13	inches
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years - Equivalent to precipitation intensity index	3.18	inches
I24H500Y	Maximum 24-hour precipitation that occurs on average once in 500 years	10.23	inches
I24H50Y	Maximum 24-hour precipitation that occurs on average once in 50 years	6.93	inches
I24H5Y	Maximum 24-hour precipitation that occurs on average once in 5 years	4.25	inches
SSURGOCCDD	Percentage of area with hydrologic soil types C, D, or C/D from SSURGO	0.0844	percent

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Statewide DA only SIR 2020 5054]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.02	square miles	0.69	325

Peak-Flow Statistics Parameters [Statewide Multiparameter SIR 2020 5054]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.02	square miles	0.69	325
I24H100Y	24 Hour 100 Year Precipitation	7.74	inches	7.62	9.38
I24H10Y	24 Hour 10 Year Precipitation	5.06	inches	4.86	5.79
I24H200Y	24 Hour 200 Year Precipitation	8.81	inches	8.7	11.22
I24H25Y	24 Hour 25 Year Precipitation	6.13	inches	5.99	7.22
I24H2Y	24 Hour 2 Year Precipitation	3.18	inches	2.77	3.32
I24H500Y	24 Hour 500 Year Precipitation	10.23	inches	10.1	13.64
I24H50Y	24 Hour 50 Year Precipitation	6.93	inches	6.81	8.3
I24H5Y	24 Hour 5 Year Precipitation	4.25	inches	4	4.7
SSURGOCCDD	Percent soil type C or D from SSURGO	0.0844	percent	0.118	0.945

Peak-Flow Statistics Flow Report [Statewide DA only SIR 2020 5054]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	ASEp
Drainage Area Only 50-percent AEP flood	65.1	ft^3/s	35
Drainage Area Only 20-percent AEP flood	115	ft^3/s	35
Drainage Area Only 10-percent AEP flood	156	ft^3/s	36.3
Drainage Area Only 4-percent AEP flood	218	ft^3/s	37.8
Drainage Area Only 2-percent AEP flood	269	ft^3/s	39.8
Drainage Area Only 1-percent AEP flood	327	ft^3/s	42.4
Drainage Area Only 0.5-percent AEP flood	391	ft^3/s	44.4
Drainage Area Only 0.2-percent AEP flood	487	ft^3/s	48

Peak-Flow Statistics Disclaimers [Statewide Multiparameter SIR 2020 5054]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Peak-Flow Statistics Flow Report [Statewide Multiparameter SIR 2020 5054]

Statistic	Value	Unit
50-percent AEP flood	39.2	ft^3/s
20-percent AEP flood	61.6	ft^3/s
10-percent AEP flood	78.9	ft^3/s
4-percent AEP flood	107	ft^3/s
2-percent AEP flood	130	ft^3/s
1-percent AEP flood	156	ft^3/s
0.5-percent AEP flood	187	ft^3/s
0.2-percent AEP flood	237	ft^3/s

Peak-Flow Statistics Flow Report [Area-Averaged]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	ASEp
Drainage Area Only 50-percent AEP flood	65.1	ft^3/s	35
Drainage Area Only 20-percent AEP flood	115	ft^3/s	35

Statistic	Value	Unit	ASEp
Drainage Area Only 10-percent AEP flood	156	ft ³ /s	36.3
Drainage Area Only 4-percent AEP flood	218	ft ³ /s	37.8
Drainage Area Only 2-percent AEP flood	269	ft ³ /s	39.8
Drainage Area Only 1-percent AEP flood	327	ft ³ /s	42.4
Drainage Area Only 0.5-percent AEP flood	391	ft ³ /s	44.4
Drainage Area Only 0.2-percent AEP flood	487	ft ³ /s	48
50-percent AEP flood	39.2	ft ³ /s	
20-percent AEP flood	61.6	ft ³ /s	
10-percent AEP flood	78.9	ft ³ /s	
4-percent AEP flood	107	ft ³ /s	
2-percent AEP flood	130	ft ³ /s	
1-percent AEP flood	156	ft ³ /s	
0.5-percent AEP flood	187	ft ³ /s	
0.2-percent AEP flood	237	ft ³ /s	

Peak-Flow Statistics Citations

Ahearn, E.A., and Hodgkins, G.A., 2020, Estimating flood magnitude and frequency on streams and rivers in Connecticut, based on data through water year 2015: U.S. Geological Survey Scientific Investigations Report 2020–5054, 42 p. (<https://doi.org/10.3133/sir20205054>)

➤ NHD Features of Delineated Basin

NHD Streams Intersecting Basin Delineation Boundary

This functionality attempts to find the stream name at the delineation point. The name of the nearest intersecting National Hydrography Dataset (NHD) stream is selected by default to appear in the report above. NHD streams do not correspond to the StreamStats stream grid and may not be accurate. If you would like a different stream to appear in the above section, please make a selection below.

No NHD streams intersect the delineated basin.

Watershed Boundary Dataset (WBD) HUC 8 Intersecting Basin Delineation Boundary

This functionality attempts to find the intersecting HUC 8 of the delineated watershed. HUC boundaries do not correspond to the StreamStats data and may not be accurate.

No WBD HUC8s intersect the delineated basin.

NHD Hydrologic Features Citations

U.S. Geological Survey, 2022, USGS TNM - National Hydrography Dataset, accessed July 21, 2022 at URL

<https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer/6>.

(<https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer/6>) U.S. Geological Survey, 2022, USGS TNM - National Hydrography Dataset, accessed July 21, 2022 at URL <https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer/4>. (<https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer/4>)

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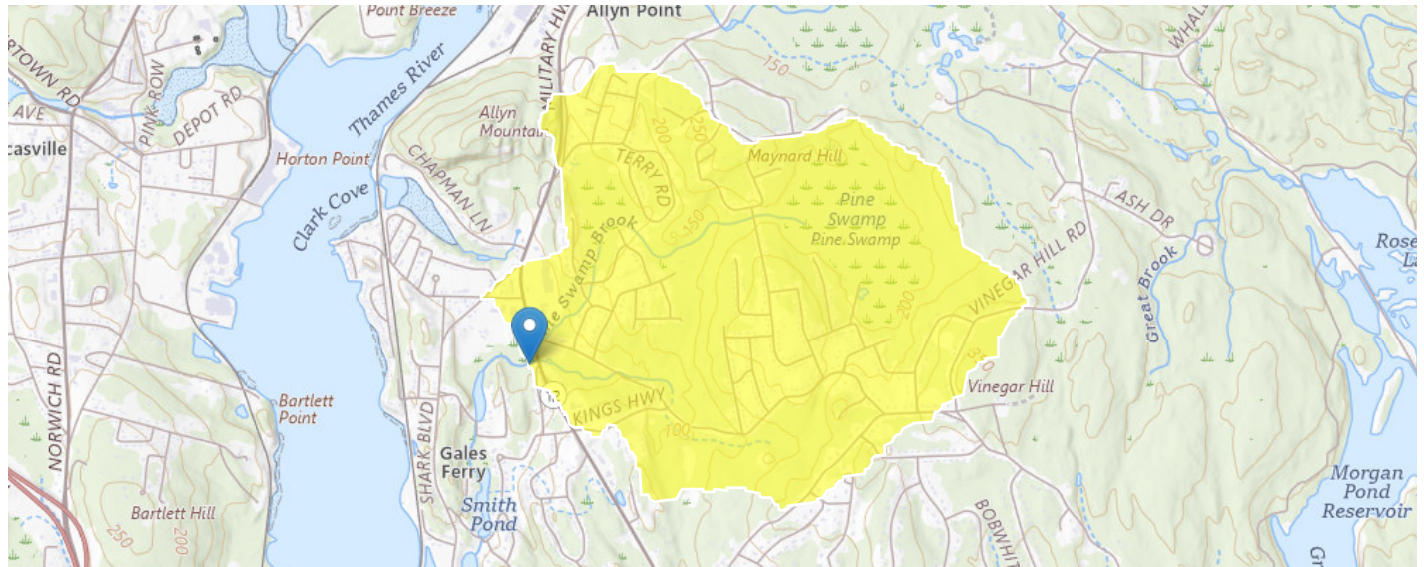
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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.29.3
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Route 12 Culvert - Peak Flow Statistics

Region ID: CT
 Workspace ID: CT20251007155358347000
 Clicked Point (Latitude, Longitude): 41.42518, -72.08192
 Time: 2025-10-07 11:54:37 -0400



[+ Collapse All](#)

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.52	square miles
I24H100Y	Maximum 24-hour precipitation that occurs on average once in 100 years	7.74	inches
I24H10Y	Maximum 24-hour precipitation that occurs on average once in 10 years	5.06	inches
I24H200Y	Maximum 24-hour precipitation that occurs on average once in 200 years	8.82	inches
I24H25Y	Maximum 24-hour precipitation that occurs on average once in 25 years	6.13	inches
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years - Equivalent to precipitation intensity index	3.18	inches
I24H500Y	Maximum 24-hour precipitation that occurs on average once in 500 years	10.23	inches
I24H50Y	Maximum 24-hour precipitation that occurs on average once in 50 years	6.94	inches
I24H5Y	Maximum 24-hour precipitation that occurs on average once in 5 years	4.25	inches
SSURGOCCDD	Percentage of area with hydrologic soil types C, D, or C/D from SSURGO	0.0977	percent

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Statewide DA only SIR 2020 5054]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.52	square miles	0.69	325

Peak-Flow Statistics Parameters [Statewide Multiparameter SIR 2020 5054]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.52	square miles	0.69	325
I24H100Y	24 Hour 100 Year Precipitation	7.74	inches	7.62	9.38
I24H10Y	24 Hour 10 Year Precipitation	5.06	inches	4.86	5.79
I24H200Y	24 Hour 200 Year Precipitation	8.82	inches	8.7	11.22
I24H25Y	24 Hour 25 Year Precipitation	6.13	inches	5.99	7.22
I24H2Y	24 Hour 2 Year Precipitation	3.18	inches	2.77	3.32
I24H500Y	24 Hour 500 Year Precipitation	10.23	inches	10.1	13.64
I24H50Y	24 Hour 50 Year Precipitation	6.94	inches	6.81	8.3
I24H5Y	24 Hour 5 Year Precipitation	4.25	inches	4	4.7
SSURGOCCDD	Percent soil type C or D from SSURGO	0.0977	percent	0.118	0.945

Peak-Flow Statistics Flow Report [Statewide DA only SIR 2020 5054]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR²: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	ASEp
Drainage Area Only 50-percent AEP flood	88.8	ft ³ /s	35
Drainage Area Only 20-percent AEP flood	156	ft ³ /s	35
Drainage Area Only 10-percent AEP flood	212	ft ³ /s	36.3
Drainage Area Only 4-percent AEP flood	295	ft ³ /s	37.8
Drainage Area Only 2-percent AEP flood	365	ft ³ /s	39.8
Drainage Area Only 1-percent AEP flood	443	ft ³ /s	42.4
Drainage Area Only 0.5-percent AEP flood	531	ft ³ /s	44.4
Drainage Area Only 0.2-percent AEP flood	661	ft ³ /s	48

Peak-Flow Statistics Disclaimers [Statewide Multiparameter SIR 2020 5054]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Peak-Flow Statistics Flow Report [Statewide Multiparameter SIR 2020 5054]

Statistic	Value	Unit
50-percent AEP flood	55.3	ft ³ /s
20-percent AEP flood	86.2	ft ³ /s
10-percent AEP flood	110	ft ³ /s
4-percent AEP flood	148	ft ³ /s
2-percent AEP flood	181	ft ³ /s
1-percent AEP flood	216	ft ³ /s
0.5-percent AEP flood	260	ft ³ /s
0.2-percent AEP flood	328	ft ³ /s

Peak-Flow Statistics Flow Report [Area-Averaged]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR²: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	ASEp
Drainage Area Only 50-percent AEP flood	88.8	ft ³ /s	35
Drainage Area Only 20-percent AEP flood	156	ft ³ /s	35

Statistic	Value	Unit	ASEp
Drainage Area Only 10-percent AEP flood	212	ft ³ /s	36.3
Drainage Area Only 4-percent AEP flood	295	ft ³ /s	37.8
Drainage Area Only 2-percent AEP flood	365	ft ³ /s	39.8
Drainage Area Only 1-percent AEP flood	443	ft ³ /s	42.4
Drainage Area Only 0.5-percent AEP flood	531	ft ³ /s	44.4
Drainage Area Only 0.2-percent AEP flood	661	ft ³ /s	48
50-percent AEP flood	55.3	ft ³ /s	
20-percent AEP flood	86.2	ft ³ /s	
10-percent AEP flood	110	ft ³ /s	
4-percent AEP flood	148	ft ³ /s	
2-percent AEP flood	181	ft ³ /s	
1-percent AEP flood	216	ft ³ /s	
0.5-percent AEP flood	260	ft ³ /s	
0.2-percent AEP flood	328	ft ³ /s	

Peak-Flow Statistics Citations

Ahearn, E.A., and Hodgkins, G.A., 2020, Estimating flood magnitude and frequency on streams and rivers in Connecticut, based on data through water year 2015: U.S. Geological Survey Scientific Investigations Report 2020–5054, 42 p. (<https://doi.org/10.3133/sir20205054>)

➤ NHD Features of Delineated Basin

NHD Streams Intersecting Basin Delineation Boundary

This functionality attempts to find the stream name at the delineation point. The name of the nearest intersecting National Hydrography Dataset (NHD) stream is selected by default to appear in the report above. NHD streams do not correspond to the StreamStats stream grid and may not be accurate. If you would like a different stream to appear in the above section, please make a selection below.

Watershed Boundary Dataset (WBD) HUC 8 Intersecting Basin Delineation Boundary

This functionality attempts to find the intersecting HUC 8 of the delineated watershed. HUC boundaries do not correspond to the StreamStats data and may not be accurate.

No WBD HUC8s intersect the delineated basin.

NHD Hydrologic Features Citations

U.S. Geological Survey, 2022, USGS TNM - National Hydrography Dataset, accessed July 21, 2022 at URL <https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer/6>. (<https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer/6>) U.S. Geological Survey, 2022, USGS TNM - National Hydrography Dataset, accessed July 21, 2022 at URL <https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer/4>. (<https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer/4>)

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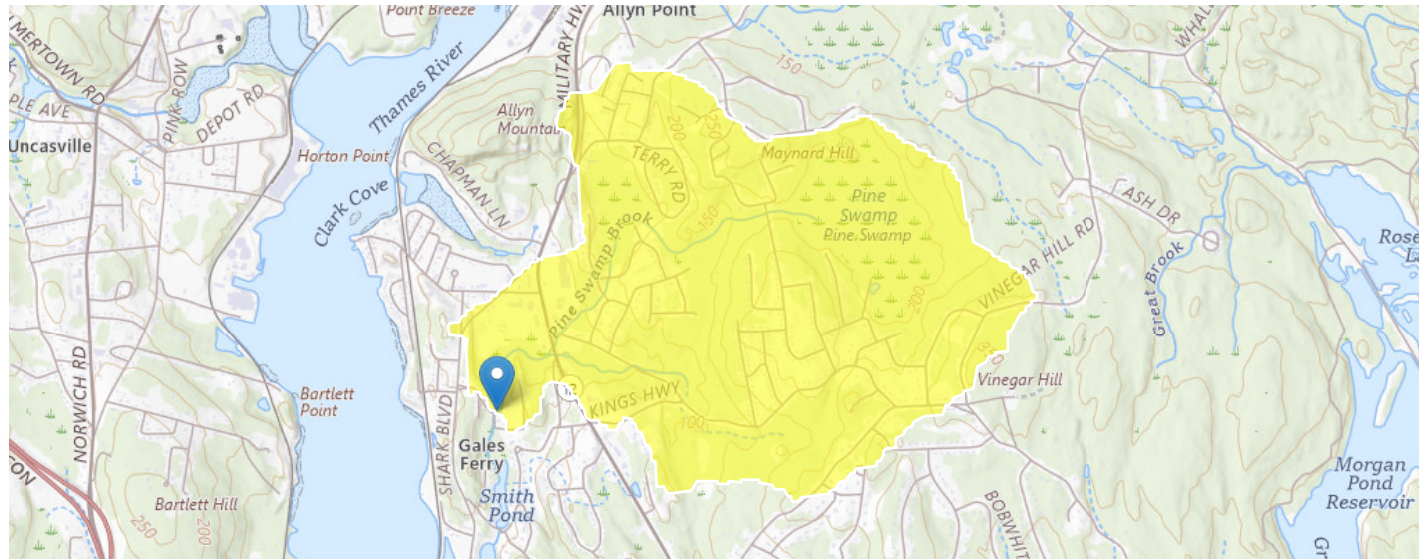
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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.29.3
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Pine Swamp Brook Dam - Peak Flow Statistics

Region ID: CT
 Workspace ID: CT20250924151958307000
 Clicked Point (Latitude, Longitude): 41.42268, -72.08499
 Time: 2025-09-24 11:20:22 -0400



[+ Collapse All](#)

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.61	square miles
I24H100Y	Maximum 24-hour precipitation that occurs on average once in 100 years	7.74	inches
I24H10Y	Maximum 24-hour precipitation that occurs on average once in 10 years	5.06	inches
I24H200Y	Maximum 24-hour precipitation that occurs on average once in 200 years	8.82	inches
I24H25Y	Maximum 24-hour precipitation that occurs on average once in 25 years	6.13	inches
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years - Equivalent to precipitation intensity index	3.18	inches
I24H500Y	Maximum 24-hour precipitation that occurs on average once in 500 years	10.23	inches
I24H50Y	Maximum 24-hour precipitation that occurs on average once in 50 years	6.94	inches
I24H5Y	Maximum 24-hour precipitation that occurs on average once in 5 years	4.25	inches
SSURGOCCDD	Percentage of area with hydrologic soil types C, D, or C/D from SSURGO	0.1199	percent
STRDEN	Stream Density -- total length of streams divided by drainage area	1.9	miles per square mile

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Statewide DA only SIR 2020 5054]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.61	square miles	0.69	325

Peak-Flow Statistics Parameters [Statewide Multiparameter SIR 2020 5054]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.61	square miles	0.69	325
I24H100Y	24 Hour 100 Year Precipitation	7.74	inches	7.62	9.38
I24H10Y	24 Hour 10 Year Precipitation	5.06	inches	4.86	5.79
I24H200Y	24 Hour 200 Year Precipitation	8.82	inches	8.7	11.22
I24H25Y	24 Hour 25 Year Precipitation	6.13	inches	5.99	7.22
I24H2Y	24 Hour 2 Year Precipitation	3.18	inches	2.77	3.32
I24H500Y	24 Hour 500 Year Precipitation	10.23	inches	10.1	13.64
I24H50Y	24 Hour 50 Year Precipitation	6.94	inches	6.81	8.3
I24H5Y	24 Hour 5 Year Precipitation	4.25	inches	4	4.7
SSURGOCCDD	Percent soil type C or D from SSURGO	0.1199	percent	0.118	0.945

Peak-Flow Statistics Flow Report [Statewide DA only SIR 2020 5054]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	ASEp
Drainage Area Only 50-percent AEP flood	92.9	ft^3/s	35
Drainage Area Only 20-percent AEP flood	163	ft^3/s	35
Drainage Area Only 10-percent AEP flood	221	ft^3/s	36.3
Drainage Area Only 4-percent AEP flood	308	ft^3/s	37.8
Drainage Area Only 2-percent AEP flood	381	ft^3/s	39.8
Drainage Area Only 1-percent AEP flood	463	ft^3/s	42.4
Drainage Area Only 0.5-percent AEP flood	554	ft^3/s	44.4
Drainage Area Only 0.2-percent AEP flood	691	ft^3/s	48

Peak-Flow Statistics Flow Report [Statewide Multiparameter SIR 2020 5054]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	PIL	PIU	ASEp
50-percent AEP flood	59.7	ft^3/s	14	254	26.5
20-percent AEP flood	92.7	ft^3/s	20	430	26.3
10-percent AEP flood	118	ft^3/s	23.5	591	28.4
4-percent AEP flood	159	ft^3/s	28.8	878	31.5
2-percent AEP flood	194	ft^3/s	32	1170	34.3
1-percent AEP flood	231	ft^3/s	34.7	1540	37.1
0.5-percent AEP flood	278	ft^3/s	47.5	1630	40.6
0.2-percent AEP flood	350	ft^3/s	64	1910	45

Peak-Flow Statistics Flow Report [Area-Averaged]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

Statistic	Value	Unit	ASEp
Drainage Area Only 50-percent AEP flood	92.9	ft^3/s	35
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Drainage Area Only 10-percent AEP flood	221	ft^3/s	36.3
Drainage Area Only 4-percent AEP flood	308	ft^3/s	37.8

Statistic	Value	Unit	ASEp		
Drainage Area Only 2-percent AEP flood	381	ft ³ /s	39.8		
Drainage Area Only 1-percent AEP flood	463	ft ³ /s	42.4		
Drainage Area Only 0.5-percent AEP flood	554	ft ³ /s	44.4		
Drainage Area Only 0.2-percent AEP flood	691	ft ³ /s	48		
50-percent AEP flood	59.7	ft ³ /s	14	254	26.5
20-percent AEP flood	92.7	ft ³ /s	20	430	26.3
10-percent AEP flood	118	ft ³ /s	23.5	591	28.4
4-percent AEP flood	159	ft ³ /s	28.8	878	31.5
2-percent AEP flood	194	ft ³ /s	32	1170	34.3
1-percent AEP flood	231	ft ³ /s	34.7	1540	37.1
0.5-percent AEP flood	278	ft ³ /s	47.5	1630	40.6
0.2-percent AEP flood	350	ft ³ /s	64	1910	45

Peak-Flow Statistics Citations

Ahearn, E.A., and Hodgkins, G.A., 2020, Estimating flood magnitude and frequency on streams and rivers in Connecticut, based on data through water year 2015: U.S. Geological Survey Scientific Investigations Report 2020-5054, 42 p. (<https://doi.org/10.3133/sir20205054>)

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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.29.3

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

Appendix 2
Hydraulic Capacity Analysis

Christy Hill Road (1-Pipe)
Tributary to 3000-07

Hydraulic Capacity Analysis

Culvert Report

Christy Hill Road (1-Pipe)

Invert Elev Dn (ft)	= 26.61
Pipe Length (ft)	= 33.00
Slope (%)	= 1.30
Invert Elev Up (ft)	= 27.04
Rise (in)	= 12.0
Shape	= Circular
Span (in)	= 12.0
No. Barrels	= 1
n-Value	= 0.023
Culvert Type	= Circular Corrugate Metal Pipe
Culvert Entrance	= Mitered to slope (C)
Coeff. K,M,c,Y,k	= 0.021, 1.33, 0.0463, 0.75, 0.7

Embankment

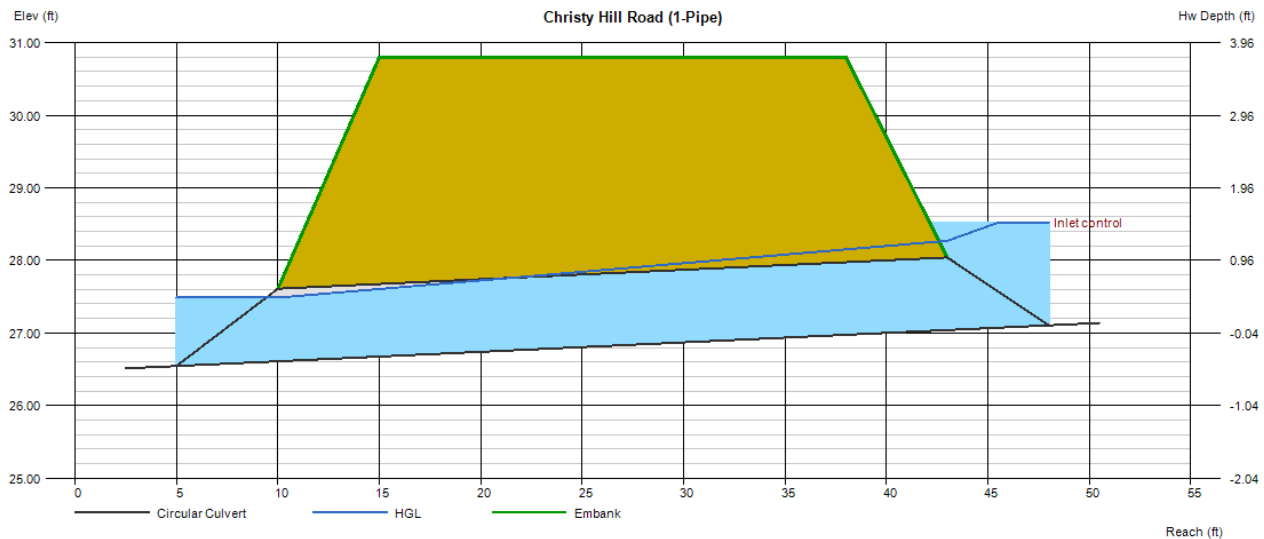
Top Elevation (ft)	= 30.80
Top Width (ft)	= 23.00
Crest Width (ft)	= 10.00

Calculations

Qmin (cfs)	= 3.10
Qmax (cfs)	= 3.10
Tailwater Elev (ft)	= (dc+D)/2

Highlighted

Qtotal (cfs)	= 3.10
Qpipe (cfs)	= 3.10
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 4.25
Veloc Up (ft/s)	= 3.95
HGL Dn (ft)	= 27.49
HGL Up (ft)	= 28.27
Hw Elev (ft)	= 28.52
Hw/D (ft)	= 1.48
Flow Regime	= Inlet Control



Culvert Report

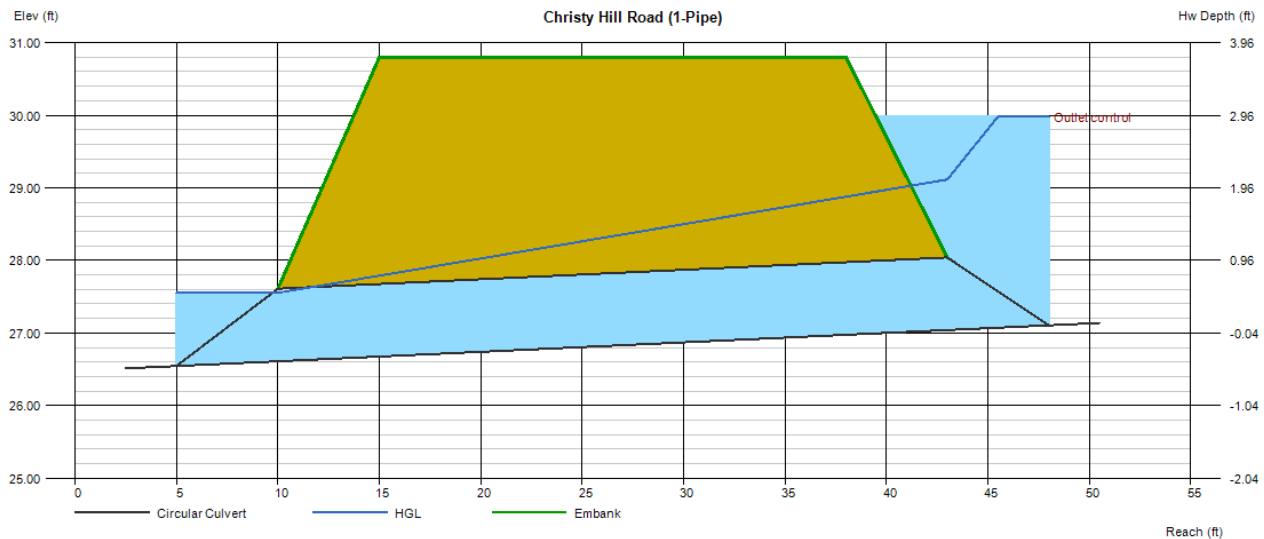
Christy Hill Road (1-Pipe)

Invert Elev Dn (ft)	= 26.61
Pipe Length (ft)	= 33.00
Slope (%)	= 1.30
Invert Elev Up (ft)	= 27.04
Rise (in)	= 12.0
Shape	= Circular
Span (in)	= 12.0
No. Barrels	= 1
n-Value	= 0.023
Culvert Type	= Circular Corrugate Metal Pipe
Culvert Entrance	= Mitered to slope (C)
Coeff. K,M,c,Y,k	= 0.021, 1.33, 0.0463, 0.75, 0.7

Embankment	
Top Elevation (ft)	= 30.80
Top Width (ft)	= 23.00
Crest Width (ft)	= 10.00

Calculations	
Qmin (cfs)	= 4.50
Qmax (cfs)	= 4.50
Tailwater Elev (ft)	= (dc+D)/2

Highlighted	
Qtotal (cfs)	= 4.50
Qpipe (cfs)	= 4.50
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 5.86
Veloc Up (ft/s)	= 5.73
HGL Dn (ft)	= 27.55
HGL Up (ft)	= 29.11
Hw Elev (ft)	= 29.98
Hw/D (ft)	= 2.94
Flow Regime	= Outlet Control



Culvert Report

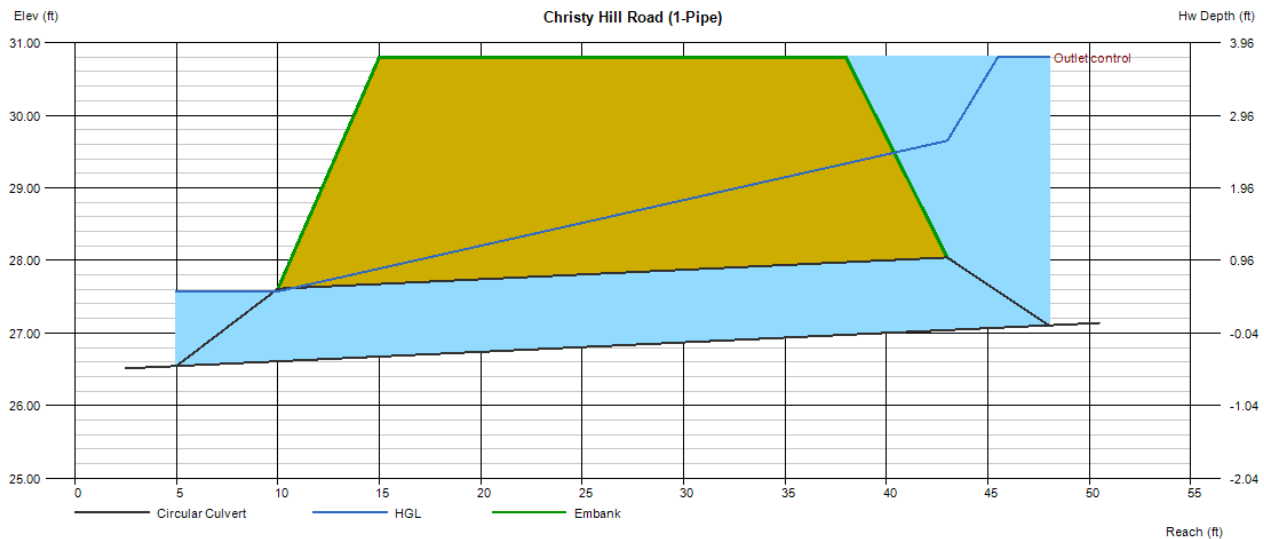
Christy Hill Road (1-Pipe)

Invert Elev Dn (ft)	= 26.61
Pipe Length (ft)	= 33.00
Slope (%)	= 1.30
Invert Elev Up (ft)	= 27.04
Rise (in)	= 12.0
Shape	= Circular
Span (in)	= 12.0
No. Barrels	= 1
n-Value	= 0.023
Culvert Type	= Circular Corrugate Metal Pipe
Culvert Entrance	= Mitered to slope (C)
Coeff. K,M,c,Y,k	= 0.021, 1.33, 0.0463, 0.75, 0.7

Embankment	
Top Elevation (ft)	= 30.80
Top Width (ft)	= 23.00
Crest Width (ft)	= 10.00

Calculations	
Qmin (cfs)	= 4.50
Qmax (cfs)	= 10.00
Tailwater Elev (ft)	= (dc+D)/2

Highlighted	
Qtotal (cfs)	= 5.20
Qpipe (cfs)	= 5.19
Qovertop (cfs)	= 0.01
Veloc Dn (ft/s)	= 6.69
Veloc Up (ft/s)	= 6.61
HGL Dn (ft)	= 27.57
HGL Up (ft)	= 29.65
Hw Elev (ft)	= 30.80
Hw/D (ft)	= 3.76
Flow Regime	= Outlet Control



Christy Hill Road (4-Pipes)
Tributary to 3000-08)

Hydraulic Capacity Analysis

Culvert Report

Christy Hill Road (4-Pipes)

Invert Elev Dn (ft)	= 23.50
Pipe Length (ft)	= 235.00
Slope (%)	= 0.38
Invert Elev Up (ft)	= 24.40
Rise (in)	= 24.0
Shape	= Circular
Span (in)	= 24.0
No. Barrels	= 4
n-Value	= 0.013
Culvert Type	= Circular Concrete
Culvert Entrance	= Square edge w/headwall (C)
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5

Calculations

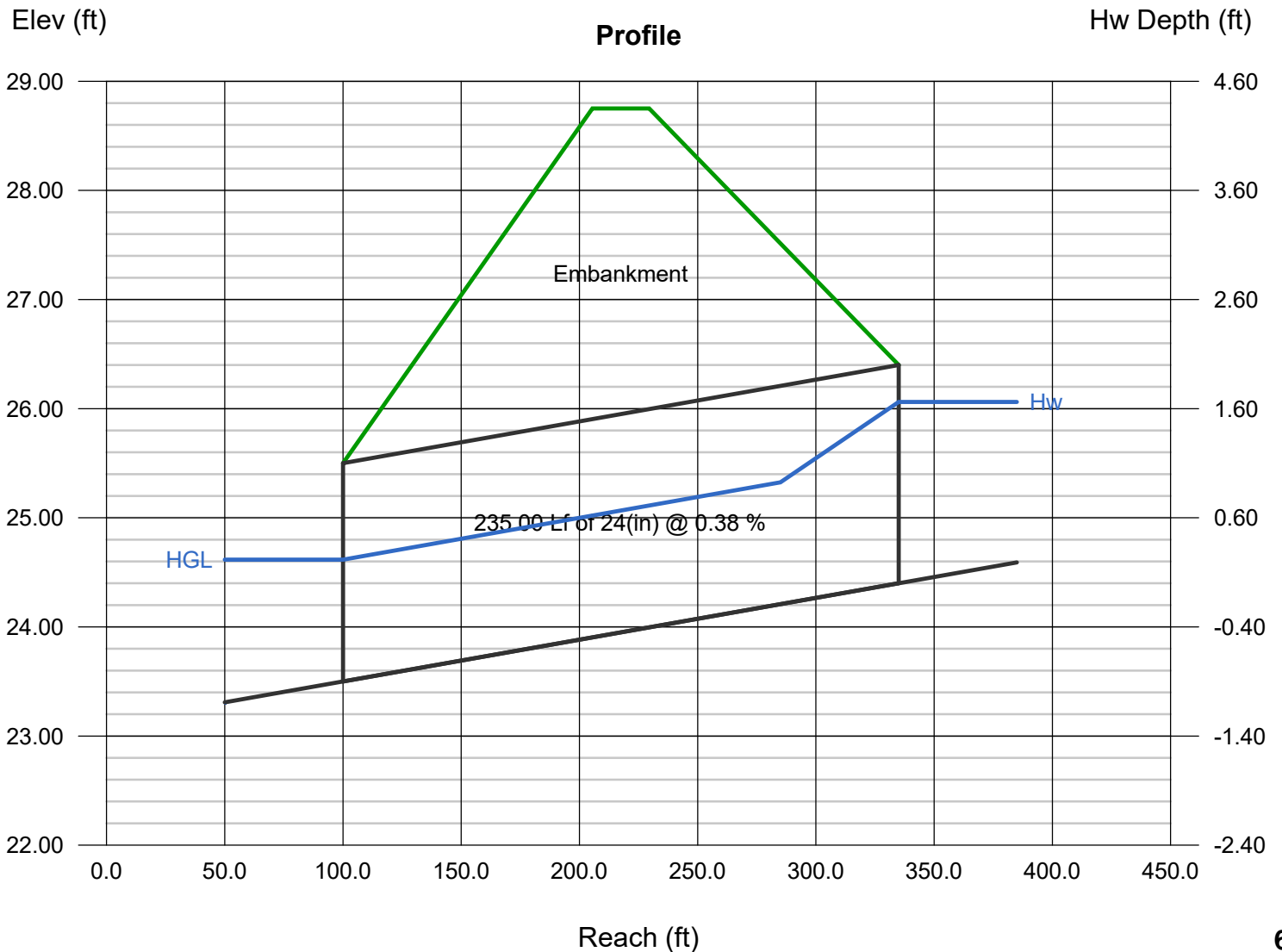
Qmin (cfs)	= 39.00
Qmax (cfs)	= 39.00
Tailwater Elev (ft)	= 0.00

Highlighted

Qtotal (cfs)	= 39.00
Qpipe (cfs)	= 39.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 5.41
Veloc Up (ft/s)	= 5.41
HGL Dn (ft)	= 24.62
HGL Up (ft)	= 25.52
Hw Elev (ft)	= 26.06
Hw/D (ft)	= 0.83
Flow Regime	= Inlet Control

Embankment

Top Elevation (ft)	= 28.75
Top Width (ft)	= 24.00
Crest Width (ft)	= 20.00



Culvert Report

Christy Hill Road (4-Pipes)

Invert Elev Dn (ft)	= 23.50
Pipe Length (ft)	= 235.00
Slope (%)	= 0.38
Invert Elev Up (ft)	= 24.40
Rise (in)	= 24.0
Shape	= Circular
Span (in)	= 24.0
No. Barrels	= 4
n-Value	= 0.013
Culvert Type	= Circular Concrete
Culvert Entrance	= Square edge w/headwall (C)
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5

Calculations

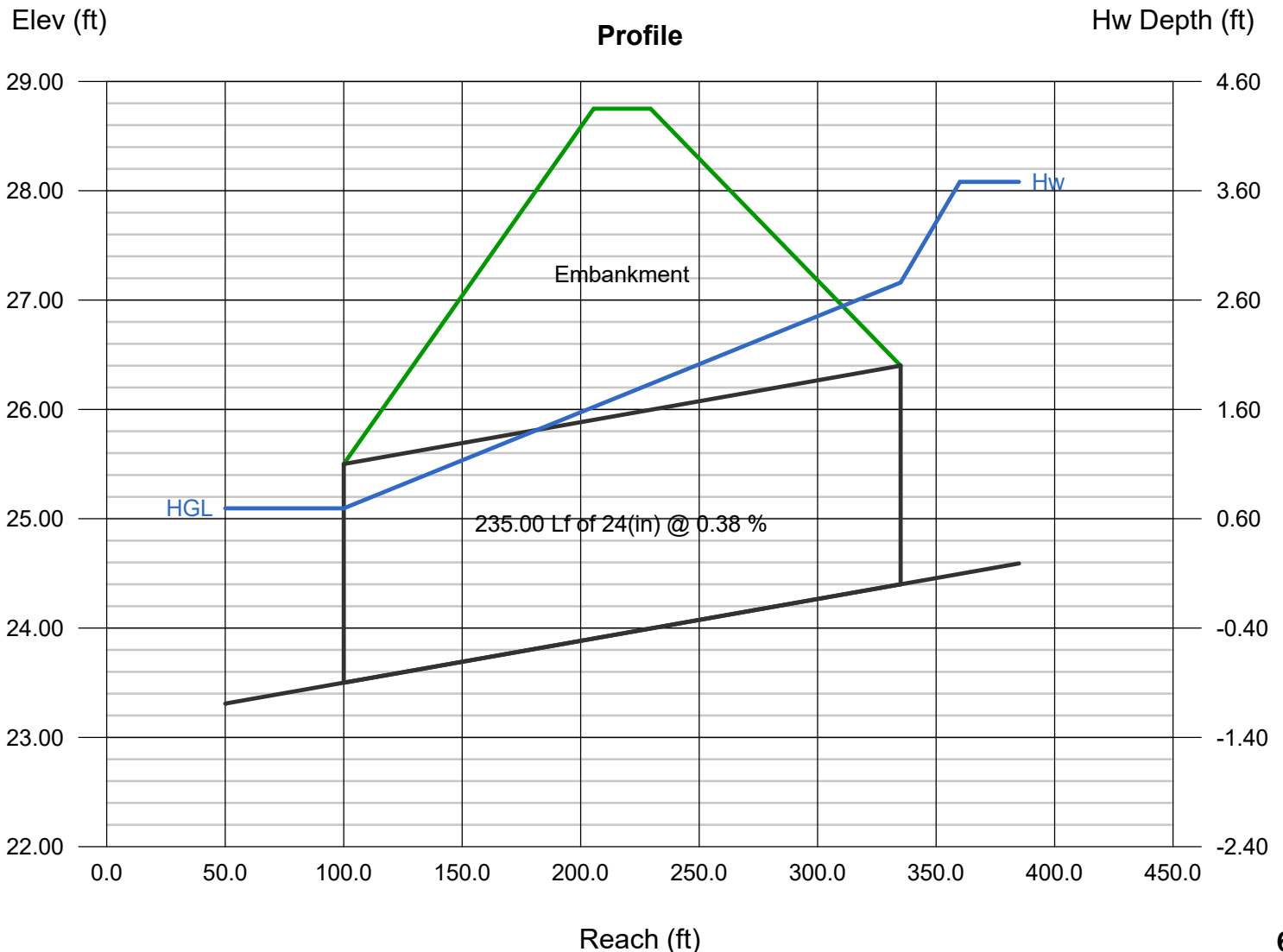
Qmin (cfs)	= 79.00
Qmax (cfs)	= 79.00
Tailwater Elev (ft)	= 0.00

Highlighted

Qtotal (cfs)	= 79.00
Qpipe (cfs)	= 79.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 7.35
Veloc Up (ft/s)	= 6.29
HGL Dn (ft)	= 25.10
HGL Up (ft)	= 27.16
Hw Elev (ft)	= 28.08
Hw/D (ft)	= 1.84
Flow Regime	= Outlet Control

Embankment

Top Elevation (ft)	= 28.75
Top Width (ft)	= 24.00
Crest Width (ft)	= 20.00



Culvert Report

Christy Hill Road (4-Pipes)

Invert Elev Dn (ft)	= 23.50
Pipe Length (ft)	= 235.00
Slope (%)	= 0.38
Invert Elev Up (ft)	= 24.40
Rise (in)	= 24.0
Shape	= Circular
Span (in)	= 24.0
No. Barrels	= 4
n-Value	= 0.013
Culvert Type	= Circular Concrete
Culvert Entrance	= Square edge w/headwall (C)
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5

Calculations

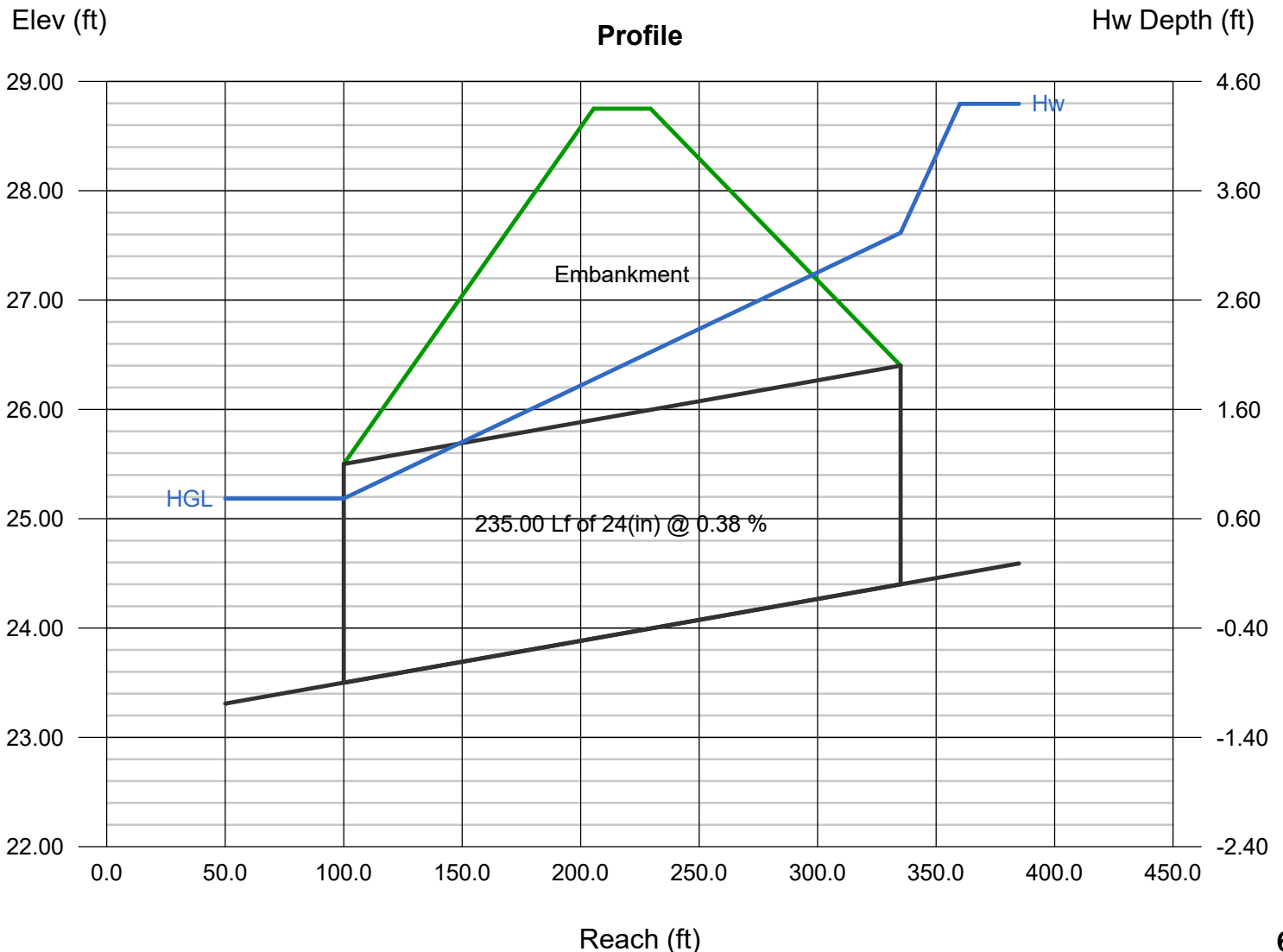
Qmin (cfs)	= 90.00
Qmax (cfs)	= 90.00
Tailwater Elev (ft)	= 0.00

Highlighted

Qtotal (cfs)	= 90.00
Qpipe (cfs)	= 89.41
Qovertop (cfs)	= 0.59
Veloc Dn (ft/s)	= 7.91
Veloc Up (ft/s)	= 7.12
HGL Dn (ft)	= 25.19
HGL Up (ft)	= 27.61
Hw Elev (ft)	= 28.80
Hw/D (ft)	= 2.20
Flow Regime	= Outlet Control

Embankment

Top Elevation (ft)	= 28.75
Top Width (ft)	= 24.00
Crest Width (ft)	= 20.00



Route 12
Hydraulic Capacity Analysis

Culvert Report

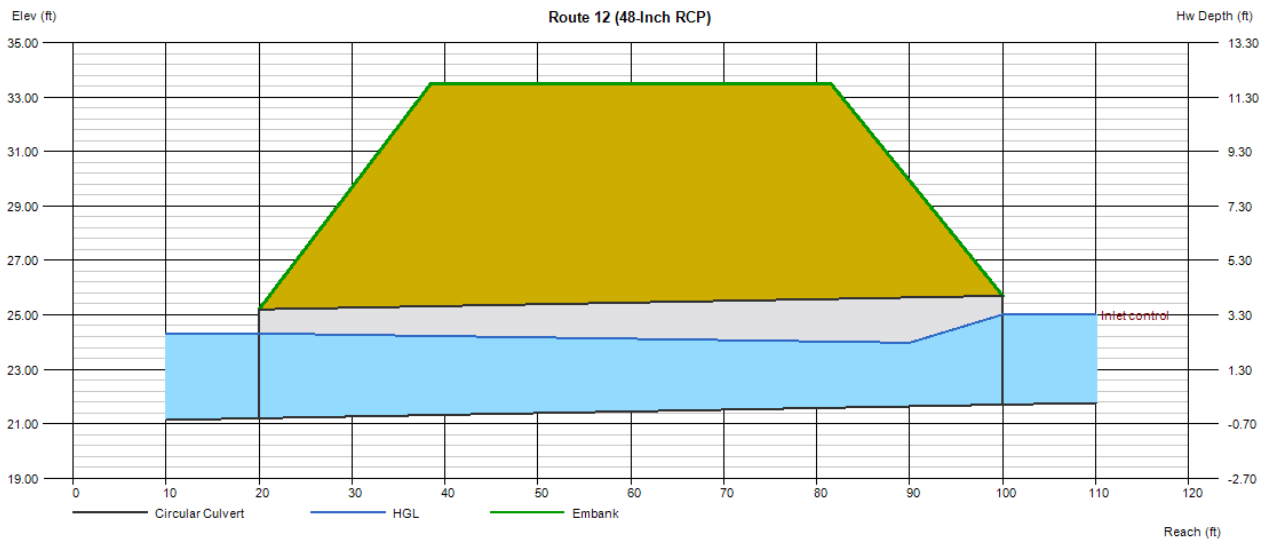
Route 12 (48-Inch RCP)

Invert Elev Dn (ft)	= 21.20
Pipe Length (ft)	= 80.00
Slope (%)	= 0.63
Invert Elev Up (ft)	= 21.70
Rise (in)	= 48.0
Shape	= Circular
Span (in)	= 48.0
No. Barrels	= 1
n-Value	= 0.013
Culvert Type	= Circular Concrete
Culvert Entrance	= Square edge w/headwall (C)
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5

Embankment	
Top Elevation (ft)	= 33.50
Top Width (ft)	= 43.00
Crest Width (ft)	= 10.00

Calculations	
Qmin (cfs)	= 55.00
Qmax (cfs)	= 55.00
Tailwater Elev (ft)	= (dc+D)/2

Highlighted	
Qtotal (cfs)	= 55.00
Qpipe (cfs)	= 55.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 5.24
Veloc Up (ft/s)	= 7.65
HGL Dn (ft)	= 24.31
HGL Up (ft)	= 23.93
Hw Elev (ft)	= 25.01
Hw/D (ft)	= 0.83
Flow Regime	= Inlet Control



Culvert Report

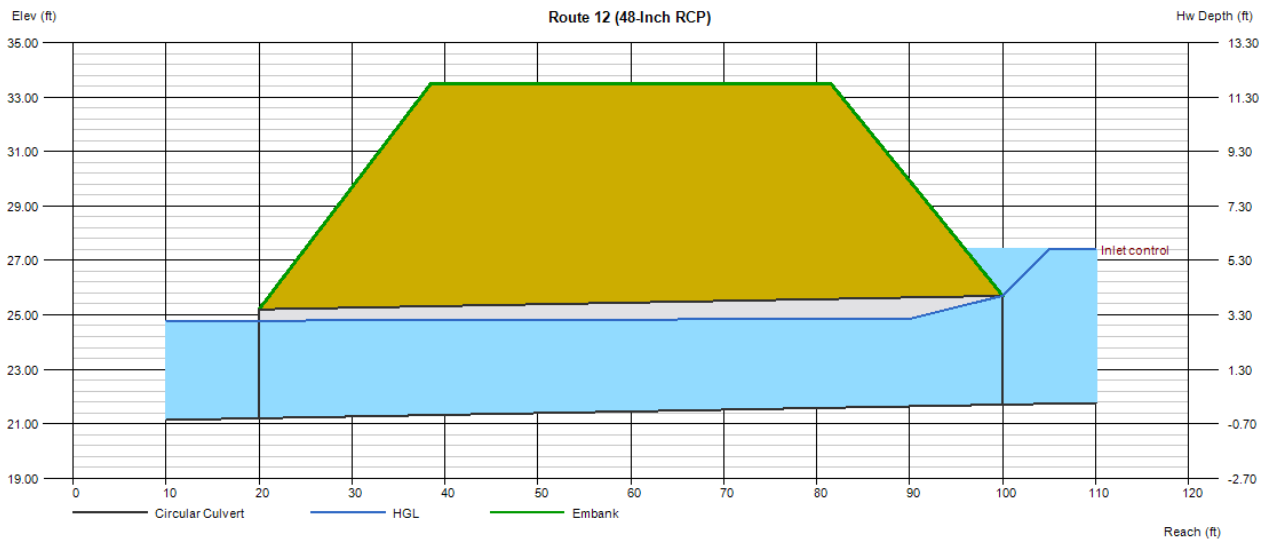
Route 12 (48-Inch RCP)

Invert Elev Dn (ft)	= 21.20
Pipe Length (ft)	= 80.00
Slope (%)	= 0.63
Invert Elev Up (ft)	= 21.70
Rise (in)	= 48.0
Shape	= Circular
Span (in)	= 48.0
No. Barrels	= 1
n-Value	= 0.013
Culvert Type	= Circular Concrete
Culvert Entrance	= Square edge w/headwall (C)
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5

Embankment	
Top Elevation (ft)	= 33.50
Top Width (ft)	= 43.00
Crest Width (ft)	= 10.00

Calculations	
Qmin (cfs)	= 110.00
Qmax (cfs)	= 110.00
Tailwater Elev (ft)	= (dc+D)/2

Highlighted	
Qtotal (cfs)	= 110.00
Qpipe (cfs)	= 110.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 9.26
Veloc Up (ft/s)	= 10.31
HGL Dn (ft)	= 24.78
HGL Up (ft)	= 24.87
Hw Elev (ft)	= 27.42
Hw/D (ft)	= 1.43
Flow Regime	= Inlet Control



Culvert Report

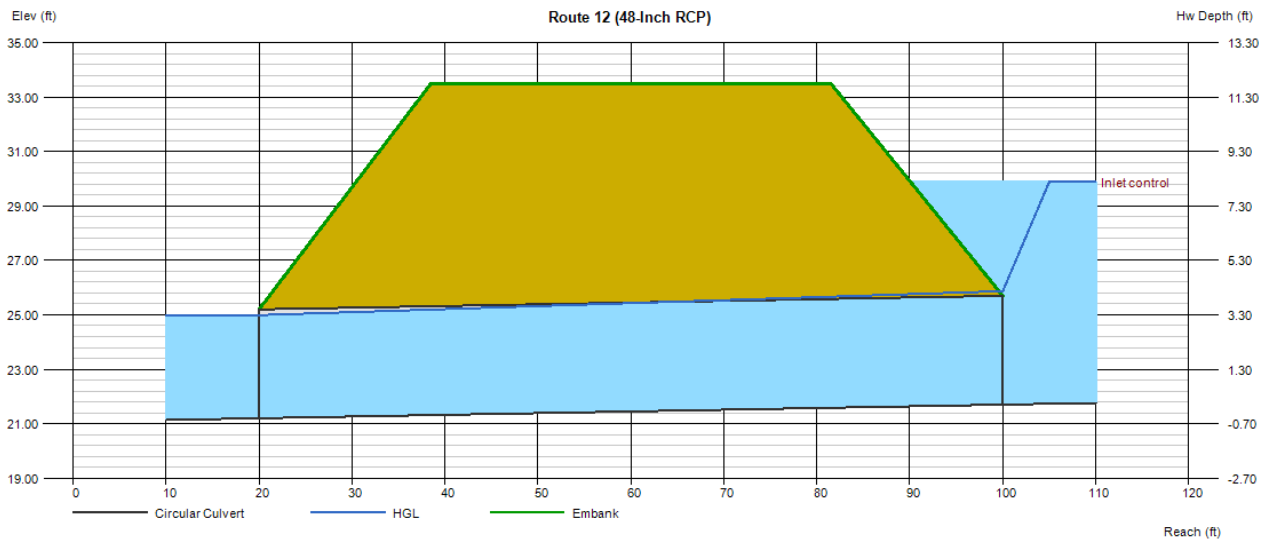
Route 12 (48-Inch RCP)

Invert Elev Dn (ft)	= 21.20
Pipe Length (ft)	= 80.00
Slope (%)	= 0.63
Invert Elev Up (ft)	= 21.70
Rise (in)	= 48.0
Shape	= Circular
Span (in)	= 48.0
No. Barrels	= 1
n-Value	= 0.013
Culvert Type	= Circular Concrete
Culvert Entrance	= Square edge w/headwall (C)
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5

Embankment	
Top Elevation (ft)	= 33.50
Top Width (ft)	= 43.00
Crest Width (ft)	= 10.00

Calculations	
Qmin (cfs)	= 148.00
Qmax (cfs)	= 148.00
Tailwater Elev (ft)	= (dc+D)/2

Highlighted	
Qtotal (cfs)	= 148.00
Qpipe (cfs)	= 148.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 12.02
Veloc Up (ft/s)	= 11.78
HGL Dn (ft)	= 24.99
HGL Up (ft)	= 25.87
Hw Elev (ft)	= 29.89
Hw/D (ft)	= 2.05
Flow Regime	= Inlet Control



Culvert Report

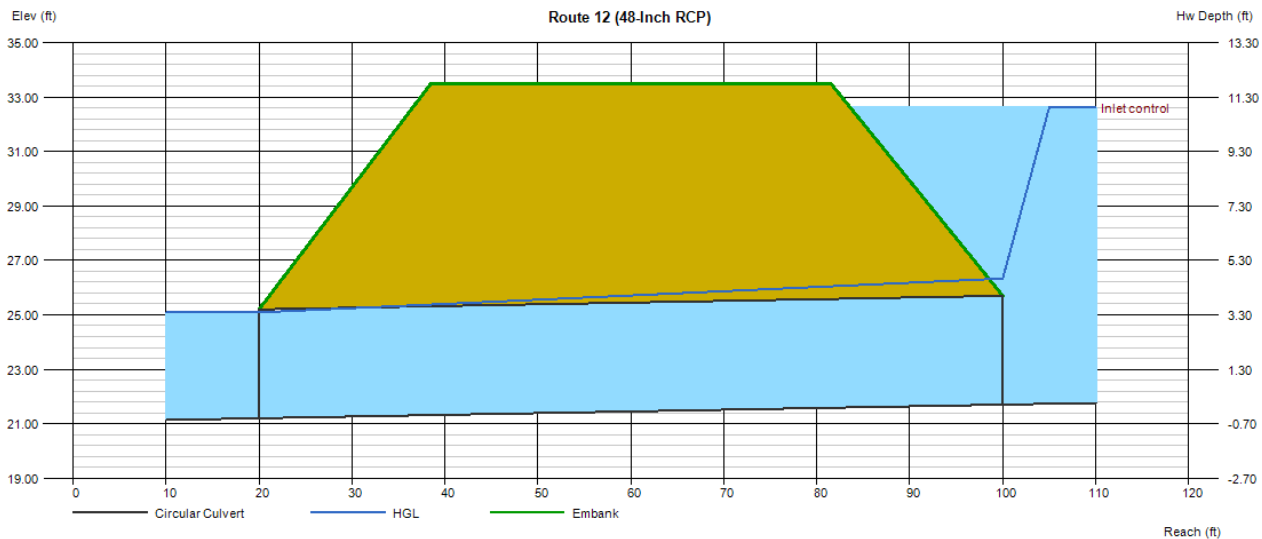
Route 12 (48-Inch RCP)

Invert Elev Dn (ft)	= 21.20
Pipe Length (ft)	= 80.00
Slope (%)	= 0.63
Invert Elev Up (ft)	= 21.70
Rise (in)	= 48.0
Shape	= Circular
Span (in)	= 48.0
No. Barrels	= 1
n-Value	= 0.013
Culvert Type	= Circular Concrete
Culvert Entrance	= Square edge w/headwall (C)
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5

Embankment	
Top Elevation (ft)	= 33.50
Top Width (ft)	= 43.00
Crest Width (ft)	= 10.00

Calculations	
Qmin (cfs)	= 181.00
Qmax (cfs)	= 181.00
Tailwater Elev (ft)	= (dc+D)/2

Highlighted	
Qtotal (cfs)	= 181.00
Qpipe (cfs)	= 181.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 14.52
Veloc Up (ft/s)	= 14.40
HGL Dn (ft)	= 25.09
HGL Up (ft)	= 26.34
Hw Elev (ft)	= 32.62
Hw/D (ft)	= 2.73
Flow Regime	= Inlet Control



Culvert Report

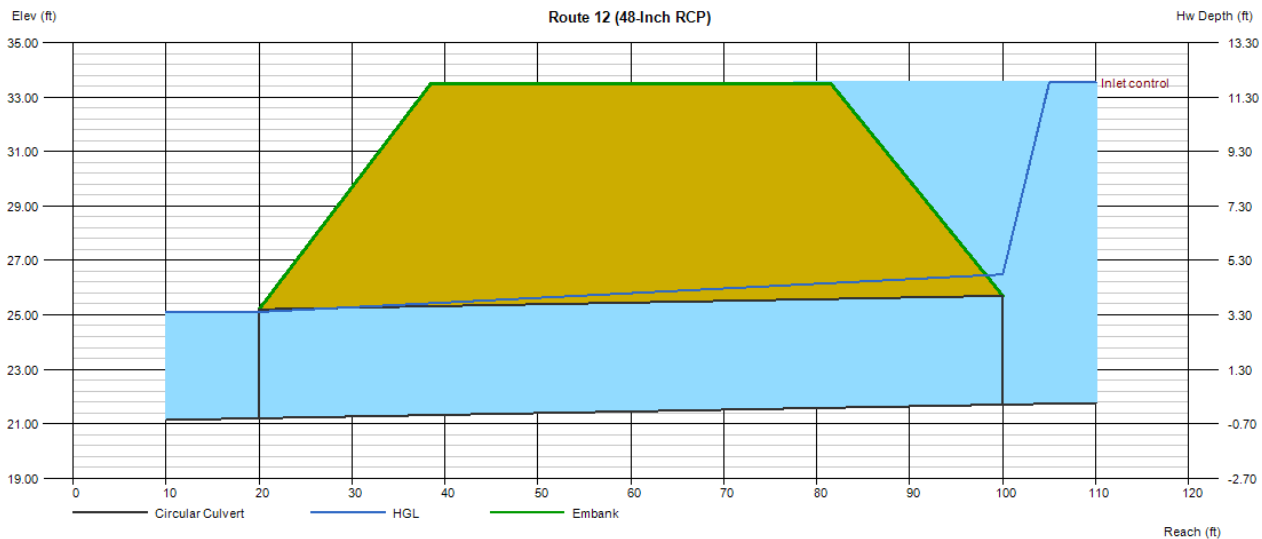
Route 12 (48-Inch RCP)

Invert Elev Dn (ft)	= 21.20
Pipe Length (ft)	= 80.00
Slope (%)	= 0.63
Invert Elev Up (ft)	= 21.70
Rise (in)	= 48.0
Shape	= Circular
Span (in)	= 48.0
No. Barrels	= 1
n-Value	= 0.013
Culvert Type	= Circular Concrete
Culvert Entrance	= Square edge w/headwall (C)
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5

Embankment	
Top Elevation (ft)	= 33.50
Top Width (ft)	= 43.00
Crest Width (ft)	= 10.00

Calculations	
Qmin (cfs)	= 191.00
Qmax (cfs)	= 191.00
Tailwater Elev (ft)	= (dc+D)/2

Highlighted	
Qtotal (cfs)	= 191.00
Qpipe (cfs)	= 190.76
Qovertop (cfs)	= 0.24
Veloc Dn (ft/s)	= 15.27
Veloc Up (ft/s)	= 15.18
HGL Dn (ft)	= 25.11
HGL Up (ft)	= 26.48
Hw Elev (ft)	= 33.54
Hw/D (ft)	= 2.96
Flow Regime	= Inlet Control



Pine Swamp Brook Dam
Hydraulic Capacity Analysis

Hydrograph Report

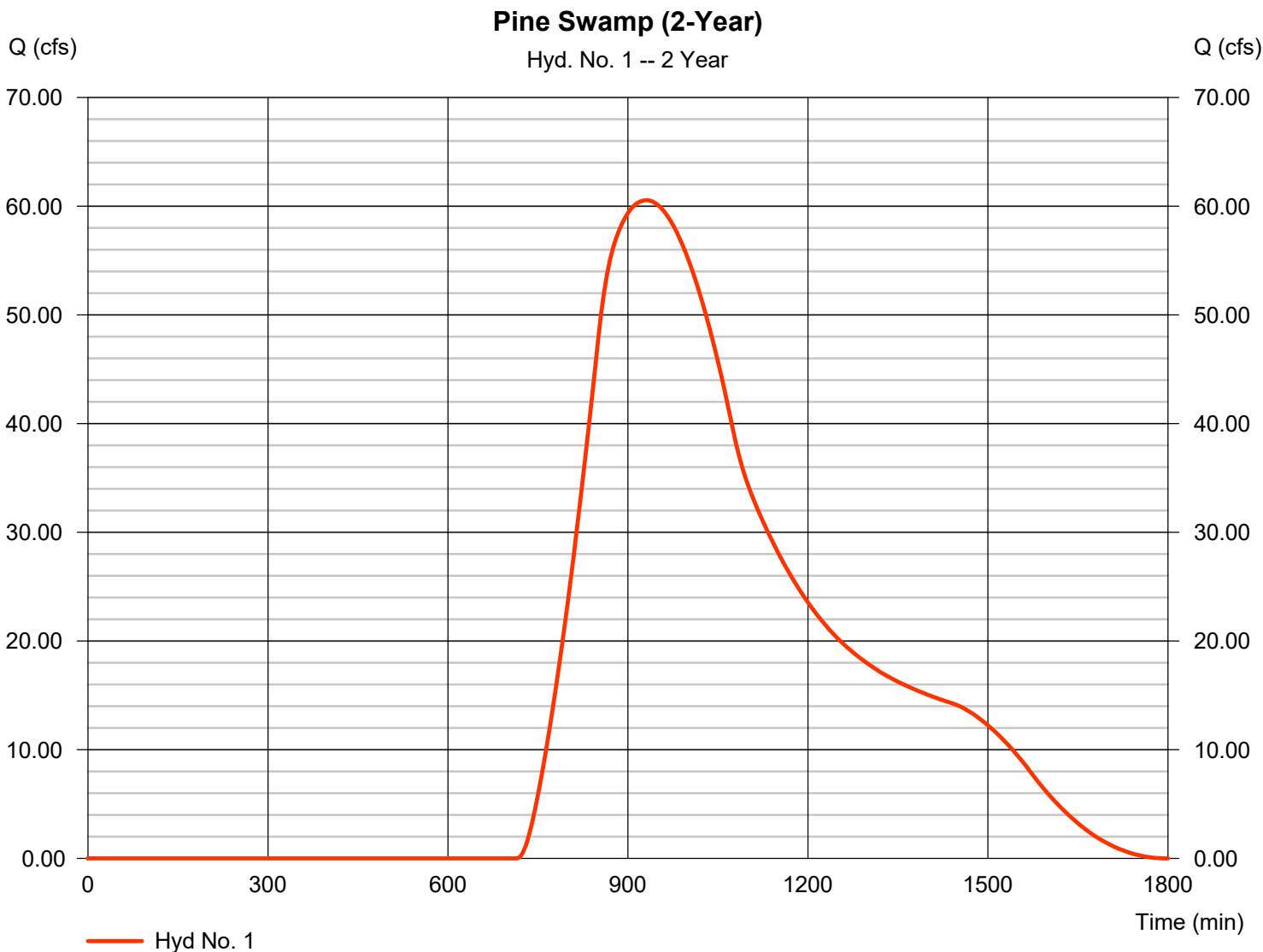
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Wednesday, 12 / 3 / 2025

Hyd. No. 1

Pine Swamp (2-Year)

Hydrograph type	= SCS Runoff	Peak discharge	= 60.56 cfs
Storm frequency	= 2 yrs	Time to peak	= 930 min
Time interval	= 5 min	Hyd. volume	= 1,497,510 cuft
Drainage area	= 1030.000 ac	Curve number	= 60
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 225.00 min
Total precip.	= 3.18 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

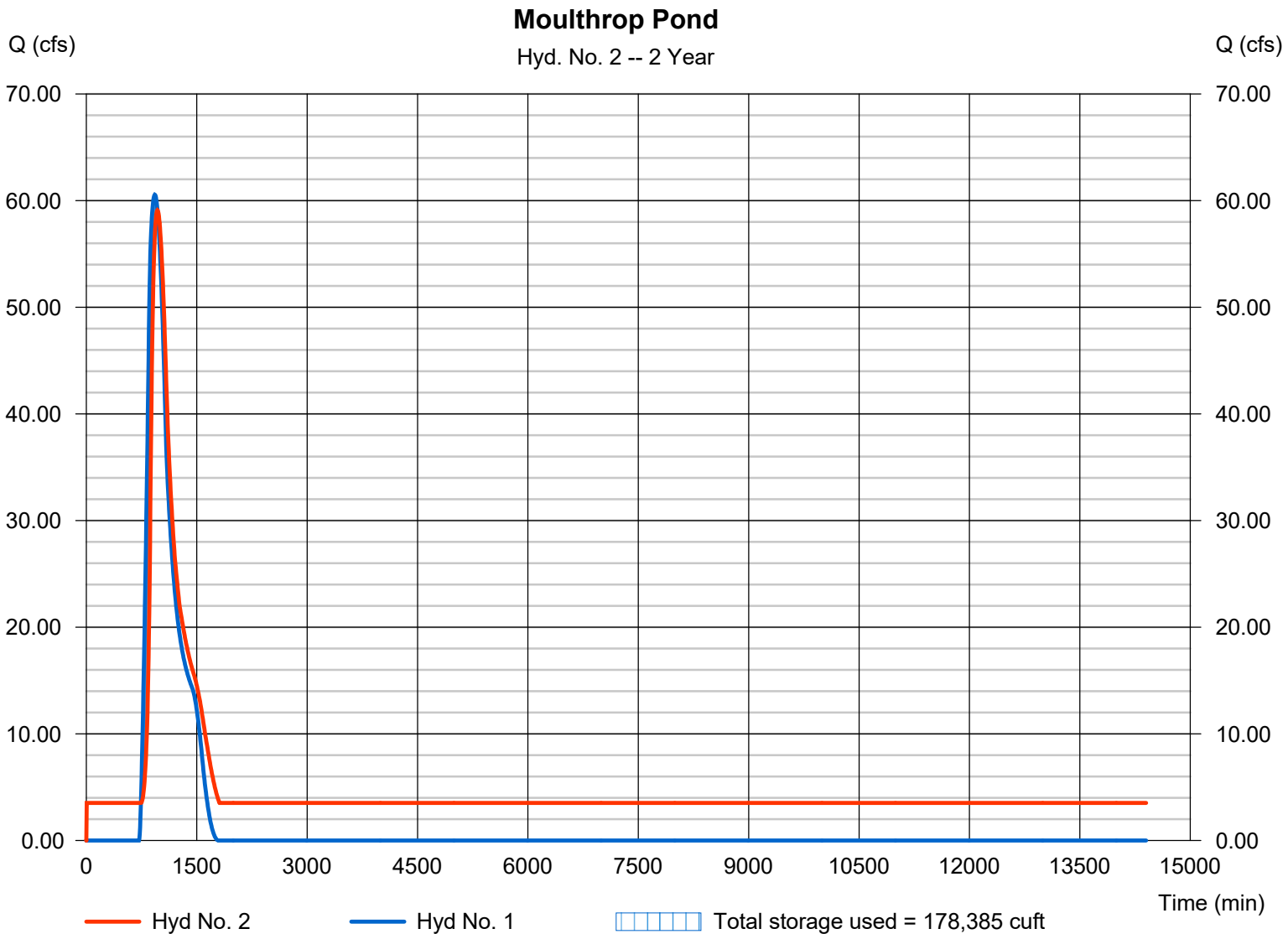
Wednesday, 12 / 3 / 2025

Hyd. No. 2

Moulthrop Pond

Hydrograph type	= Reservoir	Peak discharge	= 59.10 cfs
Storm frequency	= 2 yrs	Time to peak	= 965 min
Time interval	= 5 min	Hyd. volume	= 4,314,228 cuft
Inflow hyd. No.	= 1 - Pine Swamp (2-Year)	Max. Elevation	= 24.09 ft
Reservoir name	= Moulthrop Pond	Max. Storage	= 178,385 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - Moulthrop Pond

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 22.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	22.50	107,211	0	0
0.50	23.00	110,126	54,327	54,327
1.50	24.00	116,000	113,039	167,366
2.50	25.00	121,931	118,941	286,307
3.50	26.00	127,920	124,901	411,209
4.50	27.00	133,966	130,918	542,127
5.50	28.00	140,068	136,992	679,119
6.50	29.00	146,227	143,122	822,241

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	36.00	0.00	0.00
Span (in)	= 36.00	36.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 18.10	21.80	0.00	0.00
Length (ft)	= 30.00	40.00	0.00	0.00
Slope (%)	= 1.70	1.50	0.00	n/a
N-Value	= .026	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 13.30	3.00	10.00	0.00
Crest El. (ft)	= 23.50	23.00	26.00	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	Rect	Broad	---
Multi-Stage	= Yes	Yes	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	22.50	0.00	3.57 ic	---	---	0.00	0.00	0.00	---	---	---	3.572
0.05	5,433	22.55	51.00 oc	4.08 ic	---	---	0.00	0.00	0.00	---	---	---	4.080
0.10	10,865	22.60	51.00 oc	4.61 ic	---	---	0.00	0.00	0.00	---	---	---	4.610
0.15	16,298	22.65	51.00 oc	5.18 ic	---	---	0.00	0.00	0.00	---	---	---	5.176
0.20	21,731	22.70	51.00 oc	5.78 ic	---	---	0.00	0.00	0.00	---	---	---	5.780
0.25	27,164	22.75	51.00 oc	6.38 ic	---	---	0.00	0.00	0.00	---	---	---	6.378
0.30	32,596	22.80	51.00 oc	7.03 ic	---	---	0.00	0.00	0.00	---	---	---	7.030
0.35	38,029	22.85	51.00 oc	7.71 ic	---	---	0.00	0.00	0.00	---	---	---	7.714
0.40	43,462	22.90	51.00 oc	8.41 ic	---	---	0.00	0.00	0.00	---	---	---	8.407
0.45	48,894	22.95	51.00 oc	9.13 ic	---	---	0.00	0.00	0.00	---	---	---	9.128
0.50	54,327	23.00	51.00 oc	9.85 ic	---	---	0.00	0.00	0.00	---	---	---	9.852
0.60	65,631	23.10	51.00 oc	11.40 ic	---	---	0.00	0.32	0.00	---	---	---	11.72
0.70	76,935	23.20	51.00 oc	13.04 ic	---	---	0.00	0.89	0.00	---	---	---	13.94
0.80	88,239	23.30	51.00 oc	14.77 ic	---	---	0.00	1.64	0.00	---	---	---	16.41
0.90	99,543	23.40	51.00 oc	16.53 ic	---	---	0.00	2.53	0.00	---	---	---	19.06
1.00	110,847	23.50	51.00 oc	18.37 ic	---	---	0.00	3.53	0.00	---	---	---	21.90
1.10	122,151	23.60	51.00 oc	20.25 ic	---	---	1.40	4.64	0.00	---	---	---	26.30
1.20	133,455	23.70	51.00 oc	22.16 ic	---	---	3.96	5.85	0.00	---	---	---	31.97
1.30	144,758	23.80	51.00 oc	23.65 oc	---	---	7.28	7.15	0.00	---	---	---	38.07
1.40	156,062	23.90	51.00 oc	24.98 oc	---	---	11.20	8.53	0.00	---	---	---	44.72
1.50	167,366	24.00	51.00 oc	26.31 oc	---	---	15.66	9.99	0.00	---	---	---	51.96
1.60	179,260	24.10	51.00 oc	27.56 oc	---	---	20.58	11.53	0.00	---	---	---	59.67
1.70	191,154	24.20	51.00 oc	28.73 oc	---	---	25.94	13.13	0.00	---	---	---	67.80
1.80	203,049	24.30	51.00 oc	29.83 oc	---	---	31.69	14.81	0.00	---	---	---	76.33
1.90	214,943	24.40	54.36 oc	30.83 oc	---	---	37.81	16.55	0.00	---	---	---	85.19
2.00	226,837	24.50	61.69 oc	31.70 oc	---	---	44.29	17.40 s	0.00	---	---	---	93.38
2.10	238,731	24.60	65.84 oc	32.41 oc	---	---	48.56 s	17.27 s	0.00	---	---	---	98.25
2.20	250,625	24.70	68.40 oc	32.91 oc	---	---	51.04 s	17.36 s	0.00	---	---	---	101.30
2.30	262,519	24.80	70.46 oc	32.86 oc	---	---	53.01 s	17.45 s	0.00	---	---	---	103.32
2.40	274,413	24.90	72.23 oc	35.49 oc	---	---	54.70 s	17.53 s	0.00	---	---	---	107.72
2.50	286,307	25.00	73.79 oc	37.94 oc	---	---	56.18 s	17.60 s	0.00	---	---	---	111.73
2.60	298,798	25.10	75.19 oc	40.25 oc	---	---	57.52 s	17.67 s	0.00	---	---	---	115.44
2.70	311,288	25.20	76.49 oc	42.42 oc	---	---	58.74 s	17.74 s	0.00	---	---	---	118.91
2.80	323,778	25.30	77.70 oc	44.49 oc	---	---	59.88 s	17.81 s	0.00	---	---	---	122.19
2.90	336,268	25.40	78.83 oc	46.47 oc	---	---	60.94 s	17.89 s	0.00	---	---	---	125.30

Continues on next page...

Moulthrop Pond

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.00	348,758	25.50	79.91 oc	48.37 oc	---	---	61.95 s	17.96 s	0.00	---	---	---	128.28
3.10	361,248	25.60	80.95 oc	50.20 oc	---	---	62.91 s	18.04 s	0.00	---	---	---	131.14
3.20	373,738	25.70	81.94 oc	51.96 oc	---	---	63.82 s	18.12 s	0.00	---	---	---	133.89
3.30	386,228	25.80	82.90 oc	53.66 oc	---	---	64.70 s	18.20 s	0.00	---	---	---	136.55
3.40	398,718	25.90	83.84 oc	54.87 ic	---	---	65.54 s	18.28 s	0.00	---	---	---	138.69
3.50	411,209	26.00	84.74 oc	55.92 ic	---	---	66.38 s	18.36 s	0.00	---	---	---	140.66
3.60	424,300	26.10	85.63 oc	56.94 ic	---	---	67.17 s	18.45 s	0.82	---	---	---	143.39
3.70	437,392	26.20	86.50 oc	57.95 ic	---	---	67.95 s	18.54 s	2.33	---	---	---	146.77
3.80	450,484	26.30	87.35 oc	58.94 ic	---	---	68.72 s	18.63 s	4.27	---	---	---	150.56
3.90	463,576	26.40	88.09 ic	59.92 ic	---	---	69.37 s	18.69 s	6.58	---	---	---	154.56
4.00	476,668	26.50	88.80 ic	60.88 ic	---	---	70.00 s	18.76 s	9.19	---	---	---	158.83
4.10	489,759	26.60	89.49 ic	61.82 ic	---	---	70.63 s	18.83 s	12.08	---	---	---	163.37
4.20	502,851	26.70	90.17 ic	62.75 ic	---	---	71.24 s	18.90 s	15.23	---	---	---	168.11
4.30	515,943	26.80	90.84 ic	63.67 ic	---	---	71.84 s	18.97 s	18.60	---	---	---	173.08
4.40	529,035	26.90	91.51 ic	64.57 ic	---	---	72.44 s	19.05 s	22.20	---	---	---	178.26
4.50	542,127	27.00	92.17 ic	65.46 ic	---	---	73.02 s	19.12 s	26.00	---	---	---	183.59
4.60	555,826	27.10	92.82 ic	66.34 ic	---	---	73.59 s	19.19 s	30.00	---	---	---	189.12
4.70	569,525	27.20	93.46 ic	67.21 ic	---	---	74.14 s	19.26 s	34.18	---	---	---	194.78
4.80	583,224	27.30	94.10 ic	68.06 ic	---	---	74.72 s	19.35 s	38.54	---	---	---	200.67
4.90	596,924	27.40	94.73 ic	68.91 ic	---	---	75.27 s	19.42 s	43.07	---	---	---	206.67
5.00	610,623	27.50	95.35 ic	69.74 ic	---	---	75.84 s	19.51 s	47.77	---	---	---	212.86
5.10	624,322	27.60	95.98 ic	70.57 ic	---	---	76.34 s	19.58 s	52.62	---	---	---	219.10
5.20	638,021	27.70	96.59 ic	71.38 ic	---	---	76.89 s	19.66 s	57.63	---	---	---	225.57
5.30	651,720	27.80	97.20 ic	72.19 ic	---	---	77.40 s	19.74 s	62.79	---	---	---	232.11
5.40	665,419	27.90	97.81 ic	72.99 ic	---	---	77.92 s	19.82 s	68.09	---	---	---	238.82
5.50	679,119	28.00	98.41 ic	73.78 ic	---	---	78.49 s	19.91 s	73.54	---	---	---	245.72
5.60	693,431	28.10	99.01 ic	74.56 ic	---	---	78.95 s	19.98 s	79.12	---	---	---	252.61
5.70	707,743	28.20	99.60 ic	75.33 ic	---	---	79.47 s	20.06 s	84.84	---	---	---	259.70
5.80	722,055	28.30	100.19 ic	76.10 ic	---	---	79.97 s	20.15 s	90.69	---	---	---	266.91
5.90	736,368	28.40	100.77 ic	76.85 ic	---	---	80.48 s	20.23 s	96.67	---	---	---	274.24
6.00	750,680	28.50	101.35 ic	77.60 ic	---	---	81.00 s	20.32 s	102.77	---	---	---	281.69
6.10	764,992	28.60	101.93 ic	78.34 ic	---	---	81.42 s	20.39 s	109.00	---	---	---	289.15
6.20	779,304	28.70	102.50 ic	79.08 ic	---	---	81.98 s	20.48 s	115.35	---	---	---	296.89
6.30	793,616	28.80	103.07 ic	79.81 ic	---	---	82.45 s	20.57 s	121.82	---	---	---	304.64
6.40	807,928	28.90	103.64 ic	80.53 ic	---	---	82.96 s	20.66 s	128.40	---	---	---	312.55
6.50	822,241	29.00	104.20 ic	81.25 ic	---	---	83.40 s	20.73 s	135.10	---	---	---	320.48

...End

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Wednesday, 12 / 3 / 2025

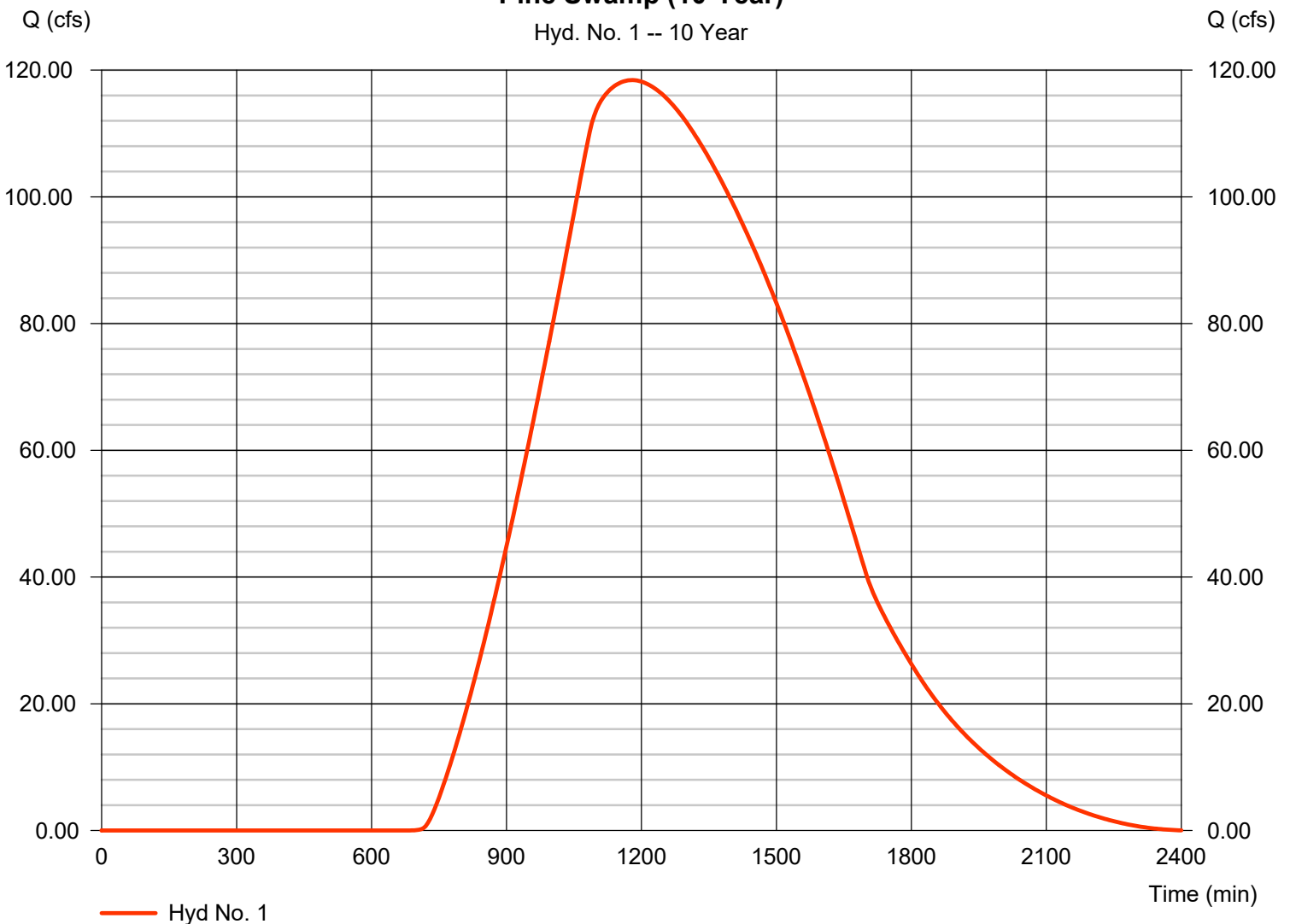
Hyd. No. 1

Pine Swamp (10-Year)

Hydrograph type	= SCS Runoff	Peak discharge	= 118.42 cfs
Storm frequency	= 10 yrs	Time to peak	= 1180 min
Time interval	= 5 min	Hyd. volume	= 4,987,647 cuft
Drainage area	= 1030.000 ac	Curve number	= 60
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 620.00 min
Total precip.	= 5.06 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

Pine Swamp (10-Year)

Hyd. No. 1 -- 10 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

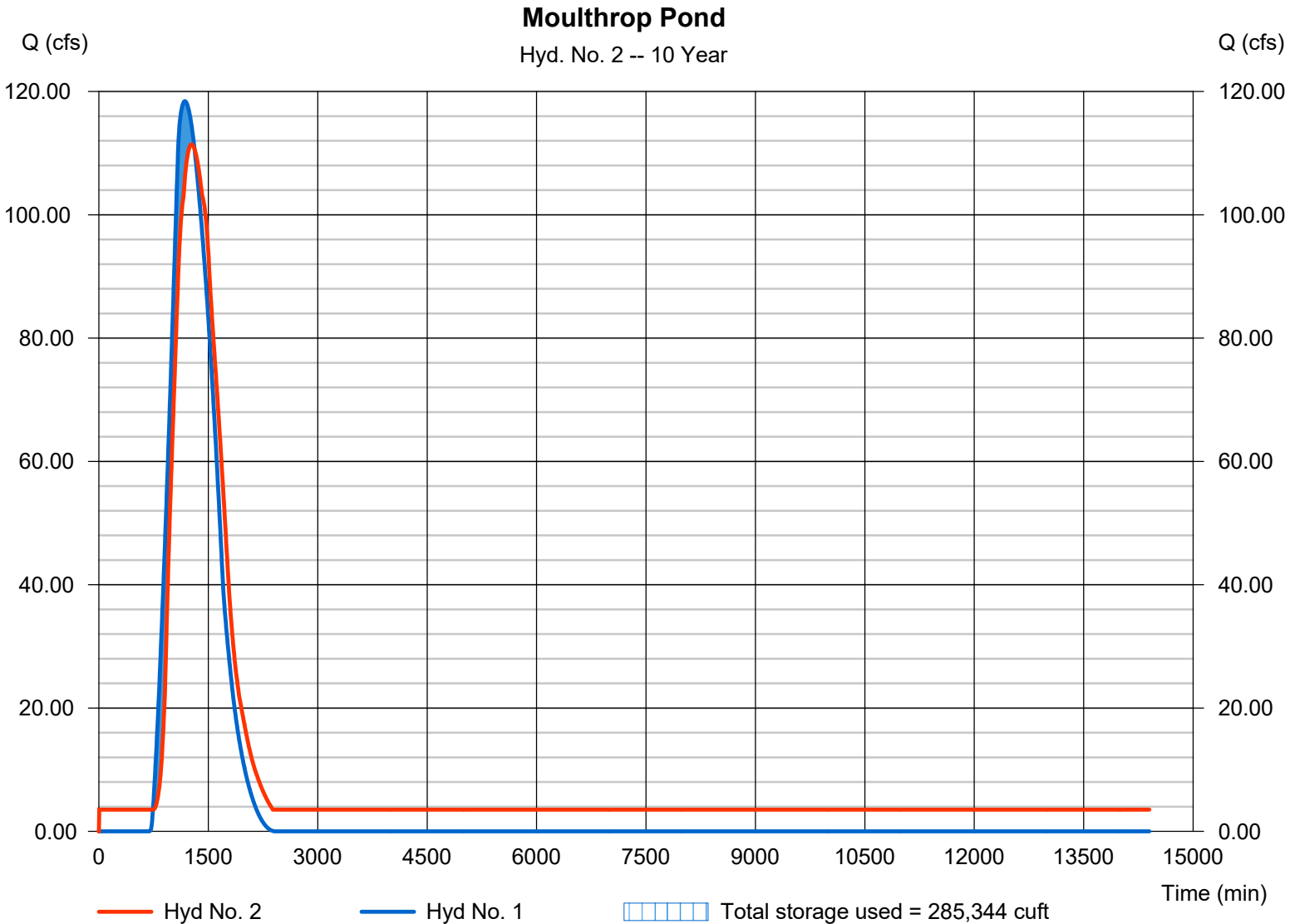
Wednesday, 12 / 3 / 2025

Hyd. No. 2

Moulthrop Pond

Hydrograph type	= Reservoir	Peak discharge	= 111.40 cfs
Storm frequency	= 10 yrs	Time to peak	= 1270 min
Time interval	= 5 min	Hyd. volume	= 7,696,977 cuft
Inflow hyd. No.	= 1 - Pine Swamp (10-Year)	Max. Elevation	= 24.99 ft
Reservoir name	= Moulthrop Pond	Max. Storage	= 285,344 cuft

Storage Indication method used.



Pond No. 1 - Moulthrop Pond

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 22.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	22.50	107,211	0	0
0.50	23.00	110,126	54,327	54,327
1.50	24.00	116,000	113,039	167,366
2.50	25.00	121,931	118,941	286,307
3.50	26.00	127,920	124,901	411,209
4.50	27.00	133,966	130,918	542,127
5.50	28.00	140,068	136,992	679,119
6.50	29.00	146,227	143,122	822,241

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	36.00	0.00	0.00
Span (in)	= 36.00	36.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 18.10	21.80	0.00	0.00
Length (ft)	= 30.00	40.00	0.00	0.00
Slope (%)	= 1.70	1.50	0.00	n/a
N-Value	= .026	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 13.30	3.00	10.00	0.00
Crest El. (ft)	= 23.50	23.00	26.00	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	Rect	Broad	---
Multi-Stage	= Yes	Yes	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	22.50	0.00	3.57 ic	---	---	0.00	0.00	0.00	---	---	---	3.572
0.05	5,433	22.55	51.00 oc	4.08 ic	---	---	0.00	0.00	0.00	---	---	---	4.080
0.10	10,865	22.60	51.00 oc	4.61 ic	---	---	0.00	0.00	0.00	---	---	---	4.610
0.15	16,298	22.65	51.00 oc	5.18 ic	---	---	0.00	0.00	0.00	---	---	---	5.176
0.20	21,731	22.70	51.00 oc	5.78 ic	---	---	0.00	0.00	0.00	---	---	---	5.780
0.25	27,164	22.75	51.00 oc	6.38 ic	---	---	0.00	0.00	0.00	---	---	---	6.378
0.30	32,596	22.80	51.00 oc	7.03 ic	---	---	0.00	0.00	0.00	---	---	---	7.030
0.35	38,029	22.85	51.00 oc	7.71 ic	---	---	0.00	0.00	0.00	---	---	---	7.714
0.40	43,462	22.90	51.00 oc	8.41 ic	---	---	0.00	0.00	0.00	---	---	---	8.407
0.45	48,894	22.95	51.00 oc	9.13 ic	---	---	0.00	0.00	0.00	---	---	---	9.128
0.50	54,327	23.00	51.00 oc	9.85 ic	---	---	0.00	0.00	0.00	---	---	---	9.852
0.60	65,631	23.10	51.00 oc	11.40 ic	---	---	0.00	0.32	0.00	---	---	---	11.72
0.70	76,935	23.20	51.00 oc	13.04 ic	---	---	0.00	0.89	0.00	---	---	---	13.94
0.80	88,239	23.30	51.00 oc	14.77 ic	---	---	0.00	1.64	0.00	---	---	---	16.41
0.90	99,543	23.40	51.00 oc	16.53 ic	---	---	0.00	2.53	0.00	---	---	---	19.06
1.00	110,847	23.50	51.00 oc	18.37 ic	---	---	0.00	3.53	0.00	---	---	---	21.90
1.10	122,151	23.60	51.00 oc	20.25 ic	---	---	1.40	4.64	0.00	---	---	---	26.30
1.20	133,455	23.70	51.00 oc	22.16 ic	---	---	3.96	5.85	0.00	---	---	---	31.97
1.30	144,758	23.80	51.00 oc	23.65 oc	---	---	7.28	7.15	0.00	---	---	---	38.07
1.40	156,062	23.90	51.00 oc	24.98 oc	---	---	11.20	8.53	0.00	---	---	---	44.72
1.50	167,366	24.00	51.00 oc	26.31 oc	---	---	15.66	9.99	0.00	---	---	---	51.96
1.60	179,260	24.10	51.00 oc	27.56 oc	---	---	20.58	11.53	0.00	---	---	---	59.67
1.70	191,154	24.20	51.00 oc	28.73 oc	---	---	25.94	13.13	0.00	---	---	---	67.80
1.80	203,049	24.30	51.00 oc	29.83 oc	---	---	31.69	14.81	0.00	---	---	---	76.33
1.90	214,943	24.40	54.36 oc	30.83 oc	---	---	37.81	16.55	0.00	---	---	---	85.19
2.00	226,837	24.50	61.69 oc	31.70 oc	---	---	44.29	17.40 s	0.00	---	---	---	93.38
2.10	238,731	24.60	65.84 oc	32.41 oc	---	---	48.56 s	17.27 s	0.00	---	---	---	98.25
2.20	250,625	24.70	68.40 oc	32.91 oc	---	---	51.04 s	17.36 s	0.00	---	---	---	101.30
2.30	262,519	24.80	70.46 oc	32.86 oc	---	---	53.01 s	17.45 s	0.00	---	---	---	103.32
2.40	274,413	24.90	72.23 oc	35.49 oc	---	---	54.70 s	17.53 s	0.00	---	---	---	107.72
2.50	286,307	25.00	73.79 oc	37.94 oc	---	---	56.18 s	17.60 s	0.00	---	---	---	111.73
2.60	298,798	25.10	75.19 oc	40.25 oc	---	---	57.52 s	17.67 s	0.00	---	---	---	115.44
2.70	311,288	25.20	76.49 oc	42.42 oc	---	---	58.74 s	17.74 s	0.00	---	---	---	118.91
2.80	323,778	25.30	77.70 oc	44.49 oc	---	---	59.88 s	17.81 s	0.00	---	---	---	122.19
2.90	336,268	25.40	78.83 oc	46.47 oc	---	---	60.94 s	17.89 s	0.00	---	---	---	125.30

Continues on next page...

Moulthrop Pond

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.00	348,758	25.50	79.91 oc	48.37 oc	---	---	61.95 s	17.96 s	0.00	---	---	---	128.28
3.10	361,248	25.60	80.95 oc	50.20 oc	---	---	62.91 s	18.04 s	0.00	---	---	---	131.14
3.20	373,738	25.70	81.94 oc	51.96 oc	---	---	63.82 s	18.12 s	0.00	---	---	---	133.89
3.30	386,228	25.80	82.90 oc	53.66 oc	---	---	64.70 s	18.20 s	0.00	---	---	---	136.55
3.40	398,718	25.90	83.84 oc	54.87 ic	---	---	65.54 s	18.28 s	0.00	---	---	---	138.69
3.50	411,209	26.00	84.74 oc	55.92 ic	---	---	66.38 s	18.36 s	0.00	---	---	---	140.66
3.60	424,300	26.10	85.63 oc	56.94 ic	---	---	67.17 s	18.45 s	0.82	---	---	---	143.39
3.70	437,392	26.20	86.50 oc	57.95 ic	---	---	67.95 s	18.54 s	2.33	---	---	---	146.77
3.80	450,484	26.30	87.35 oc	58.94 ic	---	---	68.72 s	18.63 s	4.27	---	---	---	150.56
3.90	463,576	26.40	88.09 ic	59.92 ic	---	---	69.37 s	18.69 s	6.58	---	---	---	154.56
4.00	476,668	26.50	88.80 ic	60.88 ic	---	---	70.00 s	18.76 s	9.19	---	---	---	158.83
4.10	489,759	26.60	89.49 ic	61.82 ic	---	---	70.63 s	18.83 s	12.08	---	---	---	163.37
4.20	502,851	26.70	90.17 ic	62.75 ic	---	---	71.24 s	18.90 s	15.23	---	---	---	168.11
4.30	515,943	26.80	90.84 ic	63.67 ic	---	---	71.84 s	18.97 s	18.60	---	---	---	173.08
4.40	529,035	26.90	91.51 ic	64.57 ic	---	---	72.44 s	19.05 s	22.20	---	---	---	178.26
4.50	542,127	27.00	92.17 ic	65.46 ic	---	---	73.02 s	19.12 s	26.00	---	---	---	183.59
4.60	555,826	27.10	92.82 ic	66.34 ic	---	---	73.59 s	19.19 s	30.00	---	---	---	189.12
4.70	569,525	27.20	93.46 ic	67.21 ic	---	---	74.14 s	19.26 s	34.18	---	---	---	194.78
4.80	583,224	27.30	94.10 ic	68.06 ic	---	---	74.72 s	19.35 s	38.54	---	---	---	200.67
4.90	596,924	27.40	94.73 ic	68.91 ic	---	---	75.27 s	19.42 s	43.07	---	---	---	206.67
5.00	610,623	27.50	95.35 ic	69.74 ic	---	---	75.84 s	19.51 s	47.77	---	---	---	212.86
5.10	624,322	27.60	95.98 ic	70.57 ic	---	---	76.34 s	19.58 s	52.62	---	---	---	219.10
5.20	638,021	27.70	96.59 ic	71.38 ic	---	---	76.89 s	19.66 s	57.63	---	---	---	225.57
5.30	651,720	27.80	97.20 ic	72.19 ic	---	---	77.40 s	19.74 s	62.79	---	---	---	232.11
5.40	665,419	27.90	97.81 ic	72.99 ic	---	---	77.92 s	19.82 s	68.09	---	---	---	238.82
5.50	679,119	28.00	98.41 ic	73.78 ic	---	---	78.49 s	19.91 s	73.54	---	---	---	245.72
5.60	693,431	28.10	99.01 ic	74.56 ic	---	---	78.95 s	19.98 s	79.12	---	---	---	252.61
5.70	707,743	28.20	99.60 ic	75.33 ic	---	---	79.47 s	20.06 s	84.84	---	---	---	259.70
5.80	722,055	28.30	100.19 ic	76.10 ic	---	---	79.97 s	20.15 s	90.69	---	---	---	266.91
5.90	736,368	28.40	100.77 ic	76.85 ic	---	---	80.48 s	20.23 s	96.67	---	---	---	274.24
6.00	750,680	28.50	101.35 ic	77.60 ic	---	---	81.00 s	20.32 s	102.77	---	---	---	281.69
6.10	764,992	28.60	101.93 ic	78.34 ic	---	---	81.42 s	20.39 s	109.00	---	---	---	289.15
6.20	779,304	28.70	102.50 ic	79.08 ic	---	---	81.98 s	20.48 s	115.35	---	---	---	296.89
6.30	793,616	28.80	103.07 ic	79.81 ic	---	---	82.45 s	20.57 s	121.82	---	---	---	304.64
6.40	807,928	28.90	103.64 ic	80.53 ic	---	---	82.96 s	20.66 s	128.40	---	---	---	312.55
6.50	822,241	29.00	104.20 ic	81.25 ic	---	---	83.40 s	20.73 s	135.10	---	---	---	320.48

...End

Hydrograph Report

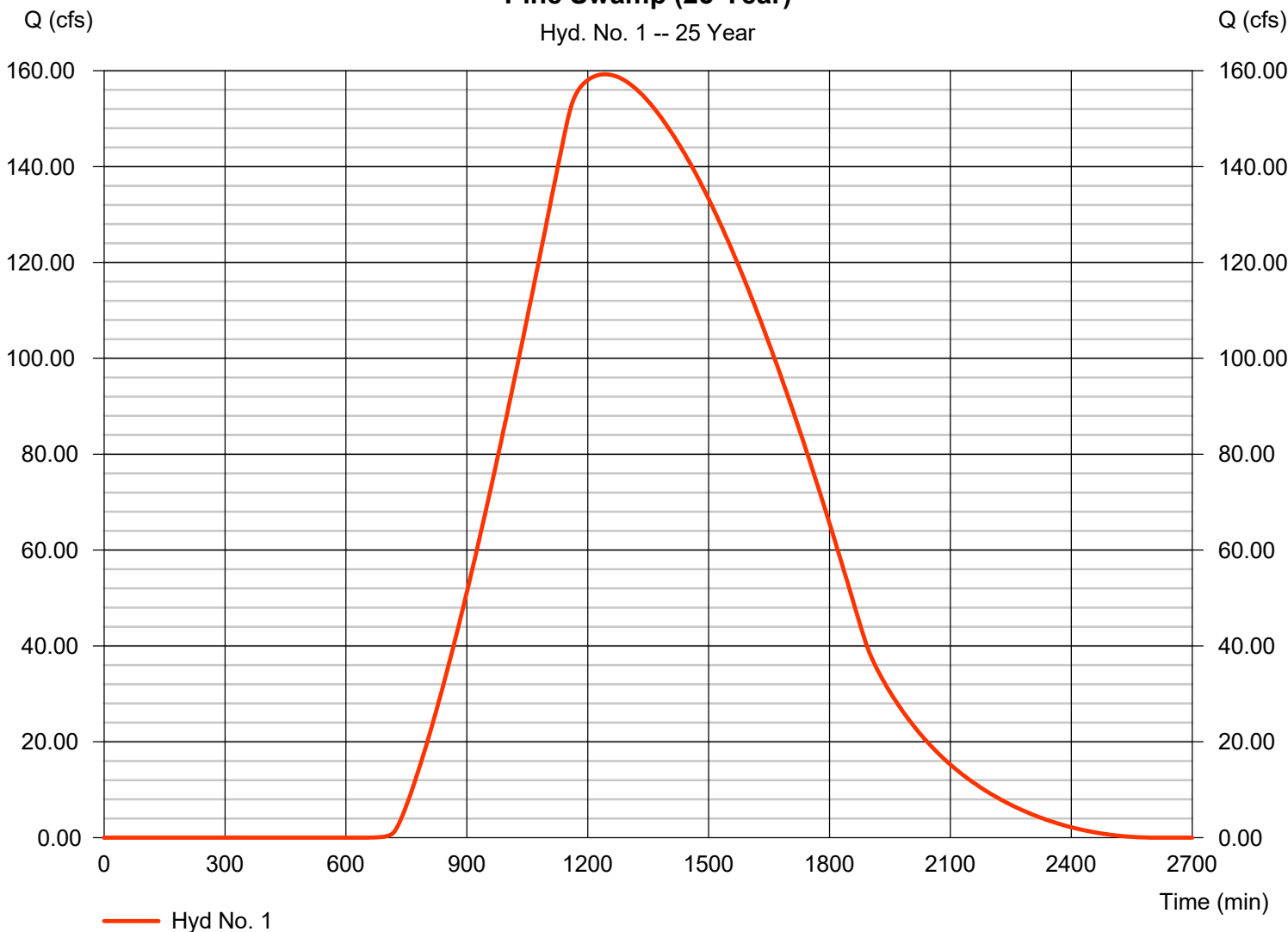
Hyd. No. 1

Pine Swamp (25-Year)

Hydrograph type	= SCS Runoff	Peak discharge	= 159.26 cfs
Storm frequency	= 25 yrs	Time to peak	= 1245 min
Time interval	= 5 min	Hyd. volume	= 7,514,955 cuft
Drainage area	= 1030.000 ac	Curve number	= 60
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 740.00 min
Total precip.	= 6.13 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

Pine Swamp (25-Year)

Hyd. No. 1 -- 25 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

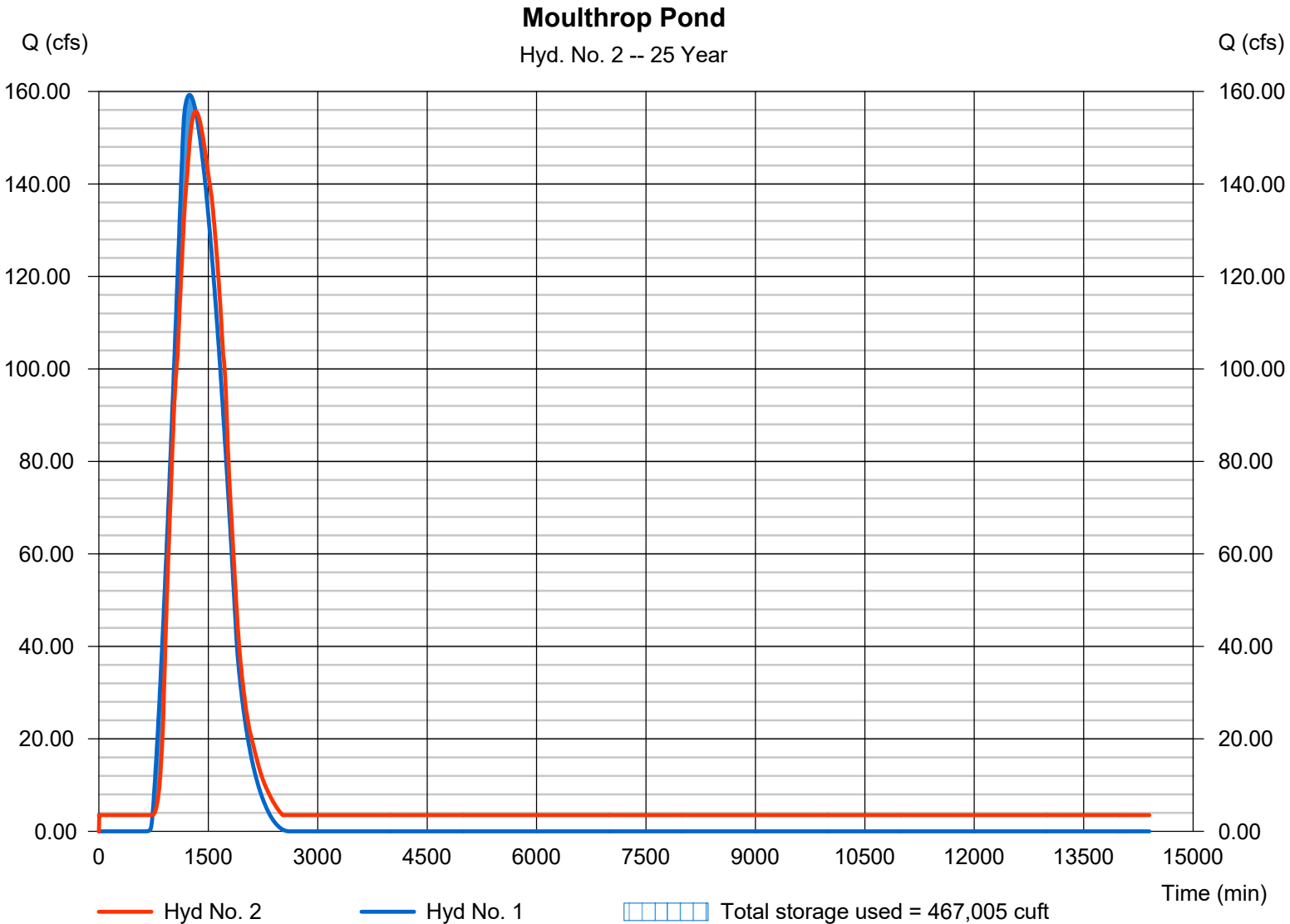
Wednesday, 12 / 3 / 2025

Hyd. No. 2

Moulthrop Pond

Hydrograph type	= Reservoir	Peak discharge	= 155.68 cfs
Storm frequency	= 25 yrs	Time to peak	= 1325 min
Time interval	= 5 min	Hyd. volume	= 10,178,340 cuft
Inflow hyd. No.	= 1 - Pine Swamp (25-Year)	Max. Elevation	= 26.43 ft
Reservoir name	= Moulthrop Pond	Max. Storage	= 467,005 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - Moulthrop Pond

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 22.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	22.50	107,211	0	0
0.50	23.00	110,126	54,327	54,327
1.50	24.00	116,000	113,039	167,366
2.50	25.00	121,931	118,941	286,307
3.50	26.00	127,920	124,901	411,209
4.50	27.00	133,966	130,918	542,127
5.50	28.00	140,068	136,992	679,119
6.50	29.00	146,227	143,122	822,241

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	36.00	0.00	0.00
Span (in)	= 36.00	36.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 18.10	21.80	0.00	0.00
Length (ft)	= 30.00	40.00	0.00	0.00
Slope (%)	= 1.70	1.50	0.00	n/a
N-Value	= .026	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 13.30	3.00	10.00	0.00
Crest El. (ft)	= 23.50	23.00	26.00	0.00
Weir Coeff.	= 3.33	3.33	2.60	3.33
Weir Type	= 1	Rect	Broad	---
Multi-Stage	= Yes	Yes	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	22.50	0.00	3.57 ic	---	---	0.00	0.00	0.00	---	---	---	3.572
0.05	5,433	22.55	51.00 oc	4.08 ic	---	---	0.00	0.00	0.00	---	---	---	4.080
0.10	10,865	22.60	51.00 oc	4.61 ic	---	---	0.00	0.00	0.00	---	---	---	4.610
0.15	16,298	22.65	51.00 oc	5.18 ic	---	---	0.00	0.00	0.00	---	---	---	5.176
0.20	21,731	22.70	51.00 oc	5.78 ic	---	---	0.00	0.00	0.00	---	---	---	5.780
0.25	27,164	22.75	51.00 oc	6.38 ic	---	---	0.00	0.00	0.00	---	---	---	6.378
0.30	32,596	22.80	51.00 oc	7.03 ic	---	---	0.00	0.00	0.00	---	---	---	7.030
0.35	38,029	22.85	51.00 oc	7.71 ic	---	---	0.00	0.00	0.00	---	---	---	7.714
0.40	43,462	22.90	51.00 oc	8.41 ic	---	---	0.00	0.00	0.00	---	---	---	8.407
0.45	48,894	22.95	51.00 oc	9.13 ic	---	---	0.00	0.00	0.00	---	---	---	9.128
0.50	54,327	23.00	51.00 oc	9.85 ic	---	---	0.00	0.00	0.00	---	---	---	9.852
0.60	65,631	23.10	51.00 oc	11.40 ic	---	---	0.00	0.32	0.00	---	---	---	11.72
0.70	76,935	23.20	51.00 oc	13.04 ic	---	---	0.00	0.89	0.00	---	---	---	13.94
0.80	88,239	23.30	51.00 oc	14.77 ic	---	---	0.00	1.64	0.00	---	---	---	16.41
0.90	99,543	23.40	51.00 oc	16.53 ic	---	---	0.00	2.53	0.00	---	---	---	19.06
1.00	110,847	23.50	51.00 oc	18.37 ic	---	---	0.00	3.53	0.00	---	---	---	21.90
1.10	122,151	23.60	51.00 oc	20.25 ic	---	---	1.40	4.64	0.00	---	---	---	26.30
1.20	133,455	23.70	51.00 oc	22.16 ic	---	---	3.96	5.85	0.00	---	---	---	31.97
1.30	144,758	23.80	51.00 oc	23.65 oc	---	---	7.28	7.15	0.00	---	---	---	38.07
1.40	156,062	23.90	51.00 oc	24.98 oc	---	---	11.20	8.53	0.00	---	---	---	44.72
1.50	167,366	24.00	51.00 oc	26.31 oc	---	---	15.66	9.99	0.00	---	---	---	51.96
1.60	179,260	24.10	51.00 oc	27.56 oc	---	---	20.58	11.53	0.00	---	---	---	59.67
1.70	191,154	24.20	51.00 oc	28.73 oc	---	---	25.94	13.13	0.00	---	---	---	67.80
1.80	203,049	24.30	51.00 oc	29.83 oc	---	---	31.69	14.81	0.00	---	---	---	76.33
1.90	214,943	24.40	54.36 oc	30.83 oc	---	---	37.81	16.55	0.00	---	---	---	85.19
2.00	226,837	24.50	61.69 oc	31.70 oc	---	---	44.29	17.40 s	0.00	---	---	---	93.38
2.10	238,731	24.60	65.84 oc	32.41 oc	---	---	48.56 s	17.27 s	0.00	---	---	---	98.25
2.20	250,625	24.70	68.40 oc	32.91 oc	---	---	51.04 s	17.36 s	0.00	---	---	---	101.30
2.30	262,519	24.80	70.46 oc	32.86 oc	---	---	53.01 s	17.45 s	0.00	---	---	---	103.32
2.40	274,413	24.90	72.23 oc	35.49 oc	---	---	54.70 s	17.53 s	0.00	---	---	---	107.72
2.50	286,307	25.00	73.79 oc	37.94 oc	---	---	56.18 s	17.60 s	0.00	---	---	---	111.73
2.60	298,798	25.10	75.19 oc	40.25 oc	---	---	57.52 s	17.67 s	0.00	---	---	---	115.44
2.70	311,288	25.20	76.49 oc	42.42 oc	---	---	58.74 s	17.74 s	0.00	---	---	---	118.91
2.80	323,778	25.30	77.70 oc	44.49 oc	---	---	59.88 s	17.81 s	0.00	---	---	---	122.19
2.90	336,268	25.40	78.83 oc	46.47 oc	---	---	60.94 s	17.89 s	0.00	---	---	---	125.30

Continues on next page...

Moulthrop Pond

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.00	348,758	25.50	79.91 oc	48.37 oc	---	---	61.95 s	17.96 s	0.00	---	---	---	128.28
3.10	361,248	25.60	80.95 oc	50.20 oc	---	---	62.91 s	18.04 s	0.00	---	---	---	131.14
3.20	373,738	25.70	81.94 oc	51.96 oc	---	---	63.82 s	18.12 s	0.00	---	---	---	133.89
3.30	386,228	25.80	82.90 oc	53.66 oc	---	---	64.70 s	18.20 s	0.00	---	---	---	136.55
3.40	398,718	25.90	83.84 oc	54.87 ic	---	---	65.54 s	18.28 s	0.00	---	---	---	138.69
3.50	411,209	26.00	84.74 oc	55.92 ic	---	---	66.38 s	18.36 s	0.00	---	---	---	140.66
3.60	424,300	26.10	85.63 oc	56.94 ic	---	---	67.17 s	18.45 s	0.82	---	---	---	143.39
3.70	437,392	26.20	86.50 oc	57.95 ic	---	---	67.95 s	18.54 s	2.33	---	---	---	146.77
3.80	450,484	26.30	87.35 oc	58.94 ic	---	---	68.72 s	18.63 s	4.27	---	---	---	150.56
3.90	463,576	26.40	88.09 ic	59.92 ic	---	---	69.37 s	18.69 s	6.58	---	---	---	154.56
4.00	476,668	26.50	88.80 ic	60.88 ic	---	---	70.00 s	18.76 s	9.19	---	---	---	158.83
4.10	489,759	26.60	89.49 ic	61.82 ic	---	---	70.63 s	18.83 s	12.08	---	---	---	163.37
4.20	502,851	26.70	90.17 ic	62.75 ic	---	---	71.24 s	18.90 s	15.23	---	---	---	168.11
4.30	515,943	26.80	90.84 ic	63.67 ic	---	---	71.84 s	18.97 s	18.60	---	---	---	173.08
4.40	529,035	26.90	91.51 ic	64.57 ic	---	---	72.44 s	19.05 s	22.20	---	---	---	178.26
4.50	542,127	27.00	92.17 ic	65.46 ic	---	---	73.02 s	19.12 s	26.00	---	---	---	183.59
4.60	555,826	27.10	92.82 ic	66.34 ic	---	---	73.59 s	19.19 s	30.00	---	---	---	189.12
4.70	569,525	27.20	93.46 ic	67.21 ic	---	---	74.14 s	19.26 s	34.18	---	---	---	194.78
4.80	583,224	27.30	94.10 ic	68.06 ic	---	---	74.72 s	19.35 s	38.54	---	---	---	200.67
4.90	596,924	27.40	94.73 ic	68.91 ic	---	---	75.27 s	19.42 s	43.07	---	---	---	206.67
5.00	610,623	27.50	95.35 ic	69.74 ic	---	---	75.84 s	19.51 s	47.77	---	---	---	212.86
5.10	624,322	27.60	95.98 ic	70.57 ic	---	---	76.34 s	19.58 s	52.62	---	---	---	219.10
5.20	638,021	27.70	96.59 ic	71.38 ic	---	---	76.89 s	19.66 s	57.63	---	---	---	225.57
5.30	651,720	27.80	97.20 ic	72.19 ic	---	---	77.40 s	19.74 s	62.79	---	---	---	232.11
5.40	665,419	27.90	97.81 ic	72.99 ic	---	---	77.92 s	19.82 s	68.09	---	---	---	238.82
5.50	679,119	28.00	98.41 ic	73.78 ic	---	---	78.49 s	19.91 s	73.54	---	---	---	245.72
5.60	693,431	28.10	99.01 ic	74.56 ic	---	---	78.95 s	19.98 s	79.12	---	---	---	252.61
5.70	707,743	28.20	99.60 ic	75.33 ic	---	---	79.47 s	20.06 s	84.84	---	---	---	259.70
5.80	722,055	28.30	100.19 ic	76.10 ic	---	---	79.97 s	20.15 s	90.69	---	---	---	266.91
5.90	736,368	28.40	100.77 ic	76.85 ic	---	---	80.48 s	20.23 s	96.67	---	---	---	274.24
6.00	750,680	28.50	101.35 ic	77.60 ic	---	---	81.00 s	20.32 s	102.77	---	---	---	281.69
6.10	764,992	28.60	101.93 ic	78.34 ic	---	---	81.42 s	20.39 s	109.00	---	---	---	289.15
6.20	779,304	28.70	102.50 ic	79.08 ic	---	---	81.98 s	20.48 s	115.35	---	---	---	296.89
6.30	793,616	28.80	103.07 ic	79.81 ic	---	---	82.45 s	20.57 s	121.82	---	---	---	304.64
6.40	807,928	28.90	103.64 ic	80.53 ic	---	---	82.96 s	20.66 s	128.40	---	---	---	312.55
6.50	822,241	29.00	104.20 ic	81.25 ic	---	---	83.40 s	20.73 s	135.10	---	---	---	320.48

...End

**Southeast Connecticut Road-Stream Crossing
Assessment for Community and Wildlife Resilience:
Findings Report and Restoration Opportunities**

**Prepared by:
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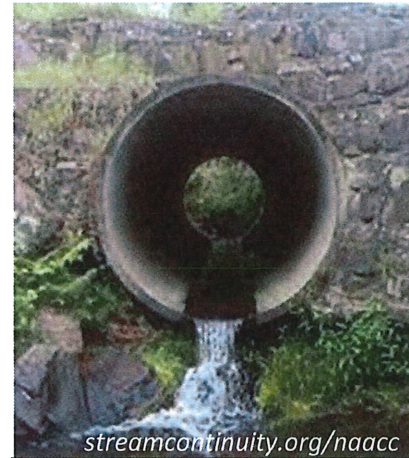
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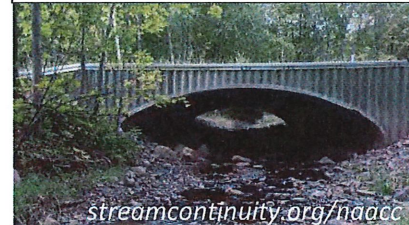
Road-Stream Crossings: Aquatic Organism Passage and Community Resilience

Connectivity for Wildlife

“Road-stream crossings” are the bridges and culverts that are built to convey the waters of rivers, streams, and other wetlands. They are so ubiquitous along our roadways that they are rarely noticed, but there are more than 26,000 road-stream crossings in Connecticut. These crossings are built to convey people and vehicles over streams, typically with little consideration given to the wildlife that moves through and along the waterways below. Conventionally designed culverts can completely block passage of aquatic macroinvertebrates, fish, frogs, turtles, mink, beaver, ducks, and other species that live in or along streams. Species that cannot move on land are isolated in smaller habitat fragments that may not fully support their life cycle needs. As habitat conditions change (due to human activity, natural disturbances, or climate change), these species are not able to migrate to more suitable habitat for survival. Diadromous fish that need both fresh and saltwater habitats to live and spawn are particularly susceptible to these types of barriers and are regionally threatened. Tragically, species that can move on land are forced up and onto roadways where they can be hit and killed by traffic. These barriers present a serious threat to individual animals, as well as entire populations of wildlife. Woodland amphibians, struck en-mass on roads while migrating to vernal pools, are an example of species particularly threatened by wetland habitat fragmentation. Road-killed turtles are another common sight along streams in summer months, with the loss of breeding adults often spelling disaster for local populations.



This perched culvert is a dead-end for most wildlife species.



A bridge that spans the full stream and dry banks allows passage for many animals.



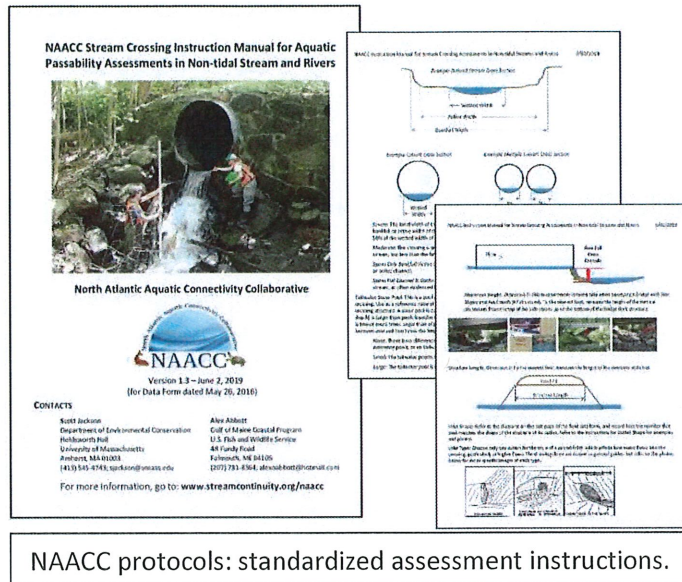
A culvert “washed out” by a storm in Beckett, MA.

Community Resilience

Crossings that are bad for wildlife are often bad for community resilience as well. Misaligned and/or undersized bridges and culverts that block wildlife passage are also more prone to flooding, debris jams, or washouts during high flows. These events are costly for towns to repair. They also create dangerous driving conditions and may block key routes for emergency vehicles during storms, leading to further community risk. Due to climate change, storms are becoming more frequent and severe across New England, posing even more risk to aging infrastructure and creating a growing need to provide timely emergency vehicle access to all residential areas.

Assessment Protocols and Database

Based on a growing realization of the risks and negative impacts associated with poorly designed road-stream crossings, the North Atlantic Aquatic Connectivity Collaborative (NAACC) was formed in 2015. NAACC maintains a spatial database of all known road-stream crossings in 13 northeast states, and trains engineers, environmental professionals, and community scientists to perform a standardized assessment survey protocol. This protocol involves in-the-field crossing structure measurements and ecological observations, followed by an automated computer modeling analysis of the data to produce a rating of barrier severity. As



NAACC Stream Crossing Instruction Manual for Aquatic Passability Assessments in Non-tidal Stream and Rivers

North Atlantic Aquatic Connectivity Collaborative

Version 1.3 – June 2, 2019
(for Data Form dated May 26, 2016)

CONTACTS

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For more information, go to: www.streamcontinuity.org/naacc

crossings are assessed, the NAACC database is updated. This free and publicly-available data can then be used by environmental and transportation planners to prioritize crossing for replacement or upgrades using advanced design standards (like USFS Stream Simulation, see attached guidelines). Furthermore, the ratings of individual crossings are compiled and used in combination with ecological data to produce prioritization models for connectivity restoration. Completing road-stream crossing assessments not only characterizes individual crossings, but contributes to landscape-scale planning for wildlife habitat and resilience.

NAACC protocols: standardized assessment instructions.

Restoration Opportunities

The ultimate goal of this effort is to identify the most important road-stream crossings for restoration and facilitate on-the-ground change. The descriptions, photos, maps, and design guidelines included with this report are intended to help Towns and regional planners prioritize infrastructure upgrades and apply for additional funding to redesign and replace or retrofit road-stream crossings for the benefit of both community resilience and ecological function. Successful implementation will mean safer roads, robust emergency access routes, and less frequent repairs. The result for wildlife will be functioning wetlands, connected habitats, and reduction in road-kills and injuries.





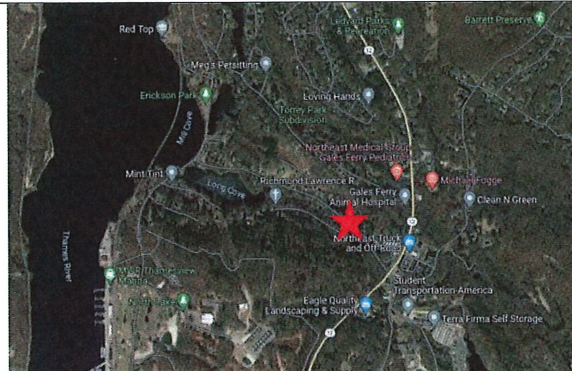
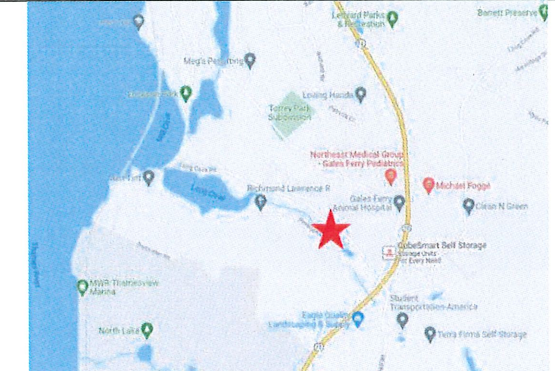
Success! A culvert replaced with a bridge on Churchill Brook in Pittsfield, MA allows wildlife to migrate and storm flows to pass through safely.



Housatonic Valley Association

Priority Road-Stream Crossing Restoration Opportunity

#1 Flat Brook, Pinelock Dr, Ledyard

<p>Upstream:</p> 	<p>Downstream:</p> 
<p>Aerial Image:</p> 	<p>Map Screen Shot:</p> 

Structure Info:

- Located under a dead-end road, Pinelock Drive
- Two undersized perched, round culverts creating very large scour pool
- Evidence of erosion along Long Cove Road
- Damage to downstream headwall has occurred, large trees growing out of damaged area
- Susceptible to wash out during storm event

Key findings from NAACC assessment:

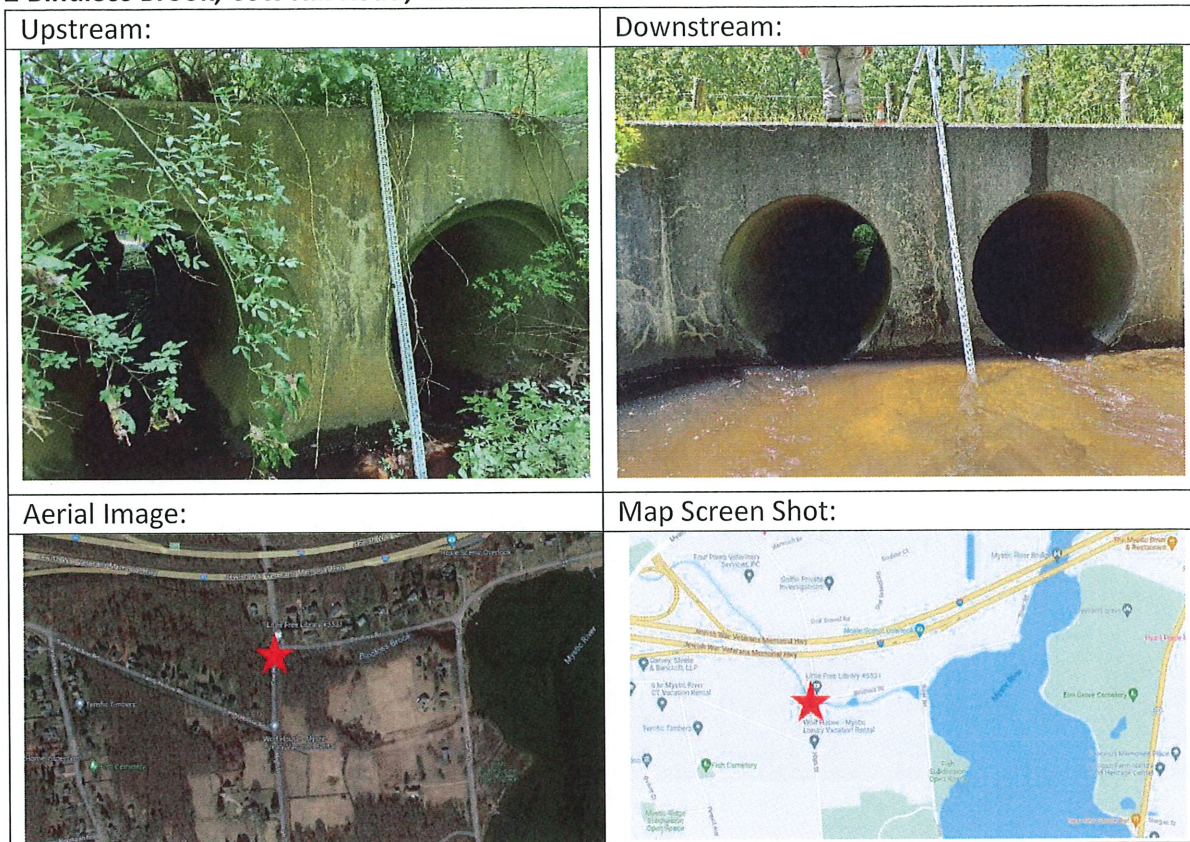
- **Crossing type:** 2 round concrete culverts with 4 ft diameter
- **Crossing condition:** Poor
- **Constriction severity:** Severe
- **AOP Coarse Screen / NAACC AOP Score:** Reduced AOP / 0.51

Habitat Info:

- Close proximity to tidally influenced Thames River
- Downstream side of culvert perched, limiting fish passage
- Spawning habitat potential upstream

Restoration Recommendations:

- Replace with Stream Simulation Design culvert or bridge: widen and restore stream channel (i) to increase hydraulic capacity and reduce over-topping risk, (ii) restore aquatic organism passage, and (iii) reduce debris accumulation and maintenance.
- Long Cove Road in need of bank stabilization for erosion control and storm resilience

#2 Bindloss Brook, Cow Hill Road, Groton

Structure Info:

- Near Cow Hill Road and Bindloss Road intersection
- Two Round Culverts undersized creating large scour pool downstream
- Sediment accretion evident upstream and erosion present downstream
- Limited depth of water in structure will likely limit fish movement and migration

Key findings from NAACC assessment:

- **Crossing type:** 2 round concrete culverts with 4 ft diameters
- **Crossing condition:** OK
- **Constriction severity:** Severe
- **AOP Coarse Screen / NAACC AOP Score:** Reduced AOP / 0.48

Habitat Info:

- Strong potential for spawning habitat upstream with restoration efforts
- Breached dam downstream is present at Bindloss Preserves, Avalonia Land Conservancy
- Structure is influencing substrate particle size, modifying habitat

Restoration Recommendations:

- Replace with Stream Simulation Design culvert or bridge: widen and restore stream channel (i) to increase hydraulic capacity and reduce over-topping risk, (ii) restore aquatic organism passage, and (iii) reduce debris accumulation and maintenance.
- Stabilize outlet with riparian plantings and stone to reduce erosion

#3 Bindloss Brook, Indigo Street, Groton

Upstream:	Downstream:
	
Aerial Image:	Map Screen Shot:
	

Structure Info:

- Between 243 and 219 Indigo Street
- Single culvert with shallow water depth likely to limit aquatic organism passage
- Perched downstream side of structure reduces aquatic organism passage
- Secondary storm drain outlet present on downstream side of structure

Key findings from NAACC assessment:

- **Crossing type:** Single primary concrete culvert with 4.5 ft diameter.
- Crossing condition: OK
- **Constriction severity:** Moderate
- **AOP Coarse Screen / NAACC AOP Score:** Reduced AOP / 0.06



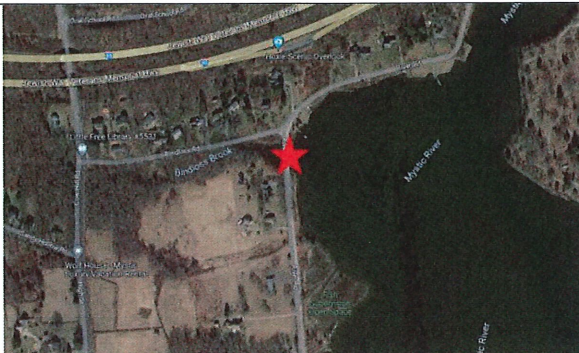
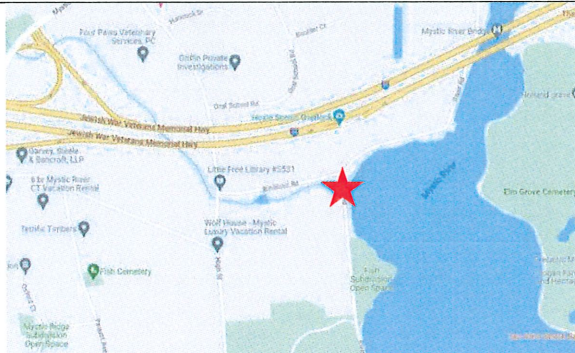
Habitat Info:

- Prominent wetland upstream
- Large sediment size for increased habitat accessibility
- Dense canopy cover moderates water temperatures

Restoration Recommendations:

- Replace with Stream Simulation Design culvert or bridge: widen and restore stream channel (i) to increase hydraulic capacity and reduce over-topping risk, (ii) restore aquatic organism passage, and (iii) reduce debris accumulation and maintenance.

#4 Bindloss Brook, River Road, Groton

<p>Upstream:</p> 	<p>Downstream:</p> 
<p>Aerial Image:</p> 	<p>Map Screen Shot:</p> 

Crossing Info:

- Two round culverts 4 ft in diameter, restrict fluvial and tidal flows
- High tide mark is close to road elevation
- Possible road over topping in storm event
- Restriction in flow path may lead to debris accumulation

Key findings from NAACC assessment:

- **Crossing type:** 2 round concrete culverts with 4 ft diameters
- **Crossing condition:** OK
- **Constriction severity:** Severe
- **AOP Coarse Screen / NAACC AOP Score:** Full AOP / 0.77

Habitat Info:

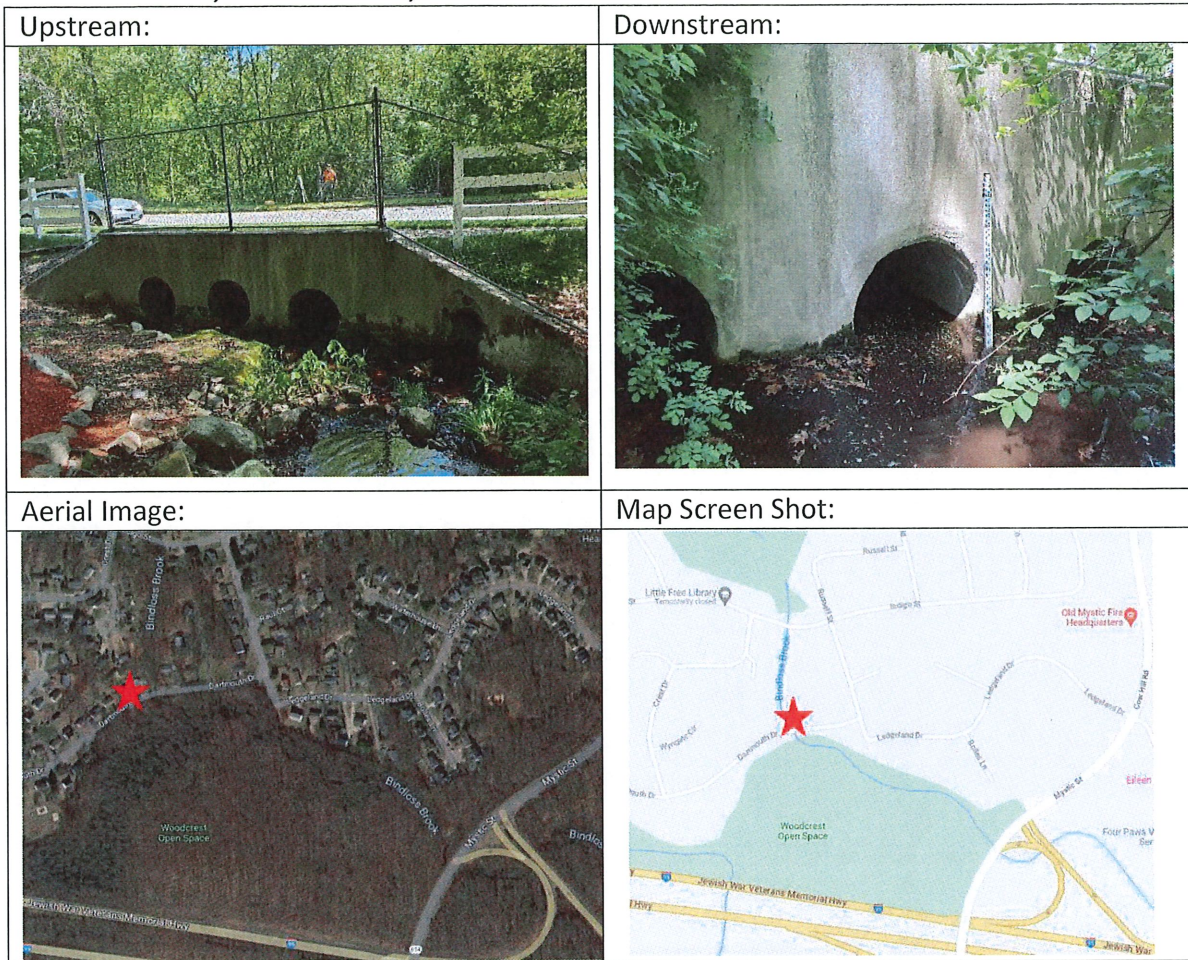
- Salt marsh presence upstream
- Strong spawning habitat potential upstream

Restoration Recommendations:

- Replace with wider culvert or bridge (i) to increase hydraulic capacity and tidal fluctuation, (ii) reduce debris accumulation and maintenance

Secondary Priority Road-Stream Crossing Restoration Opportunities

#5 Bindloss Brook, Dartmouth Rd, Groton



Structure Info:

- Upstream of Interstate I-95
- Three round culverts with minimal water depth moving through each
- Sharp skew of stream at entrance of structure increases maintenance needs

Key findings from NAACC assessment:

- **Crossing type:** 3 round concrete culverts with 3 ft diameter
- **Crossing condition:** OK
- **Constriction severity:** Moderate
- **AOP Coarse Screen / NAACC AOP Score:** Reduced AOP / 0.70



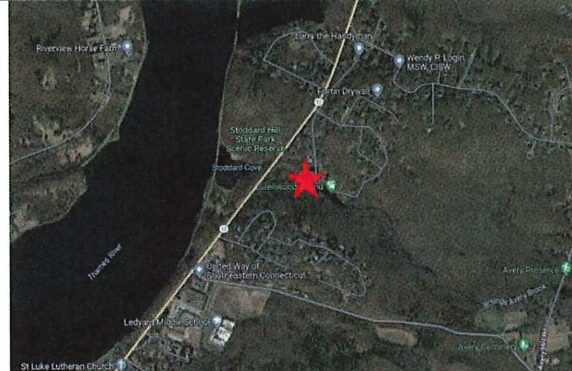
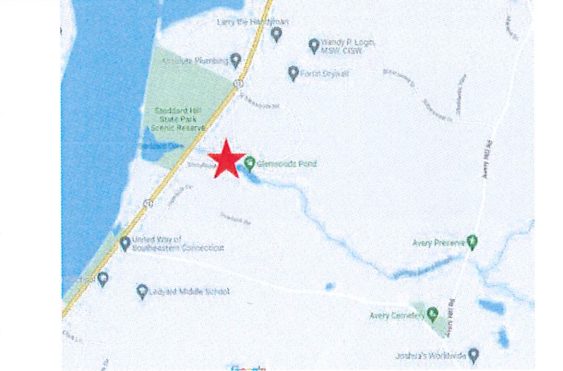
Habitat Info:

- Unknown downstream crossing conditions on I-95 due to limited access
- Shallow water depth in structure likely to limit aquatic organism passage
- Structure/stream design susceptible to sediment (cobbles and boulders) and debris accumulation

Restoration Recommendations:

- Replace with Stream Simulation Design culvert or bridge: widen and restore stream channel (i) to increase hydraulic capacity and reduce over-topping risk, (ii) restore aquatic organism passage, and (iii) reduce debris accumulation and maintenance.
- Restore stream channel to be in line with crossing structure

#6 Billings Avery Brook, Stoneybrook Rd, Ledyard

Upstream:	Downstream:
	
Aerial Image:	Map Screen Shot:
	

Structure Info:

- Fieldstone structure under Stoneybrook Road
- A small spillway immediately upstream of culvert inlet and Stoneybrook Road form the dam of Glenwoods Pond
- CTDEEP Dam Safety database identifies this as Long Pond Dam, #7220, Low Hazard
- Structure curves under the road

Key findings from NAACC assessment:

- **Crossing type:** single rock / stone box bridge with abutments 6 ft wide 10 feet tall
- **Crossing condition:** OK
- **Constriction severity:** Moderate
- **AOP Coarse Screen / NAACC AOP Score:** Reduced AOP / 0.70

Habitat Info:

- Pond habitat present for river herring spawning if access is provided
- Close proximity to tidally influenced Thames River
- Vegetation was thick and fallen trees were present
- Erosion present downstream
- Likely to be susceptible to storm debris jams because of design intricacies

Potential Restoration Recommendations:

- Consider feasibility of installing technical fishway through crossing to provide diadromous fish access to Glenwoods Pond.
- Consider feasibility for removing the small spillway upstream of crossing, which would likely eliminate Glenwoods Pond, and replace with Stream Simulation Design culvert or bridge: widen and

restore stream channel (i) to increase hydraulic capacity and reduce over-topping risk, (ii) restore aquatic organism passage, and (iii) reduce debris accumulation and maintenance.

- Failing masonry in structure should be repaired in any future work.

Safety Concerns for Community

#7 Pine Swamp Brook, Structure 1 on Harvard Terrace, Ledyard

<p>Upstream:</p> 	<p>Downstream:</p> 
<p>Aerial Image:</p> 	<p>Map Screen Shot:</p> 

Structure Info:

- Road crossing comprises dam of Pine Swamp Pond (aka Avalonia Land Trust Pond).
- CTDEEP Dam Safety database identifies this as Pine Swamp Pond Dam, #7212, Low Hazard
- Perched round culvert with a rusted out dilapidated bottom
- Fall hazard around guard rail and repaired curbing pavement and apron

Key findings from NAACC assessment:

- **Crossing type:** 1 metal culvert with a 3 ft diameter
- **Crossing condition:** Poor
- **Constriction severity:** Severe
- **AOP Coarse Screen/ NAACC AOP Score:** No AOP / 0.03



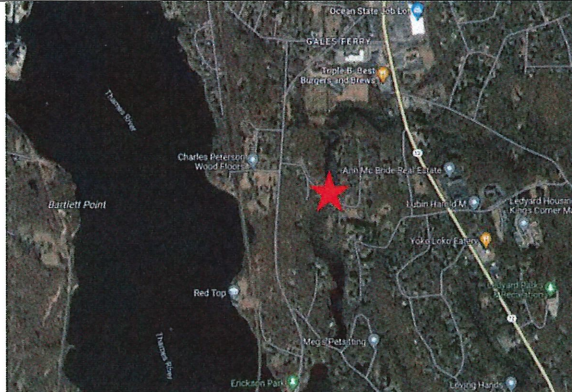
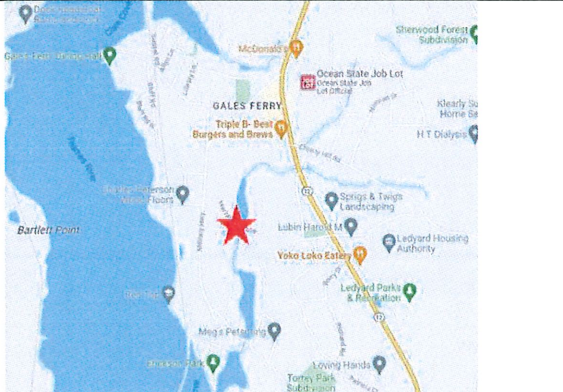
Habitat Info:

- Downstream barrier to fish migration due to natural waterfall located south of Smith Pond Way
- Resident fish habitat upstream in pond and downstream in river channel
- Perched structure reduces movement of fish migration

Restoration Recommendations:

- Consider feasibility of installing technical fishway through crossing to provide fish passage to Pine Swamp Pond
- Failing masonry in structure should be repaired in any future work.
- Reduce fall risk for children in neighborhood.

#8 Pine Swamp Brook, Structure 2 on Harvard Terrace, Ledyard

<p>Upstream:</p> 	<p>Downstream:</p> 
<p>Aerial Image:</p> 	<p>Map Screen Shot:</p> 

Structure Info:

- Under Harvard Terrace Road downstream of Avalonia Land Trust Pond
- CTDEEP Dam Safety database identifies this as Pine Swamp Pond Dam, #7212, Low Hazard
- Inlet drop culvert to square stone outlet
- Fall hazard around guard rail and repaired curbing pavement and apron
- Large metal conveyance structure present to move water away from road creating another safety hazard

Key findings from NAACC assessment:

- **Crossing type:** Inlet drop to square outlet
- **Crossing condition:** Poor
- **Constriction severity:** Severe
- **AOP Coarse Screen/ NAACC AOP Score:** No AOP / No score

Habitat Info:

- Downstream barrier to fish migration due to natural waterfall located south of Smith Pond Way
- Resident fish habitat upstream in pond and downstream in river channel

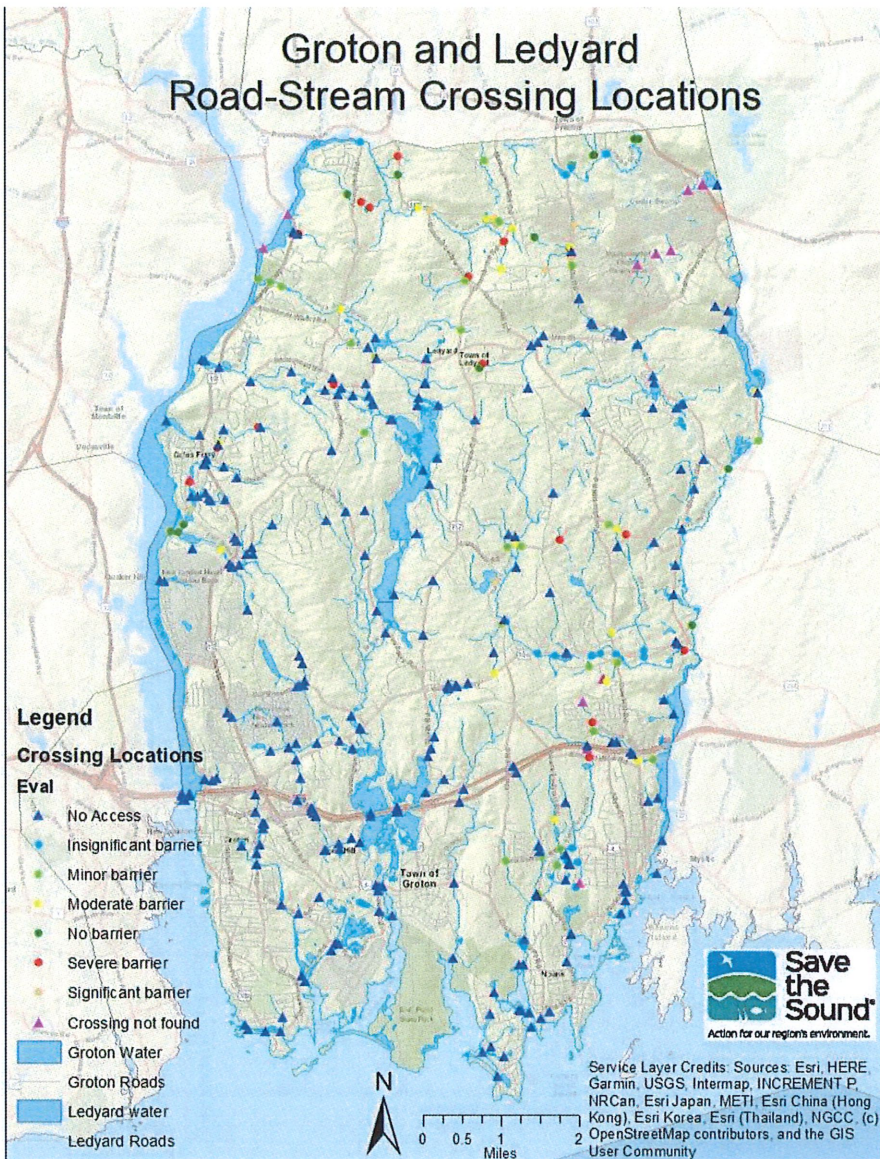


- Perched structure reduces movement of fish migration

Restoration Recommendations:

- Refurbish dated and worn areas of structure
- Reduce fall risk for children in neighborhood

Groton and Ledyard Road-Stream Crossing Locations





DAM SAFETY PROGRAM DAM INSPECTION REPORT FORM – FOR REGULATORY INSPECTION

Please complete this form in accordance with the instructions (DEEP-DAM-INST-002). Please note that a separate inspection report is required for each individual structure (i.e., a dam and dike on the same waterbody would require two reports, one for the dam and one for the dike).

Part I: Summary of Dam Inspection

Dam Name:	Pine Swamp Brook Pond Dam	Inspection Date(s):	December 18, 2024
Alternate Dam Name(s):	none	CT Dam ID #:	7212
Location (Municipality):	Ledyard	Temperature / Weather:	±32°, Clear, calm
Registered? Yes or No <small>If yes, provide the 9 digit registration number found on the notification letter.</small>	Y, not available	Pool Level: <small>See Instructions</small>	±1-inch
Emergency Action Plan? Yes or No <small>If Yes, see instructions</small>	No	Impoundment Use: <small>use options listed in instructions</small>	Recreation
Hydraulic and Hydrologic Analysis? Yes or No <small>If Yes, see instructions</small>	No	Stability Analysis? Yes or No <small>If Yes, see instructions</small>	No
Overall Condition of Dam: (refer to Appendix A located at the end of this form) Fair			

Persons present at the inspection <small>(select the tab button in the last cell to the right to create another row)</small>		
Name	Title/Position	Representing
Michael E. Fanning, P.E.	Senior Engineer	WMC Consulting Engineers
Zachary Nesdale	Inspector	WMC Consulting Engineers

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Land Use Department

Owners and Operators: If there is more than one owner or operator, copy the empty table below for each owner or operator and paste right below the previous table, then complete the information for each

*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject report. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes by email via deep.damsafety@ct.gov.

Indicate if Owner or Operator: Owner/Operator

Name: **Town of Ledyard**

Mailing Address: **741 Colonel Ledyard Highway**

City/Town: **Ledyard**

State: **CT**

Zip Code: **06339**

Phone: **680-464-3238**

ext.:

Emergency Phone: **860-464-8705**

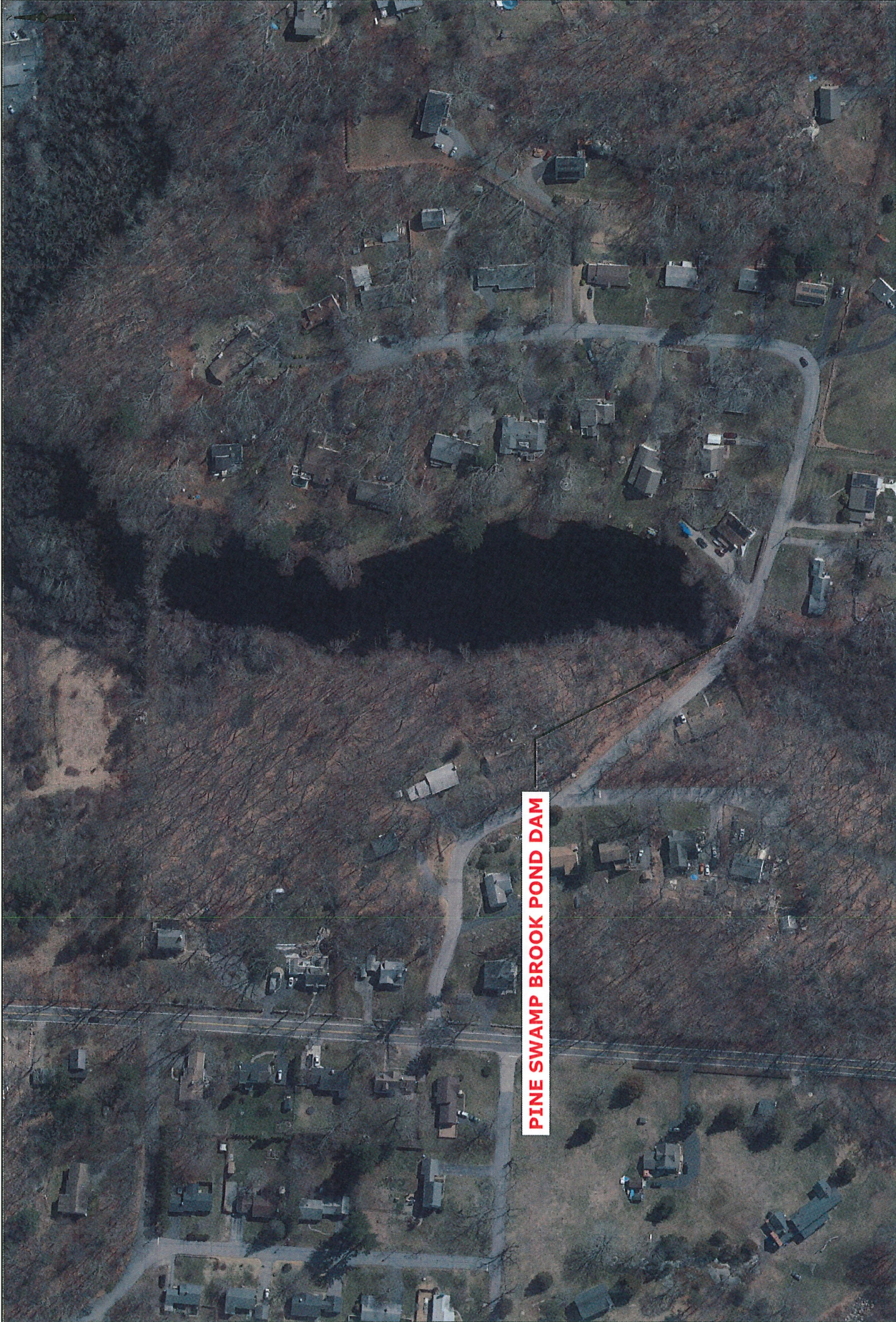
*E-mail: **pwd@ledyardct.org**

Part II: General Dam Information

General Description: Pine Swamp Brook Pond Dam is an earthen embankment with a local road (Harvard Terrace) crossing the dam. The embankment has a principal and auxiliary spillway. The principal spillway has a riser structure at the inlet that functions as a drop inlet. There is a solid cover over the drop inlet structure. Flow is conveyed to an outlet via a bottomless culvert with grouted stone masonry walls and a concrete slab top. The auxiliary spillway is a corrugated metal pipe with an invert slightly higher than the crest of the principal spillway invert.			
Hazard Classification:	A	Dam Height (ft):	8
Dam Length (ft):	95	Spillway Length (ft):	10
Spillway Type:	Rectangular concrete drop inlet	Normal Freeboard (ft):	5
Drainage Area (square miles):	1.9	Impoundment Area (at principal spillway crest, in acres):	2.85
Watercourse(s): Pine Swamp Brook (3000-06-2-L1)			

OTHER INFORMATION: (see instructions) Location (41.422588°, -72.085202°) Dam was apparently constructed as part of subdivision development. Several single-family residences abut the pond, and there are driveways located near both dam abutments. The local road is used to convey a potable water supply system across the dam. Valves are located near each abutment and at a fire hydrant located at the right abutment. There is also a dry hydrant with a connection adjacent to the auxiliary spillway.

Part III: Aerial Photo/Location Map (insert the aerial photo and location map under this Part.
See instructions for details.)



PINE SWAMP BROOK POND DAM

SUPV.	S.R.M.
DESIGN	
DRAWN	M.E.F.
CHECKED	
DATE	11/13/24


WMC
 CONSULTING ENGINEERS
 • WENGEL, McDONNELL & COSTELLO •
 87 HOLMES ROAD
 NEWINGTON, CT 06111
 (860) 667-9624

PREPARED FOR:
 TOWN OF LEDYARD
 741 COLONEL LEDYARD HIGHWAY
 LEDYARD, CT 06339

PINE SWAMP BROOK POND DAM - #7212
 AERIAL MAP
 SCALE - 1:200

LEDYARD DAM INSPECTIONS		SHEET	1
- DAM INSPECTION	- AERIAL	- 24097	- 0
PROJECT	FILE NAME	NUMBER	REV.
			1



SUPV. S.R.M.	<p>WMC CONSULTING ENGINEERS</p> <ul style="list-style-type: none"> WENGELL, McDONNELL & COSTELLO • 87 HOLMES ROAD NEWINGTON, CT 06111 (860) 667-9624 	<p>PREPARED FOR: TOWN OF LEDYARD 741 COLONEL LEDYARD HIGHWAY LEDYARD, CT 06339</p>	<p>PINE SWAMP BROOK POND DAM INSPECTION LOCATION MAP - UNCASVILLE QUAD SCALE - 1:200</p>		
DESIGN			PROJECT	FILE NAME	NUMBER
DRAWN M.E.F.			DAM INSPECTION	LOCATION	24097
CHECKED			REV.	0	0
DATE 11/13/24			SHEET	1	1

Part IV: Dam Information

Dam Name (see instructions): Pine Swamp Brook Pond Dam

General Description: Earthen embankment dam with a local road crossing on the dam.

General Condition: Good

Concrete Condition: N/A

Stone Masonry: Some missing grout, but no structural concerns

Settlement/Alignment/Movement: None observed

Seepage/Foundation Drainage: None observed

Riprap: N/A

Erosion/Burrows: None observed

Vegetative Cover: Heavy growth of trees and brush on dam embankment

Other: Potable water pipe crosses dam, hydrant located adjacent to right abutment

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)



Photo 1: Upstream face of embankment



Photo 2: Downstream face of embankment



Photo 3: Roadway approach to right abutment and hydrant position



Photo 4: Roadway across dam embankment and beyond left abutment



Photo 5: Water shut-off for hydrant and pipe crossing dam. Similar arrangement at left abutment

Part V: Principal Spillway, Training Walls, Apron

Number of Principal Spillways: 1 (if there is more than one principal spillway, reproduce this section and paste right below the previous section)

Spillway Type (see instructions): Rectangular concrete drop inlet

General Description: Drop inlet located near left abutment, connecting to stone masonry culvert through embankment. Inlet has a removable wood cover, to prevent vegetation and other obstructions from entering the inlet.

General Condition: Good

Concrete Condition: Not observed

Stone Masonry: Some grout missing near outlet end of culvert

Settlement/Alignment/Movement: None observed

Cracks: None observed

Scouring/Undermining: None observed

Seepage/Foundation Drainage: None observed

Other: Culvert has flared exit walls and cantilevered concrete slab over outlet

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)



Photo 6: Principal spillway inlet with cover

Q



Photo 7: Principal spillway outlet

Part VI: Auxiliary Spillway, Training Walls, Apron

Number of Auxiliary Spillways: 1 (if there is more than one auxiliary spillway, reproduce this section and paste right below the previous section)

Auxiliary Spillway Type (see instructions): Corrugated metal pipe

General Description: 2-foot diameter corrugated metal pipe. Inlet and outlet end project beyond the dam embankment

General Condition: Poor

Concrete Condition: N/A

Stone Masonry: N/A

Settlement/Alignment/Movement: None observed

Cracks: N/A

Scouring/Undermining: Scouring on downstream embankment

Vegetative Cover: N/A

Riprap: None observed

Seepage/Foundation Drainage: None observed

Other: Downstream invert of CMP has rotted through and flow spills out onto dam embankment before it exits at the outlet. Also, there is no scour protection at outlet.

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)



Photo 8: Auxiliary spillway inlet



Photo 9: Auxiliary spillway outlet

10

Part VII: Downstream Channel

Number of Downstream Channels: 1 (if there is more than one downstream channel, reproduce this section and paste right below the previous section)

Channel Name (see instructions), include Watercourse Name: Pine Swamp Brook

General Description: Natural stream channel with dense vegetation on banks, sand-cobble bottom

General Condition: Good

Scouring: Minimal

Debris: None observed

Riprap: None observed

Other: Short reach just downstream is two channels for the two spillways of dam before merge

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)



Photo 10: Downstream channel of Pine Swamp Brook

Part VIII: Intake Structure(s)

Number of Intake Structures: 0 (if there is more than one intake structure, reproduce this section and paste right below the previous section)

Intake Structure Type (see instructions):

General Description:

General Condition:

Concrete Condition:

Stone Masonry:

Settlement/Alignment/Movement:

Cracks:

Other:

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)

Part IX: Outlet Structure(s)

Number of Outlet Structures: 0 (if there is more than one outlet structure, reproduce this section and paste right below the previous section)

Outlet Structure Type (see instructions):

General Description:

General Condition:

Concrete Condition:

Stone Masonry:

Settlement/Alignment/Movement:

Scouring/Undermining:

Other:

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)

Part X: Miscellaneous Features

List miscellaneous features: (e.g., access roads, bridges, etc.):

- Road over dam;
- Potable water pipe crosses dam, with isolation valves near each abutment and for hydrant located near right abutment;
- Dry hydrant siphon connection on embankment

Photos/Graphics/Sketches (insert either below this Part or in Parts XIII and XIV, refer to the instructions under Parts XIII and XIV for additional details)

Part XI: Downstream Hazard Classification Reassessment

Downstream Hazard Classification: *(provide recommendation for the hazard class based on the Dam Safety regulation. See Instructions and [Appendix B.](#))*

Current classification is adequate. Only a few downstream structures on larger pond before confluence of brook with Thames River

Part XII: Recommendations *(See instructions for identifying recommendations)*

Recommendations: *(Each item should be numbered)*

1. Clear vegetation from dam and ± 25 beyond. Grubbing of trees requires Dam Safety permit.
2. Replace or repair failing auxiliary spillway pipe.
3. Monitor principal spillway grouted stone walls, and repoint grout as needed.
4. Monitor principal spillway inlet for blockage

Part XIII: Photographs/Graphics (see instructions and [Appendix C](#))

[insert photos/graphics here if not included in each part above]



Photo 11: Pine Swamp Brook Pond

q



Photo 12: Dry hydrant and potable water hydrants

Part XIV: Sketches

This completed report must include a sketch of the plan view of the dam to aid in the description of its condition. Refer to the instructions for more detail and an example.

[insert sketches here if not included in each part above].



PINE SWAMP BROOK POND

SUPV.	S.R.M.	PREPARED FOR: TOWN OF LEDYARD 741 COLONEL LEDYARD HIGHWAY LEDYARD, CT 06339	PINE SWAMP BROOK POND DAM - #7212 SKETCH MAP SCALE - 1:50	
DESIGN			PROJECT	FILE NAME
DRAWN	M.E.F.		DAM INSPECTION	24097
CHECKED			NUMBER	0
DATE	12/19/24	REV.	1	SHEET
				OF



SUPV.	S.R.M.	<p>PREPARED FOR:</p> <p>TOWN OF LEDYARD</p> <p>741 COLONEL LEDYARD HIGHWAY</p> <p>LEDYARD, CT 06339</p>	PINE SWAMP BROOK POND DAM - #7212 PHOTO LOG MAP SCALE - 1:50	
DESIGN			PINE SWAMP BROOK POND DAM INSPECTION - DAM INSPECTION - SKETCH MAP - 24097 - 0	SHEET 1 OF 1
DRAWN	M.E.F.		PROJECT	REV.
CHECKED			FILE NAME	NUMBER
DATE	12/19/24			


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 CONSULTING ENGINEERS
 • WENGELL, McDONNELL & COSTELLO •
 87 HOLMES ROAD
 NEWINGTON, CT 06111
 (860) 667-9624

Part XV: Professional Engineer Certification

The following certification must be signed by a Professional Engineer

"I hereby certify that the information provided in this report has been examined by me and found to be true and correct in my professional judgment."

4/3/25

Signature of Professional Engineer

Date

Stephen R. McDonnell

Vice President

12010

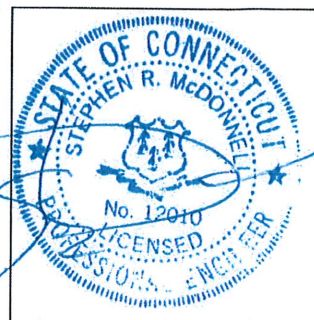
Printed Name of Professional Engineer

Title

CT P.E. Number

WMC Consulting Engineers

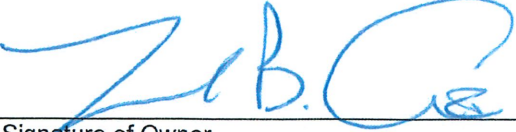
Name of Firm



Affix P.E. Stamp Here

Part XVI: Owner Signature

The following statement must be signed by the Owner(s) of the subject Dam.

"The information provided in this report has been examined by me."	
	<u>3/12/25</u>
Signature of Owner	Date
Fred B. Allyn III	Mayor
Name of Owner (print or type)	Title (if applicable)
Signature of Owner	Date
Name of Owner (print or type)	Title (if applicable)
Signature of Owner	Date
Name of Owner (print or type)	Title (if applicable)
Signature of Owner	Date
Name of Owner (print or type)	Title (if applicable)

Note: Please send the completed report converted to Adobe portable document format (pdf) to DEEP.DamSafety@ct.gov with signature pages signed.

Appendix A: Overall Dam Condition Selection Standards

Condition	Definition
Good	Through file research and after a thorough visual inspection it has been determined that the dam is well maintained and no existing dam safety deficiencies are recognized. Only continued routine maintenance is required.
Satisfactory	Through file research and after a thorough visual inspection it has been determined that no significant deficiencies are recognized. Only minor maintenance is required and only minor flaws are noted.
Fair	Through file research and after a thorough visual inspection it has been determined that there are no critical deficiencies with the dam that would require engineering analysis with the following exception: the engineer may recommend that a hydrologic and hydraulic analysis be conducted due to the lack of adequate freeboard and/or the lack of spillway capacity documentation. A condition exists at the dam that may require some sort of additional monitoring.
Poor	Through file research and after a thorough visual inspection it has been determined that deficiencies are recognized that require engineering analysis and/or remedial action.
Unsatisfactory	Through file research and after a thorough visual inspection it has been determined that a deficiency is recognized that requires immediate or emergency action. Administrative/Enforcement action may be required as determined by the Dam Safety Program. Reservoir level restrictions may be necessary until the problem is resolved.

Appendix B - Hazard Classification of Dams

- I. A Class AA dam is a negligible hazard potential dam which, if it were to fail, would result in the following:**
- (i) no measurable damage to roadways;
 - (ii) no measurable damage to land and structures;
 - (iii) negligible economic loss.
- II. A Class A dam is a low hazard potential dam which, if it were to fail, would result in any of the following:**
- (i) damage to agricultural land;
 - (ii) damage to unimproved roadways (less than 100 ADT);
 - (iii) minimal economic loss.
- III. A Class BB dam is a moderate hazard potential dam which, if it were to fail, would result in any of the following:**
- (i) damage to normally unoccupied storage structures;
 - (ii) damage to low volume roadways (less than 500 ADT);
 - (iii) moderate economic loss.
- IV. A Class B dam is a significant hazard potential dam which, if it were to fail, would result in any of the following:**
- (i) possible loss of life;
 - (ii) minor damage to habitable structures, residences, hospitals, convalescent homes, schools, etc;
 - (iii) damage to or interruption of the use of service of utilities;
 - (iv) damage to primary roadways (less than 1500 ADT) and railroads;
 - (v) significant economic loss.
- V. A Class C dam is a high hazard potential dam which, if it were to fail, would result in any of the following:**
- (i) probable loss of life;
 - (ii) major damage to habitable structures, residences, hospitals, convalescent homes, schools, etc;
 - (iii) damage to main highways (greater than 1500 ADT);
 - (iv) great economic loss.

Appendix C - PHOTOGRAPH INSTRUCTIONS

All photographs shall be color photographs. Photographs shall be clear and include scale references where applicable. Photographs shall include, but not be limited to the following:

1. Overview of dam/dike from upstream
2. Overview of dam/dike from downstream
3. Overview of upstream face from right abutment
4. Overview of upstream face from left abutment
5. Overview of dam crest from right abutment
6. Overview of dam crest from left abutment
7. Overview of downstream face from right abutment
8. Overview of downstream face from left abutment
9. Overview of spillway(s) from upstream
10. Overview of spillway(s) from downstream (tailrace or channel area)
11. Overview of right training wall(s)
12. Overview of left training wall(s)
13. Overview of weir
14. Overview of stilling basin
15. Overview of downstream channel
16. Overview of gatehouse exterior
17. Overview of gatehouse interior
18. Overview of operators
19. Outlet inlets and discharge points
20. Overview of reservoir area
21. Areas of specific deficiencies (e.g., cracks, erosion, displacement, seeps, deterioration, etc.)

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41N72WMILITARYHWY LLC
58 HUNTINGTON ST
NEW LONDON, CT 06320

CASSIDY KEVIN JOHN + HOLL
55 HARVARD TER
GALES FERRY, CT 06335

GRALTON ROBERT G + CHRIST
30 HARVARD TER
GALES FERRY, CT 06335

HASS AARON + BRENNAN
51 HARVARD TER
GALES FERRY, CT 06335

HOLLOWAY JAMES + DARLENE
32 HARVARD TER
GALES FERRY, CT 06335

KLEWIN C R -LLC
3 JOHNNY CAKE HILL RD
OLD LYME, CT 06371

LARSON DAVID L + MARY B
53 HARVARD TER
GALES FERRY, CT 06335

LEVESQUE LINDA M + RICHAR
33 HARVARD TER
GALES FERRY, CT 06335

MARSHALL WAYNE H
5 HARVARD TERRACE
GALES FERRY, CT 06335

MONAGHAN DOUGLAS J + ANN
49 HARVARD TER
GALES FERRY, CT 06335

MONPENNY COLLEEN + MATEY
7 HARVARD TER
GALES FERRY, CT 06335

MOOREHEAD KAREN W
45 HARVARD TER
GALES FERRY, CT 06335

PENN ADRIANA LEIGH + MYKE
26 HARVARD TER
GALES FERRY, CT 06335

PONS ELAYNE A
57 HARVARD TER
GALES FERRY, CT 06335

SLACK CONNOR D + PHELAN V
47 HARVARD TER
GALES FERRY, CT 06335

VALDEZ JAMIE M
49 MILITARY HWY
GALES FERRY, CT 06335

B O Q INVESTMENTS INC
1649 ROUTE 12
GALES FERRY, CT 06335

PONS ELAYNE A
57 HARVARD TER
GALES FERRY, CT 06335

BAILEY MICHAEL P + LISA M
24 MILITARY HIGHWAY
GALES FERRY, CT 06335

TAGGART JEREMIAH + DAWN
23 MILITARY HWY
GALES FERRY, CT 06335

BARRETT ELIZABETH J + ROB
6 KINGS HWY
GALES FERRY, CT 06335

THE LANDING AT GALES FERR
41 WALNUT ST
HARTFORD, CT 06120

BARRIERE JESSE
12 MAPLE CORNERS RD
GALES FERRY, CT 06335

WORTHEN DONNA A
38 MILITARY HIGHWAY
GALES FERRY, CT 06335

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FEB 26 2026

Land Use Department

DUBIN SETH P
58 HARVARD TER
GALES FERRY, CT 06335

E AVALONIA LAND CONSERVAN
PO BOX 49
OLD MYSTIC, CT 06372

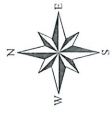
KILBY LAWRENCE T + TINA M
11 MAPLE CORNERS RD
GALES FERRY, CT 06335

KLEWIN C R -LLC
3 JOHNNY CAKE HILL RD
OLD LYME, CT 06371

MOOREHEAD DAVID
86 MILITARY HWY
GALES FERRY, CT 06335

41N72WMILITARYHWY LLC
58 HUNTINGTON ST
NEW LONDON, CT 06320

NS RETAIL HOLDINGS LLC
2021 MCKINNEY AVE, STE 1150
DALLAS, TX 75201-7632



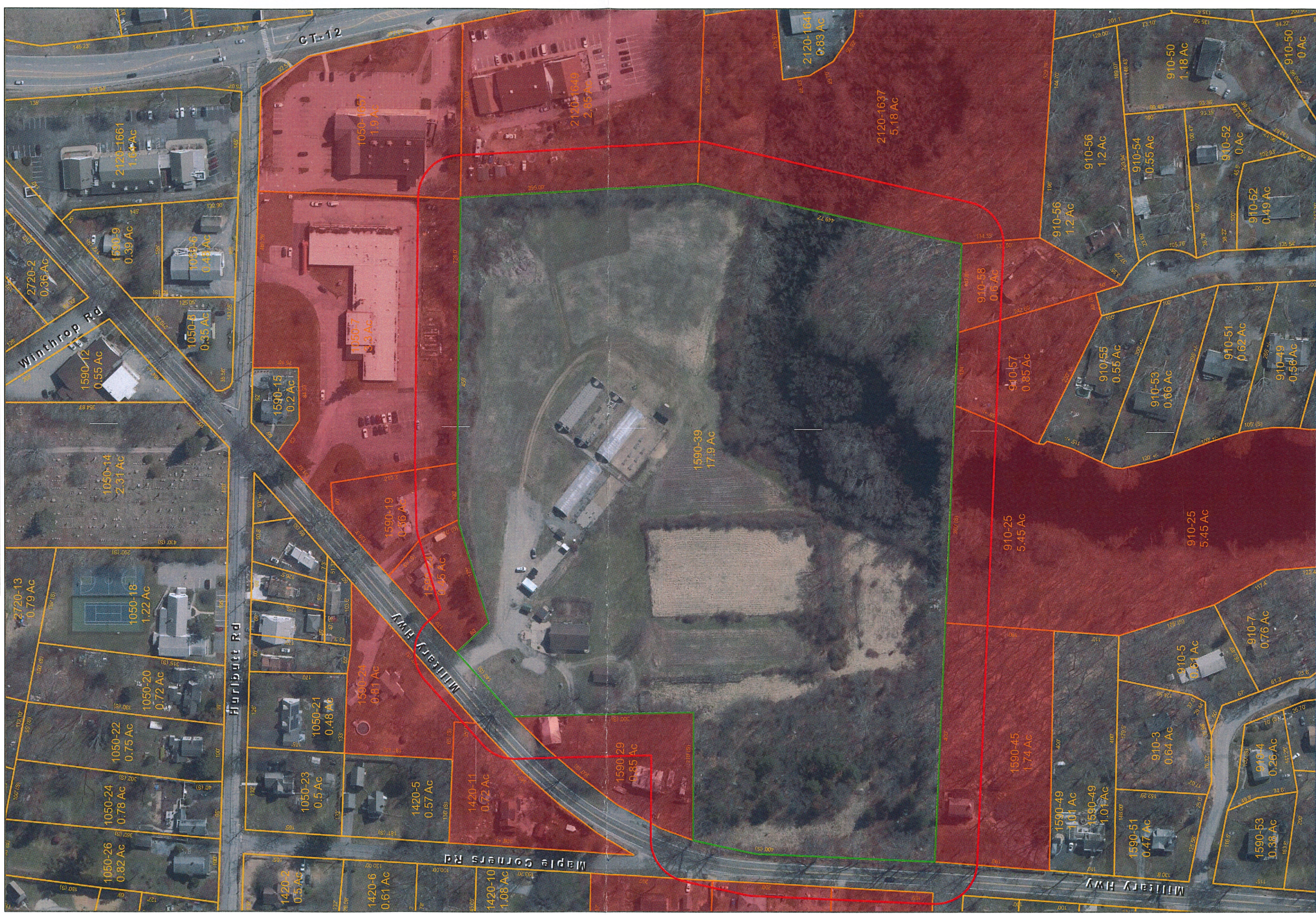
Ledyard, CT

February 26, 2026

1 inch = 150 Feet



www.cai-tech.com



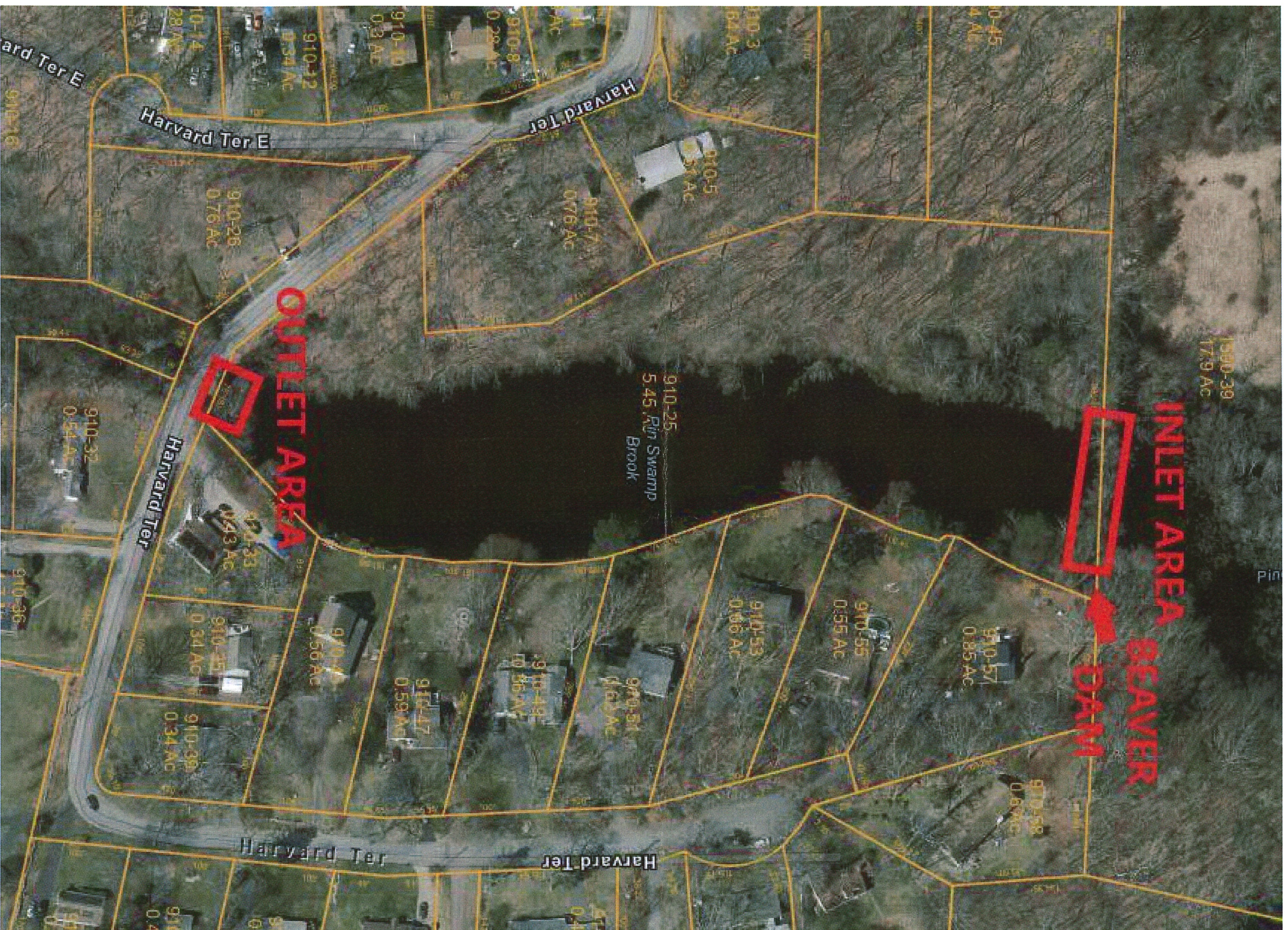
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FD# 8

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FEB 26 2026

Land Use Department



MAR 02 2026

Elizabeth Burdick~~Land Use Department~~

From: DENNIS MAIN <dennis.main@snet.net>
Sent: Monday, March 2, 2026 5:00 PM
To: Elizabeth Burdick
Cc: Steve Masalin; Hannah Gienau; Anna Wynn
Subject: Re: IWWC 26-3SITE - 25 Harvard Terrace (Avalonia) & 39 Military Highway (C.R.Klewin)

Yes, permission granted - I have passed along all the information which indeed is on the agenda for our Stewardship Committee meeting on Wednesday evening 3/4/2026.

Dennis 860-823-MAIN

EX#10

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MAR 02 2026

Elizabeth Burdick

Land Use Department

From: Smith, Brian R. <BSMITH@RC.com>
Sent: Monday, March 2, 2026 5:04 PM
To: Elizabeth Burdick; Charles Klewin
Cc: Steve Masalin; Hannah Gienau
Subject: RE: 39 Military Highway - Property Owner Permission to Apply for IWWC Permit

Dear Ms. Burdick:

On behalf of the owner of 39 Military Highway, C.R. Klewin, LLC, I am authorized as its attorney to inform you and the IWWC by means of this e-mail that the Town of Ledyard is duly authorized to by C.R. Klewin, LLC to apply for the wetland permit TOWN OF LEDYARD - File #: 26-0286. Please let us know if you require any additional information to proceed.

Sincerely,
Brian R. Smith
 Robinson & Cole LLP
 One State Street
 Hartford, CT 06103
 Direct 860.275.8224 | Fax 860.275.8299
bsmith@rc.com | [Bio](#)

Robinson+Cole

Boston | Hartford | New York | Washington, DC | Providence | Miami | Austin
 Stamford | Wilmington | Philadelphia | Los Angeles | Albany | www.rc.com

LEGAL NOTICE
Ledyard Inland Wetlands and Watercourses Commission
NOTICE OF PUBLIC HEARING

The Ledyard IWWC, on 4/7/26 at 7pm at Ledyard Town Hall Annex, 741 Colonel Ledyard Highway, Ledyard, CT, will hold a public hearing on the following application: IWWC#26-3SITE-25 Harvard Terrace & 39 Military Hwy, Gales Ferry CT- Applicant/Agent, Town of Ledyard- Property Owners, Avalonia Land Conservancy Inc. & C.R Klewin LLC for regulated activities including maintenance & repair of existing stormwater inlet & outlet infrastructure and removal of a beaver dam & other obstructions at both properties to improve drainage & reduce flooding. A copy of the application and all supporting documents will be on file in the Land Use Department at Town Hall, 741 Colonel Ledyard Hwy, Ledyard, CT 06339 & on the Town website.

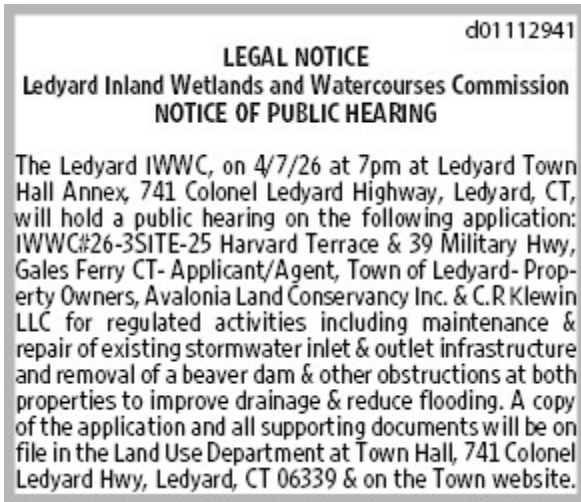
Attn: legal@theday.com

Please publish twice in The Day legals on Friday, March 27, 2026 and Friday, April 3, 2026.

Anna Wynn

From: legal <legal@theday.com>
Sent: Monday, March 9, 2026 9:54 AM
To: Anna Wynn
Cc: Hannah Gienau
Subject: Re: IWWC#26-3SITE: Notice of Public Hearing
Attachments: Invoice - IWWC#26-3SITE-25 Harvard Terrace & 39 Military Hwy, Gales Ferry CT.pdf

Here is notice d01112941 that will run in the 3/27 + 4/3 edition. Invoice is attached.



Kelly Johnson
Legal Notices
Office Hours are 8 a.m. to 4 p.m. Monday - Friday
The Day & Shore Publishing
200 State Street
New London, CT 06320
Legal Line - 860-701-4410
Direct Line: 860-701-4371

From: Anna Wynn <land.use.asst@ledyardct.org>
Sent: Monday, March 9, 2026 7:50 AM
To: legal <legal@theday.com>
Cc: Hannah Gienau <zoning.official@ledyardct.org>
Subject: IWWC#26-3SITE: Notice of Public Hearing

Good Morning,

See attached notice of public hearing for application IWWC#26-3SITE. Please publish twice in The Day Legals on Friday, March 27, 2026 and Friday, April 3, 2026. Please note that these same instructions are contained at the bottom of the document. Reach out with any questions or comments, thank you!

Disclaimer

The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful.

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TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-0451

Agenda Date: 4/7/2026

Agenda #: B.

LAND USE APPLICATION

Subject/Application:

Discussion & Decision: IWWC#26-3SITE - 25 Harvard Terrace (MAP ID: 9/910/25) & 39 Military Hwy (MAP ID: 92/1590/39), Gales Ferry CT,- Applicant/Agent, Town of Ledyard, - Property Owners, Avalonia Land Conservancy Inc. & C.R Klewin LLC, for regulated activities, including maintenance and repair of existing stormwater inlet and outlet infrastructure, and removal of a beaver dam and other obstructions at both locations to improve drainage and reduce flooding. (Submitted 2/26/26, Date of Receipt 3/3/26, PH set for 4/7/26, PH must close by 5/11/26, DRD 35-days from close of PH)

Background:

(type text here)

Land Use Director/Town Planner:

(type text here)



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-0442

Agenda Date: 4/7/2026

Agenda #: A.

LAND USE APPLICATION

Subject/Application:

IWWC#26-6RESUB - 84 Silas Deane Road (MAP ID: 42-2220-84) & 58 & 59 Seabury Avenue (MAP ID: 42-2200-58) (MAP ID: 42-2200-59), Owner/Applicant - 84 Silas Deane Road, LLC - Agent, Dieter & Gardner, LLC for regulated activities associated with a proposed 23-Lot Resubdivision, including the construction of a new public road, stormwater drainage system and installation of a dry hydrant (Submitted 3/26/26, Date of Receipt 4/7/26, DRD 6/10/26)

Background:

(type text here)

Land Use Director/Town Planner:

(type text here)

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FDAI

Street No./ Name: _____

TOWN OF LEDYARD
INLAND WETLANDS AND WATERCOURSES COMMISSION (IWWC)
APPLICATION FOR PERMIT (Or Commission ruling that a permit is not needed)

Application No. IWWC# 26-6 P088
Receipt Date 4/7/26

MAR 26 2026

Land Use Department

APPLICANT 84 SILAS DEANE LLC

Date Submitted 3/26/26

Applicant/Agent PAUL C. GARDNER Owner (if different) 84 SILAS DEANE LLC

Address P.O. Box 335 GALE FERRY CT 06335 Address of Owner 24 KILBURN ST CHARLESTOWN

Phones 860-461-7455 cell Phone 860-625-0102 RT 02813

- I have received information on the Army Corps of Engineers permit procedure.
- I have read and have included all the application and site plan requirements in Section 7 of the IWWC Regulations

[Signature]
STON A. RICE Signature of Applicant/ Agent

Location of Property 58259 SEABURY AVE; 84 SILAS DEANE ROAD

Tax Assessor's Map No. 42 Zoning District R-60

Written Description of Proposed Activity SUBDIVISION; CONSTRUCT ROAD AND STORM DRAINAGE SYSTEM; INSTALL DRY HYDRANT

Proposed Erosion/ Sediment Control Measures: AS SHOWN ON PLAN

Total Area of Site 48.58 ACRES Total Area of Wetlands per Official Inventory Map 24,200 ± sq Ft

Amount of Fill, in Cubic Yards 0 Disturbed Area, in Square Feet 150 ± sq Ft or in Acres _____

Area Increase/Decrease in Wetlands 0 (For Map Amendment Only*)

Soil Types from USDA Soil Survey CdD/Rn/CrC/PdB/HrC/SvB

General Description of Vegetative Cover WOODED

Name and Address of Adjacent Property Owners SEE ATTACHED LIST

Anticipated Start Date 7/2026 Completion Date 9/2030

List previous IWWC application #'s _____

IWW Commission Disposition: IWWC Regulations; Section _____ Classification _____

Signature of Chair

FEE: _____ + \$60.00 State Fee = _____ DATE PAID _____ RECEIPT # _____

MAR 26 2026

Land Use Department

NAMES/ADDRESSES ADJACENT PROPERTY OWNERS

USA TRUST FOR MASHANTUCKET PEQUOT TRIBE
C/O BIA EASTERN OFFICE
ARLINGTON, VA. 22203

PATRICK L. & JOHANNA E. NOLAN
825 SHEWVILLE ROAD
LEDYARD, CT. 06339

JASON JOHANNISON
857 SHEWVILLE ROAD
LEDYARD, CT. 06339

MONIQUE SILVIA
833 SHEWVILLE ROAD
LEDYARD, CT. 06339

JAMES E. & MEGHAN C. DODGE
111 SILAS DEANE ROAD
LEDYARD, CT. 06339

MASHANTUCKET PEQUOT TRIBE
P.O. BOX 3008
MASHANTUCKET, CT. 06338-3008

ANNMARIE KENNEY & JACQUELYN SALAS
81 SILAS DEANE ROAD
LEDYARD, CT. 06339

DAVID F. & MARY H. FOLTZ
15 SPICER HILL ROAD
LEDYARD, CT. 06339

TIMOTHY A. & NANCY C. WALKER
P.O. BOX 3096
LEDYARD, CT. 06339

MASHANTUCKET PEQUOT TRIBAL NATION
P.O. BOX 3008
MASHANTUCKET, CT. 06338-3008

JASON P. & HEATHER M. HOLDORF
90 SILAS DEANE ROAD
LEDYARD, CT. 06339

TOMMY L. & CHERYL A. SMITH
80 SILAS DEANE ROAD
LEDYARD, CT. 06339

TIRE SERVICE CO.
563 BROAD STREET
NEW LONDON, CT. 06320

BARBARA KIL
50 SEABURY AVENUE
LEDYARD, CT. 06339

EDWIN R. & TERI L. BERRYMAN
96 SILAS DEANE ROAD
LEDYARD, CT. 06339

SUMMER OMAILEY
76 SILAS DEANE ROAD
LEDYARD, CT. 06339

RYAN & CAROLINA ROSE
94 SILAS DEANE ROAD
LEDYARD, CT. 06339

LONNY G. SMITH
72 SILAS DEANE ROAD
LEDYARD, CT. 06339

RICHARD T. WALKER
106 SILAS DEANE ROAD
LEDYARD, CT. 06339

VICKY W. POWELL
70 SILAS DEANE ROAD
LEDYARD, CT. 06339

WENDY MARIA RICHMOND
1777 COMMANDER HARVEY LANE
NAVARRE, FL. 32566

AVALONIA LAND CONSERVANCY
P.O. BOX 49
OLD MYSTIC, CT. 06372

SHAWN P. & KRISTEN N. COOLEY
102 SILAS DEANE ROAD
LEDYARD, CT. 06339

DANIEL R. & ANN M. DESSAINT
55 SEABURY AVENUE
LEDYARD, CT. 06339

BRENDA A. HUBLEY
100 SILAS DEANE ROAD
LEDYARD, CT. 06339

RONALD A. & ANNE H. DONAVAN - TRUSTEE
57 SEABURY AVENUE
LEDYARD, CT. 06339

BRIAN A. & BROOKE JOHNSON
56 SEABURY AVENUE
LEDYARD, CT. 06339



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete this form in accordance with the instructions on pages 2 and 3 and mail to:

DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106

Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

- DATE ACTION WAS TAKEN: year: _____ month: _____
- ACTION TAKEN (see instructions - one code only): _____
- WAS A PUBLIC HEARING HELD (check one)? yes no
- NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

- TOWN IN WHICH THE ACTIVITY IS OCCURRING (print name): Ledyard
does this project cross municipal boundaries (check one)? yes no
if yes, list the other town(s) in which the activity is occurring (print name(s)): _____
- LOCATION (see instructions for information): USGS quad name: OLD MYSTIC, CONN or number: _____
subregional drainage basin number: 3002 AND 2103
- NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): ROGER C GARDNER
- NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): 84 SILVER DEANE ROAD
briefly describe the action/project/activity (check and print information): temporary permanent description: _____
- ACTIVITY PURPOSE CODE (see instructions - one code only): B
- ACTIVITY TYPE CODE(S) (see instructions for codes): 9, 12, 14, _____
- WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):
wetlands: 0 acres open water body: 0 acres stream: 0 linear feet
- UPLAND AREA ALTERED (must provide acres): 15.0[±] acres
- AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0 acres

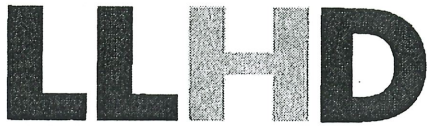
DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO



Ledge Light Health District

Promoting healthy communities
RECEIVED
MAR 26 2026

Land Use Department

Date: March 11, 2026
To: Dieter & Gardner
Subject Property: 84 Silas Deane Rd. Ledyard, CT

Plan Designed by: John Martucci Plan Date: 02/13/2026 Last Revision Date: n/a Date Paid: 02/20/2064
The plan and associated information submitted to our office on 02/20/2026 for a proposed 23 lot subdivision/commission review. Lots ranging from 0.46 acres to 1.80 acres are to be served by public and private water and private septic systems, in the Town of Ledyard.

The Ledge Light Health District (LLHD) does not issue approvals for Subdivision or Commission reviews, but our recommendation for suitability of the previously stated plan/lots to accommodate the LLHD Subdivision Submission Requirements and Connecticut Public Health Code Section 19-13-B103e are as follows:

- Lots 2, 3, 5, 6, 8, 9, 10, 12, 14, 16, 17,20,22,23,24,25,26,28 and 84 are recommended suitable in their current condition.
- Lot 84: Any future change to the property line will require connection to public water if the property is within 200 feet of an available public water connection.
- Lot 3 and 19 are identified as areas of special concern due to ledge rock occurring less than five feet below ground surface, and Lots 4 and 18 due to maximum groundwater occurring less than three feet below ground. The septic system must be designed by a Professional Engineer (PE)

"Additional Suitability Issues" & Notes

1. Additional soil data witnessed by Joseph Balchard on 4/19 shall be incorporated into the subdivision plan and reflected on the individual lot plans.
2. Leaching areas, shall be staked by LS for protection during clearing and construction.
3. Additional soil testing and/or perc tests may be required for individual lot submission.
 - a. Ex. Lot 1 does not have a test pit in the leaching area, there is two approximately 10' away, adequate for subdivision suitability review.
4. Septic tank locations not demonstrated, shall maintain all required setback distances on individual lot reviews.
5. The subdivision plan does not show any groundwater drainage system designed to collect groundwater or stormwater.

*Please note that soils testing indicated on this plan are representative of actual soils conditions and additional deep test pits and percolation tests may be required by the Ledge Light Health District if the building or system location is altered and/or the suitable septic area is limited. Applicant should be aware that subdivision approval IS NOT sufficient for individual lot approval. Each lot must be reviewed by the Ledge Light Health District at the time of building permit application in order to obtain lot approval and issue a septic/well permit.

Please call me at 860-448-4882 x 1316 with any questions regarding this matter.

Sincerely,

Odalys Reyes Morales
Sanitarian I

FDH5

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MAR 26 2026

Land Use Department

March 26, 2026

This authorizes Peter Gardner to act as agent for the resubdivision application for 58 & 59 Seabury Avenue and 84 Silas Deane Road.



Steve Rice
Member 84 Silas Deane LLC



LEDYARD FIRE COMPANY
DISTRICT #1 INC.
Professionalism, Compassion, Dedication.

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MAR 26 2026

Land Use Department

Jonathan Mann
Fire Chief

84 Silas Deane, LLC
Steve.rice@rice.construction
Attn: Steve Rice

RE: Ledyard Fire Department Support – Shewville Heights Subdivision, Seabury Avenue,
Ledyard, CT

Dear Mr. Rice,

I am writing in response to your letter dated March 12, 2026 regarding the proposed Shewville Heights subdivision at the terminus of Seabury Avenue, in anticipation of your application for re-subdivision, which will require a cul-de-sac length waiver for approval by the Planning and Zoning Commission.

As previously communicated during the review process, the Ledyard Fire Department had raised concerns regarding emergency vehicle access and the availability of an adequate water supply for fire suppression associated with this development. Seabury Avenue currently terminates in a non-conforming cul-de-sac, providing only a single point of ingress and egress for emergency apparatus, and the area is not presently served by a supplemental water source suitable for firefighting operations.

After reviewing the improvements proposed by 84 Silas Deane, LLC, I am satisfied that the plan adequately addresses the fire safety concerns previously identified by this Department. Specifically, the following commitments are responsive and sufficient:

Secondary Emergency Access: The construction of a paved access road across private land, connecting to Silas Deane Road, will provide a second point of ingress and egress for emergency apparatus. This improvement resolves the existing single-access deficiency affecting both the proposed subdivision and current Seabury Avenue residences.

Dry Hydrant and On-Site Water Supply: The installation of a dry hydrant connected to an existing on-site pond will provide a reliable and substantial water source for fire suppression operations. This resource will serve both the proposed Shewville Heights homes and the existing Seabury Avenue neighborhood, which currently lacks a proximate supplemental water supply.



LEDYARD FIRE COMPANY
DISTRICT #1 INC.

Professionalism, Compassion, Dedication.

Dedication of Pond and Open Space to the Town: The conveyance of the pond and surrounding open space to the Town of Ledyard ensures that this critical water supply asset will remain permanently available to the Fire Department, regardless of future changes in private ownership within the subdivision.

It is noteworthy that the improvements committed to by 84 Silas Deane, LLC will provide meaningful and lasting fire safety benefits to the existing non-conforming Seabury Avenue cul-de-sac, which has historically operated under the same access and water supply limitations that prompted the Department's concerns. The development of Shewville Heights presents an opportunity to remediate these pre-existing deficiencies at no cost to the Town.

Based on the foregoing, the Ledyard Fire Department supports approval of the Shewville Heights subdivision and the associated cul-de-sac length waiver, contingent upon the applicant's fulfillment of the improvement commitments described herein. I respectfully request that the Planning and Zoning Commission give favorable consideration to this application.

Please do not hesitate to contact me should the Commission or the applicant require any additional information.

Respectfully,

Jonathan E. Mann
Fire Chief
Ledyard Fire Company

RECEIVED

MAR 26 2026

Land Use Department



Ian Cole, LLC

Professional Registered Soil Scientist / Professional Wetland Scientist

PO BOX 619

Middletown, CT 06457

Itcole@gmail.com

860-514-5642

March 12, 2026

Town of Ledyard
 Inland Wetland and Watercourse Commission
 Ms. Elizabeth Burdick, Director of Planning
 741 Colonel Ledyard Highway
 Ledyard, CT 06339

**RE: WETLAND IMPACT EVALUATION
 PREPARED FOR MR. STEVEN RICE
 PROPOSED OPEN SPACE SUBDIVISION
 84 SILAS DEANE ROAD
 59 SEABURY AVENUE
 LEDYARD, CONNECTICUT**

Dear Ms. Burdick, Chairman, DeBrodtt and Commission Members:

INTRODUCTION

On behalf of the Applicant, Mr. Steven Rice, I have completed a wetland delineation and evaluation of the jurisdictional freshwater inland wetlands and watercourses at the above referenced Project Site. This evaluation was completed to provide a basis for determining the potential impacts associated with the proposed open space residential subdivision of these parcels. Details of the proposed development are presented in the Project Site Plans and the wetland application.

This evaluation identifies the site's natural resources, assesses the potential for adverse impacts to regulated resources and offers some practical recommendations that would further promote environmental protection. Field surveys were conducted on the site in the summer of 2024. The 2026 work builds upon biological and wetland surveys conducted on the site. GIS software (ArcMap v10.0) was used to review open source GIS data layers in order to catalog abiotic resources and understand the significance of the study area in relation to the entire watershed.

PROPOSED ACTIVITIES

The Applicant is proposing to construct a 23 lot single family residential open space subdivision located on two parcels of land totaling 49.8 acres. The proposal will provide a dedication of 65.5% of the land or 31.83 acres to open space. The lots will be accessed by a new 900 foot long road (to be named Seabury Avenue Extension) that ends in a cul-de-sac. The new proposed road will extend from the terminus of Seabury Avenue. Each new lot will be serviced by individual on-site subsurface sewage disposal systems and water will be provided from a Southeastern Connecticut Water Authority (SCWA) installed waterline. Utilities will be underground and co-located alongside the roadway. The open space layout clusters the development to a 15-acre development envelope positioned on the high, level terrain that covers southwestern quadrant of the Project Site. Clustering the development in one area greatly reduces fragmentation of the overall 49.8 acre property and provides a substantial open space area.

The project will provide erosion and sedimentation controls during construction periods and will re-vegetate all disturbed areas for the long term stabilization of the site. The site has been designed with a conventional drainage system and stormwater from the new roadway will be collected by catch basins in the road and directed into a water quality detention basin for treatment prior to discharge.

The proposed development can be constructed with no direct wetland impact, with exception of a fire suppression dry hydrant to be installed in the subject pond per the request of the Town's fire marshal. Installation of the fire pond will result in the nominal disturbance of roughly 120 SF to facilitate the installation of the pipe. The new proposed stormwater discharge point for the water quality basin will be separated by 40 feet of undisturbed forest prior to reaching the receiving wetland. Flows from the water quality basin will discharge onto a rip-rap armored scour pad that will deenergize flows as non-erosive sheet flow which will promote infiltration into the undisturbed forested soils; recharging groundwater helping to maintain downstream wetland baseflows.

For more information, please refer to the plans entitled "*Plan Showing Open Space Conceptual Subdivision Property of Steven Rice 84 Silas Deane Road Shewville Road and Seabury Avenue, Ledyard, Connecticut,*" prepared by Dieter & Gardner dated March 2024, as amended.

EXISTING SITE CONDITIONS

The combined 49.8-acre Project Site is vacant, undeveloped, and forested. The property is accessed from the terminus of Seabury Avenue between the driveways of #57 and #56 Seabury Avenue. There is additional road frontage on both Silas Deane Road and Shewville Road. A distinct ridgeline running north to south bisects the center of the property. The land west of the ridgeline ranges from a level till plateau to a gently eastern sloping landscape, in contrast to the east facing moderately sloping to steeply sloping hillside that defines the eastern half of the property down to Shewville Road.

The upland habit consists of a mature deciduous Oak-Hickory forest community. Prominent tree species observed include white, black and red oaks, shagbark hickory, red

and sugar maple, American beech, black cherry, black and white birch, aspen and tulip trees. Overall, where the forest community is dominated by large old growth trees the understory consists of a light shrub stratum of witch hazel, low-bush blueberry, green briar, and muscle wood (Photo 7). The forest floor ground cover includes species such as Christmas fern, service berry, Canadian mayflower intermingled with beds of hay-scented fern, and marginal wood fern. (Photo 8) Along the transitional forest ecotones that abut neighboring developments and the roadside is a cohort of smaller younger trees from past clearings, and the successional upland forest community has a heavier influence of birch, maple and tulip and a thicker undergrowth of Japanese barberry, an echo-signature of those past land disturbances.

The site is not located in aquifer protection zone. Lastly, the site is not located in a Connecticut Department of Energy and Environmental Protection (CTDEEP) designated Natural Diversity Data Base (NDDB) polygon per the CTDEEP 2026 NDDB mapper.

WETLAND DELINEATION

The wetland delineation was completed in accordance with the standards of the Natural Resources Conservation Services (NRCS) National Cooperative Soil Survey and the definitions of inland wetlands and watercourses as found in the Connecticut General Statutes, Chapter 440, Sections 22a-36 through 22a-45 as amended. Wetlands, as defined by the Statute, are those soil types designated as poorly drained, very poorly drained, floodplain or alluvial in accordance with the NRCS National Cooperative Soil Survey. Such areas may also include disturbed areas that have been filled, graded, or excavated and which possess an aquic (saturated) soil moisture regime.

Watercourses means 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 Town of Ledyard or any portion thereof not regulated pursuant to sections 22a-28 through 22a-35, inclusive, of the Connecticut General Statutes. Intermittent watercourses are defined as having a 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 duration longer than a particular storm incident, and (c) the presence of hydrophytic vegetation.

The wetland delineation was completed in June and July of 2024. Four wetland areas were identified on the Project Site.

WETLAND AND WATERCOURSE DESCRIPTIONS

The United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Mapper shows the onsite wetlands as part of palustrine and riverine wetland group that classifies the forested wetland areas as a PFO1F, designating the jurisdictional feature as a forested wetland that is semi-permanently flooded, and notes the intermittent watercourse that flows to Silas Dean Road as R4SABC. Additionally the man-made pond is noted as PUBHh which denotes a fresh water unconsolidated bottom (mud, organics and silts) that was excavated (i.e. man-made). Generally, the wetland boundaries

are sharply distinct, marked by an abrupt rise in topography as poorly drained wetland soils quickly give rise to sandy well-drained soils.

Wetland #1 is a man-made pond created from excavation and damming of earth at the pond's easterly edge (Photo 1). The wetland is centrally located on the property. In the northeast corner of the pond is an excavated overflow channel that outlets seasonal and stormwater high flows from the pond. The overflow creates an ephemeral hanging intermittent watercourse (Photo 2) that flows down gradient roughly 125-150 feet to a flat plateau of sandy soils where the watercourse terminates as concentrated surface water runoff infiltrates back into the soils. Wetland flags 1 through 42 represent the limits of Wetland #1.

Wetland #2 is associated with two drainage flow paths that flow onto the northeastern corner of the property, east of the shared property line with 112 Silas Deane Road. The wetland is associated with a groundwater spring that forms the upper reaches of a short watercourse that flows to a culvert along the shoulder of Silas Deane Road. Bordering the watercourse is a confined area of poorly drained soils vegetated by a classic Red Maple swamp community (Photo 3). Wetland Flags 1A to 27A delineate Wetland #2 in the field.

Wetland #3 is an intermittent watercourse and associated with the extremely stony forested Red Maple wetland corridor (Photo 4) that originates on Avalonia Land Property to the west and drains east bisecting the low-lying center of the 7.47 acre 59 Seabury Avenue parcel. The forested wetland has extremely stony ground conditions and is associated with the source of an intermittent watercourse that flows to a headwall along Silas Dean Road (Photo 5). Wetland Flags 1B through 28B mark the edge of Wetland #3's boundary.

Wetland #4 is an excavated pool located at the bottom of the hillside where Shewville Road connects with the north of the property line at 837 Shewville Road (Photo 6). The pool is seasonally flooded and appears to dry up most years, with an estimated depth of 3-4 feet. The wetland margins are very well defined confined to the excavated 1:1 slopes that create the depression. The wetlands hydrology is both from groundwater and overland flow as the road, adjacent driveway and excavations retain and detain surface water runoff. Wetland flags 1C through 14C represent the wetland limits as marked in the field.

The overall wetland community exhibits classic Red Maple swamp vegetation, including:

Trees: Red Maple, yellow birch, swamp white oak, and shagbark hickory.

Shrubs: Highbush blueberry, spicebush, Japanese barberry, winterberry, ironwood, witch hazel, Asiatic bittersweet.

Herbaceous: Tussock sedge, sphagnum moss, stout wood reed, sensitive fern, royal fern, interrupted fern, cinnamon fern, skunk cabbage, false hellebore, jack-in-pulpit, jewelweed, fringe sedge, swamp dewberry and meadow rue.

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 TYPES

The soils identified on the site are a refinement of the Natural Resources Conservation Service (NRCS) Websoil survey. The on-site soils originated from dense glacial till parent material. The development area and western half of the property is relatively level in comparison to the eastern side of the site that is steeply sloping and has exposed bedrock that defines landscape. The site has varying slopes ranging from <1% to >35% and elevations ranging generally from 370 at the terminus of Seabury Avenue down to 180 at Shewville Road on the eastern limits of the site.

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 interior of the wetlands where the water table is at the surface thought most of the growing season.

A typical soil profile along the wetland boundary consists of approximately 2"-0" of intermediately decomposed organic material (Oi), followed by 0"-6" of a thick dark topsoil horizon (A), underlain by 6-18" of a wet weakly developed grayish subsoil horizon (Bg) with common redoximorphic features (Common medium distinct strong brown mottles, masses) ranging from fine sandy loam to very fine sandy loam. This subsoil is underlain by a saturated sandy loam to fine sandy loam gray substratum (2Cg).

Upland Soils

The bulk of the uplands are mapped and classified as well-drained Canton and Charlton fine sandy loams in a north to south orientation. Shallow depth to ledge may be encountered along topographic ridgelines. In the center of the proposed development is a notable polygon of Sutton, extremely stony fine sandy loams. Sutton soils are typically associated with a perched high seasonal watertable due to an underlying dense till layer.

Surficial Geology

Surficial geology refers to the distribution of surficial (unconsolidated) materials that lie between the land surface (below the pedogenic soil) and the bedrock surface. Surficial material in Connecticut ranges from a few feet to several hundred feet in thickness. These earth materials significantly affect anthropogenic land uses. Most of the unconsolidated materials are deposits of continental glaciers that covered all of New England at least twice during the Pleistocene ice age.

These glacial deposits are divided into two broad categories, glacial till and glacial stratified deposits. Surficial geology consists of thin glacial till. Till, the most widespread glacial deposit, was laid down directly by glacier ice and is characterized by a non-sorted matrix of sand, silt, and clay with variable amounts of stones and large boulders. Per the 1991 Surficial Materials Map of Connecticut (Stone et al.) the study area is located on the summit of a drumlin. Drumlins are formed over a short distance within the receding glacier ice and record the final direction of ice movement. Drumlins occur in symmetric, spindle, parabolic, and transverse asymmetrical forms.

Bedrock Geology

Bedrock underlying surficial material consists primarily of Quartzite with smaller fractions of Schist and Gneiss also present. Quartzite is metamorphosed sandstone composed primarily of quartz. It is light-colored to gray, massive to layered, medium-grained and very hard and resistant. Schist is light, silvery to dark, coarse-to very coarse-grained, strongly to very strongly layered metamorphic rock whose layering is typically defined by parallel alignment of micas. Primarily composed of mica, quartz, and feldspar; occasionally spotted with conspicuous garnets. Gneiss is light and dark, medium- to coarse-grained metamorphic rock characterized by compositional banding of light and dark minerals, typically composed of quartz, feldspar, and various amounts of dark minerals. Gneiss occurs with a variety of compositions and is a characteristic rock of CT uplands.

In summary, the site's geologic framework supports infiltration from the uplands and shallow groundwater discharge to the wetlands maintain the observed wetland hydrology. Understanding this interplay between surficial deposits, soil permeability, and local groundwater gradients is essential for designing site development features—such as drainage systems, stormwater management structures, and septic leach fields. Functioning compliant systems as provided will protect the hydrologic integrity and ecological function of the on-site regulated resources.

RARE SPECIES HABITAT

Consultation and a review of the Connecticut Department of Energy and Environmental Protection (CTDEEP) Natural Diversity Data Base (NDDB) mapping indicates the site is not listed as providing critical habitat and there are no state records of known state-listed species. A copy of the CTDEEP NDDB preliminary site assessment is attached for reference.

VERNAL POOL EVALUATION

With regards to the pond (Wetland #1) I have been on-site throughout various times of the year including the vernal pool breeding season from the end of February through the beginning of May. Over the course of many site investigations I found no evidence of facultative or obligate vernal pool organisms such as but not limited to wood frog, spotted salamander, fairy shrimp or fingernail snails. It is my professional opinion that pond includes fin-fish habitat which by definition excludes viable vernal pool habitat and sustainable vernal pool populations as a result of high predation of fish on amphibian populations.

However, Wetland #4 at the base of the hill along Shewville Road is an isolated seasonally to semi-permanently flooded wetland pocket that potentially could host vernal pool habitat for species such as wood frogs or yellow spotted salamanders. Because this wetland area will not be impacted by being far removed from the zone of influence of the project (over 550-feet away) and coupled with the fact the feature and the surrounding forest will be preserved in the open space area this wetland was never formally surveyed for vernal pool activity but is presumed as a vernal pool based on its physical characteristics and commonality to other nearby pools in Ledyard and on the neighboring Mashantucket reservation why are confirmed to host obligate vernal pool species.

WETLAND FUNCTIONS AND VALUES

A wetland functional assessment was completed to assist in identifying impacts to the wetlands and the functions and services they provide. An evaluation of the wetlands functions and values was completed using the United States Army Corps of Engineers (USACE) Highway Methodology Workbook for Wetland Functions and Values: A Descriptive Approach, October 1993” (“Highway Methodology”) and best professional judgement. This wetland methodology describes the wetland functions and values holistically for the project area.

The USACE Highway Methodology evaluates 13 functions and values assigned to wetlands which include:

1. Groundwater recharge/discharge (GWR/D)
2. Flood flow alteration (FFA)
3. Fish and shellfish habitat (F&SH)
4. Sediment/toxicant/pathogen retention (S&TR)
5. Nutrient removal/retention/transformation (NR&T)
6. Production export (PE)
7. Sediment/shoreline stabilization (S&S)
8. Wildlife habitat (WLH)
9. Recreation (REC)
10. Education/scientific value (ED/S)
11. Uniqueness/heritage (U/H)
12. Visual quality/aesthetics (VO/A)
13. Threatened or endangered species habitat (T&E)

The functions and values of the wetland system 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.

A variety of wetland characteristics affect a wetlands overall functions and values. The most important wetland characteristic influencing a wetlands functions and values is hydroperiod (i.e. depth and duration of standing water). Hydroperiod is related to a wetlands micro - topography and location on the landscape. Wetlands with a short hydroperiod tend to provide only limited functions and values and are often small and occur on moderate - steep slopes. Wetlands with longer hydroperiods tend to provide a wide range of functions and values and are often located at the base of the slope in valleys and drainageways.

The following site specific factors are important to the functional assessment and are listed here to provide context to the later discussion of functions and values.

1. Connecticut protected species are not known to be present on the site per the CTDEEP NDDB Mapper.
2. The wetlands are located in a dense glacial till landscape surrounded by well drained soils.
3. While similar in nature, the wetland on-site are four distinct and independent systems.
4. Fish populations are known to be present in the man-made pond.

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 #1	P	S	P	P	S	S	S	P	S	S	S	S	U
WETLAND #2	P	U	U	U	S	S	S	S	U	U	U	U	U
WETLAND #3	P	U	U	U	S	S	S	S	U	U	U	S	U
WETLAND #4	P	U	S	U	S	S	U	S	U	S	U	S	S
<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

Groundwater recharge and discharge are a primary function of the wetland systems. All the wetlands show evidence of variable water levels, and while recharge / discharge of groundwater is a principle function, it is not anticipated that the proposed development will impact the groundwater levels.

Moreover, wetland system #1 near the development was identified to have the additional following principle functions:

1. Flood-flow alteration: the wetland is able to detain locally appreciable quantities of water during storm and flooding events.
2. Fish habitat, there are known fish presence in the pond.
3. Wildlife Habitat: Wetland dependent species such as Fish and waterfowl use of the wetlands and Pond.

The proposed activities will not negatively or adversely impact the functionality of the onsite wetland(s) as described above. These listed functions can be maintained and promoted by maintaining overall on-site drainage patterns, demonstrating a compliant septic system, maintaining erosion and sedimentation controls through construction,

stabilizing the bare ground with final vegetative cover and adherence to permit conditions.

IMPACT ASSESSMENT

The site development plans have been designed to provide a feasible residential development while providing a reasonable use of the property with minimal impact on the wetland resources and the environment.

DIRECT IMPACTS

The proposed development will have minor direct wetland impact with the installation of the proposed fire suppression dry hydrant to be located in the pond. No other inland wetland or watercourse will be directly impacted by the proposed activities. Impacts to the upland review area are limited to the areas proximal to the proposed water quality treatment basin and development limits for lots 9, 17 and a portion of lot 19.

Short-term direct impacts during construction can be managed and reduced through measures to control sedimentation and erosion and adherence to BMPs. These controls as well as compliance with permit approvals will ensure that no long-term adverse effects will impact on the natural capacity of the wetlands or detract from the functions and services they currently provide.

INDIRECT IMPACTS

Indirect or secondary impacts to a wetland or watercourse can occur as a result of activities outside of the wetlands or watercourses. These impacts can be either short-term (*construction phase*) or long-term (*i.e., change in drainage patterns / whole-sale clear cutting*) and are typically associated with erosion and sedimentation during construction, removal or disturbance of vegetation in adjacent upland areas, alteration of ground / drainage patterns that could affect the flow regime of a watercourse, and the discharge of degraded or insufficiently treated surface or groundwater, which may adversely impact the water quality of the regulate resource.

The potential for any of these indirect impacts to occur at the site as a result of the development depends on the quality of the regulated resources, the sensitivity to said resources, the resource's physical and ecological characteristics, and the degree to which those resources provide recognized functions and values, and the nature of the activities proposed in areas surrounding or which contribute flow (either surface water or groundwater to the regulated resource). These potential impacts are described in detail below.

ERISION AND SEDIMENT CONTROLS

Short term impacts will be mitigated with standard construction best management practices and adherence to the erosion and sediment control plan. The development respects the watershed hydrology and will not direct discharge to the wetland features without proper treatment. The proposed site plan includes an erosion and sedimentation control plan designed following the 2024 Connecticut Guidelines for Soil Erosion and

Sediment Control. Silt fencing, anti-tracking pads and other E&S measures are proposed to control sediment from construction activities.

The risk for potential adverse impacts from erosion and sedimentation is considered low to moderate because 1.) A detailed erosion and sediment control plan has been prepared, 2) the site's in-situ undisturbed soils are for the most part low to moderately erosive. 3) the site is vegetated, and topography is easily managed, and 4) there is no need for large scale tree removal, only sites under active construction will be cleared to keep the building area envelope to a manageable size. Therefore, it is my professional opinion that with coordination and watchful monitoring and maintenance of erosion and sediment controls until construction is completed and restoration activities have stabilized the ground conditions there will be no anticipated adverse impacts to the regulated resources resulting from sedimentation discharging from the development of the parcel as proposed.

VEGETATION REMOVAL AND HABITAT LOSS

Habitat loss associated with land clearing is a consequence of land development which has the potential of impacting wetlands and watercourses. Clustering the development in one area greatly reduces the fragmentation of the overall 49.8 acre property. As such the project reduces a significant landscape conversion. The proposed development will keep clearing limits to a minimum by clearing what is physically needed for facilitating the construction site improvements, dwellings and associated appurtenances. The conversion of the vegetation cover within the development envelope will not change or diminish the ecological integrity of the open space uplands and/or the wetland communities. The site clearing planned on the western side of the Project site and grading activities will not de-water nor flood the nearby wetlands or alter surface water drainage patterns in a significant manner that exacerbates erosion or causes downstream issues.

The project will result in the conversion of roughly 15 acres of forest to single-family residential suburban neighborhood. Provided in the following sections are the implications of that habitat conversion on the species confirmed present or those that could potentially occur on the site based on the presence of suitable habitat.

clustering the development in an open space concept allows the Project to permanently preserve 31.83 acres of contiguous forest that abuts three road frontages. The open space will also encompass and includes all four wetland resources areas identified on the property.

IMPACTS TO HYDROLOGY

In Connecticut, the design and implementation of stormwater management measures are guided by the Connecticut Department of Energy and Environmental Protection (CT DEEP) Stormwater Quality Manual (2024), developed pursuant to Phase II of the federal Clean Water Act (CWA). The Manual provides a framework of BMPs demonstrated through research and field performance data to effectively reduce pollutant loads and mitigate hydrologic alteration associated with land development. While these guidelines do not replace the engineering judgment or site-specific design developed by a licensed

professional engineer, they establish performance criteria intended to preserve the physical, chemical, and biological integrity of receiving waters, including wetlands and watercourses.

The proposed site improvements will not impact overall drainage patterns. The site improvements will not increase the potential for downstream flooding. The stormwater management system for this site has been designed utilizing best management practices (BMPs) to meet or exceed the stormwater management standards in accordance with CT DEEP 2024 Connecticut Stormwater Quality Manual and the Ledyard Zoning Regulations. The proposed project will provide; pollutant reduction by providing via treatment of the water quality volume and water quality flows through stormwater BMPs; peak runoff attenuation through use of stormwater BMPs; and conveyance protection through structural stormwater BMPs.

All runoff from proposed impervious surfaces will be conveyed to the water quality system for detention and treatment. The site has been designed with a conventional drainage system. Catch basins with deep sumps will capture and convey stormwater runoff, via an underground pipe system, to the water quality basin. The treated discharge of this stormwater will issue to the upland review area +/- 40 feet away from the wetland boundary and will beneficially infiltrate into the upland soil recharging the nearby wetland baseflow. The proposed development will not holistically alter surface or subsurface flow conditions or directions in a substantially impactful way.

The runoff volume and pollutant reduction criterion are designed to preserve pre-development hydrology and pollutant loads to protect water quality and maintain groundwater recharge. The proposed stormwater management as designed will provide a decrease in peak rates of runoff for the 2-, 10-, 25- and 100-year design storm events in accordance with the 2024 Connecticut Stormwater Quality Manual and the Ledyard Zoning Regulations. The proposed development stormwater management system reduces peak rates of stormwater runoff from the subject site when compared to pre-development conditions for the analyzed storm events. The project engineer has certified for the record that the proposed stormwater management system as discussed herein and shown on the referenced plans is appropriate for the proposed development on the subject site, is consistent with Town and State requirements, and should not pose any detrimental impacts to the surrounding environment.

Nutrient Loading and Water Quality Assessment

When a residential subdivision with individual septic systems is proposed upgradient of a wetland or waterbody or surface water, the potential for nutrient loading represents a primary concern. A portion of three (Lots 6, 17, 19) of the twenty-three proposed septic systems will be located within 100 feet of the Wetland #1, the man-made pond centrally located on the site, yet all are fully compliant with separation distances required under the Connecticut Public Health Code. The firm subsoils will encourage lateral groundwater flow in a northerly direction, promoting additional subsurface renovation of septic leachate as it moves through the forested buffer before discharging to the wetland system.

The wooded swamp provides favorable conditions for denitrification and nutrient attenuation. The forested buffer between the proposed development and subject wetland ranges from 40 to 100 feet in width. Within this buffer, groundwater flows are diffuse and slow-moving through saturated soils, creating extended residence times that enhance biogeochemical processing. The high organic matter content, combined with root uptake by trees and shrubs, facilitates removal of nitrogen and phosphorus from shallow groundwater. Where preserved, deep-rooted perennial forbs along the swales will further contribute to nutrient uptake. Based on field observations and GIS-based watershed analysis it is unlikely water quality and aquatic habitat will be negatively or adversely affected by the proposed residential development and associated septic systems.

The engineered subsurface sewage disposal system requires health department approval. Human health water quality criteria are based on the toxicity of a contaminant and the amount of the contaminant consumed through ingestion of water and fish regardless of the type of water. Therefore, both the EPA and State chemical-specific human health criteria are directly applicable to wetlands. Consequently, demonstrating the project meets health department criteria implies the activity will not adversely affect the wetland resources.

RECOMMENDATIONS

1. Where activities are within 50 feet of a regulated wetland provide a double row of silt fencing and/or erosion & sediment control measures, particularly between the limits of disturbances and the man-made pond (WELAND #1) centrally located on the site.
2. Prior to the start of construction the wetland boundary should be re-flagged with new hi-visibility flagging so the line is readily identifiable to civil contractors completing site work.

SUMMARY

The project has been designed so that there will be no direct impacts on wetlands and watercourses. Furthermore, it is my professional opinion that the project will not have negative secondary or indirect impacts to wetlands or watercourses. Strict adherence to the detailed erosion and sediment control plan and stormwater pollution prevention plan will minimize any impacts to water quality during construction.

The project will result in some loss of native upland forest habitat, as clearing and grading of approximately 15 total acres of the site will be required, resulting in the conversion of mixed hardwood forest habitat to residential single family subdivision neighborhood. Biological surveys did not reveal the presence of any State of Connecticut or Federally listed species. The impacts to habitat and wildlife are expected to be less significant when compared to impacts associated with a traditional residential development which would fragment the parcel and result in a larger disruption to the ecosystem. The proposed project will result in a concentration of activity and will preserve a large contiguous block of forest as undisturbed natural open space.

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

1. The proposed activities have very limited direct disturbance to wetlands and as such the project does not substantially change or negatively inhibit the natural dynamics or the natural capacity of the wetland system(s).
2. 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.
3. The proposed stormwater treatment system will collect and renovate stormwater quality and volume generated from the site development and therefore is unlikely to cause or have the potential to cause pollution of the wetland. Additionally, the project is providing a local and state compliant sewage treatment system which by approval is required to meet or exceeds health code requirements which will further eliminate pollution.
4. 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, requires no physical impact on the wetland resources. The project implements best management practices that will protect the regulated areas. The open space design is a feasible and prudent alternative for the development of this property giving consideration to balancing the protection of the inland wetlands and watercourses while fostering reasonable development and use of the site for residential uses as zoned R60.

In my professional opinion there will be no significant adverse impacts resulting from the development of the project as proposed. The design has avoided wetland disturbance and reduced environmental impacts by:

1. Avoiding direct impacts to the wetland resources.
2. Providing and maintaining erosion and sediment controls during construction.
3. Providing stormwater management and treatment.
4. Commitment to adhering to permit conditions and construction industry standard BMPs.
5. Compliance with regulatory standards.
6. The plans are consistent with and satisfy the statutory factors for consideration provided by Section 22a-41 of the Connecticut General Statutes; and
7. Are consistent with and satisfy the criteria for consideration provided by the Town of Ledyard Inland Wetlands and Watercourses Regulations dated February 25, 2025.



PHOTO 1: WETLAND #1 – MAN-MADE POND IN CENTER OF SITE



PHOTO 2: DISCHARGE FROM WETLAND #1 WHICH FORMS THE "HANGING" WATERCOURSE THAT INFILTRATES BACK INTO THE SANDY UPLAND SOIL ROUGHLY 150' DOWN HILL OF THE POND'S OVERFLOW OUTLET.



PHOTO 3: WETLAND #2



PHOTO 4: WETLAND #3 THAT FLOWS TO SILAS DEANE ROAD HEADWALL.



PHOTO 5: HEADWALL AT SILAS DEANE ROAD THAT INTERCEPTS FLOWS FROM WETLAND #3 AND CARRIES THE STREAM CHANNEL UNDER SILAS DEANE ROAD.



PHOTO 6: WETLAND #4 – ISOLATED WETLAND POCKET NEXT TO 837 SHEWVILLE ROAD



PHOTO 7: GENERAL UPLAND CONDITIONS IN AREA OF PROPOSED DEVELOPMENT



PHOTO 8: EXAMPLE OF THE UPLAND CONDITIONS THAT TYPIFY THE PROPOSED OPEN SPACE

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

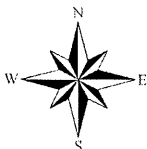
SITE PHOTOS

GIS MAP(S)

USFWS NWI

NRCS SOIL MAP

CTDEEP NDDDB PRELIM SITE ASSESSMENT



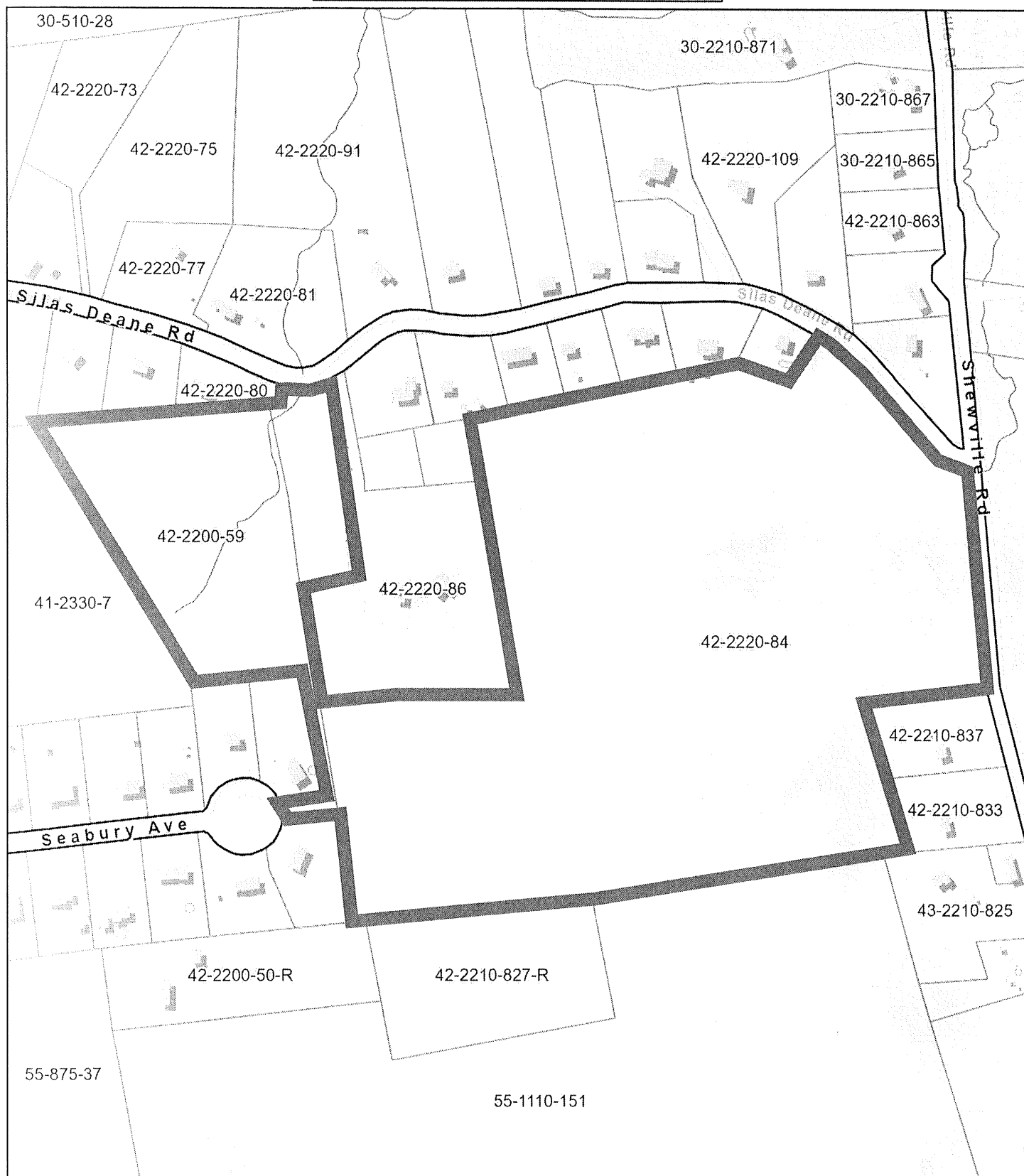
Ledyard, CT

1 inch = 354 Feet

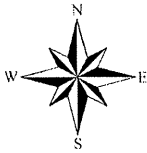


www.cai-tech.com

March 7, 2026



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Ledyard, CT

1 inch = 354 Feet



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March 7, 2026



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Ledyard, CT

1 inch = 565 Feet

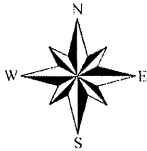


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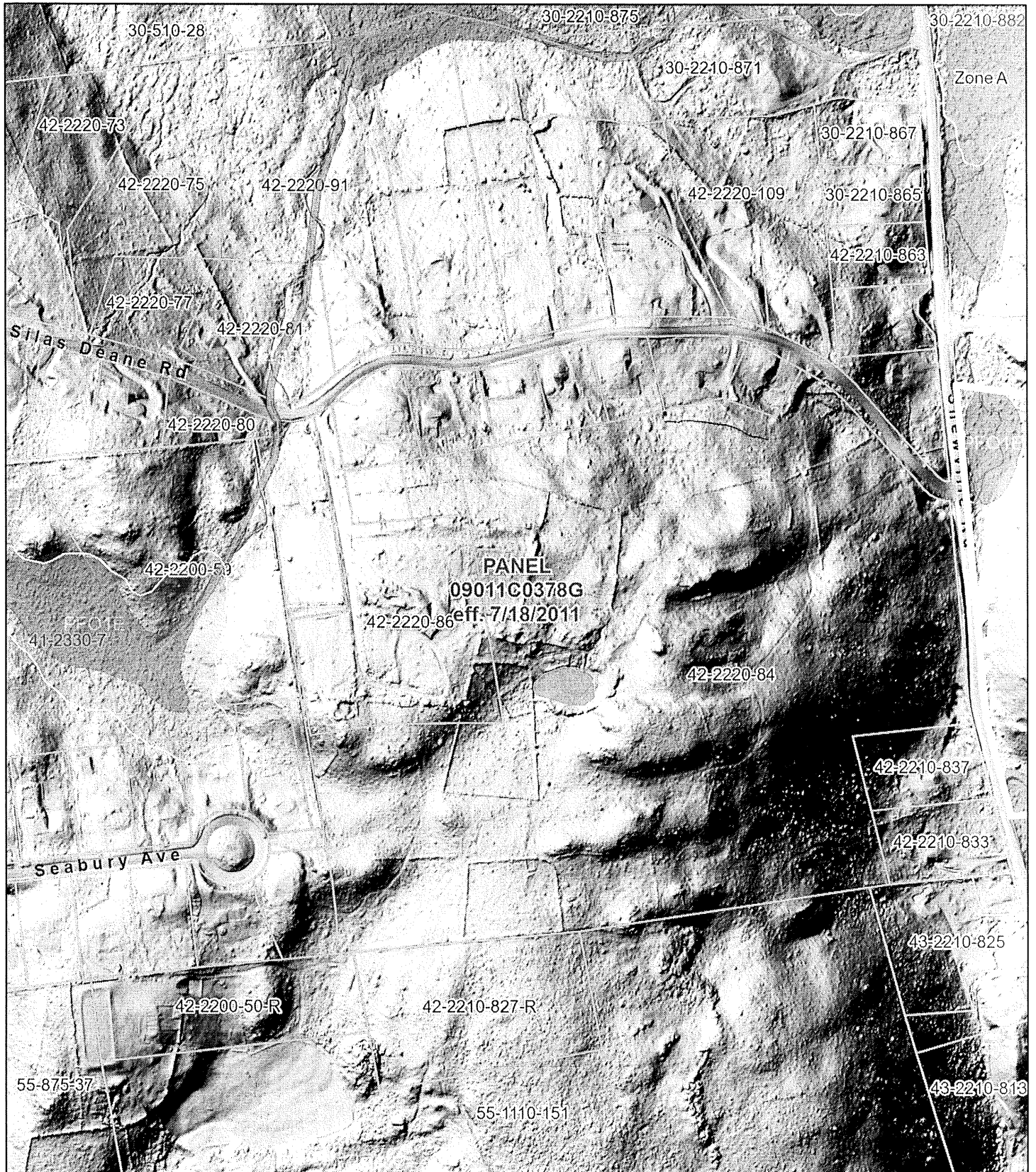
Ledyard, CT

1 inch = 355 Feet



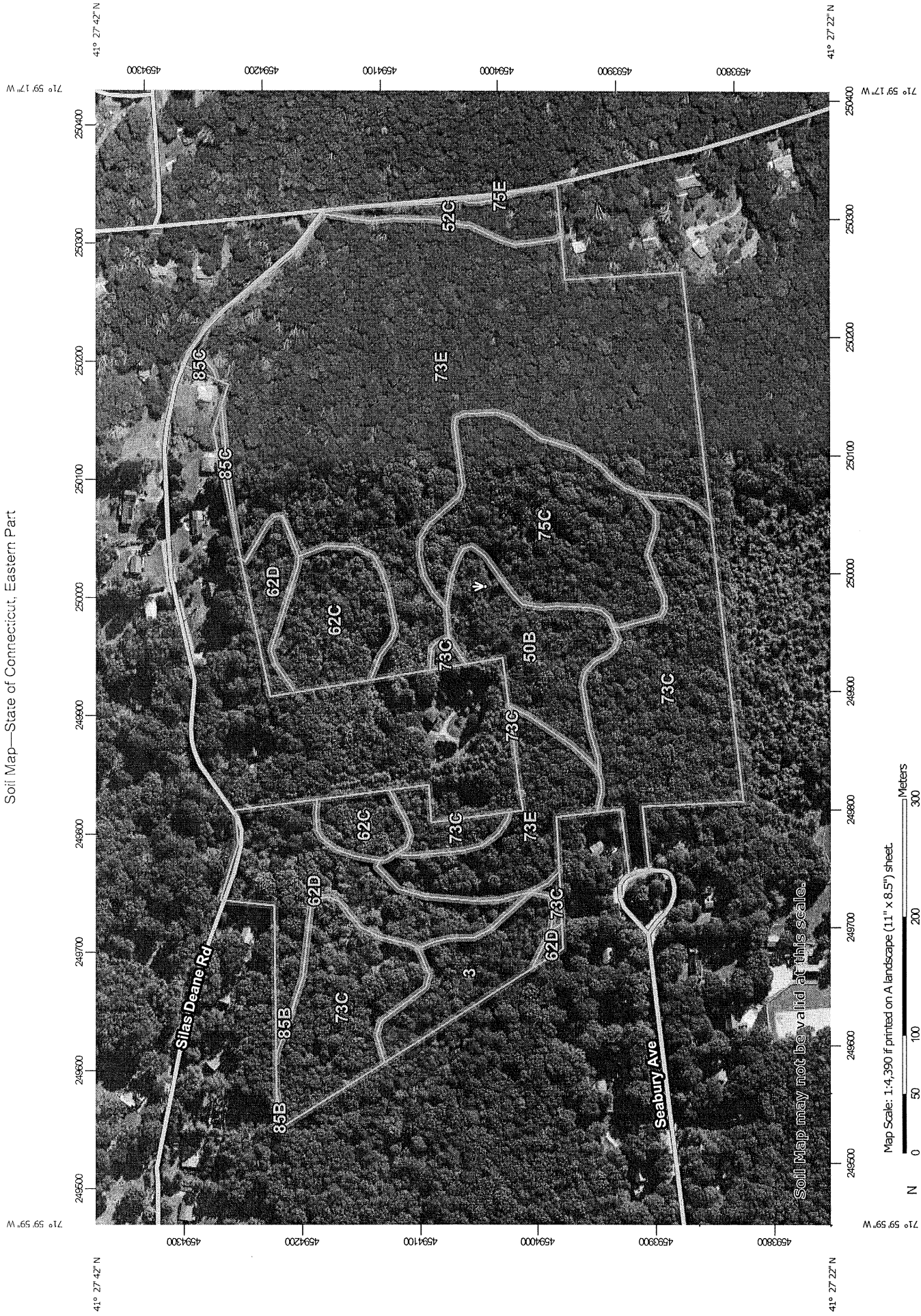
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March 7, 2026



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Soil Map—State of Connecticut, Eastern Part



Map Scale: 1:4,390 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND

- 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

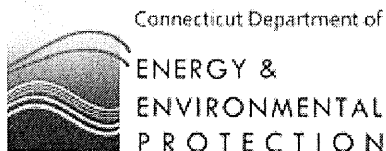
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

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
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	2.0	3.6%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	3.1	5.5%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	1.1	1.9%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	3.3	6.0%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	4.8	8.6%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	10.3	18.5%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	24.9	44.8%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	5.8	10.5%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	0.0	0.0%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	0.1	0.1%
85C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony	0.2	0.3%
Totals for Area of Interest		55.6	100.0%



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Generated by eNDDDB on:
3/7/2026

Ian Cole
Towns: Ledyard
Preliminary Site Assessment: 1518612540

Subject: 54 SILAS DEANE RD

Current data maintained by the Natural Diversity Database (NDDDB) and housed in the DEEP ezFile portal, indicates that no populations of State Endangered, Threatened, or Special Concern species (RCA Sec. 26-306), and no Critical Habitats have been documented within or in close proximity to the area delineated.

Please be advised that this is a preliminary assessment and not a Natural Diversity Database determination. The purpose of this information is to provide a general planning tool which identifies those species that have been reported and may occur on or near the mapped area. A more detailed application and review will be necessary to move forward with any environmental authorization, permit, license, or registration applications submitted to DEEP. If such review is required, please return to the DEEP's ezFile Portal and select Natural Diversity Database Review to begin the review process.

This Preliminary Site Assessment does not preclude the possibility that species not previously reported to the Natural Diversity Database may be encountered on the site. You are encouraged to report incidental observations to the Natural Diversity Database using the appropriate survey form and follow the instructions for submittal. We recommend field surveys be conducted in order to evaluate potential habitat and species presence. Field surveys should be performed by a qualified biologist with the appropriate scientific collecting permits at a time when these target species are identifiable. A report summarizing the results of such surveys should include:

1. Survey date(s) and duration
2. Site descriptions and photographs
3. List of component vascular plant and animal species within the survey area (including scientific binomials)
4. Data regarding population numbers and/or area occupied by State-listed species
5. Detailed maps of the area surveyed including the survey route and locations of State listed species
6. Statement/résumé indicating the biologist's qualifications

The site surveys report should be sent to the CT DEEP-NDDDB Program (deep.nddbrequest@ct.gov) for further review by program biologists.

Natural Diversity Database information includes all information regarding listed species available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units

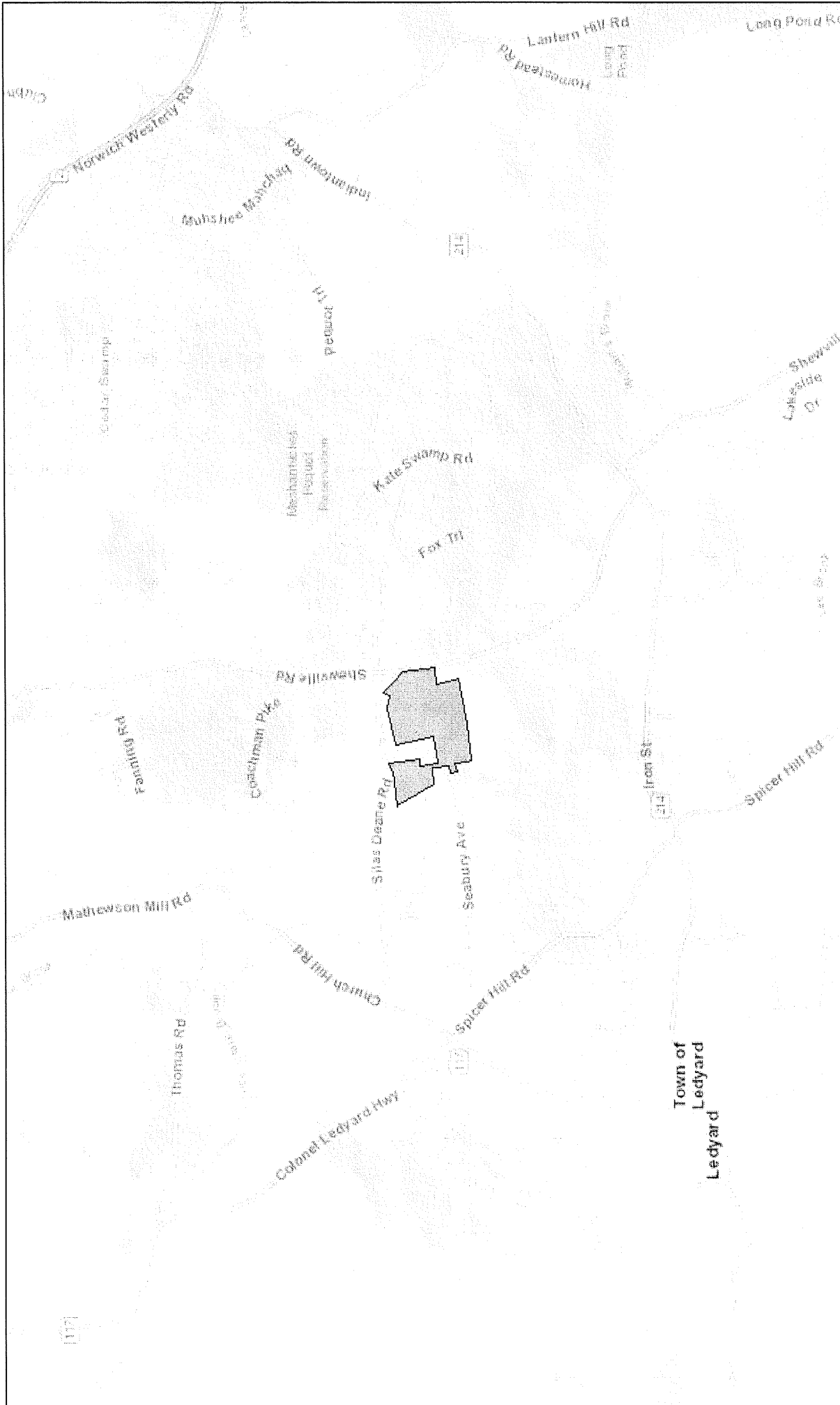
of DEEP, land owners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Database and accessed through the ezFile portal as it becomes available.

This letter is computer generated from our existing records and carries no signature. If however, any clarification/error is noted, or, if you have further questions, please contact the following:

CT DEEP Bureau of Natural Resources
Wildlife Division
Natural Diversity Database
79 Elm Street
Hartford, CT 06106-5127
(860) 424-3011
deep.nddbrequest@ct.gov

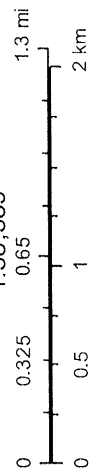
Please include a snapshot of the map, your last name, and the subject area town when you e-mail or write. Thank you for consulting the Natural Diversity Data Base.

54 SILAS DEANE RD Map



2026

1:38,389



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri, Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

LBM Engineering, LLC

11 Hally Lane, Colchester, CT 06415-2133

Phone: 860-416-9809

Email: John@LBMEngineering.com

CIVIL ENGINEERING - LAND DEVELOPMENT - SITE PLANS – STORMWATER ANAGEMENT**Engineering Report
For Land Use Commissions Submittals
Shewville Heights Subdivision, Ledyard, Connecticut**

February 24, 2026

RECEIVED
MAR 26 2026**Land Use Department**

EXISTING CONDITIONS: Reference is made to the following Plan Set: "Plan Showing Open Space Subdivision Property of 84 Silas Deane LLC 84 Silas Deane Road Shewville Road and 58 & 59 Seabury Avenue, Ledyard, Connecticut" Scales as Shown February 2026, By Dieter & Gardner, Gales Ferry, CT. The property is located at the east end of Seabury Avenue, east of Seabury Circle. The property is wooded and hilly and drains to the north, east and south.

METHODOLOGY: The Rational Method was used for analyzing runoff rates per Part III of the Town of Ledyard's *Ordinance Regulating the Management of Stormwater Runoff*. The descending leg of the hydrographs are increased by a factor of 2.5 to provide additional stormwater volume. Intensity-Duration-Frequency (IDF) Curves were downloaded from the Northeast Regional Climate Center (NRCC) web site. Calculations are attached to this report.

STORMWATER MANAGEMENT: The proposed development will not change the existing drainage patterns. Only 3.5 acres of the 170 acre parcel drains to the road's piped storm drain. An additional 1.52 acres (including 3 proposed houses) drains to the detention basin via sheet flow. A proposed detention/water quality basin is sized to reduce the peak rates of runoff from the proposed road's drainage system for 2, 10, 25 and 100-year rainfall events to below the pre-development rates. The basin is designed to over-compensate for the runoff through the drainage system to make up for increases for development not associated with the road/storm drain.

Discharge rate from the detention/water quality basin will be further reduced as it flows over 1,000 feet through wetlands and underbrush. The basin is designed to slowly drain empty after each storm. The following table provides a comparison of computed peak rates of runoff from the area that flows to the basin (4.77 acres) for undeveloped land versus the developed condition:

(*Developed Peak Flow Rates do not include the flow from the extended detention underdrain. Peak Flow Rate from a 4-inch PVC pipe will be less than 1 CFS.)

Eight of the remaining lots drain to a swale/wetland that flows off the property to the northeast. The following table provides a comparison of computed peak rates of runoff from the area of development from those lots (8.84 acres) for undeveloped land versus the developed condition:

WATER QUALITY: The proposed detention/water quality basin is to hold the Water Quality Volume (WQV) for 12 hours to settle out suspended solids from the proposed roadway's runoff. The CT D.E.E.P. 2024 Stormwater Quality Manual Paragraph 7.4.1 states: "In the northeastern U.S., the 90 percent rainfall event is equal to approximately 1.3 inches, which is consistent with the recommended WQV sizing criteria for Connecticut." Therefore, by treating one inch of runoff from the new road's drainage system, the proposal effectively improves the runoff from the property for 90 percent of all storm events.

CONCLUSION: The proposed development will not have adverse effects on down-gradient properties and is in keeping with the policies and goals of the Ledyard Planning and Zoning Commission.

Submitted by:
LBM Engineering, LLC

John R. Martucci, P.E.

PREPARED BY JRM	DATE PREPARED 2/2026	LBM Engineering, LLC 11 HALLY LANE COLCHESTER, CONNECTICUT 06415 TEL: (860)-416-9809 EMAIL: JOHN@LBMENGINEERING.COM	JOB NUMBER	PAGE NUMBER 1
CHECKED BY	DATE CHECKED		CLIENT NAME	TOTAL PAGES

SHEWVILLE HEIGHTS SUB, - DRAINAGE CALCS.

CB1 STA 11+82, LT (4% SLOPE)

ROAD 200' x 14' ÷ 43,560	0.06 AC
OVERLAND 200' x 10' ÷ 43,560	0.05 AC
WEIGHTED 'C' [(0.06 x 0.9) + (0.05 x 0.3)] ÷ 0.11 =	0.11 0.63
TG = 366.72 INV 362.22	

CB2 STA. 11+82, RT (4.0%)

ROAD 200' x 14' ÷ 43,560	0.06 AC
DRIVEWAY 75 x 10	0.02 AC
OVERLAND 5000 SF ÷ 43560	0.11 AC
WEIGHTED 'C' [(0.08 x 0.9) + (0.11 x 0.3)] ÷ 0.19 = 0.55	0.19 AC
TG 366.72 INV = 361.98	

CB3 STA 14+04, LT (1%)

ROAD 212' x 14' ÷ 43,560	0.07
OVERLAND 200 x 20 ÷ 43,560	0.09
WEIGHTED C [(0.07 x 0.9) + (0.09 x 0.3)] ÷ 0.16 = 0.56	0.16 0.56
TG = 363.21 INV 359.95	

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CB 4 STA 14+04 RT (1.0%)

ROAD	$212' \times 14' \div 43,560$	0.07 AC
DRIVEWAY	120 x 10	0.03 AC
ROOF	1500	0.03 AC
OVERLAND	$(80 \times 200 \div 43,560) - 0.06$	0.30 AC
		0.43 AC

WEIGHTED 'C' $[(0.13 \times 0.9) + (0.30 \times 0.3)] \div 0.43 = 0.48$

TG 363.21 INV 358.71

CB 5 STA 17+0 LT (LOW POINT)

ROAD	$550' \times 14' \div 43,560$	0.18 AC
------	-------------------------------	---------

AI = $0.18 \times 0.9 = 0.16$
 TG = 360.50 INV 355.25

CB 6 STA 17+0 RT (LOW POINT)

ROAD	$500' \times 14' \div 43,560$	0.16 AC
DRIVEWAYS & ROOF	$3 \times 3,000 \div 43,560$	0.21 AC
OVERLAND	$45,000 \div 43,560$	1.03 AC
		1.40

WEIGHTED 'C' $[(0.37 \times 0.9) + (1.03 \times 0.3)] \div 1.40$

TG 360.50 INV 355.75

AI = 0.46
 TYPE C Double Gate

PROJECT: SHEWILLE HEIGHTS SUBDIVISION
 PROJECT NO.: _____
 TOWN: Ledyard
 ROUTE: _____
 LOCATION: N/A

DESIGNED BY: JRM DATE: 02/23/26
 CHECKED BY: _____ REV: _____
 DATE: _____

GUTTER FLOW ANALYSIS - 25 YR STORM																
Inlet ID	Inlet Station and Offset	Area in Acres (A)	Runoff Coeff. (C)	Time to Inlet (min.)	Rainfall Intensity (in/hr)	AC	Total AC	Q to Inlet (cfs)	Grade of Gutter ft/ft (SL)	Cross Slope Of Shoulder ft/ft (Sx)	Depth of Flow of Gutter (ft)	Gutter Flow Width (ft)	Q Bypassing Inlet (cfs)	AC Bypassing Inlet	AC Entering Catch Basin	Inlet Type
PROPOSED ROAD LEFT GUTTER																
CB1	11+82, LT	0.110	0.63	10	6.20	0.069	0.069	0.473	0.040	0.043	0.104	2.415	0.000	0.000	0.069	"C"
CB3	14+04, LT	0.160	0.56	10	6.20	0.090	0.090	0.611	0.010	0.043	0.148	3.449	0.046	0.007	0.082	"C"
CB5	17+00, LT	0.180	0.9	10	6.20	0.162	0.169	1.156	LOW PT	0.043					0.169	"C"
PROPOSED ROAD RIGHT GUTTER																
CB2	11+82, RT	0.190	0.55	10	6.20	0.105	0.105	0.713	0.040	0.043	0.121	2.818	0.009	0.001	0.103	"C"
CB4	14+04, RT	0.430	0.48	10	6.20	0.206	0.208	1.418	0.010	0.043	0.203	4.729	0.315	0.051	0.157	"C"
CB6	17+00, RT	1.400	0.46	10	6.20	0.644	0.696	4.749	LOW PT	0.043					0.696	"C"
NOTES:																
LOW POINT ANALYSIS																
INLET	Q TO INLET	PERIM.	C WEIR	d WEIR	WIDTH	d ^d ORIFICE										
CB5	1.156	5.020	3	0.180	4.20	0.019	0.3' DEEP - OK									
CB6	4.749	7.330	3	0.360	8.37	0.318	0.3' DEEP - OK									

GRATES	PERIM	AREA
C	5.02	3.13
C DOUB	7.33	6.26
CL	7.33	3.13
CL DOUB	11.96	6.26

Notes:
 1.) Manning's n = 0.016 (asphalt).
 2.) Tc = 5 minutes minimum for areas with all pavement.
 3.) Tc = 10 minutes minimum for small areas with pavement and grass.
 4.) Allow points operate as a weir. Depth (d) over grate is less than 0.4 feet.

STORM SEWER SYSTEM DESIGN DRAINAGE SYSTEM

Sheet No. 1 of 1

Client: SHEWILLE HEIGHTS SUBDIVISION
 Project: SHEWILLE HEIGHTS SUBDIVISION
 Proj. No.:
 Return Period for Design: 25-YR

Prepared By: JRM Date: 02/20/26 Revised:

Line Segment		Time to Inlet (min.)	Time in Pipe (min.)	Accumul. Time (min.)	A x C Entering System	Sum of A x C in System	Rainfall Intensity, R (in./hr.)	Q in System (c.f.s.)	Pipe Data						
From	To								Size (in.)	Length (ft.)	Slope (ft./ft.)	Avg. Vel. (f.p.s.)	Full Cap. (c.f.s.)	Headwater (ft.)	Manning "n"
CB 1 11+82,LT	CB 2 11+82,RT	10	0.08	10.0	0.069	0.069	6.2	0.43	15	24	0.010	5.0	6.99	0.30	0.012
CB 2 11+82,RT	CB 4 14+04,RT	10	0.74	10.1	0.103	0.172	6.2	1.07	15	222	0.010	5.0	6.99	0.40	0.012
CB 3 14+04,LT	CB 4 14+04,RT	10	0.08	10.8	0.092	0.092	6.2	0.57	15	24	0.010	5.0	6.99	0.60	0.012
CB 4 14+04,RT	CB 6 17+00,RT	10	0.99	10.9	0.157	0.249	6.2	1.54	15	296	0.010	5.0	6.99	0.55	0.012
CB 6 17+00,RT	CB 5 17+00,LT	10	0.08	11.9	0.696	0.945	6.2	5.86	15	24	0.010	5.0	6.99	1.70	0.012
CB 5 17+00,LT	OUTLET	10	0.08	12.0	0.173	1.118	6.2	6.93	18	50	0.026	10.0	18.34	2.00	0.012

Manning's "n" for HDPE and RC pipe = 0.012

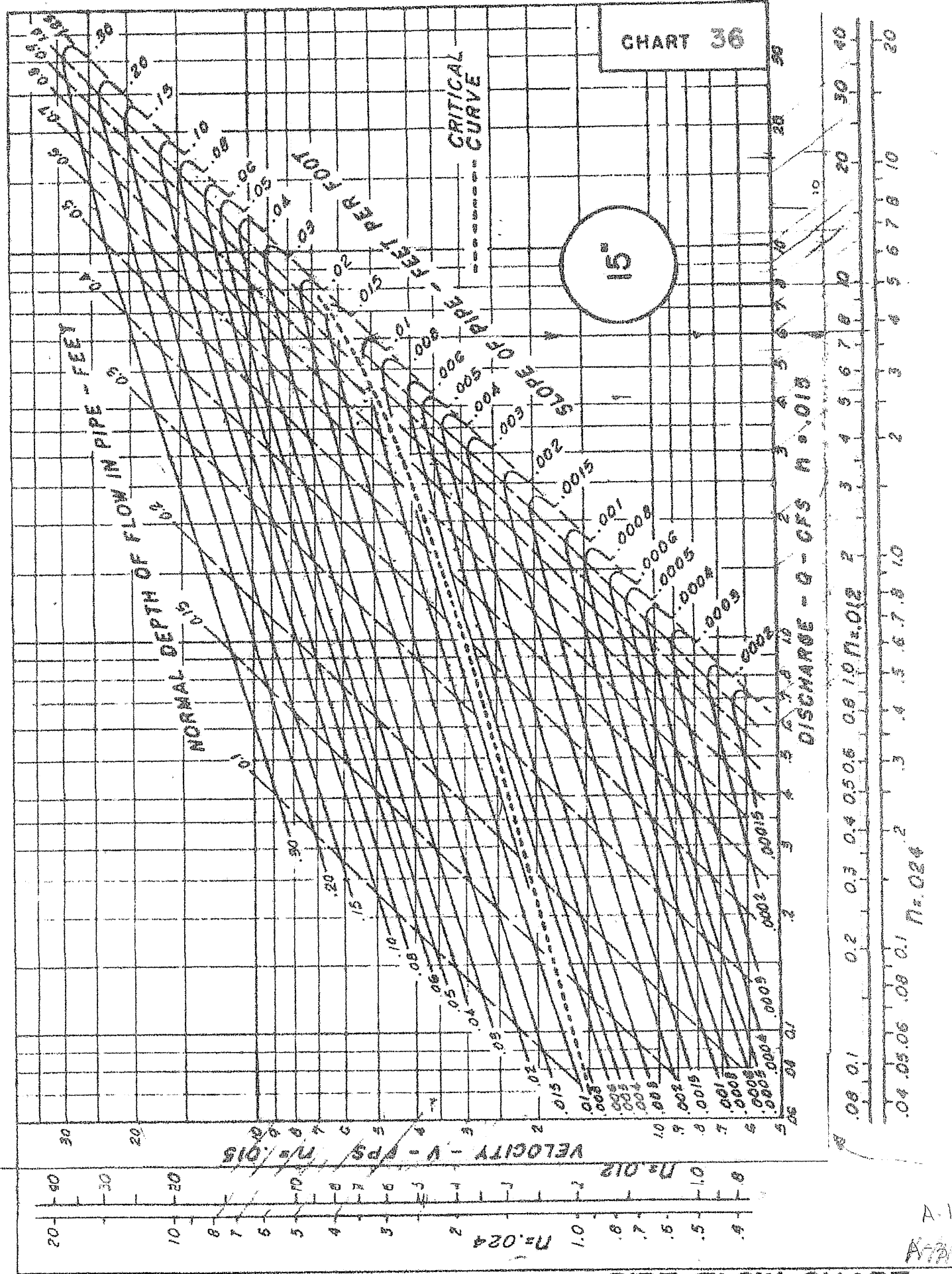
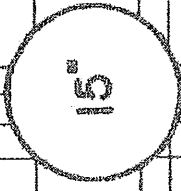
NOTE: ALL PIPES ARE BELOW FULL CAPACITY.

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STORM DRAIN TO DETENTION BASIN

	AREA	ROOF & PAV'T	O'LAND
CB1	0.11	0.06	0.05
CB2	0.19	0.08	0.11
CB3	0.16	0.09	0.07
CB4	0.43	0.13	0.3
CB5	0.18	0.18	
CB6	<u>1.140</u>	<u>0.37</u>	<u>1.03</u>
	2.47 AC	0.91	1.56

CHART 36

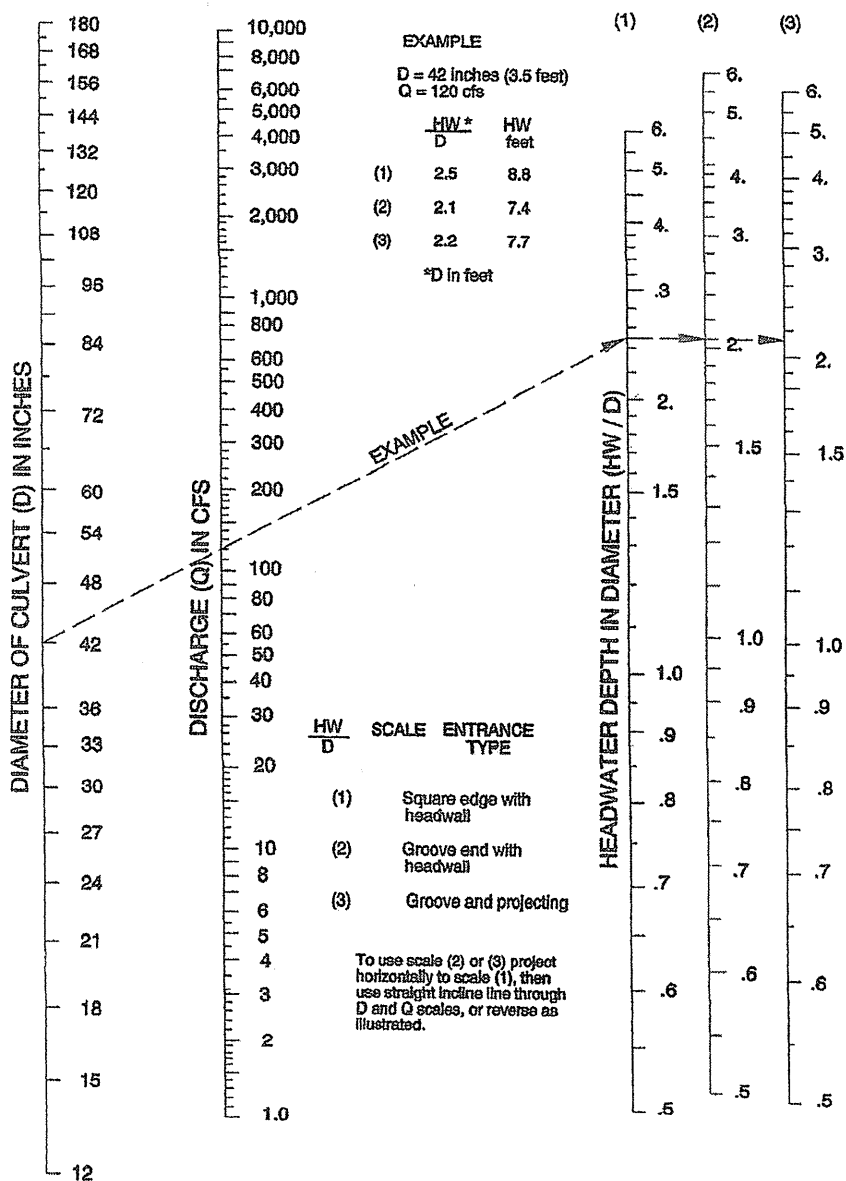


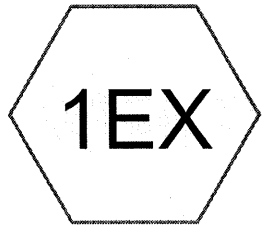
PIPE FLOW CHART
15-INCH DIAMETER

A-1
A-7A

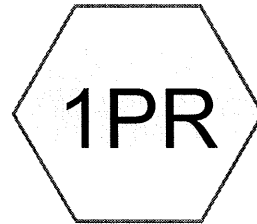
CHART 1

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

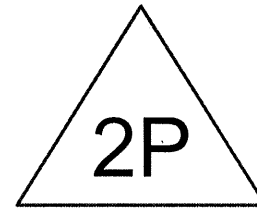




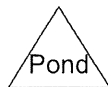
UNDEV



TO BASIN



WQ BASIN



Routing Diagram for BASIN 02-2026
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BASIN 02-2026

GALESFERRY 2-yr Duration=20 min, Inten=2.35 in/hr

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Page 2

Summary for Subcatchment 1EX: UNDEV

Runoff = 1.76 cfs @ 0.17 hrs, Volume= 2,899 cf, Depth= 0.32"

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
GALESFERRY 2-yr Duration=20 min, Inten=2.35 in/hr

Area (ac)	C	Description	Land Use
2.470	0.30	EXISTING UNDEVELOPED	
2.470		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment 1PR: TO BASINRunoff = 3.05 cfs @ 0.17 hrs, Volume= 5,025 cf, Depth= 0.56"
Routed to Pond 2P : WQ BASINRunoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
GALESFERRY 2-yr Duration=20 min, Inten=2.35 in/hr

Area (ac)	C	Description	Land Use
0.910	0.90	PAVEMENT & ROOFS	
1.560	0.30	OVERLAND	
2.470	0.52	Weighted Average	
2.470		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, MINIMUM

Summary for Pond 2P: WQ BASIN

Inflow Area = 107,593 sf, 0.00% Impervious, Inflow Depth = 0.56" for 2-yr event
 Inflow = 3.05 cfs @ 0.17 hrs, Volume= 5,025 cf
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
Peak Elev= 359.10' @ 0.75 hrs Surf.Area= 3,647 sf Storage= 5,025 cfPlug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume #	Invert	Avail.Storage	Storage Description
#1	357.50'	21,700 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

BASIN 02-2026

GALESFERRY 2-yr Duration=20 min, Inten=2.35 in/hr

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
357.50	2,650	0	0
359.50	3,900	6,550	6,550
361.50	5,450	9,350	15,900
362.50	6,150	5,800	21,700

Device	Routing	Invert	Outlet Devices
#1	Primary	360.00'	7.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=357.50' (Free Discharge)

↑1=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

BASIN 02-2026

GALESFERRY 10-yr Duration=20 min, Inten=3.49 in/hr

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Summary for Subcatchment 1EX: UNDEV

Runoff = 2.61 cfs @ 0.17 hrs, Volume= 4,302 cf, Depth= 0.48"

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
 GALESFERRY 10-yr Duration=20 min, Inten=3.49 in/hr

Area (ac)	C	Description	Land Use
2.470	0.30	EXISTING UNDEVELOPED	
2.470		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment 1PR: TO BASIN

Runoff = 4.52 cfs @ 0.17 hrs, Volume= 7,457 cf, Depth= 0.83"
 Routed to Pond 2P : WQ BASIN

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
 GALESFERRY 10-yr Duration=20 min, Inten=3.49 in/hr

Area (ac)	C	Description	Land Use
0.910	0.90	PAVEMENT & ROOFS	
1.560	0.30	OVERLAND	
2.470	0.52	Weighted Average	
2.470		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, MINIMUM

Summary for Pond 2P: WQ BASIN

Inflow Area = 107,593 sf, 0.00% Impervious, Inflow Depth = 0.83" for 10-yr event
 Inflow = 4.52 cfs @ 0.17 hrs, Volume= 7,457 cf
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
 Peak Elev= 359.73' @ 0.75 hrs Surf.Area= 4,076 sf Storage= 7,457 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume #	Invert	Avail.Storage	Storage Description
#1	357.50'	21,700 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

BASIN 02-2026

GALESFERRY 10-yr Duration=20 min, Inten=3.49 in/hr

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
357.50	2,650	0	0
359.50	3,900	6,550	6,550
361.50	5,450	9,350	15,900
362.50	6,150	5,800	21,700

Device	Routing	Invert	Outlet Devices
#1	Primary	360.00'	7.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=357.50' (Free Discharge)
 ↳ **1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

BASIN 02-2026

GALESFERRY 50-yr Duration=20 min, Inten=4.74 in/hr

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Summary for Subcatchment 1EX: UNDEV

Runoff = 3.54 cfs @ 0.17 hrs, Volume= 5,840 cf, Depth= 0.65"

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
GALESFERRY 50-yr Duration=20 min, Inten=4.74 in/hr

Area (ac)	C	Description	Land Use
2.470	0.30	EXISTING UNDEVELOPED	
2.470		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment 1PR: TO BASIN

Runoff = 6.14 cfs @ 0.17 hrs, Volume= 10,123 cf, Depth= 1.13"
Routed to Pond 2P : WQ BASIN

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
GALESFERRY 50-yr Duration=20 min, Inten=4.74 in/hr

Area (ac)	C	Description	Land Use
0.910	0.90	PAVEMENT & ROOFS	
1.560	0.30	OVERLAND	
2.470	0.52	Weighted Average	
2.470		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, MINIMUM

Summary for Pond 2P: WQ BASIN

Inflow Area = 107,593 sf, 0.00% Impervious, Inflow Depth = 1.13" for 50-yr event
Inflow = 6.14 cfs @ 0.17 hrs, Volume= 10,123 cf
Outflow = 1.50 cfs @ 0.65 hrs, Volume= 1,524 cf, Atten= 76%, Lag= 28.7 min
Primary = 1.50 cfs @ 0.65 hrs, Volume= 1,524 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
Peak Elev= 360.18' @ 0.65 hrs Surf.Area= 4,427 sf Storage= 9,382 cf

Plug-Flow detention time= 41.5 min calculated for 1,522 cf (15% of inflow)
Center-of-Mass det. time= 28.4 min (48.0 - 19.5)

Volume #1	Invert	Avail.Storage	Storage Description
	357.50'	21,700 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

BASIN 02-2026

GALESFERRY 50-yr Duration=20 min, Inten=4.74 in/hr

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
357.50	2,650	0	0
359.50	3,900	6,550	6,550
361.50	5,450	9,350	15,900
362.50	6,150	5,800	21,700

Device	Routing	Invert	Outlet Devices
#1	Primary	360.00'	7.0' long x 0.5' breadth Broad-Crested Rectangular Weir
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.50 cfs @ 0.65 hrs HW=360.18' (Free Discharge)
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 1.50 cfs @ 1.19 fps)

BASIN 02-2026

GALESFERRY 100-yr Duration=20 min, Inten=5.30 in/hr

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Summary for Subcatchment 1EX: UNDEV

Runoff = 3.96 cfs @ 0.17 hrs, Volume= 6,528 cf, Depth= 0.73"

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
 GALESFERRY 100-yr Duration=20 min, Inten=5.30 in/hr

Area (ac)	C	Description	Land Use
2.470	0.30	EXISTING UNDEVELOPED	
2.470		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment 1PR: TO BASIN

Runoff = 6.86 cfs @ 0.17 hrs, Volume= 11,315 cf, Depth= 1.26"
 Routed to Pond 2P : WQ BASIN

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
 GALESFERRY 100-yr Duration=20 min, Inten=5.30 in/hr

Area (ac)	C	Description	Land Use
0.910	0.90	PAVEMENT & ROOFS	
1.560	0.30	OVERLAND	
2.470	0.52	Weighted Average	
2.470		100.00% Pervious Area	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry, MINIMUM

Summary for Pond 2P: WQ BASIN

Inflow Area = 107,593 sf, 0.00% Impervious, Inflow Depth = 1.26" for 100-yr event
 Inflow = 6.86 cfs @ 0.17 hrs, Volume= 11,315 cf
 Outflow = 2.59 cfs @ 0.59 hrs, Volume= 2,717 cf, Atten= 62%, Lag= 25.4 min
 Primary = 2.59 cfs @ 0.59 hrs, Volume= 2,717 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-6.00 hrs, dt= 0.01 hrs
 Peak Elev= 360.26' @ 0.59 hrs Surf.Area= 4,487 sf Storage= 9,725 cf

Plug-Flow detention time= 35.3 min calculated for 2,717 cf (24% of inflow)
 Center-of-Mass det. time= 23.4 min (43.0 - 19.5)

Volume	Invert	Avail.Storage	Storage Description
#1	357.50'	21,700 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

BASIN 02-2026

GALESFERRY 100-yr Duration=20 min, Inten=5.30 in/hr

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
357.50	2,650	0	0
359.50	3,900	6,550	6,550
361.50	5,450	9,350	15,900
362.50	6,150	5,800	21,700

Device	Routing	Invert	Outlet Devices
#1	Primary	360.00'	7.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=2.59 cfs @ 0.59 hrs HW=360.26' (Free Discharge)↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.59 cfs @ 1.44 fps)

NOTE: BOUNDARY LINES OF ADJOINING PROPERTIES ARE SHOWN FOR GENERAL INFORMATION PURPOSES ONLY AND ARE NOT TO BE CONSTRUED AS BEING ACCURATELY LOCATED OR DEPICTED.
THE STONE WALLS AND/OR FENCES SHOWN AS BOUNDARIES MAY HAVE IRREGULARITIES OF COURSE BETWEEN PRINCIPAL POINTS OF COURSE INDICATED.

SOILS LEGEND

- CdC - CANTON AND CHARLTON EXTREMELY STONY FINE SANDY LOAMS, 3 TO 15 PERCENT SLOPES
- CdD - CANTON AND CHARLTON EXTREMELY STONY FINE SANDY LOAMS, 15 TO 35 PERCENT SLOPES
- CrC - CHARLTON-HOLLIS FINE SANDY LOAMS, VERY ROCKY, 3 TO 15 PERCENT SLOPES
- CrD - CHARLTON-HOLLIS FINE SANDY LOAMS, VERY ROCKY, 15 TO 45 PERCENT SLOPES
- HrC - HOLLIS-CHARLTON-ROCK, OUTCROP COMPLEX 3 TO 5 PERCENT SLOPES
- PdC - PAXTON AND MONTAUK, VERY STONY FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES
- PdB - PAXTON AND MONTAUK, VERY STONY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES
- Rn - RIDGEBURY, LEICESTER, AND WHITMAN EXTREMELY STONY FINE SANDY LOAMS
- SvB - SUTTON FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES
- SxB - SUTTON EXTREMELY STONY FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES

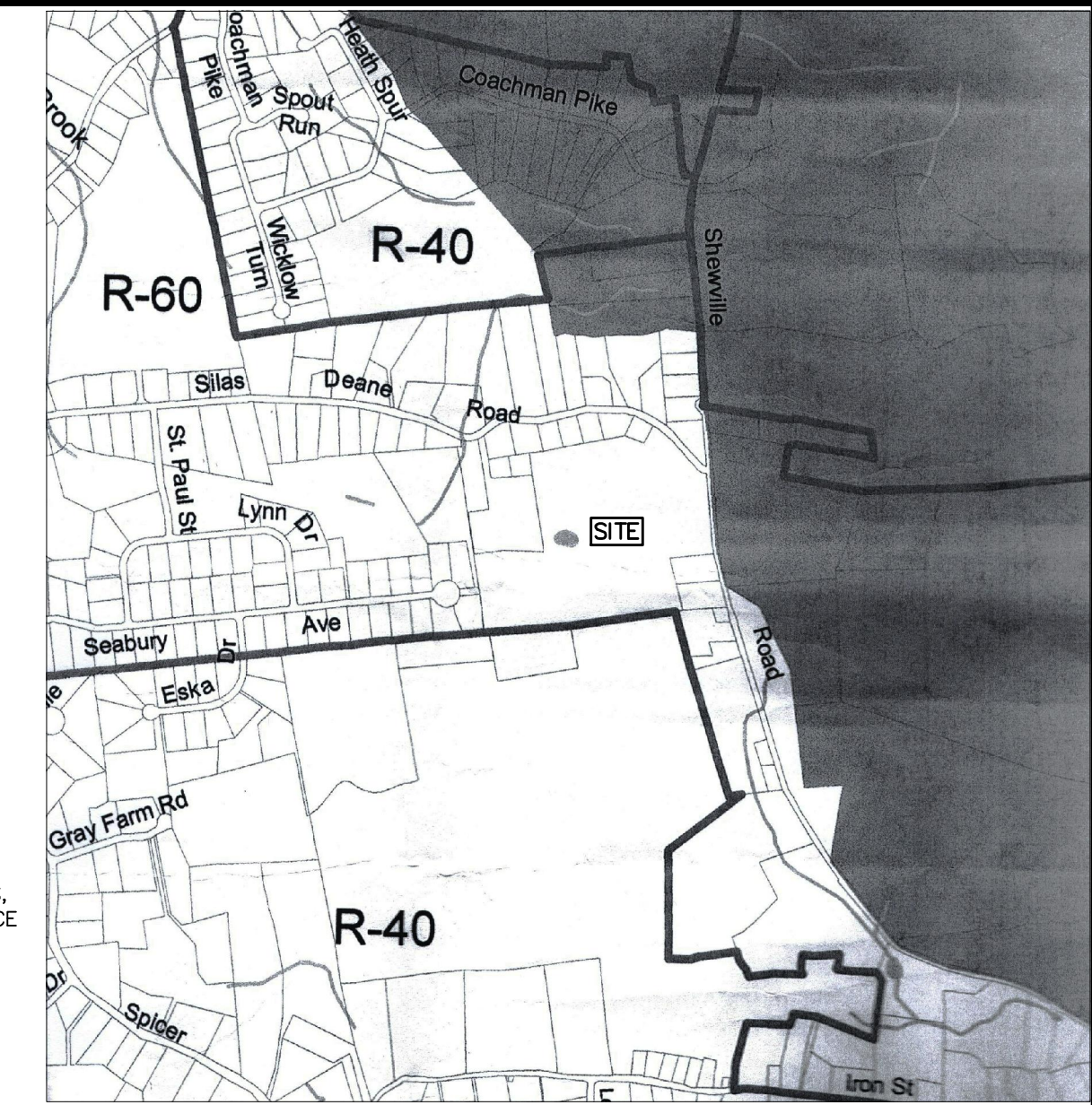
GENERAL NOTES CONTINUED:

7. BULK REQUIREMENTS FOR OPEN SPACE SUBDIVISION R-60 ZONE.

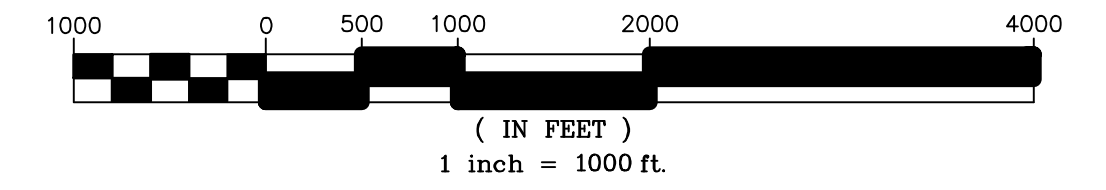
ITEM	REQUIRED	PROVIDED
MINIMUM PARCEL AREA PRIOR TO SUBDIVISION	40 ACRES	48.58 ACRES
OPEN SPACE REQUIRED	29.42 ACRES	31.94 ACRES
MINIMUM SIDE YARD DISTANCE	10 FEET	10 FEET
MINIMUM LOT REAR YARD DISTANCE	30 FEET	30 FEET
MINIMUM FRONT YARD SETBACK	30 FEET	25 FEET
LOT SIZE (FRONT)	20,000 Sq. Ft.	PROVIDED
INTERIOR/ SPECIAL LOT	30,000 Sq. Ft.	PROVIDED
MAXIMUM IMPERVIOUS LOT COVERAGE	40%	REQUIREMENT MET
ROAD FRONTAGE	100 FEET	REQUIREMENT MET
8. SOILS TESTING INDICATED ON THIS PLAN ARE REPRESENTATIVE OF ACTUAL SOIL CONDITIONS AND ADDITIONAL DEEP TEST PITS AND PERCOLATION TESTS MAY BE REQUIRED BY THE HEALTH DISTRICT IF THE BUILDING OR SYSTEM LOCATION IS ALTERED AND/OR THE SUITABLE SEPTIC AREA IS LIMITED.
9. MONUMENTS, PERMANENT PIN MARKERS OR DRILL HOLES SHALL BE INSTALLED AT ALL CORNERS AND AT INTERVALS NO GREATER THAN 100 FEET ALONG THE BOUNDARIES OF ALL OPEN SPACE PARCELS. RIGHTS OF WAY TO OPEN SPACE PARCELS WHICH ARE 50 FEET IN WIDTH OR LESS SHALL BE MARKED AT INTERVALS NO GREATER THAN 50 FEET.
10. CALL BEFORE YOU DIG (1-800-922-4455) WILL BE CONTACTED PRIOR TO INITIATION OF THIS PROJECT.
11. WORK SHALL CONFORM TO ORDINANCE REGULATING THE ADDITION OF A NEW STREET OR HIGHWAY TO THE HIGHWAY SYSTEM OF THE TOWN OF LEDYARD.
12. ACTUAL CONDITIONS THAT DEVELOP OR ARE MORE CLEARLY ASSESSED DURING CONSTRUCTION MAY DICTATE THAT FIELD ADJUSTMENTS TO ACCOMMODATE DEVELOPMENT ACTIVITY, INCLUDING ADDITIONAL DRAINAGE OR SIGHTLINE CLEARING MEASURES, MAY BE NECESSARY. ADDITIONAL DESIGN EFFORT FOR AND INSTALLATION OF SUCH MEASURES SHALL BE UNDERTAKEN IN CONSULTATION WITH AND AT NO EXPENSE TO THE TOWN.
13. THE TOWN OF LEDYARD SHALL SUPPLY AND INSTALL STREET SIGNAGE AND MARKINGS SPECIFIED BY THESE PLANS AT THE EXPENSE OF DEVELOPER. UPON COMPLETION OF WORK THE TOWN WILL PRESENT AN INVOICE TO THE DEVELOPER FOR THE MATERIALS AND LABOR ASSOCIATED WITH THIS EFFORT.
14. SECTION 4.6 OF THE SUBDIVISION REGULATIONS WAS FOLLOWED IN THE DESIGN OF THIS SUBDIVISION.
15. PORTIONS OF THIS RE-SUBDIVISION ARE SERVICED BY COMMON DRIVEWAYS. THE TOWN OF LEDYARD WILL PROVIDE NO MAINTENANCE, REPAIRS OR SCHOOL BUS SERVICE ALONG COMMON DRIVEWAY.

GENERAL NOTES:

1. MAP REFERENCES:
 - A) CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF LEDYARD A SECTION OF SHEWVILLE ROAD ABOUT 6,400 FEET SCALE 1"=40' DATE 7-21-41 DATE 8-14-41 NUMBER 71-10 SHEET NO. 1 OF 2.
 - B) HIGH VIEW RIDGE PLAN SHOWING PROPERTY OF HILDRETH BARRETT SHEWVILLE ROAD LEDYARD, CONN. SCALE 1"=100 FT. APRIL 9, 1956 REVISED OCT. 12, 1956 H.A. EMERSON LAND SURVEYOR 3012.
 - C) HIGH VIEW RIDGE LOT PLAN No. 1 LEDYARD, CONN. SCALE 1"=60 FT. JAN 18, 1957 H.A. EMERSON LAND SURVEYOR 3012.
 - D) HIGH VIEW RIDGE LOT PLAN SHEWVILLE ROAD LEDYARD, CONN SCALE 1"=100 FT. MAY 25, 1957 H.A. EMERSON LAND SURVEYOR 3012.
 - E) PARSONAGE HILL MANOR BOUNDARY SURVEY MAP RESUBDIVISION SECTION II OWNER & DEVELOPER BONNIE BROOK LTD. SEABURY AVE. LEDYARD, CT. SCALE: 1"=100' FEBRUARY, 1977 SHEET NO. 2 OF 16 PREPARED BY BERNARD F. STONE & ASSOCIATES, INC. SALEM, CT. WITH REVISIONS THROUGH 6/16/77.
 - F) MAP SHOWING LAND TRANSFERS OF LAND OF PIERUCCI SILAS DEANE RD. LEDYARD, CT SCALE: 1"=40' 6-1-81.
 - G) HIDDEN ACRES SUBDIVISION PLAN PREPARED FOR JERRY KIL & JOHN LOMBARDO, JR. IRON STREET & SPICER HILL ROAD EXT. LEDYARD, CT. SCALE: 1"=100' DATE: 11/10/94 SHEET NO. 3 OF 40 WITH REVISIONS TO 12/19/95.
2. THIS SUBDIVISION WILL BE SERVED BY PUBLIC WATER AND ON SITE SEWAGE DISPOSAL SYSTEMS.
3. HOUSES, DRIVEWAYS, SEWAGE DISPOSAL SYSTEMS, FOUNDATION DRAINS AND EROSION & SEDIMENT CONTROL ARE SHOWN CONCEPTUALLY.
4. ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM.
5. LOTS WITH SHARED DRIVES SHALL CONTAIN EASEMENTS FOR INGRESS AND EGRESS, THE RIGHT TO INSTALL AND MAINTAIN UTILITIES AND DRIVEWAY AND A MAINTENANCE AGREEMENT FOR THE SHARED DRIVEWAY.
6. UTILITIES TO BE INSTALLED UNDERGROUND.



LOCATION MAP
ZONING DISTRICT: R-60
GRAPHIC SCALE



SHEET INDEX

- SHEET 1 - 100 SCALE BOUNDARY MAP; LOCATION MAP AND GENERAL NOTES
- SHEET 2 - 100 SCALE PLAN PARCEL HISTORY MAP
- SHEET 3 - 40 SCALE A-2 PLAN
- SHEET 4 - 40 SCALE A-2 PLAN
- SHEET 5 - 40 SCALE A-2 PLAN WITH TOPOGRAPHY/WETLANDS
- SHEET 6 - 40 SCALE CONCEPTUAL LAYOUT
- SHEET 7 - 40 SCALE CONCEPTUAL LAYOUT
- SHEET 8 - 40 SCALE A-2 PLAN WITH TOPOGRAPHY/WETLANDS
- SHEET 9 - 40 SCALE CONCEPTUAL LAYOUT
- SHEET 10 - 40 SCALE A-2 PLAN WITH TOPOGRAPHY/WETLANDS
- SHEET 11 - 40 SCALE PLAN/PROFILE SEABURY AVENUE EXTENSION
- SHEET 12 - DEEP TEST HOLE DATA
- SHEET 13 - PERCOLATION TEST RESULTS/SEPTIC SYSTEM DESIGN CRITERIA
- SHEET 14 - CONSTRUCTION DETAILS
- SHEET 15 - CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENT CONTROL NARRATIVE/DETAILS

PLAN SHOWING
SHEWVILLE HEIGHTS
OPEN SPACE RESUBDIVISION
PROPERTY OF
84 SILAS DEANE LLC
84 SILAS DEANE ROAD
SHEWVILLE ROAD
AND
58 & 59 SEABURY AVENUE
LEDYARD, CONNECTICUT
SCALE: 1"=100'
FEBRUARY 2026

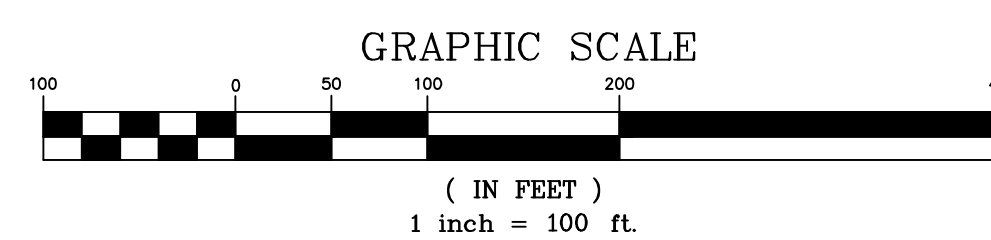
SHEET 1 OF 15

THIS MAP AND SURVEY WAS PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES-MINIMUM STANDARDS OF ACCURACY, CONTENT AND CERTIFICATION FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT, ADOPTED EFFECTIVE JUNE 21, 1998, REVISED OCTOBER 26, 2018. IT IS A BOUNDARY SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS "D". TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208

DATE: FEBRUARY 13, 2026

DIETER & GARDNER
LAND SURVEYORS • PLANNERS
1641 CONNECTICUT ROUTE 12
P.O. BOX 335
GALES FERRY, CT. 06335
(860) 464-7455
EMAIL: DIETER.GARDNER@YAHOO.COM



LEGEND

- STONE WALL
- PROPERTY LINE
- STREET LINE
- STREET ADDRESS
- SOIL TYPE PER SOILS SURVEY OF NEW LONDON COUNTY

APPROVED BY THE LEDYARD PLANNING AND ZONING COMMISSION AS TO THE COMPLIANCE WITH THE REGULATIONS GOVERNING THE SUBDIVISION OF LAND. ALL IMPROVEMENTS SHALL BE COMPLETED BY _____ DATE _____

CHAIRMAN OR SECRETARY _____ DATE _____

LOT NUMBERS ASSIGNED BY THE ASSESSOR

ASSESSOR _____ DATE _____

IWVC APPLICATION# _____

APPROVED, _____

NO PERMIT NECESSARY. (NOT WITHIN A REGULATED AREA)
NOT APPLICABLE AT THIS TIME. (WITHIN A REGULATED AREA: NO REGULATED ACTIVITY PROPOSED AT THIS TIME.)

ZONING/WETLANDS OFFICER _____ DATE _____

APPROVED BY THE DIRECTOR OF PUBLIC WORKS OR THE TOWN ENGINEER FOR PUBLIC WAY LAYOUT.

PUBLIC WORKS DIRECTOR/TOWN ENGINEER _____ DATE _____

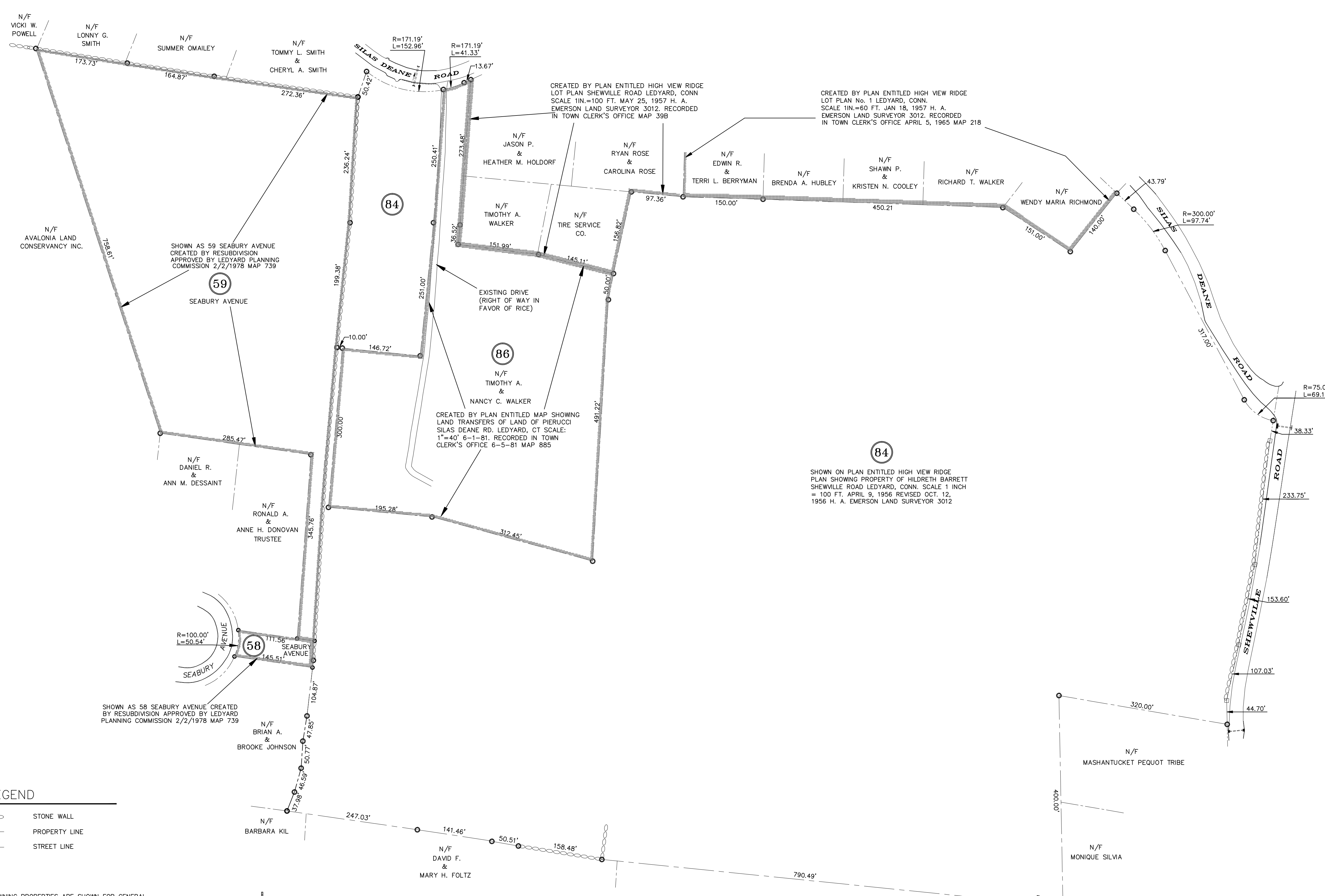
EROSION AND SEDIMENT CONTROL PLAN CERTIFIED BY VOTE OF THE LEDYARD PLANNING AND ZONING COMMISSION

CHAIRMAN OR SECRETARY OF THE LEDYARD PLANNING AND ZONING COMMISSION _____ DATE _____

© THIS DRAWING IS THE PROPERTY OF THE LAND SURVEYOR. THIS PLAN AND REPRODUCTIONS, ADDITIONS OR REVISIONS OF THIS PLAN ARE NOT VALID WITHOUT THE EMBOSSED SEAL AND SIGNATURE OF THE LAND SURVEYOR WHO PREPARED THIS PLAN. JOB# 23-031.DWG FBK#334

THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF THE PROFESSIONAL OPINION BY THE LAND SURVEYOR WHICH IS BASED ON HIS OR HER BEST KNOWLEDGE, INFORMATION AND BELIEF. AS SUCH IT CONSTITUTES NEITHER GUARANTEE OR WARRANTY.

APPROVED BY THE LEDYARD PLANNING AND ZONING COMMISSION AS TO THE COMPLIANCE WITH THE REGULATIONS GOVERNING THE SUBDIVISION OF LAND. ALL IMPROVEMENTS SHALL BE COMPLETED BY _____ DATE _____	
CHAIRMAN OR SECRETARY _____	DATE _____
LOT NUMBERS ASSIGNED BY THE ASSESSOR	
ASSESSOR _____	DATE _____
TWNC APPLICATION# _____	
APPROVED _____	
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NOT APPLICABLE AT THIS TIME. (WITHIN A REGULATED AREA. NO REGULATED ACTIVITY PROPOSED AT THIS TIME.)	
ZONING/WETLANDS OFFICER _____	DATE _____
APPROVED BY THE DIRECTOR OF PUBLIC WORKS OR THE TOWN ENGINEER FOR PUBLIC WAY LAYOUT.	
PUBLIC WORKS DIRECTOR/TOWN ENGINEER _____	DATE _____
EROSION AND SEDIMENT CONTROL PLAN CERTIFIED BY VOTE OF THE LEDYARD PLANNING AND ZONING COMMISSION	
CHAIRMAN OR SECRETARY OF THE LEDYARD PLANNING AND ZONING COMMISSION _____	DATE _____



NOTE: SHEVILLE HEIGHTS RESUBDIVISION IS COMPOSED OF 84 SILAS DEANE ROAD; 58 AND 59 SEABURY AVENUE, WHICH WERE CREATED BY THE PARSONAGE HILL MANOR SUBDIVISION. 84 SILAS DEANE ROAD, CREATED SINCE MARCH 22, 1962.

**PLAN SHOWING
 PARCEL HISTORY MAP
 SHEVILLE HEIGHTS
 OPEN SPACE RESUBDIVISION
 PROPERTY OF
 84 SILAS DEANE LLC
 84 SILAS DEANE ROAD
 SHEVILLE ROAD
 AND
 58 & 59 SEABURY AVENUE
 LEDYARD, CONNECTICUT
 SCALE: 1"=100'
 FEBRUARY 2026**

SHEET 2 OF 15

THIS MAP AND SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES—MINIMUM STANDARDS OF ACCURACY, CONTENT AND CERTIFICATION FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT, ADOPTED EFFECTIVE JUNE 21, 1996, REVISED OCTOBER 26, 2018. IT IS A BOUNDARY SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS "D" TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

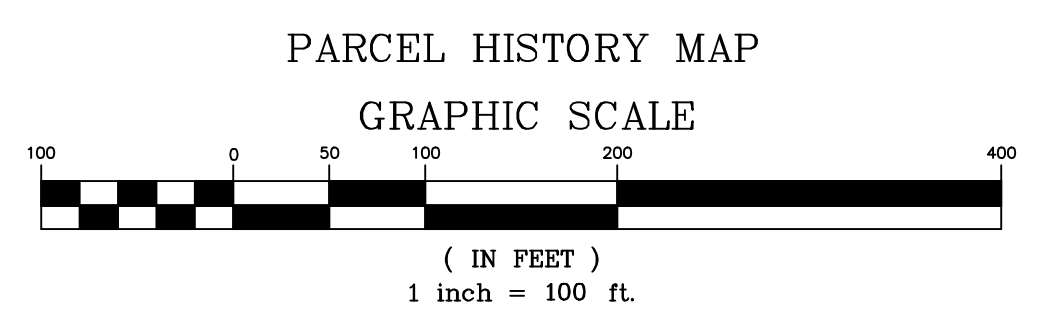
TITLE: LAND SURVEYOR CT No. 14208
 DATE: FEBRUARY 13, 2026

LEGEND

	STONE WALL
	PROPERTY LINE
	STREET LINE

NOTE: BOUNDARY LINES OF ADJOINING PROPERTIES ARE SHOWN FOR GENERAL INFORMATION PURPOSES ONLY AND ARE NOT TO BE CONSTRUED AS BEING ACCURATELY LOCATED OR DEPICTED.
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CHAIRMAN OR SECRETARY _____ DATE _____

LOT NUMBERS ASSIGNED BY THE ASSESSOR _____

ASSESSOR _____ DATE _____

IWVC APPLICATION# _____

APPROVED. _____

NO PERMIT NECESSARY. (NOT WITHIN A REGULATED AREA)

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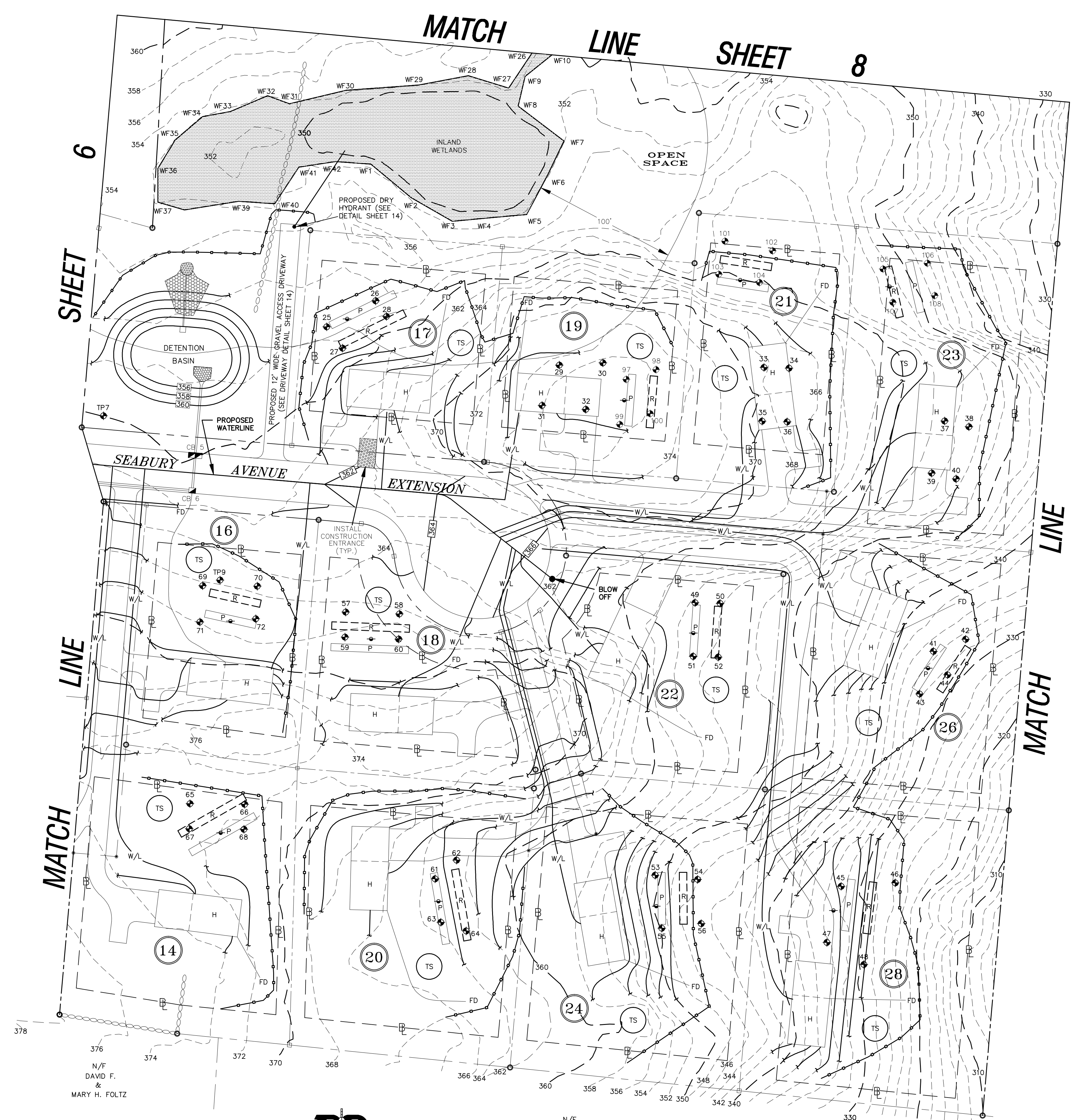
ZONING/WETLANDS OFFICER _____ DATE _____

APPROVED BY THE DIRECTOR OF PUBLIC WORKS OR THE TOWN ENGINEER FOR PUBLIC WAY LAYOUT. _____

PUBLIC WORKS DIRECTOR/TOWN ENGINEER _____ DATE _____

EROSION AND SEDIMENT CONTROL PLAN CERTIFIED BY VOTE OF THE LEDYARD PLANNING AND ZONING COMMISSION _____

CHAIRMAN OR SECRETARY OF THE LEDYARD PLANNING AND ZONING COMMISSION _____ DATE _____



LEGEND

- STONE WALL
- PROPERTY LINE
- STREET LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- BUILDING SETBACK LINE
- ① STREET ADDRESS
- H CONCEPTUAL HOUSE
- P PRIMARY SEPTIC
- R RESERVE AREA
- W/L WATERLINE
- FD FOOTING DRAIN
- ⊕ APPROXIMATE DEEP TEST PIT
- ⊕ APPROXIMATE PERC TEST LOCATION
- TS TOPSOIL STOCKPILE
- WF-35 EDGE OF WETLANDS & FLAG NUMBER
- SILT FENCE/HAYBALES OR WOODCHIPS

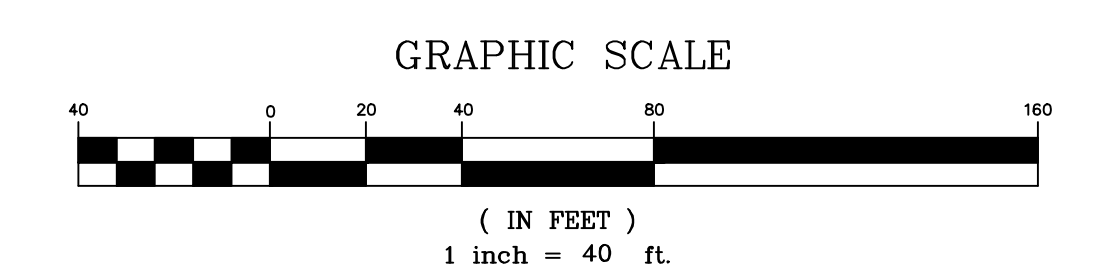
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I HAVE REVIEWED THE INLAND WETLAND BOUNDARY I DELINEATED AND I AM OF THE OPINION THAT THE WETLAND BOUNDARY IS SHOWN CORRECTLY ON THIS MAP.

Jan Cole
 JAN COLE
 SOIL SCIENTIST

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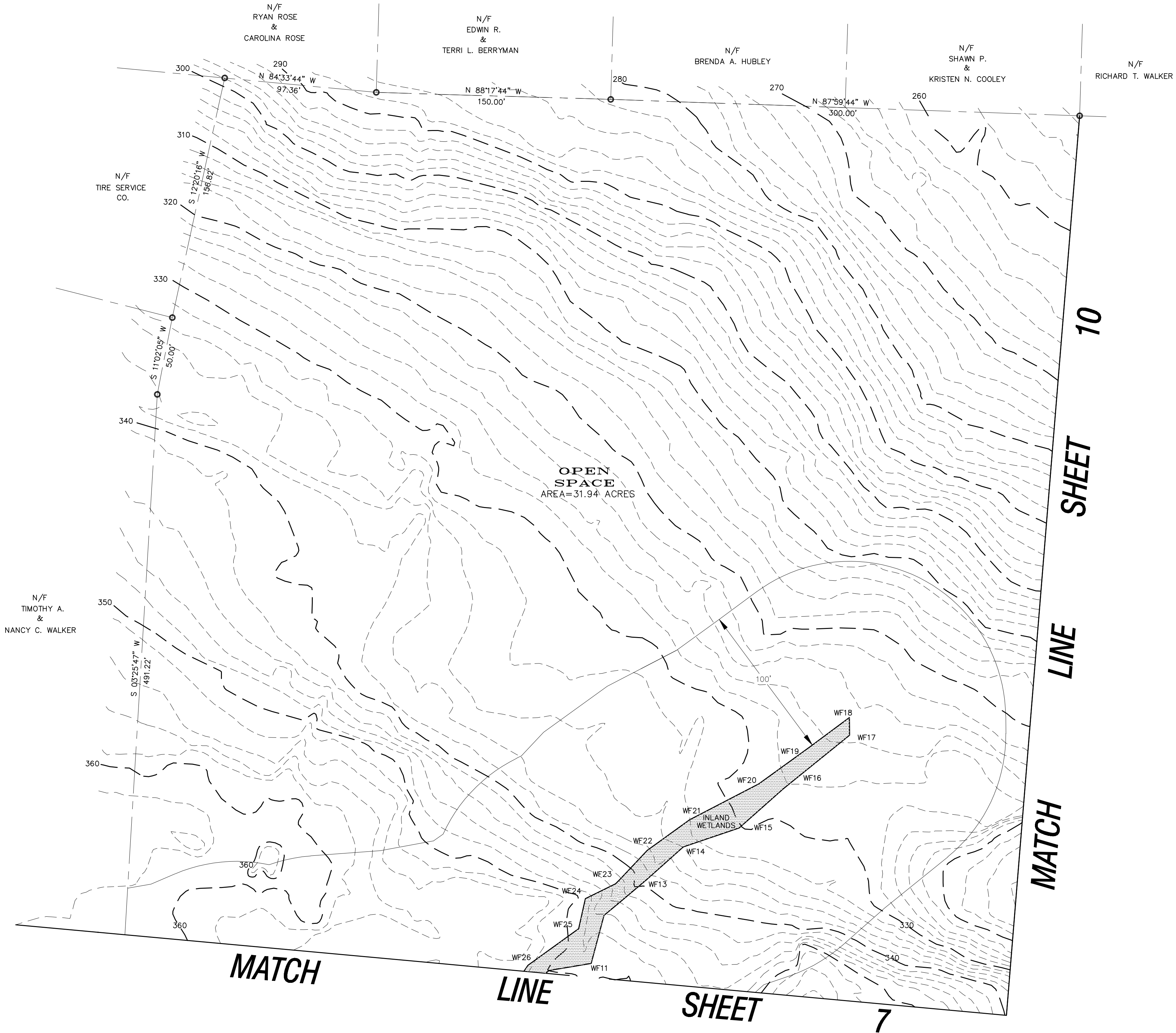
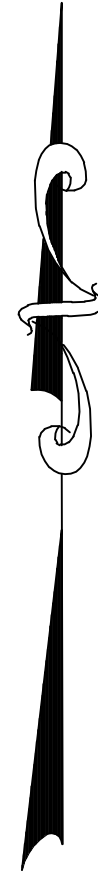


NOTE: DEVELOPMENT OF LOTS SHOWN CONCEPTUALLY ONLY.

PLAN SHOWING SHEWVILLE HEIGHTS OPEN SPACE RESUBDIVISION PROPERTY OF 84 SILAS DEANE LLC 84 SILAS DEANE ROAD SHEWVILLE ROAD AND 58 & 59 SEABURY AVENUE LEDYARD, CONNECTICUT SCALE: 1"=40' FEBRUARY 2026

THIS MAP AND SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES--MINIMUM STANDARDS OF ACCURACY, CONTENT AND CERTIFICATION FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT, ADOPTED EFFECTIVE JUNE 21, 1996, REVISED OCTOBER 26, 2018. IT IS A BOUNDARY SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS "D", TOPOGRAPHIC ACCURACY T-D. TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208
 DATE: FEBRUARY 13, 2026



LEGEND

	STONE WALL
	PROPERTY LINE
	STREET LINE
	EXISTING CONTOUR
	EDGE OF WETLANDS & FLAG NUMBER

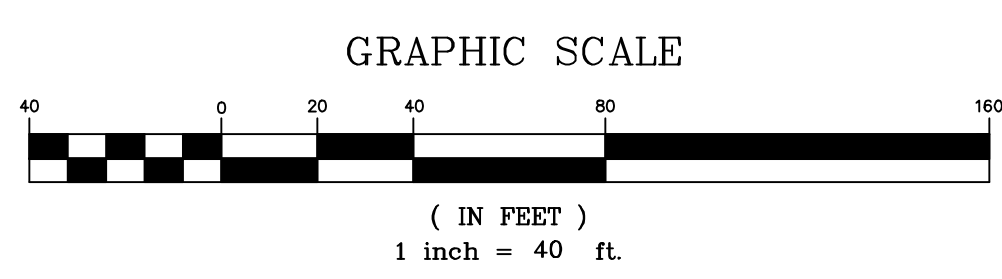
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I HAVE REVIEWED THE INLAND WETLAND BOUNDARY I DELINEATED AND I AM OF THE OPINION THAT THE WETLAND BOUNDARY IS SHOWN CORRECTLY ON THIS MAP.

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APPROVED BY THE LEDYARD PLANNING AND ZONING COMMISSION AS TO THE COMPLIANCE WITH THE REGULATIONS GOVERNING THE SUBDIVISION OF LAND.	
ALL IMPROVEMENTS SHALL BE COMPLETED BY _____	DATE _____
CHAIRMAN OR SECRETARY _____	DATE _____
LOT NUMBERS ASSIGNED BY THE ASSESSOR	
ASSESSOR _____	DATE _____
IWWC _____	APPLICATION# _____
APPROVED, _____	
_____	NO PERMIT NECESSARY. (NOT WITHIN A REGULATED AREA)
_____	NOT APPLICABLE AT THIS TIME. (WITHIN A REGULATED AREA; NO REGULATED ACTIVITY PROPOSED AT THIS TIME.)
ZONING/WETLANDS OFFICER _____	DATE _____
APPROVED BY THE DIRECTOR OF PUBLIC WORKS OR THE TOWN ENGINEER FOR PUBLIC WAY LAYOUT.	
PUBLIC WORKS DIRECTOR/TOWN ENGINEER _____	DATE _____
EROSION AND SEDIMENT CONTROL PLAN CERTIFIED BY VOTE OF THE LEDYARD PLANNING AND ZONING COMMISSION	
CHAIRMAN OR SECRETARY OF THE LEDYARD PLANNING AND ZONING COMMISSION _____	DATE _____

PLAN SHOWING
SHEVILLE HEIGHTS
OPEN SPACE RESUBDIVISION
PROPERTY OF
84 SILAS DEANE LLC
84 SILAS DEANE ROAD
SHEVILLE ROAD
AND
58 & 59 SEABURY AVENUE
LEDYARD, CONNECTICUT
SCALE: 1"=40'
FEBRUARY 2026

SHEET 8 OF 15

THIS MAP AND SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES—MINIMUM STANDARDS OF ACCURACY, CONTENT AND CERTIFICATION FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT, ADOPTED EFFECTIVE JUNE 21, 1986, REVISED OCTOBER 26, 2018. IT IS A BOUNDARY SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 AND TOPOGRAPHIC ACCURACY T-D. TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT NO. 14208
DATE: FEBRUARY 13, 2026

APPROVED BY THE LEDYARD PLANNING AND ZONING COMMISSION AS TO THE COMPLIANCE WITH THE REGULATIONS GOVERNING THE SUBDIVISION OF LAND. ALL IMPROVEMENTS SHALL BE COMPLETED BY _____ DATE _____

CHAIRMAN OR SECRETARY _____ DATE _____

LOT NUMBERS ASSIGNED BY THE ASSESSOR _____

ASSESSOR _____ DATE _____

IWVC APPLICATION# _____

APPROVED. _____

NO PERMIT NECESSARY. (NOT WITHIN A REGULATED AREA)

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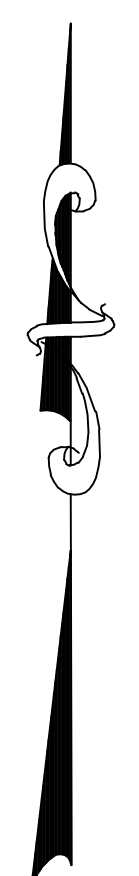
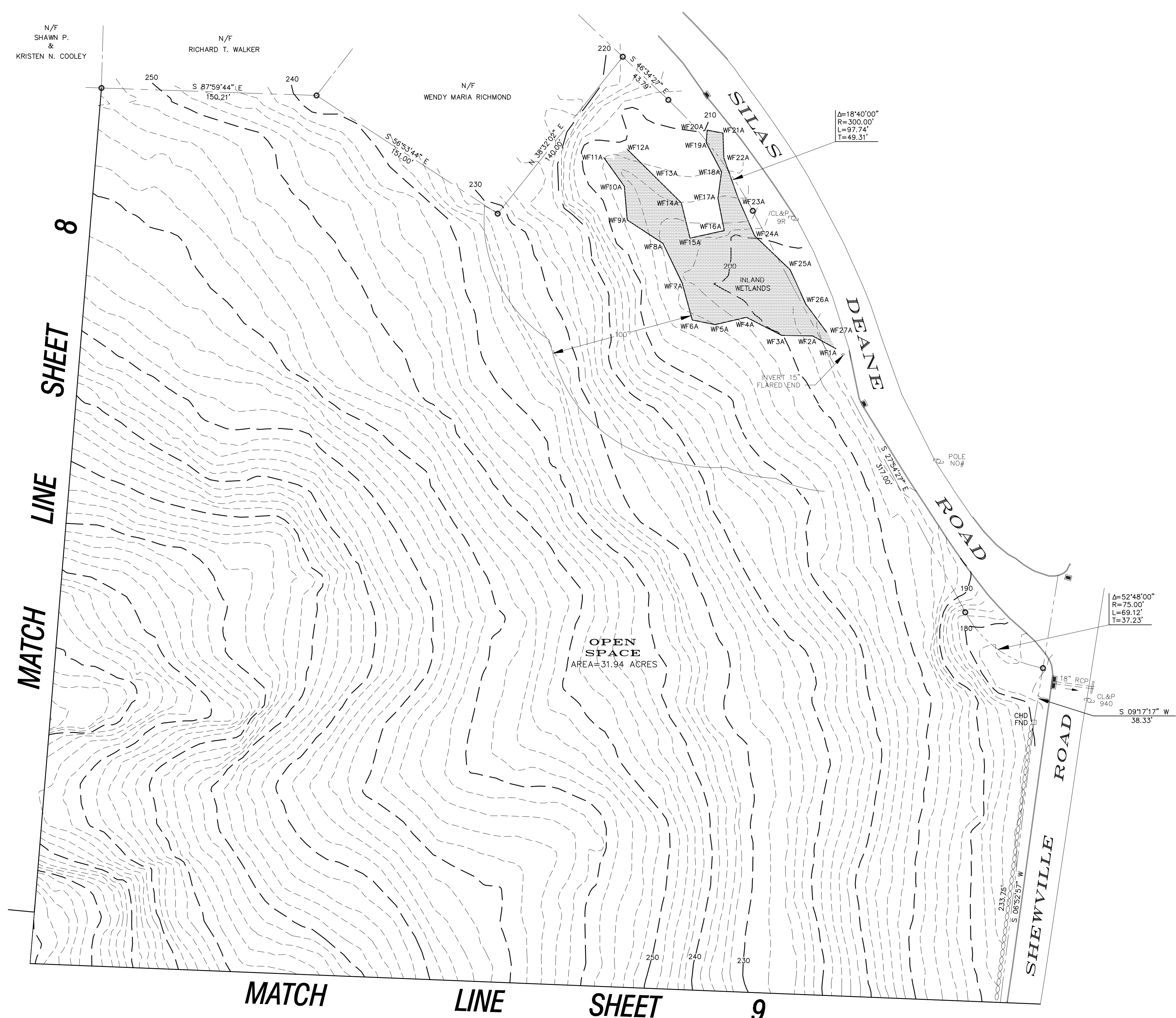
ZONING/WETLANDS OFFICER _____ DATE _____

APPROVED BY THE DIRECTOR OF PUBLIC WORKS OR THE TOWN ENGINEER FOR PUBLIC WAY LAYOUT. _____

PUBLIC WORKS DIRECTOR/TOWN ENGINEER _____ DATE _____

EROSION AND SEDIMENT CONTROL PLAN CERTIFIED BY VOTE OF THE LEDYARD PLANNING AND ZONING COMMISSION _____

CHAIRMAN OR SECRETARY OF THE LEDYARD PLANNING AND ZONING COMMISSION _____ DATE _____



LEGEND

○○○○○○○○	STONE WALL
— — — — —	PROPERTY LINE
— — — — —	STREET LINE
- - - - -	EXISTING CONTOUR
CHD FND □	CONNECTICUT HIGHWAY DEPARTMENT MONUMENT FOUND
○	UTILITY POLE
WF1	EDGE OF WETLANDS & FLAG NUMBER

NOTE: BOUNDARY LINES OF ADJOINING PROPERTIES ARE SHOWN FOR GENERAL INFORMATION PURPOSES ONLY AND ARE NOT TO BE CONSTRUED AS BEING ACCURATELY LOCATED OR DEPICTED.

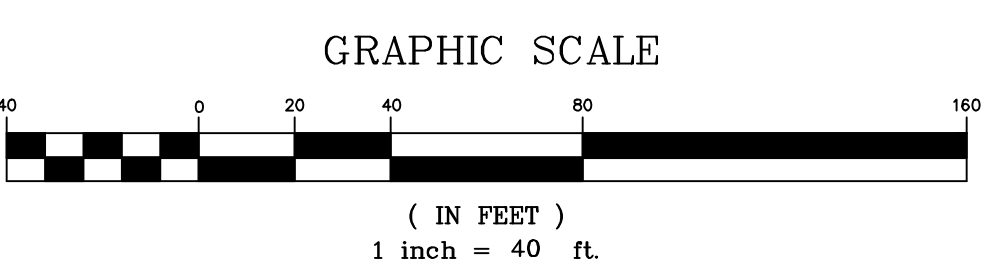
THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF THE PROFESSIONAL OPINION BY THE LAND SURVEYOR WHICH IS BASED ON HIS OR HER BEST KNOWLEDGE, INFORMATION AND BELIEF, AS SUCH IT CONSTITUTES NEITHER GUARANTEE OR WARRANTY.

THE STONE WALLS AND/OR FENCES SHOWN AS BOUNDARIES MAY HAVE IRREGULARITIES OF COURSE BETWEEN PRINCIPAL POINTS OF COURSE INDICATED.

I HAVE REVIEWED THE INLAND WETLAND BOUNDARY I DELINEATED AND I AM OF THE OPINION THAT THE WETLAND BOUNDARY IS SHOWN CORRECTLY ON THIS MAP.

Ian Cole
 IAN COLE
 SOIL SCIENTIST

DIETER & GARDNER
 LAND SURVEYORS • PLANNERS
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**PLAN SHOWING
 SHEWILLE HEIGHTS
 OPEN SPACE RESUBDIVISION
 PROPERTY OF
 84 SILAS DEANE LLC
 84 SILAS DEANE ROAD
 SHEWILLE ROAD
 AND
 58 & 59 SEABURY AVENUE
 LEDYARD, CONNECTICUT
 SCALE: 1"=40'
 FEBRUARY 2026**

THIS MAP AND SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES—"MINIMUM STANDARDS OF ACCURACY, CONTENT AND CERTIFICATION FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT", ADOPTED EFFECTIVE JUNE 21, 1996, REVISED OCTOBER 26, 2018. IT IS A BOUNDARY SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 AND TOPOGRAPHIC ACCURACY T-0. TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208
 DATE: FEBRUARY 13, 2026

SHEET 10 OF 15

PERCOLATION TEST RESULTS
 WITNESSED AND RECORDED BY DIETER & GARDNER INC. ON JULY 9,10,11 AND SEPTEMBER 26, 2025.

1 SEABURY AVENUE EXTENSION PERC BETWEEN TP 9 & 10 DEPTH 22"		2 SEABURY AVENUE EXTENSION PERC BETWEEN TP 93 & 94 DEPTH 23"	
TIME	READING	TIME	READING
12:18		12:20	6 1/2"
12:23	7 1/4"	12:25	8 3/4"
12:28	8"	12:30	12"
12:33	8 5/8"	12:35	14 1/4"
12:38	9 1/4"	12:40	16"
12:43	9 1/2"	12:45	17 1/2"
12:48	10 1/4"	12:50	19"
12:53	10 1/2"	12:55	20 1/2"
12:58	11 1/8"	1:00	22"
1:03	11 1/2"	1:05	DRY

PERC RATE: 13.3 MIN/INCH PERC RATE: 3.3 MIN/INCH

3 SEABURY AVENUE EXTENSION PERC BETWEEN TP 6 & 8 DEPTH 22"		4 SEABURY AVENUE EXTENSION PERC BETWEEN TP 89 & 90 DEPTH 19"	
TIME	READING	TIME	READING
12:19	3 3/4"	12:32	2"
12:24	9 1/2"	12:37	5"
12:29	12 1/2"	12:42	7"
12:34	15 1/4"	12:47	8"
12:39	17 1/4"	12:52	8 3/4"
12:44	19"	12:57	9 1/2"
12:49	20 1/2"	1:02	10 1/4"
12:54	DRY	1:07	11"
		1:12	11 3/4"
		1:17	12 1/2"

PERC RATE: 3.3 MIN/INCH PERC RATE: 6.7 MIN/INCH

5 SEABURY AVENUE EXTENSION PERC BETWEEN TP 13 & 14 DEPTH 21"		6 SEABURY AVENUE EXTENSION PERC BETWEEN TP 82 & 84 DEPTH 23"	
TIME	READING	TIME	READING
8:20	4"	8:25	4"
8:25	8"	8:30	8"
8:30	10 1/2"	8:35	9 1/2"
8:35	12 1/2"	8:40	10 1/4"
8:40	13 3/4"	8:45	11 1/4"
8:45	15 1/2"	8:50	12 1/4"
8:50	17"	8:55	13 1/4"
8:55	18 1/2"	9:00	14 1/4"
9:00	19 1/2"	9:05	15 1/4"
9:05	20 1/2"	9:10	16 1/4"

PERC RATE: 5 MIN/INCH PERC RATE: 5 MIN/INCH

8 SEABURY AVENUE EXTENSION PERC BETWEEN TP 85 & 87 DEPTH 23"		9 SEABURY AVENUE EXTENSION PERC BETWEEN TP 17 & 18 DEPTH 20"	
TIME	READING	TIME	READING
8:18	3 1/2"	8:22	2 1/4"
8:23	12"	8:27	5"
8:28	17 1/2"	8:32	6 3/4"
8:33	18 7/8"	8:37	8 5/8"
8:38	20"	8:42	9 5/8"
8:43	22"	8:47	10 3/4"
8:48	DRY	8:52	12 1/4"
		8:57	13"
		9:02	14 1/8"
		9:07	15 1/4"

PERC RATE: 4.4 MIN/INCH PERC RATE: 4.4 MIN/INCH

9 SEABURY AVENUE EXTENSION PERC BETWEEN TP 21 & 23 DEPTH 20"		10 SEABURY AVENUE EXTENSION PERC BETWEEN TP 73 & 74 DEPTH 24"	
TIME	READING	TIME	READING
9:21	3 1/4"	9:32	2"
9:26	4 1/2"	9:37	7 1/4"
9:31	4 3/4"	9:42	10 1/8"
9:36	5"	9:47	12 7/8"
9:41	5 1/4"	9:52	14 7/8"
9:46	5 1/2"	9:57	15 7/8"
9:51	5 3/4"	10:02	17 1/2"
9:56	6"	10:07	19 1/2"
10:01	6 1/4"	10:12	22"
10:06	6 1/2"	10:17	DRY

PERC RATE: 20 MIN/INCH PERC RATE: 3 MIN/INCH

12 SEABURY AVENUE EXTENSION PERC BETWEEN TP 77 & 79 DEPTH 19 1/2"		14 SEABURY AVENUE EXTENSION PERC BETWEEN TP 67 & 68 DEPTH 20"	
TIME	READING	TIME	READING
9:25	2"	10:30	1 1/2"
9:30	4 5/8"	10:35	5 1/2"
9:35	6 1/4"	10:40	8 1/4"
9:40	7 1/4"	10:45	10 1/4"
9:45	8 1/4"	10:50	12 1/4"
9:50	9 1/4"	10:55	14 1/4"
9:55	10 1/4"	11:00	15 5/8"
10:00	11 1/4"	11:05	16 7/8"
10:05	12 1/8"	11:10	18 1/4"
10:10	13 1/8"	11:15	DRY

PERC RATE: 4.4 MIN/INCH PERC RATE: 3.5 MIN/INCH

16 SEABURY AVENUE EXTENSION PERC BETWEEN TP 71 & 72 DEPTH 16"		17 SEABURY AVENUE EXTENSION PERC BETWEEN TP 25 & 26 DEPTH 15"	
TIME	READING	TIME	READING
10:18	5 1/4"	9:22	3 1/8"
10:23	7 1/4"	9:27	4 7/8"
10:28	8 1/2"	9:32	5 7/8"
10:33	10 1/8"	9:37	6 7/8"
10:38	10 1/2"	9:42	8"
10:43	11 1/8"	9:47	8 1/2"
10:48	12"	9:52	9"
10:53	12 1/2"	9:57	9 1/2"
10:58	13 1/4"	10:02	10 1/4"
11:03	13 7/8"	10:07	10 7/8"

PERC RATE: 8 MIN/INCH PERC RATE: 8 MIN/INCH

18 SEABURY AVENUE EXTENSION PERC BETWEEN TP 59 & 60 DEPTH 18"		19 SEABURY AVENUE EXTENSION PERC BETWEEN TP 97 & 99 DEPTH 24"	
TIME	READING	TIME	READING
10:19	3 1/4"	12:50	5"
10:24	4 1/2"	12:55	9"
10:29	5 1/4"	1:00	11"
10:34	6 1/8"	1:05	13"
10:39	6 7/8"	1:10	14"
10:44	7 1/8"	1:15	15"
10:49	7 3/8"	1:20	16"
10:54	8 1/2"	1:25	16 3/4"
10:59	8 7/8"	1:30	17 5/8"
11:04	9 1/4"	1:35	18 1/4"
		1:40	18 7/8"

PERC RATE: 13.3 MIN/INCH PERC RATE: 8 MIN/INCH

20 SEABURY AVENUE EXTENSION PERC BETWEEN TP 61 & 63 DEPTH 19"		22 SEABURY AVENUE EXTENSION PERC BETWEEN TP 49 & 51 DEPTH 19"	
TIME	READING	TIME	READING
10:23	4"	12:02	6"
10:28	6 1/2"	12:07	7 3/4"
10:33	7 1/8"	12:12	8 3/4"
10:38	8 3/8"	12:17	9 7/8"
10:43	9 1/4"	12:22	10 3/4"
10:48	10"	12:27	11 3/4"
10:53	11"	12:32	12 1/4"
10:58	12"	12:37	12 3/4"
11:03	12 3/4"	12:42	13 1/2"
11:08	13 1/2"	12:47	14 1/8"
11:13	14 1/4"		

PERC RATE: 6.7 MIN/INCH PERC RATE: 8 MIN/INCH

23 SEABURY AVENUE EXTENSION PERC BETWEEN TP 103 & 104 DEPTH 23"		24 SEABURY AVENUE EXTENSION PERC BETWEEN TP 53 & 55 DEPTH 21"	
TIME	READING	TIME	READING
12:00	3"	12:10	4 1/2"
12:05	9 1/4"	12:15	8 1/4"
12:10	12 1/4"	12:20	10 1/4"
12:15	14 1/4"	12:25	12 1/4"
12:20	15 1/4"	12:30	13 1/2"
12:25	16 1/4"	12:35	14 7/8"
12:30	17 1/2"	12:40	15 7/8"
12:35	18 1/2"	12:45	16 3/4"
12:40	19 1/2"	12:50	17 3/4"
12:45	20 5/8"	12:55	18 3/4"

PERC RATE: 5 MIN/INCH PERC RATE: 5.7 MIN/INCH

25 SEABURY AVENUE EXTENSION PERC BETWEEN TP 105 & 107 DEPTH 24"		26 SEABURY AVENUE EXTENSION PERC BETWEEN TP 41 & 43 DEPTH 20"	
TIME	READING	TIME	READING
11:53	3"	12:03	6 1/4"
11:58	9"	12:08	10 1/4"
12:03	13"	12:13	11 3/4"
12:08	15"	12:18	13 1/2"
12:13	17"	12:23	14 1/2"
12:18	18 1/4"	12:28	15 3/4"
12:23	19 1/4"	12:33	16 1/2"
12:28	20 1/2"	12:38	17 3/4"
12:33	22"	12:43	18 1/2"
12:38	DRY	12:48	DRY

PERC RATE: 3.3 MIN/INCH PERC RATE: 6.7 MIN/INCH

28 SEABURY AVENUE EXTENSION PERC BETWEEN TP 45 & 47 DEPTH 25"		84 SILAS DEANE ROAD PERC BETWEEN TP 3 & 4 DEPTH 21"	
TIME	READING	TIME	READING
12:02	4"	1:55	2 1/2"
12:07	9 3/4"	2:00	6 1/2"
12:12	12"	2:05	9 1/4"
12:17	14"	2:10	11"
12:22	15 1/4"	12:22	12 1/2"
12:27	17 1/4"	12:27	13 1/2"
12:32	19 1/2"	12:32	14 1/2"
12:37	21 1/2"	12:37	15 1/2"
12:42	DRY	12:42	16 1/2"
		12:47	17 1/2"

PERC RATE: 4 MIN/INCH PERC RATE: 5 MIN/INCH

DEEP TEST PIT DATA
 WITNESSED AND RECORDED BY JOSEPH BLANCHARD, LEDGE LIGHT HEALTH DISTRICT ON 4/19/2023.

64 Silas Deane Rd Lot 4/15
 TP1 95"
 0-7" ls
 7-30" sst
 30-44" tan clay of sandstone with
 some inconsistent shaly
 44-95" grey, fine med sand & gravel
 with some shaly? 47" roots
 No ledge No clay

TP2 75" ledge
 0-7" ls
 7-35" sst
 35-75" grey fine-med sand & gravel
 41" roots 75" ledge
 No ledge No shaly

TP3 80" ledge (grey rock)
 0-7" ls
 7-30" sst
 30-61" tan clay of sandstone with
 some shaly throughout not
 61-80" tan clay of fine med sand & gravel
 70" roots No ledge No shaly
 No ledge No shaly?

TP4 86"
 0-7" ls
 7-26" sst
 26-54" tan clay of sandstone with
 some shaly
 54-70" tan clay of fine med sand
 & gravel
 70-86" roots
 86" ledge
 No ledge No shaly

TP5 91"
 0-7" ls
 7-30" sst
 30-81" tan clay of fine med sand
 & gravel slightly compact
 81" ledge
 No ledge No shaly

TP6 80"
 0-10" ls
 10-27" sst
 27-47" sst slightly compact
 47-80" tan clay of fine med sand &
 gravel
 80" ledge
 No ledge No shaly

TP7 82"
 0-9" ls
 9-32" sst
 32-60" tan clay of sandstone with
 shaly throughout
 60-82" dark grey med sand & gravel
 some shaly throughout
 82" ledge
 No ledge No shaly

TP8 94"
 0-9" ls
 9-33" sst
 33-55" tan clay of sandstone with
 shaly throughout
 55-81" dark grey med sandstone
 compact & shaly
 81" ledge
 No ledge No shaly

TP9 83"
 0-8" ls
 8-33" sst
 33-58" tan clay of fine sand & gravel
 & some shaly
 58-83" tan clay of sandstone with
 shaly throughout
 83" ledge
 No ledge No shaly

TP10 83"
 0-8" ls
 8-33" sst
 33-58" tan clay of fine sand & gravel
 & some shaly
 58-83" tan clay of sandstone with
 shaly throughout
 83" ledge
 No ledge No shaly

SANITARY DESIGN CRITERIA: (ALL HOMES TO BE SERVED BY PUBLIC WATER)
 A. ALL PRIMARY AND SEPTIC SYSTEM DESIGNS ARE DESIGNED FOR THREE-BEDROOM HOMES.
 NO TUBS OVER 100 GALLONS IN SIZE OR GARBAGE DISPOSAL INTO SEPTIC SYSTEM PLANNED.
 B. MINIMUM REQUIRED AREA IS 495 S.F./ 10 S.F./L.F.
 HF = HYDRAULIC FACTOR BASED ON GRADIENT AND DEPTH TO AVERAGE RESTRICTION
 FF = FLOW FACTOR, 1.5 FOR THREE BEDROOM HOME DESIGN
 PF = PERC FACTOR, 1.0 FOR PERC RATE UP TO & 10.0 MIN/INCH

STREET ADDRESS		DESIGN PITS	GRADIENT %	RESTRICTION	PERCOLATION RATE	HF	FF	PF	MLSS	SYSTEM
1 SEABURY AVENUE EXTENSION	10 & 12	8.1-10.0%	58"	13.3 MIN/INCH	16	1.5	1.25	30'	36 LF GST 6218	
2 SEABURY AVENUE EXTENSION	93 & 94	6.1-8.0%	38"	3.3 MIN/INCH	24	1.5	1.0	36'	36 LF GST 6218	
3 SEABURY AVENUE EXTENSION	6 & 8	NO RESTRICTION	MLSS	NOT	APPLICABLE	36'	36 LF GST 6218			
4 SEABURY AVENUE EXTENSION	89 & 90	3.1-4%	25"	6.7 MIN/INCH	42	1.5	1.0	63'	65 LF GST 6218	
5 SEABURY AVENUE EXTENSION	14 & 15	10.1-15.0%	34"	5.0 MIN/INCH	20	1.5	1.0	30'	36 LF GST 6218	
6 SEABURY AVENUE EXTENSION	82 & 84	6.1-8.0%	29"	5.0 MIN/INCH	28	1.5	1.0	42'	50 LF GST 6218	
8 SEABURY AVENUE EXTENSION	86 & 87	10.1-15.0%	48"	2.5 MIN/INCH	16	1.5	1.0	24'	36 LF GST 6218	
7 SEABURY AVENUE EXTENSION	17 & 18	8.1-10%	25"	4.4 MIN/INCH	30	1.5	1.0	45'	36 LF GST 6218	
11 SEABURY AVENUE EXTENSION	21 & 23	8.1-10%	35"	20.0 MIN/INCH	24	1.5	1.25	45'	36 LF GST 6218	
12 SEABURY AVENUE EXTENSION	77 & 79	4.1-6.0%	38"	4.4 MIN/INCH	26	1.5	1.0	39'	36 LF GST 6218	
14 SEABURY AVENUE EXTENSION	67 & 68	4.1-6.0%	29"	3.5 MIN/INCH	34	1.5	1.0	51'	52 LF GST 6218	
16 SEABURY AVENUE EXTENSION	71 & 72	6.1-8.0%	45"	8.0 MIN/INCH	20	1.5	1.0	30'	36 LF GST 6218	
17 SEABURY AVENUE EXTENSION	25 & 26	6.1-8.0%	29"	8.0 MIN/INCH	28	1.5	1.0	42'	36 LF GST 6218	
18 SEABURY AVENUE EXTENSION	59 & 60	6.1-8.0%	29"	13.3 MIN/INCH	28	1.5	1.25	52.5'	54 LF GST 6212	
19 SEABURY AVENUE EXTENSION	97 & 99	6.1-8.0%	50"	8.0 MIN/INCH	18	1.5	1.0	27'	36 LF GST 6218	
20 SEABURY AVENUE EXTENSION	61 & 63	6.1-8.0%	29"	6.7 MIN/INCH	28	1.5	1.0	42'	50 LF GST 6218	
22 SEABURY AVENUE EXTENSION	49 & 51	8.1-10%	39"	8.0 MIN/INCH	20	1.5	1.0	30'	36 LF GST 6218	
21 SEABURY AVENUE EXTENSION	103 & 104	NO RESTRICTION	MLSS	NOT	APPLICABLE	36 LF GST 6218				
24 SEABURY AVENUE EXTENSION	53 & 55	>15.0%	48"	5.7 MIN/INCH	14	1.5	1.0	21'	36 LF GST 6218	
23 SEABURY AVENUE EXTENSION	105 & 107	NO RESTRICTION	MLSS	NOT	APPLICABLE	36 LF GST 6218				
26 SEABURY AVENUE EXTENSION	41 & 43	>15.0%	57"	4.0 MIN/INCH	10	1.5	1.0	15'	36 LF GST 6218	
28 SEABURY AVENUE EXTENSION	45 & 47	>15.0%	47"	4.0 MIN/INCH	14	1.5	1.0	21'	36 LF GST 6218	
84 SILAS DEANE ROAD	3 & 4	>15.0%	33"	5.0 MIN/INCH	18	1.5	1.0	27'	50 LF GST 6212	

PERCOLATION TEST DATA
 MINIMUM LEACHING SYSTEM SPREAD
 AND
 SEPTIC SYSTEM DESIGN CRITERIA
 SHEWVILLE HEIGHTS
 OPEN SPACE RESUBDIVISION
 PROPERTY OF
 84 SILAS DEANE LLC
 84 SILAS DEANE ROAD
 SHEWVILLE ROAD
 AND
 58 & 59 SEABURY AVENUE
 LEDYARD, CONNECTICUT
 FEBRUARY 2026

THIS DRAWING IS THE PROPERTY OF THE LAND SURVEYOR.
 THIS PLAN AND REPRODUCTIONS, ADDITIONS OR REVISIONS OF
 THIS PLAN ARE NOT VALID WITHOUT THE EMBOSSED SEAL AND
 SIGNATURE OF THE LAND SURVEYOR WHO PREPARED THIS PLAN.<

CONSTRUCTION SEQUENCING:

CONSTRUCTION OF SEABURY AVENUE EXTENSION.

- The Applicant shall remove surface soil in the area proposed for the installation of the anti-tracking pad construction entrance at the beginning of Seabury Avenue Extension.
- Any stumps removed shall either be ground in place or removed to a location approved, in advance, by the Town of Ledyard Zoning Enforcement Officer. In no event shall stumps be buried on site.
- Surface soil shall be stripped and shall be stockpiled in the surface soil stockpile locations delineated on the Plan.
- Surface soil shall be retained on site for eventual use in the stabilization of all disturbed areas of the property. Surface soil stockpiles shall be stabilized by installing a single row of silt fence around each stockpile location. The stockpiles shall be constructed at a slope not to exceed 4:1 and shall be stabilized by seeding with an annual ryegrass mix and mulch. The annual ryegrass mix shall be applied at a rate of forty (40) pounds per acre. Mulch shall be applied at the rate of eighty (80) pounds per one thousand (1,000) square feet and shall be spread by hand or with a mulch blower.
- The road shall be "boxed out" and trenches excavated for the installation of all utilities, including stormwater drainage.
- Subsequent to the installation of bedding, utilities, including drainage pipe, shall be installed as delineated on the Plan.
- Catch basins shall remain elevated in order to ensure that stormwater is not introduced into the stormwater drainage system.
- Disturbed areas shall be stabilized by spreading stockpiled surface soil over these areas at a thickness of not less than four (4") inches. Areas to be seeded will be prepared by spreading ground limestone equivalent to fifty (50%) percent calcium plus magnesium oxide applied at a rate of fifty (50) pounds per one thousand (1,000) square feet. Fertilizer (10-10-10) is to be applied at a rate of seven and one-half (7.5) pounds per one thousand (1,000) square feet. Following the initial application of lime and fertilizer, there are to be no periodic applications of lime and fertilizer. Disturbed areas will be seeded with a seeding mix of Kentucky Bluegrass applied at a rate of twenty (20) pounds per acre, Creeping Red Fescue applied at a rate of twenty (20) pounds per acre and Perennial Ryegrass applied at a rate of five (5) pounds per acre for a total application of forty-five (45) pounds per acre. A hydroseed mix utilizing comparable cultivars shall be a suitable substitute. In the event that a hydroseed mix is not utilized, after seeding, the areas seeded shall be stabilized with hay mulch immediately applied at a rate of seventy (70) pounds per one thousand (1,000) square feet and anchored by tracking. Seeding shall only occur between April 1 and June 15 and August 15 to October 1.
- Once all disturbed areas have been thoroughly stabilized, erosion control measures shall be removed.

INDIVIDUAL LOT DEVELOPMENT (WITH UPLAND REVIEW AREA ACTIVITIES).

- The Applicant shall clear, but not grub, within the limits of development activity for each lot on the Plan.
- The Applicant shall install a construction entrance to each lot which is being developed in accordance with the "Temporary Construction Entrance" detail.
- The Applicant shall install a single row of erosion control in the location delineated on each lot in locations down gradient from proposed construction activities.
- The Applicant shall strip the surface soil in the area of construction of the dwelling house, yard, septic system and driveway. Surface soil shall be retained on each lot for eventual use in the stabilization of disturbed areas.
- No stumps shall be buried on site.
- Construction of the dwelling house, septic system, driveway and utility installation shall be completed.
- Upon the completion of construction of improvements on each lot, all disturbed areas shall be stabilized by loaming the same with not less than four (4") inches of topsoil obtained from the surface soil stockpile. Areas to be seeded will be prepared by spreading ground limestone equivalent to fifty (50%) percent calcium plus magnesium oxide applied at a rate of one hundred (100) pounds per one thousand (1,000) square feet. Fertilizer (10-10-10) is to be applied at a rate of fifteen (15) pounds per one thousand (1,000) square feet. Seeding shall be applied with a mix of Kentucky Bluegrass applied at a rate of twenty (20) pounds per acre, Creeping Red Fescue applied at a rate of twenty (20) pounds per acre and Perennial Ryegrass applied at a rate of five (5) pounds per acre for a total application of forty-five (45) pounds per acre. Hydroseed, utilizing comparable cultivars shall be an acceptable substitute for the referenced seeding mix. After seeding, and in the event that a hydroseed application is not used, the areas seeded shall be stabilized with hay mulch immediately applied at a rate of seventy (70) pounds per one thousand (1,000) square feet and anchored by tracking. Seeding shall only occur between April 1 and June 15 and August 15 to October 1.

EROSION & SEDIMENT CONTROL PLAN

1. NARRATIVE

1.1 PURPOSE AND DESCRIPTION OF PROJECT.

THE PURPOSE OF THIS PROJECT IS TO SUBDIVIDE 48.58 ACRES OF LAND TO CREATE 23 NEW RESIDENTIAL BUILDING LOTS. LOTS RANGE IN SIZE FROM 0.46 ACRES TO 0.85 ACRES. 898 PLUS/MINUS LINEAR FEET OF ROAD WILL BE CONSTRUCTED. THE PLANNED PAVEMENT WIDTH IS 28 FEET. ROAD DRAINAGE HAS BEEN DESIGNED BY A PROFESSIONAL ENGINEER, AND INCLUDES CURBED PAVEMENT EDGES AND CATCH BASINS WITH A MINIMUM SUMP DEPTH OF 2 FEET. THE UPLANDS ARE GENTLY TO LOCALLY SLOPING AND WOODED.

IT IS ANTICIPATED THAT ONCE WORK ON THE PUBLIC IMPROVEMENTS BEGINS, IT WILL CONTINUE UNTIL THE PROJECT IS COMPLETED. IT IS ANTICIPATED THAT THE ROAD CONSTRUCTION WILL BE COMPLETED WITHIN ONE YEAR OF COMMENCEMENT.

(STEVEN RICE 860-625-0102) OR OWNER AT TIME OF CONSTRUCTION SHALL BE RESPONSIBLE FOR THE SEDIMENT CONTROL MEASURES.

1.2 ESTIMATES OF THE TOTAL AREA OF THE PROJECT SITE AND THE TOTAL AREA OF THE SITE THAT IS EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES.

THE TOTAL PROJECT AREA IS 48.58 ACRES OF WHICH 7.5+ ACRES TOTAL WILL BE DISTURBED TO FACILITATE THE CONSTRUCTION OF THE ROAD, HOMES, DRIVEWAYS AND ESTABLISHMENT OF REASONABLE YARD AREAS.

1.3 THE PLANNED START AND COMPLETION DATES FOR EACH PHASE OF THE PROJECT.

IT IS ANTICIPATED THAT THE PROJECT (PUBLIC IMPROVEMENT PORTION) WILL COMMENCE DURING THE SUMMER OF 2026 AND BE COMPLETED BEFORE THE END OF FALL 2027.

1.4 - WOOD CHIPS, SILT FENCE AND SILT FENCE BACKED WITH HAY BALES FOR STRUCTURAL SUPPORT MAY BE UTILIZED. ALL SILT FENCE SHALL BE MAINTAINED SUCH THAT SEDIMENTS WILL BE REMOVED WHEN REACHING A HEIGHT OF 0.5 FEET. BREACHES IN SILT FENCE SHALL BE REPAIRED IMMEDIATELY. THE SILT FENCE SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RAINFALL OF 0.5 INCH IN A 24 HOUR PERIOD.

1.5 - STOCKPILE MANAGEMENT WILL BE DONE IN ACCORDANCE WITH THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL. TOPSOIL STOCKPILES WILL BE LOCATED AS DEPICTED ON THE PLANS, AND WILL BE TREATED AS DISTURBED GROUND, I.E.: SURROUNDED BY SILT FENCE, AND SEEDED TO GRASS AFTER ALL THE TOPSOIL TO BE STRIPPED IS PLACED IN THE STOCKPILE. STOCKPILE SLOPES SHALL NOT EXCEED 2:1.

1.6 - TOPSOILING SHALL TAKE PLACE AS AREAS WITHIN THE PROJECT SITE ARE BROUGHT TO GRADE. THE TOPSOIL THAT SHALL BE SPREAD IS OF NATURAL ORIGIN AND WILL BE TAKEN FROM THE TOPSOIL STOCKPILE(S).

1.7 - PERMANENT SEEDING WILL BE DONE AS DISTURBED AREAS ARE BROUGHT TO GRADE AND TOPSOILED AS LONG AS SUCH SEEDING IS DONE BETWEEN APRIL 1 AND JUNE 15 OR AUGUST 15 THROUGH NOVEMBER 15. WITHIN 7 DAYS AFTER TOPSOIL IS APPLIED SEED MIX WILL BE BROADCAST AT THE PRESCRIBED RATE FOR THAT PARTICULAR MIX. THE SELECTED SEED MIX WILL BE FROM THE CONNECTICUT GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

MAINTENANCE: THE SEEDBED WILL BE INSPECTED AT LEAST ONCE PER WEEK, AND WITHIN 24 HOURS OF A RAINFALL IN AN AMOUNT EXCEEDING 0.5 INCHES IN 24 HOURS. IN ANY AREAS THAT SUSTAIN DAMAGE, THE TOPSOIL WILL BE REAPPLIED AND SMOOTHED, AND RESEDED AS DESCRIBED ABOVE.

1.8 (CONSTRUCTION SEQUENCE). PRIOR TO THE COMMENCEMENT OF MAJOR EARTH DISTURBANCES, THE FOLLOWING SHALL BE IN PLACE:

1.8A - CONSTRUCTION ENTRANCES AS DEPICTED ON PLAN.

1.8B - STAKEOUT LIMITS OF DISTURBANCE ASSOCIATED WITH THE PROPOSED CONSTRUCTION. CLEAR TREES, CHIP WOOD AND BRUSH WOOD CHIPS MAY BE TRUCKED OFF SITE OR SAVED FOR USE AS MULCH ON THE PROJECT SITE. INSTALL SILT FENCE/HAYBALES WITH WOOD CHIPS.

1.8C - INSTALL SEDIMENT BARRIERS AS DEPICTED ON THE PLANS.

1.8D - REMOVE STUMPS FROM ROADWAY.

1.8E - STRIP TOPSOIL FROM THE ROADWAY AND STOCKPILE TOPSOIL.

1.8F - GRADE THE ROAD TO ATTAIN THE PLANNED SUBGRADE PROFILE AND GRADE SIDESLOPES TO PLAN.

1.8G - APPLY TOPSOIL AND PERMANENT SEED MIX AND APPLY AND ANCHOR MULCH TO ALL FINISHED SLOPES.

1.8H - INSTALL ALL DRAINAGE FACILITIES STARTING AT THE OUTFALL AND PROCEEDING UPGRADIENT. THE CONTRACTOR WILL ENSURE THAT ADEQUATE PROTECTION IS PROVIDED AT THE OUTLET OF THE DRAINAGE SYSTEM SO THAT SEDIMENTS WILL BE PREVENTED FROM MIGRATING OFF THE SITE. ON A REGULAR BASIS AND CLEANED AS NEEDED TO MAINTAIN PROPER FUNCTION.

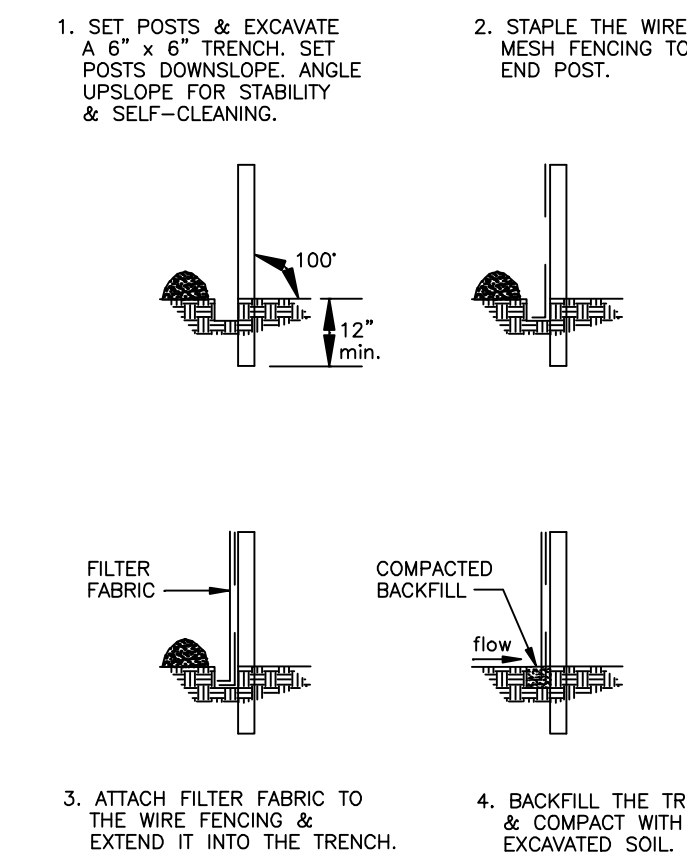
1.8I - PLACE, GRADE AND COMPACT THE SUBGRADE AGGREGATE TO ESTABLISH THE ROADWAY BASE.

1.8J - TOPSOIL AND GRADE ALL SLOPES/DISTURBED AREAS WITHIN 2 FEET OF THE OUTSIDE OF THE PROPOSED CURBS.

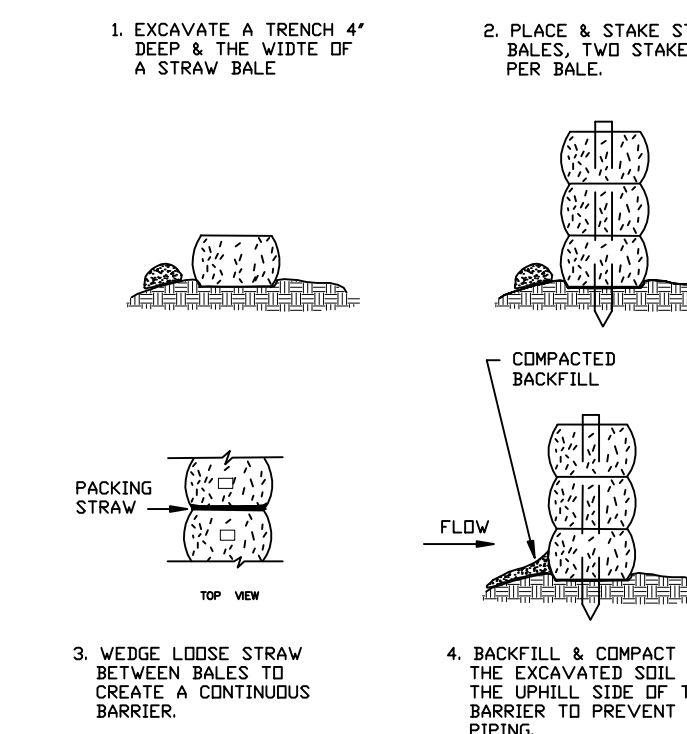
1.8K - LAY DOWN FIRST COURSE OF BITUMINOUS PAVEMENT.

1.8L - INSTALL CURBING.

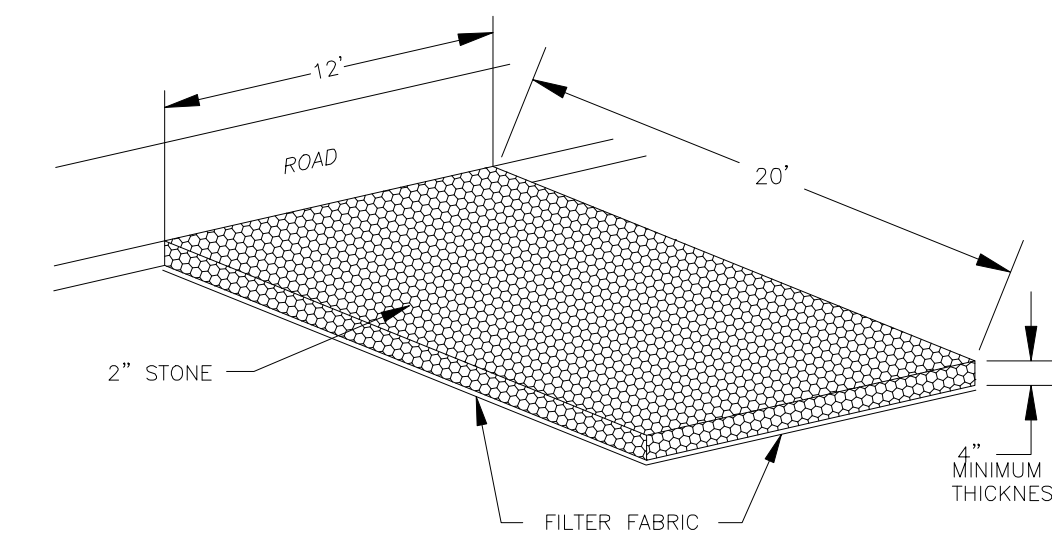
1.8M - APPLY TOP COURSE OF BITUMINOUS PAVEMENT.



FILTER FABRIC SEDIMENT BARRIER
NOT TO SCALE



CONSTRUCTION OF A STRAW BALE BARRIER
NOT TO SCALE



TEMPORARY CONSTRUCTION ENTRANCE FOR HOMES
NOT TO SCALE

APPROVED BY THE LEDYARD PLANNING AND ZONING COMMISSION AS TO THE COMPLIANCE WITH THE REGULATIONS GOVERNING THE SUBDIVISION OF LAND. ALL IMPROVEMENTS SHALL BE COMPLETED BY _____ DATE _____

CHAIRMAN OR SECRETARY _____ DATE _____

LOT NUMBERS ASSIGNED BY THE ASSESSOR _____

ASSESSOR _____ DATE _____

IWWC APPLICATION# _____

APPROVED, _____

NO PERMIT NECESSARY. (NOT WITHIN A REGULATED AREA)

NOT APPLICABLE AT THIS TIME. (WITHIN A REGULATED AREA; NO REGULATED ACTIVITY PROPOSED AT THIS TIME.)

ZONING/WETLANDS OFFICER _____ DATE _____

APPROVED BY THE DIRECTOR OF PUBLIC WORKS OR THE TOWN ENGINEER FOR PUBLIC WAY LAYOUT. _____

PUBLIC WORKS DIRECTOR/TOWN ENGINEER _____ DATE _____

EROSION AND SEDIMENT CONTROL PLAN CERTIFIED BY VOTE OF THE LEDYARD PLANNING AND ZONING COMMISSION

CHAIRMAN OR SECRETARY OF THE LEDYARD PLANNING AND ZONING COMMISSION _____ DATE _____

PLAN SHOWING
CONSTRUCTION SEQUENCING
EROSION AND SEDIMENT CONTROL
NARRATIVE AND DETAILS
SHEVILLE HEIGHTS
OPEN SPACE RESUBDIVISION
PROPERTY OF
84 SILAS DEANE LLC
84 SILAS DEANE ROAD
SHEVILLE ROAD
AND
58 & 59 SEABURY AVENUE
LEDYARD, CONNECTICUT
FEBRUARY 2026

DIETER & GARDNER
LAND SURVEYORS • PLANNERS
P.O. BOX 335
1641 CONNECTICUT ROUTE 12
GALES FERRY, CT. 06335
(860) 464-7455
EMAIL: DIETER.GARDNER@YAHOO.COM

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TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-0460

Agenda Date: 4/7/2026

Agenda #: B.

LAND USE APPLICATION

Subject/Application:

IWWC#26-7SITE-1947 Center Groton Road (Map ID:67-430-1947), Ledyard CT,-Applicant, EG Home LLC- Agent, William Sweeney, Esq.- Property Owners, 1947 Center Groton Road LLC, for regulated activities associated with construction of a 72-unit multifamily development & associated site improvements. (Submitted 4/1/26, Date of receipt 4/7/26, DRD 6/10/26)

Background:

(type text here)

Land Use Director/Town Planner:

(type text here)



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-0141

Agenda Date: 4/7/2026

Agenda #: C.

LAND USE APPLICATION

Subject/Application:

IWWC#26-2SITE - 31 Church Hill Road, (Map ID: 40-490-31) Ledyard, CT - Agent, Peter Gardner, L.S. - Property Owners, David & Sara Holdridge, for regulated activities associated with the construction of a driveway, including two wetland crossings and associated site improvements, to serve a future single-family residence. Application APPROVED WITH CONDITIONS by the IWWC on 3/3/26. Applicant requests Transfer of the Approved Permit to Ty Curtis per Section 11.9.

Background:

(type text here)

Land Use Director/Town Planner:

(type text here)

FD#1

TOWN OF LEDYARD
INLAND WETLANDS AND WATERCOURSES COMMISSION (IWWC)
APPLICATION FOR PERMIT (Or Commission ruling that a permit is not needed)

Street No./Name: 31 Church Hill Rd

Application No. IWWC# 26-2517E
Receipt Date 2/3/26

Date Submitted 1/28/26

Applicant/Agent David + Sara Holdridge Owner (if different)
Address 68 A Spicer Hill Rd, Ledyard, Ct Address of Owner
Phones 860 917 9614 cell Phone

RECEIVED
JAN 28 2026

Land Use Department

- I have received information on the Army Corps of Engineers permit procedure.
- I have read and have included all the application and site plan requirements in Section 7 of the IWWC Regulations

Signature of Applicant/ Agent
David A Holdridge
Sara Holdridge

Location of Property 31 Church Hill Road

Tax Assessor's Map No. 40 Zoning District R-60

Written Description of Proposed Activity Construct 12 ft wide driveway
two wetlands crossings

Proposed Erosion/ Sediment Control Measures: SILT FENCE

Total Area of Site 3.37 ACRES Total Area of Wetlands per Official Inventory Map 10,100± sq ft

Amount of Fill, in Cubic Yards 300± Disturbed Area, in Square Feet 3500± or in Acres

Area Increase/Decrease in Wetlands 3500± sq ft (For Map Amendment Only*)

Soil Types from USDA Soil Survey CHARLTON - HOLLIS

General Description of Vegetative Cover WOODS

Name and Address of Adjacent Property Owners

Robert + Rachel Barnes 29 Church Hill Rd.	Lawrence + Victor Lawrence 15 Spicer Hill Rd
Robert + Elaine Pleas 34 Church Hill Rd.	Jacob Fedors + Mary Malerba 894 R Col. L. Hwy
Joseph + Michelle Denny 30 Church Hill Rd.	Alexander + Susan Rousseau 38 Church Hill Rd
Robert + Barnett 61 Church Hill Rd.	Jacob + Angela Montoya 43 Spicer Hill Rd

Anticipated Start Date Spring 2026 Completion Date Fall 2026

List previous IWWC application #'s

IWW Commission Disposition: IWWC Regulations; Section Classification

Signature of Chair

FEE: [] + \$60.00 State Fee = [] DATE PAID [] RECEIPT # []



Inland Water Resources Division
 Department of Environmental Protection
 79 Elm Street, 3rd Floor
 Hartford, CT 06106-5127
www.ct.gov/dep

FD#2
 RECEIVED

GIS CODE #: _____ JAN 28 2026
 For DEP Use Only

Land Use Department

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Complete, print, **sign**, and mail this form in accordance with the instructions on pages 2 and 3.

PART I: To Be Completed By The Municipal Inland Wetlands Agency Only

- DATE ACTION WAS TAKEN (use drop-down box): Year _____ Month _____
- ACTION TAKEN (use drop-down box): _____
- WAS A PUBLIC HEARING HELD? (select one only) Yes No
- NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
 (print): _____ (signature) _____

PART II: To Be Completed By The Municipal Inland Wetlands Agency Or The Applicant

- TOWN IN WHICH THE ACTION IS OCCURRING: Looyms
 Does this project cross municipal boundaries? (select one only) Yes No
 If Yes, list the other town(s) in which the action is occurring: _____
- LOCATION: USGS Quad Map Name (see hyperlink): UNUSVILLE, CONN
Quad Number (see hyperlink): _____
 Subregional Drainage Basin Number (see hyperlink): 303
- NAME OF APPLICANT, VIOLATOR OR PETITIONER: DAVID HOLDEN
- NAME & ADDRESS/LOCATION OF PROJECT SITE: 31 GUNN HILL ROAD
 Briefly describe the action/project/activity: Temporary Permanent
- ACTIVITY PURPOSE CODE (Use drop-down box): A
- ACTIVITY TYPE CODE(S) (Use drop-down box): 1, 9, 12
- WETLAND / WATERCOURSE AREA ALTERED [must be provided in acres or linear feet as indicated]:
 Wetlands: 0.08 acres Open Water Body: _____ acres Stream: _____ linear feet
- UPLAND REVIEW AREA ALTERED [must be provided in acres]: 0.35 acres
- AREA OF WETLANDS AND / OR WATERCOURSES RESTORED, ENHANCED OR CREATED: 0 acres
 [must be provided in acres]

PART III: To Be Completed By The DEP

DATE RECEIVED: _____ DATE RETURNED TO DEP: _____
 FORM COMPLETED: YES NO FORM CORRECTED / COMPLETED: YES NO

JAN 28 2026

Land Use Department

WE ARE FAMILIAR WITH ALL THE
INFORMATION PROVIDED IN THE APPLICATION
AND ARE AWARE OF THE PENALTIES
FOR OBTAINING A PERMIT THROUGH
DECEPTION OR THROUGH INACCURATE
OR MISLEADING INFORMATION

MEMBERS AND AGENTS OF THE INWC
MAY INSPECT THE SITE AT REASONABLE
TIMES, DURING THE PENDING OF AN
APPLICATION AND FOR THE LIFE OF
THE PERMIT

David A Holdridge
Sarah J Holdridge

EROSION & SEDIMENTATION CONTROL PLAN

THIS PLAN HAS BEEN DEVELOPED TO MINIMIZE EROSION AND SEDIMENTATION AND REDUCE THE IMPACT OF STORM WATER RUNOFF DURING CONSTRUCTION USING ENGINEERING PRINCIPALS DETAILED IN THE CONNECTICUT GUIDELINES FOR SOIL AND EROSION AND SEDIMENT CONTROL SEPTEMBER 30, 2023.

THE ACCOMPANYING PLANS PROVIDE THE FOLLOWING INFORMATION FOR THE IMPLEMENTATION OF THIS PLAN:

- LOCATION OF SEDIMENT CONTROL BARRIERS
- FINISHED GRADES TO BE ACHIEVED
- CONSTRUCTION SEQUENCE AND DETAILS

THIS PROJECT IS FOR THE INSTALLATION OF A DRIVEWAY.

THE OWNER AT TIME OF CONSTRUCTION SHALL BE RESPONSIBLE FOR IMPLEMENTING THIS PLAN AND MAINTAINING EROSION/SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. THERE ARE INLAND WETLANDS ON THIS SITE.

CONSTRUCTION SEQUENCE:

1. STAKEOUT LIMITS OF CONSTRUCTION FOR THE DRIVEWAY.
2. INSTALL SEDIMENTATION CONTROL BARRIERS AS SHOWN ON THE PLAN.
3. REMOVE EXISTING VEGETATION AND TOPSOIL WITHIN THE LIMITS OF CONSTRUCTION. STOCKPILE TOPSOIL AS SHOWN ON THE PLAN.
4. ROUGH GRADE THE DRIVEWAY AND INSTALL PIPES AS SHOWN.
5. FOLLOWING THE INSTALLATION OF DRIVEWAY, FINISH GRADE ALL DISTURBED AREAS.
6. LOAM AND SEED ALL DISTURBED AREAS.

MAINTENANCE:

INSPECT SEDIMENT BARRIERS AFTER EACH STORM EVENT AND REPAIR OR REPLACE AS NECESSARY. CLEAN OUT OF ACCUMULATED SEDIMENT IS NECESSARY IF 1/2 OF THE ORIGINAL HEIGHT OF THE BARRIER BECOMES FILLED IN WITH SEDIMENT.

GENERAL NOTES:

1. MAINTAIN ALL SEDIMENT AND EROSION CONTROL FACILITIES UNTIL ALL AREAS HAVE BEEN STABILIZED.
2. LIMITS OF DISTURBANCE AND EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE CONSIDERED AS TYPICAL MINIMUM STANDARDS. THE OWNER AT THE TIME OF CONSTRUCTION WILL BE RESPONSIBLE FOR INSTALLING AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL AND FOR IMPLEMENTING ADDITIONAL MEASURES AS SITE CONDITIONS WARRANT.
3. SLOPES IN HIGH MAINTENANCE AREAS SHALL NOT EXCEED 3:1 (H:V).

TEMPORARY SEEDING:

USE A TEMPORARY VEGETATION COVER OF ANNUAL RYE GRASS AT A RATE OF 1.0 lbs./1000 S.F. APPLY 10-10-10 FERTILIZER, OR EQUIVALENT, AT A RATE OF 7.5 lbs./1000 S.F. AND LIMESTONE AT A RATE OF 90 lbs./1000 S.F. APPLY STRAW OR HAY MULCH AT A RATE OF 70 lbs./1000 S.F.

PERMANENT SEEDING (ALL DISTURBED AREAS)

SEED BED PREPARATION: FINE GRADE AND RAKE SOIL SURFACE TO REMOVE STONES LARGER THAN 2" IN DIAMETER. APPLY LIMESTONE AT A RATE OF 90 lbs./1000 S.F. FERTILIZE WITH 10-10-10, OR EQUIVALENT, AT A RATE OF 7.5 lbs./1000 S.F. WORK LIMESTONE AND FERTILIZER INTO SOIL UNIFORMLY TO A DEPTH OF 4" WITH A HARROW OR EQUIVALENT. SEED APPLICATION: APPLY LAWN SEED BY HAND, CYCLONE SEEDER OR HYDROSEEDER. LIGHTLY DRAG OR ROLL THE SEED SURFACE TO COVER SEED. SEEDING SHOULD BE DONE BETWEEN APRIL 15 AND JUNE 15 OR BETWEEN AUGUST 15 AND SEPTEMBER 30. REPEAT MULCHING PROCEDURE BELOW UNTIL SEEDING CAN TAKE PLACE. NOTE: IF HYDROSEEDER IS USED, INCREASE SEED MIXTURE BY 10%. MULCHING: IMMEDIATELY FOLLOWING SEEDING, MULCH THE SEED SURFACE WITH STRAW OR HAY AT A RATE OF 70 lbs./1000 S.F. SPREAD MULCH BY HAND OR MULCH BLOWER. PUNCH MULCH INTO SOIL SURFACE WITH TRACK MACHINE OR DISK HARROW.

IT IS ANTICIPATED THAT CONSTRUCTION WILL BEGIN IN SPRING 2026 AND ANTICIPATED COMPLETION WOULD BE FALL/WINTER 2026.

WITNESSED AND RECORDED ON JULY 17, 2024 BY ODALYS REYES MORALES LEDGE LIGHT HEALTH DISTRICT.

TEST PIT 1 DEPTH: 84"
0-10" TOPSOIL
10-22" ORANGE BROWN FINE SANDY LOAM
22-84" GRAY TAN FINE TO MEDIUM SAND W/ GRAVEL AND COBBLES

TEST PIT 2 DEPTH: 79"
0-11" TOPSOIL
11-32" ORANGE BROWN FINE SANDY LOAM
32-79" TAN FINE SAND W/GRAVEL AND COBBLES

MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: NONE OBSERVED
ROOTS: 39"
RESTRICTIVE: 84"

MOTTLES: 34"
GW: NONE OBSERVED
LEDGE: NONE OBSERVED
ROOTS: 40"
RESTRICTIVE: 79"

TEST PIT 3 DEPTH: 80"
0-11" TOPSOIL
11-33" ORANGE BROWN FINE SANDY LOAM
33-80" TAN FINE TO MEDIUM SAND W/ GRAVEL AND COBBLES
SOME LARGE ROCKS

TEST PIT 4 DEPTH: 79"
0-10" TOPSOIL
10-32" ORANGE BROWN FINE SANDY LOAM
32-79" TAN FINE MEDIUM SAND W/GRAVEL AND COBBLES

MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: NONE OBSERVED
ROOTS: 46"
RESTRICTIVE: 80"

MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: NONE OBSERVED
ROOTS: 48"
RESTRICTIVE: 79"

PERCOLATION TEST
PERFORMED BY ODALYS REYES MORALES LEDGE LIGHT HEALTH DISTRICT

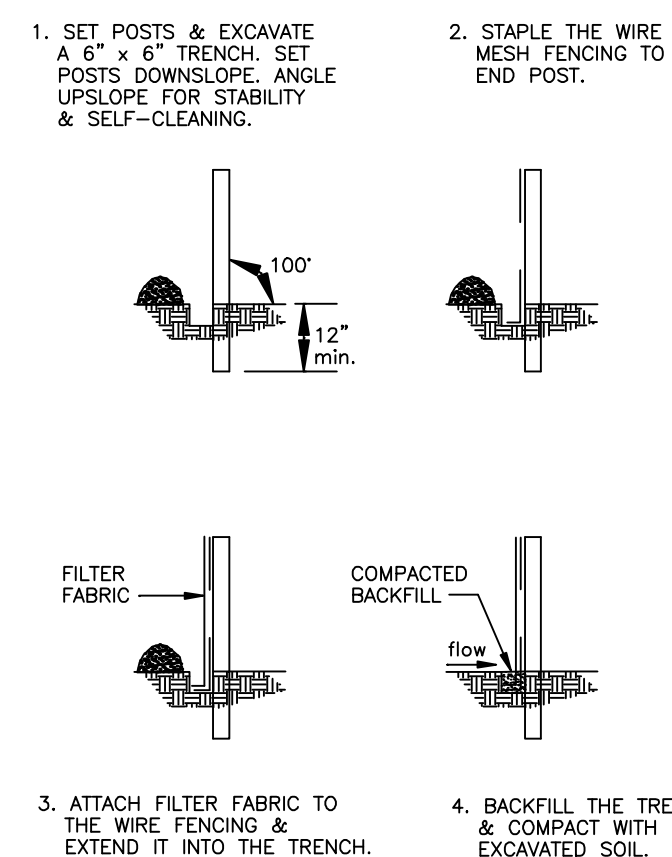
DATE: 7/14/2024
DEPTH: 26.5"

TIME	READING	MIN/IN
3:09	18.5"	
3:11	20"	2
3:16	21.5"	3.33
3:21	23"	3.33
3:26	24.5"	3.33
3:31	26"	3.33

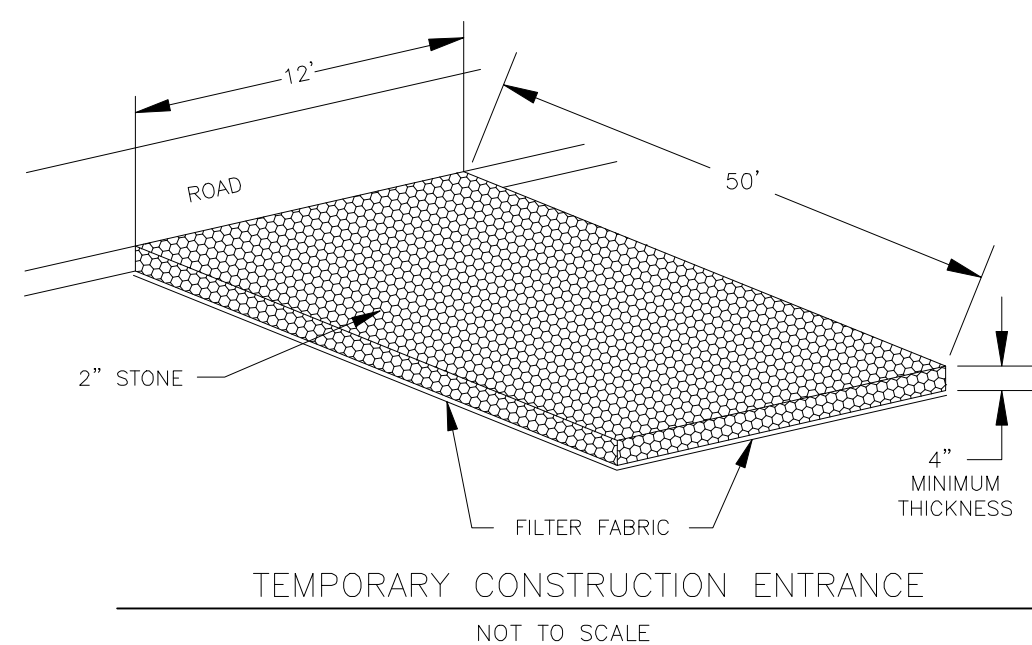
PERCOLATION RATE: 3.33 MIN/IN

LEGEND

- STONE WALL
- PROPERTY LINE
- STREET LINE
- DRILL HOLE
- IRON PIPE
- REBAR
- MONUMENT
- UTILITY POLE
- CATCH BASIN
- PROPOSED CONTOUR
- CONTOUR
- BUILDING SETBACK LINE
- SILT FENCE
- CONCEPTUAL HOUSE LOCATION
- PRIMARY SEPTIC AREA
- RESERVE SEPTIC AREA
- CONCEPTUAL WELL LOCATION
- FOOTING DRAIN OUTLET
- DEEP TEST PIT LOCATION
- APPROXIMATE PERC TEST LOCATION
- TOPSOIL STOCKPILE
- EDGE OF WETLANDS & FLAG NUMBER



FILTER FABRIC SEDIMENT BARRIER
NOT TO SCALE



TEMPORARY CONSTRUCTION ENTRANCE
NOT TO SCALE

THE STONE WALLS AND/OR FENCES SHOWN AS BOUNDARIES MAY HAVE IRREGULARITIES OF COURSE BETWEEN PRINCIPAL POINTS OF COURSE INDICATED.

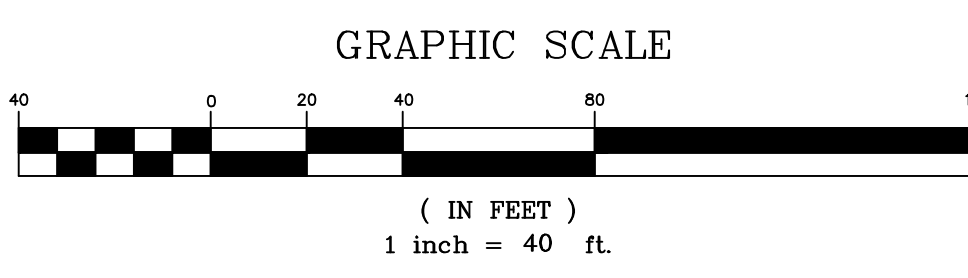
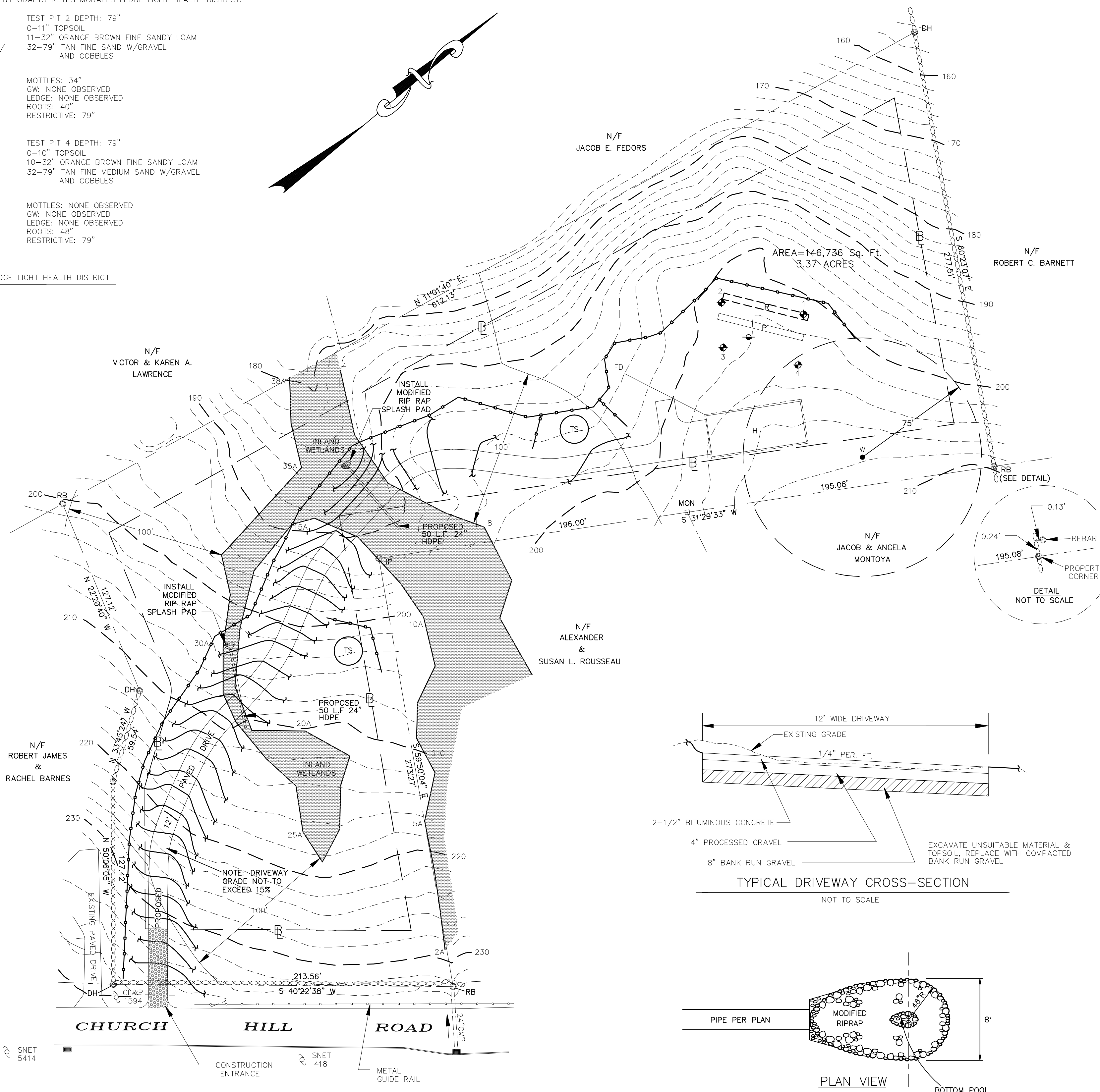
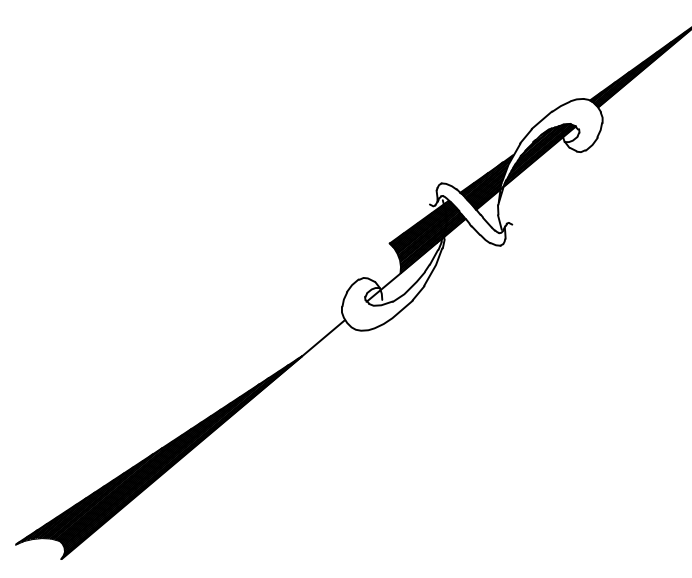
THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF THE PROFESSIONAL OPINION BY THE LAND SURVEYOR WHICH IS BASED ON HIS OR HER BEST KNOWLEDGE, INFORMATION AND BELIEF, AS SUCH IT CONSTITUTES NEITHER GUARANTEE OR WARRANTY.

NOTE: BOUNDARY LINES OF ADJOINING PROPERTIES ARE SHOWN FOR GENERAL INFORMATION PURPOSES ONLY AND ARE NOT TO BE CONSTRUED AS BEING ACCURATELY LOCATED OR DEPICTED.

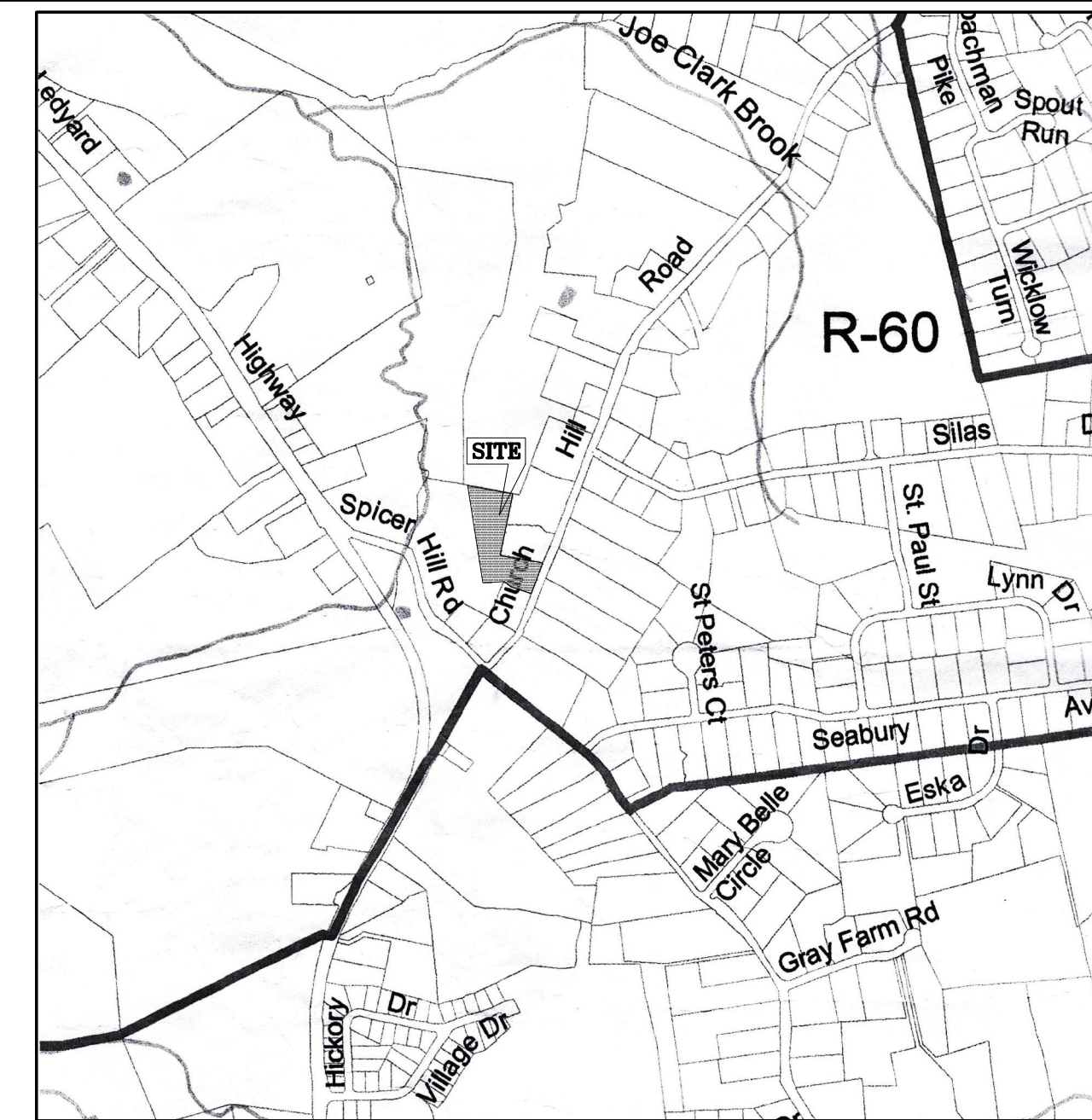
I HAVE REVIEWED THE INLAND WETLAND BOUNDARY I DELINEATED AND I AM OF THE OPINION THAT THE WETLAND BOUNDARY IS SHOWN CORRECTLY ON THIS MAP.

IAN COLE
SOIL SCIENTIST

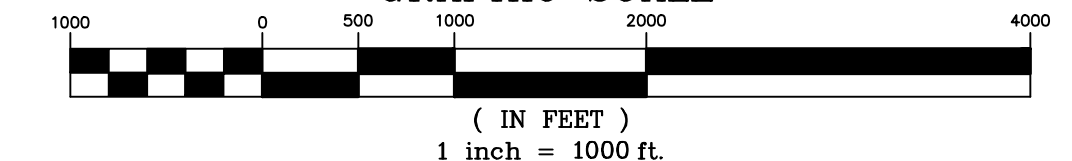
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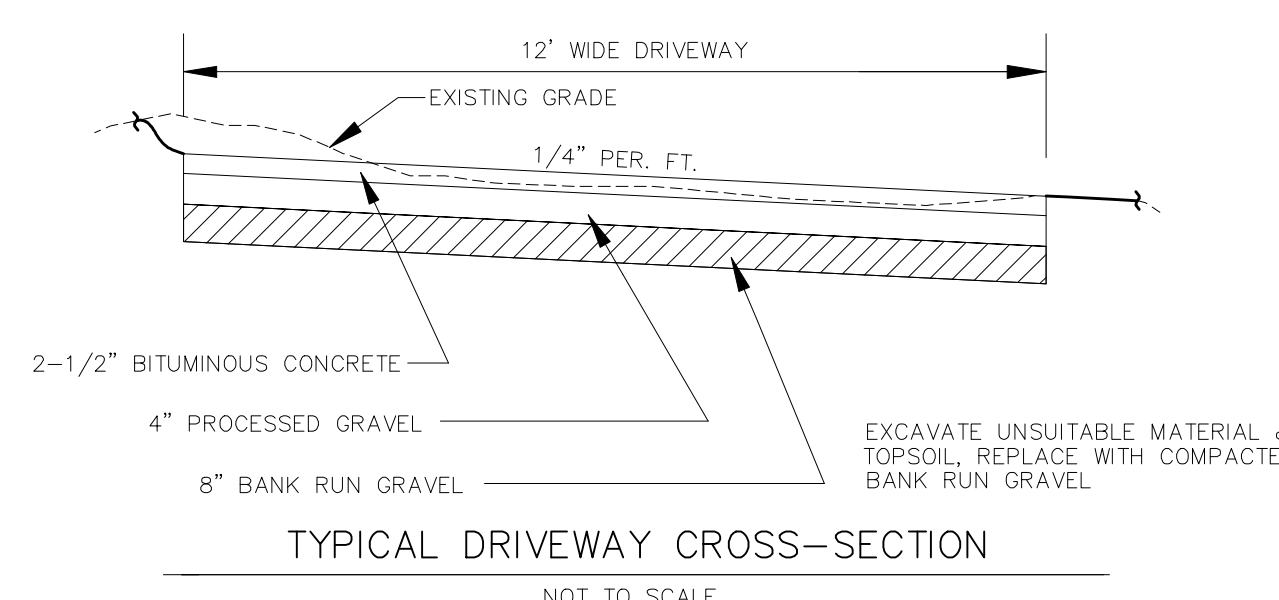
DIETER & GARDNER
LAND SURVEYORS • PLANNERS
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GALES FERRY, CT. 06335
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EMAIL: DIETER.GARDNER@YAHOO.COM



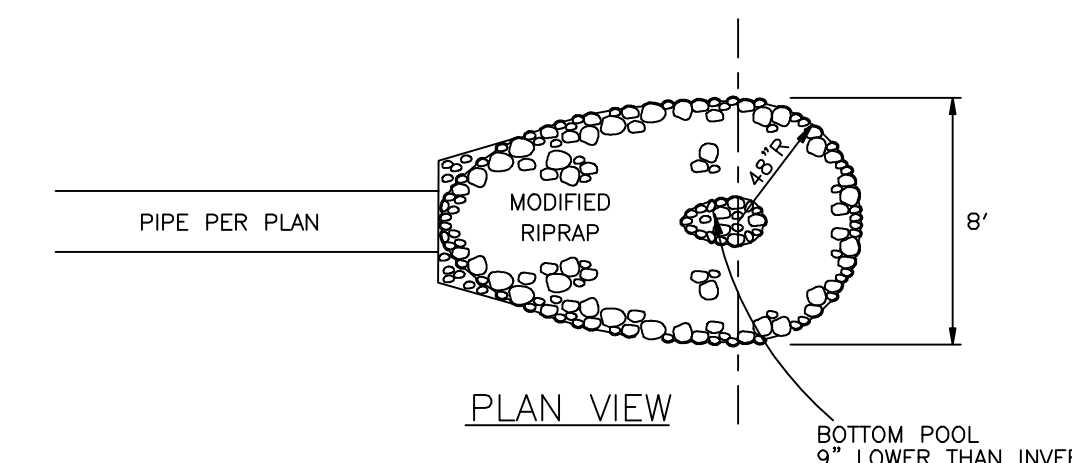
LOCATION MAP
ZONING DISTRICT: R-60
GRAPHIC SCALE



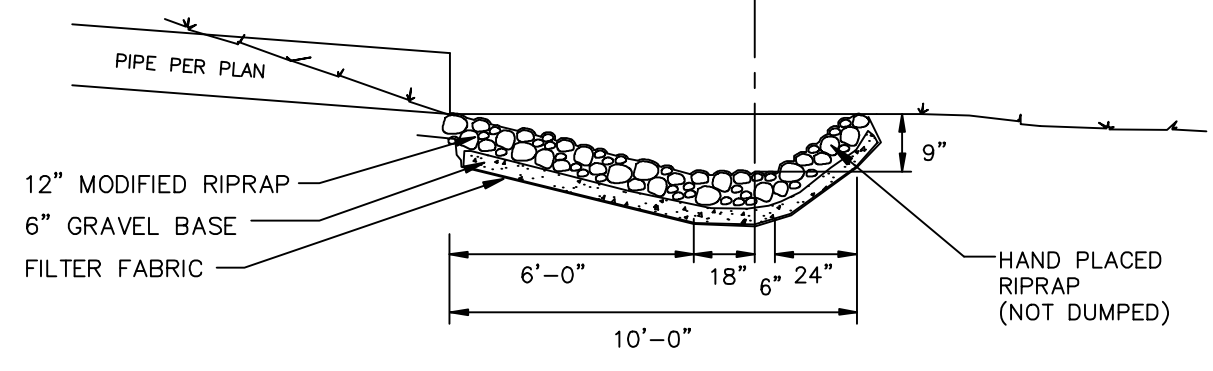
MAP REFERENCES:
A) F AND H SUBDIVISION ZONE R-60 OWNER & SUBDIVIDER: DAVID F. FOLTZ ET AL & DAVID A. HOLDRIDGE ET AL TOTAL AREA: 13.62 ACRES DATE JULY 1978 SCALE 1"=60' SH. 1 OF 1.
B) PLAN SHOWING NEW DIVISION LINE DIVIDING PROPERTY JOINTLY OWNED BY DAVID FOLTZ AND DAVID HOLDRIDGE LEDYARD, CONNECTICUT SHEET NUMBER 1 OF 1 DATE: SEPTEMBER 20, 2005 1 INCH = 60 FEET.
C) LOT DIVISION PLAN PREPARED FOR DAVID A. HOLDRIDGE AND SARA S. HOLDRIDGE CHURCH HILL ROAD LEDYARD, CONNECTICUT SCALE: 1"=40' JULY 2024.



TYPICAL DRIVEWAY CROSS-SECTION
NOT TO SCALE



PLAN VIEW
NOT TO SCALE



SECTION VIEW
RIP RAP PAD
NOT TO SCALE

PER SOIL SURVEY OF NEW LONDON COUNTY SOIL TYPE C/D CHARLTON-HOLLIS FINE SANDY LOAMS, VERY ROCKY, 15 TO 45% SLOPES

ZONING COMPLIANCE ZONING DISTRICT R-60		
ITEM	REQUIRED	PROVIDED
LOT AREA	60,000 S.F.	146,736 S.F.
LOT FRONTAGE	200 FT.	213.56 FT.
FRONT YARD SETBACK	35 FT.	35 FT.
SIDE YARD SETBACK	20 FT.	20 FT.
REAR YARD SETBACK	30 FT.	30 FT.

PLAN PREPARED FOR
DAVID A. HOLDRIDGE
AND
SARA S. HOLDRIDGE
SHOWING PROPOSED DRIVEWAY
AND
CONCEPTUAL HOUSE, WELL
AND SEPTIC SYSTEM
31 CHURCH HILL ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=40'
JANUARY 2026

THIS MAP AND SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES--"MINIMUM STANDARDS OF ACCURACY, CONTENT AND CERTIFICATION FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT", ADOPTED EFFECTIVE JUNE 21, 1996, REVISED OCTOBER 26, 2018. IT IS A BOUNDARY SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2, TOPOGRAPHIC ACCURACY T-D, TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208
DATE: JANUARY 28, 2026



Ian Cole LLC

Professional Registered Soil Scientist / Professional Wetland Scientist

PO BOX 619

Middletown, CT 06457

ltcole@gmail.com

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 than 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

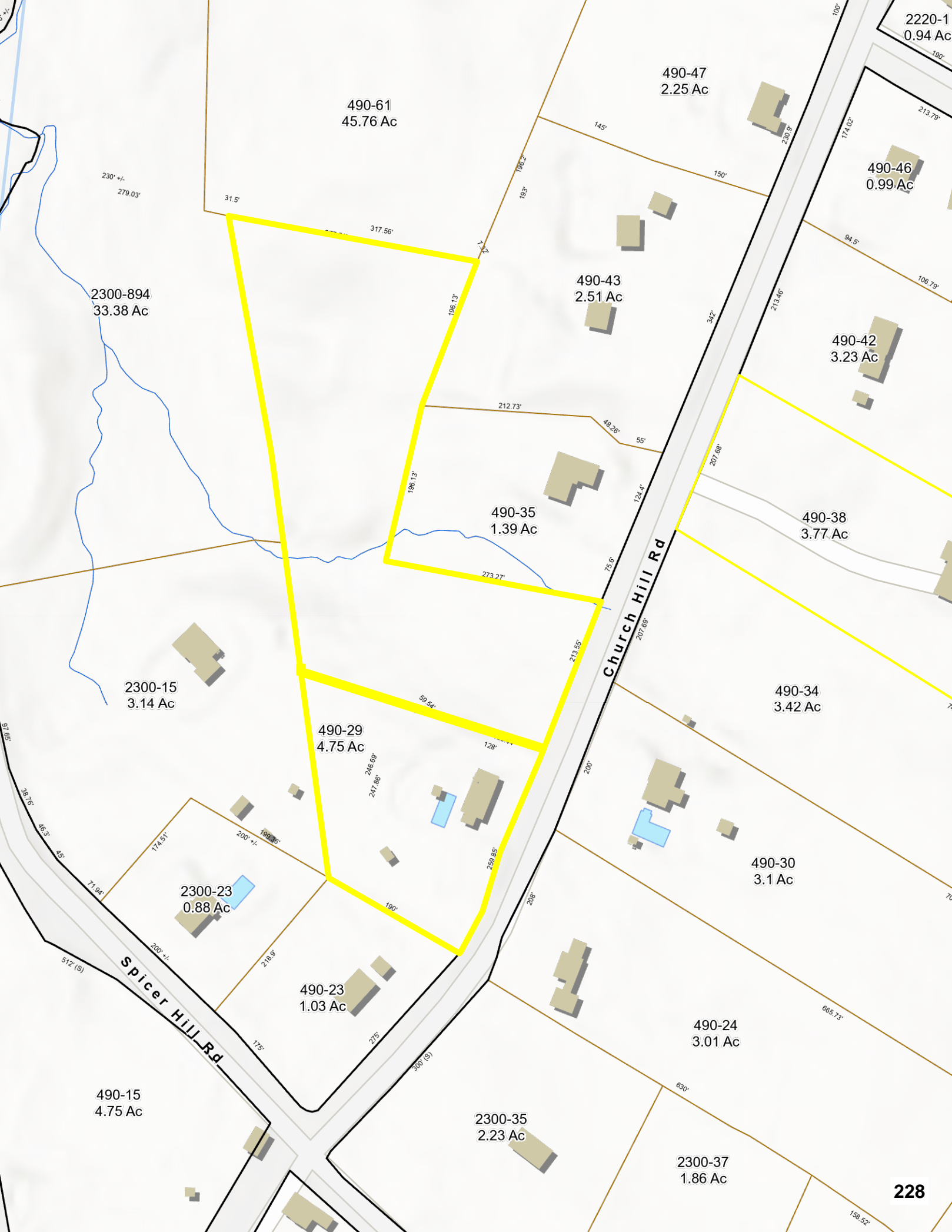
**SITE PHOTOS TAKE JULY 26, 2024
31 CHURCH HILL ROAD, LEDYARD CT**



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

490-61
45.76 Ac

490-47
2.25 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

490-30
3.1 Ac

2300-23
0.88 Ac

490-23
1.03 Ac

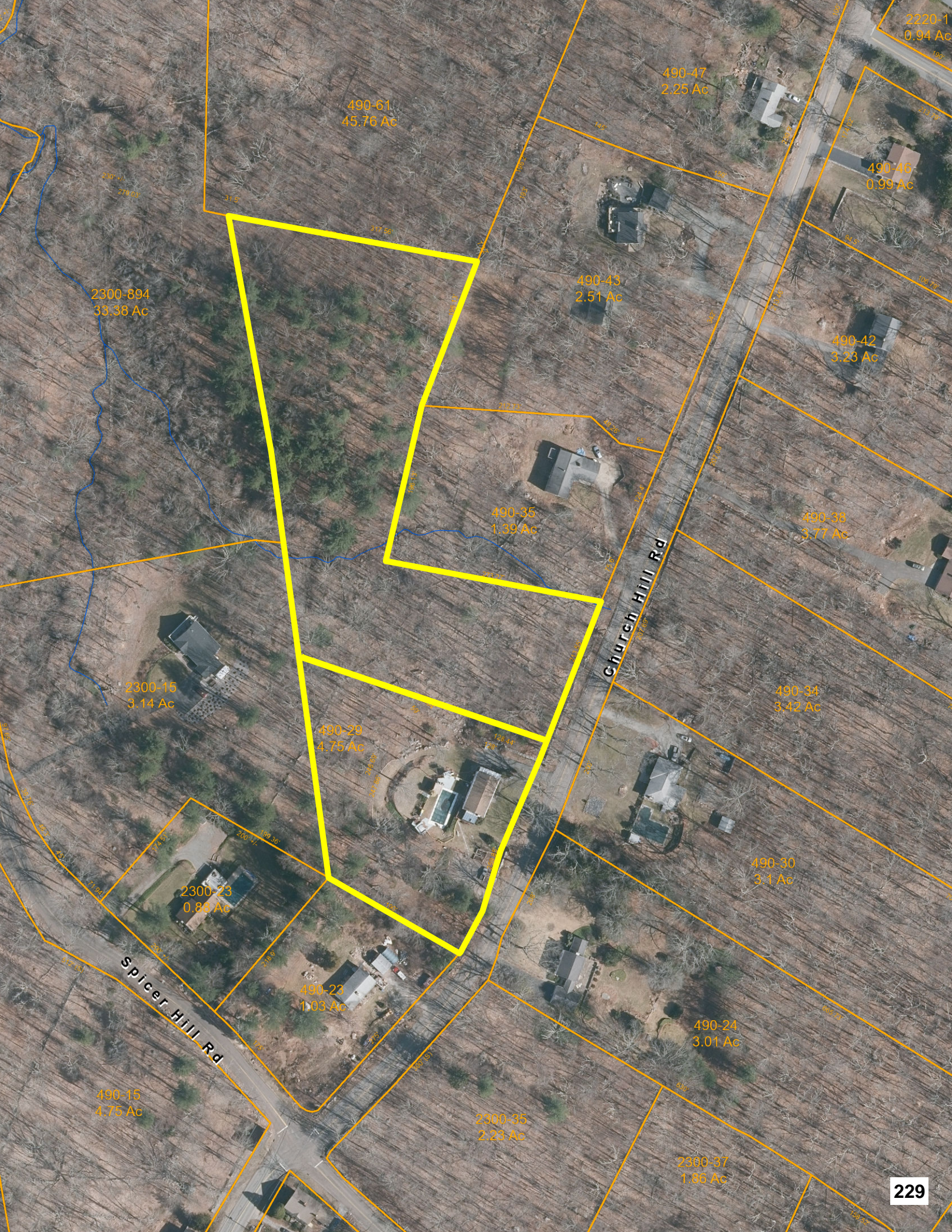
490-24
3.01 Ac

490-15
4.75 Ac

2300-35
2.23 Ac

2300-37
1.86 Ac

228



2220-1
0.94 Ac

490-61
45.76 Ac

490-47
2.25 Ac

490-45
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

490-29
4.75 Ac

490-34
3.42 Ac

2300-23
0.88 Ac

490-23
1.03 Ac

490-30
3.1 Ac

Spicer Hill Rd

Church Hill Rd

490-24
3.01 Ac

490-15
4.75 Ac

2300-35
2.23 Ac

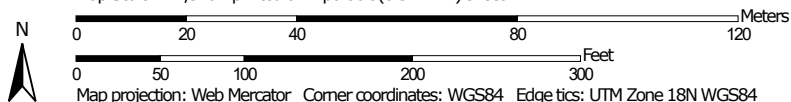
2300-37
1.86 Ac

Soil Map—State of Connecticut, Eastern Part



Soil Map may not be valid at this scale.

Map Scale: 1:1,370 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



MAP LEGEND

- Area of Interest (AOI)
- 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%

LETTER OF TRANSMITTAL

Town of Ledyard Land Use Department

741 Colonel Ledyard Highway, Ledyard, CT 06339

Telephone: (860) 464-3216

Email: Zoning.official@ledyardct.org

DATE: February 3, 2026

- TO:
- | | | | |
|--|--|---|--|
| <input checked="" type="checkbox"/> Town Engineer | <input type="checkbox"/> Groton Public Utilities | <input type="checkbox"/> Building Dept. | <input checked="" type="checkbox"/> Assessor |
| <input type="checkbox"/> Town Attorney | <input type="checkbox"/> SCWA | <input type="checkbox"/> Fire Marshal | <input type="checkbox"/> Police |
| <input checked="" type="checkbox"/> Ledge Light Health | <input type="checkbox"/> Mayor | <input type="checkbox"/> DOT | <input type="checkbox"/> CAM |
| <input type="checkbox"/> WPCA | <input type="checkbox"/> Public Works | <input type="checkbox"/> DEEP | <input type="checkbox"/> Other |

Project Name: IWWC#26-2SITE

Project Location: 31 Church Hill Rd, Ledyard CT, 06339

The following items have been transmitted:

- Application Plans and/or Supporting Documents via Hand Delivered
- Regulations
- Other

Description
Please review & comment on application.

Transmitted as checked below. Please submit comments on or before:

- For approval
 For your use
 As requested
 For your review and comment

Note: Please return comments to Zoning.official@ledyardct.org.

Remarks: If you are unable to submit written comments on or before **March 3, 2026**, please contact me by phone at the Land Use Department at (860) 464-3216. Thank you.

Signed: *Hannah Gienau*

Hannah Gienau, Zoning & Wetlands Official/Blight Enforcement Officer

Reviewing Agency:

Review Date:

Reviewed By:

Project Name:

Project Location:

Comments:

Electronic Signature: _____



TOWN OF LEDYARD

Department of Land Use and Planning

Hannah Gienau, Zoning and Wetlands Official

741 Colonel Ledyard Highway, Ledyard, CT 06339

Telephone: (860) 464-3216, Fax: (860) 464-0098

Email: Zoning.Official@LedyardCT.org

MEMORANDUM FOR THE RECORD

APPLICATION #IWWC26-2SITE

REGULAR MEETING – TUESDAY, February 3, 2026

Prepared by Hannah Gienau, Zoning and Wetlands Official on 02/03/26

Agent/Applicant(s): Peter C. Gardner (Agent) & David & Sara Holdridge (Applicant)
Property Owner(s): David & Sara Holdridge
Project Address: 31 Church Hill Rd, Ledyard CT, 06339
Meeting Date: February 3, 2026
Date Received by IWWC: February 3, 2026

Applicant/Owner Requests: Regulated Activities include the construction of a driveway (including grading), two (2) 50-linear-foot 24-inch pipe crossings, and temporary disturbance for the installation of soil erosion and sediment controls within a wetland and intermittent watercourses, to serve a future single-family residence. In addition, regulated activities in the Upland Review Area (URA) include temporary disturbance for the installation of erosion and sediment controls, two (2) topsoil stockpile areas, and grading.

Property Info:

Zone District: R60

Total-Area: 3.37 Acres

Total Wetlands: Per the Applicant, 10,000 SF +/-.

Public Water Supply Watershed: No.

Flood Hazard Zone: X (FIRM ID:09011C0359G)

Referrals:

Town Engineer: Referred 2/3/26. No comments received to date.

LLHD: Referred 2/3/26. No comments received to date.

Tax Assessor: Referred 2/3/26. No comments received to date.

Regulated Activity Description:

Wetland Disturbance Area	3500 SF +/-
Upland Review Disturbance Area	15,246 SF +/-

Staff Comments:

Please be advised the following comments with regard to my review of the Application, supporting documents, and plan set entitled "Plan Prepared for David A. Holdridge and Saras S. Holdridge, Showing Proposed Driveway and Conceptual House, Well and Septic System 31 Church Hill Road Ledyard, Connecticut, January 2026." (FD#4)

1.) Regulated Activities (Wetlands & Intermittent Watercourse): According to the applicant, Regulated activities within the wetlands and two ephemeral intermittent watercourses will include construction of two (2) crossings with a 24-inch pipe and rip rap splash pads. In addition, temporary disturbance within the wetland will include installation of Soile Erosion and Sediment Controls and minimal grading for driveway construction. According to the Applicant, the wetland/watercourse area is 3,500 square feet.

2.) Regulated Activities (Upland Review Area): Regulated activities within the Upland Review Area will include as follows:

A.) Grading for the construction of the paved driveway.

B.) Temporary Erosion and Sediment Controls will be installed for the duration of the project within the 100ft URA and installed for the duration of wetland crossings. This includes two Topsoil Stockpile areas with E&S controls down gradient.

3.) Wetland Evaluation Report: A Wetlands report (copy attached) written by Ian Cole, Professional Soil& Wetlands Scientist, dated February 1, 2026, (FD#5) states in relevant parts:

Wetland And Upland Review Area Resources:

The Applicant is proposing to develop a new single-family residential dwelling and associated site improvements. The new proposed dwelling would be accessed by a 12-foot-wide driveway. The 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 site". It can be noted that the inland wetland and watercourse boundaries were delineated on July 26, 2024.

Impact Assessment: 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.

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 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.

Commission Actions: The Commission will need to:

1.
 - a. Make a finding as to whether or not the proposed activities are significant impact activities Class "B" (not significant impact) or "C" (significant impact) as defined by the Regulations (see *definition of Significant Impact Activity* below);

OR

- b. If it is found to be a Class "B" not significant impact activity or, in the alternative, set a public hearing for the application if it is found to be a Class "C" significant impact activity.

Staff recommends the Commission shall make a finding of whether the proposed regulated activities meet the definition of a significant impact activity, per IWWC Regs Section 2 (*Terms and Definitions*) as follows:

“*Significant impact*” means any activity, including, but not limited to, the following activities which may have a major effect as determined by the IWWC.

1. Any activity involving deposition or removal of material which will or may have a substantial effect on the wetland or water course or on wetlands or water courses outside the area for which the activity is proposed.
2. Any activity which substantially changes the natural channel or may inhibit the natural dynamics of a water course system.
3. Any activity which substantially diminishes the natural capacity of an inland wetland or water course to: support aquatic, plant or animal life and habitats; prevent flooding; supply water; assimilate waste; facilitate drainage; provide recreation or open space; or perform other functions.
4. Any activity which is likely to cause or has the potential to cause substantial turbidity, siltation or sedimentation in a wetland or water course.
5. Any activity which causes substantial diminution of flow of a natural water course or groundwater levels of the wetland or water course.
6. Any activity which is likely to cause or has the potential to cause pollution of a wetland or water course.
7. Any activity which damages or destroys unique wetland or water course areas or such areas having demonstrable scientific or educational value.

Staff Recommendation: Staff suggests the activities are not significant impact.

CONSIDERATIONS FOR ACTION:

1. If the Commission believes the proposed regulated activities do not meet the criteria of significant impact, the following Motion is suggested:

MOTION #1 (Finding that the proposed activities are not Significant Impact Activities)

a. I make a MOTION that the Commission find that the proposed regulated activities within the watercourse/waterbody as submitted in the Application IWWC#26-2, plans and all supporting documents, do not meet any of the criteria of significant impact activities as defined the Town of Ledyard Inland Wetlands & Watercourses Regulations per IWWC Regs Section 2 and therefore are Class “B” activities.

OR

2. If the Commission believes the proposed regulated activities meet the criteria of significant impact, the following Motion is suggested:

MOTION #1 (Finding that the Proposed activities are Significant Impact Activities)

***b. I make a MOTION that the Commission find that the proposed regulated activities within the watercourse/waterbody as submitted in Application IWWC#26-2, its plans and all supporting documents, meet the criteria of significant impact activities as defined the Town of Ledyard Inland Wetlands & Watercourses Regulations per IWWC Regs Section 2 (Terms and Definitions)as follows:
LIST SECTIONS HERE:***

Commission Actions:

After the Commission makes a finding of not significant impact or significant impact, the Commission shall table the application to the March 3, 2026 Regular IWWC meeting or schedule a public hearing per Section 9.1.1 of the Regulations.

Anna Wynn

From: Steve Masalin
Sent: Tuesday, February 10, 2026 11:15 AM
To: Elizabeth Burdick
Cc: Anna Wynn
Subject: RE: IWWC#26-2SITE: Transmittal Letter

I have reviewed the subject application and find the drainage measures suitable and adequate for the purpose proposed.

Steven E. Masalin, P.E.



Public Works Director, Town of Ledyard
741 Colonel Ledyard Hwy.
Ledyard, CT 06339
(860) 464-3238
www.ledyardct.org

From: Anna Wynn <land.use.asst@ledyardct.org>
Sent: Tuesday, February 03, 2026 11:22 AM
To: Steve Masalin <pwd@ledyardct.org>; odalysreyesmoralesoray@llhd.org; Adrianna Hedwall <assessor@ledyardct.org>
Cc: Hannah Gienau <zoning.official@ledyardct.org>
Subject: IWWC#26-2SITE: Transmittal Letter

Good Morning,

See attached transmittal letter for application IWWC#26-2SITE. Please send back any comments to Ms. Gienau. All applicable attachments can found on the Ledyard Town Website using this link: [TOWN OF LEDYARD - File #: 26-0141](#)



TOWN OF LEDYARD

Department of Land Use and Planning

Hannah Gienau, Zoning and Wetlands Official

741 Colonel Ledyard Highway, Ledyard, CT 06339

Telephone: (860) 464-3216, Fax: (860) 464-0098

Email: Zoning.Official@LedyardCT.org

MEMORANDUM FOR THE RECORD

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REGULAR MEETING – TUESDAY, March 3, 2026

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The Applicant is proposing to develop a new single-family residential dwelling and associated site improvements. The new proposed dwelling would be accessed by a 12-foot-wide driveway. The 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 site". It can be noted that the inland wetland and watercourse boundaries were delineated on July 26, 2024.

Impact Assessment: 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.

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 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.

Commission Actions: The Commission will need to:

1.
a. Make a finding as to whether or not the proposed activities are significant impact activities Class "B" (not significant impact) or "C" (significant impact) as defined by the Regulations (see *definition of Significant Impact Activity* below);

OR

b. If it is found to be a Class "B" not significant impact activity or, in the alternative, set a public hearing for the application if it is found to be a Class "C" significant impact activity.

Staff recommends the Commission shall make a finding of whether the proposed regulated activities meet the definition of a significant impact activity, per IWWC Regs Section 2 (*Terms and Definitions*) as follows:

“*Significant impact*” means any activity, including, but not limited to, the following activities which may have a major effect as determined by the IWWC.

1. Any activity involving deposition or removal of material which will or may have a substantial effect on the wetland or water course or on wetlands or water courses outside the area for which the activity is proposed.
2. Any activity which substantially changes the natural channel or may inhibit the natural dynamics of a water course system.
3. Any activity which substantially diminishes the natural capacity of an inland wetland or water course to: support aquatic, plant or animal life and habitats; prevent flooding; supply water; assimilate waste; facilitate drainage; provide recreation or open space; or perform other functions.
4. Any activity which is likely to cause or has the potential to cause substantial turbidity, siltation or sedimentation in a wetland or water course.
5. Any activity which causes substantial diminution of flow of a natural water course or groundwater levels of the wetland or water course.
6. Any activity which is likely to cause or has the potential to cause pollution of a wetland or water course.
7. Any activity which damages or destroys unique wetland or water course areas or such areas having demonstrable scientific or educational value.

Staff Recommendation: Staff suggests the activities are not significant impact.

CONSIDERATIONS FOR ACTION:

1. If the Commission believes the proposed regulated activities do not meet the criteria of significant impact, the following Motion is suggested:

MOTION #1 (Finding that the proposed activities are not Significant Impact Activities)

a. I make a MOTION that the Commission find that the proposed regulated activities within the watercourse/waterbody as submitted in the Application IWWC#26-2, plans and all supporting documents, do not meet any of the criteria of significant impact activities as defined the Town of Ledyard Inland Wetlands & Watercourses Regulations per IWWC Regs Section 2 and therefore are Class “B” activities.

OR

2. If the Commission believes the proposed regulated activities meet the criteria of significant impact, the following Motion is suggested:

MOTION #1 (Finding that the Proposed activities are Significant Impact Activities)

***b. I make a MOTION that the Commission find that the proposed regulated activities within the watercourse/waterbody as submitted in Application IWWC#26-2, its plans and all supporting documents, meet the criteria of significant impact activities as defined the Town of Ledyard Inland Wetlands & Watercourses Regulations per IWWC Regs Section 2 (Terms and Definitions)as follows:
LIST SECTIONS HERE:***

MOTION # 2 (A Motion to Approve)-Regulated Activities

After giving due consideration to all relevant factors, including those in Section 6 of the Ledyard Inland Wetland Regulations and Section 22a-40 of the Connecticut General Statutes, I move to APPROVE Application #IWWC26-2SITE, submitted by the Agent, Peter Gardner, , Applicant, and property owner David Holdridge and Sara Holdridge, for regulated activities include the construction of a driveway to serve a future single-family residence & associated site improvements as more fully described in the application & supporting documents, dated January 28, 2026 and a plan entitled "Plan Prepared for David A. Holdridge and Saras S. Holdridge, Showing Proposed Driveway and Conceptual House, Well and Septic System 31 Church Hill Road Ledyard, Connecticut, January 2026".

1. Soil erosion and sediment controls shall be installed prior to the start of work and maintained in good working order until any disturbed soils are permanently stabilized with vegetative cover.
2. Prior to the start of any work at the site, the Ledyard Wetlands Enforcement Officer shall be notified and shall conduct an inspection to verify soil erosion and sediment controls have been properly installed at the wetland crossings and throughout the site.
3. Any future proposed changes to the proposed site plan submitted as part of this application shall be reviewed and approved by the Wetlands Official and/or the IWWC.
4. Any future construction of a new single family residence containing regulated activities shall be reviewed & approved by the WEO and/or IWWC.

If the Commission is inclined to deny the Application, it must state their reasons for the record.

FD#10

RECEIVED

MAR 03 2026



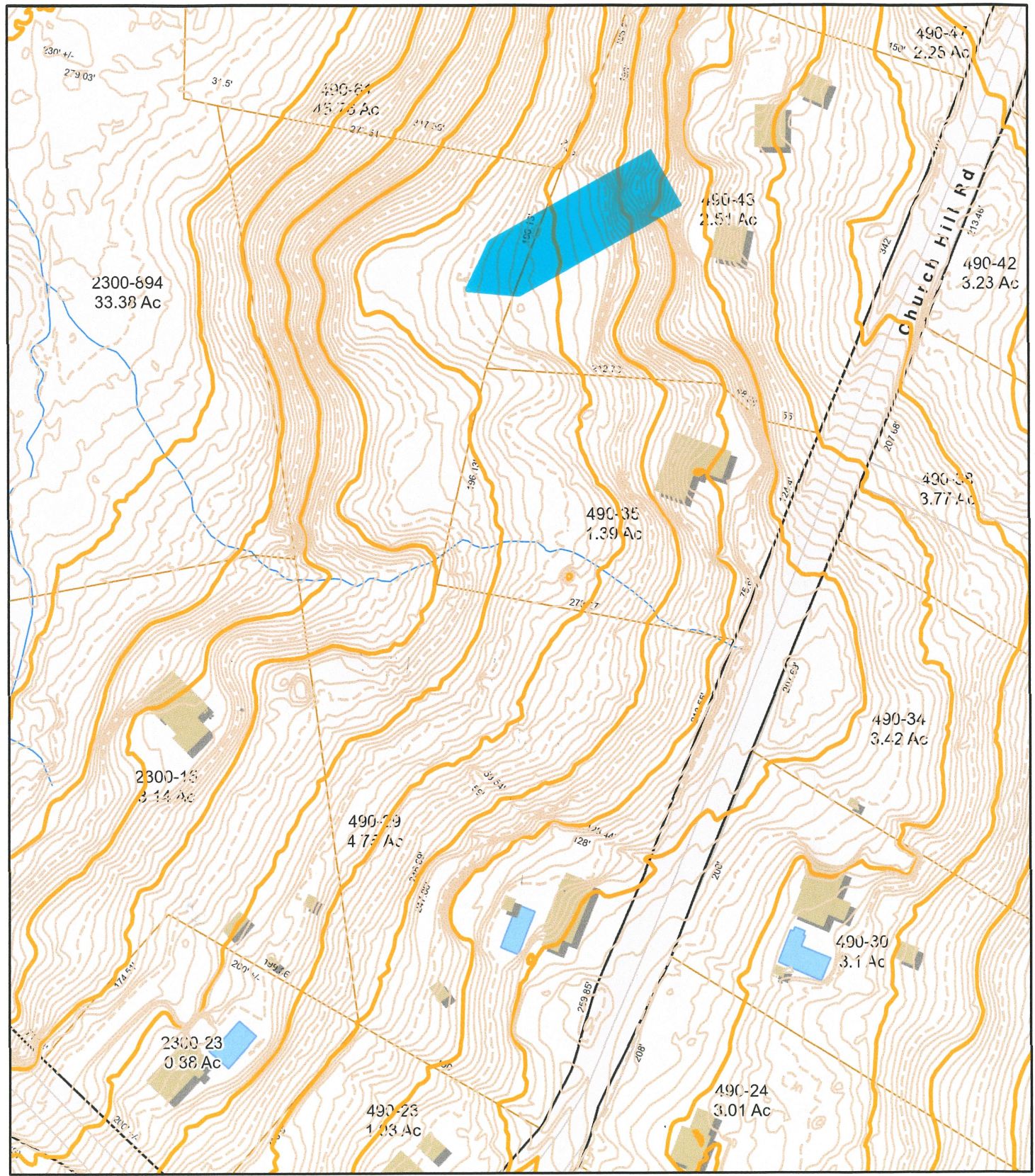
Ledyard, CT

1 inch = 123 Feet

Land Use Department

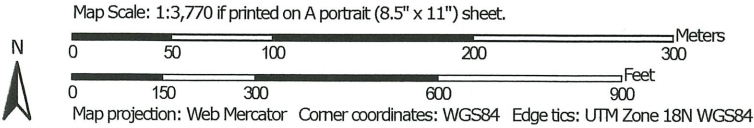
www.cai-tech.com

March 2, 2026
























Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

Soil Map—State of Connecticut, Eastern Part



MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Area of Interest (AOI)	 Stony Spot
Soils	 Very Stony Spot
 Soil Map Unit Polygons	 Wet Spot
 Soil Map Unit Lines	 Other
 Soil Map Unit Points	 Special Line Features
Special Point Features	Water Features
 Blowout	 Streams and Canals
 Borrow Pit	Transportation
 Clay Spot	 Rails
 Closed Depression	 Interstate Highways
 Gravel Pit	 US Routes
 Gravely Spot	 Major Roads
 Landfill	 Local Roads
 Lava Flow	Background
 Marsh or swamp	 Aerial Photography
 Mine or Quarry	
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

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

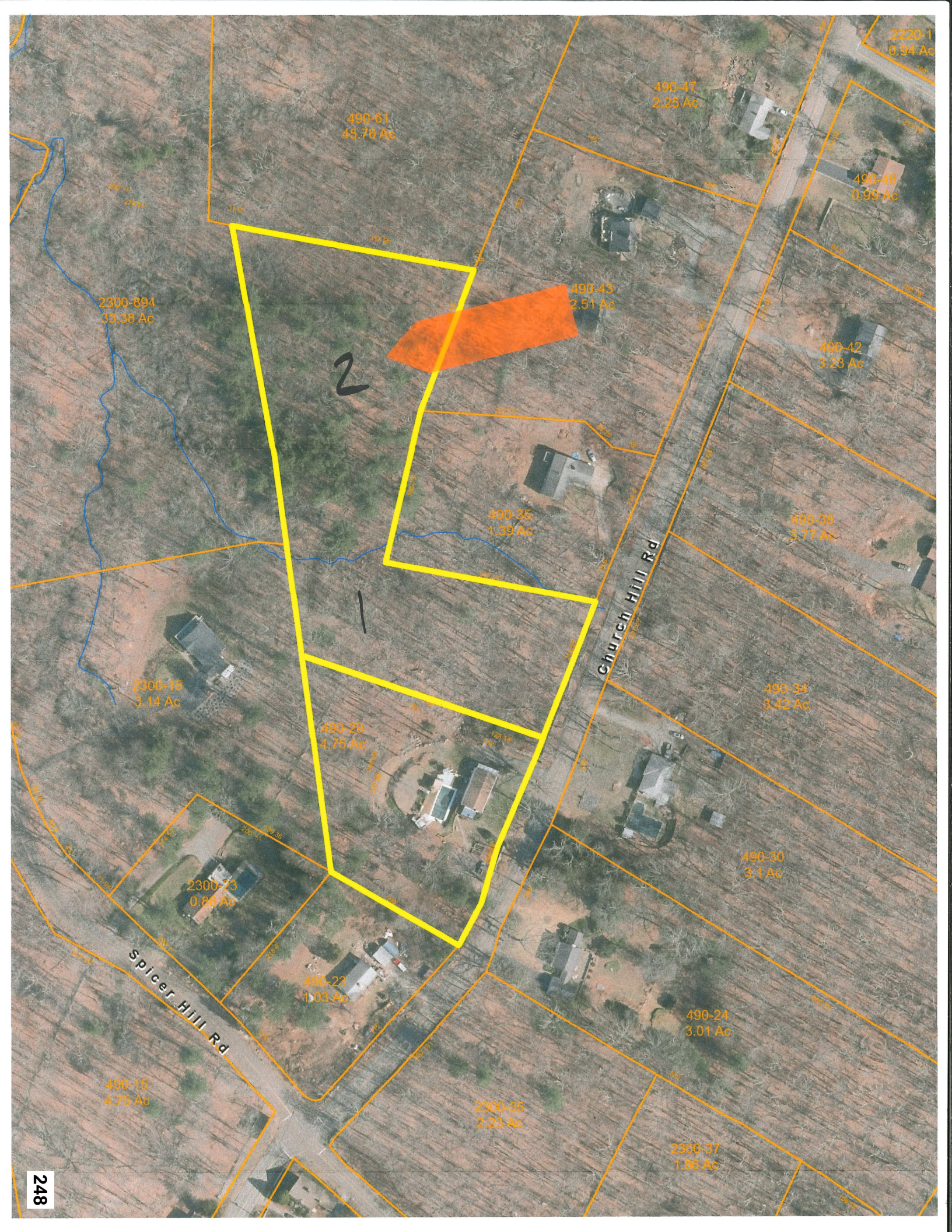
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

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
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	12.9	18.1%
18	Catden and Freetown soils, 0 to 2 percent slopes	0.4	0.5%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	3.5	5.0%
38C	Hinckley loamy sand, 3 to 15 percent slopes	7.1	10.0%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	2.4	3.4%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	2.2	3.2%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	4.3	6.0%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	13.1	18.4%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	25.2	35.4%
86C	Paxton and Montauk fine sandy loams, 3 to 15 percent slopes, extremely stony	0.0	0.0%
Totals for Area of Interest		71.1	100.0%



2220-1
0.94 Ac

490-47
2.25 Ac

490-61
43.78 Ac

490-48
0.99 Ac

2300-894
33.38 Ac

490-43
2.51 Ac

490-42
3.23 Ac

2

490-35
1.39 Ac

490-38
3.77 Ac

2300-16
3.14 Ac

Church Hill Rd

490-34
3.42 Ac

490-29
4.75 Ac

2300-23
0.86 Ac

490-30
3.1 Ac

Spicer Hill Rd

490-23
1.03 Ac

490-24
3.01 Ac

490-15
4.75 Ac

2300-33
2.23 Ac

2380-37
1.86 Ac

**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.



TOWN OF LEDYARD

Inland Wetlands and Watercourses Commission

741 Colonel Ledyard Highway
Ledyard, CT 06339-1551

PH: 860-464-3216

Email: zoning.official@ledyardct.org

RECEIVED

MAR 04 2026

Land Use Department

Via Regular & Certified Mail #9589071052702077322907 & #70212720000111911861

Email: dieter.gardner@yahoo.com & daveholdridge@aol.com

March 4, 2026

David & Sara Holdridge, Property Owners
68A Spicer Hill Rd,
Ledyard, CT 06339

Peter Gardner, Agent
Dieter & Gardner
PO Box 335
Gales Ferry, CT 06335

RE: IWWC#26-2SITE – 31 Church Hill Road, (Map ID:40-490-31) Ledyard, CT -Agent, Peter Gardner, L.S, -Property Owners, David & Sara Holdridge, for regulated activities associated with the construction of a driveway, including two wetland crossings and associated site improvements, to serve a future single-family residence.

Dear David & Sara,

The Ledyard Inland Wetlands and Watercourses Commission, at its March 3, 2026, regular meeting, rendered the following decision regarding your above-referenced application:

IWWC#26-2SITE – 31 Church Hill Road, (Map ID:40-490-31) Ledyard, CT -Agent, Peter Gardner, L.S, -Property Owners, David & Sara Holdridge, for regulated activities associated with the construction of a driveway, including two wetland crossings and associated site improvements, to serve a future single-family residence.

APPROVED WITH CONDITIONS as follows:

1. Soil erosion and sediment controls shall be installed prior to the start of work and maintained in good working order until any disturbed soils are permanently stabilized with vegetative cover.
2. Prior to the start of any work at the site, the Ledyard Wetlands Enforcement Officer shall be notified and shall conduct an inspection to verify soil erosion and sediment controls have been properly installed at the wetland crossings and throughout the site.
3. Any future proposed changes to the proposed site plan submitted as part of this application shall be reviewed and approved by the Wetlands Official and/or the IWWC.
4. Any future construction of a new single-family residence containing regulated activities shall be reviewed & approved by the WEO and/or IWWC.

Notice of this approval will be published in The Day newspaper on March 5, 2026 and this will commence a 15-day appeal period. Please contact me with any questions at (860) 464-3216.

Sincerely,
Hannah Gienu
Zoning & Wetlands Official

C: Elizabeth Burdick, Director of Land Use & Planning
File- Land Use Dept.

LEGAL NOTICE
LEDYARD INLAND WETLANDS AND WATERCOURSES COMMISSION
NOTICE OF DECISION

The Ledyard IWWC, at its 03/03/26 Regular Meeting, made the following decision:

IWWC#26-2SITE- 31 Church Hill Road, Ledyard, CT -Agent, Peter Gardner, L.S, -Property Owners, David & Sara Holdridge, for regulated activities associated with the construction of a driveway, including two wetland crossings and associated site improvements, to serve a future single-family residence. **APPROVED WITH CONDITIONS.**

Any person may appeal such decisions within **15-days** after the publication date of this notice.

Attn: legal@theday.com

Please publish once on Thursday, March 5, 2026.

Anna Wynn

From: legal <legal@theday.com>
Sent: Wednesday, March 4, 2026 12:16 PM
To: Anna Wynn
Cc: Hannah Gienau
Subject: Re: IWWC#26-2SITE - 31 Church Hill - Notice of Decision
Attachments: Invoice - IWWC#26-2SITE- 31 Church Hill Road, Ledyard.pdf

Categories: Completed

Here is notice d01112799 that will run in the 3/5 edition. Invoice is attached.



Kelly Johnson
Legal Notices
Office Hours are 8 a.m. to 4 p.m. Monday - Friday
The Day & Shore Publishing
200 State Street
New London, CT 06320
Legal Line - 860-701-4410
Direct Line: 860-701-4371

From: Anna Wynn <land.use.asst@ledyardct.org>
Sent: Wednesday, March 4, 2026 12:06 PM
To: legal <legal@theday.com>
Cc: Hannah Gienau <zoning.official@ledyardct.org>
Subject: IWWC#26-2SITE - 31 Church Hill - Notice of Decision

Good Afternoon,

See attached notice of decision for application IWWC#26-2SITE at 31 Church Hill Road. Please publish once in The Day Legals on Thursday, March 5, 2026. Note that these instructions are also included at the bottom of the document. Please reach out with any questions or concerns, thank you!

Disclaimer

The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful.

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TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-0444

Agenda Date: 4/7/2026

Agenda #: A.

MINUTES

Minutes:

IWWC Regular Meeting Minutes of March 3, 2026



TOWN OF LEDYARD CONNECTICUT INLAND WETLAND & WATERCOURSES COMMISSION

741 Colonel Ledyard Highway

Ledyard, Connecticut 06339

Chairman Justin DeBrodt

HYBRID FORMAT
REGULAR MEETING

~ MINUTES ~

Tuesday, March 3, 2026

7:00 PM

Town Hall Annex Council Chambers

I. CALL TO ORDER – Chairman DeBrodt called the meeting to order at 7:00 p.m. in the Town Hall Annex Council Chambers and on Zoom.

II. PLEDGE OF ALLEGIANCE

III. ROLL CALL APPOINTMENT OF ALTERNATES

Present: Chairman, Justin DeBrodt
Commissioner, Michael Marelli
Commissioner, Daniel Pealer (via Zoom)
Vice Chairman, Beth E. Ribe
Alternate Member, Robert Graham

In addition, the following were present:

Zoning & Wetlands Enforcement Official, Hannah Gienau
Town Council Liaison, James Thompson

Chairman DeBrodt appointed Alternate member Robert Graham as a regular member. He additionally stated that he will make the recommendation to the Town Council to have Commissioner Graham appointed as a regular member of the Inland Wetlands & Watercourses Commission.

IV. APPROVAL OF ADDITONS TO AND/OR CHANGES TO ORDER OF THE AGNEDA

None.

V. CITIZENS PETITIONS (NON-AGENDA ITEMS ONLY – LIMIT 3 MINUTES)

None.

VI. PRE-APPLICATIONS DISCUSSION OR WORKSHOP

None.

VII. PUBLIC HEARING/ APPLICATIONS

None.

VIII. OLD BUSINESS

A. IWWC#26-2SITE - 31 Church Hill Road, (Map ID: 40-490-31) Ledyard, CT - Agent, Peter Gardner, L.S. - Property Owners, David & Sara Holdridge, for regulated activities associated with the construction of a driveway, including two wetland crossings and associated site improvements, to serve a future single-family residence. (Date submitted 1/28/26, Date of Receipt 2/3/26, Tabled to 3/3/26, DRD 4/8/26)

Ian Cole, Certified Soil Scientist, representative of the applicant, spoke to the Commission about the wetlands on the property and the flagged soils. He handed out documents to the Commission to demonstrate the approximate location of the work being done and how it will interact with the wetlands. The document was marked as file document #10.

Commissioner Ribe restated a question that the Commission had from the previous meeting and asked Mr. Cole to clarify the need for the first wetlands crossing when there seemed to be an alternative pathway outside of the wetlands. Mr. Cole stated that the other part of the parcel would not work due to steep grading and ground conditions.

Wetlands Enforcement Official, Hannah Gienau, and the Commission discussed her staff report and suggested motions included in her staff report previously marked as file document #9. Chairman DeBrodt asked when the work was planning to be done if the applicant receives approval. Ms. Gienau stated that the anticipated start of construction would begin Spring 2026.

MOTION that the Commission find that the proposed regulated activities within the watercourse/waterbody as submitted in the Application IWWC#26-2SITE, plans and all supporting documents, do not meet any of the criteria of significant impact activities as defined the Town of Ledyard Inland Wetlands & Watercourses Regulations per IWWC Regs Section 2 and therefore are Class "B" activities.

MOVER: Ribe
SECONDER: Graham

No further discussion was had.

RESULT: 5-0 NON-SIGNIFICANT IMPACT
MOVER: Ribe
SECONDER: Graham
AYES: 5 Pealer, Ribe, DeBrodt, Marelli, Graham

MOTION to APPROVE Application IWWC#26-2SITE, submitted by the Agent, Peter Gardner, , Applicant, and property owner David Holdridge and Sara Holdridge, for regulated activities for the construction of a driveway to serve a future single-family residence & associated site improvements as more fully described in the application & supporting documents, dated January 28, 2026 and a plan entitled "Plan Prepared for David A. Holdridge and Saras S. Holdridge, Showing Proposed Driveway and Conceptual House, Well and Septic System 31 Church Hill Road Ledyard, Connecticut, January 2026" with the following conditions:

1. Soil erosion and sediment controls shall be installed prior to the start of work and maintained in good working order until any disturbed soils are permanently stabilized with

vegetative cover.

2. Prior to the start of any work at the site, the Ledyard Wetlands Enforcement Officer shall be notified and shall conduct an inspection to verify soil erosion and sediment controls have been properly installed at the wetland crossings and throughout the site.

3. Any future proposed changes to the proposed site plan submitted as part of this application shall be reviewed and approved by the Wetlands Official and/or the IWWC.

4. Any future construction of a new single family residence containing regulated activities shall be reviewed & approved by the WEO and/or IWWC.

RESULT: 5-0 APPROVE REGULATED ACTIVITIES

MOVER: Ribe

SECONDER: Graham

AYES: 5 Pealer, Ribe, DeBrodt, Marelli, Graham

IX. NEW BUSINESS

A. IWWC#26-3SITE - 25 Harvard Terrace (MAP ID: 9/910/25) & 39 Military Hwy (MAP ID: 92/1590/39), Gales Ferry CT,- Applicant/Agent, Town of Ledyard, - Property Owners, Avalonia Land Conservancy Inc. & C.R Klewin LLC, for regulated activities, including maintenance and repair of existing stormwater inlet and outlet infrastructure, and removal of a beaver dam and other obstructions at both locations to improve drainage and reduce flooding.(Date submitted 2/26/26, DOR 3/3/26, PH set for TBD, DRD 35 days from close of PH.)

ZEO Hannah Gienau stated that there has not been sufficient time to review the application but that staff suggests that the Commission set a public hearing on the application for the IWWC Regular Meeting of April 7, 2026. She stated the department had received prior petitions for a public hearing.

MOTION to set a public hearing on application IWWC#26-3SITE to the IWWC Regular Meeting of April 7, 2026 at 7:00 pm in the Town Hall Annex and on Zoom.

RESULT: 5-0 PUBLIC HEARING SET

MOVER: Ribe

SECONDER: Graham

AYES: 5 Pealer, Ribe, DeBrodt, Marelli, Graham

X. APPROVAL OF MINUTES

A. IWWC Regular Meeting Minutes of February 3, 2026

MOTION to approve the IWWC Regular Meeting Minutes of February 3, 2026

RESULT: 5-0 APPROVED AND SO DECLARED

MOVER: Marelli

SECONDER: Graham

AYES: 5 Pealer, Ribe, DeBrodt, Marelli, Graham

XI. CORRESPONDENCE

None.

XII. REPORTS

A. Wetlands Report of March 3, 2026

ZEO Hannah Gienau and the Commission briefly discussed her wetlands report. Chairman DeBrodt and the Commission discussed which members were able to attend the FOIA training last month. Chairman DeBrodt asked which members had completed their DEEP Training and submitted their training confirmation statements to the Land Use Department.

XIII. ADJOURNMENT

Commissioner Graham moved the meeting to be adjourned, seconded by Commissioner Ribe.

VOTE: 5-0 The meeting was adjourned at 7:20 p.m.

Respectfully submitted,

Chairman Justin DeBrodt
Inland Wetlands & Watercourses Commission



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-0450

Agenda Date: 4/7/2026

Agenda #:

AGENDA REQUEST
GENERAL DISCUSSION ITEM

Subject:

Memorandum: Ledyard Agriculture Commission Request for Joint Meeting (Dated 3/19/26)

Background:

(type text here)

Department Comment/Recommendation:

(type text here)



Chairman Bruce Garstka

TOWN OF LEDYARD
CONNECTICUT

LEDYARD AGRICULTURAL COMMISSION

Town of Ledyard
Ledyard, CT 06339
<http://www.ledyardct.org>

MEMORANDUM

DATE: March 19, 2026
TO: Town Council
Mayor Fred Allyn, III
Land Use Department (Planning & Zoning)
Planning & Zoning Commission
Inland Wetland & Watercourses Commission
Conservation Commission
Economic Development
Board of Education
Ledyard Beautification
Ledyard Historic District Commission

FROM: Chairman Bruce P. Garstka, Agricultural Commission

RE: Agricultural Commission joint meeting

The Agricultural Commission, at its Regular meeting on April 21, 2026, will hold a joint discussion. The meeting will begin at 6:00 p.m. in the Town Hall Annex. It is requested that a representative from their group attend who could discuss what they are working on currently and what their short- and long-term goals might be. This open discussion may help coordinate the different groups to a common goal for the Town.

For the Agricultural Commission,

Bruce P. Garstka, Agricultural Commission Chairman



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-0443

Agenda Date: 4/7/2026

Agenda #: A.

REPORT

Staff Report:

Wetlands Report, dated April 7, 2026