



Chairman
Justin DeBrod

TOWN OF LEDYARD CONNECTICUT

741 Colonel Ledyard Highway
Ledyard, Connecticut 06339

Inland Wetland and Water Courses

Commission

~ AGENDA ~

Regular Meeting

Tuesday, August 4, 2026

7:00 PM

Council Chambers -Hybrid Format

REMOTE MEETING INFORMATION

Join Zoom Meeting

<https://ledyardct.zoom.us/j/83838072409?pwd=F0YQxfWUwASSrBsQoYJ7CVkn6AuBtY.1>

Meeting ID: 838 3807 2409 Passcode: 279629

One tap mobile +16469313860,,83838072409#,,,,*279629# 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

None.

- VIII. OLD BUSINESS

- A. IWWC#26-17SITE - 6 Winthrop Road (Map ID: 91/2720/6), Gales Ferry, Applicant - Town of Ledyard, Owner - Mark Horbay, for regulated activities associated with the emergent repair and restoration of an eroded drainage ditch abutting a residential home. (Submitted 6/25/26, Date of Receipt 7/7/26, Tabled to 8/4/26, DRD 9/9/26)

Attachments: [FD#1 IWWC#26-17SITE Application&SupportingDocs Rec061126](#)
[FD#2 IWWC#26-17SITE AuthorizationLetter Rec063026](#)
[FD#3 IWWC#26-17SITE WEOComments Rec070726](#)
[FD#4 IWWC#26-17SITE Survey Rec072826](#)

- B. IWWC#26-18RESUB - 12 Hyde Park Dr. (Map ID: 107/1060/12) & 975 Long Cove Road (MAP ID: 107-1340-939), Applicant - Peter Gardner, Owner - Spencer Bay Properties, LLC, for regulated activities associated with a 14-lot resubdivision and construction of a new town road. (Submitted 6/23/26, Date of Receipt 7/7/26, Site Walk 7/28/26, Tabled to 8/4/26, DRD 9/9/26)

Attachments: [FD#1 IWWC#26-18RESUB Application Rec062526](#)
[FD#2 IWWC#26-18RESUB AdjacentLandOwnersList Rec062526](#)
[FD#3 IWWC#26-18RESUB WetlandImpactEvaluation Rec062526](#)
[FD#4 IWWC#26-18RESUB LBMEngineeringReport Rec062526](#)
[FD#4-1 IWWC#26-18RESUB DrainageAreaMaps Rec062526](#)
[FD#5 IWWC#26-18RESUB DEEPReportingForm Rec062526](#)
[FD#6 IWWC#26-18RESUB ResubdivisionPlan Rec062526](#)
[FD#7 IWWC#26-18RESUB - TransmittalLtr Rec070626](#)
[FD#8 IWWC#26-18RESUB WEOComments Rec070726](#)
[FD#9 IWWC#26-18RESUB TEComments072226 Rec072226](#)

- C. IWWC#26-22SITE - 669 Shewville Road (MAP ID: 71-2210-669), Ledyard CT -Property Owner, John Hardy, for regulated activities associated with the construction of a driveway including a wetland crossing and associated site improvements, to serve a future single-family residence. (Submitted 7/6/26, Date of Receipt 7/7/26, Tabled to 8/4/26, DRD 9/9/26)

Attachments: [FD#1 IWWC#26-22SITE App&SupportingDocs Rec070626](#)
[FD#2 IWWC#26-22SITE LMBEngineeringMemo Rec070626](#)
[FD#3 IWWC#26-22SITE WetlandsReport Rec070626](#)
[FD#4 IWWC#26-22SITE SitePlan Rec070626](#)

IX. NEW BUSINESS

- A. IWWC#26-23SITE - 78 Christy Hill Road (MAP ID: 92-470-78), Gales Ferry CT, - Property Owner, Gail Curland - Agent, Peter Gardner, for regulated activities associated with the construction of a driveway, septic system and single family home and all site improvements. (Submitted 7/29/26, Date of Receipt 8/4/26, DRD 10/8/26)

Attachments: [FD#1 IWWC#26-23SITE Application Rec072926](#)
[FD#2 IWWC#26-23SITE WetlandsReport Rec072926](#)
[FD#3 IWWC#26-23SITE SitePlan Rec072926](#)

- B. PZ#26-XXSITE - 1363 Baldwin Hill Road (MAP ID: 121-140-1363), Gales Ferry, CT - Applicant/Property Owner, RVE Properties - Agent, Michael Ott, P.E, L.S, for regulated activities associated with the construction of commercial office space and associated site improvements. (Submitted 7/29/26, Date of Receipt 8/4/26, DRD 10/8/26)

- C. IWWC#26-25SITE-611 Lantern Hill Road (MAP ID: 74-1210-611), Ledyard, CT, Applicant/Property Owner, James Holley, Agent, CT Cabinetry & Millwork LLC/Boundaries LLC, for regulated activities for construction of a new single-family residence, installation of a floating dock, and restoration of the eroded shoreline with associated site improvements. (Submitted 7/30/26, Date of Receipt 8/4/26, DRD

10/8/26)

X. APPROVAL OF THE MINUTES OF PREVIOUS MEETINGS

A. IWWC Regular Meeting Minutes of July 7, 2026

Attachments: [IWWC Regular Meeting Minutes 7-7-2026 FINAL](#)

B. IWWC Special Meeting Site Walk Minutes of July 28, 2026

XI. CORRESPONDENCE

XII. REPORTS

A. Wetlands Report of August 4, 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 #: 26-0939

Agenda Date: 7/7/2026

Agenda #: A.

LAND USE APPLICATION

Subject/Application:

IWWC#26-17SITE - 6 Winthrop Road (Map ID: 91/2720/6), Gales Ferry, Applicant - Town of Ledyard, Owner - Mark Horbay, for regulated activities associated with the emergent repair and restoration of an eroded drainage ditch abutting a residential home. (Submitted 6/25/26, Date of Receipt 7/7/26, Tabled to 8/4/26, DRD 9/9/26)

Background:

(type text here)

Land Use Director/Town Planner:

(type text here)

FD#1

5

TOWN OF LEDYARD

INLAND WETLANDS AND WATERCOURSES COMMISSION (IWWC)

APPLICATION FOR PERMIT (Or Commission ruling that a permit is not needed)

Street No./ Name: _____

Application No. IWWC#26-17

Receipt Date _____

S176

Date Submitted 6/11/26

RECEIVED

Applicant/Agent Town of LedyardOwner (if different) Mark T. Horbay

JUN 11 2026

Address 741 Colonel Ledyard HwyAddress of Owner 6 Winthrop Rd

Land Use Department

Phones 860-464-3238 / _____ cellPhone 860-464-9447

- 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

Mark T. Horbay

Signature of Applicant/ Agent

Location of Property 6 Winthrop RdTax Assessor's Map No. 76 & 91Zoning District R20

Written Description of Proposed Activity Remediation of a severely eroded drainage ditch that is expanding to the point of threatening the home on the property.

Proposed Erosion/ Sediment Control Measures: Work in dry conditions; progressively stabilize with rip rap/stoneTotal Area of Site 1.15 acresTotal Area of Wetlands per Official Inventory Map 2,500 sq ftAmount of Fill, in Cubic Yards ~500Disturbed Area, in Square Feet ~5,000 or in Acres _____Area Increase/Decrease in Wetlands 0 (For Map Amendment Only*)

Soil Types from USDA Soil Survey _____

General Description of Vegetative Cover Sporadic low brushy vegetation interspersed among larger trees.

Name and Address of Adjacent Property Owners

See attached.Anticipated Start Date 8/1/26 Completion Date 10/15/26

List previous IWWC application #'s _____

IWW Commission Disposition: IWWC Regulations; Section _____

Classification _____

Signature of Chair

FEE: _____ + \$60.00 State Fee = _____

DATE PAID _____

RECEIPT # _____



100 feet Abutters List Report

Ledyard, CT
June 23, 2026

Subject Property:

Parcel Number: 91-2720-6
CAMA Number: 91-2720-6
Property Address: 6 WINTHROP RD

Mailing Address: HORBAY MARK THEODORE
6 WINTHROP RD
GALES FERRY, CT 06335

Abutters:

Parcel Number: 76-2120-1673
CAMA Number: 76-2120-1673
Property Address: 1673 ROUTE 12

Mailing Address: PETROLEUM MARKETING INVESTMENT
GROUP LLC
2900 TELESTAR CT
FALLS CHURCH, VA 22042

Parcel Number: 76-440-11
CAMA Number: 76-440-11
Property Address: 11 CHAPMAN LN

Mailing Address: RIDLEY DEBORAH
11 CHAPMAN LN
GALES FERRY, CT 06335

Parcel Number: 76-440-15
CAMA Number: 76-440-15
Property Address: 15 CHAPMAN LN

Mailing Address: ORTA HAYDEE ACEVEDO
15 CHAPMAN LN
GALES FERRY, CT 06335

Parcel Number: 76-440-3
CAMA Number: 76-440-3
Property Address: 3 CHAPMAN LN

Mailing Address: SHERIDAN ASPHALT PAVING LLC
727 PENDLETON HILL RD
NORTH STONINGTON, CT 06359

Parcel Number: 76-440-7
CAMA Number: 76-440-7
Property Address: 7 CHAPMAN LN

Mailing Address: LEWIS JORDAN LANE + STACY
ZACHARY JOSEPH
7 CHAPMAN LN
GALES FERRY, CT 06335

Parcel Number: 91-1050-14
CAMA Number: 91-1050-14
Property Address: 14 HURLBUTT RD

Mailing Address: A GALES FERRY CEMETERY ASSOC I
P O BOX 144
GALES FERRY, CT 06335

Parcel Number: 91-1590-12
CAMA Number: 91-1590-12
Property Address: 12 MILITARY HWY

Mailing Address: BANNERSTONE LLC
P O BOX 647
GALES FERRY, CT 06335

Parcel Number: 91-1590-2
CAMA Number: 91-1590-2
Property Address: 2 MILITARY HWY

Mailing Address: CASSABRIA MERRY
13 DEVONSHIRE DR
GALES FERRY, CT 06335

Parcel Number: 91-2720-10
CAMA Number: 91-2720-10
Property Address: 10 WINTHROP RD

Mailing Address: COUZELIS DAVID + ANGELA
10 WINTHROP RD
GALES FERRY, CT 06335

Parcel Number: 91-2720-8
CAMA Number: 91-2720-8
Property Address: 8 WINTHROP RD

Mailing Address: OCONNELL RYAN P
8 WINTHROP RD
GALES FERRY, CT 06335



www.cai-tech.com

Data shown on this report 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 report.

6/23/2026

Page 1 of 1



6 Winthrop Rd, Gales Ferry

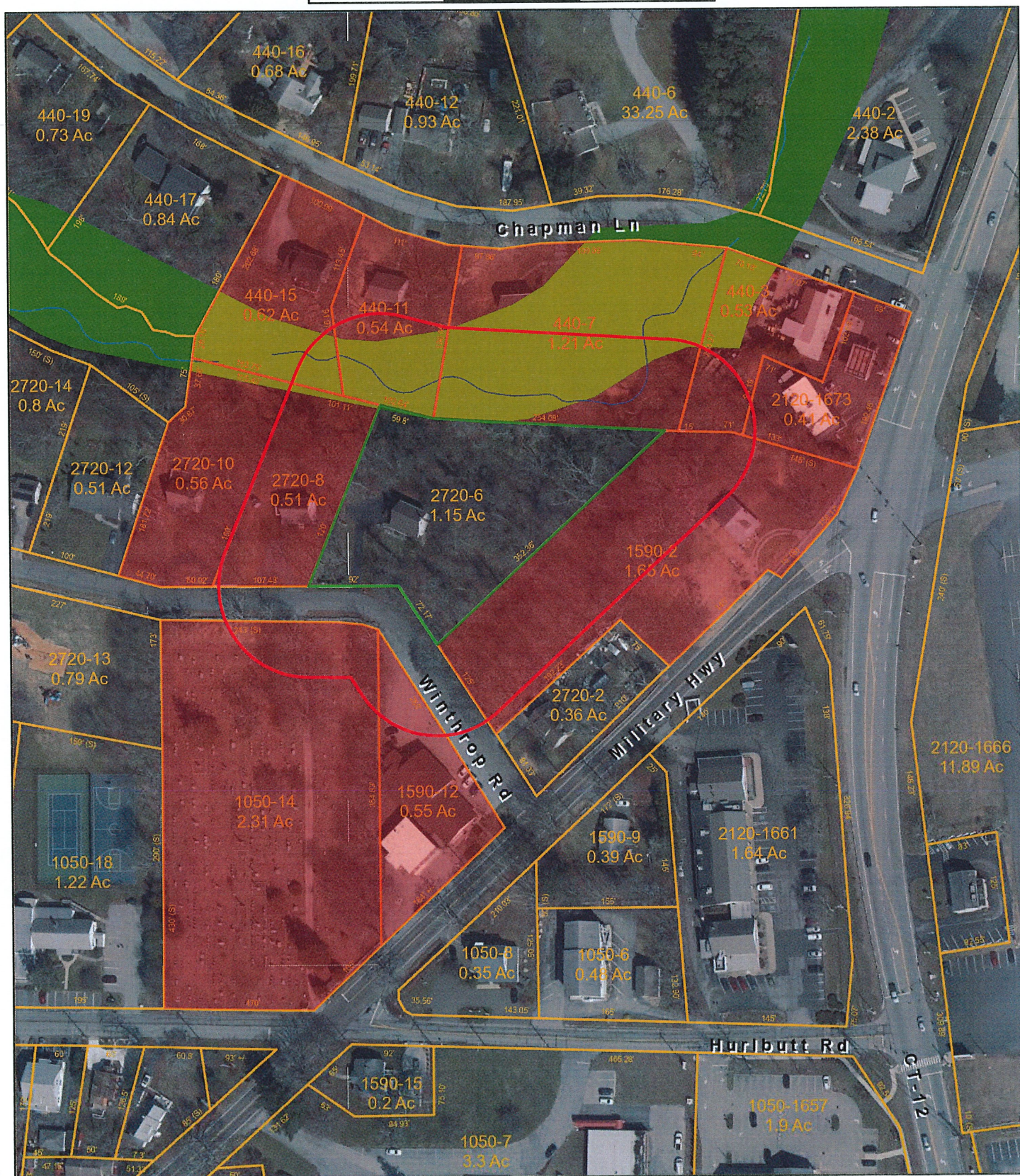
Ledyard, CT

1 inch = 150 Feet



www.cai-tech.com

June 23, 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.



TOWN OF LEDYARD

CONNECTICUT

PUBLIC WORKS DEPARTMENT

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

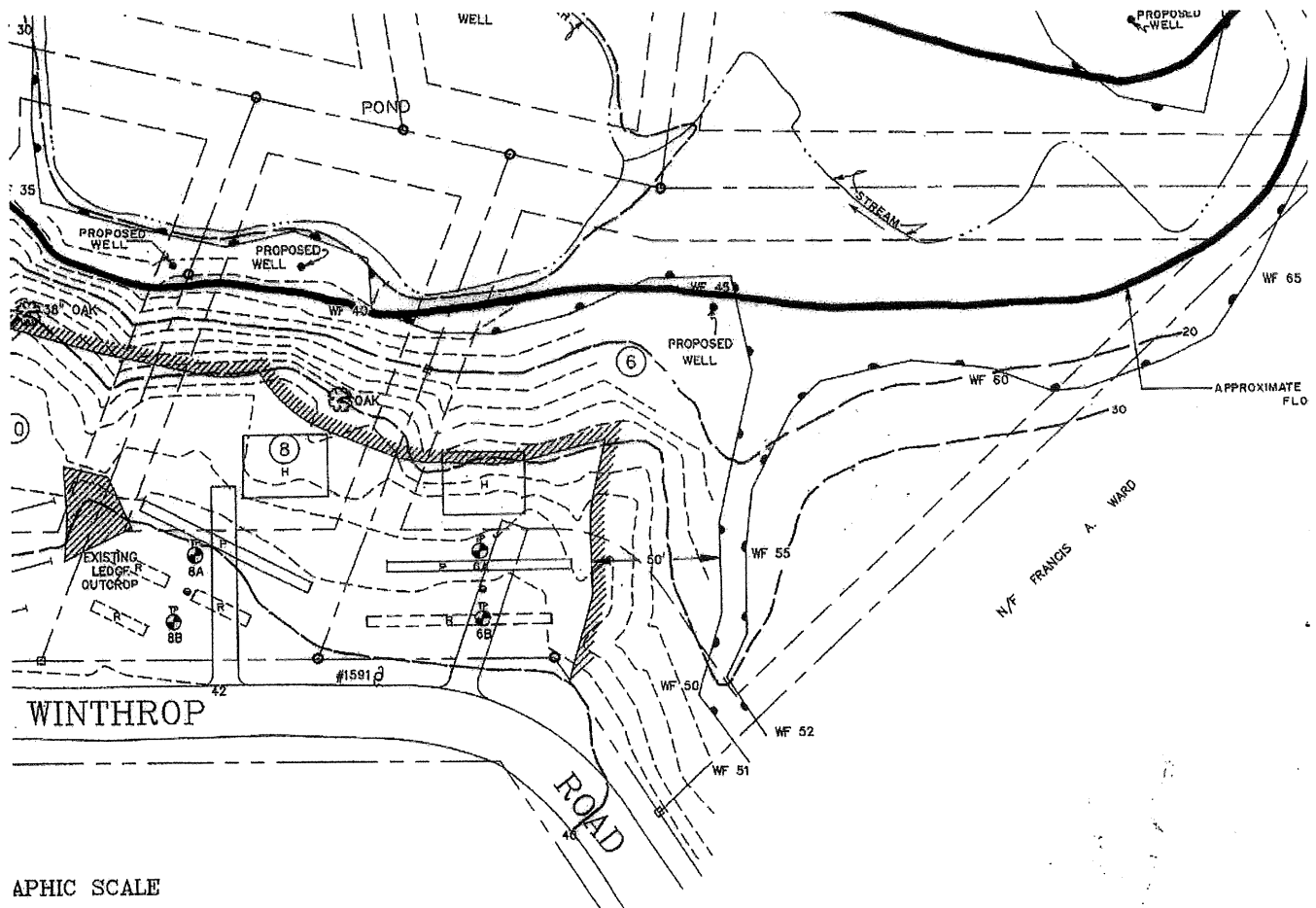
June 11, 2026

6 Winthrop Rd Drainage Ditch Remediation (IWWC#26-17SITE)

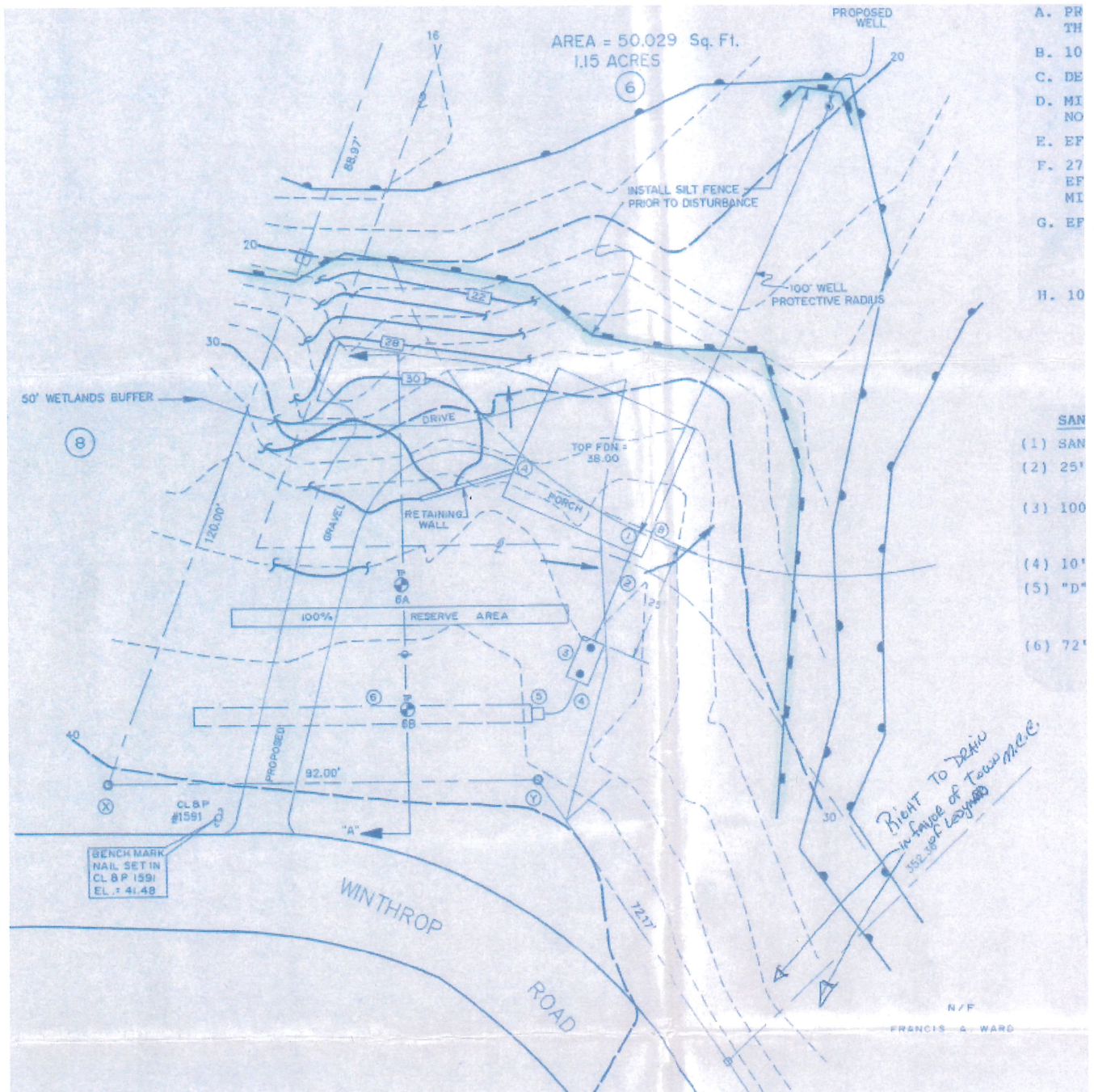
Background

The proposed work associated with this project is to remediate an area of severe erosion associated with a drainage ditch conveying stormwater from a Town drainage system. In 1996 a subdivision of land between Winthrop Rd and Chapman Ln was approved that included 6 Winthrop Rd.

An existing drainage ditch starting at a discharge point at 2 Military Hwy continues across 6 Winthrop Rd and runs into the headwater area of Clark Cove. The original proposed house layout on this lot was at the extreme west boundary and 75 ft from the edge of the ditch, as it existed then.



Subsequently, the builder moved the house considerably closer to the ditch (about 40 ft).

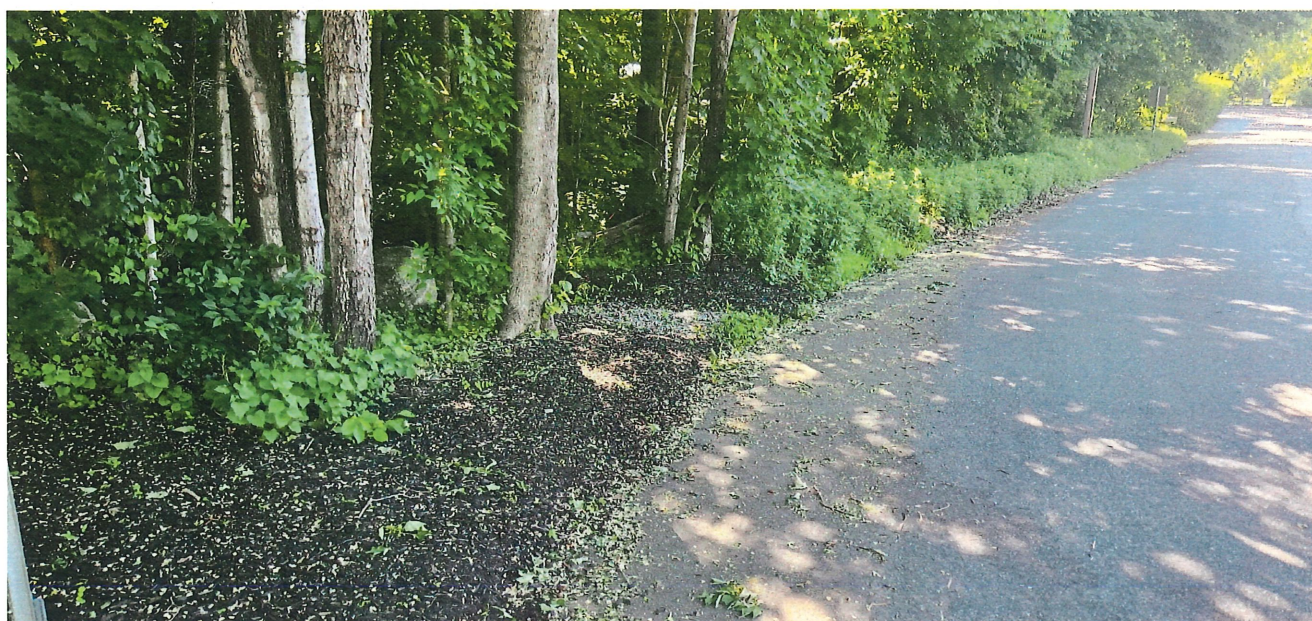


This ditch was never properly armored against the progressive effects of stormwater runoff, which has led to dramatic erosion and expansion of the ditch with the present proximity of the bank noticeably closer to the house. This situation was brought to the Town's attention by Mr. Mark Horbay, the present owner and occupant of 6 Winthrop Rd.

Here are some photographs:



House from the Road (ditch to the right in the woods)



Leak-Off on to 6 Winthrop Rd west of Drainage Discharge



Drainage Discharge at 2 Military Hwy



Views of House from Ditch



View Looking up Ditch from Adjacent to House



Miscellaneous Ditch Photos

The objective of this project is to fill in the ditch as necessary to restore its original grade and then armor it with appropriately sized stone. We would be using clean fill that we have stockpiled at the Public Works Highway Garage facility. We will be clearing and grubbing as necessary to establish suitable access to the work area from the road.

The normal condition of the ditch is dry and of upland condition; it is typically only stream-like when conveying stormwater. But the original drawings depict wetland boundaries at the ditch and the area approaching and at the stream below are wetlands. Our work will most likely breach the 100-ft setback limit.

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

5 June, 2026

RECEIVED

JUN 30 2026

Land Use Department

To whom it may concern:

This is to advise that the McKee Farm Trust (MFT) hereby notifies the Towns of Ledyard and North Stonington, Connecticut, that the MFT approves and endorses the design, approval, permitting and construction of the culvert under Hyde Mill Pentway on MFT property as per the engineering drawings prepared by WMC Consulting Engineers of Newington, CT for such project.

Please let me know if you need anything else on this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Samuel Duplessis', with a large, sweeping loop at the end.

Samuel Duplessis

Trustee

McKee Farm Trust



TOWN OF LEDYARD

Department of Land Use and Planning

Hannah Middleton-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 #IWWC26-17SITE

REGULAR MEETING – TUESDAY, July 7, 2026

Prepared by Hannah Middleton- Gienau, Zoning and Wetlands Official on 07/07/26

Agent/Applicant(s):	Town of Ledyard (Applicant)
Property Owner(s):	Mark Horbay, Gales Ferry CT, 06335
Project Address:	6 Winthrop Rd (Map ID: 91/2720/6) Gales Ferry, CT 06335
Meeting Date:	July 7, 2026
Date Received by IWWC:	July 7, 2026
Legal:	Date submitted 6/11/26, Date of Receipt 7/7/26, DRD 9/9/26

Applicant/Owner Requests: Regulated Activities include remediation and restoration of a severely eroded drainage ditch that conveys stormwater from a Town drainage system that is expanding towards a residential home.

Property Info:

Zone District: R-20

Lot-Area: Total lot area 1.15 AC

Total Wetlands: Total wetlands area according to the Applicant 2500SF

Flood Hazard Zone: Zone A (FEMA FIRMD#0911C0362J).

Regulated Activity Description:

Wetland/Watercourse Disturbance Area	5000 SF +/-
---	--------------------

Staff Comments:

Please be advised the following comments with regard to my review of the Application and supporting documents.

Regulated Activities (Wetlands & Intermittent Watercourse): The proposed permit consists of remediation of an existing drainage ditch that conveys stormwater from a Town drainage system. The drainage ditch has a discharge point starting at 2 Military Highway and continues across 6 Winthrop Rd. as depicted on the original approved subdivision plan entitled "Plan Showing Clark Cove Subdivision Detail Lot Layout, Property of Nathan B. Weiss Winthrop Road and Chapman Lane Ledyard, March 1996, Revised May 30, 1996, Sheet 2 of 3". It can be shown that the approved plan did not reflect the As-built of the home once construction was completed. The home was built approximately 40ft closer to the existing drainage ditch. The drainage ditch was not properly armored against the progression of stormwater runoff and has led to severe erosion and expansion of the drainage ditch that is eroding closer to the

residential home on the lot the ditch drains through. The application will consist of filling in the ditch as necessary and restoring the ditch to original grade with armored stone that is appropriately sized to stabilize.

Soil Erosion & Sediment Controls: Work will be conducted in the dry months with mitigation measures used as needed to reduce siltation or sedimentation accumulating downstream. Clearing and grubbing will be done as needed to restore the drainage ditch during construction.

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#26-17, 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#26-17, 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:



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-0940

Agenda Date: 8/4/2026

Agenda #: B.

LAND USE APPLICATION

Subject/Application:

IWWC#26-18RESUB - 12 Hyde Park Dr. (Map ID: 107/1060/12) & 975 Long Cove Road (MAP ID: 107-1340-939), Applicant - Peter Gardner, Owner - Spencer Bay Properties, LLC, for regulated activities associated with a 14-lot resubdivision and construction of a new town road. (Submitted 6/23/26, Date of Receipt 7/7/26, Site Walk 7/28/26, Tabled to 8/4/26, DRD 9/9/26)

Background:

(type text here)

Land Use Director/Town Planner:

(type text here)

FD#1

RECEIVED

Street No./ Name:

TOWN OF LEDYARD

INLAND WETLANDS AND WATERCOURSES COMMISSION (IWWC)

APPLICATION FOR PERMIT (Or Commission ruling that a permit is not needed)

Land Use Department

Application No. IWWC#26-18
Receipt Date 7/7/26 ResubDate Submitted 6/23/26

Applicant/Agent Peter C. Gardner Owner (if different) Spencer Bay Properties LLC
 Address PO Box 335 Gales Ferry, Ct. 06335 Address of Owner 74 Crosswinds Dr Groton, Ct 06340
 Phones 860-464-7455 / _____ cell Phone 860-705-9299

- 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

Location of Property 12 Hyde Park Dr and 975 Long Cove RdTax Assessor's Map No. 108Zoning District R-40Written Description of Proposed Activity 14 Lot subdivision and construction of new town road.Proposed Erosion/ Sediment Control Measures: An erosion and sediment control plan is part of proposal and is shown in detail on planTotal Area of Site 35.11 acres Total Area of Wetlands per Official Inventory Map 10.7 acresAmount of Fill, in Cubic Yards 280 +/- Disturbed Area, in Square Feet 270,000 +/- or in Acres _____Area Increase/Decrease in Wetlands 1500 +/- (For Map Amendment Only*)Soil Types from USDA Soil Survey Sva:Rn:NiC:NgB:SxB: Swb:CdC:CcBGeneral Description of Vegetative Cover Lightly wooded

Name and Address of Adjacent Property Owners

See attached listAnticipated Start Date Fall 2026 Completion Date Fall 2028List previous IWWC application #'s #25-228UB

IWW Commission Disposition: IWWC Regulations; Section _____ Classification _____

Signature of Chair

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

NAMES/MAILING ADDRESSES OF ADJACENT LAND OWNERS
AND LAND DIRECTLY ACROSS STREET

CAPAZZI MICHAEL EST + DENISE
976 LONG COVE RD
GALES FERRY, CT 06335

BROWN MARK H + MELISSA
974 LONG COVE RD
GALES FERRY, CT 06335

SLAVIN MICHAEL J + KATHERINE E
11 HYDE PARK DR
GALES FERRY, CT 06335

MALEK JOSHUA M + ISABELLA
977 LONG COVE RD
GALES FERRY, CT 06335

MASTERSON KRISTOFER + COLLETTE
973 LONG COVE RD
GALES FERRY, CT 06335

LEDGEWOOD MOBILE HOME PARK LLC
967 LONG COVE RD
GALES FERRY, CT 06335

SPENCER BAY PROPERTIES LLC
963 LONG COVE RD
GALES FERRY, CT 06335

SPENCER BAY PROPERTIES LLC
943 LONG COVE RD
GALES FERRY, CT 06335

EGAN BRETT + ELLIS KATE E
8 HYDE PARK DR
GALES FERRY, CT 06335

TOWN OF LEDYARD
741 COLONEL LEDYARD HWY
LEDYARD, CT 06339

RECEIVED

JUN 23 2026

Land Use Department

SUPHASAWAD REPEAT + KAEWONG PHADUNGSAK
14 HYDE PARK DR
GALES FERRY, CT 06335

ANDERSON DAVID J
16 HYDE PARK DR
GALES FERRY, CT 06335

BOHARA CHARLES W JR + ELIZABETH W
20 HYDE PARK DR
GALES FERRY, CT 06335

HART ROGER A + CLARK ERIN E
22 HYDE PARK DR
GALES FERRY, CT 06335

HYDE PARK LLC
24 HYDE PARK DR
GALES FERRY, CT 06335

TOMPKINS ROGER R CO-TRUSTEE + HOLLANDER ELLEN
26 HYDE PARK DR
GALES FERRY, CT 06335

TOWN OF LEDYARD
741 COLONEL LEDYARD HWY
LEDYARD, CT 06339

HALL RICHARD C - ESTATE
981R LONG COVE RD
GALES FERRY, CT 06335

COLLINS DONNA ELAINE
983R1 LONG COVE RD
GALES FERRY, CT 06335

ALLEN MARK
983R LONG COVE RD
GALES FERRY, CT 06335

CHURCHILL DENISE A
981 LONG COVE RD
GALES FERRY, CT 06335



Ian Cole, LLC***Professional Registered Soil Scientist / Professional Wetland Scientist******PO BOX 619******Middletown, CT 06457******Itcole@gmail.com******860-514-5642***

March 15, 2026

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

RECEIVED

JUN 23 2026

Land Use Department

**RE: WETLAND IMPACT EVALUATION
KINEO ESTATES – PROPOSED CONSERVATION RESUBDIVISION
12 HYDE PARK DRIVE & 975 LONG COVE ROAD
LEDYARD, CONNECTICUT**

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

INTRODUCTION

On behalf of the Applicant, Mt. Kineo Builders, I have completed a wetland delineation and evaluation of the jurisdictional freshwater inland wetlands and watercourses at the above referenced residential development Project Site. This evaluation was completed to provide a basis for determining the potential impacts associated with the proposed conservation Resubdivision of the 35 acre parcel. Details of the proposed development are presented in the Project Site Plans and the wetland application.

This evaluation identifies the site's natural resources and provides a natural resource narrative to provide context for assessment of the potential for adverse impacts to regulated resources. Field surveys were conducted on the site in the summer of 2024, and spring and summer of 2025. The 2026 work builds upon the previous 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 14 new individual single family residential lots in a proposed conservation re-subdivision of land totaling 35.11 acres. The proposal will provide a dedication of 64% of the land or 22.46 acres to open space (24% more

preserved acres than the required 40% open space requirement). The lots will be accessed by a new 1,000 foot long road that ends in a cul-de-sac (to be named Ellie Rose Lane). The new proposed road will extend from the Hyde Park Road. 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 12-acre development envelope positioned in the center of the overall 35.11 acre Project Site. Clustering the development in one area greatly reduces fragmentation of the overall property and provides a substantial open space area that extensively covers the southern limits of the site which hosts the main body of the wetland system that receives runoff from the streams on the property which originating from the north on Gungywamp Hill.

The site has been designed with a conventional drainage system and stormwater from the new roadway will be collected by catch basins with deep sumps in the road and directed into a 25' x 25' water quality basin to renovate stormwater and de-energize flows prior to discharge. The proposed roadway will require the crossing of a narrow watercourse / wetland. The roadway crossing will result in the disturbance of 2,500 SF of flagged wetlands. A 36" HDPE culvert will pass the stream flows under the new proposed road. 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.

For more information, please refer to the plans entitled "*Plan Showing Kineo Estates Conservation Resubdivision Prepared For Mt. Kineo Builders 12 Hyde Park Drive and 975 Long Cove Road, Ledyard, Connecticut Scale 1"= 100',*" prepared by Dieter & Gardner dated March 2024, as amended.

EXISTING SITE CONDITIONS

The 35.5-acre Project Site is vacant, undeveloped, and forested. The property is accessed from a 50-foot strip of land that connects to Hyde Park Drive. The property has additional road frontage connecting to Long Cove Road and Bluebird Drive, but both access points would require significant wetlands and/or upland disturbance to be utilized. The proposed access alignment from Hyde Park Drive was selected to minimize impacts.

The upland habitat consists of a mature a 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. Notable conifers include hemlock and white pine. 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. There are notable large mountain laurel shrub groves that neighbor the southern limits of the development extending into the open space conservation areas. The forest floor ground cover includes species such as Christmas fern, serviceberry, Canadian mayflower intermingled with beds of hay-scented fern, and marginal wood fern.

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 (NDDDB) polygon per the CTDEEP 2026 NDDDB 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 March of 2024.

WETLAND AND WATERCOURSE DESCRIPTIONS

The United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Mapper shows the onsite wetlands that will be impacted 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 watercourse as R4SBC. 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.

Three wetland areas are found in proximity to the proposed activities.

1. West of the site entrance is concrete headwall that issues road drainage onto the adjacent Town of Ledyard property. The stormwater runoff discharges to an eroded intermittent stream channel. The edge of the flagged watercourse parallels the proposed subdivision roadway for roughly 100' before veering to the west into the Town of Ledyard owned parcel.
2. The proposed roadway will cross over a narrow, rocky, unnamed watercourse demarcated by wetland flags 1E to 10E and 1D to 10D on the project plans. The

watercourse is very well-defined and flows through two notable topographic knolls which the roadway connects.

3. To the east of the proposed development are two narrow very ephemeral drainage paths that carry very seasonal flows south to the larger forested wetland system that extensively covers the proposed opens space conservation area. Portions of the drainageway are very shallow (1-foot deep) consisting of hand-dug ditches, particularly along the boundary of lots 11 and 12.

The wetland community exhibits classic Red Maple swamp habitat, including:

- Trees: Red Maple, yellow birch, swamp white oak, and shagbark hickory.
- Shrubs: Highbush blueberry, spicebush, Japanese barberry, winterberry, ironwood, witch hazel, and Mountain Laurel (*along the boundary not in the interior of the wetland*)
- Herbaceous: Tussock sedge, sphagnum moss, sensitive fern, marsh fern, cinnamon fern, skunk cabbage, false hellebore, jack-in-pulpit, and jewelweed.

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 melt-out glacial till parent material.

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.

Upland Soils

The bulk of the uplands in the vicinity of the proposed development are mapped and classified as well-drained Canton and Charlton fine sandy loams. In the lower level land covering the eastern side of the site are areas of moderately well drained Narragansett silt loams with inclusions of Sutton fine sand loams in areas where the ground conditions are notably stonier. Both Narragansett and Sutton soils are typically associated with a perched high seasonal watertable due to an underlying dense till layer.

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 noted within a NDDB specific polygon layer. Regardless a preliminary site assessment query was completed which identified Northern Long Eared Bats, which ubiquitously occur across the state. The project will comply with NLEB best management practices to ensure there are no conflicts. A copy of the CTDEEP NDDB preliminary site assessment is attached for reference.

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. Wetland dependent State Listed Species are not known to be present on the site per the CTDEEP NDDDB Mapper.
2. The wetlands are located in a glacial till landscape with well drained soils.
3. The regulated disturbances consist of piping a 100-foot segment of a watercourse.
4. The watershed at the crossing site is approximately 20 acres per the USGS Map.

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 (SITE ENTRANCE)	P	U	P	U	S	S	S	U	U	U	U	U	U
WETLAND #2 (STREAM CROSSING)	P	U	U	U	U	U	S	S	U	U	U	S	U
WETLAND #3 (EAST DRAINAGE)	P	U	U	U	S	S	S	S	U	U	U	U	U
Suitability P = principal function S = secondary function U = function unlikely to be provided at a significant level N/A = not applicable or unknown													

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.

The proposed activities will not negatively or adversely impact the functionality of the on-site wetland(s) as described above. These listed functions can be maintained and promoted by maintaining overall on-site drainage patterns, demonstrating a compliant septic systems, 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 2500 SF of direct wetland impact with the installation of the 100-foot long by 36 inch culvert pipe that will be installed to cross the stream. 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.

EROSION 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 clearing to accommodate the proposed roadway and then 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 35.5 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 12 acres of forest to single-family residential suburban neighborhood. However, strategically clustering the development in an open space concept allows the Project to permanently preserve 22.46 acres of contiguous forest that connects to road frontages at both Long Cove Road and Bluebird Drive, both of which offer accessibility to the public. The open space will also encompass a large, forested wetland and extensive Mountain Laurel groves which cover large swaths of the uplands in the southern limits of the site.

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 proposed wetland crossing will utilize a 36 inch HDPE pipe with flared ends. There will be inlet and outlet protection at each respective opening of the pipe. The stream crossing occurs in the upper stretch of the watershed which drains roughly 20-acres of forested area north of Hyde Park Drive. The pipe has been sized so there is no change to the existing stream dynamics and the carrying capacity of the stream.

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 onto a riprap scour pad and will beneficially infiltrate into the soil recharging the nearby watercourse baseflow. The proposed development will not holistically alter surface or subsurface flow conditions or directions in a substantially impactful way. 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.

CLOSING STATEMENTS

The project has been designed to minimize 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 12 total acres of the site will be required. This clearing will

result in the conversion of mixed hardwood forest habitat to residential single family subdivision neighborhood. Biological surveys did not reveal a unique wetland type, outstanding natural community or 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 without open space and /or access from one of the other road connections 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 reduced 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 and minimizes 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.

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. Minimizing 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.

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

USFWS NWI

NRCS SOIL MAP

USGS STREAM STATS

CTDEEP NDDB PRELIM SITE ASSESSMENT

SITE PHOTOS



Photo 1: General upland conditions in the centerline of proposed subdivision road.



Photo 2: General upland conditions in vicinity of proposed subdivision

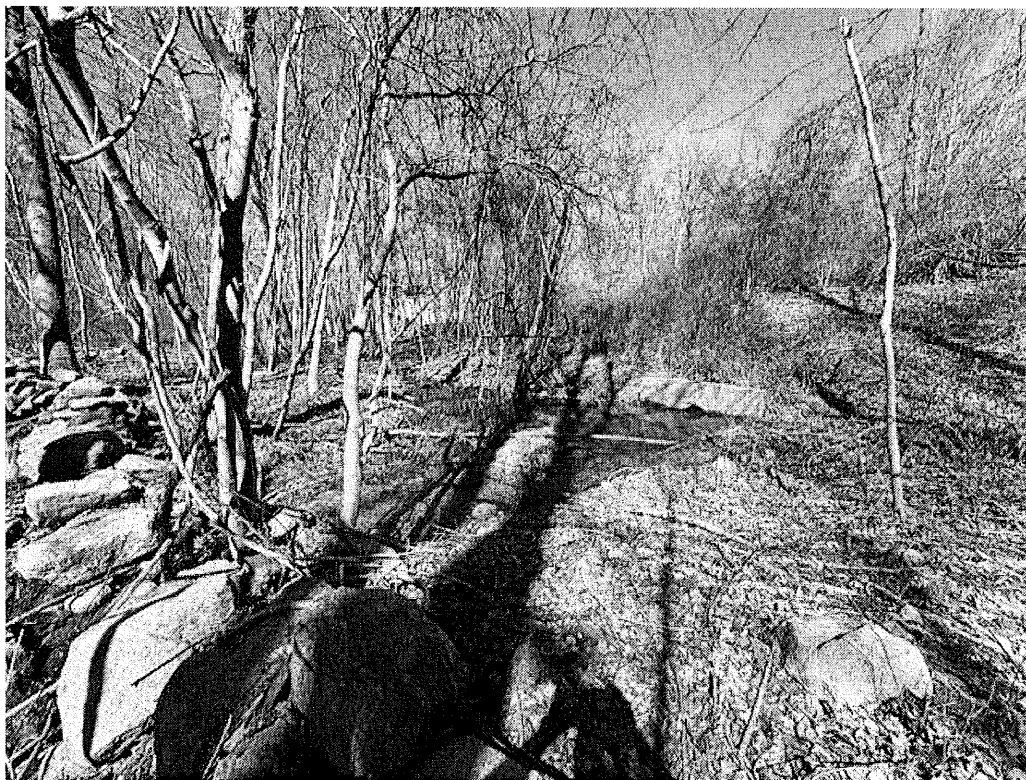


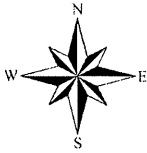
Photo 3: Example of the wetlands on The Town of Ledyard owned parcel west of the proposed access road entrance, this wetland was partly constructed to manage stormwater from Hyde Park Drive.



Photo 4: Example of the watercourse conditions at the proposed crossing



Photo 5: Example of the narrow, shallow, ephemeral drainageway and wetlands on the eastern side of the parcel.



Ledyard, CT

1 inch = 565 Feet



www.cai-tech.com

October 12, 2025



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.



U.S. Fish and Wildlife Service
National Wetlands Inventory

KINEO ESTATES



U.S. Fish and Wildlife Service, National Standards and Support Team
wetlands_team@fws.gov

March 15, 2026

Wetlands

- | | | | | | |
|--|--------------------------------|--|-----------------------------------|--|----------|
| | Estuarine and Marine Deepwater | | Freshwater Emergent Wetland | | Lake |
| | Estuarine and Marine Wetland | | Freshwater Forested/Shrub Wetland | | Other |
| | | | Freshwater Pond | | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Soil Map—State of Connecticut, Eastern Part



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

Spoil Area

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 1, Sep 15, 2023

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

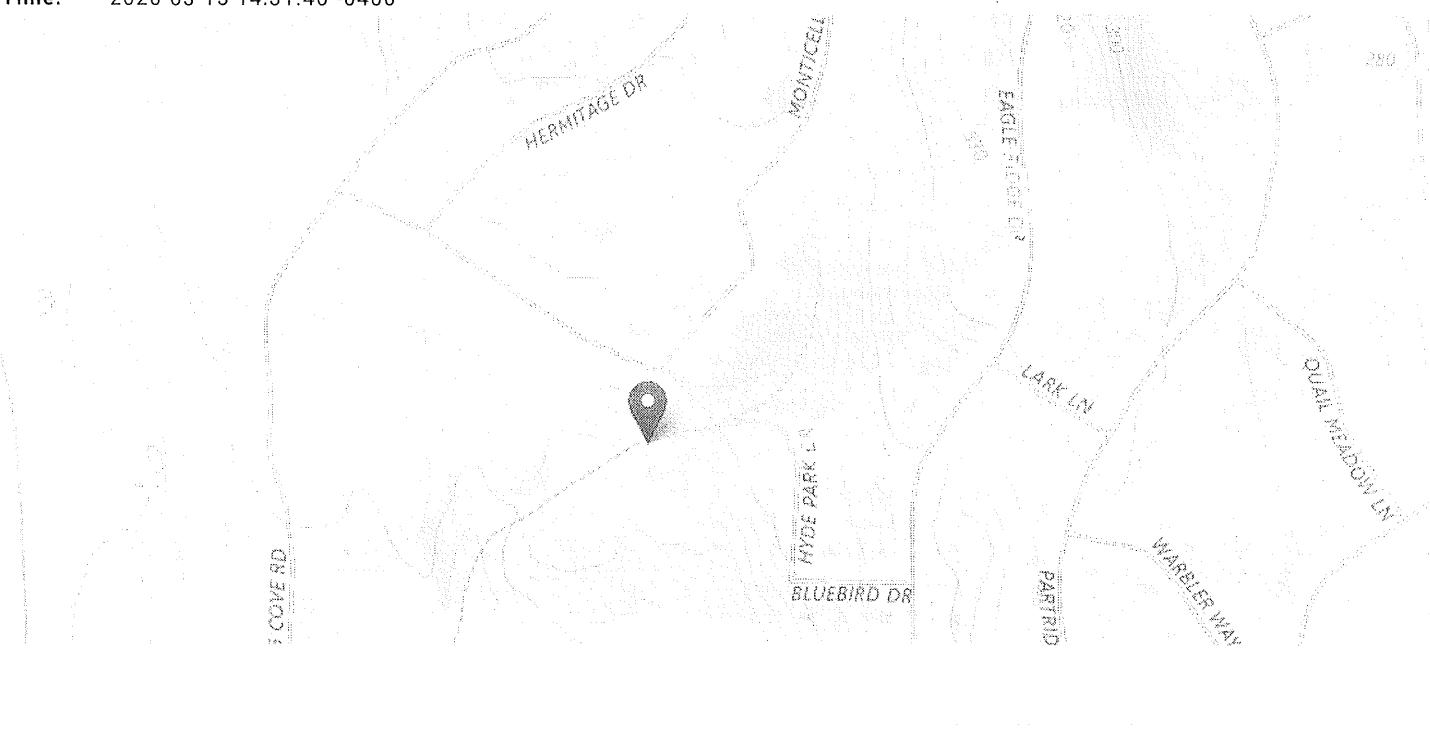
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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	12.2	21.4%
50A	Sutton fine sandy loam, 0 to 3 percent slopes	2.9	5.1%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	4.6	8.0%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	11.6	20.3%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	10.0	17.6%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	1.4	2.5%
67B	Narragansett silt loam, 3 to 8 percent slopes, very stony	6.6	11.7%
68C	Narragansett silt loam, 3 to 15 percent slopes, extremely stony	2.4	4.2%
68D	Narragansett silt loam, 15 to 25 percent slopes, extremely stony	0.3	0.6%
74C	Narragansett-Hollis complex, 3 to 15 percent slopes, very rocky	4.0	7.0%
703B	Haven silt loam, 3 to 8 percent slopes	1.0	1.7%
Totals for Area of Interest		57.0	100.0%

StreamStats Report

Region ID: CT
Clicked Point (Latitude, Longitude): 41.41391, -72.06486
Time: 2026-03-15 14:31:46 -0400



StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at <https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release> (<https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release>).

+ Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
ALTELEV	Alternate mean basin elevation	234	feet
DRNAREA	Area that drains to a point on a stream	0.03	square miles
I24H100Y	Maximum 24-hour precipitation that occurs on average once in 100 years	7.74	inches
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years	3.17	inches
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	9.184	percent
LFLENGTH	Length of longest flow path	0.384	miles

Parameter Code	Parameter Description	Value	Unit
WETLAND	Percentage of Wetlands	0	percent

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

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: 4.31.1
- SSHydro Services Version: 1.1.1
- SSDelineate Services Version: 1.0.1
- NSS Services Version: 2.2.1
- GageStats Services Version: 1.2.1
- Pourpoint Services Version: 1.2.0
- Batch Processor Version: 1.6.1



Generated by eNDDDB on:
10/12/2025

Ian Cole
Towns: Ledyard
Automated Site Assessment: 963888211

Subject: LONG COVE

This is an automated site assessment and not a Natural Diversity Data Base determination. The information provided represents a snapshot that can be used for general planning purposes. **This letter cannot be used to fulfill Endangered Species Act compliance requirements.** Please see information below as well as our [FAQs](#) describing the appropriate use and limitations of the automated Site Assessment tool.

Current data maintained by the Natural Diversity Data Base (NDDDB) and housed in the DEEP ezFile portal, indicates that populations of the following State Endangered, Threatened, or Special Concern species (RCA Sec. 26-306) have been documented within or in close proximity to the area delineated. **Please see the attached table for detailed species information.**

HOW SITE ASSESSMENT SPECIES LISTS ARE COMPILED

Site assessment species lists include 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, landowners, private conservation groups and the scientific community. New and updated information is incorporated into the Data Base and accessed through the ezFile portal as it becomes available. The species list provided is not necessarily the result of comprehensive or site-specific field investigations.

WHAT PURPOSE DOES THIS SITE ASSESSMENT SERVE?

A site assessment is intended to provide a snapshot of the species that may be in the vicinity of your drawn area. It may be useful in project planning or to gain an understanding of the potential for listed species to utilize the site. The list is computer generated; it was not prepared or reviewed by program staff. Biologist review of your location may result in the addition of species not provided by the automated site assessment.

I'VE REVIEWED MY SITE ASSESSMENT, WHAT DO I DO NEXT?

If you are undertaking an activity that requires a state permit, utilizes state funding, or involves state agency action, you must demonstrate compliance with the CT Endangered Species Act. This is done through the full Natural Diversity Data Base review process. Please return to the DEEP's ezFile Portal and select [Natural Diversity Data Base Review](#) to begin this review process. Keep in mind that these detailed reviews may include additional species not identified in the automated site assessment. Program staff consider factors such as habitat characteristics, species life history and other

information to determine appropriate species of concern.

SURVEY WORK MAY BE NECESSARY

Suitable and potentially occupied habitat may extend beyond mapped NDDB areas and unmapped areas may represent potential habitat that has not been adequately surveyed for all taxa. If you are undertaking activities that involve significant ground disturbance, converting natural lands to development, or otherwise fragmenting or disturbing large areas, we recommend conducting comprehensive biological surveys and a full site habitat characterization for areas that have not been assessed through prior biological inventories. Survey work may be required as part of the NDDB review process; completing some or all of this work up front will allow the process to proceed more efficiently.

This survey and habitat characterization should be comprehensive and not strictly limited to species included in the site assessment. Field surveys should be performed by a qualified taxonomic expert with the appropriate scientific collecting permits. Surveys should be conducted at seasonally appropriate times.

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. Recommendations for management and protection of State-listed species with reference to project activities.
7. Statement/résumé indicating the taxonomic expert's qualifications.

Site survey reports should be sent to the CT DEEP-NDDB Program (deep.nddbrequest@ct.gov) for further review by program biologists.

SENSITIVE SPECIES

Please note that, for purposes of automated site assessments, certain sensitive species are not identified beyond their taxa. Additional information will be provided for those projects that will be conducting survey work in preparation for permitting ground disturbing activities or for other activities that might necessitate survey work. For these projects, please submit a Natural Diversity Data Base Review Request and we will provide information to your taxonomic expert.

ADDITIONAL RESOURCES

The following resources may be helpful when planning survey work

- State Listed plant species and Natural Communities documented within each CT town
- Thirteen of Connecticut's Most Imperiled Ecosystems (1998) - Metzler and Wagner
- The Vegetation of Connecticut - Metzler and Barrett
- Nature's Network identifies opportunities for conserving and connecting intact habitats and ecosystems and supporting imperiled species.
- Connecticut's Critical Habitat map. The Critical Habitat map project contains a subset of

known important natural community types and sites in CT. Refer to [Resource Guide](#) for a complete description and limitations of this product.

Additional sites of Critical Habitats and important natural communities exist, some of which are documented by NDDDB and some of which have not been identified, or fully mapped or field verified. You may [contact NDDDB](#) prior to conducting field reviews for more comprehensive information.

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 Data Base
79 Elm Street
Hartford, CT 06106-5127
(860) 424-3011
deep.nddbrequest@ct.gov

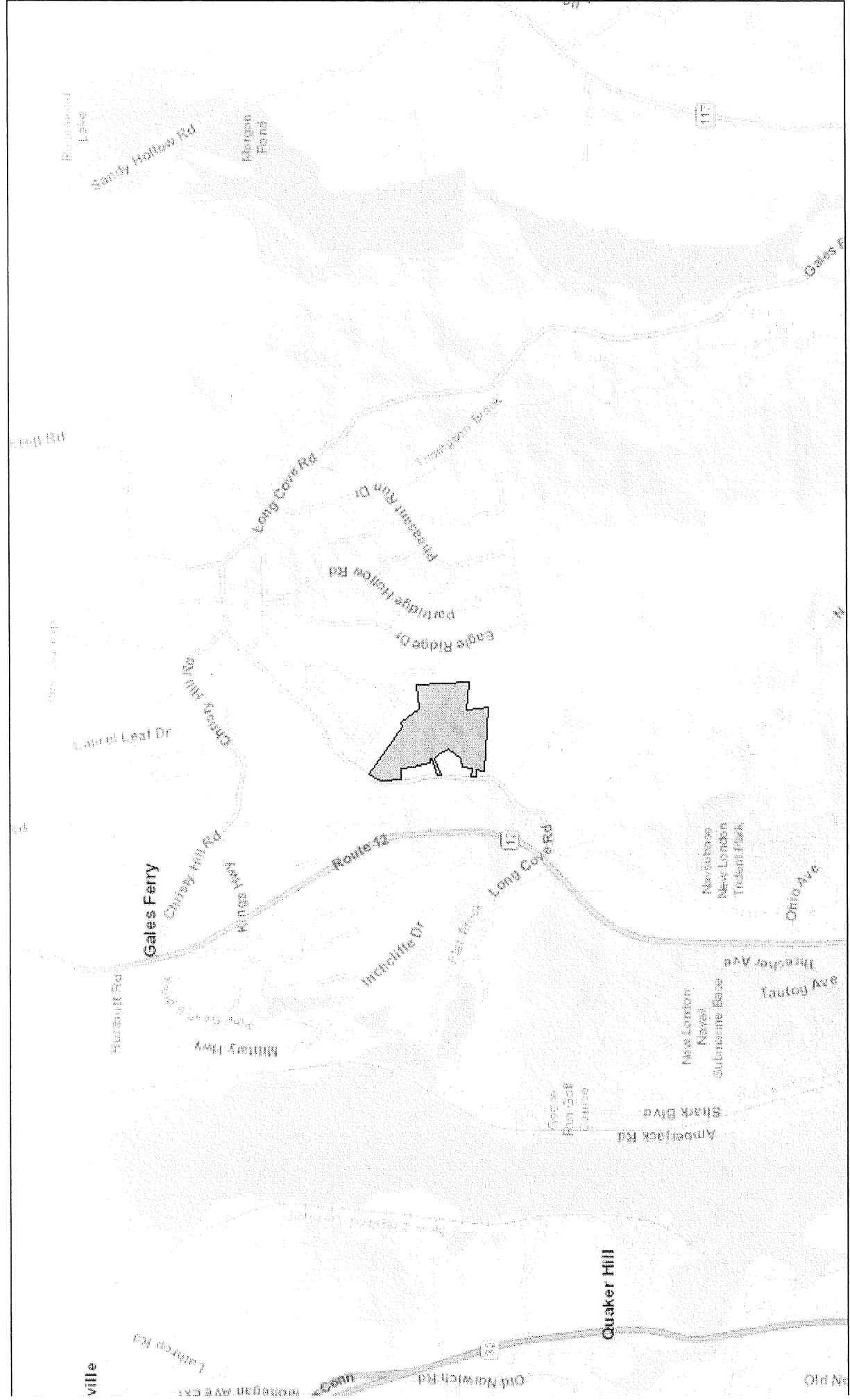
Please include a snapshot of the map, your last name, and the subject area town when you e-mail or write. Thank you for consulting the Natural Diversity Data Base.

Common Name	Northern long-eared bat
Scientific Name	<i>Myotis septentrionalis</i>
Listing Status¹	FE
Taxa	mammal
General Ecology	The Northern long-eared bat is one of the species most impacted by White Nose Syndrome. Populations in Connecticut have declined by over 90%, and it has been Federally listed as Endangered. During the summer northern long-eared bats roost singly or in maternal colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). Males and non-reproductive females may also roost in cooler places, like caves and mines. Northern long-eared bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. This bat has also been found rarely roosting in structures, like barns and sheds. Northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. The presence of northern long-eared bat (<i>Myotis septentrionalis</i>), a federally endangered and state endangered species, may require consultation with the US Fish and Wildlife Service Ecological Field Office in order to be in compliance with the Federal Endangered Species Act if the proposed project requires federal permits or uses federal funds. For more information on federal requirements as well as guidance on the latest management recommendations including development projects, wind energy development, sustainable forest management, and other tools and FAQs, please visit:

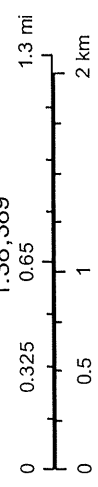
	https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis
--	---

¹E = State Endangered, T = State Threatened, SC = State Special Concern, FE = Federally Endangered, FT = Federally Threatened, NA = Not applicable.

LONG COVE Map



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

12, 2025

LBM Engineering, LLC11 Hally Lane, Colchester, CT 06415-2133 Phone 860-416-9809 Email John@LBMEngineering.com

CIVIL ENGINEERING - LAND DEVELOPMENT - SITE PLANS - STORMWATER MANAGEMENT

RECEIVED**Engineering Report**

JUN 23 2026

June 18, 2026

For Land Use Commissions Submittals**Kineo Estates Conservation Subdivision,
Ledyard, Connecticut****Land Use Department**

EXISTING CONDITIONS: Reference is made to the following Plan Set: "Plan Showing Kineo Estates Conservation Subdivision Prepared for Mt. Kineo Builders 12 Hyde Park Drive and 975 Long Cove Road, Ledyard, Connecticut" Scales as Shown March 2026, By Dieter & Gardner, Gales Ferry, CT. The property is located on the east side of Long Cove Road south of Hyde Park Drive. The property is wooded and drains to the 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. Gutter Flow Analysis and Storm System design are designed for a 25-year storm event. Intensity-Duration-Frequency (IDF) Curves were downloaded from the NOAA Atlas 14 web site.

STORMWATER MANAGEMENT: The proposed development will not change the existing drainage patterns. Pavement runoff from the proposed road, Ellie Rose Lane, will drain to three (3) water quality/detention basins. Each basin has outlet piping designed to reduce the peak rate of runoff from the pavement to a rate of undeveloped ground cover. The basins' outlets are extended detention under drains that hold the runoff for less than 12 hours and settle out suspended solids and drain empty after each storm. Discharge rate from the detention/water quality basin will be further reduced as it flows over 1,000 feet through wetlands and underbrush. The following table provides a comparison of computed peak rates of runoff from roadway pavement for undeveloped land versus the developed condition:

BASIN	AREA (ACRES)	RUNOFF COEFF. (O'LAND)	PRE-DEVELOPED PEAK RUNOFF RAINFALL INTENSITY (IN./HR.)			
			2-YR 3.46 IN./HR.	10 YR 5.14 IN./HR.	25 YR 6.18 IN./HR.	100-YR 7.80 IN./HR.
CB1	0.20	0.25	0.17 CFS	0.26 CFS	0.31 CFS	0.39 CFS
CB3	0.46	0.25	0.40 CFS	0.59 CFS	0.71 CFS	0.90 CFS
CB5	0.35	0.25	0.30 CFS	0.45 CFS	0.54 CFS	0.68 CFS

BASIN	PEAK OUTLET FLOW FROM BASINS			
	2-YR	10 YR	25 YR	100-YR
CB1	0.21 CFS +0.04	0.25 CFS -0.01	0.27 CFS -0.04	0.30 CFS -0.09
CB3	0.43 CFS +0.03	0.51 CFS -0.08	0.56 CFS -0.15	0.61 CFS -0.29
CB5	0.37 CFS +0.07	0.45 CFS -0.00	0.49 CFS -0.05	0.55 CFS -0.13

There is a slight computed increase (less than 0.10 CFS) in peak flow rate for the 2-year storm.

LBM Engineering, LLC

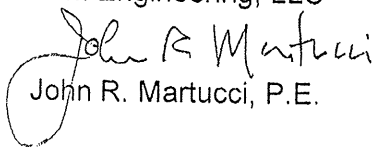
11 Hally Lane, Colchester, CT 06415-2133 Phone 860-416-9809 Email John@LBMEngineering.com

CIVIL ENGINEERING - LAND DEVELOPMENT - SITE PLANS - STORMWATER MANAGEMENT
Kineo Estates Page 2

There is a proposed cross-culvert that will carry an intermittent watercourse under Ellie Rose Lane. The drainage areas were delineated, and the 50-year peak flows were determined using USGS StreamStats (www.usgs.gov). The proposed 36-inch culvert was sized by verifying the inlet control headwater was no more than 1.5 times the pipe diameter. (HW/D). Calculations are attached to this report.

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.

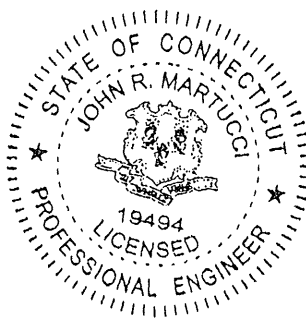


TABLE OF CONTENTS

<u>Title</u>	<u>Page</u>
Report	1 – 2
Drainage Areas	3 – 4
Gutter Flow Analysis	5
System Design	6
NOAA Precipitation	7 – 8
36" Cross Culvert	9 – 16
15" & 36" Pipe Flow Charts	17 – 18
Preformed Scour Holes for 36" Culvert	19 – 21
Detention / Water Quality Basins	22 – 37
Drainage Area Maps	38 - 40

PREPARED BY JRM	DATE PREPARED 11/2024	LBM Engineering, LLC 11 HALLY LANE COLCHESTER, CONNECTICUT 06415 TEL: (860)-416-9809 EMAIL: JOHN@LBMENGINEERING.COM	JOB NUMBER	PAGE NUMBER
CHECKED BY	DATE CHECKED REV 4/2024		CLIENT NAME	TOTAL PAGES

CONSERVATION SUBDIVISION - KINED SUBDIVISION / LEDYARD

RATIONAL METHOD NOTE: RATIONAL METHOD WAS USED TO COMPUTE PEAK RATES OF RUNOFF, DRAINAGE AREAS ARE SMALL (< 1 ACRE)

$$Q_{25} = C \times I \times A \quad \begin{array}{l} C_{PAVEMENT} = 0.95 \\ C_{OVERLAND} = 0.25 \end{array}$$

$$T_C = 10 \text{ MINUTES} \quad I = 5.5 \text{ INCHES/HOUR}$$

ELLIE ROSE LN
CB 1 STA. 12+75, RT

$$275' \times 14' = 0.09 \text{ AC} \quad \text{PAVEMENT } C = 0.95$$

$$AC = 0.95 \times 0.09 = 0.09$$

$$Q_{25} = 0.09 \times 5.5 = 0.50 \text{ CFS}$$

CB 2 STA 12+75, LT (MIRROR IMAGE OF CB1)

ELLIE ROSE LN
CB 3 STA 16+97, RT (LOW POINT)

$$14+42 \text{ TO } 18+66 = 424' \times 14' = 0.14 \text{ AC} \quad \text{PAVT} \times 0.95 = 0.133$$

$$15+0 \text{ TO } 16+00 \text{ RT} = 1800 \text{ SF} = 0.04 \text{ AC (overland)} \times 0.25 = 0.010$$

$$\text{TOTAL AREA } 0.18 \quad \text{WEIGHTED } C \quad 0.143 / 0.18 = 0.79$$

CB 4 STA 16+97 LT (MIRROR IMAGE OF CB3)

PREPARED BY JEM	DATE PREPARED 4/2026	LBM Engineering, LLC 11 HALLY LANE COLCHESTER, CONNECTICUT 06415 TEL: (860)-416-9809 EMAIL: JOHN@LBMENGINEERING.COM	JOB NUMBER	PAGE NUMBER
CHECKED BY	DATE CHECKED		CLIENT NAME	TOTAL PAGES

CB 5 STA. 20+52 ELLIE ROSE LN

			A x C
10,442 SF PAVEMENT	0.24 ACRES	x 0.95	= 0.228
4774 SF O'LAND	0.11 AC	x 0.25	= 0.028
	<u>0.35 AC</u>		<u>0.256</u>

WEIGHTED C = $0.256 / 0.35 = 0.73$

CB 1A STA 14+42, RT ELLIE ROSE LN

(167' x 14') = 0.05 AC		AC
	x (PAV'T) 0.95	= 0.048

CB 1B STA 14+42, LT

MIRROR OF 1A

PROJECT: KINEO ESTATES SUBDIVISION
PROJECT NO.:
TOWN: Ledyard
ROAD: ELLIE ROSE LN
LOCATION: N/A

DESIGNED BY: JRM DATE: 01/03/25
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
ELLIE ROSE LN RIGHT GUTTER																
C8 1	12+75, RT	0.090	0.95	10	5.50	0.086	0.086	0.517	0.010	0.043	0.139	3.240	0.027	0.005	0.081	"C"
C8 1A	14+42, RT	0.050	0.95	10	5.50	0.048	0.052	0.317	0.010	0.043	0.116	2.697	0.002	0.000	0.048	"C"
C8 3	16+97, RT	0.180	0.79	10	5.50	0.142	0.143	0.862	LOW PT	0.043	SEE LOW POINT ANALYSIS				0.142	"C"
ELLIE ROSE LN LEFT GUTTER																
C8 2	12+75, LT	0.090	0.95	10	5.50	0.086	0.086	0.517	0.010	0.043	0.139	3.240	0.027	0.005	0.081	"C"
C8 2A	14+42, LT	0.050	0.95	10	5.50	0.048	0.052	0.317	0.010	0.043	0.116	2.697	0.002	0.000	0.048	"C"
C8 4	16+97, LT	0.180	0.79	10	5.50	0.142	0.143	0.862	LOW PT	0.043	SEE LOW POINT ANALYSIS				0.142	"C"
C8 5	20+52, RT	0.350	0.73	10	5.50	0.256	0.256	1.546	LOW PT	0.043	SEE LOW POINT ANALYSIS				0.256	"C"
											NOTES:					
LOW POINT ANALYSIS																
INLET	Q TO INLET	PERIM.	C WEIR	d WEIR	WIDTH OF FLOW	d ORIFICE										
C3 3	0.862	5.020	3	0.148	2.97	0.010	<0.4' DEEP - OK									
C3 4	0.862	5.020	3	0.148	2.97	0.010	<0.4' DEEP - OK									
C3 5	1.546	5.020	3	0.219	4.38	0.008	<0.4' DEEP - OK									

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.) All low points operate as a weir. Depth (d) over grate is less than 0.4 feet.

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

STORM SEWER SYSTEM DESIGN

Client: KINEO ESTATES SUBDIVISION
 Project: ELLIE ROSE LANE
 Road: 25-YR
 Return Period for Design: 25-YR
 Prepared By: JRM Date: 01/03/25 Revised: 1
 Sheet No. 1 of 1

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.)	Size (in.)	Length (ft.)	Slope (ft./ft.)	Avg. Vel. (f.p.s.)	Full Cap. (c.f.s.)	Headwater (ft.)	Manning "n"
From	To														
CB 2 12+75,LT	CB 1 12+75,RT	10	0.10	10.0	0.081	0.081	5.5	0.45	15	24	0.010	4.0	6.99	0.20	0.012
CB 1 12+75,RT	BASIN	10	0.41	10.1	0.081	0.162	5.5	0.89	15	124	0.014	5.0	8.28	0.30	0.012
CB 2A 14+42,LT	CB 1A 14+42,RT	10	0.13	10.0	0.048	0.048	5.5	0.26	15	24	0.010	3.0	6.99	0.20	0.012
CB 1A 14+42,RT	CB 3 16+97,RT	10	1.07	10.1	0.048	0.096	5.5	0.53	15	256	0.010	4.0	6.99	0.20	0.012
CB 4 16+97,LT	CB 3 16+97,RT	10	0.08	10.0	0.142	0.142	5.5	0.78	15	24	0.010	5.0	6.99	0.30	0.012
CB 3 16+97,RT	BASIN	10	0.08	10.1	0.142	0.38	5.5	2.09	15	45	0.067	10.0	18.10	0.40	0.012
CB 5 20+55,RT	BASIN	10	0.47	10.0	0.256	0.256	5.5	1.41	15	140	0.010	5.0	6.99	0.40	0.012

Manning's "n" for HDPE and RC pipe = 0.012
 NOTE: ALL PIPES ARE BELOW FULL CAPACITY.



Search ☐ NWS ☐ All NOAA

Site Map

NOAA Atlas 14

NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CT

Data description

Data type: Precipitation depth Units: English Time series type: Partial duration

Select location

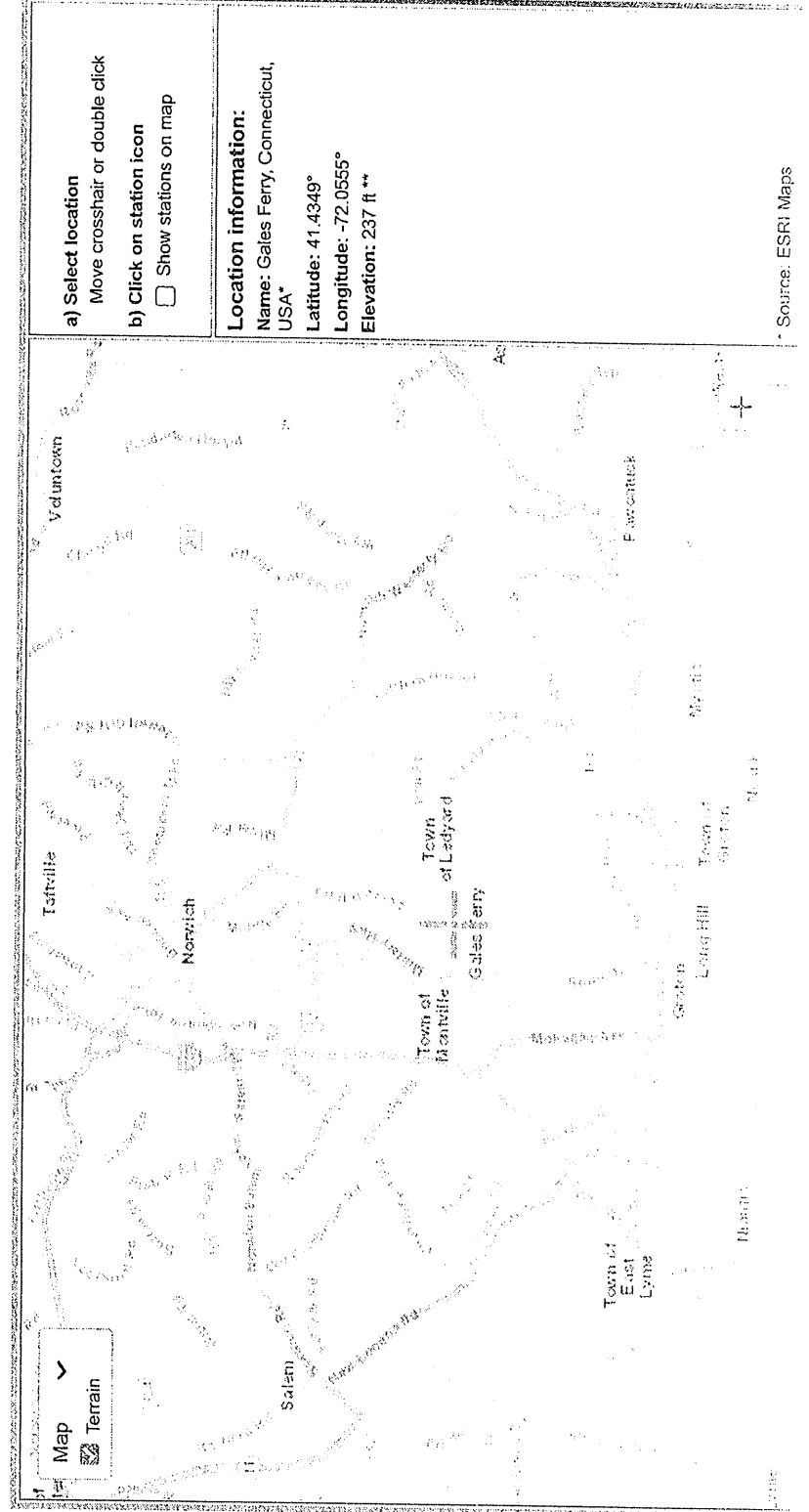
1) Manually:

a) By location (decimal degrees, use "-" for S and W): Latitude: Longitude:

b) By station (list of CT stations):

c) By address

2) Use map:



* Source: ESRI Maps

5km
4mi

Source: USGS

POINT PRECIPITATION FREQUENCY (PF) ESTIMATES

WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION
NOAA Atlas 14, Volume 10, Version 3

PF tabular

PF graphical

Supplementary information

Print page

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)¹

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.341 (0.265-0.434)	0.407 (0.316-0.519)	0.515 (0.398-0.657)	0.605 (0.466-0.776)	0.729 (0.544-0.964)	0.822 (0.604-1.10)	0.919 (0.654-1.27)	1.03 (0.693-1.44)	1.19 (0.771-1.70)	1.32 (0.836-1.92)
10-min	0.483 (0.376-0.615)	0.577 (0.448-0.735)	0.731 (0.565-0.934)	0.858 (0.660-1.10)	1.03 (0.770-1.37)	1.16 (0.852-1.56)	1.30 (0.926-1.80)	1.46 (0.982-2.04)	1.69 (1.09-2.41)	1.87 (1.18-2.71)
15-min	0.569 (0.442-0.724)	0.679 (0.527-0.865)	0.859 (0.665-1.10)	1.01 (0.777-1.29)	1.22 (0.906-1.61)	1.37 (1.00-1.84)	1.53 (1.09-2.12)	1.72 (1.16-2.39)	1.98 (1.28-2.83)	2.20 (1.39-3.19)
30-min	0.805 (0.626-1.02)	0.960 (0.746-1.22)	1.21 (0.939-1.55)	1.42 (1.10-1.82)	1.71 (1.28-2.27)	1.93 (1.41-2.59)	2.16 (1.54-2.98)	2.42 (1.63-3.37)	2.80 (1.81-3.99)	3.10 (1.96-4.50)
60-min	1.04 (0.810-1.33)	1.24 (0.965-1.58)	1.57 (1.21-2.00)	1.84 (1.42-2.36)	2.21 (1.65-2.92)	2.49 (1.82-3.34)	2.78 (1.98-3.85)	3.12 (2.10-4.35)	3.61 (2.34-5.15)	4.01 (2.54-5.81)
2-hr	1.37 (1.07-1.73)	1.63 (1.28-2.06)	2.06 (1.61-2.60)	2.41 (1.87-3.06)	2.90 (2.18-3.80)	3.27 (2.41-4.35)	3.66 (2.62-5.00)	4.10 (2.77-5.66)	4.74 (3.08-6.71)	5.26 (3.35-7.57)
3-hr	1.59 (1.25-1.99)	1.89 (1.49-2.37)	2.38 (1.87-3.00)	2.79 (2.18-3.53)	3.36 (2.54-4.38)	3.78 (2.80-5.01)	4.23 (3.04-5.76)	4.74 (3.22-6.52)	5.48 (3.58-7.73)	6.09 (3.88-8.72)
6-hr	2.01 (1.60-2.50)	2.39 (1.90-2.97)	3.01 (2.38-3.75)	3.52 (2.77-4.40)	4.22 (3.22-5.46)	4.75 (3.55-6.24)	5.31 (3.85-7.17)	5.95 (4.07-8.12)	6.87 (4.52-9.62)	7.64 (4.90-10.8)
12-hr	2.48 (2.00-3.05)	2.94 (2.36-3.62)	3.69 (2.96-4.56)	4.32 (3.44-5.35)	5.18 (3.98-6.63)	5.82 (4.38-7.57)	6.50 (4.74-8.70)	7.28 (5.01-9.85)	8.41 (5.56-11.7)	9.35 (6.02-13.2)
24-hr	2.90 (2.36-3.54)	3.46 (2.80-4.22)	4.36 (3.52-5.33)	5.11 (4.11-6.28)	6.15 (4.77-7.81)	6.92 (5.26-8.94)	7.74 (5.71-10.3)	8.70 (6.02-11.7)	10.1 (6.72-13.9)	11.3 (7.32-15.8)
2-day	3.24 (2.66-3.91)	3.90 (3.19-4.71)	4.98 (4.06-6.02)	5.87 (4.76-7.13)	7.10 (5.56-8.95)	8.01 (6.14-10.3)	8.99 (6.70-11.9)	10.2 (7.08-13.5)	11.9 (7.96-16.3)	13.4 (8.73-18.6)
3-day	3.52 (2.90-4.22)	4.22 (3.48-5.07)	5.38 (4.42-6.48)	6.35 (5.17-7.67)	7.67 (6.04-9.62)	8.65 (6.67-11.0)	9.71 (7.27-12.8)	11.0 (7.68-14.5)	12.9 (8.63-17.5)	14.5 (9.47-20.0)
4-day	3.77 (3.12-4.51)	4.51 (3.73-5.40)	5.73 (4.72-6.87)	6.74 (5.52-8.11)	8.13 (6.43-10.1)	9.16 (7.08-11.6)	10.3 (7.70-13.5)	11.6 (8.12-15.3)	13.6 (9.12-18.4)	15.3 (9.99-21.0)
7-day	4.49 (3.75-5.32)	5.30 (4.42-6.29)	6.63 (5.50-7.88)	7.73 (6.36-9.23)	9.24 (7.35-11.4)	10.4 (8.06-13.0)	11.6 (8.71-15.0)	13.0 (9.15-17.0)	15.1 (10.2-20.3)	16.8 (11.1-23.0)
10-day	5.20 (4.37-6.14)	6.05 (5.07-7.14)	7.44 (6.21-8.80)	8.59 (7.12-10.2)	10.2 (8.13-12.5)	11.4 (8.86-14.2)	12.6 (9.50-16.2)	14.0 (9.94-18.3)	16.1 (10.9-21.6)	17.8 (11.7-24.3)
20-day	7.39 (6.27-8.63)	8.30 (7.02-9.69)	9.78 (8.24-11.5)	11.0 (9.22-12.9)	12.7 (10.2-15.4)	14.0 (11.0-17.2)	15.3 (11.5-19.3)	16.7 (11.9-21.5)	18.5 (12.6-24.5)	19.9 (13.2-26.9)
30-day	9.21 (7.86-10.7)	10.2 (8.65-11.8)	11.7 (9.92-13.6)	13.0 (10.9-15.2)	14.7 (11.9-17.7)	16.1 (12.7-19.6)	17.5 (13.1-21.7)	18.8 (13.5-24.1)	20.4 (14.0-26.9)	21.6 (14.3-28.9)
45-day	11.5 (9.83-13.2)	12.5 (10.7-14.4)	14.1 (12.0-16.3)	15.5 (13.1-18.0)	17.3 (14.1-20.6)	18.8 (14.8-22.7)	20.2 (15.2-24.8)	21.4 (15.5-27.3)	22.9 (15.8-30.0)	23.9 (15.9-31.9)
60-day	13.3 (11.5-15.3)	14.4 (12.4-16.5)	16.1 (13.8-18.6)	17.5 (14.9-20.3)	19.5 (15.9-23.1)	21.1 (16.7-25.3)	22.6 (17.0-27.6)	23.8 (17.2-30.2)	25.2 (17.4-32.9)	26.0 (17.5-34.6)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS)

36 X-CULVERT

GALESFERRY 50-yr Duration=15 min, Inten=5.48 in/hr

Prepared by LBM Engineering LLC

Printed 1/20/2025

HydroCAD® 10.20-6a s/n 09192 © 2024 HydroCAD Software Solutions LLC

Page 1

Summary for Subcatchment 1AB: AREA B

[48] Hint: Peak<CiA due to short duration

Runoff = 44.55 cfs @ 0.25 hrs, Volume= 70,079 cf, Depth= 0.32"
 Routed to Pond 3P : 36" INLET

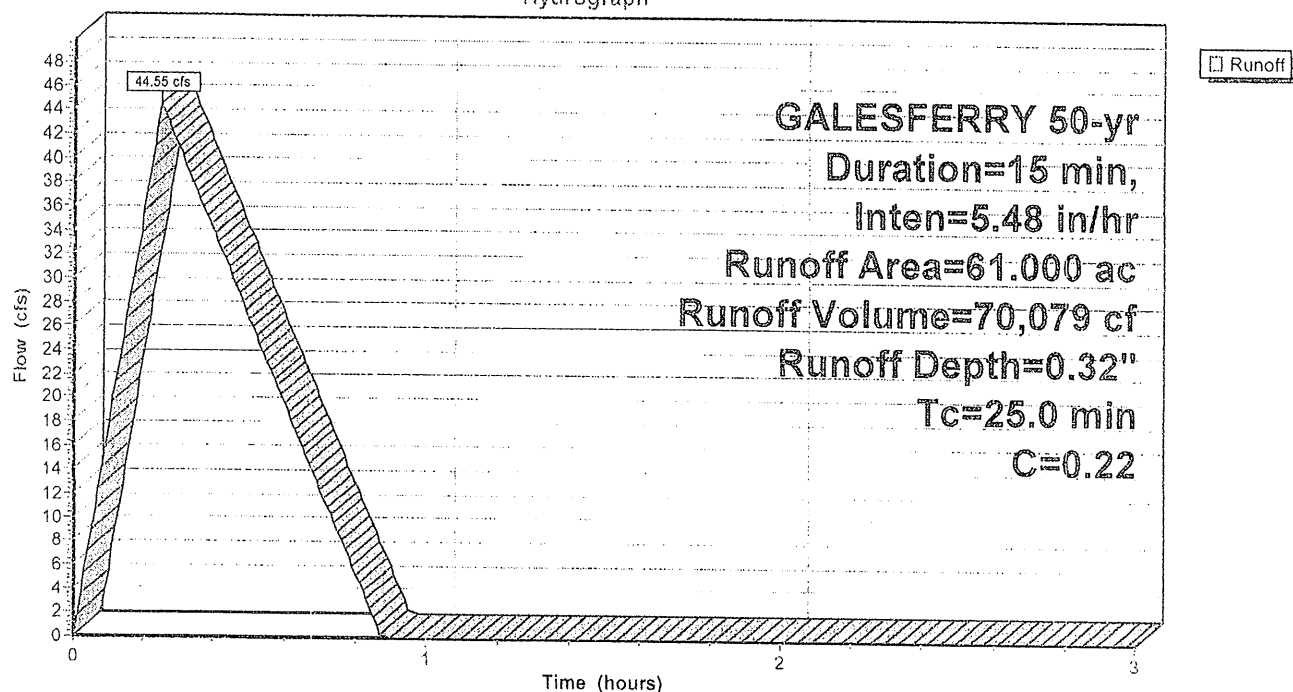
Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 GALESFERRY 50-yr Duration=15 min, Inten=5.48 in/hr

Area (ac)	C	Description	Land Use
61.000	0.22	AREA TO X-ING	Meadow
61.000		100.00% Pervious Area	

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

Subcatchment 1AB: AREA B

Hydrograph



36 X-CULVERT

GALESFERRY 50-yr Duration=15 min, Inten=5.48 in/hr

Prepared by LBM Engineering LLC

Printed 1/20/2025

HydroCAD® 10.20-6a s/n 09192 © 2024 HydroCAD Software Solutions LLC

Page 2

Summary for Pond 3P: 36" INLET

[57] Hint: Peaked at 163.21' (Flood elevation advised)

Inflow Area = 2,657,160 sf, 0.00% Impervious, Inflow Depth = 0.32" for 50-yr event
 Inflow = 44.55 cfs @ 0.25 hrs, Volume= 70,079 cf
 Outflow = 44.55 cfs @ 0.25 hrs, Volume= 70,079 cf, Atten= 0%, Lag= 0.0 min
 Primary = 44.55 cfs @ 0.25 hrs, Volume= 70,079 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 163.21' @ 0.25 hrs

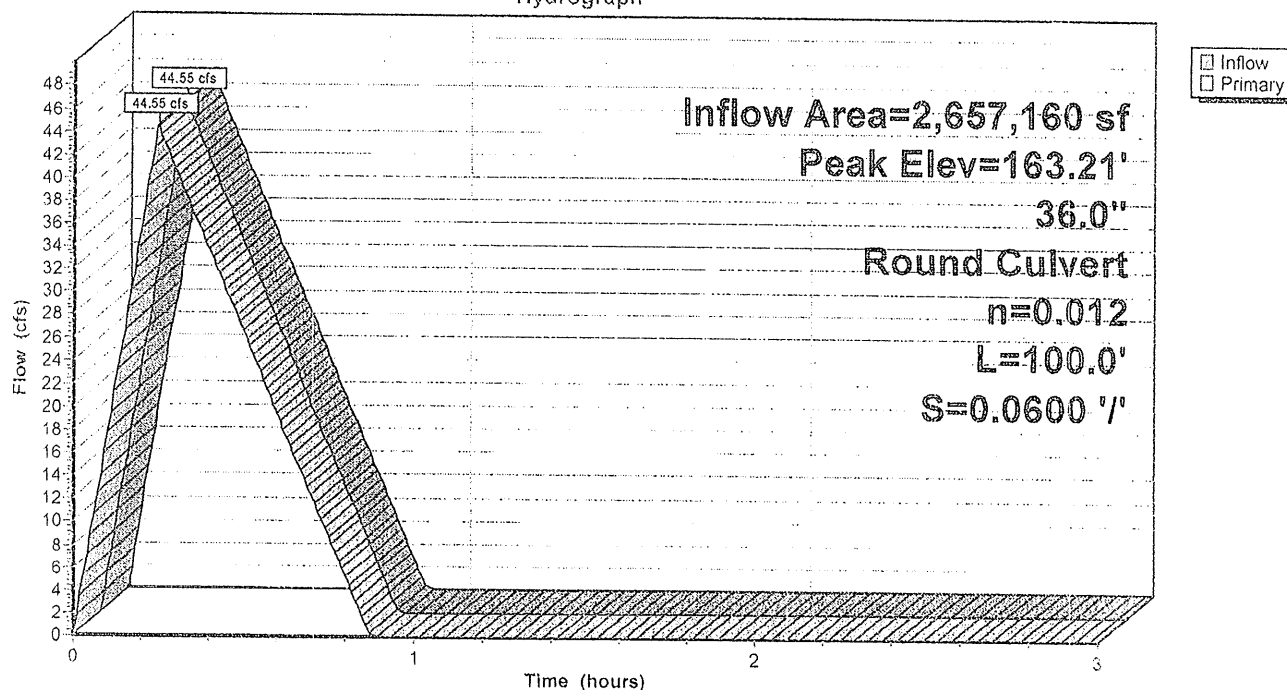
Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	36.0" Round Culvert L= 100.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 160.00' / 154.00' S= 0.0600 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=44.34 cfs @ 0.25 hrs HW=163.20' (Free Discharge)

1=Culvert (Inlet Controls 44.34 cfs @ 6.27 fps)

Pond 3P: 36" INLET

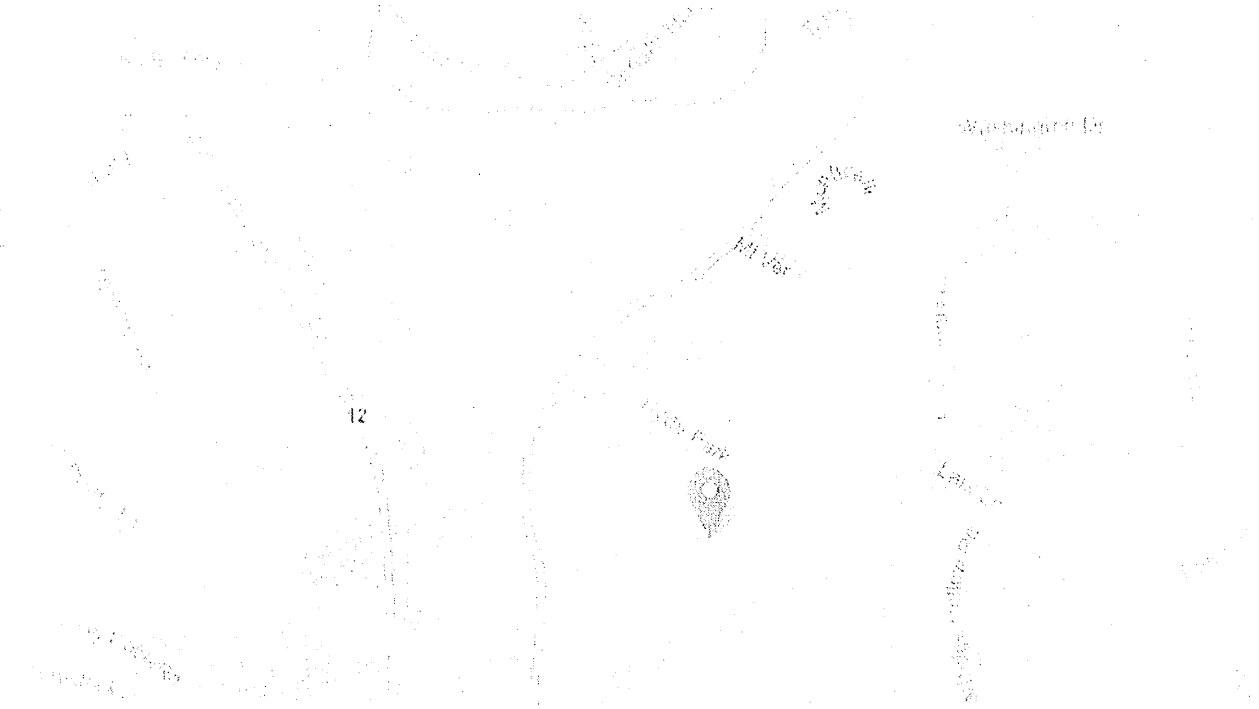
Hydrograph



StreamStats Report

CROSS CULVERT
ELLIE ROSE LANE
STA 16+75

Region ID: CT
Workspace ID: CT20241015123229026000
Clicked Point (Latitude, Longitude): 41.41357, -72.06568
Time: 2024-10-15 08:32:51 -0400



Collapse All

» Basin Characteristics

SEE PG 3 OF 5 FOR 50-YR FLOW

61 ACRES

Parameter Code	Parameter Description	Value	Unit
CRSDFT	Percentage of area of coarse-grained stratified drift	0	percent
DRNAREA	Area that drains to a point on a stream	0.0949	square miles
ELEV	Mean Basin Elevation	258	feet
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	5.05	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	6.12	inches

Parameter Code	Parameter Description	Value	Unit
I24H2Y	Maximum 24-hour precipitation that occurs on average once in 2 years - Equivalent to precipitation intensity index	3.17	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	4.24	inches
SSURGOCCDD	Percentage of area with hydrologic soil types C, D, or C/D from SSURGO	0.0656	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	0.0949	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	0.0949	square miles	0.69	325
I24H2Y	24 Hour 2 Year Precipitation	3.17	inches	2.77	3.32
SSURGOCCDD	Percent soil type C or D from SSURGO	0.0656	percent	0.118	0.945
I24H5Y	24 Hour 5 Year Precipitation	4.24	inches	4	4.7
I24H10Y	24 Hour 10 Year Precipitation	5.05	inches	4.86	5.79
I24H25Y	24 Hour 25 Year Precipitation	6.12	inches	5.99	7.22
I24H50Y	24 Hour 50 Year Precipitation	6.93	inches	6.81	8.3
I24H100Y	24 Hour 100 Year Precipitation	7.74	inches	7.62	9.38
I24H200Y	24 Hour 200 Year Precipitation	8.82	inches	8.7	11.22
I24H500Y	24 Hour 500 Year Precipitation	10.23	inches	10.1	13.64

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

Statistic	Value	Unit
Drainage Area Only 50-percent AEP flood	10.3	ft ³ /s
Drainage Area Only 20-percent AEP flood	18.5	ft ³ /s
Drainage Area Only 10-percent AEP flood	25.4	ft ³ /s
Drainage Area Only 4-percent AEP flood	35.6	ft ³ /s
Drainage Area Only 2-percent AEP flood	44.2	ft ³ /s
Drainage Area Only 1-percent AEP flood	53.5	ft ³ /s
Drainage Area Only 0.5-percent AEP flood	63.9	ft ³ /s
Drainage Area Only 0.2-percent AEP flood	79.2	ft ³ /s

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	5.38	ft ³ /s
20-percent AEP flood	8.85	ft ³ /s
10-percent AEP flood	11.6	ft ³ /s
4-percent AEP flood	15.9	ft ³ /s
2-percent AEP flood	19.5	ft ³ /s
1-percent AEP flood	23.5	ft ³ /s
0.5-percent AEP flood	28.7	ft ³ /s
0.2-percent AEP flood	36.3	ft ³ /s

Peak-Flow Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Drainage Area Only 50-percent AEP flood	10.3	ft ³ /s
Drainage Area Only 20-percent AEP flood	18.5	ft ³ /s
Drainage Area Only 10-percent AEP flood	25.4	ft ³ /s
Drainage Area Only 4-percent AEP flood	35.6	ft ³ /s
Drainage Area Only 2-percent AEP flood	44.2	ft ³ /s
Drainage Area Only 1-percent AEP flood	53.5	ft ³ /s
Drainage Area Only 0.5-percent AEP flood	63.9	ft ³ /s
Drainage Area Only 0.2-percent AEP flood	79.2	ft ³ /s
50-percent AEP flood	5.38	ft ³ /s

Statistic	Value	Unit
20-percent AEP flood	8.85	ft ³ /s
10-percent AEP flood	11.6	ft ³ /s
4-percent AEP flood	15.9	ft ³ /s
2-percent AEP flood	19.5	ft ³ /s
1-percent AEP flood	23.5	ft ³ /s
0.5-percent AEP flood	28.7	ft ³ /s
0.2-percent AEP flood	36.3	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>)

» Flow-Duration Statistics

Flow-Duration Statistics Parameters [Duration Flow 2010 5052]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.0949	square miles	0.92	150
ELEV	Mean Basin Elevation	258	feet	168	1287
CRSDFT	Percent Coarse Stratified Drift	0	percent	0.1	55.1

Flow-Duration Statistics Disclaimers [Duration Flow 2010 5052]

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

Flow-Duration Statistics Flow Report [Duration Flow 2010 5052]

Statistic	Value	Unit
25 Percent Duration	0.248	ft ³ /s
99 Percent Duration	0.0000495	ft ³ /s

Flow-Duration Statistics Citations

Ahearn, E.A., 2010, Regional regression equations to estimate flow-duration statistics in Connecticut: U. S. Geological Survey Scientific Investigations Report 2010-5052, 45 p. (<http://pubs.usgs.gov/sir/2010/5052/>)

➤ Maximum Probable Flood Statistics

Maximum Probable Flood Statistics Parameters [Crippen Bue Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.0949	square miles	0.1	3000

Maximum Probable Flood Statistics Disclaimers [Crippen Bue Region 2]

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

Maximum Probable Flood Statistics Flow Report [Crippen Bue Region 2]

Statistic	Value	Unit
Maximum Flood Crippen Bue Regional	1020	ft ³ /s

Maximum Probable Flood Statistics Citations

Crippen, J.R. and Bue, Conrad D. 1977, Maximum Floodflows in the Conterminous United States, Geological Survey Water-Supply Paper 1887, 52p. (<https://pubs.usgs.gov/wsp/1887/report.pdf>)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

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: 4.24.0

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

CHART 2

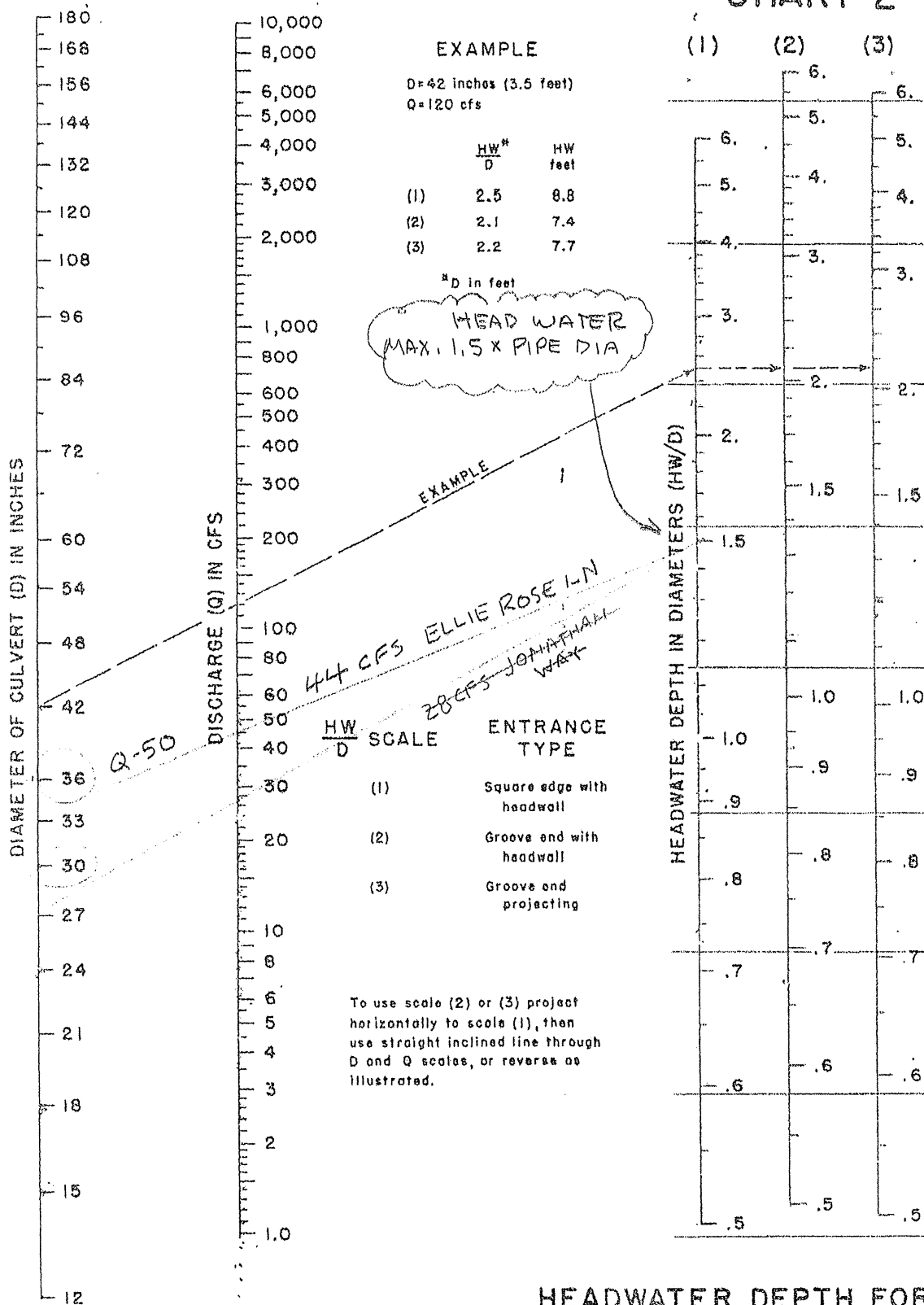
EXAMPLE

D=42 inches (3.5 feet)
Q=120 cfs

	$\frac{HW^*}{D}$	HW feet
(1)	2.5	8.8
(2)	2.1	7.4
(3)	2.2	7.7

*D in feet

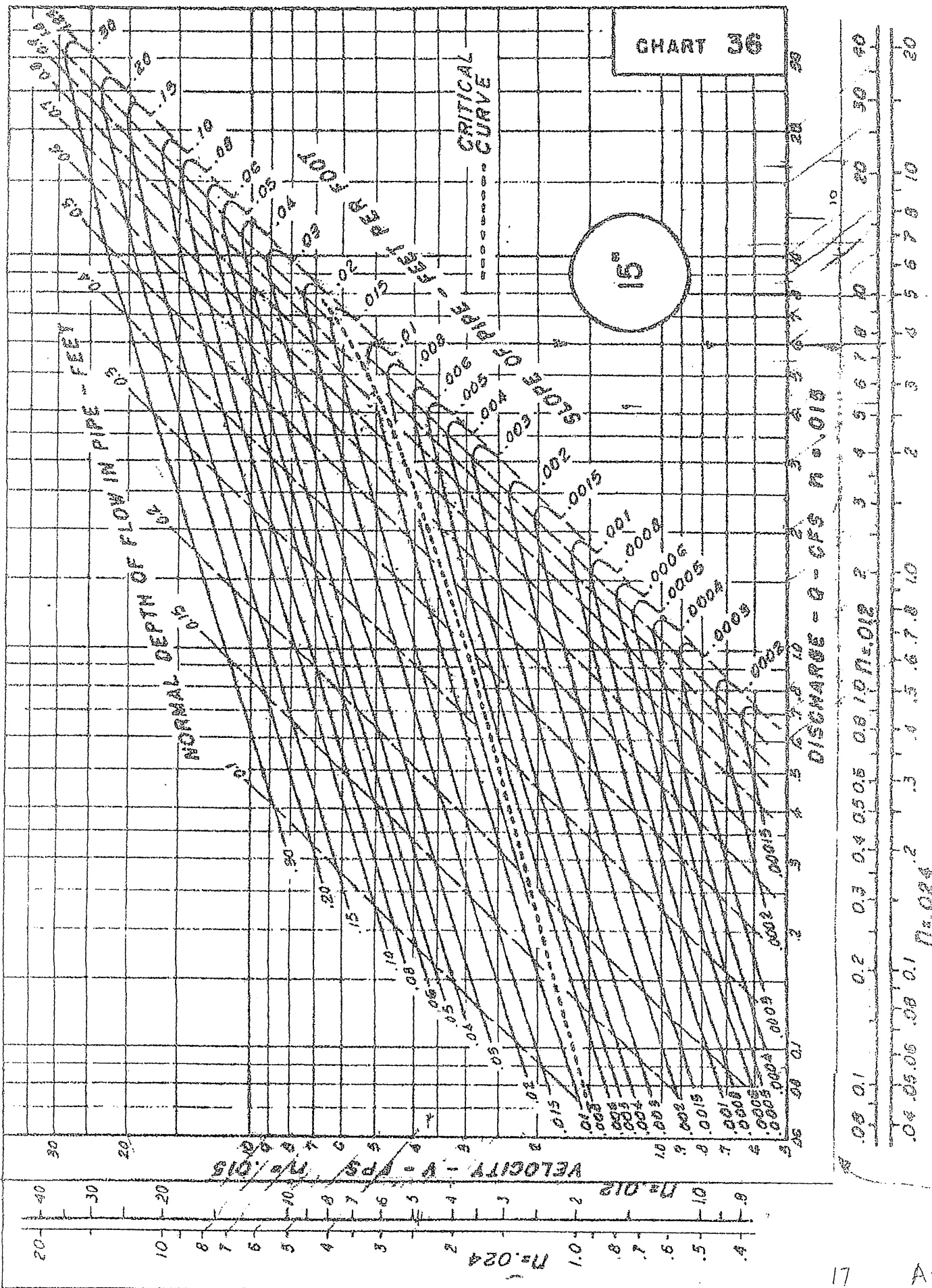
HEAD WATER
MAX. 1.5 X PIPE DIA



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

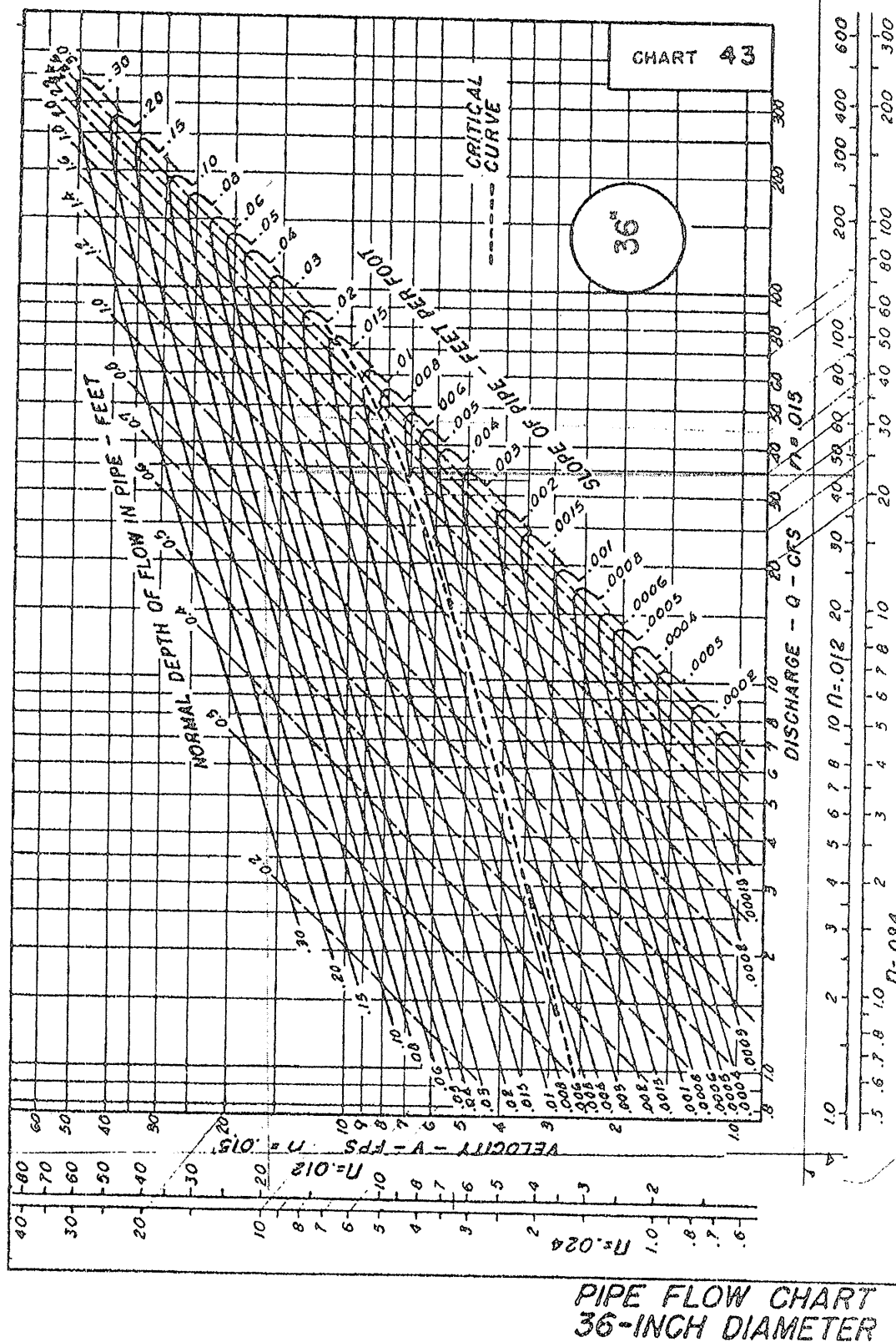
HEADWATER SCALES 2 & 3
REVISED MAY 1964

BUREAU OF PUBLIC ROADS JAN 1963



PIPE FLOW CHART
15 - INCH DIAMETER

17 A-3



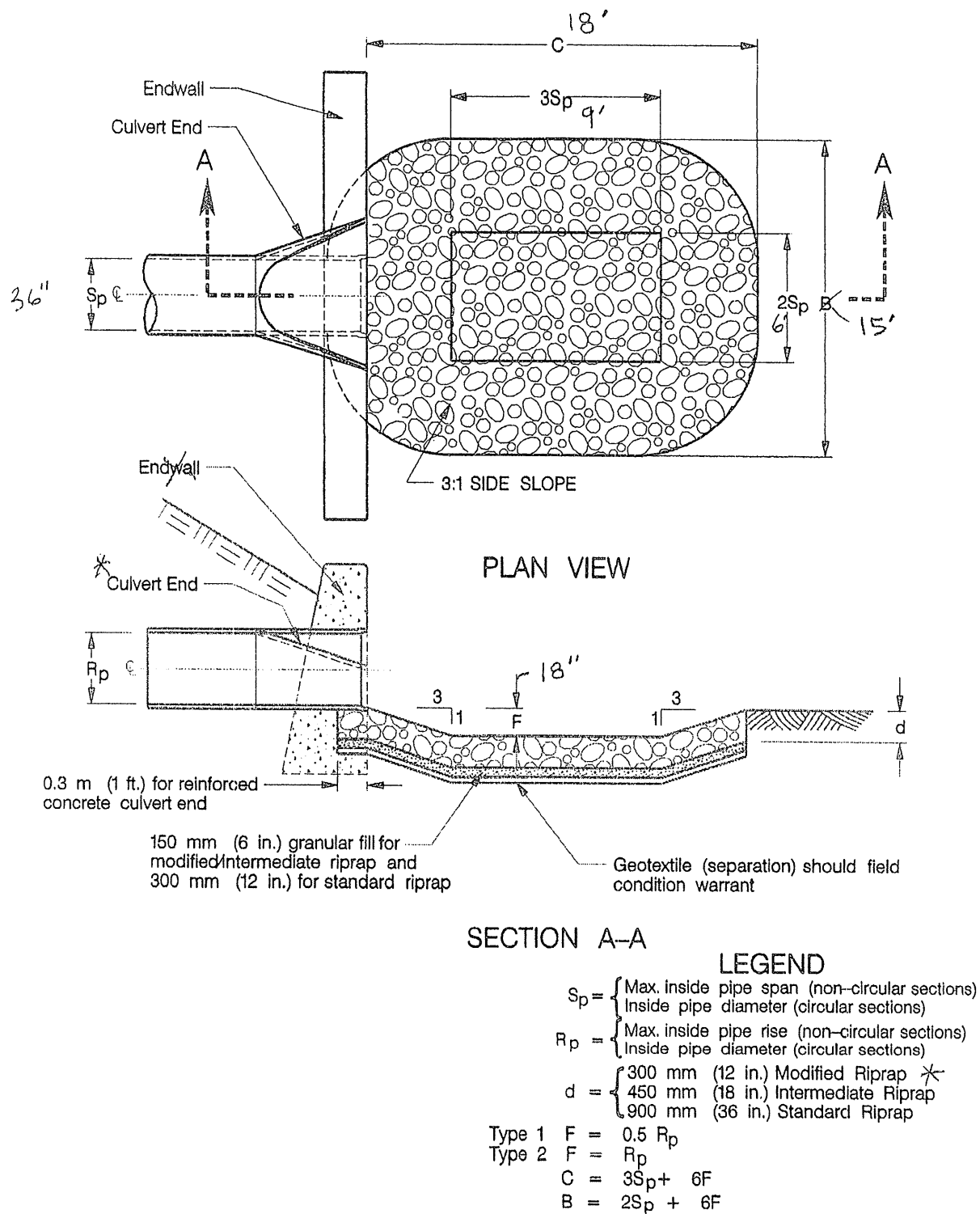


Figure 11-15 Preformed Scour Hole Type 1 and Type 2

OUTLET PROTECTION
OUTLET VELOCITY > 14 feet/sec or Length of Apron exceeds limits shown on
Tables 11-12.1 and 11-13.1

(See Figure 11-15)	Preformed Scour Hole									
	PIPE DIAMETER OR SPAN (in)									
	12	15	18	24	30	36	42	48	54	60
Type 1										
B	5	6	8	10	13	15	18	20	23	25
C	6	8	9	12	15	18	21	24	27	30
d	MODIFIED Depends on riprap type(see Figure 11-15)									
2S _p	2.0	2.6	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
3S _p	3.0	3.9	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
F = 0.5 S _p	0.5	0.625	0.75	1	1.25	1.5	1.75	2	2.25	2.5
Type 2										
B	8	10	12	16	20	24	28	32	36	40
C	9	11	14	18	23	27	32	36	41	45
d	Depends on riprap size (see Figure 11-15)									
2S _p	2.0	2.6	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
3S _p	3.0	3.9	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
F = S _p	1.0	1.3	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0

Table 11-14.1 - Dimensions of Preformed Scour Hole (Feet)

Empirical Preformed Scour Hole Equations:

Type 1: Scour Hole Depression = one-half pipe rise, m (ft)

$$d_{50} = (0.0276 R_p^2 / TW) (Q/R_p^{2.5})^{1.333} \quad (d_{50} = (0.0125 R_p^2 / TW) (Q/R_p^{2.5})^{1.333}) = 0.22' \quad (11.35)$$

$\begin{matrix} 0.1125 & 2.823 \\ \hline (0.0125)(3^2)/1 & [(44/3^{2.5})^{1.333}] \end{matrix}$

Type 2: Scour Hole Depression = full pipe rise, m (ft)

$$d_{50} = (0.0181 R_p^2 / TW) (Q/R_p^{2.5})^{1.333} \quad (d_{50} = (0.0082 R_p^2 / TW) (Q/R_p^{2.5})^{1.333}) \quad (11.36)$$

$\begin{matrix} 44 \text{ CFS} \\ \hline (0.0082)(3^2)/1 & [(44/3^{2.5})^{1.333}] \end{matrix}$

d_{50} = median stone size required, m (ft)

For variables S_p , R_p , TW and Q , see Section 11.13.5.

$$R = 3' \\ Q = 45 \text{ CFS}$$

Type 1 and 2 preformed scour hole dimensions (See Figure 11-15)

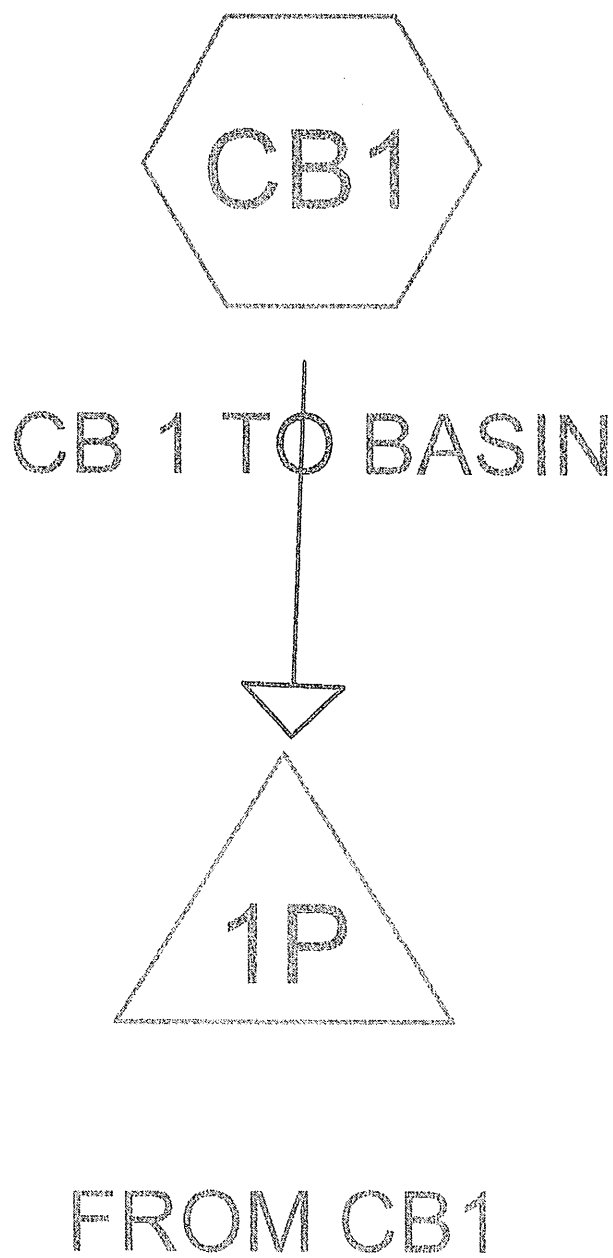
$$\begin{aligned} C &= 3S_p + 6F && \text{Basin Length m (ft)} \\ B &= 2S_p + 6F && \text{Basin Inlet and Outlet Width m (ft)} \\ F &= 0.5R_p \text{ (Type 1) or } R_p \text{ (Type 2)} && \text{Basin Depression m (ft)} \end{aligned} \quad (11.37)$$

Table 11-14 solves the above set of equations for Type 1 and 2 preformed scour holes for various pipe sizes.

The type of riprap required is as follows:

Modified	$d_{50} < 0.13\text{m (0.42 ft)}$
Intermediate	$0.13\text{m (0.42 ft)} < d_{50} < 0.20\text{m (0.67 ft)}$
Standard	$0.20\text{m (0.67 ft)} < d_{50} < 0.38\text{m (1.25 ft)}$
Special Design	$0.38\text{m (1.25 ft)} < d_{50}$

Reference: Report No. FHWA-RD-75-508 ("Culvert Outlet Protection Design: Computer Program Documentation")



Routing Diagram for BASIN FROM CB1
Prepared by LBM Engineering LLC, Printed 6/19/2026
HydroCAD® 10.20-9a sm 09192 © 2026 HydroCAD Software Solutions LLC

BASIN FROM CB1

Gales Ferry 2 2-yr Duration=10 min, Inten=3.46 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Page 2

Summary for Subcatchment CB1: CB 1 TO BASIN

Runoff = 0.66 cfs @ 0.17 hrs, Volume= 696 cf, Depth= 0.96"
 Routed to Pond 1P : FROM CB1

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 2-yr Duration=10 min, Inten=3.46 in/hr

Area (ac)	C	Description	Land Use
0.200	0.95	AREA TO BASIN	Pavement
0.200		100.00% Impervious Area	

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

Summary for Pond 1P: FROM CB1

Inflow Area = 8,712 sf, 100.00% Impervious, Inflow Depth = 0.96" for 2-yr event
 Inflow = 0.66 cfs @ 0.17 hrs, Volume= 696 cf
 Outflow = 0.21 cfs @ 0.45 hrs, Volume= 693 cf, Atten= 68%, Lag= 16.7 min
 Primary = 0.21 cfs @ 0.45 hrs, Volume= 693 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 166.29' @ 0.45 hrs Surf.Area= 410 sf Storage= 406 cf

Plug-Flow detention time= 23.1 min calculated for 693 cf (100% of inflow)
 Center-of-Mass det. time= 23.0 min (38.0 - 15.0)

Volume	Invert	Avail. Storage	Storage Description
#1	165.00'	1,367 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
165.00	225	0	0
166.00	361	293	293
167.00	529	445	738
168.00	729	629	1,367

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	3.0" Round Culvert L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 165.00' / 164.60' S= 0.0200 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior. Flow Area= 0.05 sf

Primary OutFlow Max=0.21 cfs @ 0.45 hrs HW=166.29' (Free Discharge)
 1=Culvert (Barrel Controls 0.21 cfs @ 4.36 fps)

BASIN FROM CB1

Gales Ferry 2 10-yr Duration=10 min, Inten=5.14 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Page 3

Summary for Subcatchment CB1: CB 1 TO BASIN

Runoff = 0.98 cfs @ 0.17 hrs, Volume= 1,034 cf, Depth= 1.42"
 Routed to Pond 1P : FROM CB1

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 10-yr Duration=10 min, Inten=5.14 in/hr

Area (ac)	C	Description	Land Use
0.200	0.95	AREA TO BASIN	Pavement
0.200		100.00% Impervious Area	

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

Summary for Pond 1P: FROM CB1

Inflow Area = 8,712 sf, 100.00% Impervious, Inflow Depth = 1.42" for 10-yr event
 Inflow = 0.98 cfs @ 0.17 hrs, Volume= 1,034 cf
 Outflow = 0.25 cfs @ 0.48 hrs, Volume= 1,030 cf, Atten= 74%, Lag= 18.3 min
 Primary = 0.25 cfs @ 0.48 hrs, Volume= 1,030 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 166.88' @ 0.48 hrs Surf.Area= 509 sf Storage= 675 cf

Plug-Flow detention time= 30.1 min calculated for 1,027 cf (99% of inflow)
 Center-of-Mass det. time= 30.4 min (45.4 - 15.0)

Volume	Invert	Avail. Storage	Storage Description
#1	165.00'	1,367 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf. Area (sq-ft)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)
165.00	225	0	0
166.00	361	293	293
167.00	529	445	738
168.00	729	629	1,367

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	3.0" Round Culvert L= 20.0' CPP, end-section conforming to fill. Ke= 0.500 Inlet / Outlet Invert= 165.00' / 164.60' S= 0.0200 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.05 sf

Primary OutFlow Max=0.25 cfs @ 0.48 hrs HW=166.88' (Free Discharge)
 1=Culvert (Barrel Controls 0.25 cfs @ 5.17 fps)

BASIN FROM CB1

Gales Ferry 2 25-yr Duration=10 min, Inten=6.18 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Page 4

Summary for Subcatchment CB1: CB 1 TO BASIN

Runoff = 1.17 cfs @ 0.17 hrs, Volume= 1,243 cf, Depth= 1.71"
 Routed to Pond 1P : FROM CB1

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 25-yr Duration=10 min, Inten=6.18 in/hr

Area (ac)	C	Description	Land Use
0.200	0.95	AREA TO BASIN	Pavement
0.200		100.00% Impervious Area	

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

Summary for Pond 1P: FROM CB1

Inflow Area = 8,712 sf, 100.00% Impervious, Inflow Depth = 1.71" for 25-yr event
 Inflow = 1.17 cfs @ 0.17 hrs, Volume= 1,243 cf
 Outflow = 0.27 cfs @ 0.49 hrs, Volume= 1,238 cf, Atten= 77%, Lag= 19.0 min
 Primary = 0.27 cfs @ 0.49 hrs, Volume= 1,238 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 167.20' @ 0.49 hrs Surf.Area= 570 sf Storage= 850 cf

Plug-Flow detention time= 34.5 min calculated for 1,234 cf (99% of inflow)
 Center-of-Mass det. time= 34.7 min (49.7 - 15.0)

Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	1,367 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
165.00	225	0	0
166.00	361	293	293
167.00	529	445	738
168.00	729	629	1,367

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	3.0" Round Culvert L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 165.00' / 164.60' S= 0.0200 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.05 sf

Primary OutFlow Max=0.27 cfs @ 0.49 hrs HW=167.20' (Free Discharge)

1=Culvert (Barrel Controls 0.27 cfs @ 5.56 fps)

BASIN FROM CB1

Gales Ferry 2 100-yr Duration=10 min, Inten=7.80 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Page 5

Summary for Subcatchment CB1: CB 1 TO BASIN

Runoff = 1.48 cfs @ 0.17 hrs, Volume= 1,569 cf, Depth= 2.16"
 Routed to Pond 1P : FROM CB1

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 100-yr Duration=10 min, Inten=7.80 in/hr

Area (ac)	C	Description	Land Use
0.200	0.95	AREA TO BASIN	Pavement
0.200		100.00% Impervious Area	

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

Summary for Pond 1P: FROM CB1

Inflow Area = 8,712 sf, 100.00% Impervious, Inflow Depth = 2.16" for 100-yr event
 Inflow = 1.48 cfs @ 0.17 hrs, Volume= 1,569 cf
 Outflow = 0.30 cfs @ 0.50 hrs, Volume= 1,563 cf, Atten= 80%, Lag= 19.8 min
 Primary = 0.30 cfs @ 0.50 hrs, Volume= 1,563 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 167.66' @ 0.50 hrs Surf.Area= 661 sf Storage= 1,131 cf

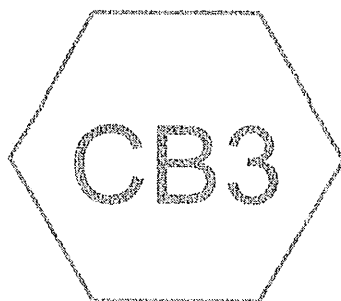
Plug-Flow detention time= 41.0 min calculated for 1,558 cf (99% of inflow)
 Center-of-Mass det. time= 41.2 min (56.2 - 15.0)

Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	1,367 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

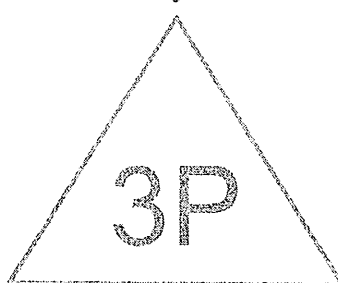
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
165.00	225	0	0
166.00	361	293	293
167.00	529	445	738
168.00	729	629	1,367

Device	Routing	Invert	Outlet Devices
#1	Primary	165.00'	3.0" Round Culvert L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 165.00' / 164.60' S= 0.0200 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.05 sf

Primary OutFlow Max=0.30 cfs @ 0.50 hrs HW=167.66' (Free Discharge)
 1=Culvert (Barrel Controls 0.30 cfs @ 6.08 fps)



CB 3 TO BASIN



FROM CB3



Routing Diagram for BASIN FROM CB3
Prepared by LBM Engineering LLC, Printed 6/19/2026
HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

BASIN FROM CB3

Gales Ferry 2 2-yr Duration=10 min, Inten=3.46 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 ©'2026 HydroCAD Software Solutions LLC

Page 2

Summary for Subcatchment CB3: CB 3 TO BASIN

Runoff = 1.51 cfs @ 0.17 hrs, Volume= 1,601 cf, Depth= 0.96"
 Routed to Pond 3P : FROM CB3

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 2-yr Duration=10 min, Inten=3.46 in/hr

Area (ac)	C	Description	Land Use
0.460	0.95	AREA TO BASIN	Pavement
0.460		100.00% Impervious Area	

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

Summary for Pond 3P: FROM CB3

Inflow Area = 20,038 sf, 100.00% Impervious, Inflow Depth = 0.96" for 2-yr event
 Inflow = 1.51 cfs @ 0.17 hrs, Volume= 1,601 cf
 Outflow = 0.43 cfs @ 0.47 hrs, Volume= 1,577 cf, Atten= 72%, Lag= 17.8 min
 Primary = 0.43 cfs @ 0.47 hrs, Volume= 1,577 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 153.35' @ 0.47 hrs Surf.Area= 927 sf Storage= 1,038 cf

Plug-Flow detention time= 30.5 min calculated for 1,577 cf (98% of inflow)
 Center-of-Mass det. time= 30.2 min (45.2 - 15.0)

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	2,927 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	625	0	0
153.00	841	733	733
154.00	1,089	965	1,698
155.00	1,369	1,229	2,927

Device	Routing	Invert	Outlet Devices
#1	Primary	152.00'	4.0" Round Culvert L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 152.00' / 151.60' S= 0.0200 ' S= 0.0200 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.43 cfs @ 0.47 hrs HW=153.35' (Free Discharge)
 1=Culvert (Barrel Controls 0.43 cfs @ 4.88 fps)

BASIN FROM CB3

Prepared by LBM Engineering LLC

Gales Ferry 2 10-yr Duration=10 min, Inten=5.14 in/hr

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Printed 6/19/2026

Page 3

Summary for Subcatchment CB3: CB 3 TO BASIN

Runoff = 2.25 cfs @ 0.17 hrs, Volume= 2,379 cf, Depth= 1.42"
 Routed to Pond 3P : FROM CB3

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 10-yr Duration=10 min, Inten=5.14 in/hr

Area (ac)	C	Description	Land Use
0.460	0.95	AREA TO BASIN	Pavement
0.460		100.00% Impervious Area	

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

Summary for Pond 3P: FROM CB3

Inflow Area = 20,038 sf, 100.00% Impervious, Inflow Depth = 1.42" for 10-yr event
 Inflow = 2.25 cfs @ 0.17 hrs, Volume= 2,379 cf
 Outflow = 0.51 cfs @ 0.49 hrs, Volume= 2,348 cf, Atten= 77%, Lag= 19.1 min
 Primary = 0.51 cfs @ 0.49 hrs, Volume= 2,348 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 153.98' @ 0.49 hrs Surf.Area= 1,083 sf Storage= 1,672 cf

Plug-Flow detention time= 37.6 min calculated for 2,340 cf (98% of inflow)
 Center-of-Mass det. time= 37.7 min (52.7 - 15.0)

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	2,927 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	625	0	0
153.00	841	733	733
154.00	1,089	965	1,698
155.00	1,369	1,229	2,927

Device	Routing	Invert	Outlet Devices
#1	Primary	152.00'	4.0" Round Culvert L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 152.00' / 151.60' S= 0.0200 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.51 cfs @ 0.49 hrs HW=153.98' (Free Discharge)
 1=Culvert (Barrel Controls 0.51 cfs @ 5.87 fps)

BASIN FROM CB3

Gales Ferry 2 25-yr Duration=10 min, Inten=6.18 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Page 4

Summary for Subcatchment CB3: CB 3 TO BASIN

Runoff = 2.70 cfs @ 0.17 hrs, Volume= 2,859 cf, Depth= 1.71"
 Routed to Pond 3P : FROM CB3

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 25-yr Duration=10 min, Inten=6.18 in/hr

Area (ac)	C	Description	Land Use
0.460	0.95	AREA TO BASIN	Pavement
0.460		100.00% Impervious Area	

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

Summary for Pond 3P: FROM CB3

Inflow Area = 20,038 sf, 100.00% Impervious, Inflow Depth = 1.71" for 25-yr event
 Inflow = 2.70 cfs @ 0.17 hrs, Volume= 2,859 cf
 Outflow = 0.56 cfs @ 0.50 hrs, Volume= 2,823 cf, Atten= 79%, Lag= 19.7 min
 Primary = 0.56 cfs @ 0.50 hrs, Volume= 2,823 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 154.34' @ 0.50 hrs Surf.Area= 1,183 sf Storage= 2,080 cf

Plug-Flow detention time= 42.4 min calculated for 2,823 cf (99% of inflow)
 Center-of-Mass det. time= 42.2 min (57.2 - 15.0)

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	2,927 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	625	0	0
153.00	841	733	733
154.00	1,089	965	1,698
155.00	1,369	1,229	2,927

Device	Routing	Invert	Outlet Devices
#1	Primary	152.00'	4.0" Round Culvert L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 152.00' / 151.60' S= 0.0200 ' S= 0.0200 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.56 cfs @ 0.50 hrs HW=154.34' (Free Discharge)
 1=Culvert (Barrel Controls 0.56 cfs @ 6.37 fps)

BASIN FROM CB3

Gales Ferry 2 100-yr Duration=10 min, Inten=7.80 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Page 5

Summary for Subcatchment CB3: CB 3 TO BASIN

Runoff = 3.41 cfs @ 0.17 hrs, Volume= 3,608 cf, Depth= 2.16"
 Routed to Pond 3P : FROM CB3

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 100-yr Duration=10 min, Inten=7.80 in/hr

Area (ac)	C	Description	Land Use
0.460	0.95	AREA TO BASIN	Pavement
0.460		100.00% Impervious Area	

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

Summary for Pond 3P: FROM CB3

Inflow Area = 20,038 sf, 100.00% Impervious, Inflow Depth = 2.16" for 100-yr event
 Inflow = 3.41 cfs @ 0.17 hrs, Volume= 3,608 cf
 Outflow = 0.61 cfs @ 0.51 hrs, Volume= 3,560 cf, Atten= 82%, Lag= 20.3 min
 Primary = 0.61 cfs @ 0.51 hrs, Volume= 3,560 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 154.86' @ 0.51 hrs Surf.Area= 1,329 sf Storage= 2,732 cf

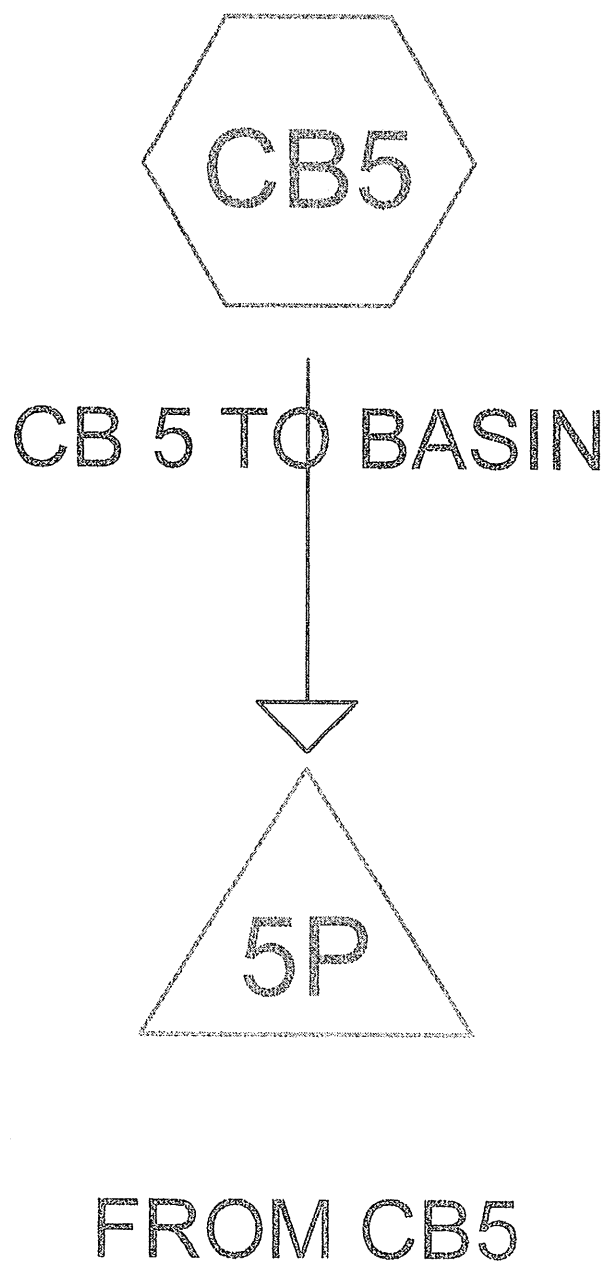
Plug-Flow detention time= 48.7 min calculated for 3,548 cf (98% of inflow)
 Center-of-Mass det. time= 48.8 min (63.8 - 15.0)

Volume	Invert	Avail.Storage	Storage Description
#1	152.00'	2,927 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
152.00	625	0	0
153.00	841	733	733
154.00	1,089	965	1,698
155.00	1,369	1,229	2,927

Device	Routing	Invert	Outlet Devices
#1	Primary	152.00'	4.0" Round Culvert L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 152.00' / 151.60' S= 0.0200 ' S= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.61 cfs @ 0.51 hrs HW=154.86' (Free Discharge)
 1=Culvert (Barrel Controls 0.61 cfs @ 7.02 fps)



Routing Diagram for BASIN FROM CB5
Prepared by LBM Engineering LLC. Printed 6/19/2026
HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

BASIN FROM CB5

Gales Ferry 2 2-yr Duration=10 min, Inten=3.46 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Page 2

Summary for Subcatchment CB5: CB 5 TO BASIN

Runoff = 1.15 cfs @ 0.17 hrs, Volume= 1,218 cf, Depth= 0.96"
 Routed to Pond 5P : FROM CB5

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 2-yr Duration=10 min, Inten=3.46 in/hr

Area (ac)	C	Description	Land Use
0.350	0.95	AREA TO BASIN	Pavement
0.350		100.00% Impervious Area	

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

Summary for Pond 5P: FROM CB5

Inflow Area = 15,246 sf, 100.00% Impervious, Inflow Depth = 0.96" for 2-yr event
 Inflow = 1.15 cfs @ 0.17 hrs, Volume= 1,218 cf
 Outflow = 0.37 cfs @ 0.45 hrs, Volume= 1,197 cf, Atten= 68%, Lag= 16.7 min
 Primary = 0.37 cfs @ 0.45 hrs, Volume= 1,197 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 162.01' @ 0.45 hrs Surf.Area= 844 sf Storage= 745 cf

Plug-Flow detention time= 26.5 min calculated for 1,193 cf (98% of inflow)
 Center-of-Mass det. time= 26.6 min (41.6 - 15.0)

Volume	Invert	Avail.Storage	Storage Description
#1	161.00'	2,927 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
161.00	625	0	0
162.00	841	733	733
163.00	1,089	965	1,698
164.00	1,369	1,229	2,927

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	4.0" Round Culvert L= 20.0' CPP, end-section conforming to fill. Ke= 0.500 Inlet / Outlet Invert= 161.00' / 160.60' S= 0.0200 ' S= 0.0200 ' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.37 cfs @ 0.45 hrs HW=162.01' (Free Discharge)

1=Culvert (Barrel Controls 0.37 cfs @ 4.27 fps)

BASIN FROM CB5

Gales Ferry 2 10-yr Duration=10 min, Inten=5.14 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Page 3

Summary for Subcatchment CB5: CB 5 TO BASIN

Runoff = 1.71 cfs @ 0.17 hrs, Volume= 1,810 cf, Depth= 1.42"
 Routed to Pond 5P : FROM CB5

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 10-yr Duration=10 min, Inten=5.14 in/hr

Area (ac)	C	Description	Land Use
0.350	0.95	AREA TO BASIN	Pavement
0.350		100.00% Impervious Area	

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

Summary for Pond 5P: FROM CB5

Inflow Area = 15,246 sf, 100.00% Impervious, Inflow Depth = 1.42" for 10-yr event
 Inflow = 1.71 cfs @ 0.17 hrs, Volume= 1,810 cf
 Outflow = 0.45 cfs @ 0.47 hrs, Volume= 1,784 cf, Atten= 74%, Lag= 18.2 min
 Primary = 0.45 cfs @ 0.47 hrs, Volume= 1,784 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 162.52' @ 0.47 hrs Surf.Area= 970 sf Storage= 1,204 cf

Plug-Flow detention time= 32.5 min calculated for 1,784 cf (99% of inflow)
 Center-of-Mass det. time= 32.3 min (47.3 - 15.0)

Volume	Invert	Avail. Storage	Storage Description
#1	161.00'	2,927 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
161.00	625	0	0
162.00	841	733	733
163.00	1,089	965	1,698
164.00	1,369	1,229	2,927

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	4.0" Round Culvert L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 161.00' / 160.60' S= 0.0200 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior. Flow Area= 0.09 sf

Primary OutFlow Max=0.45 cfs @ 0.47 hrs HW=162.52' (Free Discharge)
 1=Culvert (Barrel Controls 0.45 cfs @ 5.18 fps)

BASIN FROM CB5

Gales Ferry 2 25-yr Duration=10 min, Inten=6.18 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Page 4

Summary for Subcatchment CB5: CB 5 TO BASIN

Runoff = 2.06 cfs @ 0.17 hrs, Volume= 2,175 cf, Depth= 1.71"
 Routed to Pond 5P : FROM CB5

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 25-yr Duration=10 min, Inten=6.18 in/hr

Area (ac)	C	Description	Land Use
0.350	0.95	AREA TO BASIN	Pavement
0.350		100.00% Impervious Area	

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

Summary for Pond 5P: FROM CB5

Inflow Area = 15,246 sf, 100.00% Impervious, Inflow Depth = 1.71" for 25-yr event
 Inflow = 2.06 cfs @ 0.17 hrs, Volume= 2,175 cf
 Outflow = 0.49 cfs @ 0.48 hrs, Volume= 2,146 cf, Atten= 76%, Lag= 18.8 min
 Primary = 0.49 cfs @ 0.48 hrs, Volume= 2,146 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 162.82' @ 0.48 hrs Surf.Area= 1,044 sf Storage= 1,503 cf

Plug-Flow detention time= 35.7 min calculated for 2,139 cf (98% of inflow)
 Center-of-Mass det. time= 35.8 min (50.8 - 15.0)

Volume	Invert	Avail. Storage	Storage Description
#1	161.00'	2,927 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
161.00	625	0	0
162.00	841	733	733
163.00	1,089	965	1,698
164.00	1,369	1,229	2,927

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	4.0" Round Culvert L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 161.00' / 160.60' S= 0.0200 ' S= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.49 cfs @ 0.48 hrs HW=162.82' (Free Discharge)
 1=Culvert (Barrel Controls 0.49 cfs @ 5.64 fps)

BASIN FROM CB5

Gales Ferry 2 100-yr Duration=10 min, Inten=7.80 in/hr

Prepared by LBM Engineering LLC

Printed 6/19/2026

HydroCAD® 10.20-9a s/n 09192 © 2026 HydroCAD Software Solutions LLC

Page 5

Summary for Subcatchment CB5: CB 5 TO BASIN

Runoff = 2.59 cfs @ 0.17 hrs, Volume= 2,745 cf, Depth= 2.16"
 Routed to Pond 5P : FROM CB5

Runoff by Rational method, Rise/Fall=1.0/2.5 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Gales Ferry 2 100-yr Duration=10 min, Inten=7.80 in/hr

Area (ac)	C	Description	Land Use
0.350	0.95	AREA TO BASIN	Pavement
0.350		100.00% Impervious Area	

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

Summary for Pond 5P: FROM CB5

Inflow Area = 15,246 sf, 100.00% Impervious, Inflow Depth = 2.16" for 100-yr event
 Inflow = 2.59 cfs @ 0.17 hrs, Volume= 2,745 cf
 Outflow = 0.55 cfs @ 0.50 hrs, Volume= 2,711 cf, Atten= 79%, Lag= 19.5 min
 Primary = 0.55 cfs @ 0.50 hrs, Volume= 2,711 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 163.25' @ 0.50 hrs Surf.Area= 1,160 sf Storage= 1,983 cf

Plug-Flow detention time= 41.4 min calculated for 2,711 cf (99% of inflow)
 Center-of-Mass det. time= 41.1 min (56.1 - 15.0)

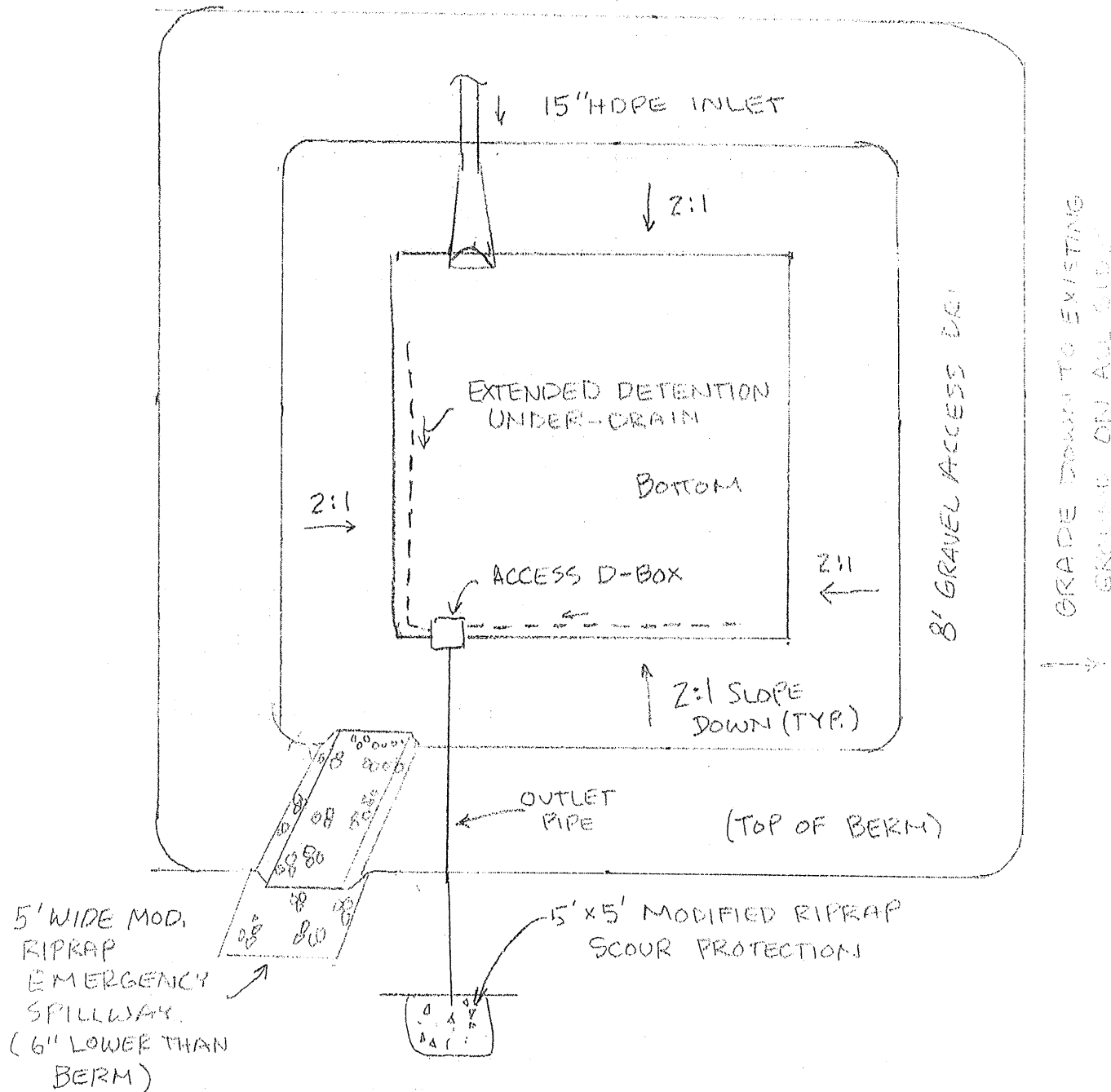
Volume	Invert	Avail.Storage	Storage Description
#1	161.00'	2,927 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
161.00	625	0	0
162.00	841	733	733
163.00	1,089	965	1,698
164.00	1,369	1,229	2,927

Device	Routing	Invert	Outlet Devices
#1	Primary	161.00'	4.0" Round Culvert L= 20.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 161.00' / 160.60' S= 0.0200 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.09 sf

Primary OutFlow Max=0.55 cfs @ 0.50 hrs HW=163.25' (Free Discharge)
 1=Culvert (Barrel Controls 0.55 cfs @ 6.26 fps)

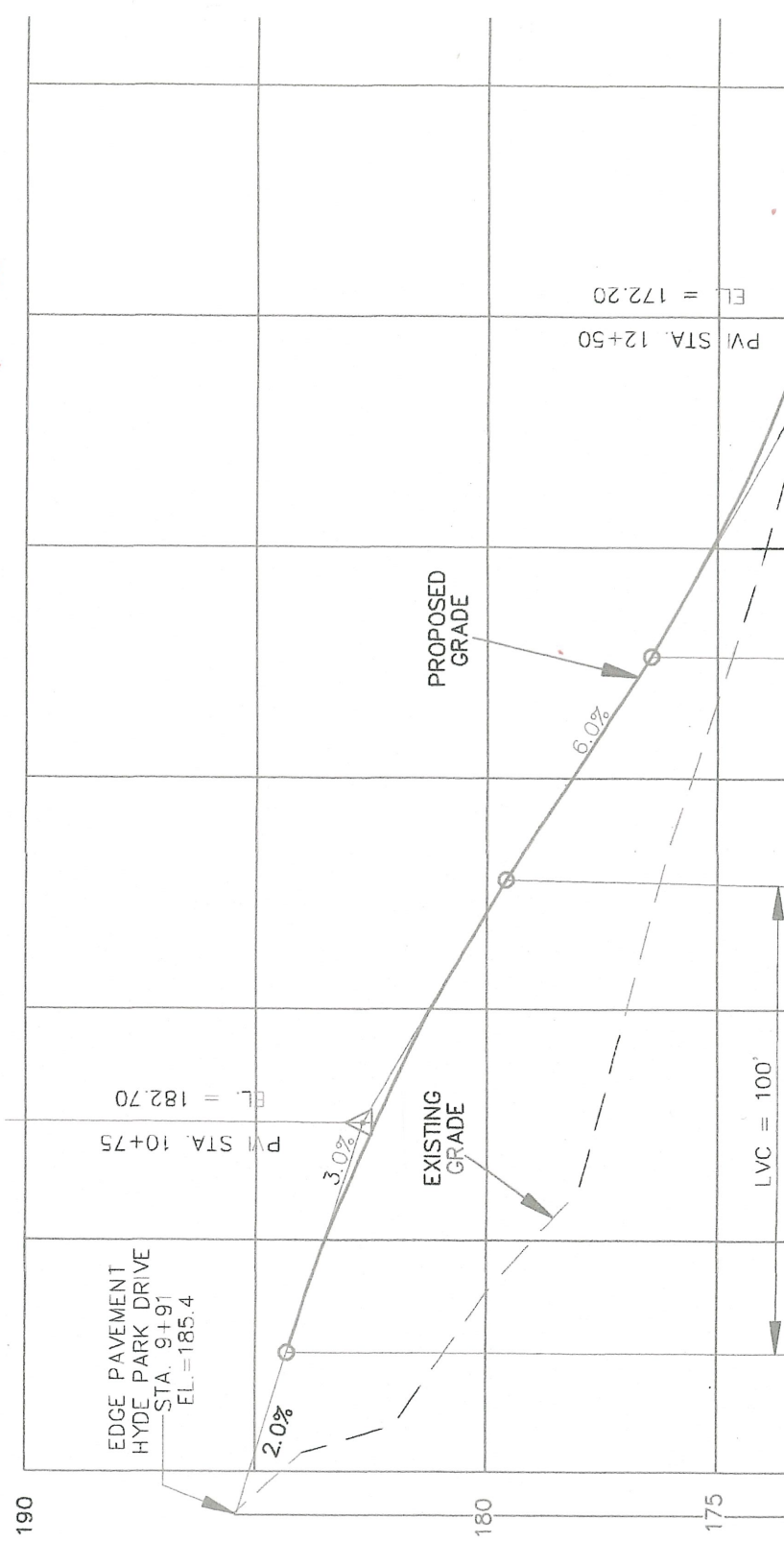
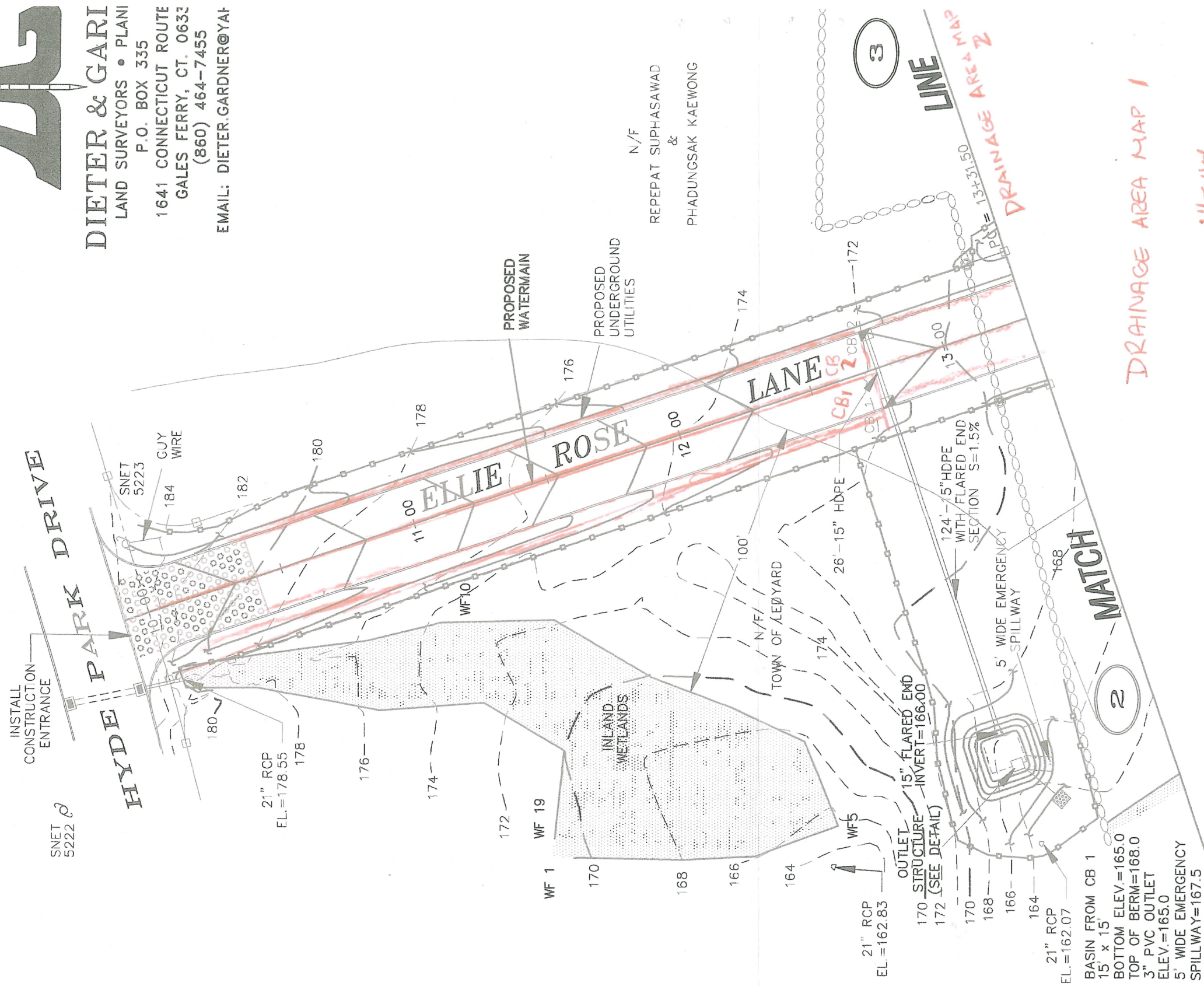
PREPARED BY JRM	DATE PREPARED 01/2025	LBM Engineering, LLC 11 HALLY LANE COLCHESTER, CONNECTICUT 06415 TEL: (860)-416-9809 EMAIL: JOHN@LBMENGINEERING.COM	JOB NUMBER	PAGE NUMBER
CHECKED BY	DATE CHECKED		CLIENT NAME	TOTAL PAGES



DETAIL DETENTION/ WATER QUALITY BASIN
(NOT TO SCALE)

JOB#24-003SD.DWG FBK#338

DIETER & GARI
LAND SURVEYORS • PLANNERS
P.O. BOX 335
1641 CONNECTICUT ROUTE
GALES FERRY, CT. 06332
(860) 464-7455
EMAIL: DIETER.GARDNER@YAHOO.COM



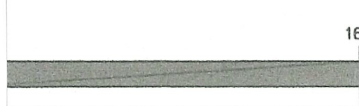
LINE

ED
AL
ILE

MATCH DRAINAGE
AREA MAP 2

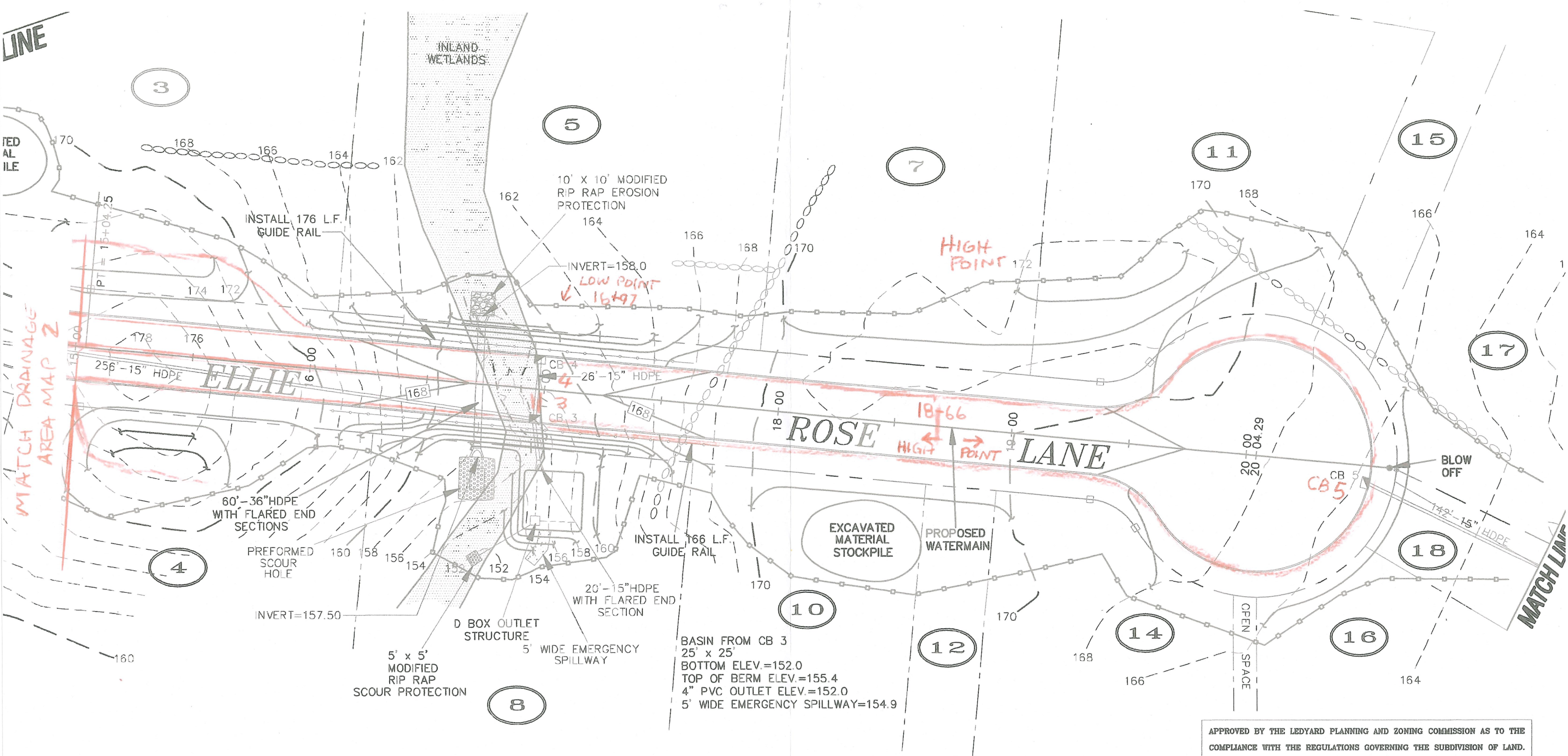
LE

68



MATCH LINE

MATCH LINE



DRAINAGE AREA MAP
3
1"=40'

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)	

40



Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

FD# 5

GIS CODE #: _____
For DEEP Use Only

79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

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

1. DATE ACTION WAS TAKEN: year: _____ month: _____

RECEIVED

2. ACTION TAKEN (see instructions - one code only): _____

JUN 23 2025

3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐

Land Use Department

4. 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

5. 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)): _____

6. LOCATION (see instructions for information): USGS quad name: UNIONVILLE, CONN or number: _____

subregional drainage basin number: _____

7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): PETER GAYLOR

8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): 12 HOPE PARK DR / 975 LONG COTTAGE RD

briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☒ description: _____

9. ACTIVITY PURPOSE CODE (see instructions - one code only): B

10. ACTIVITY TYPE CODE(S) (see instructions for codes): 9, 12, 14, 1

11. WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):

wetlands: 0.031 acres open water body: 0 acres stream: _____ linear feet

12. UPLAND AREA ALTERED (must provide acres): 6.2± acres

13. 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

- GENERAL NOTES:
1. MAP REFERENCES:
- A) PLAN SHOWING LANDS NOW OR FORMERLY OF MONET A. LAWSON LONG COVE ROAD LEDYARD, CONNECTICUT. SCALE: 1"=80' SEPTEMBER, 1969. REVISED: JUNE 1972.
- B) RESUBDIVISION PLAN SHOWING SECTION 2 PRESIDENTIAL ESTATES SUBDIVISION ON PROPERTY OF IRVING NORMAN, INC. LONG COVE ROAD LEDYARD, CONNECTICUT SCALE: 1 inch = 40 feet FEBRUARY 1980.
- C) RESUBDIVISION PLAN SHOWING SECTION 4 PRESIDENTIAL ESTATES SUBDIVISION ON PROPERTY OF IRVING NORMAN, INC. LONG COVE ROAD LEDYARD, CONNECTICUT SCALE: 1"=40' AUGUST 1987. REVISED: SEPTEMBER 26, 1987. SHEET 3 OF 6.
- D) RESUBDIVISION PLAN SHOWING SECTION 4 PRESIDENTIAL ESTATES SUBDIVISION ON PROPERTY OF IRVING NORMAN, INC. LONG COVE ROAD LEDYARD, CONNECTICUT SCALE: 1"=40' AUGUST 1987. REVISED: SEPTEMBER 26, 1987. SHEET 4 OF 6.
- E) PHEASANT RUN TOPOGRAPHIC MAP SECTION B-2 RESUBDIVISION OWNER & DEVELOPER CHRISTY HILL BUILDERS EAGLE RIDGE & PARTRIDGE HOLLOW RD. LEDYARD, CONN. SCALE 1"=40' OCTOBER 13, 1975.
- F) PLAN SHOWING KINEO ESTATES SUBDIVISION PREPARED FOR MT. KINEO BUILDERS PROPERTY OF JOHN HALE ALMY II AND MARCY ZWERLING ALMY LEDYARD, CONNECTICUT SCALE: 1"=100' SEPTEMBER 2025.
2. BULK REQUIREMENTS FOR MT. KINEO BUILDERS CONSERVATION RESUBDIVISION R-40 ZONE.
- | ITEM | REQUIRED | PROVIDED |
|--|-----------------|-------------------|
| MINIMUM PARCEL AREA PRIOR TO SUBDIVISION | 10 ACRES | 35.11 ACRES |
| OPEN SPACE REQUIRED | 40%/14.04 ACRES | 66.7%/23.42 ACRES |
| MINIMUM SIDE YARD DISTANCE | 10 FEET | 10 FEET |
| MINIMUM LOT REAR YARD DISTANCE | 30 FEET | 20 FEET |
| MINIMUM FRONT YARD DISTANCE | 25 FEET | 25 FEET |
| LOT SIZE (FRONT) | 12,000 Sq. Ft. | PROVIDED |
| INTERIOR LOT | 20,000 Sq Ft. | PROVIDED |
| MAXIMUM IMPERVIOUS LOT COVERAGE | 50% | 8% ± |
| ROAD FRONTAGE | 100 FEET | PROVIDED |
3. THIS SUBDIVISION WILL BE SERVED BY PUBLIC WATER AND ON SITE SEWAGE SYSTEMS.
4. HOUSES, DRIVEWAYS, SEWAGE DISPOSAL SYSTEMS AND EROSION/SEDIMENT CONTROL MEASURES ARE SHOWN CONCEPTUALLY ONLY.
5. ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM.
6. CALL BEFORE YOU DIG AT 1-800-922-4455 BEFORE ANY CONSTRUCTION ACTIVITY.
7. SOILS TESTING INDICATED ON THIS PLAN ARE REPRESENTATIVE OF ACTUAL SOIL CONDITIONS. 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.
8. UTILITIES TO BE INSTALLED UNDERGROUND.
9. WORK SHALL CONFORM TO ORDINANCE REGULATING THE ADDITION OF A NEW STREET OR HIGHWAY TO THE HIGHWAY SYSTEM OF THE TOWN OF LEDYARD.
10. PASSIVE SOLAR TECHNIQUES AS PRESCRIBED BY LAW HAVE BEEN CONSIDERED IN THE DESIGN OF THIS SUBDIVISION.
11. 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. THE TOWN OF LEDYARD WILL PROVIDE NO MAINTENANCE, REPAIRS OR SCHOOL BUS SERVICE ALONG COMMON DRIVEWAY.
12. MONUMENTS, PERMANENT PIPE MARKERS OR BRASS PINS SHALL BE INSTALLED AT INTERVALS NO GREATER THAN ONE HUNDRED (100) FEET ALONG THE BOUNDARIES OF ALL OPEN SPACE PARCELS. DRIVEWAY ACCESS STRIPS FOR ALL INTERIOR LOTS SHALL BE MARKED WITH PERMANENT PIPE MARKERS, MONUMENTS OR BRASS PINS ON BOTH SIDES AT INTERVALS OF NOT MORE THAN ONE HUNDRED (100) FEET FOR THE LENGTH OF THE ACCESS STRIP. ACCESS TO OPEN SPACE PARCELS WHICH ARE 50 FEET IN WIDTH OR LESS SHALL BE MARKED AT INTERVALS NO GREATER THAN 50 FEET.
13. 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.
14. 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.
15. SECTION 4.6 OF THE SUBDIVISION REGULATIONS WAS FOLLOWED IN THE DESIGN OF THIS SUBDIVISION.
16. PORTIONS OF THIS RE-SUBDIVISION ARE SERVICED BY COMMON DRIVEWAYS.
17. THE SITE IS NOT LOCATED IN A COASTAL AREA MANAGEMENT ZONE, FLOOD HAZARD ZONE OR PUBLIC WATER SUPPLY WATERSHED. SITE IS IN OTHER AREAS AS SHOWN ON FIRM INSURANCE RATE MAP 09011C0362U.
18. PER SUBDIVISION REGULATIONS SECTION 4.6, ENERGY EFFICIENCY, ENERGY CONSERVATION AND USE OF SOLAR ENERGY WAS CONSIDERED IN DESIGNING THIS SUBDIVISION AND THIS SECTION WILL BE CONSIDERED FOR INDIVIDUAL LOT DEVELOPMENT.

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. _____ DATE _____

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 _____

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.

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# 24-003SD.DWG FBK#338

LEGEND

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

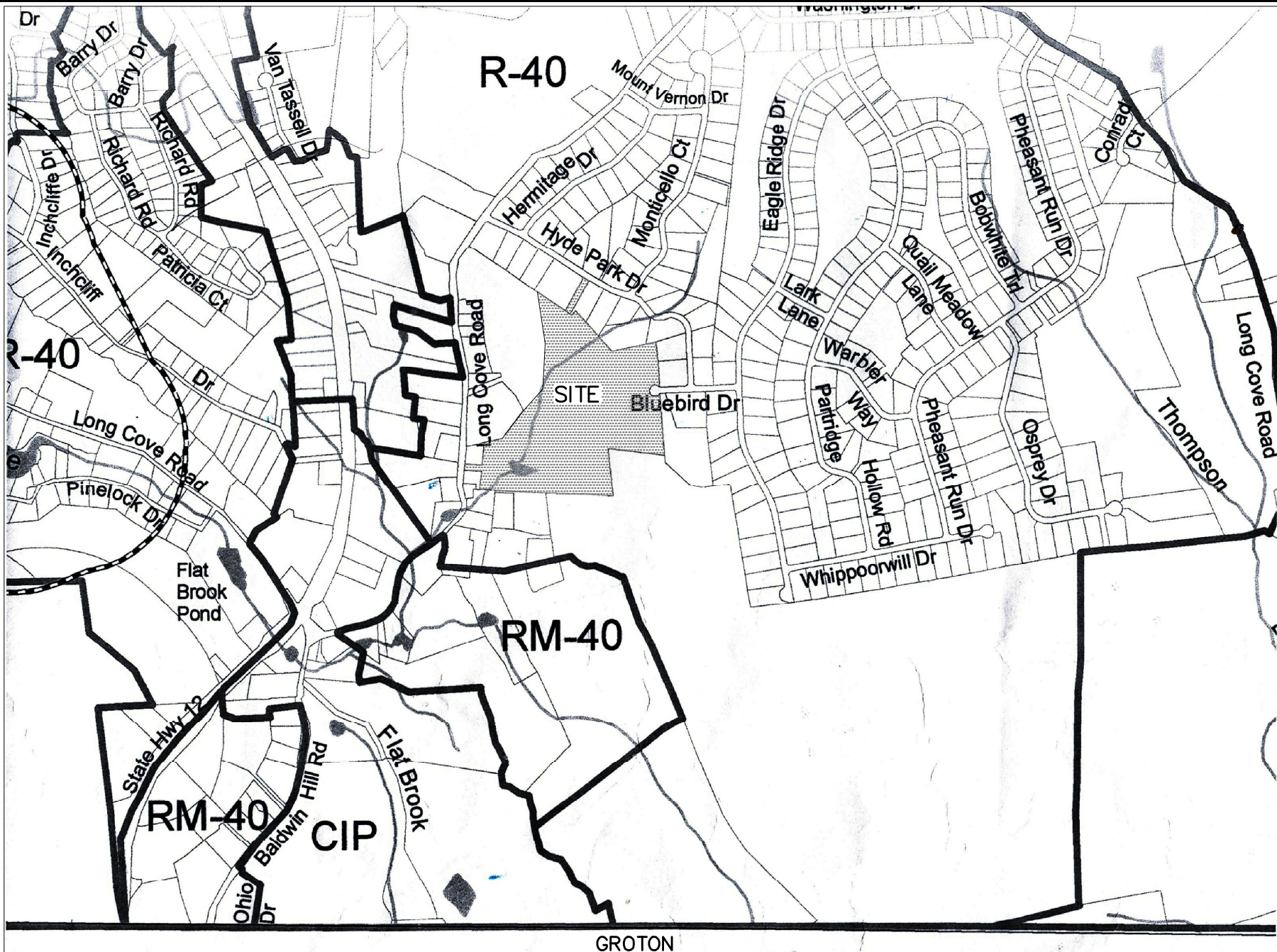
LONG COVE ROAD

GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

SOILS LEGEND

- CcB - CANTON AND CHARLTON VERY STONY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES
- CdC - CANTON AND CHARLTON VERY STONY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES
- HcB - CANTON AND CHARLTON EXTREMELY STONY FINE SANDY LOAMS, 3 TO 15 PERCENT SLOPES
- NgB - NARRAGANSETT VERY STONY SILT LOAM, 3 TO 8 PERCENT SLOPES
- NIC - NARRAGANSETT-HOLLIS COMPLEX, VERY ROCKY, 3 TO 15 PERCENT SLOPES
- Rn - RIDGEBURY, LEICESTER, AND WHITMAN EXTREMELY STONY FINE SANDY LOAMS
- SvA - SUTTON FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES
- SwB - SUTTON VERY STONY FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES
- SxB - SUTTON EXTREMELY STONY FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES



LOCATION MAP

ZONING DISTRICT: R-40

GRAPHIC SCALE

(IN FEET)
1 inch = 1000 ft.

SHEET INDEX

- SHEET 1 - 100 SCALE BOUNDARY MAP; SOILS MAP; LOCATION MAP AND GENERAL NOTES
- SHEET 2 - 200 SCALE PLAN PARCEL HISTORY MAP
- SHEET 3 - 100 SCALE OVERALL PLAN/ ZONING COMPLIANCE TABLE
- SHEET 4 - 40 SCALE A-2 PLAN
- SHEET 5 - 40 SCALE A-2 PLAN
- SHEET 6 - 40 SCALE A-2 PLAN WITH TOPOGRAPHY/WETLANDS
- SHEET 7 - 40 SCALE A-2 PLAN WITH TOPOGRAPHY/WETLANDS
- SHEET 8 - 40 SCALE CONCEPTUAL LAYOUT
- SHEET 9 - 40 SCALE CONCEPTUAL LAYOUT
- SHEET 10 - 40 SCALE PLAN/PROFILE ELLIE ROSE LANE
- SHEET 11 - DEEP TEST PIT DATA: PERCOLATION TEST RESULTS /SEPTIC SYSTEM DESIGN CRITERIA
- SHEET 12 - CONSTRUCTION DETAILS
- SHEET 13 - CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENT CONTROL NARRATIVE/DETAILS

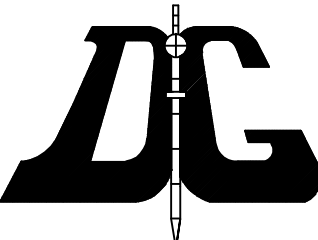
PLAN SHOWING
KINEO ESTATES
CONSERVATION RESUBDIVISION
PROPERTY OF
SPENCER BAY PROPERTIES, LLC
12 HYDE PARK DRIVE
AND
975 LONG COVE ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=100'
JUNE 2026

SHEET 1 OF 13

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.

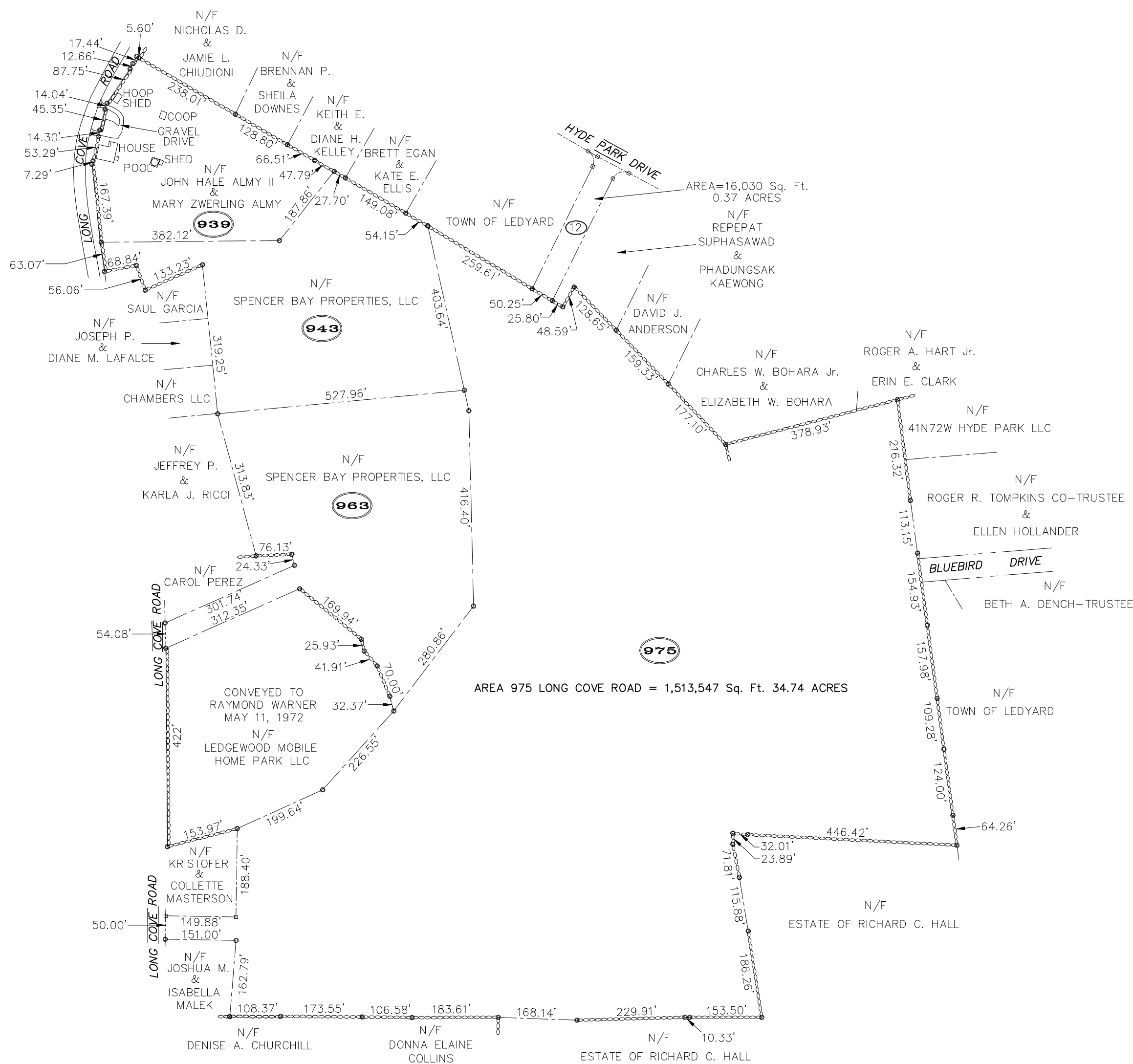
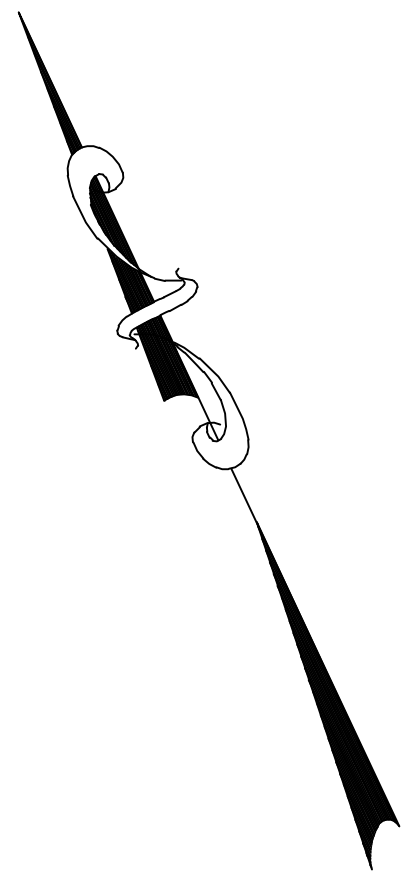
TITLE: LAND SURVEYOR CT No. 14208

DATE: JUNE 12, 2026



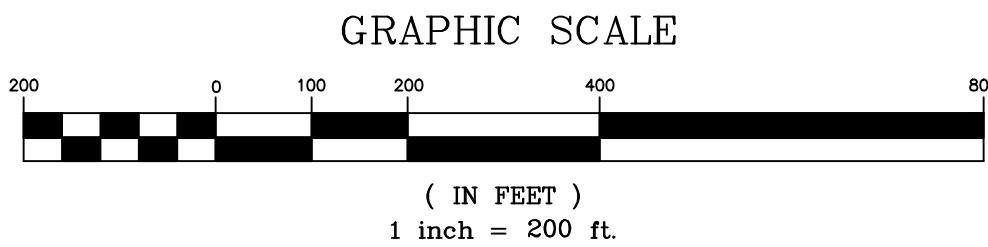
DIETER & GARDNER
LAND SURVEYORS • PLANNERS
P.O. BOX 335
1641 CONNECTICUT ROUTE 12
GALES FERRY, CT. 06335
(860) 464-7455
EMAIL: DIETER.GARDNER@YAHOO.COM

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



TOTAL AREA OF 939 LONG COVE ROAD ON MARCH 22, 1962 = 52.66 ACRES
TOTAL NUMBER LOTS CREATED FROM ORIGINAL TRACT = 4

PARCEL HISTORY MAP



LEGEND

- STONE WALL
- PROPERTY LINE
- STREET LINE

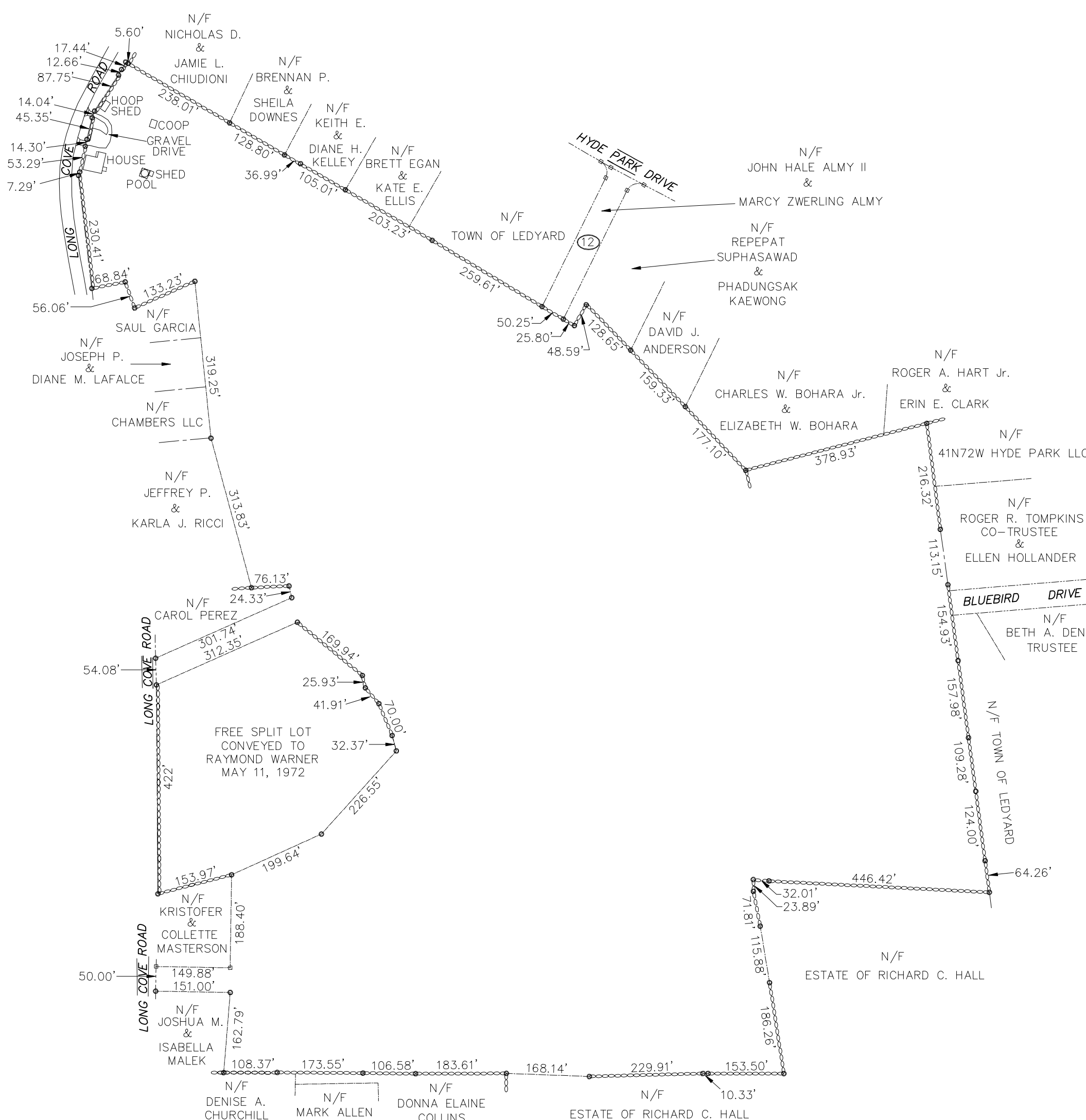
NOTE: BOUNDARY LINES OF ADJOINING PROPERTIES ARE SHOWN FOR GENERAL INFORMATION PURPOSES ONLY AND ARE NOT TO BE CONSTRUED AS BEING ACCURATELY LOCATED OR DEPICTED.

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

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# 24-003SD.DWG FBK#338

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.

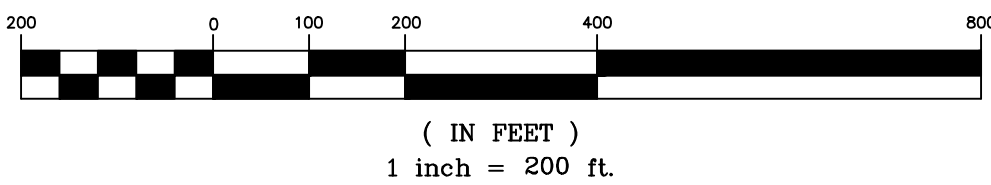
DIETER & GARDNER
LAND SURVEYORS • PLANNERS
P.O. BOX 335
1641 CONNECTICUT ROUTE 12
GALES FERRY, CT. 06335
(860) 464-7455
EMAIL: DIETER.GARDNER@YAHOO.COM



PARCEL HISTORY MAP
THIS IS NOT A SURVEY

PARCEL HISTORY
TOTAL AREA ON MARCH 22, 1962 = 52.66 ACRES
TOTAL NUMBER OF LOTS CREATED FROM ORIGINAL TRACT = 1

GRAPHIC SCALE



PLAN SHOWING
KINEO ESTATES
CONSERVATION RESUBDIVISION
PARCEL HISTORY MAP
PROPERTY OF
SPENCER BAY PROPERTIES, LLC
12 HYDE PARK DRIVE
AND
975 LONG COVE ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=200'
JUNE 2026

SHEET 2 OF 13

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.

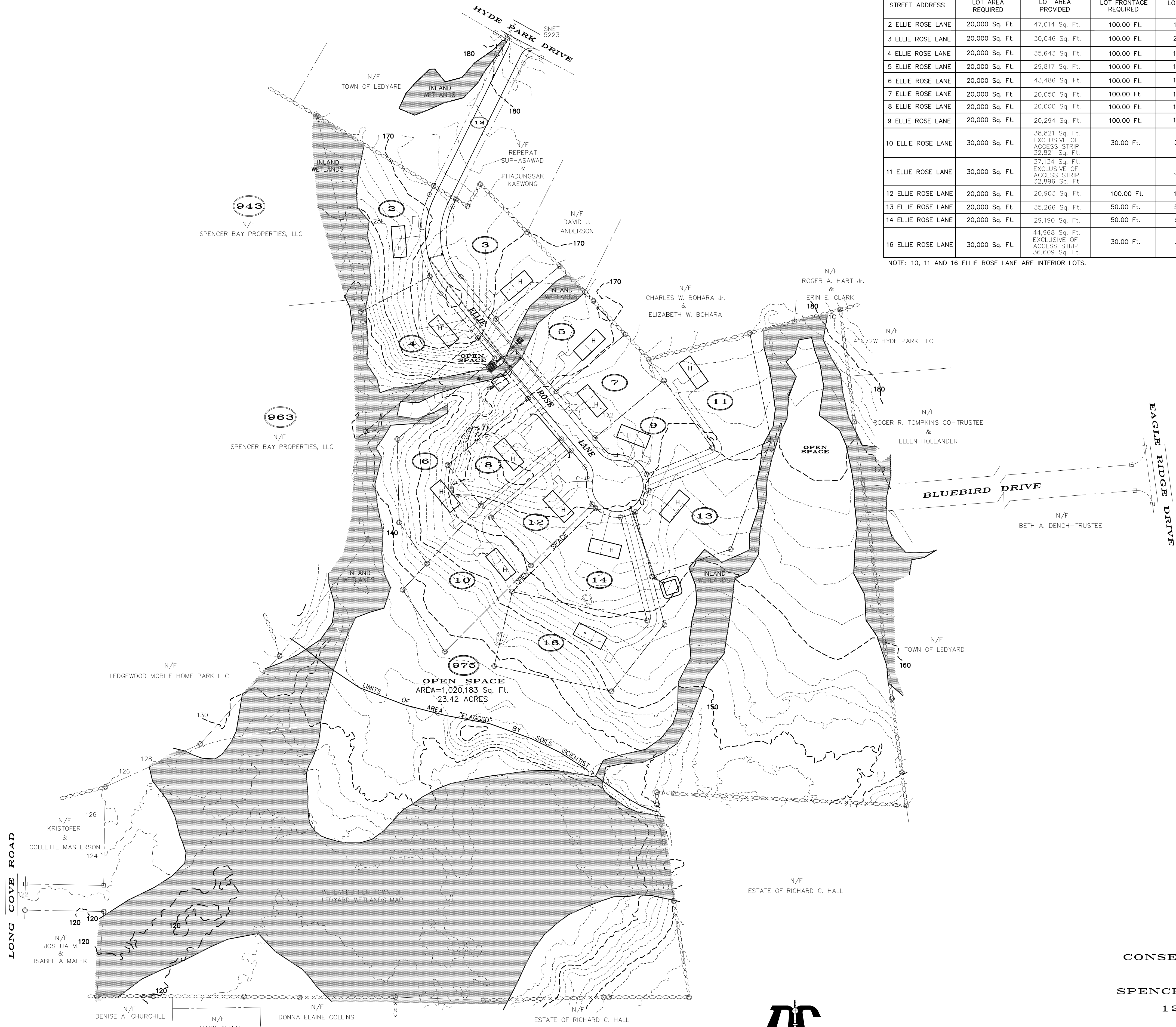
TITLE: LAND SURVEYOR CT No. 14208

DATE: JUNE 12, 2026

ZONING COMPLIANCE TABLE
R-40 ZONE (CONSERVATION RESUBDIVISION)

STREET ADDRESS	LOT AREA REQUIRED	LOT AREA PROVIDED	LOT FRONTAGE REQUIRED	LOT FRONTAGE PROVIDED	FRONT SETBACK	SIDE SETBACK	REAR SETBACK
2 ELLIE ROSE LANE	20,000 Sq. Ft.	47,014 Sq. Ft.	100.00 Ft.	181.03 Ft.	25 Ft.	10 Ft.	20 Ft.
3 ELLIE ROSE LANE	20,000 Sq. Ft.	30,046 Sq. Ft.	100.00 Ft.	264.00 Ft.	25 Ft.	10 Ft.	20 Ft.
4 ELLIE ROSE LANE	20,000 Sq. Ft.	35,643 Sq. Ft.	100.00 Ft.	149.73 Ft.	25 Ft.	10 Ft.	20 Ft.
5 ELLIE ROSE LANE	20,000 Sq. Ft.	29,817 Sq. Ft.	100.00 Ft.	180.47 Ft.	25 Ft.	10 Ft.	20 Ft.
6 ELLIE ROSE LANE	20,000 Sq. Ft.	43,486 Sq. Ft.	100.00 Ft.	100.00 Ft.	25 Ft.	10 Ft.	20 Ft.
7 ELLIE ROSE LANE	20,000 Sq. Ft.	20,050 Sq. Ft.	100.00 Ft.	115.50 Ft.	25 Ft.	10 Ft.	20 Ft.
8 ELLIE ROSE LANE	20,000 Sq. Ft.	20,000 Sq. Ft.	100.00 Ft.	100.00 Ft.	25 Ft.	10 Ft.	20 Ft.
9 ELLIE ROSE LANE	20,000 Sq. Ft.	20,294 Sq. Ft.	100.00 Ft.	128.52 Ft.	25 Ft.	10 Ft.	20 Ft.
10 ELLIE ROSE LANE	30,000 Sq. Ft.	38,821 Sq. Ft. EXCLUSIVE OF ACCESS STRIP 32,821 Sq. Ft.	30.00 Ft.	30.00 Ft.	25 Ft.	10 Ft.	20 Ft.
11 ELLIE ROSE LANE	30,000 Sq. Ft.	37,134 Sq. Ft. EXCLUSIVE OF ACCESS STRIP 32,896 Sq. Ft.		31.42 Ft.	25 Ft.	10 Ft.	20 Ft.
12 ELLIE ROSE LANE	20,000 Sq. Ft.	20,903 Sq. Ft.	100.00 Ft.	115.65 Ft.	25 Ft.	10 Ft.	20 Ft.
13 ELLIE ROSE LANE	20,000 Sq. Ft.	35,266 Sq. Ft.	50.00 Ft.	50.00 Ft.	25 Ft.	10 Ft.	20 Ft.
14 ELLIE ROSE LANE	20,000 Sq. Ft.	29,190 Sq. Ft.	50.00 Ft.	52.53 Ft.	25 Ft.	10 Ft.	20 Ft.
16 ELLIE ROSE LANE	30,000 Sq. Ft.	44,968 Sq. Ft. EXCLUSIVE OF ACCESS STRIP 36,609 Sq. Ft.	30.00 Ft.	30.46 Ft.	25 Ft.	10 Ft.	20 Ft.

NOTE: 10, 11 AND 16 ELLIE ROSE LANE ARE INTERIOR LOTS.



LEGEND

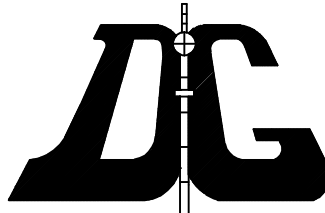
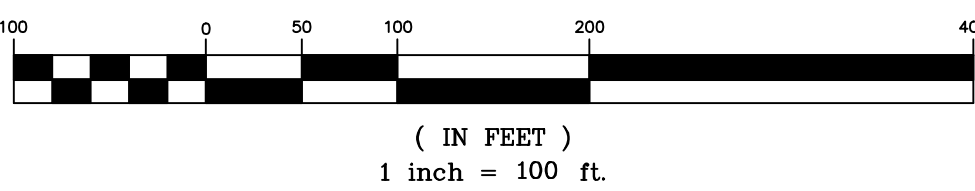
- STONE WALL
- PROPERTY LINE
- STREET LINE
- CONTOUR
- EDGE OF WETLANDS
- STREET ADDRESS
- CONCEPTUAL HOUSE

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

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# 24-003.DWG FBK#338

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

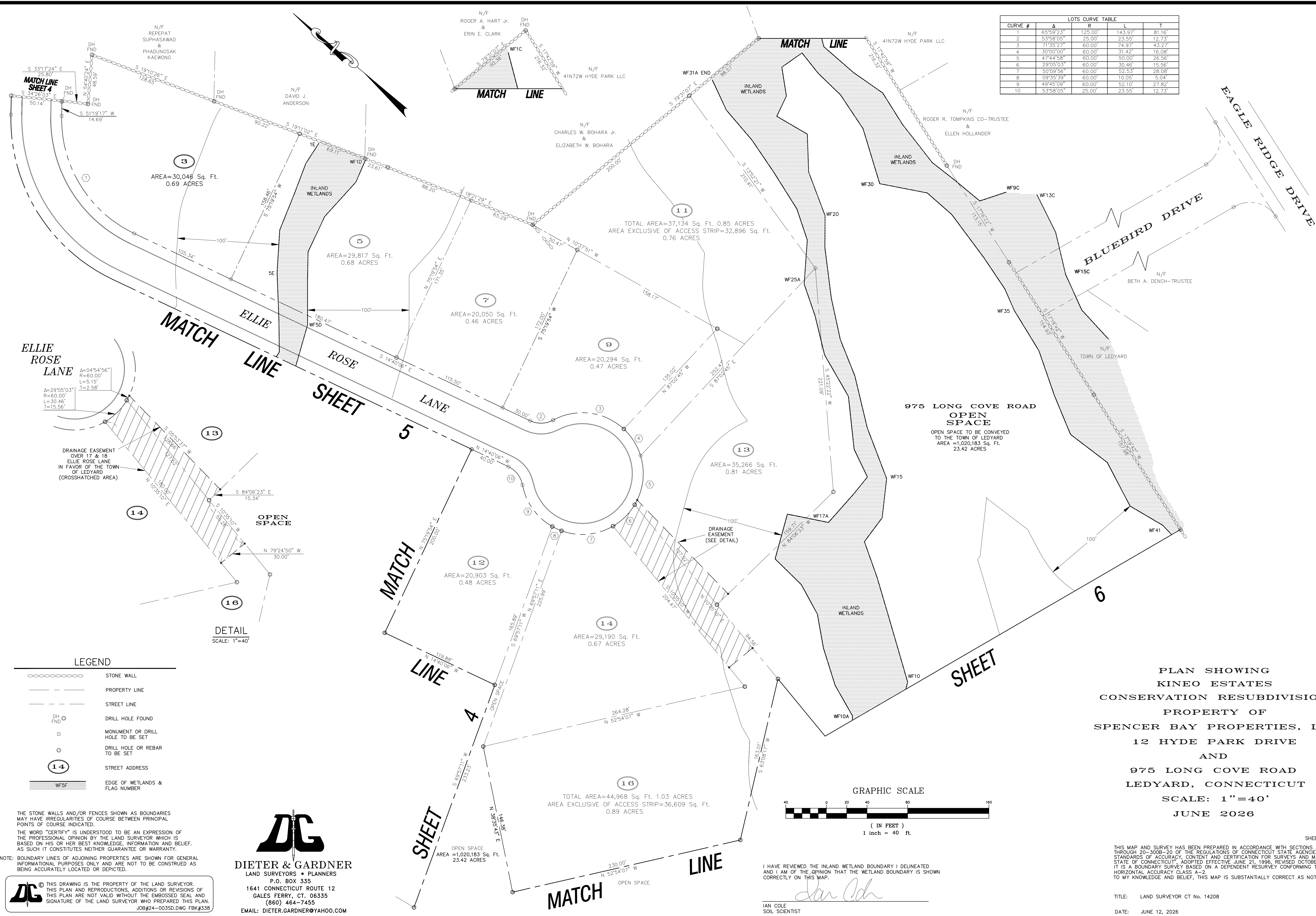
GRAPHIC SCALE



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

PLAN SHOWING
KINEO ESTATES
CONSERVATION RESUBDIVISION
PROPERTY OF
SPENCER BAY PROPERTIES, LLC
12 HYDE PARK DRIVE
AND
975 LONG COVE ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=100'
JUNE 2026

LOTS CURVE TABLE				
CURVE #	Δ	R	L	T
1	65°59'23"	125.00'	143.97'	81.16'
2	53°58'05"	25.00'	23.55'	12.73'
3	71°35'27"	60.00'	74.97'	43.27'
4	30°00'00"	60.00'	31.42'	16.08'
5	47°44'58"	60.00'	50.00'	26.56'
6	29°05'03"	60.00'	30.46'	15.56'
7	50°09'56"	60.00'	52.53'	28.08'
8	09°35'39"	60.00'	10.05'	5.04'
9	49°45'09"	60.00'	52.10'	27.82'
10	53°58'05"	25.00'	23.55'	12.73'



PLAN SHOWING
KINEO ESTATES
CONSERVATION RESUBDIVISION
PROPERTY OF
SPENCER BAY PROPERTIES, LLC
12 HYDE PARK DRIVE
AND
975 LONG COVE ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=40'
JUNE 2026

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.

© 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.

JOE#24-003SD.DWG FBK#338

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

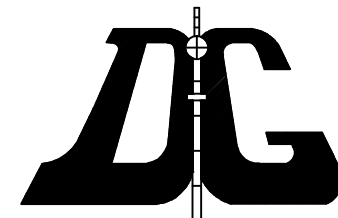
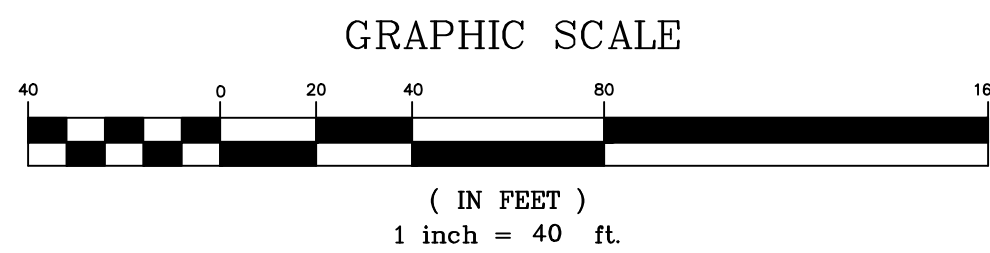
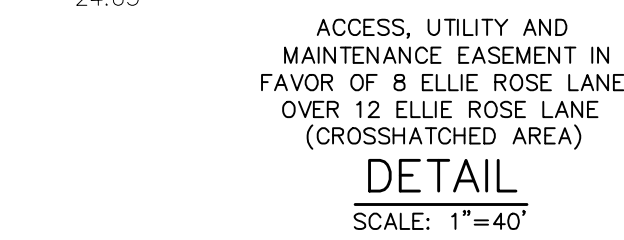
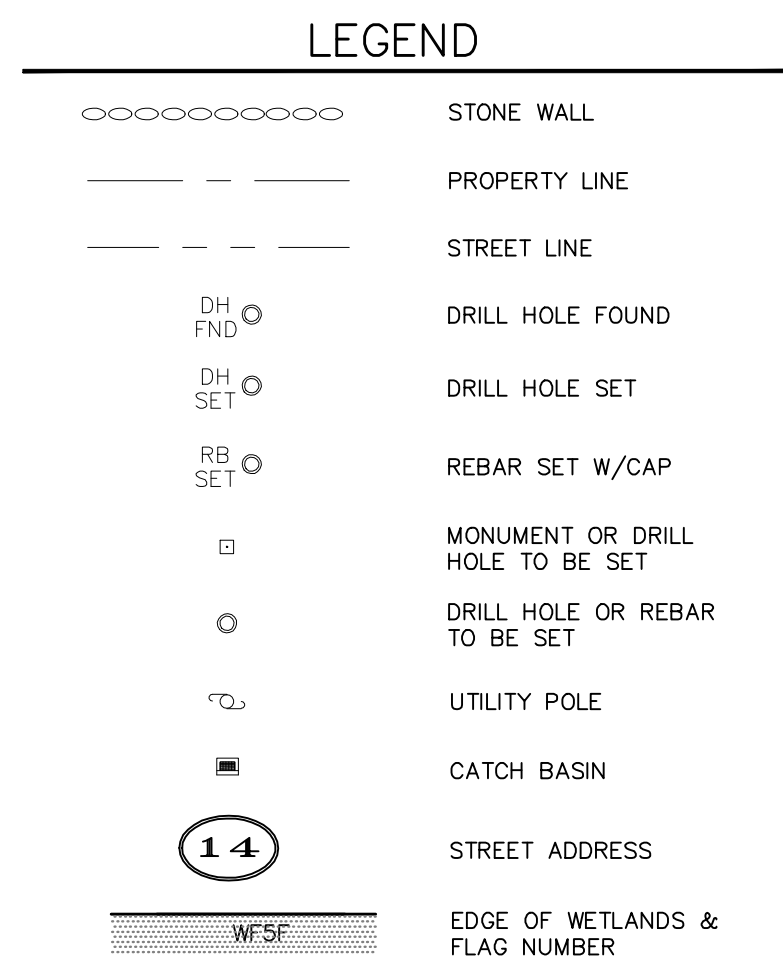
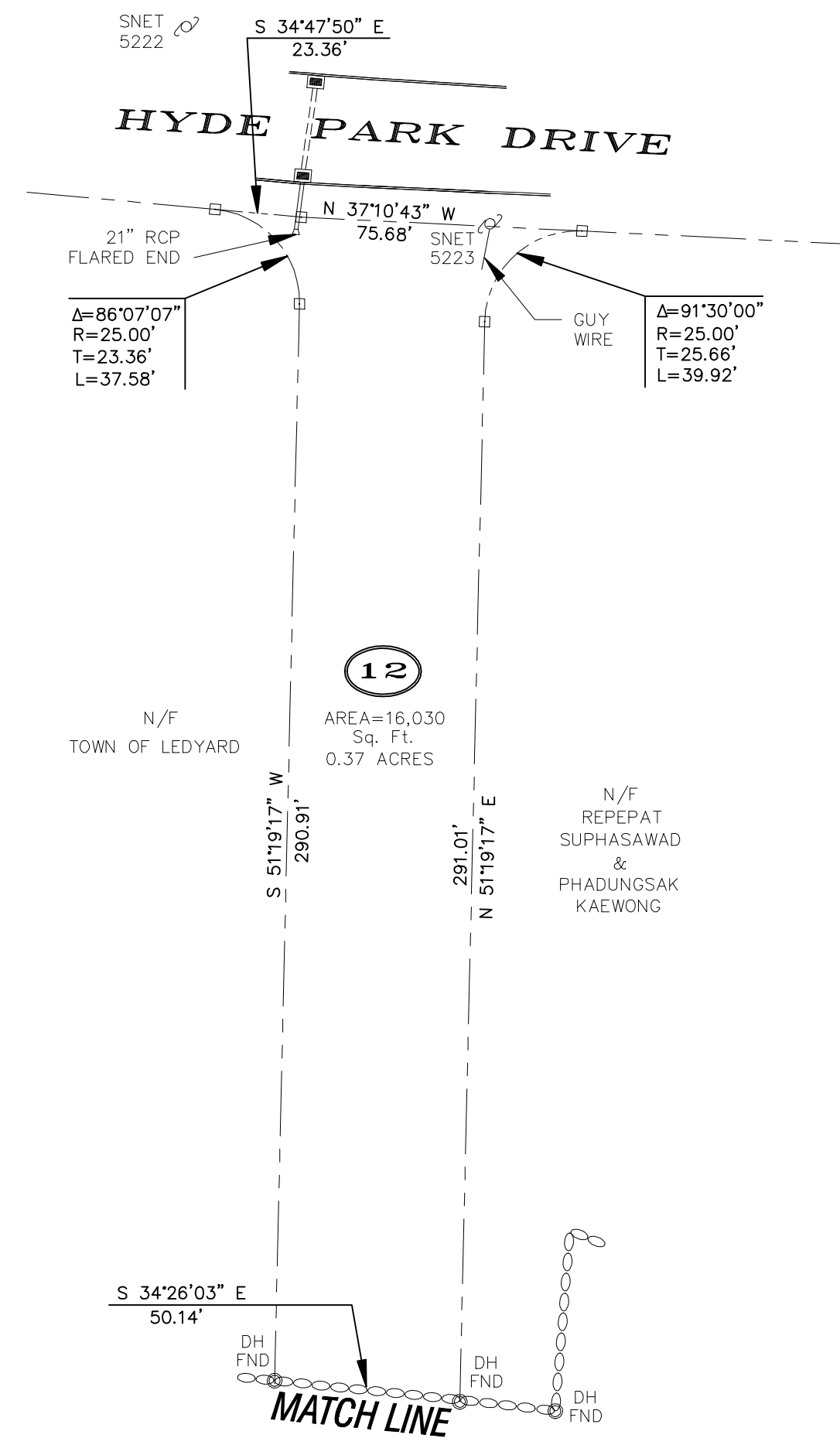
I HAVE REVIEWED THE INLAND WETLAND BOUNDARY I DELINEATED AND I AM OF THE OPINION THAT THE WETLAND BOUNDARY IS SHOWN CORRECTLY ON THIS MAP.

Jan Cole
IAN COLE
SOIL SCIENTIST

SHEET 4 OF 13

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 TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208
DATE: JUNE 12, 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

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

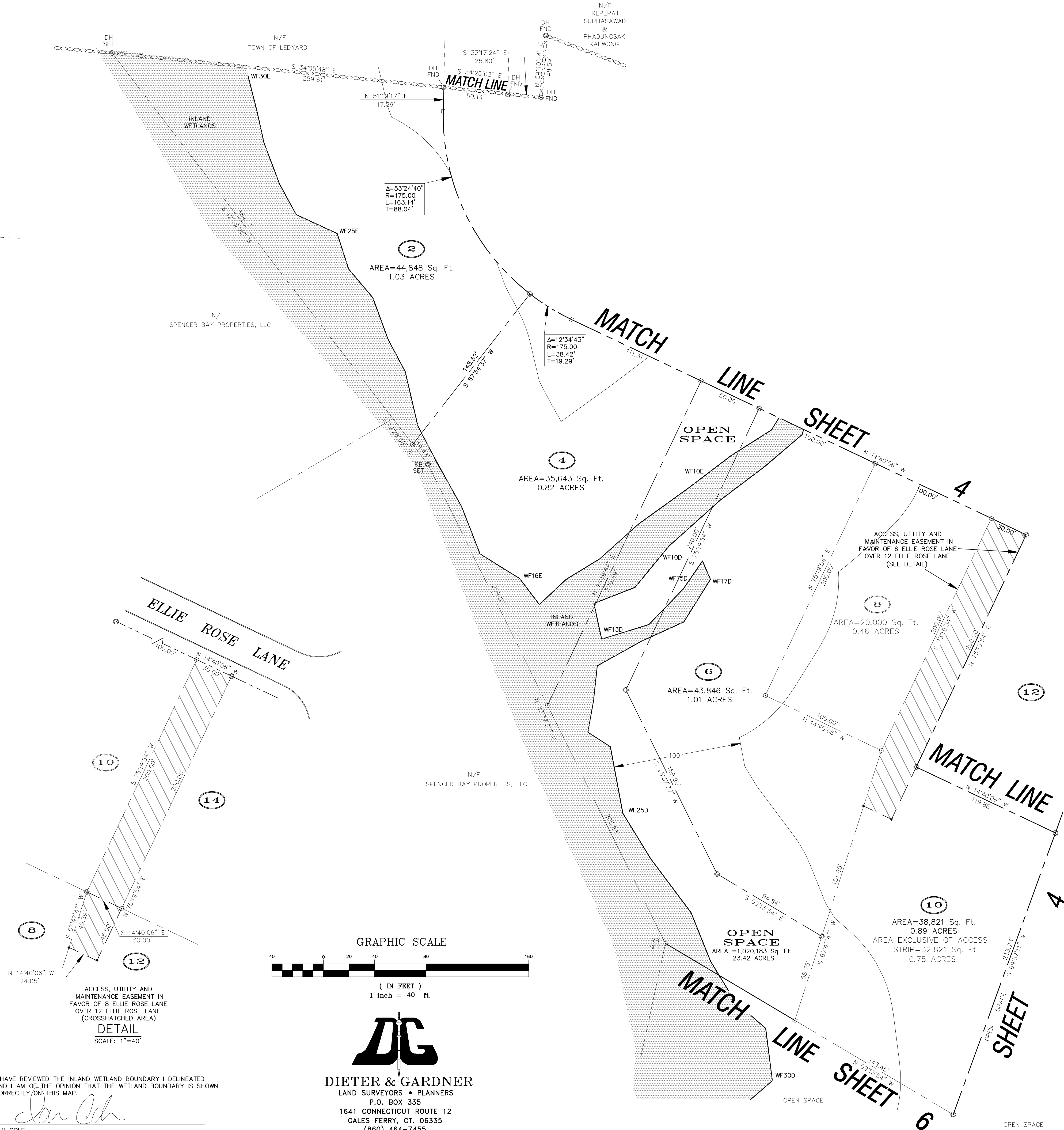
THE STONE WALLS AND/OR FENCES SHOWN AS BOUNDARIES MAY HAVE IRREGULARITIES OF COURSE BETWEEN PRINCIPAL POINTS OF COURSE INDICATED.

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.

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#24-003SD.DWG FBK#338



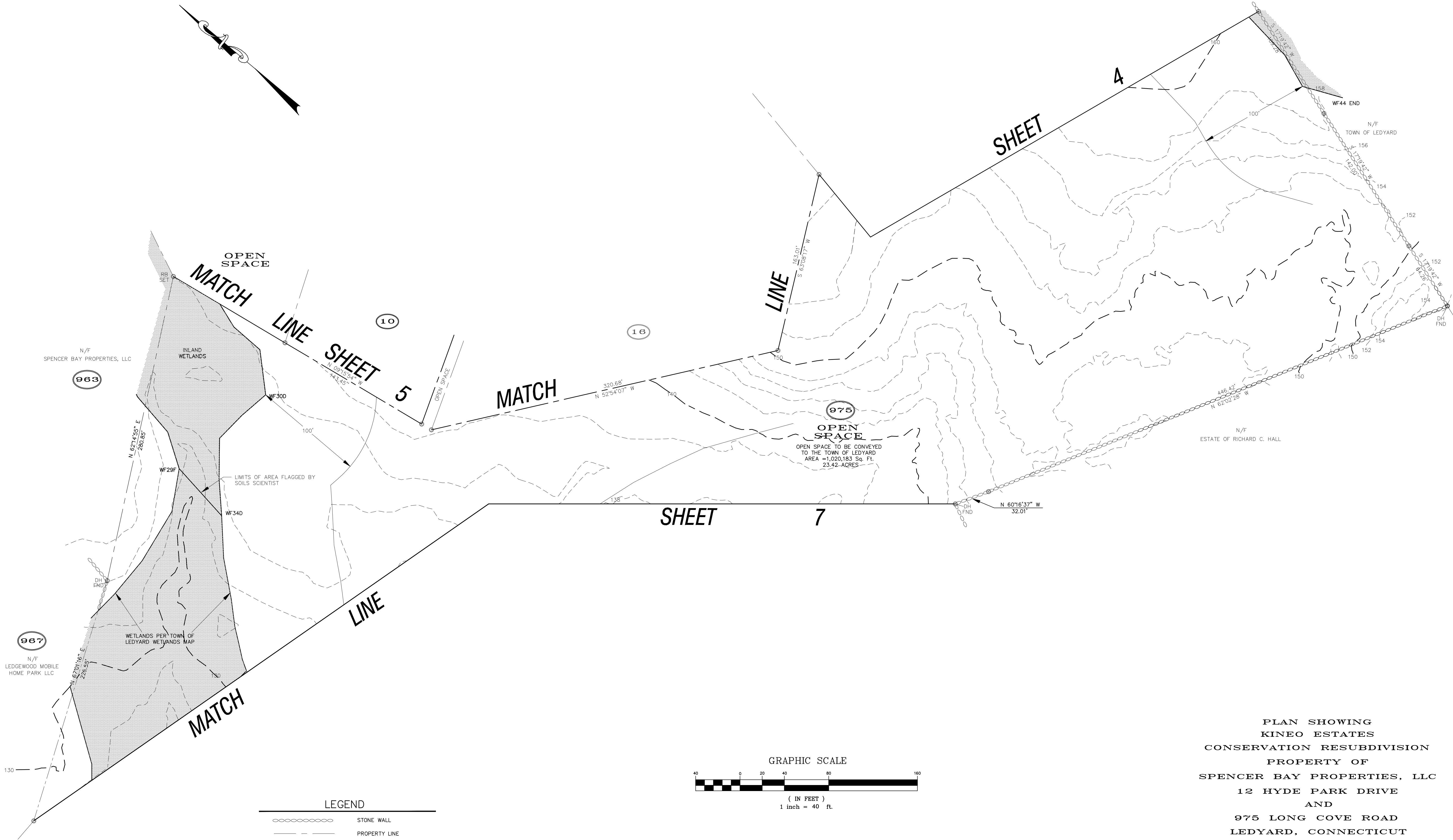
**PLAN SHOWING
KINEO ESTATES
CONSERVATION RESUBDIVISION
PROPERTY OF
SPENCER BAY PROPERTIES, LLC
12 HYDE PARK DRIVE
AND
975 LONG COVE ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=40'
JUNE 2026**

SHEET 5 OF 13

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. TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208

DATE: JUNE 12, 2026



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.

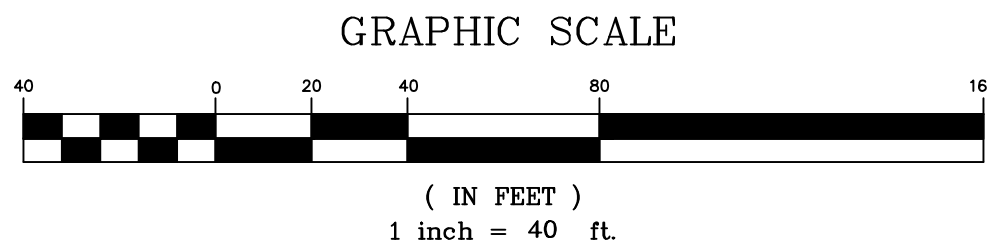
© THIS DRAWING IS THE PROPERTY OF THE LAND SURVEYOR. THIS PLAN AND REPRODUCTIONS, ADDITIONS OR REVISIONS OF THIS PLAN ARE NOT VALID WITHOUT THE EMBOSSED SEAL AND SIGNATURE OF THE LAND SURVEYOR WHO PREPARED THIS PLAN.

JOB#24-003SD.DWG FBK#338

LEGEND	
○○○○○○○○○○	STONE WALL
---	PROPERTY LINE
---	STREET LINE
DH FND	DRILL HOLE FOUND
RB SET	REBAR SET W/CAP
□	MONUMENT OR DRILL HOLE TO BE SET
○	DRILL HOLE OR REBAR TO BE SET
961	STREET ADDRESS
WFSF	EDGE OF WETLANDS & FLAG NUMBER

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



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

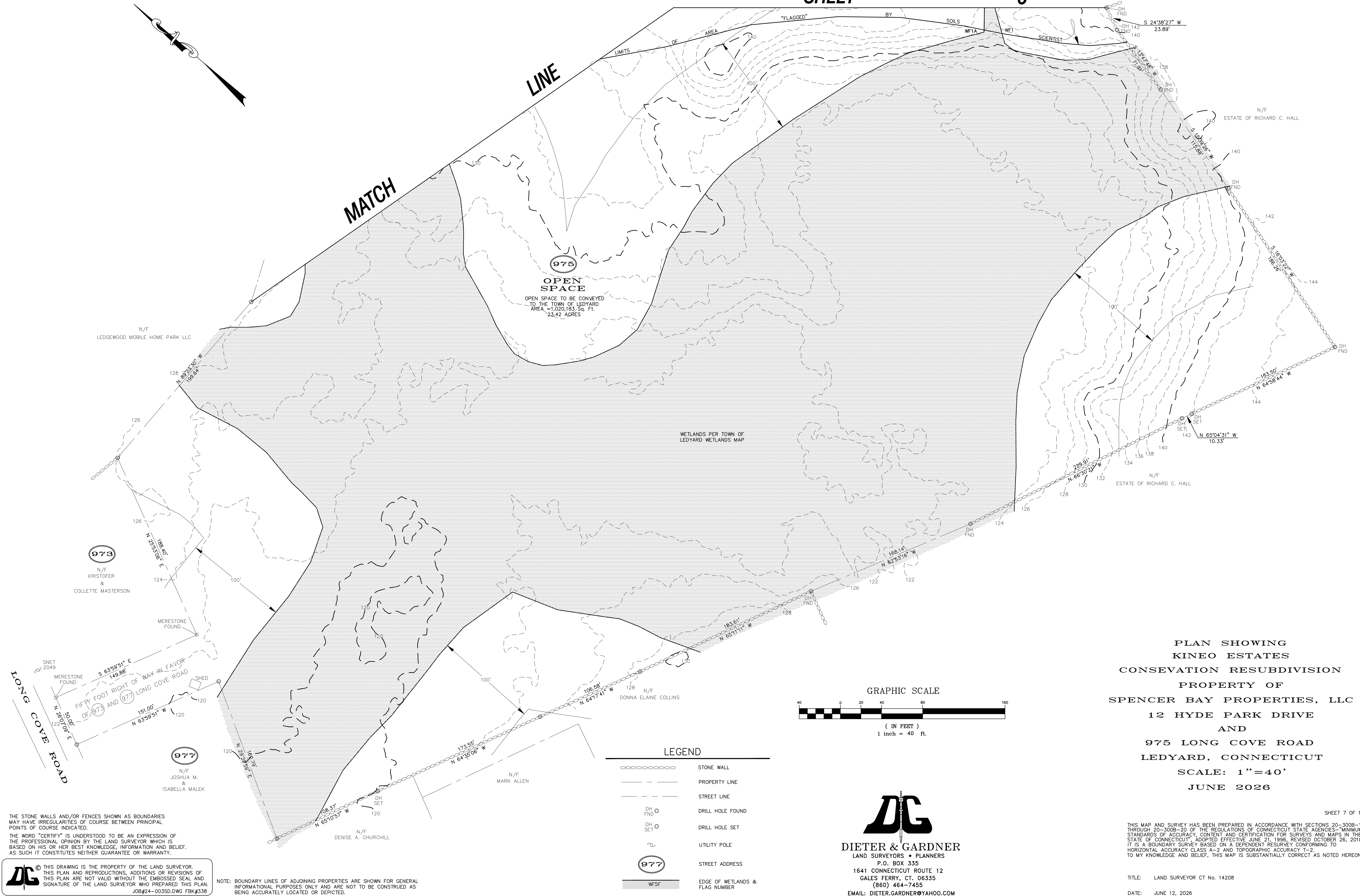
PLAN SHOWING
KINEO ESTATES
CONSERVATION RESUBDIVISION
PROPERTY OF
SPENCER BAY PROPERTIES, LLC
12 HYDE PARK DRIVE
AND
975 LONG COVE ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=40'
JUNE 2026

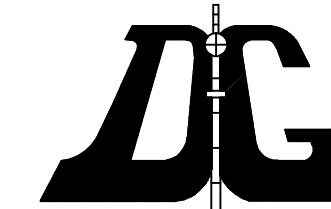
SHEET 6 OF 13

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-2. TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

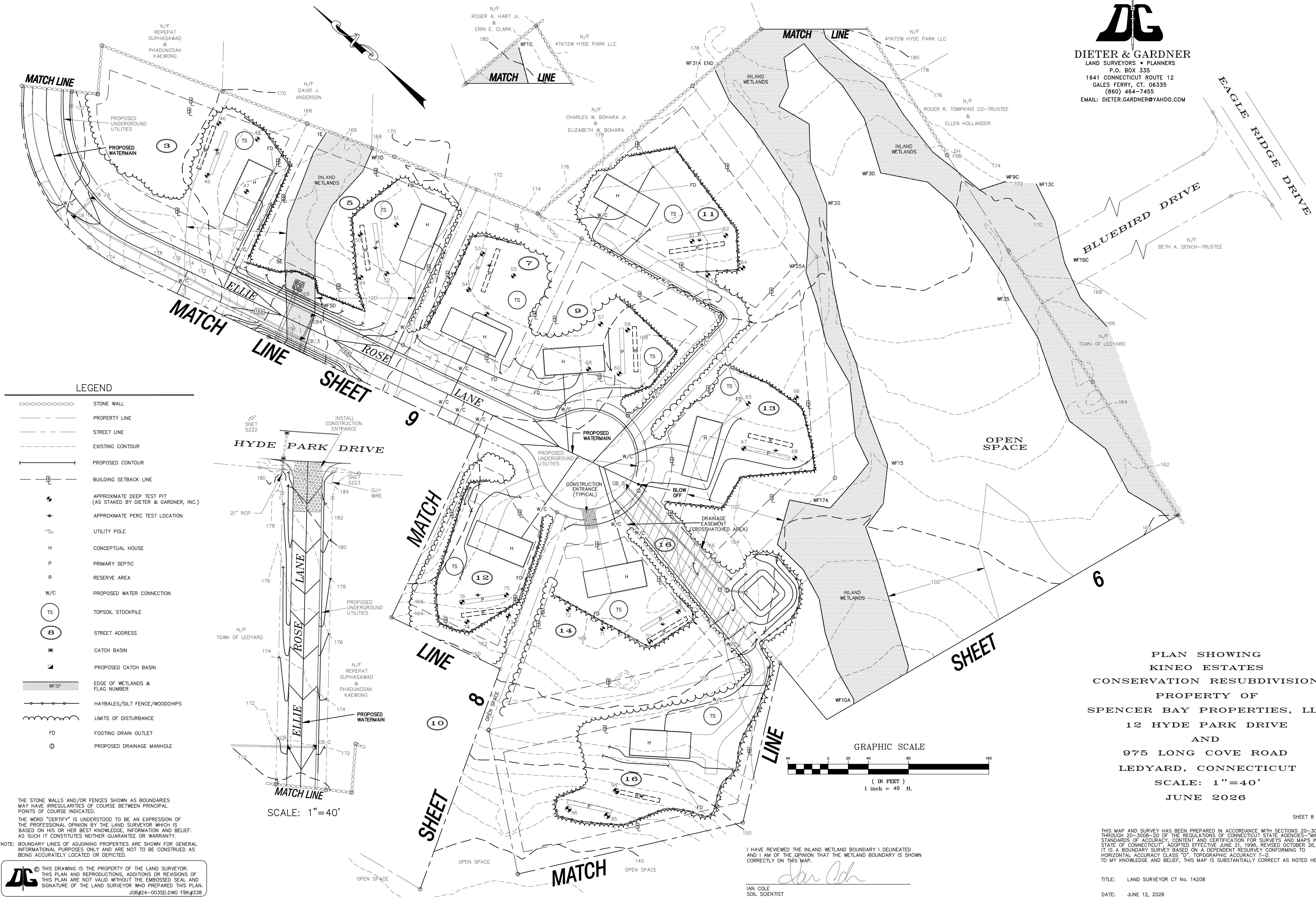
TITLE: LAND SURVEYOR CT No. 14208

DATE: JUNE 12, 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

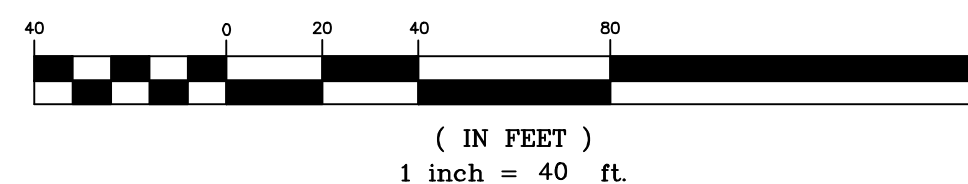


LEGEND

- STONE WALL
- PROPERTY LINE
- STREET LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- BUILDING SETBACK LINE
- APPROXIMATE DEEP TEST PIT (AS STAKED BY DIETER & GARDNER, INC.)
- APPROXIMATE PERC TEST LOCATION
- UTILITY POLE
- CONCEPTUAL HOUSE
- PRIMARY SEPTIC
- RESERVE AREA
- PROPOSED WATER CONNECTION
- TOPSOIL STOCKPILE
- STREET ADDRESS
- CATCH BASIN
- PROPOSED CATCH BASIN
- EDGE OF WETLANDS & FLAG NUMBER
- HAYBALES/SILT FENCE/WOODCHIPS
- LIMITS OF DISTURBANCE
- FOOTING DRAIN OUTLET
- PROPOSED DRAINAGE MANHOLE

SCALE: 1"=40'

GRAPHIC SCALE



PLAN SHOWING
KINEO ESTATES
CONSERVATION RESUBDIVISION
PROPERTY OF
SPENCER BAY PROPERTIES, LLC
12 HYDE PARK DRIVE
AND
975 LONG COVE ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=40'
JUNE 2026

SHEET 8 OF 13

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 1-D TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208

DATE: JUNE 12, 2026

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.

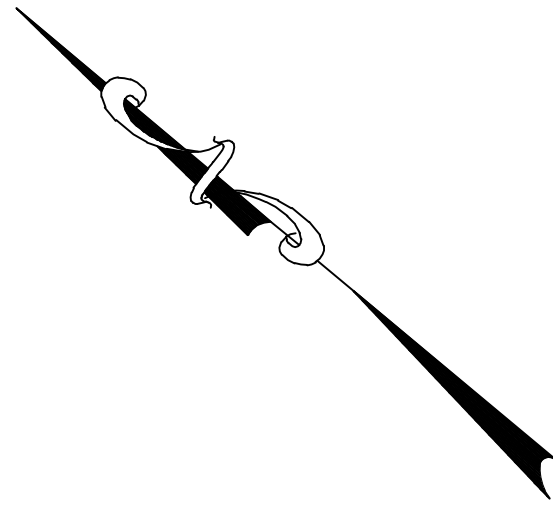
IAN COLE
SOIL SCIENTIST

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.

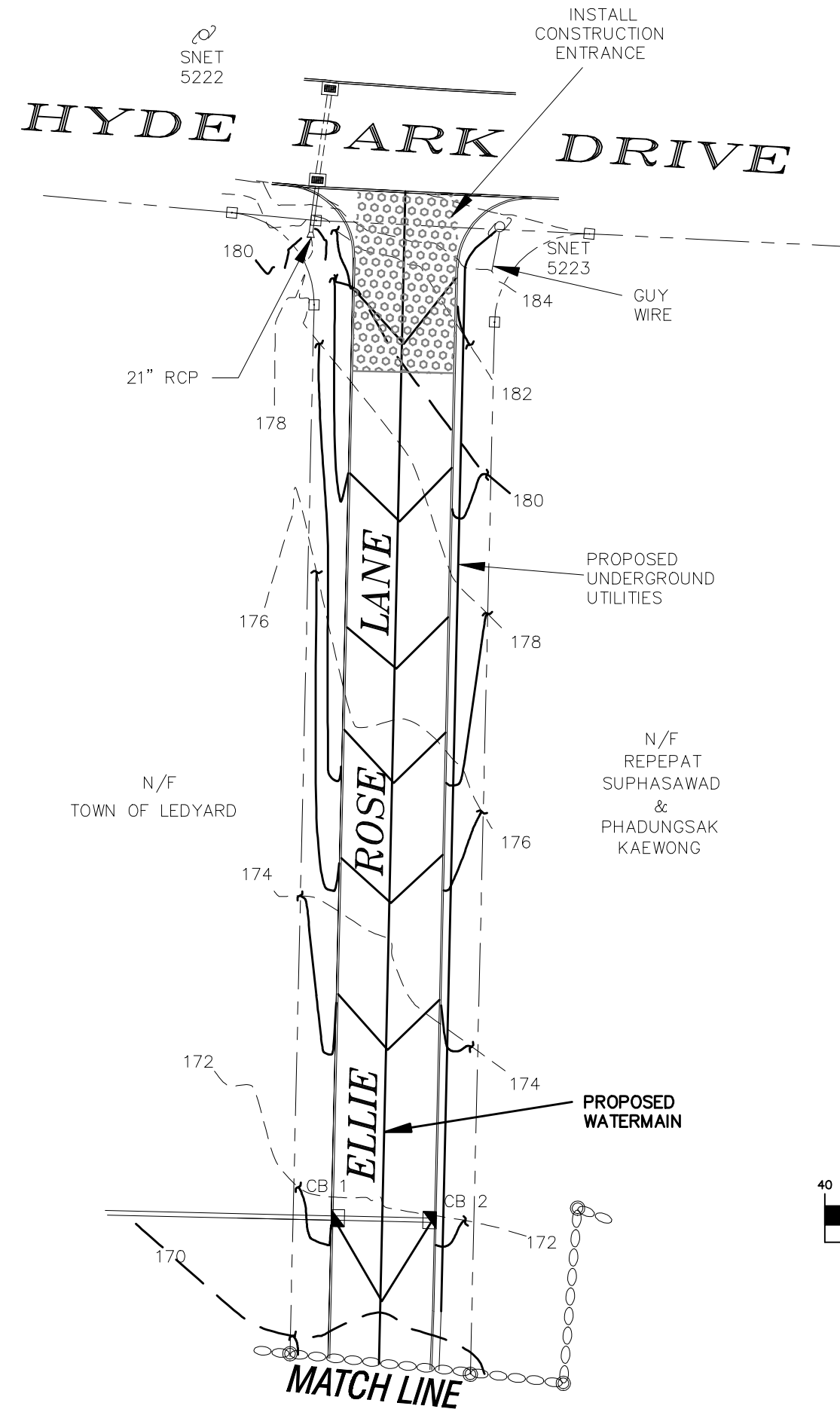
NOTE: BOUNDARY LINES OF ADJOINING PROPERTIES ARE SHOWN FOR GENERAL INFORMATION PURPOSES ONLY AND ARE NOT TO BE CONSTRUED AS BEING ACCURATELY LOCATED OR DEPICTED.

© 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#24-0035D.DWG FBK#338

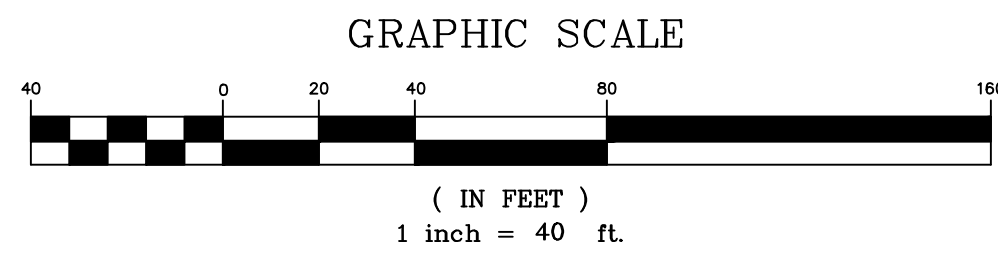


LEGEND

- STONE WALL
- PROPERTY LINE
- STREET LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- BUILDING SETBACK LINE
- APPROXIMATE DEEP TEST PIT
(AS STAKED BY DIETER & GARDNER, INC.)
- APPROXIMATE PERC TEST LOCATION
- UTILITY POLE
- H CONCEPTUAL HOUSE
- P PRIMARY SEPTIC
- R RESERVE AREA
- W/C PROPOSED WATER CONNECTION
- TS TOPSOIL STOCKPILE
- 8 STREET ADDRESS
- CATCH BASIN
- PROPOSED CATCH BASIN
- EDGE OF WETLANDS &
FLAG NUMBER
- HAYBALES/SILT FENCE/WOODCHIPS
- LIMITS OF DISTURBANCE
- FD FOOTING DRAIN OUTLET



SCALE: 1"=40'



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

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

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
INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE CONSTRUED AS
BEING ACCURATELY LOCATED OR DEPICTED.

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#24-003SD.DWG FBK#338

PLAN SHOWING
KINEO ESTATES
CONSERVATION RESUBDIVISION
PROPERTY OF
SPENCER BAY PROPERTIES, LLC
12 HYDE PARK DRIVE
AND
975 LONG COVE ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=40'
JUNE 2026

SHEET 9 OF 13

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.

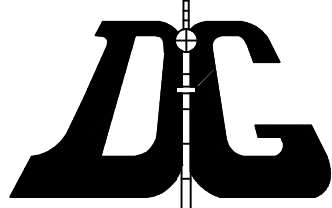
TITLE: LAND SURVEYOR CT No. 14208

DATE: JUNE 12, 2026

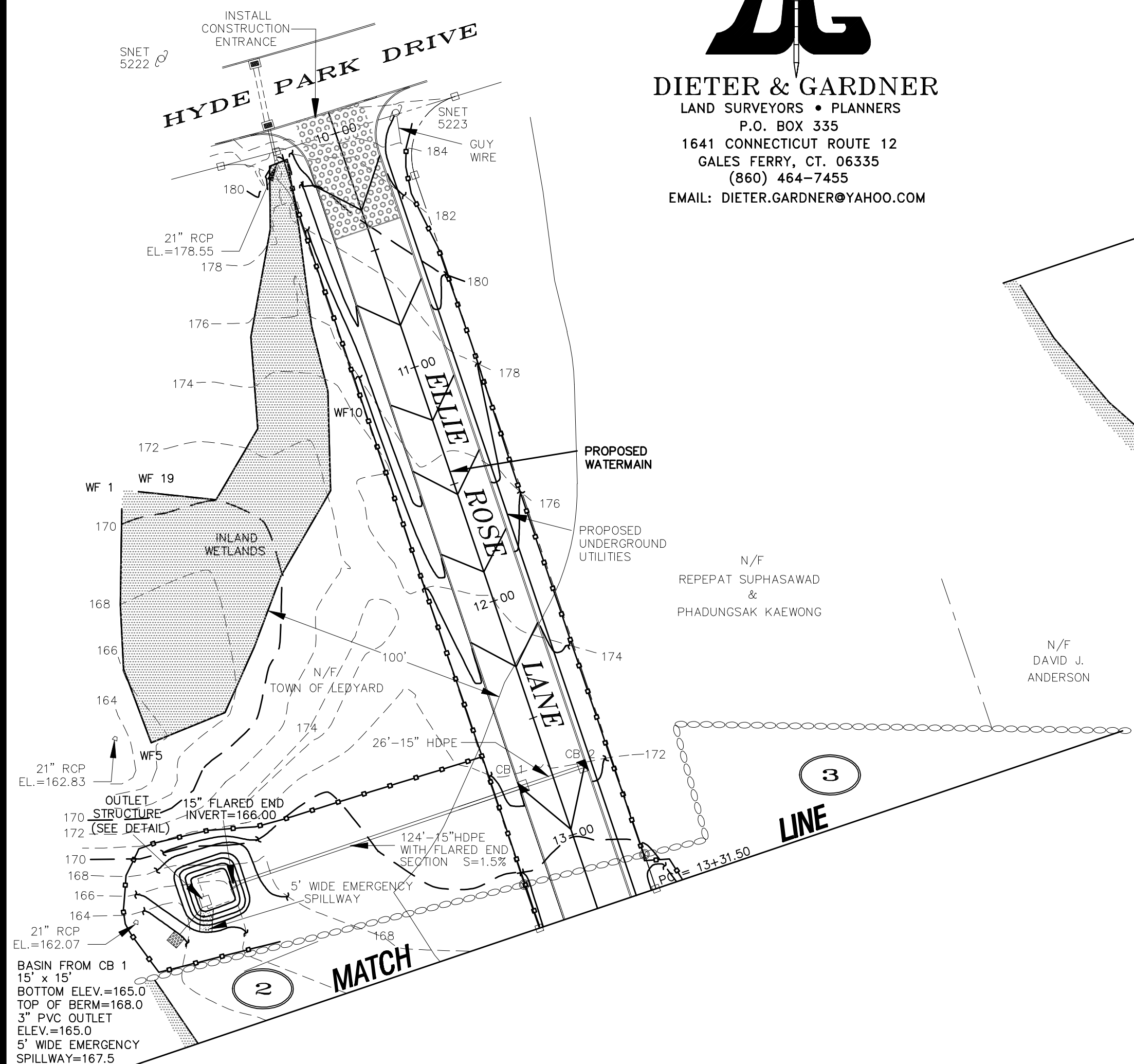


© THIS DRAWING IS THE PROPERTY OF THE LAND SURVEYOR.
THIS PLAN AND REPRODUCTIONS, ADDITIONS OR REVISIONS OF
THIS PLAN ARE NOT VALID WITHOUT THE EMBOSSED SEAL AND
SIGNATURE OF THE LAND SURVEYOR WHO PREPARED THIS PLAN.
JOB#24-0035D.DWG FBK#338

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



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



939 LONG COVE ROAD TOWN OF LEDYARD SUBDIVISION SOIL TESTING 14 LOTS DATES 9/25/2024, 9/26/2024, 9/30/2024, 10/2/2024 AND 10/4/2024 .
FORM COMPLETED BY: ODALYS REYES MORALES OTHER PRESENT FOR SITE INVESTIGATION: WILLIAM SCHMIDT REPRESENTATIVE FROM LLHD ODALYS REYES MORALES, DANIEL HOLMES, LUPITA VARELA,BRIGID WHITE AND IDELYS AMADOR.

TEST HOLE #1 DEPTH: 50"
0-12" TOPSOIL/LEAF LITTER
12"-29" ORANGE/BROWN FINE SANDY LOAM
29"-38" YELLOW/BROWN FINE SILTY SAND
38"-50" LIGHT GREY MEDIUM SAND AND GRAVEL
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 50"
ROOTS: 40"
RESTRICTIVE: 50"

TEST HOLE #2 DEPTH: 49"
0-6" TOPSOIL/LEAF LITTER
6"-21" ORANGE/BROWN FINE SANDY LOAM
21"-36" YELLOW/BROWN FINE SILTY SAND
36"-42" LIGHT GREY MEDIUM SAND WITH GRAVEL
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 49"
ROOTS: 30"
RESTRICTIVE: 49"

TEST HOLE #3 DEPTH: 53"
0-3" TOPSOIL/LEAF LITTER
3"-53" YELLOW/BROWN FINE SANDY LOAM
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 53"
ROOTS:
RESTRICTIVE: 53"

TEST HOLE #4 DEPTH: 48"
0-6" TOPSOIL/LEAF LITTER
6"-36" Y/B FINE SANDY LOAM
36"-48" TAN MEDIUM SAND AND GRAVEL
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 48"
ROOTS:
RESTRICTIVE: 48"

TEST HOLE #41 DEPTH: 83"
0-8" TS/LL
8"-46" ORANGE TO YELLOW BROWN FINE SANDY LOAM
46"-83" LIGHT GREY FINE SAND W/ COBBLES AND PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 83"
ROOTS: 50"
RESTRICTIVE: 83"

TEST HOLE #42 DEPTH: 89"
0-6" TS/LEAF LITTER
6"-28" Y/B VERY FINE SAND
28"-89" L/G FINE SAND AND GRAVEL 55%
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 89"
ROOTS: 67"
RESTRICTIVE: 89"

TEST HOLE #43 DEPTH: 85"
0-8" TS
8"-33" Y/B SILTY SAND
33"-85" L/G FINE SAND W/GRAVEL
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 85"
ROOTS:
RESTRICTIVE: 85"

TEST HOLE #44 DEPTH: 50"
0-7" TS
7"-34" LIGHT ORANGE, BROWN FINE SANDY LOAM
34"-44" L/G FINE SILTY SAND
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 50"
ROOTS: 32"
RESTRICTIVE: 50"

TEST HOLE #45 DEPTH: 84"
0-9" TS
9"-32" Y/B FSL
32"-84" L/G MEDIUM SAND W/BOULDERS AND PEBBLES
MOTTLES: 32"
GW: NONE OBSERVED
LEDGE: 84"
ROOTS: 48"
RESTRICTIVE: 32"

TEST HOLE #46 DEPTH: 91"
0-10" TS
10"-24" YBFSL
24"-36" L/B FINE SAND
36"-91" ORANGE BROWN FINE TO MEDIUM SAND AND GRAVEL-STRATIFIED LAYERS OF VERY FINE SAND
MOTTLES: 32"
GW: NONE OBSERVED
LEDGE: 84"
ROOTS: 48"
RESTRICTIVE: 32"

TEST HOLE #47 DEPTH: 96"
0-8" TS
8"-37" ORANGE TO YELLOW BROWN VERY FINE SILTY SAND
37"-48" LIGHT GREY FINE SAND
48"-96" LIGHT GREY FINE SAND, FRIABLE
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE:
ROOTS: 60"
RESTRICTIVE: 96"

TEST HOLE #48 DEPTH: 85"
0-12" T/S
12"-30" OBFSL
30"-70" O/B MEDIUM SAND AND GRAVEL
MOTTLED
70"-86" TAN FINE SAND
MOTTLES: 29"
GW: NONE OBSERVED
LEDGE: 85"
ROOTS: 30"
RESTRICTIVE: 85"

TEST HOLE #49 DEPTH: 56"
0-7" T/S
7"-56" O/B FINE SAND-MOTTLED
MOTTLES: 20"
GW: NONE OBSERVED
LEDGE: 56"
ROOTS: 32"
RESTRICTIVE: 20"

TEST HOLE #50 DEPTH: 64"
0-2" T/S
2"-32" Y/B FINE SAND SILTY
32"-64" DARK BROWN SAND AND GRAVEL 60%
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 64"
ROOTS:
RESTRICTIVE: 64"

TEST HOLE #51 DEPTH: 59"
0-6" T/S
6"-32" Y/B FINE SILTY SAND
32"-42" GREY FINE SAND
42"-59" LIGHT GREY FINE TO MEDIUM SAND W/COBBLES AND PEBBLES
MOTTLES: 42"
GW: NONE OBSERVED
LEDGE: 59"
ROOTS: 51"
RESTRICTIVE: 42"

TEST HOLE #52 DEPTH: 71"
0-5" TS/LEAF LITTER
5"-22" O/B VERY FINE SANDY LOAM
22"-59" LIGHT GREY FINE SILTY SAND
MOTTLED
59"-71" O/B MEDIUM SAND W/COBBLES
MOTTLES: 36"
GW: NONE OBSERVED
LEDGE:
ROOTS: 60"
RESTRICTIVE: 36"

TEST HOLE #53 DEPTH: 92"
0-9" TOPSOIL/LEAF LITTER
9"-40" ORANGE TO YELLOW BROWN FINE SILTY SAND MOTTLED
40"-92" STRATIFIED LAYERS OF SAND AND GRAVEL 40% LIGHT GREY
MOTTLES: 29"
GW: NONE OBSERVED
LEDGE:
ROOTS: 55"
RESTRICTIVE: 29"

TEST HOLE #54 DEPTH: 93"
0-8" T/S
8"-33" ORANGE BROWN FINE SILTY SAND
33"-93" STRATIFIED LAYERS OF LIGHT GREY FINE SAND AND GRAVEL
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 93"
ROOTS: 56"
RESTRICTIVE: 93"

TEST HOLE #55 DEPTH: 93"
0-8" TOPSOIL/LEAF LITTER
8"-44" LIGHT BROWN VERY FINE SILTY SAND
44"-93" GREY BROWN MEDIUM SAND FRIABLE AND TRACES OF COBBLES
MOTTLES: 29"
GW: NONE OBSERVED
LEDGE:
ROOTS: 41"
RESTRICTIVE: 29"

TEST HOLE #56 DEPTH: 67"
0-8" TOPSOIL/LEAF LITTER
8"-24" ORANGE BROWN FINE SILTY SAND
24"-47" LIGHT BROWN FINE SILTY SAND
47"-67" LIGHT GREY FINE SAND W/PEBBLES
MOTTLES: 37"
GW: NONE OBSERVED
LEDGE:
ROOTS: 41"
RESTRICTIVE: 37"

TEST HOLE #57 DEPTH: 100"
0-9" TOPSOIL/LEAF LITTER
9"-26" YELLOW BROWN FINE SAND
26"-42" LIGHT GREY, BROWN VERY FINE SILTY SAND MOTTLED
42"-100" GREY BROWN SAND AND GRAVEL
MOTTLES: 26"
GW: NONE OBSERVED
LEDGE:
ROOTS: 49"
RESTRICTIVE: 26"

TEST HOLE #58 DEPTH: 96"
0-5" TOPSOIL/LEAF LITTER
5"-44" ORANGE TO YELLOW FINE SILTY SAND
44"-96" LIGHT GREY MEDIUM SAND WITH COBBLES AND LARGE BOULDERS
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 96"
ROOTS: 36"
RESTRICTIVE: 96"

TEST HOLE #59 DEPTH: 60"
0-8" TOPSOIL/LEAF LITTER
8"-21" YELLOW BROWN FINE SANDY LOAM
21"-50" YELLOW BROWN VERY FINE SILTY SAND MOTTLED
50"-60" YELLOW BROWN MEDIUM TO COARSE SAND COMPACT W/COBBLES
MOTTLES: 28"
GW: NONE OBSERVED
LEDGE: 60"
ROOTS: 47"
RESTRICTIVE: 60"

TEST HOLE #60 DEPTH: 60"
0-8" TOPSOIL/LEAF LITER
8"-32" YELLOW BROWN FINE SAND
32"-60" LIGHT GREY FINE SAND W/COBBLES
MOTTLES: 44"
GW: NONE OBSERVED
LEDGE: 60"
ROOTS: 40"
RESTRICTIVE: 60"

TEST HOLE #61 DEPTH: 62"
0-10" TOPSOIL
10"-35" YELLOW BROWN FINE SILTY SAND
35"-62" LIGHT GREY FINE SAND AND GRAVEL
W/COBBLES
MOTTLES: 24"
GW: NONE OBSERVED
LEDGE: 62"
ROOTS: 40"
RESTRICTIVE: 24"

TEST HOLE #62 DEPTH: 66"
0-10" TOPSOIL
10"-35" YELLOW BROWN FINE SILTY SAND
35"-64" LIGHT GREY FINE SAND WITH COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 62"
ROOTS: 40"
RESTRICTIVE: 62"

TEST HOLE #63 DEPTH: 70"
0-8" TOPSOIL
8"-27" YELLOW BROWN FINE SAND
27"-70" LIGHT GREY MEDIUM SAND AND GRAVEL 60%
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 70"
ROOTS:
RESTRICTIVE: 70"

TEST HOLE #64 DEPTH: 60"
0-7" TOPSOIL
7"-18" TOPSOIL/LEAF LITTER
18"-60" LIGHT GREY FINE SAND W/ COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 60"
ROOTS: 26"
RESTRICTIVE: 60"

TEST HOLE #65 DEPTH: 48"
0-7" TOPSOIL
7"-32" YELLOW BROWN VERY FINE SAND
W/PEBBLES
32"-48" LIGHT GREY SILTY SAND
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 48"
ROOTS:
RESTRICTIVE: 48"

TEST HOLE #66 DEPTH: 57"
0-15" TOPSOIL
15"-35" YELLOW BROWN FINE SILTY SAND
35"-57" LIGHT GREY FINE SAND W/COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 57"
ROOTS:
RESTRICTIVE: 57"

TEST HOLE #67 DEPTH: 48"
0-11" TOPSOIL
11"-48" YELLOW BROWN FINE SAND
MOTTLES: 33"
GW: NONE OBSERVED
LEDGE:
ROOTS: 33"
RESTRICTIVE: 48"

TEST HOLE #68 DEPTH: 72"
0-8" TOPSOIL/LEAF LITTER
8"-34" OBFSL
34"-93" LIGHT GREY FINE LOAMY SAND STRATIFIED
MOTTLES: 33"
GW: NONE OBSERVED
LEDGE: 93"
ROOTS: 37"
RESTRICTIVE: 33"

TEST HOLE #69 DEPTH: 68"
0-9" TOPSOIL
9"-20" OBFSL
20"-68" LIGHT GREY FINE SAND
W/COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 68"
ROOTS: 27"
RESTRICTIVE: 68"

TEST HOLE #70 DEPTH: 93"
0-6" TOPSOIL/LEAF LITTER
6"-22" OBFSL
22"-38" Y/B FINE SILTY SAND
38"-93" LIGHT GREY FINE SANDY LOAM
FRIABLE
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 65"
ROOTS:
RESTRICTIVE: 65"

TEST HOLE #71 DEPTH: 94"
0-9" TOPSOIL
9"-21" O/B FINE SANDY LOAM
21"-94" LIGHT GREY SAND AND GRAVEL
FRIABLE 35%
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 94"
ROOTS: 58"
RESTRICTIVE: 94"

TEST HOLE #72 DEPTH: 81"
0-9" TOPSOIL/LEAF LITER
9"-29" OBFSL
29"-81" LIGHT GREY FINE LOAMY SAND
W/COBBLES AND PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 81"
ROOTS: 35"
RESTRICTIVE: 81"

TEST HOLE #73 DEPTH: 48"
0-4" TOPSOIL
4"-17" DARK BROWN FINE SANDY LOAM
17"-52" YELLOW BROWN FINE SILTY SAND
42"-48" LIGHT GREY FINE SANDY LOAM
W/PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 48"
ROOTS:
RESTRICTIVE: 48"

TEST HOLE #74 DEPTH: 90"
0-9" TOPSOIL/LEAF LITTER
9"-21" OBFSL
21"-51" YELLOW BROWN FINE SILTY SAND
42"-90" LIGHT GREY FINE SAND
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 90"
ROOTS: 50"
RESTRICTIVE: 90"

TEST HOLE #75 DEPTH: 75"
0-5" TOPSOIL/LEAF LITTER
5"-28" O/B FINE SANDY LOAM
28"-52" YELLOW BROWN FINE SILTY SAND
52"-75" LIGHT GREY FINE SANDY LOAM
W/COBBLES AND PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 75"
ROOTS: 31"
RESTRICTIVE: 75"

TEST HOLE #76 DEPTH: 71"
0-7" TOPSOIL
7"-16" TOPSOIL/LEAF LITTER
16"-25" O/B FINE SANDY LOAM
25"-52" L/B FINE SAND W/BOULDER
52"-71" LIGHT GREY MEDIUM TO FINE SAND
W/COBBLES AND PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 71"
ROOTS: 49"
RESTRICTIVE: 71"

TEST HOLE #77 DEPTH: 80"
0-6" TOPSOIL/LEAF LITTER
6"-46" Y/B FSL
46"-80" LIGHT GREY FINE SAND

MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 80"
ROOTS: 37"
RESTRICTIVE: 80"

TEST HOLE #78 DEPTH: 80"
0-5" TOPSOIL/LEAF LITTER
5"-51" O/B VERY FINE SANDY LOAM
51"-80" LIGHT GREY MEDIUM SAND
W/COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 80"
ROOTS: 50"
RESTRICTIVE: 80"

TEST HOLE #79 DEPTH: 98"
0-11" TOPSOIL
11"-48" YELLOW BROWN FINE SAND
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 98"
ROOTS: 50"
RESTRICTIVE: 98"

TEST HOLE #80 DEPTH: 93"
0-8" TOPSOIL/LEAF LITTER
8"-38" OBFSL
38"-58" Y/B FINE SILTY SAND
58"-98" LIGHT GREY FINE SANDY LOAM
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 98"
ROOTS: 50"
RESTRICTIVE: 98"

TEST HOLE #81 DEPTH: 98"
0-7" TOPSOIL/LEAF LITTER
7"-27" RED/BROWN FINE SANDY LOAM
27"-36" BROWN FINE LOAMY SAND SILTY
36"-55" LIGHT GREY FINE SAND W/PEBBLES AND COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 98"
ROOTS: 56"
RESTRICTIVE: 98"

TEST HOLE #82 DEPTH: 65"
0-6" TOPSOIL/LEAF LITTER
6"-22" OBFSL
22"-38" Y/B FINE SILTY SAND
38"-65" LIGHT GREY FINE SANDY LOAM
FRIABLE
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 65"
ROOTS:
RESTRICTIVE: 65"

TEST HOLE #83 DEPTH: 65"
0-4" TOPSOIL
4"-24" OBFSL
24"-65" LIGHT GREY FINE TO MEDIUM
W/COBBLES AND PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 65"
ROOTS:
RESTRICTIVE: 65"

TEST HOLE #84 DEPTH: 77"
0-7" TOPSOIL/LEAF LITTER
7"-46" ORANGE TO YELLOW FINE LOAMY
SAND W/COBBLES
46"-77" LIGHT GREY FINE TO MEDIUM
SAND W/COBBLES AND PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 73"
ROOTS: 45"
RESTRICTIVE: 73"

TEST HOLE #85 DEPTH: 73"
0-4" TOPSOIL/LEAF LITTER
4"-22" OBFSL
22"-51" YELLOW BROWN FINE SILTY SAND
51"-73" LIGHT GREY SANDY LOAM FRIABLE
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 73"
ROOTS:
RESTRICTIVE: 73"

TEST HOLE #86 DEPTH: 54"
0-8" TOPSOIL
8"-54" YELLOW BROWN FINE SANDY LOAM
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 54"
ROOTS: 39"
RESTRICTIVE: 54"

TEST HOLE #87 DEPTH: 48"
0-10" TOPSOIL/LEAF LITTER
10"-48" YELLOW BROWN FINE LOAMY
SAND W/COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 48"
ROOTS:
RESTRICTIVE: 48"

TEST HOLE #88 DEPTH: 51"
0-11" TOPSOIL
11"-40" YELLOW BROWN FINE TO
MEDIUM SAND
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS:
RESTRICTIVE: 51"

TEST HOLE #89 DEPTH: 49"
0-15" TOPSOIL/LEAF LITTER
15"-26" OBFSL
26"-40" LIGHT GREY FINE SAND
W/COBBLES AND PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 49"
ROOTS: 57"
RESTRICTIVE: 77"

TEST HOLE #90 DEPTH: 48"
0-6" TOPSOIL
6"-38" OBFSL
38"-48" Y/B FINE SILTY SAND
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 48"
ROOTS: 24"
RESTRICTIVE: 48"

TEST HOLE #91 DEPTH: 55"
0-7" TOPSOIL/LEAF LITTER
7"-36" BROWN FINE LOAMY SAND SILTY
36"-55" LIGHT GREY FINE SAND W/PEBBLES AND COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 55"
ROOTS: 35"
RESTRICTIVE: 55"

TEST HOLE #92 DEPTH: 80"
0-7" TOPSOIL
7"-27" RED/BROWN FINE SANDY LOAM
27"-42" YELLOW BROWN SILTY SAND
42"-92" LIGHT GREY FINE SAND W/COBBLES AND PEBBLES STRATIFIED
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 92"
ROOTS: 56"
RESTRICTIVE: 92"

TEST HOLE #93 DEPTH: 93"
0-8" TOPSOIL/LEAF LITTER
8"-34" OBFSL
34"-93" LIGHT GREY FINE LOAMY
SAND STRATIFIED
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 93"
ROOTS: 56"
RESTRICTIVE: 93"

TEST HOLE #94 DEPTH: 59"
0-8" TOPSOIL
8"-42" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
42"-59" TAN F/M SAND WITH PEBBLES
AND COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 59"
ROOTS:
RESTRICTIVE: 59"

TEST HOLE #95 DEPTH: 88"
0-10" TOPSOIL
10"-14" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
14"-48" BROWN FINE SANDY LOAM, SILTY
48"-88" TAN F/M SAND WITH PEBBLES
AND GRAVEL
MOTTLES: 47"
GW: 85"
LEDGE: NONE OBSERVED
ROOTS: 48"
RESTRICTIVE: 47"

TEST HOLE #96 DEPTH: 62"
0-7" TOPSOIL
7"-29" ORANGE/BROWN FINE SANDY LOAM,
COBBLES, SILTY
29"-53" LIGHT GREY FINE SANDY LOAM, SILTY
53"-62" TAN F/M SAND WITH PEBBLES
AND GRAVEL, MOTTLED
MOTTLES: 47"
GW: 85"
LEDGE: NONE OBSERVED
ROOTS: 48"
RESTRICTIVE: 47"

TEST HOLE #97 DEPTH: 54"
0-5" TOPSOIL
5"-24" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
24"-67" TAN F/M SAND WITH PEBBLES
AND COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 54"
ROOTS:
RESTRICTIVE: 54"

TEST HOLE #98 DEPTH: 76"
0-10" TOPSOIL
10"-27" ORANGE/BROWN FINE SANDY LOAM,
COBBLES, SILTY
27"-76" TAN F/M SAND WITH PEBBLES
AND COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 76"
ROOTS: 23"
RESTRICTIVE: 67"

TEST HOLE #99 DEPTH: 67"
0-5" TOPSOIL
5"-24" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
24"-67" TAN F/M SAND WITH PEBBLES
AND COBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 67"
ROOTS: 23"
RESTRICTIVE: 67"

TEST HOLE #100 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #101 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #102 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #103 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #104 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #105 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #106 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #107 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #108 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #109 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #110 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #111 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #112 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #113 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #114 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #115 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #116 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #117 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #118 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #119 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

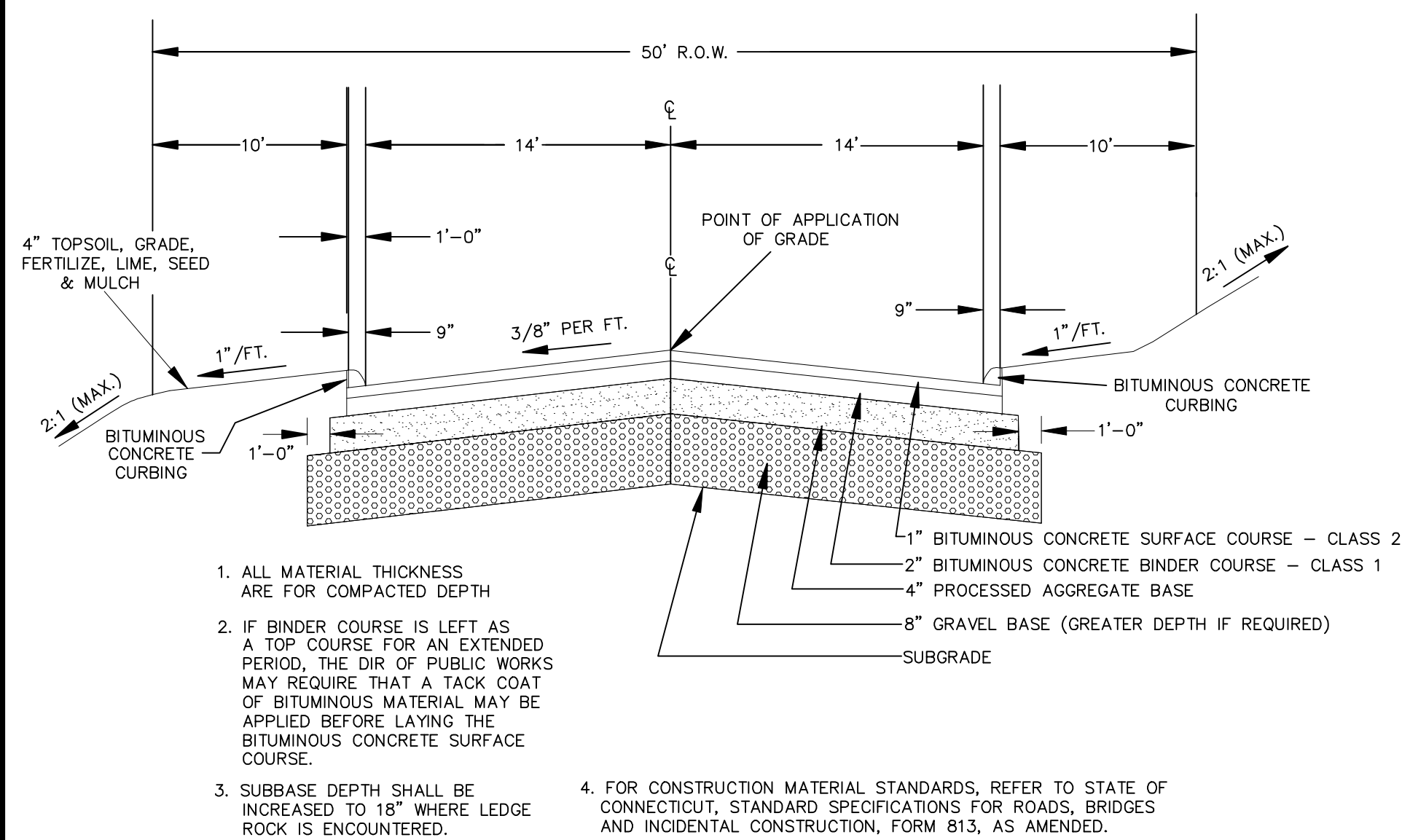
TEST HOLE #120 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #121 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

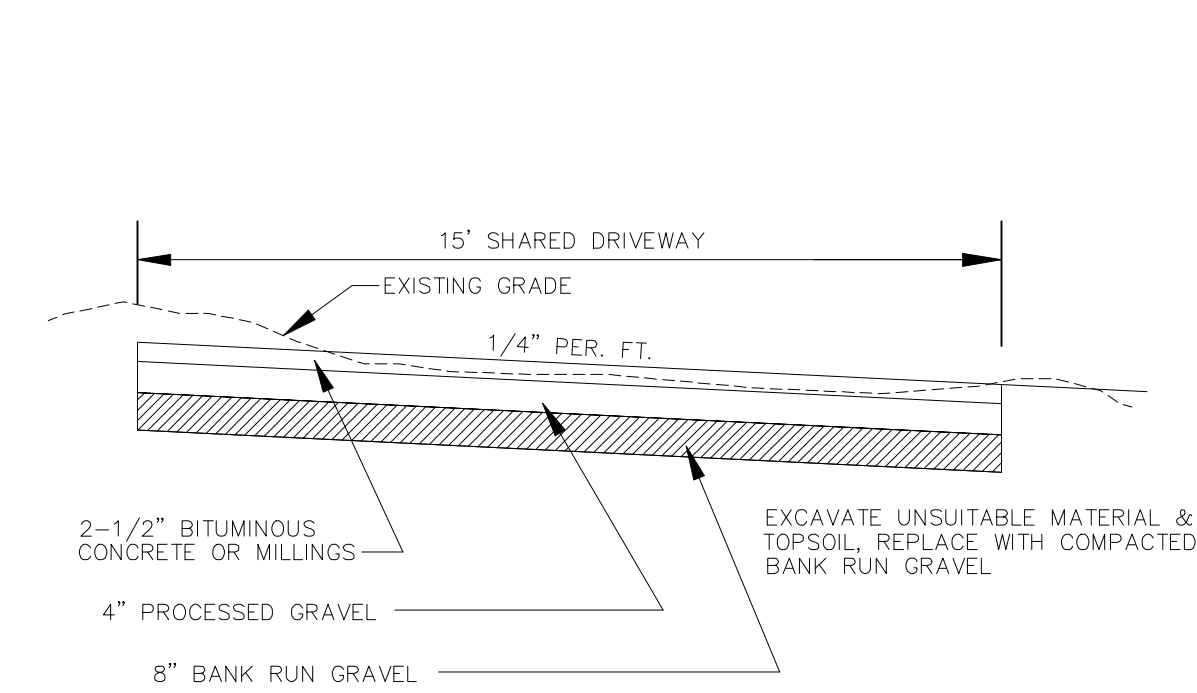
TEST HOLE #122 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

TEST HOLE #123 DEPTH: 51"
0-8" TOPSOIL
8"-34" ORANGE/BROWN FINE SANDY LOAM,
COBBLES
34"-51" TAN F/M SAND WITH PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 51"
ROOTS: 26"
RESTRICTIVE: 51"

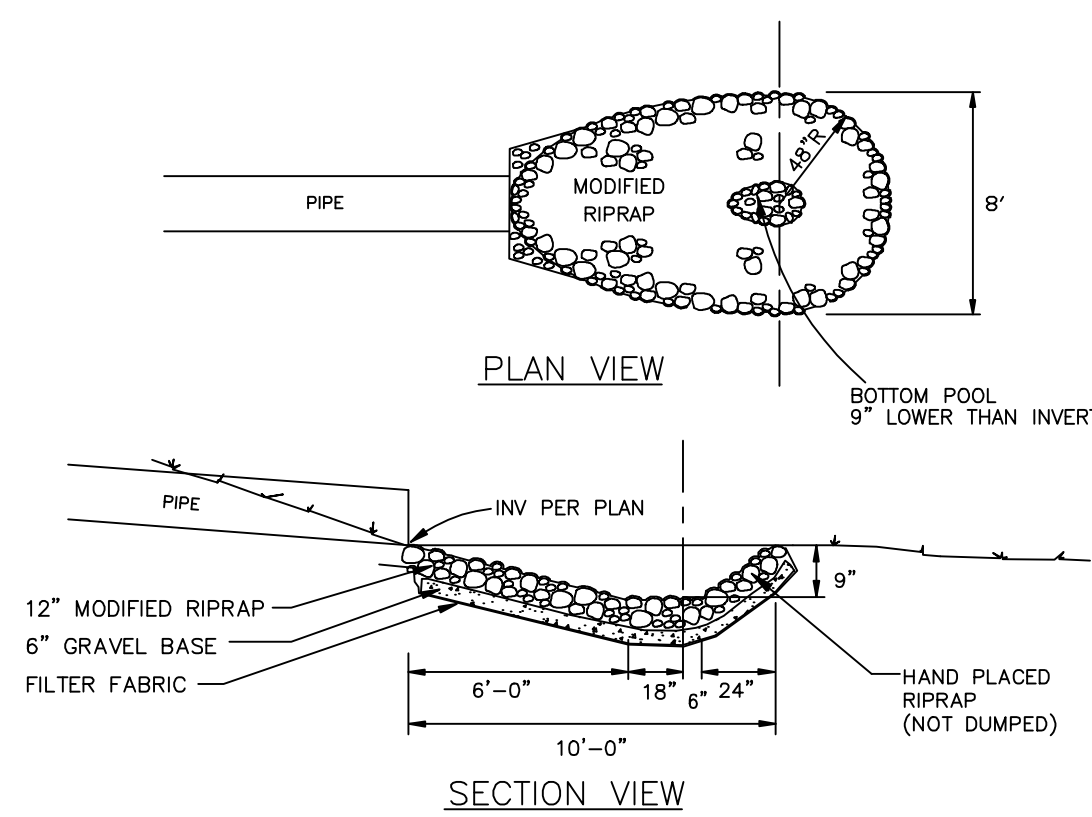
TEST HOLE #124 DEPTH: 51"
0-8" TOPSOIL



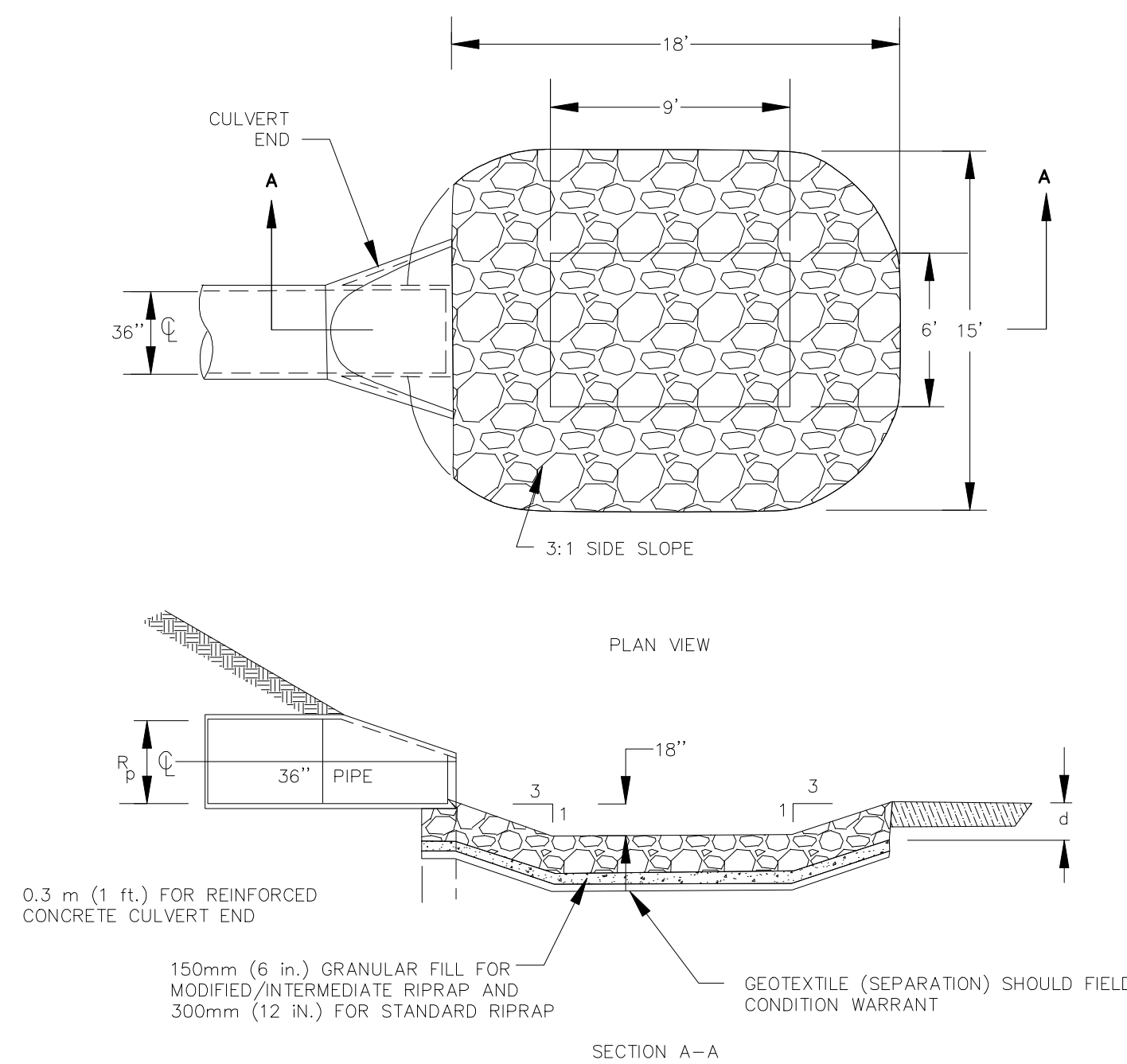
TYPICAL CROSS SECTION LOCAL STREET
NOT TO SCALE



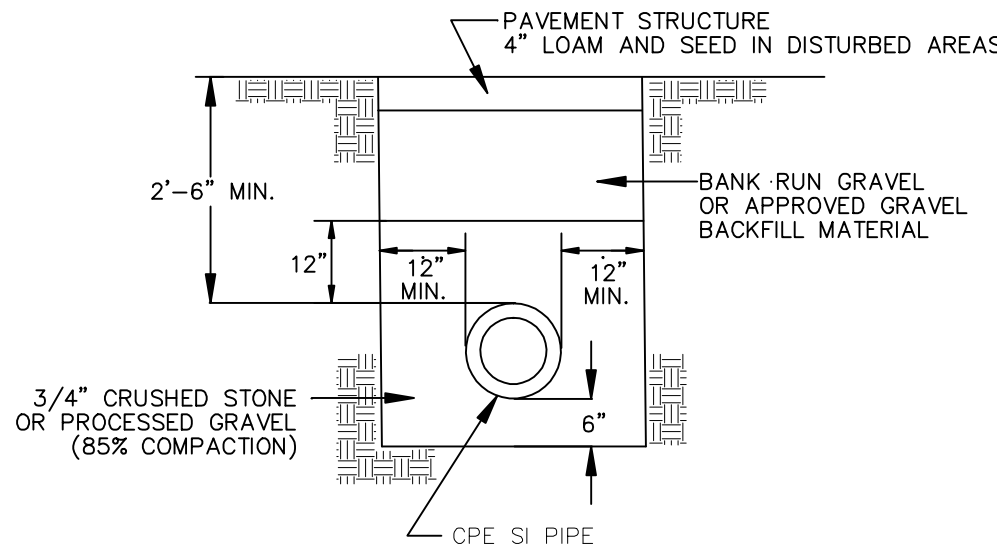
TYPICAL SHARED DRIVEWAY CROSS-SECTION
NOT TO SCALE



PREFORMED SCOUR HOLE
NOT TO SCALE

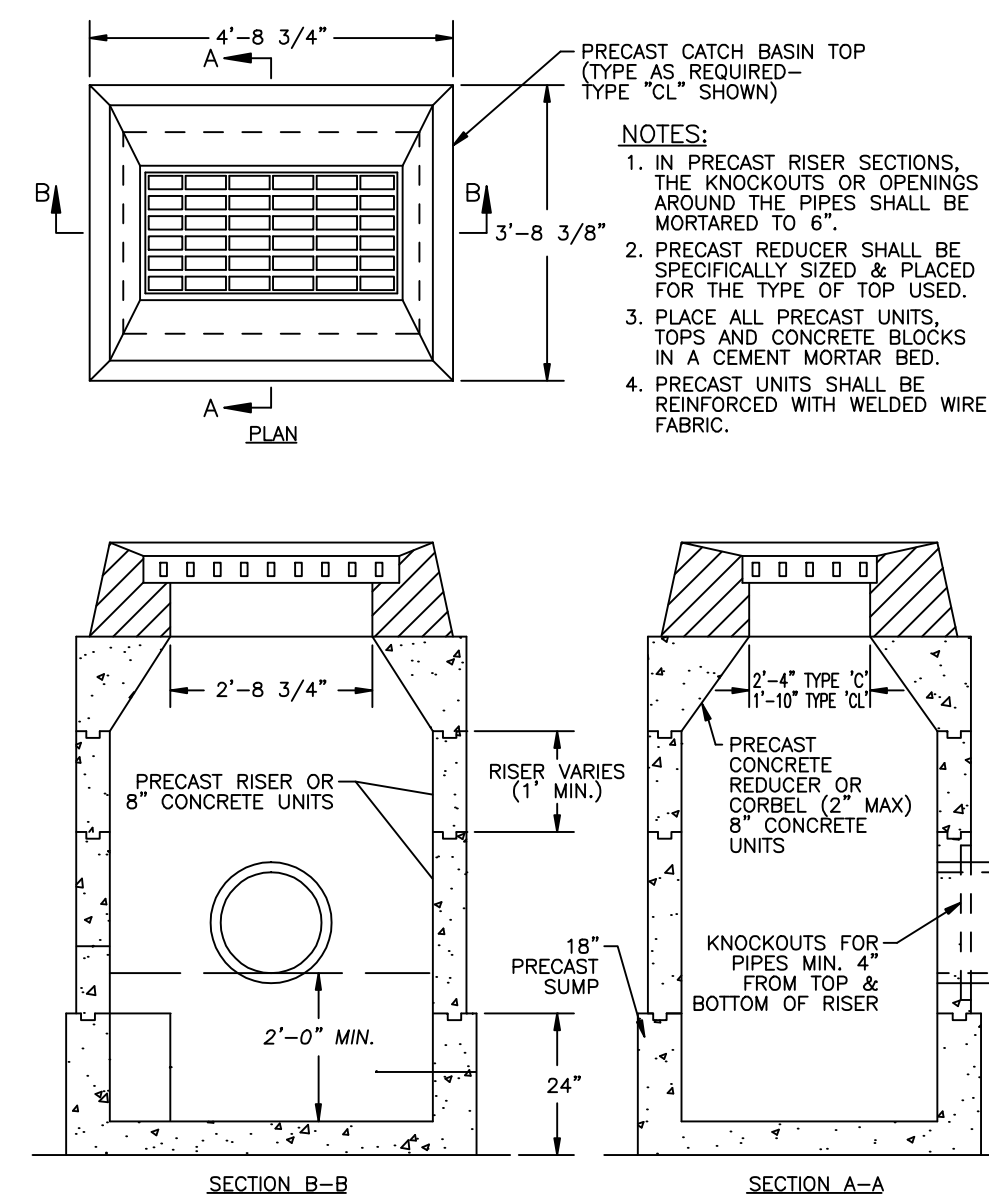


PREFORMED SCOUR HOLE
NOT TO SCALE

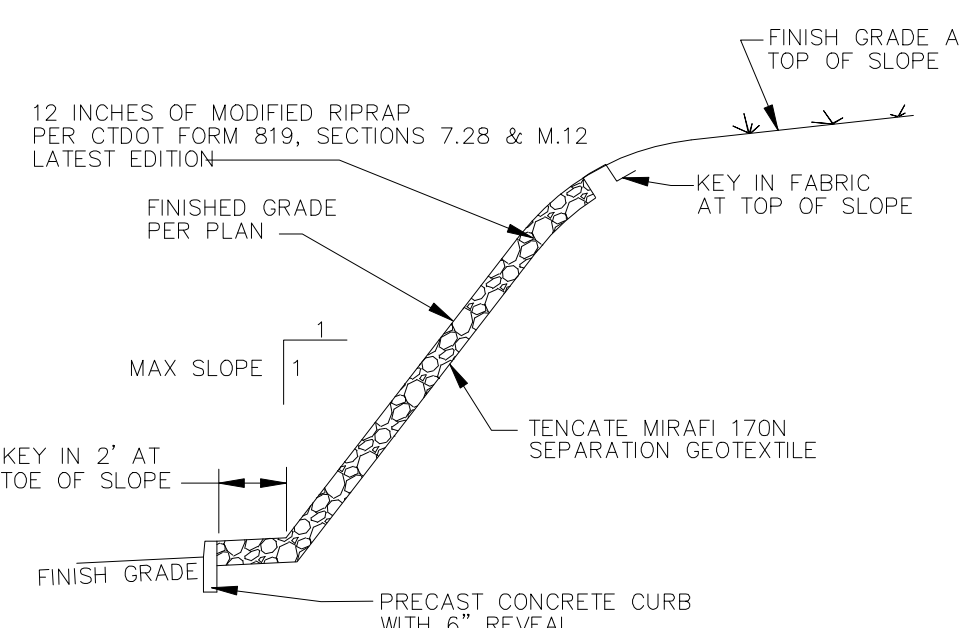


NOTE:
1. IF PIPE IS PLACED IN OR ON LEDGE, ALL LEDGE WITHIN 12" OF PIPE SHALL BE REMOVED AND REPLACED WITH PIPE BEDDING.

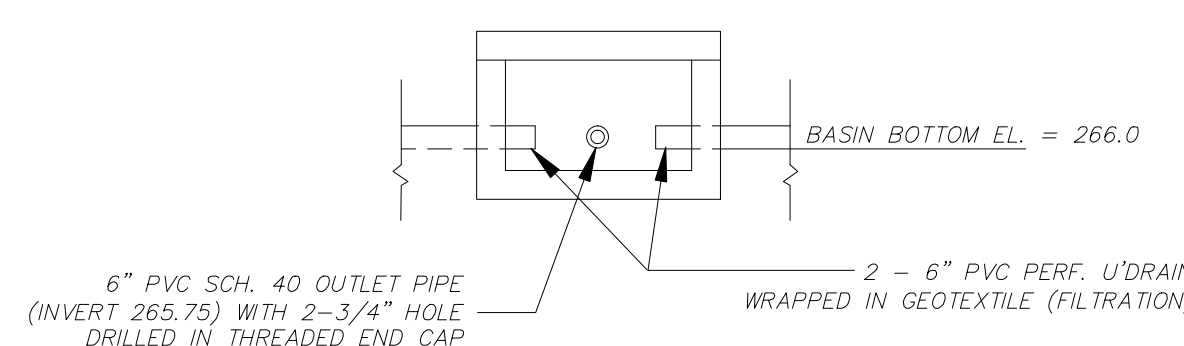
DRAINAGE PIPE TRENCH
NOT TO SCALE



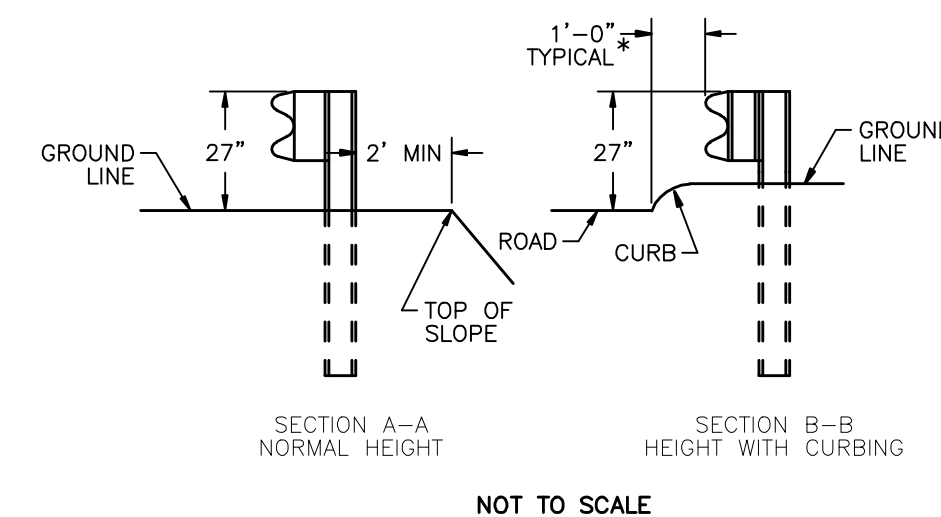
PRECAST CATCH BASIN
NOT TO SCALE



RIPRAP STABILIZED SLOPE
NOT TO SCALE

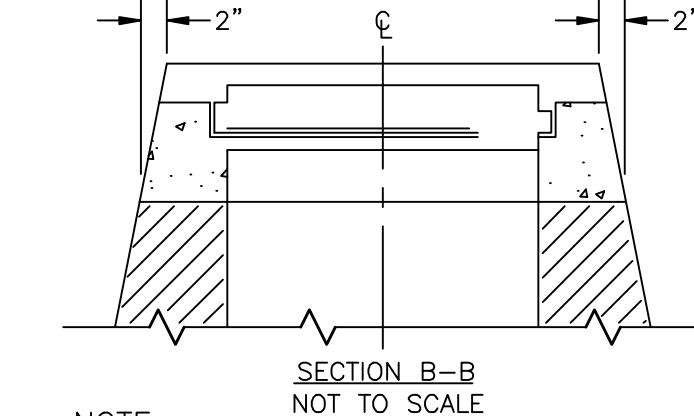


D-BOX OUTLET
EXTENDED DETENTION
UNDERDRAIN OUTLET
NOT TO SCALE

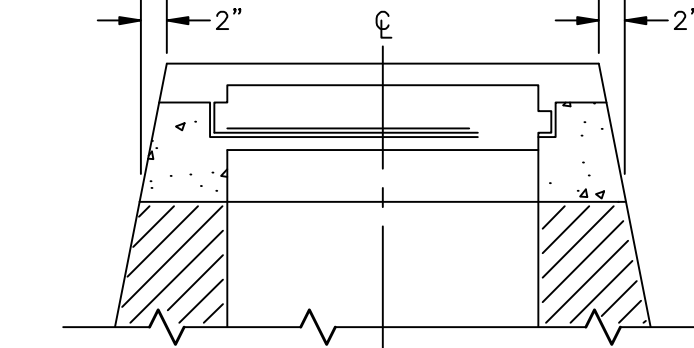


PRECAST CATCH BASIN
NOT TO SCALE

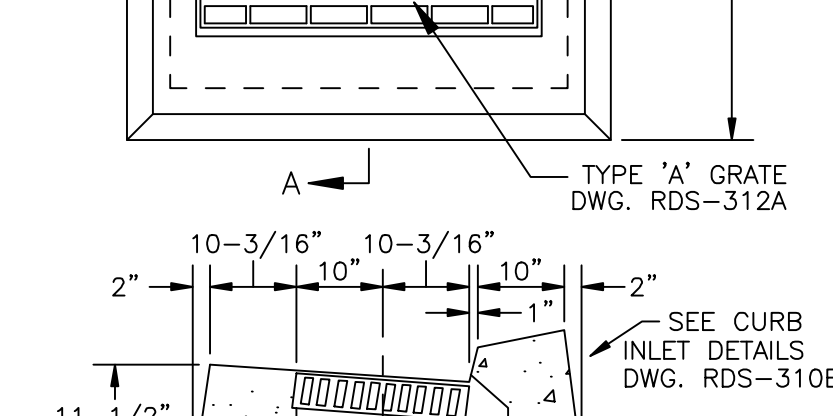
NOTE:
1. TYPE 'C' CATCH BASIN TOP SHALL CONFORM TO CONNECTICUT DEPT. OF TRANSPORTATION STANDARD SPECIFICATION FORM 814A, SECTION: M. 08. 02-4.



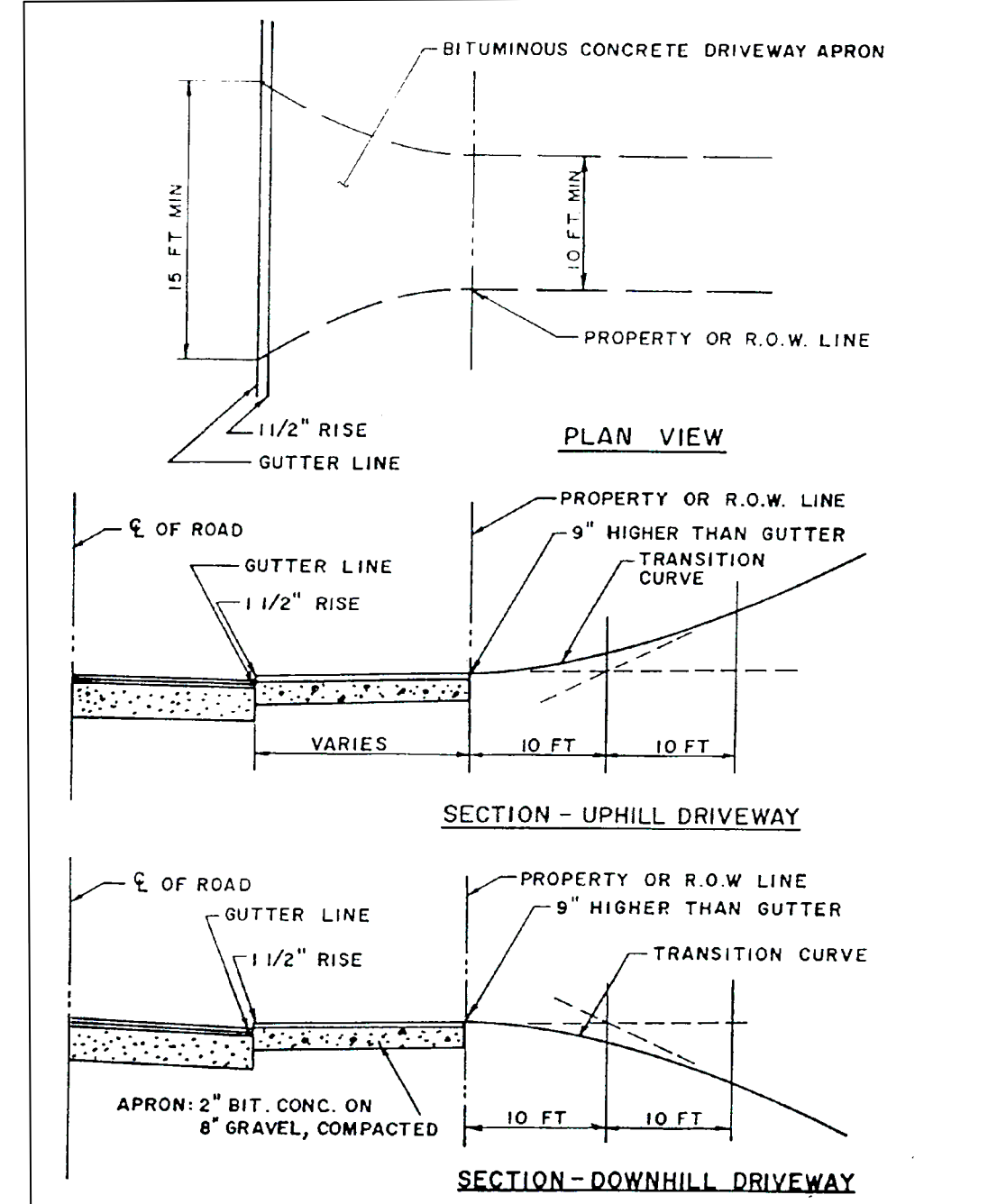
SECTION B-B
NOT TO SCALE



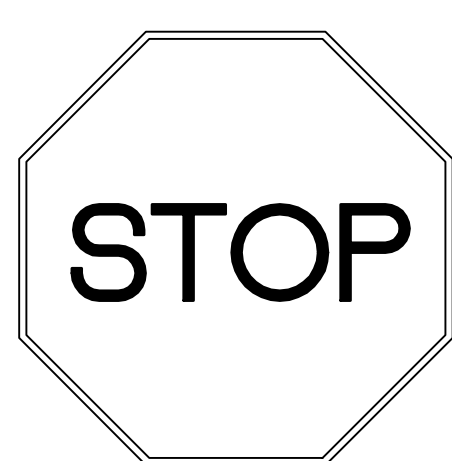
SECTION A-A



SECTION A-A



DRIVEWAY APRON DETAIL
NOT TO SCALE

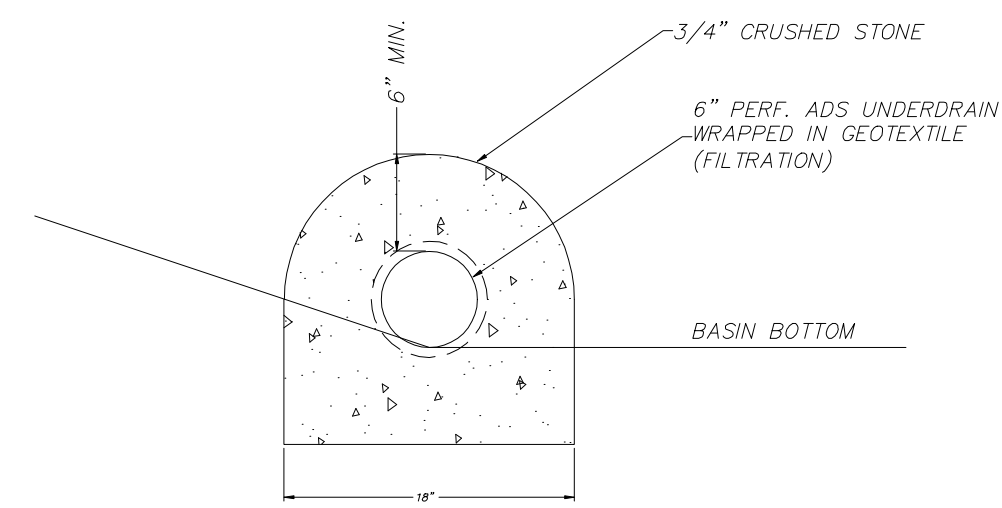


SECURE TO 1 1/2" GALVANIZED STEEL POST WITH (2) 1/4" GALVANIZED BOLTS (1 TOP, 1 BOTTOM)

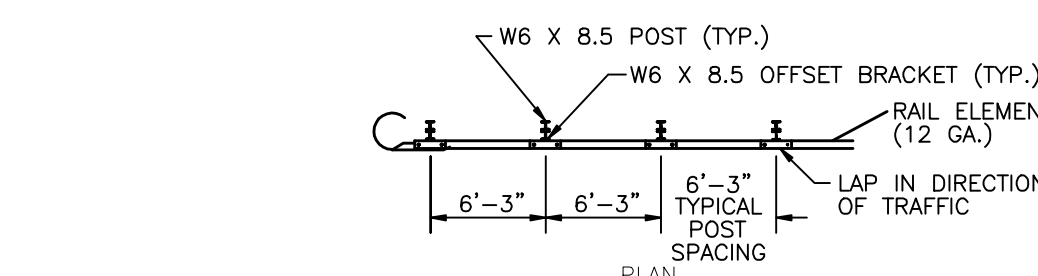
NOTE:
SIGN TO BE INSTALLED IN ACCORDANCE WITH STATE OF CONNECTICUT D.O.T. STANDARDS

STOP SIGN

NOT TO SCALE



EXTENDED DETENTION UNDERDRAIN
NOT TO SCALE



CONNDOT NOTE:
USE 12 GA. TYPE R-B GUIDE RAIL. GUIDE RAIL TO CONFORM TO STATE OF CONNECTICUT D.O.T. (CONNDOT) SPECIFICATIONS AND DETAILS.
METAL BEAM RAIL
NOT TO SCALE

CONSTRUCTION DETAILS
KINEO ESTATES
CONSERVATION RESUBDIVISION
PROPERTY OF
SPENCER BAY PROPERTIES, LLC
12 HYDE PARK DRIVE
AND
975 LONG COVE ROAD
LEDYARD, CONNECTICUT
JUNE 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. JOB# 24-003DETAIL.DWG FBK#338

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

CONSTRUCTION SEQUENCING:

CONSTRUCTION OF ELLIE ROSE LANE FROM ITS INTERSECTION WITH HYDE PARK DRIVE.

1. The Applicant shall remove surface soil in the area proposed for the installation of the anti-tracking pad construction entrance at the intersection of proposed Ellie Rose Lane with Hyde Park Drive.
2. 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.
3. Surface soil shall be stripped and shall be stockpiled in the surface soil stockpile locations delineated on the Plan.
4. 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.
5. The road shall be "boxed out" and trenches excavated for the installation of all utilities, including stormwater drainage.
6. Subsequent to the installation of bedding, utilities, including drainage pipe, shall be installed as delineated on the Plan.
7. Catch basins shall remain elevated in order to ensure that stormwater is not introduced into the stormwater drainage system.
8. 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.
9. Once all disturbed areas have been thoroughly stabilized, erosion control measures shall be removed.

INDIVIDUAL LOT DEVELOPMENT (WITH UPLAND REVIEW AREA ACTIVITIES).

1. The Applicant shall clear, but not grub, within the limits of development activity for each lot on the Plan.
2. The Applicant shall install a construction entrance to each lot which is being developed in accordance with the "Temporary Construction Entrance" detail.
3. 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.
4. 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.
5. No stumps shall be buried on site.
6. Construction of the dwelling house, septic system, driveway and well shall be completed.
7. 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 35.11 ACRES OF LAND TO CREATE 14 NEW RESIDENTIAL BUILDING LOTS. LOTS RANGE IN SIZE FROM 0.46 ACRES TO 1.63 ACRES. 1000 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.

(ROB HOHLFELDER 860-705-9299) 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 35.11 ACRES OF WHICH 4.8± 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 FALL 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 RESEEDED 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.

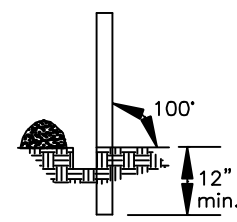
1.8J - TOPSOIL AND GRADE ALL SLOPES/DISTURBED AREAS WITHIN 2 FEET OF THE OUTSIDE OF THE PROPOSED CURBS.

1.8K - LAY DOWN FIRST COURSE OF BITUMINOUS PAVEMENT.

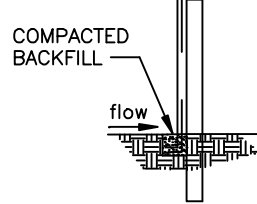
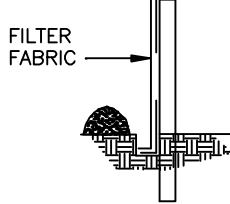
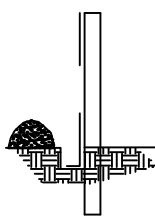
1.8L - INSTALL CURBING.

1.8M - APPLY TOP COURSE OF BITUMINOUS PAVEMENT.

1. SET POSTS & EXCAVATE A 6" x 6" TRENCH. SET POSTS DOWNSLOPE, ANGLE UPSLOPE FOR STABILITY & SELF-CLEANING.



2. STAPLE THE WIRE MESH FENCING TO END POST.

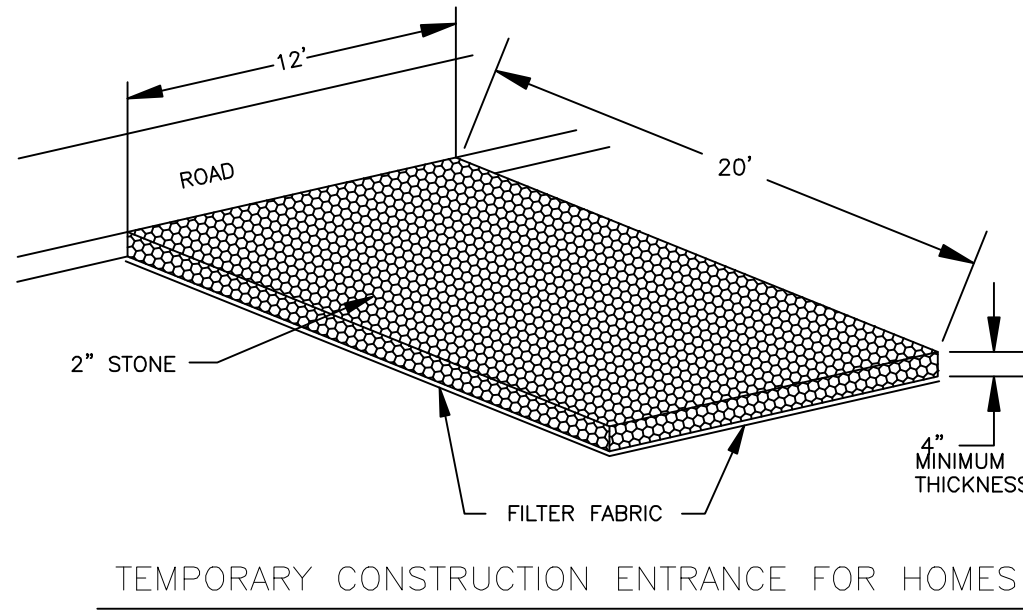


3. ATTACH FILTER FABRIC TO THE WIRE FENCING & EXTEND IT INTO THE TRENCH.

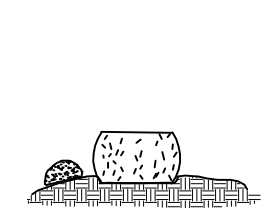
4. BACKFILL THE TRENCH & COMPACT WITH EXCAVATED SOIL.

FILTER FABRIC SEDIMENT BARRIER

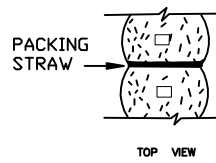
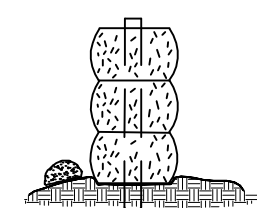
NOT TO SCALE



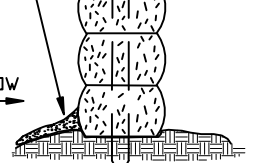
1. EXCAVATE A TRENCH 4' DEEP & THE WIDTH OF A STRAW BALE.



2. PLACE & STAKE STRAW BALES, TWO STAKES PER BALE.



3. WEDGE LOOSE STRAW BETWEEN BALES TO CREATE A CONTINUOUS BARRIER.



4. BACKFILL & COMPACT THE EXCAVATED SOIL ON THE UPHILL SIDE OF THE BARRIER TO PREVENT PIPING.

CONSTRUCTION OF A STRAW BALE BARRIER

NOT TO SCALE

PLAN SHOWING
CONSTRUCTION SEQUENCING,
EROSION AND SEDIMENT CONTROL
NARRATIVE AND DETAILS
KINEO ESTATES
CONSERVATION RESUBDIVISION
PROPERTY OF
SPENCER BAY PROPERTIES, LLC
12 HYDE PARK DRIVE
AND
975 LONG COVE ROAD
LEDYARD, CONNECTICUT
JUNE 2026

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: July 6, 2026

TO: ☒ Town Engineer ☐ Groton Public Utilities ☒ Building Dept. ☒ Assessor
☐ Town Attorney ☒ SCWA ☒ Fire Marshal ☐ Police
☒ Ledge Light Health ☐ Mayor ☐ DOT ☐ CAM
☐ WPCA ☒ Public Works ☐ DEEP ☐ Other

Project Name: IWWC#26-18RESUB

Project Location: 12 Hyde Park Drive & 975 Long Cove Road

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 July 30, 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 Middleton- 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 #IWWC26-18SREUB

REGULAR MEETING – TUESDAY, July 7, 2026

Prepared by Hannah Gienau, Zoning and Wetlands Official on 07/07/26

Agent/Applicant(s): Peter C. Gardner (Agent) & R+H Holding Company (Applicant)
Property Owner(s): Spencer Bay Proprieties, LLC
Project Address: 12 Hyde Park Dr. & 975 Long Cove Rd, Gales Ferry CT, 06335
Meeting Date: July 7, 2026
Date Received by IWWC: July 7, 2026

Applicant/Owner Requests: Permit for regulated activities for a 14-Lot Resubdivision and associated site improvements, including construction of a new public road, stormwater drainage system, and a wetland crossing through a wetland/intermittent watercourse.

Property Info:

Zone District: R40

Total-Area: 35.11 Acres

Total Wetlands: Per the Applicant, 10.7 Acres.

Public Water Supply Watershed: No.

Flood Hazard Zone: X (FIRM ID:09011C0362J)

Referrals:

Town Engineer: Referred 07/07/26.

Town Planner: Referred 07/07/26.

Fire Marshal: Referred 07/07/26.

Building Official: Referred 07/07/26.

LLHD: Referred 07/07/26.

Tax Assessor: Referred 07/07/26.

SQWA: Referred 07/07/26.

Regulated Activity Description:

Wetland & Watercourse/Waterbody Disturbance Area-	2500 SF +/- (Per Applicant)
Upland Review Disturbance Area	270,000 +/- (Per Applicant)

Staff Comments:

Please be advised the following comments with regard to my review of the Application, supporting documents, and plan set entitled "Plan Showing Kineo Estates Conservation

1.) Regulated Activities (Wetlands & Intermittent Watercourse):

According to the applicant, the current proposal is to Resubdivide the parcel into 14 lots. Regulated activities within the wetland and/or intermittent watercourse will include installing a wetland crossing with a 36" HDEP Pipe culvert with a Rip Rap Scour pad outlet and construction of a new public road including stormwater management systems, utilities, and watermain extension. Temporary disturbance within the wetland and/or intermittent watercourse will include installation of Soil Erosion and Sediment Controls and minimal grading for construction of the new public road. According to the Applicant total wetland disturbance is 2500SF +/-.

Wetlands report (copy attached FD#3). The report of Ian Cole, Professional Soil & Wetlands Scientist, dated March 15, 2026, states in relevant parts:

1. The proposed activities are not likely to have a significant effect on the environment for the following reasons:
 1. The proposed activities have reduced the direct disturbance to wetlands and as such the project does not substantially change or negative impact inhibits the natural dynamics or the natural capacity of the wetland system(s)
 2. The Erosion & 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 to 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 demonstratable scientific or educational value.
 5. 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.
- 4.) "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." See Following Reasons in FD#3.

- 3.) **Regulated Activities (Upland Review Area):** Regulated activities within the Upland Review Area will include construction of New-Single Family Residences (NSFR) and associated Site improvements on proposed Lots# 2,3,5,6,8,11,13,16. Temporary Disturbance within the URA will include installation Soil Erosion and Sediment Controls, grading, and Topsoil Stockpile Areas.

Staff Recommendation: Staff comments reserved at this time.

TOWN OF LEDYARD

Memorandum:

RECEIVED

JUL 22 2026

Land Use Department

To: Liz Burdick, Director of Land Use & Planning

From: Steve Masalin, Public Works Director/Town Engineer *SM*

Date: July 22, 2026

Re: 12 Hyde Park Dr/975 Long Cove Rd (Appl. IWWC #26-18RESUB)

I have reviewed the plans and stormwater analysis for the subject application. I have the following comments.

1. The report states that "the proposed development will not have adverse effects on down-gradient properties..." The broader watershed within which this development activity is proposed drains to the bottom of Long Cove Rd into Flat Brook. Properties in the lower reaches of this watershed are subject to flooding in lower frequency storm events.

Recently, the Town converted a detention basin at 62 Eagle Ridge Dr into a retention/leaching basin. This greatly alleviated flooding impacts in vulnerable downstream areas. Any additional development in this watershed is thus subject to particular stormwater impacts scrutiny.

The present proposal does not provide the necessary protections to this end. Though a net zero peak flow increase condition is met for the 10, 25, and 100-year storm events. The peak flows are calculated to increase for the 2-year storm. This is not acceptable.

Additionally, two intervening initiatives have been implemented at the State level relative to stormwater impacts. First, Municipal Separate Storm Sewer System (MS4) requirements now stipulate a progressive "disconnection" of stormwater systems from the environment to mitigate stormwater impacts. This is what the Eagle Ridge Dr project accomplished.

Also, the most recent revision (2024) of the Connecticut Stormwater Quality Manual, in addition to retention of 100% of the water quality volume, a reduction to 50% of pre-development peak flow rate for the 2-year storm is stipulated (Chapter 4, Standard 2). Though these requirements are not presently dictated by the Town's Drainage Ordinance (300-17), the sensitivities in this area need to be considered, and these constraints should be accommodated to the maximum extent practicable.

Plans

2. Sheet 10
 - a. A drainage manhole is shown receiving stormwater from CB 5 and discharging into the basin. This does not correspond to the components and calculations in the Engineering Report.
 - b. For correspondence to the provided detail, the call-out of a detail for the outlet structures at the basins downstream of CBs 1 and 5 should be "D-Box Outlet Structure."
 - c. The invert for the flared end downstream of CB 3 is not given. Also, the 20' length does not correspond to the 45' length given in the Storm Sewer System Design sheet in the Engineering Report.

- d. Underdrains should be considered in the areas of deep cuts (particularly between stations 14+50 and 16+00.
- e. The depicted invert of the 36" pipe discharge at station 16+80 in the elevation view (about 155.2) is lower than the invert specified in the plan view (157.5).

3. Sheet 12

- a. The elevation given for the basin bottom in the D-Box Outlet detail (266.0) does not correspond to the plans. There are three different proposed D-Box Outlets.
- b. A detail is given for riprap stabilized slope. This area is not specified in the plans, those presumably in the area of the proposed guiderail.
- c. Metal Rail Detail: The end treatment should conform to present DOT standards.



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-0969

Agenda Date: 8/4/2026

Agenda #: C.

LAND USE APPLICATION

Subject/Application:

IWWC#26-22SITE - 669 Shewville Road (MAP ID: 71-2210-669), Ledyard CT -Property Owner, John Hardy, for regulated activities associated with the construction of a driveway including a wetland crossing and associated site improvements, to serve a future single-family residence. (Submitted 7/6/26, Date of Receipt 7/7/26, Tabled to 8/4/26, DRD 9/9/26)

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:

Application No. 26-22
Receipt Date 7-7-26

Date Submitted 7-6-26

Applicant/Agent John Hardy Owner (if different) Hardy Home Builders, LLC
Address 6 Harbor View Terrace Stratford Address of Owner 6 Harbor View Terrace Stratford
Phones / cell Phone 860-625-4632

JUL 06 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

Signature of Applicant/ Agent

Location of Property 669 SHAWMUT RD

Tax Assessor's Map No. 71

Zoning District R-60

Written Description of Proposed Activity CONSTRUCT DRIVEWAY TO SERVE
PROPOSED HOUSE, WELL, SEPTIC SYSTEM AS SHOWN ON
SITE PLAN

Proposed Erosion/ Sediment Control Measures: SILT FENCE/ HAYBALS OR WOOLSCOPS

Total Area of Site 88,428 sq ft Total Area of Wetlands per Official Inventory Map 12,400 ± sq ft

Amount of Fill, in Cubic Yards NONE IN WET Disturbed Area, in Square Feet NONE IN WETLANDS or in Acres

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

Soil Types from USDA Soil Survey Rc Nn

General Description of Vegetative Cover WOODS

Name and Address of Adjacent Property Owners

SEE ATTACHED

Anticipated Start Date Completion Date

List previous IWWC application #'s

IWW Commission Disposition: IWWC Regulations; Section Classification

Signature of Chair

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



Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

GIS CODE #: _____
For DEEP Use Only

RECEIVED

JUL 06 2026

79 Elm Street • Hartford, CT 06106-5127

www.ct.gov/deep

Affirmative Action/Equal Opportunity Employer

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

1. DATE ACTION WAS TAKEN: year: _____ month: _____
2. ACTION TAKEN (see instructions - one code only): _____
3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐
4. 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

5. 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)): _____
6. LOCATION (see instructions for information): USGS quad name: OLD MYSTIC, CONN or number: _____
subregional drainage basin number: 2103
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): JOHN HALEY
8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): 669 STOWVILLE RD LEDYARD
briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☒ description: _____
9. ACTIVITY PURPOSE CODE (see instructions - one code only): B
10. ACTIVITY TYPE CODE(S) (see instructions for codes): 12, _____, _____, _____
11. WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):
wetlands: 0 acres open water body: _____ acres stream: _____ linear feet
12. UPLAND AREA ALTERED (must provide acres): 0.5± acres
13. 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

RECEIVED

JUL 06 2026

Land Use Department

ADJACENT PROPERTY OWNERS

LISA B. & JOHN G. ALLEN
665 SHEWVILLE ROAD
LEDYARD, CT. 06339

RACHEL MIKOLAJCZYK ET AL
1J LAKESIDE DRIVE
LEDYARD, CT. 06339

MICHAL KLUZA
673 SHEWVILLE ROAD
LEDYARD, CT. 06339

JAMES A. & PAMELA BALL
674R SHEWVILLE ROAD
LEDYARD, CT. 06339

FD#2

LBM Engineering, LLC

P.O. Box 44, Colchester, CT 06415-0044 Phone: 860-416-9809 Email: John@LBMEngineering.com

CIVIL ENGINEERING - LAND DEVELOPMENT - SITE PLANS - STORMWATER MANAGEMENT

RECEIVED

JUL 06 2026

MEMO June 11, 2026

Land Use Department

To: Peter Gardner, Dieter & Gardner

From: John Martucci

RE: 669 Shewville Road, Ledyard, Connecticut
Existing 15-Inch CMP

Dear Mr. Gardner:

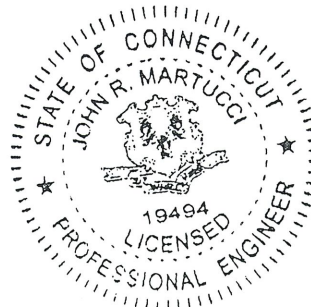
At your request, on Monday, June 8th, I went to the subject address to inspect an existing driveway culvert. I found the inlet and outlet as located by Dieter & Gardner surveyors. The culvert is a 15-inch diameter, galvanized, corrugated metal pipe (CMP). culvert is 20 feet long and installed at a 3.3% slope.

It is my professional opinion, as a licensed civil engineer in the State of Connecticut, that the existing pipe is suitable to support the proposed driveway.

I recommend as part of the driveway construction, any unsuitable soil 10 feet either side of the culvert (topsoil, vegetation, etc.) would be removed and replaced with compacted gravel and that there would be a minimum of 12 inches of gravel over the top of the pipe.

Call anytime with comments or questions.

John R Martucci
John R. Martucci, P.E.





RECEIVED

JUL 06 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***

June 28, 2026

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

RE: WETLAND DELINEATION REPORT
669 SHEWVILLE ROAD
MBL: 71/2210/669
LEDYARD, CONNECTICUT

Dear Mr. Gardner:

At Dieter & Gardner Inc's request, I completed a field delineation of the Connecticut jurisdictional freshwater inland wetland and watercourses on the above referenced 2.03-acre lot located at 669 Shewville Road in the Town of Ledyard.

DELINEATION METHODOLOGY

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 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.

WETLAND SURVEY RESULTS

The wetland survey was completed on June 26, 2026. The on-site wetland delineation examined the upper 20" of the site's soil profile for the presence of hydric soil conditions and delineated any wetland and/or watercourse boundaries located on the parcel. Two wetland areas meeting the wetland criteria noted above were marked in the field with sequentially numbered pink and blue wetland delineation flagging labeled 1 to 10 and 1A to 13A. The attached wetland sketch illustrates the approximate wetland locations and corresponding flag series. Please note this sketch is for high level planning and navigation purposes only and the wetland boundaries depicted are subject to refinement once traditionally located and mapped.

The building site (Photo 4) is accessed by an existing driveway (Photo 3) that bisects a forested wetland system that flows west along the northern property line. The wetland boundary is well-defined occurring along the toe-of-slope and is vegetated by a carpet of skunk cabbage which thickly covers the wetland forest floor (Photo 1 & 2).

The overall wetland community along both delineated wetland boundaries exhibits seasonally flooded palustrine wooded swamp wetland vegetation, including but not limited to:

Trees: Red Maple, yellow birch.

Shrubs: Alder, highbush blueberry, sweet pepperbush, spicebush, multiflora rose, honeysuckle, Japanese barberry, and winterberry

Herbaceous: Cinnamon fern, tussock sedge, sensitive fern, sphagnum moss, 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. The on-site soils occur at the interface of where glacial till to the east meets the low-lying level sandy outwash parent material that covers the landscape to the west.

Wetland Soils

The primary wetlands soil series along the flagged wetland boundary are classified as poorly drained Scarboro mucks. These nearly level mucky organic soils are found on

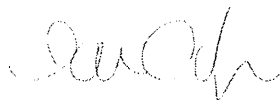
level outwash landscapes, depressions and drainageways where organic matter accumulates in depth creating mucky soil conditions in the upper 20 inches of the soil profile.

Upland Soils

The upland soils were not examined in great detail except as necessary to delineate the wetland boundary. The majority of the upland soils are mapped and characterized as belonging to the well-drained Ninigret fine sandy loam soil series. These upland soils are typically well suited for development. Additionally, small pockets of Agawam sand may be found embedded within this mapping unit as is evident by the several gravel "borrow pits" encountered both on the property and on the adjacent neighboring properties.

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

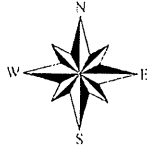
Sincerely,



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

ATTACHMENTS

GIS LOCUS MAP
WETLAND SKETCH
NRCS SOIL SURVEY
SITE PHOTOS



Ledyard, CT

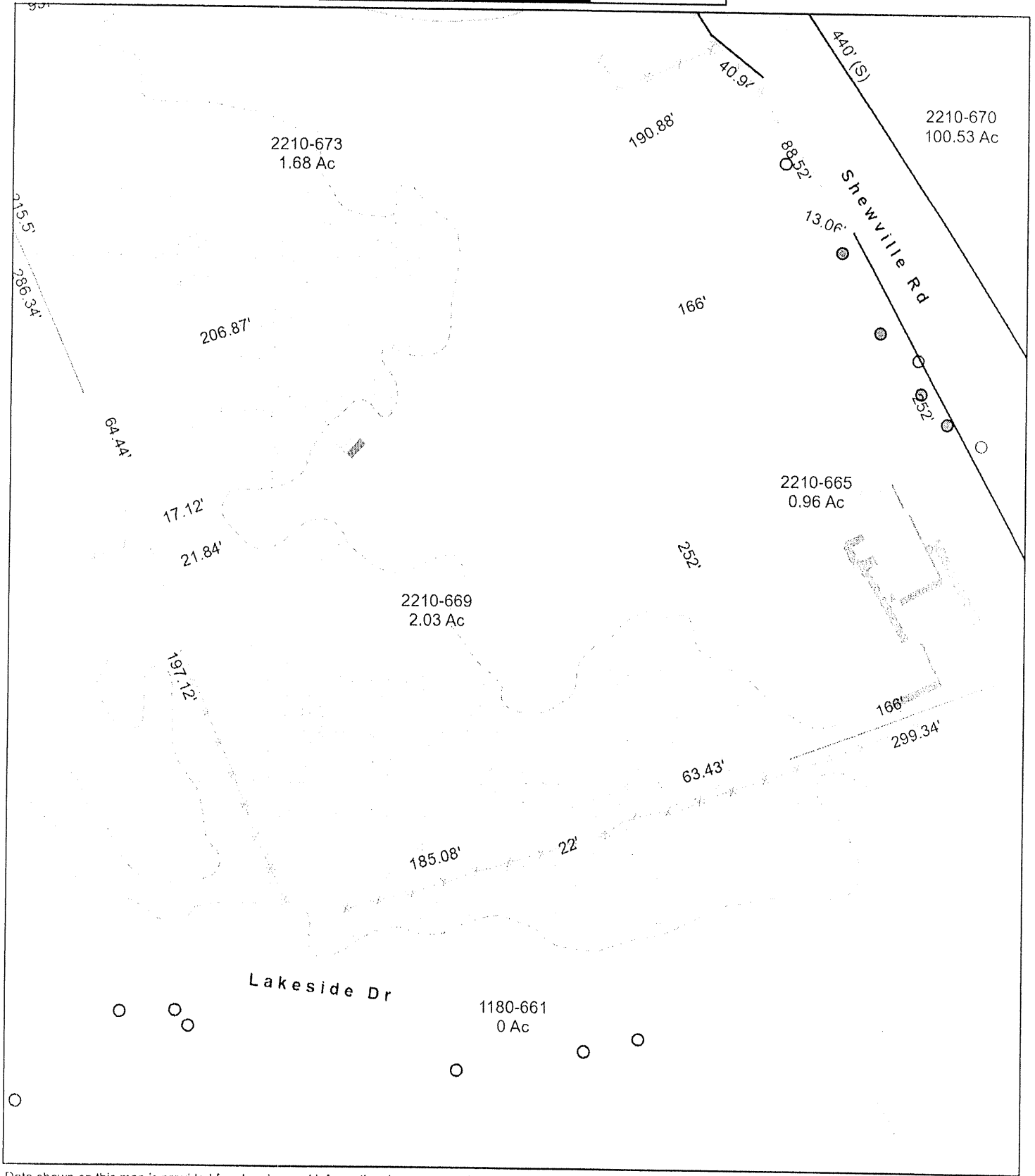
1 inch = 71 Feet



CAI Technologies

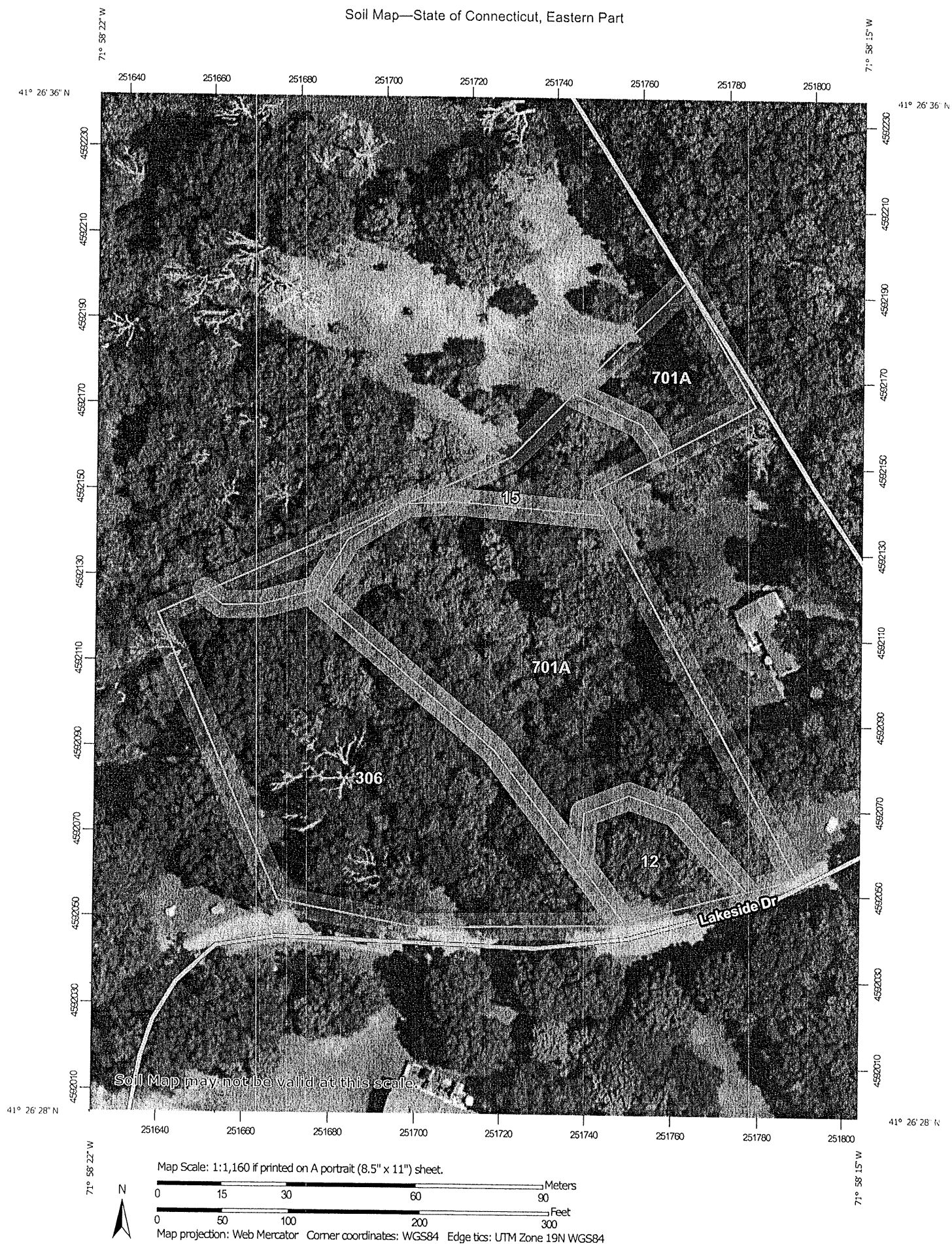
www.cai-tech.com

June 28, 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		Soil Map Unit Polygons	Very Stony Spot
		Soil Map Unit Lines	Wet Spot
		Soil Map Unit Points	Other
		Special Line Features	
Special Point Features			Special Line 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
			Aerial Photography
			Background
			Streams and Canals
			Transportation
			Rails
			Interstate Highways
			US Routes
			Major Roads
			Local Roads

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 1, Sep 15, 2023

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—Jul 1, 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
12	Raypol silt loam, 0 to 3 percent slopes	0.2	5.9%
15	Scarboro muck, 0 to 3 percent slopes	0.2	8.3%
306	Udorthents-Urban land complex	1.2	39.0%
701A	Ninigret fine sandy loam, 0 to 3 percent slopes	1.4	46.8%
Totals for Area of Interest		3.0	100.0%

WETLAND SURVEY PHOTOS

JUNE 26, 2026

669 SHEWVILLE ROAD

LEDYARD

CONNECTICUT

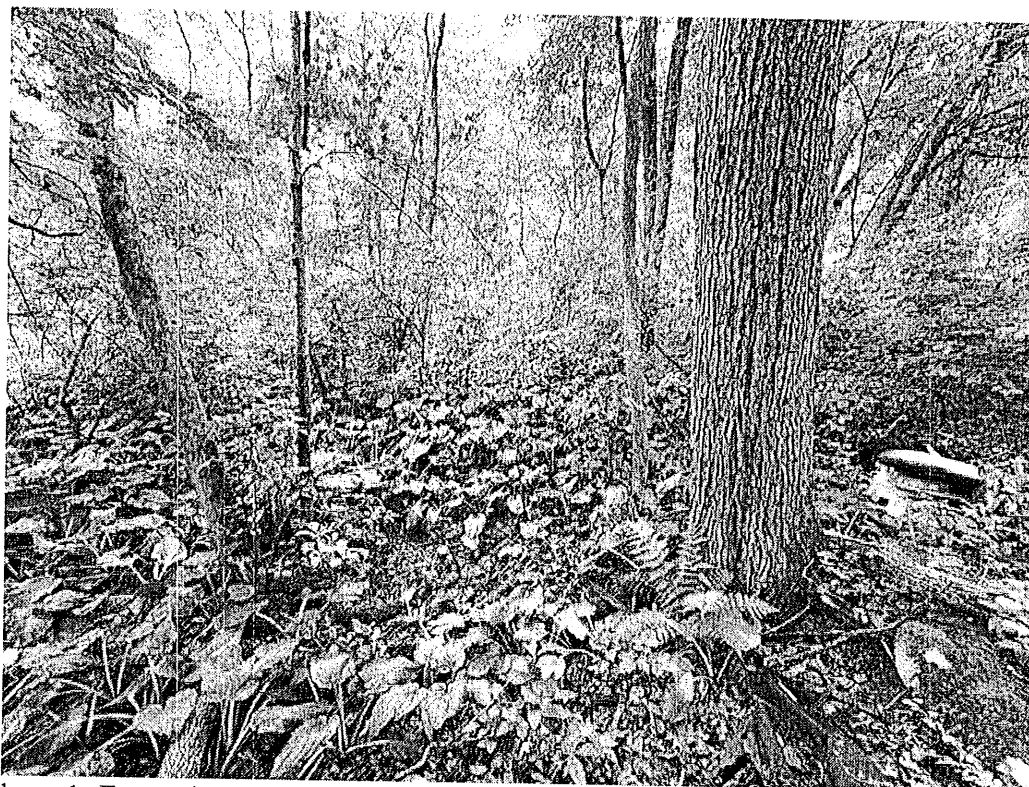


Photo 1: Example of the well-defined wetland boundary located along the northern property line. Wetland Flags 1 to 10



Photo 2: Wetland boundary north of driveway, wetland flags 1A to 13A



Photo 3: Example of the existing crossing / driveway. Wetland boundary is to the left and right of driveway clearing.



Photo 3: Existing conditions of buildable uplands in the center of the property.

MBL: 71-2210-669

669 SHEWVILLE ROAD, LEDYARD



Disclaimer: This map is for planning purposes only. Verification of its accuracy, currency and completeness is the responsibility of the reader's own independent research. All inland wetland and watercourse boundaries are subject to refinement once traditionally field located by a Licensed Land Surveyor and formally adopted by the Town. Ian Cole LLC shall not be held liable for any loss, damages or claims made in relation to anyone referring to this map.

DEEP TEST PIT DATA
DEEP TEST PITS 1 THROUGH 3 WERE WITNESSED BY GEORGE CALKINS, R.S.
OF THE LEDGE LIGHT HEALTH DISTRICT ON JULY 19, 2010.

TP1
0-8" TOPSOIL
8-20/22" OR/TAN - OR/GOLD FINE SANDY LOAM
20-38" TAN-OR/GOLD M/F-FINE SAND
38-91" DARK BROWN MED-F/FINE SAND,
SOME GRAVEL

GROUNDWATER WEeping @ 62"
NO LEDGE
MOTTLING @ 20/22"

TP2
0-8" TOPSOIL
8-11" ORANGE FINE SANDY LOAM
11-32/33" OLIVE GRAY F-VY FINE SAND/SILT
32-92" ORANGE/GOLD M/C-M/F SAND
& GRAVEL

GROUNDWATER WEeping @ 71"
NO LEDGE
MOTTLING @ 11"

TP3
0-8/10" TOPSOIL
8-22/24" ORANGE LOAMY SAND
22-66/73" YELLOW/TAN M/F-FINE SAND,
STONE

NO GROUNDWATER
LEDGE @ 68"
NO MOTTLING

TPA
0-10" TOPSOIL
10-41" ORANGE BROWN FINE SANDY LOAM
41-47" GRAY VERY FINE SILT LOAM, MOTTLED
47-62" GRAY FINE TO MEDIUM HARD PAN
W/COBLES & BOULDERS

NO GROUNDWATER
LEDGE @ 62"
MOTTLING @ 41"

TPB
0-9" TOPSOIL
9-33" ORANGE BROWN FINE SANDY LOAM
33-36" GRAY VERY FINE SILT LOAM, MOTTLED
36-58" GRAY FINE TO MEDIUM HARD PAN
W/COBLES & BOULDERS

NO GROUNDWATER
LEDGE @ 58"
MOTTLING @ 33"

TPC
0-9" TOPSOIL
9-28" ORANGE BROWN FINE SANDY LOAM
28-55" GRAY VERY FINE SILT LOAM, MOTTLED
55-80" MEDIUM YELLOW BROWN SAND

GROUNDWATER @ 78"
LEDGE @ 80"
MOTTLING @ 28"
ROOTS TO 40"

TPD
0-11" TOPSOIL
11-31" ORANGE BROWN FINE SANDY LOAM
31-48" ORANGE MOTTLED FINE TO MEDIUM
SAND (NORTH)

31-48" GRAY VERY FINE SILT LOAM,
MOTTLED
48-66" GRAY FINE TO MEDIUM SAND
& GRAVEL

GROUNDWATER @ 61"
LEDGE @ 66"
MOTTLING @ 31"
ROOTS TO 33"

TPE
0-11" TOPSOIL
11-25" ORANGE BROWN FINE SANDY LOAM
25-42" GRAY/YELLOW BROWN FINE SAND
W/COBLES
42-51" GRAY FINE TO MEDIUM SAND
& GRAVEL

NO GROUNDWATER
LEDGE @ 51"
MOTTLING @ 42"
ROOTS TO 42"

PERCOLATION TEST PT-4
DEPTH = 30"

TIME	READING
9:45	11"
10:09	DRY
10:09:30	REFILL 12"
10:12:30	17 1/4"
10:15	21 1/4"
10:17:30	24"
10:20	25 7/8"
10:22	27 1/4"
10:24:40	DRY @ 28"
3:06	16 1/8"
3:11	16 3/4"
3:16	17 3/8"
3:21	DRY

PERCOLATION RATE AT 30"
PERC RATE: 1-10.0 MINS/INCH

PERCOLATION TESTS PT-A AND PT-B WERE PERFORMED
ON MAY 10, 2024 BY BOUNDARIES, LLC

PERCOLATION TEST PT-A
DEPTH = 20"
PRESOAK @ 1:15

TIME	READING
2:21	7 3/4"
2:26	9 1/2"
2:31	10 3/4"
2:36	11 1/2"
2:41	12 1/2"
2:46	13 3/8"
2:51	14 1/8"
2:56	14 3/4"
3:01	15 1/2"
3:06	16 1/8"
3:11	16 3/4"
3:16	17 3/8"
3:21	DRY

PERCOLATION RATE AT 20"
PERC RATE: 8.0 MINS/INCH

PERCOLATION TEST PT-B
DEPTH = 20"
PRESOAK @ 1:20

TIME	READING
2:22	6"
2:27	9 3/8"
2:32	11 1/2"
2:37	13 3/4"
2:42	14 3/4"
2:47	15 7/8"
2:52	16 7/8"
2:57	17 3/4"
3:02	15 1/2"
3:06	18 5/8"
3:07	19 1/2"
3:12	DRY

PERCOLATION RATE AT 20"
PERC RATE: 5.7 MINS/INCH

LEGEND

- STONE WALL
- PROPERTY LINE
- STREET PROPERTY LINE
- MONUMENT FOUND
- REBAR FOUND
- EXISTING CONTOUR
- PROPOSED CONTOUR
- APPROXIMATE DEEP TEST PIT LOCATION
- APPROXIMATE PERC TEST LOCATION
- BUILDING SETBACK LINE
- UTILITY POLE
- SILT FENCE OR HAYBALES OR WOODCHIPS
- EDGE OF WETLANDS & FLAG NUMBER
- FOOTING DRAIN
- GRADE TO DRAIN

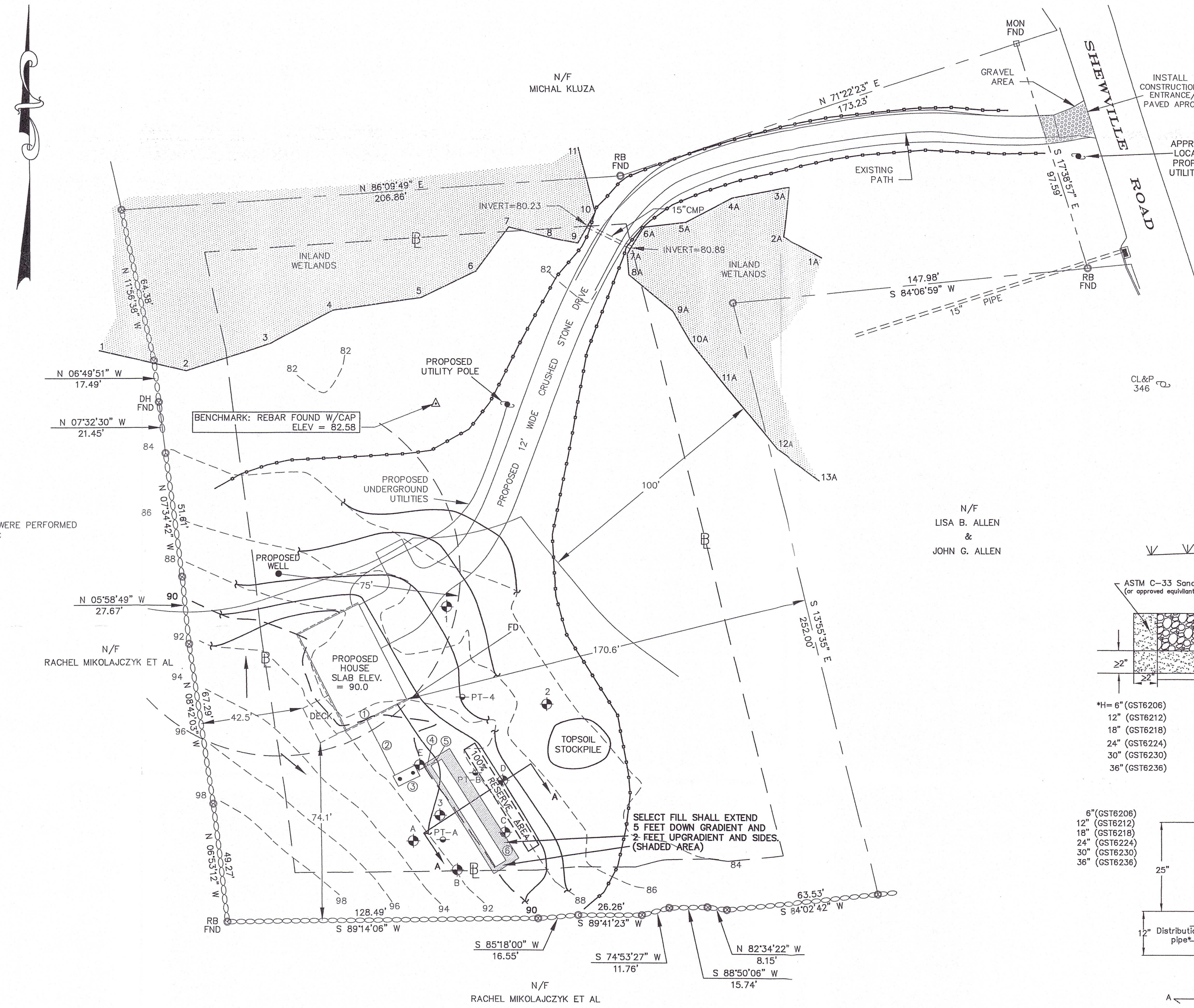
NOTE: BOUNDARY LINES OF ADJOINING PROPERTIES ARE SHOWN FOR GENERAL INFORMATION PURPOSES ONLY AND ARE NOT TO BE CONSTRUED AS BEING ACCURATELY LOCATED OR DEPICTED.

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.

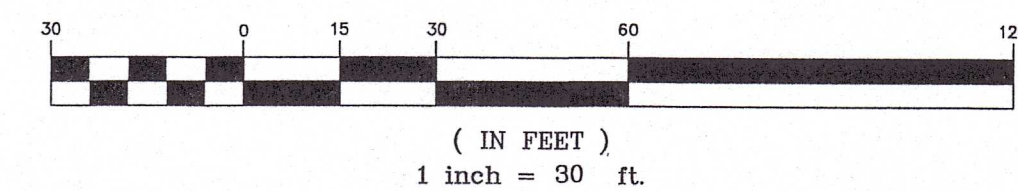
I HAVE REVIEWED THE INLAND WETLAND BOUNDARY I DELINEATED AND I AM OF THE OPINION THAT THE WETLAND BOUNDARY IS SHOWN CORRECTLY ON THIS MAP.

IAN COLE
SOIL SCIENTIST

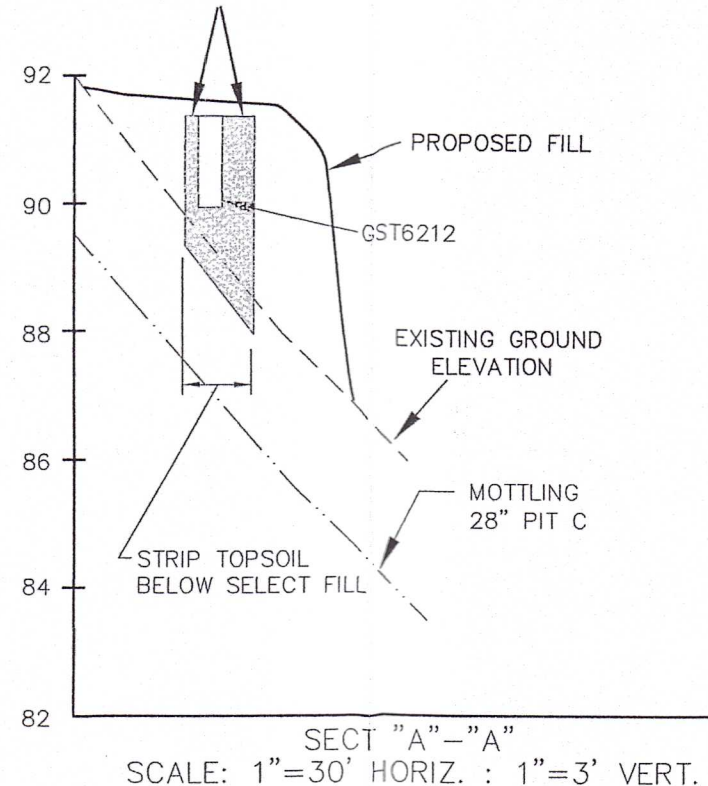
DIETER & GARDNER
LAND SURVEYORS • PLANNERS
1641 ROUTE 12
P.O. BOX 335
GALES FERRY, CT. 06335
(860) 464-7455
EMAIL: DIETER.GARDNER@YAHOO.COM



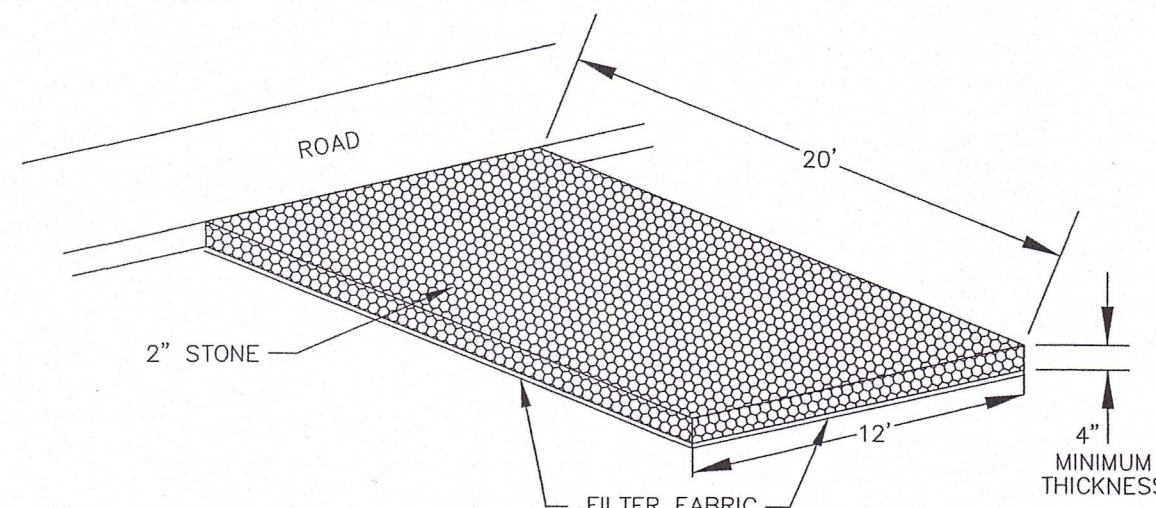
GRAPHIC SCALE



SELECT FILL SHALL EXTEND
5 FEET DOWN GRADIENT AND
2 FEET UPGRADIENT AND SIDES.
(SHADED AREA)

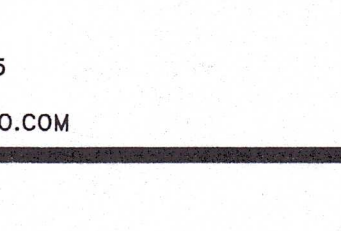
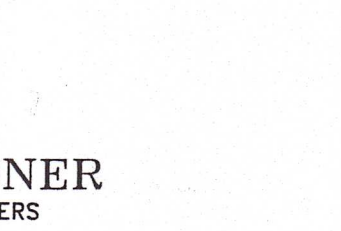
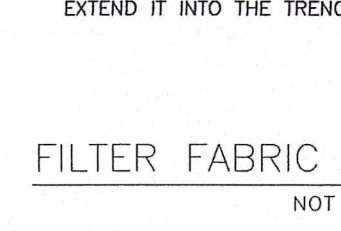
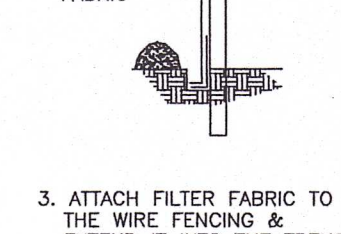
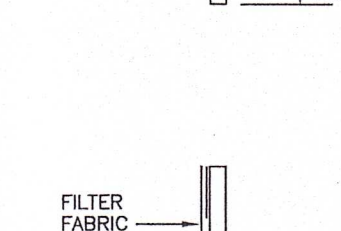
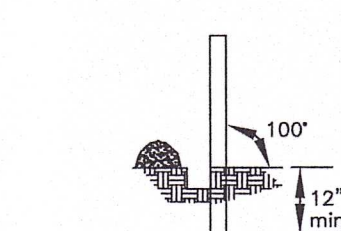


TEMPORARY CONSTRUCTION ENTRANCE



1. SET POSTS & EXCAVATE
A 6" x 6" TRENCH. SET
POSTS DOWNSLOPE. ANGLE
UPSLOPE FOR STABILITY
& SELF-CLEANING.

2. STAPLE THE WIRE
MESH FENCING TO
END POST.



SANITARY DESIGN CRITERIA:

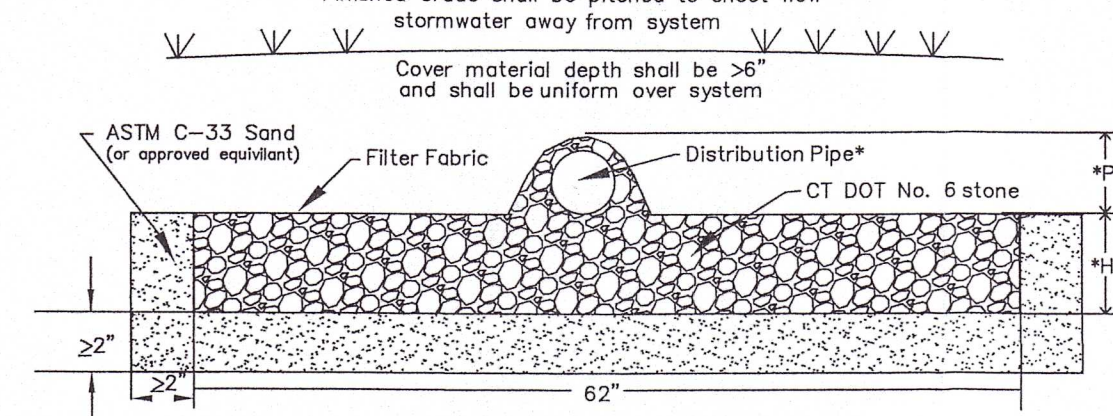
- PROPOSED THREE BEDROOM HOME. NO TUBS GREATER THAN 100 GALLONS IN SIZE.
- 1000 GALLON TWO COMPARTMENT SEPTIC TANK REQUIRED BY CODE AND PROVIDED.
- DESIGN PERCOLATION RATE: 5.7 MIN./IN.
- MINIMUM LEACHING SYSTEM SPREAD:
HF = 24, GRADIENT BETWEEN 10.1 TO 15.0%
RESTRICTION BETWEEN 26.1 TO 30.0"
FF = 1.5, THREE BEDROOM HOME
PF = 1.0, PERC RATE 5.7 MIN./INCH
MLSS = HF X FF X PF = 24 X 1.5 X 1.0 = 36"
- EFFECTIVE LEACHING AREA REQUIRED PER CODE: 10 S.F.
- GEOMATRIX GST 6212 SELECTED FOR PRIMARY SYSTEM DESIGN.
EFFECTIVE LEACHING AREA PROVIDED PER L.F. PER CODE: 10 S.F./L.F.
MINIMUM LENGTH OF TRENCH REQUIRED: 495 S.F./10 S.F./L.F. = 49.5'
- EFFECTIVE LEACHING AREA PROVIDED:
1 ROW 50' LONG GEOMATRIX GST 6212 1 X 50' X 10 S.F./L.F. = 510 S.F.
- 100% RESERVE AREA REQUIRED AND PROVIDED 50 L.F. GEOMATRIX GST 6212.

SANITARY ELEVATION DATA:

- SANITARY INVERT AT FOUNDATION: 92.45
- 26"-4" DIA. SCHEDULE 40 ASTM D1785 OR EQUAL PIPE
(MIN. SLOPE = 1/4" PER FT.)
- 1000 GALLON TWO COMPARTMENT SEPTIC TANK
INVERT IN: 91.85
INVERT OUT: 91.60
- 8" - 4" DIA. SDR 35 PVC PIPE
- "D" BOX
INVERT IN: 91.20
INVERT OUT: 91.00
- 50' LONG GEOMATRIX GST 6212
DIST PIPE INV: 91.00
BOTTOM OF STONE ELEV.: 90.00

GEOMATRIX GST™ LEACHING SYSTEM

B-B' CROSS SECTION



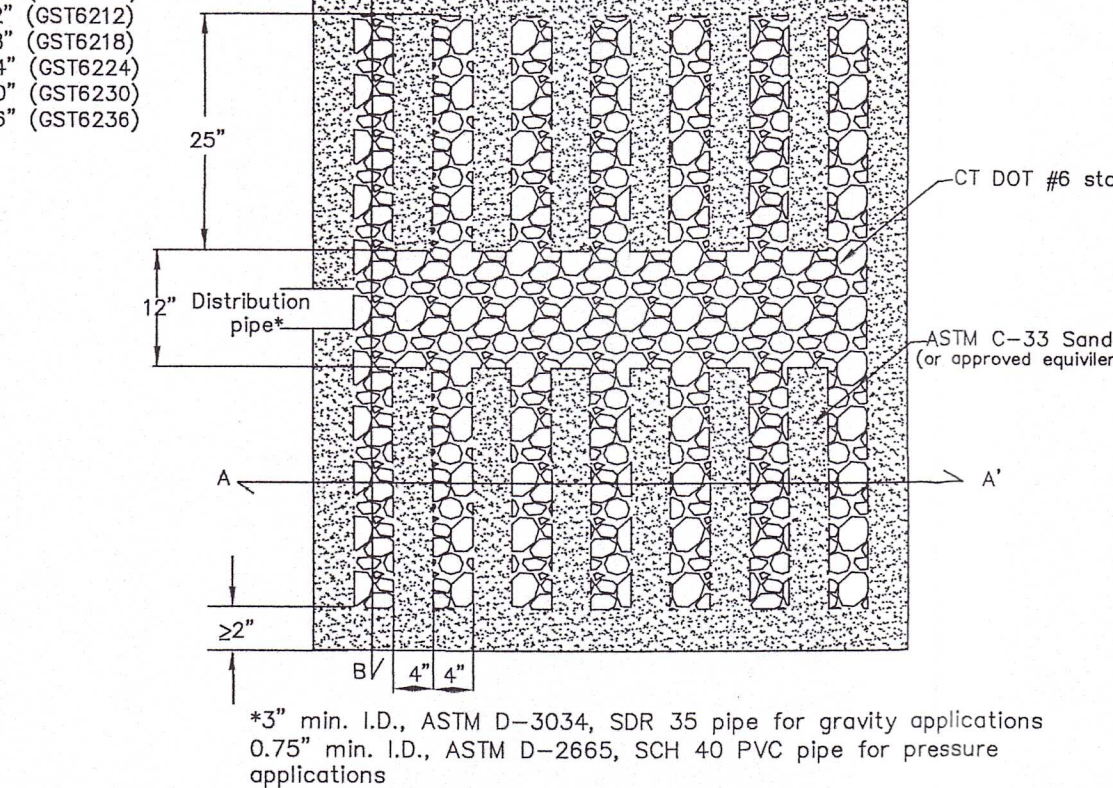
H=6" (GST6206)
12" (GST6212)
18" (GST6218)
24" (GST6224)
30" (GST6230)
36" (GST6236)

*P=2"-5.5"

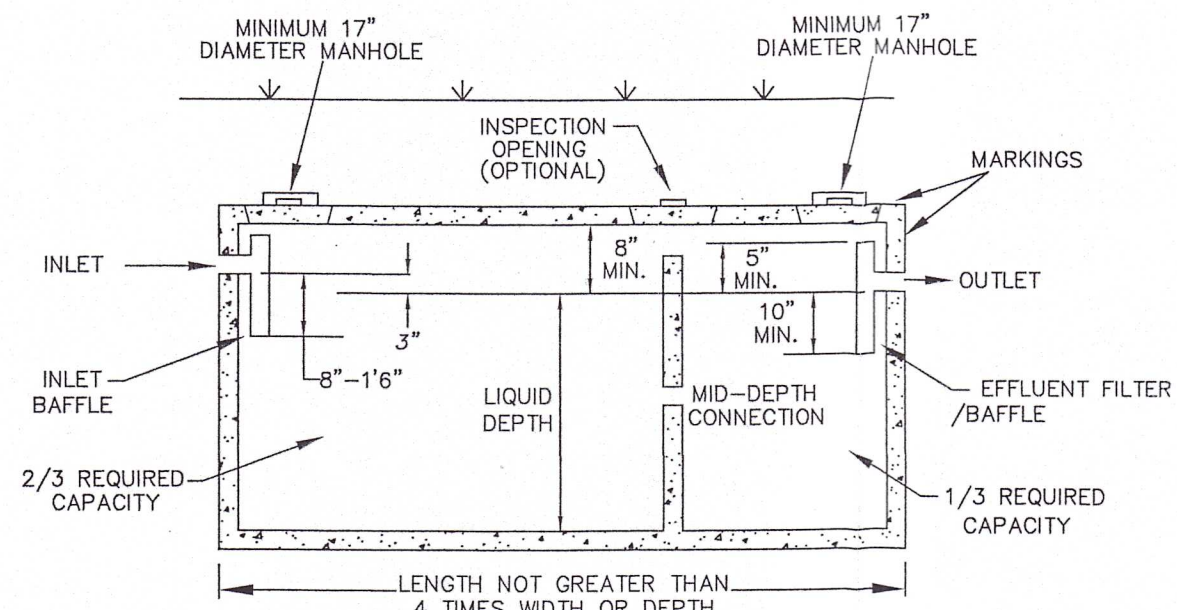
*3" min. I.D., ASTM D-3034, SDR 35 pipe for gravity applications
0.75" min. I.D., ASTM D-2665, SCH 40 PVC pipe for pressure applications

GEOMATRIX GST™ LEACHING SYSTEM

Plan View



*3" min. I.D., ASTM D-3034, SDR 35 pipe for gravity applications
0.75" min. I.D., ASTM D-2665, SCH 40 PVC pipe for pressure applications



NOTE: CLEANOUT MANHOLES AND ALL BARFLED INSPECTION MANHOLES SHALL BE LOCATED AT A DEPTH NOT GREATER THAN 12" BELOW FINAL GRADE.

TYPICAL SEPTIC TANK

NOT TO SCALE

GENERAL NOTES:

- MAP REFERENCE:
IMPROVEMENT LOCATION & TOPOGRAPHIC SURVEY "SUBDIVISION PLAN" PREPARED FOR KENNETH G. & BRENDA L. MATTEAU 669 SHEWVILLE ROAD, LEDYARD, CONNECTICUT SCALE: 1"=30' DATE: APRIL 2014 REVISIONS "A"-GENERAL REVS 6-19-14 REV "B" PER P & Z CONDITIONS OF APPROVAL & MONUMENTATION SET 7-18-14.
- THIS LOT WAS TOPPED IN THE AREA OF THE HOUSE AND SEPTIC SYSTEM AND A BENCH MARK FOUND BY DIETER & GARDNER, INC. LAND SURVEYORS IN MARCH 2026.
- AT THE TIME OF THIS DESIGN THERE WERE NO EXISTING WELLS WITHIN 75' OF THE PROPOSED SEPTIC SYSTEM AND THERE WERE NO EXISTING SEPTIC SYSTEMS WITHIN 75' OF THE PROPOSED WELL LOCATION.
- SELECT FILL PLACED WITHIN AND ADJACENT TO LEACHING SYSTEM AREAS SHALL BE COMPRISED OF CLEAN SAND, OR SAND AND GRAVEL, FREE FROM ORGANIC MATTER AND FOREIGN SUBSTANCES. THE SELECT FILL SHALL MEET THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE APPROVED BY THE DESIGN ENGINEER. SELECT FILL EXCEEDING 6% PASSING THE #200 SIEVE BASED ON A WET SIEVE TEST CANNOT BE APPROVED BY THE DESIGN ENGINEER.
 - THE SELECT FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN THE THREE (3) INCH SIEVE.
 - UP TO 45% OF THE DRY WEIGHT OF THE REPRESENTATIVE SAMPLE MAY BE RETAINED ON THE #4 SIEVE. NOTE: THIS IS THE GRAVEL PORTION OF THE SAMPLE.
 - THE MATERIAL THAT PASSES THE #4 SIEVE IS THEN REWEIGHED AND THE SIEVE ANALYSIS STARTED.
 - THE REMAINING SAMPLE SHALL MEET THE FOLLOWING GRADATION CRITERIA:

SIEVE SIZE	PERCENT PASSING	
	WET SIEVE	DRY SIEVE
#4	100	100
#10	70-100	70-100
#40	10-50 *	10-75
#100	0-20	0-5
#200	0-5	0-2.5

* PERCENT PASSING THE #40 SIEVE CAN BE INCREASED TO NO GREATER THAN 75% IF THE PERCENT PASSING THE #100 SIEVE DOES NOT EXCEED 10% AND THE #200 SIEVE DOES NOT EXCEED 5%.

SELECT FILL THAT DOES NOT MEET THE DRY SIEVE GRADATION CRITERIA BUT MEETS THE WET SIEVE GRADATION CRITERIA IS ACCEPTABLE. SIEVE TESTING OF SELECT FILL IS REQUIRED FOR LARGE (2,000 GPD OR GREATER) SYSTEMS WHENEVER THE LEACHING SYSTEM IS LOCATED TOTALLY IN SELECT FILL. THE LOCAL DIRECTOR OF HEALTH MAY REQUIRE SIEVE TESTING OF SELECT FILL ON LESS THAN 2,000 GPD SEWAGE SYSTEMS IN ACCORDANCE WITH PHC SECTION 19-13-6103e (D) (6).

THE LICENSED INSTALLER IS RESPONSIBLE FOR PREPARING THE LEACHING AREA WITH NECESSARY SELECT FILL. THE TOPSOIL IN THE LEACHING SYSTEM AREA MUST BE REMOVED AND THE SUBSOIL SCARIFIED PRIOR TO SELECT FILL PLACEMENT UNLESS OTHERWISE DIRECTED BY THE DESIGN ENGINEER. THE INSTALLER SHALL TAKE THE NECESSARY STEPS TO PROTECT THE UNDERLYING NATURALLY OCCURRING SOIL FROM OVER COMPACTION OR DAMAGE. THE INSTALLER IS RESPONSIBLE FOR PROPERLY COMPACTING SELECT FILL TO FACILITATE CONSTRUCTION AND TO PREVENT SETTLING. SELECT FILL SHALL EXTEND A MINIMUM OF FIVE (5) FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE LEACHING SYSTEM.

THE COMMISSIONER OF PUBLIC HEALTH MUST APPROVE MANUFACTURED FILL. ROCK USED TO PRODUCE MANUFACTURED FILL MUST HAVE A LOSS OF ABRASION OF NOT MORE THAN 50% USING AASHTO METHOD T-96, AND WHEN TESTED FOR SOUNDNESS USING AASHTO METHOD T104 NOT HAVE A LOSS OF MORE THAN 15% AT THE END OF 5 CYCLES. SUPPLIERS OF MANUFACTURED FILL MUST MAKE APPLICATION FOR APPROVAL TO THE COMMISSIONER OF PUBLIC HEALTH. DOCUMENTATION MUST BE SUBMITTED ON THE QUARRY OPERATION AND PRODUCTION PROCESS, FILL SPECIFICATIONS (GRADATION, PERMEABILITY, ETC) AND A NARRATIVE OF THE QUALITY CONTROL/QUALITY ASSURANCE PROGRAM MUST ALSO BE INCLUDED FOR ALL ACTIVE QUARRIES. THE MANUFACTURED FILL PRODUCERS MUST PROVIDE ANNUAL PRODUCT REGISTRATIONS TO THE COMMISSIONER OF PUBLIC HEALTH BY JULY 1ST OF EACH YEAR.

- APPLICANT: JOHN HARDY
860-625-4632
- ENGINEER: JOHN MARTUCCI
C/O DIETER & GARDNER, INC.
P.O. BOX 335
GALES FERRY CT. 06335
(860) 464-7455
- THE FOUNDATION AND SEPTIC SYSTEM SHALL BE STAKED OUT AND GRADES ESTABLISHED BY A LICENSED LAND SURVEYOR.
- AT THE TIME OF THIS DESIGN THERE WERE NO EXISTING WELLS WITHIN 75' OF THE PROPOSED SEPTIC SYSTEM AND NO EXISTING SEPTIC SYSTEMS WITHIN 75' OF THE PROPOSED WELL.
- INLAND WETLANDS AS SHOWN ON RECORDED SUBDIVISION PLAN.
- UTILITIES WILL BE OVERHEAD TO A POINT 80'± WEST OF WETLANDS THEN UNDERGROUND TO HOUSE.

ZONING DISTRICT R-60

ITEM	REQUIRED	PROVIDED
LOT AREA	60,000 Sq. Ft.	88,428 Sq. Ft.
FRONT YARD SETBACK	35 FT.	170.6 FT.
SIDE YARD SETBACK	20 FT.	74.1 FT.
REAR YARD SETBACK	30 FT.	42.6 FT.

PLAN SHOWING
PROPOSED HOUSE, DRIVE, WELL
AND
SEWAGE DISPOSAL SYSTEM
PREPARED FOR
JOHN HARDY
669 SHEWVILLE ROAD
LEDYARD, CONNECTICUT

SCALE: 1"=30' RECEIVED
JUNE 2026 JUL 06 2026

Land Use Department

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 AN IMPROVEMENT LOCATION SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 AND TOPOGRAPHIC ACCURACY 1-2. TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208
DATE: JUNE 30, 2026

FDH4



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-1112

Agenda Date: 8/4/2026

Agenda #: A.

LAND USE APPLICATION

Subject/Application:

IWWC#26-23SITE - 78 Christy Hill Road (MAP ID: 92-470-78), Gales Ferry CT, - Property Owner, Gail Curland - Agent, Peter Gardner, for regulated actives associated with the construction of a driveway, septic system and single family home and all site improvements. (Submitted 7/29/26, Date of Receipt 8/4/26, DRD 10/8/26)

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:

Application No. IWWC#26-23
Receipt Date 8/4/26

Date Submitted 7/29/26

Applicant/Agent Gail Curland Owner (if different) _____
Address 22 Gooseneck Rd, ^{Hill Canterbury} Glastonbury, Ct. 06331 Address of Owner _____
Phones 860-235-2937 / _____ cell Phone _____

RECEIVED

JUL 29 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

Gail Curland
Signature of Applicant/ Agent

Location of Property 78 Christy Hill Rd

Tax Assessor's Map No. 92

Zoning District R 40

Written Description of Proposed Activity Construct new single family home, install drive, septic system
with associated grading and erosion control as shown on site plan.

Proposed Erosion/ Sediment Control Measures: Haybales/siltfence/wood chips

Total Area of Site 2.81 acres

Total Area of Wetlands per Official Inventory Map 1.80 acres

Amount of Fill, in Cubic Yards no fill in wetlands

Disturbed Area, in Square Feet _____ or in Acres 0.7 acres

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

Soil Types from USDA Soil Survey Rn

SxB

NgB

General Description of Vegetative Cover wooded

Name and Address of Adjacent Property Owners

Melissa Loos 84 Christy Hill Rd, Gales Ferry

Gail Curland 80 Christy Hill Rd. Gales Ferry

Philip Burns 74 Christy Hill Rd, Gales Ferry

Anticipated Start Date 9/2026 Completion Date 9/2027

List previous IWWC application #'s _____

IWW Commission Disposition: IWWC Regulations; Section _____

Classification _____

Signature of Chair

FEE: _____ + \$60.00 State Fee = _____

DATE PAID _____

RECEIPT # _____



RECEIVED

JUL 29 2026

Land Use Department

Ian Cole LLC***Professional Registered Soil Scientist / Professional Wetland Scientist******PO BOX 619******Middletown, CT 06457******Itcole@gmail.com***

June 13, 2026

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

**RE: WETLAND REPORT
78 CHRISTY HILL ROAD
LEDYARD (GALES FERRY), CONNECTICUT**

Dear Mr. Gardner:

At D&G Inc's request, I completed a field survey of the leading edge of the jurisdictional freshwater inland wetland and watercourses boundaries proximal to the proposed single-family residential development planned to be constructed at 78 Christy Hill Road in Gales Ferry, Connecticut.

WETLAND DELINEATION METHODOLOGY

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.

WETLAND SURVEY RESULTS

The wetland survey was completed on June 4, 2026. The survey was performed under blue sky conditions. The upper 20" of the soil profile was sampled across the site with a hand auger to examine the underlying soil morphology for the presence of hydric soil field indicators.

Proximal to the proposed building site, the northern leading edge of a well-defined rocky red-maple forested wetland system site was flagged in the field with sequential numbered flags labeled 1 through 20. The wetland boundary is readily identifiable in the field and is demarcated by a thick growth of skunk cabbage that carpets the wetland forest floor (Photo 1). Please refer to the attached hand sketch which illustrates the approximate location of the wetland resources and corresponding flag series. The provided wetland sketch is intended for planning and navigation purposes only. The illustrated wetland boundaries are subject to refinement once traditionally located and mapped by the Project. For all practical purposes the wetland boundary looked substantially similar to the recorded and approved subdivision plans

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

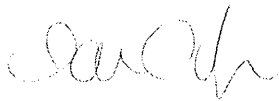
The primary wetlands soil series along the flagged wetland boundaries are classified as (3) Ridgebury, Leicester, and Whitman fine sandy loams. The poorly drained soils along the wetland boundary belong to the Ridgebury and Leicester soil series. Ridgebury and Leicester soils are found within drainageways 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.

Upland Soils

The upland soils were not examined in great detail except where necessary to delineate the wetland boundary. The bulk of the uplands within the areas suitable for development are mapped belonging to the well-drained Charlton and Charlton fine sandy loam soil series. Generally, this soil mapping unit is well suited to support development projects with few limitations.

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

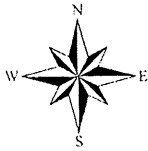
ATTACHMENTS

GIS MAP

WETLAND SKETCH

NRCS SOIL MAP

PHOTOS



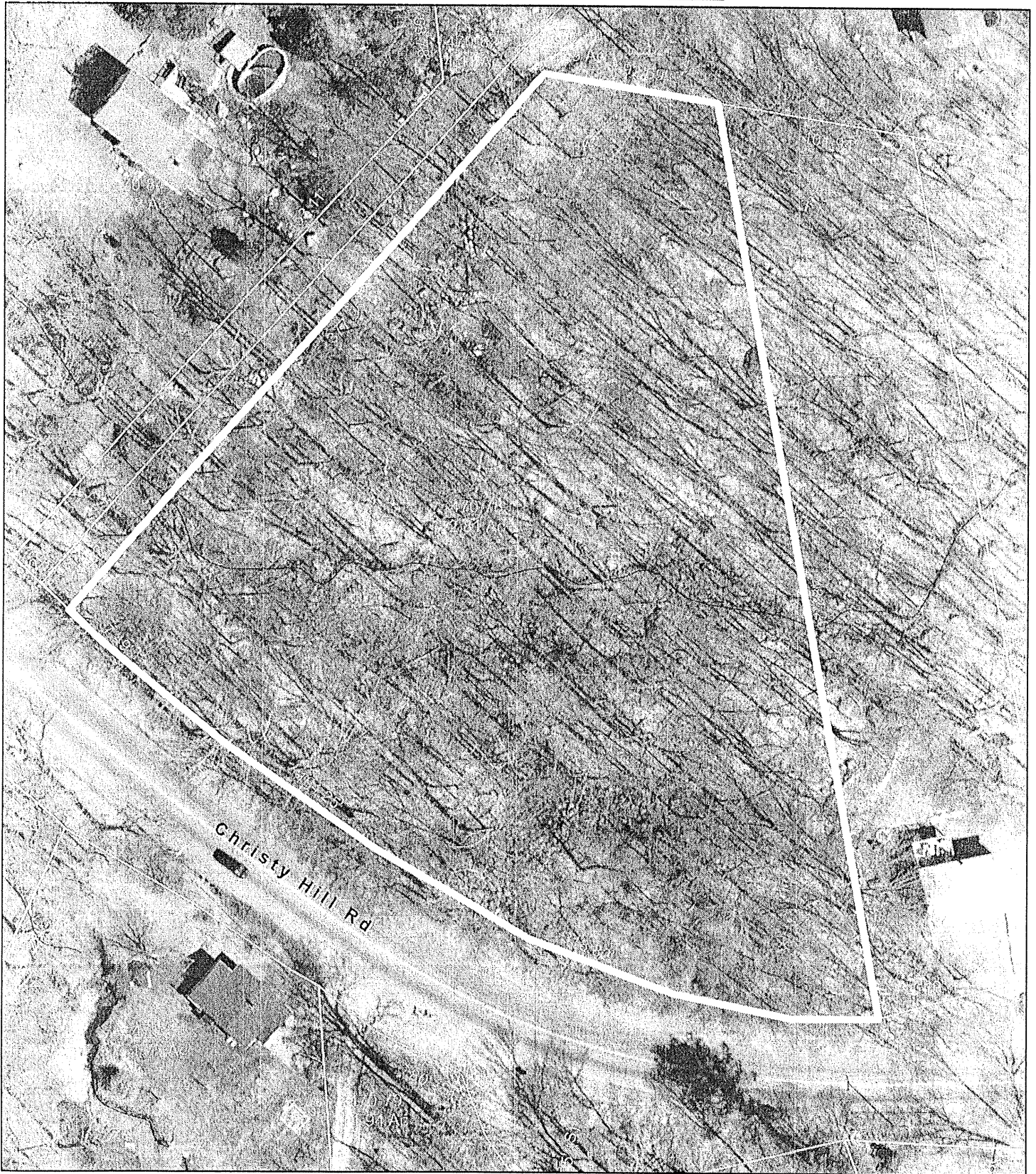
Ledyard, CT

1 inch = 71 Feet

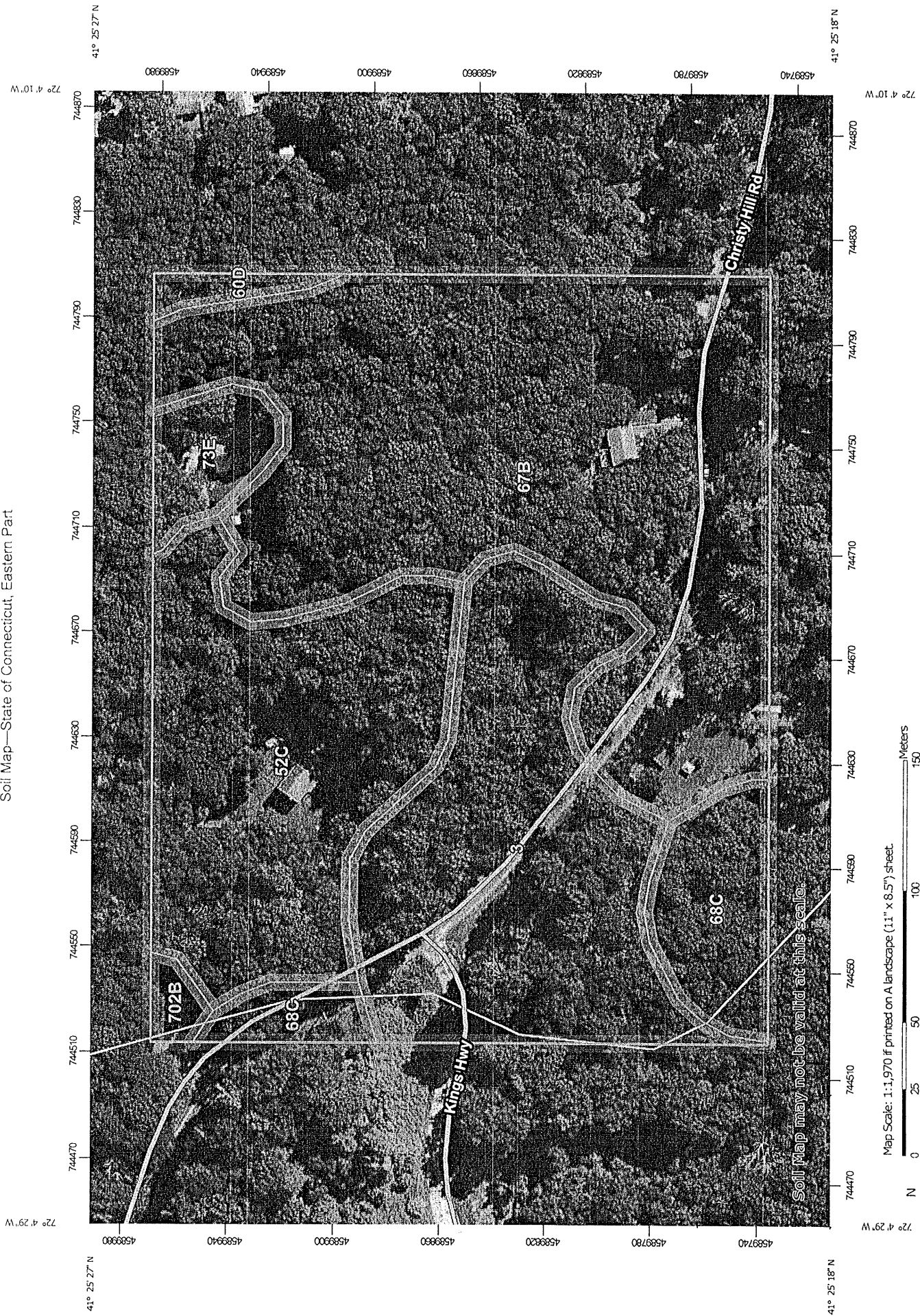


www.cai-tech.com

June 5, 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.



Map Scale: 1:1,970 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

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
	Gravelly 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	3.9	23.1%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	3.7	21.6%
60D	Canton and Charlton soils, 15 to 25 percent slopes	0.2	1.0%
67B	Narragansett silt loam, 3 to 8 percent slopes, very stony	7.3	43.3%
68C	Narragansett silt loam, 3 to 15 percent slopes, extremely stony	1.2	7.1%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	0.5	3.0%
702B	Tisbury silt loam, 3 to 8 percent slopes	0.1	0.8%
Totals for Area of Interest		16.9	100.0%

WETLAND SURVEY

SITE PHOTOS

JUNE 5, 2026

78 CHRISTY HILL ROAD

GALES FERRY

CONNECTICUT



Photo 1: Example of the flagged wetland system south of the building site.

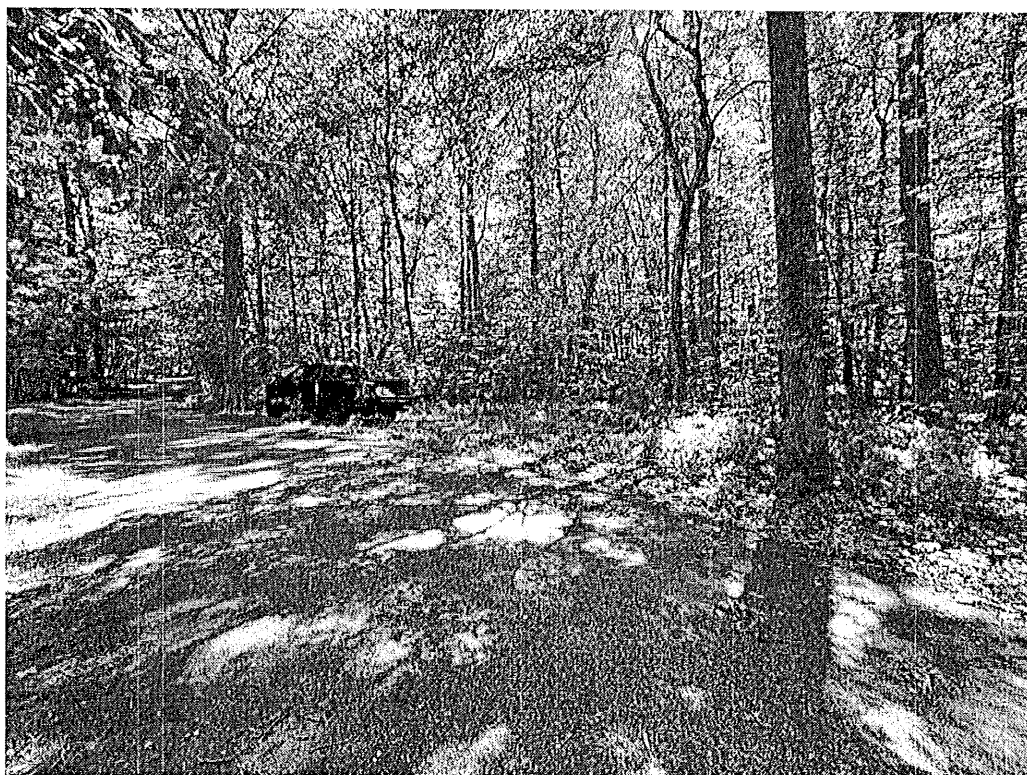


Photo 2: Example of shared driveway entrance to the site.



Photo 3: Building site & general conditions of uplands.



$\Delta=00^{\circ}35'31''$
 $R=725.00'$
 $L=7.49'$
 $T=3.74'$
 $C=7.49'$
 $CB=N37^{\circ}43'06''W$

LEGEND

- STONE WALL
- PROPERTY LINE
- STREET LINE
- UTILITY POLE
- STREET ADDRESS
- EDGE OF WETLANDS

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.

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.

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

© 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# 26-027.DWG FBK#337

$\Delta=38^{\circ}51'59''$
 $R=470.00'$
 $L=318.82'$
 $T=165.82'$
 $C=312.75'$
 $CB=N57^{\circ}26'51''W$

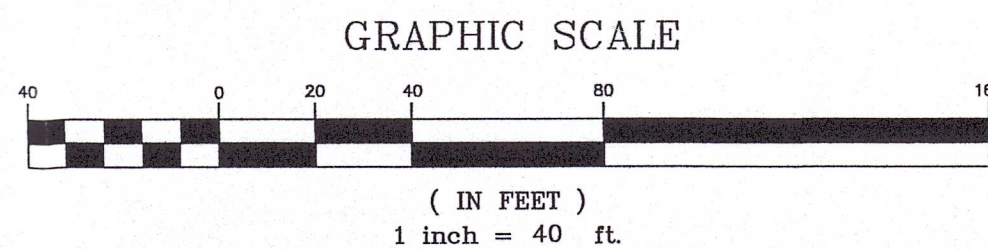
CL&P 211

CL&P 232

80
N/F
GAIL CURLAND

N/F
PHILIP A. BURNS Jr.
&
CHRISTIE PELKEY BURNS

78
AREA=122,432 Sq.Ft.
2.81 ACRES



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

GENERAL NOTES

1. MAP REFERENCES:

- SECTION "E" CHRISTY HILL ESTATES IN THE TOWN OF LEDYARD, CONNECTICUT SCALE 1"=100' OCTOBER 1961 GEORGE H. DIETER REVISED FEBRUARY 1962.
 - PLAN SHOWING BUILDING LOTS 101A THRU 105A CHRISTY HILL ESTATES LEDYARD, CONNECTICUT SCALE 1"=40' NOVEMBER 1962 GEORGE H. DIETER L.S.
 - PLAN SHOWING GARDNER SUBDIVISION PROPERTY OF RUTH H. GARDNER TRUSTEE OF THE RUTH H. GARDNER TRUST AGREEMENT CHRISTY HILL ROAD AND NUGGET HILL DRIVE LEDYARD, CONNECTICUT SCALE: 1"=100' OCTOBER 2000.
- THIS LOT WAS TOPOED IN THE AREA OF THE HOUSE AND SEPTIC SYSTEM AND BENCHMARK SET BY DIETER & GARDNER, INC. LAND SURVEYORS IN JUNE 2026.
 - AT THE TIME OF THIS DESIGN THERE WERE NO EXISTING WELLS WITHIN 75' OF THE PROPOSED SEPTIC SYSTEM AND THERE WERE NO EXISTING SEPTIC SYSTEMS WITHIN 75' OF THE PROPOSED WELL LOCATION.
 - TOPSOIL OR ORGANIC MATERIAL BELOW THE TOP OF THE LEACHING SYSTEM SHALL BE REPLACED WITH SELECT FILL. "SELECT FILL MATERIAL", PLACED WITHIN AND ADJACENT TO PROPOSED LEACHING AREAS SHALL BE COMPRISED OF CLEAN SAND AND GRAVEL, FREE FROM ORGANIC MATERIAL AND DELETERIOUS SUBSTANCES. THE FILL MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE APPROVED BY A PROFESSIONAL ENGINEER FOR USE WITHIN THE LEACHING AREA:

- THE FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN THREE INCHES.
- UP TO 45% OF THE DRY WEIGHT OF THE REPRESENTATIVE SAMPLE MAY BE RETAINED ON THE #4 SIEVE. THIS IS THE GRAVEL PORTION OF THE SAMPLE.
- THE MATERIAL THAT PASSES THE #4 SIEVE IS THEN REWEIGHED AND THE SIEVE ANALYSIS STARTED.
- THE REMAINING SAMPLE SHALL MEET THE FOLLOWING GRADUATION CRITERIA:

SIEVE SIZE	WET SIEVE	DRY SIEVE
#4	100%	100%
#10	70%-100%	70%-100%
#40	10%-50%*	10%-75%
#100	0%-20%	0%-5%
#200	0%-5%	0%-2.5%

*PERCENT PASSING THE #40 SIEVE CAN BE INCREASED TO NO GREATER THAN 75% IF THE PERCENT PASSING THE #100 SIEVE DOES NOT EXCEED 10% AND THE #200 SIEVE DOES NOT EXCEED 5%.

THE LICENSED INSTALLER IS RESPONSIBLE FOR PREPARING THE LEACHING AREA WITH NECESSARY SELECT FILL. THE TOPSOIL IN THE LEACHING SYSTEM AREA MUST BE REMOVED AND THE SUBSOIL SCARIFIED PRIOR TO SELECT FILL PLACEMENT UNLESS OTHERWISE DIRECTED BY THE DESIGN ENGINEER. THE INSTALLER SHALL TAKE NECESSARY STEPS TO PROTECT THE UNDERLYING NATURALLY OCCURRING SOIL FROM OVER COMPACTION OR DAMAGE. SELECT FILL SHALL EXTEND A MINIMUM OF FIVE (5) FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE LEACHING SYSTEM. THE COMMISSIONER OF PUBLIC HEALTH MUST APPROVE MANUFACTURED FILL. ROCK USED TO PRODUCE MANUFACTURED FILL MUST HAVE A LOSS OF ABRASION OF NOT MORE THAN 50% USING AASHTO METHOD T-96. SUPPLIERS OF MANUFACTURED FILL MUST MAKE APPLICATION FOR APPROVAL TO THE COMMISSIONER OF PUBLIC HEALTH. DOCUMENTATION MUST BE SUBMITTED ON THE QUARRY OPERATION, AND PRODUCTION PROCESS. FILL SPECIFICATIONS (GRADUATION, PERMEABILITY, ETC.) AND A NARRATIVE OF THE QUALITY CONTROL/QUALITY ASSURANCE PROGRAM MUST ALSO BE INCLUDED. THE MANUFACTURED FILL PRODUCERS MUST PROVIDE ANNUAL PRODUCT REGISTRATIONS TO THE COMMISSIONER OF PUBLIC HEALTH.

5. APPLICANT: GAIL CURLAND
860-235-2937

6. THE FOUNDATION AND SEPTIC SYSTEM SHALL BE STAKED OUT AND GRADES ESTABLISHED BY A LICENSED LAND SURVEYOR.

7. AT THE TIME OF THIS DESIGN THERE WERE NO EXISTING WELLS WITHIN 75' OF THE PROPOSED SEPTIC SYSTEM.

8. AS CALLED FOR ON GARDNER SUBDIVISION PLAN NOTE 6 LOTS 78, 80, 82, AND 84 SHALL SHARE A COMMON DRIVEWAY TO CHRISTY HILL ROAD. LOTS 11R AND 13R SHALL SHARE A COMMON DRIVEWAY TO NUGGET HILL DRIVE. DEEDS FOR ALL LOTS SHALL CONTAIN EASEMENTS FOR INGRESS AND EGRESS AND RIGHT TO INSTALL AND MAINTAIN UTILITIES. ALL LOTS SHALL CONTAIN A MAINTENANCE AGREEMENT FOR SHARED DRIVEWAY.

SHEET INDEX

SHEET 1) 40 SCALE A-2 PLAN; GENERAL NOTES AND MAP REFERENCES
SHEET 2) 20 SCALE SITE PLAN

PLAN SHOWING
PROPOSED HOUSE, WELL, DRIVE
AND SEPTIC SYSTEM
PREPARED FOR
GAIL CURLAND
78 CHRISTY HILL ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=40'
JULY 2026

RECEIVED

JUL 29 2026

Land Use Department

SHEET 1 OF 2

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. TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208

DATE: JULY 28, 2026

FDH3

DEEP TEST PIT DATA
DEEP TEST PIT DATA PERFORMED BY RANDY H. DALTON AUGUST 31, 2000.

PIT 1
5" TOPSOIL
5"-30" SUBSOIL
30"-38" SANDY SUBSOIL
38"-99" MEDIUM TO COARSE SANDS,
SILT AND STONE
NO MOTTLING
NO LEDGE
NO WATER
LARGE SURFACE BOULDERS

PIT 2
7" TOPSOIL
7"-36" SUBSOIL
36"-96" MEDIUM TO COARSE SANDS,
SOME SILT AND STONE
NO MOTTLING
NO LEDGE
NO WATER
LARGE SURFACE BOULDERS

PITS 1 & 2
DEPTH BELOW GRADE- 18"
PRE-SOAK- 11:33
START OF PERC- 11:48 - 6"
1:58 - 15"
12:10 HOLE - DRY

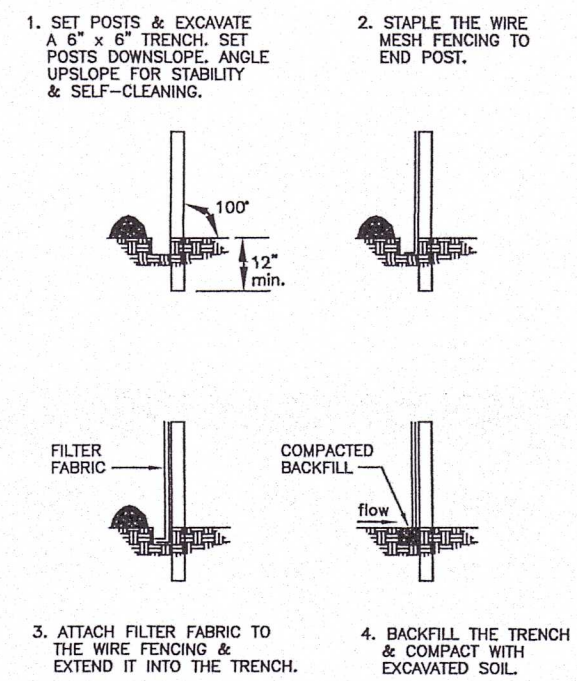
DEEP TEST PIT DATA
WITNESSED AND RECORDED BY ODALYS REYES MORALES LEDGE LIGHT HEALTH DISTRICT ON JULY 1, 2026.

TP 100 DEPTH: 50"
0-8" TOPSOIL
8-32" BROWN FINE SANDY LOAM
32-50" TAN FINE SAND WITH
PEBBLES, COBBLES
LEDGE AT BOTTOM OF HOLE
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 50"
ROTTES:
RESTRICTIVE: 50"

TP 101 DEPTH: 55"
0-5" TOPSOIL
5-23" BROWN FINE SANDY LOAM
23-55" BROWN FINE-MEDIUM SAND WITH
COBBLES AND PEBBLES
MOTTLES: NONE OBSERVED
GW: NONE OBSERVED
LEDGE: 55"
ROTTES:
RESTRICTIVE: 55"

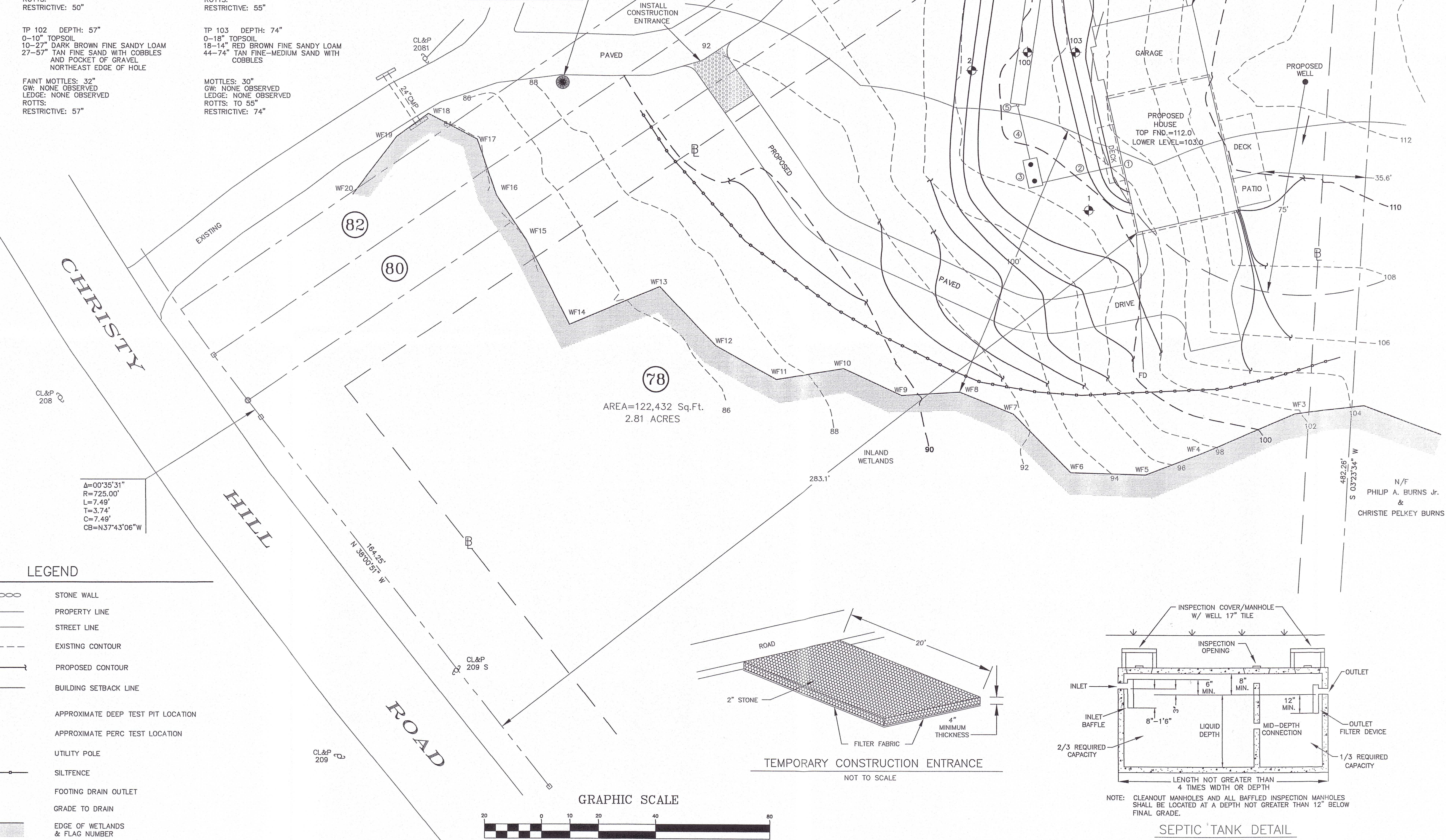
TP 102 DEPTH: 57"
0-10" TOPSOIL
10-27" DARK BROWN FINE SANDY LOAM
27-57" TAN FINE SAND WITH COBBLES
AND POCKET OF GRAVEL
NORTHEAST EDGE OF HOLE
MOTTLES: 32"
GW: NONE OBSERVED
LEDGE: NONE OBSERVED
ROTTES:
RESTRICTIVE: 57"

TP 103 DEPTH: 74"
0-18" TOPSOIL
18-44" RED BROWN FINE SANDY LOAM
44-74" TAN FINE-MEDIUM SAND WITH
COBBLES
MOTTLES: 30"
GW: NONE OBSERVED
LEDGE: NONE OBSERVED
ROTTES: TO 55"
RESTRICTIVE: 74"



FILTER FABRIC SEDIMENT BARRIER
NOT TO SCALE

BENCHMARK: NAIL SET IN 30"
TULIP TREE ELEV. = 89.57



LEGEND

- STONE WALL
- PROPERTY LINE
- STREET LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- BUILDING SETBACK LINE
- APPROXIMATE DEEP TEST PIT LOCATION
- APPROXIMATE PERC TEST LOCATION
- UTILITY POLE
- SILT FENCE
- FOOTING DRAIN OUTLET
- GRADE TO DRAIN
- EDGE OF WETLANDS
& FLAG NUMBER

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.

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# 26-027.DWG FBK#337

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.

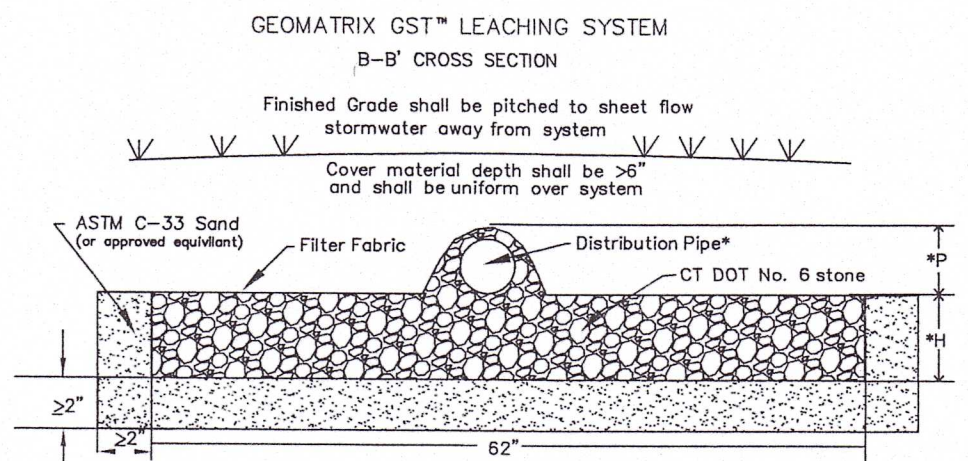
I HAVE REVIEWED THE INLAND WETLAND BOUNDARY I DELINEATED
AND I AM OF THE OPINION THAT THE WETLAND BOUNDARY IS SHOWN
CORRECTLY ON THIS MAP.

IAN COLE
SOIL SCIENTIST

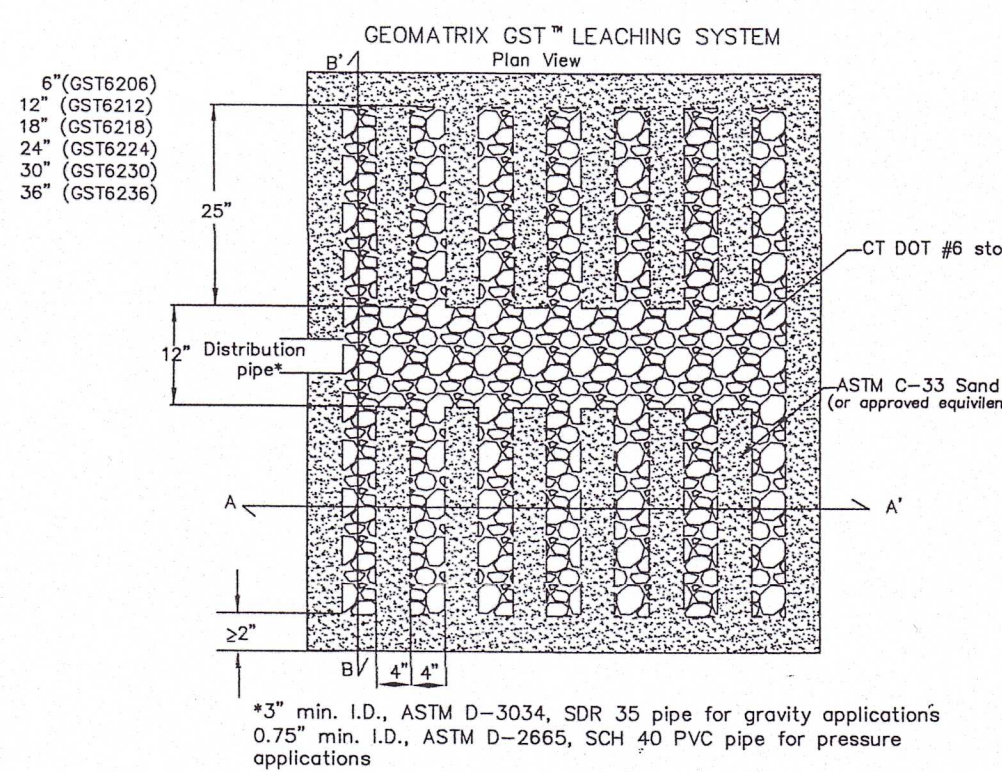
DIETER & GARDNER
LAND SURVEYORS • PLANNERS
1641 ROUTE 12
P.O. BOX 335
GALES FERRY, CT. 06335
(860) 464-7455
EMAIL: DIETER.GARDNER@YAHOO.COM

- SANITARY DESIGN CRITERIA:
- PROPOSED THREE BEDROOM HOME. NO TUBS GREATER THAN 100 GALLONS IN SIZE.
 - 1000 GALLON TWO COMPARTMENT SEPTIC TANK REQUIRED BY CODE AND PROVIDED.
 - DESIGN PERCOLATION RATE: 10 MIN./IN.
 - MINIMUM LEACHING SYSTEM SPREAD:
HF = 14. GRADIENT BETWEEN 10.1 TO 15.0%
RESTRICTION BETWEEN 48.1 TO 60.0"
FF = 1.5. THREE BEDROOM HOME
PF = 1.0. PERC RATE 10 MIN./INCH
MLSS = HF X FF X PF = 14 X 1.5 X 1.0 = 21"
 - EFFECTIVE LEACHING AREA REQUIRED PER CODE: 495 S.F.
 - GEOMATRIX GST 6212 SELECTED FOR PRIMARY SYSTEM DESIGN.
EFFECTIVE LEACHING AREA PROVIDED PER L.F. PER CODE: 10.0 S.F./L.F.
MINIMUM LENGTH OF TRENCH REQUIRED: 495 S.F./10.0 S.F./L.F. = 49.5"
 - EFFECTIVE LEACHING AREA PROVIDED:
1 ROW 50' LONG GEOMATRIX GST 6212 1 X 50' X 10.0 S.F./L.F. = 500 S.F.
 - 100% RESERVE AREA REQUIRED AND PROVIDED 50 L.F. GEOMATRIX GST 6212.

- SANITARY ELEVATION DATA:
- SANITARY INVERT AT FOUNDATION: 104.00
 - 29'-4" DIA. SCHEDULE 40 ASTM D1785 OR EQUAL PIPE
(MIN. SLOPE = 1/4" PER FT.)
 - 1000 GALLON TWO COMPARTMENT SEPTIC TANK
INVERT IN: 103.25
INVERT OUT: 103.00
 - 18' - 4" DIA. SDR 35 PVC PIPE
 - "D" BOX
INVERT IN: 102.50
INVERT OUT: 102.30
 - 50' LONG GEOMATRIX GST 6212
DIST. PIPE INV.: 102.30
BOTTOM OF STONE ELEV.: 101.30



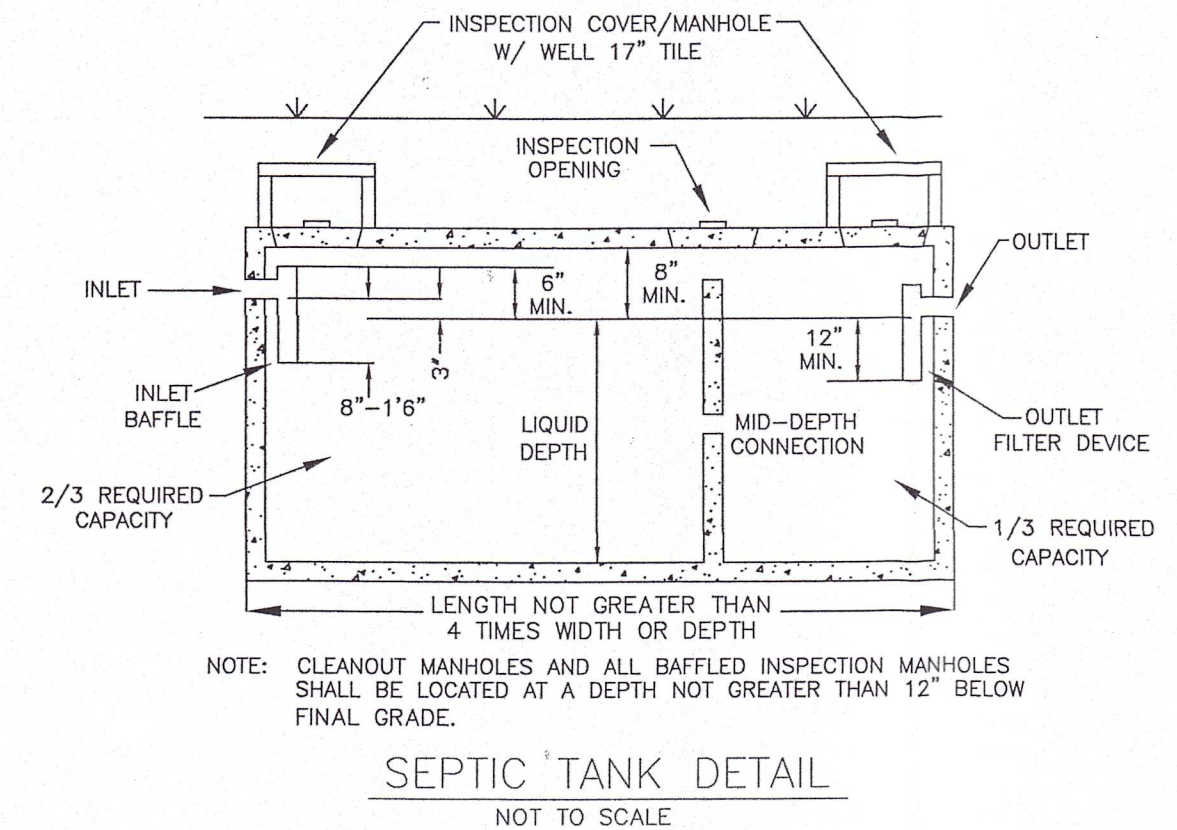
- *H= 6" (GST6206)
12" (GST6212)
18" (GST6218)
24" (GST6224)
30" (GST6230)
36" (GST6236)
- *P= 2'-5.5"
*3" min. I.D., ASTM D-3034, SDR 35 pipe for gravity applications
0.75" min. I.D., ASTM D-2665, SCH 40 PVC pipe for pressure applications



ZONING COMPLIANCE TABLE R-40 ZONING DISTRICT

ITEM	REQUIRED	PROVIDED
MIN. LOT AREA	40,000 S.F.	122,432 S.F.
MIN. FRONT YARD	30'	283.1'
MIN. SIDE YARD	15'	36.5'
MIN. REAR YARD	25'	60.1'

PLAN SHOWING
PROPOSED HOUSE, WELL, DRIVE
AND SEPTIC SYSTEM
PREPARED FOR
GAIL CURLAND
78 CHRISTY HILL ROAD
LEDYARD, CONNECTICUT
SCALE: 1"=20'
JULY 2026



SHEET 2 OF 2

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 AN IMPROVEMENT LOCATION SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING
TO HORIZONTAL ACCURACY CLASS "D" AND TOPOGRAPHIC ACCURACY T-2.
TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208
DATE: JULY 26, 2026



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-1111

Agenda Date: 8/4/2026

Agenda #: B.

LAND USE APPLICATION

Subject/Application:

PZ#26-XXSITE - 1363 Baldwin Hill Road (MAP ID: 121-140-1363), Gales Ferry, CT - Applicant/Property Owner, RVE Properties - Agent, Michael Ott, P.E, L.S, for regulated activities associated with the construction of commercial office space and associated site improvements. (Submitted 7/29/26, Date of Receipt 8/4/26, DRD 10/8/26)

Background:

(type text here)

Land Use Director/Town Planner:

(type text here)



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-1139

Agenda Date: 8/4/2026

Agenda #: C.

LAND USE APPLICATION

Subject/Application:

IWWC#26-25SITE-611 Lantern Hill Road (MAP ID: 74-1210-611), Ledyard, CT, Applicant/Property Owner, James Holley, Agent, CT Cabinetry & Millwork LLC/Boundaries LLC, for regulated activities for construction of a new single-family residence, installation of a floating dock, and restoration of the eroded shoreline with associated site improvements. (Submitted 7/30/26, Date of Receipt 8/4/26, DRD 10/8/26)

Background:

(type text here)

Land Use Director/Town Planner:

(type text here)



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-1113

Agenda Date: 8/4/2026

Agenda #: A.

MINUTES

Minutes:

IWWC Regular Meeting Minutes of July 7, 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, July 7, 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
Vice Chairman, Beth E. Ribe
Commissioner, Michael Marelli
Alternate Member, Robert Graham
Alternate Member, Sarah Bowen (via Zoom)
Commissioner, Daniel Pealer (arrived at 7:21pm)

Chairman DeBrodt appointed Alternate Member Robert Graham as a voting member for the meeting to fill the vacancy.

In addition, the following were present:

Zoning & Wetlands Enforcement Official, Hannah Gienau
Assistant to the Director of Land Use & Planning, Anna Wynn
Town Council Liaison, James Thompson

- IV. APPROVAL OF ADDITONS TO AND/OR CHANGES TO ORDER OF THE AGNEDA

Staff stated the office received application IWWC#26- 22SITE for 669 Shewville Road yesterday and would like to add it to the agenda. The Commission added it to the agenda under New Business item C.

- 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#26-15SITE -588 Lantern Hill Rd (Map ID:74/1210/588) & Hyde Mill Pentway, Applicant, Town of Ledyard, Agent, WMC Consulting Engineers, Owner, Mckee Farm Trust Agreement for regulated activities and associated site improvements for replacement of the existing Hyde Mill Pentway culvert over Whitford Brook south of the Bush Pond Dam. (Submitted 5/26/26, Date of Receipt 6/2/26, Tabled to 7/7/26, DRD 8/5/26)

Director of Public Works, Steve Maslin reviewed the application with the Commission highlighting details discussed at the last meeting. Wetlands Enforcement Official, Hannah Gienau, reviewed her staff report marked as file document FD#8.

After giving due consideration to all relevant factors, including those in Section 4 of the Ledyard Inland Wetland and Watercourse Regulations and Section 22a-40 of the Connecticut General Statutes, Commissioner Marelli made a MOTION that IWWC#26–15SITE 588 Lantern Hill & Hyde Mill Pentway, Ledyard CT - Applicant, Town of Ledyard – Owners, Mckee Farm Trust for regulated activities associated with the replacement of the existing Whitford Brook Watershed Bush Pond culvert and associated site improvements 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 and restored.
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.

RESULT: 4-0 APPROVED WITH CONDITIONS

MOVER: Marelli

SECONDER: Ribe

AYES: 4 DeBrodt, Ribe, Marelli, Graham

IX. NEW BUSINESS

A. IWWC#26-17SITE - 6 Winthrop Road (Map ID: 91/2720/6), Gales Ferry, Applicant - Town of Ledyard, Owner - Mark Horbay, for regulated activities associated with the emergent repair and restoration of an eroded drainage ditch abutting a residential home. (Submitted 6/25/26, Date of Receipt 7/7/26, DRD 9/9/26)

Director of Public Works, Steve Maslin, introduced the application to the Commission. He stated that the proposed work associated with the project is to remediate an area of severe erosion associated with a drainage ditch conveying stormwater from a Town drainage system. He stated that the house was originally proposed at the furthest point from the drainage ditch, but when it was finally constructed it was located closer to the ditch on the property. He stated that due to the proximity of the house and insufficient armoring against erosion, the ditch is quickly expanding and threatens to undermine the foundation of the home.

Commissioner Pealer joined the meeting.

Commissioner Ribe asked what the approximate square footage of the work area would be. Steve Maslin said 100 feet long and that the bowl is about 30-40 feet in diameter. They discussed the types of fill that would be used for the project. Chairman DeBrodt asked how far away the ditch was in relation to the wetlands. They discussed where it was in relation to the flagged wetlands on the provided subdivision plans. Commissioner Ribe stated that she felt the application was missing information and would like to conduct a site walk to get a better visual of the area and project in relationship to the wetlands. The Commission agreed they need more details for the application. They discussed what kind of information would need to be provided. WEO Hannah Gienau asked if the property owner had an as built that would reference the flagged wetlands.

Chairman DeBrodt requested additional details on a map for the next meeting before they could make a determination. Director Maslin concurred that he would get the additional required details for the next meeting. Commissioner Pealer clarified that the disturbed area and fill are the total area that would be documented on the map. Commissioner Pealer and the other members confirmed that he received enough information to effectively vote on the application. He stated he had.

Commissioner Pealer made a MOTION that the Commission find that the proposed regulated activities within the watercourse/waterbody as submitted in the Application IWWC#26-17SITE, 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.

RESULT: 5-0 NON-SIGNIFICANT IMPACT

MOVER: Pealer

SECONDER: Ribe

AYES: 5 DeBrodt, Ribe, Marelli, Graham, Pealer

B. IWWC#26-18RESUB - 12 Hyde Park Dr. (Map ID: 107/1060/12) & 975 Long Cove Road (MAP ID: 107-1340-939), Applicant - Peter Gardner, Owner - Spencer Bay Properties, LLC, for regulated activities associated with a 14-lot resubdivision and construction of a new town road. (Submitted 6/23/26, Date of Receipt 7/7/26, DRD 9/9/26)

Peter Gardner of Dieter & Gardner presented the subdivision plan to the Commission and talked about various details on sheet 1. He described the topography of the land and how it has impacted the design elements of the project. He described where they would have to cross over the wetlands. They discussed the pipe that would be used. He and the Commission discussed that the plan showed 14 building lots. Commissioner Pealer and Mr. Gardner clarified that the 36-inch diameter pipe would provide sufficient drainage during a 100 year storm event. WEO Hannah Gienau stated that a transmittal letter was sent out July 6th to relevant Town Departments and supporting agencies. She stated that comments are still pending at this time. WEO Hannah Gienau asked for additional clarification regarding proposed catch basins C1 through C4. They reviewed sheet 8 of the plan. Commissioner Ribe asked what is banking the road over the wetlands. Mr. Gardner stated that in an effort to minimize impact to the wetlands from the crossing they are proposing guide rails to slope down into the wetland area. He stated the material will be rip rap. They discussed the redirection of the wetlands.

Commission discussed and agreed to schedule a site walk on Tuesday, July 28th at 5:00pm. The Commission discussed if they wanted to make a ruling of significant or non-significant impact. WEO Hannah Gienau stated that she had not prepared a staff report for this application as it was received

recently to the office and she wanted to wait for comments from outside departments and agencies.

The Commission tabled application IWWC#26-18RESUB to the IWWC Regular Meeting of August 4, 2026 without a vote.

RESULT: 5-0 TABLED

C. IWWC#26-22SITE - 669 Shewville Road (MAP ID: 71-2210-669), Ledyard CT -Property Owner, John Hardy, for regulated activities associated with the construction of a driveway including a wetland crossing and associated site improvements, to serve a future single-family residence. (Submitted 7/6/26, Date of Receipt 7/7/26, DRD 9/9/26)

Chairman DeBrodt stated that the Commission would just be accepting application this evening. Peter Gardner of Dieter & Gardner, agent for the application, asked if the Commission would like a brief presentation of the application since he was already present and available. The Commission said they would wait for a presentation to provide time to review the materials and have better informed questions.

MOTION to table application IWWC#26-SITE to the IWWC Regular Meeting of August 4, 2026

RESULT: 5-0 TABLED
MOVER: Pealer
SECONDER: Graham
AYES: 5 DeBrodt, Ribe, Marelli, Graham, Pealer

X. APPROVAL OF MINUTES

A. IWWC Regular Meeting Minutes of June 2, 2026

The Commission stated there were no suggested amendments to the provided draft minutes.

MOTION to approve the IWWC Regular Meeting Minutes of June 2, 2026

RESULT: 5-0 APPROVED AND SO DECLARED
MOVER: Ribe
SECONDER: Marelli
AYES: 5 DeBrodt, Ribe, Marelli, Graham, Pealer

XI. CORRESPONDENCE

Staff and the Commission briefly discussed two memos that were received at the Land Use Department from the Town of Stonington regarding applications within 500 ft of the Ledyard Town line.

XII. REPORTS

A. Wetlands Report of July 7, 2026

WEO Hannah Gienau and Commission reviewed the monthly staff report.

XIII. ADJOURNMENT

Commissioner Ribe moved the meeting to be adjourned, seconded by Commissioner Pealer

VOTE: 5-0 The meeting was adjourned at 8:03 p.m.

Respectfully submitted,

Chairman Justin DeBrod
Inland Wetlands & Watercourses Commission



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-1116

Agenda Date: 8/4/2026

Agenda #: B.

MINUTES

Minutes:

IWWC Special Meeting Site Walk Minutes of July 28, 2026



TOWN OF LEDYARD

741 Colonel Ledyard
Highway
Ledyard, CT 06339-1511

File #: 26-1114

Agenda Date: 8/4/2026

Agenda #: A.

REPORT

Staff/Committee Report:

Wetlands Report of August 4, 2026