



Town of Woodstock  
 Inland Wetlands and Watercourses Agency  
**Application for Permit**

For Agency Use Only	
Application Number <u>06-23-03</u>	Public Hearing Date (if required) _____
Application Fee <u>\$95</u> Paid	Date of Receipt _____
Date Filed <u>08-01-23</u>	Decision/Date _____

**Applicant Instructions:**

1. Please **Read** the Inland Wetlands and Watercourses Regulations.
2. Applicants may and are encouraged to hold a pre-application meeting with the Inland Wetlands Agent to examine the scope of a proposed activity or to determine if the proposed activity involves a "Significant Impact Activity" as defined in the Town of Woodstock Inland Wetlands and Watercourses Regulations.
3. Two (2) copies of all applicable completed application materials shall be submitted unless otherwise directed in writing by the Agency or its designated agent.
4. All sections of the application **MUST** be completed and submitted in order for the application to be deemed complete.

A.	
	1. Property address/geographical location of the site (map, block, lot): 0 Old Hall Road / (5781, 50, 18)
	2. Name of applicant: Evan Renaud
	3. Home Address: 189 Lake Street, Moosup, CT 06354
	4. Business address:
	5. Telephone: Home (860) 341 - 6220 <span style="float: right;">Business</span>
	6. Applicant's interest in the property: <input checked="" type="radio"/> Owner <input type="radio"/> Lessee <input type="radio"/> Lessor <input type="radio"/> Other (explain)
	7. Name of property owner (if not applicant):
	8. Home address:
	9. Business address:
	10. Telephone: Home <span style="margin-left: 150px;">Business</span> <span style="float: right;">Fax</span>
B. The purpose and description of the proposed activity and proposed erosion and sedimentation controls. <p style="text-align: center;">see attached memo dated July 21, 2023</p>	
If additional space is needed, add and (Label Exhibit B)	

C. The geographical location of the property which is to be affected by the proposed activity, including but not limited to a description of the land in sufficient detail to allow identification of the inland wetlands and watercourses, and buffer area, a computation of the area(s) in acres or square feet of wetland or watercourses disturbance, soil type(s) and vegetation ( <i>Label: Exhibit C</i> ) see attached memo date July 21	
D. Alternatives considered by the applicant and why the proposal to alter wetlands set forth in the application was chosen. These alternatives shall be diagramed on a site plan or drawing and submitted to the Agency as part of the application ( <i>Label: Exhibit D</i> ) see attached memo dated July 21	
E. A site plan showing existing and proposed conditions in relation to wetlands and watercourses and identifying any further activities associated with, or reasonably related to, the proposed regulated activity which are made inevitable by the proposed regulated activity and which may have an impact on wetlands or watercourses ( <i>Label: Exhibit E</i> ) see attached site plan (3 sheets)	
F. Names and mailing addresses of adjacent property owners ( <i>Label: Exhibit F</i> ) attached	
G. Authorization for the members and Agents of the Agency to inspect the property, at reasonable times, both before and after a final decision has been issued ( <i>Label: Exhibit G</i> ) attached	
H. A completed DEP reporting form; the agency shall revise or correct the information provided by the applicant and submit the form to the Commissioner of Environmental Protection in accordance with Section 22a-39-14 of the regulations of Connecticut state agencies ( <i>Exhibit H</i> ) attached	
I. Submission of the appropriate filing fee based on the fee schedule established in Article Eleven (11) of these Regulations.	
J. Applicant certification that ( <i>Exhibit J</i> ):	
NO	1. Any portion of the property on which the regulated activity is proposed is not located within five-hundred (500) feet of the boundary of an adjoining municipality;
NO	2. Traffic attributable to the completed project on the site will not use streets within the adjoining municipality to enter or exit the site;
NO	3. Sewer or water drainage from the project site will not flow through and impact the sewage or drainage system within the adjoining municipality; or
NO	4. Water run-off from the improved site will not impact the streets or other municipal or private property within the adjoining municipality.
K. Certification that the applicant is familiar with all the information provided in the application and is aware of the penalties for obtaining a permit through deception or through inaccurate or misleading information ( <i>Exhibit K</i> )	
L. Any other information the Agency deems necessary to the understanding of what the applicant is proposing ( <i>Exhibit(s) L</i> )	
<b>M. Significant Impact Activities</b> If the proposed activity involves a significant impact activity as determined by the Agency and defined in Article 6 of these Regulations the applicant must provide the following additional information:	



Town of Woodstock Inland Wetlands and Watercourses Agency: **Application for Permit**

1. Site plans for the proposed use or operation and the property which will be affected, which show existing and proposed conditions, wetland and watercourse boundaries, land contours, boundaries of land ownership, proposed alterations and uses of wetlands and watercourses, and other pertinent features of the development drawn by a Licensed Surveyor, Professional Engineer, or Landscape Architect registered in the State of Connecticut or by such other qualified person
2. Engineering reports and analysis and additional drawings to fully describe the proposed project and any filling, excavation, drainage or hydraulic modifications to watercourses and proposed erosion and sedimentation control plan
3. Mapping of soil types consistent with the categories established by the National Cooperative Soil Survey of the U. S. Soil Conservation Service (the Agency may require the applicant to have the wetlands delineated in the field by a Soil Scientist and have the field delineation incorporated onto the site plan)
4. Description of the ecological communities and functions of the wetlands or watercourses involved with the application and the effects of the proposed regulated activities on these communities and wetland functions
5. Description of how the applicant will change, diminish, or enhance the ecological communities and functions of the wetlands or watercourses involved in the application, and with each alternative, and a description of why each alternative considered was deemed neither feasible nor prudent
6. Analysis of chemical or physical characteristics of any fill material
7. Management practices and other measures which mitigate the impact of the proposed activity

NOTE: An application that requires local Inland Wetlands approval may also be regulated by the Federal Government under the Clean Water Act which is administered by the U. S. Army Corps of Engineers. Obtaining federal and/or state permits is a responsibility of the applicant as are any fines, penalties, and delays due to the applicant's failure to seek permits or to question their applicability to the proposed activity.

Department of the Army  
Corps of Engineers  
696 Virginia Road  
Concord, MA. 01742-2751  
Phone: 1-800-343-4789

State of Connecticut – D.E. E.P.  
Inland Water Resources Division  
79 Elm Street  
Hartford, CT. 06106-5127  
Phone: (860) 424-3019

The undersigned applicant hereby consents to necessary and proper inspections of the above mentioned property by Agents of the Inland Wetlands Agency, at reasonable times, both before and after the permit in question has been granted by the Agent and /or the Agency.

The undersigned swears that the information supplied in the completed application is accurate, to the best of his knowledge and belief.

 Signature of Applicant

\_\_\_\_\_ Date Application Filed

Commission Action and Date: \_\_\_\_\_

## Direct Abutters - 0 Old Hall Rd, Woodstock CT (Exhibit F)

Parcel Number	Property Address	Owner Name	Co-Owner Name	Owner Address	Owner City	Owner State	Owner Zip
5781-50-06	494 RT 169	QUASSET HILL FARM LLC		PO BOX 113	WOODSTOCK CT		06281
5781-50-18A	196 OLD HALL RD	CARON SCOTT G + ANTONIA		196 OLD HALL RD	WOODSTOCK CT		06281
5781-50-18B	188 OLD HALL RD	BISHOP HAROLD R + COLLEEN L		188 OLD HALL RD	WOODSTOCK CT		06281
5781-50-18D	208 OLD HALL RD	KEANE DERMOT + LYNN		208 OLD HALL RD	WOODSTOCK CT		06281
5781-50-20	23 BASSETT HILL RD	OWENS JOHN + CHRISTIE		23 BASSETT HILL RD	WOODSTOCK CT		06281
5781-50-21	18 WEST RD	BONIN JASON & LAURETANO ERICA		18 WEST RD	WOODSTOCK CT		06281
5781-50-21-1	26 WEST RD	BIANCA JENNIFER P + POIRIER CHRISTOPHER	C/O POIRIER BERTRAND + ELLEN (LIFE USE)	PO BOX 276	WOODSTOCK CT		06281
5781-50-22	48 WEST RD	DAKIN DENNIS J + LORI B		P O BOX 297	WOODSTOCK CT		06281



**Watershed or Aquifer Area Project Notification Form**

**REQUIREMENT:**

Within seven days of filing, all applicants before a municipal Zoning Commission, Planning and Zoning Commission, Zoning Board of Appeals or Inland Wetlands Commission for any project located within a public water supply aquifer or watershed area are required by Public Act No. 06-53 of the CT General Statutes to notify The Commissioner of Public Health and the project area Water Company of the proposed project by providing the following information.

To determine if your project falls within a public water supply aquifer or watershed area visit the appropriate town hall and look at their *Public Drinking Water Source Protection Areas* map. If your project falls completely within or contain any part of a public water supply aquifer or watershed you are required to complete the following information.

**Note: You will need information obtained from the *Public Drinking Water Source Protection Areas* map located in the appropriate town hall to complete this form.**

**Step 1:** Have you already notified the CT Department of Public Health (CTDPH) of this project?

- No, Go to Step 2
- Yes, I have notified DPH under a different project name - Complete steps 4-6
- Yes, same name different year - Notification Year \_\_\_\_\_ Complete steps 4-6

**Step 2:**

- 1. Name of public water supply aquifer your project lies within: N/A
- 2. Name of the public water supply watershed your project lies within: Putnam Water Pollution Contrc
- 3. Public Water Supply Identification number (PWSID) for the water utility: CT1160011

**Step 3:** For 1-5 Check all that apply

1. My project is proposing:

- Industrial use;  Commercial use;  Agricultural use;  Residential use;
- Recreational use;  Transportation improvements;  Institutional (school, hospital, nursing home, etc.);
- Quarry/Mining;  Zone Change, Please Describe: \_\_\_\_\_
- Other, Please describe: \_\_\_\_\_

2. The total acreage of my project is:

- Less than or equal to 5 acres  Greater than 5 acres

3. My project site contains, abuts or is within 50 feet of a:

- Wetland;  Stream;  River;  Pond or Lake

4. Existing use of my project site is:

- Grassland/meadow;  Forested;  Agricultural;  Transportation;  Institutional (school, hospital, nursing home, etc.);  Residential;  Commercial;  Industrial;  Recreational;  Quarry/Mining
- Other Please Describe: \_\_\_\_\_

5. My project will utilize:

- septic system;  existing public sewer;  new public sewer;  agricultural waste facility;
- existing private well;  new private well;  existing public water supply;
- new public water supply, if new have you applied for a certificate of public convenience and necessity from DPH?  Yes  No

6. My project will contain this percentage of built up area (buildings, parking, road/driveway, pool):  Less than or equal to 20%  Greater than 20% to 50%  Greater than 50%

**Step: 4 Applicants Contact Information:**

Name: Evan Renaud

E-mail address: esrenaud@yahoo.com

Telephone: (860)341-6220

Fax number: \_\_\_\_\_

**Step 5: Please provide the following if available:**

Project name: New Residence for Renaud

Project site address: 0 Old Hall Road

Town: Woodstock

Project site nearest intersection: West View Dr and Old Hall Rd

Project site latitude and longitude: 41.93995, -71.98539

**E-mail completed form to [dph.swpmail@ct.gov](mailto:dph.swpmail@ct.gov)**

**Notification to the Windham Water Works or Southbridge Public Water Supply or  
Putnam Public Water Supply Watershed of Application for a Project within the  
Noted Water Supply – Required by Public Act 89-301**

P.A. 89-301 "An Act Implementing the Recommendation of the Water Lands Task Force and Concerning Water Diversions and Notification to Water Companies of the Storage of Hazardous Materials," requires applicants to provide a water company written notice of an application, petition, request or plan if the proposed project is located within the watershed of the wetland, zoning or planning and zoning commission and zoning boards of appeal. **The applicant must mail such notice within seven (7) days of the date of the application, by certified mail, return receipt requested.** The Town of Woodstock furnishes this form to such boards and commissions in its watershed to be used by applicants to meet this requirement. Other forms or letters, as approved by each commission, may be used, but must contain the same information. To determine if a project is within one of the above-noted watersheds, please consult the map on file with the Commission or Town Clerk. **Failure of an applicant to comply with this law may be grounds for a legal appeal of a decision rendered on the applicant due to a procedural error. Do not jeopardize your application, send your notification!**

1. Application submitted to: ( X ) Inland Wetlands Commission ( ) Planning & Zoning Commission ( ) Zoning Board of Appeals
2. Type of Application: ( ) Zone Change ( ) Subdivision ( ) Special Exception/Permit ( ) Variance ( X ) Other (Describe) single family dwelling

Name & Address of Applicant: Evan Renaud, 189 Lake St Moosup, CT 06354

Project Street Location/Nearest Utility Pole 0 Old Hall Rd / CL&P 1073

Contact Person Evan Renaud Phone (860) 341 - 6220 Email esrenaud@yahoo.com

Brief description of application: (For example: several lot subdivision with on-site septic systems and wells)

New residential home with on-site septic and well. Driveway improvements will include a new culvert to cross a wetland area.

Public Hearing Date N/A Commission Meeting Date August 7, 2023

Enclose a copy of the application submitted to the Town and a full set of project plans. Mail this completed form or substitute by certified mail; return receipt request to the appropriate watersheds.

Windham Water Works  
Superintendent  
174 Storrs Road  
Mansfield Center, CT 06250

Putnam Water & Sewer Department  
Superintendent  
126 Church Street  
Putnam, CT 06260

Southbridge Water Dept., 70 Foster Street, Southbridge, MA 01550





## 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, 3<sup>rd</sup> Floor, Hartford, CT 06106  
Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

### PART I: Must Be Completed By The Inland Wetlands Agency

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

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

- TOWN IN WHICH THE ACTIVITY IS OCCURRING (print name): Woodstock  
does this project cross municipal boundaries (check one)? yes  no   
if yes, list the other town(s) in which the activity is occurring (print name(s)): \_\_\_\_\_
- LOCATION (see instructions for information): USGS quad name: Putnam or number: 28  
subregional drainage basin number: 3707-00
- NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): Evan Renaud
- NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): Lot 18, 0 Old Hall Road  
briefly describe the action/project/activity (check and print information): temporary  permanent  description: improvement of an existing driveway, construction of new single family house with well and septic
- ACTIVITY PURPOSE CODE (see instructions - one code only): A
- ACTIVITY TYPE CODE(S) (see instructions for codes): 7, 9, 12
- WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):  
wetlands: 0.058 acres open water body: n/a acres stream: n/a linear feet
- UPLAND AREA ALTERED (must provide acres): 1.5 acres
- AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): n/a acres

DATE RECEIVED:

### PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

July 21, 2023

Town of Woodstock  
Inland Wetlands Commission

RE: Job #23151  
Proposed Wetland Crossing for  
A New Single Family Dwelling  
Lot 18, 0 Old Hall Rd, Woodstock CT

Dear Commissioners:

J&D Civil Engineers has been hired by Evan and Brooke Renaud to design a wetland crossing to provide access for their new single family dwelling. The site, known as Lot 18, is located on the eastern side of Old Hall Road, in between house numbers 196 and 208. This property was purchased by the Renauds in April of 2023. The site is roughly 9 acres in size, and contains a small cornfield at the center of the site, where the house will be constructed. The cornfield is accessed by an existing gravel driveway that is roughly 600' long. The driveway descends from the road and crosses a swamp near the middle, before rising back up to the cornfield. Currently there is no culvert in place at the wetland crossing, and water flows over the driveway at the low point. A small amount of water was observed flowing across the driveway, after a fairly wet month. The wetland soils were delineated by Margaret Washburn in May of 2023.

The drainage area for the proposed wetland crossing is 26.7 acres, and generally drains to the east and south. The drainage area is primarily composed of Group B soils such as Sutton Fine Sandy Loam and Canton-Charlton Fine Sandy Loams. There are also some Group C soils present, such as Paxton-Montauk Fine Sandy Loams. The drainage area is mostly wooded, but does contain some buildings and lawns. The driveway is located across the street from West View Drive, which drains into a series of catchbasins that discharge near the top of the driveway. Currently, this runoff goes straight down the existing driveway, which is somewhat eroded. J&D is proposing to install a catchbasin and pipe near the entrance to the driveway to intercept this runoff. Therefore, under proposed conditions, this runoff from West View Drive will be directed downstream of the proposed wetland crossing, and runoff from West View Drive is not included in the drainage model for the proposed culvert. The drainage area flows south into a 36" concrete pipe under Route 171 before finally entering Mill Brook.

This drainage area was modelled using HydroCAD software to estimate peak flows and times of concentration. The culvert was modelled using hydrology tools available in our Carlson drafting software. The 25 year storm was used for the design criteria, and the peak flow for this storm event is estimated at 31 cubic feet per second. J&D is proposing to install twin 24" HDPE pipes under the driveway. These pipes are able to convey this peak flow, with approximately 1 foot of freeboard above the culvert. The invert of these pipes is around elevation 470, the top of the pipes is around elevation 472. The maximum water elevation through at the wetland crossing would be 572.5, and the finished grade of the driveway will be around 573.5. For a 50 year storm, the peak flow would be 38.8 cubic feet per second, and the maximum water elevation would be around 573.0. For the 100 year storm, the driveway will be overtopped during peak flows. Please see the attached HydroCAD report and culvert analysis for more information.

Construction of this culvert will require a disturbance of 2,520 square feet of wetland soils. Silt fence will be installed immediately downhill of any proposed grading, to prevent any eroded sediment from entering the wetlands. The construction of this culvert shall be performed during the dry season, when runoff through the swamp should be minimal. The existing and proposed driveways cross the wetlands near the narrowest point, and therefore the proposed design represents the smallest possible amount of wetland disturbance. We look forward to working with the Wetland Commission to get this project approved.

Sincerely,

Daniel Blanchette, PE  
J&D Civil Engineers LLC





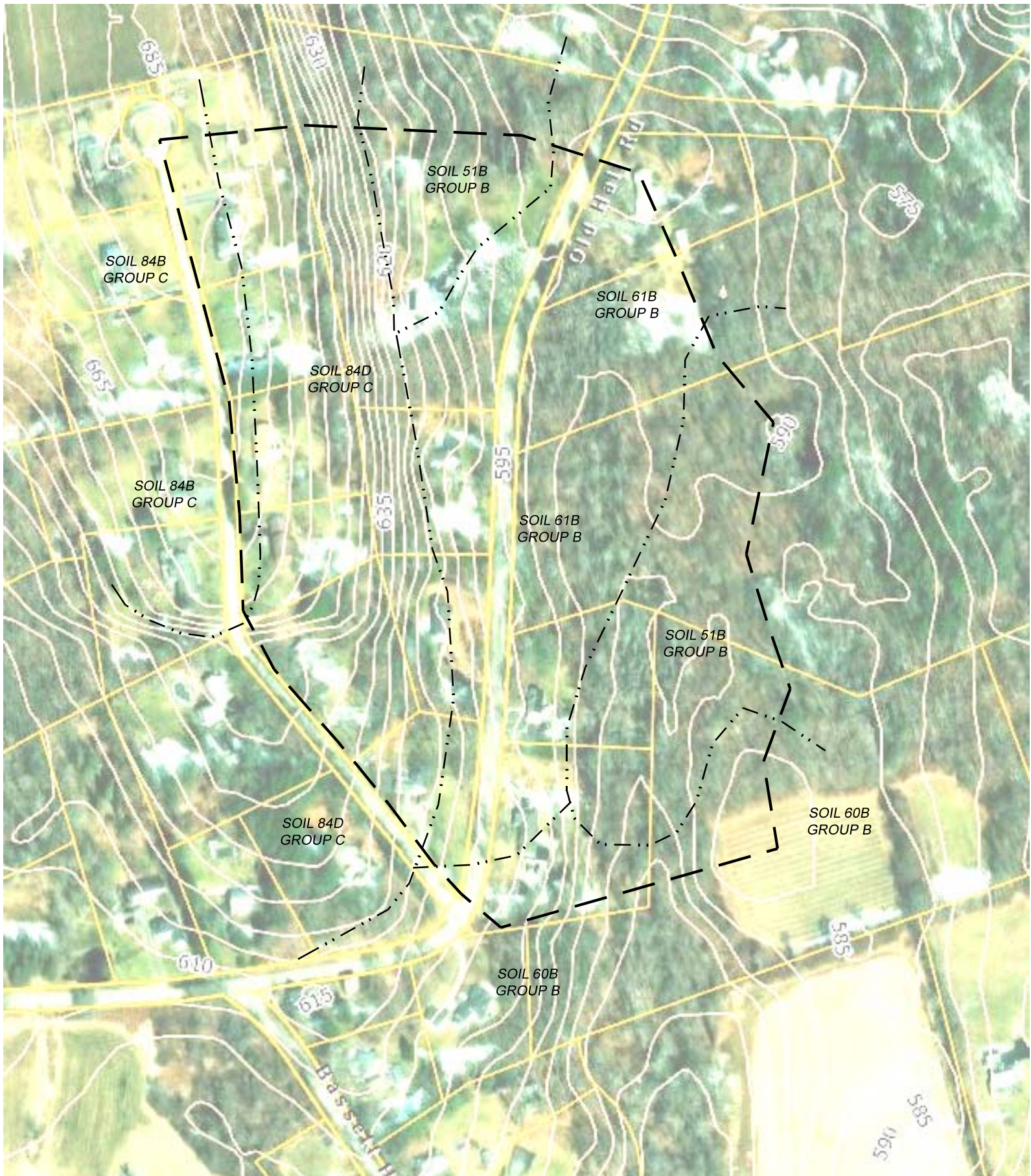
Image 1: Existing Wetland Crossing Looking East (toward house site)





Image 2: Existing Wetland Crossing Looking West (toward Road)







## Culvert Design Tool from Carlson Civil Suite 2020

### Design Parameters

#### Section

Shape: Circular  
Material: HDPE  
Diameter: 24.00 in  
Manning's n: 0.0120  
Number of Barrels: 2

#### Inlet

Inlet Type: End Section  
Ke: 0.40

#### Inverts

Inlet Invert Elevation: 570.250 ft  
Outlet Invert Elevation: 569.750 ft  
Length: 32.000 ft  
Slope: 1.56 %

### Culvert Calculation

Discharge: 30.6000 cfs  
Headwater Elevation: 572.569 ft  
Tailwater Elevation: 0.000 ft  
Downstream Velocity: 9.74 ft/s  
Downstream Flow Depth: 1.000 ft  
Flow Control Type: Outlet Control, Gradually Varied Flow

**23151 Renaud Culvert 2023-07-21**

Prepared by J&amp;D Civil Engineers LLC

Printed 7/21/2023

HydroCAD® 10.10-6a s/n 02673 © 2020 HydroCAD Software Solutions LLC

Page 1

**Rainfall Events Listing (selected events)**

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	CT 100-year	Type III 24-hr		Default	24.00	1	8.04	2
2	CT 2 year	Type III 24-hr		Default	24.00	1	3.40	2
3	CT 25-year	Type III 24-hr		Default	24.00	1	6.31	2
4	CT 50-year	Type III 24-hr		Default	24.00	1	7.10	2

**23151 Renaud Culvert 2023-07-21**

Prepared by J&amp;D Civil Engineers LLC

HydroCAD® 10.10-6a s/n 02673 © 2020 HydroCAD Software Solutions LLC

Drainage Model for Wineland

Type III 24-hr CT 100-year Rainfall=8.04"

Printed 7/21/2023

Page 2

**Summary for Subcatchment Site: Drainage Area**

Runoff = 48.98 cfs @ 12.68 hrs, Volume= 7.993 af, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr CT 100-year Rainfall=8.04"

Area (sf)	CN	Description
370,700	72	Woods/grass comb., Good, HSG C
794,000	58	Woods/grass comb., Good, HSG B
1,164,700	62	Weighted Average
1,164,700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.1	200	0.0500	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.40"
7.5	530	0.0560	1.18		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
15.0	1,290	0.0050	1.44		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
1.8	330	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
49.4	2,350	Total			



**23151 Renaud Culvert 2023-07-21**

Prepared by J&amp;D Civil Engineers LLC

HydroCAD® 10.10-6a s/n 02673 © 2020 HydroCAD Software Solutions LLC

Drainage Model for Wineland

Type III 24-hr CT 2 year Rainfall=3.40"

Printed 7/21/2023

Page 3

**Summary for Subcatchment Site: Drainage Area**

Runoff = 5.92 cfs @ 12.80 hrs, Volume= 1.269 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr CT 2 year Rainfall=3.40"

Area (sf)	CN	Description
370,700	72	Woods/grass comb., Good, HSG C
794,000	58	Woods/grass comb., Good, HSG B
1,164,700	62	Weighted Average
1,164,700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.1	200	0.0500	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.40"
7.5	530	0.0560	1.18		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
15.0	1,290	0.0050	1.44		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
1.8	330	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
49.4	2,350	Total			

**23151 Renaud Culvert 2023-07-21**

Prepared by J&amp;D Civil Engineers LLC

HydroCAD® 10.10-6a s/n 02673 © 2020 HydroCAD Software Solutions LLC

Drainage Model for Wineland

Type III 24-hr CT 25-year Rainfall=6.31"

Printed 7/21/2023

Page 4

**Summary for Subcatchment Site: Drainage Area**

Runoff = 30.60 cfs @ 12.69 hrs, Volume= 5.136 af, Depth= 2.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr CT 25-year Rainfall=6.31"

Area (sf)	CN	Description
370,700	72	Woods/grass comb., Good, HSG C
794,000	58	Woods/grass comb., Good, HSG B
1,164,700	62	Weighted Average
1,164,700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.1	200	0.0500	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.40"
7.5	530	0.0560	1.18		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
15.0	1,290	0.0050	1.44		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
1.8	330	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
49.4	2,350	Total			

**23151 Renaud Culvert 2023-07-21**

Prepared by J&amp;D Civil Engineers LLC

HydroCAD® 10.10-6a s/n 02673 © 2020 HydroCAD Software Solutions LLC

Drainage Model for Wineland

Type III 24-hr CT 50-year Rainfall=7.10"

Printed 7/21/2023

Page 5

**Summary for Subcatchment Site: Drainage Area**

Runoff = 38.80 cfs @ 12.68 hrs, Volume= 6.405 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs  
Type III 24-hr CT 50-year Rainfall=7.10"

Area (sf)	CN	Description
370,700	72	Woods/grass comb., Good, HSG C
794,000	58	Woods/grass comb., Good, HSG B
1,164,700	62	Weighted Average
1,164,700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.1	200	0.0500	0.13		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 3.40"
7.5	530	0.0560	1.18		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
15.0	1,290	0.0050	1.44		<b>Shallow Concentrated Flow,</b> Paved Kv= 20.3 fps
1.8	330	0.0400	3.00		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
49.4	2,350	Total			

**SURVEY NOTES**

1. THIS MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARD FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

SURVEY TYPE: GENERAL LOCATION  
 PURPOSE: SITE PLAN PERMITTING  
 BOUNDARY DETERMINATION CATEGORY: N/A  
 HORIZONTAL ACCURACY: CLASS B  
 TOPOGRAPHIC ACCURACY: CLASS T-2

PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION. THIS MAP WAS PREPARED FROM RECORD RESEARCH, OTHER MAPS, LIMITED FIELD MEASUREMENTS AND OTHER SOURCES. IT IS NOT TO BE CONSTRUED AS A PROPERTY BOUNDARY OR LIMITED PROPERTY BOUNDARY SURVEY AND IS SUBJECT TO SUCH FACTS AS SAID SURVEYS MAY DISCLOSE.

2. REFERENCE PLANS:  
 (A) PLAN OF LAND OWNED BY HULDA VICTORIA JOHNSON, WALTER JOHNSON BASSETT HILL ROAD, WOODSTYLCK, CONNECTICUT, JUNE 3, 1980 BY ALBERT L. FITZBACK.

(B) COMPILATION PLAN PARCEL #21 PREPARED FOR DONALD K. YOUNGSMAN & MARTHA A. YOUNGSMAN, WEST ROAD & SOMERS TOURNIPIKE, WOODSSTOCK, CONNECTICUT BY KWP ASSOCIATES, 9/28/2001.

(C) SUBDIVISION OF LAND OWNED BY WALTER JOHNSON HULDA VICTORIA JOHNSON, HALL ROAD, WOODSTOCK CONNECTICUT AUGUST 4, 1983 BY ALBERT L. FITZBACK.

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

DENNIS R. BLANCHETTE	DATE	12107
		LICENSE NUMBER

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE  
 © 2023 J&D CIVIL ENGINEERS, LLC



**LEGEND**

- ANGLE POINT
- EXISTING IRON ROD OR DRILL HOLE
- EXISTING PROPERTY LINE
- ABUTTING PROPERTY LINE
- BUILDING SETBACK
- EDGE OF EASEMENT
- STONE WALL
- UTILITIES
- TREELINE

<b>SITE DEVELOPMENT PLAN</b>	
PREPARED FOR <b>EVAN &amp; BROOKE RENAUD</b>	
0 OLD HALL ROAD, WOODSTOCK, CT MAP 5781 BLOCK 50 LOT 18	
<b>J&amp;D CIVIL ENGINEERS, LLC</b> 401 RAVENELLE ROAD N. GROSVENORDALE, CT 06255 860-923-2920	
DESIGNED: APS CHECKED: JAB	REVISIONS:
JOB NO: 23151 SCALE: 1" = 30'	DATE: JULY 21, 2023 SHEET: 1 OF 3

**TEST PIT RESULTS**

OBSERVED BY: MAUREEN MARCOUX  
 DATE: JUNE 27, 2023  
 FILE #23000261

**PIT NO. 1**  
 0 - 11" TOPSOIL, ROOTS  
 11 - 25" LOAMY FINE SAND  
 25 - 80" MOD COMPACT SANDY PAN-GREY

MOTTLING: N/A  
 GROUND WATER: N/A  
 LEDGE: N/A  
 ROOTS: 23"  
 RESTRICTIVE: 25"

**PIT NO. 2**  
 0 - 23" TOPSOIL, ROOTS  
 23 - 36" LOAMY FINE SAND  
 36 - 89" MOD COMPACT SANDY PAN-GREY

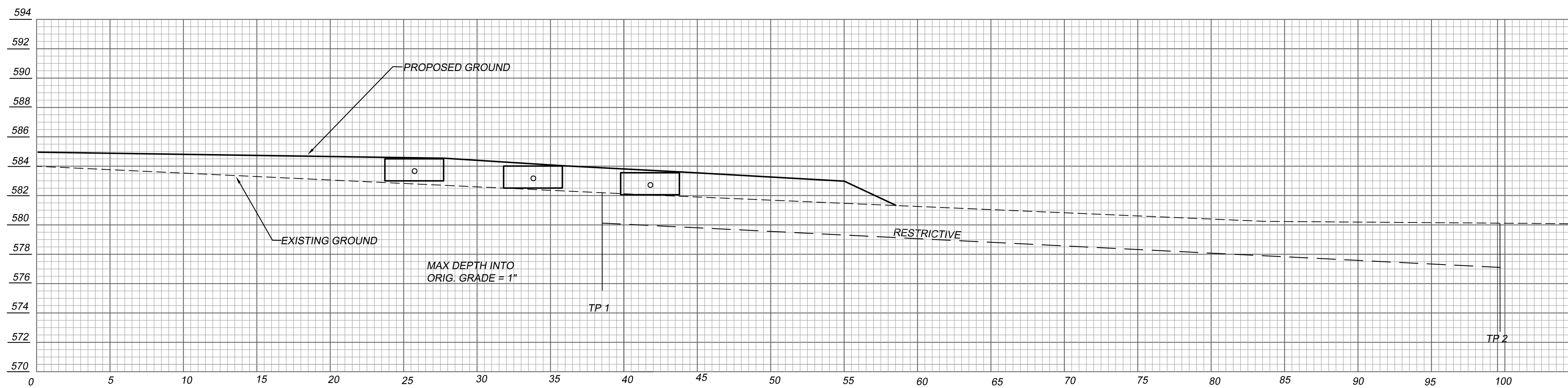
MOTTLING: N/A  
 GROUND WATER: N/A  
 LEDGE: 72"  
 ROOTS: 32"  
 RESTRICTIVE: 36"

**PERC. TEST RESULT**

HOLE A

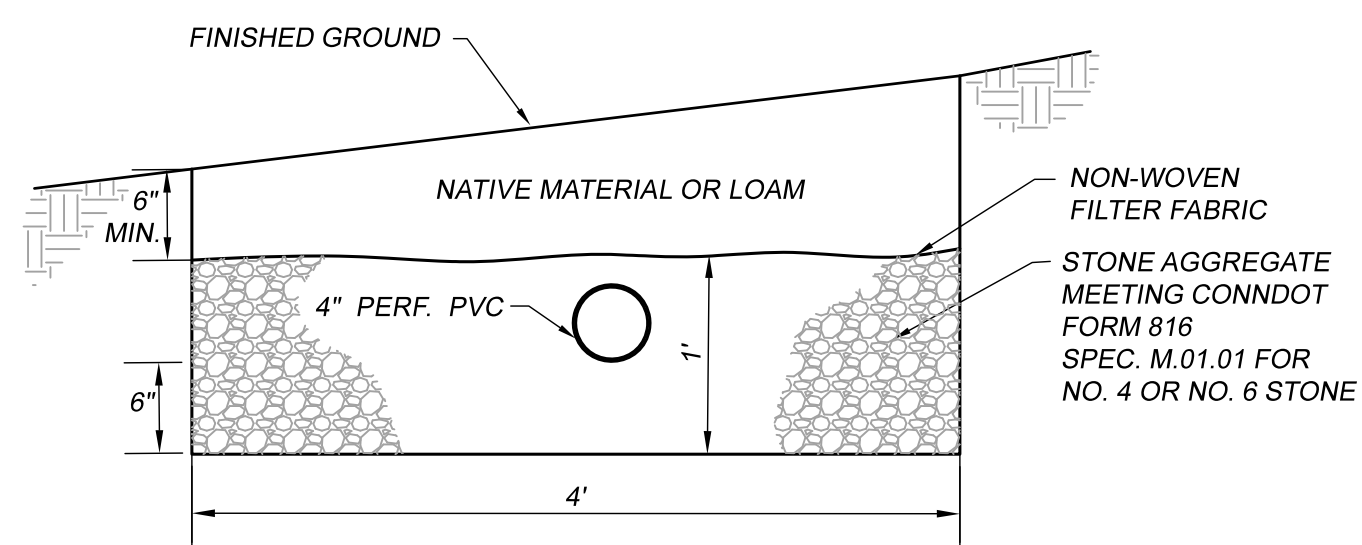
TIME	READING
9:28	4.25"
9:32	6.75"
9:37	8.875"
9:42	10.25"
9:47	11.625"

DEPTH: 13/22"  
 RATE: 3.6 MIN/IN



**LEACHING FIELD CROSS SECTION A-A**

1" = 5'



**LEACHING TRENCH DETAIL**

N.T.S.

**SURVEY NOTES**

1. THIS MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARD FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

SURVEY TYPE: GENERAL LOCATION  
 PURPOSE: SITE PLAN PERMITTING  
 BOUNDARY DETERMINATION CATEGORY: N/A  
 HORIZONTAL ACCURACY: CLASS B  
 TOPOGRAPHIC ACCURACY: CLASS T-2

PROPERTY LINES DO NOT EXPRESS A BOUNDARY OPINION. THIS MAP WAS PREPARED FROM RECORD RESEARCH, OTHER MAPS, LIMITED FIELD MEASUREMENTS AND OTHER SOURCES. IT IS NOT TO BE CONSTRUED AS A PROPERTY BOUNDARY OR LIMITED PROPERTY BOUNDARY SURVEY AND IS SUBJECT TO SUCH FACTS AS SAID SURVEYS MAY DISCLOSE.

2. REFERENCE PLANS:  
 (A) PLAN OF LAND OWNED BY HULDA VICTORIA JOHNSON, WALTER JOHNSON BASSETT HILL ROAD, WOODSTYLCK, CONNECTICUT, JUNE 3, 1980 BY ALBERT L. FITZBACK.

(B) COMPILATION PLAN PARCEL #21 PREPARED FOR DDNALD K. YOUNGSM & MARTHA A. YOUNGSM, WEST ROAD & SOMERS TOURNPIKE, WOODSSTOCK, CONNECTICUT BY KWP ASSOCIATES, 9/26/2001.

(C) SUBDIVISION OF LAND OWNED BY WALTER JOHNSON HULDA VICTORIA JHNSON, HALL ROAD, WOODSTOCK CONNECTICUT AUGUST 4, 1983 BY ALBERT L. FITZBACK.

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

DENNIS R. BLANCHETTE DATE 12/10/7 LICENSE NUMBER

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE  
 © 2023 J&D CIVIL ENGINEERS, LLC

**SEPTIC SYSTEM DESIGN CRITERIA**

NUMBER OF BEDROOMS: 3  
 SEPTIC TANK: 1000 GALLON  
 PERC RATE: 3.6 MINS/INCH  
 MOTTLING: N/A; LEDGE: 72"; WATER: N/A; RL: 25-36"; SLOPE: 3.1-4.0%  
 LEACHING AREA REQUIRED: 495 SQUARE FEET  
 LEACHING AREA PROVIDED: 165' OF TRENCHES, 48" WIDE, = 495 SQUARE FEET  
 MLSS (PRIMARY) = 45' (HF= 30, PF=1.0, FF=1.5)  
 LSS PROVIDED = 55'  
**SPECIFICATIONS**  
 SEPTIC SYSTEM INSTALLATION SHALL BE IN ACCORDANCE WITH THE "CONNECTICUT PUBLIC HEALTH CODE REGULATIONS AND TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS".  
 THE BUILDING, SEPTIC SYSTEM, AND WELL SHALL BE ACCURATELY STAKED IN THE FIELD BY A LICENSED SURVEYOR OR ENGINEER PRIOR TO CONSTRUCTION.  
 ALL PRECAST STRUCTURES SUCH AS SEPTIC TANKS AND DISTRIBUTION BOXES SHALL BE SET LEVEL ON SIX INCHES OF COMPACTED GRAVEL BASE.  
 SEPTIC TANK: TWO-COMPARTMENT TANK WITH OUTLET FILTER. INSTALL RISERS OVER TANK CLEANOUTS IF COVER OVER TANK EXCEEDS 1'.  
 DISTRIBUTION BOXES: 4 HOLE D-BOXES  
 HOUSE, EFFLUENT AND "TIGHT PIPE" FOR DRAIN OUTLETS: 4" PVC SCHEDULE 40, ASTM D 1785 OR ASTM D 2665 WITH RUBBER COMPRESSION GASKET ASTM D 3139 OR SOLVENT WELD COUPLINGS.

DISTRIBUTION PIPE: 4" PVC PERFORATED, LAID LEVEL (MAX SLOPE 2" PER 100')

POLYLOK PIPE SEAL AS MANUFACTURED BY SUPERIOR SEPTIC TANKS (OR EQUAL) SHALL BE USED TO SEAL SEPTIC TANK AND D-BOX INLETS AND OUTLETS. BOTTOM OF TRENCHES TO BE LEVEL.

TOPSOIL SHALL BE STRIPPED IN AREA OF LEACH FIELD AND THE SUBSOIL SCARIFIED PRIOR TO PLACEMENT OF SELECT SEPTIC FILL.

ALL SELECT FILL SHALL BE CLEAN BANK RUN GRAVEL, MEETING THE FOLLOWING REQUIREMENTS OF THE CT DEPT. OF PUBLIC HEALTH:

MAX. PERCENT GRAVEL (PLUS NO. 4 SIEVE MATERIAL) - 45%  
 GRADATION ON FILL LESS GRAVEL:

SIEVE	DRY PERCENT PASSING	WET PERCENT PASSING
NO. 4	100	100
NO. 10	70-100	70-100
NO. 40	10-75	10-50*
NO. 100	0-5	0-20
NO. 200	0-2.5	0-5

\* 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%.

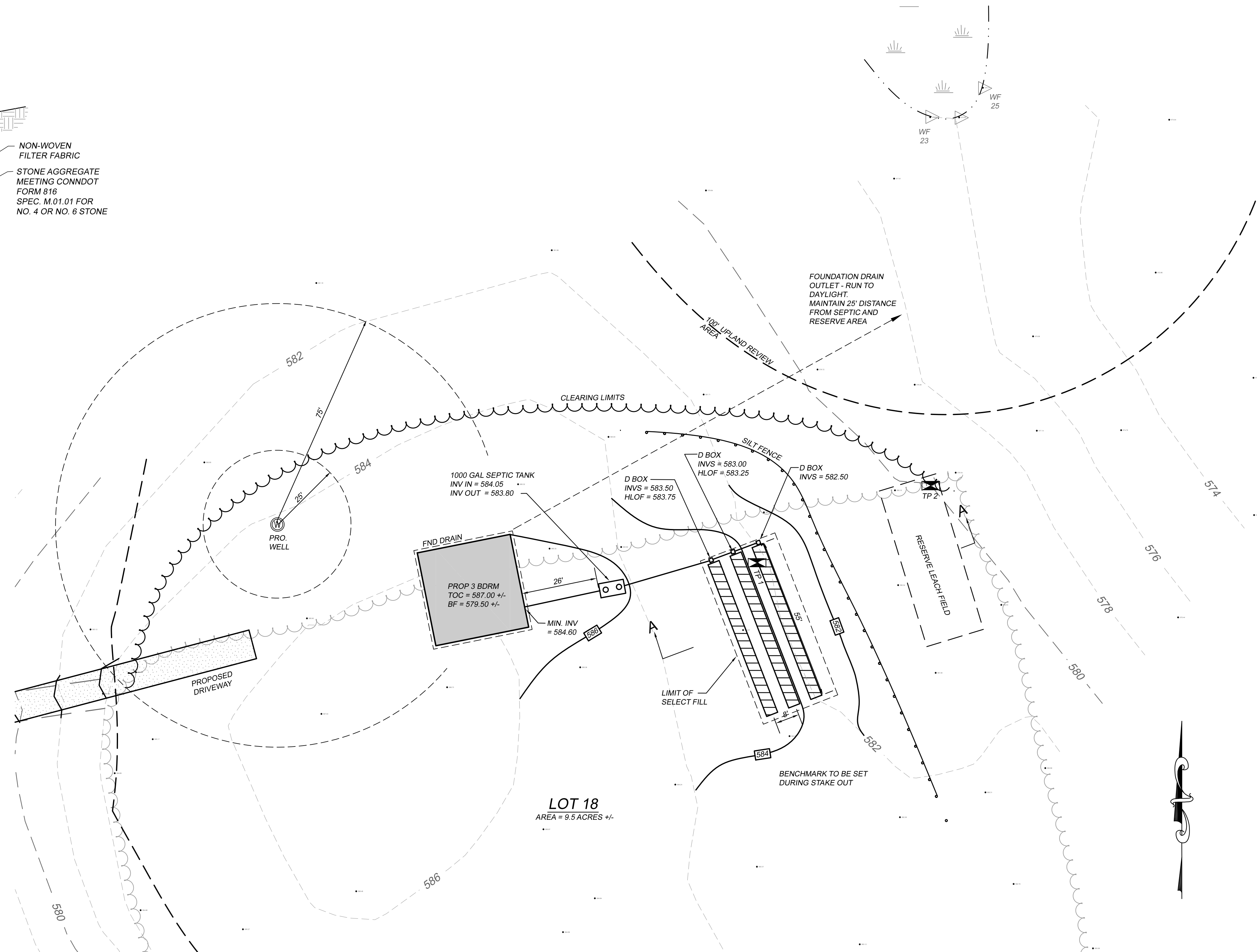
SELECT FILL MUST PERC AT A RATE EQUAL TO OR FASTER THAN THE UNDERLYING SOIL.

THIS DESIGN IS BASED ON TEST PIT INFORMATION RECORDED BY NDDH. J & D HAS MADE NO INDEPENDENT INVESTIGATION OF SOIL CONDITIONS. THE CONTRACTOR IS ADVISED TO PERFORM SUFFICIENT SITE INVESTIGATION TO DETERMINE CONSTRUCTABILITY OF THE DESIGN PRIOR TO BIDDING OR COMMENCING WORK.

- EROSION AND SEDIMENT CONTROL NOTES:**
- THE PROPOSED ACTIVITY ON THE SITE WILL CONSIST OF THE CONSTRUCTION OF A SINGLE FAMILY HOUSE, WELL, SEPTIC SYSTEM AND DRIVEWAY.
  - EROSION CONTROL DEVICES MUST BE INSTALLED WHERE INDICATED ON THIS SHEET PRIOR TO THE START OF CONSTRUCTION.
  - DISTURBED AREAS SHALL BE KEPT TO A MINIMUM AND SEEDED OR STABILIZED WITH TEMPORARY MULCH AS SOON AS FINAL GRADES HAVE BEEN ATTAINED.
  - THE OWNER OF RECORD SHALL DESIGNATE THE ON SITE ENVIRONMENTAL AGENT RESPONSIBLE FOR REGULARLY CHECKING THE CONDITION OF THE EROSION CONTROL DEVICES AND REMOVING ACCUMULATED SEDIMENT.

**LEGEND**

- BUILDING SETBACK LINE
- PROPERTY LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- STONEWALL
- UTILITIES
- TREELINE
- EROSION CONTROL DEVICES
- TEST PIT
- LEACHING TRENCH



**SEPTIC SYSTEM PLAN**  
 PREPARED FOR  
**EVAN & BROOKE RENAUD**  
 0 OLD HALL ROAD, WOODSTOCK, CT  
 MAP 5781 BLOCK 50 LOT 18

---

**J&D CIVIL ENGINEERS, LLC**  
 401 RAVENELLE ROAD  
 N. GROSVENORDALE, CT 06255  
 860-923-2920

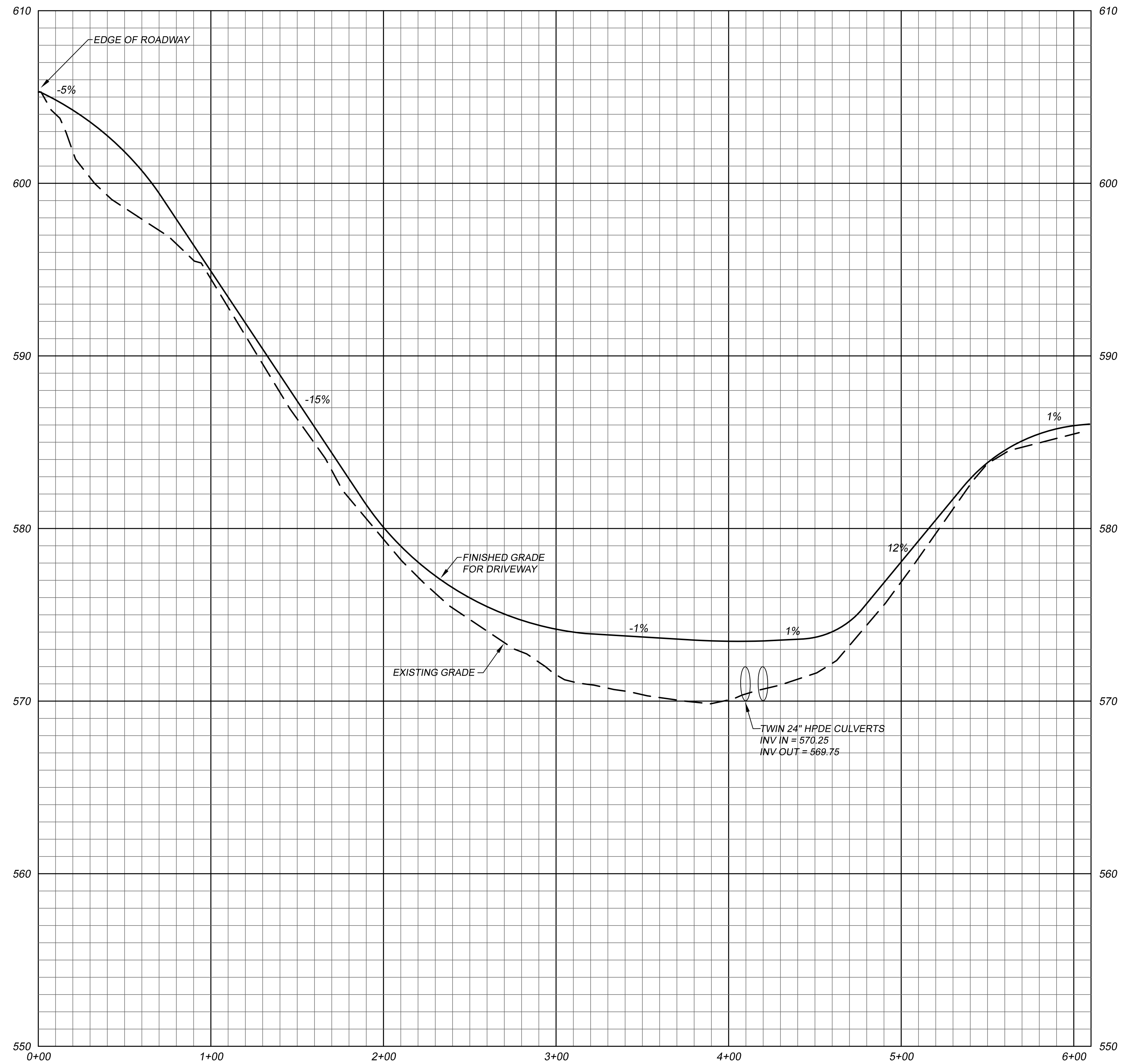
---

DESIGNED: JJB	REVISIONS:
CHECKED: DRB	

---

JOB NO: 23151	DATE: JULY 21, 2023
SCALE: 1" = 20'	SHEET: 2 OF 3



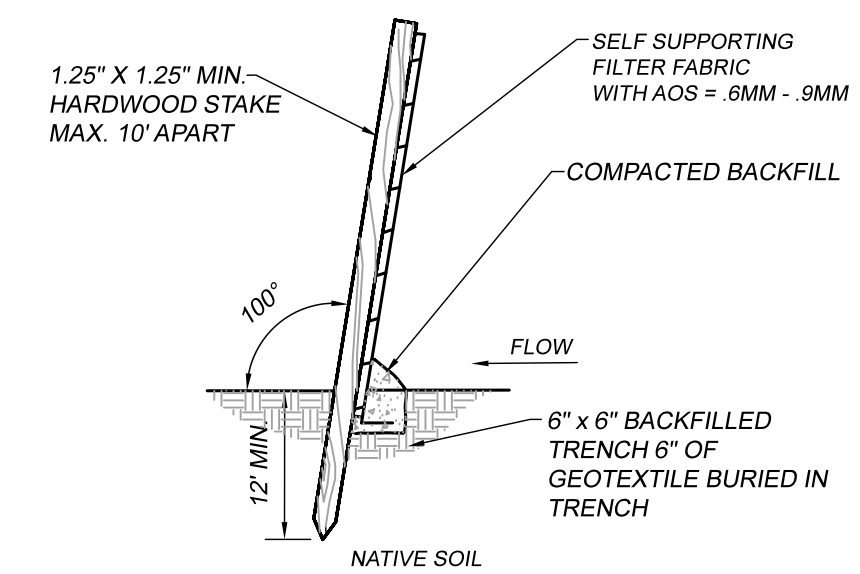


**DRIVEWAY PROFILE**

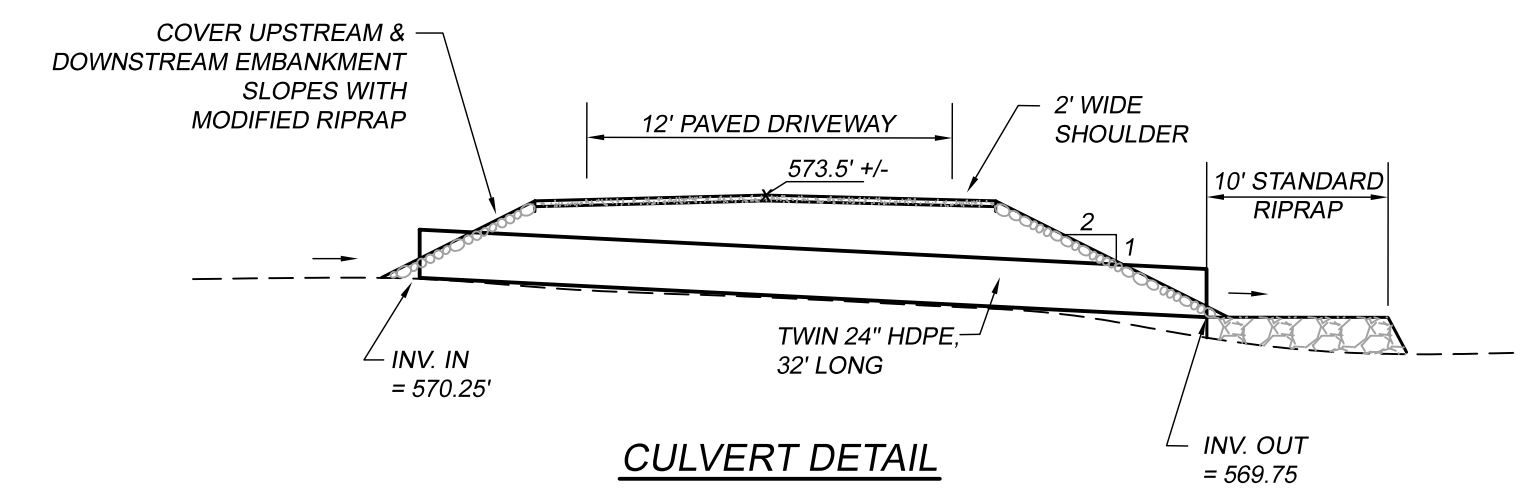
1" = 40' HORIZONTAL  
1" = 4' VERTICAL

**EROSION AND SEDIMENT CONTROL NOTES:**

1. THE PROPOSED ACTIVITY ON THE SITE WILL CONSIST OF THE CONSTRUCTION OF A SINGLE FAMILY HOUSE, WELL, SEPTIC SYSTEM AND DRIVEWAY.
2. EROSION CONTROL DEVICES MUST BE INSTALLED WHERE INDICATED ON THIS SHEET PRIOR TO THE START OF CONSTRUCTION.
3. DISTURBED AREAS SHALL BE KEPT TO A MINIMUM AND SEEDED OR STABILIZED WITH TEMPORARY MULCH AS SOON AS FINAL GRADES HAVE BEEN ATTAINED.
4. THE OWNER OF RECORD SHALL DESIGNATE THE ON SITE ENVIRONMENTAL AGENT RESPONSIBLE FOR REGULARLY CHECKING THE CONDITION OF THE EROSION CONTROL DEVICES AND REMOVING ACCUMULATED SEDIMENT.



**SILT FENCE INSTALLATION**  
NOT TO SCALE



**CULVERT DETAIL**  
NOT TO SCALE

1. THE CULVERT SHALL BE INSTALLED DURING A DRY PERIOD WHEN THERE IS NO FLOW IN THE WATERCOURSE AND NO PRECIPITATION IN THE IMMEDIATE FORECAST.
2. RIPRAP SHALL BE INSTALLED AS SOON AS POSSIBLE, ONCE THE PIPES ARE INSTALLED.
3. NO SEDIMENT SHALL BE ALLOWED TO ENTER THE WATERCOURSE. IF RAIN IS EXPECTED, ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED, INCLUDING BUT NOT LIMITED TO SILT SOCKS AT THE TOE OF EMBANKMENT.

**NOTES AND DETAILS**  
PREPARED FOR  
**EVAN & BROOKE RENAUD**  
0 OLD HALL ROAD, WOODSTOCK, CT  
MAP 5781 BLOCK 50 LOT 18

**J&D CIVIL ENGINEERS, LLC**  
401 RAVENELLE ROAD  
N. GROSVENORDALE, CT 06255  
860-923-2920

DESIGNED: APS  
CHECKED: JAB

REVISIONS:

JOB NO: 23151      DATE: JULY 21, 2023  
SCALE: AS NOTED      SHEET: 3 OF 3