

INLAND WETLANDS
COMMISSION
Telephone (203) 563-0180
Fax (203) 563-0284



TOWN HALL
238 Danbury Road
Wilton, Connecticut 06897

APPLICATION FOR AN INTERMEDIATE REGULATED ACTIVITY

For Office Use Only:

Filing Fee \$ _____	WET# _____
Date of Submission _____	Wilton Land Record Map# _____
Date of Acceptance _____	Volume # _____ Page # _____
	Assessor's Map # _____ Lot# _____

APPLICANT INFORMATION:

Applicant Karen and Bruce Legan
Address 249 Nod Hill Road
Wilton, CT 06897
Telephone (203) 761-1421
Email brucelegan@msn.com

Agent (if applicable) McChord Engineering Assoc
Address 1 Grumman Hill Road
Wilton, CT 06897
Telephone (203) 834-0569
Email hrocheville@mcchordengineering.com

PROJECT INFORMATION:

Property Address 249 Nod Hill Road
Acres of altered Wetlands On-Site 0.00
Linear Feet of Watercourse 160
Linear Feet of Open Water 0.00
Sq. Ft. of proposed and/or altered impervious coverage 2,185

Site Acreage 2.11
Cu. Yds. of Material Excavated 71
Cu. Yds. of Material to be Deposited 22
Acres of altered upland buffer 0.124
Sq. Ft. of disturbed land in regulated area 5,410

APPLICATION REQUIREMENTS:

Is The Site Within a Public Water Supply
Watershed Boundary? NO ☐ YES* ☒

Is The Site Within 500 Feet of a Town Boundary?
NO ☒ YES* ☐

* If the answer is yes, then the applicant is responsible for notifying the appropriate water authority and/or adjoining community's Wetlands Department. Instructions for notification are available at the office of the commission.

Project Description and Purpose: Construction of proposed addition and gravel driveway pull-off. The existing septic tank and pump chamber will be pumped and crushed and new ones will be installed. A stormwater management system is proposed to control the increase in runoff from the proposed development. Erosion controls are proposed to protect the inland wetlands during construction. See attached Engineering Summary for additional information.

In addition, the applicant shall provide nine (9) collated copies of the following information as well as an electronic submission via email to mike.conklin@wiltonct.org & elizabeth.larkin@wiltonct.org **

- ☒ A. Written consent from the owner authorizing the agent to act on his/her behalf
- ☒ B. A Location Map at a scale of 1" = 800'
- ☒ C. ***A Site Plan showing existing and proposed features at a scale not to exceed 1" = 40'***
- ☒ D. Sketch Plans depicting the alternatives considered
- ☒ E. Names and addresses of adjoining property owners
- ☒ F. A narrative describing, in detail
 - a. the proposed activity
 - b. the alternatives considered
 - c. impacts
 - d. proposed mitigation measures
- ☒ G. Soils Report prepared by a Certified Soil Scientist and Wetlands Map prepared by a Registered Land Surveyor
- ☒ H. Description of the chemical and physical characteristics of fill material to be used in the Regulated Area
- ☒ I. Description and maps detailing the watershed of the Regulated Area
- ☒ J. One original application and eight (8) copies

****Application materials shall be collated and copies of documents more than two pages in length shall be double sided.**

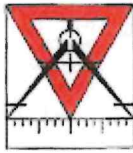
See Section 7 of the Wetlands and Watercourses Regulations of the Town of Wilton for a more detailed description of applications requirements.

The Applicant or his/her agent certifies that he is familiar with the information provided in this application and is aware of the penalties for obtaining a permit through deception, inaccurate or misleading information.

By signing this application, permission is hereby given to necessary and proper inspections of the subject property by the Commissioners and designated agents of the Commission or consultants to the Commission, at reasonable times, both before and after a final decision has been rendered.

Applicant's Signature: Sgt. Authorization Date: _____

Agent's Signature (if applicable): [Signature] Date: 2/20/24



McChord Engineering Associates, Inc.
Civil Engineers and Land Planners

1 Crumman Hill Road
Wilton, CT 06897
(203) 834-0569

February 15, 2024

Town of Wilton Inland Wetlands Commission
Town Hall – 238 Danbury Road
Wilton, CT 06897

Re: Application for an Intermediate Regulated Activity
Proposed Site Development
249 Nod Hill Road
Map 78, Lot 4

Dear Commissioners,

I hereby authorize McChord Engineering Associates, Inc. (MEA), to act as agent regarding the referenced Inland Wetlands Commission application and authorize all subject property activities associated with the proposed site development at the subject property.

I hereby consent to all necessary and proper inspections of the property by the Town of Wilton Environmental Affairs Department and Commissioners at all reasonable times, both before and after the applied permit has been granted, and until the permitted activity has been completed in accordance with the conditions of the permit and verified by the Environmental Affairs Department.

Sincerely,

Karen and Bruce Legan
249 Nod Hill Road
Wilton, CT 06897

Adjacent Property Owners of Property

249 Nod Hill Road
Wilton, CT 06897
Map 78, Lot 4

<u>M-L</u>	<u>Property Owner</u>	<u>Mailing Address</u>
78-4-1	Karen D. & Stephen G Flanagan	263 Nod Hill Road Wilton, CT 06897
78-4-4	Alexandra Daly & Gary S Cott	16 Charter Oak Drive Wilton, CT 06897
78-4-4	Jo Anne & Rober W Ambrosino	15 Charter Oak Drive Wilton, CT 06897
78-4-7	Jerrin Kallukalam	227 Nod Hill Road Wilton, CT 06897
78-5	Ada J Lamont	262 Nod Hill Road Wilton, CT 06897
78-7	Kathryn H & Brian C Groves	232 Nod Hill Road Wilton, CT 06897

Town of Wilton

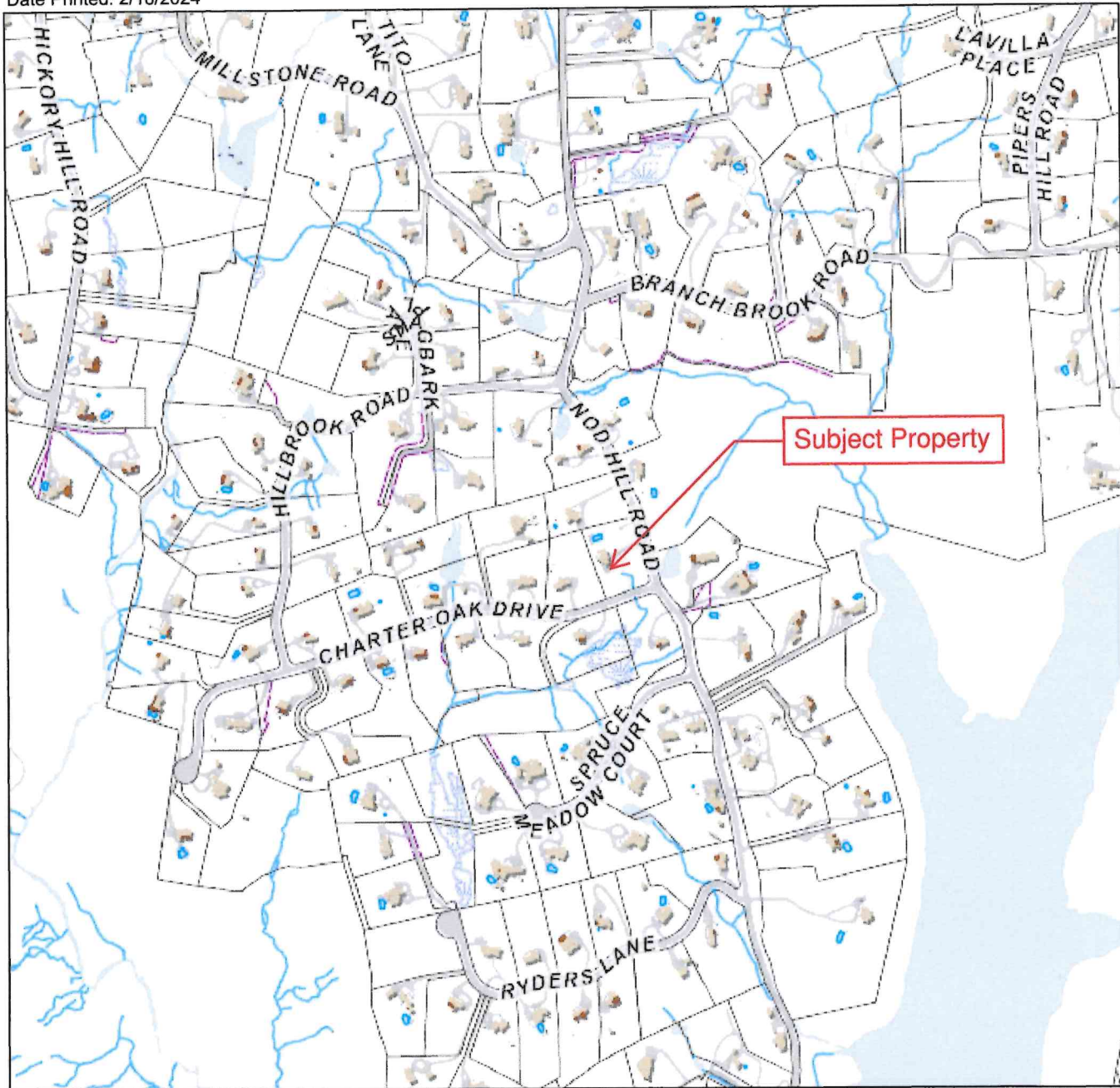
Geographic Information System (GIS)

Location Map

Scale: 1"=800'



Date Printed: 2/16/2024



MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Wilton and its mapping contractors assume no legal responsibility for the information contained herein.

Zoning Effective: July 28, 2017

Planimetrics Updated: 2014

Approximate Scale: 1 inch = 800 feet

0 800
Feet



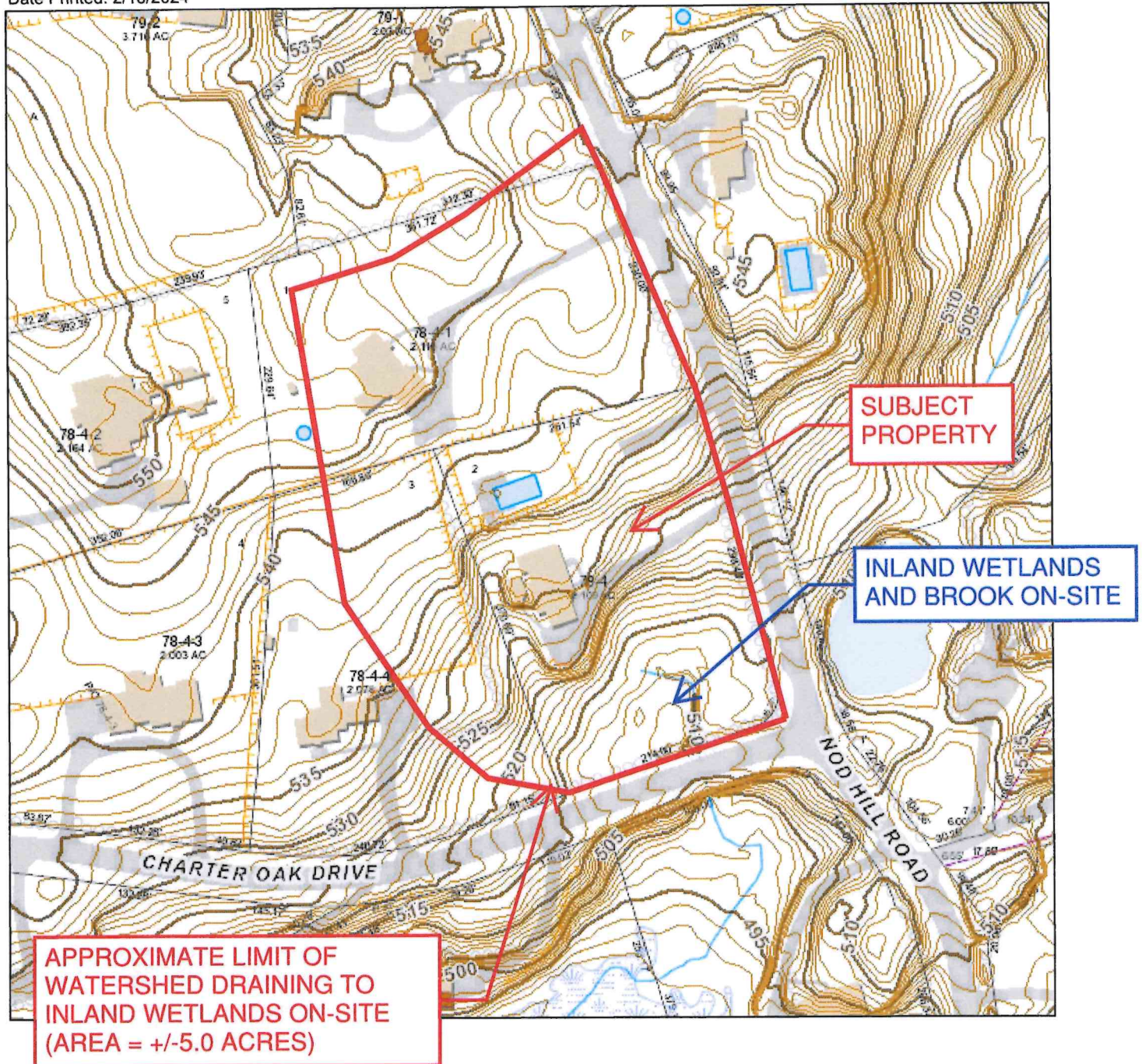
Town of Wilton

Geographic Information System (GIS)

WATERSHED MAPPING FOR INLAND WETLANDS AND BROOK



Date Printed: 2/16/2024



MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Wilton and its mapping contractors assume no legal responsibility for the information contained herein.

Zoning Effective: July 28, 2017

Planimetrics Updated: 2014

Approximate Scale: 1 inch = 150 feet

0 150
Feet



December 6, 2023

Wetland Delineation Report
249 Nod Hill Road
Wilton, Connecticut

Introduction:

A wetland delineation was conducted at 249 Nod Hill Road on December 5, 2023 by Mary Jaehnig, soil scientist. The property is located west of Nod Hill Road and north of Charter Oak Drive and supports a single family dwelling.

The topography generally descends from north to south. A wetland with associated intermittent watercourse is located along the southern property line. The wetland accepts the runoff from several pipes on site. Flow is channeled beneath Charter Oak Drive.

The edge of wetland soil was flagged in the field using chronologically labeled pink ribbon numbered 1 to 16 and 17 to 25.

The Inland Wetlands and Watercourses Act (Connecticut General Statutes 22a-38) defines inland wetlands as “land...which consists of any soil types designated as poorly drained, very poorly drained, alluvial, and floodplain.” Watercourses are defined in the act as “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 state or any portion thereof.” The act defines intermittent watercourses as having a 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 a duration longer than a particular storm incident, and C) the presence of hydrophytic vegetation.

Soils:

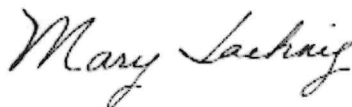
Soil samples were obtained using an auger. Features noted include color, texture and depth to wetland indicators. Soils were classified according to guidelines established by the USDA NRCS.

PFIZER – JÄHNIG
ENVIRONMENTAL CONSULTING

The upland soil unit is Charlton-Chatfield complex, very rocky. Charlton fine sandy loam is deep and well drained and Chatfield fine sandy loam is somewhat deep and well drained. Both soils are formed in glacial till. The depth to bedrock in Charlton loam usually exceeds 5 feet below grade and averages 20 to 40 inches in Chatfield loam. The depth to the water table averages 6 feet below grade. Grading of the upland soil has occurred during original site development.

The wetland soil is Leicester loam, a deep, poorly drained soil also formed in glacial till. The water table is near the surface from late fall into spring. Stones and boulders are located on the surface.

Submitted by,

A handwritten signature in cursive script that reads "Mary Jaehnig".

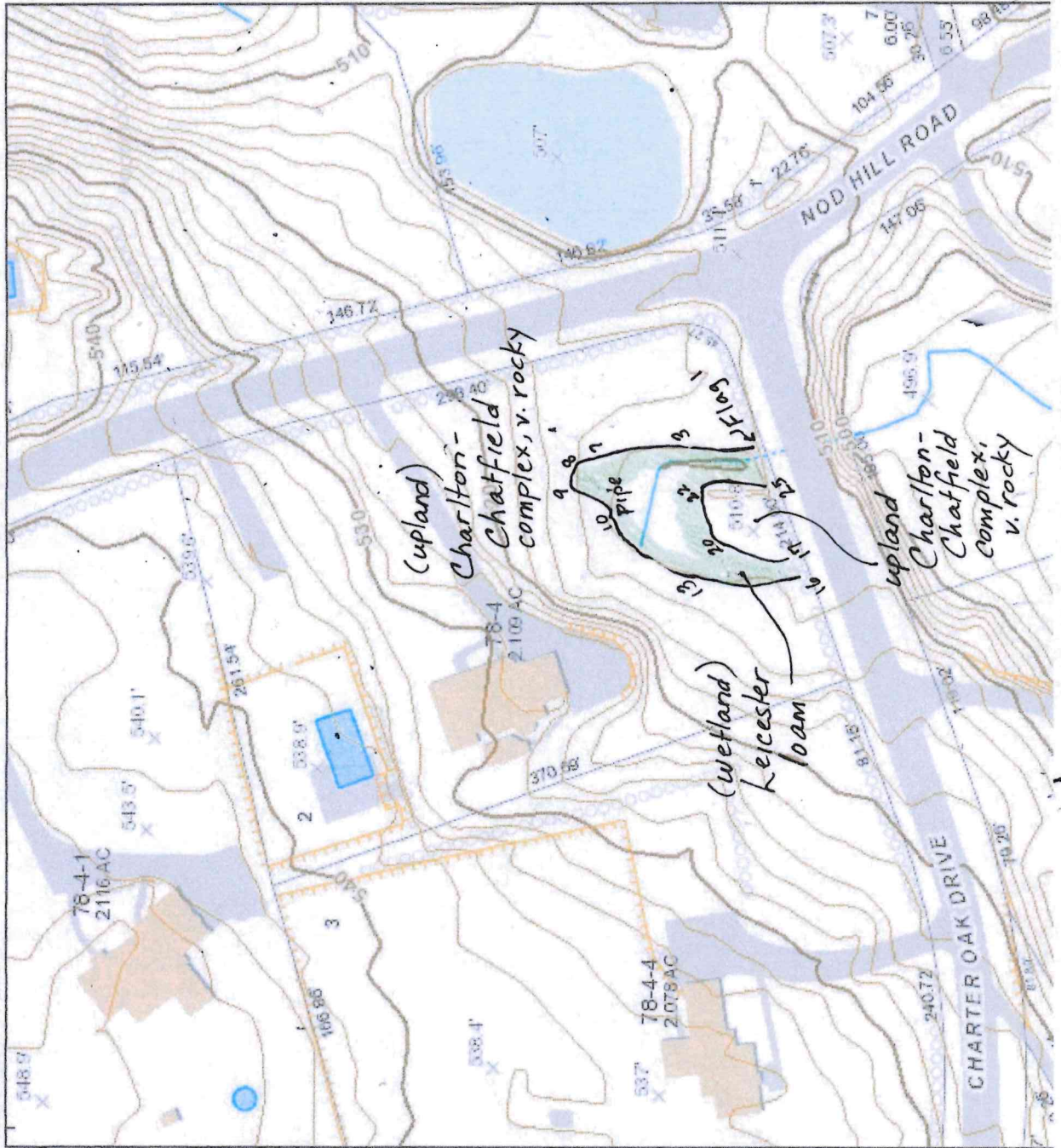
Mary Jaehnig
soil scientist

Town of Wilton

Geographic Information System (GIS)



Date Printed: 12/5/2023



**Statewide Inland Wetlands & Watercourses Activity Reporting Form**

Please complete and mail this form in accordance with the instructions on pages 2 and 3 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, only use one code): _____
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 ACTION IS OCCURRING (print name): Wilton
does this project cross municipal boundaries (check one)? yes ☐ no ☒
if yes, list the other town(s) in which the action is occurring (print name(s)): _____
6. LOCATION (see instructions for information): USGS quad name: Norwalk North or number: 107
subregional drainage basin number: 7301
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): Bruce and Karen Legan
8. NAME & ADDRESS / LOCATION OF PROJECT SITE (print information): 249 Nod Hill Road
briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☒ description: Construction of new addition, driveway pull off and installation of new septic tanks.
9. ACTIVITY PURPOSE CODE (see instructions, only use one code): A
10. ACTIVITY TYPE CODE(S) (see instructions for codes): 1, 2, 12, 14
11. WETLAND / WATERCOURSE AREA ALTERED (must provide acres or linear feet):
wetlands: 0.0 acres open water body: 0 acres stream: 0 linear feet
12. UPLAND AREA ALTERED (must provide acres): 0.12 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0.0 acres

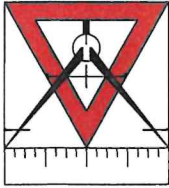
DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO



McChord Engineering Associates, Inc.

Civil Engineers and Land Planners

1 Grumman Hill Road
Wilton, CT 06897
(203) 834-0569

February 20, 2024

Inland Wetlands Commission
Town Hall
238 Danbury Road
Wilton, CT 06897

Re: Engineering Summary
Proposed Site Development
249 Nod Hill Road, Wilton, CT
Map 78, Lot 4

Dear Commissioners:

This office has been commissioned by Bruce and Karen Legan to prepare an Application for an Intermediate Regulated Activity associated with the proposed site development at 254 Nod Hill Road. A portion of the proposed activity will extend into the 100-ft regulated area for the inland wetlands and brook on the site. The total earthwork within the regulated area is less than 100 cubic yards and is therefore considered an Intermediate Activity. The following is an engineering summary of the existing conditions, proposed development, and regulated activity.

The property totals 2.11-acres and is located within Wilton's "R-2" residential zone. Approximately 0.11-acres of the property are compromised by an existing brook and inland wetlands. It is currently developed with a single-family residence, asphalt and gravel driveway, pool, hardscape and lawn. The inland wetlands are in a distinct wooded area in the southern portion of the property. The brook discharges to the town storm sewer system via a 24" RCP pipe. Topography on the site consists of moderate slopes that drain south towards the brook and inland wetlands. The property is within the South Norwalk Electric and Water Company public water supply watershed. It is outside of any FEMA 100-year flood zones. The property is served by an on-site septic system and private well.

The proposed development consists of the construction of a new addition and gravel driveway pull-off area. The existing septic tank and pump chamber will be pumped and crushed in place and new ones will be installed. The existing septic system and private well will be maintained. A B100a code compliant septic system is proposed for the addition and is not required or intended to be installed at this time. A stormwater management system will be installed to control runoff from the proposed site development. Refer to the "B100a Septic System/Site Development Plan" prepared by this office for additional information on the proposed development.

The proposed development maintains existing drainage patterns on site. Currently, there is a series of yard drains and drainage pipes in the western portion of the property that convey roof leaders and footing drains to the brook. Rooftop runoff from a portion of the proposed addition will be captured by roof leaders and conveyed to a new underground detention system located just south of the existing driveway. Rooftop runoff from the addition that is unable to be conveyed to the underground detention system will be routed to the existing yard drains. A footing drain for the new addition will also be connected to the existing yard drains. Runoff from the remainder of the property will continue to flow overland through lawn towards the inland wetlands conforming to existing conditions. Refer to the "Stormwater Management Report" prepared by this office for additional information on the stormwater management system.

A portion of the site development is within the regulated area for the inland wetlands on-site. There is an extension of the 100-ft regulated area due to steep slopes in some areas. The total disturbance within the regulated area is approximately 5,410 ft². The total amount of material being deposited is approximately 22 ft³ and the total amount of material being excavated is approximately 71 ft³. Therefore, the total amount of earthwork is 93 ft³. The earthwork within the regulated area is required to install the proposed underground detention system and associated roof leader pipes. Earthwork in the regulated area is also required to install the proposed septic tank, pump chamber and associated piping. There will be no earthwork within the inland wetlands or brook. The closest disturbance to the inland wetlands is approximately 50-ft for the detention system installation. The lawn in all disturbed areas will be returned to existing conditions following construction.

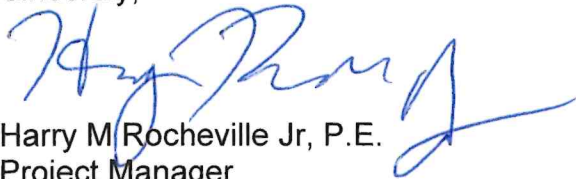
Multiple alternatives were considered to reduce the disturbance and earthwork within the regulated area. Efforts were taken to minimize the impact to the inland wetlands during construction. However, the proposed site development plan proved to be the best option since the proposed addition is located outside of the regulated area. A taller detention system was considered, but the proposed version was chosen because it will require less earthwork to be installed above a high seasonal groundwater elevation. An alternative pull-off parking location was considered on the opposite side of the driveway. The proposed location was chosen because it requires significantly less earthwork since it can be installed at existing grade. An alternative footing drain outlet for the addition that discharges to daylight was considered. The proposed outlet discharging to the existing yard drain system was chosen as it limits disturbance near the inland wetlands. A sketch showing the alternatives considered is attached.

Earthwork is minimized as the proposed addition is designed to work with existing grade. Material from the foundation excavation will be temporarily stockpiled and hauled off site. Some fill material will be needed within the regulated area. Filling for detention system installation will be minimal and will use material from the addition foundation excavation. Topsoil within the construction area will be stockpiled and reused. Clean gravel and/or crushed stone will also need to be imported for the proposed detention galleries.

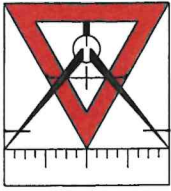
Soil and erosion controls, in the form of a silt fence, will be employed to protect the inland wetlands and brook during construction. A construction entrance is proposed to the north of the driveway, opposite of the inland wetlands on-site. Excess soil will be stockpiled outside the regulated area and surrounded by silt fence until it can be hauled off site. Sediment and erosion control measures will be installed prior to the start of construction, maintained throughout construction and will only be removed once a permanent vegetative cover is established.

Proper implementation of the proposed erosion controls will protect the inland wetlands and brook during construction. Long term, the proposed stormwater management system will reduce runoff and improve water quality from the site. It is the opinion of this office that the proposed site development will have no adverse impact on the inland wetlands, brook or any downstream drainage systems.

Sincerely,

A handwritten signature in blue ink, appearing to read "Harry Rocheville Jr.", is written over the typed name and title.

Harry M Rocheville Jr, P.E.
Project Manager



McChord Engineering Associates, Inc.
Civil Engineers and Land Planners

1 Grumman Hill Road
Wilton, CT 06897
(203) 834-0569

STORMWATER MANAGEMENT REPORT

Prepared For

PROPOSED SITE DEVELOPMENT

249 NOD HILL ROAD, WILTON, CT

February 20, 2024



TABLE OF CONTENTS

Introduction.....	1
Scope of Study.....	2
Analysis Methodology.....	2
Stormwater Management Strategy.....	2
Analysis & Results.....	3
Conclusions.....	3
Appendix A: Peak Flow Computations	
Appendix B: Water Quality Volume Computations	
Appendix C: Stormwater Facilities Maintenance Plan	

1. INTRODUCTION

McChord Engineering Associates, Inc. has been commissioned by Bruce and Karen Legan to perform stormwater management computations for the proposed site development at 249 Nod Hill Road in Wilton, Connecticut. The property consists of 2.11-acres and is located on the west side of Nod Hill Road. It is in the Comstock Brook watershed basin and the South Norwalk Electric and Water Company public water supply watershed. Figure 1 shows the location of the property on the United States Geological Survey (USGS) map.

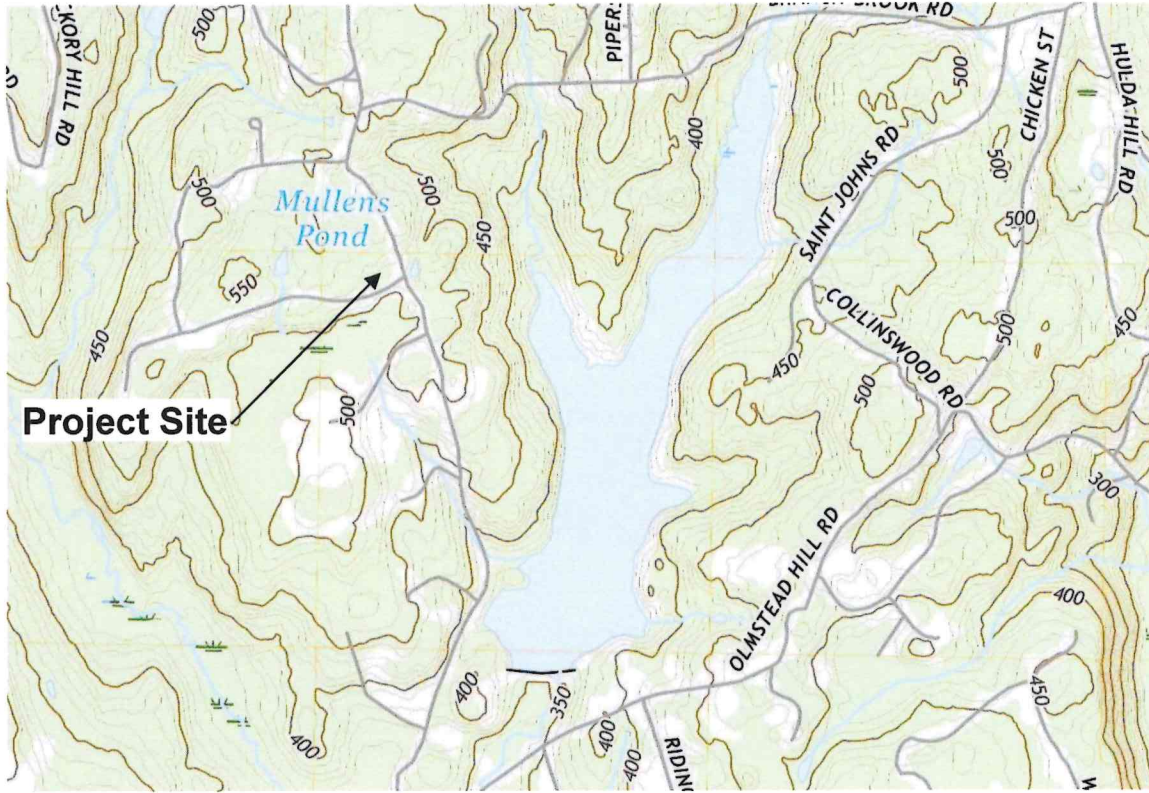


Figure 1: Location Map

The property is currently developed with a single-family residence, driveway, pool, hardscape and lawn. The edges of the property are adjacent residences, Charter Oak Drive and Nod Hill Road. There is an existing brook in the southern portion of the property that discharges to the town storm sewer system via a 24" RCP. The brook is surrounded by inland wetlands. A series of yard drains and drainage pipes convey roof leaders and footing drains to the brook. Topography on the site consists of moderate slopes that generally drain south towards the inland wetlands. The property is currently served by an on-site septic system and private well.

The proposed site development includes the construction of a new addition and gravel driveway pull-off area. A new stormwater management system will be installed to control runoff from the proposed development. The existing series of yard drains will be maintained. Soil and erosion controls will be employed to protect downgradient properties and the inland wetlands during construction. Earthwork is minimized as the proposed addition and driveway pull-off are both designed to work with existing grade. The existing on-site septic system and private well will be maintained.

2. SCOPE OF STUDY

This stormwater management report contains studies comparing peak rate and volume of runoff between the existing conditions and the proposed development to ensure that the proposed development will have no adverse impact on adjoining property owners, inland wetlands or downstream drainage systems. The site will be developed with a new on-site stormwater management system capable of controlling the increase in peak runoff from the proposed development.

3. ANALYSIS METHODOLOGY

Runoff was modeled with HydroCAD 8.50 software produced by HydroCAD Software Solutions LLC. This software uses the NRCS TR-20 method for analyzing stormwater runoff. Soil characteristics, cover conditions, slope, time of concentration, and historical rainfall data are all parameters that are utilized by this method. The analysis considered the 2, 5, 10 and 25-year storm events. Precipitation depth for each storm event was taken from the National Oceanic and Atmospheric Administration's (NOAA) Atlas 14 Point Precipitation Frequency Estimates specific to the subject property.

4. STORMWATER MANAGEMENT STRATEGY

Currently, there are no stormwater detention measures on-site. Rooftop runoff from the house is captured by roof leaders, routed through a series of yard drains and discharged to the brook via a 6" PVC pipe. Driveway runoff is not captured and flows over a flush curb through the lawn to the brook and inland wetlands. Runoff from the remainder of the property that is not captured sheet flows south following the topography to the brook and inland wetlands.

The proposed stormwater management plan maintains existing drainage patterns on the site. Rooftop runoff from most of the new addition will be captured by roof leaders and conveyed to a new underground detention system. The underground detention system will consist of six (6) units of 12" tall x 48" wide x 96" long precast concrete galleries surrounded by crushed stone with a storage capacity of approximately 225 cubic feet. During typical storm events, stormwater will infiltrate into the underlying soils and there will be no surface discharge from the detention system. The detention system will be equipped with an overflow grate at grade to provide relief during extreme storm events. Runoff from the addition that cannot be routed to the detention system will be conveyed to the existing yard drain network conforming to the existing conditions. Runoff from the remainder of the subject property, including the proposed gravel driveway pull-off, will continue to sheet flow south to the brook and inland wetlands conforming to existing conditions.

Detailed information on the size and configuration of the proposed stormwater management measures is available on the most recent revision of the "B100A Septic System/Site Development Plan" prepared by this office. A Stormwater Facilities Maintenance Plan is also included in Appendix C.

5. ANALYSIS & RESULTS

Runoff from the subject property was analyzed under existing and proposed conditions. The existing conditions analysis studied the entire property as a whole. The proposed conditions analysis divided the property into area that is detained through the new detention system and undetained areas. The proposed runoff that is not detained will sheet flow south, conforming to existing conditions.

Using the NRCS TR-20 method, the peak rate of runoff for the 2, 5, 10 and 25-year storm events was computed for the subject property. Soils on the property were determined using the NRCS Web Soil Survey. Cover conditions were derived from site observations and the "B100a Septic System/Site Development Plan" prepared by this office dated February 20, 2024. Soil testing was conducted on the property in the area of the stormwater detention system and confirmed that there would be suitable soil conditions. The resulting peak flow rates under both the existing and proposed conditions are summarized in Table 1. For detailed computations see Appendix A.

Table 1: Peak Flows

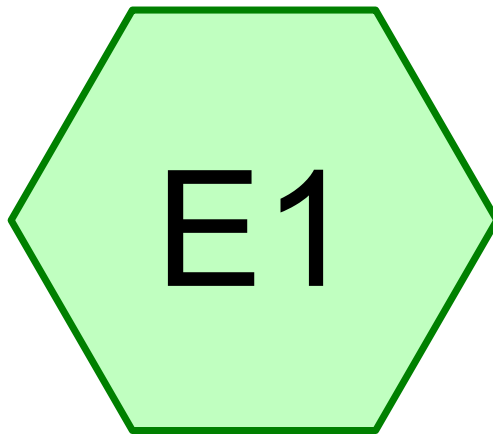
Storm Event	Existing		Proposed	
	Rate (cfs)	Volume (ft ³)	Rate (cfs)	Volume (ft ³)
2-year	1.14	5,546	1.12	5,470
5-year	2.24	9,817	2.21	9,682
10-year	3.27	13,822	3.23	13,632
25-year	4.81	19,846	4.75	19,596

The analysis shows that there is no increase in the peak rate or volume of runoff from the property during any of the analyzed storm events. The proposed underground detention system also accommodates the first 1" of runoff from the impervious surfaces that drain to it. The runoff from the initial 1" of runoff, also known as the "first flush", is generally considered to contain the majority of pollutants. Collecting the first flush and allowing it to infiltrate into the soils provides filtration of the runoff and is an effective means of stormwater renovation. For detailed computations see Appendix B.

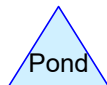
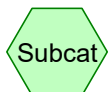
6. CONCLUSIONS

Based on our analysis, McChord Engineering Associates, Inc. has demonstrated that the proposed stormwater management system will adequately control the increase in runoff from the proposed development at 249 Nod Hill Road in Wilton, Connecticut. It is the opinion of this office and the conclusion of this report that the proposed site development will have no adverse impacts to the adjoining property owners, inland wetlands, watercourses or any downstream drainage systems.

APPENDIX A:
PEAK FLOW COMPUTATIONS



Entire Area of Study



Existing Conditions - 249 Nod Hill Road

Prepared by McChord Engineering Associates, Inc.

HydroCAD® 8.50 s/n 004801 © 2007 HydroCAD Software Solutions LLC

Printed 2/15/2024

Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
74,840	61	>75% Grass cover, Good, HSG B (E1)
2,565	85	Existing Gravel Drive (E1)
540	98	Existing Patio (E1)
1,675	98	Existing Paved Drive (E1)
820	98	Existing Pool (E1)
1,310	98	Existing Pool Patio (E1)
2,920	98	Existing Residence (E1)
260	98	Existing Walkway (E1)
84,930		TOTAL AREA

Existing Conditions - 249 Nod Hill Road

Type III 24-hr 25-Year Rainfall=6.61"

Prepared by McChord Engineering Associates, Inc.

Printed 2/15/2024

HydroCAD® 8.50 s/n 004801 © 2007 HydroCAD Software Solutions LLC

Page 3

Summary for Subcatchment E1: Entire Area of Study

Runoff = 4.81 cfs @ 12.21 hrs, Volume= 19,846 cf, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Type III 24-hr 25-Year Rainfall=6.61"

	Area (sf)	CN	Description
*	2,920	98	Existing Residence
*	2,565	85	Existing Gravel Drive
*	1,675	98	Existing Paved Drive
*	540	98	Existing Patio
*	820	98	Existing Pool
*	1,310	98	Existing Pool Patio
*	260	98	Existing Walkway
	74,840	61	>75% Grass cover, Good, HSG B
	84,930	65	Weighted Average
	77,405		Pervious Area
	7,525		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	95	0.0400	0.15		Sheet Flow, AB Grass: Dense n= 0.240 P2= 3.30"
4.0	55	0.1400	0.23		Sheet Flow, BC Grass: Dense n= 0.240 P2= 3.30"
0.2	45	0.0900	4.83		Shallow Concentrated Flow, CD Unpaved Kv= 16.1 fps
0.2	80	0.1250	5.69		Shallow Concentrated Flow, DE Unpaved Kv= 16.1 fps
14.6	275	Total			

Existing Conditions - 249 Nod Hill Road

Prepared by McChord Engineering Associates, Inc.

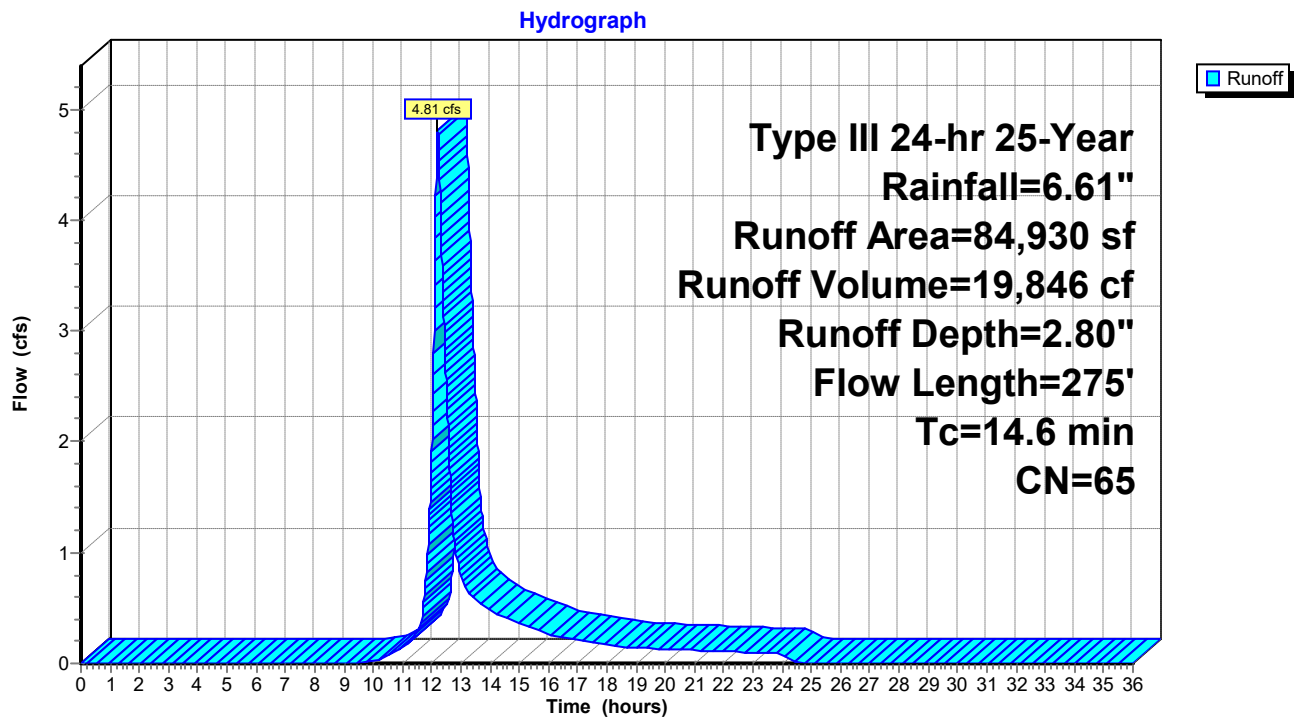
HydroCAD® 8.50 s/n 004801 © 2007 HydroCAD Software Solutions LLC

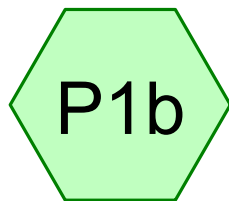
Type III 24-hr 25-Year Rainfall=6.61"

Printed 2/15/2024

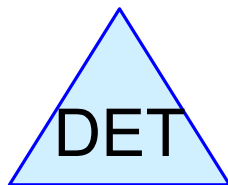
Page 4

Subcatchment E1: Entire Area of Study

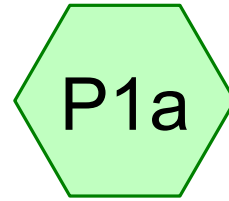




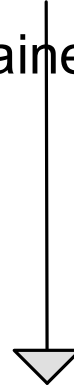
Detained Area



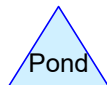
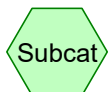
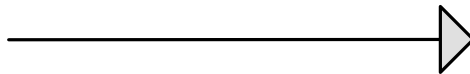
Underground Detention
System



Undetained Area



Sum Hydrograph



Proposed Conditions - 249 Nod Hill Road

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Page 2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
72,655	61	>75% Grass cover, Good, HSG B (P1a)
2,565	85	Existing Gravel Drive (P1a)
445	85	Proposed Gravel Parking (P1a)
540	98	Existing Patio (P1a)
1,675	98	Existing Paved Drive (P1a)
820	98	Existing Pool (P1a)
1,310	98	Existing Pool Patio (P1a)
2,920	98	Existing Residence (P1a)
260	98	Existing Walkway (P1a)
1,740	98	Proposed Addition (P1a,P1b)
84,930		TOTAL AREA

Proposed Conditions - 249 Nod Hill Road

Type III 24-hr 25-Year Rainfall=6.61"

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Page 3

Summary for Subcatchment P1a: Undetained Area

Runoff = 4.75 cfs @ 12.21 hrs, Volume= 19,574 cf, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Type III 24-hr 25-Year Rainfall=6.61"

	Area (sf)	CN	Description
*	2,920	98	Existing Residence
*	2,565	85	Existing Gravel Drive
*	1,675	98	Existing Paved Drive
*	540	98	Existing Patio
*	820	98	Existing Pool
*	1,310	98	Existing Pool Patio
*	260	98	Existing Walkway
*	575	98	Proposed Addition
*	445	85	Proposed Gravel Parking
	72,655	61	>75% Grass cover, Good, HSG B
	83,765	65	Weighted Average
	75,665		Pervious Area
	8,100		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	95	0.0400	0.15		Sheet Flow, AB
					Grass: Dense n= 0.240 P2= 3.30"
4.0	55	0.1400	0.23		Sheet Flow, BC
					Grass: Dense n= 0.240 P2= 3.30"
0.2	45	0.0900	4.83		Shallow Concentrated Flow, CD
					Unpaved Kv= 16.1 fps
0.2	80	0.1250	5.69		Shallow Concentrated Flow, DE
					Unpaved Kv= 16.1 fps
14.6	275	Total			

Proposed Conditions - 249 Nod Hill Road

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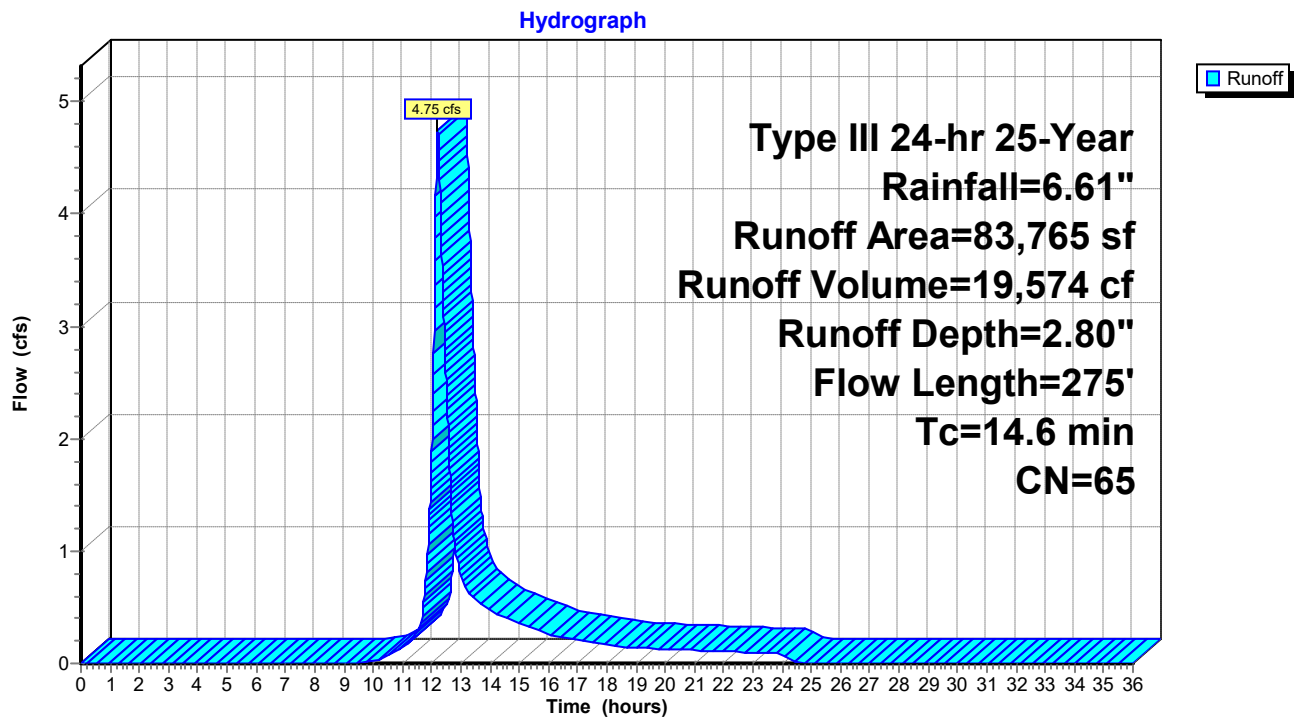
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Page 4

Subcatchment P1a: Undetained Area



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Page 5

Summary for Subcatchment P1b: Detained Area

Runoff = 0.18 cfs @ 12.07 hrs, Volume= 619 cf, Depth= 6.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

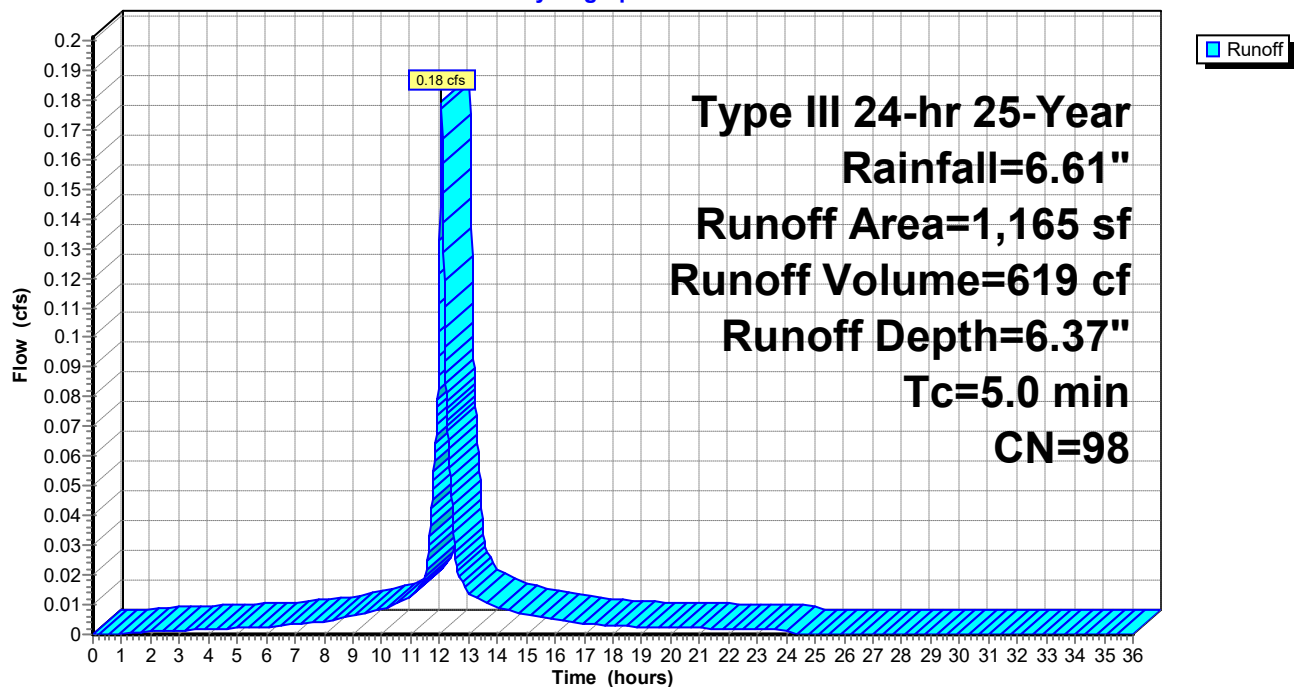
Type III 24-hr 25-Year Rainfall=6.61"

	Area (sf)	CN	Description
*	1,165	98	Proposed Addition
	1,165		Impervious Area

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

Subcatchment P1b: Detained Area

Hydrograph



Proposed Conditions - 249 Nod Hill Road

Type III 24-hr 25-Year Rainfall=6.61"

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Page 6

Summary for Pond DET: Underground Detention System

Inflow Area = 1,165 sf, 100.00% Impervious, Inflow Depth = 6.37" for 25-Year event
 Inflow = 0.18 cfs @ 12.07 hrs, Volume= 619 cf
 Outflow = 0.03 cfs @ 12.50 hrs, Volume= 619 cf, Atten= 81%, Lag= 25.8 min
 Discarded = 0.01 cfs @ 10.67 hrs, Volume= 596 cf
 Primary = 0.02 cfs @ 12.50 hrs, Volume= 22 cf

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 516.01' @ 12.50 hrs Surf.Area= 312 sf Storage= 226 cf

Plug-Flow detention time= 151.7 min calculated for 619 cf (100% of inflow)

Center-of-Mass det. time= 151.7 min (894.5 - 742.8)

Volume	Invert	Avail.Storage	Storage Description
#1	514.50'	125 cf	6.00'W x 26.00'L x 1.60'H Gravel Bed x 2 499 cf Overall - 186 cf Embedded = 313 cf x 40.0% Voids
#2	515.00'	112 cf	48.0"W x 12.0"H x 24.00'L Galley 4x8x1 x 2 Inside #1
		237 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	514.50'	1.500 in/hr Exfiltration over Surface area
#2	Primary	516.00'	1.00' x 1.00' Horiz. HLO Grate Limited to weir flow C= 0.600

Discarded OutFlow Max=0.01 cfs @ 10.67 hrs HW=514.52' (Free Discharge)↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)**Primary OutFlow** Max=0.02 cfs @ 12.50 hrs HW=516.01' (Free Discharge)↑**2=HLO Grate** (Weir Controls 0.02 cfs @ 0.37 fps)

Proposed Conditions - 249 Nod Hill Road

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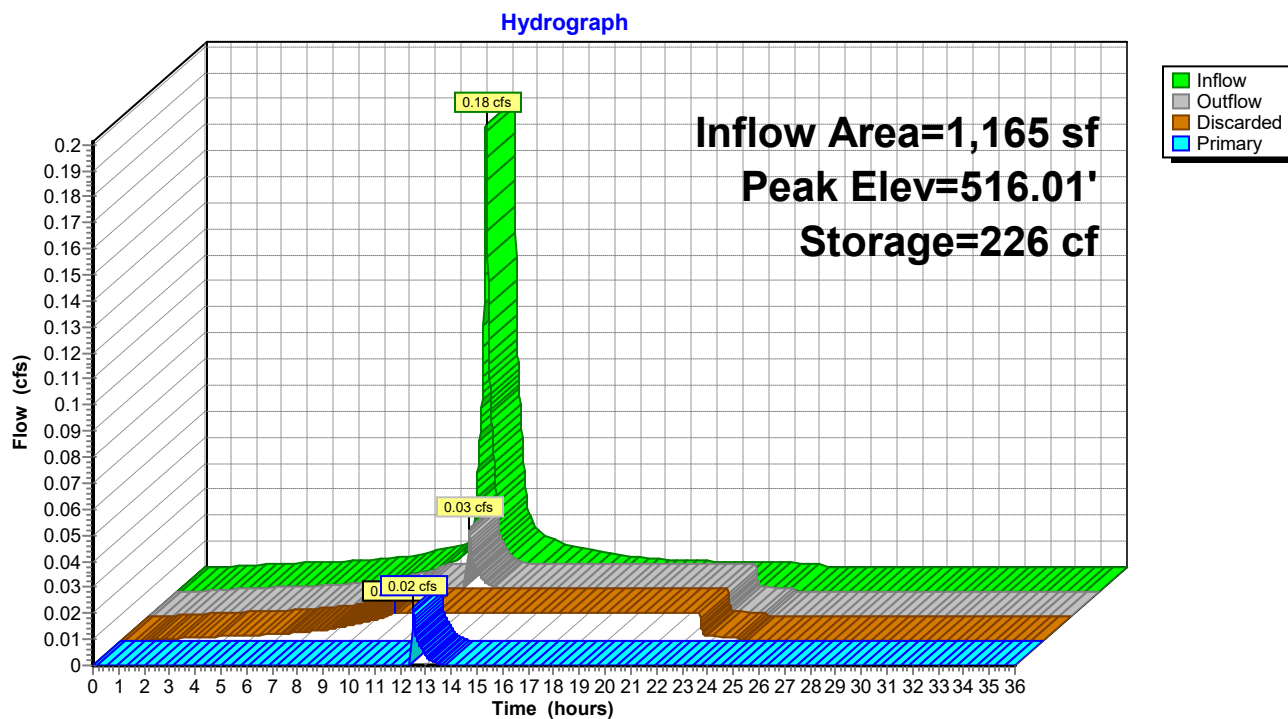
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Type III 24-hr 25-Year Rainfall=6.61"

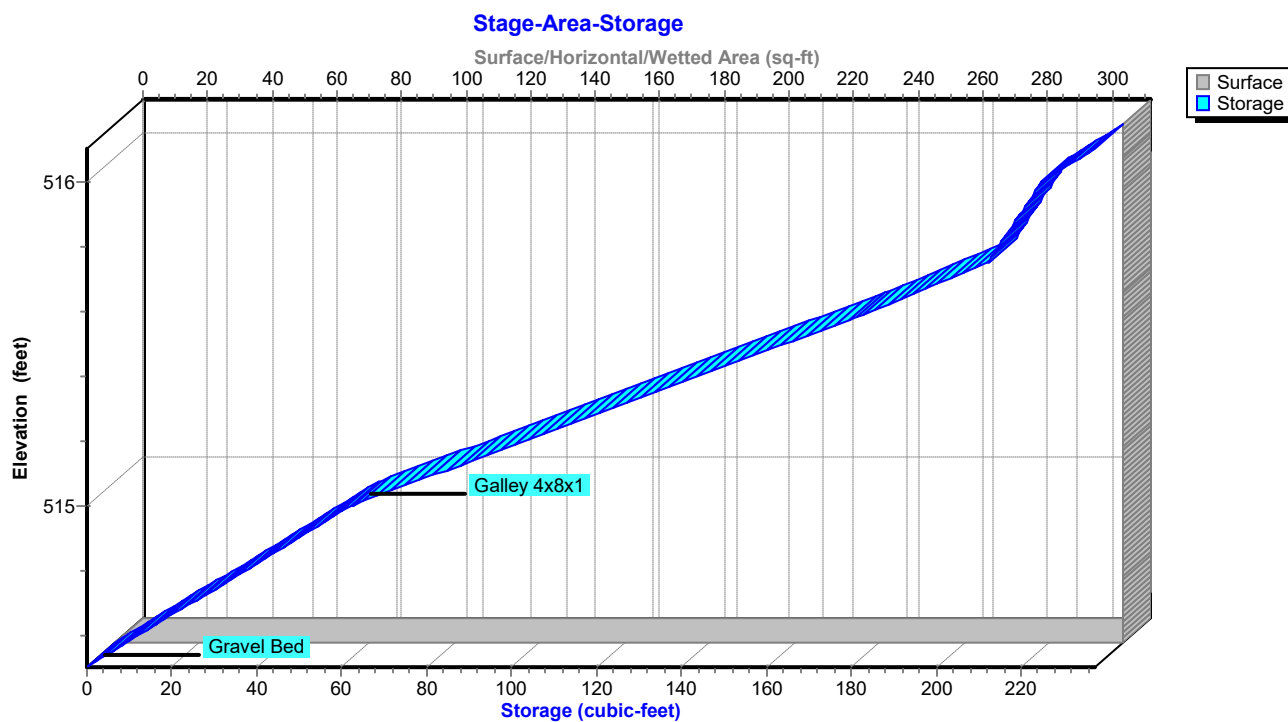
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Page 7

Pond DET: Underground Detention System



Pond DET: Underground Detention System



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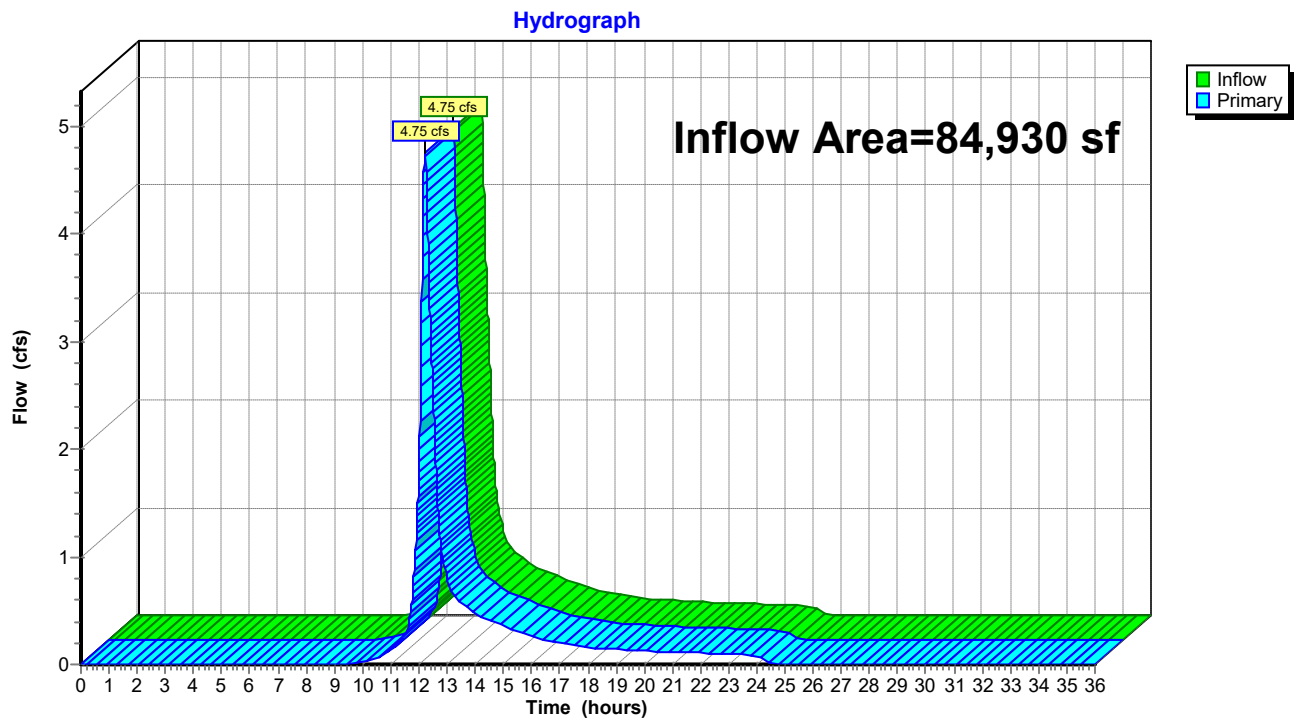
Page 8

Summary for Link SUM: Sum Hydrograph

Inflow Area = 84,930 sf, 10.91% Impervious, Inflow Depth = 2.77" for 25-Year event
Inflow = 4.75 cfs @ 12.21 hrs, Volume= 19,596 cf
Primary = 4.75 cfs @ 12.21 hrs, Volume= 19,596 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link SUM: Sum Hydrograph



APPENDIX B:
WATER QUALITY VOLUME COMPUTATIONS

Water Quality Volume Computation

249 Nod Hill Road, Wilton, CT

AREA OF PROPOSED DEVELOPMENT TO BE CAPTURED					
Location		Area, (ft ²)			
Proposed Addition		1,165			
Location	A Area (ft ²)	Imperv. Area (ft ²)	I % Imperv.	R Runoff Coeff.	WQV (ft ³)
Proposed Development	1,165	1,165	100.0	0.950	92

Location	System Description	Volume Provided Below Overflow Grate (ft ³)
Proposed Development	Six (6) 12"x48"x96" Precast Concrete Galleries	225

$$WQV = \frac{(1')(R)(A)}{12}$$

where: WQV = water quality volume (ac-ft)
 R = volumetric runoff coefficient
= $0.05 + 0.009(I)$
 I = percent impervious cover
 A = site area in acres

Proposed Conditions - 249 Nod Hill Road*Type III 24-hr 25-Year Rainfall=6.61"*

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Stage-Area-Storage for Pond DET: Underground Detention System

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
514.50	312	0	515.54	312	173
514.52	312	2	515.56	312	177
514.54	312	5	515.58	312	181
514.56	312	7	515.60	312	185
514.58	312	10	515.62	312	189
514.60	312	12	515.64	312	192
514.62	312	15	515.66	312	196
514.64	312	17	515.68	312	200
514.66	312	20	515.70	312	203
514.68	312	22	515.72	312	207
514.70	312	25	515.74	312	210
514.72	312	27	515.76	312	213
514.74	312	30	515.78	312	214
514.76	312	32	515.80	312	215
514.78	312	35	515.82	312	216
514.80	312	37	515.84	312	217
514.82	312	40	515.86	312	218
514.84	312	42	515.88	312	219
514.86	312	45	515.90	312	220
514.88	312	47	515.92	312	221
514.90	312	50	515.94	312	222
514.92	312	52	515.96	312	223
514.94	312	55	515.98	312	224
514.96	312	57	516.00	312	225
514.98	312	60	516.02	312	227
515.00	312	62	516.04	312	230
515.02	312	66	516.06	312	232
515.04	312	71	516.08	312	235
515.06	312	75	516.10	312	237
515.08	312	79			
515.10	312	83			
515.12	312	87			
515.14	312	91			
515.16	312	95			
515.18	312	99			
515.20	312	103			
515.22	312	107			
515.24	312	112			
515.26	312	116			
515.28	312	120			
515.30	312	124			
515.32	312	128			
515.34	312	132			
515.36	312	136			
515.38	312	140			
515.40	312	144			
515.42	312	148			
515.44	312	152			
515.46	312	157			
515.48	312	161			
515.50	312	165			
515.52	312	169			

APPENDIX C:
STORMWATER FACILITIES MAINTENANCE PLAN

Stormwater Facilities Maintenance Plan

249 Nod Hill Road, Wilton, CT

Scope:

The purpose of the Stormwater Facilities Maintenance Plan is to ensure that the proposed stormwater components installed at 249 Nod Hill Road are maintained in operational condition throughout the life of the home. The service procedures associated with this plan shall be performed as required by the parties legally responsible for their maintenance.

Description of Stormwater Facilities:

The proposed stormwater facilities are designed to collect, convey, detain and treat the runoff from the site in order to minimize adverse impacts to adjacent properties and downstream drainage systems. A description of the stormwater facilities are as follows:

1. **Roof Leaders/Gutters:** Roof leaders (also known as downspouts) from the addition will convey roof runoff collected by the roof gutters to the underground detention system.
2. **Underground Detention Chambers:** The underground detention systems consist of a series of precast concrete galleries which provide storage for stormwater runoff. Stormwater in the underground detention systems is designed to infiltrate into the underlying soils. The detention galleries are designed to be relieved by an overflow grate during extreme storm events.

Recommended Frequency of Service:

All of the stormwater components installed for this property should be checked periodically and kept in full working order. Ultimately the frequency of inspection and service cleaning depends on the amount of runoff, pollutant loading and interference from debris (leaves, vegetation, trash, etc.); however it is recommended that each facility be inspected and cleaned a minimum of two times a year. The guidelines for the timing of service include early spring after the winter season and late fall after the leaves have fallen from the trees.

Service Procedures:

Service can be performed by the homeowner, landscape contractor or handyman since no specialized equipment is required. Specific service procedures for the stormwater facilities are as follows:

1. **Roof Leaders/Gutters:** Roof gutters shall be inspected twice a year during the spring and fall service inspections to ensure that roof leaders are kept free of leaves and debris that could clog the detention chambers. At a minimum, leaves should be cleaned from the gutters during the fall service inspection.
2. **Underground Detention Chambers:** Functionality of the underground detention chambers ultimately depends on keeping sediment and debris out of the chambers. This is accomplished through proper maintenance of the roof leaders and gutters. These components should be maintained as described above, but more frequent maintenance may be required if excessive accumulation of debris is observed.

NOTES:

- EXISTING STRUCTURES, UTILITIES, TOPOGRAPHY, INLAND WETLANDS AND PROPERTY LINE INFORMATION SHOWN HEREON ARE TAKEN FROM THE "IMPROVEMENT LOCATION MAP" PREPARED FOR BRUCE LEGAN AND KARNE LEGAN PREPARED BY STALKER LAND SURVEYING, INC. OF WILTON, CT, DATED DECEMBER 20, 2023.
- LOCATIONS OF EXISTING UNDERGROUND STRUCTURES AND UTILITIES INDICATED HEREON ARE TAKEN FROM DESIGN DRAWINGS, FIELD OBSERVATIONS, AND OTHER SOURCES OF INFORMATION AND ARE NOT TO BE CONSTRUED AS AN ACCURATE "AS-BUILT" SURVEY. THE CONTRACTOR SHALL EXCAVATE TEST HOLES, CONTACT "CALL BEFORE YOU DIG", AND PERFORM WHATEVER ADDITIONAL VERIFICATION NECESSARY TO VERIFY THE EXISTING INFORMATION. THE PROJECT ENGINEER SHALL BE PROMPTLY NOTIFIED OF ANY APPARENT CONFLICTS BETWEEN EXISTING UTILITIES AND PROPOSED WORK.
- THE PURPOSE OF THIS PLAN IS TO SHOW THE PROPOSED SITE GRADING, STORMWATER MANAGEMENT SYSTEM, SEPTIC TANK, PUMP CHAMBER, UTILITIES, SOIL EROSION CONTROLS AND B100A CODE COMPLYING SEPTIC SYSTEM ASSOCIATED WITH THE CONSTRUCTION OF THE NEW ADDITION.
- THE PROPOSED SEPTIC SYSTEM LEACHING FIELDS ARE DESIGNED TO COMPLY WITH SECTION 19-13-B100A OF THE CONNECTICUT PUBLIC HEALTH CODE AND IS NOT REQUIRED OR INTENDED TO BE BUILT AT THIS TIME.
- THE EXISTING SEPTIC TANK AND PUMP CHAMBER SHALL BE ABANDONED IN ACCORDANCE WITH LOCAL AND STATE HEALTH DEPARTMENT REQUIREMENTS.
- ALL CONSTRUCTION SHALL CONFORM TO THE TOWN OF WILTON STANDARD DETAILS AND SPECIFICATIONS. IN THE ABSENCE OF LOCAL STANDARDS, THE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CONNECTICUT DEPARTMENT OF TRANSPORTATION SPECIFICATION FORM 818, LATEST REVISION.
- SOIL AND EROSION CONTROL MEASURES SHOWN HEREON SHALL BE PROPERLY INSTALLED PRIOR TO THE START OF CONSTRUCTION, INSPECTED AND REPAIRED WEEKLEY AND BEFORE AND AFTER STORM EVENTS, AND MAINTAINED IN FUNCTIONAL CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
- SITE GRADING INDICATED ON THIS PLAN IS IN CONFORMANCE WITH THE TOWN OF WILTON ZONING REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO THE COMMENCEMENT OF THE WORK.

GENERAL SEDIMENT AND EROSION CONTROL NOTES:

- SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
- COORDINATE THE CONSTRUCTION WITH THE TOWN OF WILTON ENVIRONMENTAL AFFAIRS DEPARTMENT STAFF PRIOR TO BEGINNING WORK.
- EXISTING TREES TO BE SAVED SHALL BE PROTECTED BY FLAGGING AND/OR SNOW FENCING AT THE DRIP LINE WHICH SHALL BE MAINTAINED DURING CONSTRUCTION.
- DUE TO THE VARIABLE LOCATION OF CONSTRUCTION, THE USE OF ANTI-TRACKING APRONS WILL BE ON AN "AS-NEEDED" BASIS DETERMINED IN THE FIELD. WHEN ANTI-TRACKING APRONS ARE USED, THEY SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. APRONS SHALL CONSIST OF 2" - 4" CRUSHED STONE WITH A MINIMUM THICKNESS OF 8 INCHES. EACH APRON SHALL BE APPROXIMATELY 50 FEET LONG AND EXTEND THE WIDTH OF THE CONSTRUCTION ACCESS.
- SILT FENCE AND OTHER SEDIMENT CONTROL MEASURES MUST BE INSTALLED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFIC MANUFACTURER'S RECOMMENDATIONS.
- SILT FENCE SHALL BE MIRAFI ENVIOFENCE OR EQUIVALENT APPROVED BY THE DESIGN ENGINEER.
- ADDITIONAL SEDIMENT AND EROSION CONTROLS MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE INSPECTING ENGINEER OR ANY GOVERNING AGENCY.
- AFTER EACH STORM EVENT OR AT LEAST ONCE WEEKLY, ALL SEDIMENT AND EROSION CONTROLS WILL BE INSPECTED. CORRECTIVE MEASURES TO MITIGATE ENVIRONMENTAL CONCERNS WILL BE ORDERED BY THE DESIGN ENGINEER AND/OR GOVERNING AGENCY, IF REQUIRED.
- ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL MEASURES WILL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK, ALL TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED FROM THE SITE AND ANY COLLECTED SEDIMENTS FROM THE DEVICES SHALL BE DISPOSED OF LEGALLY AND IN KEEPING WITH THE INTENT OF THIS PLAN.
- LAND DISTURBANCE SHALL BE KEPT TO A MINIMUM. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED. APPLY GRASS SEED AT A RATE OF APPROXIMATELY 120 LBS/ACRE. SEED MIX WILL VARY FROM UPLAND TO WETLAND BUFFER AREAS. MULCH AFTER SEEDING UPLAND AT A RATIO OF 1000 LBS/ACRE.
- EFFECTED PORTIONS OF OFFSITE ROADS MUST BE SWEEP CLEAN WHEN REQUIRED.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL," DATED MAY 2002.

N/F
GARY S. AND ALEXANDRA DALY
COTTN/F
STEPHEN G. AND KAREN D.
FLANAGAN

SCALE: 1" = 1250'

ORIENTATION

LEGEND

EXISTING	ITEM	PROPOSED
	DRAIN	
	STORM SEWER	
N.A.	DEEP TEST	
N.A.	PERCOLATION TEST	
440	CONTOUR	
337.9	SPOT ELEVATION	
N.A.	SILT FENCE	
N.A.	DOUBLE SILT FENCE	
	TREE TO REMAIN	N.A.
	POLE	N.A.

ELEVATIONS:

GARAGE	: 527.4
BASEMENT	: 524.4(EX.)/522.1(PR.)
F.F. HOUSE	: 533.0
HOUSE SEWER OUT (INV.)	: 529.5(EX.)/528.5(PR.)
SEPTIC TANK IN (INV.)	: 524.5
SEPTIC TANK OUT (INV.)	: 524.2

NOTE: PUMP CHAMBER INVERTS TO BE DETERMINED IN THE FIELD.

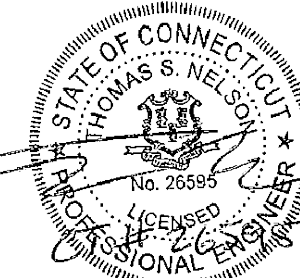
AREA = 2.109± ACRES

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1	2-20-24	ISSUED FOR MUNICIPAL APPROVAL
NO.	DATE	REVISIONS AND SUBMISSIONS

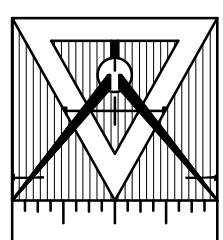
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DRAWING NO:



SE1

SHEET 1 OF 2



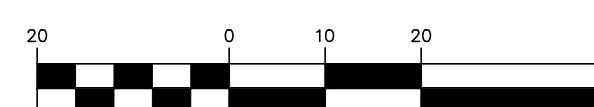
McChord Engineering Associates, Inc.
Civil Engineers and Land Planners
1 Grumman Hill Road
Wilton, CT 06897 (203) 834-0569

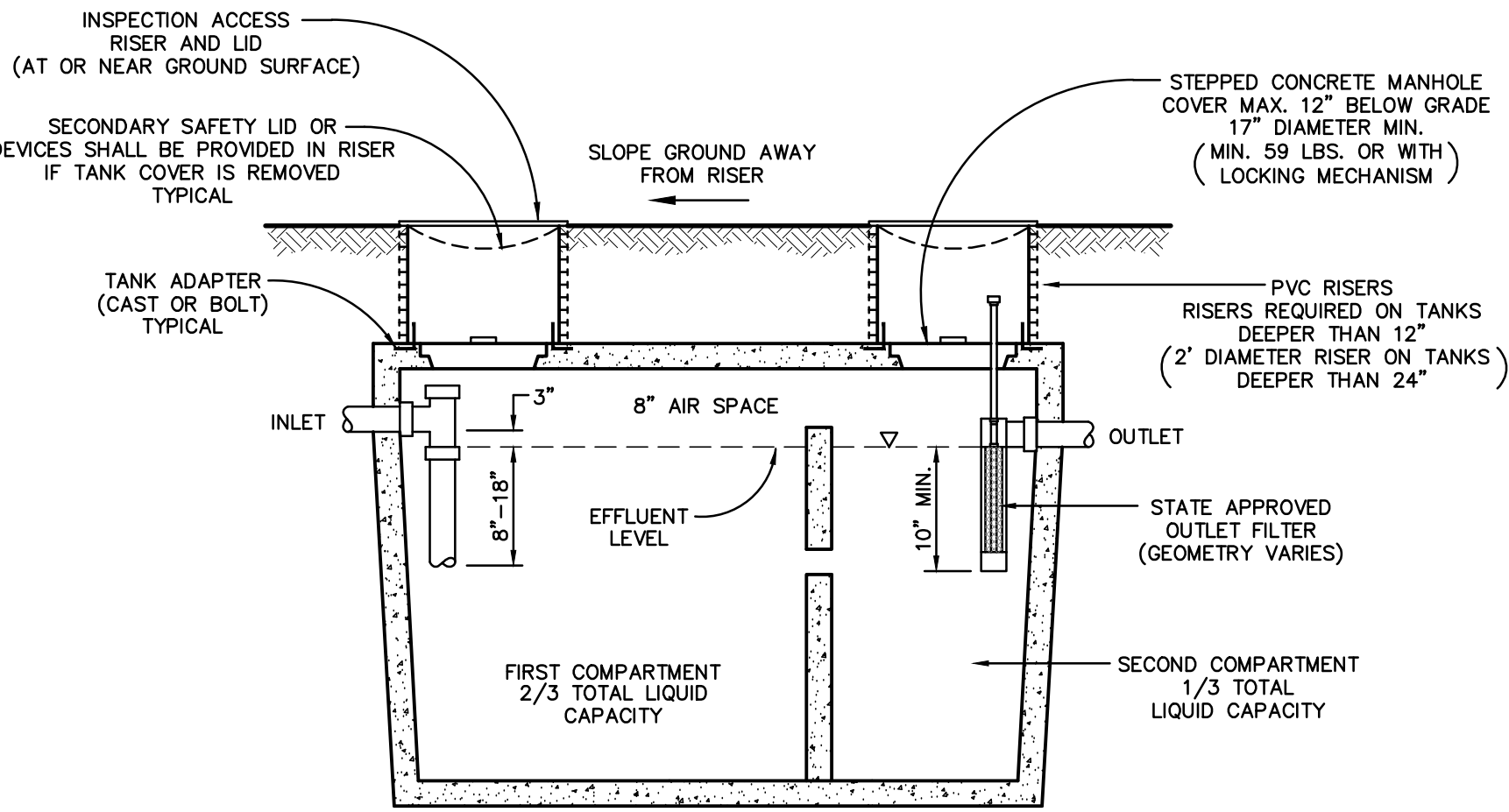
PLAN PREPARED FOR
BRUCE AND KAREN LEGAN
WILTON, CONNECTICUT

B100a SEPTIC SYSTEM/SITE DEVELOPMENT PLAN
249 NOD HILL ROAD
WILTON, CONNECTICUT

JOB NO: 2338A-1
DRAWN BY: DRS
SCALE: 1" = 20'

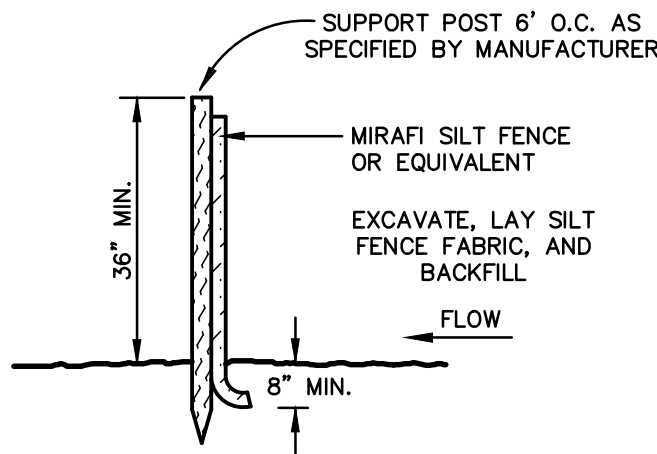
DATE: FEBRUARY 20, 2024
CHECKED BY: TSN, HMR





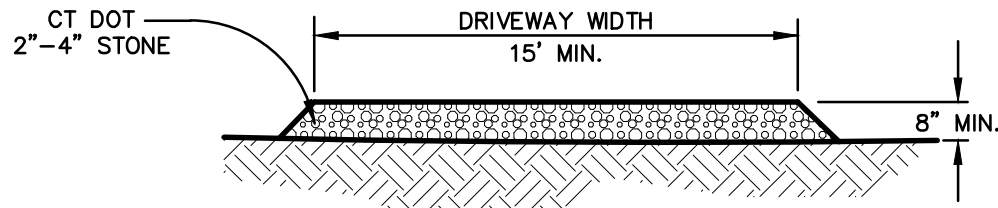
TYPICAL SEPTIC TANK DETAIL

N.T.S.



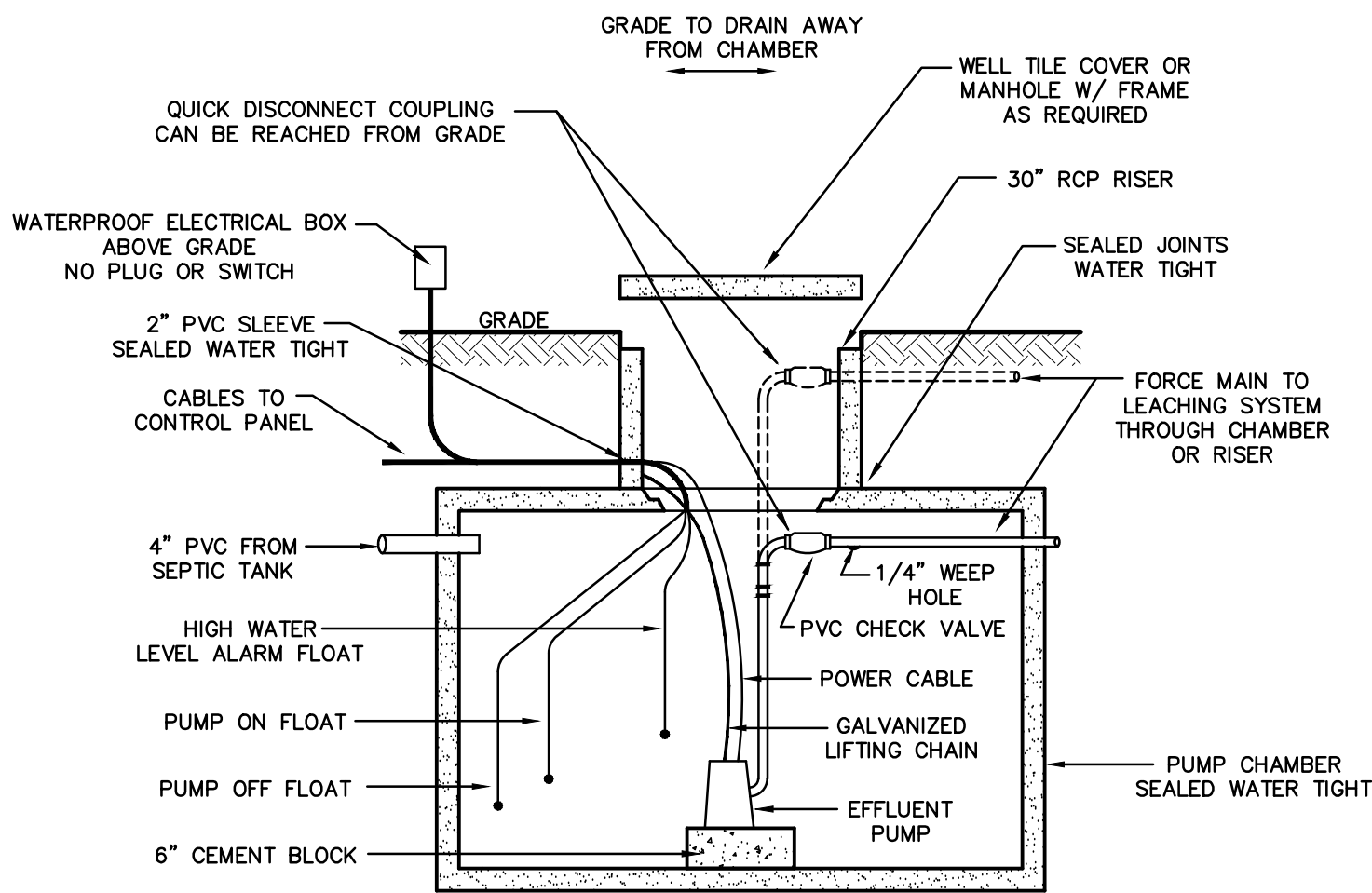
SILT FENCE DETAIL

N.T.S.



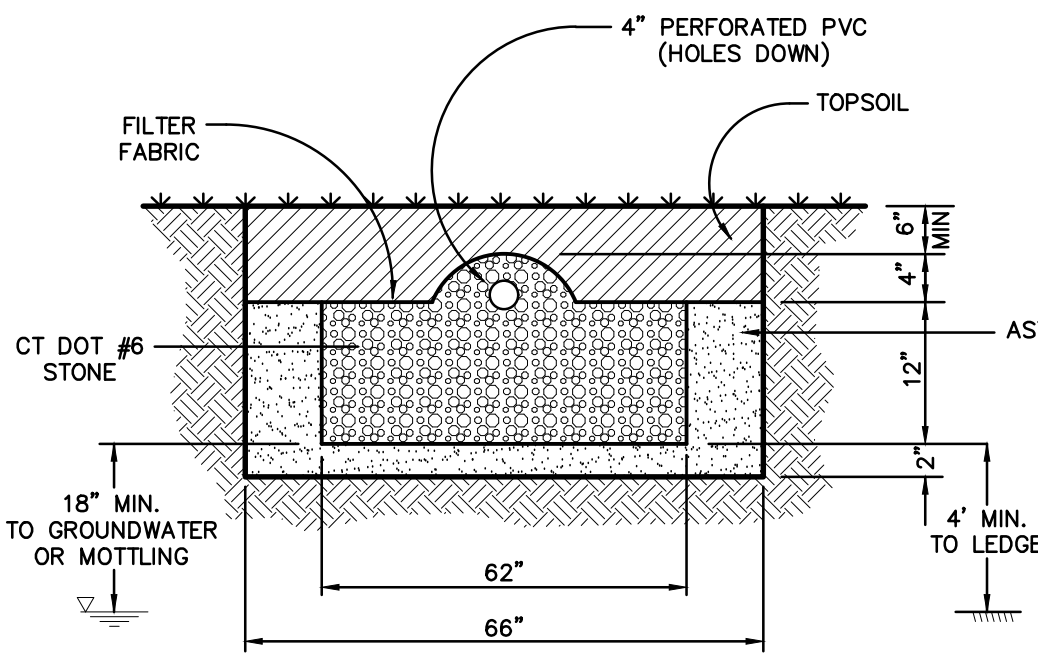
CONSTRUCTION ENTRANCE DETAIL

N.T.S.



TYPICAL PUMP CHAMBER DETAIL

N.T.S.

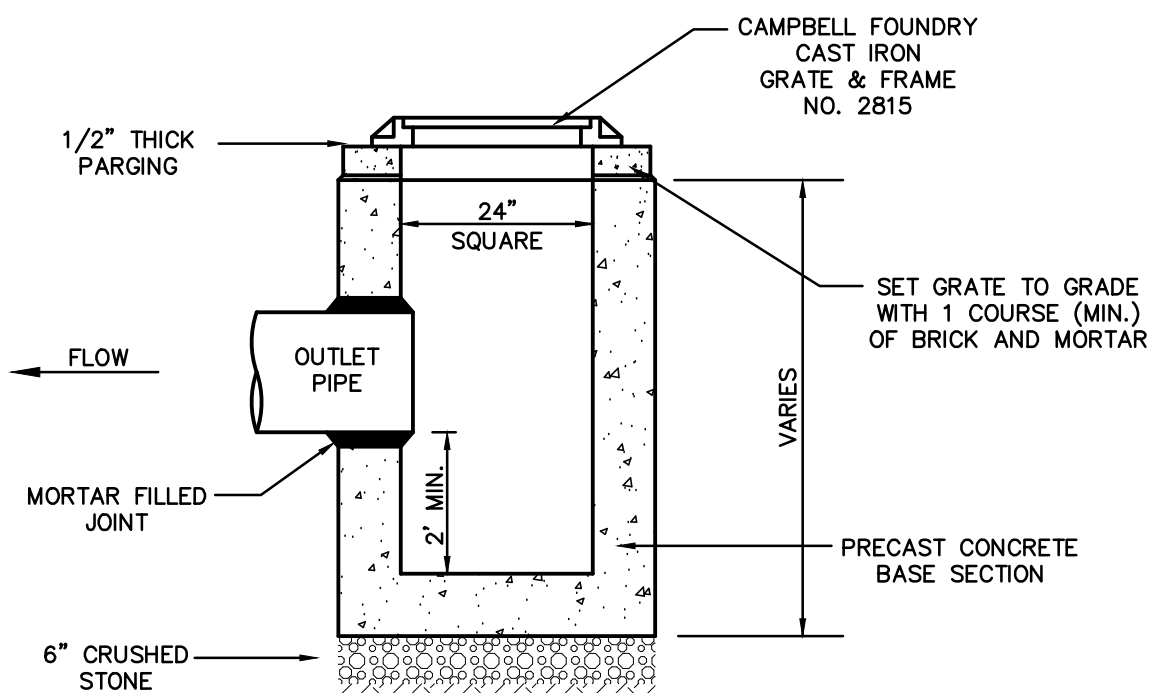


GEOMATRIX GST 6212 DETAIL

N.T.S.

PUMP NOTES:

- USE LIBERTY PUMP MODEL FL50, 1/2 HP, 115 V, WITH A 2" NPT DISCHARGE (60 gpm @ 28' tdh), OR EQUIVALENT.
- MECHANICAL FLOAT SWITCHES OR PRESSURE TRANSDUCER SHALL BE USED TO ACTIVATE THE PUMP AND THE HIGH WATER ALARM.
- SET THE HIGH WATER ALARM FLOAT AT DEPTH 2/3 INTO THE PUMP CHAMBER TO CREATE 675 GALLONS MINIMUM OF AVAILABLE STORAGE, PROVIDING FOR PUMP FAILURE.
- INSTALL THE HIGH WATER ALARM PANEL INSIDE THE HOUSE THAT IS SERVED BY THE PUMP CHAMBER. THE ALARM SHALL BE BOTH AUDIBLE AND VISUAL.
- SET THE PUMP-ON FLOAT TO PROVIDE A MAXIMUM DOSE OF 380 GALLONS. DOSE SHALL NOT EXCEED 20% OF THE LEACHING SYSTEM STORAGE VOLUME.
- THE PUMP CHAMBER SHALL HAVE A MINIMUM CAPACITY OF 1250 GALLONS. THE PUMP CHAMBER SHALL BE SEALED WATER-TIGHT AND BE EQUIPPED WITH 30" RISER SECTIONS TO GRADE. FOR ACCESS, THE PUMP CHAMBER INDICATED IS DISTRIBUTED BY CONNECTICUT PRECAST CORP., MONROE, CONNECTICUT AN EQUIVALENT CHAMBER IS ACCEPTABLE.
- THE FORCE MAIN SPECIFIED IS A 2" ASTM D1785 PVC PIPE OR POLYETHYLENE PLASTIC FLEXIBLE PRESSURE PIPE, FITTED WITH A DOWN TURN AT ITS OUTLET. IT SHALL BE BURIED DEEP ENOUGH TO PREVENT FREEZING AND BE PITCHED BACKWARDS TOWARD THE PUMP.
- THE PUMP ELECTRICAL SHUT OFF SHALL BE VISIBLE FROM THE PUMP CHAMBER AND SHALL BE ABOVE GRADE.



YARD DRAIN DETAIL

N.T.S.

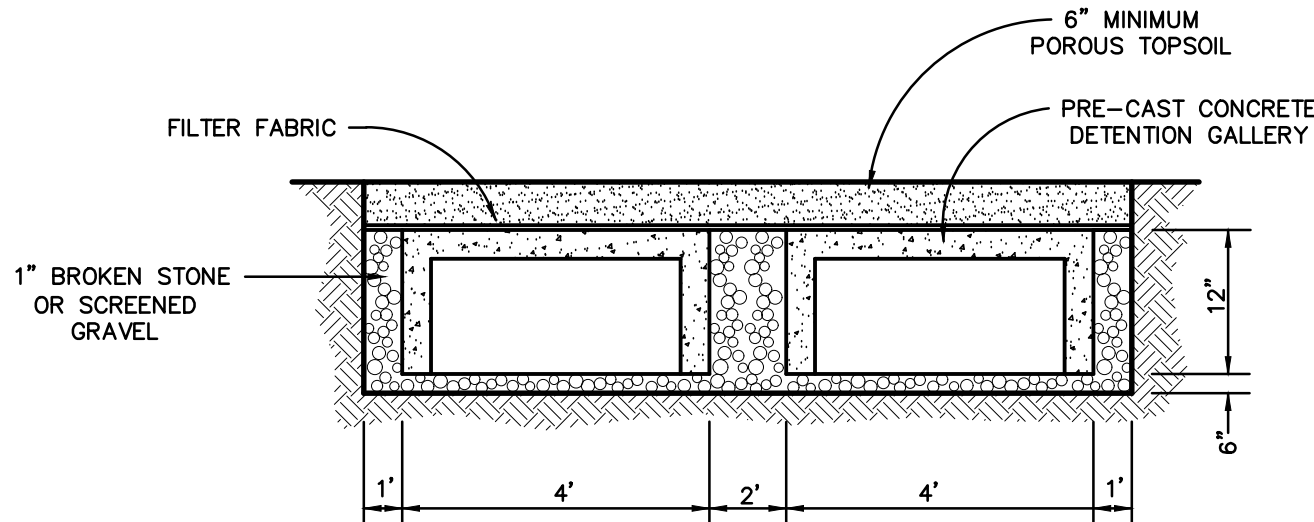
DESIGN CRITERIA B100a:

- PERCOLATION RATE: PT-A = 1:10
 - DESIGN RATE FOR PRIMARY SYSTEM: 1:10
 - DESIGN RATE FOR RESERVE SYSTEM: N/A
- MINIMUM LEACHING SYSTEM SPREAD (MLSS):
 - HYDRAULIC FACTOR (HF)
 - HYDRAULIC GRADIENT = 8.3%
 - DEPTH OF RESTRICTIVE LAYER = 52.3" (AVERAGE DTIA, 2A, 1 AND 2)
 - HYDRAULIC FACTOR = 16'
 - FLOW FACTOR (FF): 6 BEDROOM = 2.25
 - PERCOLATION FACTOR (PF): 1:10 = 1.0
 - MINIMUM LEACHING SYSTEM SPREAD = 16' x 2.25 x 1.0 = 36'
 - LEACHING SYSTEM SPREAD PROVIDED = 76'
- SYSTEM DESCRIPTION:
 - NUMBER OF BEDROOMS: 6
 - REQUIRED LEACHING AREA: 742.5 SF @ 10.0 SF/LF = 74.25 LF
 - SYSTEM COMPONENTS: 2000 GALLON SEPTIC TANK, 1250 GALLON PUMP CHAMBER AND 76 LF OF GST 6212.
 - TOTAL FIELDS PROPOSED:
 - PRIMARY SYSTEM: 1 x 76 LF = 76 LF @ 10.0 SF/LF = 760 SF
 - RESERVE SYSTEM: N/A
- DEPTH OF SYSTEM CONTROL: LEDGE @ 54" IN DEEP TEST 2 WILL CONTROL THE DEPTH OF THE SYSTEM.

DEEP TEST AND PERCOLATION TEST DATA:

DEEP TEST 1A	DEEP TEST 2A	DEEP TEST 1																								
0"-13" TOPSOIL 13"-37" RED BROWN FINE SANDY LOAM 37"-62" TAN GRAY COMPACT SAND	0"- 3" TOPSOIL 3"-54" RED BROWN FINE SANDY LOAM 54"-67" TAN GRAY COMPACT SAND	0"- 12" TOPSOIL 12"-64" RED BROWN SILTY LOAM																								
NO LEDGE NO MOTTLING NO GROUNDWATER RESTRICTIVE @ 37"	NO LEDGE NO MOTTLING NO GROUNDWATER RESTRICTIVE @ 54"	NO LEDGE NO MOTTLING NO GROUNDWATER																								
DEEP TEST 2	DEEP TEST 3	DEEP TEST 4																								
0"-12" TOPSOIL 12"-36" MOTTLED SILTY LOAM	0"-48" MISC FILL	0"- 6" TOPSOIL 6"-23" RED BROWN SILTY LOAM 23"-40" MOTTLED HARDPAN																								
LEDGE @ 54" NO MOTTLING NO GROUNDWATER RESTRICTIVE @ 54"	LEDGE @ 48" NO MOTTLING NO GROUNDWATER RESTRICTIVE @ 48"	NO LEDGE MOTTLING @ 23" NO GROUNDWATER RESTRICTIVE @ 23"																								
DEEP TEST 5	PERCOLATION TEST A																									
0"-12" TOPSOIL 12"-36" MOTTLED SILTY LOAM	PRESOAK: 2:30 AM DEPTH: 18 1/4" DIAMETER: 10"																									
NO LEDGE MOTTLING @ 12" NO GROUNDWATER RESTRICTIVE @ 12"	<table> <tr> <th>TIME</th><th>DEPTH</th><th>DROP</th></tr> <tr> <td>10:55</td><td>3"</td><td>3"</td></tr> <tr> <td>11:05</td><td>6"</td><td>3"</td></tr> <tr> <td>11:15</td><td>8 1/2"</td><td>2 1/2"</td></tr> <tr> <td>11:25</td><td>10 1/2"</td><td>2"</td></tr> <tr> <td>11:35</td><td>12"</td><td>1 1/2"</td></tr> <tr> <td>11:45</td><td>13"</td><td>1"</td></tr> <tr> <td>11:55</td><td>14 1/2"</td><td>1 1/2"</td></tr> </table>	TIME	DEPTH	DROP	10:55	3"	3"	11:05	6"	3"	11:15	8 1/2"	2 1/2"	11:25	10 1/2"	2"	11:35	12"	1 1/2"	11:45	13"	1"	11:55	14 1/2"	1 1/2"	
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	DESIGN RATE = 1:10																									

NOTE: DEEP TESTS 1A AND 2A AND PERCOLATION TEST A WERE CONDUCTED BY BRIAN ANDRONACO IN JULY 2005 AND WERE WITNESSED BY THE WILTON HEALTH DEPARTMENT. DEEP TESTS 1 THRU 5 WERE CONDUCTED BY MCHORD ENGINEERING ASSOCIATES, INC. ON JANUARY 23, 2024. DEEP TESTS 1 THRU 3 WERE WITNESSED BY THE WILTON HEALTH DEPARTMENT.



12" x 48" UNDERGROUND DETENTION SYSTEM GALLERY DETAIL

N.T.S.

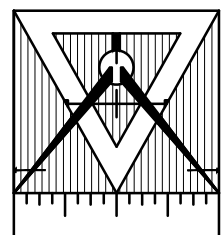
CONSTRUCTION NOTES:

- SUBSURFACE SEWAGE DISPOSAL SYSTEM MATERIALS AND CONSTRUCTION TECHNIQUES SHALL CONFORM TO THE STATE OF CONNECTICUT AND LOCAL HEALTH CODE STANDARDS AND SPECIFICATIONS, AS WELL AS ACCEPTED STANDARDS OF GOOD WORKMANSHIP.
- FINAL INSPECTION AND AS-BUILT DRAWINGS SHALL BE MADE IN ACCORDANCE WITH STATE AND LOCAL CODES. THE DESIGN ENGINEER SHALL BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF SYSTEM COMPLETION. INSPECTION OF THE SYSTEM SHALL OCCUR AS SOON AS POSSIBLE TO PREVENT DAMAGE AND IT SHALL BE COVERED WITHIN TWO WORKING DAYS OF THE SANITARIAN'S INSPECTION.
- THE WASTE LINE FROM THE HOUSE/BUILDING TO THE SEPTIC TANK SHALL BE NO LESS THAN 4" DIAMETER CAST IRON PIPE (ASTM A-74) OR A PVC SCHEDULE 40 (ASTM D1785), WITH RUBBER COMPRESSION GASKETS OR SOLVENT WELD JOINTS AND SHALL BE PITCHED WITH A MINIMUM SLOPE OF 1/4" PER FOOT.
- ALL SOLID DISTRIBUTION PIPING SHALL BE TIGHT JOINT 4" DIAMETER PVC (ASTM D3034 SDR 35). THESE LINES SHALL LIE ON UNDISTURBED OR COMPACTED SOIL.
- THE SEPTIC TANK SHALL HAVE A MINIMUM CAPACITY OF 2000 GALLONS AND CONTAIN TWO COMPARTMENTS. THE TANK SHALL BE INSTALLED LEVEL AND BE SET UPON AT LEAST 6" OF CRUSHED STONE OR GRAVEL, AND BE EQUIPPED WITH A 30" RISER SECTION TO GRADE. FOR ACCESS, SEPTIC TANKS INDICATED ARE MANUFACTURED BY RICHARD SEPTIC SYSTEMS, INC. OF TORRINGTON, CT. AN EQUIVALENT TANK IS ACCEPTABLE.
- DISTRIBUTION BOXES ARE MODEL DB 4 AS MANUFACTURED BY RICHARD SEPTIC SYSTEMS, INC. OF TORRINGTON, CONNECTICUT. BOXES SHALL BE SET UPON AT LEAST 6" OF CRUSHED STONE OR GRAVEL. EQUIVALENT BOXES ARE ACCEPTABLE.
- THE CONTRACTOR SHALL REMOVE FROM THE AREA OF THE SEPTIC SYSTEM ALL TOPSOIL AND ALL OTHER ORGANIC MATERIALS, TREE TRUNKS, AND DEBRIS; AND SHALL SCARIFY AND RAKE THE EXPOSED SURFACE TO ENSURE A GOOD BOND BETWEEN THE EXISTING SUBSOIL AND THE SELECT FILL.
- SELECT FILL SHALL MEET CONNECTICUT DEPARTMENT OF TRANSPORTATION SPECIFICATION M.02.06-1B AS FOLLOWS:

SIEVE	% 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 #200 SIEVE DOES NOT EXCEED 5%.

THE FILL SHALL ALSO BE ACCEPTABLE TO THE LOCAL HEALTH DEPARTMENT.
- THE FIRST 6" OF SELECT FILL SHALL BE HARROWED INTO THE EXISTING SOIL. THEREAFTER, IT SHALL BE PLACED IN 12" LIFTS AND MECHANICALLY COMPACTED. COMPACTION SHALL BE AT LEAST 90%-95% OF THAT DETERMINED BY A MODIFIED OPTIMUM COMPACTION TEST PERFORMED IN ACCORDANCE WITH ASTM D1557. SELECT FILL SHALL BE PLACED TO A POINT AT LEAST 5' FROM THE EDGE OF THE TRENCH, AND COMMON FILL TO A POINT 10' FROM THE EDGE OF THE TRENCH. IN CASES WHERE THE DEPTH OF FILL EXCEEDS 12" ABOVE THE EXISTING GRADE, THE TRENCH SHALL BE NOTCHED INTO THE EXISTING SOIL AT LEAST 12" AND FILLED WITH SELECT FILL.
- FINAL GRADING, INCLUDING THE 6" TOPSOIL LAYER, SHALL BE COMPLETED AS SOON AS POSSIBLE AFTER FINAL INSPECTION. CARE SHALL BE TAKEN TO PREVENT THE PONDING OF SURFACE WATER ON OR NEAR ANY PART OF THE SYSTEM.
- PROPOSED SEPTIC SYSTEM LOCATIONS MAY NOT BE SHIFTED WITHOUT OBTAINING WRITTEN PERMISSION FROM THE DESIGN ENGINEER AND LOCAL SANITARIAN.
- NO PART OF THE SEPTIC TANK OR LEACHING TRENCHES SHALL BE WITHIN 75' OF ANY WELL. THERE IS NO APPARENT INTERFERENCE BETWEEN THE WELLS OR SEPTIC SYSTEMS ON ADJACENT PROPERTIES AND THOSE PROPOSED ON THIS PLAN.
- SURFACE AND GROUNDWATER DRAINS SHALL BE PLACED UP GRADIENT AND AT LEAST 25' FROM THE SEPTIC SYSTEM. WHEN DRAINS ARE REQUIRED TO BE DOWN GRADIENT, THEY MUST BE AT LEAST 50' FROM THE SEPTIC SYSTEM. ALL DRAINS AND ROOF LEADERS SHALL DISCHARGE AWAY FROM THE SEPTIC SYSTEM.
- SOIL AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS INDICATED ON THE PLAN AND MAINTAINED DURING CONSTRUCTION, UNTIL THE SITE IS STABILIZED.
- THIS DESIGN IS BASED UPON THE USE OF CONVENTIONAL BATHTUBS WITH A CAPACITY UNDER 100 GALLONS. IF A LARGER BATH/HOT TUB IS TO BE INSTALLED THE LEACHING AREA AND SEPTIC TANK SIZES MUST BE INCREASED TO COMPLY WITH SECTION VII.F OF THE TECHNICAL STANDARDS. ADDITIONALLY, THE SYSTEM HAS NOT BEEN DESIGNED TO ACCEPT EFFLUENT FROM WHIRLPOOL BACKWASH, WATER SOFTENER BACKWASH OR GARBAGE DISPOSALS.
- THIS DESIGN IS BASED UPON THE INSTALLATION OF THE SEPTIC SYSTEM IN UNCOMPACTED NATURAL SOIL. ALTHOUGH THE CONTRACTOR IS RESPONSIBLE FOR PREPARING THE SITE, THE USE OF HEAVY EQUIPMENT IN THE PROPOSED SEPTIC AREA IS PROHIBITED TO AVOID OVER COMPACTION OF THE NATIVE SOIL.
- THIS DESIGN CONFORMS TO APPLICABLE CODES AND ACCEPTED PRACTICE. NO OTHER WARRANTY IS EXPRESSED OR IMPLIED.
- MCHORD ENGINEERING ASSOCIATES, INC. ASSUMES NO RESPONSIBILITY FOR SEPTIC SYSTEM SITE PREPARATION, LOCATION, OR INVERT ELEVATIONS IN COMPLIANCE WITH THE APPROVED PLAN, UNLESS IT SUPERVISES EACH PHASE OF SYSTEM INSTALLATION.
- PRIOR TO CONSTRUCTION A SURVEYOR LICENSED IN THE STATE OF CONNECTICUT SHALL STAKE OUT THE PROPOSED SEPTIC SYSTEM AND PROVIDE BENCHMARK ELEVATIONS.

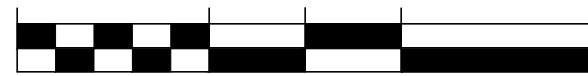


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PLAN PREPARED FOR
BRUCE AND KAREN LEGAN
WILTON, CONNECTICUT

CONSTRUCTION NOTES AND DETAILS
249 NOD HILL ROAD
WILTON, CONNECTICUT

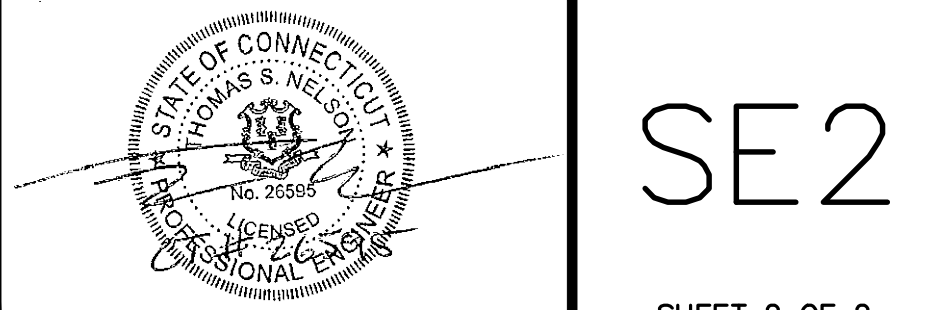
JOB NO: 2338A-1 DATE: FEBRUARY 20, 2024
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SCALE: AS SHOWN



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NO.	DATE	REVISIONS AND SUBMISSIONS
1	2-20-24	ISSUED FOR MUNICIPAL APPROVAL

SIGNATURE: _____ DRAWING NO: _____



SE2