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:								
,, ,	WET#							
Filing Fee \$	Wilton Land Record Map#							
Date of Submission	Volume # Page #							
Date of Acceptance	Assessor's Map #Lot#							
APPLICANT IN	FORMATION:							
Applicant Joseph Kropf	Agent (if applicable) McChord Engineering							
Address 26 Ledgewood Drive	Address							
Wilton, CT, 06897	Wilton, CT, 06897							
Telephone (203)856-2055	Telephone (203)834-0569							
Email Joe@wiltonfamilyeyecare.com	Email Tnelson@mcchordengineering.com							
PROJECT INF	ORMATION:							
Property Address 26 Ledgewood Drive	Site Acreage							
Acres of altered Wetlands On-Site_0.0085	Cu. Yds. of Material Excavated							
Linear Feet of Watercourse 40'	Cu. Yds. of Material to be Deposited							
Linear Feet of Open Water	Acres of altered upland buffer 0.08							
Sq. Ft. of proposed and/or altered impervious coverage 0	Sq. Ft. of disturbed land in regulated area 3,315							
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.

		Cultivart replacement for an existing part of a drivery
	Project Desc	ription and Purpose: Culvert replacement for an existing private driveway.
•		
-		
		applicant shall provide nine (9) collated copies of the following information as well as an electronic 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
<u> </u>	В.	A Location Map at a scale of 1" = 800'
~] C.	A Site Plan showing existing and proposed features at a scale not to exceed $1'' = 40'$
<u> </u>	D.	Sketch Plans depicting the alternatives considered
<u> </u>	E.	Names and addresses of adjoining property owners
<u> </u>	F.	A narrative describing, in detail
		a. the proposed activity c. impacts b. the alternatives considered d. proposed mitigation measures
✓	G.	Soils Report prepared by a Certified Soil Scientist and Wetlands Map prepared by a Registered Land Surveyor
✓	Н.	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 led.	materials shall be collated and copies of documents more than two pages in length shall be double
		of the Wetlands and Watercourses Regulations of the Town of Wilton for a more detailed description of quirements.
		or his/her agent certifies that he is familiar with the information provided in this application and is aware of or obtaining a permit through deception, inaccurate or misleading information.
Co	mmissioners	application, permission is hereby given to necessary and proper inspections of the subject property by the sand designated agents of the Commission or consultants to the Commission, at reasonable times, both before all decision has been rendered.
Аp	plicant's Sig	nature: See Attached Date: 05/12/2023
		Date: 05/12/2023 Date: 05/12/2023 Date: 05/12/2023

Joseph Kropf 26 Ledgewood Drive Wilton, CT 06897

May 12, 2023

Michael Conklin Director of Environmental Affairs Town Hall Annex 238 Danbury Road Wilton, CT 06897

Re:

Proposed Culvert Replacement 26 Ledgewood Drive, Wilton, CT Map 128, Lot 24

Dear Mr. Conklin,

I hereby authorize McChord Engineering Associates, Inc. (MEA), to act as agent in regard to the Inland Wetlands Application and authorize all subject property activities associated with the proposed culvert replacement.

Please be advised that Inland Wetlands Commission members and their designated agents or consultants are hereby given permission for necessary and proper inspections of the subject property, at reasonable times, both before and after a final decision has been rendered.

Sincerely,

Joseph Kropf∕/

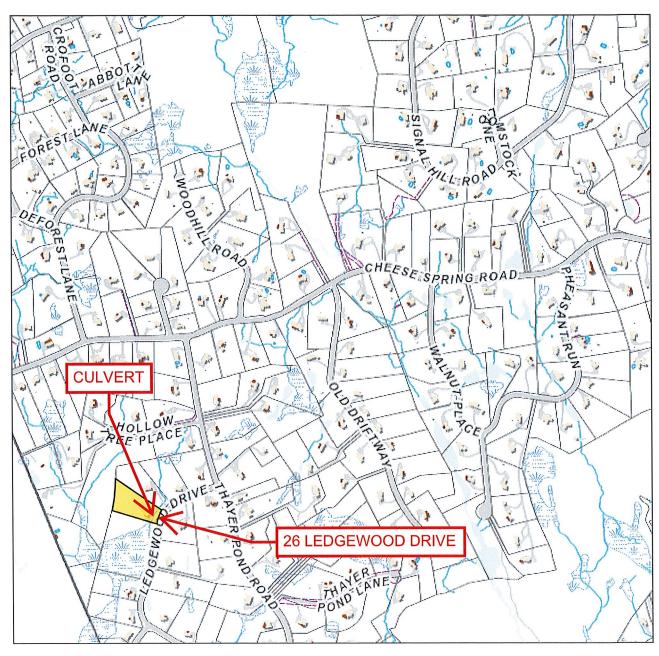
4/5/23, 11:31 AM Print Map

Town of Wilton

Geographic Information System (GIS)

LOCATION MAP 26 LEDGEWOOD DRIVE, WILTON, CT





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





Adjacent Property Owners within 100' of Property 26 Ledgewood Drive

26 Ledgewood Drive Wilton, CT 06897 Map 128, Block 24

M-B-L	Property Owner	Mailing Address
128/21	James M. III & Sheila M. Lillis	19 Ledgewood Drive Wilton, CT 06897
128/23	Town of Wilton	238 Danbury Road Wilton, CT 06897
128/25	Kenyon Bailey Jr. Fitzgerald	20 Ledgewood Drive Wilton, CT 06897
128/26	Michael & Andrea Mcelroy	16 Ledgewood Drive Wilton, CT 06897



McChord Engineering Associates, Inc.

Civil Engineers and Land Planners

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

May 15, 2023

Michael Conklin Director of Environmental Affairs Town Hall Annex 238 Danbury Road Wilton, CT 06897

Re:

Engineering Summary Proposed Culvert Repair 26 Ledgewood Drive, Wilton, CT Map 128, Lot 24

Dear Mr. Conklin:

McChord Engineering Associates, Inc. has been commissioned to prepare a design for the repair of the culvert crossing under the driveway at 26 Ledgewood Drive. This office has inspected the existing culvert, reviewed the contributing watershed, prepared a hydraulic analysis of the culvert pipe and created a repair plan. The following is an engineering summary of the existing conditions, proposed repair and potential impacts.

The existing culvert crossing consists of a single 12" diameter corrugated metal pipe (CMP) and conveys a small brook under the gravel driveway. The driveway is approximately 5.5' above the culvert bottom. The banks along the side of the driveway are very steep and are stabilized by roughly stacked stones and boulders. The gravel driveway is also bordered by staked railroad ties. It is assumed that the culvert was constructed in 1970 when the house was built. Upstream of the culvert the narrow brook meanders through a dense woodland. Downstream of the culvert the brook opens up into a large, wooded wetlands area. The brook itself is approximately 2'-4' wide, with a stone and loam bottom and steep vegetated banks. The existing conditions are shown on the "Topographic Survey" prepared for Joseph Kropf and Irene Rosenberg by John M. Farnsworth & Associates, dated October 2, 2022.

Our inspection of the driveway culvert revealed that the entire flow line of the culvert has rusted out revealing bare earth below. The stone and boulder banks are very crudely constructed but appear to be stable. No significant erosion was noted. The inlet of the culvert is very narrow and therefore it is susceptible to clogging from leaves and sticks. It requires frequent maintenance from the property owners to ensure it won't clog. The attached pictures highlight the conditions of the existing culvert.

The culvert has surpassed its life expectancy and will degrade rapidly if not repaired. Eventually it will collapse, causing blockage of the stream and damage to the driveway. The culvert is too degraded to attempt to reline and too small to sleeve a new pipe through it. Therefore the best option is to replace the culvert completely.

A 24" diameter HDPE pipe is proposed to replace the existing culvert in the same location. The larger diameter pipe will be less prone to clogging and easier to maintain. The stone and boulder slopes will be removed and the stone will be repurposed in the new construction. Two terraced walls will support the banks along the driveway. The lower terrace will consist of 4' high precast concrete or masonry fieldstone headwalls at the pipe inlet and outlet. The upper terrace will consist of a 2' high boulder wall. The boulder wall is also proposed to extend along the edge of the lawn to the north in order to stabilize the existing banks. Additionally the existing gravel parking area will be trimmed back near the southern property line, creating greater separation from the large wetlands area. The "Culvert Repair Plan" prepared for Joseph Kropf and Irene Rosenberg by this office details the proposed work.

The watershed upstream of the culvert crossing totals approximately 14.35 acres. It consists primarily of lightly developed single family residences on 2-acre lots. Portions Ledgewood Drive, Hollow Tree Place and Thayer Pond Road are also within the watershed. The watershed map is attached. The brook is not subject to any FEMA flood zones.

Culvert Studio v 2.0.0.19 software was used to model the culvert under proposed conditions during a 25-year storm event. This software uses FHWA – HDS-5 methodology to compute the hydraulic grade line for the culvert. That rational method was used to determine peak flows during a 25-year storm of 15.26 cfs. The analysis found that the proposed culvert will adequately convey the 25-year storm event. Detailed calculations are attached.

The "Culvert Repair Plan" shows silt fence to protect the stream and banks during construction. It also includes a construction sequence outlining the critical steps of the repair. Work will be staged from the existing driveway which will protect the existing vegetation. One 12" Maple will need to be removed to facilitate construction. Stones and boulders from the existing slopes will be reused in the new construction. It is also anticipated that the soil excavated can be reused for general backfill. Approximately 35 cubic yards of clean aggregate will need to be imported for bedding the new pipe and replacing the disturbed portion of the gravel driveway. Excess material from the project will be removed from the site.

Construction of the project will be timed to work within good weather conditions. Temporary dewatering measures will be required to install the culverts and headwalls. Dewatering will be accomplished by installing a pump intake at the upstream end of the project and pumping to a filter sock at the downstream end. The filter sock will ensure clean water discharge. It is anticipated that the bulk of the repair can be completed within one week and will allow the

Michael Conklin May 15, 2023 Page 3/3

owners to regain vehicle access to the house. The completed project, including boulder walls, gravel driveway and stabilization, is anticipated to take three weeks.

The proposed culvert repair is necessary before the culvert fails completely. The proposed culvert crossing is in the same location as the existing culvert and is designed to minimize disturbance to the wetlands and brook. The new culvert will provide improved conveyance capacity and will be easier to maintain. The proposed terraced walls will also improve the long-term stability of the banks and driveway. Proper implementation of the proposed construction sequence and erosion control measures will minimize potential impacts to the stream and downstream property owners during construction.

Sincerely,

Thomas Nelson, P.E.

President

Attachements.

BIC 1: EXISTENS DETVENMY



Pac Z: Exastant Exce of LANN



Pic 3: EXASTER CHIVENT



PIC 4: EXESTANT STONE SLOPE AT INLET



<u>26 LEDGEWOOD DRIVE, WILTON, CT, PROPOSED CULVERT WATERSHED.</u>

Town of Wilton

Geographic Information System (GIS)



Date Printed: 4/5/2023 CHEESE SPRIN SUBJECT PROPERT OW TREE PLACE **INLAND WETLANDS AREA** APPROXIMATE LIMIT OF WATERSHED DRAINING TO PROPOSED CULVERT Zoning Effective: July 28, 2017 BILITY (AREA = 14.35 ACRES +/-)not for legal description Planimetrics Updated: 2014 rification by any user. Approximate Scale: 1 inch = 400 feet The Town of Wilton and its mapping contractors assume no legal responsibility for the information contained herein. 400 ⊐ Feet

Existing Conditions - 26 Ledgewood Drive

Prepared by {enter your company name here}
HydroCAD® 8.50 s/n 004801 © 2007 HydroCAD Software Solutions LLC

Summary for Subcatchment E1: 26 Ledgewood - Tc Calc

[40] Hint: Not Described (Area=0)

Runoff

0.00 cfs @ 0.00 hrs, Volume=

0 cf, Depth= 0.00"

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs Rainfall Duration=0 min, Inten=0.00 in/hr

	Tc	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	15.2	150	0.0367	0.16		Sheet Flow, AB
						Grass: Dense n= 0.240 P2= 3.30"
	1.9	165	0.0424	1.44		Shallow Concentrated Flow, BC
						Short Grass Pasture Kv= 7.0 fps
	0.4	142	0.0704	5.39		Shallow Concentrated Flow, CD
						Paved Kv= 20.3 fps
	0.4	142	0.0704	5.39		Shallow Concentrated Flow, DE
						Paved Kv= 20.3 fps
	3.0	161	0.0310	0.88		Shallow Concentrated Flow, EF
						Woodland Kv= 5.0 fps
	5.8	820	0.0244	2.34		Shallow Concentrated Flow, FG
_						Grassed Waterway Kv= 15.0 fps
	26.7	1,580	Total			

= 0.30

06-15-2023 Culvert Studio v 2.0.0.19

Culvert Repair

Rise

Culvert 2

CULVERT EMBANKMENT

= Circular Top Width = 16.00 ftShape

= Roadway Profile Inlet Edge = Square Edge/ Hdwall Top Elevation

= HDPE Crest Length = Varied Material

Manning's n = 0.012

= 24 in

Method = Rational Method Span = 24 in

DISCHARGE

= 14.35 acInvert Elev. Down = 184.50 ftDrainage Area

= 30.0 ft**Runoff Coefficient** Length Time of Concentration = 26.7 min

Slope = 0.020 ft/ftInvert Elev. Up = 185.10 ft

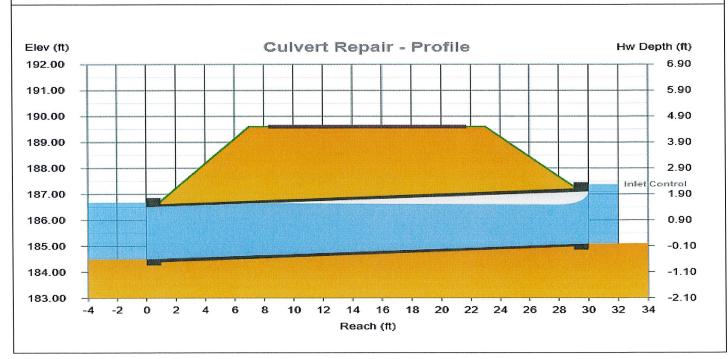
No. Barrels = 1 **TAILWATER**

Tailwater Condition = Channel 1 Plan Skew Angle = 0 degrees

CALCULATION SAMPLE, 25 - Year Event

Discharge			Velocity		Depth		HGL @ Hw/D = 1.13		
Total	Culvert	Over Top	Down	Up	Down	Up	Down	Up	Hw
(cfs)	(cfs)	(cfs)	(ft/s)	(ft/s)	(in)	(in)	(ft)	(ft)	(ft)
15.26	15.26	0.00	4.86	6.05	24.0	18.0	186.67	186.60	187.37

Notes:IDF Curves = Atlas14-IDF.idf; Tailwater = Channel 1, Id = Lachat Stream, Velocity = 0.51 ft/s, Tailwater Elev. = 186.67 ft



Culvert Report

Culvert Studio v 2.0.0.19 06-15-2023

Culvert Repair

Rise

Invert Elev. Up

Culvert 2

CULVERT EMBANKMENT

Shape = Circular Top Width = 16.00 ft

Inlet Edge = Square Edge/ Hdwall Top Elevation = Roadway Profile

Material = HDPE Crest Length = Varied

Manning's n = 0.012

Span = 24 in Method = Rational Method

DISCHARGE

Opan 24 m Method National Method

Invert Elev. Down = 184.50 ft Drainage Area = 14.35 ac

Length = 30.0 ft Runoff Coefficient = 0.30

Slope = 0.020 ft/ft Time of Concentration = 26.7 min

No. Barrels = 1 TAILWATER

Plan Skew Angle = 0 degrees Tailwater Condition = Channel 1

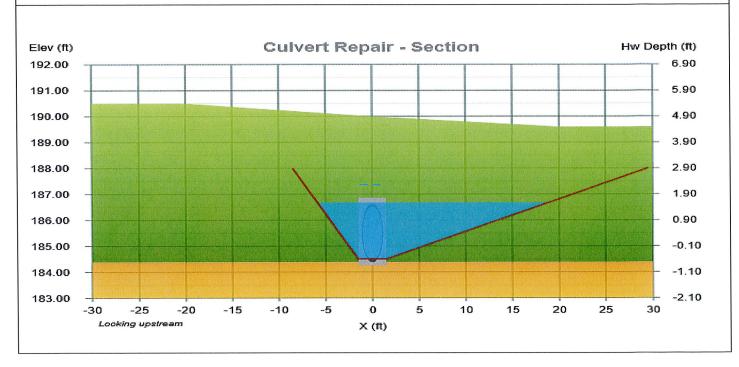
CALCULATION SAMPLE, 25 - Year Event

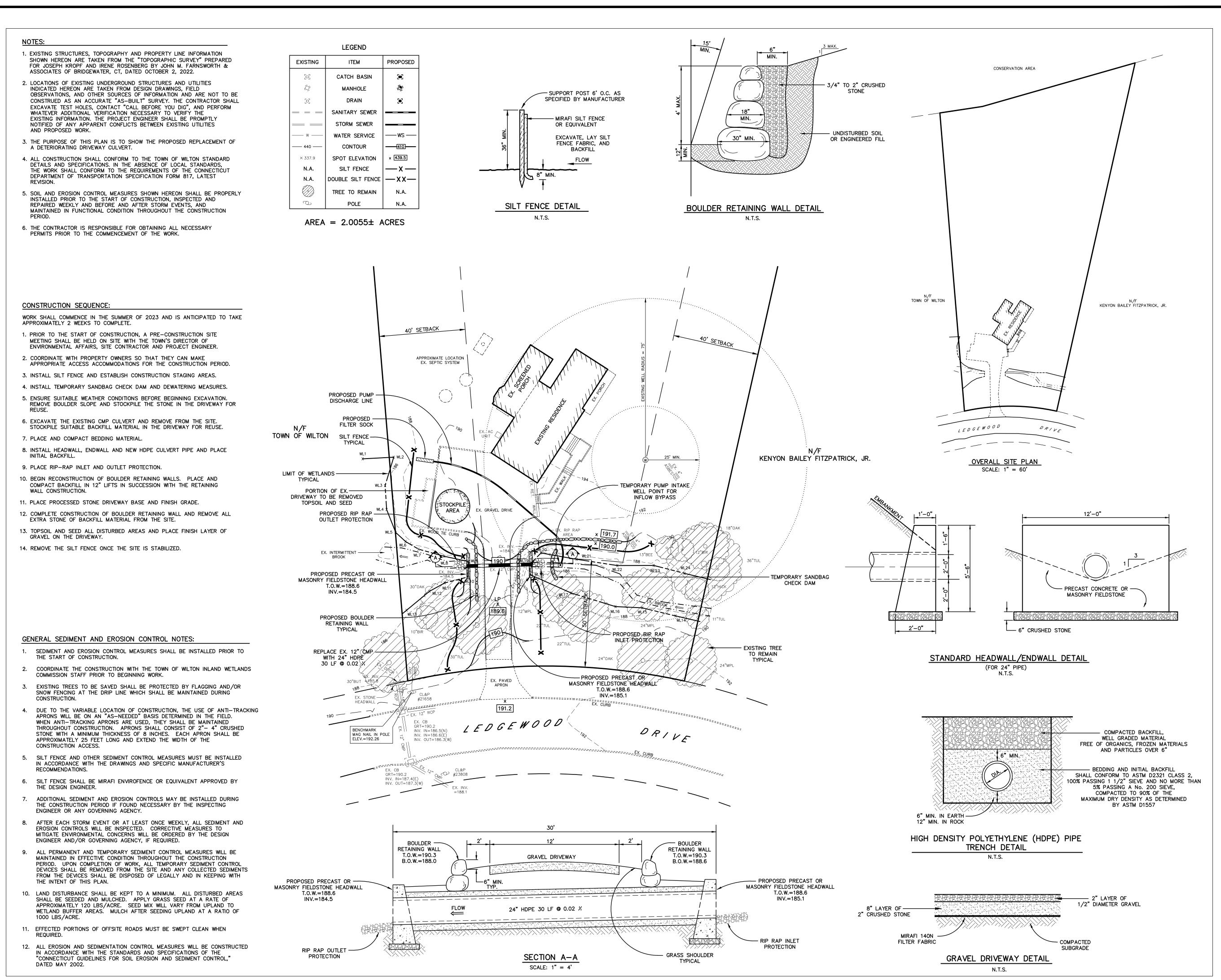
= 24 in

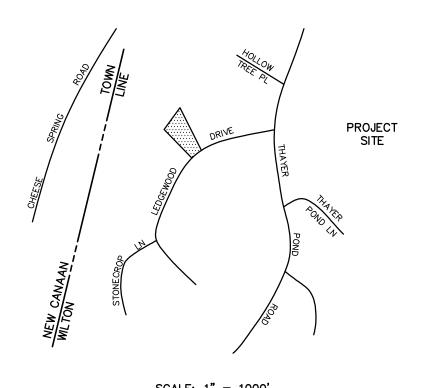
= 185.10 ft

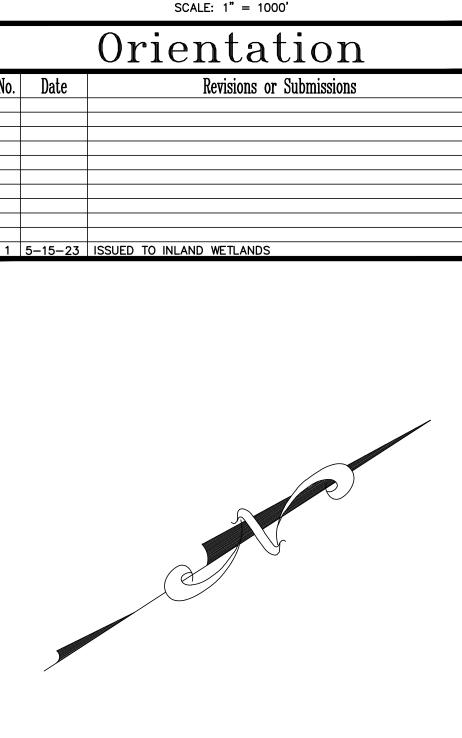
Discharge			Velocity		Depth		HGL @ Hw/D = 1.13		
Total	Culvert	Over Top	Down	Up	Down	Up	Down	Up	Hw
(cfs)	(cfs)	(cfs)	(ft/s)	(ft/s)	(in)	(in)	(ft)	(ft)	(ft)
15.26	15.26	0.00	4.86	6.05	24.0	18.0	186.67	186.60	187.37

Notes:IDF Curves = Atlas14-IDF.idf; Tailwater = Channel 1, Id = Lachat Stream, Velocity = 0.51 ft/s, Tailwater Elev. = 186.67 ft









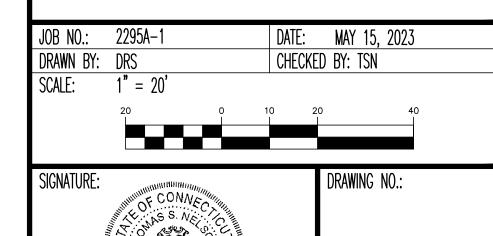
HIS DRAWING AND DETAILS ON IT, AS AN INSTRUMENT OF SERVICE, IS THE PROPERTY OF THE ENGINEER AND MAY BE USED FOR THIS SPECIFIC PROJECT AND SHALL NOT BE LOANED, COPIED OR REPRODUCED WITHOUT THE WRITTEN

McChord Engineering Associates, Inc.

Civil Engineers and Land Planners Grumman Hill Road Wilton, CT 06897 (203) 834-0569

PLAN PREPARED FOR JOSEPH KROPF & IRENE ROSENBERG WILTON, CONNECTICUT

> CULVERT REPAIR PLAN 26 LEDGEWOOD DRIVE WILTON, CONNECTICUT



SHEET 1 OF 1

PFIZER – JÄHNIG ENVIRONMENTAL CONSULTING

October 25, 2022

Wetland Delineation Report

26 Ledgewood Drive Wilton, Connecticut

Introduction:

A wetland delineation was conducted at 26 Ledgewood Drive on October 16, 2022 by Mary Jaehnig, soil scientist. The property is on the western side of the road and supports a single family dwelling. The delineation is in the front wetland/watercourse that is piped beneath the driveway. The far western portion of the site was not investigated at this time.

The edge of wetland was flagged in the field using chronologically labeled pink ribbon from number 1 to 13 and 14 to the end. The wetland is associated with a watercourse that flows from north to south adjacent to the road. The watercourse eventually enters Thayer Brook and the Silvermine River.

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 topography is undulating with slopes generally descending from west to east. The upland soil unit is Charlton-Chatfield complex, very rocky. This unit consists of the well drained and deep Charlton loam and the well drained and somewhat deep Chatfield loam in a landscape with stones, boulders and areas of exposed bedrock. The depth to the water table usually exceeds 6 feet below grade for both loams. The depth to bedrock usually exceeds 5 feet in Charlton loam and averages 20 to 40 inches below grade for Chatfield loam.

Fill was used along the road and in the driveway turnaround.

The wetland unit is Ridgebury, Leicester and Whitman, extremely stony loams. The soils are deep, poorly and very poorly drained and formed in glacial till. Stones and boulders occur on the surface and the water table is close to the surface from late fall into spring.

Submitted by,

Mary Sachnig

Mary Jaehnig soil scientist

