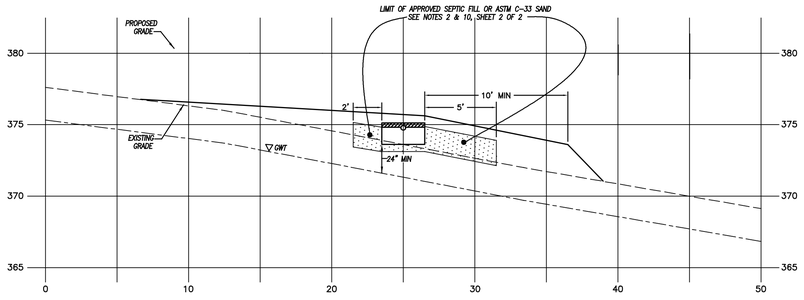


PERCOLATION TEST RESULT – August 22, 2023
Killingly Engineering Associates.

HOLE 1
Depth = 22" Rate = 3.3 min./in.

Time	Reading
9:00	1.5"
9:05	6"
9:10	8.5"
9:15	10"
9:20	11.5"
9:25	13"
9:30	14.5"
9:35	16"

TEST HOLE DATA – August 10, 2023
Northeast District Department of Health

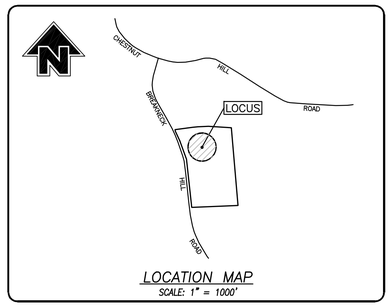
TEST PIT	DEPTH	PROFILE
1	0"–3"	Topsoil/Organics
	3"–17"	Orange/Brown Loamy Fine Sand
	17"–34"	Tan Loamy Sand
	34"–77"	White/Grey Mottled Sandy Loam
	77"–80"	Groundwater
	Ledge	N/A
	GWT	77"
	Mottling	34"
	Restrictive	34"
	Roots	30"
2	0"–6"	Topsoil/Organics
	6"–14"	Orange/Brown Loamy Fine Sand
	14"–30"	Tan Loamy Sand
	30"–82"	White/Grey Sandy Pan
	Ledge	N/A
	GWT	77"
	Restrictive	30"
	Roots	28"
3	0"–6"	Topsoil/Organics
	6"–14"	Orange/Brown Loamy Fine Sand
	14"–30"	Tan Loamy Sand
	30"–82"	White/Grey Sandy Pan
	Ledge	N/A
	GWT	77"
	Restrictive	30"
	Roots	28"

SEPTIC SYSTEM DESIGN DATA

Percolation Rate	=	3.3 min. / in.
3 bedroom house requires	=	495 s.f. effective leaching area
Effective Leaching area	=	11 s.f. / l.f. of eljen Mantic 536–8
Length Required	=	495/11 = 45 l.f.
Length Provided	=	45 l.f.
Min. Leaching System Spread (MLSS)	=	20 x 1.5 x 1.0 = 30'
MLSS Provided	=	45'

LEACHING FIELD

One 45' row of Eljen Mantis 536–8 Septic Leaching units (9 units)
Maximum depth into existing grade = 6"
Perc. rate faster than 5.0 min. per inch. GW separation increased to 24 in.



LOCATION MAP
SCALE: 1" = 1000'

NOTES:

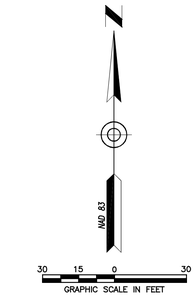
1. This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Sections 20–300b–1 through 20–300b–20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996, Amended October 26, 2018;
   - This survey conforms to a Class "C" horizontal accuracy.
   - Field surveyed topographic features conform to a Class "T–2", "V–2" vertical accuracy.
   - LIDAR topographic features conform to a Class "T–D" vertical accuracy.
   - Survey Type: General Location Survey.

   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. Zone = RD.
3. Parcel is shown as Lot #6 on Assessors Map #65.
4. Owner of record: Estate of Robert Liebler & Norma Liebler
   130 Red Stone Hill
   Plainville, CT 06062
   See Volume 440, Page 82

   Applicant: Gavin Sheehan
   75 Doyle Road
   Tolland, CT 06084
5. Elevations shown are based on North American Vertical Datum of 1988 (NAVD 88). Contours shown are taken from Connecticut statewide LIDAR and supplemented with actual field survey. Contour interval = 2'.
6. Wetlands shown were delineated in the field by Joseph Theroux, Certified Soil Scientist, on 7/14/2023.
7. North orientation, bearings and coordinate values shown are based on North American Datum of 1983 (NAD 83) and are taken from GPS observations using the "Superior" statewide GPS network and RTK correction system.
8. Before any construction is to commence contact "CALL BEFORE YOU DIG" at 1–800–922–4455 or 811.

MAP REFERENCE:

1. "Plan of Land of – Etienne L. & Marie Jeanne Labelle – Near Ballouville Killingly, Conn. – Scale: 1" = 100' – March 1945 – Prepared by: W.K. Pike On file in the Killingly Land Records as Map #363–E.



SURVEYOR SHALL SET A BENCH MARK IN THE AREA OF THE SEPTIC SYSTEM AT THE TIME OF CONSTRUCTION STAKE–OUT.

SEPTIC TANK
1000 GALLON TWO COMPARTMENT F/L IN = 377.75 F/L OUT = 377.50
DISTRIBUTION BOXES
D–1 (STANDARD) F/L IN = 374.77 F/L OUT = 374.60

CROSS SECTION "A–A"
SCALE: 1" = 5'

1. OVERALL SUMP PIT DIMENSIONS SHALL BE COMPATIBLE WITH ANTICIPATED OR MEASURED FLOW RATES AND PUMP SIZE TO BE USED.
2. THE STANDPIPE DIAMETER AND NUMBER OF PERFORATIONS SHALL BE COMPATIBLE WITH THE PUMP SIZE BEING USED.
3. PERFORATIONS IN THE STANDPIPE SHALL BE EITHER CIRCULAR OR SLOTS. PERFORATION SIZE SHALL NOT EXCEED 1/2" IN DIAMETER.
4. CRUSHED STONE OR GRAVEL SHALL BE NO SMALLER THAN CT DOT #67 SIZE NOR LARGER THAN CT DOT #3 SIZE. CRUSHED STONE SHALL EXTEND A MINIMUM OF 12" BELOW THE BOTTOM OF THE STAND PIPE.
5. IF EXCESSIVE MOVEMENT OF FINE SOIL PARTICLES FROM THE SURROUNDING EXISTING SOILS IS ANTICIPATED, A PROPERLY DESIGNED GEOTEXTILE SHALL BE PLACED BETWEEN THE EXISTING SOILS AND THE CRUSHED STONE OR GRAVEL BACKFILL.
6. THE STANDPIPE SHALL EXTEND A MINIMUM OF 12" ABOVE THE SURROUNDING GROUND.

SUMP PUMP INTAKE PROTECTION DETAIL
NOT TO SCALE

NOTES:

1.) TO BE USED IN THE EVENT THAT DEWATERING IS REQUIRED.
2.) LOCATE BASINS OUTSIDE OF WETLANDS.

PUMPING OUTLET BASIN
NOT TO SCALE

LEGEND

F.F.	FINISHED FLOOR
∅	UTILITY POLE
100	EXISTING CONTOURS
100	PROPOSED CONTOURS
#1	INLAND WETLANDS FLAG
BB	BUILDING SETBACK LINE
	PERCOLATION TEST HOLE
	TEST HOLE
	STONE WALL
	SILT FENCE

ANY CHANGES TO THESE PLANS WITHIN 200' OF WETLANDS OR WATERCOURSES MUST BE RESUBMITTED TO THE KILLINGLY INLAND WETLANDS AND WATERCOURSES COMMISSION FOR ITS APPROVAL.

THE APPLICANT WILL CONTACT THE KILLINGLY INLAND WETLANDS AND WATERCOURSES COMMISSION'S AGENT AFTER ALL EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED, PRIOR TO ANY CONSTRUCTION OR EXCAVATION ON THE PROPERTY.

APPROVED BY THE TOWN OF
KILLINGLY INLAND WETLANDS COMMISSION

CHAIRMAN DATE

LINE DATA		
LINE	BEARING	DISTANCE
L1	N 68° E	7.8'±
L2	N 27° W	19'±

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

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

GREG A. GLAUDE, L.S. LIC. NO. 70191 DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.

DATE	DESCRIPTION
01/08/2024	PER ENGINEERING REVIEW
01/05/2024	NDDH & IWWC COMMENTS
11/30/2023	PER SOIL SCIENTISTS RECOMMENDATIONS
11/27/2023	PER IWWC SITE WALK/ADDED BOX CULVERT

REVISIONS

GENERAL LOCATION SURVEY
SEPTIC SYSTEM DESIGN PLAN
PREPARED FOR

GAVIN SHEEHAN

350 BREAKNECK HILL ROAD
KILLINGLY, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 11/02/2023	DRAWN: RGS
SCALE: 1" = 30'	DESIGN: NET
SHEET: 1 OF 2	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 23096

K:\23096\Drawings\23096 SSD.dwg Jan 08, 2024 – 4:31 PM

EROSION AND SEDIMENT CONTROL NARRATIVE:

PRINCIPLES OF EROSION AND SEDIMENT CONTROL

The primary function of erosion and sediment controls is to absorb erosional energies and reduce runoff velocities that force the detachment and transport of soil and/or encourage the deposition of eroded soil particles before they reach any sensitive area.

KEEP LAND DISTURBANCE TO A MINIMUM

The more land that is in vegetative cover, the more surface water will infiltrate into the soil, thus minimizing stormwater runoff and potential erosion. Keeping land disturbance to a minimum not only involves minimizing the extent of exposure at any one time, but also the duration of exposure. Phasing, sequencing and construction scheduling are interrelated. Phasing divides a large project into distinct sections where construction work over a specific area occurs over distinct periods of time and each phase is not dependent upon a subsequent phase in order to be functional. A sequence is the order in which construction activities are to occur during any particular phase. A sequence should be developed on the premise of "first things first" and "last things last" with proper attention given to the inclusion of adequate erosion and sediment control measures. A construction schedule is a sequence with time lines applied to it and should address the potential overlap of actions in a sequence which may be in conflict with each other.

- Limit areas of clearing and grading. Protect natural vegetation from construction equipment with fencing, tree armoring, and retaining walls or tree wells.
- Route traffic patterns within the site to avoid existing or newly planted vegetation.
- Phase construction so that areas which are actively being developed at any one time are minimized and only that area under construction is exposed. Clear only those areas essential for construction.
- Sequence the construction of storm drainage systems so that they are operational as soon as possible during construction. Ensure all outlets are stable before outletting storm drainage flow into them.
- Schedule construction so that final grading and stabilization is completed as soon as possible.

SLOW THE FLOW

Detachment and transport of eroded soil must be kept to a minimum by absorbing and reducing the erosive energy of water. The erosive energy of water increases as the volume and velocity of runoff increases. The volume and velocity of runoff increases during development as a result of reduced infiltration rates caused by the removal of existing vegetation, removal of topsoil, compaction of soil and the construction of impervious surfaces.

- Use diversions, stone dikes, silt fences and similar measures to break flow lines and dissipate storm water energy.
- Avoid diverting one drainage system into another without calculating the potential for downstream flooding or erosion.

KEEP CLEAN RUNOFF SEPARATED

Clean runoff should be kept separated from sediment laden water and should not be directed over disturbed areas without additional controls. Additionally, prevent the mixing of clean off-site generated runoff with sediment laden runoff generated on-site until after adequate filtration of on-site waters has occurred.

- Segregate construction waters from clean water.
- Divert site runoff to keep it isolated from wetlands, watercourses and drainage ways that flow through or near the development until the sediment in that runoff is trapped or detained.

REDUCE ON SITE POTENTIAL INTERNALLY AND INSTALL PERIMETER CONTROLS

While it may seem less complicated to collect all waters to one point of discharge for treatment and just install a perimeter control, it can be more effective to apply internal controls to many small sub-drainage basins within the site. By reducing sediment loading from within the site, the chance of perimeter control failure and the potential off-site damage that it can cause is reduced. It is generally more expensive to correct off-site damage than it is to install proper internal controls.

- Control erosion and sedimentation in the smallest drainage area possible. It is easier to control erosion than to contend with sediment after it has been carried downstream and deposited in unwanted areas.
- Direct runoff from small disturbed areas to adjoining undisturbed vegetated areas to reduce the potential for concentrated flows and increase settlement and filtering of sediments.
- Concentrated runoff from development should be safely conveyed to stable outlets using rip rapped channels, waterways, diversions, storm drains or similar measures.
- Determine the need for sediment basins. Sediment basins are required on larger developments where major grading is planned and where it is impossible or impractical to control erosion at the source. Sediment basins are needed on large and small sites when sensitive areas such as wetlands, watercourses, and streets would be impacted by off-site sediment deposition. Do not locate sediment basins in wetlands or permanent or intermittent watercourses. Sediment basins should be located to intercept runoff prior to its entry into the wetland or watercourse.

SEPTIC SYSTEM CONSTRUCTION NOTES

1. The building, septic system and well shall be accurately staked in the field by a licensed Land Surveyor in the State of Connecticut, prior to construction.
2. Topsoil shall be removed and in the area of the primary leaching field scarified, prior to placement of septic fill. Septic fill specifications are as follows:

   – Max. percent of gravel (material between No. 4 & 3 inch sieves) = 45%

GRADATION OF FILL (MINUS GRAVEL)

SIEVE SIZE	PERCENT PASSING (WET SIEVE)	PERCENT PASSING (DRY SIEVE)
No. 4	100%	100%
No. 10	70% – 100%	70% – 100%
No. 40	10% – 50%	10% – 75%
No. 100	0% – 20%	0% – 5%
No. 200	0% – 5%	0% – 2.5%

   Fill material shall be approved by the sanitarian prior to placement. It shall be compacted in 6" lifts and shall extend a minimum of five feet (5') around the perimeter of the system. Common fill shall extend an additional five feet (5') down gradient of the system (10' total) before tapering off at a maximum slope of 2H:1V.

3. Septic tank shall be two compartment precast 1000 gallon tank with gas deflector and outlet filter as manufactured by Jolley Precast, Inc. or equal.
4. Distribution boxes shall be 4 hole precast concrete as manufactured by Jolley Precast, Inc. or equal.
5. All precast structures such as septic tanks, distribution boxes, etc. shall be set level on six inches (6") of compacted gravel base at the elevations specified on the plans.
6. Solid distribution pipe shall be 4" diameter PVC meeting ASTM D–3034 SDR 35 with compression gasket joints. It shall be laid true to the lines and grades shown on the plans and in no case have a slope less than 0.125 inches per foot.
7. Perforated distribution pipe shall be 4" diameter PVC meeting ASTM D–3034 or ASTM F1760 for SDR 35, or ASTM F810 for SDR 38.
8. Sewer pipe from the foundation wall to the septic tank shall be schedule 40 PVC meeting ASTM D 1785. It shall be laid true to the grades shown on the plans and in no case shall have a slope less than 0.25 inches per foot.
9. Solid footing drain outlet pipe shall be 4" Diameter PVC meeting ASTM D 3034, SDR 35 with compression gasketed joints. Footing drain outlet pipe shall not be backfilled with free draining material, such as gravel, broken stone, rock fragments, etc.
10. Septic sand shall meet the requirements of ASTM C–33 with less than 10% passing a 100 sieve and less than 5% passing a 200 sieve

SIEVE SIZE	% PASSING
0.375	100
#4	95–100
#8	80–100
#16	60–85
#30	25–60
#50	10–30
#100	<10
#200	<5

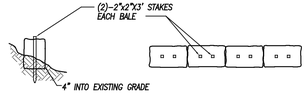
WETLAND SEED MIX FOR WETLANDS MITIGATION

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months, the seed mix will germinate the following spring. During the first season of growth, several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

The wetland seeds in this mix can be sown by hand, with a hand–held spreader, or hydro–seeded on large or hard to reach sites. Lightly rake to insure good seed–to–soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended.

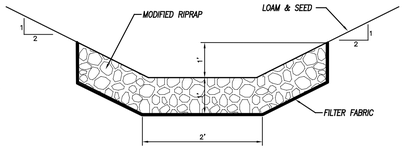
APPLICATION RATE: 1 LB/2500 sq. ft

SPECIES: Fox Sedge, (Carex vulpinoidea), Lurid Sedge, (Carex lurida), Blunt Broom Sedge, (Carex scoparia), Sensitive Fern, (Onoclea sensibilis), Blue Vervain, (Verbena hastata), Hop Sedge, (Carex lupulina), Green Bulrush, (Scirpus atrovirens), Nodding Bur Marigold, (Bidens cer–nua), Bristly Sedge, (Carex comosa), Fringed Sedge, (Carex crinita), American Mannagrass, (Glyceria grandis), Wool Grass, (Scirpus cyperinus), Soft Rush, (Juncus effusus), Spotted Joe Pye Weed, (Eupatorium maculatum), Boneset, (Eupatorium perfoliatum), Mud Plantain, (Alisma subcordatum), New England Aster, (Aster novae–angliae), Rattlesnake Grass, (Glyceria canadensis), Purplestem aster (Aster puniceus), Soft Stem Bulrush, (Scirpus validus), Blueflag (Iris versicolor), Swamp Milkweed, (Asclepias incarnata), Monkey Flower, (Mimulus ringens). The functionality of each mix will remain unchanged, although mix composition may vary during the year.



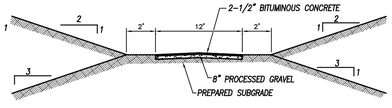
HAYBALE BARRIER

NOT TO SCALE



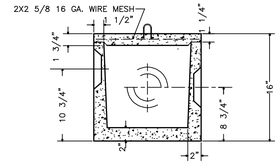
MODIFIED RIPRAP SWALE

NOT TO SCALE



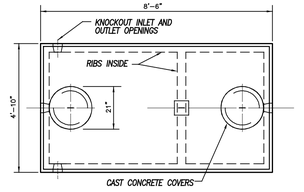
PAVED DRIVE DETAIL

NOT TO SCALE

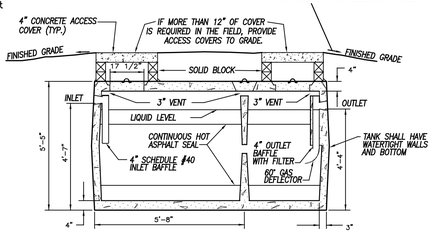


STANDARD D–BOX

NOT TO SCALE



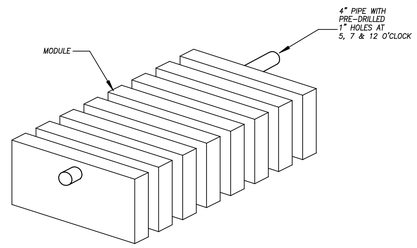
PLAN

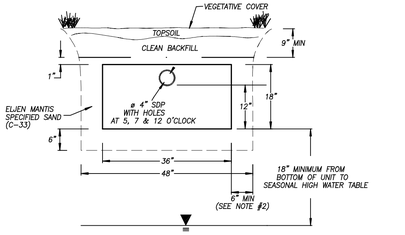


CROSS SECTION

1000 GALLON
2 COMPARTMENT
SEPTIC TANK

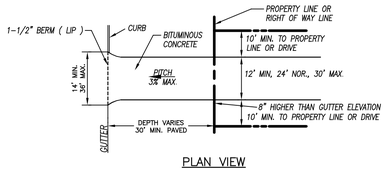
NOT TO SCALE



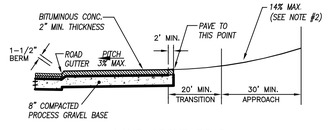


NOTES:
1. VENTING REQUIRED WHEN MORE THAN 18" OF COVER AS MEASURED FROM THE TOP OF THE UNIT TO FINISHED GRADE
2. FOR SYSTEMS INSTALLED IN FILL, CONTRACTOR SHALL PROVIDE 5' OF SELECT FILL OR ASTM C–33 SAND 5' AROUND PERIMETER OF SYSTEM.

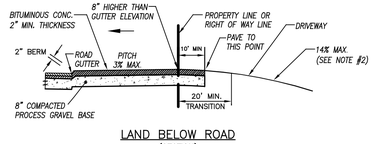
ELJEN 536–8 WASTEWATER
LEACHING SYSTEM



PLAN VIEW



LAND ABOVE ROAD
(SECTION)

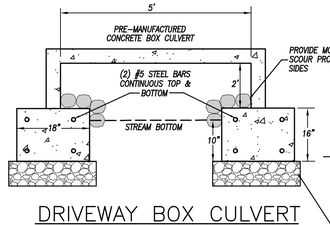


LAND BELOW ROAD
(SECTION)

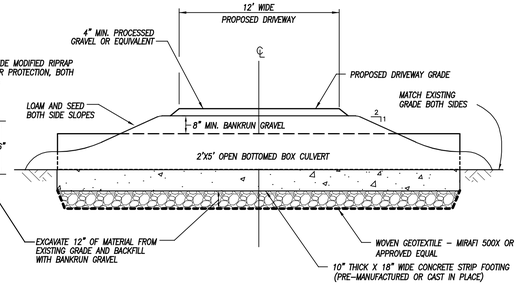
1. THE ABOVE DETAIL IS ILLUSTRATIVE ONLY AND DOES NOT APPLY TO EVERY SITUATION. REVIEW YOUR DRIVEWAY PERMIT FOR YOUR SPECIFIC REQUIREMENTS.
2. DRIVEWAYS IN EXCESS OF 10% GRADE, AND ALL COMMON (SHARED) DRIVEWAYS SHALL BE PAVED WITH BITUMINOUS CONCRETE.

STANDARD DRIVE DETAIL

NOT TO SCALE



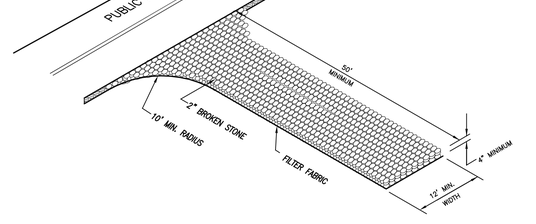
DRIVEWAY BOX CULVERT
SECTION



DRIVEWAY BOX CULVERT
DETAIL

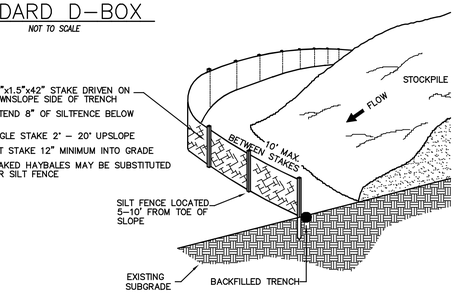
NOT TO SCALE

NOTE: SEE SHEET 1 FOR BOX CULVERT INVERT ELEVATIONS



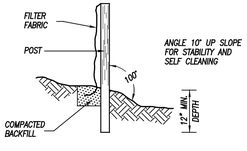
ANTI–TRACKING PAD

NOT TO SCALE



SILT FENCE @ TOE OF SLOPE APPLICATION

NOT TO SCALE



SILT FENCE

NOT TO SCALE

01/08/2023	PER ENGINEERING REVIEW
01/05/2023	NDDH & IWWC COMMENTS
11/30/2023	PER SOIL SCIENTIST RECOMMENDATIONS
11/27/2023	PER IWWC SITE WALK/ADDED BOX CULVERT
DATE	DESCRIPTION
REVISIONS	

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APPROVED BY THE TOWN OF KILLINGLY INLAND WETLANDS COMMISSION

CHAIRMAN DATE

DETAIL SHEET

PREPARED FOR

GAVIN SHEEHAN

350 BREAKNECK HILL ROAD
KILLINGLY, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

DATE: 11/02/2023	DRAWN: RGS
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 2 OF 2	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 23096

K:\23096\Drawings\23096 SSD_Det.dwg Jan 08, 2024 – 4:32 PM