SEPTIC SYSTEM NOTES

1. All construction shall comply with applicable sections of the State of Connecticut and Town of Weston Public Health Codes, and those criteria shall take precedent over these plans.
2. The septic system installer shall be licensed by the State of Connecticut.
3. The licensed installer shall notify Muller Engineering LLC, and the Town of Weston Health Department at least 24 hrs prior to commencing construction or the system installation will not be certified.
4. The licensed installer shall be responsible to install the subsurface sewage disposal system in accordance with the approved plans. Any change in the location or design of the system without prior approval of Muller Engineering LLC is not permitted.
5. Prior to commencing construction, all portions of the septic system disposal area shall be clearly marked and enclosed using construction fencing, so that it is not subject to heavy loading from construction equipment.
6. A Professional Engineer licensed in the State of Connecticut and acceptable to the Town of Weston Director of Health shall inspect construction to insure compliance with the proposed plan.
7. An "As Built" plan, certified by a Professional Engineer licensed in the State of Connecticut, shall be submitted to the Department of Health before a "Permit to Use and/or Operate" is issued.
8. Any portion of the septic system that is covered prior to proper inspection shall be uncovered by the installer and inspected as required.
9. This system is NOT designed to accept any wastes from garbage disposal units; NOR backwash from water treatment devices; NOR discharge from whirlpool type baths of volumes greater than 100 gallons.
10. There are no apparent wells within 75' of the proposed septic system. There shall be no part of a septic system located within 75 feet of a well. Separation distance shall be increased as necessary subject to the criteria of the Connecticut Public Health Code.
11. The separating distance between a septic system and a building shall be: 10 feet if there are no footing drains on the building; 25 feet if the building has footing drains and is located upgradient from the septic system; and 50 feet if the building has footing drains and is located downgradient from the septic system.
12. Leaching systems shall be covered with a minimum of 6" of soil and finished in a condition that will prevent erosion over and adjacent to the leaching system. Earth material used to cover the sewage disposal system shall be topsoil, free of large stones, masonry, stumps or construction debris.
13. Areas disturbed during construction shall be re-graded, seeded and mulched, or planted, for permanent stabilization as soon as practical upon completion of installation.
14. No permanent structure shall be constructed over the septic reserve area.
15. All select septic fill material must meet the requirements specified in Section VIII A of the State of Connecticut Public Health Code Technical Standards as amended to date.
16. A sieve analysis must be submitted and approved by the design engineer prior to the installation of the system.
17. Select septic fill shall be placed on the perimeter of the leaching system area and spread with a small crawler tractor or other machinery approved by the design engineer.
18. The septic tank for the proposed dwelling shall be a 1500 gallon tank with baffle and gas deflectors, designed for H-20 loading as manufactured by Eastern Precast, Inc., Tanks shall be designed for H-20 loading as manufactured by Eastern Precast Inc., or engineer approved equivalent. Septic tank shall conform to ASTM C 1227 as amended to date.
19. Prior to backfilling, both the septic tank shall be waterproofed, tightly sealed on the outside and the inside, tested for leakage and inspected by the Health Department and/or the design engineer.
20. Final locations and elevations of the septic tank shall be approved in the by Muller Engineering LLC prior to installation.
21. Access manholes over each cleanout of the septic tank shall extend to within 6" of finished grade. Service access manhole covers shall be installed on the pump chamber. Where access manhole covers are flush with or above grade, either the lid must weigh a minimum of 59 lbs or the cover shall be provided with a lock system to prevent unauthorized entrance.
22. Building sewers from the house to the septic tank shall be 4" diameter (minimum) SCH 40 PVC with solvent weld joints. Pipe shall conform to ASTM D 1785 or ASTM D 2665. The pipe grade from the house to the septic tank shall be at least 1/4 inch per foot for 4" diameter sewers, and not less than 1/8 inch per foot for 6" or 8" diameter sewers.
23. There shall be 4" PVC perforated pipes installed along the sides of, or through, each gallery, and caps shall be placed on the pipes at the end of each row of galleries.
24. All PVC pipe, except the building sewer and where noted, shall conform to ASTM D-3034 "standard specifications for type PSM-Poly Vinyl Chloride (PVC) sewer pipe and fittings," as specified in Table 2-C of the Connecticut Public Health Code, or engineer approved equivalent.
25. All distribution boxes shall be designed and constructed for H-20 loading as manufactured by Eastern Precast Co., Inc., or engineer approved equivalent.
26. All distribution boxes shall be installed, set level, and supported on an a base to a depth below the frost line.
27. Filter fabric used to cover the leaching galleries shall be GEOMATRIX GST 6218 or engineer approved equivalent.
28. Portions of the existing septic system shall be abandoned according to Connecticut Public Health Code specifications. Structures to be abandoned, including cesspools, shall be emptied of all sewage and/or wastewater, and either crushed or filled with sand or gravel, and the surrounding area backfilled with clean soil.
29. In accordance with Connecticut Public Act 87-71 and Connecticut General Statutes (CGS) Sections 16-345 through 16-359, the contractor shall verify the depth and location of all utilities prior to commencing construction, and shall contact "Call Before You Dig, Inc." at 1.800.922.4455, 48 hours prior to commencing construction.

SYSTEM INSTALLATION

1. INSTALL 70 LF OF GEOMATRIX GST 6218
2. THE BOTTOM OF UNITS SHALL BE SET LEVEL.
3. THE END OF PIPE WITHIN UNITS SHALL BE CAPPED.
4. THE NOMINAL LIQUID CAPACITY OF THE PROPOSED SEPTIC TANK & PUMP CHAMBER IS 1500 GALLONS.
5. THE SEPTIC TANK SHALL BE PRECAST CONCRETE AND WATERPROOFED ON THE OUTSIDE AND MEET ASTM SPEC C-1227-95. ACCESS MANHOLES OVER EACH CLEANOUT OF THE SEPTIC TANK SHALL EXTEND TO WITHIN 6" OF FINISH GRADE. RISERS, IF REQUIRED, SHALL BE GROUTED SOLID TO THE TOP OF THE TANKS AND WATERPROOFED.
6. THE SOIL LINE FROM THE DWELLING TO THE SEPTIC TANK SHALL BE 4" DIAMETER PVC SCHEDULE 40 ASTM D 1785 PRESSURE WATER PIPE WITH RUBBER COMPRESSION GASKET COUPLINGS (OR EQUAL). SEWER PIPE SHALL BE SET AT A MINIMUM PITCH OF 1/4" PER FOOT.
7. ALL DISTRIBUTION PIPE, AFTER THE SEPTIC TANK, SHALL BE ASTM D 3034 SDR 35 WITH RUBBER COMPRESSION GASKETS OF EQUAL (TABLE 2-C OF STATE REGS) UNLESS OTHERWISE NOTED.
8. JUNCTION BOXES SHALL BE PRECAST CONCRETE WITH REMOVABLE COVER AND A 12"x12" MINIMUM INSIDE DIMENSION UNLESS OTHERWISE NOTED. THE BOXES SHALL BE SET LEVEL AND SOLIDLY SUPPORTED TO A DEPTH BELOW THE FROST LINE.
9. STRIP TOPSOIL IN THE AREA REQUIRING FILL. STOCKPILE AND USE EROSION CONTROL FENCING AS NECESSARY. TOPSOIL MAY BE REUSED ON TOP OF LEACHING AREA, CHISEL PLOW OR ROTOTILL GROUND SURFACE PRIOR TO PLACING FILL.
10. SELECT FILL MATERIAL SHALL CONSIST OF SAND AND GRAVEL MIXTURES WHICH COMPLY WITH SECTION VIIIA OF THE STATE OF CT PUBLIC HEALTH CODE TECHNICAL STANDARDS AND HAVE A MINIMUM IN PLACE PERCOLATION RATE OF 15 MINUTES PER INCH DROP AND HAVE A GRADATION THAT ALLOWS NO MORE THAN 2.5% OF THE MATERIAL BY WEIGHT TO PASS THE NO. 200 SIEVE. A SIEVE ANALYSIS MUST BE SUBMITTED AND APPROVED BY THE ENGINEER PRIOR TO THE INSTALLATION. THE CERTIFYING ENGINEER AND GREENWICH HEALTH DEPT. SHALL BOTH APPROVE THE FILL TO BE USED PRIOR TO SPREADING.
11. FILL SHALL BE PLACED ON THE PERIMETER OF TRENCH AREA AND SPREAD WITH A SMALL CRAWLER, TRACTOR OR OTHER APPROVED MACHINERY. FILL SHALL NOT BE TAMPED, ROLLED, OR PUDDLED. NO HEAVY EQUIPMENT OR MACHINERY SHALL BE PERMITTED TO PASS OVER THE AREA.
12. PERFORMANCE TESTING: WHEN NECESSARY DUE TO INSTALLATION CONCERNS, TESTING FOR LEAKAGE WILL BE PERFORMED USING WITHER A VACUUM TEST OR WATER-PRESSURE TEST. VACUUM TEST: SEAL THE EMPTY TANK AND APPLY A VACUUM TO 4 IN. (50 MM) OF MERCURY. THE TANK IS APPROVED IF 90% OF VACUUM IS HELD FOR TWO MINUTES. WATER-PRESSURE TEST: SEAL THE TANK, FILL WITH WATER, AND LET STAND FOR 24 HOURS. REFILL THE TANK. THE TANK IS APPROVED IF THE WATER LEVEL IS HELD FOR 1 HOUR.
13. TANK BOTTOMS LOCATED BELOW MAXIMUM GROUNDWATER LEVELS MUST BE PROVIDED WITH ANTI BUOYANCY/FLOATATION PROVISIONS (CHECK WITH MANUFACTURER).
14. THE CERTIFYING ENGINEER SHALL PREPARE BUOYANCY CALCULATIONS TO REPRESENT THE SEPTIC TANK AND PUMP CHAMBER WILL NOT FLOAT; AS PER AS-BUILT CONDITIONS.
15. ALL PROPOSED DRAINAGE CONTROL STRUCTURES SHALL BE A MINIMUM OF 50 FEET FROM ANY PART OF THE SEPTIC SYSTEM.

DESIGN DATA

1. THE PROPOSED DWELLING SHALL CONTAIN 5 BEDROOMS.
2. THE MINIMUM UNIFORM PERCOLATION RATE FOR DESIGN SHALL BE 20 MINUTES PER INCH. SYSTEM TO BE PLACED IN NEW SELECT SEPTIC FILL.
3. *THE DESIGN PERCOLATION RATE 1/20" MIN., PROPOSED 5 BEDROOM DWELLING – 225 SQ. FT. PER BEDROOM PLUS 112.5 SQ. FT. FOR EACH BEDROOM OVER 3 BEDROOMS TOTAL – 900 SQ. FT. REQUIRED. 980 SQ. FT. PROVIDED WITH 70 LINEAR FEET OF GEOMATRIX GST 6218.*
4. THE TOTAL LEACHING AREA REQUIRED IS 900 SQ. FT.
5. MLSS CALCULATIONS:

RESTRICTIVE LAYER $\frac{THfA + THfB}{2} = \frac{47" + 43"}{2} = 45"$

$= \frac{45" + 33.5"}{2} = 39.25"$

RESTRICTIVE LAYER $\frac{THfF + THfE}{2} = \frac{37" + 30"}{2} = 33.5"$

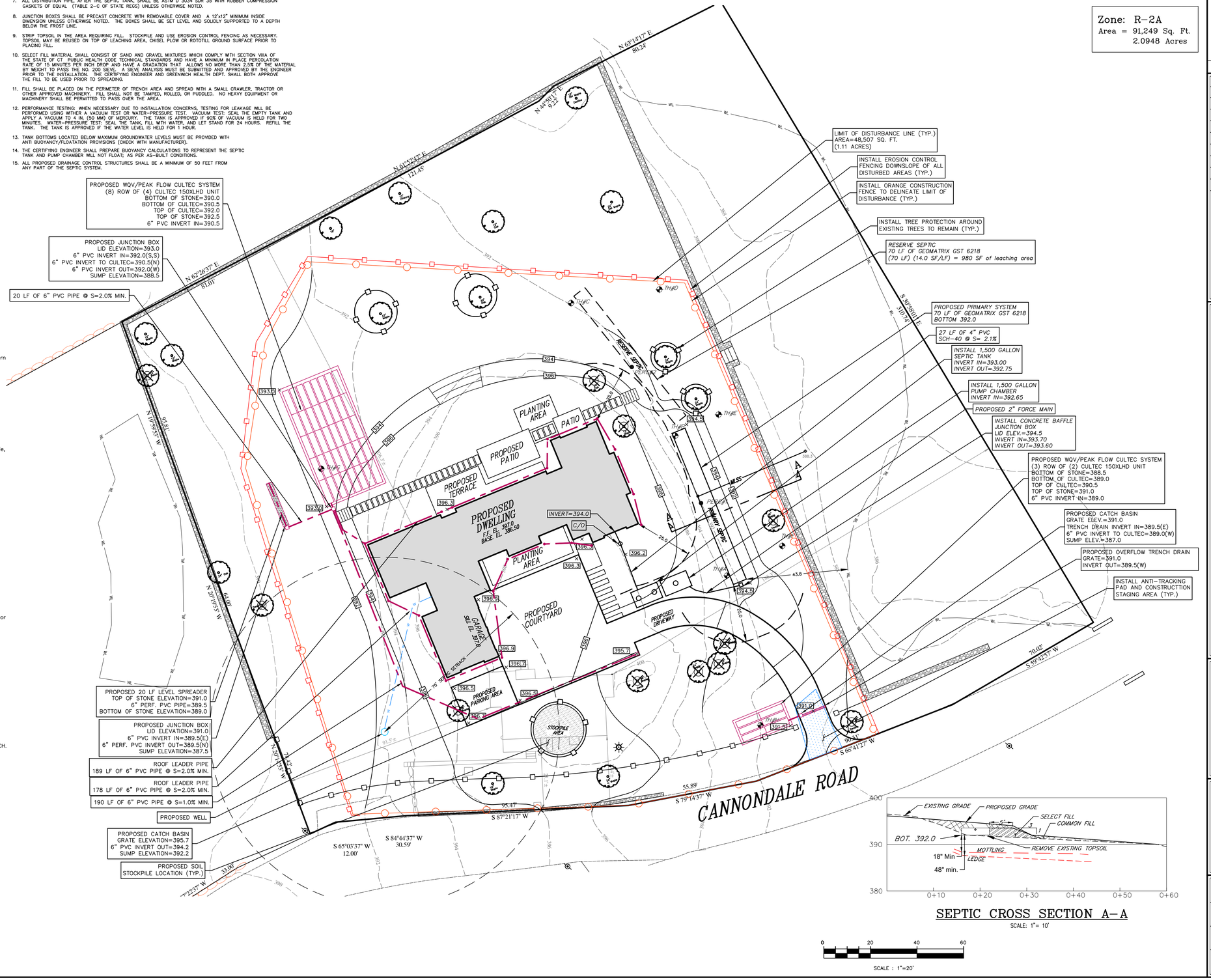
HF = 24
FF = 2.0 (5 BEDROOM)
PF = 1.25 (20 MINUTES)

SLOPE $= \frac{392 - 388.3}{50} = 7.4\%$

MLSS = 24 x 2.0 x 1.25 = 60 FEET REQUIRED < 70 FEET PROPOSED

THE EFFECTIVE LEACHING AREA OF THE SYSTEM IS 14.0 sq. ft. PER LINEAR FOOT.
THE TOTAL LEACHING AREA 14.0 SF/LF x 70 LF = 980 > 900 REQ'D

C33 SAND – MEDIUM TO COARSE TEXTURED WASHED SILICA SAND
LESS THAN 5% PASSING NO. 200 SIEVE
LESS THAN 10% PASSING NO. 100 SIEVE



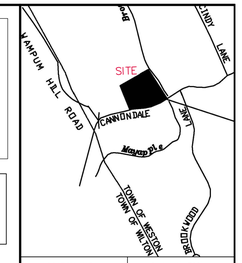
SEPTIC CROSS SECTION A–A
SCALE: 1"= 10'

0 20 40 60
SCALE : 1"=20'

LEGEND

- Tree To be Removed
- Tree Protection
- × 94.1 Existing Elevations
- × 91.8 Proposed Elevations
- 96 Existing Contours
- 96 Proposed Contours
- Erosion Control Fence
- DH#1 Deep Test Hole
- PERC#1 Perc Test

Zone: R-2A
Area = 91,249 Sq. Ft.
2.0948 Acres



LOCATION MAP | Scale: 1"=700'

REVISIONS		
	DATE	DESCRIPTION
	4.19.24	SITE DRAINAGE 50 YEAR

MULLER ENGINEERING, LLC
Engineering Consulting
26 Widgeon Way
Greenwich, Connecticut 06870
Telephone (203) 921-9059
Email: Bryan.Muller@Ymail.com
Bryan S. Muller, P.E.

STATE OF CONNECTICUT · BRYAN S. MULLER · No. 29767 · REGISTERED PROFESSIONAL ENGINEER

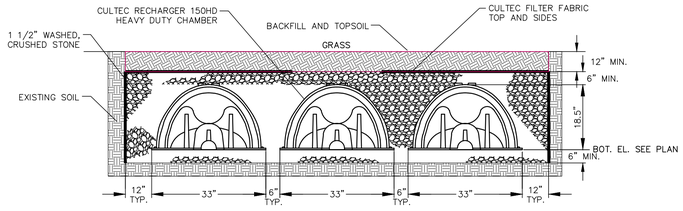
Bryan Muller
BRYAN S. MULLER, P.E.
CT PROFESSIONAL ENGINEER
LICENSE No. 29767

PREPARED FOR:
WALLIS RESIDENCE
ADDRESS:
33 CANNONDALE ROAD
WESTON, CONNECTICUT

SHEET TITLE
SEPTIC PLAN

APRIL 19,2024

SCALE	JOB NO.
1" = 20'	2024-135
DRAWN: BSM	SHEET NO.
CHKD.: BSM	1 OF 2

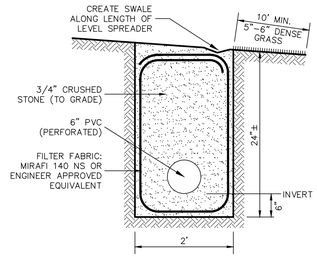


SOILS BENEATH THE STONE BED SHALL BE SCARIFIED OR TILLED TO IMPROVE INFILTRATION.

CONTRACTOR SHALL NOT PLACE EXCAVATION EQUIPMENT IN THE BOTTOM OF THE INFILTRATION AREAS DURING ANY POINT OF CONSTRUCTION.

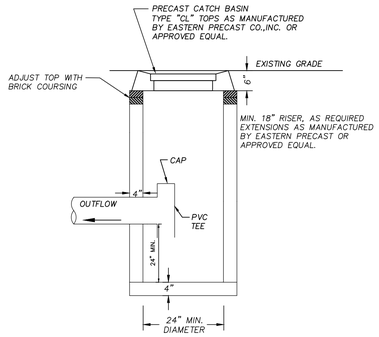
CULTEC RECHARGER 150HD CHAMBERS TYPICAL CROSS SECTION DETAIL

N.T.S.



LEVEL SPREADER DETAIL

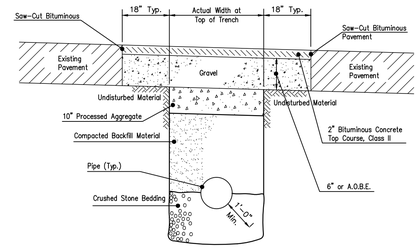
N.T.S.



(ALL MATERIALS REINFORCED FOR H-20 LOADING)

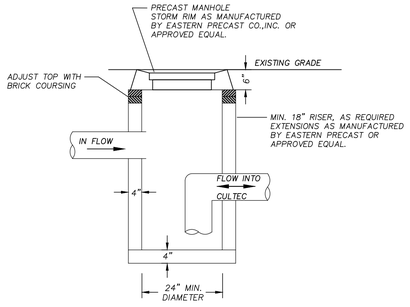
CATCH BASIN DETAIL

N.T.S.



TRENCH REPAIR DETAIL

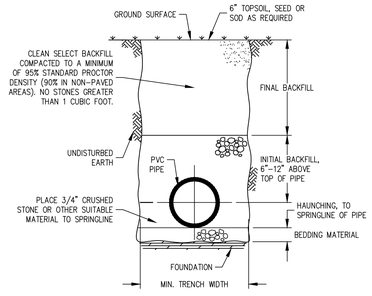
N.T.S.



(ALL MATERIALS REINFORCED FOR H-20 LOADING)

JUNCTION BOX STRUCTURE

N.T.S.



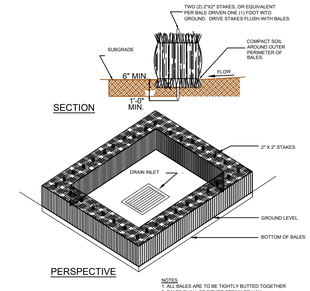
PVC PIPE INSTALLATION DETAIL

N.T.S.

NOTES

1. BEDDING AND BACKFILL MATERIAL SHALL CONFORM TO ASTM D2321 (LATEST EDITION), "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS."
2. HAUNCHING AND INITIAL BACKFILL MATERIAL SHALL BE CLASS I, II, OR III, AND INSTALLED AS REQUIRED IN ASTM D2321 (LATEST EDITION). IT SHALL BE PLACED IN 4" LIFTS COMPACTED TO A MINIMUM OF 90% STANDARD PROCTOR DENSITY BY HAND OR BY MECHANICAL TAMPING.
3. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

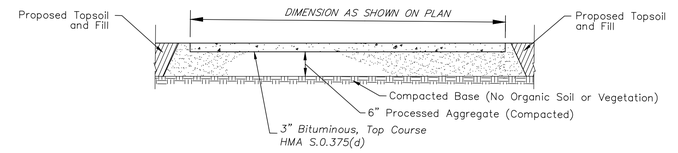
NOMINAL ø (IN)	TRENCH WIDTH (IN)	NOMINAL ø (IN)	TRENCH WIDTH (IN)
8	25	18	39
10	28	24	48
12	31	30	66
15	34	36	78



NOTES
1. ALL BALES ARE TO BE TIGHTLY BUTTED TOGETHER
2. BALES SHALL BE EITHER STRAW OR HAY
3. PROVIDE FREQUENT INSPECTION AND MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AND REPLACE CLOGGED BALES TO MAINTAIN EFFECTIVENESS OF INSTALLATION.

CATCHBASIN PROTECTION DETAIL

N.T.S.



BITUMINOUS DRIVE DETAIL

N.T.S.

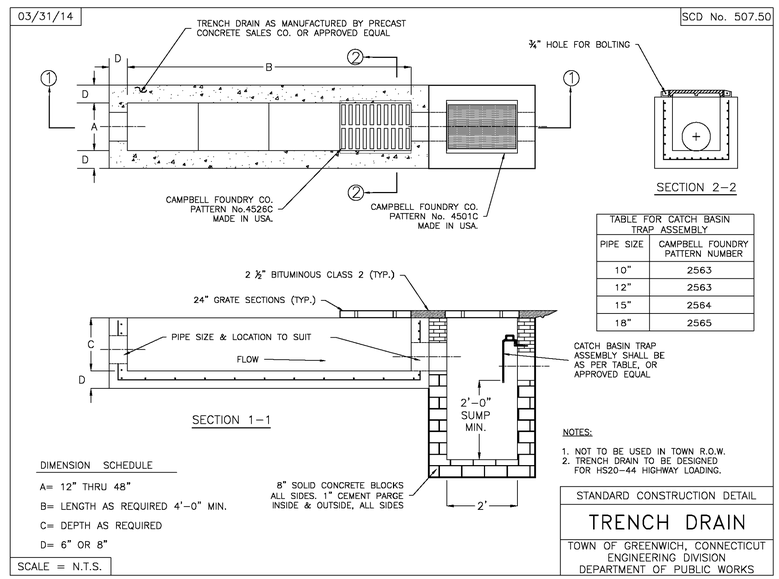
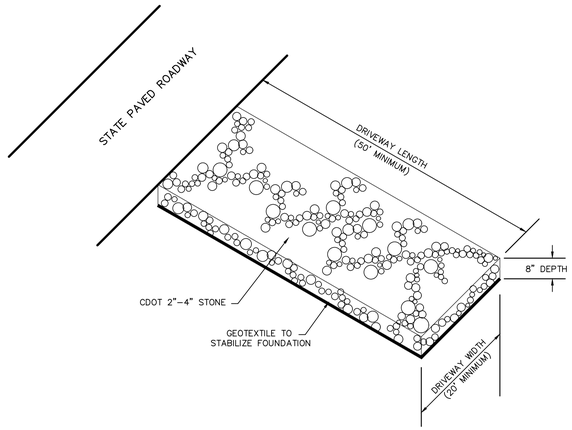


TABLE FOR CATCH BASIN TRAP ASSEMBLY	
PIPE SIZE	CAMPBELL FOUNDRY PATTERN NUMBER
10"	2563
12"	2563
15"	2564
18"	2565

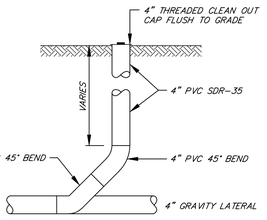
NOTES:
1. NOT TO BE USED IN TOWN R.O.W.
2. TRENCH DRAIN TO BE DESIGNED FOR HS20-44 HIGHWAY LOADING.



1. INSTALLATION REQUIREMENTS: THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. A ROAD STABILIZATION FILTER CLOTH CAN BE PLACED ON THE SUBGRADE PRIOR TO THE GRAVEL PLACEMENT TO PREVENT PLUMBING. THE GRAVEL SHALL BE PLACED TO THE SPECIFIED DIMENSIONS.
2. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANED OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.

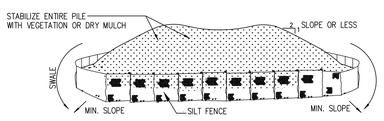
CONSTRUCTION ENTRANCE (ANTI-TRACKING PAD)

N.T.S.



CLEAN OUT DETAIL

N.T.S.

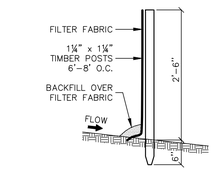


INSTALLATION NOTES

1. THE AREA CHOSEN FOR STOCKPILING SHALL BE FLAT, DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR HAY BALES, THEN STABILIZED WITH VEGETATION OR DRY MULCH.
4. SEE SPECIFICATIONS (THIS SHEET) FOR INSTALLATION OF SILT FENCE.

SOIL STOCKPILE DETAIL

N.T.S.



EROSION CONTROL FENCE

N.T.S.

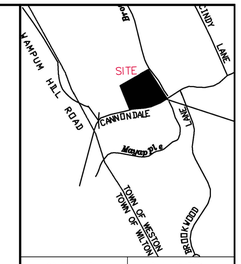
Orange Construction Fence — Correct Trunk Armouring

TREE PROTECTION

N.T.S.

0 20 40 60

SCALE : 1"=20'



LOCATION MAP — Scale: 1"=700'

REVISIONS		
	DATE	DESCRIPTION
	4.19.24	SITE DRAINAGE 50 YEAR

MULLER ENGINEERING, LLC
Engineering Consulting
26 Widgeon Way
Greenwich, Connecticut 06870
Telephone (203) 921-9059
Email: Bryan.Muller@Ymail.com
Bryan S. Muller, P.E.

STATE OF CONNECTICUT — BRYAN S. MULLER — No. 29767 — REGISTERED PROFESSIONAL ENGINEER

Bryan Muller

BRYAN S. MULLER, P.E.
CT PROFESSIONAL ENGINEER
LICENSE No. 29767

PREPARED FOR:

WALLIS RESIDENCE

ADDRESS:

33 CANNONDALE ROAD
WESTON, CONNECTICUT

SHEET TITLE

CONSTRUCTION DETAILS

APRIL 19,2024

SCALE: AS NOTED	JOB NO.: 2024-135
DRAWN: BSM	SHEET NO.: 2 OF 2
CHKD.: BSM	