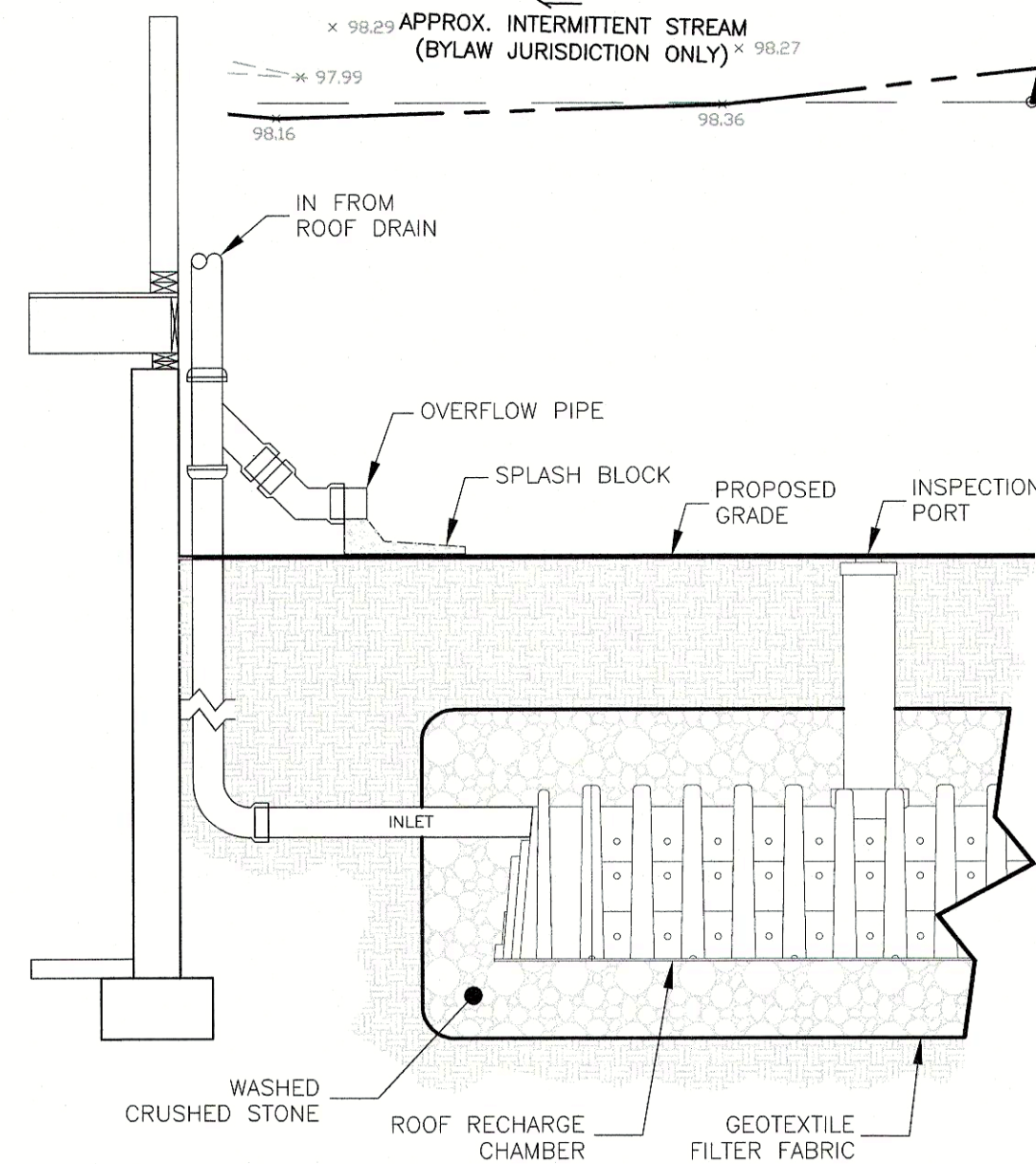


TABLE OF PROPOSED SEPTIC SYSTEM INVERTS (INV)

INV. AT FOUNDATION = 103.50
SEPTIC TANK INV. IN = 101.63
SEPTIC TANK INV. OUT = 101.38
DISTRIBUTION BOX INV. IN = 100.67
DISTRIBUTION BOX INV. OUT = 100.50
4" PIPE INV. IN = 100.31
ENVIRO-SEPTIC PIPE INV. = 99.73
BOTTOM OF SAND BED/B.O. ELEV = 99.23

ASSESSORS MAP REFERENCE:
MAP 32 PARCEL 135

ZONING DISTRICT: C-R
MINIMUM LOT AREA = 20,000 S.F.
MINIMUM LOT FRONTAGE = 100 FEET
MINIMUM LOT WIDTH = 80 FEET
MINIMUM LOT DEPTH = 120 FEET
FRONT YARD SETBACK = 20 FEET
SIDE YARD SETBACK = 10 FEET
REAR YARD SETBACK = 30 FEET
MAXIMUM LOT COVERAGE = 40%
MAXIMUM BUILDING AREA = 40%
MAXIMUM BUILDING HEIGHT = 35 FEET
MAXIMUM BUILDING HEIGHT = 2.5 STORIES



ROOF DRAIN TO RECHARGE CHAMBER
NOT TO SCALE

NOTE:
1. CULTEC'S SHALL BE INSTALLED A MINIMUM OF 10' FROM HOUSE.

Soil Test Pit Data
Soil Evaluator: Will Schkuta, SE#14030
SE Approval Date: August 30, 2016
Witnessed By: Wendy Hansbury, Topsfield BOH Witness
Date of Testing: May 25, 2022

TP 22-1
Elev. = 100.4±

0-8" Ap SL 10YR 3/3
8-24" Bw GrSL 10YR 4/6
24-90" C1d GrLS 2.5Y 5/4

ESHWT observed down 68" @ Elev. = 94.73

TP 22-2
Elev. = 99.7±

0-22" Ap/Fill SL 10YR 3/3
22-34" Bw GrSL 10YR 4/6
34-104" C1d GrLS 2.5Y 5/4

ESHWT observed down 70" @ Elev. = 93.87

Percolation Test @ P-1 @ 36"+18", 42 MPI

TP 22-3
Elev. = 99.3±

0-8" Ap SL 10YR 3/3
8-34" C1 S 10YR 5/8
34-60" C2 GrSL 10YR 4/6

ESHWT observed down 68" @ Elev. = 93.83

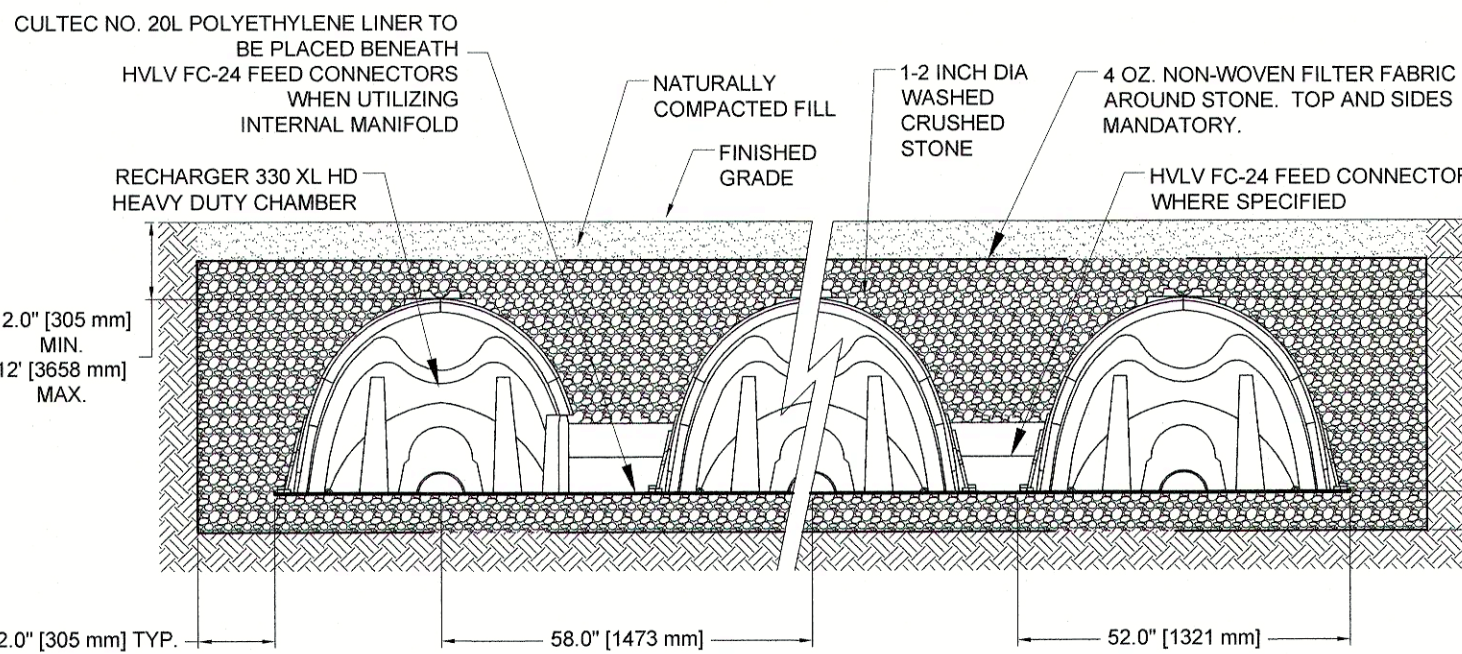
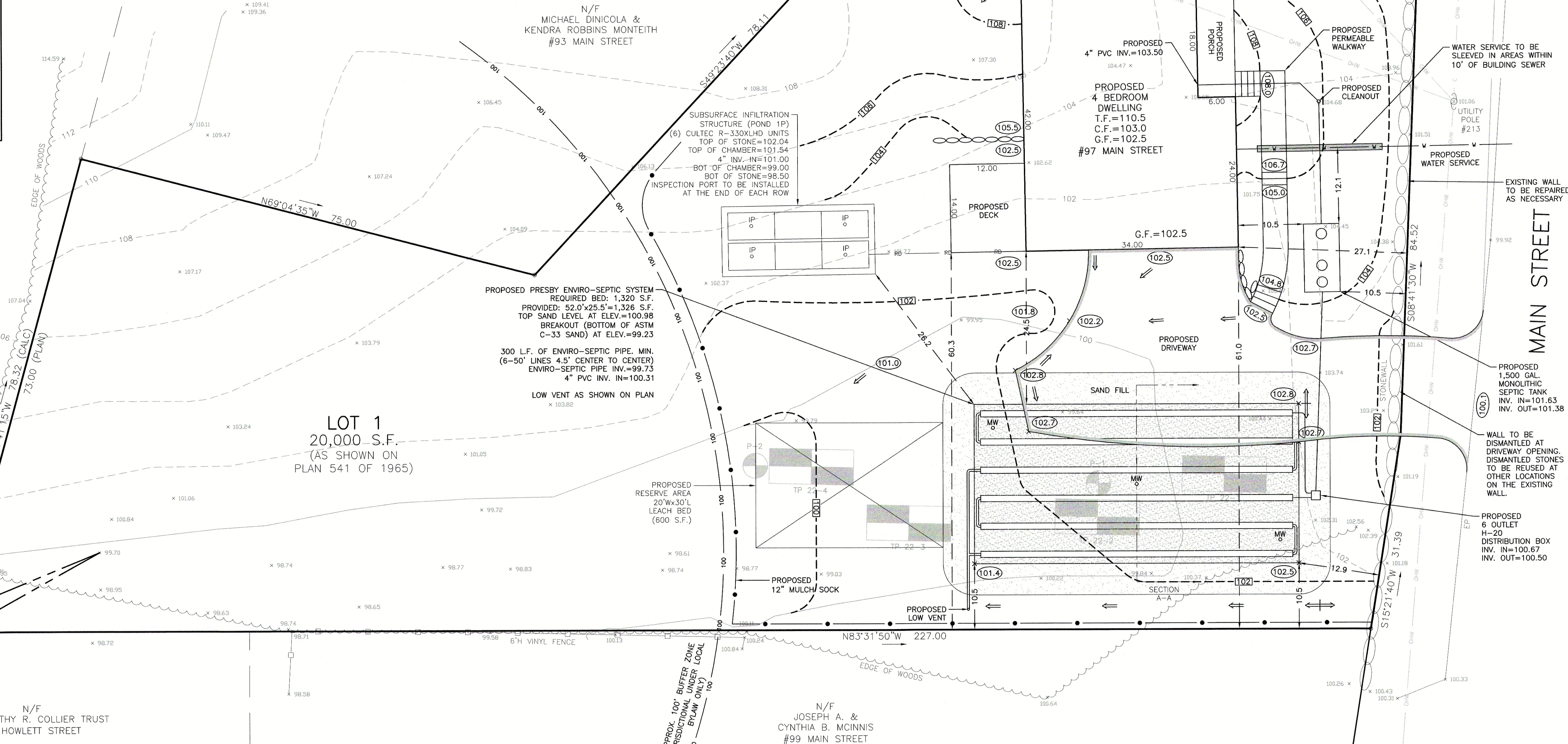
ESHWT observed down 42" @ Elev. = 95.80

TP 22-4
Elev. = 99.5±

0-8" Ap SL 10YR 3/3
8-24" Bw GrSL 10YR 4/6
24-105" C1d GrLS 2.5Y 5/4

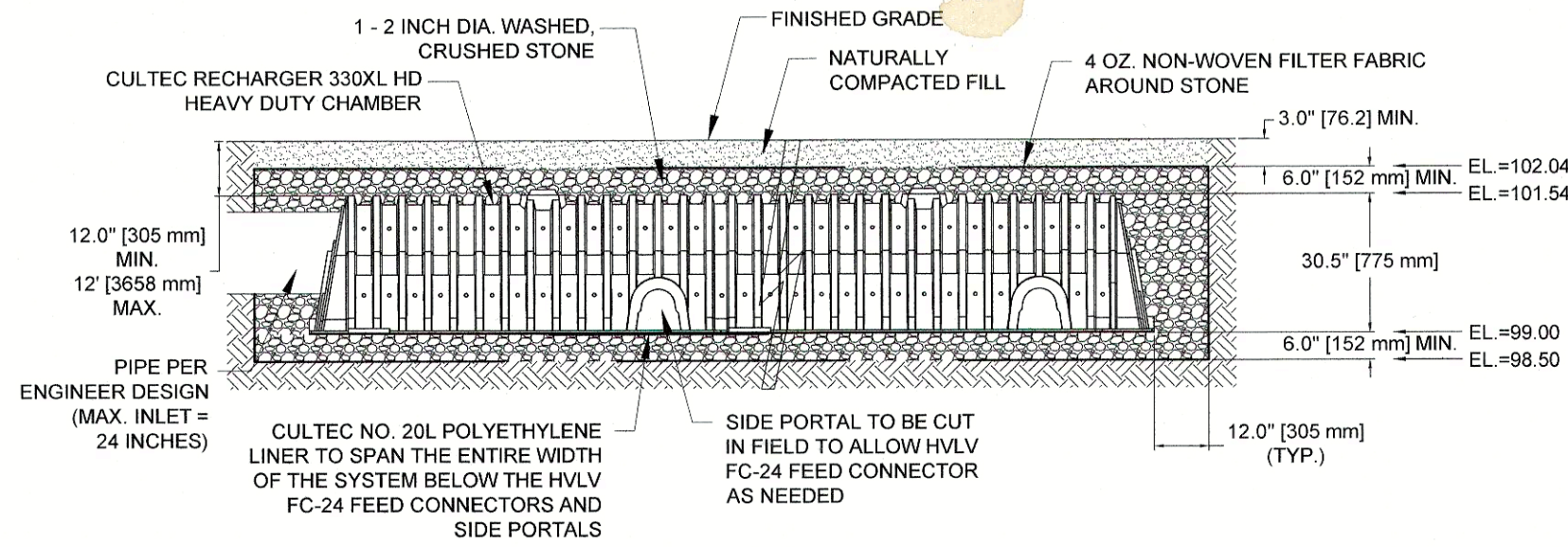
ESHWT observed down 68" @ Elev. = 93.83

Percolation Test @ P-2 @ 30"+18", 5 MPI



GENERAL NOTES:
RECHARGER 330XL HD BY CULTEC, INC. OF BROOKFIELD, CT.
STORAGE PROVIDED = 11.32 CF/FT PER DESIGN UNIT.
REFER TO CULTEC, INC.'S CURRENT RECOMMENDED
INSTALLATION GUIDELINES.
USE RECHARGER 330XL HD HEAVY DUTY FOR TRAFFIC AND/OR
H-25 APPLICATIONS.

ALL RECHARGER 330XL HD HEAVY DUTY UNITS ARE MARKED
WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE
LENGTH OF THE CHAMBER.
ALL RECHARGER 330XL HD CHAMBERS MUST BE INSTALLED IN
ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND
FEDERAL REGULATIONS.



SANITARY DISPOSAL SYSTEM DESIGN PLAN
#97 MAIN STREET, TOPSFIELD, MA

DRAWING: S-1

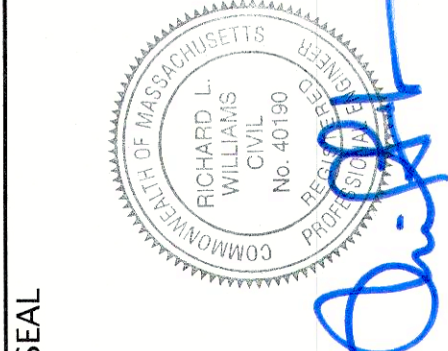
SHEET 1 OF 3

SCALE: 1"=10'

JANUARY 30, 2023

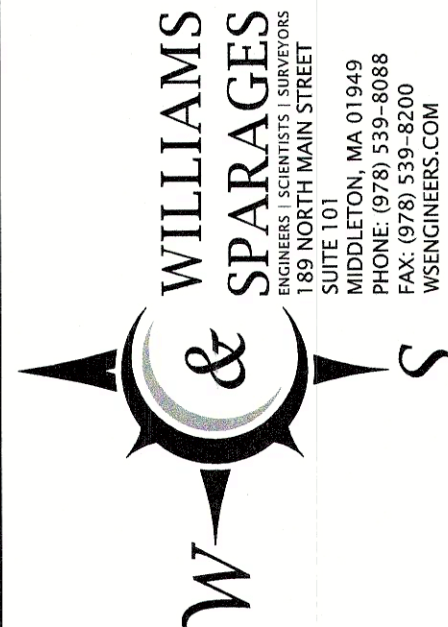
REVISED: HOUSE, DRIVEWAY & GRADING

4/13/2023



Designed By: SWL
Drawn By: SML
Reviewed By: RLW
Project Manager: RLW
Job File Number: TOPS-0076
Drawing File Folder: TOPS76
☐ Drawing Issued for Review Only
☒ Drawing Issued for Permit
☐ Drawing Issued for Construction

Owner:
The Orlando Lopez Trust
93 Main Street
Topsfield, MA 01983
Applicant:
Montana Development LLC
23 Aaron Drive
Topsfield, MA 01983
978-317-7724



P:\TOPS-007607 Main Street\Drawings\Sheet\97R3.dwg, sabine

- PLAN NOTES:
1. SOIL TESTING INFORMATION USED FOR DESIGN WAS PERFORMED ON MAY 25, 2022.
 2. ALL ELEVATIONS SHOWN ARE REFERENCED TO AN ASSUMED DATUM.
 3. VEHICULAR TRAFFIC, PARKING OF VEHICLES, STOCKPILING OF MATERIALS, AND STORAGE OF EQUIPMENT OVER LEACHING AREA ARE PROHIBITED AT ALL TIMES.
 4. EXISTING TOPOGRAPHIC INFORMATION SHOWN IS THE RESULT FROM AN ACTUAL INSTRUMENT SURVEY CONDUCTED BY WILLIAMS & SPARAGES ON NOVEMBER 15, 2022.
 5. THIS PROJECT DOES NOT LIE WITHIN A NITROGEN SENSITIVE AREA.
 6. ACCORDING TO AVAILABLE MAPPING AND INFORMATION, THERE ARE NO PUBLIC OR PRIVATE DRINKING WATER SUPPLY WELLS WITHIN 100- FEET OF THE PROPOSED SEPTIC SYSTEM. IN ADDITION, THE PROPOSED SYSTEM DOES LIE WITHIN 400- FEET OF A ZONE A TO A PUBLIC WATER SUPPLY.

WILLIAMS & SPARAGES LLC HAS BEEN RETAINED TO PREPARE A SEPTIC SYSTEM DESIGN PLAN FOR THE CLIENT, BUT HAS NOT BEEN RETAINED TO CONSTRUCT OR SUPERVISE CONSTRUCTION OF THE SEPTIC SYSTEM. THEREFORE, NO GUARANTEE OR WARRANTY, EXPRESS OR IMPLIED, IS MADE TO THE CLIENT OR TO THE ULTIMATE USER RELATIVE TO ANY SYSTEM INSTALLED PURSUANT TO THIS PLAN SET.

1. THE PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON THE DATE OF TOPOGRAPHY. THE ABSENCE OF SUBSURFACE STRUCTURES UTILITIES, ETC. DOES NOT MEAN THAT THEY DO NOT EXIST.
2. THE FINISHED SURFACE OF THE LEACHING AREA SHALL BE GRADED TO ASSURE SURFACE WATER RUNOFF (2% MINIMUM SLOPE IN ACCORDANCE WITH TITLE 5).
3. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY SITE CONDITION THAT DIFFERS FROM THOSE INDICATED ON THE DESIGN PLAN.
4. IF ANY PART OF THIS DESIGN IS TO BE ALTERED IN ANY WAY, THE DESIGNER AS WELL AS THE APPROVING AUTHORITIES SHALL BE NOTIFIED IN WRITING PRIOR CONSTRUCTION.
5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR HORIZONTAL AND VERTICAL CONTROL OF ALL SYSTEM COMPONENTS.
6. THE GENERAL CONTRACTOR IS RESPONSIBLE TO CHECK BETWEEN A MINIMUM OF TWO (2) VERTICAL CONTROL BENCHMARKS.
7. THESE PLANS AND SPECIFICATIONS ARE INTENDED TO BE EXPLANATORY OF THE WORK TO BE DONE, BUT SHOULD ANY OMISSION, ERRORS, OR DISCREPANCIES APPEAR, THEY SHALL BE SUBJECT TO CORRECTION AND INTERPRETATION BY THE DESIGN ENGINEER, THEREBY DEFINING AND FULFILLING THE INTENT OF THE PLANS.
8. ALTERNATE MANUFACTURERS FOR CONCRETE STRUCTURES AND EQUIPMENT SHOWN ON THESE PLANS MAY BE USED UPON WRITTEN APPROVAL OF THE DESIGNER. ALTERNATE MANUFACTURERS WILL NOT BE USED IF THE USE OF THEIR EQUIPMENT REQUIRES DESIGN CHANGES.
9. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING DIG SAFE SYSTEM, INC. (1-888-344-7233 OR 811) TO LOCATE UTILITIES.
10. THE SYSTEM IS DESIGNED ONLY TO ACCOMMODATE SANITARY SEWAGE ASSOCIATED WITH NORMAL DOMESTIC USAGE AND CONSISTING OF WATER-CARRIED PUTRESCIBLE WASTE.
11. DISPOSAL SYSTEM AREAS ARE TO BE RAKED (SCARIFIED) BEFORE INSTALLATION OF STONE. ALL STONES EXCEEDING 2 INCHES IN DIAMETER AND ALL FOREIGN MATERIAL ENCOUNTERED DURING EXCAVATION ARE TO BE REMOVED FROM THE LEACHING AREA BED SURFACE.
12. THIS PLAN SHOWS THE DESIGN OF THE SUBSURFACE SEWAGE DISPOSAL SYSTEM ONLY. THE SYSTEM IS DESIGNED FOR FLOWS ESTIMATED UNDER DESIGN CRITERIA.
13. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM AFTER THEY ARE BURIED.
14. THE SOIL ABSORPTION SYSTEM SHALL HAVE A MINIMUM OF 1 INSPECTION PORT CONSISTING OF A PERFORATED 4 INCH PIPE PLACED VERTICALLY DOWN INTO THE STONE TO THE NATURALLY OCCURRING SOIL OR SAND FILL BELOW THE STONE. THE PIPE SHALL BE CAPPED WITH A SCREW TYPE CAP AND ACCESSIBLE TO WITHIN 3 INCHES OF FINISH GRADE.
15. ALL WORK AND MATERIALS SHALL COMPLY WITH THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION STATE ENVIRONMENTAL CODE, TITLE 5 AND LOCAL BOARD OF HEALTH SUPPLEMENTARY REGULATIONS AS REQUIRED.
16. NO GARBAGE GRINDER SHALL BE INSTALLED AS PART OF THIS DESIGN.
17. THE SYSTEM SHALL BE VENTED THROUGH BUILDING PLUMBING AS REQUIRED BY THE BUILDING AND/OR PLUMBING CODE.
18. THE INSTALLER OF THIS SYSTEM MUST BE LICENSED BY THE LOCAL BOARD OF HEALTH.
19. APPLICABLE ZONING BYLAWS AND/OR OTHER LOCAL REGULATIONS SHALL BE CONFIRMED BY THE OWNER PRIOR TO CONSTRUCTION.
20. THE SEPTIC TANK SHALL BE PERIODICALLY INSPECTED AND MAINTAINED AND SHOULD BE PUMPED WHENEVER THE TOP OF THE SLUDGE LAYER IS WITHIN 12-INCHES OF THE BOTTOM OF THE OUTLET TEE OR WHEN THE TOP OF THE SCUM LAYER IS WITHIN 2-INCHES OF THE TOP OF THE OUTLET TEE OR THE BOTTOM OF THE SCUM LAYER IS WITHIN 2-INCHES OF THE BOTTOM OF THE OUTLET TEE.
21. COMPONENTS NOT TO BE BACKFILLED WITHOUT INSPECTION BY BOARD OF HEALTH AND PERMISSION OBTAINED BY BOARD OF HEALTH.
22. DESIGNER TO SUBMIT AN AS-BUILT PLAN OF SYSTEM WITHIN 30 DAYS OF FINAL INSPECTION OF THE SYSTEM.
23. EXCAVATE ALL TOPSOIL, SUBSOIL, AND ANY OTHER UNSUITABLE MATERIAL. FILL MATERIAL FOR SYSTEMS CONSTRUCTED IN FILL SHALL CONSIST OF CLEAN GRANULAR SAND, FREE FROM ORGANIC MATTER AND DELETERIOUS SUBSTANCES.
24. FILL MATERIAL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN 2 INCHES. THE FILL MATERIAL SHALL COMPLY WITH THE STATE ENVIRONMENTAL CODE, TITLE 5, 310 CMR 15.255 (3) AS REVISED.
25. CONTRACTOR TO SUPPLY TO THE CITY OR TOWN WITH A CURRENT SIEVE TEST ANALYSES REPORT AT THEIR EXPENSE IF REQUIRED BY THE LOCAL APPROVING AUTHORITY.

PRESBY SYSTEM SAND REQUIREMENTS:

1. NO MORE THAN 35% OF THE TOTAL SAND MAY BE GRAVEL.
2. 40-90% OF THE TOTAL SAND IS TO BE COARSE AND VERY COARSE SAND.
3. NO GRAVEL IS TO EXCEED 3/4" IN DIAMETER BUT MUST NE LARGER THAN 2MM/.0787" DIAMETER. (IT MUST NOT PASS THROUGH A #10 SIEVE.)
4. NO COARSE SAND IS TO BE SMALLER THAN 0.5MM/.0196" IN DIAMETER. (IT MUST NOT PASS THROUGH A #35 SIEVE.)
5. NO MORE THAN 2% OF THE TOTAL SAND MAY PASS THROUGH A #200 SIEVE.

*ASTM C-33 CONCRETE SAND MEETS THE REQUIREMENTS ABOVE.

SOIL ABSORPTION SYSTEM (SAS) SIZING CALCULATIONS:

1. NUMBER OF BEDROOMS (BR) = 4
2. DESIGN FLOW = 110 GALLONS PER DAY (GPD) / BR, PER TITLE V
3. DAILY FLOW = 4 BR x 110 GPD/BR = 440 GPD
4. SEPTIC TANK REQUIRED = 2 x 440 GPD = 880 GAL - USE 1,500 GAL. MONOLITHIC SEPTIC TANK
5. LEACHING AREA REQUIRED FOR PRIMARY SYSTEM:

CLASS III SOILS W/ 42 MPI PERC RATE = 440 GPD/0.20 GPD/S.F. = 2,200 S.F.
6. 300 LINEAR FEET OF ENVIRO-SEPTIC PIPE (ESP) REQUIRED FOR A 4 BEDROOM SYSTEM WITH A 42 MPI PERC RATE

SEE [TABLE A](#) OF THE PRESBY ENVIRONMENTAL DESIGN MANUAL

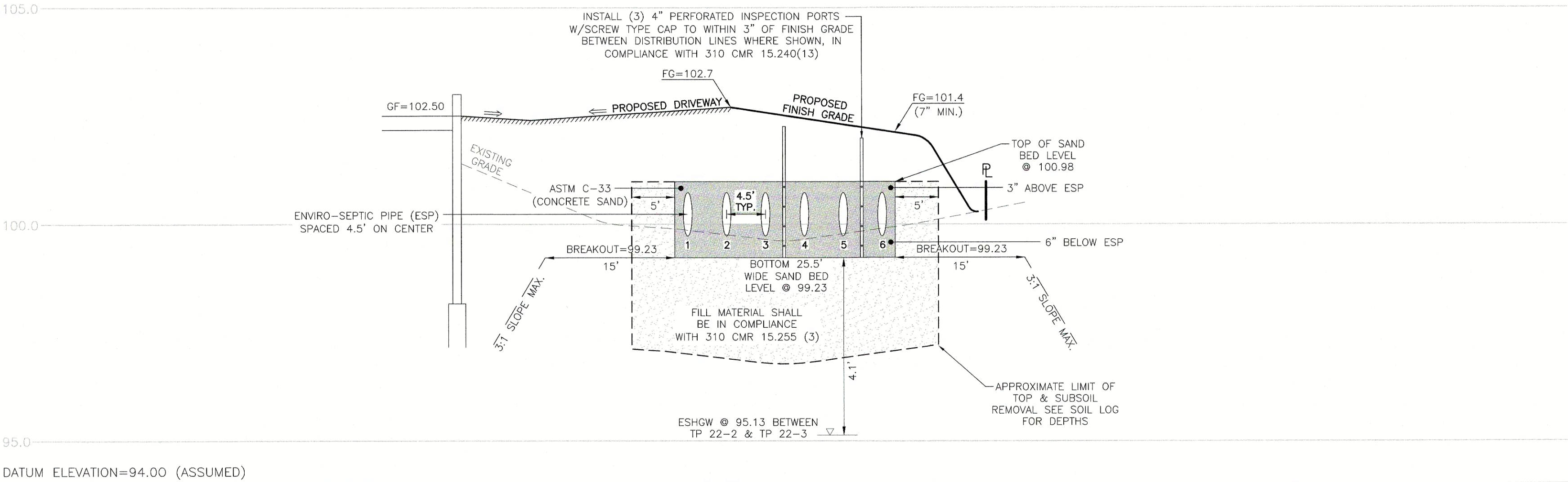
USE 6-50.0' LONG ENVIRO-SEPTIC PIPE SPACED 4.5' CENTER TO CENTER (300 LINEAR FEET OF PIPE)
7. LEACHING AREA USED FOR PRIMARY SYSTEM:

REQUIRED AREA = 1,320 S.F.

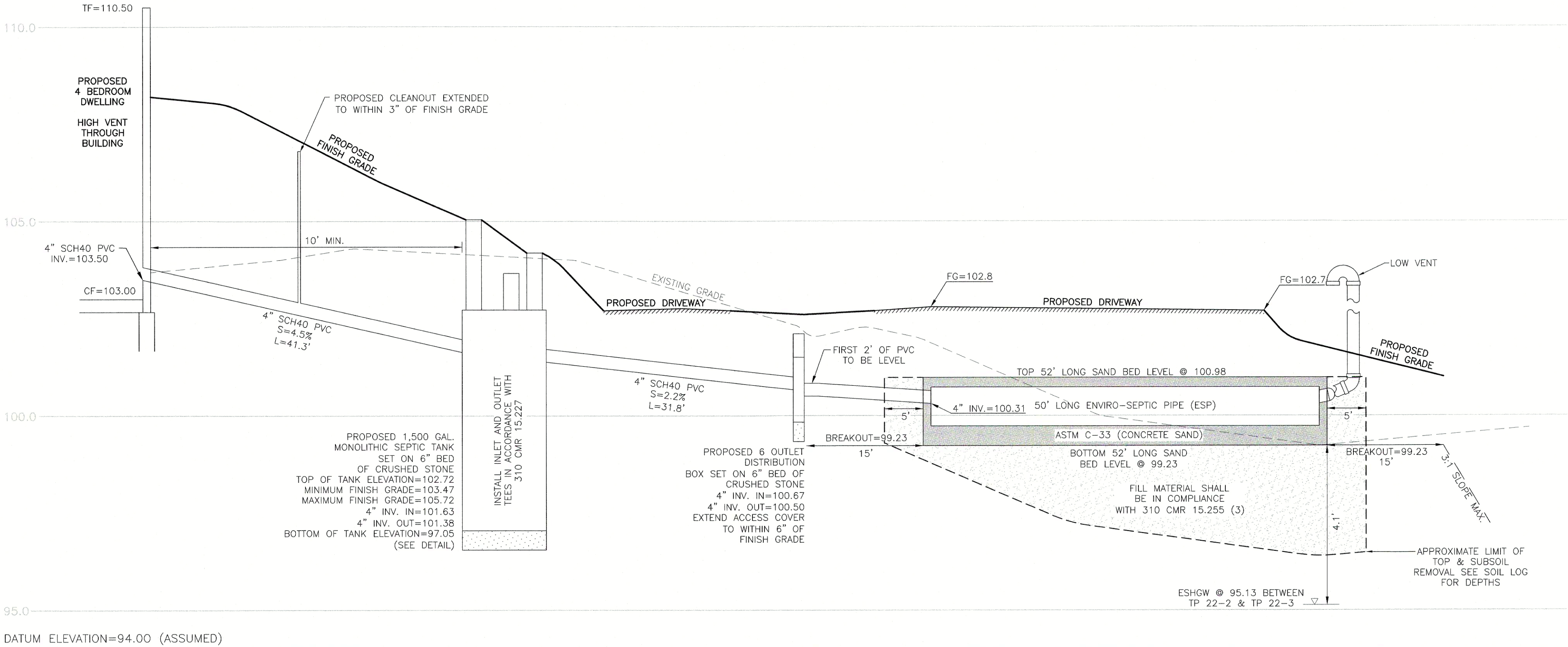
PROVIDED AREA = 52.00 FT. x 25.50 FT. = 1,326 S.F.
8. LEACHING AREA USED FOR RESERVE SYSTEM:

FOR CLASS I SOIL WITH A PERCOLATION RATE OF 5 MINUTES PER INCH = 440 GPD/0.74 GPD/S.F. = 595 S.F.

LEACHING AREA PROVIDED = LEACH BED 20.00'W x 30.00'L x 0.50'D = 600 S.F.



SECTION A-A



SECTION A-A

SANITARY DISPOSAL SYSTEM DESIGN PLAN
#97 MAIN STREET, TOPSFIELD, MA

DRAWING: S-2

SHEET 2 OF 3

SCALE: 1"=10'

JANUARY 30, 2023

REVISED HOUSE, DRIVEWAY & GRADING

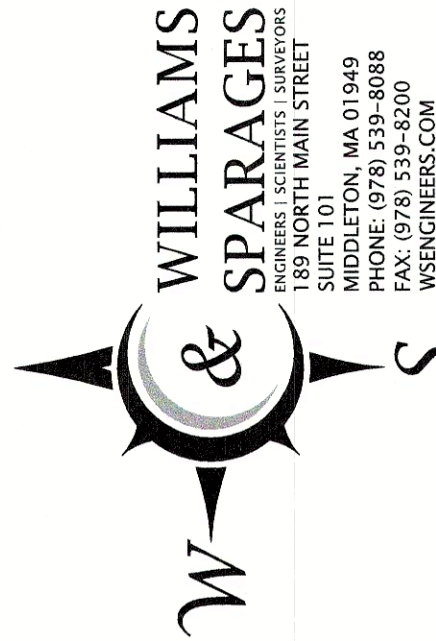
4/13/2023

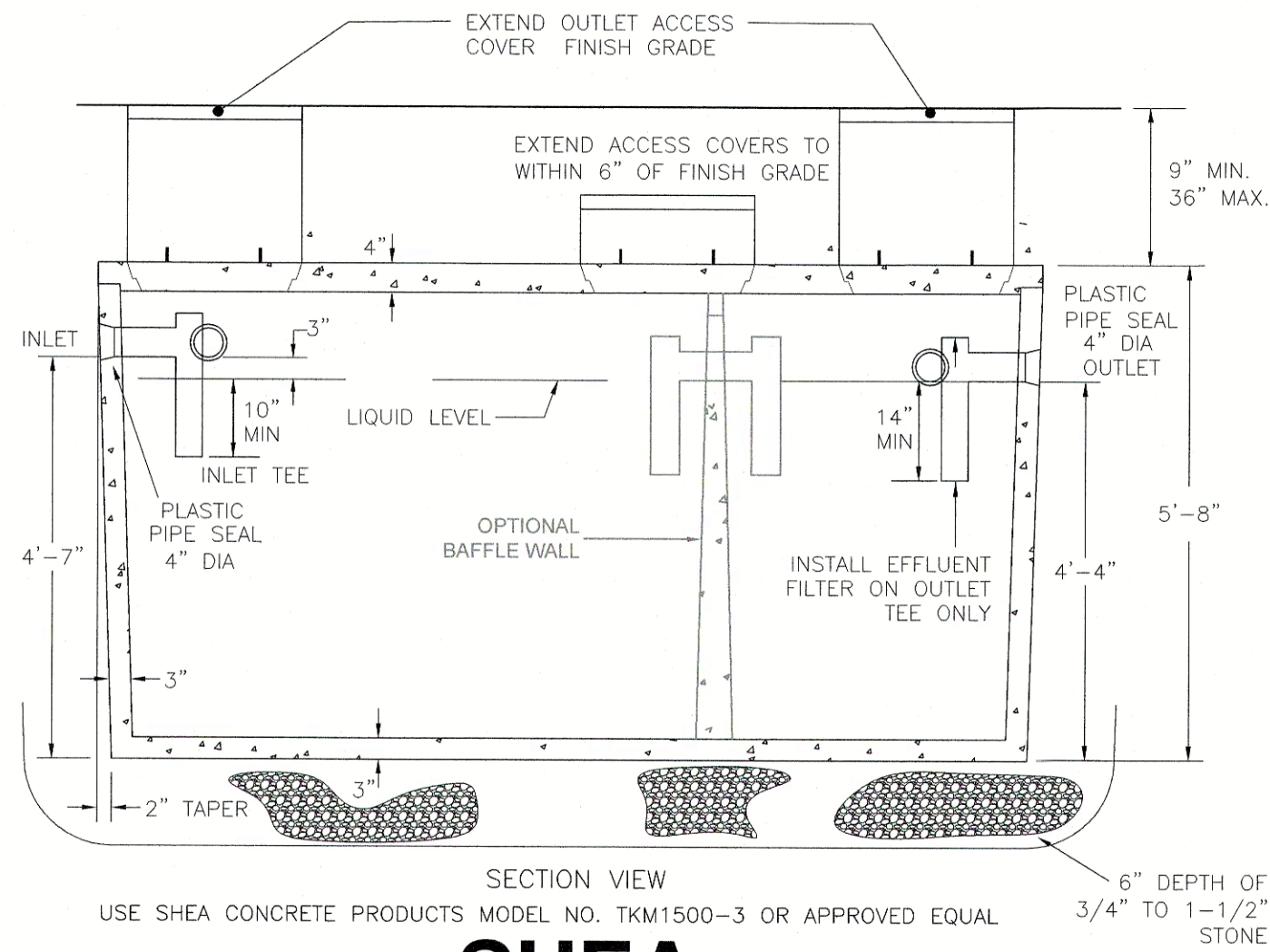


Designed By: SML
Drawn By: SML
Reviewed By: RLW
Project Manager: RLW
Job File Number: TOPS-0076
Drawing File Folder: TOPS76
☐ Drawing Issued for Review Only
☒ Drawing Issued for Permit
☐ Drawing Issued for Construction

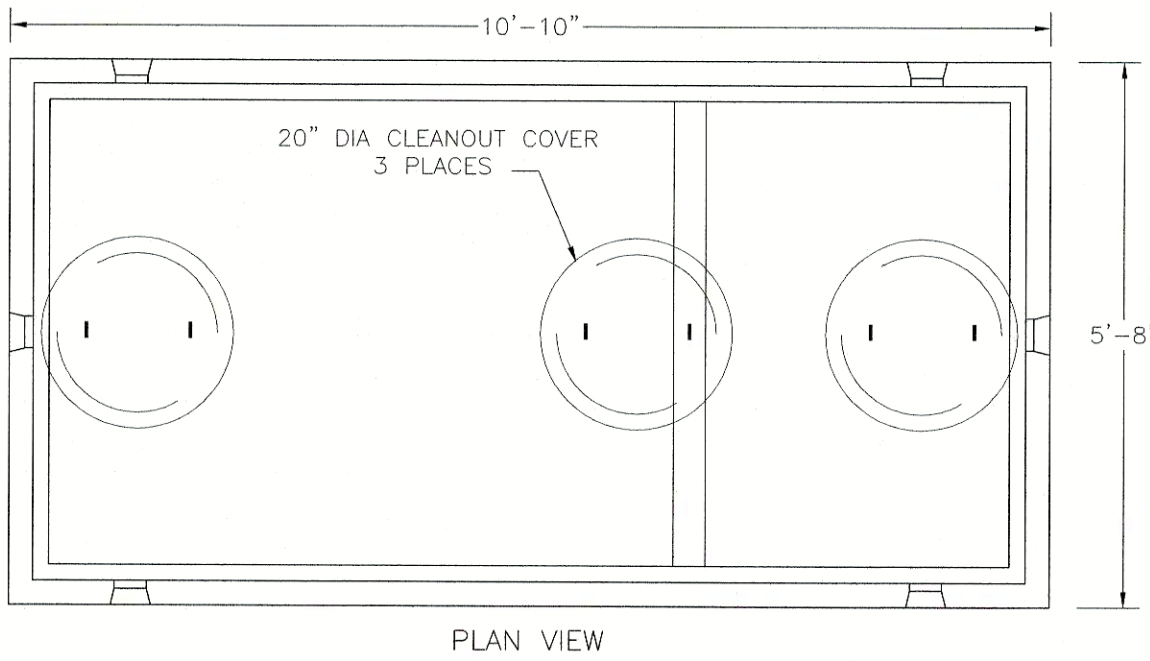
Owner:
The Orlando Lopez Trust
93 Main Street
Topsfield, MA 01983

Applicant:
Montana Development LLC
23 Aaron Drive
Topsfield, MA 01983
978-317-7724





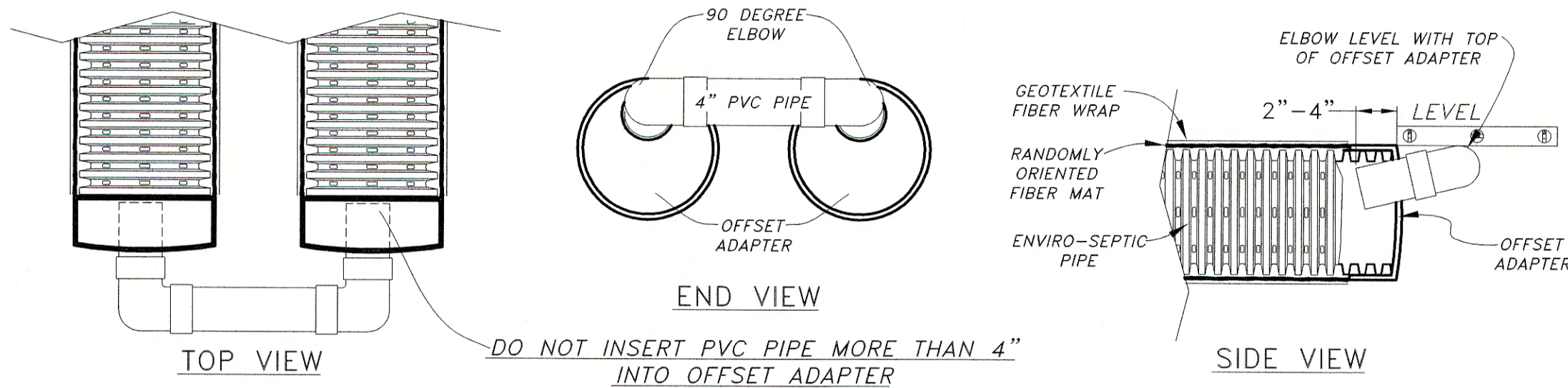
SHEA



ITEM NO.	WEIGHT
M1500	11,035#
M15002C	11,841#

1500 GALLON SEPTIC TANK
MONOLITHIC 3" WALL
N.T.S.

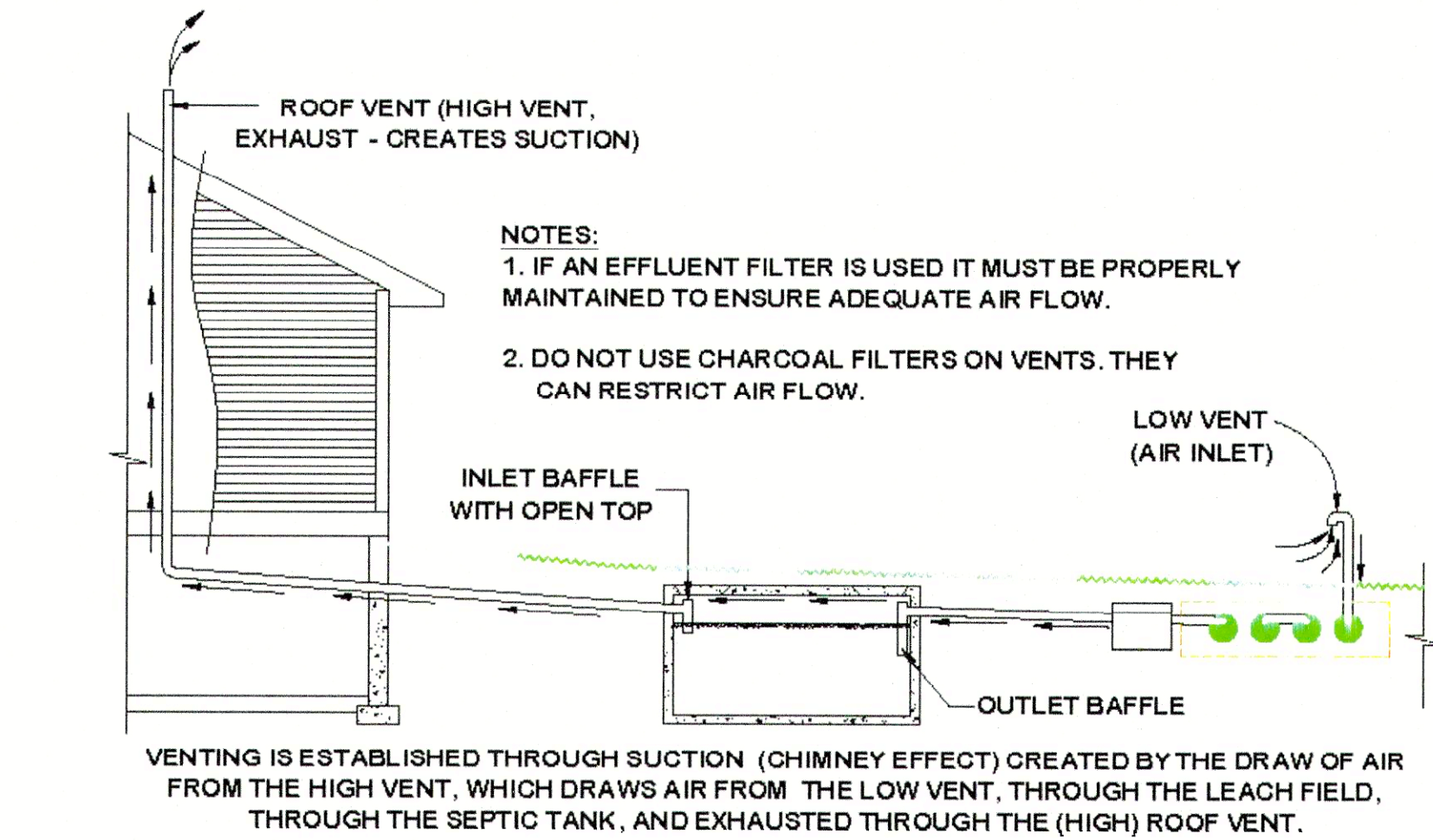
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGN CONFORMS WITH 310 CMR, SECTION 15.00 DEP TITLE 5 REGS FOR SEPTIC TANKS
3. ALL REINFORCEMENT PER ASTM C1227.
4. TEES AND GAS BAFFLE SOLD SEPARATELY.
5. TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN.
6. IF COVER EXCEEDS 4 FEET, HEAVY DUTY TANK REQUIRED. ALSO AVAILABLE IN AASHTO HS-20 LOADING.



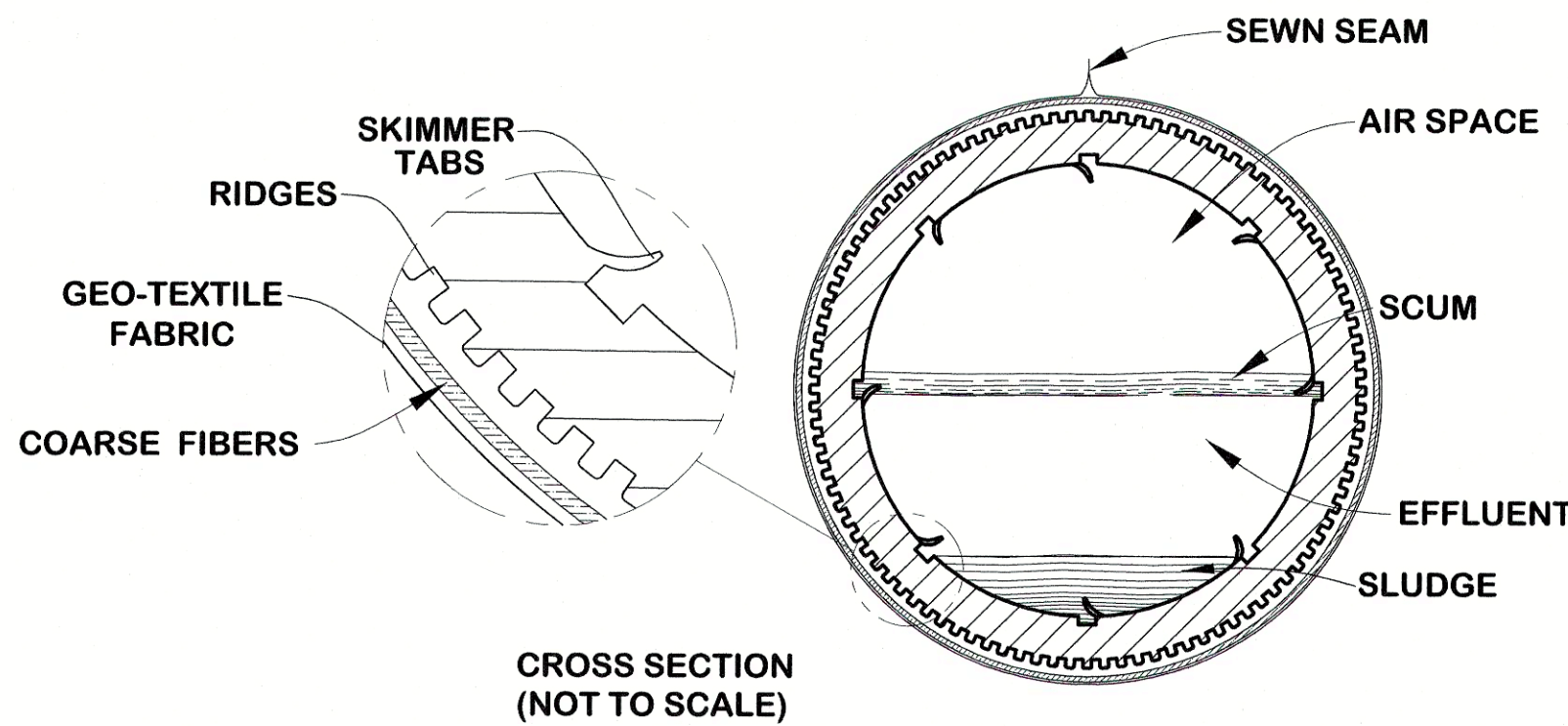
RAISED CONNECTION DETAIL (NOT TO SCALE)

NOTES

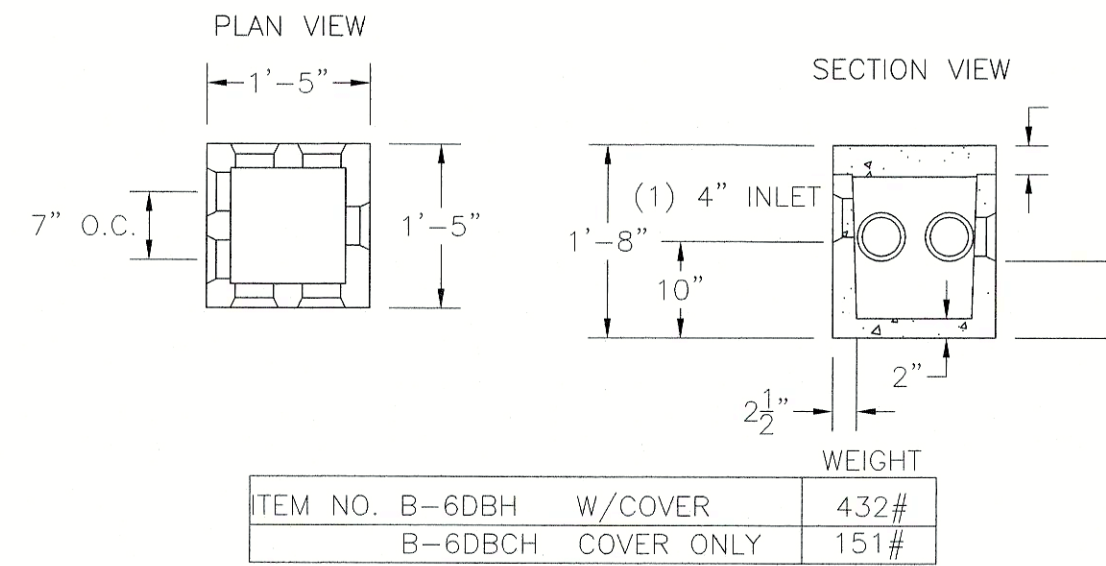
- 1) SYSTEM TO BE INSTALLED IN ACCORDANCE WITH PRODUCT DESIGN AND INSTALLATION MANUAL, STATE AND LOCAL REGULATIONS. FOR PRODUCT INFORMATION OR THE NEAREST DEALER CONTACT PRESBY ENVIRONMENTAL, INC. 143 AIRPORT ROAD, WHITEFIELD, NH 03598, PHONE 1-800-473-5298 WWW.PRESBYENVIRONMENTAL.COM
- 2) MINIMUM OF 6" OF MEDIUM TO COARSE SAND, WITH LESS THAN 3% PASSING A # 200 SIEVE, REQUIRED AROUND CIRCUMFERENCE OF ADVANCED ENVIRO-SEPTIC PIPES. (SEE DESIGN AND INSTALLATION MANUAL FOR COMPLETE SAND AND FILL SPECIFICATIONS.)
- 3) INSTALLER ADVISED TO CONTACT DIG SAFE PRIOR TO CONSTRUCTION.
- 4) DO NOT INSTALL SYSTEM ON FROZEN GROUND OR LEAVE SYSTEM UNCOVERED FOR EXTENDED PERIODS OF TIME.
- 5) NO DRAINS, HOT TUBS, SAUNAS, GARBAGE DISPOSALS ETC.. SHALL BE INCORPORATED INTO THIS SYSTEM UNLESS OTHERWISE SPECIFIED.
- 6) MAINTENANCE: RECOMMEND INSPECTION OF SEPTIC TANKS AT LEAST ONCE EVERY TWO YEARS AND CLEAN IF COMBINED THICKNESS OF SLUDGE AND SCUM EQUALS MORE THAN 1/4 OF THE LIQUID DEPTH INSIDE THE TANK.
- 7) THIS DOCUMENT IS FOR THE CONSTRUCTION OF THE EFFLUENT DISPOSAL SYSTEM SHOWN. ANYONE USING INFORMATION FROM THIS DOCUMENT FOR ANY OTHER PURPOSE DOES SO AT THEIR OWN RISK.



VENT LOCATION FOR GRAVITY SYSTEM
N.T.S.

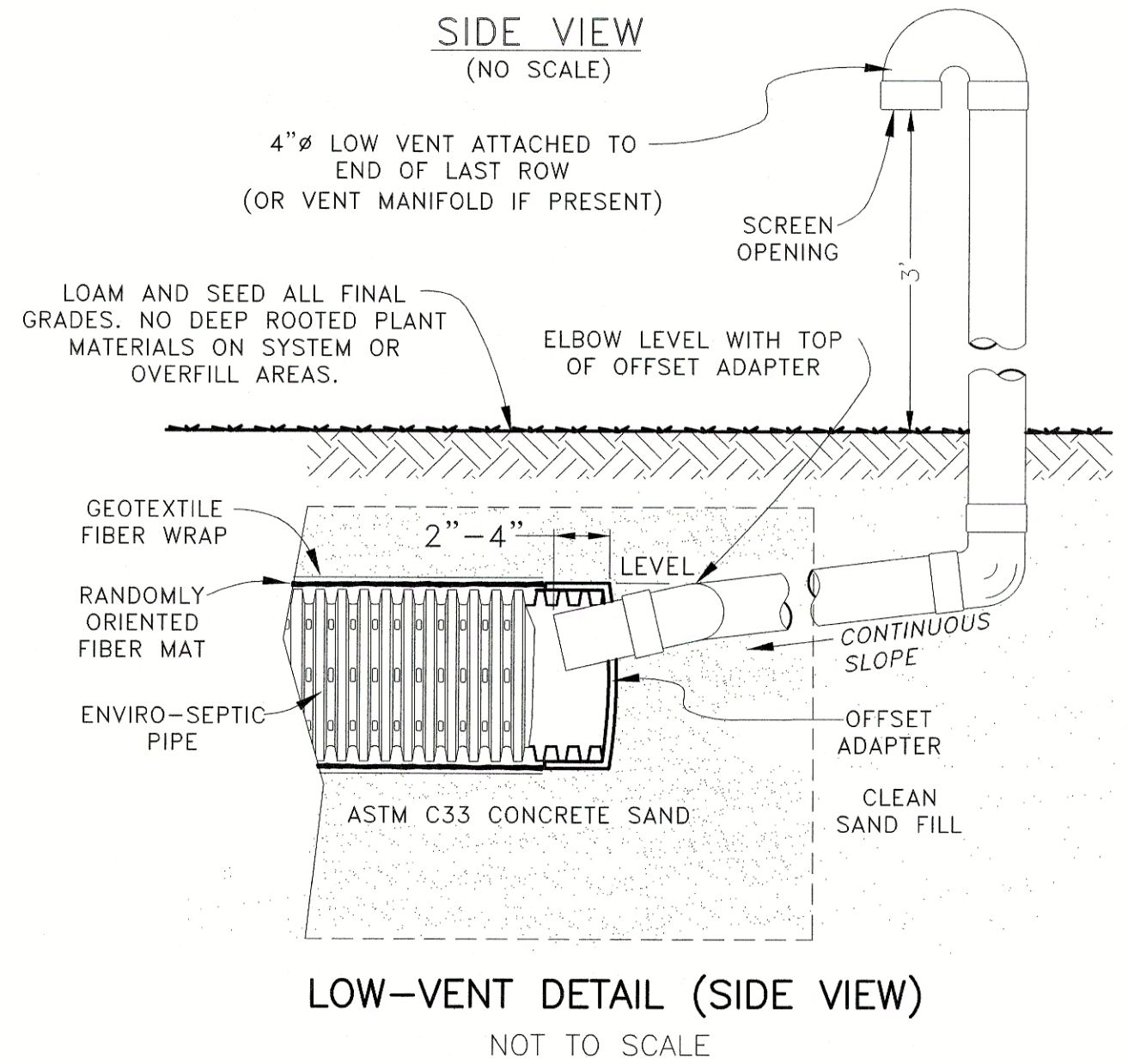
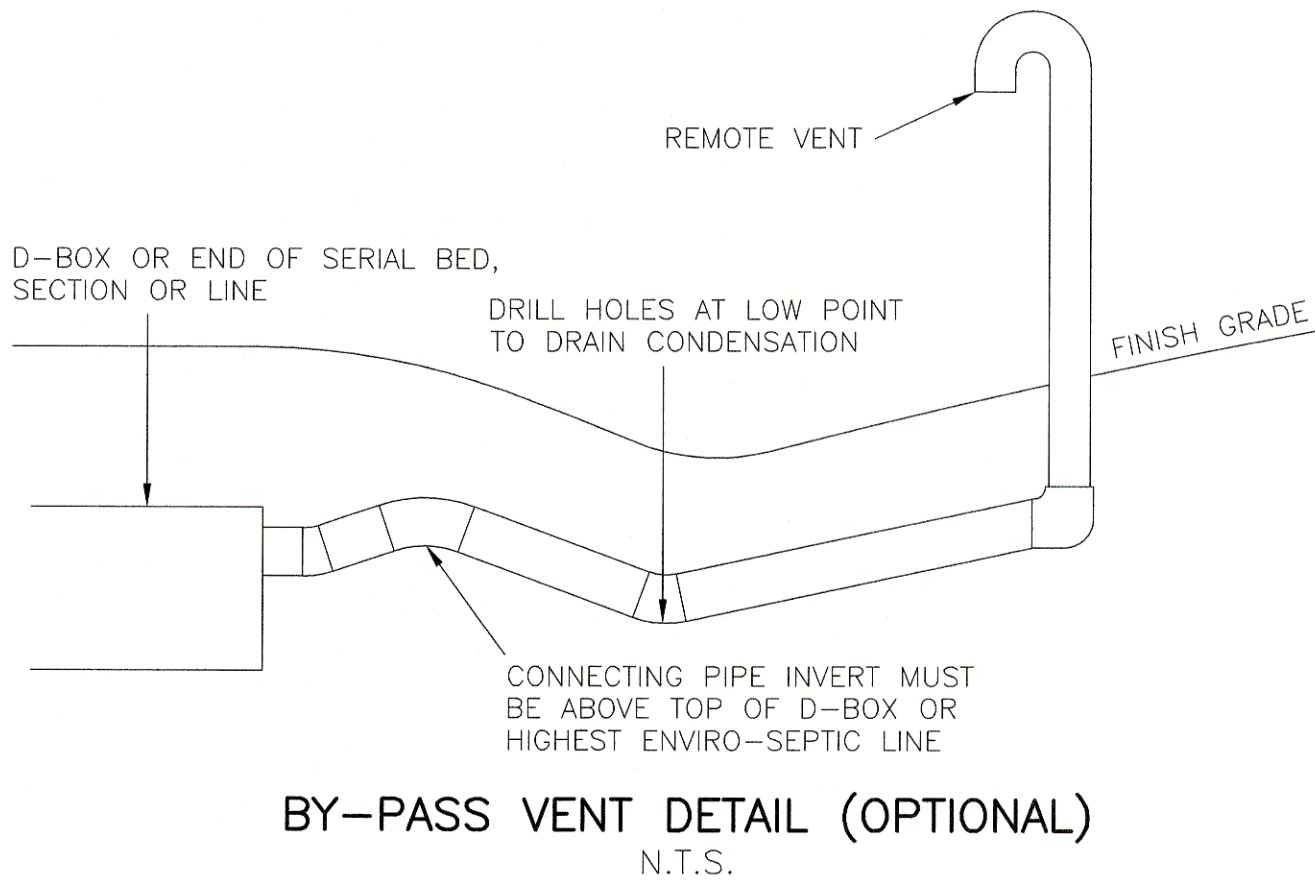


ENVIRO-SEPTIC[®]
LEACHING SYSTEM



SHEA
OR APPROVED EQUAL

1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGN CONFORMS WITH 310 CMR 15.000, DEP TITLE 5 REGS, FOR DISTRIBUTION BOXES.
3. CONTRACTOR SHALL INSURE THAT ALL INLETS AND OUTLETS ARE MADE WATERTIGHT.
4. CONTRACTOR SHALL INSURE THAT DISTRIBUTION BOXES ARE SET ON A MINIMUM OF 6" OF MECHANICALLY COMPACT CRUSHED STONE.
5. THE INVERT ELEVATION OF ALL OUTLETS SHALL BE EQUAL TO EACH OTHER AND LOCATED AT LEAST 2" BELOW THE INVERT OF THE INLET.
6. INLET TEES IN DISTRIBUTION BOXES SHALL BE INSTALLED IN ACCORDANCE TO 310 CMR 15.232 (3)(A) TO PROVIDE 1" BETWEEN THE BOTTOM OF THE TEE AND THE OUTLET INVERT.
7. DISTRIBUTION BOX SHALL BE EQUIPPED WILL FLOW EQUALIZERS.



Owner:
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93 Main Street
Topsfield, MA 01983
Applicant:
Montana Development LLC
23 Aaron Drive
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SANITARY DISPOSAL SYSTEM DESIGN PLAN
#97 MAIN STREET, TOPSFIELD, MA

6	5	4	3	2	1
20'	10'	5'	0'	0'	0'
SCALE: 1"=10'					
JANUARY 30, 2023					
REVISED HOUSE, DRIVEWAY & GRADING					
4/13/2023					

DRAWING: S-3

SHEET 3 OF 3