





PLOTTED: Jun 07, 2023 - 3:35pm Q:\1230009 - Deitemyer\_1723 Underwood Rd03. Design\09 - Drawings\01. AutoCAD\02. Civil\1723 Underwood Rd\_sewer layout.dwg.....Tab-S-2

SEWER CONSTRUCTION NOTES

1. PROPERTY OWNER :  
TRISSIE F. AND JEFFREY D. MANWILLER
2. SITE ADDRESS: 1723 UNDERWOOD ROAD, SYKESVILLE, MD 21784
3. TAX MAP 9, GRID 21, PARCEL 300
4. EXISTING TOPOGRAPHY, EXISTING UTILITIES, FEATURES OF THE SITE, AND SURROUNDING PROPERTIES AND ROADS WERE TAKEN FROM DRAWINGS PREPARED BY OTHERS.
5. THE SITE IS NOT LOCATED WITHIN THE CHESAPEAKE BAY CRITICAL AREA.
6. SITE UTILITIES ARE AS FOLLOWS :  
- WATER - PRIVATE WELL  
- SANITARY SEWER - PRIVATE SYSTEM  
- STORM DRAINAGE - PRIVATE SYSTEM
7. ALL EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR TO HIS/HER OWN SATISFACTION BEFORE CONSTRUCTION.
8. TAKE NECESSARY PRECAUTIONS TO PROTECT EXISTING SERVICES AND MAINS. ANY DAMAGE TO THEM SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
9. NOTIFY LOCAL UTILITY COMPANIES THAT PROVIDE SERVICES TO THE SITE MINIMUM FIVE (5) WORKING DAYS BEFORE STARTING WORK ON THESE DRAWINGS OR EARLIER AS REQUIRED BY LOCAL UTILITY PROVIDERS. THE CONTRACTOR IS TO VERIFY FOR TELEVISION CABLE. IF EITHER UTILITY SERVICE PROVIDERS OR HOWARD COUNTY DETERMINE THAT EXISTING POLES ADJACENT TO THE EXCAVATION NEED TO BE BRACED, BRACING SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.
10. PRIOR TO SUBMITTING BID/PROPOSAL, THE CONTRACTOR SHALL WALK THE ENTIRE SITE AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS IN THE AREA OF NEW CONSTRUCTION WORK.
11. REPAIR AND REPLACE ANY EXISTING FENCES, DRIVEWAYS, ETC., DAMAGED OR REMOVED DURING CONSTRUCTION UNLESS OTHERWISE NOTED BY THE CONTRACT DRAWINGS AND SPECIFICATION OR BY THE OWNER/OWNER'S REPRESENTATIVE.
12. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK WHICH WOULD NORMALLY BE REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM SUCH WORK.
13. NOTIFY THE OWNER/OWNER'S REPRESENTATIVE OF ANY DEVIATION FROM THIS PLAN PRIOR TO ANY CHANGE BEING MADE. ANY CHANGE TO THIS PLAN WITHOUT WRITTEN AUTHORIZATION FOR SAID CHANGE FROM THE OWNER/OWNER'S REPRESENTATIVE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR.
14. THESE DRAWINGS DO NOT INCLUDE ALL THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. CONSTRUCTION TO BE DONE IN COMPLIANCE WITH THE MOST RECENT VERSION OF OSHA STANDARDS AND REQUIREMENTS.
15. WHERE UTILITY PIPES ARE TO BE PLACED ON COMPACTED FILL, THE FOLLOWING SHALL APPLY :  
A. PRIOR TO PLACEMENT OF COMPACTED FILL, ANY SOFT OR OTHERWISE UNSUITABLE SOILS ENCOUNTERED AT OR BELOW THE PIPE INVERT SHALL BE UNDERCUT AND REMOVED FROM THE CONSTRUCTION AREA.  
B. ACCEPTABLE COMPACTED FILL SHALL BE PLACED IN SIX INCH THICK LOOSE LIFTS AND COMPACTED TO THE MINIMUM DENSITY IN ACCORDANCE WITH A.A.S.H.T.O., DESIGNATION T-180, METHOD C, AND THE APPLICABLE HOWARD COUNTY SPECIFICATION. COMPACTION TEST RESULTS CONDUCTED BY AN INDEPENDENT TESTING LAB AND SEALED BY A REGISTERED ENGINEER ARE TO BE SUBMITTED TO THE OWNER/OWNER'S REPRESENTATIVE PRIOR TO PIPE INSTALLATION.  
C. THE COMPACTED FILL SHALL BE BENCHED INTO THE EXISTING VIRGIN SLOPES WITH EACH LIFT PLACED TO ALLOW A SMOOTH TRANSITION FROM VIRGIN TO FILL SOILS.  
D. CONTRACTOR SHALL FOLLOW THE SEPTIC TANK INSTALLATION AND BACKFILL REQUIREMENTS PROVIDED IN MANUFACTURER'S INSTALLATION REQUIREMENTS. ANY NON-APPROVED DEVIATION FROM THESE INSTRUCTIONS AND CAUSED DAMAGE WILL BE A DIRECT RESPONSIBILITY OF THE GENERAL CONTRACTOR, AND SHALL BE REPAIRED AT NO EXTRA COST TO THE OWNER. LIQUIDATION DAMAGES WILL APPLY AT DISCRETION OF THE OWNER.
16. THESE DRAWINGS ARE TO BE USED FOR CONSTRUCTION OF THE SEPTIC TANK AND SUBSURFACE DISPOSAL SYSTEM OF WASTEWATER.
17. ALL TEES, PLUGS, CAPS AND BENDS SHALL BE RESTRAINED AGAINST MOVEMENT PER SECTION 8-6.1 NFPA 24.

SEWER CONSTRUCTION NOTES (CONT'D)

18. TRENCH BACKFILL SHALL BE COMPACTED TO THE MINIMUM DENSITY IN ACCORDANCE WITH A.A.S.H.T.O., DESIGNATION T-180, METHOD C.
19. HOWARD COUNTY INSTALLATION PERMIT IS EFFECTIVE DURING TWO (2) YEAR AFTER THE ISSUANCE DATE. IF ANY INSTALLATION IS NOT COMPLETE AT THE END OF THE 2-YEAR CONSTRUCTION PERIOD, THE OWNER/CONTRACTOR IS RESPONSIBLE TO RE-APPLY FOR THE INSTALLATION PERMIT.
20. PRE-CONSTRUCTION MEETING IS REQUIRED WITH AN INSPECTOR FROM THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO ANY EXCAVATIONS FOR THE SEPTIC SYSTEM. PRIOR TO THE MEETING THE SEPTIC TRENCHES AND TANK LOCATIONS MUST BE STAKED BY A LICENSED SURVEYOR.
21. PVC PIPE FOR GRAVITY SEWER SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM D-3034, SDR 26 SPECIFICATION FOR TYPE PSM POLY VINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, UTILIZING A RUBBER RING JOINT TO PROVIDE FOR EXPANSION AND CONTRACTION. JOINTS FOR BOTH PIPE AND FITTINGS SHALL BE OF THE INTEGRAL BELL TYPE, CONSISTING OF AN INTEGRAL WALL SECTION WITH A SOLID CROSS-SECTION RUBBER RING, FACTORY ASSEMBLED AND SECURELY LOCKED IN PLACE TO PREVENT DISPLACEMENT. RUBBER GASKETS SHALL COMPLY IN ALL RESPECTS WITH THE PHYSICAL REQUIREMENTS SPECIFIED IN ASTM F-477 AND THE LUBRICANT USED FOR JOINT ASSEMBLY SHALL HAVE NO DETRIMENTAL EFFECT ON THE RING OR PIPE. PIPE CONNECTIONS AT MANHOLES SHALL BE ACCOMPLISHED BY MEANS OF AN ELASTOMERIC GASKET TO PROVIDE FLEXIBILITY AND ADEQUATE JOINT TIGHTNESS.
22. FOLLOW CONSTRUCTION SAFETY REQUIREMENTS AS REQUIRED BY OSHA STANDARDS AND REGULATIONS.

DESIGN BACKGROUND

100% MAXIMUM DESIGN FLOW = 5 BEDROOMS \* 150 GPD/bedroom = 750 GPD

100% STANDARD TRENCH AREA = 100% DESIGN FLOW / STANDARD APPLICATION RATE = 750 GPD / 1.2 GPD/SF = 625 SF

PRIMARY (PERC TEST #1): TRENCH DESIGN LENGTH = 625 SF \* 0.455 / 3 FT WIDE TRENCH = 95 FT (100 %) SIDEWALL REDUCTION CREDIT: (W+2) / (W+1+2D) = (3+2) / (3+1+2\*3.5 FT) = 0.455

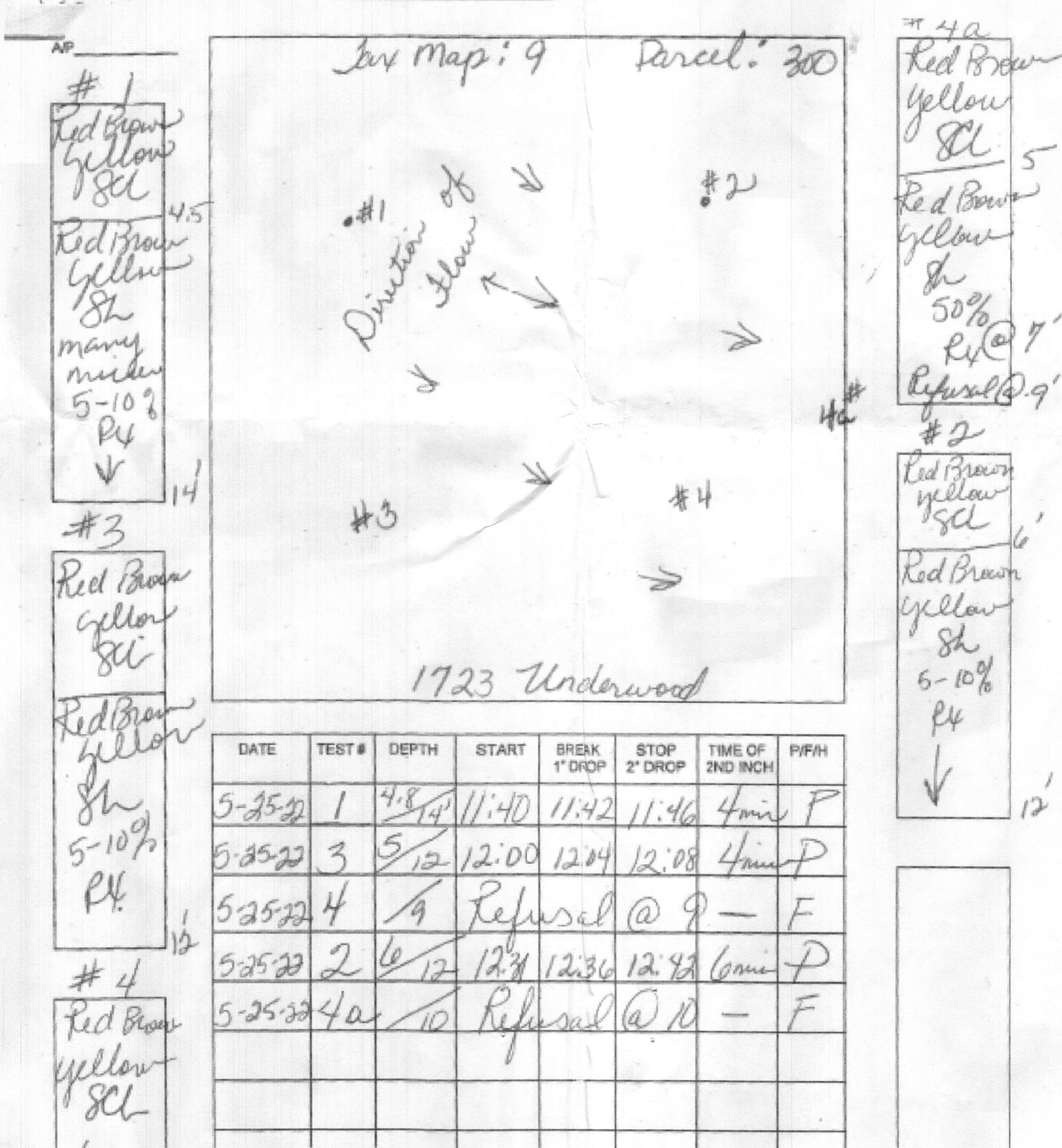
1ST RESERVE (PERC TEST #3): TRENCH DESIGN LENGTH = 625 SF \* 0.5 / 3 FT WIDE TRENCH = 104 FT (100 %) SIDEWALL REDUCTION CREDIT: (W+2) / (W+1+2D) = (3+2) / (3+1+2\*3.0 FT) = 0.5

2ND RESERVE (PERC TEST #2): TRENCH DESIGN LENGTH = 625 SF \* 0.625 / 3 FT WIDE TRENCH = 130 FT (100 %) SIDEWALL REDUCTION CREDIT: (W+2) / (W+1+2D) = (3+2) / (3+1+2\*2.0 FT) = 0.625

MINIMUM TRENCH SPACING IS 10 FT.

		Test #1	Test #3	Test #2
		Primary	Reserve 1	Reserve 2
Deep Trench Length				
Width =	ft	3.00	3.00	3.00
Trench Bottom =	ft	8.00	8.00	8.00
Effective Depth Start =	ft	4.50	5.00	6.00
Effective Depth =	ft	3.50	3.00	2.00
(w+2)/(w+1+2d) =		0.455	0.500	0.625
Design Length =	ft	95	104	130

Number of Primary Trenches (Test #1) =	1	95	foot long trenches - EXISTING TRENCH
Number of Reserve 1 Trenches (Test #3) =	2	52	foot long trenches
Number of Reserve 2 Trenches (Test #2) =	2	65	foot long trenches



REVISIONS		DATE	DESCRIPTION
REV #			

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DATE:	JUNE 2023
JOB NUMBER:	C150000
SCALE:	As Shown
DRAWN BY:	CAD
DESIGNED BY:	MCCRONE
APPROVED BY:	RMS
FOLDER REFERENCE:	N/A

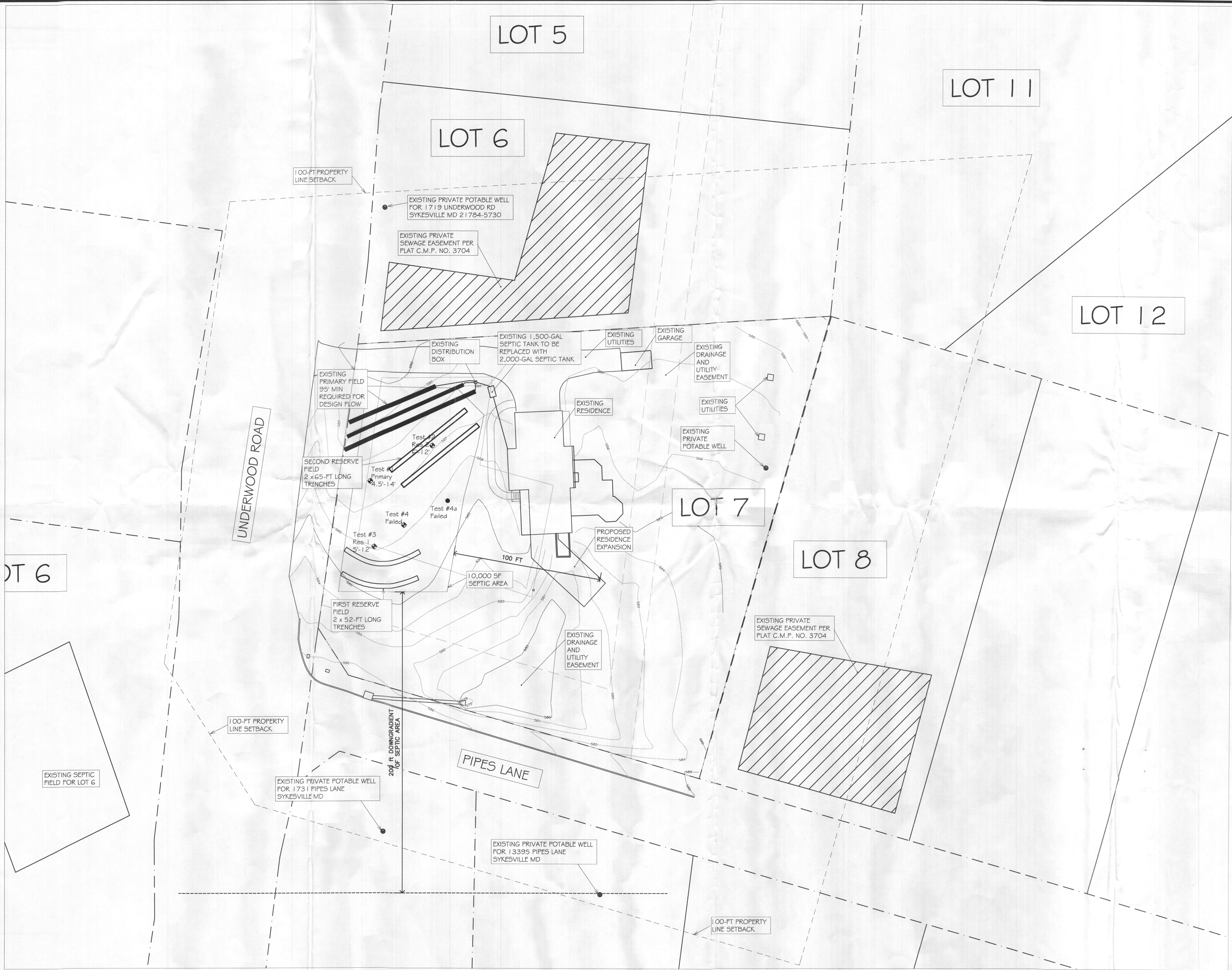
SEPTIC FIELD LAYOUT

1723 UNDERWOOD ROAD  
SEPTIC SYSTEM  
Sykesville, MD 21784  
Howard County

SHEET NO.:	S-2
DWG. NO.:	1723 Underwood Rd_sewer layout.dwg

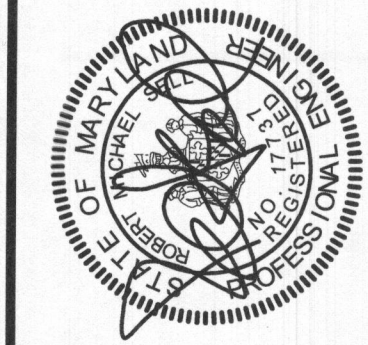


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1723 UNDERWOOD DRIVE SITE PLAN

SCALE: 1" = 30'-0"



SEAL 6-7-2023  
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SEPTIC FIELD LAYOUT

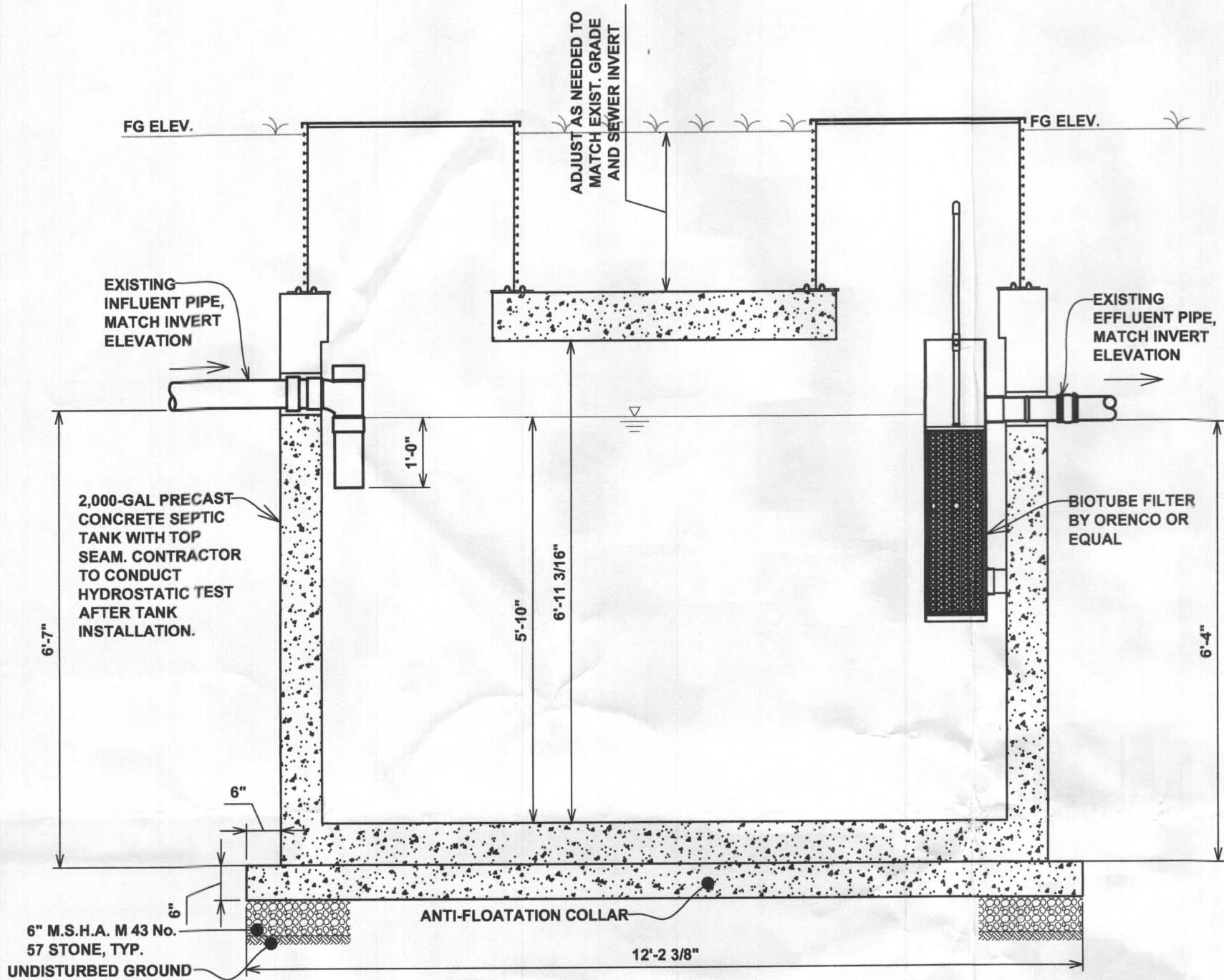
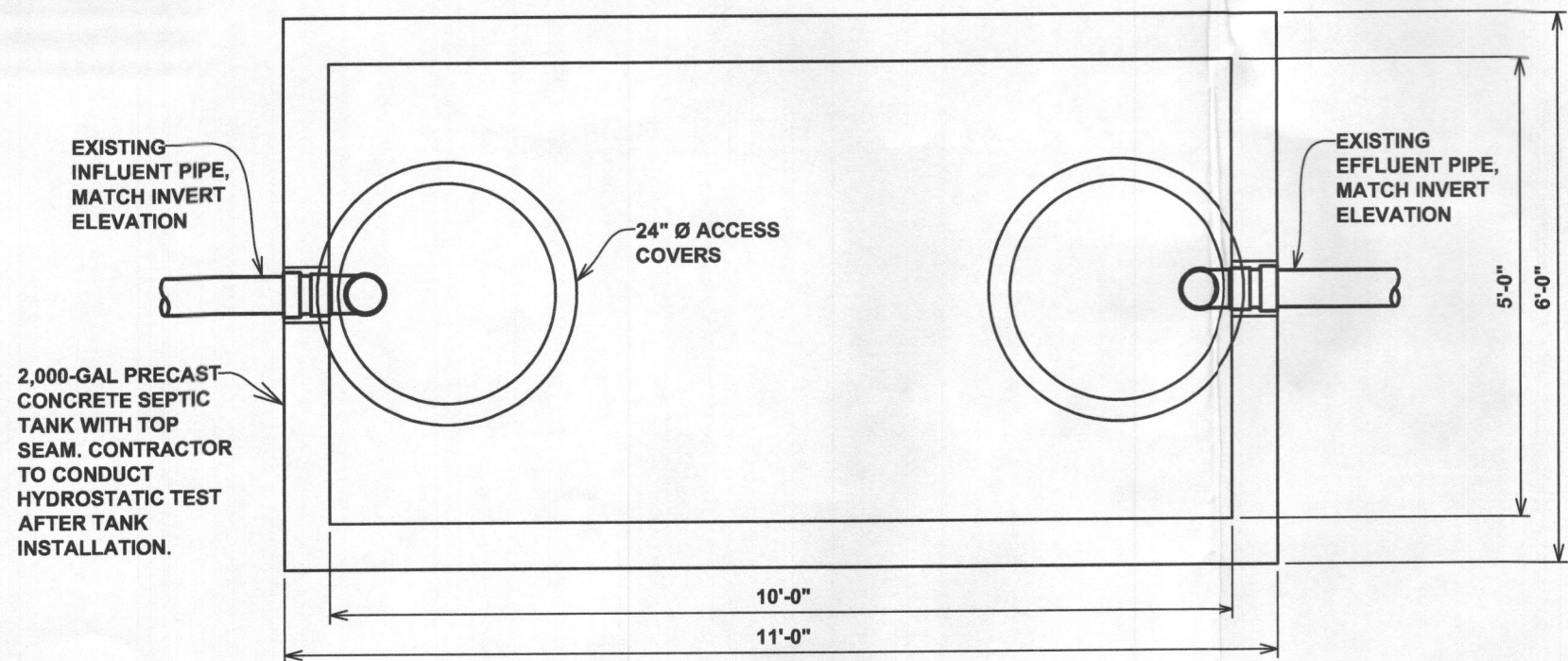
1723 UNDERWOOD ROAD  
SEPTIC SYSTEM

Sykesville, MD 21784  
Howard County

SHEET NO.: **S-3**

DWG. NO.:  
1723 Underwood Rd\_sewer layout.dwg



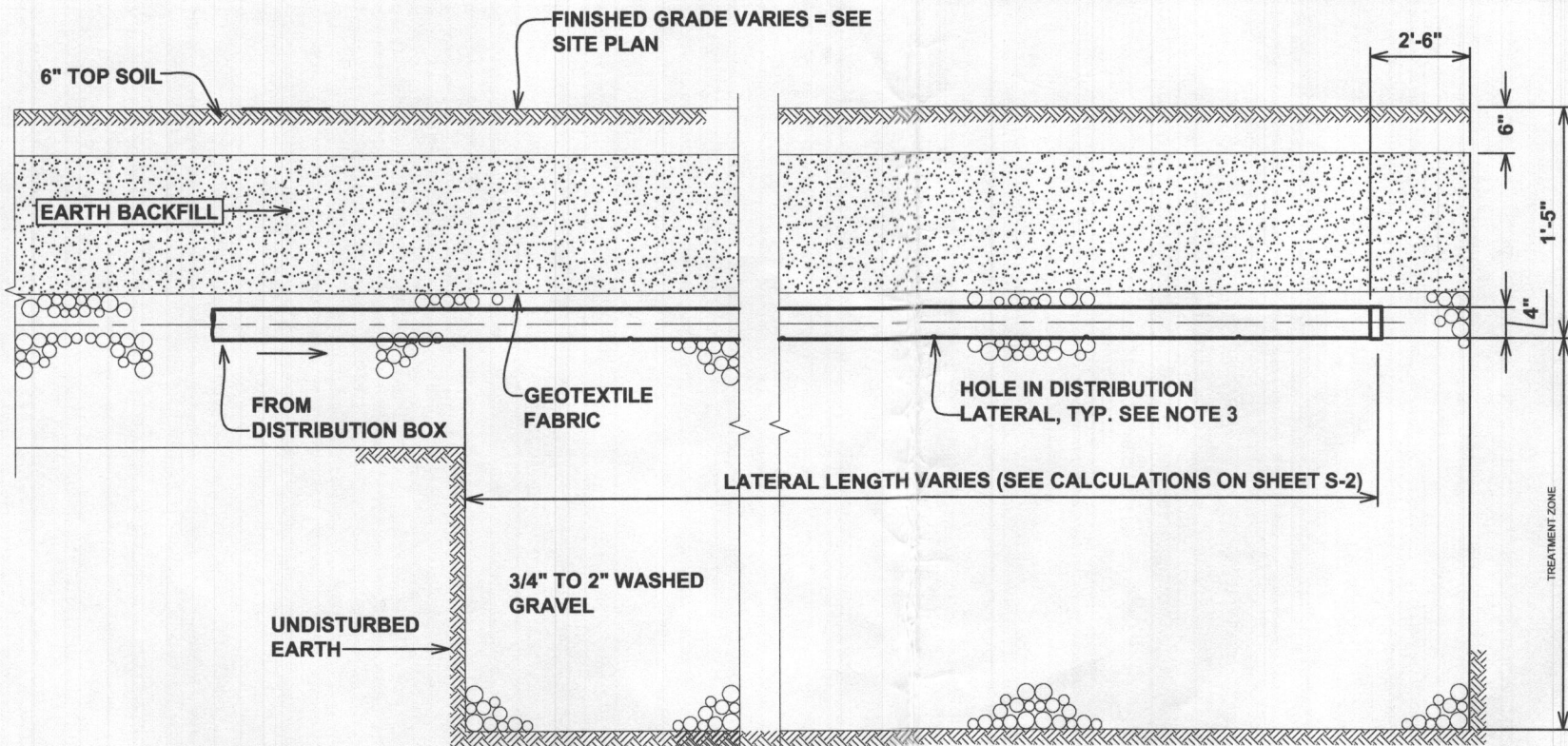


PROPOSED 2,000-GAL SEPTIC TANK

SCALE: 1" = 30'-0"

### SEPTIC TANK NOTES

1. REPLACE THE EXISTING 1,500-GAL SEPTIC TANK WITH THE PROPOSED 2,000-GAL TANK.
2. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
3. SUPPLY TOP SEAM OF CONCRETE TANK ONLY. MID-SEAM IS NOT ALLOWED.
4. ALL REINFORCEMENT PER ASTM C1227.
5. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
6. SUPPLY TANK RATED FOR H-20 LOADING.
7. THE EFFLUENT PIPE OF THE SEPTIC TANK SHALL BE EQUIPPED WITH EFFLUENT FILTER MODEL 3014-525 (PL-525) BY POLYLOK OR EQUAL.
8. THE FILTER MUST BE EQUIPPED WITH A PVC EXTENSION HANDLE THE FILTER MUST BE EQUIPPED WITH FILTER ALARM PANEL MODEL 3014A (SmartFilter Alarm Only). INSTALL ALARM PANEL BY THE SEPTIC TANK (OUTDOORS)



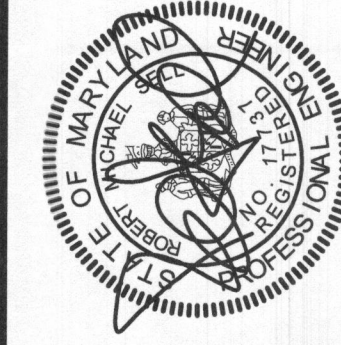
\* SOIL COVER VARIES FOR EACH LATERAL WITH A MINIMUM COVER OF 0.5 FOOT.

### LATERAL/TRENCH DETAIL

NOT TO SCALE

#### DRAINFIELD TRENCHES NOTES:

1. THE FILTER MATERIAL SHALL COVER THE PIPE AND EXTEND THE FULL WIDTH OF THE TRENCH AND SHALL BE NOT LESS THAN 6 INCHES DEEP BENEATH THE BOTTOM OF THE DRAIN PIPE, AND 2 INCHES ABOVE THE TOP OF THE PIPE. THE FILTER MATERIALS SHALL BE WASHED GRAVEL, CRUSHED STONE, OR SLAG, RANGING IN SIZE FROM 1/4 TO 2 1/4 INCHES AND FREE OF FINES, DUST, ASHES, OR CLAY. THE FILTER MATERIAL SHALL BE COVERED BY GEOTEXTILE FABRIC SPECIALLY DESIGNED TO EXCLUDE SEDIMENT BUT ALLOW THE PASSAGE OF WATER.
2. THE MINIMUM SIZE PIPE SHALL BE FOUR INCHES (4").
3. DISPOSAL LINES SHALL BE CONSTRUCTED OF NOT LESS THAN FOUR INCH (4") PERFORATED PLASTIC PIPE PVC SDR 35. THE PERFORATED PIPE SHALL CONTAIN 3 ROWS OF PERFORATIONS. EACH ROW OF PERFORATIONS SHALL CONSIST OF A MINIMUM OF 20 FIVE-EIGHTHS INCH DIAMETER HOLES FOR A 10-FOOT SECTION OF PIPE.
4. THE TRENCH BOTTOM SHALL BE UNIFORMLY GRADED TO SLOPE NO MORE THAN FOUR INCHES (4") PER ONE HUNDRED FEET (100'). THE DRAINFIELD PIPE SHALL BE LAID AT THE SAME PITCH AS THE BOTTOM OF THE DRAINFIELD TRENCH.
5. DRAINFIELD TRENCH EXCAVATIONS MUST BE INSPECTED BEFORE THE ADDITION OF AGGREGATE UNLESS AN ALTERNATIVE ARRANGEMENT HAS BEEN MADE WITH THE APPROVING AUTHORITY.
6. DISTRIBUTION LATERAL TO BE INSTALLED ON LEVEL GRADE, ELEVATIONS PER INVERTS TABLE.



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