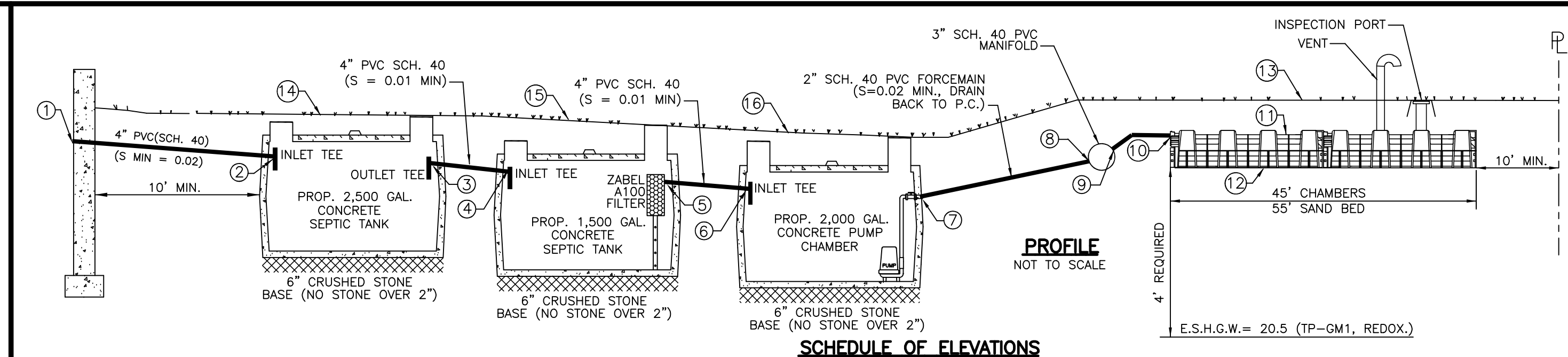


SOIL TEST DATA
 SOIL TESTING AND EVALUATION BY: PAUL GRAEME CUNN, SE#14392
 SOIL TESTING WITNESSED BY: RALPH H. COLE, P.L.S.
 DATE: JULY 10, 2023

TP-GM1 APPROX. GRADE EL. 23.8	TP-GM2 APPROX. GRADE EL. 23.1	TP-GM3 APPROX. GRADE EL. 22.5	TP-GM4 APPROX. GRADE EL. 23.0
EL. 20.6 FILL C HORIZON SANDY LOAM 2.5Y 5/2 39"	EL. 20.1 FILL C HORIZON SANDY LOAM 2.5Y 5/2 36"	EL. 19.2 C1 HORIZON SANDY LOAM 2.5Y 5/1 40"	EL. 20.3 C1 HORIZON SANDY LOAM 2.5Y 5/1 32"
EL. 16.3 WEEPING OBSERVED: 75" MOTTLING OBSERVED: 40" PERC. RATE: 17 MPI @ 52-70" ESHGW: 40" (EL. 20.5)	EL. 15.4 WEEPING OBSERVED: 80" MOTTLING OBSERVED: 32" PERC. RATE: 7 MPI @ 48-66" ESHGW: 32" (EL. 20.4)	EL. 18.2 C2 HORIZON SANDY LOAM 2.5Y 5/4 52"	EL. 19.0 C2 HORIZON SANDY LOAM 2.5Y 5/4 48"
		EL. 13.5 WEEPING OBSERVED: 85" MOTTLING OBSERVED: 40" PERC. RATE: 12 MPI @ 55-73" ESHGW: 40" (EL. 19.2)	EL. 14.8 WEEPING OBSERVED: 82" MOTTLING OBSERVED: 32" PERC. RATE: 9 MPI @ 48-66" ESHGW: 32" (EL. 20.3)

SITE LOCUS
NOT TO SCALE



SCHEDULE OF ELEVATIONS

1. INV. OF PIPE AT FOUNDATION = 23.7± (MINIMUM, CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION)	9. INV. OF 3" MANIFOLD PIPE (AT END) = 24.59
2. INV. OF PIPE AT 3,000 GAL. SEPTIC TANK INLET = 23.33	10. INV. OF 1 1/2" PRESSURE LATERAL AT CHAMBER INLET = 25.09
3. INV. OF PIPE AT 3,000 GAL. SEPTIC TANK OUTLET = 23.08	11. TOP OF CHAMBER (BREAKOUT) = 25.58
4. INV. OF PIPE AT 1,500 GAL. SEPTIC TANK INLET = 23.33	12. BOTTOM OF CHAMBER = 24.50
5. INV. OF PIPE AT 1,500 GAL. SEPTIC TANK OUTLET = 23.08	13. FINISHED GRADE OVER LEACHING CHAMBERS = 26.6 (MIN) - 28.6 (MAX)
6. INV. OF PIPE AT 2,500 GAL. PUMP CHAMBER INLET = 22.90	14. FINISHED GRADE OVER SEPTIC TANK = 25.5 (MIN) - 27.8 (MAX)
7. INV. OF PIPE AT 2,500 GAL. PUMP CHAMBER OUTLET = 22.65	15. FINISHED GRADE OVER SEPTIC TANK = 25.5 (MIN) - 27.8 (MAX)
8. INV. OF 2" FOREMAN AT MANIFOLD PIPE TEE = 24.42	16. FINISHED GRADE OVER PUMP CHAMBER = 25.3 (MIN) - 27.6 (MAX)

GENERAL NOTES

- SEPTIC SYSTEM INSTALLATION CONTRACTORS SHALL BE LICENSED BY THE BOARD OF HEALTH AND MUST COMPLY WITH ALL REQUIREMENTS OF THE BOARD OF HEALTH DISPOSAL WORKS CONSTRUCTION PERMIT AND ANY CONDITIONS, IF ISSUED BY THE CONSERVATION COMMISSION.
- ALL CONSTRUCTION MUST COMPLY WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE 310 CMR 15 & THE ANY LOCAL BOARD OF HEALTH SUPPLEMENTAL REGULATIONS.
- THERE SHALL BE NO CHANGES MADE IN THIS PLAN WITHOUT THE WRITTEN PERMISSION OF THE BOARD OF HEALTH AND DESIGN ENGINEER.
- ANY CHANGE IN SITE CONDITIONS, DISCREPANCIES, ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF MORSE ENGINEERING PRIOR TO THE COMMENCEMENT OF WORK.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH TITLE 5 (310 CMR 15) AND THE LOCAL BOARD OF HEALTH REQUIREMENTS TO THE FULLEST EXTENT PRACTICABLE. NO GUARANTEE TO THE SYSTEMS PERFORMANCE IS EXPRESSED OR IMPLIED.
- SOIL TEST DATA SHOWN IS LIMITED TO THE CONDITIONS EXISTING AT THE SUBJECT TEST PIT LOCATION ONLY. IF DIFFERENT SOIL CONDITIONS ARE FOUND IN THE AREA OF THE PROPOSED SOIL ABSORPTION SYSTEM THEY SHALL BE BROUGHT TO THE ATTENTION OF MORSE ENGINEERING IMMEDIATELY.
- THE CONTRACTOR SHALL NOTIFY DIGSAFE PRIOR TO ANY EXCAVATION AT THE SUBJECT PROPERTY. IT IS SPECIFICALLY CAUTIONED THAT THE SUBSURFACE UTILITIES SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN COMPILED FROM AVAILABLE RECORDS AND OBSERVABLE SITE FEATURES. UTILITIES OTHER THAN THOSE SHOWN MAY BE PRESENT AT THIS LOCATION.
- THIS PLAN HAS BEEN PREPARED SPECIFICALLY AS A SEPTIC SYSTEM DESIGN AND IS NOT TO BE USED TO ESTABLISH PROPERTY LINES OR BUILDING SETBACKS. PROPERTY LINES AND BUILDING LOCATIONS ARE GRAPHIC ONLY. PROPERTY LINES NOT HAVING BEEN VERIFIED. NO REPRESENTATION OR CERTIFICATION AS TO THE ACCURACY OF THOSE SHOWN IS IMPLIED.
- CONTRACTOR TO VERIFY AND ENSURE THAT ALL INTERIOR PLUMBING IS DIRECTED INTO PROPOSED SEPTIC SYSTEM. ANY VARIATIONS FROM THE DESIGN AS SHOWN SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.

CONSTRUCTION NOTES

- CONTRACTOR SHALL COORDINATE INSPECTION TIMES WITH THE LOCAL BOARD OF HEALTH AND DESIGN ENGINEER 24-HOURS IN ADVANCE OF THE FOLLOWING INSPECTIONS:
 - AFTER EXCAVATION OF ALL UNSUITABLE MATERIAL FROM SOIL ABSORPTION AREA.
 - PRIOR TO COVERING THE CONSTRUCTED SYSTEM.
 - AFTER SYSTEM BACKFILL AND FINAL GRADING.
- ALL CONSTRUCTION MUST COMPLY WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE 310 CMR 15 & THE ANY LOCAL BOARD OF HEALTH SUPPLEMENTAL REGULATIONS.
- ALL TIGHT-JOINT PLUMBING SHALL BE CONSTRUCTED OF SCH. 40 PVC PIPE WITH CLEANED AND CEMENTED FITTINGS, UNLESS OTHERWISE NOTED.
- ALL PRECAST/PIPE CONSTRUCTION JOINTS AND FITTINGS SHALL BE MADE WATERTIGHT BY PARGING WITH HYDRAULIC CEMENT.
- THE CONTRACTOR SHALL PROVIDE A SIEVE ANALYSIS OF THE TITLE 5 PERC SAND UTILIZED FOR FILL TO VERIFY THAT IT MEETS THE REQUIREMENTS OF 310 CMR 15.255(3). TITLE 5 SAND FILL SHALL COMPLY WITH THE FOLLOWING:

SIEVE SIZE	PARTICLE SIZE
#4	4.75 mm
#50	0.30 mm
#100	0.15 mm
#200	0.075 mm
- THE CONTRACTOR SHALL PREVENT ANY HEAVY CONSTRUCTION MACHINERY AND/OR TRUCKS FROM DRIVING OVER THE PROPOSED SOIL ABSORPTION SYSTEM LOCATION UNTIL FINISHED GRADE IS ESTABLISHED.
- THE CONTRACTOR SHALL INSTALL MAGNETIC TAPE OVER SYSTEM PIPING & COMPONENTS
- THE DESIGN ENGINEER SHALL CERTIFY AND PREPARE AN "AS-BUILT" PLAN FOR SUBMITTAL TO THE BOARD OF HEALTH UPON SEPTIC SYSTEM COMPLETION.
- ALL DISTURBED AREAS SHALL BE RESTORED WITH 4" LOAM & SEED POST CONSTRUCTION.
- ALL SEPTIC SYSTEM COMPONENTS TO BE STAKED OUT BY PROFESSIONAL LAND SURVEYOR PRIOR TO SYSTEM INSTALLATION.
- CONTRACTOR SHALL ABANDON EXISTING SEPTIC COMPONENTS IN ACCORDANCE WITH 310 CMR SEC. 15.354 OF TITLE 5 AND LOCAL REGULATIONS BY PUMPING DRY, CRUSHING AND ABANDONING.

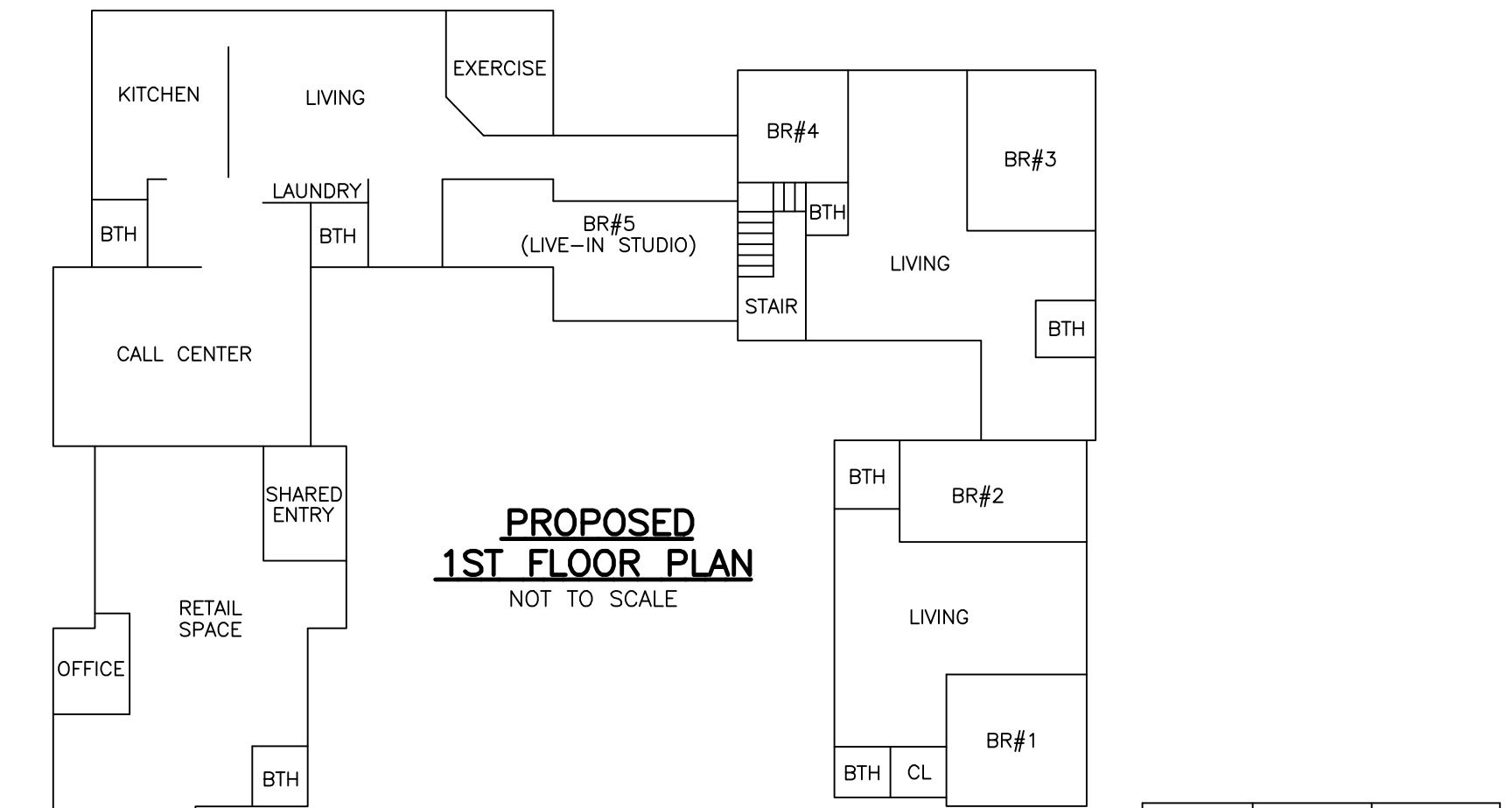
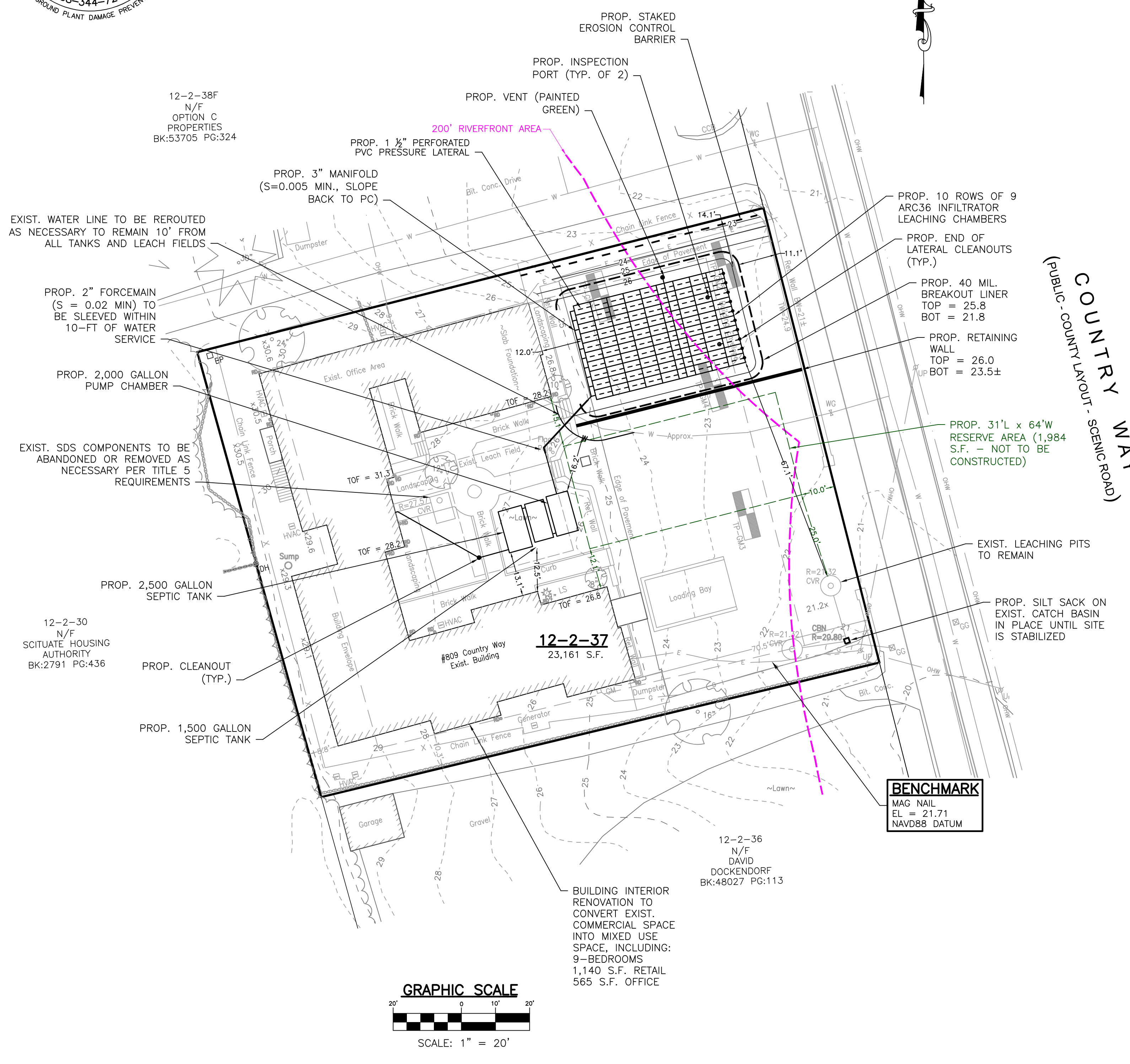
SITE NOTES

- LOCUS DOES NOT LIE WITHIN A DEP DESIGNATED ZONE II OR ZONE A RESOURCE AREA.
- ALL KNOWN WETLANDS WITHIN 100 FEET OF THE PROPOSED SEWAGE SYSTEM ARE SHOWN.
- PROPERTY LINE DATA WAS OBTAINED FROM RECORDED DEED (52892-291) AND RECORDED PLANS ON FILE AT THE PLYMOUTH COUNTY REGISTRY OF DEEDS.
- THERE WERE NO ACTIVE/POTABLE WELLS OBSERVED WITHIN 100' OF THE PROPOSED SYSTEM.
- LOCUS LIES IN FEMA ZONE "X" AS SHOWN ON FEMA COMMUNITY MAP PANEL 25023C 0106L DATED JULY 6, 2021. ZONE "X" IS NOT A SPECIAL FLOOD HAZARD AREA.

INSTALLER TO BE INFILTRATOR CERTIFIED

PREPARED BY:

PROJECT:	809 COUNTRY WAY (ASSESSOR'S PARCELS: 12-2-37) SCITUATE, MASSACHUSETTS	DESIGN:	PGG
OWNER:	MICHAEL R. HALE	CHECK:	GJM
PLAN TITLE:	SEPTIC & SITE PLAN	JOB NO:	23-215
		DATE:	10/3/2023
		REV:	
		SHEET:	1



12-2-37 DEGRADED AREA CALCULATIONS

AREA	EXISTING	PROPOSED
TOTAL RIVERFRONT AREA ON-SITE = 3,103 S.F.		
INNER RIPARIAN	0 S.F.	0 S.F.
OUTER RIPARIAN	2,730 S.F.	1,403 S.F.
PERCENTAGE	87.9%	45.2%

PROPOSED WORK RESULTS IN A NET 42.7% REDUCTION IN DEGRADED SURFACES WITHIN THE RIVERFRONT AREA.

REMOVE & REPLACE NOTE

CONTRACTOR TO EXCAVATE ALL UNSUITABLE MATERIAL TO A DEPTH OF C HORIZON (39")± DIRECTLY UNDER & WITHIN 5' OF PROPOSED LEACHING AREA AND REPLACE CLEAN TITLE 5 PERC SAND TO TOP OF CHAMBER ELEVATION.

VOL. OF SAND = (38.30'W x 55'L x (25.58-20.1)D x 1.2) / 27 = 513± C.Y.

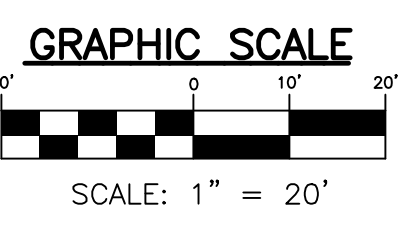
DESIGN DATA (RESERVE AREA)

- BUILDING TYPE: MIXED USE (RESIDENTIAL APARTMENTS & RETAIL STORE)
- NUMBER OF BEDROOMS: 9
- DESIGN FLOW: 9 x 110 GPD/BEDROOM = 990 GPD (GALLONS PER DAY)
 RETAIL FLOOR SPACE: 1,140 S.F.
 DESIGN FLOW: (1,140 S.F. / 1,000 S.F.) * 50 GPD = 57 GPD
 OFFICE FLOOR SPACE: 565 S.F.
 DESIGN FLOW: (565 S.F. / 1,000 S.F.) * 75 GPD = 43 GPD
 TOTAL DESIGN FLOW: 43 + 57 + 990 = 1,090 GPD
- DESIGN PERCOLATION RATE: 12 MPI (TP-GM3, CLASS II)
- GARBAGE DISPOSAL: NO
- LEACH AREA REQUIREMENTS (GALLONS PER DAY / SQUARE FOOT)
 BOTTOM: 0.56 GPD/S.F. SIDE: 0.56 GPD/S.F.
- TOTAL LEACH AREA REQUIRED:
 TITLE 5: 1,090 GPD / (0.56 GPD/S.F.) = 1,946.4 S.F.
 PROVIDED: 31'W x 64'L CONVENTIONAL SAS (1,984 S.F.)

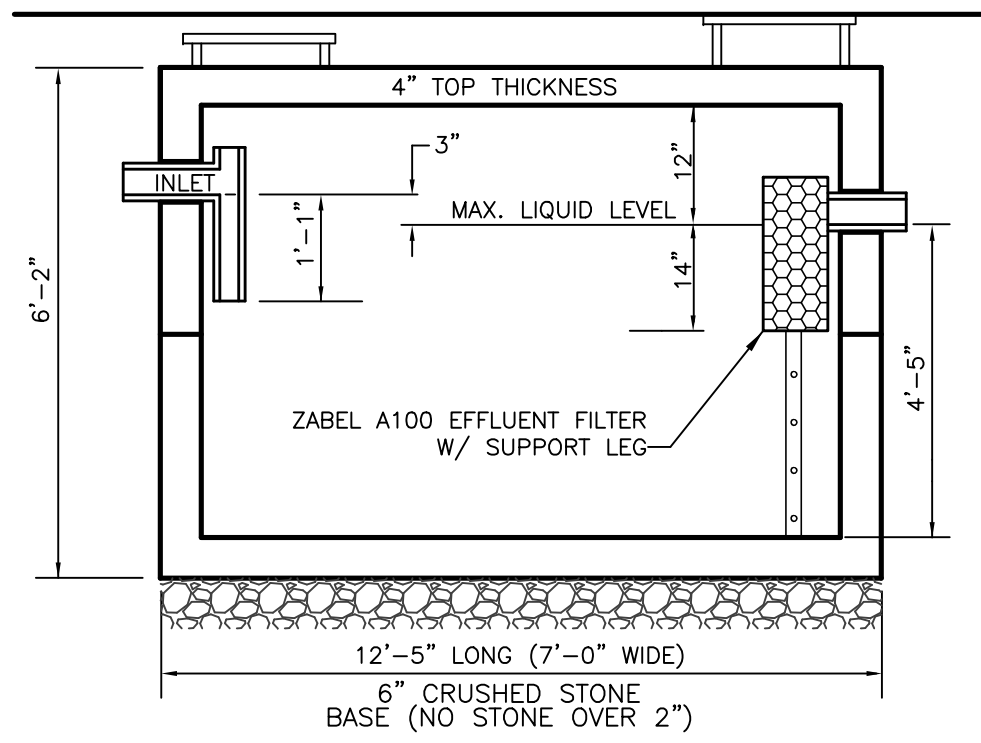
DESIGN DATA (PRIMARY AREA)

- BUILDING TYPE: MIXED USE (RESIDENTIAL APARTMENTS & RETAIL STORE)
- NUMBER OF BEDROOMS: 9
- DESIGN FLOW: 9 x 110 GPD/BEDROOM = 990 GPD (GALLONS PER DAY)
 RETAIL FLOOR SPACE: 1,140 S.F.
 DESIGN FLOW: (1,140 S.F. / 1,000 S.F.) * 50 GPD = 57 GPD
 OFFICE FLOOR SPACE: 565 S.F.
 DESIGN FLOW: (565 S.F. / 1,000 S.F.) * 75 GPD = 43 GPD
 TOTAL DESIGN FLOW: 43 + 57 + 990 = 1,090 GPD
- DESIGN PERCOLATION RATE: 17 MPI (TP-GM1, CLASS II)
- GARBAGE DISPOSAL: NO
- SEPTIC TANK 1 DESIGN REQUIREMENTS: 200% DESIGN FLOW
 1,090 x 2 = 2,180 GAL (PROVIDE NEW 2,500 GALLON SEPTIC TANK)
- SEPTIC TANK 2 DESIGN REQUIREMENTS: 100% DESIGN FLOW
 1,090 x 1 = 1,090 GAL (PROVIDE NEW 1,500 GALLON SEPTIC TANK)
- LEACH AREA REQUIREMENTS (GALLONS PER DAY / SQUARE FOOT)
 BOTTOM: 0.53 GPD/S.F. SIDE: 0.53 GPD/S.F.
- TOTAL LEACH AREA REQUIRED:
 TITLE 5: 1,090 GPD / (0.53 GPD/S.F.) = 2,056.6 S.F.
 PROVIDED: 10 ROWS OF 9 ARC-36 INFILTRATOR LEACHING CHAMBERS
 EFFECTIVE AREA: 90 CHAMBERS x 5.00'L x 4.80 S.F./L.F.* = 2,160 S.F.
 CAPACITY = 2,160 S.F. x 0.53 GPD/S.F. = 1,145 GPD

*EFFECTIVE AREA PER GENERAL USE CERTIFICATION ISSUED BY MASSDEP

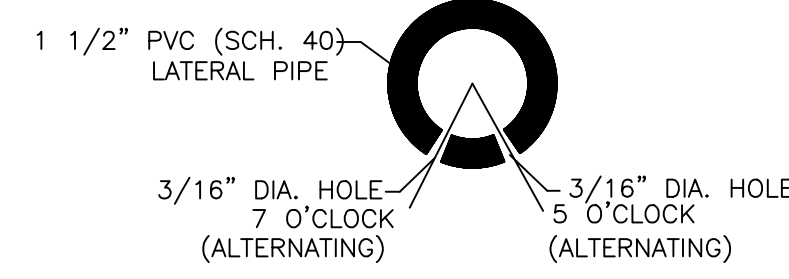


2,500 GAL. SEPTIC TANK DETAIL



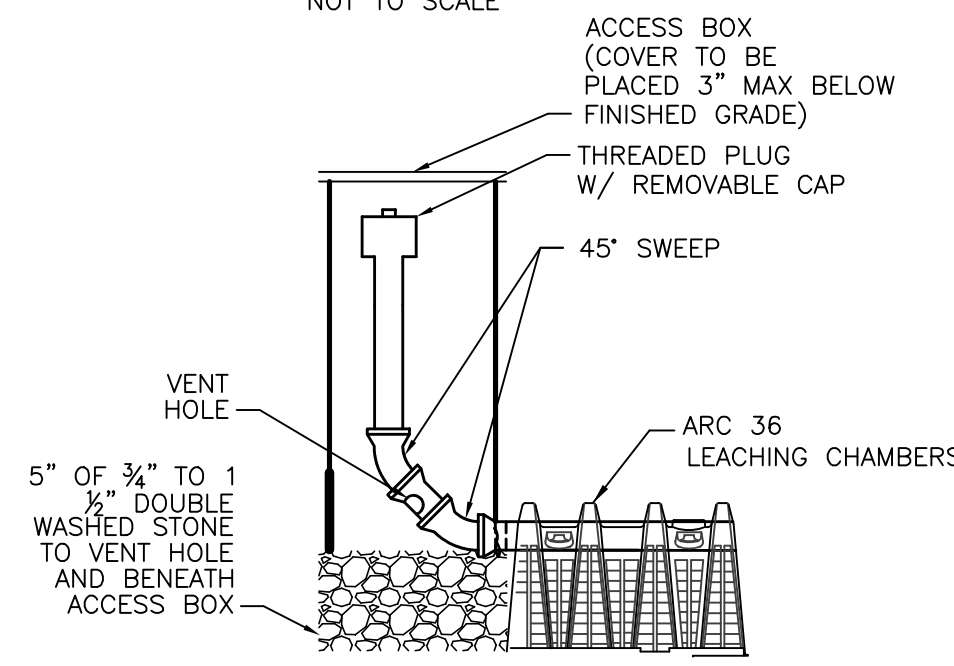
- NOTES:**
1. THE SEPTIC TANK INLET COVER SHALL BE EXTENDED WITHIN 6" OF FINISHED GRADE & OUTLET COVER SHALL BE EXTENDED TO FINISHED GRADE & EQUIPPED WITH 20" DIA. CAST IRON FRAME & COVER.
 2. ALL PIPE CONNECTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
 3. SEPTIC TANK SHALL BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE.
 4. OUTLET SHALL BE EQUIPPED WITH A ZABEL A100 EFFLUENT FILTER (OR APPROVED EQUAL).
 5. EXTERIOR OF TANK TO BE EQUIPPED WITH BITUMINOUS COATING.

PERFORATION DETAIL
NOT TO SCALE



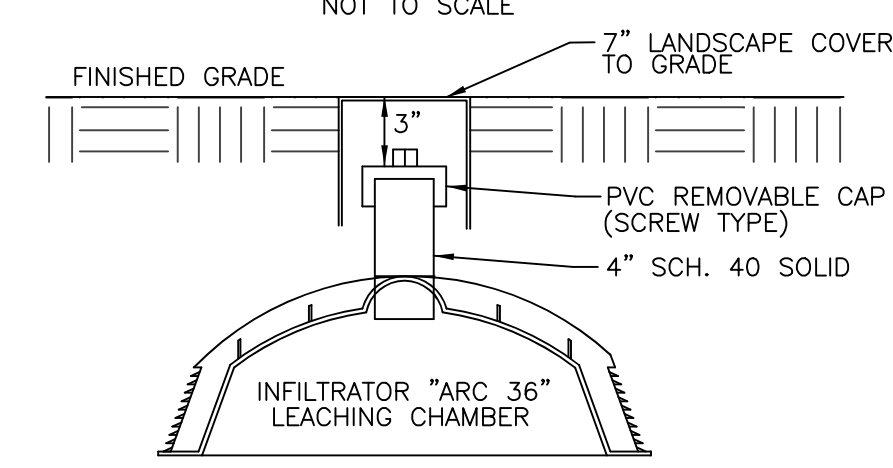
- NOTES:**
1. ALL BURRS AND ROUGH EDGES (FROM ORIFICE DRILLINGS) SHALL BE REMOVED FROM THE LATERAL PRIOR TO ASSEMBLY.
 2. PERFORATIONS SHALL START 2.5' INSIDE OF FIRST LEACHING CHAMBER AND THEN BE SPACED AT 5' O.C., ALTERNATING IN THE 5 AND 7 O'CLOCK POSITIONS. (14 PERF PER LATERAL/ 1 PERF PER CHAMBER)
 3. LATERALS SHALL BE SUSPENDED AT THE TOP OF THE CHAMBER BY NYLON WIRE TIES "ZIP TIES" PLACED 3' O.C.

END OF LINE CLEANOUT
NOT TO SCALE



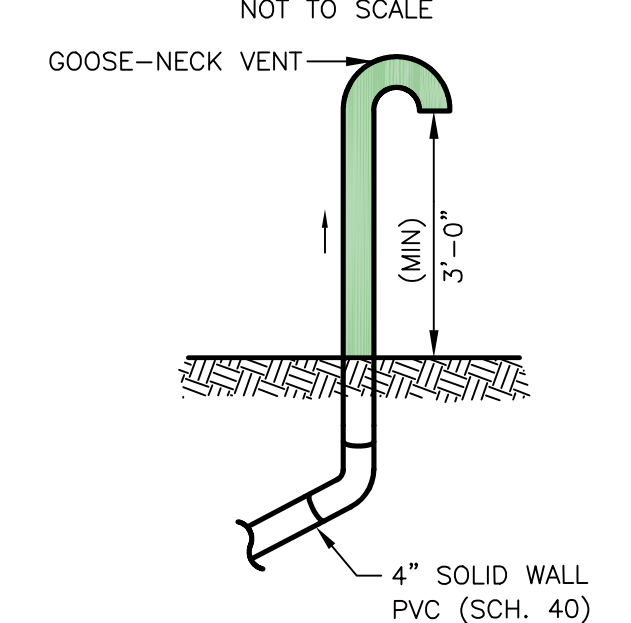
- NOTES:**
- 1.) DISTAL END PERFORATION TO BE PLACED NEAR THE CROWN OF THE PIPE IN THE 45' BEND OR SWEEP AT THE END OF EACH LATERAL.

INSPECTION PORT
NOT TO SCALE



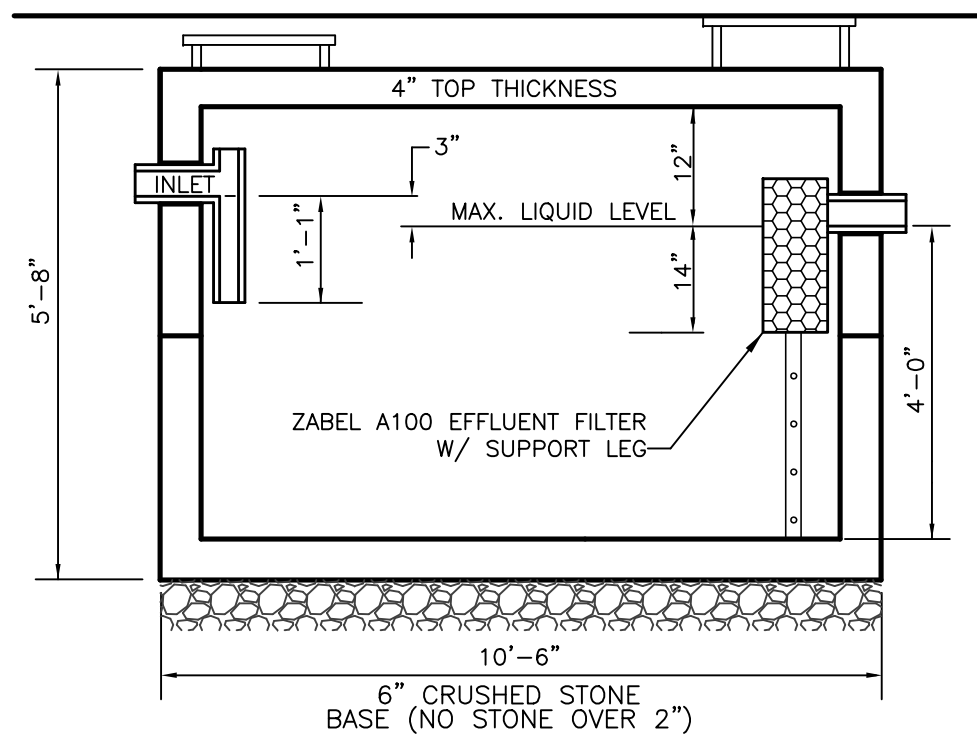
CONTRACTOR TO PROVIDE 2 INSPECTION PORTS

VENT SYSTEM
NOT TO SCALE



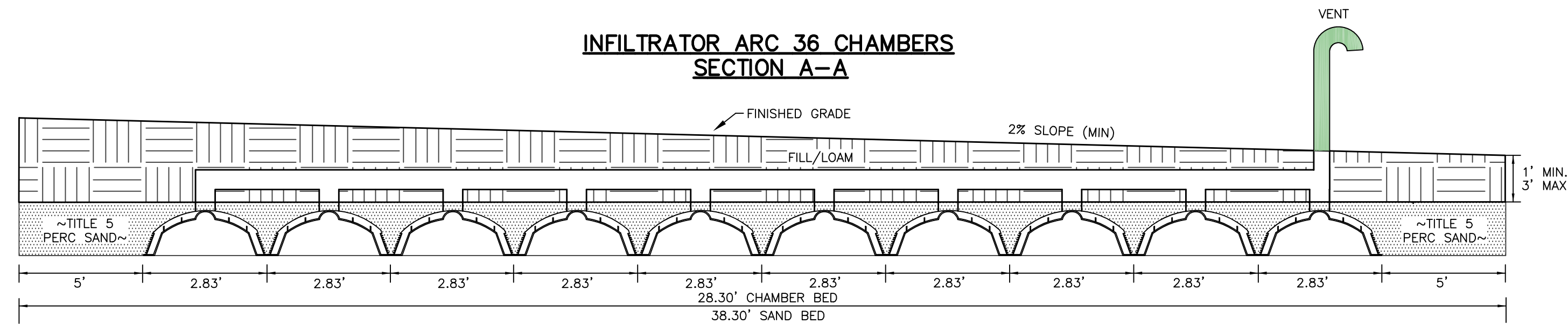
TO CONNECT TO ALL CHAMBER ROWS
*PREBY VENT TO BE PAINTED GREEN.

1,500 GAL. SEPTIC TANK DETAIL



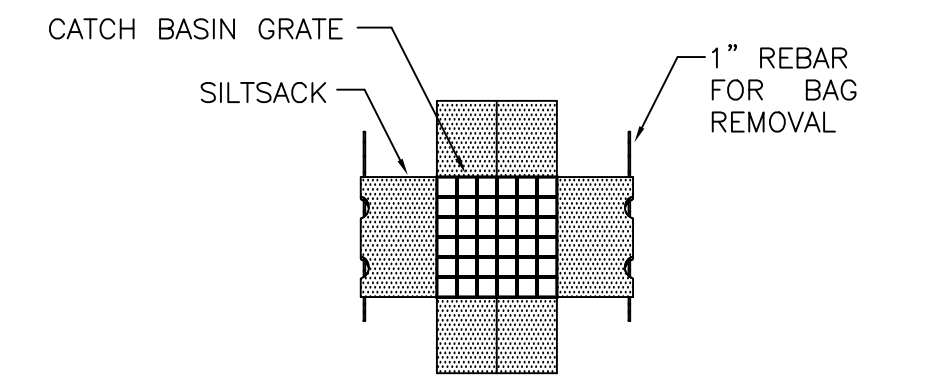
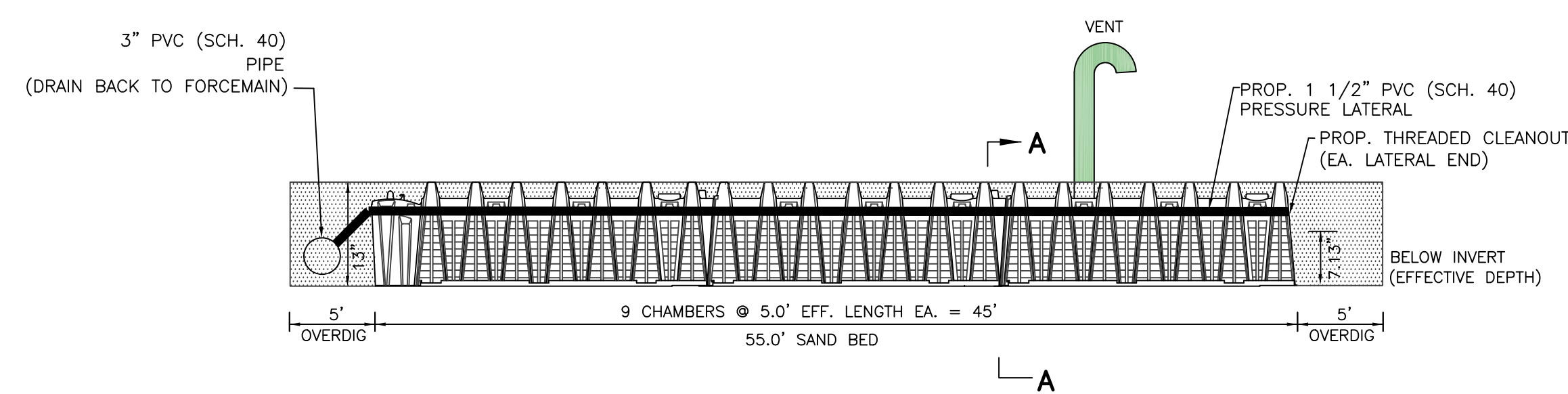
- NOTES:**
1. THE SEPTIC TANK INLET COVER SHALL BE EXTENDED WITHIN 6" OF FINISHED GRADE & OUTLET COVER SHALL BE EXTENDED TO FINISHED GRADE & EQUIPPED WITH 20" DIA. CAST IRON FRAME & COVER.
 2. ALL PIPE CONNECTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
 3. SEPTIC TANK SHALL BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE.
 4. OUTLET SHALL BE EQUIPPED WITH A ZABEL A100 EFFLUENT FILTER (OR APPROVED EQUAL).
 5. EXTERIOR OF TANK TO BE EQUIPPED WITH BITUMINOUS COATING.

INFILTRATOR ARC 36 CHAMBERS
SECTION A-A

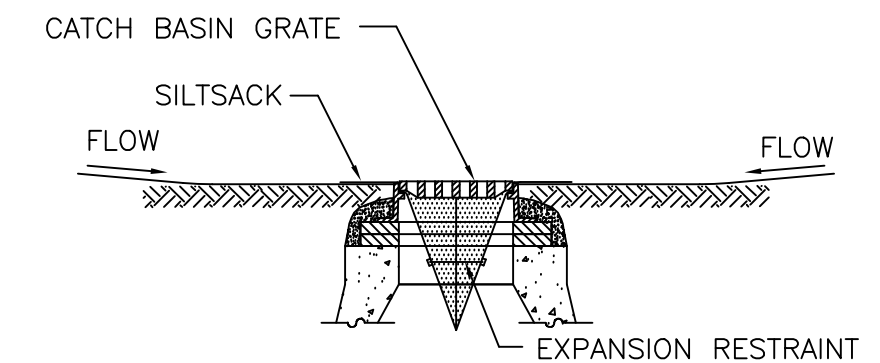


- NOTES:**
1. NO STONE BELOW OR AROUND THE CHAMBERS IS REQUIRED.
 2. BACKFILL CHAMBERS WITH CLEAN COARSE SAND IN ACCORDANCE WITH 310 CMR 15.255(3) TO TOP OF THE CHAMBER.
 3. DO NOT BACKFILL WITH ANY STONES 3" OR LARGER AGAINST CHAMBERS.
 4. CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

INFILTRATOR ARC 36 CHAMBER SYSTEM

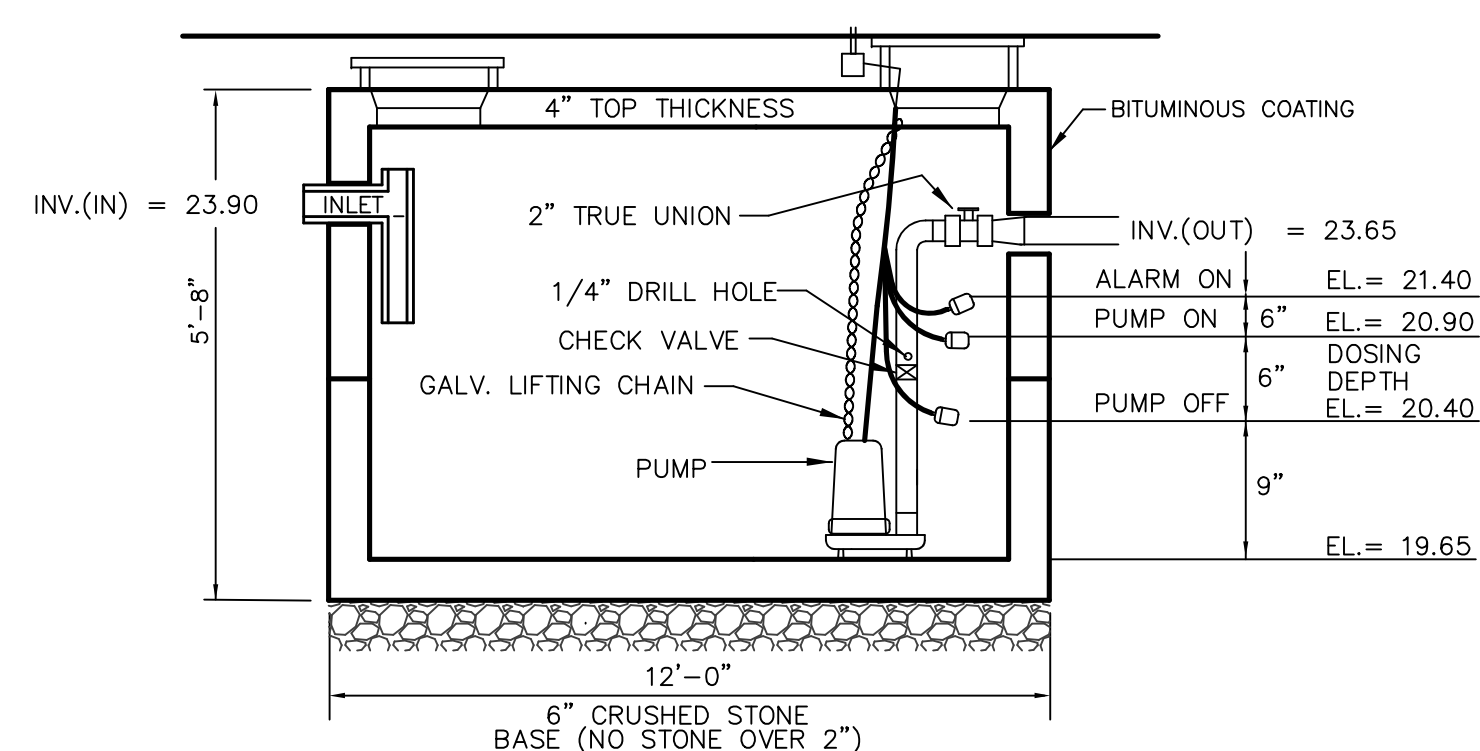


PLAN VIEW

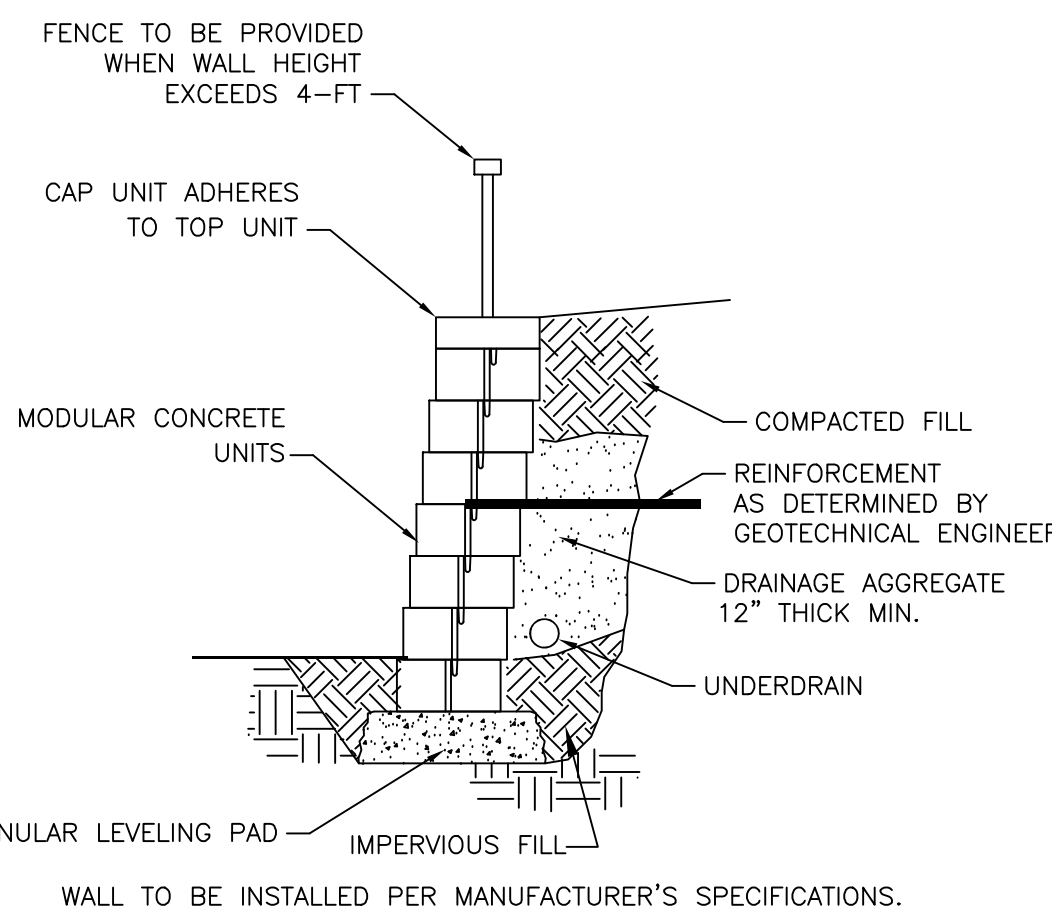


SECTION VIEW
SILTSACK SEDIMENT TRAP
NOT TO SCALE

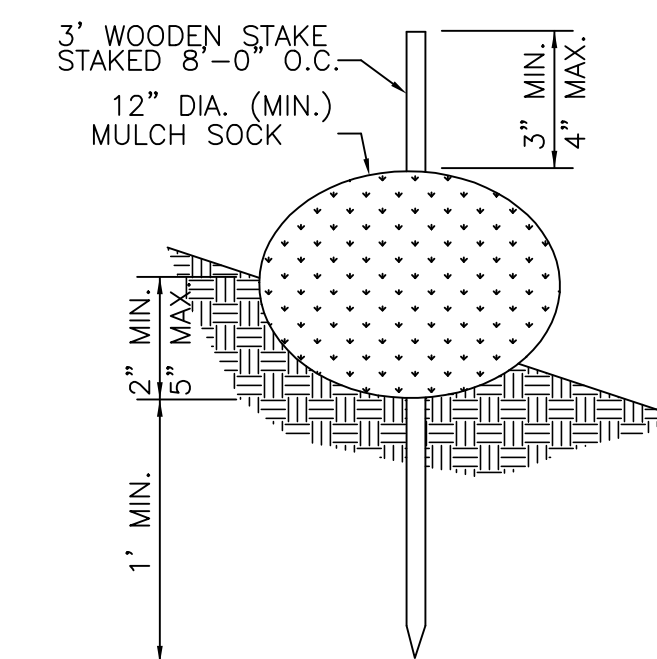
2,000 GAL. PUMP CHAMBER DETAIL



- NOTES:**
1. THE PUMP CHAMBER INLET COVER SHALL BE EXTENDED WITHIN 6" OF FINISHED GRADE & OUTLET COVER SHALL BE EXTENDED TO FINISHED GRADE & EQUIPPED WITH 20" DIA. CAST IRON FRAME & COVERS.
 2. ALL PIPE CONNECTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
 3. PUMP CHAMBER SHALL BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE.
 4. EXTERIOR OF TANK TO BE EQUIPPED WITH BITUMINOUS COATING.



MODULAR BLOCK RETAINING WALL
NOT TO SCALE



STAKED MULCH SOCK DETAIL
NOT TO SCALE

PUMP DESIGN NOTES

1. THE PUMP CONTROLS SHALL BE DESIGNED TO ALLOW THE FIELD TO BE DOSED WITH 250 GAL. PER DOSE (APPROX. 4.55 TIMES IN A 24-HOUR PERIOD UNDER NORMAL OPERATION CONDITIONS).
2. USE GOULDS SUBMERSIBLE SEWAGE PUMP, WS05B, 1 HP, 2" DISCHARGE, 2" SOLIDS CAPACITY T.D.H. = 13.3± FT. @ 65 GPM OR APPROVED EQUAL.
3. INSTALL HIGH WATER MERCURY FLOAT LEVEL CONTROL IN PUMP CHAMBER WITH VISIBLE FLASHING AND AUDIBLE ALARMS. CONTRACTOR TO COORDINATE LOCATIONS WITH HOMEOWNER. PUMP POWER SHALL BE LOCATED ON SEPARATE CIRCUIT FROM THE ALARM CIRCUIT. ALL ELECTRICAL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICIAN UNDER A VALID PERMIT AND INSPECTED BY THE TOWN WIRING INSPECTOR.
4. ELECTRICAL CONDUIT TO CONTROL PANEL (SIMPLEX OR EQUAL) MOUNTED INSIDE BUILDING. PUMP POWER CABLE AND FLOAT CONTROL TO BE PLACED IN CONDUIT IN ACCORDANCE WITH LOCAL BUILDING AND ELECTRICAL CODES.

24 HOUR EMERGENCY STORAGE (1,090 GAL. MIN.)
EL. = 23.90 INVERT IN
EL. = 21.40 ALARM ON
2,500 GAL. AVAILABLE STORAGE
x 500 GAL./VERT. FOOT = 1,250 GALLONS

INSTALLER TO BE INFILTRATOR CERTIFIED

	PREPARED BY: 	DESIGN: PGG CHECK: GJM JOB NO: 23-215
	PROJECT: 809 COUNTRY WAY (ASSESSOR'S PARCELS: 12-2-37) SCITUATE, MASSACHUSETTS	DATE: 10/3/2023 REV:
PLAN TITLE: SEPTIC & SITE PLAN	SHEET: 2	