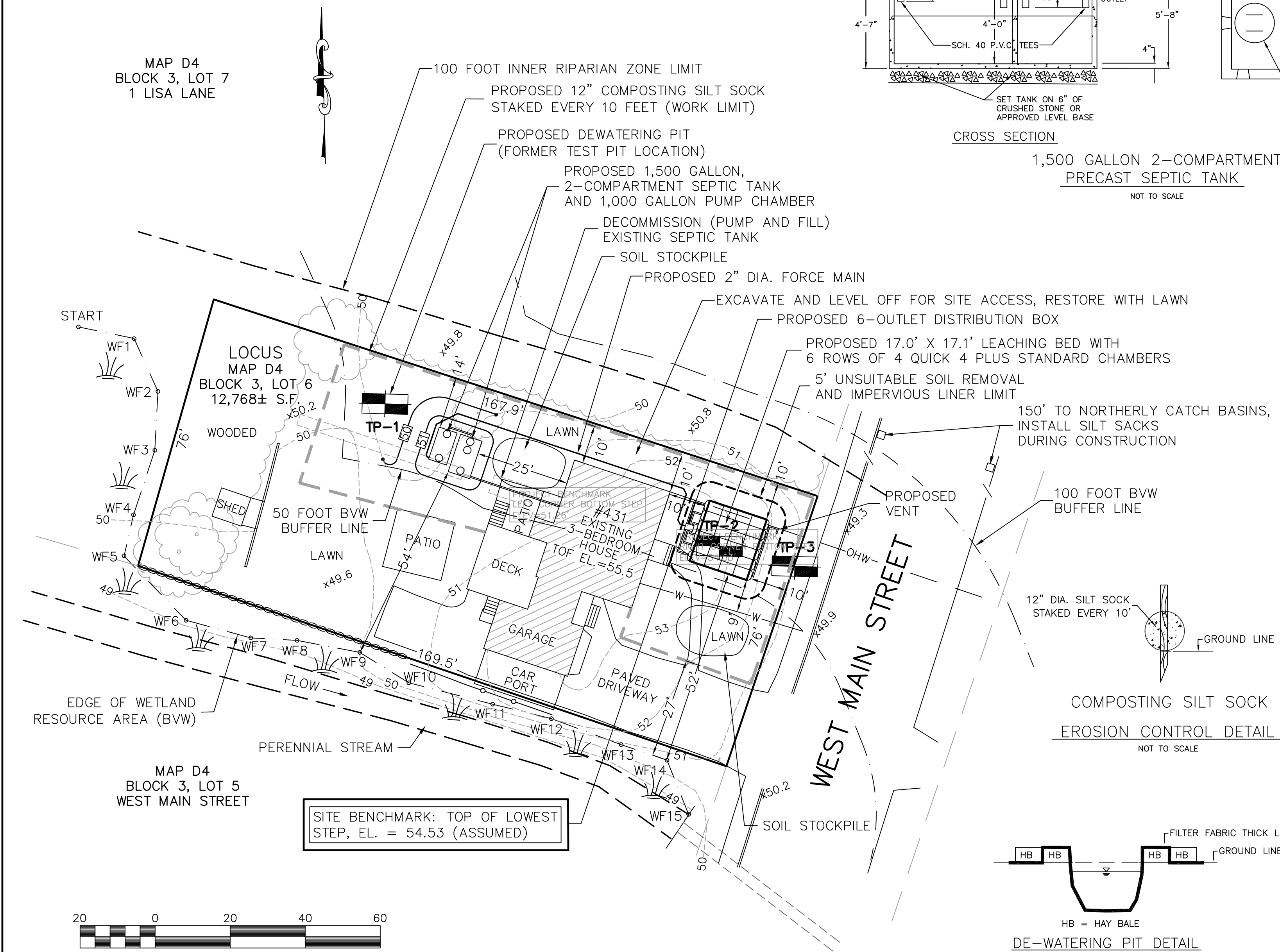
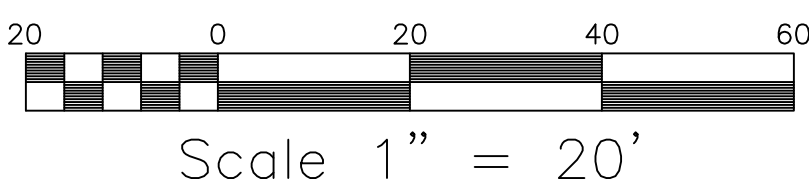


LOCUS PLAN

MAP D4
BLOCK 3, LOT 7
1 LISA LANE



SITE BENCHMARK: TOP OF LOWEST STEP, EL. = 54.53 (ASSUMED)



LEGEND

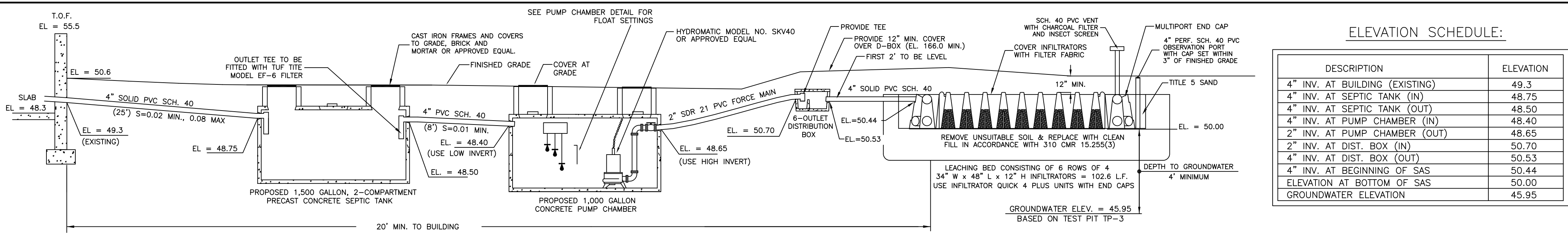
- 49 --- EXISTING CONTOURS
- 49 --- PROPOSED CONTOURS
- PROPERTY LINES
- TP-1 OBSERVATION HOLE LOCATION
- EDGE OF BITUMINOUS PAVEMENT

LOCAL UPGRADE APPROVAL REQUESTS:

1. VARIANCE FROM SECTION 310 CMR 15.212 OF THE STATE SANITARY CODE WHICH REQUIRES A MINIMUM VERTICAL SEPARATION FROM THE SOIL UNDERLYING THE SOIL ABSORPTION SYSTEM ABOVE THE HIGH GROUND-WATER ELEVATION SHALL BE FIVE (5) FEET WITH A RECORDED PERC RATE OF LESS THAN TWO MINUTES PER INCH. A VARIANCE THAT WOULD ALLOW A VERTICAL SEPARATION REDUCTION FROM THE REQUIRED FIVE (5) FEET TO FOUR (4) FEET IS REQUESTED.
2. LOCAL UPGRADE APPROVAL FROM SECTION 310 CMR 15.227 OF THE STATE SANITARY CODE WHICH REQUIRES A 12" VERTICAL SEPARATION BETWEEN THE HIGH GROUNDWATER ELEVATION AND THE LOWEST TANK INVERT. A VARIANCE ALLOWING A REDUCTION OF THE REQUIRED 12 INCHES TO A MINIMUM OF 5 INCHES IS REQUESTED.
3. VARIANCE FROM SECTION 310 CMR 15.211 OF THE STATE SANITARY CODE WHICH REQUIRES A MINIMUM 20' SETBACK FROM A FOUNDATION WALL TO A SAS. A VARIANCE ALLOWING A REDUCTION FROM 20' TO A MINIMUM OF 10' IS REQUESTED (LINER PROVIDED).
4. USE OF A GRAIN SIZE DISTRIBUTION ANALYSIS ACCORDANCE WITH DEP GUIDANCE POLICY #BRP/DWM/PeP-P00-1 TO ESTABLISH DESIGN LOADING RATE.

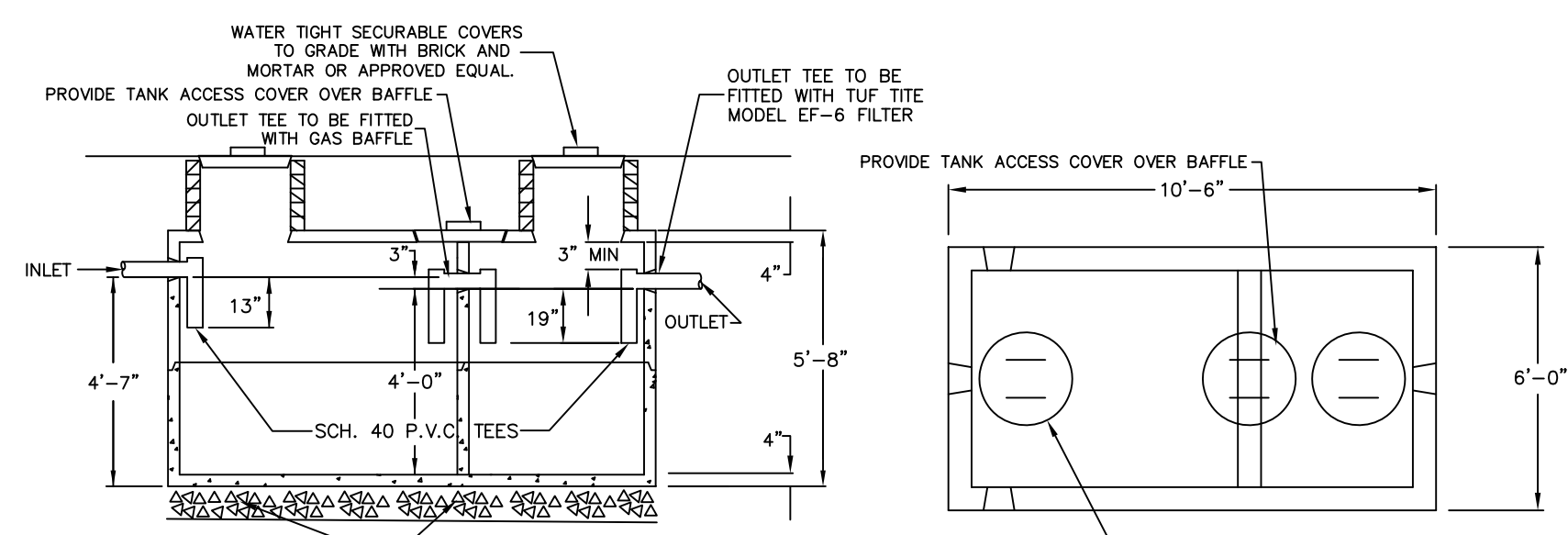
WETLAND AND EROSION CONTROL NOTES

1. WETLAND DELINEATION PERFORMED BY BROOKE MONROE, BOTANIST.
2. EROSION CONTROL (WORK LIMIT) LINE TO BE INSTALLED PRIOR TO ANY ACTIVITY AND REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.
3. CONTRACTOR RESPONSIBLE FOR IMPLEMENTING ALL CONSERVATION COMMISSION AND BOARD OF HEALTH DIRECTIVES.
4. THE SITE IS NOT LOCATED IN AN AREA OF CRITICAL ENVIRONMENTAL CONCERN.
5. CONTRACTOR TO SWEEP STREET AT THE END OF EACH WORK DAY.
6. THE DEP FILE NUMBER MUST BE POSTED ON SITE PRIOR TO STARTING WORK.
7. A COPY OF THE REGISTRY RECORDED ORDER OF CONDITIONS MUST BE ON SITE AT ALL TIME DURING WORK.
8. THE NAME AND CONTACT NUMBERS OF THE GENERAL CONTRACTOR MUST BE PROVIDED TO THE ENGINEER AND CONSERVATION COMMISSION PRIOR TO STARTING WORK.
9. STRAW WADDLE ALONG STREET AND DRIVEWAY CAN BE REMOVED DURING WORK HOURS.
10. CONTRACTOR TO MONITOR, REPAIR AND MODIFY EROSION CONTROL TO ASSURE THAT THERE IS NO WETLAND RESOURCE AREA OR ADJUTER ENCROACHMENT.
11. SILT SACKS (2) TO BE INSTALLED AT THE 2 CATCH BASINS IN THE STREET AS SHOWN. CONTRACTOR TO MAINTAIN AND MONITOR DURING WORK AND REMOVED AFTER WORK IS DONE.



SEPTIC SYSTEM PROFILE

NOT TO SCALE



CROSS SECTION

1,500 GALLON 2-COMPARTMENT
PRECAST SEPTIC TANK
NOT TO SCALE



PLAN VIEW

1,000 GALLON PRECAST PUMP CHAMBER

MONOLITHIC / SEALCOATED
NOT TO SCALE

BUOYANCY CALCULATIONS 1,500 GALLON TANK:
DOWNWARD FORCE:
WEIGHT OF EMPTY 1,500 GAL. TANK = 12,930 LBS.
WEIGHT OF SOIL ABOVE TANK:
100 CF OF SOIL X 110 LB/CF OF SOIL = 11,000 LBS.
DOWNWARD FORCE = 12,930 + 11,000 = 23,930 LBS.
BUOYANT FORCE: (ASSUMES TANK FULLY SUBMERGED IN WATER)
VOLUME OF DISPLACED WATER = 357 CF
BUOYANT FORCE = 357 CF X 62.4 LB/CF = 22,277 LB
23,930 LB > 22,277 LB (DOWNWARD FORCE > BUOYANT FORCE)

BUOYANCY CALCULATIONS 1,000 GALLON TANK:
DOWNWARD FORCE:
WEIGHT OF EMPTY 1,000 GAL. TANK = 8,800 LBS.
WEIGHT OF SOIL ABOVE TANK:
72.25 CF OF SOIL X 110 LB/CF OF SOIL = 7,947.5 LBS.
DOWNWARD FORCE = 8,800 + 7,947.5 = 16,747.5 LBS.
BUOYANT FORCE: (ASSUMES TANK FULLY SUBMERGED IN WATER)
VOLUME OF DISPLACED WATER = 255 CF
BUOYANT FORCE = 255 CF X 62.4 LB/CF = 15,912 LB
16,747.5 LB > 15,912 LB (DOWNWARD FORCE > BUOYANT FORCE)

ELEVATION SCHEDULE:

DESCRIPTION	ELEVATION
4" INV. AT BUILDING (EXISTING)	49.3
4" INV. AT SEPTIC TANK (IN)	48.75
4" INV. AT SEPTIC TANK (OUT)	48.50
4" INV. AT PUMP CHAMBER (IN)	48.40
2" INV. AT PUMP CHAMBER (OUT)	48.65
2" INV. AT DIST. BOX (IN)	50.70
4" INV. AT DIST. BOX (OUT)	50.53
4" INV. AT BEGINNING OF SAS	50.44
ELEVATION AT BOTTOM OF SAS	50.00
GROUNDWATER ELEVATION	45.95

NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE LOCAL BOARD OF HEALTH AND COLLINS ENGINEERING GROUP AT LEAST 48 HOURS PRIOR TO REQUIRED INSPECTIONS.
2. SITE BENCHMARK IS THE TOP OF THE LOWEST FRONT STEP AS INDICATED ON THIS PLAN, EL. = 54.53 (ASSUMED DATUM).
3. HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO OPERATE OVER THE LIMITS OF THE SEWAGE DISPOSAL FIELD DURING THE COURSE OF CONSTRUCTION OF THE SYSTEM.
4. NO FIELD MODIFICATIONS TO THE SEWAGE SYSTEM SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER AND THE LOCAL BOARD OF HEALTH.
5. UNLESS OTHERWISE NOTED ALL SYSTEM COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH TITLE V OF THE STATE ENVIRONMENTAL CODE DATED JANUARY 2014 AND ANY APPLICABLE LOCAL RULES.
6. DISTRIBUTION BOX SHALL BE MANUFACTURED BY J&R PRECAST, INC. OR APPROVED EQUAL.
7. GROUT TO BE USED AT ALL POINTS WHERE PIPES ENTER OR LEAVE ALL CONCRETE STRUCTURES IN ORDER TO PROVIDE A WATER TIGHT SEAL.
8. THE FIRST TWO FEET OF EACH LINE EXITING THE DISTRIBUTION BOX SHALL BE LEVEL.
9. THIS SYSTEM IS NOT DESIGNED TO ACCOMMODATE A GARBAGE GRINDER OR WATER FILTRATION SYSTEM BACKWASH.
10. SYSTEM COMPONENTS TO WITHSTAND H-10 LOADING CRITERIA.
11. PROPERTY LINE SHOWN IS APPROXIMATE ONLY AND IS NOT A RESULT OF A PROPERTY LINE OR VERTICAL SURVEY.
12. THE CONTRACTOR SHALL DECOMMISSION (PUMP & FILL OR REMOVE) THE EXISTING SEPTIC SYSTEM IN ACCORDANCE WITH 310 CMR 15.354.
13. AS SHOWN, THERE ARE NO KNOWN WELLS WITHIN 100 FEET OF THE PROPOSED LEACH FIELD.
14. RESTORE (LOAM & SEED) ALL AREAS DISTURBED DURING CONSTRUCTION.
15. AN AUDIBLE AND VISUAL ALARM SHALL BE PROVIDED. PUMP TO BE ON SEPARATE CIRCUIT FROM ALARM.
16. PUMP AND APPURTENANCES TO BE INSTALLED AND LOCATED ACCORDING TO MANUFACTURERS INSTRUCTIONS AND LOCAL BUILDING AND WIRING CODES.
17. PUMP SHALL CONSIST OF HYDROMATIC MODEL SKV40 SUBMERSIBLE PUMP (OR APPROVED EQUAL). PUMP SHALL BE RATED AT 4/10 HP AND SHALL HAVE A 2" DISCHARGE. THE PUMP SHALL OPERATE FROM A 115 VOLT, 12.6 AMP, SINGLE PHASE, 60 HERTZ POWER SUPPLY.
18. CONTRACTOR TO ENSURE LIQUID IN DISCHARGE PIPE FLOWS BACK TO PUMP CHAMBER AFTER PUMP CYCLE.
19. PUMP CONTROL PANEL SHALL CONSIST OF MYERS CE SIMPLEX ELECTRICAL CONTROL PANEL (OR APPROVED EQUAL). PUMP CONTROL PANEL TO BE LOCATED INSIDE EXISTING DWELLING.
20. CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING DIG SAFE (888-DIGSAFE) AND ANY OTHER APPLICABLE UTILITY COMPANIES PRIOR TO STARTING WORK.
21. CONTRACTOR WILL BE RESPONSIBLE FOR COMBINING LAUNDRY FLOW WITH SYSTEM.
22. CONTRACTOR RESPONSIBLE FOR IMPLEMENTING ALL O.S.H.A. PROCEDURES TO INCLUDE BUT NOT LIMITED TO CONFINED SPACE ENTRY PROCEDURES.
23. CONTRACTOR RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING LEACHING FACILITY AND DECOMMISSION AS REQUIRED.
24. CONTRACTOR TO CONFIRM EXISTING PLUMBING, SILL AND BENCHMARK ELEVATIONS PRIOR TO CONSTRUCTION.
25. MAGNETIC LOCATOR TAPE TO BE PLACED ON ALL SEPTIC SYSTEM COMPONENTS.

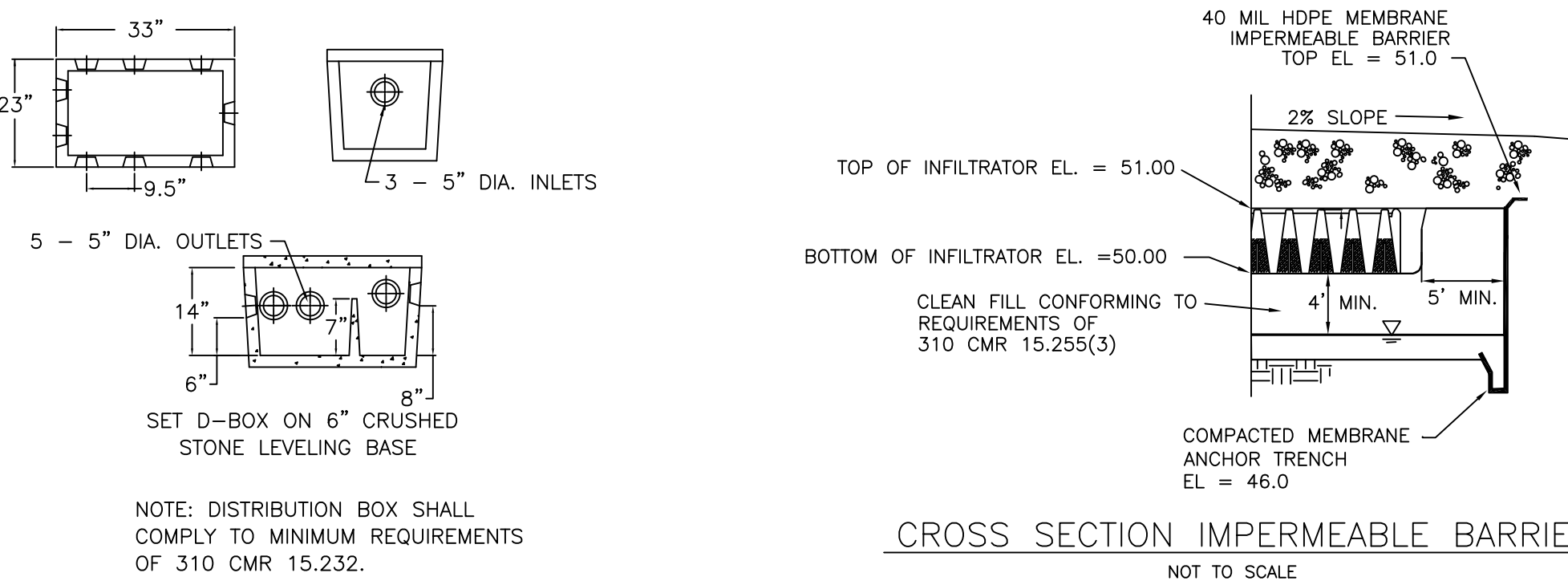
DESIGN DATA:

DESIGN FLOW:
3 BEDROOMS X 110 GPD/BEDROOM = 330 GPD
SEPTIC TANK:
330 GPD X 2.0 = 660 GALLONS
USE NEW 1,500 GALLON SEPTIC TANK

SOIL ABSORPTION SYSTEM:
PERCOLATION RATE DETERMINED FROM SIEVE ANALYSES PERFORMED ON SOIL SAMPLES COLLECTED FROM LAYER C2 AT TEST PITS TP-1 & TP-2. TESTS REVEALED SOIL IS A SAND (97.7 & 94.1% SAND, 1.6 & 1.5% SILT, 0.8 & 4.4% CLAY). DESIGN LOADING RATE SELECTED FOR CLASS I SOILS WITH >85% SAND IN ACCORDANCE WITH DEP GUIDANCE POLICY #BRP/DWM/PeP-P00-1.
DESIGN LOADING RATE = 0.74 GPD/SF
LEACHING AREA REQ'D = (330 GPD) / 0.74 GPD/SF = 446 S.F.
USE 17.0' X 17.1' LEACHING BED WITH 6 ROWS OF 4 INFILTRATOR QUICK 4 PLUS CHAMBERS = 102.6 L.F.
EACH ROW (4) 4' UNITS PLUS 1.1' END CAP CREDIT = 16'+1.1' = 17.1' PER ROW X 6 ROWS = 102.6 L.F.
QUICK 4 CHAMBER LEACHING AREA = 4.73 S.F./L.F.
LEACHING AREA PROVIDED:
102.6 L.F. X 4.73 S.F./L.F. = 485 SF > 446 SF REQUIRED
DAILY FLOW CAPACITY:
485 SF X 0.74 GPD/SF = 359 GPD > 330 GPD REQ'D

SOIL DATA:

DATE: SEPTEMBER 16, 2020
PERFORMED BY: GEORGE R. COLLINS, P.E.
WITNESSED BY: KATHLEEN WALDRON, AVON BOH

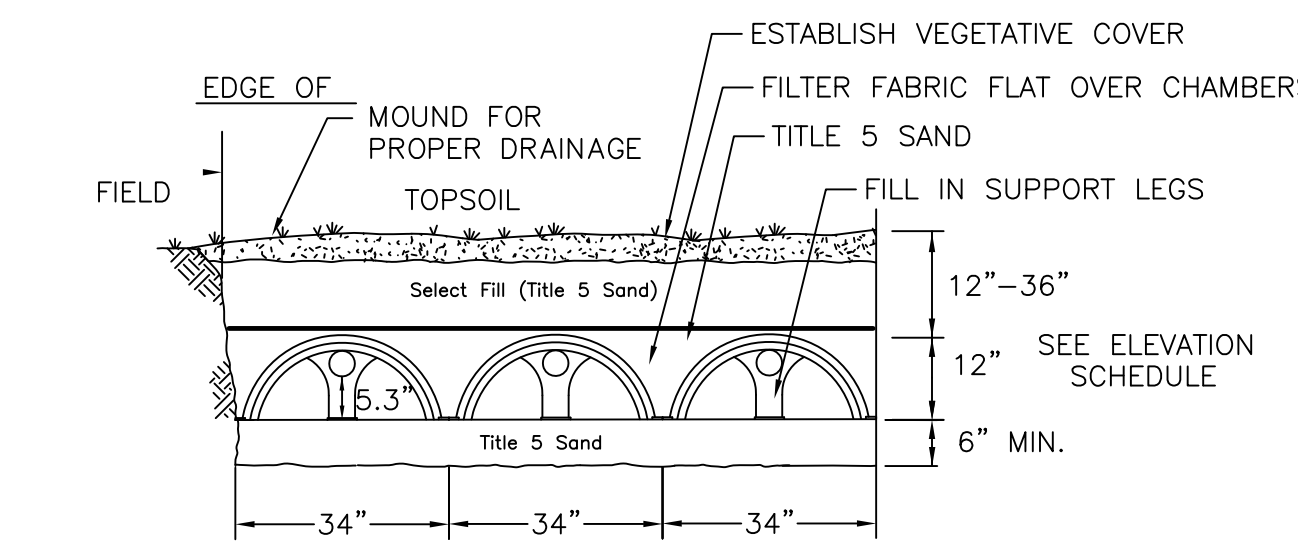


CROSS SECTION IMPERMEABLE BARRIER

NOT TO SCALE

6-OUTLET DISTRIBUTION BOX

NOT TO SCALE



QUICK 4 PLUS STANDARD CONFIGURATION

NOT TO SCALE

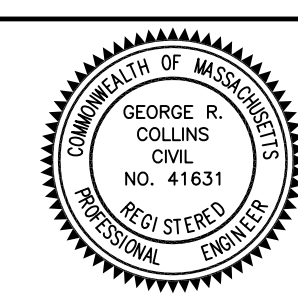
SOIL HORIZ.	SOIL COLOR	TP-1 DEPTH	ELEV.	SOIL HORIZ.	SOIL COLOR	TP-2 DEPTH	ELEV.	SOIL HORIZ.	SOIL COLOR	TP-3 DEPTH	ELEV.
		0	49.95			0	53.50			0	50.95
		FILL				FILL				FILL/A	
		24"	47.95			80"				52"	
		SILT LOAM								60"	45.95
		70"	44.12			108"	44.50			76"	44.62
		C1 2.5Y 6/2									
		C2 2.5Y 6/3									
		M-C LMY. SAND W/ COBBLES (SATURATED, UNCOMPACTED)				M-C LMY. SAND W/ COBBLES (SATURATED, UNCOMPACTED)					
		134"	38.78			166"	39.67			130"	40.12

EST. SEASONAL HIGH GROUNDWATER ELEV. 45.95
DESIGN LOADING RATE ESTABLISHED BY SIEVE SAMPLES COLLECTED FROM LAYER C2 AT TP-1 AND TP-2.

NOTE: LAYERS FILL/A, B, C1, AND C2 TO BE REMOVED TO AN ELEVATION OF 44.00 AND REPLACED WITH CLEAN FILL IN ACCORDANCE WITH 310 CMR 15.255(3). UNSUITABLE SOIL TO BE REMOVED TO A DISTANCE OF 5'-0" BEYOND THE LIMITS OF THE SOIL ABSORPTION SYSTEM.

PLAN TO ACCOMPANY A CONSERVATION FILING

REV.	DATE	DESCRIPTION	BY	APP.	DRAWING TITLE	PROJECT	CLIENT	CHECKED BY	APPROVED BY	SCALE:	DRAWING NO.	PROJECT NO.
					PLAN AND DETAILS SUBSURFACE SEWAGE DISPOSAL SYSTEM UPGRADE	431 WEST MAIN STREET AVON, MA	JEAN NERETTE 431 WEST MAIN STREET, AVON, MA 02322	GRC	GRC	AS SHOWN DATE: 10-21-20		20-175-3156
								GRC	GRC	DRAWN BY: SWR		
								GRC	GRC	DESIGNED BY: SWR		
								GRC	GRC	CHECKED BY: GRC		
								GRC	GRC	APPROVED BY: GRC		



COLLINS CIVIL ENGINEERING GROUP, INC.
BRAintree - FALMOUTH - WEST BRIDGEWATER
CIVIL ENGINEERING - LAND SURVEY - L.S.P. SERVICES
225 SOUTH MAIN STREET, WEST BRIDGEWATER, MA 02379
TEL:508-580-2332 MOBILE: 617-347-1369 E-MAIL:GRCPE@AOL.COM