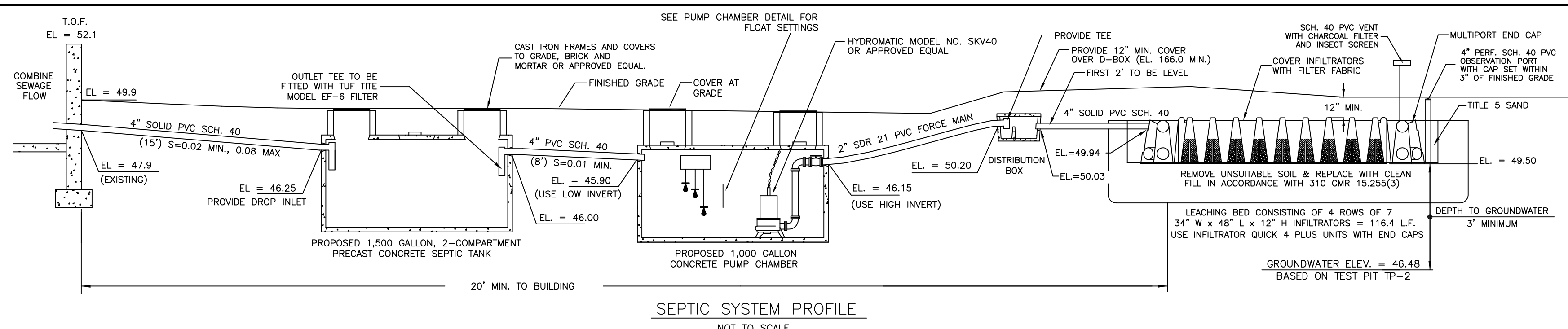


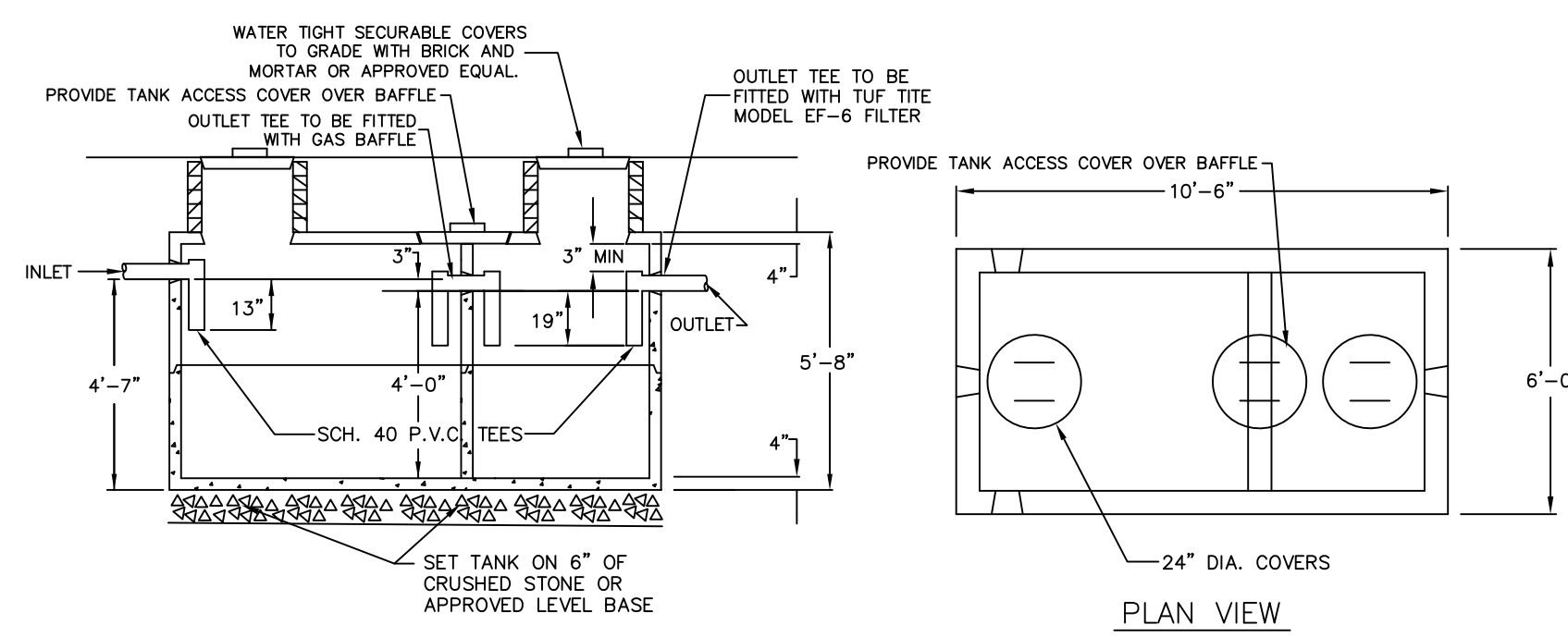
LOCUS PLAN



SEPTIC SYSTEM PROFILE

ELEVATION SCHEDULE:

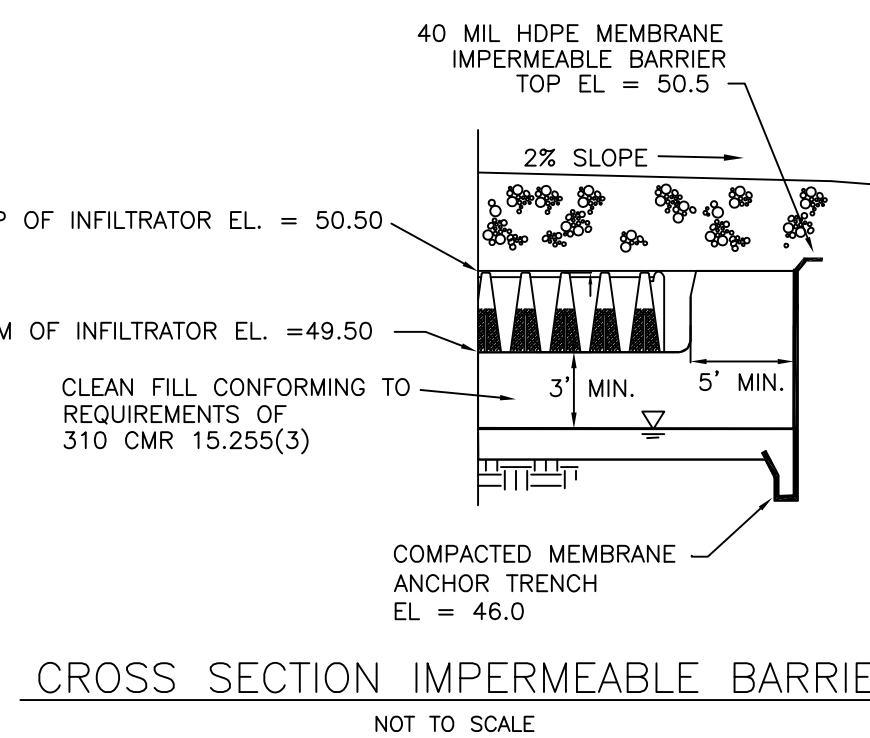
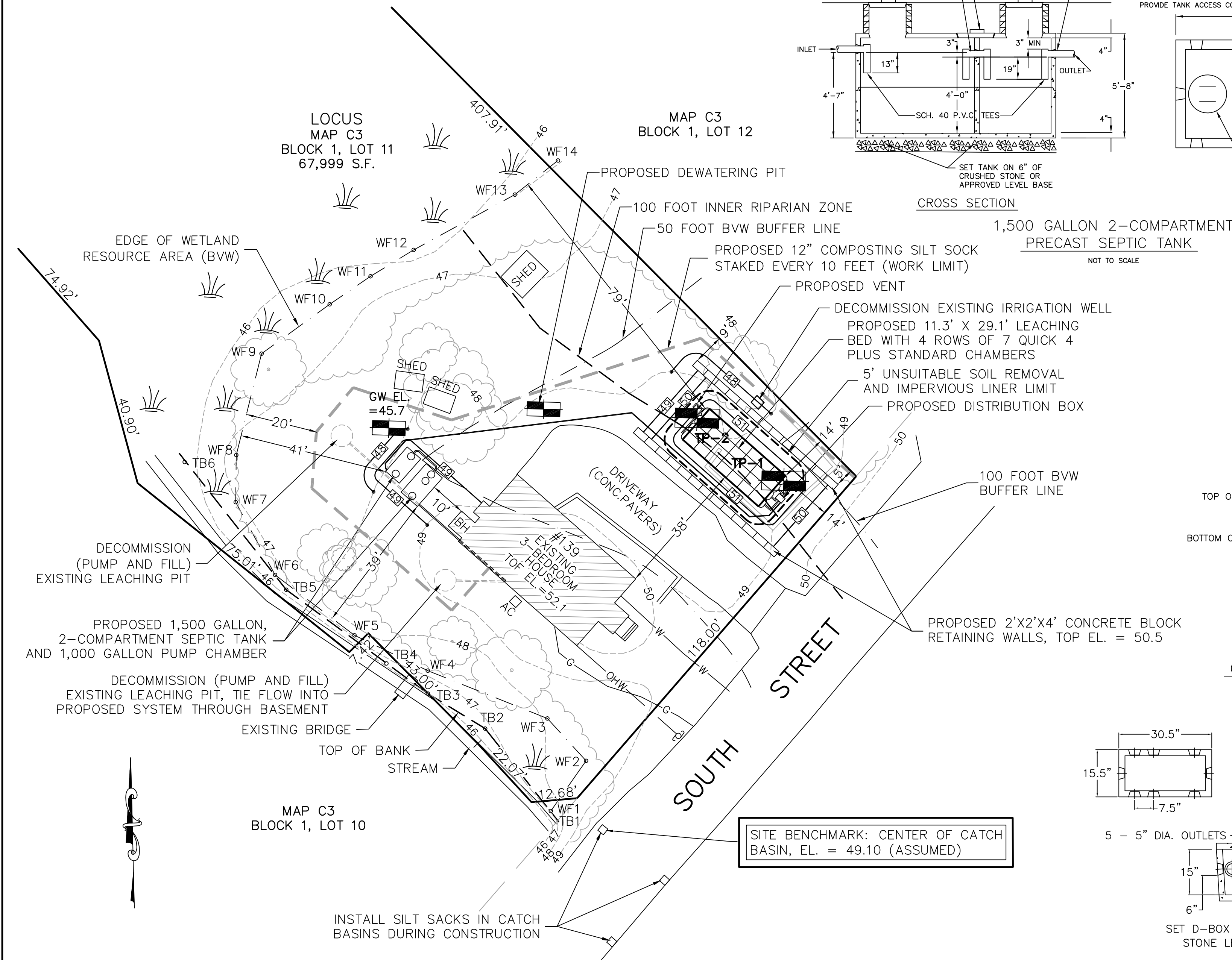
DESCRIPTION	ELEVATION
4" INV. AT BUILDING (EXISTING)	47.9
4" INV. AT SEPTIC TANK (IN)	46.25
4" INV. AT SEPTIC TANK (OUT)	46.00
4" INV. AT PUMP CHAMBER (IN)	45.90
2" INV. AT PUMP CHAMBER (OUT)	46.15
2" INV. AT DIST. BOX (IN)	50.20
4" INV. AT DIST. BOX (OUT)	50.03
4" INV. AT BEGINNING OF SAS	49.94
ELEVATION AT BOTTOM OF SAS	49.50
GROUNDWATER ELEVATION	46.48



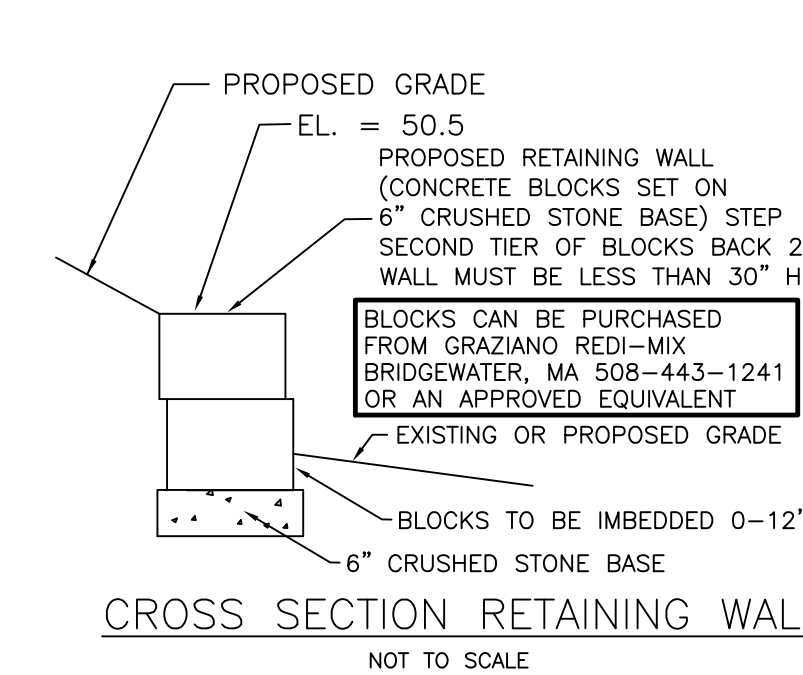
1,000 GALLON PRECAST PUMP CHAMBER
MONOLITHIC / SEALCOATED
NOT TO SCALE

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)

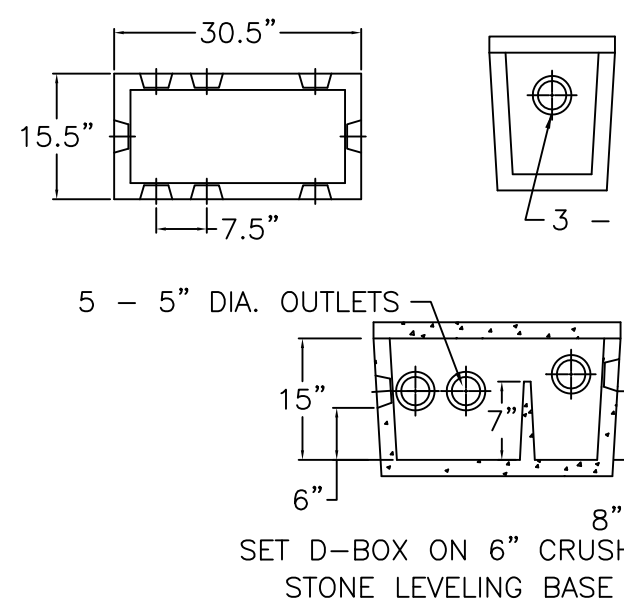
BUOYANCY CALCULATIONS 1,000 GALLON TANK:
 DOWNWARD FORCE:
 WEIGHT OF EMPTY 1,000 GAL. TANK = 8,800 LBS.
 WEIGHT OF SOIL ABOVE TANK:
 72.25 CF OF SOIL X 110 LB/CF OF SOIL = 7,947.5 LBS.
 DOWNWARD FORCE = 8,800 + 7,947.5 = 16,747.5 LBS.
 BUOYANT FORCE: (ASSUMES TANK FULLY SUBMERGED IN WATER)
 VOLUME OF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



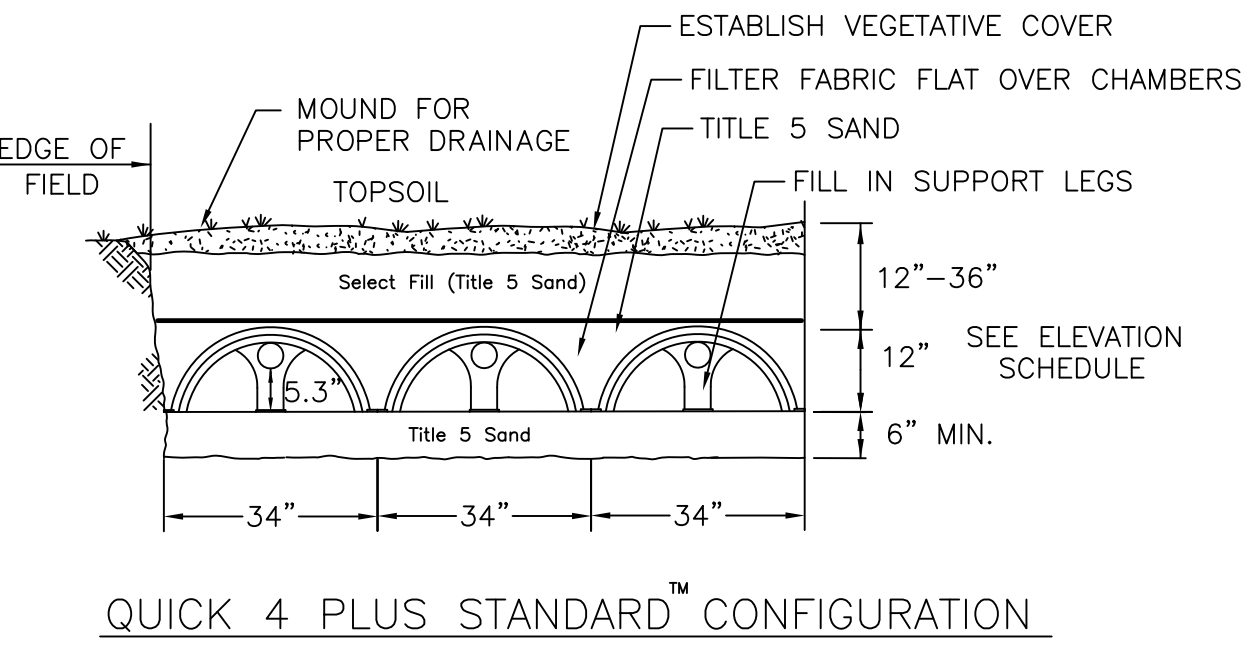
CROSS SECTION IMPERMEABLE BARRIER
NOT TO SCALE



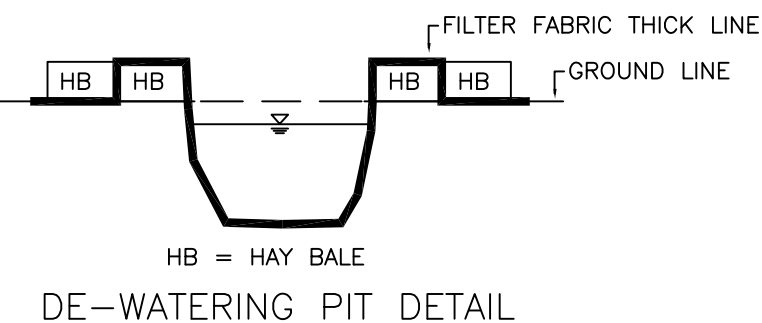
CROSS SECTION RETAINING WALL
NOT TO SCALE



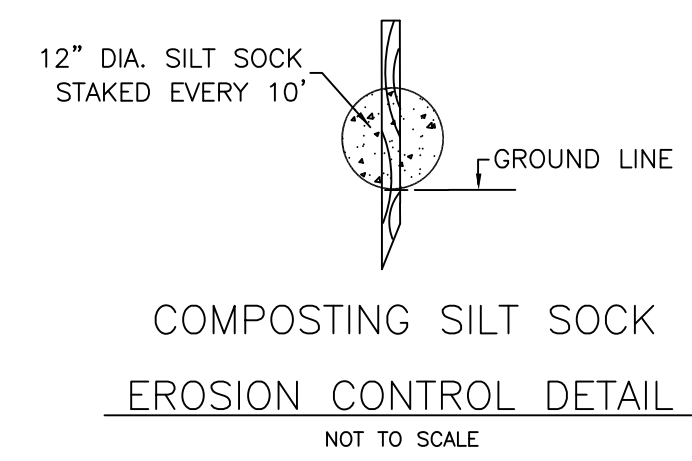
DISTRIBUTION BOX
NOT TO SCALE



QUICK 4 PLUS STANDARD™ CONFIGURATION
NOT TO SCALE



DE-WATERING PIT DETAIL
NOT TO SCALE



COMPOSTING SILT SOCK
EROSION CONTROL DETAIL
NOT TO SCALE

NOTES:

- THE CONTRACTOR SHALL NOTIFY THE LOCAL BOARD OF HEALTH AND COLLINS ENGINEERING GROUP AT LEAST 48 HOURS PRIOR TO REQUIRED INSPECTIONS.
- SITE BENCHMARK IS THE CENTER OF THE CATCH BASIN AS INDICATED ON THIS PLAN, EL. = 49.10 (ASSUMED DATUM).
- HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO OPERATE OVER THE LIMITS OF THE SEWAGE DISPOSAL FIELD DURING THE COURSE OF CONSTRUCTION OF THE SYSTEM.
- NO FIELD MODIFICATIONS TO THE SEWAGE SYSTEM SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER AND THE LOCAL BOARD OF HEALTH.
- 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.
- DISTRIBUTION BOX SHALL BE MANUFACTURED BY J&R PRECAST, INC. OR APPROVED EQUAL.
- GROUT TO BE USED AT ALL POINTS WHERE PIPES ENTER OR LEAVE ALL CONCRETE STRUCTURES IN ORDER TO PROVIDE A WATER TIGHT SEAL.
- THE FIRST TWO FEET OF EACH LINE EXITING THE DISTRIBUTION BOX SHALL BE LEVEL.
- THIS SYSTEM IS NOT DESIGNED TO ACCOMMODATE A GARBAGE GRINDER OR WATER FILTRATION SYSTEM BACKWASH.
- SYSTEM COMPONENTS TO WITHSTAND H-10 LOADING CRITERIA.
- PROPERTY LINE SHOWN IS APPROXIMATE ONLY AND IS NOT A RESULT OF A PROPERTY LINE OR VERTICAL SURVEY.
- THE CONTRACTOR SHALL DECOMMISSION (PUMP & FILL OR REMOVE) THE EXISTING SEPTIC SYSTEM IN ACCORDANCE WITH 310 CMR 15.354.
- AS SHOWN, THERE ARE NO KNOWN WELLS WITHIN 100 FEET OF THE PROPOSED LEACH FIELD.
- RESTORE (LOAM & SEED) ALL AREAS DISTURBED DURING CONSTRUCTION.
- AN AUDIBLE AND VISUAL ALARM SHALL BE PROVIDED. PUMP TO BE ON SEPARATE CIRCUIT FROM ALARM.
- PUMP AND APPURTENANCES TO BE INSTALLED AND LOCATED ACCORDING TO MANUFACTURERS INSTRUCTIONS AND LOCAL BUILDING AND WIRING CODES.
- 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.
- CONTRACTOR TO ENSURE LIQUID IN DISCHARGE PIPE FLOWS BACK TO PUMP CHAMBER AFTER PUMP CYCLE.
- PUMP CONTROL PANEL SHALL CONSIST OF MYERS CE SIMPLEX ELECTRICAL CONTROL PANEL (OR APPROVED EQUAL). PUMP CONTROL PANEL TO BE LOCATED INSIDE EXISTING DWELLING.
- CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING DIG SAFE (888-DIGSAFE) AND ANY OTHER APPLICABLE UTILITY COMPANIES PRIOR TO STARTING WORK.
- CONTRACTOR WILL BE RESPONSIBLE FOR COMBINING LAUNDRY FLOW WITH SYSTEM.
- CONTRACTOR RESPONSIBLE FOR IMPLEMENTING ALL O.S.H.A. PROCEDURES TO INCLUDE BUT NOT LIMITED TO CONFINED SPACE ENTRY PROCEDURES.
- CONTRACTOR RESPONSIBLE FOR CONFIRMING LOCATION OF EXISTING LEACHING FACILITY AND DECOMMISSION AS REQUIRED.
- CONTRACTOR TO CONFIRM EXISTING PLUMBING, SILL AND BENCHMARK ELEVATIONS PRIOR TO CONSTRUCTION.
- 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, 2-COMPARTMENT SEPTIC TANK

SOIL ABSORPTION SYSTEM:
 PERCOLATION RATE = 3 MIN./INCH (CLASS I SOIL)
 DESIGN LOADING RATE = 0.74 GPD/SF
 LEACHING AREA REQ'D = 0.74 GPD/SF = 446 SF

USE 11.3' X 29.1' LEACHING BED WITH 4 ROWS OF 7 INFILTRATOR QUICK 4 PLUS CHAMBERS = 116.4 L.F.
 EACH ROW (7) 4' UNITS PLUS 1.1' END CAP CREDIT = 28'+1.1' = 29.1'
 29.1' PER ROW X 4 ROWS = 116.4 L.F.

QUICK 4 CHAMBER LEACHING AREA = 4.73 S.F./L.F.
 LEACHING AREA PROVIDED:
 116.4 L.F. X 4.73 S.F./L.F. = 550 SF > 446 SF REQUIRED

DAILY FLOW CAPACITY:
 550 SF X 0.74 GPD/SF = 407 GPD > 330 GPD REQ'D

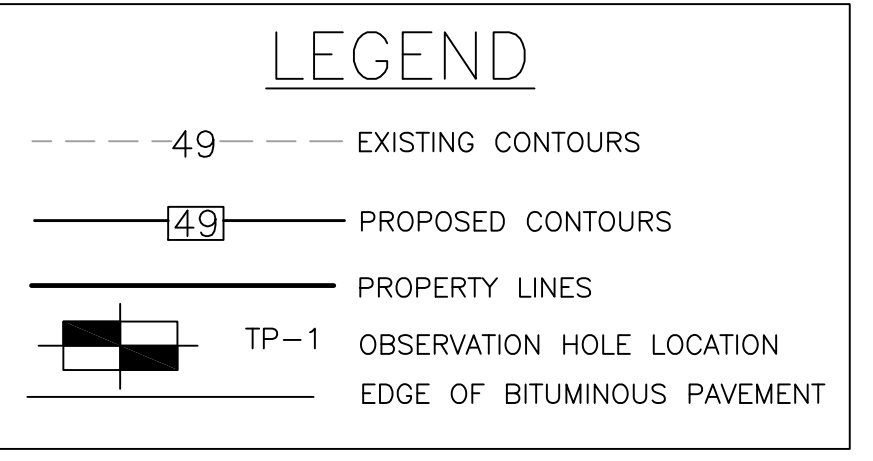
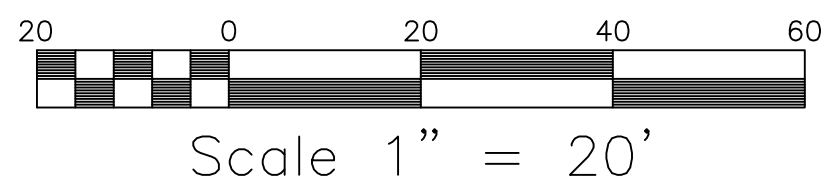
SOIL DATA:

DATE: SEPTEMBER 26, 2020
 PERFORMED BY: GEORGE R. COLLINS, P.E.
 WITNESSED BY: KATHLEEN WALDRON, AVON BOH

SOIL HORIZ.	SOIL COLOR	TP-1	DEPTH	ELEV.	SOIL HORIZ.	SOIL COLOR	TP-2	DEPTH	ELEV.
		FILL	0	48.50			FILL	0	48.15
			26"	46.33				20"	46.48
			80"					62"	
			146"	36.33				120"	38.15

ESTIMATED SEASONAL HIGH GROUNDWATER ELEV. = 46.48
 DESIGN PERC RATE = 1" IN 3 MIN.

NOTE: LAYERS FILL AND C1 TO BE REMOVED TO A DEPTH OF 30" BELOW GRADE 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.



WETLAND AND EROSION CONTROL NOTES

- WETLAND DELINEATION PERFORMED BY BROOKE MONROE, BOTANIST.
- SILT FENCE AND HAY BALE LINE TO BE INSTALLED PRIOR TO ANY ACTIVITY AND REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.
- CONTRACTOR RESPONSIBLE FOR IMPLEMENTING ALL CONSERVATION COMMISSION AND BOARD OF HEALTH DIRECTIVES.

LOCAL UPGRADE APPROVAL REQUEST:

- VARIANCE FROM SECTION 310 CMR 15.212 OF THE STATE SANITARY CODE WHICH REQUIRES A MINIMUM VERTICAL SEPARATION BETWEEN THE SOIL UNDERLYING THE SOIL ABSORPTION SYSTEM ABOVE THE HIGH GROUND-WATER ELEVATION SHALL BE FOUR (4) FEET WITH A RECORDED PERC RATE OF GREATER THAN TWO MINUTES PER INCH. A VARIANCE THAT WOULD ALLOW A VERTICAL SEPARATION REDUCTION FROM THE REQUIRED FOUR (4) FEET TO THREE (3) FEET IS REQUESTED.
- 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 2 INCHES IS REQUESTED.

PLAN TO ACCOMPANY A CONSERVATION FILING

REV.	DATE	DESCRIPTION	BY	APP.	DRAWING TITLE	SCALE:	AS SHOWN
					PLAN AND DETAILS SUBSURFACE SEWAGE DISPOSAL SYSTEM UPGRADE	DATE:	10-13-20
					PROJECT	DRAWN BY:	SWR
					CLIENT	DESIGNED BY:	SWR
					34 TWIN BROOK LANE, TAUNTON, MA 02780	CHECKED 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	APPROVED BY:	GRC
						DRAWING NO.	
						PROJECT NO.	20-193-3171

