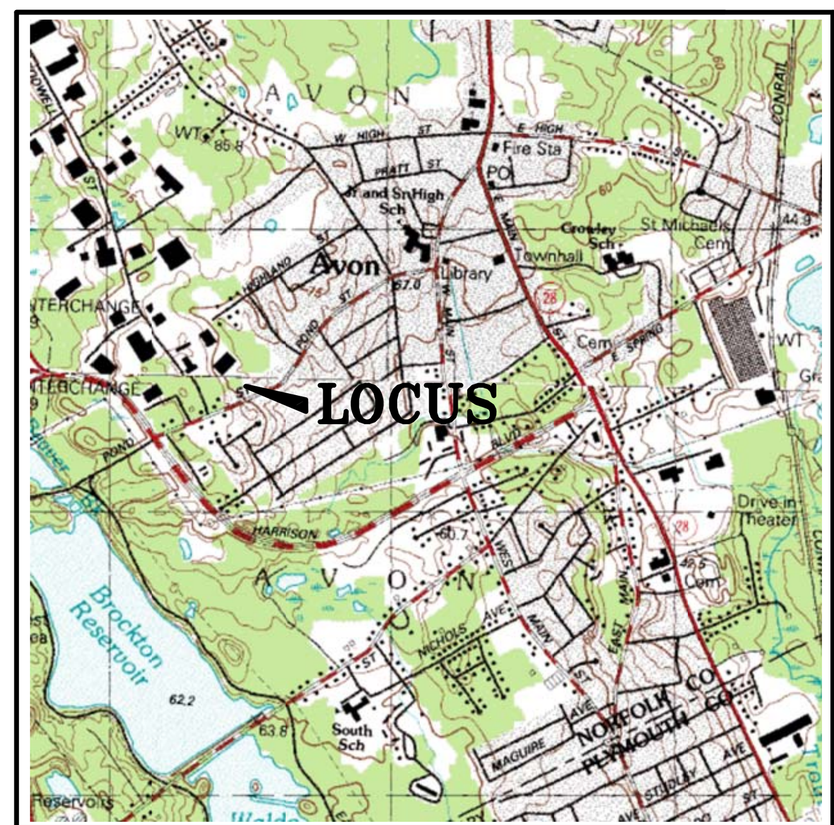
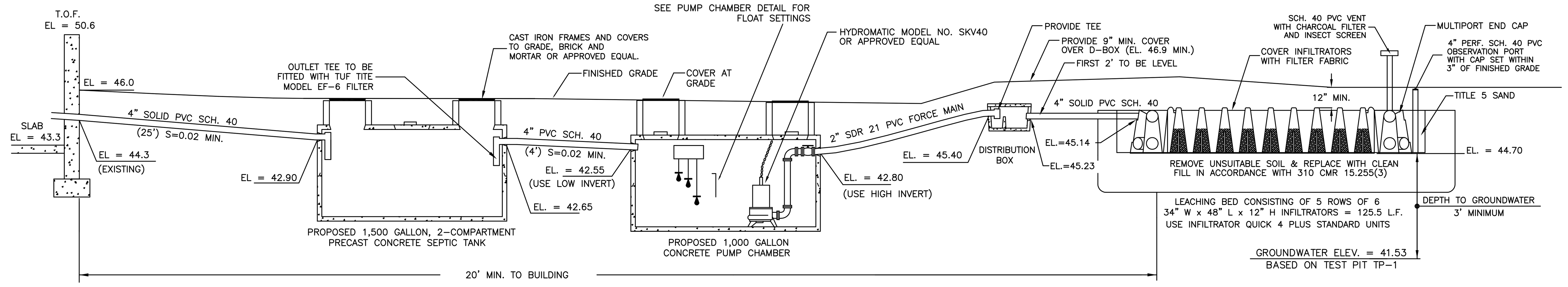


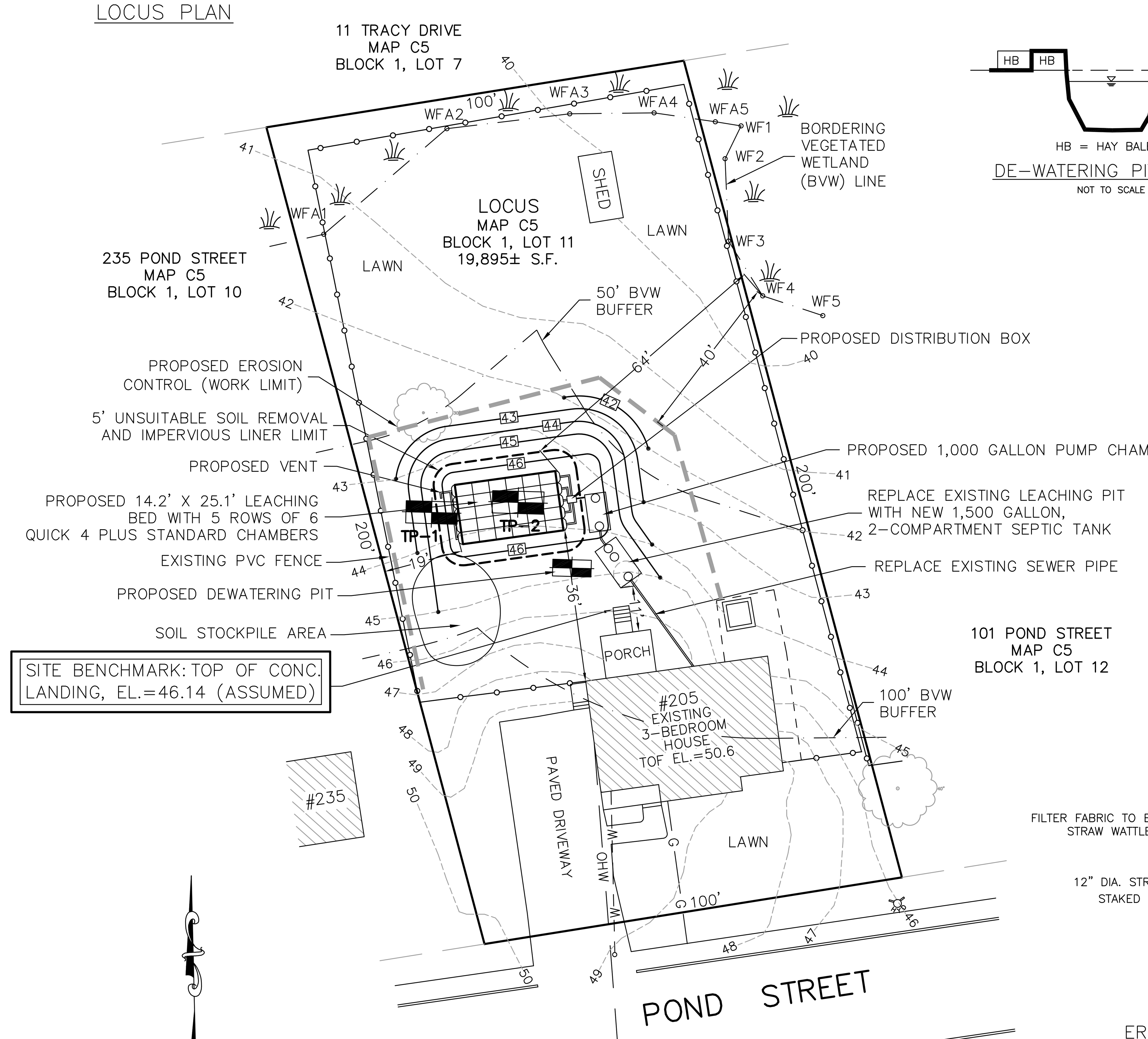
LOCUS PLAN



SEPTIC SYSTEM PROFILE
NOT TO SCALE

ELEVATION SCHEDULE:

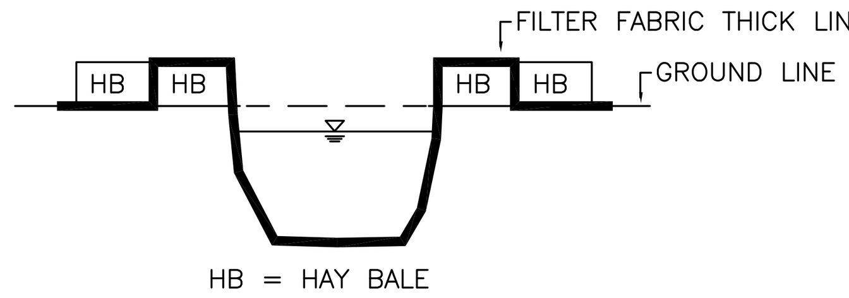
DESCRIPTION	ELEVATION
4" INV. AT BUILDING (EXISTING)	44.3
4" INV. AT SEPTIC TANK (IN)	47.90
4" INV. AT SEPTIC TANK (OUT)	42.65
4" INV. AT PUMP CHAMBER (IN)	42.55
2" INV. AT PUMP CHAMBER (OUT)	42.80
2" INV. AT DIST. BOX (IN)	45.40
4" INV. AT DIST. BOX (OUT)	45.23
4" INV. AT BEGINNING OF SAS	45.14
ELEVATION AT BOTTOM OF SAS	44.70
GROUNDWATER ELEVATION	41.53



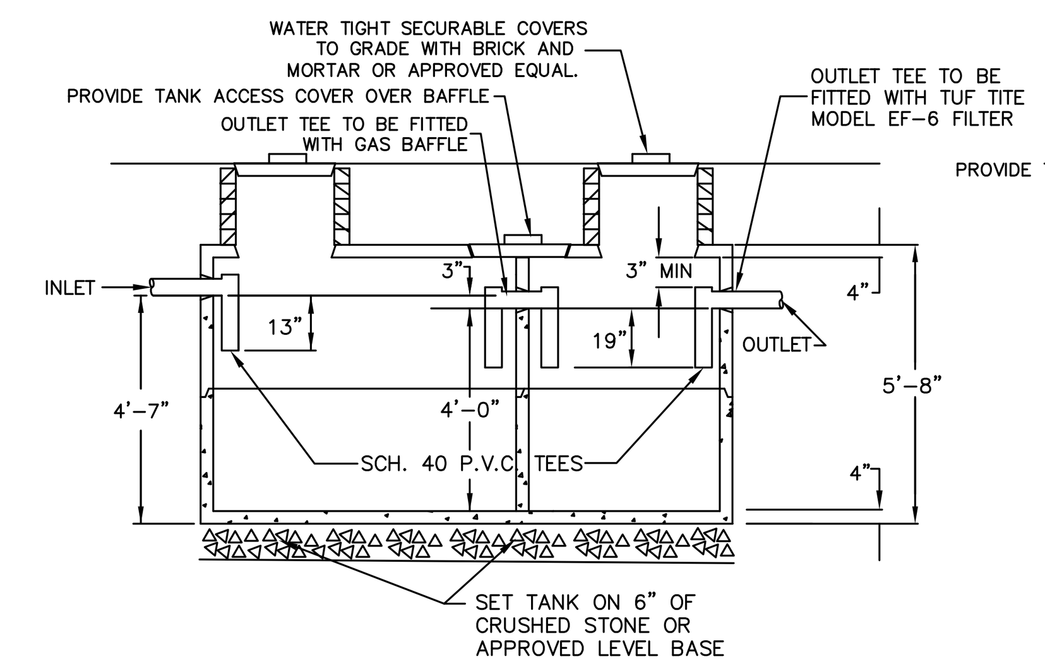
20 0 20 40 60
Scale 1" = 20'

LEGEND

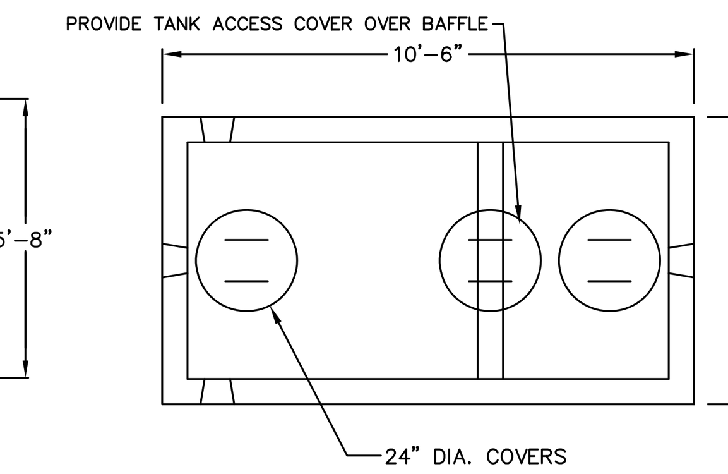
---49---	EXISTING CONTOURS
—[49]—	PROPOSED CONTOURS
——	PROPERTY LINES
TP-1	OBSERVATION HOLE LOCATION
——	EDGE OF BITUMINOUS PAVEMENT



DE-WATERING PIT DETAIL
NOT TO SCALE



CROSS SECTION

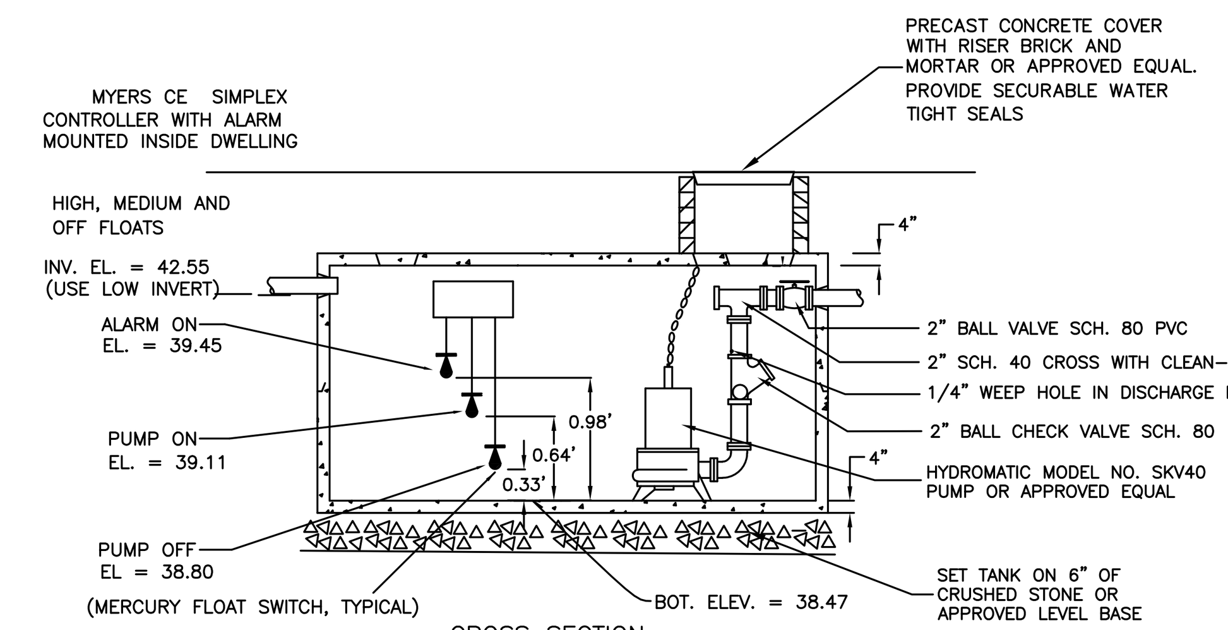


PLAN VIEW

1,500 GALLON 2-COMPARTMENT PRECAST SEPTIC TANK
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:
107 CF OF SOIL X 110 LB/CF OF SOIL = 11,770 LBS.
DOWNWARD FORCE = 12,930 + 11,770 = 24,700 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
24,700 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

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

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 CONCRETE LANDING AS INDICATED ON THIS PLAN, EL = 46.14 (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 WATERTIGHT 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, 2-COMPARTMENT SEPTIC TANK

SOIL ABSORPTION SYSTEM:

PERCOLATION RATE DETERMINED FROM SIEVE ANALYSIS PERFORMED ON SOIL SAMPLE COLLECTED FROM LAYER C AT TEST PIT TP-2.
TEST REVEALED SOIL IS A LOAMY SAND (84.5% SAND, 13.5% SILT, 1.9% CLAY)

DESIGN LOADING RATE SELECTED FOR CLASS I SOILS WITH 70-85% SAND IN ACCORDANCE WITH DEP GUIDANCE POLICY #BRP/DWM/PeP-P00-1.

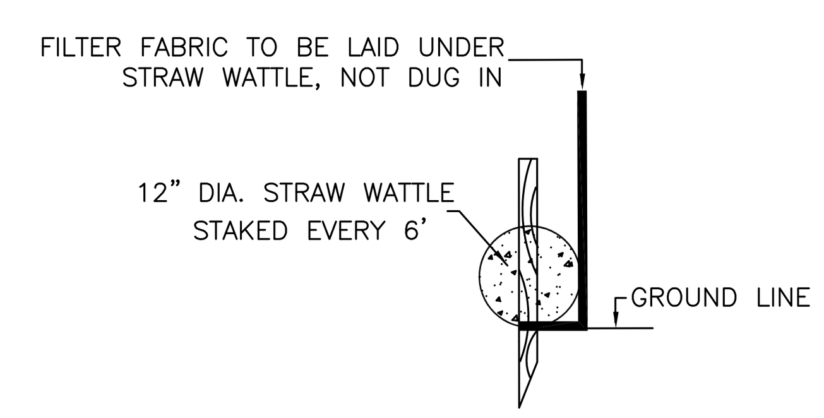
DESIGN LOADING RATE = 0.66 GPD/SF

$$\text{LEACHING AREA REQ'D} = \frac{(330\ \text{GPD})}{0.66\ \text{GPD/SF}} = 500\ \text{SF}$$

USE 14.2' X 25.1' LEACHING BED WITH 5 ROWS OF 6 INFILTRATOR QUICK4 PLUS STANDARD LEACHING CHAMBERS WITH END CAPS = 125.5 L.F.

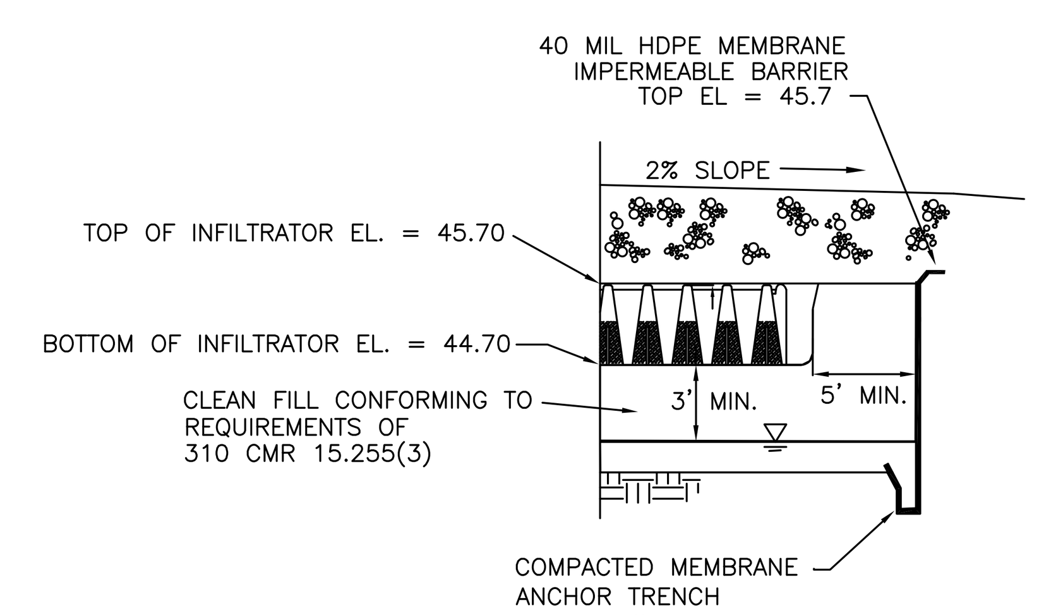
EACH ROW (6) 4' UNITS PLUS 1.1' END CAP CREDIT = 24.0'+1.1' = 25.1'
25.1' PER ROW X 5 ROWS = 125.5 L.F.

QUICK 4 CHAMBER LEACHING AREA = 4.73 S.F/L.F.
LEACHING AREA PROVIDED:
125.5 L.F. X 4.73 S.F/L.F = 593 SF > 500 SF REQUIRED
DAILY FLOW CAPACITY:
593 SF X 0.66 GPD/SF = 391 GPD > 330 GPD REQ'D

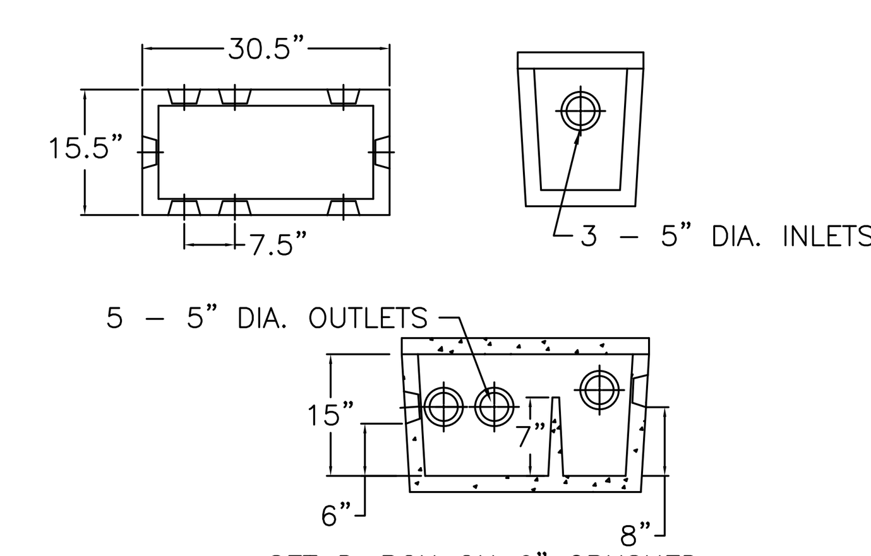


STRAW WATTLE

EROSION CONTROL DETAILS
NOT TO SCALE



CROSS SECTION IMPERMEABLE BARRIER
NOT TO SCALE



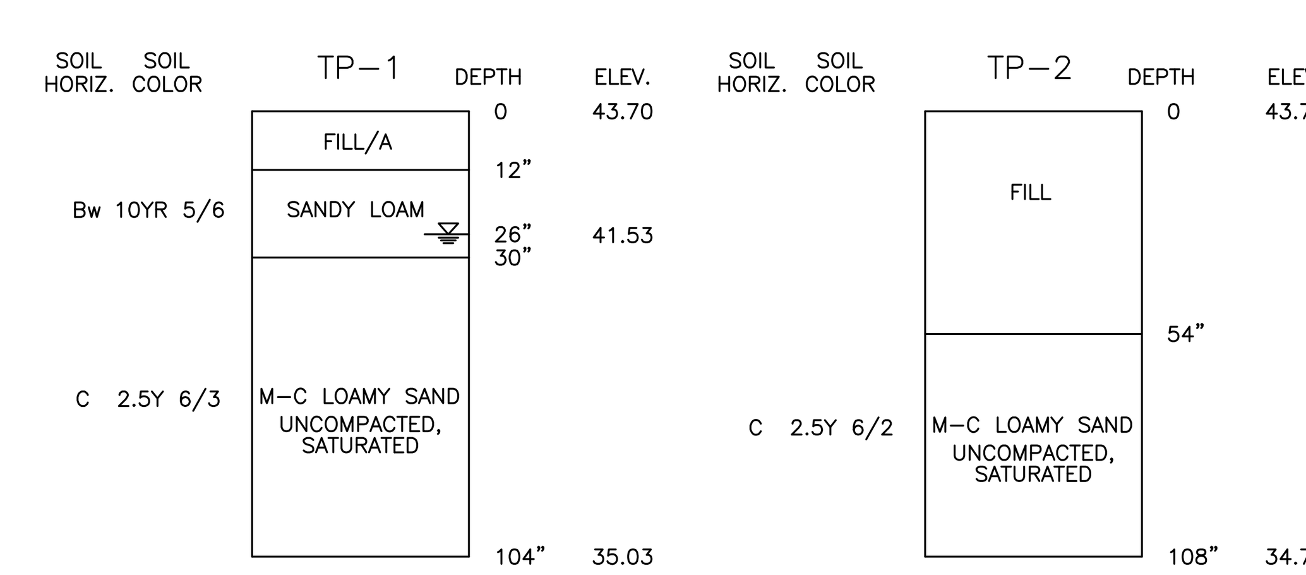
SET D-BOX ON 6" CRUSHED STONE LEVELING BASE

NOTE: DISTRIBUTION BOX SHALL COMPLY TO MINIMUM REQUIREMENTS OF 310 CMR 15.232.

DISTRIBUTION BOX
NOT TO SCALE

SOIL DATA:

DATE: JULY 14, 2021
PERFORMED BY: GEORGE R. COLLINS, P.E.
WITNESSED BY: KATHLEEN WALDRON, AVON BOH



ESTIMATED SEASONAL HIGH GROUNDWATER ELEV. = 41.53
DESIGN LOADING RATE ESTABLISH BY SIEVE SAMPLE COLLECTED FROM LAYER C AT TP-2.

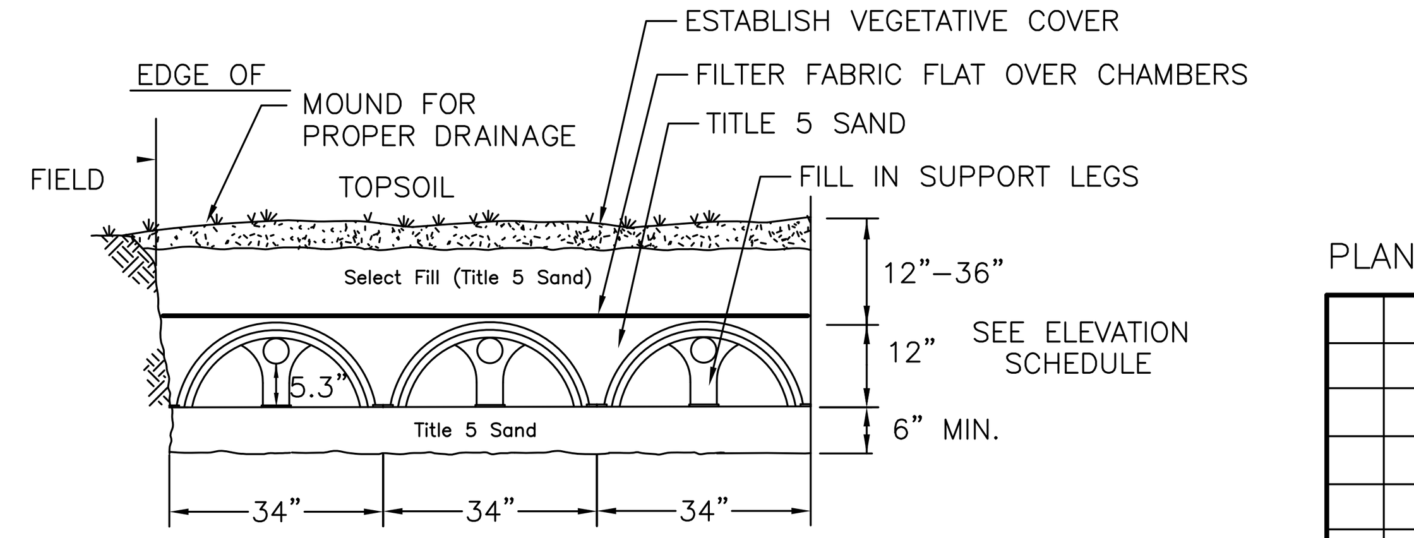
NOTE: LAYERS FILL/A, B, AND C TO BE REMOVED TO A DEPTH OF 60" BELOW GRADE AND REPLACED WITH CLEAN FILL IN ACCORDANCE WITH 310 CMR 15.255(3). UNSUITABLE SOIL TO BE REMOVED TO A DISTANCE OF 5'-0" BEYOND THE LIMITS OF THE SOIL ABSORPTION SYSTEM.

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 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.
2. 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 BROOK MONROE, ENVIRONMENTAL SCIENTIST.
2. EROSION CONTROL 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 NAME AND CONTACT NUMBERS OF THE GENERAL CONTRACTOR MUST BE PROVIDED TO THE ENGINEER AND CONSERVATION COMMISSION PRIOR TO STARTING WORK.
7. CONTRACTOR TO MONITOR, REPAIR AND MODIFY EROSION CONTROL TO ASSURE THAT THERE IS NO WETLAND RESOURCE AREA OR ABUTTER ENCROACHMENT.



QUICK 4 PLUS STANDARD™ CONFIGURATION
NOT TO SCALE

PLAN TO ACCOMPANY A CONSERVATION FILING

REV.	DATE	DESCRIPTION	BY	APP.

DRAWING TITLE: PLAN AND DETAILS — SUBSURFACE SEWAGE DISPOSAL SYSTEM UPGRADE

PROJECT: 205 POND STREET, AVON, MA

CLIENT: SAMANTHA REGO, 205 POND STREET, AVON, MA 02322

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: 617-347-1363 E-MAIL:GRCPE@AOL.COM

SCALE:	AS SHOWN
DATE:	7-26-21
DRAWN BY:	SWR
DESIGNED BY:	SWR
CHECKED BY:	GRC
APPROVED BY:	GRC
DRAWING NO.	
PROJECT NO.	21-147-3363