

VICINITY MAP  
SCALE: 1" = 800'

### SOIL TEST DATA

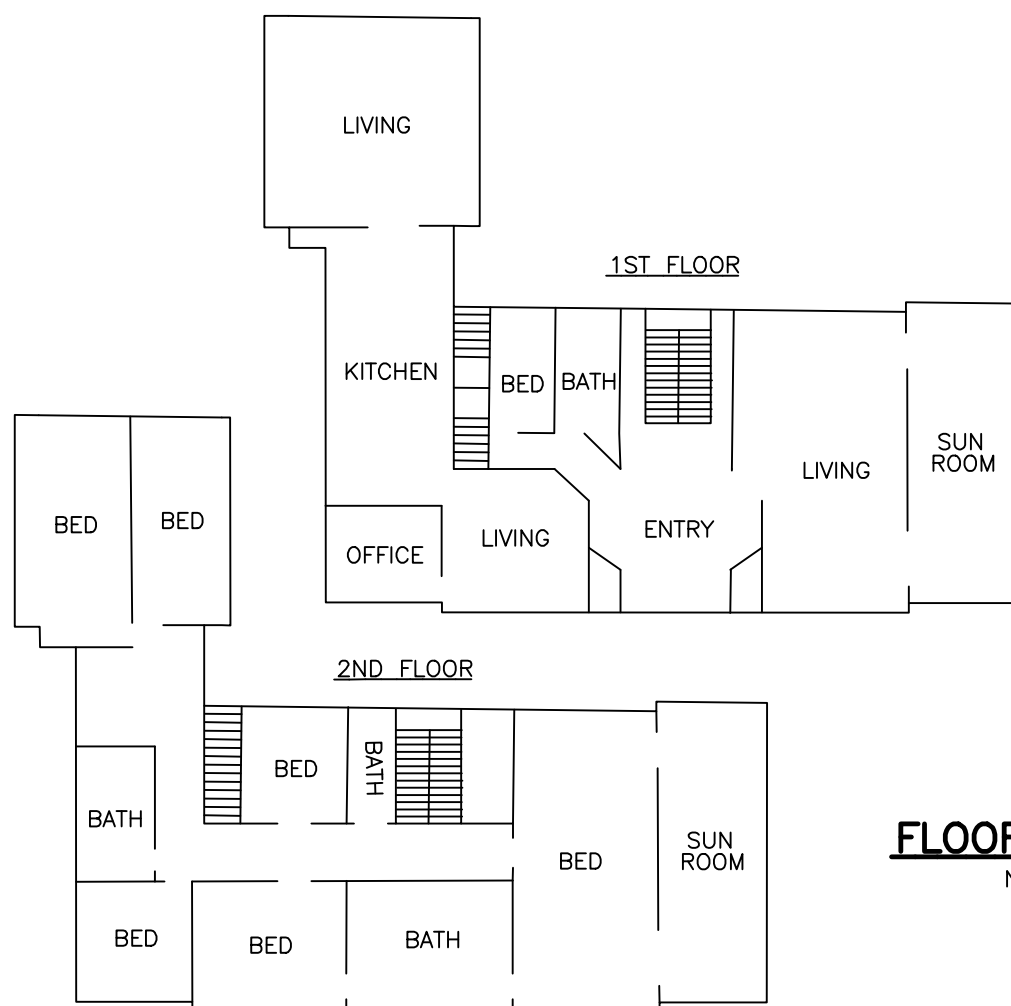
SOIL TESTING AND EVALUATION BY: JAMES GARFIELD, SE#14162  
SOIL TESTING WITNESSED BY: RALPH H. COLE, P.L.S.  
DATE: AUGUST 5, 2020

TP-A	APPROX. GRADE EL. 51.5	TP-B	APPROX. GRADE EL. 49.5	TP-C	APPROX. GRADE EL. 50.1
EL. 50.5	A HORIZON SANDY LOAM 10YR 3/2	EL. 48.7	A HORIZON SANDY LOAM 10YR 3/2	EL. 49.1	A HORIZON SANDY LOAM 10YR 3/2
EL. 49.5	B HORIZON SANDY LOAM 10YR 5/6	EL. 47.7	B HORIZON SANDY LOAM 10YR 5/6	EL. 47.9	B HORIZON SANDY LOAM 10YR 5/6
EL. 45.5	C HORIZON SANDY LOAM 2.5Y 5/3	EL. 44.2	C HORIZON SANDY LOAM 2.5Y 5/3	EL. 42.1	C HORIZON SANDY LOAM 2.5Y 5/3
REFUSAL		REFUSAL			

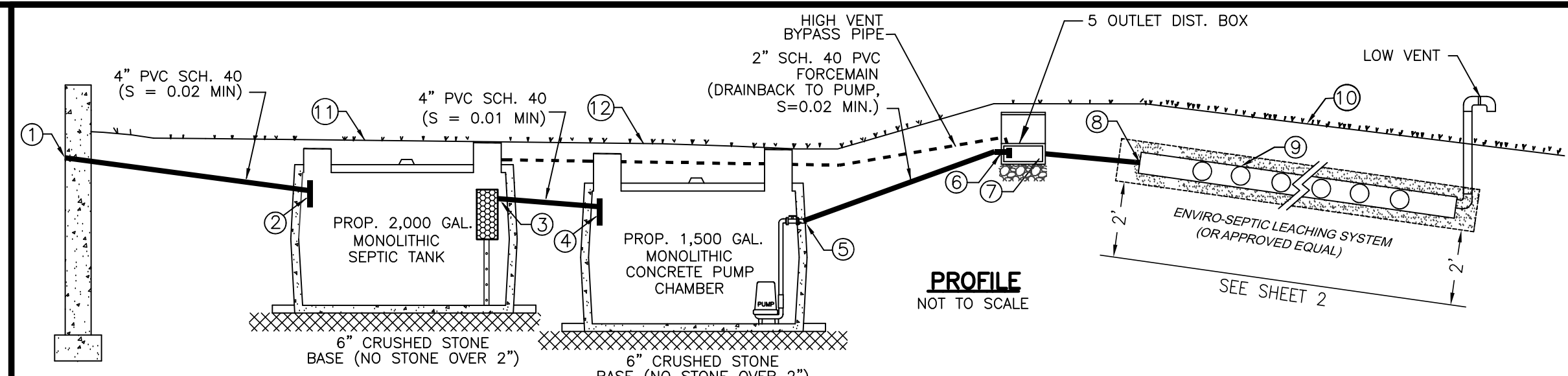
WEeping OBSERVED: NONE  
MOTTling OBSERVED: 38"  
PERC. RATE: NONE  
ESHGW: 38" (EL. 48.3)

WEeping OBSERVED: NONE  
MOTTling OBSERVED: 36"  
PERC. RATE: 37 MPI @ 34"-52"  
ESHGW: 36" (EL. 46.5)

WEeping OBSERVED: NONE  
MOTTling OBSERVED: 40"  
PERC. RATE: NONE  
ESHGW: 40" (EL. 46.8)



FLOOR PLAN  
N.T.S.

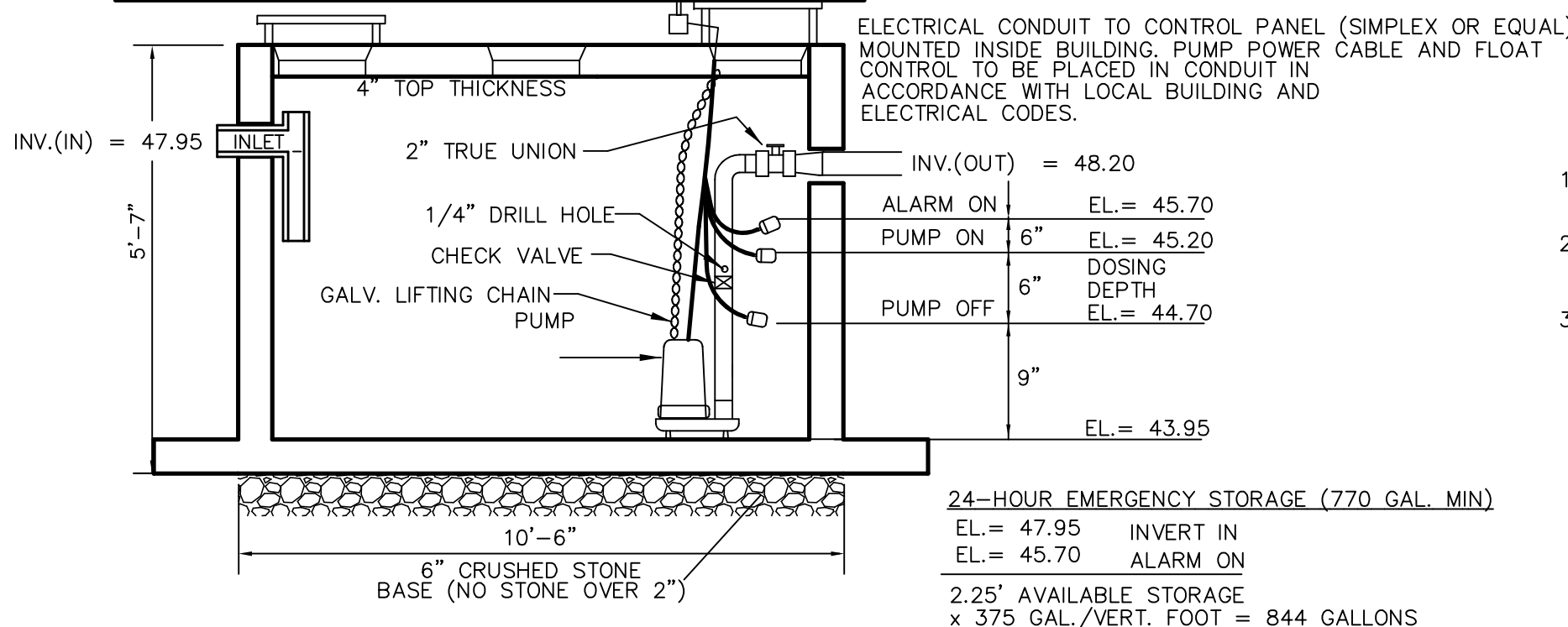


PROFILE  
NOT TO SCALE

SCHEDULE OF ELEVATIONS	
1. INV. OF PIPE AT FOUNDATION = 48.7± (MIN., CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION)	9. TOP OF PRESBY PIPE (PRESBY PIPE #1) = 51.38
2. INV. OF PIPE AT SEPTIC TANK INLET = 48.25	9. TOP OF PRESBY PIPE (PRESBY PIPE #6) = 50.18
3. INV. OF PIPE AT SEPTIC TANK OUTLET = 48.00	9. TOP OF PRESBY PIPE (PRESBY PIPE #12) = 48.74
4. INV. OF PIPE AT PUMP CHAMBER INLET = 47.95	10. FINISHED GRADE OVER LEACHING (PRESBY PIPE #1) = 52.38
5. INV. OF PIPE AT PUMP CHAMBER OUTLET = 48.20	10. FINISHED GRADE OVER LEACHING (PRESBY PIPE #6) = 51.18
6. INV. OF PIPE AT DISTRIBUTION BOX INLET = 51.26	10. FINISHED GRADE OVER LEACHING (PRESBY PIPE #12) = 49.74
7. INV. OF PIPE AT DISTRIBUTION BOX OUTLET = 51.09	11. FINISHED GRADE OVER SEPTIC TANK = 50.0 (MIN) - 52.0 (MAX)
8. INVERT OF 4" PVC INLET (PRESBY PIPE #1) = 50.92	12. FINISHED GRADE OVER PUMP CHAMBER = 49.7 (MIN) - 51.7 (MAX)
8. INVERT OF 4" PVC INLET (PRESBY PIPE #6) = 49.72	
8. INVERT OF 4" PVC INLET (PRESBY PIPE #12) = 48.28	

### 1,500 GAL. PUMP CHAMBER MONOLITHIC (EXT. BASE) DETAIL

NOTE: OUTLET COVER (20" DIA.) BROUGHT TO FINISHED GRADE.  
INLET COVER (20" DIA.) BROUGHT TO WITHIN 6" OF FINISHED GRADE

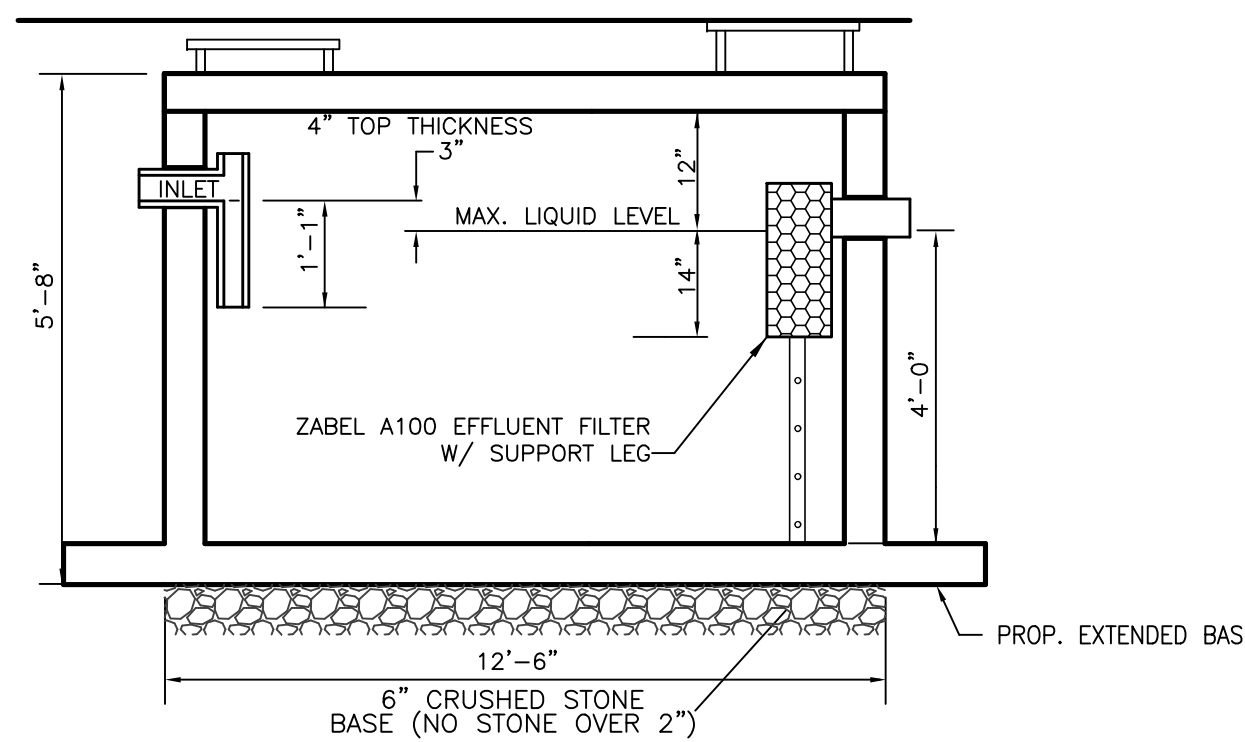


### PUMP DESIGN NOTES:

- THE PUMP CONTROLS SHALL BE DESIGNED TO ALLOW THE FIELD TO BE DOSED WITH 125 GAL. PER DOSE (APPROX. 6.2 TIMES IN A 24-HOUR PERIOD UNDER NORMAL OPERATING CONDITIONS).
- USE GOULDS SUBMERSIBLE EFFLUENT PUMP WS03B, 1/3 HP, 2" DISCHARGE, 2" SOLIDS CAPACITY T.D.H. = 15.7 FT. ± @ 15 GPM OR APPROVED EQUAL.
- 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 AND INSPECTED BY THE TOWN OF SCITUATE WIRING INSPECTOR.

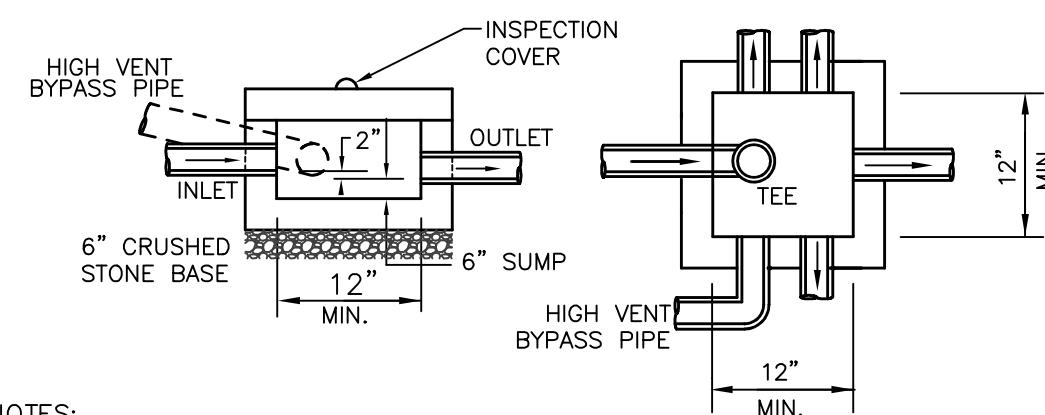
24-HOUR EMERGENCY STORAGE (770 GAL. MIN.)  
EL. = 47.95 INVERT IN  
EL. = 45.70 ALARM ON  
2.25' AVAILABLE STORAGE  
x 375 GAL./VERT. FOOT = 844 GALLONS

### 2,000 GAL. MONOLITHIC (EXT. BASE) SEPTIC TANK DETAIL



- THE SEPTIC TANK INLET COVER (20" DIA.) SHALL BE EXTENDED TO WITHIN 6" OF FINISHED GRADE & OUTLET COVER (20" DIA.) SHALL BE EXTENDED TO FINISHED GRADE.
- ALL PIPE CONNECTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
- SEPTIC TANK SHALL BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE.
- OUTLET SHALL BE EQUIPPED WITH A ZABEL A100 EFFLUENT FILTER (OR APPROVED EQUAL).

### 5 OUTLET DISTRIBUTION BOX



### NOTES:

- DISTRIBUTION BOX COVER SHALL BE EQUIPPED WITH RISERS AS NECESSARY TO BRING THE COVER TO WITHIN 6" OF FINISHED GRADE.
- ALL PIPE CONNECTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
- DISTRIBUTION BOX TO BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE.
- ELEVATION DIFFERENCE BETWEEN THE DIST. BOX OUTLET AND PRESBY 4" PVC INLET MUST BE AT LEAST 2'.

### LOCAL UPGRADE APPROVAL REQUESTS

310 CMR 15.405(a): TO REDUCE THE SETBACK FROM THE SAS TO PROPERTY LINE FROM 10' (REQUIRED) TO 5.9' (PROPOSED).

### 1/A TECHNOLOGY CREDIT

-ALLOW 2' SEPARATION BETWEEN BOTTOM OF SAND AND SEASONAL HIGH GROUNDWATER.  
-TO ALLOW A MAXIMUM REDUCTION IN SAS SIZE OF 40% (39.8% PROPOSED).  
-TO ALLOW A DEPTH OF 2' FT. FOR NATURALLY OCCURRING PERVIOUS MATERIAL.

### REMOVE & REPLACE NOTE

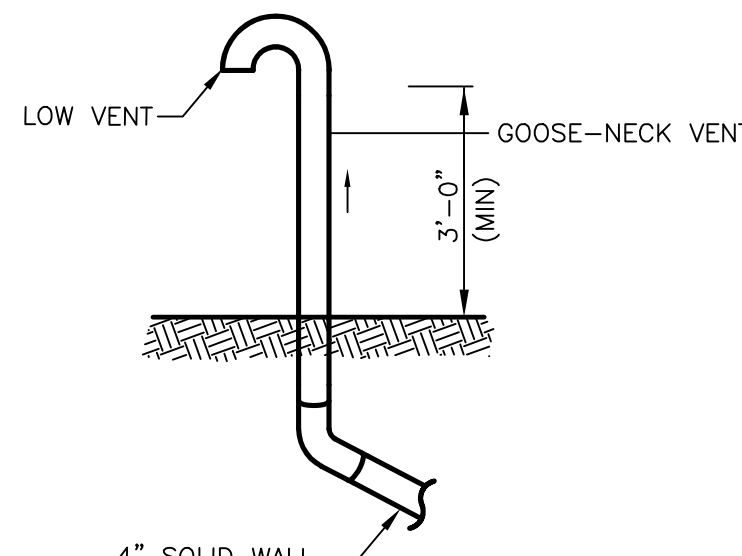
-CONTRACTOR TO REMOVE A & B HORIZONS WITHIN 5' OF PROPOSED SOIL ABSORPTION SYSTEM & REPLACE WITH CLEAN TITLE 5 PERC. SAND TO TOP OF C33 SAND.

-C33 SAND REQUIRED:  
2.0'D x 43.15'W x 43.0'L x 1.2% / 27 = 165 C.Y.  
165 C.Y. - (12 PIPES x 41.0' x 3.14 x 0.5"² / 27) = 151 C.Y.  
-TITLE 5 SAND REQUIRED = 53.15' x 53' x (2.0' AVG.) x 1.2% / 27  
165 C.Y. = 86± C.Y.

\*APPROX. SAND AREA REQUIRED AT CROSS SECTION AS SHOWN IN CROSS SECTION A-A

### DESIGN DATA

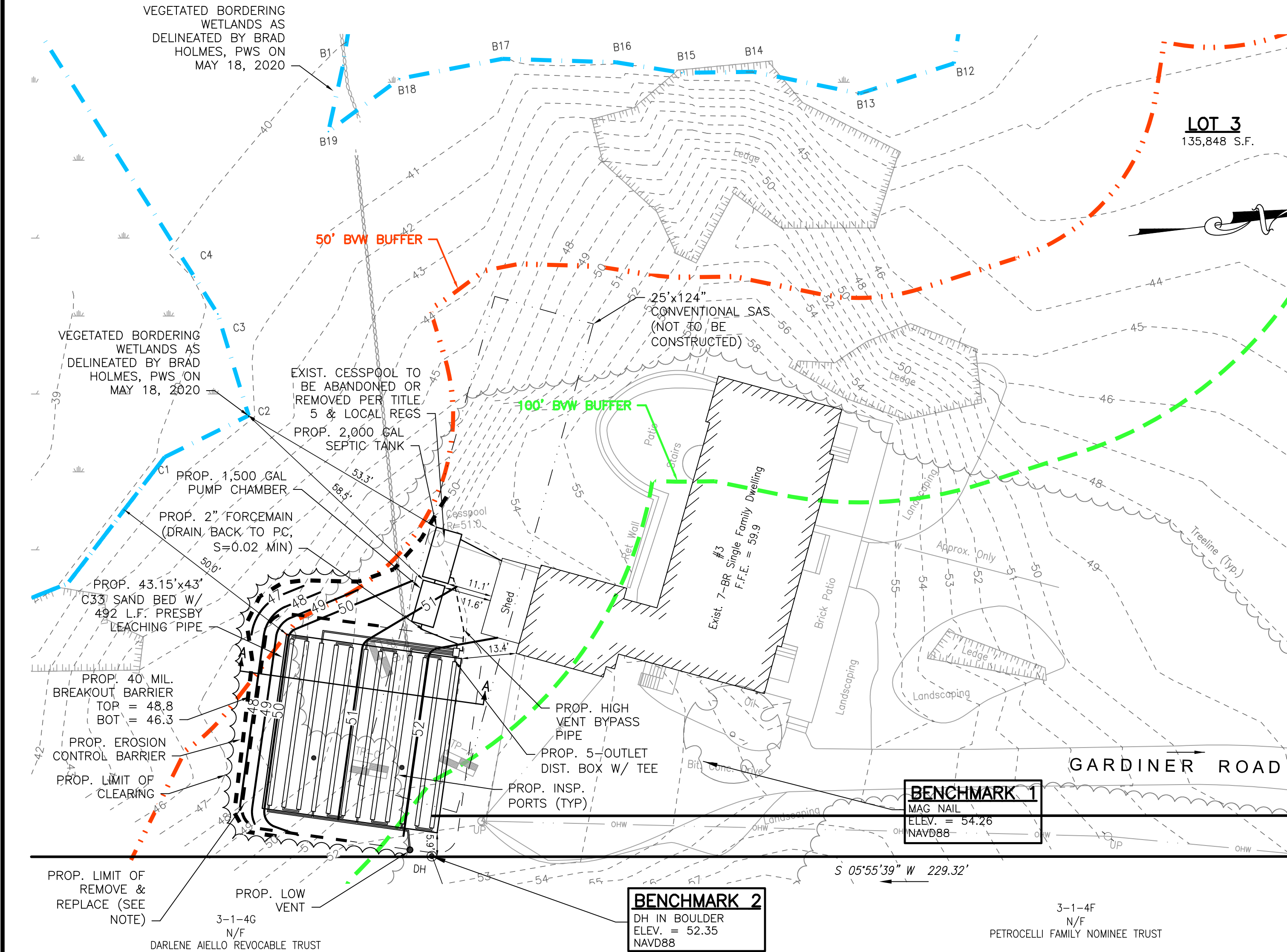
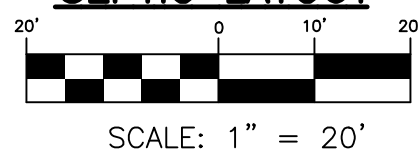
- BUILDING TYPE: SINGLE FAMILY DWELLING
- NO. OF BEDROOMS: 7
- DESIGN FLOW: 7 x 110 GPD/BEDROOM = 770 GPD (GALLONS PER DAY)
- DESIGN PERCOLATION RATE: 37 MPI (TP-B, CLASS III)
- GARBAGE DISPOSAL: NO
- SEPTIC TANK DESIGN REQUIREMENT: 200% DESIGN FLOW 770 X 2 = 1,540 GAL. (PROVIDE NEW 2,000 GAL. SEPTIC TANK)
- LEACH AREA REQUIREMENTS GALLONS/SQ. FT.  
BOTTOM: 0.25 GAL./S.F. SIDE: 0.25 GAL./S.F.
- TOTAL LEACH AREA REQUIRED:  
TITLE 5: 770 GPD / (0.25 GPD/S.F.) = 3,080 S.F.  
PROVIDED: PRESBY ENVIRO-SEPTIC LEACHING SYSTEM (OR EQUAL)  
REQ'D AREA: 1,848 S.F. (40% SIZE REDUCTION)  
PROVIDED AREA: 43.15'W x 43'L SAND BED = 1855.45 S.F. (39.8% AREA REDUCTION)  
PER TABLE A: SYSTEM REQUIRES 490 L.F. OF ENVIRO-SEPTIC PIPE (492 L.F. PROVIDED)



### VENT SYSTEM

\*CONTRACTOR TO COORDINATE LOCATION W/ HOMEOWNER AND PAINT VENT GREEN.

### SEPTIC LAYOUT



### 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.

### 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.

### SITE NOTES

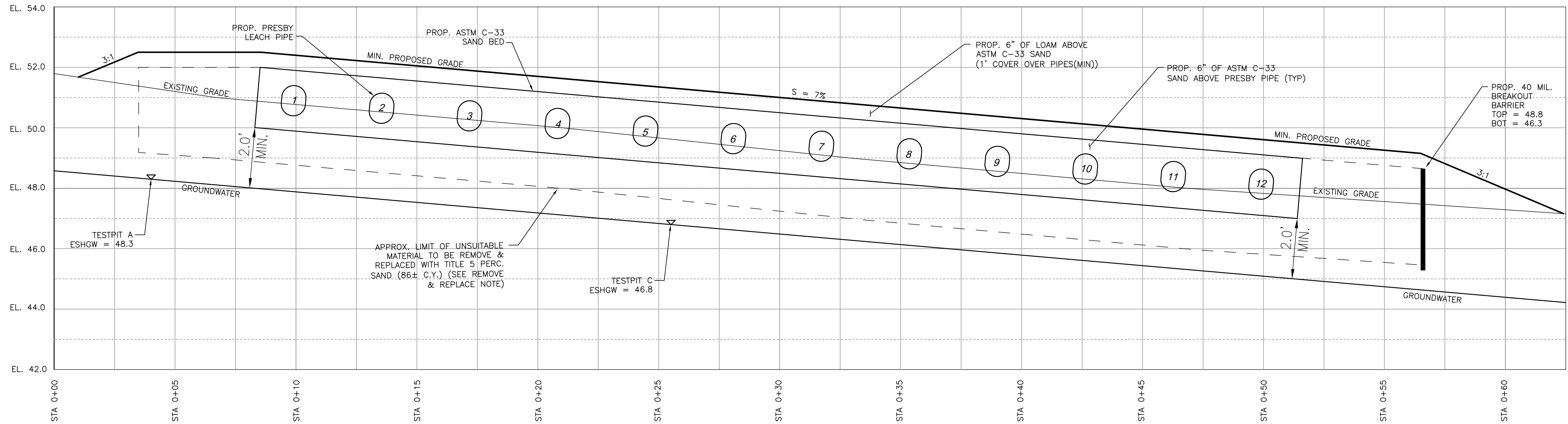
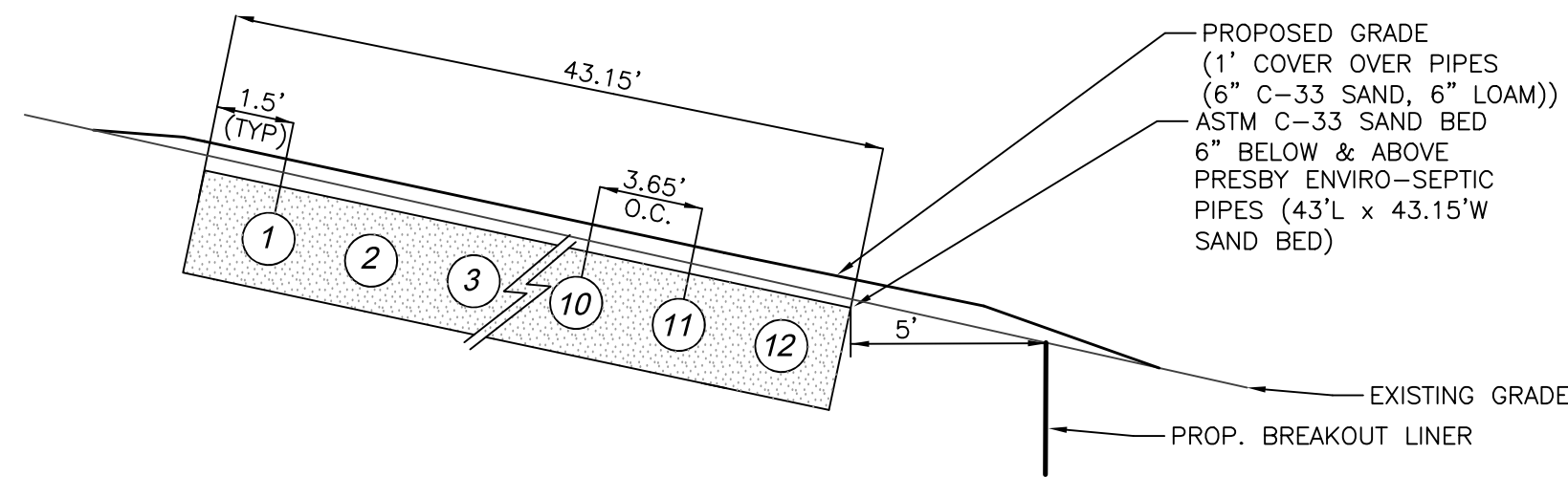
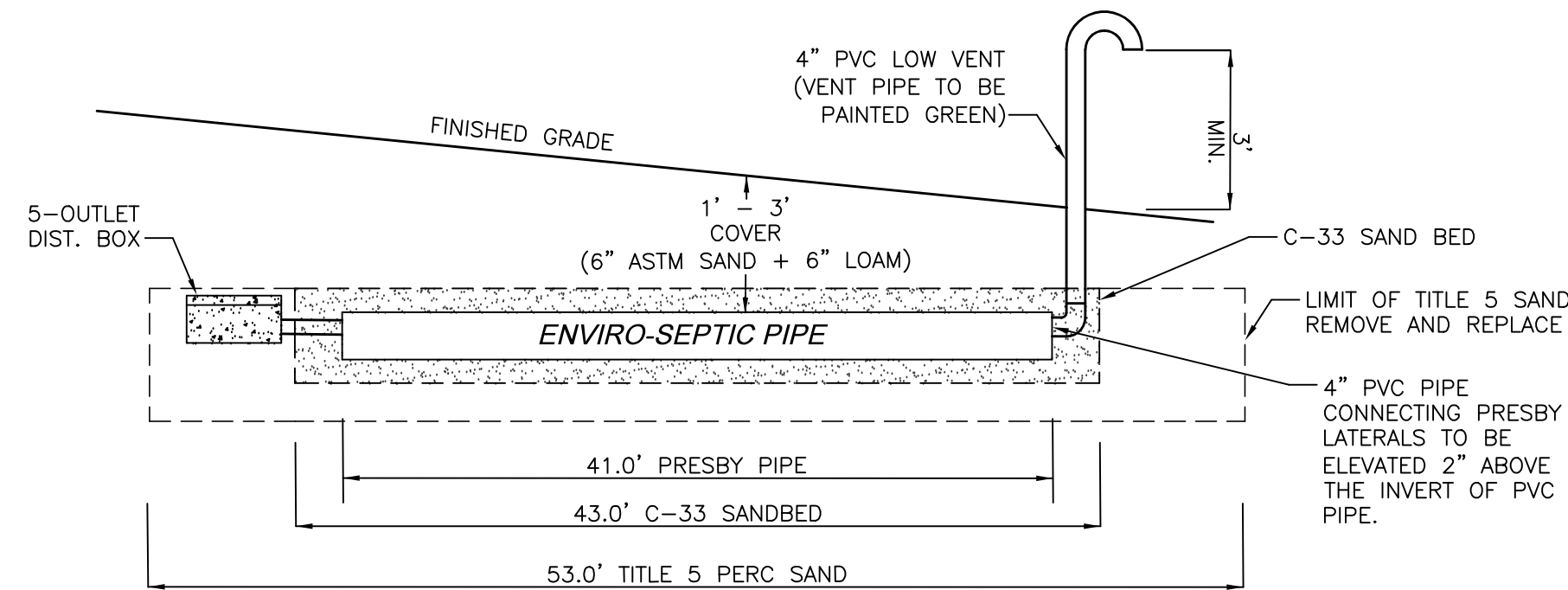
- LOCUS DOES NOT LIE WITHIN A DEP DESIGNATED ZONE II RESOURCE AREA.
- ALL KNOWN WETLANDS WITHIN 100 FEET OF THE PROPOSED SEWAGE SYSTEM ARE SHOWN.
- PROPERTY LINE DATA WAS OBTAINED FROM RECORDED DEED (52488-66) AND RECORDED PLANS ON FILE AT THE PLYMOUTH COUNTY REGISTRY OF DEEDS.
- THERE WERE KNOWN NO ACTIVE/POTABLE WELLS OBSERVED WITHIN 100' OF THE PROPOSED SYSTEM.
- LOCUS LIES IN FEMA ZONE "X" AS SHOWN ON FEMA COMMUNITY MAP PANEL 25021C 0106K DATED NOVEMBER 4, 2016. ZONE "X" IS NOT A SPECIAL FLOOD HAZARD AREA.

### \*INSTALLER TO BE PRESBY CERTIFIED\*

PREPARED BY:		DESIGN: PGG	
PROJECT: SEPTIC SYSTEM DESIGN PLAN 3 GARDINER ROAD (ASSESSOR'S PARCEL: 3-1-3) SCITAUTE, MASSACHUSETTS		CHECK: GJM	
APPLICANT: LILLIAN C. PETERS TRUST 3 GARDINER RD SCITUATE, MA 02066		JOB NO: 20-184	
PLAN TITLE: SEPTIC SYSTEM DESIGN PLAN		DATE: 9/24/20	
		REV:	
		SHEET: 1	



ENVIRO-SEPTIC CROSS SECTIONS



SECTION A-A

VERTICAL SCALE: 1" = 2'  
HORIZONTAL SCALE: 1" = 2.5'

ENVIRO-SEPTIC PROFILE & ELEVATIONS

PRESBY PIPE #	APPROX. GROUNDWATER	BOTTOM OF C-33 SAND	INV. PRESBY PIPE	TOP PRESBY PIPE	INV. 4" PVC INLET PIPE	TOP OF C-33 SAND	FINISHED GRADE
1	47.88	49.88	50.38	51.38	50.92	51.88	52.38
2	47.64	49.64	50.14	51.14	50.68	51.64	52.14
3	47.40	49.40	49.90	50.90	50.44	51.40	51.90
4	47.16	49.16	49.66	50.66	50.20	51.16	51.66
5	46.92	48.92	49.42	50.42	49.96	50.92	51.42
6	46.68	48.68	49.18	50.18	49.72	50.68	51.18
7	46.44	48.44	48.94	49.94	49.48	50.44	50.94
8	46.20	48.20	48.70	49.70	49.24	50.20	50.70
9	45.96	47.96	48.46	49.46	49.00	49.96	50.46
10	45.72	47.72	48.22	49.22	48.76	49.72	50.22
11	45.48	47.48	48.98	48.98	48.52	49.48	49.98
12	45.24	47.24	48.74	48.74	48.28	49.24	49.74

\*INSTALLER TO BE PRESBY CERTIFIED\*

GREGORY J. MORSE  
CIVIL  
No. 47105  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF MASSACHUSETTS

PREPARED BY:

PROJECT: SEPTIC SYSTEM DESIGN PLAN  
3 GARDINER ROAD  
(ASSESSOR'S PARCEL: 3-1-3)  
SCITAUTE, MASSACHUSETTS

DESIGN: PGG  
CHECK: GJM  
JOB NO: 20-184  
DATE: 9/24/20  
REV:  
SHEET: 2

APPLICANT: LILLIAN C. PETERS TRUST  
3 GARDINER RD  
SCITUATE, MA 02066

PLAN TITLE: SEPTIC SYSTEM DESIGN PLAN