

**Plan of Land**  
 SCALE: 1"=20'  
 MAP NO.: 3  
 PARCELS NO.: 119 AND 132  
 AREA: 27,656± SF.

- NOTES:**
- THE OWNER SHALL SUBMIT THE BUILDING FLOOR PLANS TO THE OAK BLUFFS BOARD OF HEALTH FOR THEIR APPROVAL.
  - ALL UNDERGROUND UTILITIES, INCLUDING WATER, PHONE, AND ELECTRICAL LINES, MUST BE LOCATED BY THE CONTRACTOR AND DIG SAFE SYSTEM, INC. MUST BE CONTACTED AT 1-888-344-7233 PRIOR TO ANY EXCAVATION.
  - ENGINEER SHALL INSPECT BOTTOM OF EXCAVATION IN THE LEACHING FIELD PRIOR TO INSTALLING THE LEACHING FIELD.
  - EXISTING WATER SERVICE SHALL BE DISCONNECTED IN ACCORDANCE WITH THE OAK BLUFFS WATER DISTRICT REGULATIONS.
  - PRESSURE PIPE SHALL BE INSTALLED AT A MINIMUM OF 48" BELOW GRADE UNLESS PRESSURE PIPE IS INSTALLED BETWEEN 48"-24" BELOW GRADE WITH 2" THICK BY 24" WIDE RIGID INSULATION INSTALLED OVER PIPE.
  - BOTH SEWER AND WATER PIPES SHALL BE CONSTRUCTED OF CLASS 150 PRESSURE PIPE AND SHALL BE PRESSURE TESTED TO ASSURE WATERTIGHTNESS (WITHIN 10' FROM WHERE SEWER LINES CROSS WATER SUPPLY LINES) AND IN ACCORDANCE WITH THE OAK BLUFFS WATER DISTRICT REQUIREMENTS.



**Legend**

- 100 — EXISTING CONTOUR
- 100+0 EXISTING SPOT ELEVATION
- 100 — PROPOSED CONTOUR
- THI PERCOLATION TEST
- X SEWAGE LINE
- W — W — PRO. WATER LINE (SEE NOTE F)
- — — — — APPROXIMATE PROPERTY LINE
- O-W — — — — — EXISTING OVERHEAD WIRE OR PRO. UNDERGROUND ELECTRIC

**SOILS LOG**

TEST HOLE #1	DATE: 6/22/2021	ELEV. + 53.4
DEPTH	HORIZON	TEXTURE
00-12"	A	LOAMY SAND
12-30"	B	LOAMY SAND
30-120"	C	LOAMY SAND

TEST HOLE #2	DATE: 6/22/2021	ELEV. + 54.0
DEPTH	HORIZON	TEXTURE
00-10"		FILL
10-16"	A	LOAMY SAND
16-30"	B	LOAMY SAND
30-120"	C	LOAMY SAND

TEST HOLE #3	DATE: 6/22/2021	ELEV. + 48.1
DEPTH	HORIZON	TEXTURE
00-07"	A	LOAMY SAND
07-30"	B	LOAMY SAND
30-120"	C	LOAMY SAND

- Notes**
- GENERAL NOTES:**
- THIS PLAN IS TO BE USED ONLY FOR THE PERMITTING AND INSTALLATION OF A SEWAGE DISPOSAL SYSTEM. IT IS NOT TO BE USED FOR ANY OTHER PURPOSE.
  - NO CHANGES TO THIS PLAN ARE PERMITTED WITHOUT THE PRIOR WRITTEN APPROVAL OF SOURATI ENGINEERING GROUP, LLC.
  - INSTALLATION SHALL BE IN STRICT CONFORMITY WITH TITLE 5 OF THE MASSACHUSETTS STATE SANITARY CODE AND THE RULES & REGULATIONS OF THE TOWN OF OAK BLUFFS BOARD OF HEALTH.
  - MACHINERY THAT MAY DISTURB PIPE ALIGNMENT IN THE DISPOSAL SYSTEM SHALL NOT BE USED ON THE DISPOSAL AREA.
  - NO EXISTING WELLS WERE FOUND WITHIN 100' FROM THE PROPOSED SOIL ADSORPTION SYSTEM OR WITHIN 50' FROM THE SEPTIC TANK.
  - FINISHED SURFACE OF LEACHING AREA SHALL BE GRADED TO INSURE RUNOFF (2% MINIMUM SLOPE).
  - THE SEPTIC TANK AND THE DISTRIBUTION BOX SHALL BE EITHER:
    - A. WATERTIGHT ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND WARRANTY, OR
    - B. MADE WATERTIGHT BY THE MANUFACTURER, EQUIPMENT SUPPLIER OR INSTALLER, USING ASPHALT OR SYNTHETIC POLYMER SEALER SPECIFIED BY THE CONCRETE OR SYNTHETIC MATERIAL MANUFACTURER.
  - SEPTIC TANKS AND DISTRIBUTION BOXES SHALL BE LEVEL AND TRUE TO GRADE ON A LEVEL STABLE BASE THAT HAS BEEN MECHANICALLY COMPACTED AND ONTO WHICH 6 INCHES OF CRUSHED STONE HAVE BEEN PLACED TO MINIMIZE UNEVEN SETTLING.
  - ALL SYSTEM COMPONENTS SHALL BE CONSTRUCTED OF CORROSION RESISTANT MATERIALS.
  - ALL PIPING SHALL BE A MINIMUM OF SCHEDULE 40 PVC UNLESS OTHERWISE NOTED.
  - DISTRIBUTION BOX OUTLET LINES SHALL BE LEVEL FOR A MINIMUM OF THE FIRST TWO FEET OF THEIR LENGTH.

**CONSTRUCTION IN FILL:**

- FILL MATERIAL FOR SYSTEMS CONSTRUCTED IN FILL SHALL CONSIST OF SELECT ON-SITE OR IMPORTED SOIL MATERIAL THE FILL BE COMPOSED OF CLEAN GRANULAR SAND, FREE FROM ORGANIC MATTER AND DELETERIOUS SUBSTANCES, MIXTURES AND LAYERS OF DIFFERENT CLASSES OF SOIL. FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN TWO INCHES. A SIEVE ANALYSIS USING A #4 SIEVE SHALL BE PERFORMED ON A REPRESENTATIVE SAMPLE OF THE FILL UP TO 25% BY WEIGHT OF THE FILL. THE #4 SIEVE ANALYSIS SHALL BE PERFORMED ON THE FILL SAMPLE PASSING THE #4 SIEVE. SUCH ANALYSES MUST DEMONSTRATE THAT THE MATERIAL MEETS EACH OF THE FOLLOWING SPECIFICATIONS:

SIEVE SIZE	EFFECTIVE PARTICLE SIZE	% THAT MUST PASS SIEVE
#4	4.75 MM	100 ±
#50	0.30 MM	10 ± - 100
#100	0.15 MM	0 ± - 20
#200	0.075 MM	0 ± - 5

**HIGH CAPACITY INFILTRATOR CHAMBER (SOIL ADSORPTION SYSTEM):**

- THE INFILTRATORS SHALL BE INSTALLED IN STRICT CONFORMITY WITH THE MANUFACTURER SPECIFICATIONS.

**PUMP CHAMBER:**

- BASE SECTION SHALL BE MONOLITHICALLY CAST (REINFORCED CONCRETE) AND SHALL HAVE A MINIMUM RISE OF 30" BEFORE ANY JOINT.
- BOTTOM SLAB OF BASE SECTION SHALL BE AT LEAST 4" IN THICKNESS.
- THE CHAMBER SHALL BE CLEANED OUT, MADE WATER TIGHT, AND TEST DURING FINAL INSPECTION BY THE CONTRACTOR. THE EXTERIOR WALLS SHOULD BE SPRAYED OR PAINTED WITH A WATERPROOF COMPOUND AND ALL PIPE INLETS OR CONNECTIONS SHALL BE MADE WATERTIGHT.
- THE CHAMBER SHALL BE EQUIPPED WITH ONE 20" MANHOLE WITH A READY REMOVABLE WATERTIGHT COVER OF DURABLE MATERIAL. THE ACCESS COVER SHALL BE LOCATED WITHIN 6" OF FINAL GRADE.

**PUMP:**

- THE PUMP TO BE INSTALLED IN THE PUMP CHAMBER SHALL CONSIST OF ONE (1) MEASAC-II MYERS HEAVY-DUTY SUBMERSIBLE SEWAGE PUMP OR APPROVED EQUAL. THE PUMP MUST HAVE A CAPACITY OF 30 GPM AGAINST A HEAD OF 15'. MOTORS TO BE 0.5 HP, SINGLE PHASE, 60 CYCLE, 115 VOLTS A.C. ELECTRICAL SERVICE FOR PUMPS MUST BE ON A SEPARATE CIRCUIT BREAKER NOT IN COMMON WITH THE HIGH WATER ALARM.
- THE PUMP SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- THE PUMP AND ALARM REQUIRE PERIODIC OR ROUTINE INSPECTION AND MAINTENANCE SHALL BE OPERATED, INSPECTED AND MAINTAINED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. IN NO INSTANCE SHALL INSPECTION BE PERFORMED LESS FREQUENTLY THAN ONCE EVERY THREE MONTHS. THE RESULTS OF SUCH INSPECTIONS SHALL BE SUBMITTED TO THE APPROVING AUTHORITY.

**ALARMS AND SWITCHES:**

- THE ON-OFF SWITCHES MUST BE BUILT INTO THE PUMP AND MOTOR ASSEMBLY OR SET AS PER THE DESIGN PLAN.
- THE HIGH WATER ALARM SWITCH MUST BE SET TO THE ELEVATION SHOWN ON THE DESIGN PLAN ATTACHED AND CONSIST OF A MERCURY FLOAT TYPE. THE HIGH WATER ALARM PANEL MUST BE INSTALLED IN THE MAIN HOUSE SO AS TO BE EASILY HEARD WHEN ACTIVATED. THIS ALARM MUST BE CONNECTED TO A SEPARATE ELECTRICAL CIRCUIT NOT COMMON WITH THE PUMP AND MOTOR ASSEMBLY.
- THE PUMP CONTROLS SHALL BE MOISTURE PROOF.

**FORCE MAIN:**

- ALL PIPING FROM THE PUMP CHAMBER TO THE LEACHING AREA SHALL CONSIST OF 2" DIAMETER PVC SCHEDULE 40 PIPE, UNLESS OTHERWISE NOTED ON THE DESIGN PLAN.
- FORCE MAINS SHALL BE COVERED WITH A MINIMUM OF THREE (3) FEET OF COVER MATERIAL. THE COVER MATERIAL SHALL CONSIST OF CLEAN COMPACT SAND FREE OF LARGE STONES OR OBJECT FOR A DISTANCE OF 6' AROUND THE FORCE MAIN FOR PROPER BEDDING.

**Design Computations:**

**HYDRAULIC LOADING:**

8 + 6 + 2 = 16 BEDROOMS AT 110 GPD = 1,760 GPD  
 A GARBAGE DISPOSAL IS NOT ALLOWED IN THIS DESIGN.

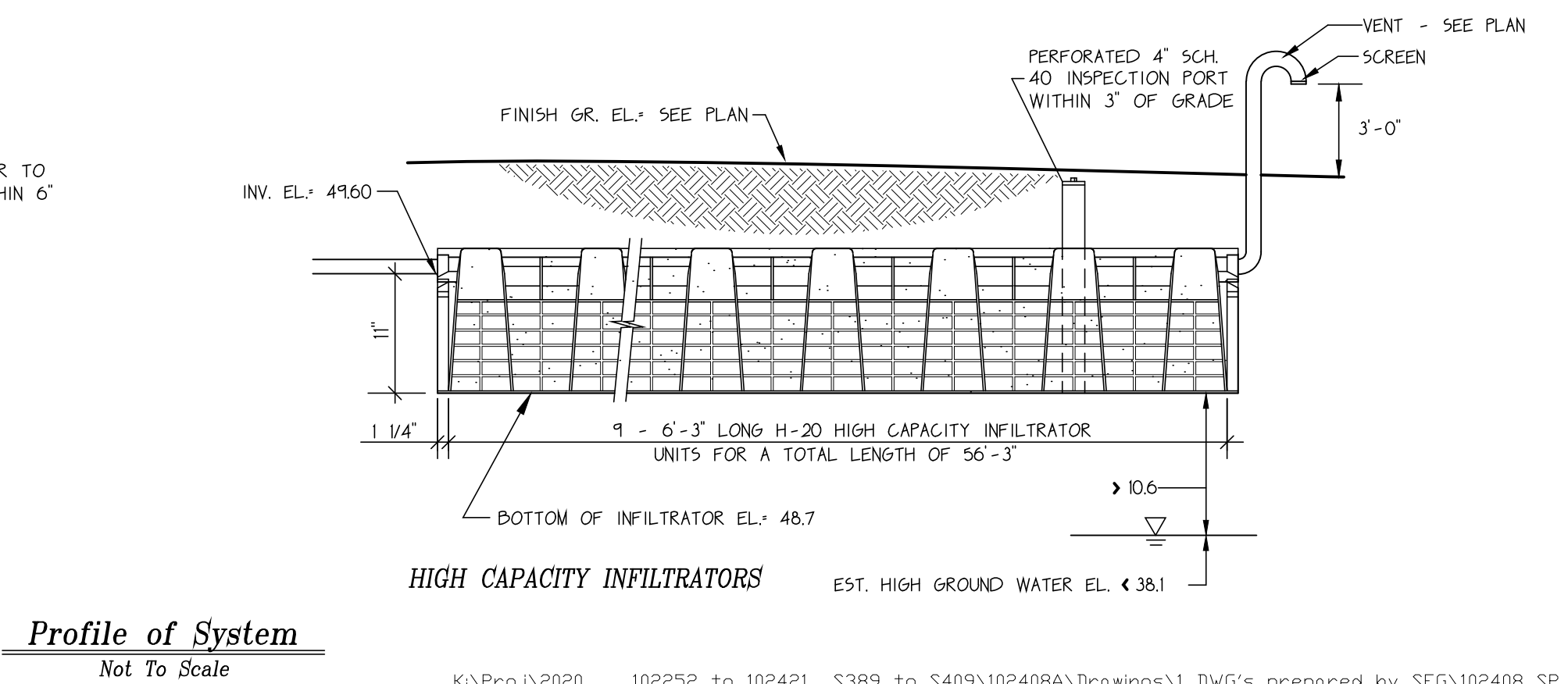
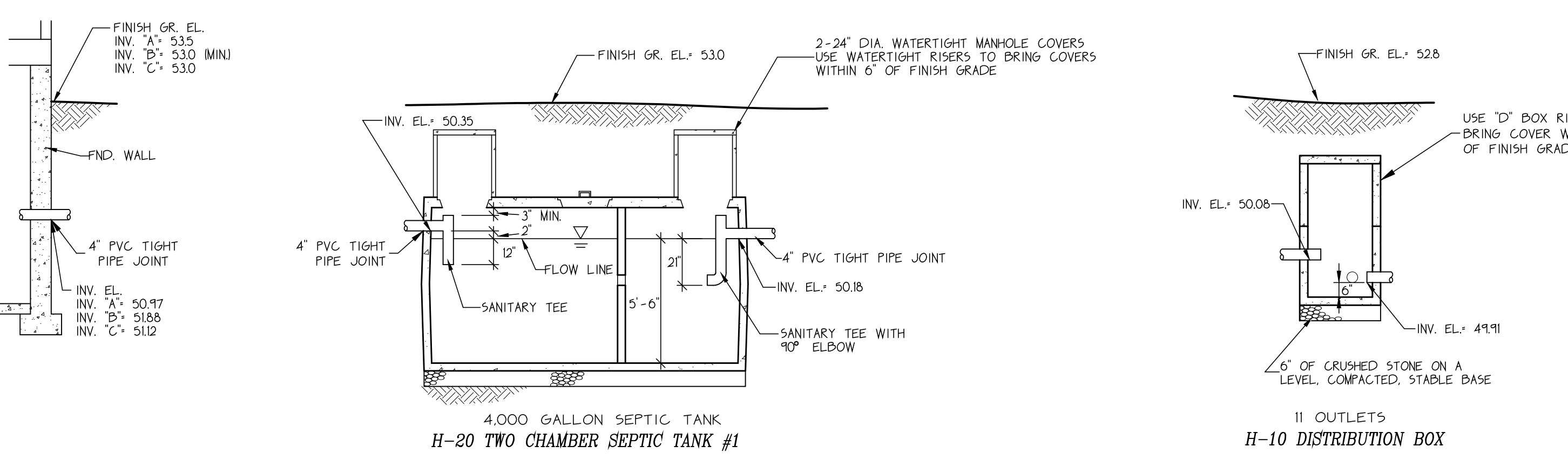
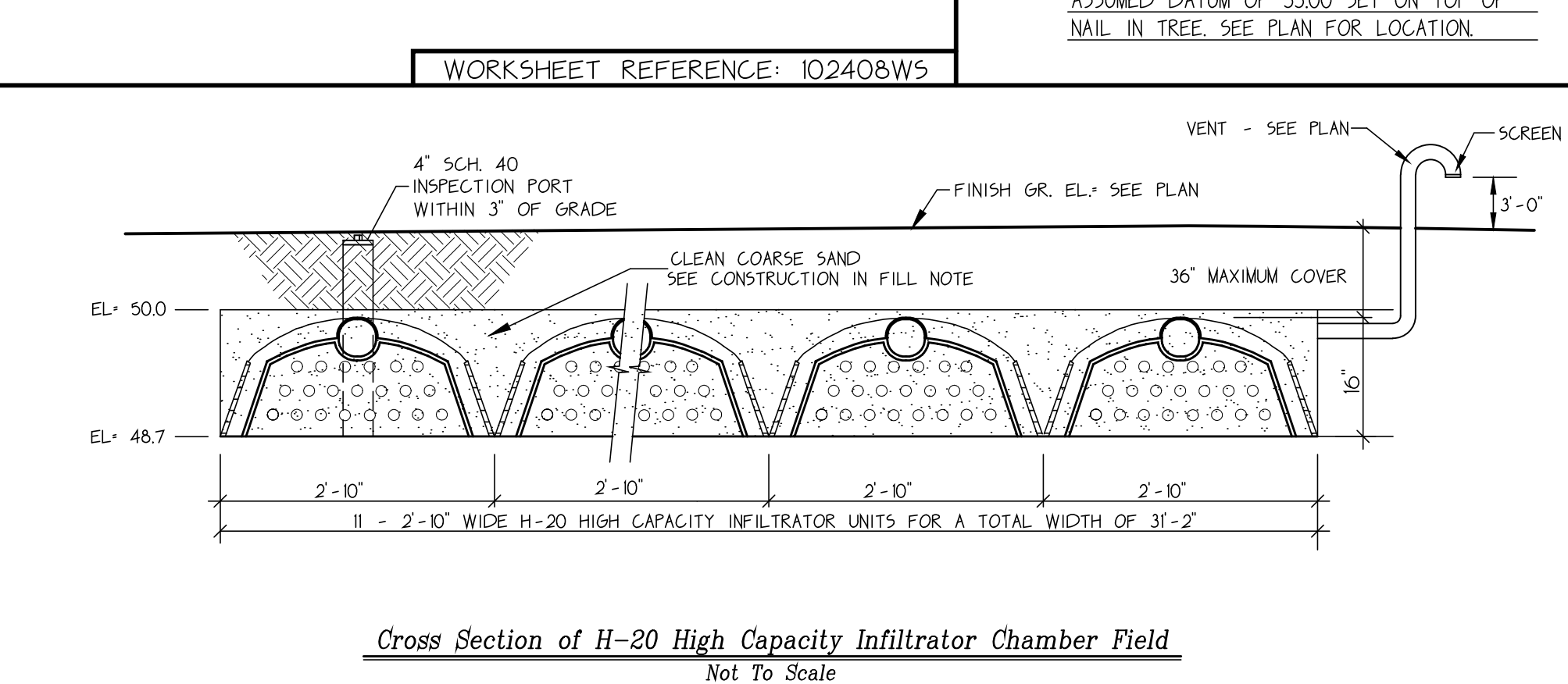
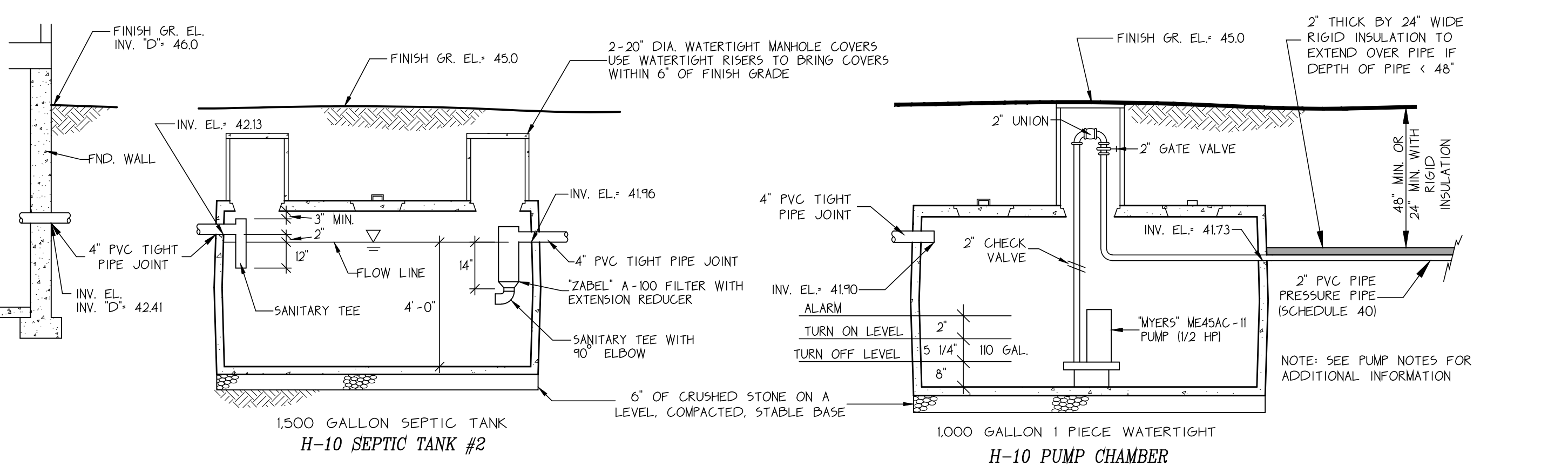
**SEPTIC TANK #1 SIZE:**  
 16 BEDROOMS AT 110 GPD = 1,760 GPD  
 INCREASE FLOW TO 200% (TITLE VI) = 3,520 GALLONS USE 4,000 GALLON SEPTIC TANK.

**SEPTIC TANK #2 SIZE:**  
 4 BEDROOMS AT 110 GPD = 440 GPD  
 INCREASE FLOW TO 200% (TITLE VI) = 880 GALLONS USE 1,500 GALLON SEPTIC TANK.

**PUMP CHAMBER SIZE:**  
 4 BEDROOMS AT 110 GPD = 440 GPD USE 1,000 GALLON PUMP CHAMBER.

**LEACHING CAPACITY:**  
 DESIGN PERCOLATION RATE IS 5 MIN/INCH SOIL TYPE: CLASS I  
 EFFLUENT LOADING RATE 0.74 G/5F/D  
 USE 1 LEACHING FIELD WITH 99 CHAMBERS.

TOTAL AREA OF FIELD = 99 CHAMBERS X 6.25 LF/CHAMBER X 4.73 SF/LF. = 2,926 SF.  
 TOTAL LEACHING CAPACITY PROVIDED = 2,926 SF. X 0.74 G/5F/D = 2,165 G/D.  
 TOTAL LEACHING CAPACITY REQUIRED = 2,165 G/D.  
 TOTAL HYDRAULIC LOADING REQUIRED = 1,760 G/D.



**New Sewage Disposal System  
 In The Town Of  
 Oak Bluffs**

**Site:**  
 Proposed Shearer Cottage (Eight Bedrooms) Plus  
 Proposed Shearer Cottage (Six Bedrooms) Plus  
 Proposed Shearer Cottage (Two Bedrooms)  
 for a Total of Sixteen Bedrooms

**Owner:**  
 Shearer Cottage Realty Trust  
 41 Warrent Court  
 South Orange, NJ 07079

**Scale:** As Shown **Date:** August 4, 2021  
**Job No.:** 102408 **Drawn By:** H. Chen  
**Drawing No.:** 102408SP **Designed By:** H. Chen  
**Sheet 1 of 1** **Checked By:** G. Sourati

**Sourati Engineering Group**  
 Professional Land Surveyors

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