Design Computations:

HYDRAULIC LOADING

6 + 1 = 7 BEDROOMS AT 110 GPD = 770 GPD
A GARBAGE DISPOSAL IS NOT ALLOWED IN THIS DESIGN.

SEPTIC TANK SIZE
INCREASE FLOW TO 200% (TITLE V) = 1,540 GALLONS USE 2,000 GALLON SEPTIC TANK.

PUMP CHAMBER SIZE
USE 1,500 GALLON PUMP CHAMBER.

LEACHING CAPACITY
DESIGN PERCOLATION RATE IS 10 MIN./INCH SOIL TYPE: CLASS 2
EFFLUENT LOADING RATE 0.60 G/S.F./D)
USE 1 LEACHING FIELD WITH 45 CHAMBERS.

TOTAL AREA OF FIELD = 45 CHAMBERS X 6.25 L.F./CHAMBER X 4.72 S.F./L.F. = 1,327 S.F.
TOTAL LEACHING CAPACITY PROVIDED = 1,327 S.F. X 0.60 G/S.F./D = 796 G/D.
TOTAL LEACHING CAPACITY PROVIDED = 796 G/D.
TOTAL HYDRAULIC LOADING REQUIRED = 770 G/D.

SOILS LOG

TEST HOLE #1 DATE: 6/28/2023 ELEV. = 44.1

DEPTH	HORIZON	TEXTURE
00 - 04"	A	SANDY LOAM
04 - 20"	B	SANDY LOAM
20 - 156"	C1	SILT CLAY/LOAMY SAND
156 - 198"	C2	SANDY LOAM

TEST HOLE #2 DATE: 6/28/2023 ELEV. = 39.7

DEPTH	HORIZON	TEXTURE
00 - 05"	A	SANDY LOAM
05 - 28"	B	SANDY LOAM
28 - 130"	C	SANDY LOAM

TEST HOLE #3 DATE: 6/28/2023 ELEV. = 41.4

DEPTH	HORIZON	TEXTURE
00 - 05"	A	SANDY LOAM
05 - 28"	B	SANDY LOAM
28 - 130"	C	SANDY LOAM

TEST HOLE #4 DATE: 5/22/2023 ELEV. = 44.2

DEPTH	HORIZON	TEXTURE
00 - 04"	A	SANDY LOAM
04 - 30"	B	SANDY LOAM W/ SILT
30 - 120"	C	LOAMY SAND W/ CLAY

TEST HOLE #5 DATE: 5/22/2023 ELEV. = 44.8

DEPTH	HORIZON	TEXTURE
00 - 10"	A	SANDY LOAM
10 - 30"	B	SANDY LOAM
30 - 60"	C1	SANDY LOAM W/ CLAY
60 - 102"	C2	SANDY LOAM

STANDING WATER @ 6' - 10"

TEST HOLE #6 DATE: 5/22/2023 ELEV. = 44.5

DEPTH	HORIZON	TEXTURE
00 - 06"	A	SANDY LOAM
06 - 28"	B	SANDY LOAM
28 - 50"	C1	SANDY LOAM
50 - 120"	C2	LOAMY SAND FRIABLE

TEST HOLE #7 DATE: 5/22/2023 ELEV. = 44.9

DEPTH	HORIZON	TEXTURE
		SANDY LOAM W/ CLAY

TEST HOLE #8 DATE: 5/22/2023 ELEV. = 42.5

DEPTH	HORIZON	TEXTURE
00 - 06"	A	SANDY LOAM
06 - 22"	B	SANDY LOAM
22 - 120"	C	LOAMY SAND W/ POCKETS OF SANDY LOAM, 5% COBBLES

TEST HOLE #9 DATE: 5/22/2023 ELEV. = 44.0

DEPTH	HORIZON	TEXTURE
00 - 06"	A	LOAMY SAND
06 - 24"	B	SANDY LOAM
24 - 60"	C1	SANDY LOAM W/ TRACE OF CLAY + SILT, 5% COBBLES
60 - 120"	C2	SANDY LOAM

TEST HOLE #10 DATE: 1/10/2006

DEPTH	HORIZON	TEXTURE
00 - 07"	A	FINE - MEDIUM SANDY LOAM
07 - 22"	B	LOAMY SAND
22 - 120"	C	MEDIUM - COARSE SAND TO FINE - MEDIUM SANDY LOAM

PERCOLATION TEST #10 WAS PERFORMED BY
CHRISTOPHER P. ALLEY FROM SCHOFIELD, BARBINI + HOEHN, INC.

Notes

GENERAL NOTES:

1. 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.
2. NO CHANGES TO THIS PLAN ARE PERMITTED WITHOUT THE PRIOR WRITTEN APPROVAL OF SOURATI ENGINEERING GROUP, LLC.
3. INSTALLATION SHALL BE IN STRICT CONFORMITY WITH TITLE 5 OF THE MASSACHUSETTS STATE SANITARY CODE AND THE RULES + REGULATIONS OF THE TOWN OF CHILMARK BOARD OF HEALTH.
4. MACHINERY THAT MAY DISTURB PIPE ALIGNMENT IN THE DISPOSAL SYSTEM SHALL NOT BE USED ON THE DISPOSAL AREA.
5. NO EXISTING WELLS WERE FOUND WITHIN 150' FROM THE PROPOSED SOIL ABSORPTION SYSTEM, OR WITHIN 50' FROM THE SEPTIC TANK.
6. FINISHED SURFACE OF LEACHING AREA SHALL BE GRADED TO INSURE RUNOFF (2% MINIMUM SLOPE).
7. 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.
8. 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.
9. ALL SYSTEM COMPONENTS SHALL BE CONSTRUCTED OF CORROSION RESISTANT MATERIALS.
10. ALL PIPING SHALL BE A MINIMUM OF SCHEDULE 40 PVC UNLESS OTHERWISE NOTED.
11. DISTRIBUTION BOX OUTLET LINES SHALL BE LEVEL FOR A MINIMUM OF THE FIRST TWO FEET OF THEIR LENGTH.

CONSTRUCTION IN FILL:

1. FILL MATERIAL FOR SYSTEMS CONSTRUCTED IN FILL SHALL CONSIST OF SELECT ON-SITE OR IMPORTED SOIL MATERIAL. THE FILL BE COMPRISED OF CLEAN GRANULAR SAND, FREE FROM ORGANIC MATTER AND DELETERIOUS SUBSTANCES. MIXTURES AND LAYERS OF DIFFERENT CLASSES OF SOIL SHALL NOT BE USED. THE 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 45% BY WEIGHT OF THE FILL SAMPLE MAY BE RETAINED ON THE #4 SIEVE. SIEVE ANALYSIS ALSO SHALL BE PERFORMED ON THE FRACTION OF 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 ABSORPTION SYSTEM):

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

PUMP CHAMBER:

1. BASE SECTION SHALL BE MONOLITHICALLY CAST (REINFORCED CONCRETE) AND SHALL HAVE A MINIMUM RISE OF 30" BEFORE ANY JOINT.
2. BOTTOM SLAB OF BASE SECTION SHALL BE AT LEAST 4" IN THICKNESS.
3. 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.
4. 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:

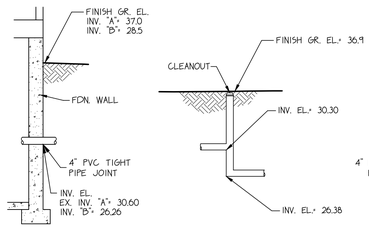
1. THE PUMP TO BE INSTALLED IN THE PUMP CHAMBER SHALL CONSIST OF ONE (1) ME45AC-11 MYERS HEAVY-DUTY SUBMERSIBLE SEWAGE PUMP OR APPROVED EQUAL. THE PUMP MUST HAVE A CAPACITY OF 30 GPM AGAINST A HEAD OF 15'. MOTORS TO BE 0.5 HP, SINGLE PHASE, 60 CYCLE, 115 VOLTS A.C. ELECTRICAL SERVICE FOR PUMPS MUST BE ON A SEPARATE CIRCUIT BREAKER NOT IN COMMON WITH THE HIGH WATER ALARM.
2. THE PUMP SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURES SPECIFICATIONS.
3. THE PUMP AND ALARM REQUIRE PERIODIC OR ROUTINE INSPECTION AND MAINTENANCE SHALL BE OPERATED, INSPECTED AND MAINTAINED IN STRICT ACCORDANCE WITH THE MANUFACTURE'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.

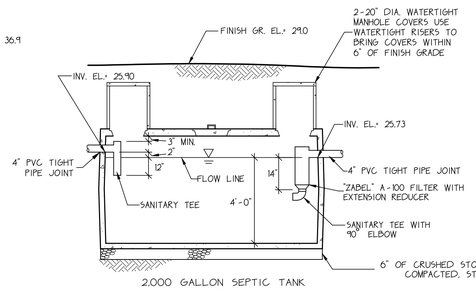
ALARMS AND SWITCHES:

1. THE ON-OFF SWITCH(ES) MUST BE BUILT INTO THE PUMP AND MOTOR ASSEMBLY OR SET AS PER THE DESIGN PLAN.
2. 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.
3. THE PUMP CONTROLS SHALL BE MOISTURE PROOF.

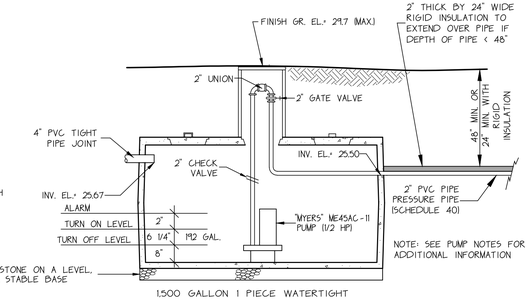
FORCE MAIN:

1. 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.
2. 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.

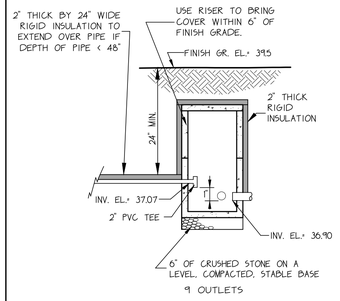




2,000 GALLON SEPTIC TANK.
H-10 SEPTIC TANK

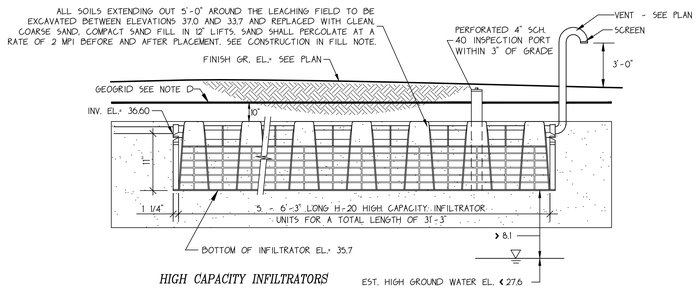


1,500 GALLON 1 PIECE WATERTIGHT
H-10 PUMP CHAMBER

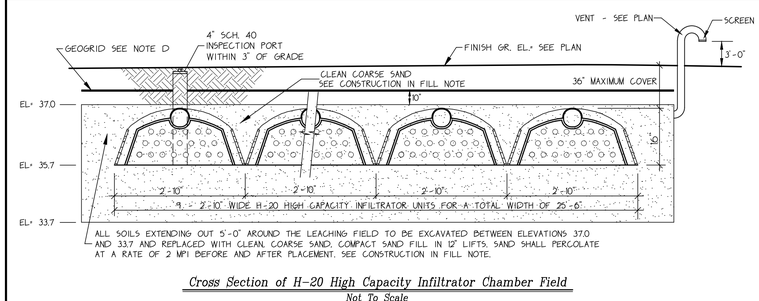


H-10 DISTRIBUTION BOX

Profile of System
Not To Scale



HIGH CAPACITY INFILTRATORS



Cross Section of H-20 High Capacity Infiltrator Chamber Field
Not To Scale

Revisions:

New Sewage Disposal System
In The Town Of
Chilmark

Site:
Existing Four Bedroom House &
Proposed Two bedroom Addition
for Six Bedrooms Plus
Existing One Bedroom Guesthouse
for a Total of Seven Bedrooms
Map 34, Parcel 1.3
9 Signal Hill Lane

Owner:
Santiago Realty Trust
c/o M. Landesman, ML Management LLC
888 Seventh Avenue, 4th Floor
New York, NY 10106

Scale: As Shown	**Date: July 10, 2023**
Job No.: S426	**Drawn By: H. Chen**
Drawing No.: S426SP	**Designed By: H. Chen**
Sheet 2 of 2	**Checked By: G. Sourati**

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