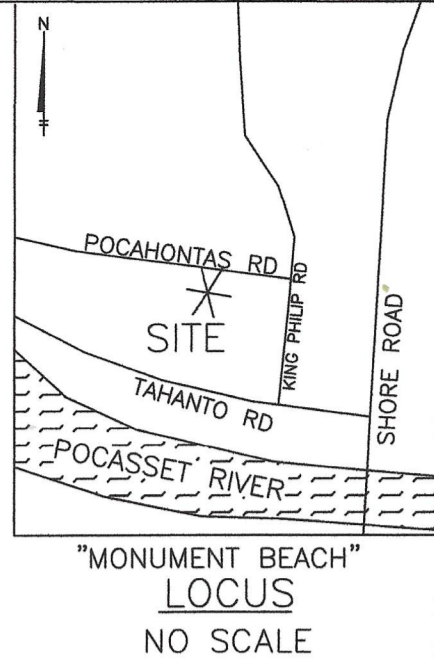


SITE PLAN

SCALE: 1" = 20'
 B.M.=10.23' (APPROX. NAVD)
 ON C.B. 1 FND



GENERAL NOTES

PROPOSED SAS
 30 Infiltrator Quick 4 Standard chambers
 without stone with geo-grid below in
 21.5' x 17' x 0.67' leach field.

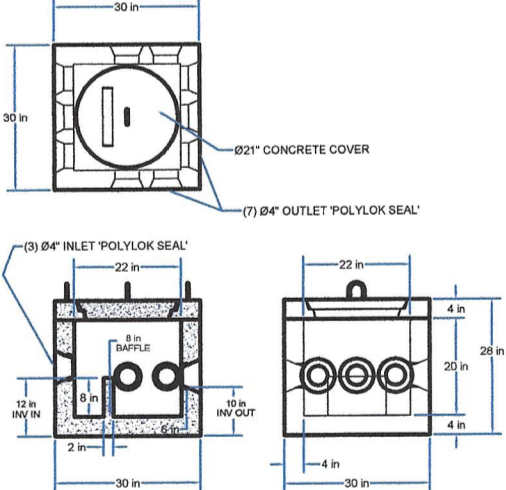
1. ADDRESS: #9 POCAHONTAS ROAD, BOURNE, MA
2. ASSESSORS NUMBER: MAP 38.3 PARCEL 317-0
3. DEVELOPER'S LOT: LOT 75
4. TOPOGRAPHIC INFORMATION WAS COMPILED FROM AN ON THE GROUND INSTRUMENT SURVEY.
5. TOWN WATER IS PROVIDED TO SITE & SURROUNDING PROPERTIES.
6. REFERENCE PLAN: PLAN BOOK 9 PAGE 127
7. THE PROPERTY IS LOCATED WITHIN AN AE-15 FLOOD HAZARD ZONE PER FIRM 250001C0503J, EFFECTIVE 7/16/2014.
8. NO POTABLE WELLS ARE LOCATED WITHIN 150 FEET OF SAS.
9. UTILITIES WERE LOCATED BY DIGSAFE.
10. PROPERTY LINES ARE APPROXIMATE. THIS DESIGN PLAN SHALL BE USED FOR SEPTIC INSTALLATION PURPOSES ONLY.
11. PROPERTY LINE DISTANCES SHOWN ARE DEED DISTANCES FROM PROPERTY CORNER TO CORNER.
12. THE PROPERTY IS WITHIN THE 100-YEAR STORM FLOOD EVENT AND IS CONSIDERED LAND SUBJECT TO COASTAL STORM FLOWAGE (LSCSF).

Design Calculations

Number of Bedrooms: 3 Equivalent to 330 Gal./Day
 Garbage Disposal: Not allowed with this design
 Septic Tank Capacity Required: 330 gpd x 200% = 660 gpd.
 Septic Tank Capacity Provided: Proposed 1,500-gal H-10 septic Tank
 Leaching Capacity Required: 330 gpd x LTAR= 446 SF Req'd Area
 LTAR for Class I soil at <2 min./inch = 0.74 gal/sq. ft.
 Proposed Leaching Structure: 1-20'x17'x0.67' Leaching Field
 Proposed Leaching Structures: Infiltrator Quick 4 Standard Chambers
 Leaching Area Provided = 120 linear feet x 4.73 sq. ft./ft.=568 sq. ft.
 Total Leaching Area Provided = 568 sq. ft. > 446 sq. ft req'd.
 Leaching Capacity Provided =568 sq. ft X 0.74 gal/sq.ft.=420 gpd.>330 gpd. required

LEGEND

- EXISTING CESSPOOLS (TO BE PUMPED & REMOVED)
- PROPOSED 500 GAL PUMP CHAMBER
- PROPOSED 1500 GAL SEPTIC TANK
- x 104.46 DENOTES EXISTING SPOT GRADE
- 95- EXISTING CONTOUR
- DEEP TEST HOLE
- W-W- APPROX. LOCATION EXISTING WATER LINE
- o-o- 4' WIRE FENCE
- 4' PICKET FENCE
- OH E, T & C OVERHEAD ELECTRIC TELEPHONE & CABLE



H-20 7-HOLE DISTRIBUTION BOX

Local Upgrade Approval Variances

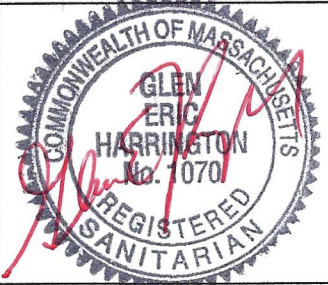
310 CMR 15.405(1)(a) – A variance is requested to allow the SAS to be installed five feet from the property line in lieu of the required 10 feet.

310 CMR 15.405(1)(b) – A variance is requested to allow the septic tank and pump chamber to be installed five feet from the cellar wall/crawl space in lieu of the required 10 feet. A 40 mil liner is proposed to mitigate the variance.

310 CMR 15.405(1)(b) – A variance is requested to allow the SAS to be installed five feet from the cellar wall/crawl space in lieu of the required 10 feet. A 40 mil liner is proposed to mitigate the variance.

OWNER OF RECORD: MULHALL FAMILY REALTY TRUST

PROPOSED SEPTIC SYSTEM REPAIR
 PREPARED FOR
 DONE RIGHT EXCAVATION & SEPTIC
 AT
 9 POCAHONTAS ROAD
 BOURNE, MA

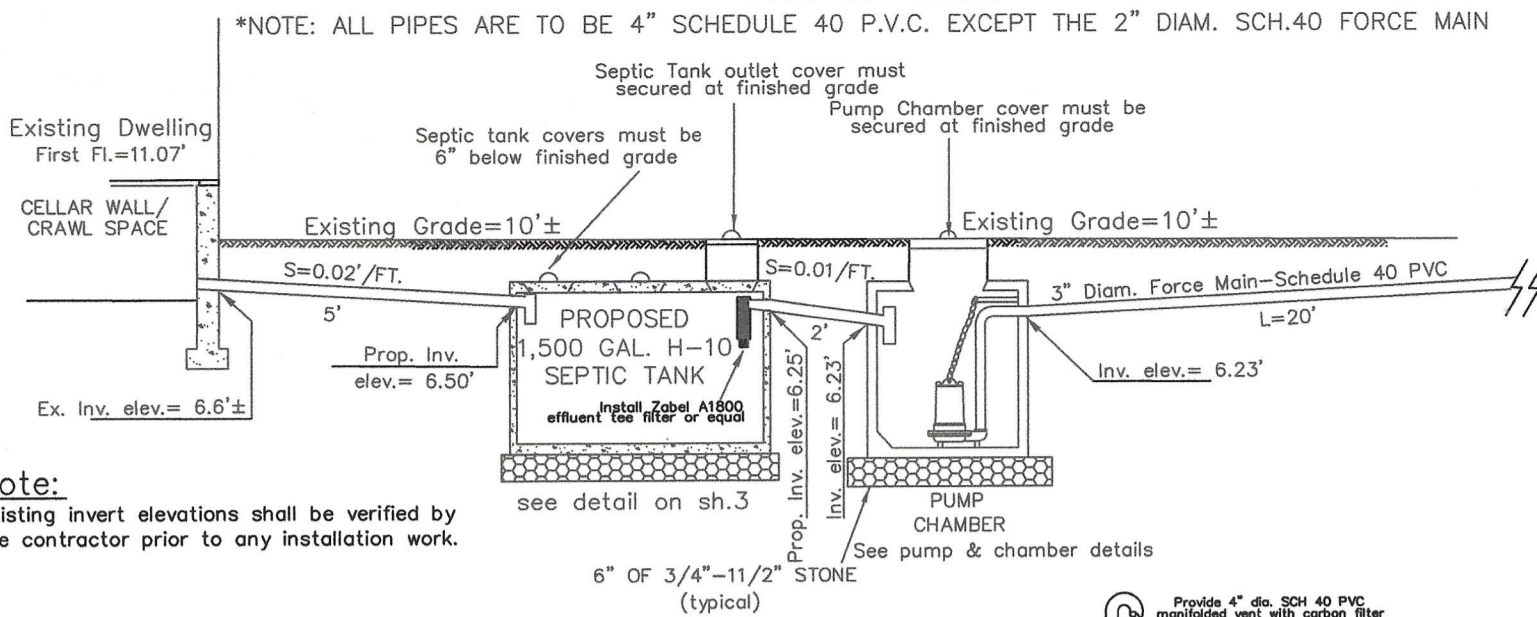


PREPARED BY: A Perfect Environment LLC
 dba
 Geo-Cape Environmental Consultants
 100 Independence Drive, Suite 7-623
 Hyannis, MA 02601

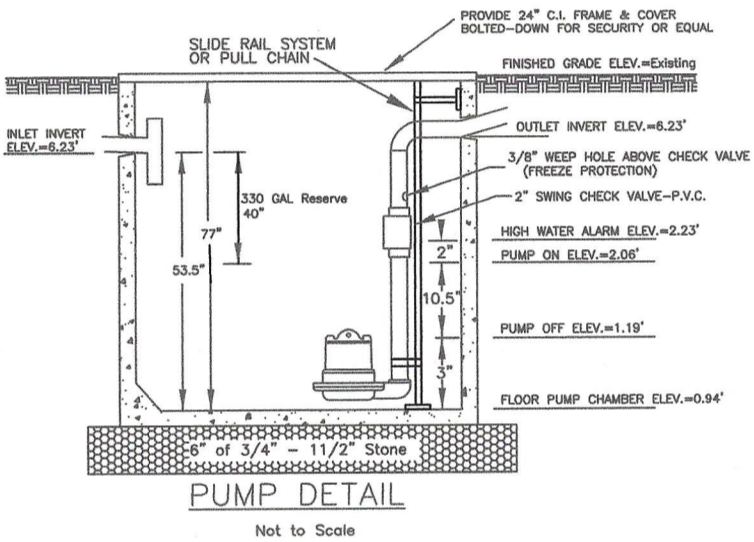
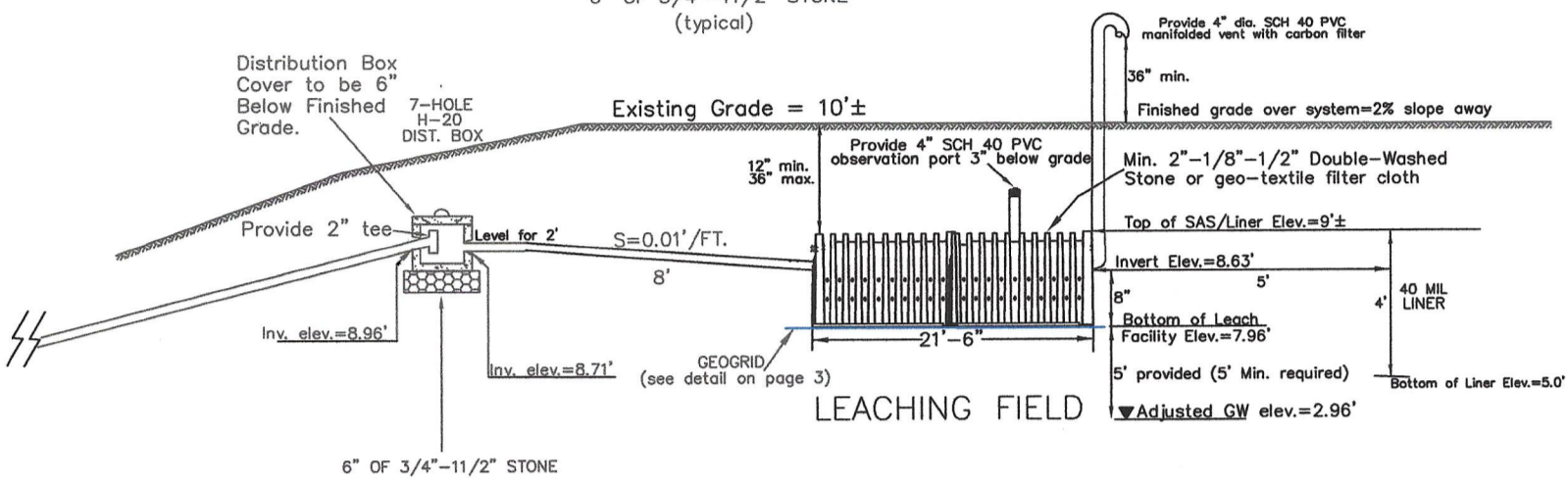
Tel: 774-238-1813		Email: aperfectenvironment@gmail.com	
SCALE: 1"=20'	DRAWN BY: GEH	18 OCT 2023	
DATUM: APPROX. NAVD	FILENAME:9Pocahontas	SHEET 1 OF 3	

SYSTEM PROFILE

Not to Scale



Note:
Existing invert elevations shall be verified by the contractor prior to any installation work.



PUMP NOTES & SPECIFICATIONS

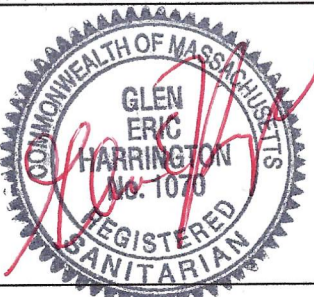
1. PROVIDE 1 LIBERTY MODEL LE41A 4/10 H.P. SUBMERSIBLE PUMPS CAPABLE OF PASSING A MINIMUM SOLID SIZE OF 2" DIAMETER DISCHARGE, 115V, 1 PHASE OR EQUAL THE PUMP SHALL PERFORM AT A MINIMUM AT 103 GPM AT 9.3' TOTAL HEAD.
2. USE LIBERTY SXL24=3 SIMPLEX ELECTRIC NEMA 4X CONTROL PANEL OUTDOOR MOUNTED W/VISIBLE ALARM OR EQUAL
3. PUMPS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS & DETAIL SHOWN.
4. ALARM SHALL CONSIST OF AUDIBLE SIGNAL & RED WARNING LIGHT TO BE INSTALLED ON BUILDING AND POWERED BY SEPARATE CIRCUIT FROM CIRCUITS TO PUMP.
5. AN ELECTRICAL PERMIT SHALL BE OBTAINED PRIOR TO INSTALLING ALARM AND PUMP POWER.
6. THE FORCE MAIN SHALL BE 3" DIA. SCH 40 PVC WITH THRUST BLOCKS INSTALLED, AS NECESSARY.
7. INSTALL STAINLESS STEEL SLIDE RAIL SYSTEM AND SIMPLEX DISCHARGE PIPING OR PULL CHAIN OR EQUAL.

CONSTRUCTION NOTES

1. Contractor is responsible for Digsafe notification and protection of all underground utilities, site features and pipes.
2. The septic tank, pump chamber and distribution box shall be set level on 6" of 3/4"-1 1/2" stone.
3. Backfill should be clean sand or gravel with no stones over 3" in size.
4. This system is subject to inspection during installation by Geo-Cape Environmental Consultants.
5. The contractor shall install this system in accordance with Title 5 of the Massachusetts Environmental Code and the Regulations of the Town of Bourne.
6. Provide an Acme-Shorey Precast H-10 1,500-gal. septic tank, a 500-gal. H-20 round pump chamber, a H-20 DB-7 D-Box and 30 H-10 Infiltrator Quick4 Standard chambers, all with H-10 risers or equal. Multi-port or Standard end caps may be used.
7. No vehicle or heavy machinery shall drive over the septic system unless noted as H-20 septic components.
8. Install Zabel A1800 effluent tee filter, or equal, in septic tank outlet. Tee shall be maintained a minimum of annually.
9. All existing inverts and site conditions shall be verified by contractor.
10. If, during installation the contractor encounters any soil conditions or site conditions that are different from those shown on the soil log or in the design, the installer shall halt installation immediately and notify Geo-Cape Environmental Consultants.
11. Designer not responsible for undocumented septic components.
12. The existing cesspools shall be pumped and removed.
13. The Contractor shall notify the Designer and Board of Health 24 hours prior to completion of septic repair for as-built certification purposes.
14. Magnetic marking tape shall be installed one foot below grade above all septic components.
15. The Infiltrator chambers shall be installed and maintained according to DEP Transmittal X259183, 6/12/2015, the manufacturer's installation requirements and DEP Standard Conditions for General & Remedial Use Certifications.
16. Install the ISI 14000 or Tensar BX1100 geo-grid or equal below the chambers and one foot beyond the chambers edge.
17. The SAS shall be installed with a manifolded 4" dia. SCH 40 PVC vent as shown on site plan.

OWNER OF RECORD: MULHALL FAMILY REALTY TRUST

PROPOSED SEPTIC SYSTEM REPAIR
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AT
9 POCAHONTAS ROAD
BOURNE, MA



PREPARED BY: A Perfect Environment LLC
dba
Geo-Cape Environmental Consultants
100 Independence Drive, Suite 7-623
Hyannis, MA 02601

Tel: 774-238-1813
Email: aperfectenvironment@gmail.com

SCALE: 1"=20'	DRAWN BY: GEH	18 OCT 2023
DATUM: APPROX. NAVD	FILENAME: 9Pocahontas	SHEET 2 OF 3

PERK TEST & SOIL EVALUATION

Date of Perc. Test & Soil Eval.: August 21, 2023
 Test Performed By: Glen E. Harrington, R.S.
 WITNESSED BY: Kaitlyn Shea, Assistant Health Agent
 EXCAVATOR: Brett Ellis, Done Right Excavation & Septic
 PERK RATE: LESS THAN 2 MPI in C1 & C2

DEPTH	SOILS	ELEV.
0	A	10.06
8"	loamy sand 10YR5/1	9.39
23"	loamy sand 10YR6/6	8.14
66"	med. sand 2.5Y/4	4.56
86"	ADJ. GW	2.96
102"	m-c sand 10YR6/1	1.56
108"	20% gravel 20% cobbles	1.06

Frimpter Calculation

Reference Well: Sandwich SDW-252
 Range: Zone A
 Current Well Date: July 2023
 Water Level: 35.7'
 Adjustment: 1.4'
 Therefore adjusted depth to groundwater = 86"

Soil Evaluation Certification

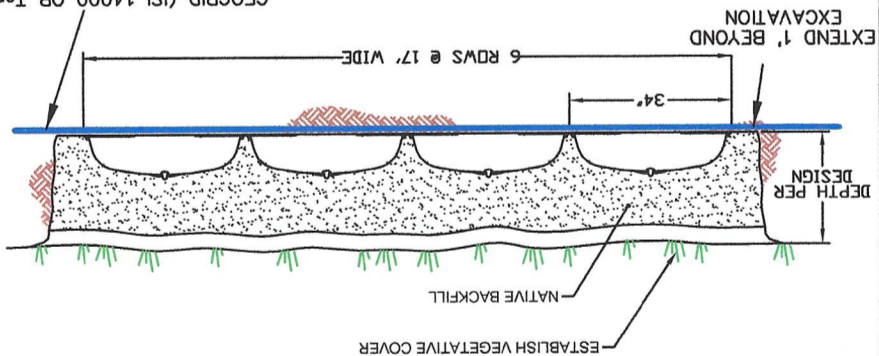
I certify that on October, 1995, I have passed the soil evaluator examination approved by the DEP and that the analysis was performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017.

GLEN E. HARRINGTON, R.S.

INFILTRATOR WATER TECHNOLOGIES

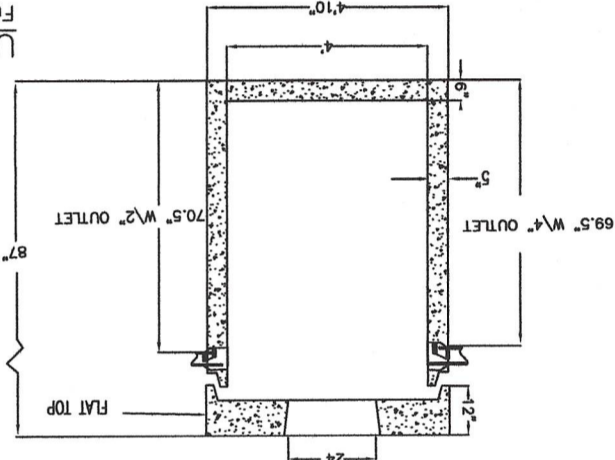
QUICK4 STANDARD LOW PROFILE CHAMBER

SECTION VIEW
(NOT TO SCALE)



500-GAL. PUMP CHAMBER

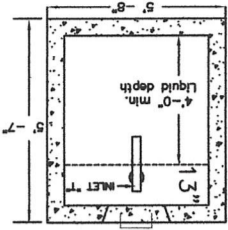
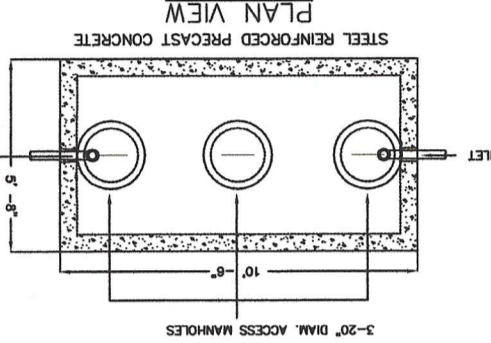
1. CONCRETE STRENGTH 5,000 PSI @ 28 DAYS
2. CEMENT, PORTLAND TYPE II PER ASTM C150-81.
3. STEEL REINFORCEMENT PER ASTM A-615, GRADE 60.
4. DESIGN LOADING PER AASHTO HS-20.
5. WEIGHT APPROX. 8,500 LBS WITH FLAT TOP.



Uplift Calculations (Pump Chamber)

$F_u = 3.14 \times 4 \text{ (radius squared)} \times 3.67 \text{ in GW} \times 62.4 \text{ lbs/cu. ft.} = 2,878 \text{ lbs}$
 Weight of Pump Chamber (empty) = 8,500 lbs
 Weight of Soil = $3.14 \times 4 \text{ (radius squared)} \times 2.44' \times 90 \text{ lbs/cy.ft.} = 2,760 \text{ lbs}$
 Pump Chamber & Soil = $11,260 \text{ lbs.} > 2,878 \text{ lbs of uplift.}$
 No uplift anticipated.

THE INLET ACCESS COVER FOR THE SEPTIC TANK SHALL BE WITHIN 6" OF FINISHED GRADE.
 INSTALL GAS BAFFLE OR EQUAL ON TANK OUTLET TEE.

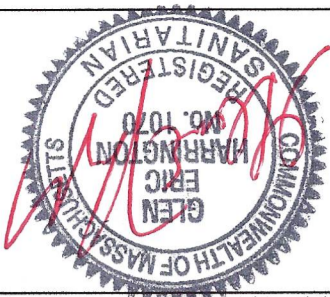


Uplift Calculations (Septic Tank)

$F_u = 10.5' \times 5.67' \times 0.96' \times 62.4 \text{ lbs/cu. ft.} = 3,566 \text{ lbs}$
 Weight of Septic Tank (empty) = 19,504 lbs
 Weight of Soil = $10.5' \times 5.67' \times 2.3' \times 90 \text{ lbs/cy.ft.} = 12,324 \text{ lbs}$
 S.T. & Soil = $31,828 \text{ lbs.} > 3,566 \text{ lbs of uplift.}$
 No uplift anticipated.

NOT TO SCALE

OWNER OF RECORD: MULHALL FAMILY REALTY TRUST
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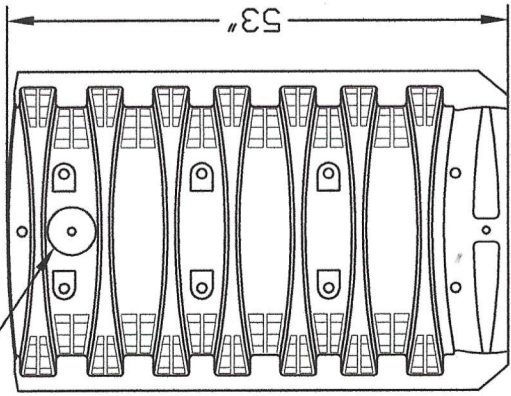
PREPARED BY: A Perfect Environment LLC
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 Geo-Cape Environmental Consultants
 100 Independence Drive, Suite 7-623
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 SHEET 3 OF 3

INFILTRATOR WATER TECHNOLOGIES

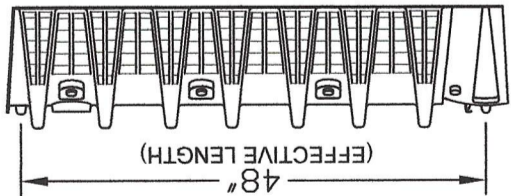
QUICK4 STANDARD CHAMBER
PRODUCT SPECIFICATIONS

(NOT TO SCALE)

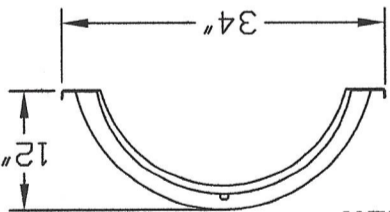
TOP VIEW



SIDE VIEW



END VIEW



QUICK4 STANDARD MULTIPORT END CAP

