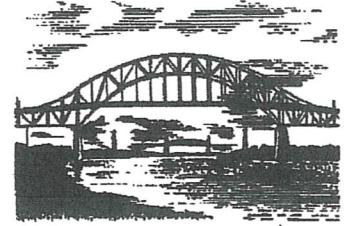


Bourne Board of Health Application for Septic Variance or Waiver Requests



In accordance with the established procedures of the Bourne Board of Health, this application is for septic variances and waivers which have not been approved administratively and require approval at a public meeting. Please use the following application form for guidance on how to apply for variances and waivers which serve new construction, changes in use, increases in flow, or repairs and upgrades to on-site sewage disposal systems with design flows of less than 10,000 gallons/ day.

RECEIVED

NOV 13 2023

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

1. Facility Name and Address:

Owner's Name

MULHALL FAMILY REALTY TRUST

Facility's Street Address

9 POCAHONTAS ROAD

Owner's Telephone Number

Owner's E-mail Address

Owner's Mailing Address

160 FOX GLEN DRIVE, NAPLES, FL 34104

2. Applicant or Preparer's Name and Address (if different from above):

Preparer's Name

GLEN E. HARRINGTON, R.S.

Company

GEO-CAPE ENVIRONMENTAL CONSULTANTS

Telephone Number

774-238-1813

E-mail Address

aperfectenvironment@gmail.com

Mailing Address

100 INDEPENDENCE DRIVE, SUITE 7-623, HYANNIS, MA 02601

3. Type of Facility (check all that apply):

Residential Commercial Institutional School Industrial Mixed Use

4. Describe Facility (i.e. single-family dwelling, 45 seat restaurant):

SINGLE-FAMILY, RANCH-STYLE DWELLING WITH 3 BEDROOMS ON 0.13 ACRE LOT

5. Type of System Proposed (check all that apply):

Conventional Title 5 I/A System
 Pumped System Gravity System Pressure Dosed Tight Tank Other

5. Describe the existing and proposed septic system components:

TO 30 INFILTRATOR QUICK4 STANDARD CHAMBERS WITHOUT STONE, GEO-GRIDE BELOW IN
20' X 17' X 0.67'; LEACH FIELD

7. Design Flow per 310 CMR 15.203 (in gallons/ day):

	EXISTING	PROPOSED
Design flow of system:	330	330
Total design flow of facility: <i>(if more than one system on subject property)</i>	330	

8. Enclose a **letter of request for variances/waivers** which makes reference to the specific provisions of Title 5 and/ or the Board Bourne of Health Regulations for which a variance is sought. Please use this opportunity to demonstrate compliance with 310 CMR 15.410, and to justify the relevant facts and circumstances of the individual case. Note that with regard to variances for new construction, enforcement of the provision from which a variance is sought must be shown to deprive the applicant of substantially all beneficial use of the subject property in order to be manifestly unjust. Be sure to explain why full compliance with the applicable regulations is not feasible, and how a level of environmental protection that is at least equivalent to that provided under Title 5 and the Board of Health Regulations can be achieved without strict application of said regulations.

9. In order for this Application to be deemed complete, it must be accompanied by the following:

- \$125 filing fee + any other applicable permit application fees paid to the Town of Bourne.
- Application for a Disposal System Construction Permit (may be filled out by installer).
- Six copies of Letter of Request describing nature of variances.
- Six sets of complete engineered plans and specifications, one with original stamp of design engineer; plus, one electronic copy. All variances/ waivers must also be listed on the plans per 310 CMR 15.220(4).
- Six sets of floor plans, existing and proposed.
- Six copies of Nitrogen Loading Calculation Worksheet *required for all applications.
- If abutter notification is required, one of each of the following must be submitted:
 - A copy of the certified list of abutters from the Assessor's Department.
 - Sample letter for abutter notification postmarked 10 days prior to meeting date.
 - Proof of certified mailing (receipts) meeting requirements of 310 CMR 15.405(2).
- Proposals for installation of Innovative/Alternative septic systems must be accompanied by:
 - A copy of the Certification for Use including technology specific conditions.
 - Draft disclosure notice for the I/A technology to be recorded in the deed.
- Hydrogeologic data may be required for new leaching facilities proposed within 100ft of a wetland/watercourse.
- Percentage of Increase Worksheet may be required for waivers or increases in flow.

10. Certification:

"I certify under penalty of law that this document and all attachments, to the best of my knowledge and belief, are true, accurate, and complete. I am aware that there may be significant consequences for submitting false information, including, but not limited to, penalties or fine and/or imprisonment for deliberate violations."

Facility Owner's Signature _____ Date _____

Print Name _____

Signature of Preparer Glen E Harrington

Date 10/22/2023

Print Name GLEN E. HARRINGTON, R.S.

A PERFECT ENVIRONMENT LLC
dba
GEO-CAPE ENVIRONMENTAL CONSULTANTS
100 INDEPENDENCE DRIVE, SUITE 7-623
HYANNIS, MA 02601
Phone: 774-238-1813
Email: aperfectenvironment@gmail.com

November 9, 2023

Ms. Terri Guarino, R.S., Health Agent
Bourne Board of Health
24 Perry Avenue
Buzzards Bay, MA 02532

RE: 9 Pocahontas Road, Bourne, MA

Dear Ms. Guarino & Honorable Board Members,

Please accept this letter as a request for approval of three variances from Title 5 under Local Upgrade Approval. The complete variance packet containing the \$125 fee, the variance application, abutters notices, plans, certified abutters list, and floor plans will be sent electronically and six hard copies to your office.

Due to the shape and size of the on-site dwelling and the small area of the property, setback variances are necessary to fit the 1,500-gallon septic tank, 500-gallon pump chamber and a compliant leaching bed of Infiltrator chambers. Five feet of distance is provided from the bottom of the proposed SAS to the adjusted groundwater elevation.

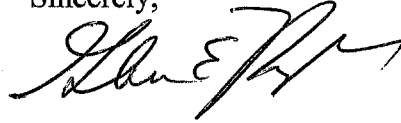
In order to perform the septic system repair, three variances are requested:

1. 310 CMR 15.211/405(1)(a) - A variance is requested to allow the proposed SAS to be constructed 5 feet from the property line to #46 Tahanto Road in lieu of the required 10 feet.
2. 310 CMR 15.211/405(1)(b) - A variance is requested to allow the septic tank and pump chamber to be installed 5 feet from the on-site dwelling's cellar wall in lieu of the required 10 feet. A 40 mil liner is proposed to mitigate the variance.
3. 310 CMR 15.211/405(1)(b) - A variance is requested to allow the proposed SAS to be installed 10 feet from the cellar wall/crawl space in lieu of the required 20 feet. A 40 mil liner is proposed to mitigate the variance.

Per your email, this variance application will be submitted for a public hearing scheduled on December 13th at 5:30 pm. Abutters have been sent their certified mail notices. The certified mailers (green cards) will be provided upon their return at the meeting.

If there are any questions or comments, please do not hesitate to contact me at the above number.

Sincerely,

A handwritten signature in black ink, appearing to read "Glen E. Harrington". The signature is fluid and cursive, with a prominent initial "G" and "H".

Glen E. Harrington, R.S.

ecc: Client

A PERFECT ENVIRONMENT LLC

dba

GEO-CAPE ENVIRONMENTAL CONSULTANTS

100 INDEPENDENCE DRIVE, SUITE 7-623

HYANNIS, MA 02601

Phone: 774-238-1813

Email: aperfectenvironment@gmail.com

DATE: November 9, 2023

TO: ABUTTERS OF #9 POCAHONTAS ROAD, BOURNE

RE: NOTICE OF PUBLIC HEARING - VARIANCES FROM TITLE 5 REGULATION

In accordance with the State Environmental Code, Title 5: 310 CMR 15.00, you are hereby notified that Mr. Brett Ellis of Done Right Excavation & Septic has requested a hearing before the Board of Health for relief from Title 5 and/or the Bourne Board of Health Regulations for the installation of an upgraded septic system. The location of the property for this proposal is **#9 Pocahontas Road, Bourne, MA** where you are listed as an abutter. At said hearing, the board will discuss and possibly vote on:

The variances listed below are divergences from the Title 5 Code in order to design and install the proposed septic system:

1. 310 CMR 15.211/405(1)(a) - A variance is requested to allow the proposed SAS to be constructed 5 feet from the property line to #46 Tahanto Road in lieu of the required 10 feet.
2. 310 CMR 15.211/405(1)(b) - A variance is requested to allow the septic tank and pump chamber to be installed 5 feet from the on-site dwelling's cellar wall in lieu of the required 10 feet. A 40 mil liner is proposed to mitigate the variance.
3. 310 CMR 15.211/405(1)(b) - A variance is requested to allow the proposed SAS to be installed 10 feet from the cellar wall/crawl space in lieu of the required 20 feet. A 40 mil liner is proposed to mitigate the variance.

This hearing is tentatively scheduled for December 13th at 5:30 pm at Conference Room 2, Bourne Veteran's Memorial Community Building, 239 Main Street, Buzzards Bay, MA. Information regarding the hearing may be available for your review one week prior to the meeting at the Bourne Health Department, 24 Perry Avenue, Buzzards Bay, Monday through Friday from 8:30 am to 4:30 pm.

Meeting agendas are posted on the Town of Bourne website, www.townofbourne.com/health no less than 48 hours in advance of the hearing. Please confirm the date, time and location of the meeting with the town, in case of any changes. Should you have any questions or concerns, please do not hesitate to contact me or the Bourne Health Department at 508-759-0600 ext. 1513.

Sincerely,



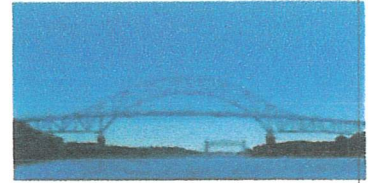
Glen E. Harrington, R.S.



Michael Leitzel, Chairperson
Ellen Doyle Sullivan, Clerk
Donna Barakauskas, Member

TOWN OF BOURNE

Board of Assessors
24 Perry Avenue
Buzzards Bay, MA 02532
(508) 759-0600 Ext. 1510



Rui Pereira, MAA
Director of Assessing

October 30, 2023

Glen E. Harrington
100 Independence Dr., Ste. 7-623
Hyannis, MA 02601

Re: Abutters List for Map 38.3 Parcel 317
Property address: 9 Pocahontas Road

As required by the Bourne Board of Health, pursuant with section 310 CMR 15.411(1), this is to certify that the attached list of names and addresses constitutes all of the parties in interest as shown on the most recent tax list of the Town of Bourne.

Abutting properties are: Map 38.3 Parcels 303, 304, 316, 318 & 330.

Your filing fee of \$25.00 has been received by the Bourne Assessor's Office.

Please be advised that this abutters list is only good for 30 days from the date on this letter. Expired abutters list can be recertified for an additional filing fee.

See enclosed for abutters mailing addresses.

Board of Assessors

*Ellen Doyle Sullivan -
Donna Barakauskas
Michael Leitzel*

Report #24: Owner Listing Report
Fiscal Year 2024

Bolton MA

Extract: ABUTTERS LIST
Database: LIVE
Key IN 8271,8272,8283,8285,8296

Sort:

Key	Parcel ID	Owner	Location	LCVCI	Bk-Plat/Cert/Dt	Mailing Street	Mailing City	ST	Zip Cd/County
8271	383-303-0	HARVEY JAMINE T & GEOFFREY L HARVEY	50 TAHANTO RD N	1010	34251/185 6/29/2021	50 TAHANTO RD	POCASSET	MA	02559
8272	383-304-0	TOWLE JANET T	46 TAHANTO RD N	1010	13979/129 6/27/2001	46 TAHANTO RD	POCASSET	MA	02559
8283	383-316-0	BROWN CAROL T ETUX GLENN F BROWN	5 POCAHONTAS RD N	1010	23728/284 5/22/2009	1 LEE ROAD	MEDFIELD	MA	02052-3203
8285	383-318-0	HARP SAMUEL C	15 POCAHONTAS RD N	1010	33901/83 3/16/2021	622 HURON AVE	CAMBRIDGE	MA	02138
8296	383-330-0	MONAHAN ROBERT B & MARY S MONAHAN	6 POCAHONTAS RD N	1010	35832/175 6/9/2023	379 MARLE ST	BELLINGHAM	MA	02019

Total Records 5

7022 2410 0003 4481 6402

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OFFICIAL USE

Certified Mail Fee	\$4.35	0655
	\$3.55	29
Extra Services & Fees (check box, add fee as appropriate)		
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00	
<input type="checkbox"/> Return Receipt (electronic)	\$0.00	
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00	
<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.66	
Total Postage and Fees	\$8.56	

Postmark
Here

11/10/2023

Sent To *Havix re: 9 Pocahontas*
 Street and Apt. No., or PO Box No.
50 Tahanto Rd
 City, State, ZIP+4®
Pocahontas MA 02559

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 2410 0003 4481 6449

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Extra Services & Fees (check box, add fee as appropriate)		
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<input type="checkbox"/> Return Receipt (electronic)	\$0.00	
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00	
<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.66	
Total Postage and Fees	\$8.56	

Postmark
Here

11/10/2023

Sent To *Monahan re: 9 Pocahontas*
 Street and Apt. No., or PO Box No.
379 Maple St
 City, State, ZIP+4®
Bellingham MA 02019

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 2410 0003 4481 6433

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	\$3.55	29
Extra Services & Fees (check box, add fee as appropriate)		
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00	
<input type="checkbox"/> Return Receipt (electronic)	\$0.00	
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00	
<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.66	
Total Postage and Fees	\$8.56	

Postmark
Here

11/10/2023

Sent To *Harp re: 9 Pocahontas*
 Street and Apt. No., or PO Box No.
622 Huron Ave
 City, State, ZIP+4®
Cambridge MA 02138

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 2410 0003 4481 6426

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	\$3.55	29
Extra Services & Fees (check box, add fee as appropriate)		
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<input type="checkbox"/> Return Receipt (electronic)	\$0.00	
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00	
<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.66	
Total Postage and Fees	\$8.56	

Postmark
Here

11/10/2023

Sent To *Brown re: 9 Pocahontas*
 Street and Apt. No., or PO Box No.
1 Lee Rd
 City, State, ZIP+4®
Medfield MA 02052

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7022 2410 0003 4481 6419

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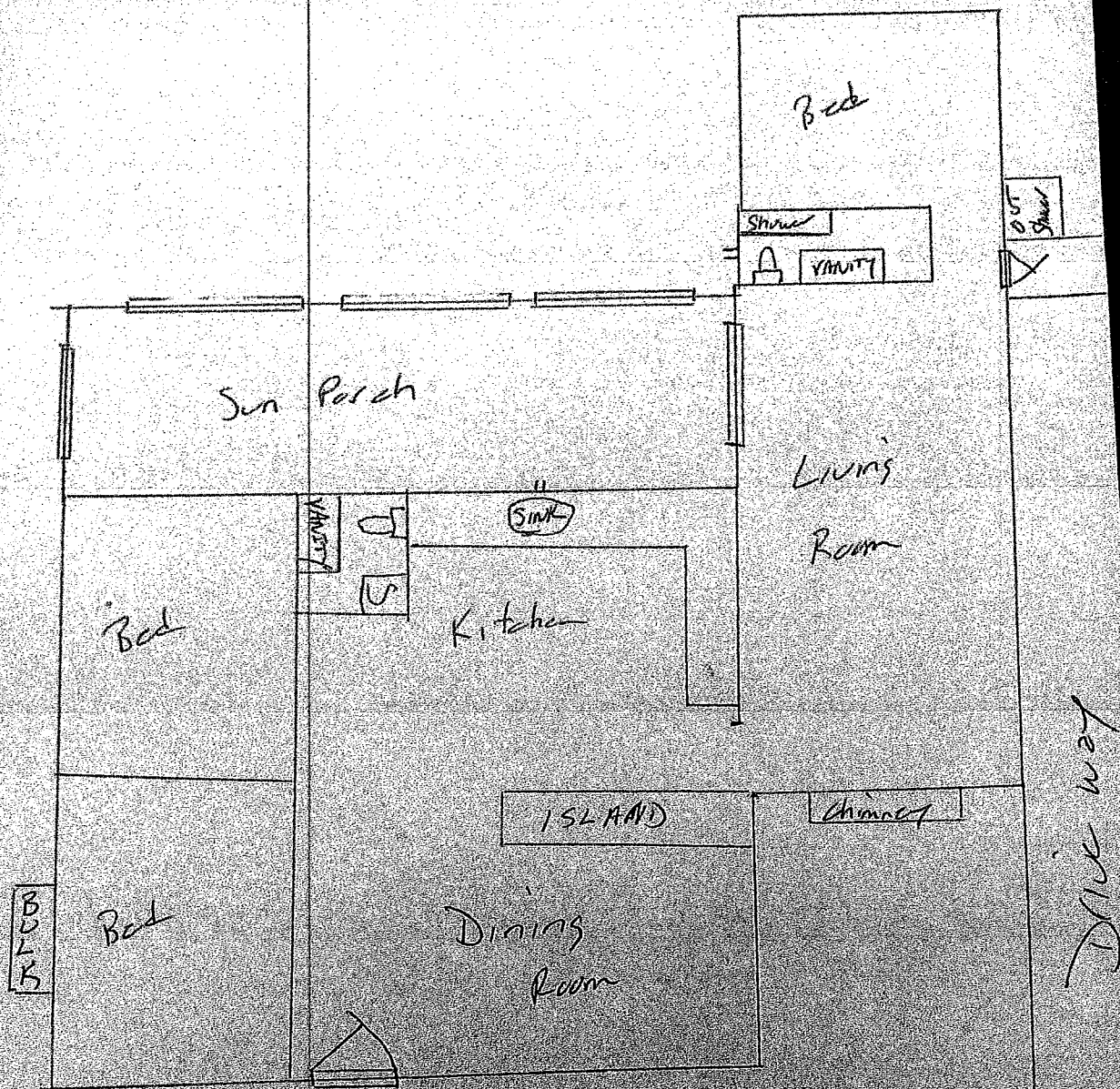
Certified Mail Fee	\$4.35	0655
	\$3.55	29
Extra Services & Fees (check box, add fee as appropriate)		
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<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00	
<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.66	
Total Postage and Fees	\$8.56	

Postmark
Here

11/10/2023

Sent To *Towle re: 9 Pocahontas*
 Street and Apt. No., or PO Box No.
46 Tahanto Rd
 City, State, ZIP+4®
Pocahontas MA 02559

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



#9 Pocatowita Rd, Barre
 BY: OWNER



Town of Bourne - Water Resources Nitrogen Loading and Mitigation Worksheet

See Cape Cod Commission Technical Bulletin 91-001 for further details:
https://capecodcommission.org/resource-library/files?url=/depl/commission/team/Website_Resources/regulatory/NitrogenLoadTechbulletin.pdf

Facility Address: 9 POCAHONTAS ROAD
 Preparer's Name: G. HARRINGTON, R.S.
 Date:
 Watershed:

Project Nitrogen Load

Proposed Wastewater

1. Project Title-5 wastewater flows: gpd (a)
 Actual wastewater flows: gpd (b)
 Average wastewater flows: gpd (A)
 * Actual water use flows per unit in Bourne

Place \checkmark in applicable box:
 Yes No
 Will the project be connected to sewer?
 Is project Title-5 wastewater flow 10,000 gpd or greater?

Place \checkmark in applicable box and multiply unsewered wastewater flow by applicable conversion factor:
 Standard Title-5 System (35-ppm-N) x 0.048359
 DEP-approved I/A System (25-ppm-N) x 0.034542
 DEP-approved I/A System (19-ppm-N) x 0.026252
 DEP-approved Enhanced I/A (12-ppm-N) x 0.016580
 Type of system:

Wastewater nitrogen load (Title-5 flows) = kg-N/yr (B)
 Wastewater nitrogen load (Actual flows) = kg-N/yr (C)

Stormwater Runoff

Town of Bourne
 Recharge rate for Bourne (inches; for natural areas from Technical Bulletin 91-001): (RECH)

Project site area: acres (D)
 Project site wetland area: acres (E)
 Project site upland area: acres (F)
 Pervious unpaired upland: acres (G)

% using LID Paved area: s.f.
 Factor may be adjusted for employment of LID → 1.4158E-04
 LID = low impact development = kg-N/yr (H)

Roof area: s.f.
 = kg-N/yr (J)
 = kg-N/yr (K)

Fertilizer

Previous unpaired upland - roof area =
 Managed turf/lawn area s.f.
 = kg-N/yr (L)

Total Nitrogen Load
 Total project nitrogen load (Title-5 flows): kg-N/yr (M)
 Total project nitrogen load (Actual flows): kg-N/yr (N)

Nitrogen load per acre (Average): kg-N/yr/acre (O)
 = ppm-N (P)
 = ppm-N (Q)

Proposed Nitrogen Loading Concentration

Project nitrogen loading concentration (Title-5 flows):
 Project nitrogen loading concentration (Actual flows):

Existing Conditions

Calculate (A) through (P) as w/ (A) through (P):
 Title-5 wastewater flows: gpd
 Actual wastewater flows: gpd
 Avg. wastewater flows: gpd (A')

Place \checkmark in applicable box:
 Yes No
 Is existing development on sewer? (If 'Yes', then go to line 2.)

Standard Title-5 System
 DEP-approved I/A System (commercial)
 DEP-approved I/A System (residential)
 DEP-approved enhanced I/A

Wastewater nitrogen load (Title-5 flows) = kg-N/yr (B')
 Wastewater nitrogen load (Actual flows) = kg-N/yr (C')
 wastewater offsets

Project site area: acres (D)
 Project site wetland area: acres (E)
 Project site upland area: acres (F)
 Pervious unpaired upland: acres (G')

Paved area: s.f. (H')
 Paving runoff offset: kg-N/yr (I')

Roof area: s.f. (J')
 Roof runoff offset: kg-N/yr (K')

Managed Turf/lawn area: s.f. (L')
 Fertilizer offset: kg-N/yr (L')

Existing nitrogen load (Title-5 flows): kg-N/yr (M')

Existing nitrogen load (Actual flows): kg-N/yr (N')

Existing nitrogen loading concentrations:

Title-5 flows: ppm-N (P')

Actual flows: ppm-N (Q')

$$(P) = \frac{(M)}{(a)+723.76 + (G)x(RECH)+9.7286 + (H)+10.594 + (K)+0.75}$$

$$(Q) = \frac{(N)}{(b)+723.76 + (G)x(RECH)+9.7286 + (H)+10.594 + (K)+0.75}$$

Project nitrogen loading concentration (Average): **17.98** ppm-N (R)= (P)+(Q)+2 (R')

17.98 ppm-N

17.98 ppm-N

Project nitrogen loading concentration (Average): **17.98** ppm-N (R)= (P)+(Q)+2 (R')

next page ->

Resource/ Impact Based Criteria

Marine Water Recharge Areas / Coastal Embayments

2. Yes No
Is the project located in any of the following watersheds: Buttermilk Bay Basins, Plinneys Harbor / Back River / Eel Pond, Pocasset River Basin, Pocasset Harbor / Hen Cove / Red Brook Harbor, Mogansett / Squeteague Harbors** ?
(If 'No', then go to line 3.)

Name of Watershed
(from Regional Policy Plan Data Viewer):

Critical Nitrogen-loading limit** : **0.000** kg-N/year/acre (S)

Yes No
Does project's nitrogen load (O) exceed the existing load (O') AND the critical nitrogen load (S) ?
(If 'No', then go to line 3.)

Excess project nitrogen load to be mitigated: kg-N/yr (T)= LESSER OF (O)-(S) X(F) AND (O')(O') X(F)

** When nitrogen-loading limit has been determined through either a Total Maximum Daily Load (TMDL), a Massachusetts Estuaries Project-accepted technical report, or specified by a Commission-approved comprehensive wastewater management plan pursuant to Objective WR3, or if impaired water quality has been documented for the receiving coastal waters, the nitrogen loading limit shall be 0 kg-N/yr per acre pursuant to Objective WR3.

Groundwater Quality

3. Yes No
Does the project's nitrogen loading concentration in groundwater (R) exceed the greater of 5 ppm or the existing concentration (R') ?
(If 'Yes', the project will need to provide an alternative strategy for meeting these thresholds by using another worksheet)

Potential Public Water Supply Areas

4. Yes No
Is project in a Potential Public Water Supply Area (PPWSA) ?
(If 'No', then go to line 5.)

Yes No
Does the project's nitrogen loading concentration (R) exceed the greater of 1 ppm or the existing concentration (R') ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WRT1)

Yes No
Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WRT1)

Wellhead Protection Areas

5. Yes No
Is project in a Wellhead Protection Area (WHPA) ?

Yes No
Does the project's nitrogen loading concentration (R) exceed the greater of 5 ppm or the existing concentration (R') ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WRT1)

Yes No
Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WRT1)

Fresh Water Recharge Areas

6. Yes No
Is project wastewater disposed of within 300 feet of a stream or fresh surface water body?
(If 'No', then go to line 7.)

Yes No
Is the project located in a freshwater recharge area (FWRA) hydraulically upgradient of a stream or fresh surface water body?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR2)

Other Potential Impacts

Yes No

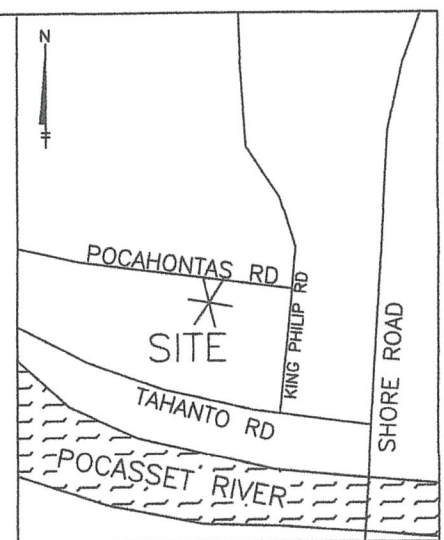
7. Will the project withdraw more than 20,000 gallons of water per day?
(If 'yes', then the project must provide documentation demonstrating that there will not be significant impacts to water levels, surface waters and wetlands)

8. The project must demonstrate compliance with Objective WR4, including use of Low Impact Development to mitigate impacts of stormwater runoff and O & M plans for maintaining stormwater infrastructure and landscaping.

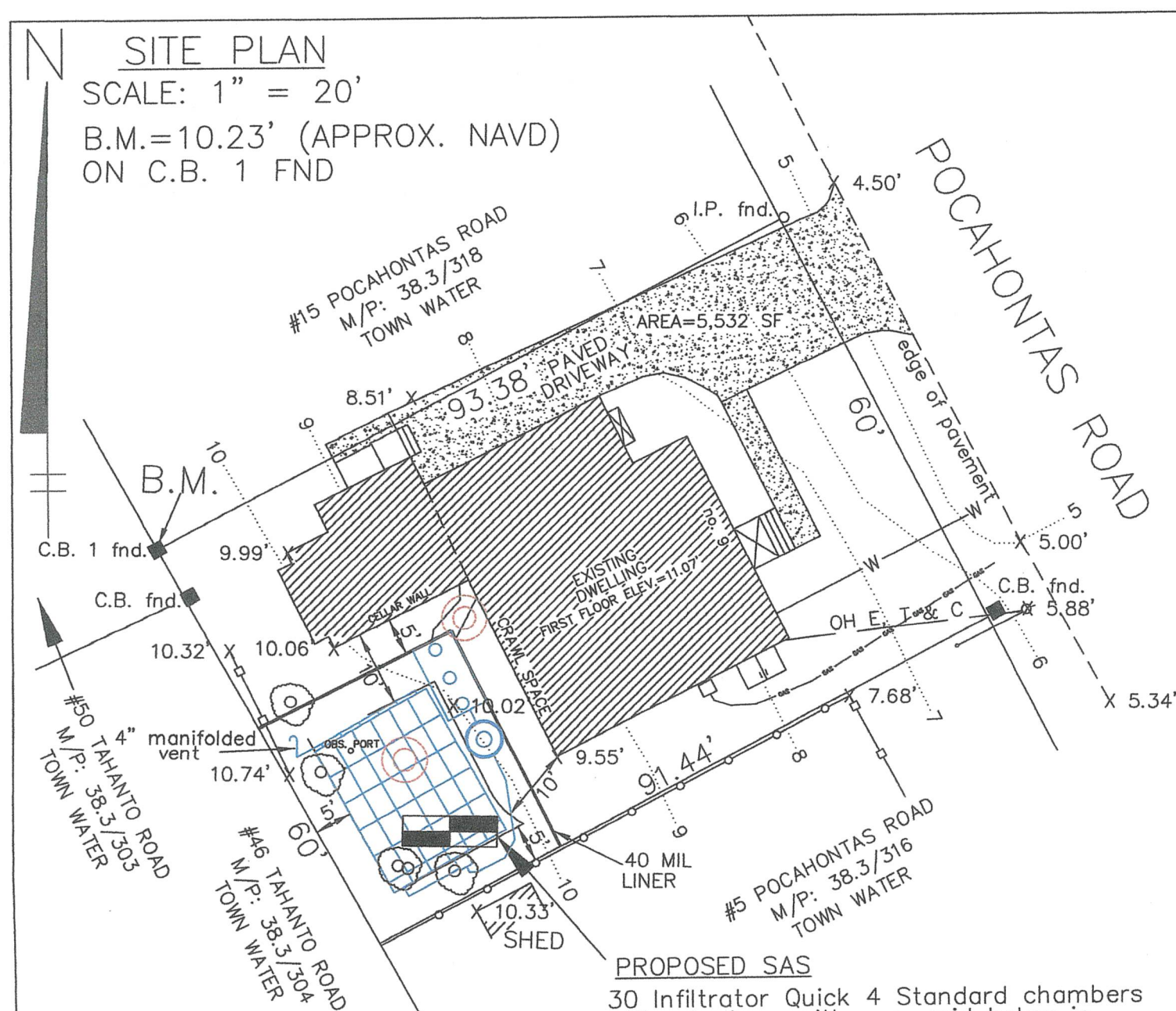
SITE PLAN

SCALE: 1" = 20'

B.M.=10.23' (APPROX. NAVD)
ON C.B. 1 FND



"MONUMENT BEACH"
LOCUS
NO SCALE



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

GENERAL NOTES

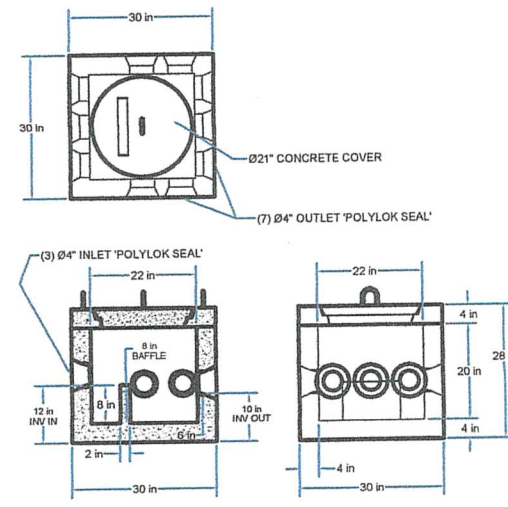
1. ADDRESS: #9 POCAHONTAS ROAD, BOURNE, MA
2. ASSESSORS NUMBER: MAP 38.3 PARCEL 317-0
3. DEVELOPER'S LOT: LOT 75
4. TOPOGRAPHIC INFORMATION WAS COMPILED FROM AN ON THE GROUND INSTRUMENT SURVEY.
5. TOWN WATER IS PROVIDED TO SITE & SURROUNDING PROPERTIES.
6. REFERENCE PLAN: PLAN BOOK 9 PAGE 127
7. THE 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
- x104.46 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

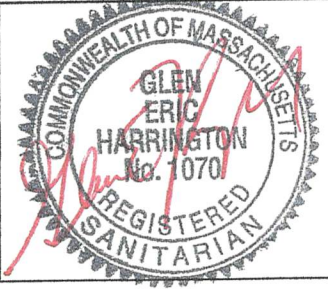
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24 Perry Avenue
Buzzards Bay MA 02532

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



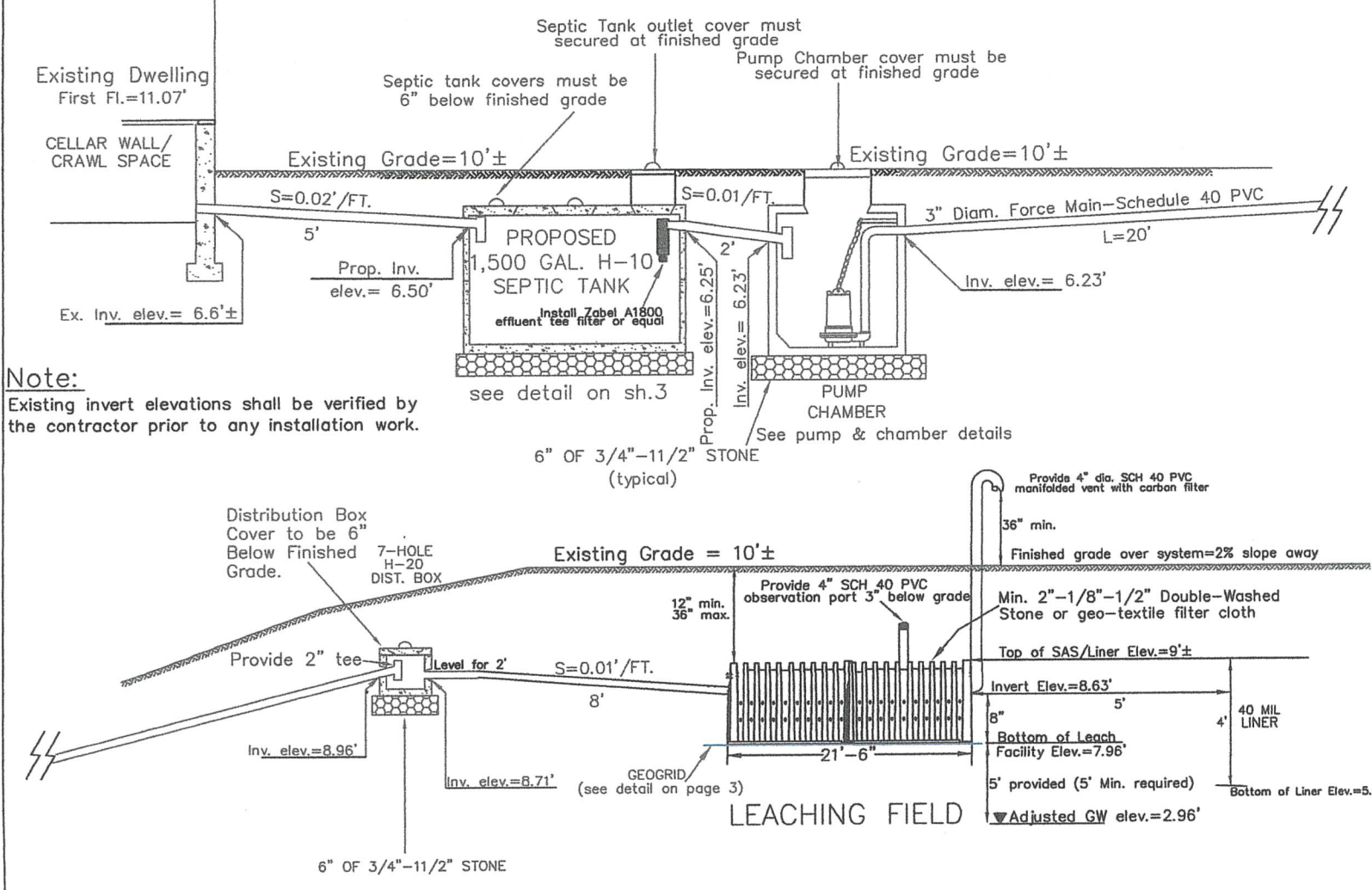
PREPARED BY: A Perfect Environment LLC
 dba
 Geo-Cape Environmental Consultants
 100 Independence Drive, Suite 7-623
 Hyannis, MA 02601
 Tel: 774-238-1813
 Email: aperfectenvironment@gmail.com

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

SYSTEM PROFILE

Not to Scale

*NOTE: ALL PIPES ARE TO BE 4" SCHEDULE 40 P.V.C. EXCEPT THE 2" DIAM. SCH.40 FORCE MAIN

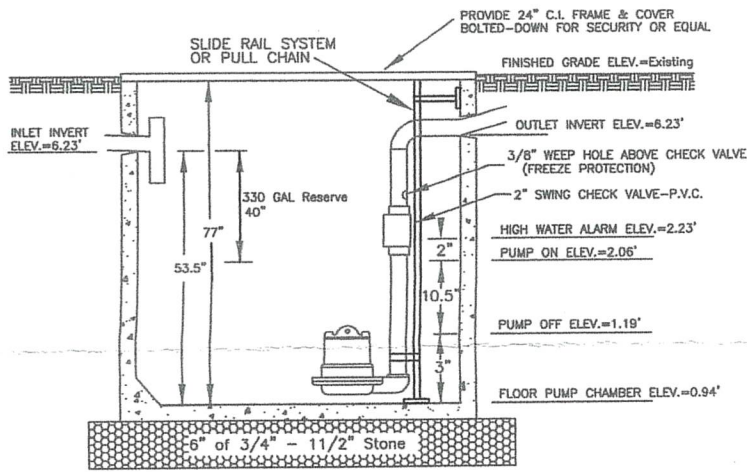


Note:
Existing invert elevations shall be verified by the contractor prior to any installation work.

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.

PUMP DETAIL



Not to Scale

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"-11/2" 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 tapes 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.

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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

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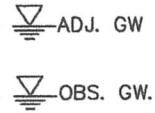
PERK TEST & SOIL EVALUATION

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

Test Hole No. 1		
DEPTH	SOILS	ELEV.
0		10.06
8"	A loamy sand 10YR6/1	9.39
23"	Bw loamy sand 10YR6/8	8.14
66"	C1 med. sand 2.5Y6/4	4.56'
86"		2.96'
102"	C2 m-c sand 10YR6/1 standing 20% gravel	1.56'
108"	20% cobbles	1.06

Frimpter Calculation

Reference Well: Sandwich SDW-252
 Range: Zone A
 Current Well Data: July 2023
 Water Level: 35.7'
 Adjustment: 1.4'
 Therefore adjusted depth to groundwater= 86"
 or Elevation=2.96'



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.

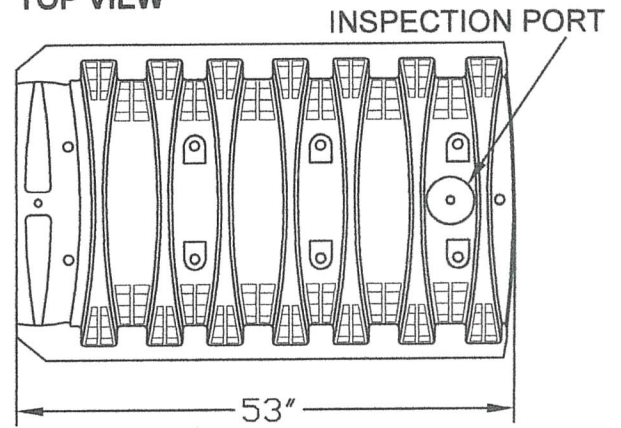
GLEN E. HARRINGTON, R.S.

INFILTRATOR WATER TECHNOLOGIES

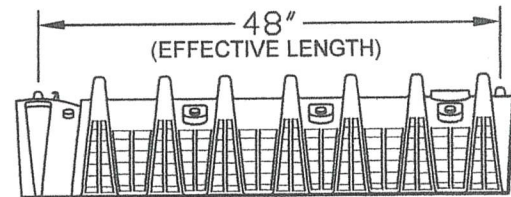
QUICK4 STANDARD CHAMBER PRODUCT SPECIFICATIONS

(NOT TO SCALE)

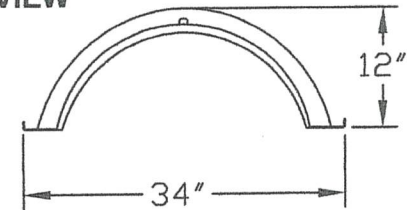
TOP VIEW



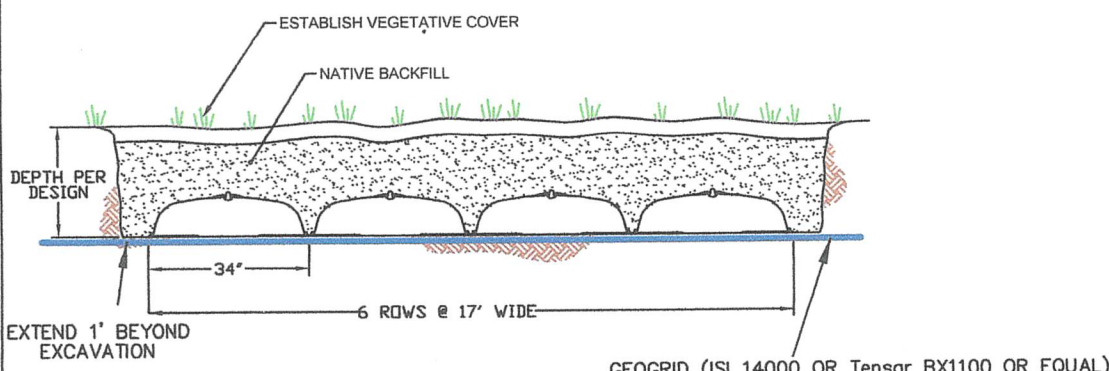
SIDE VIEW



END VIEW

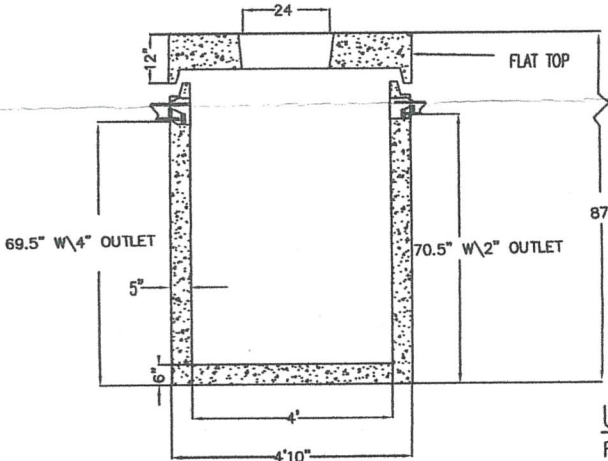


INFILTRATOR WATER TECHNOLOGIES QUICK4 STANDARD LOW PROFILE CHAMBER TYPICAL BED DETAIL SECTION VIEW (NOT TO SCALE)



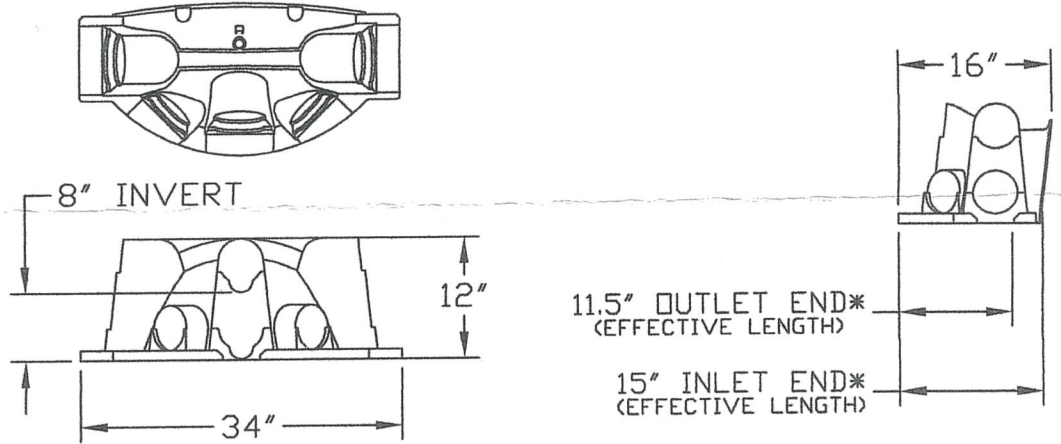
500-GAL. PUMP CHAMBER

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.



GEOGRID (ISI 14000 OR Tensar BX1100 OR EQUAL)

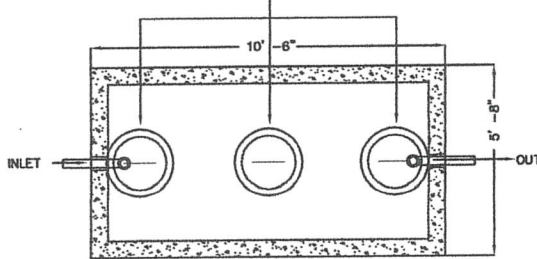
QUICK4 STANDARD MULTIPOST END CAP



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 lbs. > 2,878 lbs of uplift.
 No uplift anticipated.

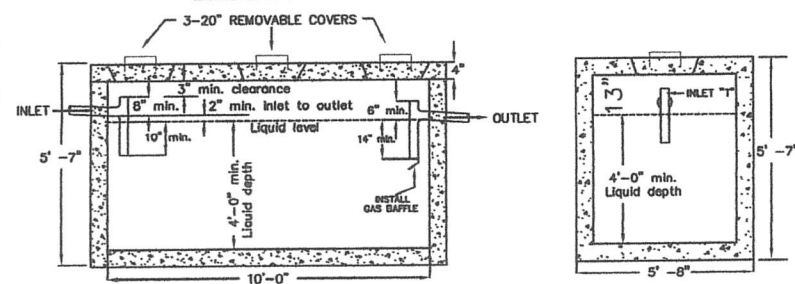
3-20" DIAM. ACCESS MANHOLES



THE INLET ACCESS COVER FOR THE SEPTIC TANK, DISTRIBUTION BOX AND LEACHING COMPONENT SHALL BE WITHIN 6" OF FINISHED GRADE.

INSTALL GAS Baffle OR EQUAL ON TANK OUTLET TEE

PLAN VIEW



CROSS-SECTION

END-SECTION

TYPICAL 1500 GALLON H-10 SEPTIC TANK

NOT TO SCALE

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 lbs. > 3,566 lbs of uplift.
 No uplift anticipated.

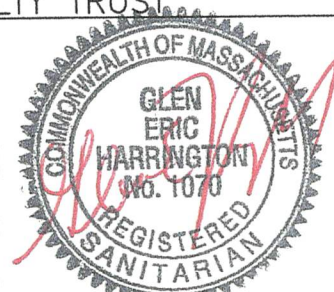
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