



# Town of Brewster Board of Health

2198 Main St., Brewster, MA 02631

brhealth@brewster-ma.gov

(508) 896-3701

## BOARD OF HEALTH MEETING AGENDA

2198 Main Street

September 20, 2023 at 6:30PM

### Board of Health

Penny Holeman

Kimberley Crocker  
Pearson

David Bennett

John Keith

Abigail Archer

### Health Director

Amy von Hone

### Assistant Health Director

Sherrie McCullough

### Senior Department Assistant

Tammi Mason

This meeting will be conducted in person at the date, time and location identified above. This means that at least a quorum of the members of the public body will attend the meeting in person and members of the public are welcome to attend in person as well. As a courtesy only, access to the meeting is also being provided via remote means in accordance with applicable law. Please note that while an option for remote attendance and/or participation is being provided as a courtesy to the public, the meeting/hearing will not be suspended or terminated if technological problems interrupt the virtual broadcast or affect remote attendance or participation, unless otherwise required by law. Members of the public with particular interest in any specific item on this agenda, which includes an applicant and its representatives, should make plans for in-person vs. virtual attendance accordingly.

Members of the public who wish to access the meeting may do so in the following manner:

**Phone:** Call (301)715-8592 or (312)626-6799. Webinar ID: 820 4394 4509 Passcode: 979174

To request to speak: Press \*9 and wait to be recognized.

**Zoom Webinar:** <https://us02Web.zoom.us/j/82043944509?pwd=MjVpM2kvUEExKkU1RS0hmM01Zb3dQZz09>

Passcode: 979174

To request to speak: Tap Zoom "Raise Hand", then wait to be recognized.

When required by law or allowed by the Chair, persons wishing to provide public comment or otherwise participate in the meeting, may do so by accessing the meeting remotely, as noted above. Additionally, the meeting will be broadcast live, in real time, via **Live broadcast** (Brewster Government TV Channel 18), **Livestream** ([livestream.brewster-ma.gov](http://livestream.brewster-ma.gov)) or **Video recording** ([tv.brewster-ma.gov](http://tv.brewster-ma.gov))

1. Call to Order
2. Declaration of a Quorum
3. Recording Statement
4. Chairman's announcements
5. Citizen's forum: Members of the public may address the Board of Health on matters not on the meeting agenda for a maximum 3-5 minutes at the Chair's discretion. Under Open Meeting Law, the Board of Health is unable to reply but may add items presented to a future agenda
6. Discuss and vote: 0 Greenland Pond Road M94 L29, new construction with proposed I/A Technology MicroFAST 0.5 General Approval for Nitrogen reduction
7. Consent Agenda:
  - a. In-House Variance Approval – 432 Blueberry Pond Drive, 300' setback to pond
8. Pressure Dose Letter update
9. I/A Enforcement of Non-compliant systems update, review and vote:
  - a. BREW-Sar050-FAS
  - b. BREW-Tho054-FAS
  - c. BREW-Gre083-FAS
  - d. BREW-Low015-FAS
10. Discuss and vote MWRC Discharge Permit Renewal and EPA removal of Outfall Monitoring Scientific Advisory Panel
11. Review and approve minutes from 8/02/23 meeting
12. Liaison Reports
13. Matters not reasonably anticipated by the Chair
14. Items for next agenda
15. Next meeting: October 4, 2023
16. Informational items:
  - a. Open Movement Arts Fair 9/23/23 Announcement
16. Adjournment

**Date Posted:**  
September 14, 2023

**Date Revised:**

**Received by Town Clerk:**



**TOWN OF BREWSTER**  
2198 MAIN STREET  
BREWSTER, MA 02631  
PHONE: (508) 896-3701 EXT 1120  
FAX: (508) 896-4538  
[BRHEALTH@BREWSTER-MA.GOV](mailto:BRHEALTH@BREWSTER-MA.GOV)  
[WWW.BREWSTER-MA.GOV](http://WWW.BREWSTER-MA.GOV)

OFFICE OF  
HEALTH DEPARTMENT

Received: _____	Paid: _____
Abutter Deadline: _____	

**Application for Board of Health Variances**

In-House Local Upgrade Approval     Public Hearing

Date: August 9, 2023

**SUBJECT PROPERTY ADDRESS:** 0 Greenland Pond Rd. [Map 94 Parcel 29]

Map: 94 Parcel: 29 Book: 33428, 34503 Page: 240, 252 LC Certificate: \_\_\_\_\_  
LC Plan: \_\_\_\_\_ Lot: 5 & 7

Name of Applicant: William and Kimberly Donnelly

Mailing Address: 870 Farm to Market Rd., Troy, NY 12180

Telephone # \_\_\_\_\_ Email: \_\_\_\_\_

Owner(s) of Record : William & Kimberly Donnelly

Mailing Address: 870 Farm to Market Rd., Troy, NY 12180

Design Engineer/Sanitarian: Linda J. Cronin Firm/Company Name: CSN Engineering

Mailing Address: P.O. Box 201, Brewster, MA 02631

Telephone #: 508-896-1783 Email address: 508-896-1783

Signature: *Linda J. Cronin*  
Applicant or Engineer

New Construction <input type="checkbox"/> Voluntary Upgrade <input checked="" type="checkbox"/> Addition/Alteration <input type="checkbox"/> Failed system <input type="checkbox"/> Real Estate Transfer <input type="checkbox"/>	
Design flow of existing system: _____	Reason for failure: _____
Design flow of proposed system: _____	Total lot size (sf): _____
Total sewage flow of site: _____	Conservation Commission approval required: yes <input type="checkbox"/> no <input type="checkbox"/>
Order of Conditions/Det. Of Applicability attached <input type="checkbox"/>	Date of ConCom hearing: _____

**List of all Variances from State and Local codes (add sheets if needed)**

TITLE 5, Sec. #:	Description of Variance(s)

Brewster Reg. #:	Description of Variance(s)
	I/A Approval/Review

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Health Department

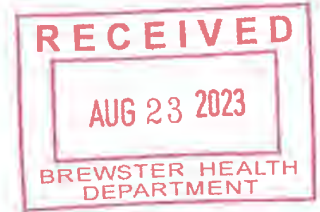


P.O. Box 201  
Brewster, MA 02631

Phone: (508) 896-1783  
linda@csn-eng.com

August 18, 2023

Ms. Amy Von Hone  
Brewster Board of Health  
2198 Main St.  
Brewster, MA 02631



**Re: Septic System Installation**  
0 Greenland Pond Rd. [Map 94, Parcel 29]  
Brewster, MA 02631

Dear Ms. Von Hone:

The owners of the property located at 0 Greenland Pond Rd. [Map 94, Parcel 29], Brewster, MA are requesting a Board of Health hearing for approval/review of the I/A system that is being specified as a part of the site plan. They are proposing to construct a 4-bedroom dwelling with associated Title 5 Sewage disposal system with MicroFAST 0.5 I/A treatment, utilities, driveways, and landscaping. The proposed system consists of a 1500 gallon septic tank with a MicroFAST treatment unit installed, a DB-3 H-20 Rated Distribution Box, and three (3) 500 gallon Leach Chambers with 4' of stone all around.

Nitrogen loading is as follows:

		Volume (L/day)	Nitrogen Load (mg/day)	Load (ppm)
Total nitrogen load (including runoff and wastewater)	Title 5	5815.7	35421.7	6.1
	Average	4629.1	12876.3	2.8
<b>Average Nitrogen Load</b>				<b>4.44 ppm</b>

Thank you,  
Sincerely,

Linda J. Cronin, P.E.  
Project manager

LJC/1



## Town of Brewster

2198 MAIN STREET  
BREWSTER, MASSACHUSETTS 02631-1898

PHONE: 508.896.3701 EXT. 1120

FAX: 508.896.4538

[brhealth@brewster-ma.gov](mailto:brhealth@brewster-ma.gov)

WWW.BREWSTER-MA.GOV

Health Department

Amy L. von Hone, R.S., C.H.O.  
Director

Sherrie McCullough, R.S.  
Assistant Director

Tammi Mason  
Senior Department Assistant

### AGENDA ACTION ITEM FORM

**BOH Variance Agenda Item**

**In-House Local Upgrade Approval**

**Other:**  BOH review of I/A MicroFAST 0.5 System  
for Nitrogen Removal

**Board of Health Meeting Date:** September 6, 2023

**Project Location:** 0 Greenland Pond Road

**Map & Parcel:** 94/29

**Owner's Name & Address:** William and Kimberly Donnelly  
870 Farm to Market Road  
Troy, NY 12180

**Applicant:** same as owner

**Date Requested:** August 9, 2023

**Title 5 Variance Request:** Yes  No

**Board of Health Variance Request:** Yes  No

**Other:** Yes  No

1. Property lies within Zone II, District of Critical Planning and Concern (DCPC), and the Herring River Impaired Embayment Watershed
2. Proposed town water
3. Proposed I/A MicroFAST 0.5 Unit for Nitrogen Removal

**Health Director's Suggested Discussion Points:**

1. The existing vacant lot (Lot 7) consists of 19,489 sf of upland with an abutting lot (Lot 5) of 13,952 sf of upland. The applicant proposes to construct a 3-bedroom single family dwelling with a 4-bedroom capacity Title 5 system and a MicroFAST 0.5 unit for Nitrogen removal.
2. No variances are being requested.
3. Discussion Points:
  - a. The lots are located in a Zone II (Title 5 restriction of 1 bedroom/10,000 sf of land area).
  - b. The lots are located in the District of Critical Planning Concern with a restriction of 5 ppm of Total Nitrogen (more restrictive than Title 5 Zone II).



- c. The lots are located in the Herring River Impaired Embayment Watershed.
- d. Rear abutting lot (Lot 5) – Have Lot 5 and Lot 7 been combined into one lot (81X Plan), otherwise, a nitrogen aggregate plan will be required to utilize the square footage of Lot 5 for calculating the total nitrogen load of the proposed development?
- e. Nitrogen loading calculations indicate 4.44 ppm of Total Nitrogen with a maximum of 4 bedrooms, 3000 sf of lawn area, and the installation of a nitrogen reducing I/A system. Proposed 3000 sf of lawn area should be identified on the site plan as well as the proposed use of the rear lot (i.e., undisturbed natural vegetation).
- f. The MicroFAST 0.5 unit is approved for General Use with Nitrogen removal with a maximum of 19 ppm of Total Nitrogen per DEP Approval Letter # X232831 with the following operation and monitoring requirements:
  - i. O & M agreement with a licensed operator (for a minimum 1 year) for the life of the system.
  - ii. Effluent parameters to meet: max. 19 ppm Total Nitrogen, pH of 6.0-9.0, min. 2 ppm or greater dissolved oxygen, max. 40 NTU Turbidity.
  - iii. Year-round use – quarterly testing of TN for first year, 2x/year thereafter
  - iv. Seasonal use – 2x/year testing for TN
  - v. Flow metering of wastewater flow is recommended.
  - vi. Access ports for sampling and inspection must be readily removable. System control panel and alarm must be accessible to the system operator.
  - vii. Notification of system installation to be recorded at Registry of Deeds.
- g. Proposed location of required system air blower and vent? Proposed filter on vent?
- h. A copy of the BOH Approval Letter identifying the installation of an I/A system must be recorded at the Barnstable County Registry of Deeds prior to issuance of the Certificate of Compliance upon completion of the septic system installation. A copy of the recorded letter to be placed on file at the BOH.
- i. I/A system must be registered with the Barnstable County I/A Database for monitoring and data collection.
- j. Engineer certification and I/A system start-up required prior to issuance of Certificate of Compliance.
- k. Property is restricted to a maximum 4 bedrooms with the I/A installation.



0 Greenland Pond Rd. [Map 94 Parcel 29] Brewster, MA



Greenland Pond Rd. [Map 94 Parcel 29] Brewster, MA



Brewster Board of Health  
Nitrogen Loading Calculations Spreadsheet

Residential

Complete the highlighted cells as applicable.

Section 1: Runoff	Land Use/Nitrogen Source	Area (square feet)	Nitrogen Loading Input (units)	Recharge Rate (units)	Volume (L/day)	Nitrogen Load (mg/day)	
	Lot size (total)	33441					
	Building Roof Area	2105	0.75 mg/L	40 inches/year	544.4	408.3	
	<i>Total footprint of all buildings on the property</i>						
	Road/Driveway/Impervious Area	1089	1.5 mg/L	40 inches/year	281.6	422.4	
	<i>Footprint of paved/ impervious areas including driveways, parking areas, buildings and impervious patios. Impervious areas include gravel, shell, and crushed stone pathways or driveways or parking areas</i>						
	Lawn Size	3000	3 lbs N/1,000 sq ft - 25% leaching rate	17 inches/year	329.7	2798.6	
	<i>Lawn areas defined as ground covered with grass or other vegetation that is mowed more than twice a year. The minimum lawn size for nitrogen loading calculations is 1,000 sq. ft.</i>						
Other/Miscellaneous	0	0 mg/L	17 inches/year	0.0	0.0		
<i>For any other potential sources of nitrogen on the property. Inputs must be approved by the health agent.</i>							
Natural/Undisturbed Areas	27247	0.05 mg/L	17 inches/year	2994.6	149.7		
<i>Calculated by subtracting roof, road/impervious areas, and lawn areas from total lot size.</i>							
<b>Subtotal: Runoff</b>					<b>4150.3</b>	<b>3779.1</b>	

Section 2: Wastewater	Do you have an Innovative/Alternative Septic System (Yes/No)?		Yes	If "Yes", what is the nitrogen concentraion of the system (in units of mg/L), based on the DEP Alternative System Approval Letter? (See <a href="https://www.mass.gov/guides/innovative-technology-and-title-5-systems">https://www.mass.gov/guides/innovative-technology-and-title-5-systems</a> )	19
					Nitrogen Load (mg/day)
	Title 5 Design Flow	Number of Bedrooms?	4	Based on Title 5 (310 CMR 15.203): Each bedroom is assumed to have associated with it 110 gallons per day of flow.	Volume (L/day)
Average Wastewater Flow	The average wastewater flow method assumes 2.3 people and an average flow of 55 gallons per day per person.			478.8	9097.2

Total nitrogen load (including runoff and wastewater)	Title 5 Average	Volume (L/day)	Nitrogen Load (mg/day)	Load (ppm)
		5815.7	35421.7	6.1
		4629.1	12876.3	2.8
<b>Average Nitrogen Load</b>				<b>4.44 ppm</b>

**CERTIFIED MAIL RETURN RECEIPT  
REQUESTED**

## BREWSTER BOARD OF HEALTH PUBLIC HEARING NOTICE

**Date:** August 9, 2023

**Re:** 0 Greenland Pond Rd. [Map 94, Parcel 29] Map: 94 Lot: 5 & 7  
**Subject Address**

**Dear Abutter:**

**A public hearing has been scheduled for the Brewster Board of Health to take action on an application for variances from the regulations of the Massachusetts Department of Environmental Protection, Title 5, and/or the Town of Brewster Regulations for Subsurface Disposal of Sewage. The following variances are requested:**

### List of all variances from State and Town Codes

Title 5, Sec. #	Description of variance(s)

Brewster Reg. #	Description of variance(s)
	I/A Approval/Review
	MicroFAST C.S Treatment Unit

**Said hearing will be held at the Brewster Town Offices, 2198 Main Street, Brewster, on Septemebr 6, 2023 at 7:00 p.m.**

**The application and plans are available for review at the Brewster Health Department, Brewster Town Offices, 2198 Main Street, Brewster, MA, Monday through Friday (excluding holidays) from 8:30 a.m. to 4:00 p.m.**

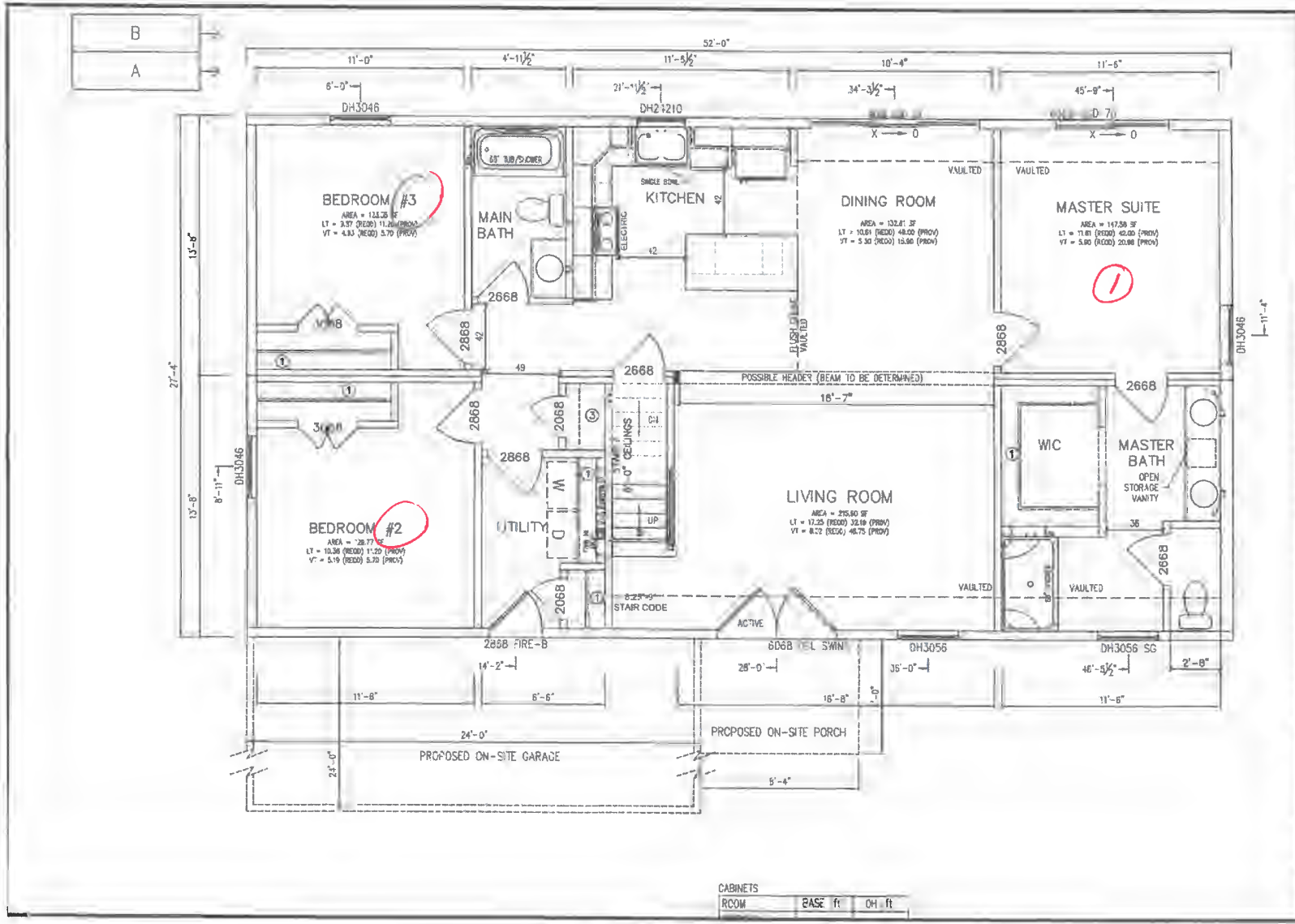
Sincerely,



**Applicant/Representative**

**CC: Brewster Health Department**





COM 2837623  
 SAE

**Ritz-Craft**  
 Cleverest Building Simplified

REVISIONS

DATE	DESCRIPTION	BY
06/13/23	PRELIM	MIKKY
07/26/23	REV01	LK
08/26/23	REV02	LK

WD PRICE INC  
 CUSTOMER: DONNELLY  
 REACT MGR: WALT BILSK  
 MODEL: HS CAPE GREENFIELD  
 TITLE: 1ST FLOOR PLAN  
 0.01828  
**FP1**

CABINETS	ROOM	BASE ft	OH ft

# Brewster Impaired Embayment Watersheds



**Figure 1**  
Watersheds Pertaining to Proposed Septic System Regulations in Brewster, MA.



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker  
Governor

Karyn E. Polito  
Lieutenant Governor

Matthew A. Beaton  
Secretary

Martin Suuberg  
Commissioner

### CERTIFICATION FOR GENERAL USE

Pursuant to Title 5, 310 CMR 15.000

#### Name and Address of Applicant:

Bio-Microbics, Inc.  
8450 Cole Parkway  
Shawnee, KS 66227

#### Trade name of technology and models:

FAST Treatment Systems with Nitrogen Reduction including models *MicroFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5, 9.0*, *HighStrengthFAST® 1.0, 1.5, 3.0, 4.5, 9.0* and *NitriFAST® 0.5, 0.75, 1.0, 1.5, 3.0, 4.5, 9.0* (all hereinafter the "System") for facilities with design flows less than 2,000 gallons per day (GPD). Schematic drawings illustrating the models and an Inspection Checklist are part of this Certification.

Transmittal Number: X232831  
Date of Issuance: December 29, 2010, revised March 20, 2015

#### Authority for Issuance:

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection (hereinafter "the Department") hereby issues this General Use Approval to: Bio-Microbics, Inc., 8450 Cole Parkway, Shawnee, KS 66227 (hereinafter "the Company"), approving the above referenced FAST technology (hereinafter "the Technology" or "System") for use in the Commonwealth of Massachusetts subject to the conditions herein. Sale and use of the Technology are subject to compliance by the Company, the Designer, the System Installer, the Operator, and the System Owner with the terms and conditions herein. Any noncompliance with the terms or conditions of this Certification constitutes a violation of 310 CMR 15.000.

David Ferris, Director  
Wastewater Management Program  
Bureau of Water Resources

March 20, 2015  
Date

**Certification for General Use**  
**Bio-Microbics FAST <2,000 GPD Nitrogen Reducing**

**Page 2 of 10**

**I. Purpose**

- 1 Subject to the conditions of this Approval and any other local requirements, the purpose of this Approval is to allow the use of the System in Massachusetts on a General Use basis. With the necessary permits and approvals required by 310 CMR 15.000, this Certification authorizes the installation and use of the System in Massachusetts.
2. The System may be installed for residential facilities with design flow less than 2,000 GPD where a system in compliance with 310 CMR 15.000 exists on-site or could be built and for which a site evaluation in compliance with 310 CMR 15.000 has been approved by the local approving authority; or by the Department if Department approval is required by 310 CMR 15.000. This Approval allows for the use of the System as an equivalent alternative technology in accordance with 310 CMR 15.202 on facilities for nitrogen reduction in a Department designated nitrogen sensitive or limited area as defined in 310 CMR 15.214 and 15.215.

Non-residential facilities are not allowed under this approval. Non-residential facilities include properties with businesses and/or commercial establishments.

3. The technology shall meet or exceed the following effluent discharge requirements:
  - Effluent Total Nitrogen (TN) concentration of 19 mg/L (for 660 gallons per day per acre -gpda- loading) or 25 mg/L (for 550 gpda loading).
  - Effluent pH range shall be 6.0 to 9.0.
  - The System is approved for use at facilities with a maximum design flow less than 2,000 GPD.
- 4 The System Owner or the designated System Operator (or 'Operator') has responsibility for oversight and sampling of the System if the property served was allowed to increase the discharge rate per acre above 440 gpda in an area subject to Nitrogen Loading Limitations.  
  
The System Owner will be required to repair, replace, modify or take any other action as required by the Department or the local approving authority, if the Department or the local approving authority determines that the System is not capable of meeting the required reduction in nitrogen in the effluent.

The Company is responsible for the approved technology as described below

**II. General Description of the Technology and Design Standards**

1. The tank containing the FAST® insert is installed between the building sewer and the soil absorption system (SAS). The SAS shall be designed and constructed in accordance with 310 CMR 15.100 - 15.279 and subject to the provisions of this Certification.
2. Technology Description - The FAST® system is an aerobic wastewater treatment system that utilizes a completely submerged fixed film process to treat organics and nitrify, and a passive recycle system for denitrification. Each model contains submerged media specific to the application. Microorganisms grow on the media and remove soluble contaminants from the wastewater, utilizing them as a source of energy for growth and production of new microorganisms. The FAST® system insert consists of a liner around the media and an airlift to provide aeration and mixing within the confines of the liner. The area outside the



**Certification for General Use**  
**Bio-Microbics FAST <2,000 GPD Nitrogen Reducing**

**Page 3 of 10**

liner in the septic tank remains anoxic for denitrification and a passive recirculation system moves the aerated wastewater to the outside of the liner to obtain denitrification. The aeration and circulation inside the liner are provided by a blower that pumps air into a draft tube that extends down the center of the media. Treated effluent passes out of the aerobic zone of the treatment plant through a pipe connected directly to a baffled quiescent area in the liner. Final effluent is discharged to a soil absorption system. Specific model considerations are as follows:

- The MicroFAST® 0.5, 0.75 and 0.9, HighStrengthFAST® 1.0 and NitriFAST® 0.5, 0.75 and 0.9 are installed in the second compartment of a two-compartment tank with a total liquid capacity of at least 1,500 gallons constructed in accordance with 310 CMR 15.226.
  - The MicroFAST®, HighStrengthFAST® and NitriFAST® 1.5 are installed in the second compartment of a two compartment 3000-gallon tank constructed in accordance with 310 CMR 15.226.
  - The MicroFAST®, HighStrengthFAST® and NitriFAST® 3.0 is installed in a separate tank constructed in accordance with 310 CMR 15.226 and located between a standard Title 5 septic tank, designed in accordance with 310 CMR 15.223 and 15.224, and the soil adsorption system (SAS). In this larger system, an additional recycle pump may be needed to send nitrified effluent back to the septic tank for added denitrification. Consult the Company for proper layout.
  - The NitriFAST® models can also be used for additional nitrification in series after the MicroFAST® models or HighStrengthFAST® models. In this configuration the tanks used for the NitriFAST® shall be constructed in accordance with 310 CMR 15.226 and meet the minimum dimensions and volumes required by the Company.
  - Flow equalization may also be employed prior to the FAST® system depending on the type of facility. Consult Company for proper layout.
- 3 All access ports and manhole covers shall be readily removable, of durable material and installed and maintained at grade to allow for maintenance of the System. No structures shall be located directly upon or above the access locations which could interfere with performance, access, inspection, pumping, or repair. Sufficient access for infrequent maintenance of the System treatment media and all other treatment works shall be evaluated, and addressed in the System design if necessary, by the designer. System control panel(s) including alarms shall be mounted in a location accessible to the operator of the System.
4. Wastewater Loading and Effluent Concentration Design Standards  
For new residential construction in an area subject to the Nitrogen Loading Limitations of 310 CMR 15.214, and the facility does not meet with the Nitrogen Loading Limitations pursuant to the aggregation provisions of 310 CMR 15.216, an increase in calculated nitrogen loading per acre is allowed for facilities with design flow less than 2000 gpd with limitations as follows:
- The design flow shall not exceed 660 gallons per day per acre (gpda) and the total nitrogen (TN) concentration in the effluent shall not exceed 19 milligrams per liter (mg/L); or



**Certification for General Use**  
**Bio-Microbics FAST <2,000 GPD Nitrogen Reducing**

**Page 4 of 10**

- The design flow shall not exceed 550 gallons per day per acre (gpda) and the total nitrogen (TN) concentration in the effluent shall not exceed 25 milligrams per liter (mg/L).
- TN is measured as the total of TKN (Total Kjeldhal Nitrogen), NO<sub>3</sub>-N (Nitrate nitrogen) and NO<sub>2</sub>-N (Nitrite nitrogen).

**III. General Conditions**

1. The provisions of 310 CMR 15.000 is applicable to the use and operation of this System, the System owner and the Company, except those that specifically have been varied by the terms of this Certification.
2. Any required operation and maintenance, monitoring and testing shall be performed in accordance with a Department approved plan. Any required sample analysis shall be conducted by an independent U.S. EPA or DEP approved testing laboratory, or a DEP approved independent university laboratory, unless otherwise provided in the Department's written approval. It shall be a violation of this Certification to falsify any data collected pursuant to an approved testing plan, to omit any required data or to fail to submit any report required by such plan.
3. The facility served by the System and the System itself, shall be open to inspection and sampling by the Department and the local approving authority at all reasonable times.
4. In accordance with applicable law, the Department and the local approving authority may require the System owner to cease operation of the system and/or to take any other action as it deems necessary to protect public health, safety, welfare or the environment.
5. The Department has not determined that the performance of the System will provide a level of protection to public health and safety and the environment that is at least equivalent to that of a sanitary sewer system. Accordingly, no System shall be upgraded or expanded, if it is feasible to connect the facility to a sanitary sewer, unless as allowed by 310 CMR 15.004.
6. Design, installation, and use of the System shall be in strict conformance with the Company's DEP approved plans and specifications and 310 CMR 15.000, subject to this Certification.

**IV. Conditions Applicable to the System Owner**

1. The System owner shall at all times have the System properly operated and maintained by a Company approved Operator in accordance with this Certification, the designer's operation and maintenance requirements and the Company's approved procedures.
2. The System is certified only in connection with the discharge of sanitary wastewater from facilities with a design flow of less than 2000 gpd. Any non-sanitary wastewater generated and/or used at the facility served by the System shall not be introduced into the System and shall be lawfully disposed of.

**Certification for General Use**  
**Bio-Microbics FAST <2,000 GPD Nitrogen Reducing**

**Page 5 of 10**

3. The System Owner shall provide access to the site for the System Operator to perform inspections, maintenance, repairs, responding to alarm events, field testing, and sampling as may be required by the Approval.

**Operation and Monitoring Requirements**

4. System effluent total nitrogen (TN) concentrations shall not exceed 19 or 25 mg/L and effluent pH shall not be less than 6.0 or more than 9.0. Field test observations of dissolved oxygen (DO) shall equal or exceed 2 mg/L and for Turbidity shall be equal or less than 40 NTU.
5. All samples shall be taken at a flowing discharge point, i.e. distribution box, pipe entering a pump chamber or other Department approved location from the treatment unit.
6. Inspection, operation and maintenance (O&M), sampling, and field testing of the System required by the Approval shall be performed by a Company approved Operator who has been certified at a minimum of Grade Level 4 (four) by the Board of Registration of Operators of Wastewater Treatment Facilities, in accordance with Massachusetts regulations 257 CMR 2.00, and is an approved Title 5 System Inspector in accordance with 310 CMR 15.340.
7. Prior to commencement of construction of the System, the System Owner shall provide to the local approving authority a copy of a signed O&M Agreement that meets the requirements of paragraph IV (8).
8. The System Owner shall maintain, at all times, an O&M Agreement with a qualified System Operator approved by the Company. The Agreement shall be at least for one year and include the following provisions:
  - a) The name of a System Operator who is an approved System Inspector in accordance with 310 CMR 15.340 and who meets any additional qualification requirements specified in the Approval;
  - b) The System Operator must inspect the Alternative System as required by paragraph IV (9) and (12);
  - c) The System Operator shall be responsible for submitting the monitoring results to the System Owner in accordance with paragraph IV (13) and to the local approving authority in accordance with paragraph IV (14); and
  - d) In the case of a System failure, an equipment failure, alarm event, components not functioning as designed, or violations of the Approval, procedures and responsibilities of the System Operator and System Owner shall be clearly defined for corrective measures to be taken immediately. The System Operator shall agree to provide written notification within five days, describing corrective measures taken, to the System Owner and the local board of health.
9. The System Owner shall comply with the following monitoring requirements if the System is subject to a TN concentration limit in accordance with paragraph II (4):

**Certification for General Use**  
**Bio-Microbics FAST <2,000 GPD Nitrogen Reducing**

**Page 6 of 10**

- a) Year-round installations shall be inspected and have effluent sampled for at least the TN parameter quarterly for the first year, then a minimum of twice/year thereafter, at least 5 months apart and with at least one sample taken between December 1 and March 1 of each year. Field testing shall be completed per paragraph IV (11) below, and as determined necessary by the System Operator. See DEP Field Testing Protocol at <http://www.mass.gov/dep/water/laws/policies.htm#5pols>. Wastewater flow shall be recorded at each inspection, see 'Flow Metering' paragraph IV (10).
- b) Seasonal installations shall be inspected and have effluent sampled for at least the TN parameter a minimum of twice/year. At least one sample must be taken 30 to 60 days after each seasonal occupancy begins. A second sample must be taken no less than 2 months after the first sample. Field testing shall be completed per paragraph IV (11) below, and as determined necessary by the System Operator. Wastewater flow shall be recorded at each inspection, see 'Flow Metering' paragraph IV (10).
- c) Systems in operation prior to issuance of this Approval, which have received approval of sampling reduction from the Department may continue with that System monitoring frequency.

Properties occupied at least 6 months per year are considered year-round properties. Properties occupied less than 6 months per year are considered seasonal properties.

TN is measured as the total of TKN (Total Kjeldhal Nitrogen), NO<sub>3</sub>-N (Nitrate nitrogen) and NO<sub>2</sub>-N (Nitrite nitrogen).

10. Flow Metering: Reporting of residential System water use is not required, however it is recommended the Operator record water meter readings if available at all inspections, or otherwise estimate System flow, to assist in addressing possible operational problems or issues. Flow measurement when recorded shall be based on:
  - a) actual metering data of wastewater flow to the System or actual water meter data of flow to fixtures that discharge to the wastewater system; or
  - b) actual water meter data for the total facility with either actual meter data or estimated flows for non-wastewater usage subtracted from the total facility water usage. If estimating the wastewater portion of metered water usage, the System Operator shall provide a best estimate of wastewater discharged to the System with the method of estimating, such as pump run times, occupancy rates, adjustment due to seasonal outdoor watering use, etc.; or
  - c) for Systems installed under a prior Approval that did not include a wastewater flow data reporting requirement, if no flow meters are available, the System Operator shall provide a best estimate of wastewater discharged to the System with the method of estimating, such as pump run times, occupancy rate, etc.
11. Field Testing: Temperature, turbidity, pH and DO shall be measured and recorded in the field whenever the effluent is sampled for TN. See applicable sections of the Department's Field Testing Protocol at <http://www.mass.gov/dep/water/laws/policies.htm#5pols>.

**Certification for General Use**  
**Bio-Microbics FAST <2,000 GPD Nitrogen Reducing**

**Page 7 of 10**

12. At a minimum, the System Operator shall inspect the System:
  - a) quarterly for the first year then two times per year thereafter;
  - b) in accordance with the approved O&M manual, the Designer's operation and maintenance requirements, and the requirements of the local approving authority;  
and
  - c) any time there is an alarm event, equipment failure, or system failure.

Recordkeeping and Reporting

13. Within 60 days of any site visit, the System Operator shall submit an O&M report and inspection checklist to the System Owner and the Company. It is recommended the System Owner and Company maintain copies of these items for possible Department audit. The O&M report shall include, at a minimum:
  - a) for a System failing, any corrective actions taken;
  - b) wastewater analyses, wastewater flow data, field testing results and inspection checklists;
  - c) any violations of the Approval;
  - d) any determinations that the System or its components are not functioning as designed or in accordance with the Company specifications; and
  - e) any other corrective actions taken or recommended.
14. By February 15th of each year the System Owner or the System Operator if designated by the owner, shall submit to the local approving authority all monitoring results with all O&M reports and inspection checklists completed by the System Operator during the previous 12 months.
15. Upon determining that the System has failed, as defined in 310 CMR 15.303, the System Operator shall notify the System Owner immediately.
16. Upon determining that the System has failed, as defined in 310 CMR 15.303, the System Owner and the System Operator shall be responsible for the notification of the local approving authority within 24 hours of such determination.
17. The System Owner shall notify the Approving Authority and the Company in writing within seven days of any cancellation, expiration or any other change in the terms and/or conditions of the O&M Agreement required by Paragraph IV (8).
18. Violations of the TN concentration in the System effluent shall not constitute a failure of the System for the purposes of 24-hour notification or 5-day written reporting as required in Paragraphs IV (16) and (8).
19. The System owner shall provide a copy of this Approval, prior to the signing of a purchase and sale agreement for the facility served by the System or any portion thereof, to the proposed new owner.

**Certification for General Use**  
**Bio-Microbics FAST <2,000 GPD Nitrogen Reducing**

**Page 8 of 10**

20. The System owner shall furnish the Department any information that the Department requests regarding the System, within 21 days of the date of receipt of that request.
21. Prior to issuance of a Certificate of Compliance of the System, and after recording and/or registering the Notice required by 310 CMR15.287(10), the System Owner shall provide to the Local Approving Authority a copy of: (i) a certified Registry copy of the Notice bearing the book and page/or document number; and (ii) if the property is unregistered land, a Registry copy of the System Owner's deed to the property, bearing a marginal reference on the System Owner's deed to the property. The Notice to be recorded shall be in the form of the Notice provided by the Department.
22. Prior to signing any agreement to transfer any or all interest in the property served by the System, or any portion of the property, including any possessory interest, the System Owner shall provide written notice of all conditions contained in the Approval to the transferee(s). Any and all instruments of transfer and any leases or rental agreements shall include as an exhibit attached thereto and made a part of thereof a copy of the Approval for the System. The System Owner shall send a copy of such written notification(s) to the Local Approving Authority within 10 days of giving such notice to the transferee(s).

**V. Conditions Applicable to the Company**

1. The Company shall notify the Director of the Wastewater Management Program at least 30 days in advance of the proposed transfer of ownership of the technology for which this Certification is issued. Said notification shall include the name and address of the proposed new owner and a written agreement between the existing and proposed new owner containing a specific date for transfer of ownership, responsibility, coverage and liability between them. All provisions of this Certification applicable to the Company shall be applicable to successors and assigns of the Company, unless the Department determines otherwise.
2. The Company shall develop maintain and update as necessary the following: minimum installation requirements; an operating manual, including information on substances that should not be discharged to the System; a maintenance checklist; and a recommended schedule for maintenance of the System consistent with the Department's requirements essential to consistent successful performance of the installed Systems.
3. The Company shall institute and maintain a program of operator training and continuing education. The Company shall maintain and annually update, and make available the list of qualified operators by February 15th and make the list known to local approving authorities, the Department and to users of the technology.
4. The Company shall furnish the Department any information that the Department requests regarding the System, within 21 days of the date of receipt of that request.
5. The Company shall include copies of this Certification and the procedures described in Section V (3) with each System that is sold. In any contract executed by the Company for distribution or re-sale of the System, the Company shall require the distributor or re-seller to provide each purchaser of the System with copies of this Certification and the procedures described in Section V (3).



**Certification for General Use**  
**Bio-Microbics FAST <2,000 GPD Nitrogen Reducing**

**Page 9 of 10**

6. A copy of the wastewater analyses, wastewater flow data, field testing results, and System Operator O&M reports and inspection checklists from each installed System shall be maintained by the Company or its designee for possible Department audit.
7. If the Company wishes to continue this Certification after its expiration date, the Company shall apply for and obtain a renewal of this Certification. The Company shall submit a renewal application at least 180 days before the expiration date of this Certification, unless written permission for a later date has been granted in writing by the Department. This Certification shall continue in force until the Department has acted on the renewal application.

**VI. Conditions Applicable to the System Designer**

1. Upon submission of an application for a DSCP, the Designer shall provide to the local approving authority:
  - a) a certification, signed by the owner of record for the property to be served by the System, stating that the property owner:
    - i) has been provided a copy of the Approval, the Owner's Manual, and the Operation and Maintenance Manual, if applicable, and the Owner agrees to comply with all terms and conditions;
    - ii) has been informed of all the owner's costs associated with the operation including, when applicable: power consumption, maintenance, sampling, recordkeeping, reporting, and equipment replacement;
    - iii) understands the requirement for a service contract;
    - iv) agrees to fulfill his responsibilities to provide a Deed Notice as required by 310 CMR 15.287(10) and the Approval;
    - v) agrees to fulfill his responsibilities to provide written notification of the Approval to any new owner, as required by 310 CMR 15.287(5);
    - vi) if the design does not provide for the use of garbage grinders, the restriction is understood and accepted;
    - vii) if the design is for an upgrade of failed or nonconforming system, the System Owner has been provided a copy of the evaluation of the existing system;
    - viii) whether or not covered by a warranty, the System Owner understands the requirement to repair, replace, modify or take any other action as required by the Department or the local approving authority, if the Department or the local approving authority determines that the Alternative System is not capable of meeting the performance standards; and
  - b) a certification, signed by the Designer that the design conforms to the Approval with Conditions and 310 CMR 15.000.

**VII. Reporting**

1. All notices and documents required to be submitted to the Department by this Certification shall be submitted to:

**Certification for General Use  
Bio-Microbics FAST <2,000 GPD Nitrogen Reducing**

**Page 10 of 10**

Director  
Wastewater Management Program  
Department of Environmental Protection,  
One Winter Street - 5th floor  
Boston, Massachusetts 02108

**VIII. Rights of the Department**

1. The Department may suspend, modify or revoke this Certification for cause, including, but not limited to, non-compliance with the terms of this Certification, non-payment of the annual compliance assurance fee, for obtaining the Certification by misrepresentation or failure to disclose fully all relevant facts or any change in or discovery of conditions that would constitute grounds for discontinuance of the Certification, or as necessary for the protection of public health, safety, welfare or the environment, and as authorized by applicable law. The Department reserves its rights to take any enforcement action authorized by law with respect to this Certification and/or the System against the owner or operator of the System and/or the Company.

Transmittal: X232831 (formerly W101238)



**TOWN OF BREWSTER**  
2198 MAIN STREET  
BREWSTER, MA 02631  
PHONE: (508) 896-3701 EXT 1120  
FAX: (508) 896-4538  
BRHEALTH@BREWSTER-MA.GOV

OFFICE OF  
HEALTH DEPARTMENT

**LOCAL REGULATION TO SUPPLEMENT TITLE 5  
STATE ENVIRONMENTAL CODE  
MONITORING OF INNOVATIVE/ALTERNATIVE ON-SITE  
SEWAGE TREATMENT SYSTEMS**

- 1. Authority** – In considering the permitting and use of various alternative septic treatment technologies in the Town of Brewster, the Brewster Board of Health recognizes that there may be specific local circumstances which warrant the Board to require more stringent conditions for the installation and monitoring of these alternative systems than may be required by the Massachusetts Department of Environmental Protection. As allowed under Massachusetts General Laws, Chapter 111, Section 31 and as permitted by 310 CMR 15.003 (3), 15.285 (2), 15.286 (5) and 15.288 (4), the Brewster Board of Health hereby adopts the following regulations concerning all innovative/alternative sewage treatment technologies and all systems where the soil absorption system is designed for pressure distribution of effluent.
- 2. Purpose** – The purpose of this regulation is to provide a greater degree of protection to environmental and public health, to protect groundwater from contamination, prevent the spread of disease and provide specific reporting and monitoring requirement for the use of innovative/alternative sewage treatment technologies and pressure-distribution systems.
- 3. Monitoring Requirement** – The Brewster Board of Health hereby requires that all owners and operators of innovative/alternative sewage treatment technologies and pressure-distribution systems approved for use in Brewster submit for approval to the Board of Health a proposed monitoring and reporting plan to evaluate the performance of the system. This plan shall include a description of any long-term operation or maintenance requirements of the alternative system and any education, financial assurance or other mechanism proposed to ensure effective long-term operation and maintenance.
- 4. Reporting of Monitoring and Maintenance Results** – The Brewster Board of Health hereby requires that owners and operators of all innovative/alternative sewage treatment and pressure-distribution systems shall report the results of all operation, maintenance and monitoring activities required by the foregoing provision or by the Department of Environmental Protection to the Brewster Board through the Barnstable County Department of Health and Environment. Such reporting must be performed in the manner specified by the Board of Health in imposing the monitoring requirement or in the form approved by the Barnstable County Department of Health and Environment and must occur within 15 days after each maintenance or monitoring event.
- 5. Reporting of Malfunctioning Systems** – The Board of Health hereby further requires that when a system operator performs a system inspection and finds that a sewage treatment technology has malfunctioning components which have comprised the system's ability to treat sewage as designed, the operator shall report on the system's status and any planned corrective action, including a proposed deadline

for said corrective action, to the Brewster Board of Health and the Barnstable County Department of Health and Environment within 48 hours of inspection.

**6. Malfunctioning Systems** – If at any time a monitoring or maintenance report indicates that an innovative/alternative system or system using pressure distribution is in need of corrective action, the Brewster Board of Health may hold a hearing to inquire as to whether corrective action is needed. If at such hearing, the Brewster Board of Health determines that such system is in need of corrective action, it may take enforcement action, including but not limited to the imposition of fines, orders to take corrective action or cease operation of the system, or any other action otherwise necessary to protect public health, safety, welfare and the environment.

**7. Right to impose Additional Conditions Reserved** – The Brewster Board of Health hereby reserves the right to impose any additional conditions, effluent water quality standards and/or monitoring and reporting requirements it views as necessary to ensure the safe performance of any innovative/alternative sewage treatment systems and all pressure-distribution systems permitted within the Town of Brewster. Such conditions may include, without limitation, specification of site or effluent characteristics; flow limitations; monitoring, testing and reporting requirements; a requirement that a certified operator operate the system; or financial assurance mechanisms.

**8. Certified Operator Requirement** – If a condition of approval for an innovative/alternative system or pressure-distribution system is that it be operated by a certified systems operator, the owner or operator shall provide the Brewster Board of Health with documentation verifying that said system will be operated by an operator certified by the Board of Certification of Operators of Wastewater Treatment Facilities pursuant to the provisions of Massachusetts General Laws, Chapter 21, Section 34A. A list of such certified operators doing business within the Town of Brewster shall be on file with the Brewster Board of Health for inspection or examination by any person.

**9. Enforcement** – In addition to the remedies described in the preceding sections, the Board of Health may enforce this regulation or enjoin violations thereof through any lawful process, and the election of one remedy shall not preclude enforcement through any other lawful means, including but not limited to the following:

Whoever violates any provision of this regulation may be penalized by indictment or on complaint brought in the district court. Except as may be otherwise provided by law and as the district court may see fit to impose, the maximum penalty for each violation shall be a fine of not more than \$1,000.

Whoever violates any provision of this regulation may be penalized by a non-criminal disposition process as provided in Massachusetts General Laws, Chapter 40, Section 21D and the Town's non-criminal disposition bylaw. If non-criminal disposition is elected, then any person who violates any provision of this regulation shall be subject to the following penalties:

- A fine of \$30.00 for a first offense not corrected within 60 days of notice of the violation;
- A fine of \$60.00 for a second offense or failure to correct a prior offense within 120 days of notice of the violation;
- A fine of \$90.00 for a third offense or failure to correct a prior offense within 180 days of notice of the violation;

- A fine of \$120.00 for a fourth or subsequent offense or failure to correct a prior offense within 240 days of the notice of violation; and
- An additional fine of \$120.00 for failure to correct after each additional offense or 60 day period thereafter until compliance is met.

Each day any violation exists shall be deemed to be a separate offense.

\_\_\_\_\_  
Dr. Carmen Scherzo, Chairman

\_\_\_\_\_  
Joe Ford

\_\_\_\_\_  
Dr. Mary Chaffee

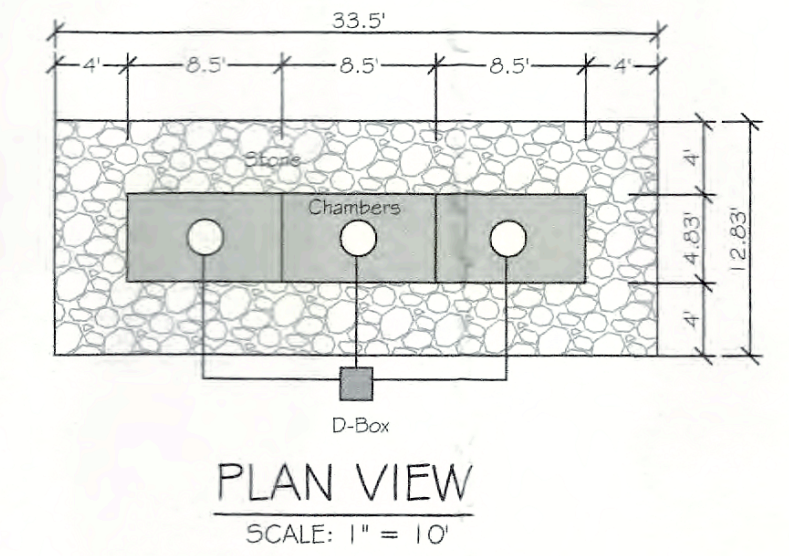
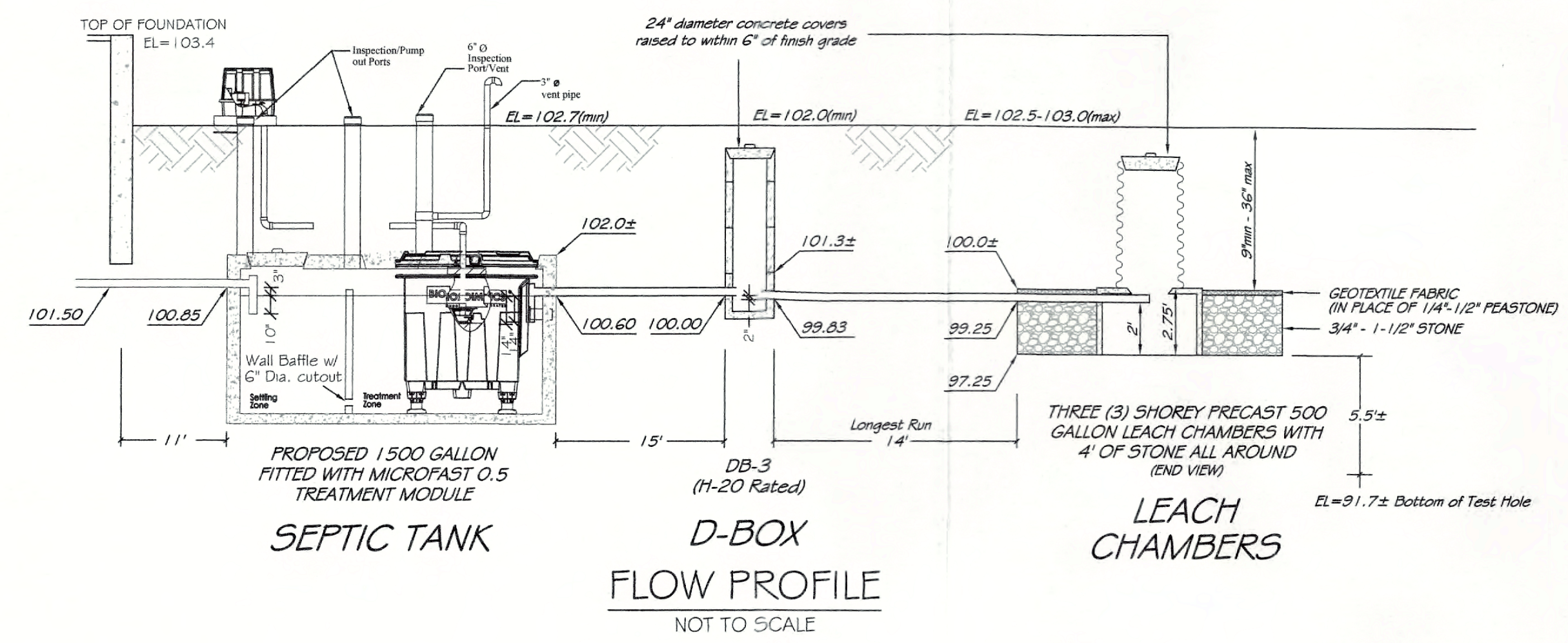
\_\_\_\_\_  
Annette Graczewski

\_\_\_\_\_  
Anne Bittner

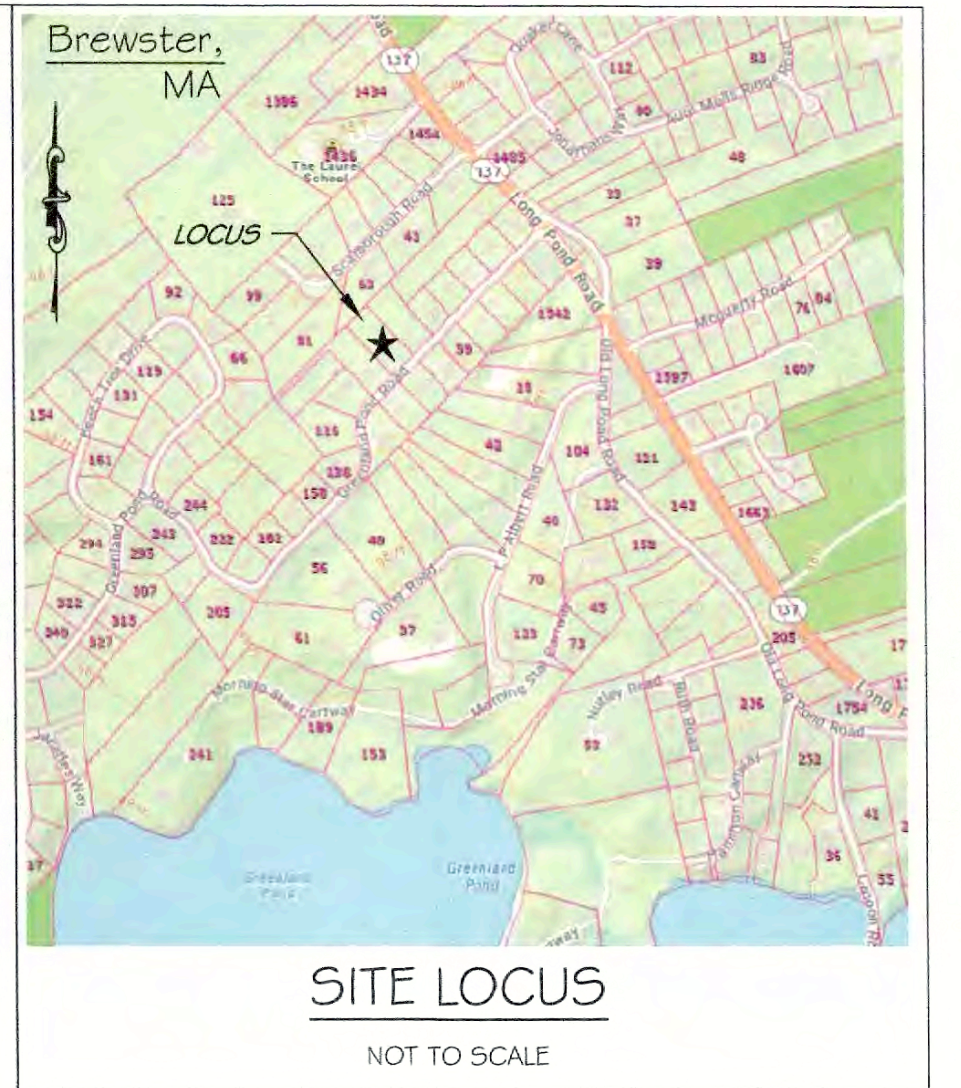
Board  
Of  
Health

Adopted: December 20, 2005  
Effective: Upon publication  
Amended: November 15, 2017  
Effective: December 1, 2017





Stormwater Volume:  
 Impervious Area:  $2105 \text{ ft}^2 \times 1.0' \times 1.0'/12.0'$   
 $= 175.4 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3$   
 $= 1312 \text{ gallons}$   
 Proposed: Two (2) 6"x2' drywells with 1' of stone  
 $\text{Volume} = 2[\pi R^2 h + .45(\pi R^2 - \pi r^2)h]$   
 $= 2[\pi(4' \times 1.5' + .45(\pi(4' - \pi(3')) \times 1.5)]$   
 $= 180.5 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3$   
 $= 1350.1 \text{ gallons} > 1312 \text{ gallons required}$



**SYSTEM DESIGN CALCULATIONS**

SEWAGE DESIGN FLOW REQUIRED: 4 BEDROOM DWELLING @ 110 GPD / BEDROOM  
 = 440 GPD REQUIRED  
 WITH MICROFAST 0.5 TREATMENT  
 SEWAGE DESIGN FLOW PROVIDED: THREE (3) 500 GALLON LEACH CHAMBERS WITH  
 4' OF STONE ALL AROUND  
 $V_t = (33.5' \times 12.03' + 2(33.5' \times 12.03') \times 2) \times .74$   
 $= 455.2 \text{ GPD PROVIDED}$   
 455 GPD PROVIDED > 440 GPD REQUIRED  
 SEPTIC TANK CAPACITY REQUIRED: 440 GPD X 200% = 880 GPD REQUIRED  
 SEPTIC TANK CAPACITY PROVIDED: 1500 GALLON PROVIDED (MINIMUM ALLOWED)  
 WITH MICROFAST 0.5 TREATMENT UNIT

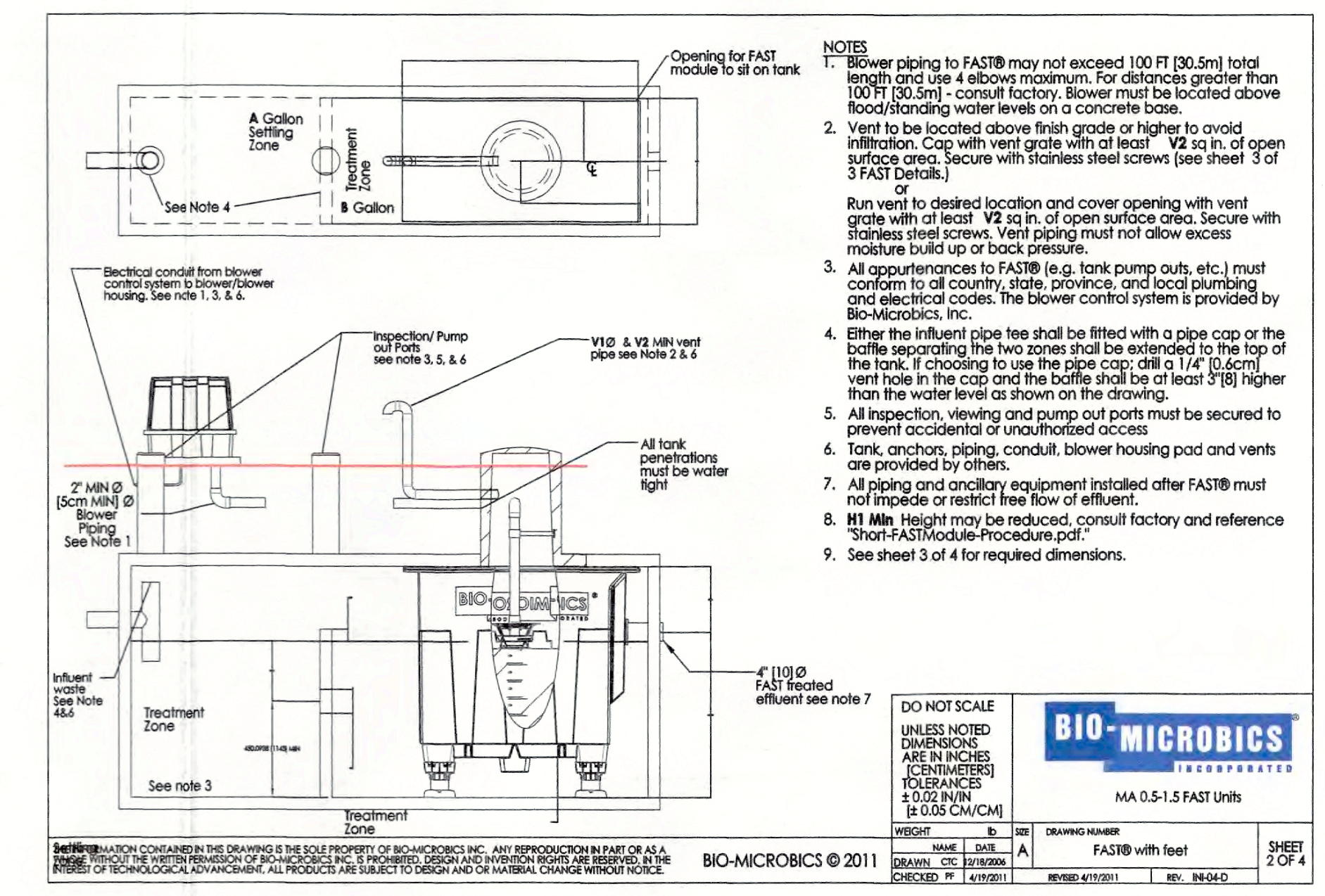
**CONSTRUCTION NOTES**

- ALL WORK SHALL CONFORM TO THE STATE ENVIRONMENTAL CODE, TITLE 5 (3) OCMR 15.000; AND THE REGULATIONS OF THE LOCAL BOARD OF HEALTH.
- ANY SEPTIC SYSTEM COMPONENT INSTALLED IN A LOCATION WHERE THERE IS POTENTIAL FOR VEHICLES OR HEAVY EQUIPMENT TO PASS OVER IT SHALL BE DESIGNED TO WITHSTAND AN H-20 LOADING. IF UNDER AN IMPERVIOUS SURFACE, SYSTEM SHALL BE VENTED TO THE ATMOSPHERE.
- TO MINIMIZE UNEVEN SETTLING, SEPTIC TANKS SHALL BE INSTALLED ON A STABLE MECHANICALLY-COMPACTED BASE ON SIX INCHES OF CRUSHED STONE.
- COVERS OVER THE INLET AND OUTLET TEES OF THE SEPTIC TANK, THE DISTRIBUTION BOX, AND THE SOIL ABSORPTION SYSTEM SHALL BE RAISED TO WITHIN 6" OF FINAL GRADE. LEACHING FIELDS, TRENCHES, AND OTHER SOIL ABSORPTION SYSTEMS WITHOUT ACCESS MANHOLES SHALL HAVE AT LEAST ONE (1) INSPECTION PORT CONSISTING OF PERFORATED 4" PVC PIPE PLACED VERTICALLY TO THE BOTTOM OF THE SOIL ABSORPTION SYSTEM WITH A CAP, TIED WITH MAGNETIC MARKING TAPE, ACCESSIBLE TO WITHIN 3' OF FINAL GRADE.
- PIPING SHALL CONSIST OF 4" SCHEDULE 40 PVC OR EQUIVALENT. PIPE SHALL BE LAID ON A MINIMUM CONTINUOUS GRADE OF NOT LESS THAN 2% FROM THE BUILDING TO THE SEPTIC TANK, AND NOT LESS THAN 1% OTHERWISE.
- DISTRIBUTION LINES FOR THE SOIL ABSORPTION SYSTEM SHALL BE 4" DIAMETER SCHEDULE 40 PVC (OR EQUIVALENT) LAID AT 0.005 FT/FT, UNLESS OTHERWISE NOTED. LINES SHALL BE CAPPED AT END OR AS NOTED.
- LINES FROM THE DISTRIBUTION BOX TO BE LEVEL FOR THE FIRST TWO (2) FEET BEFORE FITTING TO THE SOIL ABSORPTION SYSTEM. DISTRIBUTION BOX SHALL BE WATER TESTED TO ASSURE EVEN DISTRIBUTION.
- GROUT TO BE USED AT ALL POINTS WHERE PIPES ENTER OR LEAVE ALL CONCRETE STRUCTURES IN ORDER TO PROVIDE A WATERTIGHT SEAL.
- HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO OPERATE OVER THE LIMITS OF THE SEWAGE DISPOSAL FIELD DURING THE COURSE OF CONSTRUCTION OF THE SYSTEM.
- IN ACCORDANCE WITH 310 CMR 15.221, ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE.
- THERE ARE NO KNOWN WELLS WITHIN 100' OF THE PROPOSED SOIL ABSORPTION SYSTEM.
- FROM THE DATE OF THE INSTALLATION OF THE SOIL ABSORPTION SYSTEM UNTIL RECEIPT OF THE CERTIFICATE OF COMPLIANCE, THE PERIMETER SHALL BE STAKED AND FLAGGED TO PREVENT USE OF THE AREA THAT MAY CAUSE DAMAGE TO THE SYSTEM.
- THE DESIGNER WILL NOT BE RESPONSIBLE FOR THE SYSTEM AS DESIGNED UNLESS CONSTRUCTED AS SHOWN ON PLAN. ANY CHANGES SHALL BE APPROVED IN WRITING BY THE DESIGNER.
- IF THE BOARD OF HEALTH REQUIRES INSPECTION OF ALL CONSTRUCTION BY AN AGENT OF THE BOARD OF HEALTH AND THE DESIGNER. THE DESIGNER SHALL CERTIFY IN WRITING THAT THE SEWAGE DISPOSAL SYSTEM WAS INSTALLED IN ACCORDANCE WITH THE TERMS OF THE PERMIT AND THE APPROVED PLANS. 48 HOURS ADVANCE NOTICE IS REQUESTED.
- LOCATION OF UTILITIES IS APPROXIMATE AND CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL UNDERGROUND AND OVERHEAD UTILITIES PRIOR TO COMMENCEMENT OF ANY WORK. THIS INCLUDES, BUT IS NOT LIMITED TO, REQUESTS TO DISGAS, ANY PRIVATE UTILITY COMPANIES, AND THE LOCAL WATER DEPARTMENT.
- CONTRACTOR SHALL VERIFY THAT ALL WASTELINES ARE CONNECTED BY WATER TESTING WITHIN THE DWELLING PRIOR TO INSTALLATION OF ANY SEPTIC COMPONENTS.
- CONTRACTOR SHALL VERIFY EXISTING INVERT ELEVATIONS PRIOR TO INSTALLATION OF ANY SEPTIC SYSTEM COMPONENTS.
- INSTRUMENT SURVEY CONDUCTED FOR PROPOSED WORK ONLY. SITE PLAN SHALL NOT BE USED FOR STAKING, OR ANY OTHER PURPOSES. NOR SHALL IT BE USED AS A MORTGAGE PLOT PLAN OR TITLE SURVEY. CONFORMANCE TO LOCAL BYLAWS SHALL BE DETERMINED BY THE OWNER PRIOR TO CONSTRUCTION.
- THIS PLAN DOES NOT CERTIFY, GUARANTEE OR WARRANTY COMPLIANCE WITH DEEDED OR ZONING BYLAWS, SPECIFICALLY, BUT NOT LIMITED TO, SIDELINE SETBACKS AND BUILDING HEIGHT RESTRICTIONS. OWNER IS RESPONSIBLE FOR OBTAINING SUCH A DETERMINATION FROM THE APPROPRIATE AUTHORITY.
- TEST HOLES COMPLETED PER STATE ENVIRONMENTAL CODE, TITLE 5. SOILS CAN BE VARIABLE AND TEST HOLE DATA IS NO GUARANTEE OF SOIL CONDITIONS IN OTHER AREAS. IF SOILS DIFFER FROM THOSE SHOWN IN THE SOILS LOGS, DESIGN ENGINEER IS TO INSPECT THE SOILS PRIOR TO PROCEEDING WITH INSTALLATION OF ANY SEPTIC COMPONENTS.

**TEST HOLE LOGS**

Test Hole #1 (EL=102.9±)				
Depth	Layer	Soil Class	Soil Color	Comments
0'-3"	A	Medium Sandy Loam	OYR 3/2	Perc @ 42"
3'-24"	B	Medium Loamy Sand	OYR 4/6	
24'-60"	C1	Coarse Sand	OYR 5/6	
60'-120"	C2	Medium Sand	OYR 5/8	
Test Hole #2 (EL=101.7±)				
Depth	Layer	Soil Class	Soil Color	Comments
0'-5"	A	Medium Sandy Loam	OYR 3/2	Perc @ 51"
5'-21"	B	Medium Loamy Sand	OYR 4/6	
21'-63"	C1	Coarse Sand	OYR 5/6	
63'-120"	C2	Medium Sand	OYR 5/8	
Test Hole #3 (EL=102.7±)				
Depth	Layer	Soil Class	Soil Color	Comments
0'-3"	A	Medium Sandy Loam	OYR 3/2	Perc @ 51"
3'-12"	B	Medium Loamy Sand	OYR 4/6	
12'-73"	C1	Coarse Sand	OYR 5/6	
73'-120"	C2	Medium Sand	OYR 5/8	
Test Hole #4 (EL=103.2±)				
Depth	Layer	Soil Class	Soil Color	Comments
0'-2"	A	Medium Sandy Loam	OYR 3/2	Perc @ 51"
2'-14"	B	Medium Loamy Sand	OYR 4/6	
14'-72"	C1	Coarse Sand	OYR 5/6	
72'-120"	C2	Medium Sand	OYR 5/8	

DATE OF TESTING: 10/06/2020  
 SOIL EVALUATOR: LINDA J. CRONIN, P.E., CSN ENGINEERING  
 BOARD OF HEALTH AGENT: SHERRIE MCCULLOUGH, BREWSTER HEALTH DEPARTMENT  
 PERCOLATION RATE: LESS THAN 2 MIN INCH IN 1" LAYERS  
 NO GROUNDWATER ENCOUNTERED



- NOTES**
- Blower piping to FAST® may not exceed 100 FT (30.5m) total length and use 4 elbows maximum. For distances greater than 100 FT (30.5m) - consult factory. Blower must be located above flood/standing water levels on a concrete base.
  - Vent to be located above finish grade or higher to avoid infiltration. Cap with vent grate with at least 1/2 in. of open surface area. Secure with stainless steel screws (see sheet 3 of 3 FAST Details).
  - Run vent to desired location and cover opening with vent grate with at least 1/2 in. of open surface area. Secure with stainless steel screws. Vent piping must not allow excess moisture build up or back pressure.
  - All appurtenances to FAST® (e.g. tank pump outs, etc.) must conform to all county, state, province, and local plumbing and electrical codes. The blower control system is provided by Bio-Microbics, Inc.
  - Either the influent pipe tee shall be fitted with a pipe cap or the baffle separating the two zones shall be extended to the top of the tank. If choosing to use the pipe cap, drill a 1/4" (0.6cm) vent hole in the cap and the baffle shall be at least 3" (8) higher than the water level as shown on the drawing.
  - All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access.
  - Tank anchors, piping, conduit, blower housing pad and vents are provided by others.
  - All piping and ancillary equipment installed after FAST® must not impede or restrict free flow of effluent.
  - H1 Min. Height may be reduced, consult factory and reference "Short-FAST® Module-Procedure.pdf".
  - See sheet 3 of 4 for required dimensions.

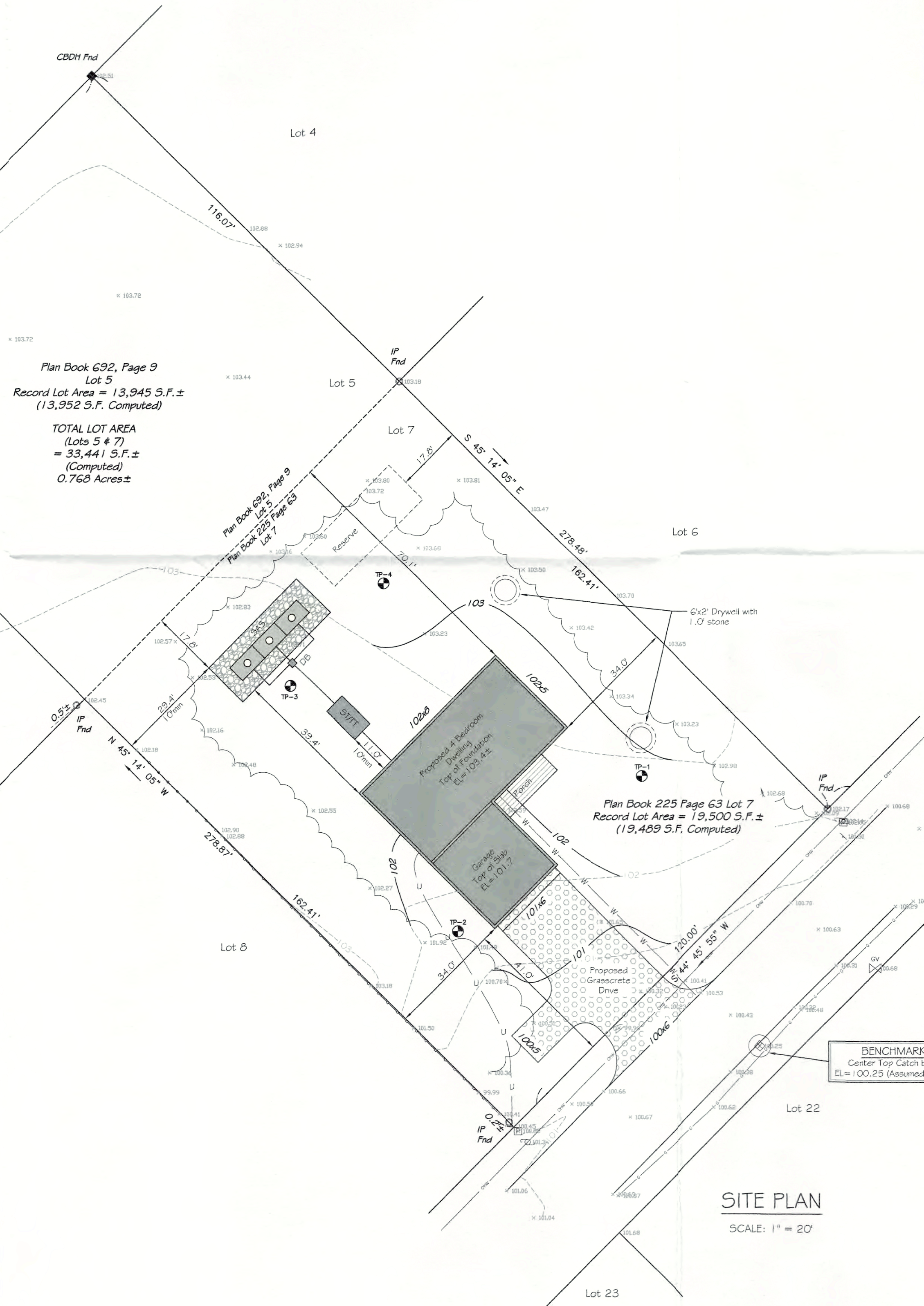
DO NOT SCALE UNLESS NOTED DIMENSIONS ARE IN INCHES (CENTIMETERS) TOLERANCES ± 0.02 IN (± 0.05 CM) (± 0.08 CH) (± 0.08 CH) (± 0.08 CH)

**BIO-MICROBICS** INCORPORATED  
 MA 0-51.5 FAST Units

MADE IN THE U.S.A.  
 FAST® with leaf  
 DRAWN: J.C. BURNETT  
 CHECKED: J. KIRBY  
 REVISION: 04/19/2011 REV. 04/04/20

SHEET 2 OF 4

**INSPECTION NOTE:**  
 PRIOR TO FINAL INSPECTION BY THE ENGINEER, SYSTEM NEEDS TO BE COMPLETE INCLUDING BUILDUP FOR COVERS.



**LEGEND**

- 24x5 EXISTING SPOT GRADE
- 24 PROPOSED SPOT GRADE
- PROPOSED CONTOUR
- WATER SERVICE LINE
- OVERHEAD UTILITY LINES
- UNDERGROUND UTILITY LINES
- GAS SERVICE LINE
- TOP OF BANK
- LIMIT OF WORK
- EDGE OF CLEARING
- FENCE
- TEST HOLE LOCATION
- SEPTIC TANK
- DISTRIBUTION BOX
- SOIL ABSORPTION SYSTEM
- RESERVED FOR FUTURE USE
- UTILITY POLE
- CATCH BASIN
- FIRE HYDRANT
- DRINKING WATER WELL
- CONCRETE BOUND



SURVEY BY:  
 TS Land Surveying, Inc.  
 2 Sweetfern Ln.  
 Harwich, MA 02645  
 508-737-8635

Proposed Site & Sewage Disposal System  
 0 Greenland Pond Rd. (Lots 5 & 7), Brewster, MA

Prepared for:  
 William & Kimberly Donnelly  
 870 Farm to Market Rd.  
 Troy, NY 12180

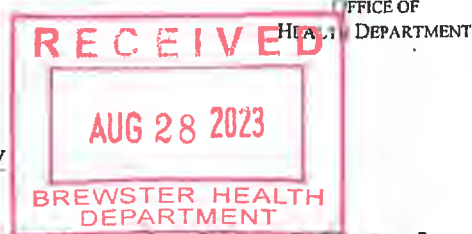
**CSN ENGINEERING**  
 P.O. Box 201  
 Brewster, MA 02631  
 Phone: (508) 868-1783

DATE: 09/10/2023 SCALE: AS SHOWN DESIGN: LUC CHECK: KM JOB NO: 2023336





TOWN OF BREWSTER
2198 MAIN STREET
BREWSTER, MA 02631
PHONE: (508) 896-3701 EXT 1120
FAX: (508) 896-4538
BRHEALTH@BREWSTER-MA.GOV
WWW.BREWSTER-MA.GOV



Received: 8/28/23 Paid: N/A
Abutter Deadline: N/A

Application for Board of Health Variances

[X] In-House Local Upgrade Approval [ ] Public Hearing

Date: 8/28/2023

SUBJECT PROPERTY ADDRESS: 432 BLUEBERRY POND DR

Map: 89 Parcel: 44 Book: Page: LC Certificate: 155719
LC Plan: Lot:

Name of Applicant: ROBIN EISENHARD

Mailing Address: 939 MARY DUNN ROAD APT. 302 HYANNIS, MA 02601

Telephone #: 717-576-1725 Email: ROBINM.EISENHARD@GMAIL.COM

Owner(s) of Record: LINDA T Young / ROBIN EISENHARD

Mailing Address:

Design Engineer/Sanitarian: Firm/Company Name:

Mailing Address:

Telephone #: Email address:

Signature: [Signature]
Applicant or Engineer

Form section with checkboxes: New Construction, Voluntary Upgrade, Addition/Alteration, Failed system, Real Estate Transfer. Includes fields for design flow, total lot size (1.1 Acres), and conservation commission approval.

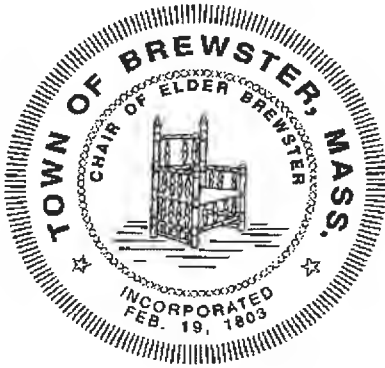
List of all Variances from State and Local codes (add sheets if needed)

Table with 2 columns: TITLE 5, Sec. #: and Description of Variance(s). Entry: within 300 ft across the pond.

Table with 2 columns: Brewster Reg. #: and Description of Variance(s). Entry: #19 Keep SAS 175 +/-' JDM Blueberry Pond.

Approved by: [Signature]
Health Department

Date: 9/13/2023



# Town of Brewster

2198 MAIN STREET  
BREWSTER, MASSACHUSETTS 02631-1898

PHONE: 508.896.3701 EXT. 1120

FAX: 508.896.4538

[brhealth@brewster-ma.gov](http://brhealth@brewster-ma.gov)

WWW.BREWSTER-MA.GOV

Health Department

Amy L. von Hone, R.S., C.H.O.  
Director

Sherrie McCullough, R.S.  
Assistant Director

Tammi Mason  
Senior Department Assistant

## AGENDA ACTION ITEM FORM

**BOH Variance Agenda Item**

**In-House Local Upgrade Approval**

**Other:** 300' variance request to Blueberry Pond

**Board of Health Meeting Date:** September 20, 2023

**Project Location:** 432 Blueberry Pond Drive

**Map & Parcel:** 89/44

**Owner's Name & Address:** Robin Eisenbard  
939 Mary Dunn Road  
Apt. # 302  
Hyannis, MA 02601

**Applicant:** Robin Eisenbard

**Date Requested:** August 28, 2023

**Title 5 Variance Request:**

Yes  No

**Board of Health Variance Request:**

Yes  No  300' Pond Setback

**Other:**

Yes  No

1. In an Environmentally Sensitive Area (ESA) – existing dwelling and septic system within 300' Blueberry Pond
2. Outside Zone II and the District of Critical Planning Concern (DCPC)
3. Property lies within the Cape Cod Bay Embayment
4. Town Water

**Assistant Health Director's Recommendation:** Approve with following comments and conditions

1. The existing property consists of an existing 3-bedroom dwelling serviced by a 1989 Title 5 septic system with a design flow of 440 gpd. The lot is approximately 1.1 acres and is subject to local ESA restrictions.
2. Per engineered plans on file and a Title 5 Septic Inspection Report dated July 26, 2023, the existing leach facility system (two 2' X 6' leach pits with stone) are located approximately 175' feet from the edge of Blueberry Pond.
3. The existing leach facility is greater than 4' above ground water.

4. Per the Water Table Map of Brewster and Harwich, groundwater is flowing northeasterly. The existing septic system is located downgradient of Blueberry Pond and therefore, will not impact the pond as currently situated. In addition, according to the Brewster Water Resource Atlas the property lies outside the 100-foot septic system buffer indicating the septic system is located on the downgradient side of the pond.



# Town of Brewster

2198 MAIN STREET  
BREWSTER, MASSACHUSETTS 02631-1898

PHONE: 508.896.3701 EXT. 1120

FAX: 508.896.4538

[brhealth@brewster-ma.gov](mailto:brhealth@brewster-ma.gov)

[WWW.BREWSTER-MA.GOV](http://WWW.BREWSTER-MA.GOV)

Health Department

Amy L. von Hone, R.S., C.H.O.  
Director

Sherrie McCullough, R.S.  
Assistant Director

Tammi Mason  
Senior Department Assistant

August 13, 2023

Robin Eisenbard  
939 Mary Dunn Road, Apt. # 302  
Hyannis, MA 02601

Re: 432 Blueberry Pond Drive – Septic System In-House Variance Request Approval

Dear Ms. Eisenbard:

The Health Department has reviewed your variance request and hereby approves the existing leaching facility to remain less than 300 feet from Blueberry Pond as required by the Brewster Leaching Facility Setback Regulation.

If you have any questions about the above matters, please do not hesitate to contact this office.

Sincerely,

Sherrie McCullough, RS  
Assistant Health Director

cc: File







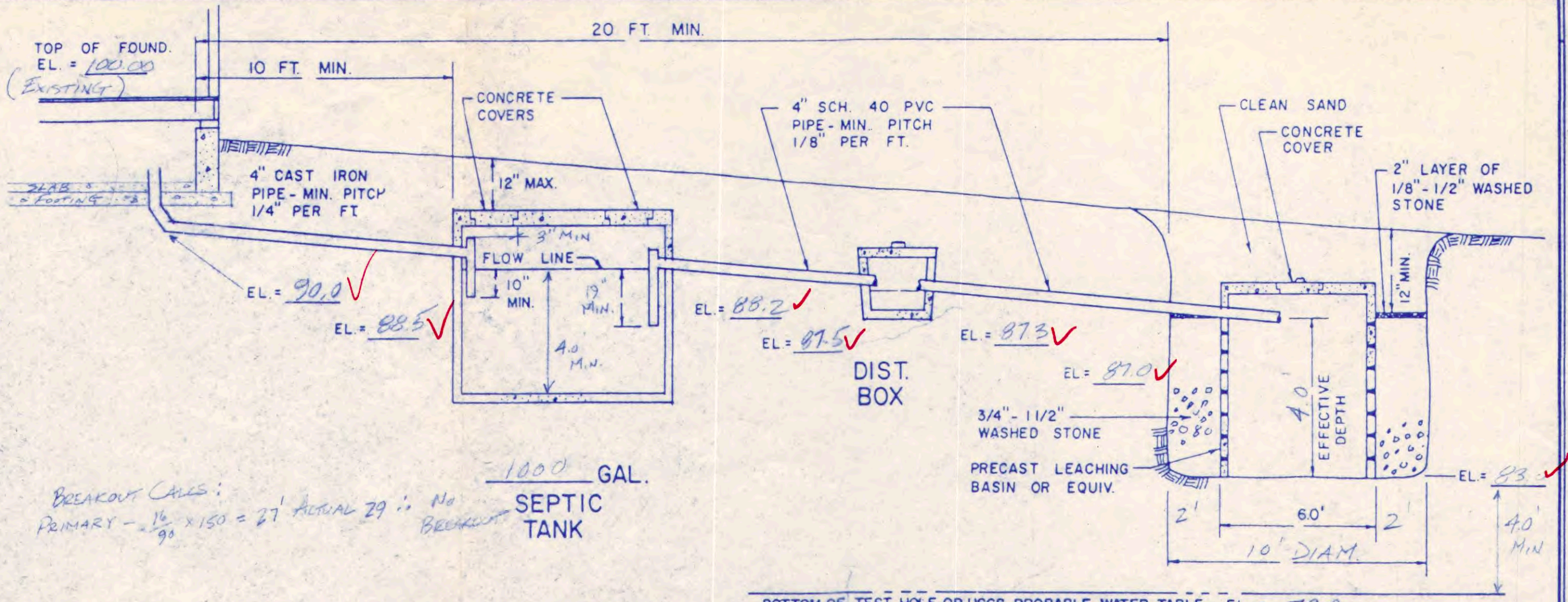




325-88 M27 L28-170



LOCATION MAP



PROFILE OF SEWAGE DISPOSAL SYSTEM NOT TO SCALE

BREAKOUT CALC: PRIMARY -  $\frac{1}{90} \times 150 = 27'$  ACTUAL 29' No Breakout

1000 GAL. SEPTIC TANK

DESIGN CALCULATIONS

NUMBER OF BEDROOMS	4 ✓
GARBAGE DISPOSAL UNIT	No
TOTAL ESTIMATED FLOW (110 GAL/BR./DAY x 4 BR.)	440 GAL/DAY
REQUIRED SEPTIC TANK CAPACITY	660 GAL
ACTUAL SIZE OF SEPTIC TANK	1000 GAL
LEACHING AREA REQUIREMENTS SIDEWALL AREA $\frac{2.5}{1.0}$ GAL/S.F. BOTTOM AREA $\frac{1.0}{1.0}$ GAL/S.F.	
LEACHING CAPACITY (BOTTOM + SIDEWALL)	785.4 GAL
$(2 \times T \times S \times 4 \times 2.5) + (\pi \times S^2 \times 1.0) \times 2$ LEACH PITS	
RESERVE LEACHING CAPACITY	785.4 ✓

SOIL TEST

DATE OF SOIL TEST 11/18/88  
WITNESSED BY CINDI BARRAN B.O.H.  
PERCOLATION RATE 12 MIN./INCH

OBSERVATION HOLE 1	OBSERVATION HOLE 2
ELEVATION = 93.0	ELEVATION =
0" TOP OF SUBSOIL	
36" FINE SAND	
60" MEDIUM/FINE SAND	
156"	

- NOTES
1. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO D.E.Q.E. TITLE 5 AND THE TOWN OF BREWSTER RULES AND REGULATIONS FOR SUBSURFACE DISPOSAL OF SANITARY SEWAGE
  2. ALL COVERS TO SANITARY UNITS SHALL BE BROUGHT TO WITHIN 12" OF FINISHED GRADE.
  3. EXISTING AND FINAL GRADES SHALL REMAIN ESSENTIALLY THE SAME.
  4. NO DETERMINATION HAS BEEN MADE BY THIS OFFICE AS TO COMPLIANCE WITH TOWN ZONING REGULATIONS. OWNER/APPLICANT IS TO OBTAIN SUCH DETERMINATION FROM APPROPRIATE AUTHORITY.
  5. EXISTING CESSPOOLS TO BE PUMPED AND FILLED

LEGEND

EXISTING SPOT ELEVATIONS	00.0
EXISTING CONTOUR	00
FINAL SPOT ELEVATIONS	00.0
FINAL CONTOUR	00
SOIL TEST LOCATION	⊙



SITE PLAN 1"=40'



APPROVED: BOARD OF HEALTH  
1/26/89 DATE  
nae AGENT

PROJECT LOCATION: Lot 55 Blueberry Pond Drive Brewster, MA.

APPLICANT: FRANK VARGA

SCALE: 1"=40' DR BY: ASL DATE: 11/19/88

JOB NO: 9588 APPD. BY: REV:

TADCO ENVIRONMENTAL CONSULTANTS  
P.O. BOX 615, EAST DENNIS, MA 02641  
(617) 385-2425

DRAWING NO. 1 OF 1





# Town of Brewster

2198 MAIN STREET  
BREWSTER, MASSACHUSETTS 02631-1898

PHONE: 508.896.3701 EXT. 1120

FAX: 508.896.4538

[brhealth@brewster-ma.gov](mailto:brhealth@brewster-ma.gov)

WWW.BREWSTER-MA.GOV

Health Department

Amy L. von Hone, R.S., C.H.O.  
Director

Sherrie McCullough, R.S.  
Assistant Director

Tammi Mason  
Senior Department Assistant

August 22, 2023

Certified Mail: 7021 0350 0000 0857 6921

Christian Diaz  
7 Thousand Oaks Drive  
Brewster, MA 02631

**RE: Notice of Noncompliance – Innovative/Alternative Sewage System  
7 Thousand Oaks Drive Brewster M107 L21**

Dear Mr. Diaz:

This office monitors the sampling results for the Innovative/Alternative septic system approved and installed at your Brewster property. in accordance with **310 CMR 15.287 of 310 CMR 15.000: The State Environmental Code, Title 5: General Conditions for the Use of Alternative Systems Pursuant to 310 CMR Under 15.2840 through 15.286.**

Our review finds that the Alternative System performance in the removal of total nitrogen is deficient and concentrations of total nitrogen are consistently greater than that represented in the technology approval and local approvals granted. Such conditions could threaten public health, welfare and safety and adversely affect the environment. Therefore, you may be **out of compliance** with 310 CMR 15.000: The State Environmental Code, Title 5, and the Town of Brewster Local Board of Health Regulations.

To bring your Innovative/Alternative system into compliance, you must increase system treatment performance and lower total nitrogen concentrations. You should speak to your Wastewater Treatment System Operator to discuss these deficiencies and **to collect effluent samples and analyze total nitrogen (nitrate+nitrite+TKN) within thirty (30) days of receipt. They should forward these results to the Brewster Health Department within 15 days of receipt with an explanation of noncompliance and or corrective actions undertaken.** A list of certified operators is attached for your convenience.

You have the right to a hearing before the Board of Health to show cause why the Board should modify or withdraw this order. If you choose to exercise this right, you must do so, in writing, within seven (7) days of receipt of this letter.

If you have any further questions or comments about this matter, please contact our office Monday through Friday, 8:30- 4:00PM. Our telephone number is 508-896-3701 ext. 1120.

**Failure to comply with this Notice will result in further Board of Health action and/or legal action including monetary fines.**

Respectfully,

Amy von Hone, R.S., C.H.O.  
Health Director

cc: Barnstable County Department of Health and Environment- Tracy Long  
Board of Health  
File

Enclosure: I/A Contractor List

*9-7-23 Owner visited of type and was advised to renew contract asap. Contractor will need to test systems & bring into compliance. Must provide copy of signed contract. Owner does not like system & will need to consult with contractor for options. att.*

Bennett Environmental Associates, LLC.  
 A Natural Systems Utilities Company  
 1573 Main Street, Brewster MA 02631  
 508-896-1706



## WORK ORDER

<b>PROPOSAL DATE:</b>	September 9, 2023
<b>PAYMENT TERMS:</b>	Net 30
<b>PROPOSAL PREPARED BY:</b>	Samantha Farrenkopf
<b>BEA CONTACT (Name/Phone):</b>	Samantha Farrenkopf/508-535-0489
<b>LOCUS:</b>	56 McGuerty Road - Brewster, MA 02631
<b>CLIENT CONTACT (Name/Phone):</b>	Jessica & Johnathan Swanson, 56 McGuerty Road - Brewster, MA 02631, [REDACTED]
<b>BEA WORK ORDER#(if applicable)</b>	K11023DA.X.IA.700

**STATEMENT OF WORK:** In response to the notice from the Brewster Health Department, and in consideration of the results of recent inspection and sampling findings, the following scope of work is provided to complete the required effluent resampling; as well as recommended influent characterization for analysis of BOD, TSS, ammonia, surfactants, and quaternary ammonium to determine efficiency of treatment, strength of nutrients in incoming untreated wastewater, and to qualify the potential presence of inhibitory substances; and process control adjustments to test effectiveness with the aerator in continuous operation. If you would like to proceed, please sign and date the document and return a copy to my office.

**PRICE PROPOSAL:**

LABOR:	HOURS	RATE	PRICE
Professional Services	3	[REDACTED]	[REDACTED]
<b>SUBTOTAL LABOR:</b>			[REDACTED]
MATERIALS:	QTY	COST	Ext PRICE (\$)
Laboratory Analysis	1	[REDACTED]	[REDACTED]
<b>SUBTOTAL MATERIALS:</b>			[REDACTED]
<b>Contingency:</b>			\$0.00
<b>Tax &amp; Shipping:</b>			[REDACTED]
<b>ESTIMATED PROPOSAL TOTAL:</b>			[REDACTED]

**ACCEPTANCE OF PROPOSAL:**

The preceding prices, specifications and conditions, including the "Work Order Terms and Conditions" (v 2.3 2020) attached to this Work Order Proposal and incorporated herein as Schedule A are satisfactory and hereby accepted. By way of signature adjacent hereto, Bennett Environmental Associates, LLC., is authorized to proceed with the work in accordance with the conditions herein.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Purchase Order Number

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Date

## Amy von Hone

---

**From:** Samantha Farrenkopf <SFarrenkopf@NSUWater.com>  
**Sent:** Friday, September 8, 2023 12:04 PM  
**To:** [REDACTED]  
**Cc:** Joseph Smith; Brian Fortin; Tyler Gomes; Kara Risk; Amy von Hone  
**Subject:** Brewster Health Department NON Response / Work Order Proposal  
**Attachments:** Work Order Resample, Influent Characterization, Process Adjustments 11023 09-08-23.pdf; BEA-NSU Mid 2023 Schedule Of Rates.pdf

Please find attached the work order proposal prepared in response to the notice of non-compliance issued by the Town of Brewster Health Department. This scope of work was prepared in consideration of the required effluent resampling, as well as findings of recent inspection and sampling results. In addition to the required effluent resampling, influent characterization sampling is recommended to review efficiency of treatment, untreated wastewater strength, and the potential for inhibitory substances. Further, process control adjustments will be made to put the aerator into continuous operation to see if that setting produces greater treatment efficiency. Solids pumping has also been recommended for this system based on the findings during the July inspection. If this has been completed, please let us know. If it has not, BEA recommends contacting a septic hauler to complete solids removal.

If you would like to proceed, please sign and date the attached document and return a copy to my office. Based on the timeline presented by the Brewster Health Department, this work is required to be completed before October 1, 2023.

Thank you,  
*Samantha Farrenkopf*



**SAMANTHA FARRENKOPF**  
INNOVATIVE ALTERNATIVE PROGRAM SUPERVISOR  
TEL: (508) 896-1706 | FAX: (508) 896-5109  
[NSUWATER.COM](http://NSUWATER.COM)

---

*This message may contain privileged and confidential information. If you are not an intended recipient, please note that any disclosure, dissemination, distribution, or copying of this information is prohibited.*

BENNETT ENVIRONMENTAL ASSOCIATES, LLC.  
A Natural Systems Utilities Company  
1573 Main Street  
Brewster, MA 02631

## Amy von Hone

---

**From:** Amy von Hone  
**Sent:** Wednesday, September 13, 2023 11:12 AM  
**To:** Samantha Farrenkopf; [REDACTED]  
**Cc:** Joseph Smith; Brian Fortin; Tyler Gomes; Kara Risk  
**Subject:** RE: Brewster Health Department NON Response / Work Order Proposal

Thank you, Samantha. I will forward this information to the BOH and please keep me updated as you work through mitigation plans outlined in the attached contract (including copies of data and the signed contract to be submitted to the County Health Department and my office).

Amy

Amy L. von Hone  
Health Director

Brewster Health Department  
508.896.3701 X1120

**From:** Samantha Farrenkopf <SFarrenkopf@NSUWater.com>  
**Sent:** Friday, September 8, 2023 12:04 PM  
**To:** jonswan5@comcast.net  
**Cc:** Joseph Smith <JSmith@NSUWater.com>; Brian Fortin <bfortin@NSUWater.com>; Tyler Gomes <tgomes@NSUWATER.COM>; Kara Risk <krisk@NSUWater.com>; Amy von Hone <avonhone@brewster-ma.gov>  
**Subject:** Brewster Health Department NON Response / Work Order Proposal

Please find attached the work order proposal prepared in response to the notice of non-compliance issued by the Town of Brewster Health Department. This scope of work was prepared in consideration of the required effluent resampling, as well as findings of recent inspection and sampling results. In addition to the required effluent resampling, influent characterization sampling is recommended to review efficiency of treatment, untreated wastewater strength, and the potential for inhibitory substances. Further, process control adjustments will be made to put the aerator into continuous operation to see if that setting produces greater treatment efficiency. Solids pumping has also been recommended for this system based on the findings during the July inspection. If this has been completed, please let us know. If it has not, BEA recommends contacting a septic hauler to complete solids removal.

If you would like to proceed, please sign and date the attached document and return a copy to my office. Based on the timeline presented by the Brewster Health Department, this work is required to be completed before October 1, 2023.

Thank you,  
*Samantha Farrenkopf*



**SAMANTHA FARRENKOPF**  
INNOVATIVE ALTERNATIVE PROGRAM SUPERVISOR  
TEL: (508) 896-1706 | FAX: (508) 896-5109  
[NSUWATER.COM](http://NSUWATER.COM)



# Town of Brewster

2198 MAIN STREET  
BREWSTER, MASSACHUSETTS 02631-1898

PHONE: 508.896.3701 EXT. 1120

FAX: 508.896.4538

[brhealth@brewster-ma.gov](mailto:brhealth@brewster-ma.gov)

WWW.BREWSTER-MA.GOV

Health Department

Amy L. von Hone, R.S., C.H.O.  
Director

Sherrie McCullough, R.S.  
Assistant Director

Tammi Mason  
Senior Department Assistant

August 22, 2023

Certified Mail: 7021 0350 0000 0857 6983

Jane Johnson  
1597 Long Pond Road  
Brewster, MA 02631

**RE: Notice of Noncompliance – Innovative/Alternative Sewage System  
1597 Long Pond Road Brewster M94 L93**

Dear Ms. Johnson

This office monitors the sampling results for the Innovative/Alternative septic system approved and installed at your Brewster property. in accordance with **310 CMR 15.287 of 310 CMR 15.000: The State Environmental Code, Title 5: General Conditions for the Use of Alternative Systems Pursuant to 310 CMR Under 15.2840 through 15.286.**

Our review finds that the Alternative System performance in the removal of total nitrogen is deficient and concentrations of total nitrogen are consistently greater than that represented in the technology approval and local approvals granted. Such conditions could threaten public health, welfare and safety and adversely affect the environment. Therefore, you may be **out of compliance** with 310 CMR 15.000: The State Environmental Code, Title 5, and the Town of Brewster Local Board of Health Regulations.

To bring your Innovative/Alternative system into compliance, you must increase system treatment performance and lower total nitrogen concentrations. You should speak to your Wastewater Treatment System Operator to discuss these deficiencies and **to collect effluent samples and analyze total nitrogen (nitrate+nitrite+TKN) within thirty (30) days of receipt. They should forward these results to the Brewster Health Department within 15 days of receipt with an explanation of noncompliance and or corrective actions undertaken.** A list of certified operators is attached for your convenience.

You have the right to a hearing before the Board of Health to show cause why the Board should modify or withdraw this order. If you choose to exercise this right, you must do so, in writing, within seven (7) days of receipt of this letter.

If you have any further questions or comments about this matter, please contact our office Monday through Friday, 8:30- 4:00PM. Our telephone number is 508-896-3701 ext. 1120.

**Failure to comply with this Notice will result in further Board of Health action and/or legal action including monetary fines.**

Respectfully,

Amy von Hone, R.S., C.H.O.  
Health Director

cc: Barnstable County Department of Health and Environment- Tracy Long  
Board of Health ✓  
File

Enclosure: I/A Contractor List

C:\Users\tmason\AppData\Local\Microsoft\Windows\NetCache\Content.Outlook\K2AF1U3R\I-A Noncompliance letter (final template 7.27.23).doc

*8/29/23 Spoke to Kara Risk from NISU. Last TN sample was 8.72 ppm. Advised Kara to send email explaining current result and actions to be taken to maintain compliance with owner.*  
*9/1/23 owner Jane Johnson left message 508-896-3920*  
*9/4/23 left message on voicemail. (envt)*  
*9/12/23 Spoke to owner. Replacing pump. art*



# 1597 Long Pond Road  
Johnson

**Amy von Hone**

---

**From:** Kara Risk <krisk@NSUWater.com>  
**Sent:** Tuesday, September 12, 2023 9:28 AM  
**To:** Amy von Hone  
**Cc:** Samantha Farrenkopf; Joseph Smith; Brian Fortin; Tyler Gomes  
**Subject:** FW: NON 1597 Long Pond Road - Operator Input  
**Attachments:** 11058 Alpha (ww) 07-06-23.pdf

Good afternoon, Amy.

Bennett Environmental Associates LLC (BEA) is in possession of the Notice of Noncompliance (NON) sent to Jane Johnson at 1597 Long Pond Road (M94, L93) dated August 22, 2023. Please find attached the most recent laboratory analytical results from the July 2023 sampling, wherein permit requirements have been met. We will continue to monitor the performance of this system, and all others under our operation, moving forward. In addition, we have added language to our contracts requiring homeowners to control what enters their treatment systems, and we are providing homeowners with a handout on how to care for their systems. If you require any further information, please let me know.

In consideration of the recently updated Title 5 regulations, and the Brewster Board of Health's (BOH) most recent efforts to address wastewater impacts to the environment, BEA respectfully offers the following information to assist BOH members as they move forward with this planning. This information was obtained from working directly with these systems and homeowners over many years.

- The strength of the waste stream entering IA treatment systems has changed dramatically since these technologies were developed and permit limitations were established, as based on the expected treatment efficiency of an average waste stream. Circumstances affecting individual waste streams, and therefore treatment efficiency, include, but are not limited to, greater use of residences, longer seasonal periods, use of homes as short-term rentals with various occupants and sanitation practices utilizing inhibitory substances in between uses, the installation of low flow fixtures/appliances which result in less dilution, and the discharge of pharmaceuticals including cancer treatment chemicals.
- IA technologies and equipment are not intended to last forever. The planned obsolescence of a large wastewater treatment plant is 15 years. It should be expected that smaller IA system components will also begin to fail or become less capable of meeting optimal treatment expectations over time. However, it should also be noted that required repairs and/or upgrades can be quite costly and out of reach for some homeowners.
- These systems were originally represented as being able to operate with minimal intervention and therefore, available operational process controls are limited, and reactionary rather than proactive. By the time an operator sees the laboratory analytical from an inspection, weeks have past and system conditions may have changed. The operator may not see the system again for three months unless a dedicated trip is made. These additional mobilizations to sites to conduct resampling and make repeated adjustments increase the financial burden on the homeowner.

We hope that this information is received in the respectful nature that was intended.

Thank you,  
*Kara Risk*

**KARA RISK**  
OPERATIONS & ENVIRONMENTAL SPECIALIST

DIRECT: 508-535-0483



**BENNETT ENVIRONMENTAL ASSOCIATES, LLC.**

**A Natural Systems Utilities Company**

**1573 Main Street**

**Brewster, MA 02631**

**508-896-1706**

**508-896-5109 fax**

**BENNETT-EA.COM**

**NSUWATER.COM**

**Confidentiality Notice:**

This electronic mail message and any attached files contain information intended for the exclusive use of the individual or entity to whom it was addressed and may contain information that is proprietary, privileged, confidential and/or exempt from disclosure under applicable law. If you are not the intended recipient, you are hereby notified that any viewing, copying, disclosure or distribution of this information may be subject to legal restriction or sanction. Please notify the sender, by electronic mail or telephone, of any unintended recipients and delete the original message without making any copies.

**This message may contain privileged and confidential information. If you are not an intended recipient, please note that any disclosure, dissemination, distribution, or copying of this information is prohibited.**

Project Name: JOHNSON RESIDENCE  
 Project Number: K11058DA.S.IA.700

Lab Number: L2338547  
 Report Date: 07/20/23

**SAMPLE RESULTS**

Lab ID: L2338547-01  
 Client ID: EFFLUENT  
 Sample Location: BREWSTER, MA

Date Collected: 07/06/23 12:00  
 Date Received: 07/06/23  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Alkalinity, Total	62.2		mg CaCO3/L	2.00	NA	1	-	07/17/23 10:38	121,2320B	MKT
Solids, Total Suspended	10.		mg/l	5.0	NA	1	-	07/07/23 23:38	121,2540D	REM
Nitrogen, Nitrite	0.091		mg/l	0.050	--	1	-	07/07/23 03:37	44,353.2	KAF
Nitrogen, Nitrate	7.7		mg/l	0.10	--	1	-	07/07/23 03:37	44,353.2	KAF
Nitrogen, Total Kjeldahl	0.933		mg/l	0.300	--	1	07/19/23 02:32	07/19/23 13:32	121,4500NH3-H	KEP
CBOD, 5 day	ND		mg/l	2.0	NA	1	07/07/23 23:40	07/12/23 18:21	121,5210B	JRG

*Total Nitrogen: 8.724 mg/l*





# Town of Brewster

2198 MAIN STREET  
BREWSTER, MASSACHUSETTS 02631-1898

PHONE: 508.896.3701 EXT. 1120

FAX: 508.896.4538

[brhealth@brewster-ma.gov](mailto:brhealth@brewster-ma.gov)

WWW.BREWSTER-MA.GOV

Health Department

Amy L. von Hone, R.S., C.H.O.  
Director

Sherrie McCullough, R.S.  
Assistant Director

Tammi Mason  
Senior Department Assistant

## I/A System Samples for Discussion Continued September 20, 2023 BOH Meeting

### Sample I/A Systems (Systems out of compliance):

1. Systems approved by BOH for letter notification of system noncompliance:
  - BREW-McG039-FAS
  - BREW-Tho007-Adv
  - BREW-McG056-Sin
  - BREW-Lon159-Bio
  - BREW-Jon158-Sin
  - BREW-Sat320-FAS
  - (BREW-Old078Sin to be monitored for 1 year)
  
2. System BREW-Sar050-FAS
  - 2014 installation of MicroFAST 0.5
  - Property in Zone II, DCPC, and CC Bay and Herring River Watersheds, Private Well
  - General Approval with Nitrogen removal
  - Maximum 19 ppm (25 ppm also allowed) of Total Nitrogen allowed
  - Sample frequency – 2x/year
  - Total Nitrogen above limit, data missing
  
3. System BREW-Tho054-FAS
  - 2016 installation of MicroFAST 0.9
  - Property in Zone II, DCPC, and Pleasant Bay Watershed
  - General Approval with Nitrogen removal
  - Maximum 19 ppm (25 ppm also allowed) of Total Nitrogen allowed
  - Sample frequency – 2x/year
  - Total Nitrogen above limit, data missing
  
4. System BREW-Gre083-FAS
  - 2021 installation of MicroFAST 0.5

- Property located in Zone II, DCPC, Herring River Watershed
  - General Approval with testing Total Nitrogen
  - Maximum 19 ppm
  - Sample frequency – 4x/year in Year 1, then reduced to 2x/year
  - Total Nitrogen above standard limit
5. System BREW-Low015-FAS
- 2006 installation of High Strength MicroFAST 4.5
  - Property located in ESA, within 300' of wetlands, Cape Cod Bay Watershed
  - General Approval with testing for Total Nitrogen influent and effluent
  - Maximum 25 ppm Total Nitrogen allowed
  - Sample frequency reduced to 1x every 3 years
  - Total Nitrogen above limit





# Town of Brewster

2198 MAIN STREET  
BREWSTER, MASSACHUSETTS 02631-1898

(508) 896-3701  
FAX (508) 896-8089

Health Department  
Nancy Ellis Ice

January 7, 2014

Robin W. Wilcox, PLS  
Sweetsier Engineering  
P.O. Box 713  
South Dennis, MA 02660

Re: Sarah Maker Lane; Map 85, Parcel [REDACTED]

Dear Mr. Wilcox.:

On December 3, 2013, the Board of Health voted to approve the following variances from the Brewster Board of Health regulations:

1. To allow the proposed well to be 11 feet from the property line.
2. To allow the proposed well's protection zone to have an existing septic system within the 250 feet up-gradient zone of the proposed well. The proposed well will be 204.9 feet down gradient of the existing system.

These variances were granted with the following condition:

1. The proposed well must have biannual water testing and if the well fails to meet the drinking water standards, Town water must be installed.
2. The Innovative/Alternative septic system must be a General Use Approval for nitrogen reduction that would entitle the lot to have a two bedroom home.

A deed restriction limiting the property to two bedrooms must be recorded at the Registry of Deeds along with a notice of the existence of the alternative on-site system.

If you should have any questions, please do not hesitate to contact this office.

Sincerely,

Nancy Ellis Ice, CHO, RS  
Health Director

# I/A System Sample Report History

**Sarah Maker Lane, Brewster**



Barnstable County Department of Health and Environment  
P.O. Box 427, Barnstable, MA 02630

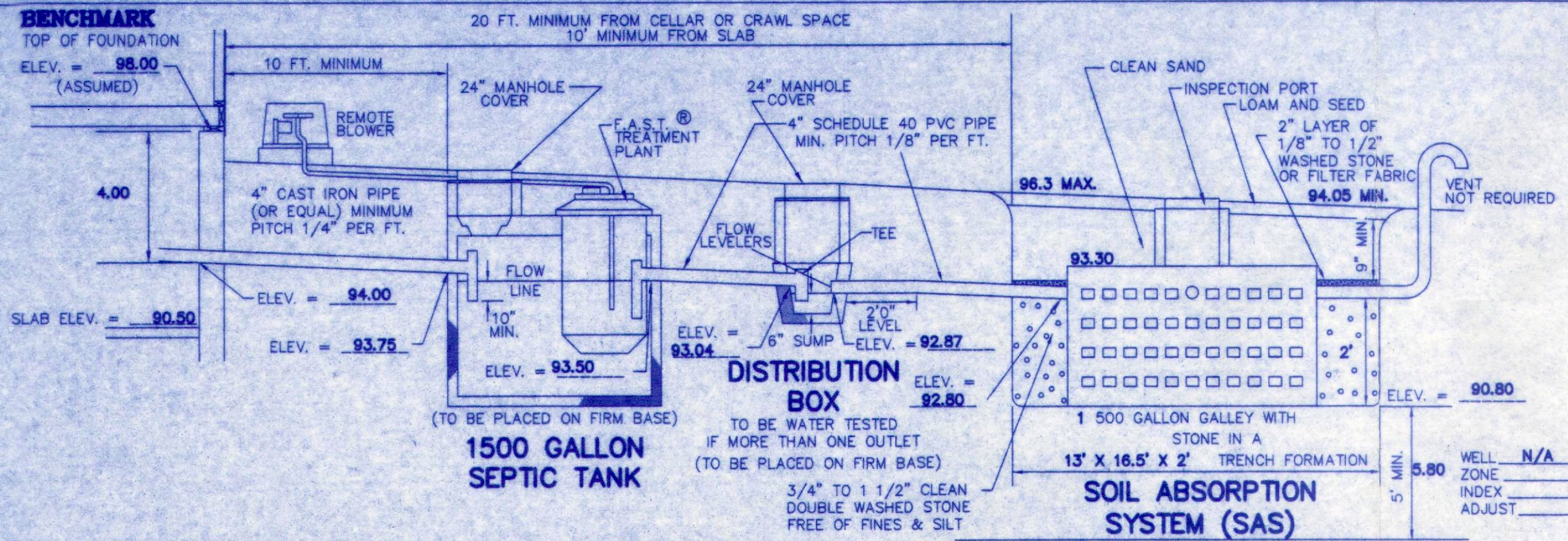
## Effluent Sample Results

Date	TN	Nitrate	Nitrite	TKN
12/01/2017		23.3		1.92
01/17/2019		15.7	0.3	9.97
07/23/2019		13.3		2.36
01/14/2020		10.5		20.4
07/23/2020		30		18.8
02/22/2021		11		44.5
12/07/2021		13.4		0.93
03/29/2022	30.25+	9.85		20.4
10/18/2022	17.6+	8.36		39.3
02/17/2023	28.9+	11.9		17
Median		12.6	0.3	17.9

## Influent Sample Results

No Influent Sample Results





**SOIL TEST**  
DATE OF SOIL TEST DECEMBER 14, 2006  
SOIL TEST DONE BY RYDER & WILCOX  
WITNESSED BY S. MC CULLOUGH

**OBSERVATION HOLE 1** ELEV. = 96.3  
PERCOLATION RATE < 2 MIN./INCH AT 58 INCHES

DEPTH	HORIZ	TEXTURE	COLOR	MOTT.	OTHER
0-3"	O	ORGANIC		NO	
3-12"	A	LOAMY SAND	10YR3/3		FRIABLE
12-32"	B	LOAMY SAND	10YR4/6		FRIABLE
32-132"	C	MED.-COAR. SAND	10YR5/6		LOOSE

NO WATER ENCOUNTERED AT 132" ELEV. = 85.3

**OBSERVATION HOLE 2** ELEV. = 96.2

DEPTH	HORIZ	TEXTURE	COLOR	MOTT.	OTHER
0-2"	O	ORGANIC		NO	
2-11"	A	LOAMY SAND	10YR3/3		FRIABLE
11-32"	B	LOAMY SAND	10YR4/6		FRIABLE
32-50"	C1	MED.-COAR. SAND	10YR5/6		LOOSE
50-65"	C2	SILT LOAM	2.5Y6/4		VERY FRIABLE
65-120"	C3	MED.-COAR. SAND			LOOSE

NO WATER ENCOUNTERED AT 120" ELEV. = 86.2

**OBSERVATION HOLE 3** ELEV. = 96.0

DEPTH	HORIZ	TEXTURE	COLOR	MOTT.	OTHER
0-2"	O	ORGANIC		NO	
2-9"	A	LOAMY SAND	10YR3/3		FRIABLE
9-18"	B	LOAMY SAND	10YR4/6		FRIABLE
18-77"	C1	MED.-COAR. SAND	10YR5/6		LOOSE
77-132"	C2	MEDIUM SAND			LOOSE

NO WATER ENCOUNTERED AT 132" ELEV. = 85.0

**OBSERVATION HOLE 4** ELEV. = 96.2  
PERCOLATION RATE < 2 MIN./INCH AT 48 INCHES

DEPTH	HORIZ	TEXTURE	COLOR	MOTT.	OTHER
0-3"	O	ORGANIC		NO	
3-10"	A	LOAMY SAND	10YR3/3		FRIABLE
10-36"	B	LOAMY SAND	10YR4/6		FRIABLE
36-60"	C1	MED.-COAR. SAND	10YR5/6		LOOSE
60-132"	C2	MEDIUM SAND			LOOSE

NO WATER ENCOUNTERED AT 132" ELEV. = 85.2

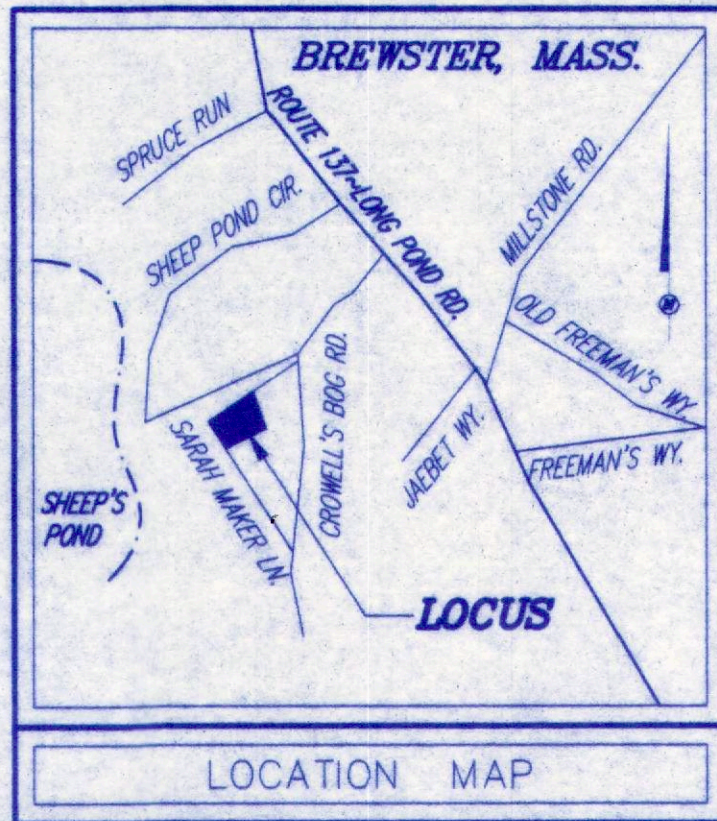
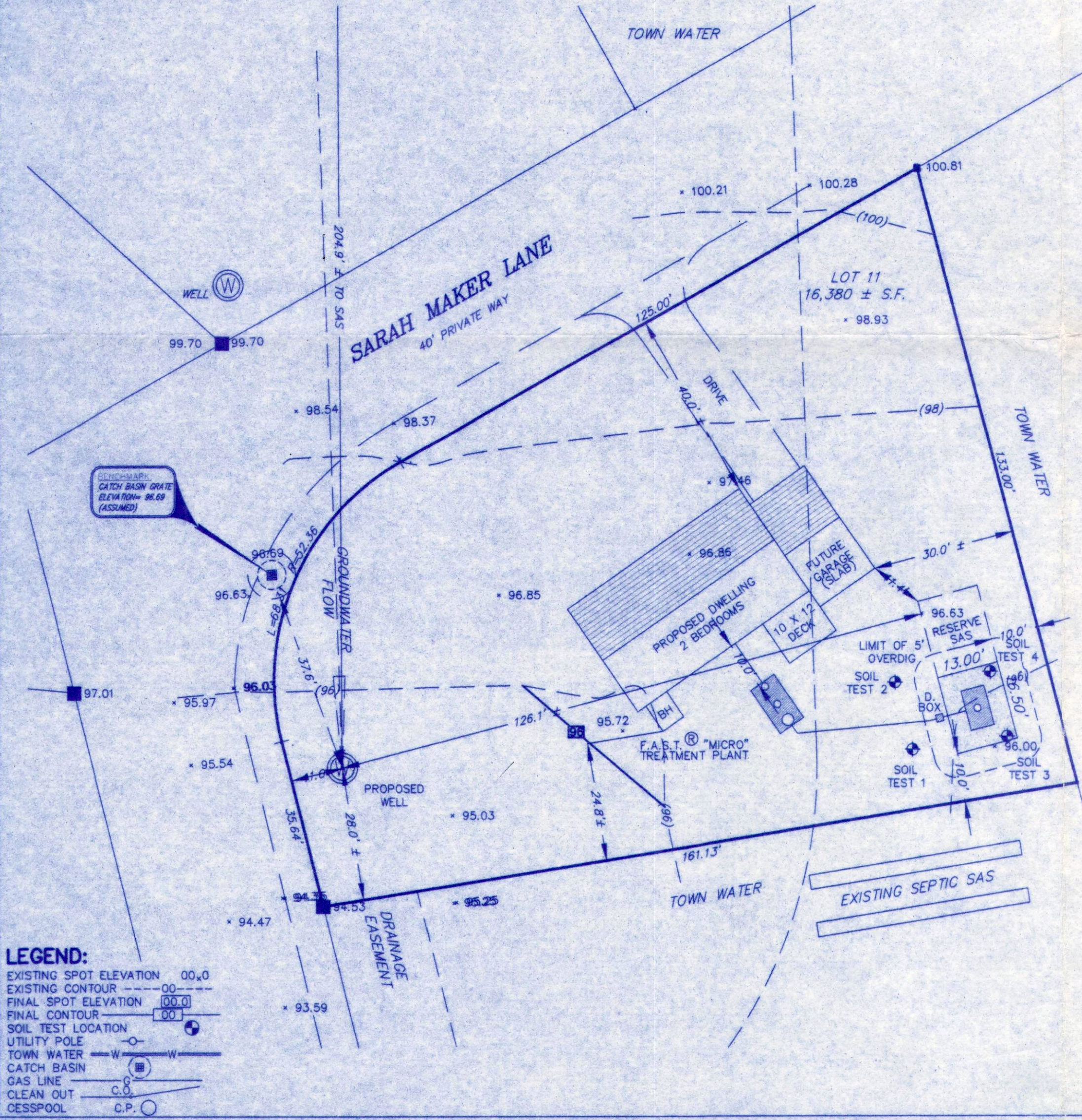
- NOTES:**
- ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO D.E.P. TITLE 5 AND THE TOWN'S RULES AND REGULATIONS FOR THE SUBSURFACE DISPOSAL OF SEWAGE.
  - ALL COVERS TO SANITARY UNITS SHALL BE BROUGHT TO WITHIN 6" OF FINISHED GRADE.
  - ALL COMPONENTS OF THE SANITARY SYSTEM SHALL BE CAPABLE OF WITHSTANDING H-10 LOADING UNLESS THEY ARE UNDER OR WITHIN 10 FT. OF DRIVES OR PARKING AREAS. H-20 LOADING SHALL BE USED UNDER OR WITHIN 10 FT. OF DRIVES OR PARKING AREAS.
  - ANY MASONRY UNITS USED TO BRING COVERS TO GRADE SHALL BE MORTARED IN PLACE.
  - NO DETERMINATION HAS BEEN MADE AS TO COMPLIANCE WITH DEEDED OR ZONING REGULATIONS. OWNER / APPLICANT IS TO OBTAIN SUCH DETERMINATION FROM APPROPRIATE AUTHORITY.
  - UTILITIES SHOWN ARE APPROXIMATE ONLY. EXCAVATION CONTRACTOR IS TO CALL "DIG-SAFE" AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO COMMENCING WORK ON SITE.
  - CONTRACTOR IS TO VERIFY GRADES AND ELEVATIONS AS WELL AS SITE CONDITIONS PRIOR TO COMMENCING WORK ON SITE. ANY VARIATION IS TO BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER IMMEDIATELY.
  - PARCEL IS IN FLOOD ZONE C
  - LOT IS SHOWN ON NEW ASSESSORS MAP 85 AS PARCEL 138
  - LOT IS SHOWN ON OLD ASSESSORS MAP 41 AS PARCEL 32-11
  - ALL UNSUITABLE MATERIAL SHALL BE REMOVED FROM UNDER AND FOR A MINIMUM OF 5' AROUND SOIL ABSORPTION SYSTEM AND BE REPLACED WITH MATERIAL AS SPECIFIED IN 310 CMR 15.255(3).
  - THE INSTALLER IS TO GIVE THE ENGINEER A MINIMUM OF 48 HOURS (2 WORKING DAYS) NOTICE FOR THE FINAL INSPECTION (NUMBER BELOW).
  - THERE IS TO BE A DEED RESTRICTION LIMITING THE NUMBER OF BEDROOMS TO 2 (TWO) MAXIMUM.
  - VARIANCES REQUIRED FROM THE BREWSTER WELL REGULATIONS:
    - PROPOSED WELL LESS THAN 25' FROM STREET (VAR. OF 14')
    - PROPOSED WELL'S ZONE OF CONTRIBUTION COVERS ABUTTER'S SOIL ABSORPTION SYSTEM.
  - APPROVAL OF THE SITING OF AN INNOVATIVE/ALTERNATIVE TECHNOLOGY SEPTIC SYSTEM.

**DESIGN CALCULATIONS**

NUMBER OF BEDROOMS	<u>2</u>
GARBAGE DISPOSAL UNIT	<u>NO</u>
TOTAL ESTIMATED FLOW	
(110 GAL./BR./DAY X <u>2</u> BR.)	<u>220</u> GAL./DAY
REQUIRED SEPTIC TANK CAPACITY	<u>440</u> GAL.
ACTUAL SIZE OF SEPTIC TANK	<u>1500</u> GAL.
SOIL CLASSIFICATION	
DESIGN PERCOLATION RATE	<u>&lt; 5</u> MIN./IN.
EFFLUENT LOADING RATE	<u>0.74</u> GAL./DAY/S.F.
LEACHING AREA	<u>332.50</u> SQ. FT.
(13X16.5)+(29.5X2X2)	
LEACHING CAPACITY (AREA X RATE)	<u>246.05</u> GAL./DAY
<u>332.50 X 0.74</u>	
RESERVE LEACHING CAPACITY	<u>246.05</u> GAL./DAY

**APPROVED: BOARD OF HEALTH**

1/15/14 DATE ndk AGENT



**PROPOSED SEPTIC DESIGN**  
FOR  
**DAVENPORT BUILDING CO.**

**BREWSTER, MASS.**

**SWEETSER ENGINEERING**  
203 SETUCKET ROAD  
P. O. BOX 713  
SOUTH DENNIS, MASS. 02660  
508-385-6900

DATE OCT. 25, 2013 SCALE 1" = 20'

REV. DEC. 26, 2013 JOB NO. 7312-00

REV. SHEET 1 OF 1





**TOWN OF BREWSTER**  
2198 MAIN STREET  
BREWSTER, MA 02631  
PHONE: (508) 896-3701 EXT 1120  
FAX: (508) 896-4538  
BRHEALTH@BREWSTER-MA.GOV

OFFICE OF  
HEALTH DEPARTMENT

June 27, 2016

Terry Eldredge, L.S.  
Eldridge Surveying & Engineering, LLC  
1038 Main Street  
Chatham, MA 02633

RE: Map 208, Parcel [REDACTED] [REDACTED] Thousand Oaks Drive

Dear Mr. Eldredge:

On June 21, 2016, the Board of Health voted to approve the request for a deed restriction for four bedrooms with the FAST Treatment System with Nitrogen Reduction. The exercise room, office and stamp/hobby space will not be considered bedrooms.

If you should have any questions, please do not hesitate to contact the Health Department at 508-896-3701 ext. 1120.

Sincerely,

Nancy Ellis Ice, C.H.O., R.S.  
Health Director

# I/A System Sample Report History

## Thousand Oaks Drive, Brewster



Barnstable County Department of Health and Environment  
P.O. Box 427, Barnstable, MA 02630

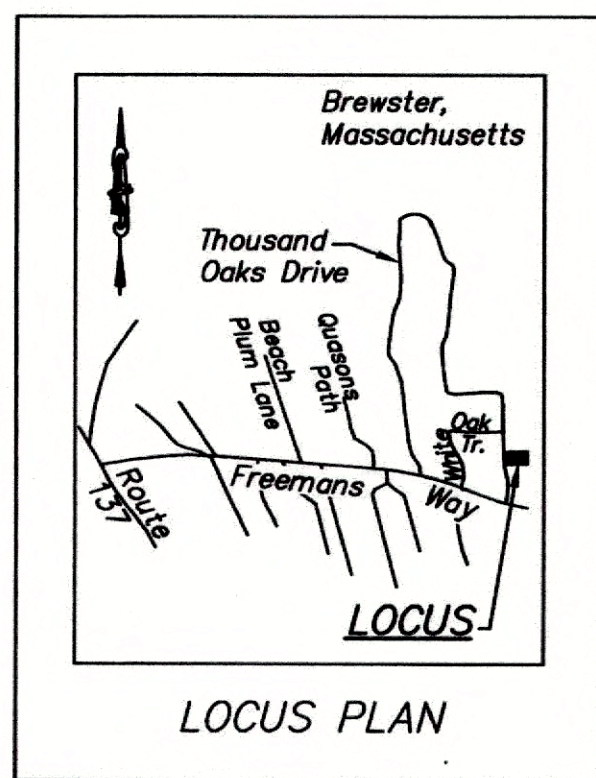
### Effluent Sample Results

Date	TN	Nitrate	Nitrite	TKN
09/07/2018		33.9		11
11/30/2018		16.9		3.31
02/27/2019		28.7	0.86	29
06/19/2019		35.4		4.12
07/23/2020		27.3		66.1
01/15/2021		36.3		11.9
08/12/2021		14.6		3.44
03/29/2022		13.2	17.7	4.91
07/08/2022		10.9		2.78
03/14/2023		29.1	0.84	
<b>Median</b>		<b>28</b>	<b>0.86</b>	<b>4.91</b>

### Influent Sample Results

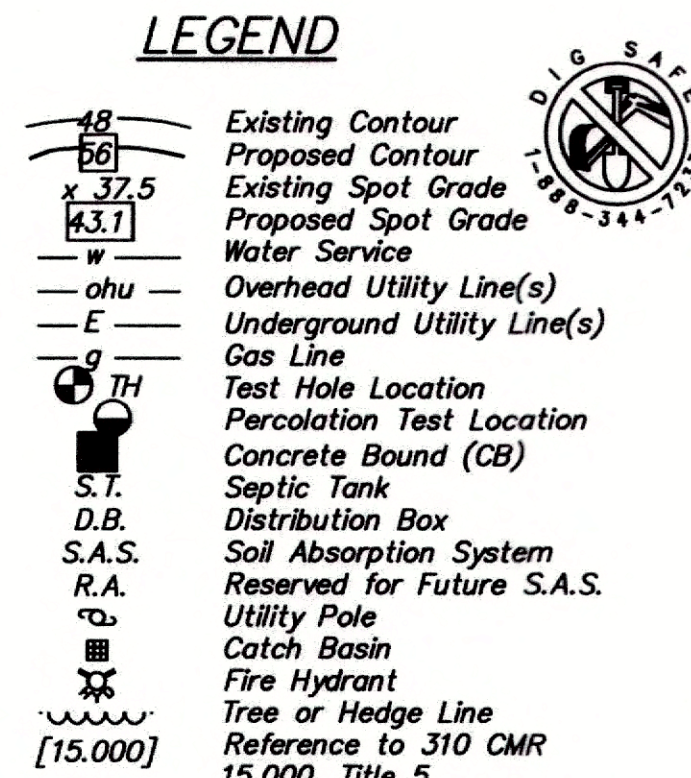
No Influent Sample Results





**ZONING REQUIREMENTS**

Zone R-L (Residential Low Density)  
 Minimum Area 60,000 S.F.  
 Minimum Frontage 150 Ft.  
 Front Setback 40 Ft.  
 Side Setback 25 Ft.  
 Rear Setback 25 Ft.  
 Maximum Lot Coverage N/A  
 Maximum Building Coverage 20%  
 Maximum Building Height 30 Ft.



**BUILDING COVERAGE**

Existing Dwelling 1,025 S.F.±  
 Existing Shed 68 S.F.±  
 TOTAL 1,093 S.F.±  
 or 3.3% of Lot Area  
 Proposed Dwelling 4,975 S.F.±  
 or 14.8% of Lot Area  
 < 20% of Lot Area

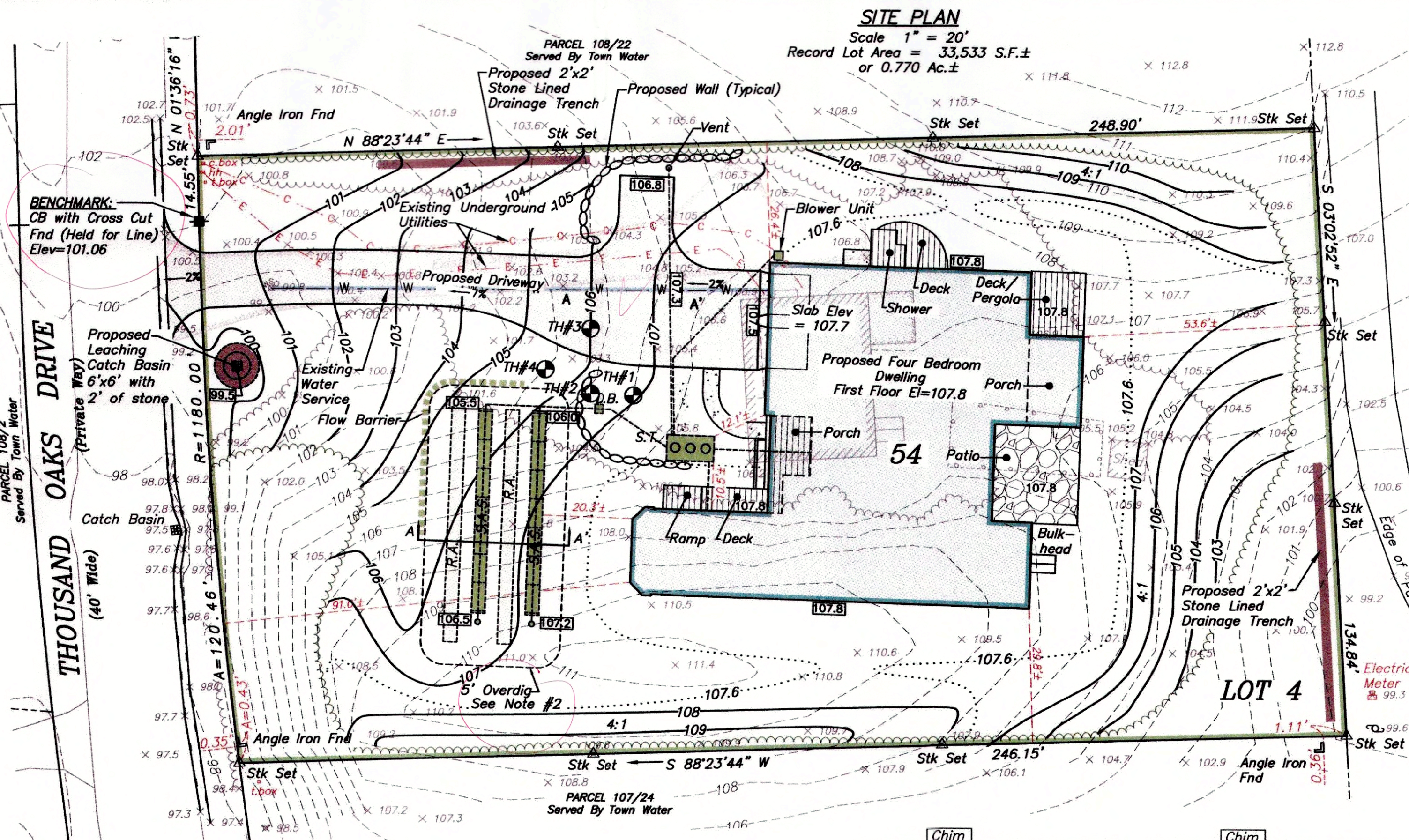
**BUILDING HEIGHT CALCULATIONS**

Computed from Mean Level of Adjacent Natural Grade

Corner Elevation

NW	106.4
NE	107.6
SE	108.2
SW	110.2

TOTAL 1828.0/17= 107.7 Average  
 Proposed Ridge Elev. 135.6  
 Building Height=135.6-107.7  
 =27.9' < 30'



**GENERAL NOTES**

A.) Neither driveway nor parking areas are allowed over septic system unless H-20 components are used and system is vented.

B.) The designer will not be responsible for the system as designed unless constructed as shown. Any changes must be approved in writing by the designer.

C.) Contractor shall be responsible for verifying the location of all underground and overhead utilities prior to the commencement of work.

**CONSTRUCTION NOTES**

1.) All materials and construction shall conform to the State Environmental Code, Title 5, and the requirements of the local Board of Health.

2.) Topsoil, subsoil, peat, or other unsuitable or impervious material [15.255(1)] shall be removed five (5) feet laterally in all directions beyond the outer perimeter of the soil absorption system to the depth of the naturally occurring pervious material(s) and replaced with fill material meeting the specifications of 310 CMR [15.255(3)].

3.) Septic tank(s), grease trap(s), dosing chamber(s) and distribution box(es) shall be set on a level stable base which has been mechanically compacted. If the component is placed in fill, proper compaction is required to ensure stability and to prevent settling; native ground with a 6 inch stone base is otherwise adequate [15.221(2)].

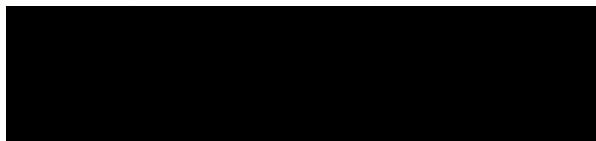
4.) Base aggregate shall consist of 3/4" to 1-1/2" double washed stone free of iron, fines and dust and shall be installed from below the crown of the distribution line to the bottom of the soil absorption system [15.247(1)]. Base aggregate shall be covered with a 2" layer of 1/8" to 1/2" double washed stone free of iron, fines and dust [15.247(2)].

5.) From the date of installation of the soil absorption system until receipt of a Certificate of Compliance, the perimeter of the soil absorption system shall be staked and flagged to prevent the use of such area for all activities which might damage the system [15.246(2)].

6.) The Board of Health shall require inspection of all construction by an agent of the Board of Health and the designer and shall require such persons to certify in writing that all work has been completed in accordance with the terms of the permit and approved plans. 48 hours advance notice is requested.

7.) Whenever sewer lines must cross water supply lines, both both pipes shall be constructed of class 150 pressure pipe and shall be pressure tested to assure water tightness; ref: 310 CMR 15.211 (1) [1].

OWNER OF RECORD:

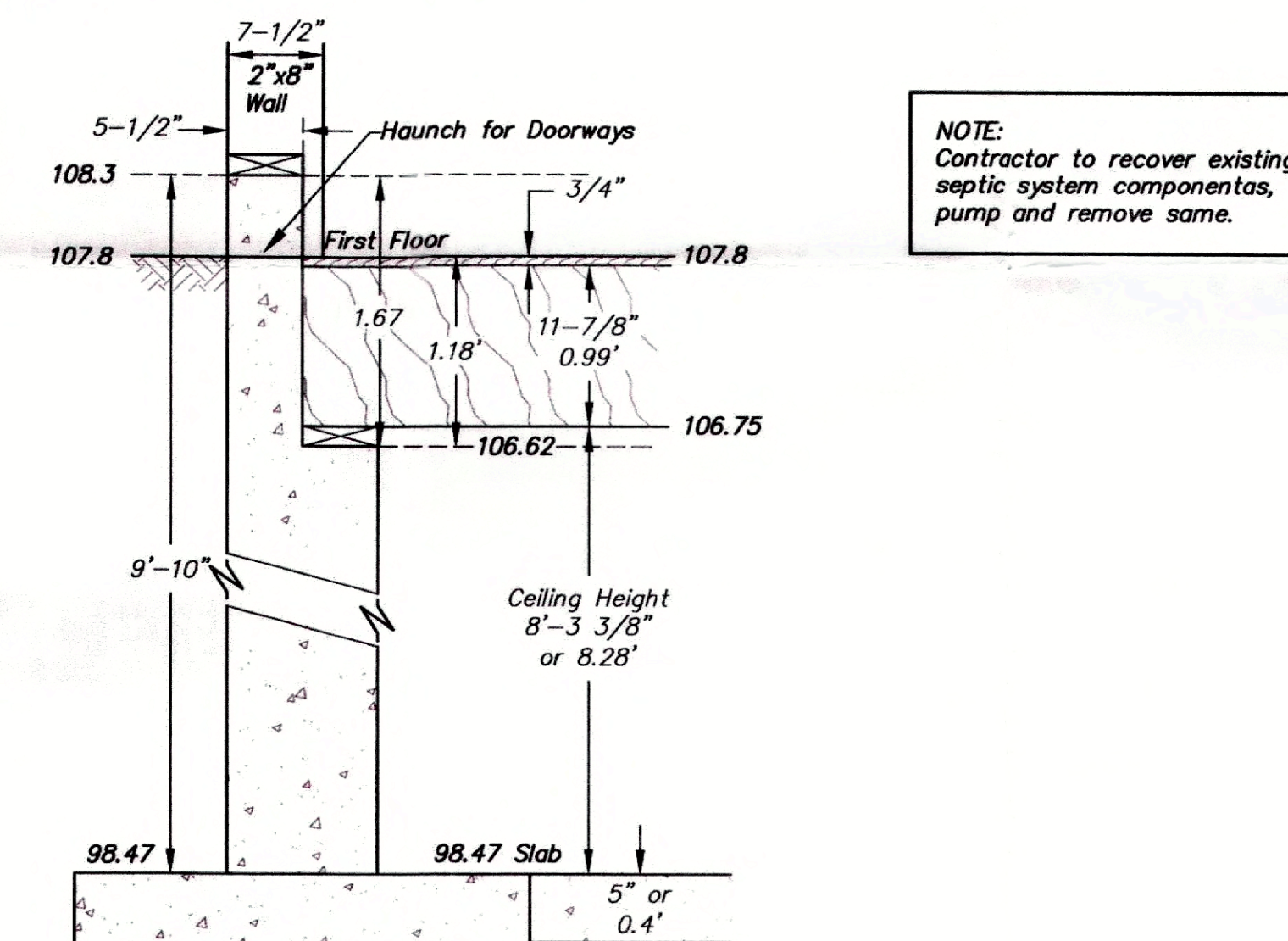


**DEEP OBSERVATION HOLE LOG**

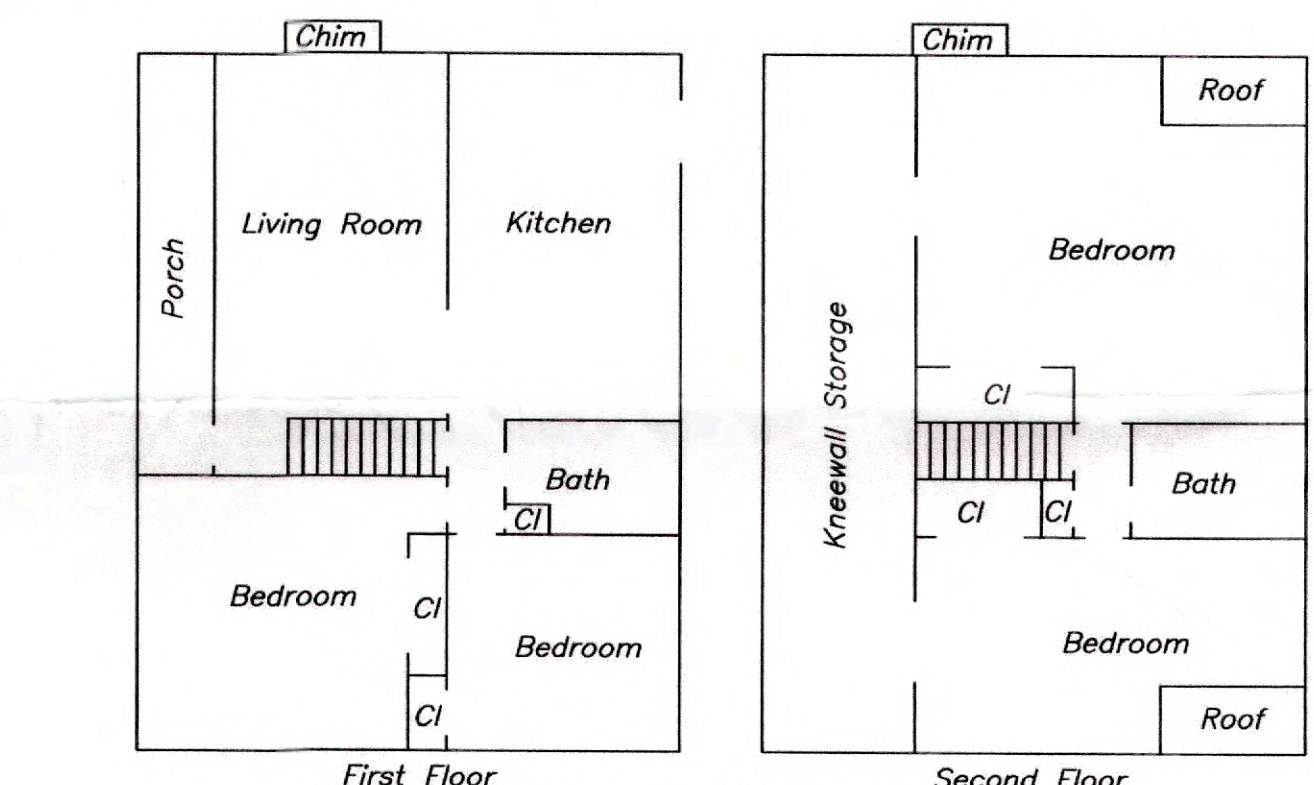
T.H.#1	T.H.#2	T.H.#3	T.H.#4
Date of Test: 06-04-15	Date of Test: 06-04-15	Date of Test: 06-04-15	Date of Test: 06-04-15
Depth Existing Grade 105.5	Depth Existing Grade 104.5	Depth Existing Grade 104.0	Depth Existing Grade 103.4
0" Fill 104.5	0" Fill 104.1	0" Fill 103.0	0" Fill 102.7
12" A Loamy Sand 2.5YR 5/1 Granular 104.3	9" A Loamy Sand 10YR 5/1 Granular 103.9	12" A Loamy Sand 10YR 6/1 Granular 102.5	14" A Loamy Sand 10YR 6/2 Granular 102.2
15" B Loamy Fine Sand 10YR 5/6 MYF 101.8	15" B Loamy Fine Sand 10YR 5/6 MYF 100.3	18" B Loamy Fine Sand 10YR 4/6 MYF 100.0	26" B Loamy Fine Sand 7.5YR 4/6 MYF 101.2
(3.7') 44" C-1 Fine-Medium Sand 2.5YR 6/3 LSG Cobbles 97.5	(4.2') 50" C-1 Fine-Medium Sand 2.5YR 6/3 LSG 94.3	48" C-1 Fine-Medium Sand 2.5YR 6/4 LSG 98.8	46" C-1 Fine-Medium Sand 2.5YR 6/3 LSG 99.6
6.6' 96" C-2 Med.-Coarse Sand 10YR 6/6 LSG 95.2	6.0' 102" C-2 Med.-Coarse Sand 10YR 6/6 LSG 96.0	6.3' 78" C-2 Med.-Coarse Sand 10YR 6/6 LSG 97.5	6.4' 90" C-2 Med.-Coarse Sand 10YR 6/6 LSG 95.9
(10.3') 124" 95.2 (10.2) 122" 94.3 (10.3) 123" 93.8 (10.2) 122" 93.2			

Representative of Approving Authority: Nancy Ellis Ice, Brewster Health Agent  
 Soil Evaluator: Richard Judd, R.S.  
 Percolation Rate: #3 06-04-15 < 2 min. per inch in C Layer.  
 #4 06-04-15 < 2 min. per inch in B Layer.  
 No Water Encountered.

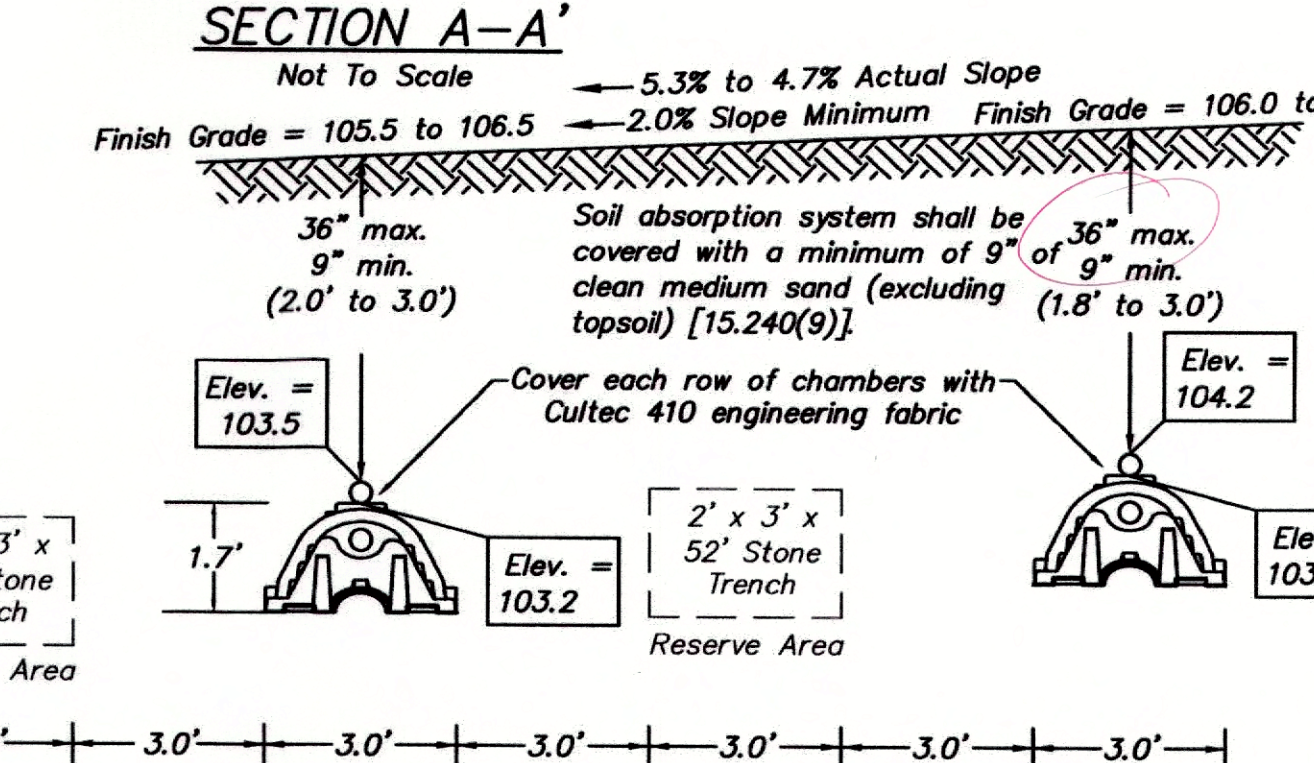
**Wetland Conservancy District Note:**  
 The subject parcel does not lie in a Wetland Conservancy District. The soils for the subject parcel are mapped as CcC, Carver Coarse Sand, 8 to 15% slopes.



**STEM WALL (SHELF) FOUNDATION DETAIL**  
 (Not to Scale)



**FLOOR PLANS OF EXISTING DWELLING (UNFINISHED BASEMENT)**



**PROFILE OF SYSTEM**  
 (Not to Scale)

**CULTEC NOTES**

1.) "No system shall be designed and constructed with a leaching area of less than 400 square feet." (See Authority of Issuance for Cultec, Inc., dated 12/17/03, revised April 18, 2006, revised July 24, 2006, entitled "MODIFIED CERTIFICATION FOR GENERAL USE pursuant to Title 5, 310 CMR 15.000" by the Commonwealth of Massachusetts Executive Office of Environmental Affairs, Department of Environmental Protection.)

2.) Lay-up length adjustment for the recharger 180HD is 1.0'.

**SYSTEM DESIGN CALCULATIONS**

1.) Basis of Design  
 Number of Bedrooms: 4

2.) Design Daily Flow Sewage Flow: 440 GPD

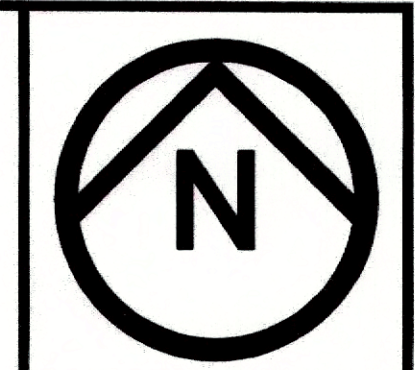
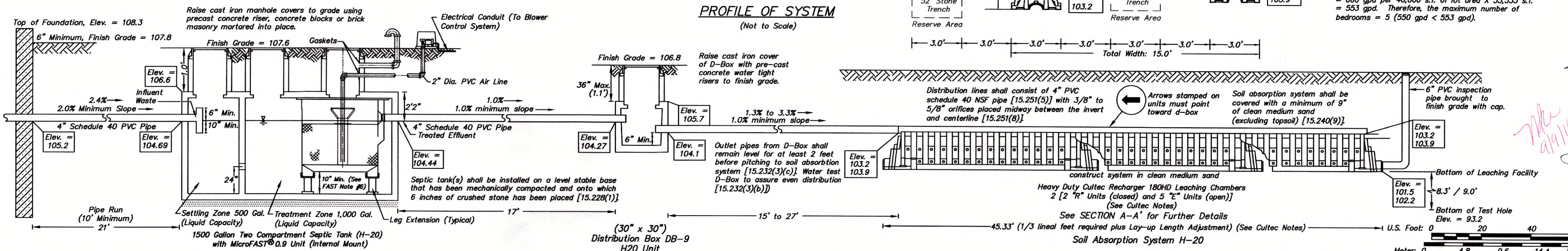
3.) Septic Tank Capacity  
 Required: 1,100 Gal  
 Provided: (806 S.F.) 1,500 Gal

4.) Soil Absorption System Capacity  
 Required: 440 GPD  
 Provided: 583 GPD\*

5.) A garbage disposal is NOT permitted with this design

\* 2[(44.3) LF x 8.9 (State Allowed SF/LF)] x 0.74 GPD/SF = 583 GPD

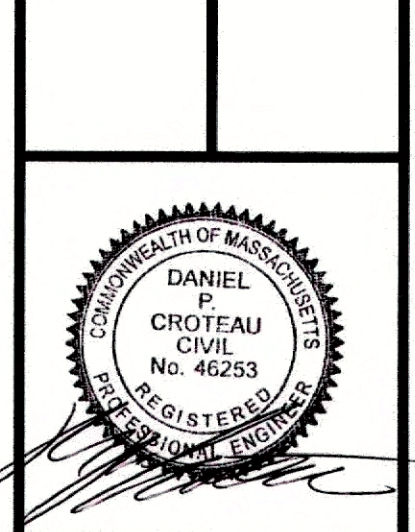
The subject property is located in a Zone II, Area of Contribution to a Municipal Well. The maximum flow = 660 gpd per 40,000 s.f. of lot area X 33,533 s.f. = 553 gpd. Therefore, the maximum number of bedrooms = 5 (550 gpd < 553 gpd).



**SEWAGE DISPOSAL SYSTEM PLAN**

Thousand Oaks Drive, Brewster, MA

**Lawrence and Joanne Norris**  
**ELDRIDGE SURVEYING & ENGINEERING, LLC**  
 1038 Main Street, Chatham, MA; (508) 945-5965; Fax: (508) 945-5885







# Town of Brewster

2198 MAIN STREET  
BREWSTER, MASSACHUSETTS 02631-1898

PHONE: 508.896.3701 EXT. 1120

FAX: 508.896.4538

[brhealth@brewster-ma.gov](mailto:brhealth@brewster-ma.gov)

WWW.BREWSTER-MA.GOV

Health Department

Amy L. von Hone, R.S., C.H.O.  
Director

Sherrie McCullough, R.S.  
Assistant Director

Tammi Mason  
Senior Department Assistant

## Notice of Board of Health Approval/Deed Restriction

August 19, 2021

[REDACTED]

RE: [REDACTED] Greenland Pond Road, Brewster, MA

Map: 94 Parcel [REDACTED]

Owner of Record: [REDACTED]

Dear Mr. and Mrs. [REDACTED]

The Brewster Health Department is in receipt of plans and specifications for the septic system construction at 83 Greenland Pond Road, Brewster. The septic system plan by East-Southeast, LLC is dated September 18, 2020 and last revised June 7, 2021. This Department has reviewed this information and **approves** of the request as shown on the plan:

Proposed construction of a three (3) bedroom single family dwelling and septic system located within the Brewster District of Critical Planning Concern (DCPC) with the following conditions:


1. Installation of a **MicroFAST 0.5 Unit under DEP General Approval with Nitrogen Reduction** (Transmittal #X232831, dated December 29, 2010 and revised March 20, 2015)
2. Throughout its life, the MicroFAST 0.5 Unit shall be under an operation and maintenance agreement with a certified operator for a minimum of one (1) year. A signed copy of the most current contract must be on file at the Brewster Health Department and the Barnstable County Department of Health and the Environment (BCDHE) at all times. The MicroFAST unit shall be registered with BCDHE annually per the Barnstable County I/A Monitoring Program.
3. The monitoring program for the wastewater treatment system shall follow the parameters schedule as outlined in the above DEP General Approval Letter. Copies of the inspection and maintenance reports are to be submitted to the BCDHE within thirty (30) days of the inspection date. Data provided to the BCDHE must be provided in a format acceptable to BCDHE.
4. The proposed dwelling and the septic system have been approved for a **maximum three (3) bedrooms, 2,200 square feet of lawn area, and maximum 19 ppm/ Total Nitrogen in the sewage effluent** based on the Brewster DCPC Nitrogen Loading requirements.

Marginal Reference: Deed Book 33406 Page [REDACTED] Greenland Pond Road, Brewster, MA

5. Prior to issuance of the Certificate of Compliance, certification of the septic system by the MicroFAST Unit consultants and the Design Engineer to the Health Department is required.
6. **Prior to issuance of the Certificate of Compliance, this Approval Letter must be properly recorded at the Barnstable County Registry of Deeds and a recorded copy of same shall be furnished to the Brewster Health Department as proof of the recording.**

Please feel free to contact me if you have any comments or questions on the above. I can be reached at the Health Department, 508-896-3701, ext. 1120, Monday through Friday, during the business hours of 9:00 a.m. to 10:30 a.m.

Sincerely,



Amy L. von Hone, R.S., C.H.O.  
Director of Health

cc: East-Southeast, LLC, 1038 Main Street, Chatham, MA 02633  
File

**BARNSTABLE REGISTRY OF DEEDS**  
**John F. Meade, Register**

# I/A System Sample Report History

## Greenland Pond Road, Brewster



Barnstable County Department of Health and Environment  
P.O. Box 427, Barnstable, MA 02630

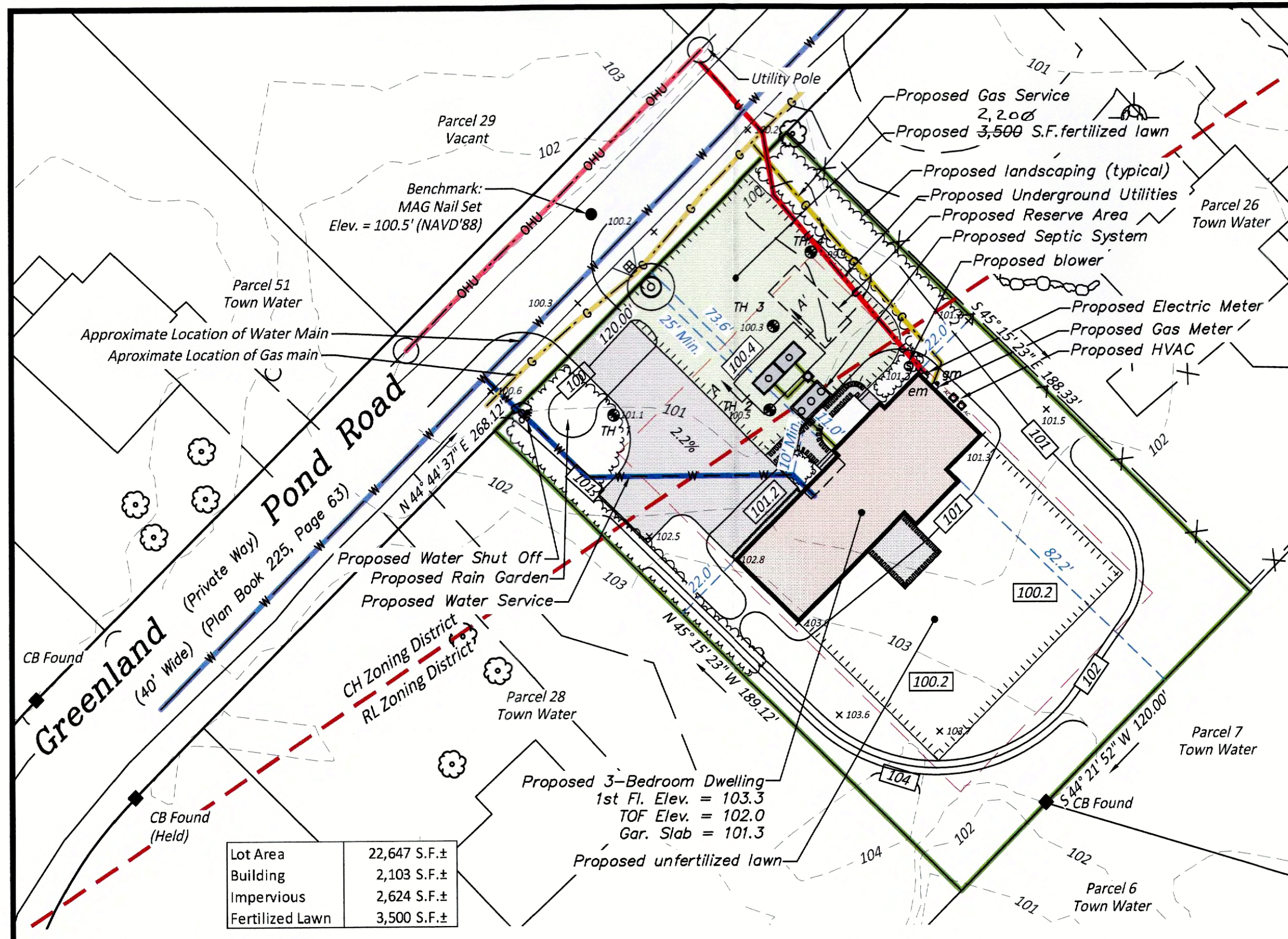
### Effluent Sample Results

Date	Nitrate	Nitrite	TKN
12/09/2021	13.7	1.76	19.8
03/29/2022	17.6		20.2
06/14/2022	25.5		8.28
10/18/2022	18		52
Median	17.8	1.76	20

### Influent Sample Results

No Influent Sample Results





0 Greenland Pond Road, Brewster, MA  
 09-17-2020 - 900 AM, Overcast 60 degrees f  
 Excavator - FL Quinn  
 Soil evaluator Rick Judd; witness Amy von Hone

No Water Encountered

**Test Hole #1**

Depth (Inches)	Elev (Feet)	Horizon	Soil Matrix	Soil Texture	Soil Structure
-4	101.1	O		Organic	
6	100.6	A/E	10YR4/2	Loamy Sand	Granular
30	98.6	Bw	10YR5/6	Loamy Medium Sand	Massive, Very Friable
56	96.4	Perc Test			<2 min/inch
80	94.4	C1	7.5YR6/4	Medium to Coarse Sand	Loose, Single Grain
120	91.1	C2	7.5YR6/6	Medium Sand	

**Test Hole #2**

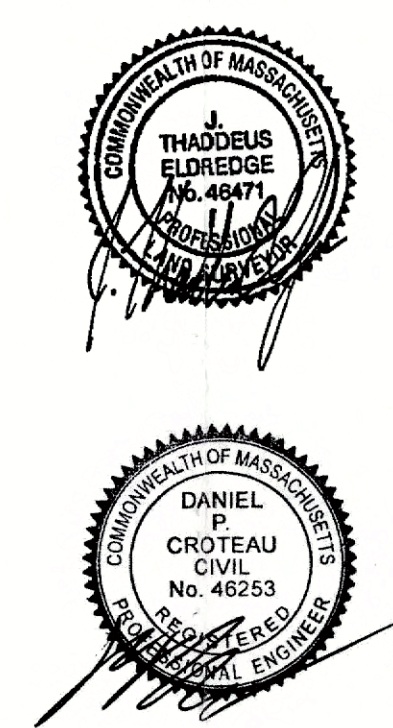
Depth (Inches)	Elev (Feet)	Horizon	Soil Matrix	Soil Texture	Soil Structure
-3	100.5	O		Organic	
5	100.1	A/E	10YR4/2	Loamy Sand	Granular
34	97.7	Bw	10YR4/6	Loamy Medium Sand	Massive, Very Friable
98	92.3	C1	7.5YR6/3	Medium to Coarse Sand	Loose, Single Grain, 15%+ Gravel, 5% Cobble
124	90.2	C2	7.5YR7/4	Medium Sand	Loose, Single Grain

**Test Hole #3**

Depth (Inches)	Elev (Feet)	Horizon	Soil Matrix	Soil Texture	Soil Structure
-5	100.3	O		Organic	
6	99.8	A/E	10YR3/2	Loamy Sand	Granular
29	97.9	Bw	10YR4/6	Loamy Medium Sand	Massive, Very Friable
110	91.1	C1	7.5YR6/4	Medium to Coarse Sand	Loose, Single Grain, 15%+ Gravel, 5% Cobble
122	90.1	C2	10YR6/4	Medium to Coarse Sand	

**Test Hole #4**

Depth (Inches)	Elev (Feet)	Horizon	Soil Matrix	Soil Texture	Soil Structure
0	99.9			Fill	
30	97.4	HTM		Fill	Granular
44	96.2	Perc Test			Time: 10:29
54	95.4	C1	10YR6/4	Medium Sand	Loose, Single Grain
122	89.7	C2	7.5YR6/6	Medium to Coarse Sand	Loose, Single Grain, 15%+ Gravel



Zoning Compliance Table				
Zone	Existing	Required/	C-H	
Lot Area	6,736 S.F.±	15,000 S.F.	Proposed	
Frontage	120.00 Ft.	80 Ft.	120.00 Ft.	
Front Yard Setback	0.0 Ft.	30 Ft.	73.6 Ft.	
Side and Rear Yard Setback	0.0 Ft.	15 Ft.	22.0 Ft.	
Building Coverage	0 S.F.±	2,694 S.F.	0 S.F.±	
Building Coverage	0.0%	40.0%	0.0%	

Zoning Compliance Table				
Zone	Existing	Required/	R-L	
Lot Area	15,911 S.F.±	60,000 S.F.	Proposed	
Frontage	0.00 Ft.	150 Ft.	150.00 Ft.	
Front Yard Setback	0.0 Ft.	40 Ft.	73.6 Ft.	
Side and Rear Yard Setback	0.0 Ft.	25 Ft.	22.0 Ft.	
Building Coverage	0 S.F.±	3,182 S.F.	2,103 S.F.±	
Building Coverage	0.0%	20.0%	13.2%	

Zoning Compliance Table				
Zone	Existing	Required/	Pre 1973	
Lot Area	22,647 S.F.±	15,000 S.F.	Proposed	
Frontage	120.00 Ft.	100 Ft.	120.00 Ft.	
Front Yard Setback	0.0 Ft.	30 Ft.	73.6 Ft.	
Side and Rear Yard Setback	0.0 Ft.	20 Ft.	22.0 Ft.	
Building Coverage	0 S.F.±	5.F.	2,103 S.F.±	
Building Coverage	0.0%		9.3%	

BUILDING HEIGHT REQUIREMENT		
Corner	Elevation	Grade
North		101.2
East		101.3
South		103.3
West		102.8
		TOTAL
		408.4/4 = 102.2 + 30 Height = 132.2
		132.2 - 101.7 Top of Foundation = 30.5
		30.5 MAXIMUM HEIGHT FROM TOP OF FOUNDATION

**MICROFAST SYSTEM NOTES**

- 1) Raise covers of the septic tank over the inlet tee and the baffle wall to finish grade for inspection purposes [15.228(2)] and Microfast Specifications.
- 2) Blower must be installed within 100' of fast unit with fewer than 4 elbows in the piping system. For distances greater than 100 feet consult factory. Blower must be located above normal flood levels.
- 3) Run vent to desired location and screen with charcoal filter to alleviate odors and to block insects or cap observation/vent pipe with 6" vent grate. See additional view drawings and table for sizing.
- 4) All appurtenances to the Fast (e.g. septic tank, pumpouts, etc.) must conform to Massachusetts State Codes.
- 5) Access port cover must allow both the sample port and the observation port to pass air freely to the vent pipe. The lid must have a padlock or require a special tool for removal.
- 6) Blower control system by Bio-Microbics, Inc.
- 7) Tank size must be increased by 20% if minimum of 10 inches is used between the unit and the base of the tank. Consult factory for approval.
- 8) The primary compartment may be a separate tank.
- 9) Four leg extensions may be used to stand unit in tank eliminating the need for the lid, refer to installation manual for more information.
- 10) See Microfast Specifications, Microfast Installation Manual and Bio-Microbics, Inc. for additional information pertaining to the design, installation and inspection of the system.

**GENERAL NOTES**

- A.) Neither driveway nor parking areas are allowed over septic system unless H-20 components are used and system is vented.
- B.) The designer will not be responsible for the system as designed unless constructed as shown. Any changes must be approved in writing by the designer.
- C.) Contractor shall be responsible for verifying the location of all underground and overhead utilities prior to the commencement of work.

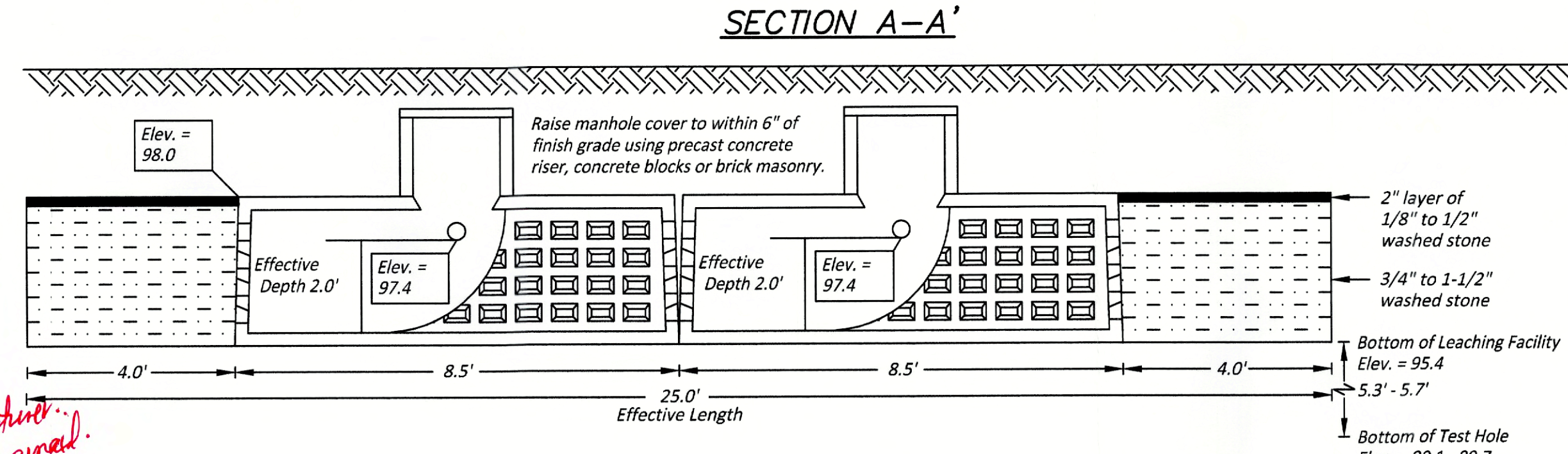
**CONSTRUCTION NOTES**

- 1.) All materials and construction shall conform to the State Environmental Code, Title 5, and the requirements of the local Board of Health.
- 2.) Topsoil, subsoil, peat, or other unsuitable or impervious material [15.255(1)] shall be removed five (5) feet laterally in all directions beyond the outer perimeter of the soil absorption system to the depth of the naturally occurring pervious material(s) and replaced with fill material meeting the specifications of 310 CMR [15.255(3)], [15.255(5)].

- 3.) Septic tank(s), grease trap(s), dosing chamber(s) and distribution box(es) shall be set on a level stable base which has been mechanically compacted. If the component is placed in fill, proper compaction is required to ensure stability and to prevent settling; native ground with a 6 inch stone base is otherwise adequate [15.221(2)].
- 4.) Base aggregate shall consist of 3/4" to 1-1/2" double washed stone free of iron, fines and dust and shall be installed from below the crown of the distribution line to the bottom of the soil absorption system [15.247(1)]. Base aggregate shall be covered with a 2" layer of 1/8" to 1/2" double washed stone free of iron, fines and dust [15.247(2)].
- 5.) From the date of installation of the soil absorption system until receipt of a Certificate of Compliance, the perimeter of the soil absorption system shall be staked and flagged to prevent the use of such area for all activities which might damage the system [15.246(2)].
- 6.) The Board of Health shall require inspection of all construction by an agent of the Board of Health and the designer and shall require such persons to certify in writing that all work has been completed in accordance with the terms of the permit and approved plans. 48 hours advance notice is requested.

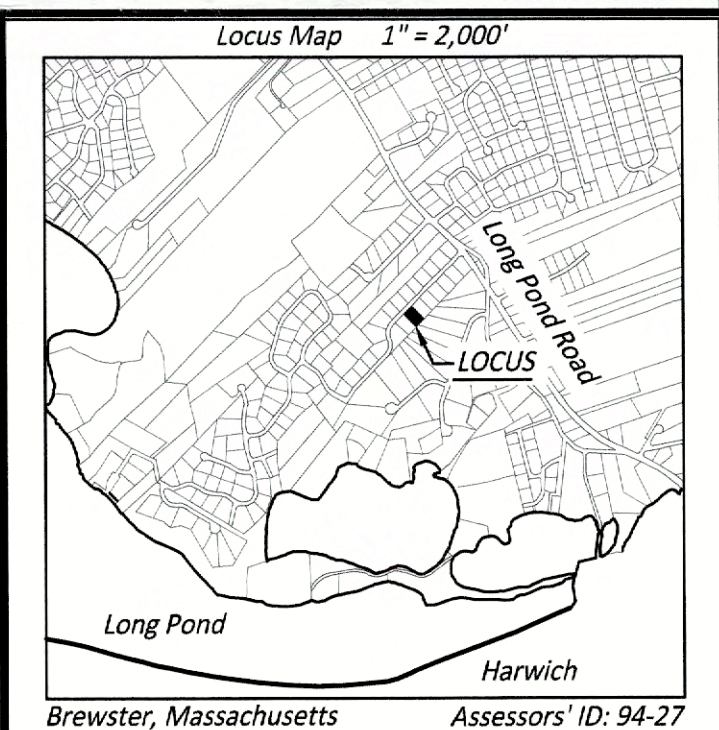
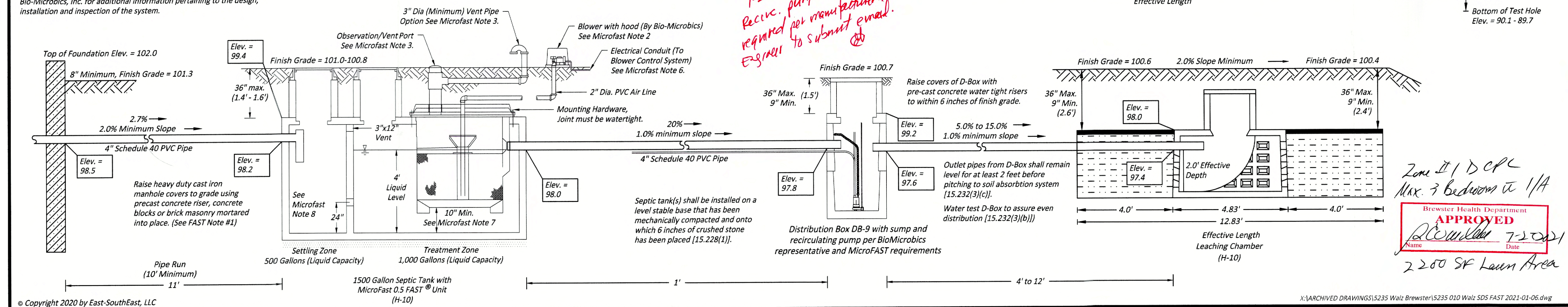
**SYSTEM DESIGN CALCULATIONS**

- 1.) Basis of Design  
Number of Bedrooms: 3  
Other:
- 2.) Design Daily Flow Sewage Flow: 330 GPD
- 3.) Septic Tank Capacity  
Required: 330 Gal.  
Provided: 1,500 Gal.
- 4.) Soil Absorption System Capacity  
Required: 330 GPD  
Provided: 349 GPD
- 5.) A garbage disposal is NOT permitted with this design  
\* [(12.83+25.0)\*2\*2 + (12.83x25.0)] x 0.74



**PROFILE**  
(Not to Scale)

*7-26-21  
Recirc. pumps not required per manufacturer's design to submit email.*



**SEWAGE DISPOSAL SYSTEM PLAN**  
 Greenland Pond Road, Brewster, Massachusetts  
 September 18, 2020  
 OWNER OF RECORD:  
 Richard Walz  
 East-Southeast, LLC

**RICHARD WALZ**  
**EAST-SOUTHEAST, LLC**  
 www.ese-llc.com \* office@ese-llc.com  
 1038 Main Street, Chatham, MA 02633  
 (508) 945-3965 \* Fax: (508) 945-5885  
 Brewer Health Department  
**APPROVED**  
 Richard Walz 7-26-21  
 2200 SF Lawn Area  
 Vertical Datum: NAVD '88  
 Horizontal Datum: NAD '83 (2011)  
 Scale: 1" = 30' (U.S. Survey Feet)  
 B-5235-01.0 Sheet 1 of 1

*Installer*





# Town of Brewster

2198 MAIN STREET  
BREWSTER, MASSACHUSETTS 02631-1898

(508) 896-3701  
FAX (508) 896-8089

Health Department  
Nancy Ellis Ice

December 6, 2005

David J. Michniewicz, P.E.  
Coastal Engineering Co., Inc.  
260 Cranberry Highway  
Orleans, MA 02653

Re: [REDACTED]

Dear Mr. Michniewicz:

On November 22, 2005, the Brewster Board of Health voted to approve the plan with the revision date of November 11, 2005 for the installation of the proposed innovative/alternative technology to the existing previously installed sewage disposal system with the following conditions:

1. The blower unit may be relocated.
2. The influent and the effluent will be tested for the full nitrogen series on an annual basis for the first three years and reported to the Board of Health. If the results show a consistent level of 25 mg/L or less, then the testing can be reduced to once every three years.

If you have any questions, do not hesitate to contact this office.

Sincerely,

Nancy Ellis Ice, CHO, RS  
Health Director

Cc: Conservation Commission

# I/A System Sample Report History

## Lower Road, Brewster

Barnstable County Department of Health and Environment  
P.O. Box 427, Barnstable, MA 02630



### Effluent Sample Results

Date	TN	Nitrate	Nitrite	TKN	pH
07/07/2006	22.4	1.8	11	9.59	
10/19/2006	20.1	11.9	0.125	8.07	
12/26/2006	15.8	5.96		9.82	
06/15/2007	59.1	39.5	0.79	18.8	
06/05/2008	16.8	2.32	1.19	13.3	
06/04/2009	9.32	2.08	0.24	7	
06/25/2010	8.74	2.12	0.317	6.3	
06/23/2011	27.78	3.03	0.85	23.9	
06/21/2012	36.44	22.1	2.34	12	
07/22/2013	22.32	1.43	0.59	20.3	
08/13/2014	13.82	2.98	1.14	9.7	6.7
08/31/2015	27.9	1.32	0.98	25.6	
07/14/2016	45.094	1.82	0.574	42.7	
12/07/2016	26.87	2.2	0.67	24	10
06/16/2017	35.763	0.4	0.063	35.3	7.11
09/10/2018	28.2	2.9	1.3	24	7.25
06/12/2019	30.8	1.2	1.1	28.5	7.21
07/20/2021	31.41	4.4	0.11	26.9	7.7
<b>Median</b>	<b>27.325</b>	<b>2.26</b>	<b>0.79</b>	<b>19.55</b>	<b>7.23</b>

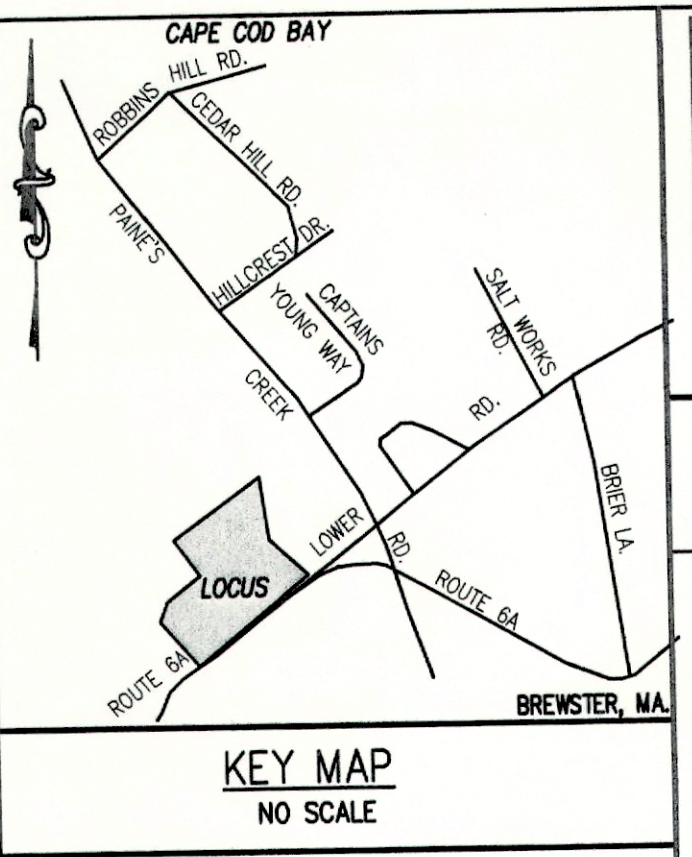
### Influent Sample Results

Date	TN	Nitrate	Nitrite	TKN	pH
07/07/2006	12.3	0.25	0.125	11.9	
10/19/2006	14.1	0.25	0.25	13.6	
12/26/2006	20.6	0.25		20.3	
06/15/2007	53.2	0.025	0.01	53.2	
06/04/2009	13.81	2.38	0.225	11.2	
06/25/2010	24.67	0.025	0.044	24.6	
06/21/2012	61.62	0.47	0.15	61	
07/22/2013	49.23	0.82	0.01	48.4	
08/13/2014	59.74	0.34		59.4	6.4
06/16/2017				42.8	7.07
09/10/2018		2.3	1.2	33.5	

<b>Date</b>	<b>TN</b>	<b>Nitrate</b>	<b>Nitrite</b>	<b>TKN</b>	<b>pH</b>
06/12/2019				99.8	
07/20/2021				33.3	
<b>Median</b>	<b>24.67</b>	<b>0.295</b>	<b>0.1375</b>	<b>33.5</b>	<b>6.735</b>



PROJECT	PLANNING PROPOSED I/A TECHNOLOGY ADDITION TO EXISTING SEPTIC SYSTEM
SHEET TITLE	ADDITION TO EXISTING SEPTIC SYSTEM
SCALE	1" = 20'
DRAWING FILE	C16297.dwg
DATE	5-03-05
DRAWN BY	SMR
CHECKED BY	JML
PROJECT NO.	C16297.00

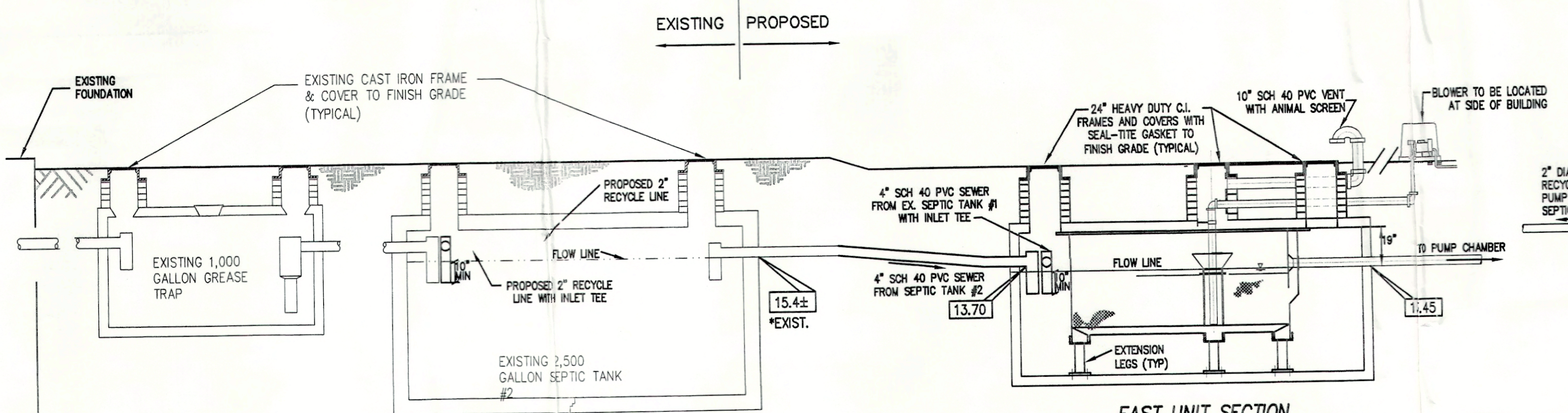


**PLAN REFERENCES:**  
 ASSESSORS MAP 20, PARCEL [REDACTED]  
 LOT AREA = 3.1± AC.  
 PLAN BOOK 433, PAGE 2  
 \*AS-BUILT\* PLAN PREPARED BY R.J. O'HEARN P.L.S., R.S. FOR LUKE BREWSTER REALTY TRUST DATED 11/08/03

**FLOOD NOTE:**  
 FLOOD ZONE A5 (EL.13) AS SHOWN ON FEMA FIRM PANEL #250003 0004 G REVISED MAY 17, 1993

**DATUM NOTE:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON THE NATIONAL GEODEIC VERTICAL DATUM (NGVD)

- LEGEND**
- BOUND
  - MHB
  - DRILL HOLE
  - CATCH BASIN
  - SEWER MANHOLE
  - MANHOLE
  - MONITORING WELL
  - GAS VALVE
  - WATER VALVE
  - HYDRANT
  - TELEPHONE BOX
  - MISC. SIGN
  - UTILITY POLE
  - GUY WIRE
  - SPLIT RAIL FENCE
  - WATER LINE
  - - - CONTOUR

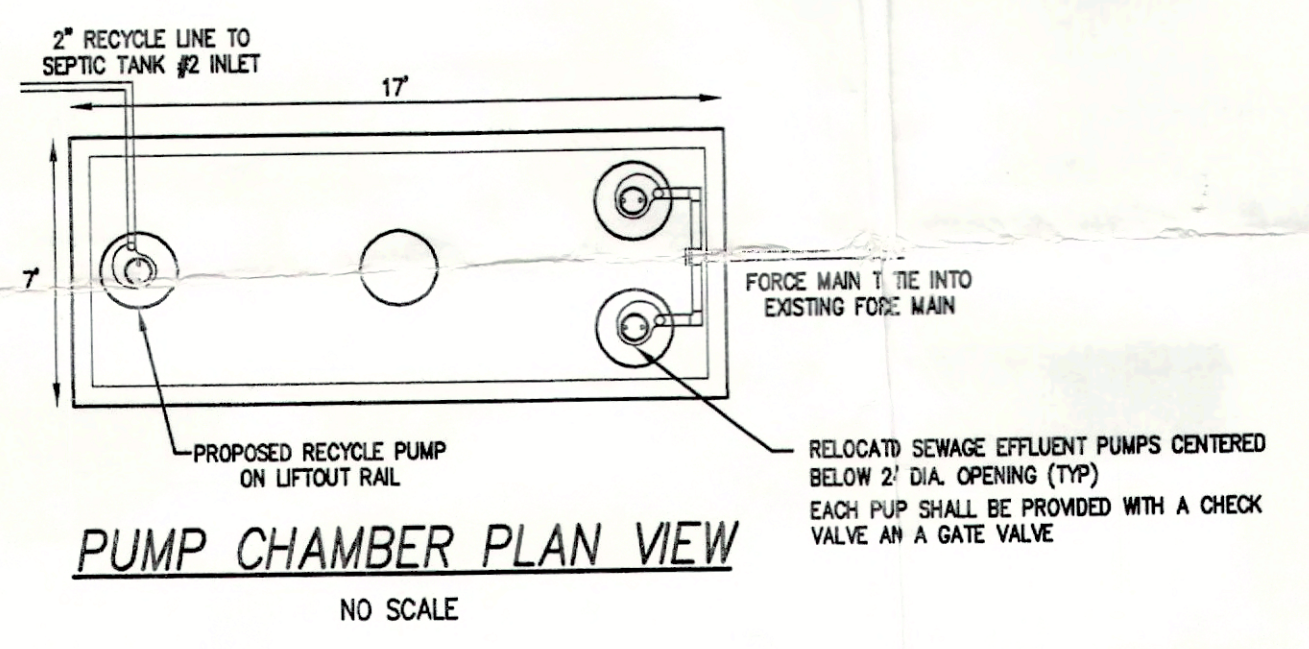


**FAST UNIT SECTION**  
**4,500 GALLON SEPTIC TANK**  
**WITH HIGH-STRENGTH-FAST 4.5 UNIT**  
 FAST TANK AND HIGH STRENGTH FAST UNIT TO BE DESIGNED TO ACCOMMODATE H-20 VEHICULAR LOADING.

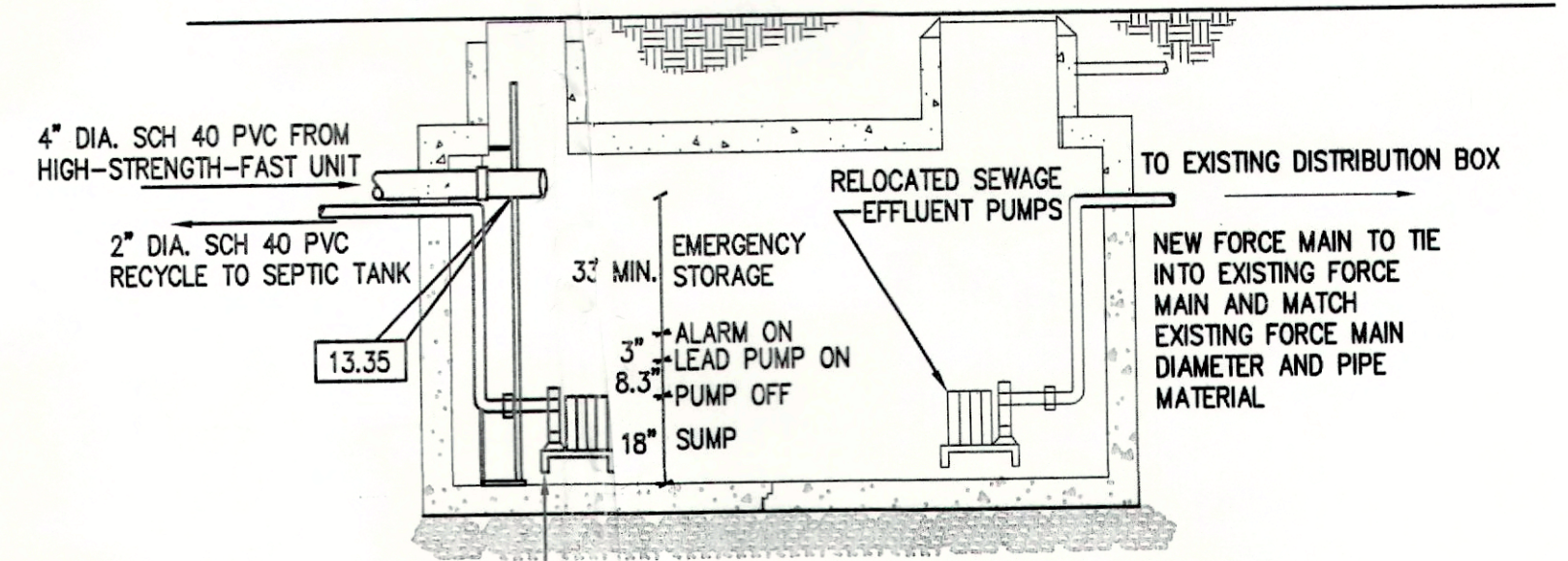
**DESIGN CALCULATIONS**

**PLAZA DESIGN FLOW:**  
 32 SEAT DONUT SHOP AT 20 GALLONS PER SEAT = 640 GPD  
 13,539 SF RETAIL SPACE AT 50 GPD PER 1,000 SF = 677 GPD  
 (3) 2-BEDROOM APT'S AT 110 GAL. PER DAY PER BEDROOM = 660 GPD  
**TOTAL FLOW: = 1,977 GPD**

**RELOCATE:** HANDHOLE WITH PUMP CONTROL JUNCTION BOX  
**INSTALL:** ONE (1) - 17' L x 10' W x 8.5' D (H-20) TANK WITH HIGH STRENGTH FAST 4.5 UNIT WITH BLOWER  
 ONE (1) - PUMP CHAMBER



**PUMP CHAMBER PLAN VIEW**  
 NO SCALE

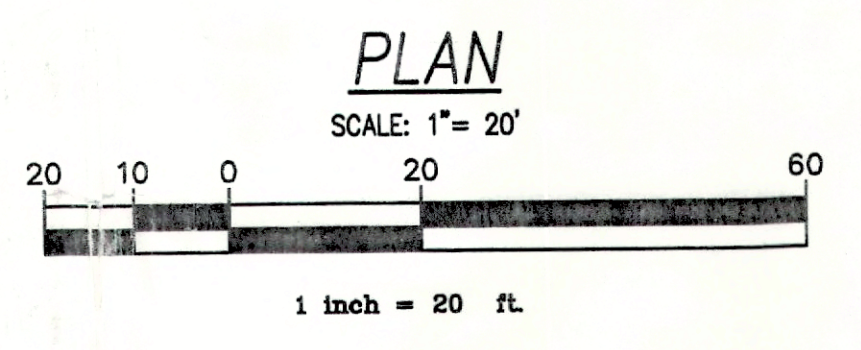
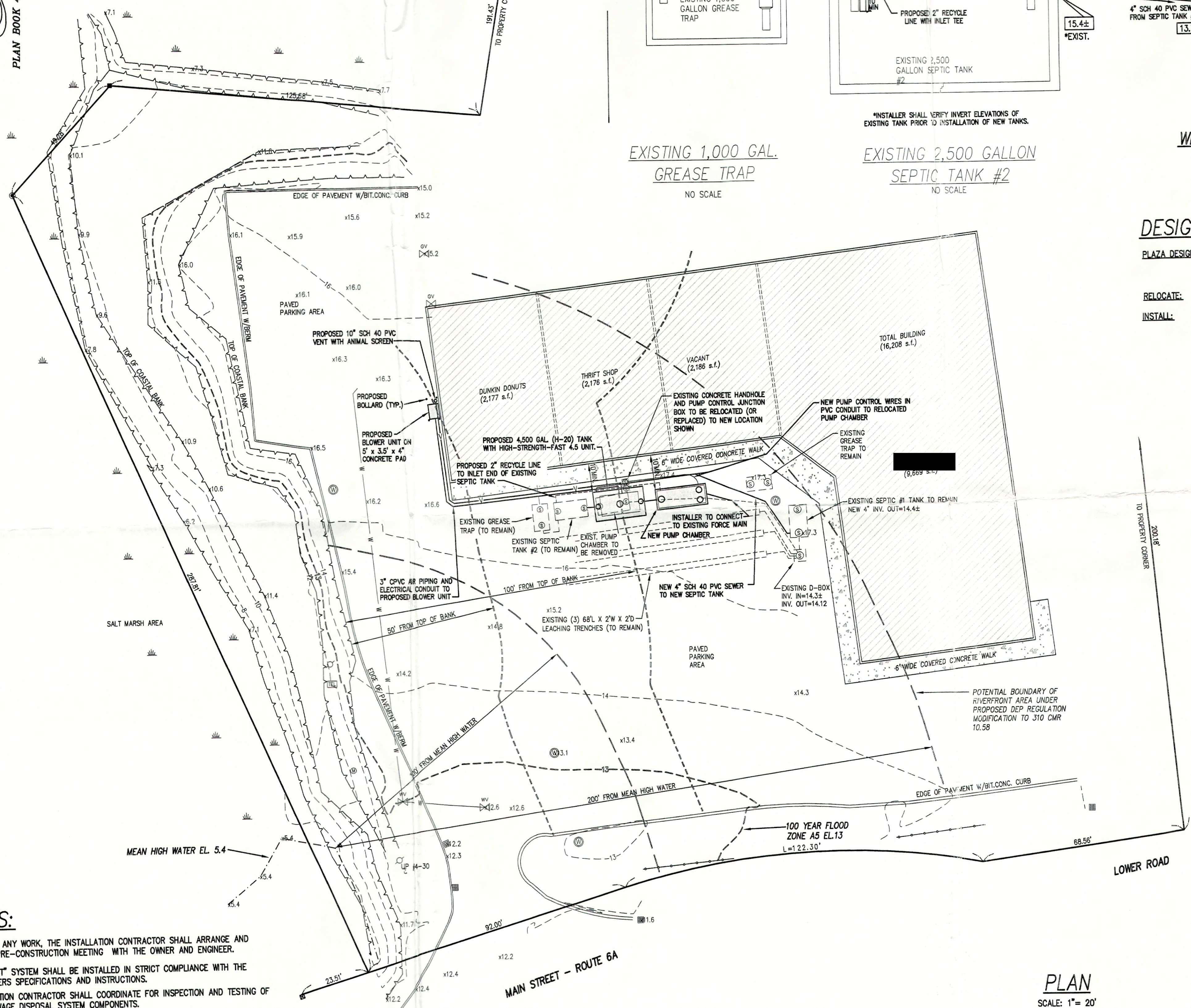


**PUMP CHAMBER 4,000 GALLON**  
 (INTERIOR DIMENSIONS: 16' L x 6' W)

**EXISTING 1,000 GAL. GREASE TRAP**  
 NO SCALE

**EXISTING 2,500 GALLON SEPTIC TANK #2**  
 NO SCALE

PLAN BOOK 433, PAGE 2



- NOTES:**
- PRIOR TO ANY WORK, THE INSTALLATION CONTRACTOR SHALL ARRANGE AND CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER AND ENGINEER.
  - THE "FAST" SYSTEM SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURERS SPECIFICATIONS AND INSTRUCTIONS.
  - INSTALLATION CONTRACTOR SHALL COORDINATE FOR INSPECTION AND TESTING OF THE NEW SEWAGE DISPOSAL SYSTEM COMPONENTS.
  - INSTALLER TO PERFORM A WATERTIGHT TEST ON ALL CHAMBERS AND TANKS. TEST TO BE WITNESSED BY ENGINEER AND PERFORMED AS FOLLOWS:
    - FILL TANKS WITH WATER AND PRESOAK FOR 24 HOURS.
    - (CONTACT ENGINEER AT START OF PRESOAK)
    - ENGINEER TO MEASURE WATER LEVEL AFTER PRESOAK IS COMPLETE
    - ENGINEER TO RE-MEASURE WATER LEVEL 24 HOURS AFTER PRESOAK
    - ENGINEER TO RE-MEASURE WATER LEVEL 48 HOURS AFTER PRESOAK
  - INSTALLER TO PERFORM A CLEARWATER TEST PRIOR TO SYSTEM BEING PLACED INTO SERVICE TO DEMONSTRATE OPERATION OF SYSTEM. TEST TO BE WITNESSED BY ENGINEER AND BOARD OF HEALTH.

BENCHMARK - FLANGE BOLT BEFORE "OPEN" ELEV. = 12.97 (N.G.V.D.)



Number	Street	Map/Parcel	Brand	DEP Approval	Year	Nutrient Reduction	Nutr. Limit	ESA	O&M Contract	Compliance	Notification	Response
127	Beach Plum Lane	96/63	Bioclere	Provisional					Y			
306	Blueberry Pond Drive	101/100	Presby	General					2013 BOH and DEP d/c Inspection rqrmt			
30	Brewster Woods Road	56/75	Bioclere	General	2021			>2000gpd - Ch. 40B development exempt	Y	Y		
200	Brier Lane	48/45	Perc-Rite	Remedial								
19	Burning Bush Way	33/267	Bioclere	Provisional								
34	Captain Connolly Road	19/29	Perc-Rite	General					historically non-compliant		10/2021 BOH hearing	
5	Carson's Way	23/60	Micro Fast 0.9	General								
47	Carson's Way	23/63	H600A H-Series Hoot					Water Quality Reg (Zoning) - 4 or more dwellings d/c > 2000 gpd	Y			
60	Carson's Way	23/64	Micro Fast 0.9	General				Water Quality Reg (Zoning) - 4 or more dwellings d/c > 2000 gpd	Y			
56	Carson's Way	23/65	Micro Fast 0.9	General				Water Quality Reg (Zoning) - 4 or more dwellings d/c > 2000 gpd	Y			
14	Carson's Way	23/67	Micro Fast 0.5	General				Water Quality Reg (Zoning) - 4 or more dwellings d/c > 2000 gpd	Y			
26	Carson's Way	23/68	Micro Fast 0.5L	General				Water Quality Reg (Zoning) - 4 or more dwellings d/c > 2000 gpd	Y			
35	Carson's Way	23/62	Micro Fast 0.5	General				Water Quality Reg (Zoning) - 4 or more dwellings d/c > 2000 gpd	Y			
40	Carson's Way	23/66	Micro Fast 0.5	General				Water Quality Reg (Zoning) - 4 or more dwellings d/c > 2000 gpd	Y			
19	Cedar Hill Road	38/20	Perc-Rite									
40	Cranview	38/74	Waterloo Biofilter	Pilot	2018	Phosphorous		300' Elbow Pond, Bog, GW@ 4.5'	County	No		
300	Foster Road	79/25	Micro Fast 0.5	General					N	No	Letter 6/30/23	
75	Johnson Cartway	61/20	Perc-Rite	General								
158	Jonathan's Way	95/7	Singulair	General w/ N							Letter 8/22/23	
85	Hamilton Cartway	93/9	Advantex A20									
88	Hamilton Cartway	93/11	Micro Fast / Drip Dispersal									
40	Konohassett Cartway	72/25	Micro Fast 0.5	General								
495	Long Pond Road	85/111	Septi-tech	General								
1597	Long Pond Road	94/93	Bioclere	Provisional	2003	Nitrogen	19 ppm	Zone II/DCPC/Herring River Watershed	Y	Y	Letter 8/22/23	NSU/Owner 9/11/23
15	Lower Road	37/1	Micro Fast 4.5	General	2006	Nitrogen	25 ppm	300' to saltmarsh/test every 3 years/CC Bay Wtshed	Y	No		
540	Main Street	26/7	Micro Fast w/ UV	General w/ N								
2907	Main Street (Ocean Edge)		Amphidrome	Pilot								
54	Mate's Way	18/32	Sludge Hammer									
39	McGuerty Road	94/75	Micro Fast 0.5	General	2018	Nitrogen	19 or 25 pp	Zone II/DCPC not addressed	Y	No	Letter 8/22/23	JMO'Reilly Email 9/1/23
56	McGuerty Road	94/88	Singulair	Pilot	2002	Nitrogen		Zone II	Pending	No	Letter 8/22/23	NSU contract prop. 9/11/23
26	Nancy May Path	91/14-801	Perc Rite									
78	Old Red Top Road	12/72	Singulair	Remedial w/ N							ck on 8/16/24	
160	Old Red Top Road	12/44	Singulair	Pilot								
85	Old Owl Pond Road	137/75	Perc Rite									
65	Pell's Fishing Road	125/50	White Knight									
255	Robbin's Hill Road	38/58	Perc Rite									
298	Robbin's Hill Road	38/80	Advantex AX25RT									
17	Russell's Path	85/73	Waterloo Biofilter	Provisional	2005	Nitrogen		Zone II	Yes ?	Yes		
0	Sachemus Trail	78/	Bioclere w/ Cultex LF	General								
50	Sarah Maker Lane	85/138	Micro Fast	General	2014	Nitrogen	19 ppm	Zone II/DCPC/Herr. River & CC Bay Wtshed/Priv.Well	N	No		
18	Samoset Road	85/134	Micro Fast									





## EPA plans to disband board studying wastewater discharge in Mass. Bay

[wbur.org/news/2023/08/21/deer-island-outfall-monitoring-scientific-advisory-panel-omsap-epa](https://www.wbur.org/news/2023/08/21/deer-island-outfall-monitoring-scientific-advisory-panel-omsap-epa)



The anaerobic digesters at the Deer Island Water Treatment facility in Winthrop. (Jesse Costa/WBUR)

Every day, the Deer Island treatment plant cleans about 330 million gallons of Greater Boston's wastewater. The treated water is then pumped through a nine-and-a-half mile pipe under the ocean, where it's diffused into Massachusetts Bay.

Since the pipe was built more than two decades ago, the Environmental Protection Agency has required that an independent group of scientists keep a close eye on the treated wastewater and its effect on the bay. This group of volunteer scientists — known as the Outfall Monitoring Science Advisory Panel (OMSAP) — has monitored everything from fish health to algae blooms to oxygen levels in the water.

WBUR is a nonprofit news organization. Our coverage relies on your financial support. If you value articles like the one you're reading right now, [give today](#).

Many scientists were shocked, therefore, when the EPA announced it plans to discontinue the panel when it renews Deer Island's discharge permit this year. The EPA declined requests for an interview. But the official reason, according to a statement from EPA New England: While the panel "served a very important role," the data show that those decades of wastewater discharge have not harmed the bay. So, the scientists' services are no longer required.

But the scientists say their work has just begun. They see a bay warming with climate change, soupy with microplastics and swimming with unfamiliar algae. Who knows what else the future holds?

"We need to be looking ahead. Climate change is happening and it's happening rapidly," said Juanita Urban-Rich, an associate professor at UMass Boston and a member of the advisory panel. "Our conclusions from the past 20 years of monitoring may not be relevant over the next coming 10 years."

"Climate change is happening and it's happening rapidly ... Our conclusions from the past 20 years of monitoring may not be relevant over the next coming 10 years."

*Juanita Urban-Rich*

Other supporters say that the advisory panel offers more than just solid science: the group makes data and decision-making transparent, and holds state and federal officials accountable.

"As a person who understands that frank, open discussions and peer review are critical to good science, I am very concerned," said Bruce Berman, who was the director of strategy and communications for the advocacy group Save the Harbor Save the Bay for 30 years.

The Massachusetts Water Resources Authority (MWRA), which operates the Deer Island plant, will still collect data on the health of the bay.

"But the question is: monitoring what?" asked Berman, who also chairs the panel's Public Interest Advisory Committee. Who is going to decide what data they gather, he said, "and how can the public have input?"

Beyond that, it's not clear yet how — or if — scientists and the public will be able to access the data.

"[The MWRA] could just do your monitoring and stick it in a bin and let it sit there," said Pam DiBona, director of the Massachusetts Bays National Estuary Partnership. "It doesn't make sense not to have scientists pay attention to what the data are."



The MWRA, for its part, has nothing but praise for the panel of scientists. A statement from the organization stated that it “greatly appreciates OMSAP’s technical and scientific oversight of the Deer Island outfall since it came online.”

Still, the MWRA is not pushing to keep the group in the permit, at least not publicly.

Judith Pederson, an oceanographer at MIT’s Sea Grant and current chair of the panel, put it this way: “While we have a congenial relationship with MWRA, I think they would be happy not to have us.”

## **Harbor of Shame**

---

Back in the 1980s, Boston Harbor was a national embarrassment. It was widely derided as the dirtiest harbor in America and blasted in headlines as the “Harbor of Shame.”

“There was so much pollution in Boston Harbor that it was constantly at risk of ginormous algae blooms that used up all the oxygen,” Berman said. “Anything that couldn’t swim the hell out of the harbor would die.”

“The water was green. And brown on some days,” he said. “We were discharging 250 million gallons of crap out of a broken pipe, out of an old plant right off the mouth of the harbor. You could see that plume from space.”

Lawsuits eventually forced the cleanup of Boston Harbor. In 1985 the state legislature created the MWRA to take over the water and sewer system for Greater Boston. One key part of the cleanup plan was a \$3.8 billion upgrade for the Deer Island wastewater treatment plant, and a new 9.5-mile pipe that would discharge treated wastewater, or “effluent,” into the bay.

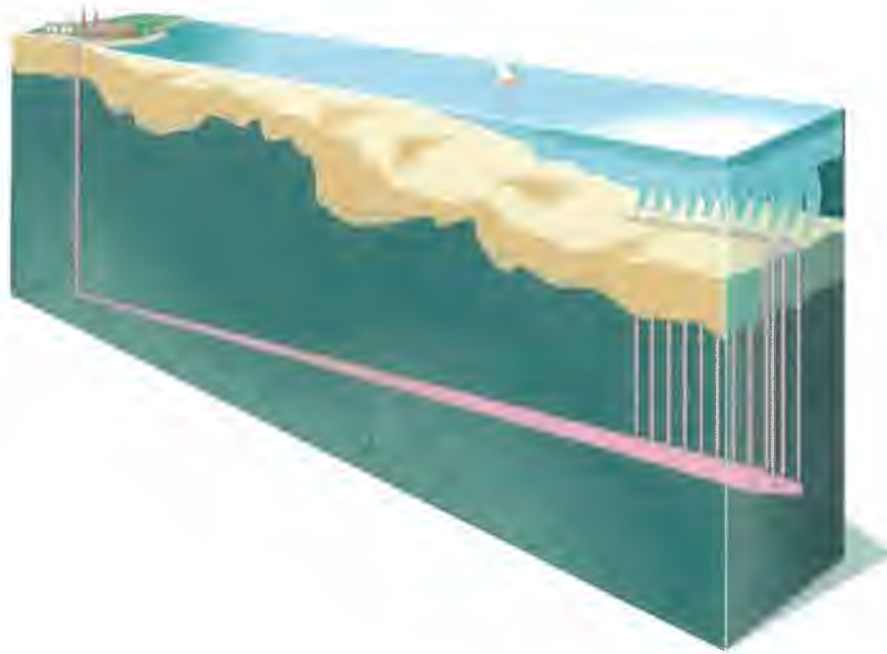


Diagram of the Deer Island outfall pipe and risers. Courtesy Massachusetts Water Resources Authority

Not everyone loved the idea of dumping Boston's wastewater — treated or not — into the bay. Coastal communities on Cape Cod and the North Shore were concerned that Boston's sewage was about to become their problem, washing up on their shores.

"There were people who thought that we were gonna save the harbor and screw the bay," said Berman.

To address these concerns, the state created an Outfall Monitoring Task Force, which collected data for almost a decade before the outfall pipe went into service. Then, when the outfall pipe began discharging into the bay in 2000, the EPA required the scientific oversight panel in Deer Island's original wastewater permit, along with stringent effluent limits and monitoring requirements.





This 1992 photo shows construction manager Joseph Griffith inside the Massachusetts Water Resources Authority's Outfall Tunnel, which would carry sewage more than nine miles underwater from Boston's Deer Island out into the Massachusetts Bay. (Paula Scully/AP)

As outlined in the group's charter, EPA and MassDEP jointly chose scientists and engineers to serve on the panel, selecting people with expertise in Boston Harbor, Massachusetts Bay, Cape Cod Bay and the Gulf of Maine. Current members hail from places like MIT, Northeastern and the Woods Hole Oceanographic Institution.

The scientists aren't being cut from the permit for cost concerns; they all volunteer their time. The MWRA estimates that the outfall monitoring costs about \$1.5 million each year, but most of that money goes toward the actual data collection. When the scientists get together, the EPA usually provides the meeting space.

While the panel has no formal mechanism to compel state or federal agencies to act, the scientists have wielded considerable power. Over the past two decades, the scientists have devised plans to monitor nitrogen and dissolved oxygen in the water. They've studied piles of data from monitoring stations; evaluated the health of flounder and lobster; and convened special studies, like those on microplastics, PFAS and other so-called contaminants of emerging concern. And while state and federal authorities may not have loved all the scientist' suggestions about what to monitor and when, said Pederson, she can't recall any suggestions that weren't adopted in the end.

“There were people who thought that we were gonna save the harbor and screw the bay.”

*Bruce Berman*

“They were charged with coming together and keeping an eye on the data,” DiBona said. “They’ve done an amazing job.”

Their biggest finding was that those millions of gallons of cleaned-up wastewater flowing into the bay didn’t have much effect.

This is why the EPA argued that the panel is no longer necessary.

“Nearly 23 years of ambient post-discharge monitoring has found that Massachusetts Bay water quality standards for the waters around the discharge are being met, and the discharge has not had an adverse effect on Massachusetts Bay,” said Michelle Barden of EPA New England in a July 12 public hearing. “EPA is dropping the outfall monitoring Science Advisory panel, or OMSAP, as a permit requirement.”

Many argue that the past effects of the discharge may not be indicative future impacts, given the rapidly changing climate.

Virginia Edgcomb, a senior scientist at the Woods Hole Oceanographic Institution and a member of the panel, pointed out that new species of harmful algae are being detected more frequently in Massachusetts Bay and Cape Cod Bay, usually triggered by warm water and available nutrients. These algae are the suspected culprits in the low-oxygen “blobs” that have killed lobsters in Cape Cod Bay.

As the water warms with climate change, she said, these patterns “need to be monitored carefully.”

Judith Pederson, the current chair of the panel, said she worries about “contaminants of emerging concern,” like PFAS and microplastics.

“I don’t feel that this permit has looked forward at all,” she said.

## **Maybe there’s another way forward**

---

While Deer Island is the largest source of wastewater discharge into Massachusetts Bay, it isn’t the only one. Pederson and others think that the panel should broaden its reach and monitor all the facilities discharging wastewater into Massachusetts Bay.

“Isn’t it stupid of us to have all of Mass. Bay and only have one monitoring program out there?” she asked.



Even as EPA New England plans to remove the science advisory panel from its permit, the agency seems to support an ongoing role for the group — just, maybe, somewhere else. In a statement, the agency said it's been working with panel members "to encourage the establishment of a regionally focused Massachusetts Bay Science Advisory Board."

One of the most likely homes for a future panel is the Massachusetts Bays National Estuary Partnership (MassBays), now housed at UMass Boston's Center for the Environment.



A view of Downtown Boston (center) and of Deer Island (right) from the Atlantic Ocean. (Jesse Costa/WBUR)

The Massachusetts Department of Environmental Protection "has been in discussions with MassBays as a potential host organization," said spokesman Ed Coletta, adding the department is considering various options for continuing the panel.

"MassDEP recognizes the value in a third-party science advisory committee," he said.

However, there seems to be little action beyond discussion. And, there's another concern with the group landing at UMass: it's unclear whether they could wield any real power without formal state or federal backing.

"We would have to be careful that they actually have some weight," DiBona said. "They all volunteer their time to look at these monstrous piles of data. And they're not going to do it if they don't think it's going into something that's worthwhile."



"I don't mind that they don't have us in the permit as long as they have us somewhere where we report either to the state or to EPA," Pederson said. "That really is what you need. If you don't have that, they won't care."

There has been little public outcry about the looming dissolution of the group. The public comment period on the proposed permit opened on May 31 and ends on Nov. 28. So far, there are no comments on the elimination of the panel. A public listening session on the group's future in July garnered lots of input from panel members, former members and allies, but none from the general public.

Scientists "are really good at asking and answering very complicated questions. They are not really good at self-promotion," Berman said. "Sometimes it's hard to get people to pay attention."

Judith Pedersen said that for scientists, the work on the bay is just getting started, and climate change has added a sense of urgency.

"Things are changing quickly," she said. Their decades of monitoring are just a short window into the history of the bay, but may prove crucial with the rapid climate shifts underway. "You really need to keep going."





# Town of Brewster

2198 MAIN STREET  
BREWSTER, MASSACHUSETTS 02631-1898

PHONE: 508.896.3701 EXT. 1120

FAX: 508.896.4538

[brhealth@brewster-ma.gov](mailto:brhealth@brewster-ma.gov)

[WWW.BREWSTER-MA.GOV](http://WWW.BREWSTER-MA.GOV)

Health Department

Amy L. von Hone, R.S., C.H.O.  
Director

Sherrie McCullough, R.S.  
Assistant Director

Tammi Mason  
Senior Department Assistant

Board of Health Meeting  
Wednesday, August 2, 2023 at 6:30PM  
Town Hall, Room A

**Board members present:** Kimberley Crocker Pearson, MS, MD, MPH, Vice Chair: John Keith and Abigail Archer

**Others present:** Amy von Hone, R.S., C.H.O., Health Director

**1. Call to Order**

Meeting was called to order at 6:30PM.

**2. Declaration of a Quorum**

Quorum present.

**3. Recording statement**

Noted.

**4. Chair announcements**

None.

**5. Citizen's Forum**

None.

**6. Pressure Dose letter update**

AVH – the office has not received a lot of response so far from the letters that went out. She did speak to an inspector who brought up the Perc Rite inspection form and asked if that could be used in place of the template the BOH approved. She told him they could be used interchangeably. The 2 emails in the packet were the most recent responses that the office received.

**7. COA Liaison position update and possible vote**

AVH- she received a response back from the Town Manager's office and it was recommended that the BOH use the Select Board Liaison Policy. Once the full board is present, we can move forward with the procedure and vote.

**8. Opioid/Narcan update**

KCP – shared a power point on "Opiate Use Disorder".

There is new acute treatment which includes Narcan (Naloxone) which is available with a prescription now. Chronic treatment is medicated assisted treatment. Doctors can now prescribe the medications without government interference.

She spoke about Fentanyl and stated that the rate of death is increasing dramatically each year. This drug is actively produced in illegal laboratories.

There is a DEA campaign directed towards middle & high school kids.

The drug "Naloxone (Narcan)" rapidly reverses and opioid overdose. This can be purchased at pharmacies. An example was shown to the Board.

She went over the signs of an OD: BLUE:

- B – breathing – shallow, gurgling, erratic, absent
- L – lips & fingertips are blue
- U – unresponsive
- E – easy to give



It can take up to 2 minutes for a response after the Narcan is given. The person should be rolled onto their side and if after 2 minutes, there is no response, give a second dose.

Insurance may cover the cost and as of September 1, 2023 it should be available over the counter.

There are not many places between Hyannis and Provincetown to get Narcan. There is a potential for the use of Opioid funds to set up a new place.

There are new strategies to prevent and treat Opioid addiction: Buprenorphine (Suboxone) and Naltrexone.

A whole patient approach is best when dealing with addiction.

AVH – stated that the Town Manager is going to be meeting with the Chair of the Human Services Committee soon.

AA – we need to figure out how much we need for chronic and acute treatment.

JK – would like to see another treatment center in areas that are lacking. Education is important as well as preventative measures.

AA – CCCC has a certificate program for Drug & Alcohol counseling. She also believes that education is key. She spoke about the “drug take back” places.

- 9. I/A Enforcement Discussion**
- a. Review & approve enforcement letter**
  - b. Review & approve final draft of I/A Flow Chart**
  - c. Discuss non-compliant I/A systems**

This was continued until the full Board could be present.

**10. Liaison Reports**

AA – Recycling Commission has not met.

JK – WQRC has not met.

KCP – Opioid group has not met.

**11. Matters not reasonable anticipated by the Chair**

None.

**12. Items for next agenda**

I/A discussion, COA Liaison and Excellence Grant

**13. Next meeting: August 16, 2023**

Noted.

**13. Next meeting: August 16, 2023**

Noted.

Informational items noted.

Meeting adjourned at 7:10PM.

\*Accompanying documents in packet: Agenda, Opioid information, informational items





**Movement Arts Cape Cod &  
The Brewster Cultural Council**

**Present**

# Open Movement Arts Fair

*Diversity - Equity - Inclusion*

**September 23rd, 1 - 4 PM**  
(Rain Date Sept 24th)

**Boat House - Bay Property - Brewster**

**Everyone Can Dance...  
What Dance is yours?**

Enjoy mini-workshops and performances of Egyptian,  
Tai Chi, Capoeira, Pound, Pole, Contemporary, Yoga, & more  
Suitable for all ages and abilities

**ALL ARE WELCOME!!!**

**Please bring your own lawn or beach chair!**

For more information please contact: David Iannitelli at  
[diannitelli@movementartscapecod.org](mailto:diannitelli@movementartscapecod.org) or 508-632-3779

This event is part of the pilot project "Dancing By The Bay"

