

**MAIN OFFICE:**  
49 Herring Pond Road  
Buzzards Bay, MA 02532  
TEL: (508) 833-0070  
FAX: (508) 833-2282



**NANTUCKET OFFICE:**  
19 Old South Road  
Nantucket, MA 02554  
TEL: (508) 325-0044  
[www.brackeneng.com](http://www.brackeneng.com)

November 3, 2022

**RECEIVED**

By Bourne Health Department at 10:16 am, Nov 04, 2022

Bourne Board of Health  
Terri Guarino, RS, CHO  
24 Perry Avenue  
Bourne, MA 02532

**RE: Bourne Board of Health Variance Request – Proposed Septic (New Construction)  
68 Elgin Road (Map 47.1, Parcel 108)**

Dear Members of the Board:

On behalf of the owners/applicants, Timothy & Michelle Bernard please accept this letter as a request for the following variances to 310 CMR 15.00 (Title 5) & the Town of Bourne Health Regulations for a proposed septic installation at the above referenced property. We respectfully request the following variances:

- **310 CMR 15.211 - A 41' ± variance to Title 5 setback requirements for a 9'± setback from a fragmented, non-water dependent Coastal Bank to a Soil Absorption System.**
- **A 141' ± variance to local setback requirements for a 9'± setback from a fragmented, non-water dependent Coastal Bank to a Soil Absorption System.**

The proposed project includes the construction of a single-family dwelling and installation of Title V septic system with all associated utilities, grading and landscaping. The property is an undeveloped 18,159± square foot parcel located in the village of Cataumet on Handy Point. It is surrounded by single family dwellings to the north and west, east by a vacant parcel and Elgin Road to the south.

The location of the proposed Soil Absorption System was chosen to maximize setback distances from Mean High Water, and separation distance to groundwater to minimize any effect on public health, safety and the environment. To aid in effluent treatment, additional nitrogen removal shall occur via the proposed MicroFAST 0.5 unit prior to dispersal in the leaching facility.

Bracken Engineering, Inc. is requesting that the Bourne Board of Health diverge from the goal of full compliance by allowing the variance requested above. The above variances are requested based on the existing topography of the parcel. The design provides the best treatment within the borders of the lot and confines of the existing resource areas.

Thank you for your time and consideration on this matter. We look forward to reviewing this project with the Board of Health at the December 14<sup>th</sup> Public Hearing. Should you have any questions regarding this project or require any further information please contact the undersigned at either 508-833-0070 or [zac@brackeneng.com](mailto:zac@brackeneng.com) or [jason@brackeneng.com](mailto:jason@brackeneng.com).

Sincerely,

**BRACKEN ENGINEERING, INC.**

A handwritten signature in black ink, appearing to read 'Zachary L. Basinski', written over a horizontal line.

Zachary L. Basinski, P.E., C.F.M.  
Project Manager

A handwritten signature in black ink, appearing to read 'Jason P. Heyer', written over a horizontal line.

Jason P. Heyer  
Project Designer

COMMONWEALTH OF MASSACHUSETTS

Board of Health, Bourne, MA.

APPLICATION FOR DISPOSAL SYSTEM CONSTRUCTION PERMIT

Application for a Permit to Construct ( ) Repair ( ) Upgrade ( ) Abandon ( ) - [X] Complete System [ ] Individual Components

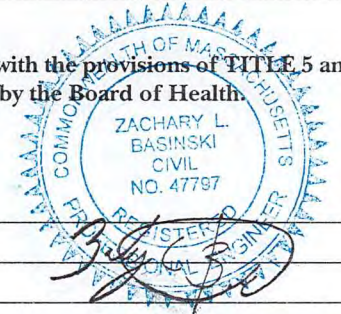
Table with 2 columns: Location, Map/Parcel#, Lot#, Installer's Name, Address, Telephone# and Owner's Name, Address, Telephone#, Designer's Name, Address, Telephone#.

Type of Building Single-family dwelling Lot Size 18,159 +/- sq. ft. Dwelling - No. of Bedrooms 3 Garbage grinder ( ) Other - Type of Building No. of persons Showers ( ), Cafeteria ( ) Other Fixtures Design Flow (min. required) 110 gpd Calculated design flow 330 GPD Design flow provided 340 gpd Plan: Date October 18, 2022 Number of sheets 1 Revision Date Title Proposed Site and Subsurface Sewage Disposal Plan in Bourne, MA Description of Soil(s) See Plan for full description Soil Evaluator Form No. T5 forms 11 & 12 Name of Soil Evaluator Robert E. Dewar, SE Date of Evaluation 7/12/2022

DESCRIPTION OF REPAIRS OR ALTERATIONS New Construction - Installation of a 1,500 gallon (H-20) MicroFast 0.5 septic tank, MicroFast Blower and Vent, D-Box and soil absorption system consisting of three (3) 500 gallon concrete leaching chambers (H-20) 10' W x 30' L x 2' D.

The undersigned agrees to install the above described Individual Sewage Disposal System in accordance with the provisions of TITLE 5 and further agrees to not to place the system in operation until a Certificate of Compliance has been issued by the Board of Health.

Signed \_\_\_\_\_ Date \_\_\_\_\_



Inspections \_\_\_\_\_

COMMONWEALTH OF MASSACHUSETTS

Board of Health, \_\_\_\_\_, MA.

CERTIFICATE OF COMPLIANCE

Description of Work: [ ] Individual Component(s) [X] Complete System

The undersigned hereby certify that the Sewage Disposal System; Constructed ( ), Repaired ( ), Upgraded ( ), Abandoned ( )

by: \_\_\_\_\_

at \_\_\_\_\_

has been installed in accordance with the provisions of 310 CMR 15.00 (Title 5) and the approved design plans/as-built plans relating to application No. \_\_\_\_\_, dated \_\_\_\_\_. Approved Design Flow \_\_\_\_\_ (gpd)

Installer \_\_\_\_\_

Designer: \_\_\_\_\_ Inspector: \_\_\_\_\_ Date: \_\_\_\_\_

The issuance of this permit shall not be construed as a guarantee that the system will function as designed.

COMMONWEALTH OF MASSACHUSETTS

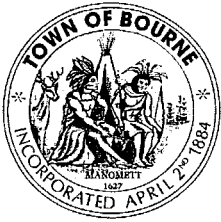
Board of Health, \_\_\_\_\_, MA.

DISPOSAL SYSTEM CONSTRUCTION PERMIT

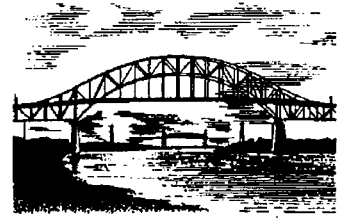
Permission is hereby granted to; Construct ( ) Repair ( ) Upgrade ( ) Abandon ( ) an individual sewage disposal system at \_\_\_\_\_ as described in the application for

Disposal System Construction Permit No. \_\_\_\_\_, dated \_\_\_\_\_.

Provided: Construction shall be completed within three years of the date of this permit. All local conditions must be met.



# Bourne Board of Health Application for Septic Variance or Waiver Requests



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

1. Facility Name and Address:

Owner's Name	Timothy Bernard and Michelle Bernard
Facility's Street Address	68 Elgin Road (Map 47.1, Parcel 108)
Owner's Telephone Number	508-254-2804
Owner's E-mail Address	timbernard@verizon.net
Owner's Mailing Address	72 Elgin Road, Pocasset, MA 02559

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

Preparer's Name	Zachary L. Basinski, PE, CFM
Company	Bracken Engineering, Inc.
Telephone Number	508-833-0070 Ext 303
E-mail Address	zac@brackeneng.com
Mailing Address	49 Herring Pond Road, Buzzards Bay
State/ Zip Code	MA / 02532

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

- Residential  
  Commercial  
  Institutional  
  School  
  Industrial

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

5. Type of System (check all that apply):
- Conventional Title 5  
  I/A System  
 Pumped System  
 Gravity System  
 Pressure Dosed  
 Existing  
 Proposed



6. Describe the existing/ proposed septic system components: New Construction  
Proposed 1,500 gallon MicroFast 0.5 Unit (General Use)  
SAS to consist of three (3) 500 gallon concrete leaching chambers

7. Design Flow per 310 CMR 15.203 (in gallons/ day):  
110 GPD/ Bedroom  
Design flow of system: 3 BDR x 110 GPD = 330 GPD  
Total design flow of facility: 340 GPD

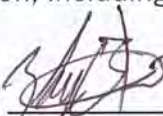
8. Enclose a **letter of request for variances/ waivers** which makes reference to the specific provisions of Title 5 and/ or the Board Bourne of Health Regulations for which a variance is sought. Please use this opportunity to demonstrate compliance with 310 CMR 15.410, and to justify the relevant facts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

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


- Application Fees paid to the Town of Bourne.
- Letter of request describing nature of variances (see samples)
- Six sets of complete plans and specifications. One with original stamp of design engineer.
- Nitrogen Loading Calculation Sheet(s) if applicable
- If abutter notification is required, one of each of the following must be submitted:
  - A copy of the certified list of abutters from the Assessor's Department
  - Sample letter for abutter notification postmarked 10 days prior to meeting date
  - Proof of certified mailing (receipts) meeting requirements of 310 CMR 15.405(2)
- Proposals for installation of Innovative/ Alternative septic systems must be accompanied by:
  - A copy of the Certification for Use including technology specific conditions
  - Draft disclosure notice for the I/A technology to be recorded in the deed
- Hydrogeologic data for all leaching facilities proposed within 100ft of a wetland/ watercourse
- Percentage of Increase Worksheet may be required for waivers or increases in flow

10. Certification:

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

Facility Owner's Signature  BRACKEN ENG, INC - AGENT Date 11/3/22

Print Name ZACHARY L. BASINSKI - AGENT

Signature of Preparer  BRACKEN ENGINEERING, INC Date 11/3/22

Print Name Zachary L. Basinski, PE, CFM

---

For Office Use Only

Completed Application Received: \_\_\_\_\_

Reviewed By: \_\_\_\_\_

Hearing Date: \_\_\_\_\_

Permit #: \_\_\_\_\_

Circle all that apply:

Approved

Continued

Disapproved

Other

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Town of Bourne

Conservation Commission

## Nitrogen Loading Calculation Sheet for Residential Housing

The following calculation sheet is based upon Technical Bulletin 91-001 issued by the Cape Cod Commission and deals with nitrate nitrogen (NO<sub>3</sub>-N) Use the information from your PLAN OF RECORD to provide the following:

### 68 Elgin Road -Preliminary- (Proposed Conditions)

Number of Bedrooms (Title 5 Definition)	=	<b>3</b>	Bedrooms
Lot Size (in square feet of upland areas)	=	<b>18,159</b>	sq.ft. Upland
Impervious Surfaces;**roof area= <b>2,947</b> sq.ft.	**Paved Area =	<b>1,489</b>	sq.ft.
Natural Area = lot area minus all impervious surfaces	=	<b>13,723</b>	sq.ft.
Lawn Area in sq. ft.	=	<b>5,000</b>	sq.ft.

TITLE 5 FLOW = 110 GAL./ DAY PER BEDROOM

WASTEWATER FLOWS (NITROGEN LOAD & WATER LOAD)

Nitrogen from Title 5 design = 14,572 mg NO<sub>3</sub>-N / day / bedroom: or 7911 mg NO<sub>3</sub>-N / day/ bedroom with IA Treatment

Water from Title 5 design = 416.3 H<sub>2</sub>O / day / bedroom

1a) Number of bedrooms = **3** x 7911 = 23733.00 mg. NO<sub>3</sub>-N / day

1b) Number of bedrooms = **3** x 416 = 1248.00 L H<sub>2</sub>O / day

Actual Nitrogen load = 6071.5 mg NO<sub>3</sub>-N / day/ bedroom: 3296 mg NO<sub>3</sub>-N / day/ bedroom with IA Treatment

Actual Water load = 173.5 L H<sub>2</sub>O / day / bedroom

\*Note: This assumes 2.5 people / unit average occupancy within the Town

2a) Number of bedrooms = **3** x 3296 = 9888.00 mg. NO<sub>3</sub>-N / day

2b) Number of bedrooms = **3** x 173.5 = 520.50 L H<sub>2</sub>O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO<sub>3</sub>-N load number sq. ft. of roof surface X 0.19395 mg NO<sub>3</sub>-N / sq. ft.

H<sub>2</sub>O load number sq. ft. of roof surface X 0.2586 L / sq. ft.

3a) Roof surface = **2947** sq. ft. X 0.19395 = 571.57 mg NO<sub>3</sub>-N

3b) Roof surface = **2947** sq. ft. X 0.2586 = 762.09 L H<sub>2</sub>O / day

NO<sub>3</sub>-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.

H<sub>2</sub>O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO<sub>3</sub>-N = **1489** sq. ft. paved surface X 0.388 mg / sq. ft. = 577.73 mg NO<sub>3</sub>-N

4b) H<sub>2</sub>O = **1489** sq. ft. paved surface X 0.2586 L / sq. ft. = 385.06 L H<sub>2</sub>O

LAWN NITROGEN LOADING = 0.933 mg / sq. ft. lawn surface

$$5) \text{ sq. ft. of lawn} = 5000 \times 0.933 = 4665.00 \text{ mg}$$

NATURAL AREA WATER LOADING

$$\text{Natural area} = \text{lot size} - \text{impervious surfaces} = 13723 \text{ sq. ft.}$$

$$6) \text{ Natural area} = 13723 \times \text{water recharge factor} = 1863.58 \text{ L} \\ \text{(0.1358 L / sq. ft. for Bourne)}$$

### SUMMARY OF NITROGEN LOADING

#### Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO<sub>3</sub>N load

1a	(+)	3a	(+)	4a	(+)	5	
23733		571.57		577.73		4665.00	29547.30 mg NO <sub>3</sub> -N / day

7b)

1b	(+)	3b	(+)	4b	(+)	6	
1248		762.09		385.06		1863.58	4258.73 L H <sub>2</sub> O / day

7c) DIVIDE 7a by 7b = 6.9 ppm NO<sub>3</sub>-N\*\*\*\*\*

#### Actual Nitrogen & Water Loading

8a) ADD the above NO<sub>3</sub>N load:

2a	(+)	3a	(+)	4a	(+)	5	
9888		571.57		577.73		4665.00	<u>15702.30</u> mg NO <sub>3</sub> -N / day

8b) ADD the above water (H<sub>2</sub>O) load:

2b	(+)	3b	(+)	4b	(+)	6	
520.5		762.09		385.06		1863.58	<u>3531.23</u> L H <sub>2</sub> O / day

8c) DIVIDE 8a by 8b = 4.4 ppm NO<sub>3</sub>-N\*\*\*\*\*

FINAL CALCULATION ADD 7c & 8c (ppm) = 11.4 divide by 2 = 5.7 ppm NO<sub>3</sub>-N

This is the actual nitrate nitrogen load for the project as designed. The target for coastal areas is 5 ppm nitrate nitrogen. Certain critical embayments may require a LOWER figure to prevent degradation.

\*\*\*\*\*If your nitrate nitrogen load exceeds the target limit **USE A SECOND CALCULATION SHEET TO SHOW ALTERNATIVES IN TRYING TO ACHIEVE THE 5 PPM NITRATE NITROGEN LEVEL**\*\*\*



**RECEIVED**

By Bourne Health Department at 10:17 am, Nov 04, 2022

Bk 35078 Pg212 #21783

04-27-2022 @ 01:23p

MASSACHUSETTS STATE EXCISE TAX  
BARNSTABLE COUNTY REGISTRY OF DEEDS  
Date: 04-27-2022 @ 01:23pm  
Ct1#: 501 Doc#: 21783  
Fee: \$1,470.60 Cons: \$430,000.00

BARNSTABLE COUNTY EXCISE TAX  
BARNSTABLE COUNTY REGISTRY OF DEEDS  
Date: 04-27-2022 @ 01:23pm  
Ct1#: 501 Doc#: 21783  
Fee: \$1,315.80 Cons: \$430,000.00

## QUITCLAIM DEED

I, **JOEL D. BLACK**, Individually, of Bourne, Massachusetts,

for consideration paid in full of Four Hundred Thirty Thousand (\$430,000.00) Dollars paid,

grant to **Timothy Bernard and Michelle Bernard**, husband and wife as tenants by the entirety, of 72 Elgin Road, Pocasset, MA 02559,

with Quitclaim Covenants,

A certain parcel of land situated in Bourne, Barnstable County, Massachusetts, shown as LOT 23 on a plan entitled "Plan of Handy Point Estates, owned by Goldie Lilly" dated February 28, 1966, prepared by James L. Tyson, Engineer, Donald Durrell & Associates, Land Planners, Falmouth, Massachusetts, and recorded in Barnstable County Registry of Deeds in Plan Book 202 Page 11, said parcel being bounded and described as follows, according to said plan:

NORTHERLY	By Lot 32, one hundred thirty-two and 46/100 (132.46) feet;
EASTERLY	By Lot 22, one hundred thirty-two and 24/100 (132.24) feet;
SOUTHERLY	By Elgin Road, one hundred twenty-two and 93/100 (122.93) feet;
	and
WESTERLY	By the easterly side line of "Foot Path 20' R.O.W." one hundred fifty-four and 03/100 (154.03) feet.

Containing 18,000 square feet of land, more or less, according to said plan.

Said Premises is conveyed subject to and together with the benefit of all rights, restrictions, reservations, easements, appurtenances and rights of way of record, insofar as the same are still in force and applicable.

Grantor herein certifies that there are no persons entitled to claim homestead rights in the premises herein conveyed pursuant to M.G.L. Chapter 188 or otherwise.

For title, see Deed recorded with the Barnstable County Registry of Deeds in Book 2282 Page 274.

**Property Address: 68 Elgin Road, Bourne, MA**



Executed as a sealed instrument this 20<sup>th</sup> day of April, 2022.

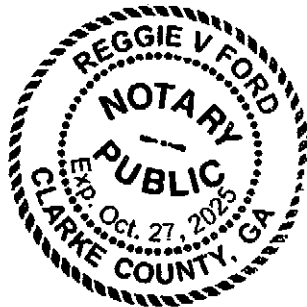
Joel D. Black  
JOEL D. BLACK

STATE OF GEORGIA

Clarke \_\_\_\_\_, ss.  
COUNTY

On this 20<sup>th</sup> day of April, 2022, before me, the undersigned notary public, personally appeared, JOEL D. BLACK, proved to me through satisfactory evidence of identification, which was DRIVER'S LICENSE, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

Reggie V Ford  
Notary Public:  
My Commission Expires: 10/27/2025



**NOTICE OF ALTERNATIVE SEWAGE DISPOSAL SYSTEM**  
M.G.L. c. 21A, § 13 and 310 CMR 15.0287(10)

**ADDRESS OF PROPERTY SERVED BY ALTERNATIVE SYSTEM:**

**68 Elgin Road, Bourne, MA**

**TITLE REFERENCE FOR PROPERTY SERVED BY ALTERNATIVE SYSTEM**

Deed recorded with the **Barnstable** Registry of Deeds in **Book 30578, Page 212**

**NAME(S) OF OWNER OF PROPERTY SERVED BY ALTERNATIVE SYSTEM:**

**Timothy Bernard and Michelle Bernard**

**OWNER(S) MAILING ADDRESS: 72 Elgin Road, Pocasset, MA 02559**

WHEREAS, Section 15.280 of Title 5 of the State Environmental Code (“Approval of Alternative Systems”), provides for the Massachusetts Department of Environmental Protection (the “Department”) to approve or certify, as appropriate, all proposals to construct, upgrade or replace on-site sewage disposal systems using alternative systems;

WHEREAS, owners and/or operators of approved or certified alternative systems are subject to general conditions, as specified in Section 15.287 of Title 5 of the State Environmental Code, 310 CMR 15.287, and may be subject to special conditions, as specified in the Department’s approvals or certifications; such general and special conditions potentially including, without limitation, requirements relating to the use of trained operators, periodic inspections, maintenance, sampling, reporting and/or recordkeeping;

WHEREAS, the owners and/or operators this alternative system acknowledges and agrees to comply with the provisions of all of the Bourne Board of Health Alternative Septic System Regulations and any other conditions for the existence of the system;

WHEREAS, Section 15.287(10) of Title 5 of the State Environmental Code, 310 CMR 15.287(10), requires that “prior to obtaining a Certificate of Compliance for installation of a new or upgraded system, the system owner shall record in the chain of title for the property served by the alternative system in the Registry of Deeds and/or Land Registration Office, as applicable, a Notice disclosing both the existence of the alternative on-site system and the Department’s approval of the system. The system owner shall also provide evidence of such recording to the Bourne Board of Health; and

WHEREAS, the Property is served by an alternative sewage disposal system.

NOW, THEREFORE, Notice of an alternative sewage disposal system is hereby given for the above- referenced Property, as follows:

**1. Existence System #1.** An alternative system has been installed as a new or upgraded alternative sewage disposal system, on or adjacent to the Property, and serves the Property. The trade name and model number(s) of the alternative system are as follows:

<b>Trade name of technology:</b>	<i>MicroFAST®</i>
<b>Manufacturer Name:</b>	Bio-Microbics, Inc.
<b>Model number(s):</b>	MicroFAST 0.5 Unit

**2. Approval/Certification.** On 12/29/2010, revised 3/20/2015, the Department, pursuant to its authority under the section of Title 5 as specified below, approved or certified the technology used in the above referenced alternative system, under MassDEP Transmittal Number X232831.

- Certified for general use under 310 CMR 15.288

A copy of the Department of Environmental Protection's Approval/Certification is available online at the Department's website:

<https://www.mass.gov/guides/approved-title-5-innovativealternative-technologies>

*\*\*This Notice of Alternative Sewage Disposal System must be submitted to the Bourne Board of Health\*\**

WITNESS the execution hereof under seal this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, made by the above-named Alternative System Owner(s).

\_\_\_\_\_  
[Alternative System Owner(s) Signature(s)]

Print Name(s): \_\_\_\_\_

COMMONWEALTH OF MASSACHUSETTS

\_\_\_\_\_, ss

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which were \_\_\_\_\_, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he) (she) signed it voluntarily for its stated purpose.

\_\_\_\_\_  
(official signature and seal of notary)

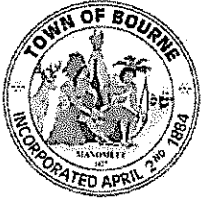
Approved and Accepted By:

\_\_\_\_\_  
Terri A. Guarino, R.S., C.H.O.  
Health Agent  
Town of Bourne

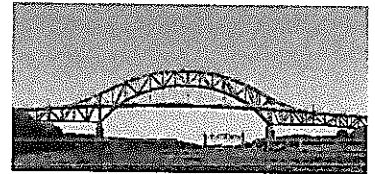


**RECEIVED**

By Bourne Health Department at 10:18 am, Nov 04, 2022



**TOWN OF BOURNE**  
**Board of Assessors**  
24 Perry Avenue  
Buzzards Bay, MA 02532  
(508) 759-0600 Ext. 1510 ♦ Fax (508) 759-8026



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

Rui Pereira, MAA  
Director of Assessing

October 12, 2022

Timothy & Michelle Bernard  
c/o Bracken Engineering, Inc.  
49 Herring Pond Rd  
Buzzards Bay, MA 02532

Re: Abutters List for Map 47.1 Parcel 108  
Property address: 68 Elgin Road

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

Abutting properties are: Map 47.1 Parcels 100, 101, 107, 109 & 120.

Your payment of \$10.00 has been received by the Bourne Assessor's Office.

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

See enclosed for abutters mailing addresses.

Board of Assessors

*Ellen Doyle Sullivan -  
Donna Barakauskas  
Michael Leitzel*

Extract:  
Database:  
Filter:  
Sort:

ABUTTERS LIST  
LIVE  
Key IN 10243,10244,10250,10252,10262

Report #24: Owner Listing Report  
Fiscal Year 2023

Bourne MA

Key	Parcel ID	Owner	Location	LC/CI	Bk-Pg(Cert) /Dt	Mailing Street	Mailing City	ST	Zip Cd/County
10243	47.1-100-0	WES CHASEN BENNY LLC	110 ELGIN RD	N 1010	35317/225 8/19/2022	53 JONATHAN BOURNE DR	POCASSET	MA	02559
10244	47.1-101-0	LANDRIGAN KEVIN & LANDRIGAN CHRISTINE	114 ELGIN RD	N 1010	30658/250 7/28/2017	27 WHITEHALL WAY	BELLINGHAM	MA	02019
10250	47.1-107-0	GOLDBERG JUDITH N & C RUSSEL HANSEN JR TRS RPG NOM TR	64 ELGIN RD	N 1300	13263/276 9/27/2000	130 MOUNT AUBURN ST UNIT 412	CAMBRIDGE	MA	02138
10252	47.1-109-0	BERNARD TIMOTHY & MICHELLE BERNARD	72 ELGIN RD	N 1010	32784/334 3/25/2020	72 ELGIN RD	POCASSET	MA	02559
10262	47.1-120-0	GOLDBERG JUDITH N & C RUSSELL HANSEN JR TRS RPG NOM TR	63 ELGIN RD	N 1010	13263/276 9/27/2000	130 MOUNT AUBURN ST UNIT 412	CAMBRIDGE	MA	02138

Total Records 5

MAIN OFFICE:  
49 Herring Pond Road  
Buzzards Bay, MA 02532  
TEL: (508) 833-0070  
FAX: (508) 833-2282



NANTUCKET OFFICE:  
19 Old South Road  
Nantucket, MA 02554  
TEL: (508) 325-0044  
[www.brackeneng.com](http://www.brackeneng.com)

**RECEIVED**

By Bourne Health Department at 10:18 am, Nov 04, 2022

November XX, 2022

**CERTIFIED MAIL**

RE : Notice of Public Hearing

Dear Abutter:

In accordance with the State Environmental Code, Title 5: 310 CMR 15.00, you are hereby notified that **Timothy and Michelle Bernard** has requested a hearing before the Bourne Board of Health for relief to 310 CMR 15.00 (Title 5) and from the Bourne Board of Health Regulations for the installation of an Innovative/Alternative Septic System. The location of the property for which approval is sought is **68 Elgin Road (Map 47.1, Parcel 108), Cataumet** where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on:

- **310 CMR 15.211 - A 141' ± variance to Title 5 setback requirements for a 9'± setback from a fragmented, non-water dependent Coastal Bank to a Soil Absorption System.**
- **A 141' ± variance to local setback requirements for a 9'± setback from a fragmented, non-water dependent Coastal Bank to a Soil Absorption System.**

This hearing is tentatively scheduled for Wednesday, December 14<sup>th</sup> at **5:30 p.m.** in Conference Room #2 at the Bourne Veteran's Memorial Community Building, 239 Main Street, Buzzards Bay. Information regarding the hearing may be available for your review one week prior to the meeting by contacting the Bourne Health Department at 508-790-0600, Ext. 1513, Monday through Friday from 8:30 a.m. until 4:30 p.m.

Meeting agendas are posted on the Town of Bourne website, [www.townofbourne.com/health](http://www.townofbourne.com/health) no less than 48 hours in advance of the hearing. Please confirm the date, time, and location of the meeting with the Town, in case of any changes. Should you have any questions or concerns, please do not hesitate to contact the undersigned at [zac@brackeneng.com](mailto:zac@brackeneng.com) or the Bourne Health Department at 508-790-0600, Ext. 1513.

Sincerely,

**BRACKEN ENGINEERING INC.**

A handwritten signature in black ink, appearing to read 'Zachary L. Basinski', is written over a horizontal line.

Zachary L. Basinski, PE, CFM  
Project Manager  
Agent for the Applicant





# 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

### 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 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



- 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.

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):

- 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#t5pols>. 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 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#t5pols>.



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.

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).

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:

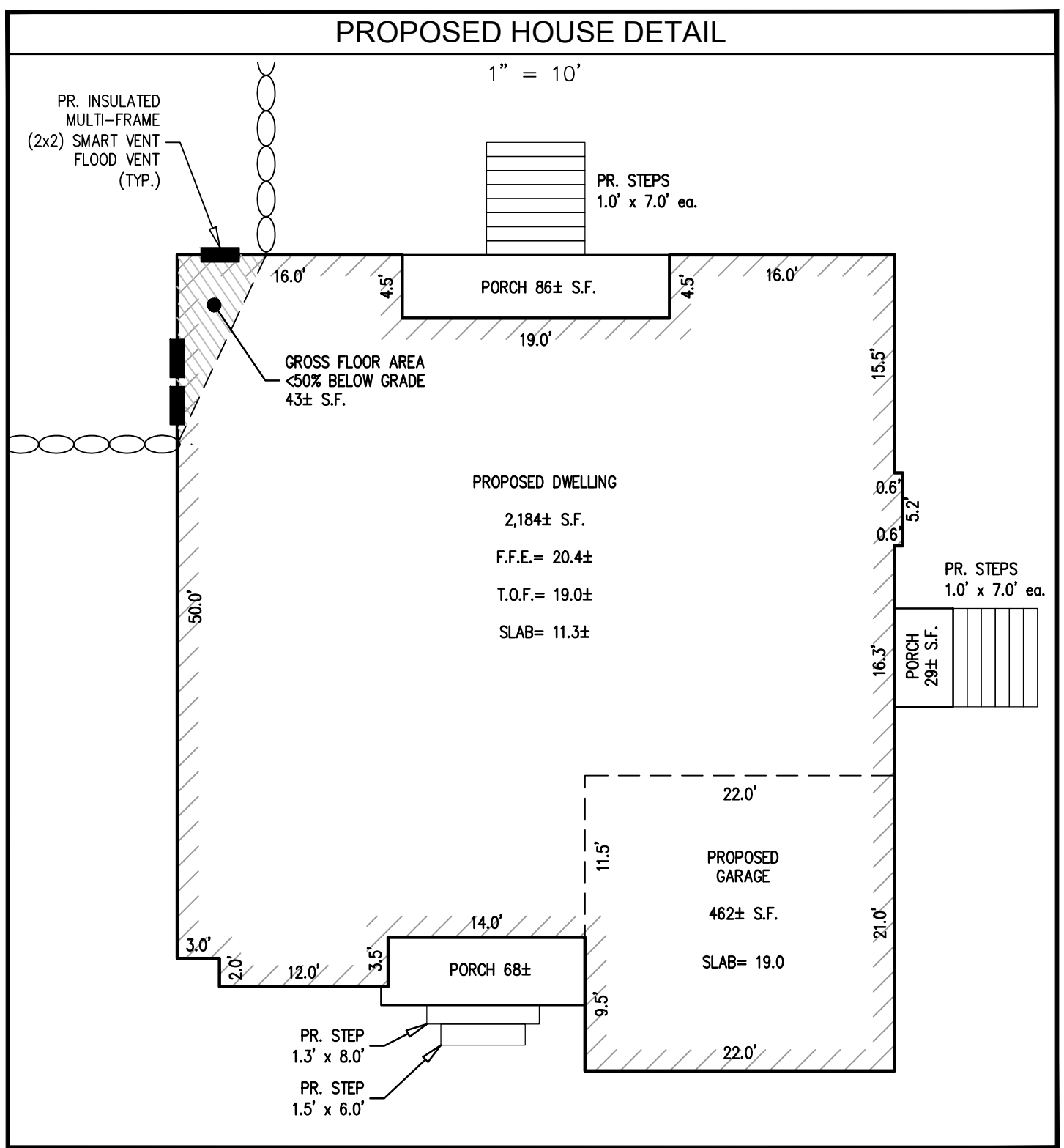
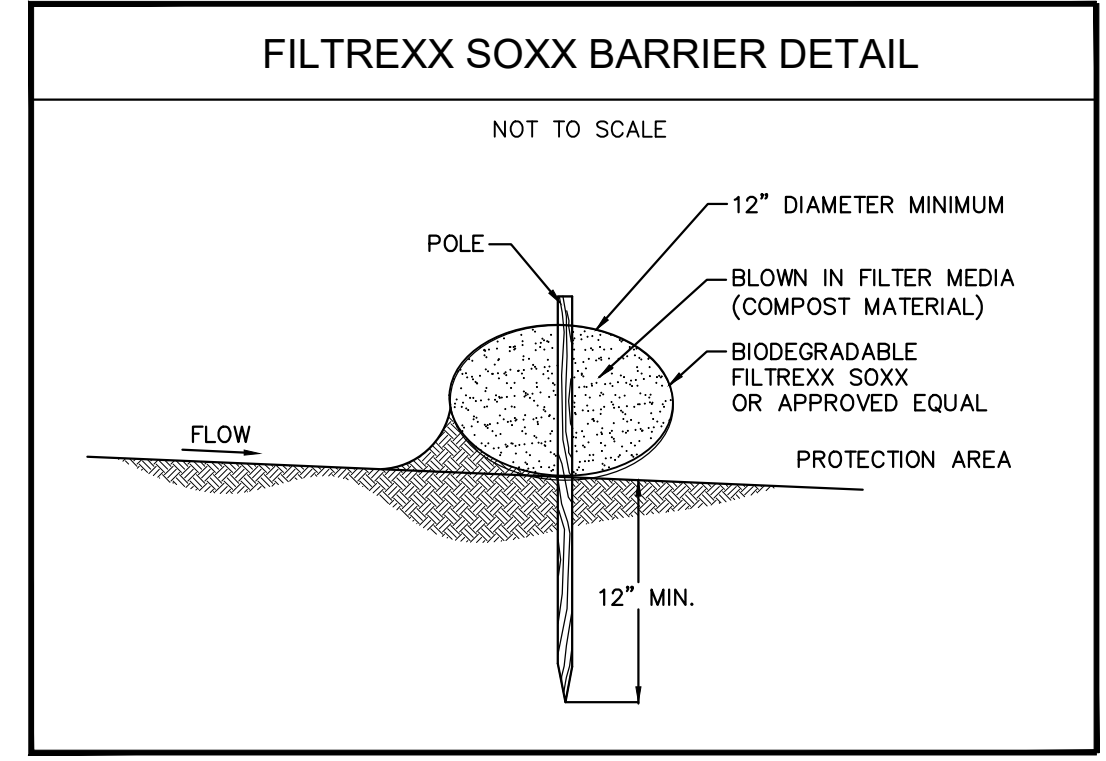
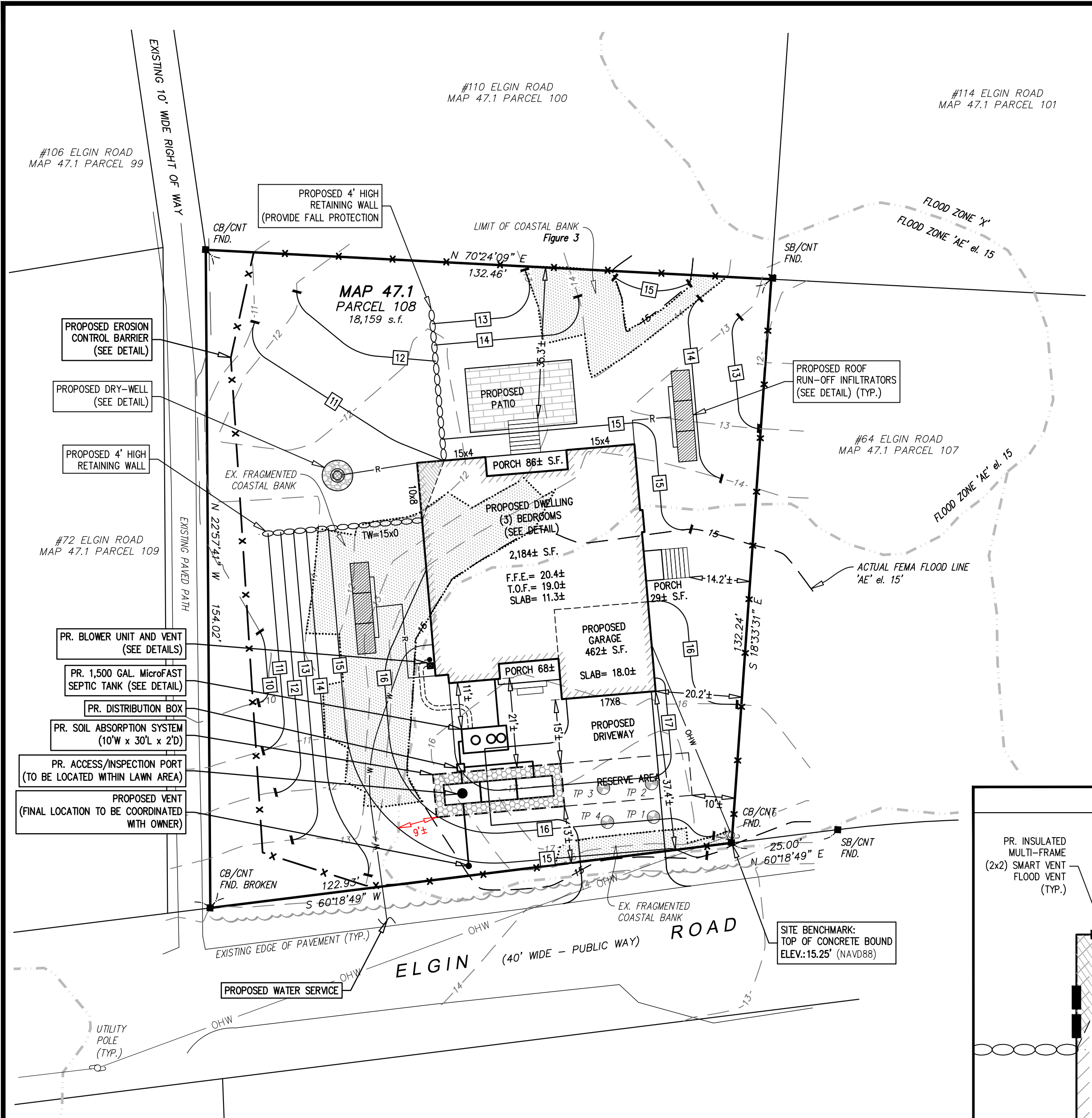
Director  
Wastewater Management Program  
Department of Environmental Protection,  
One Winter Street - 5th floor  
Boston, Massachusetts 02108

**VIII. Rights of the Department**

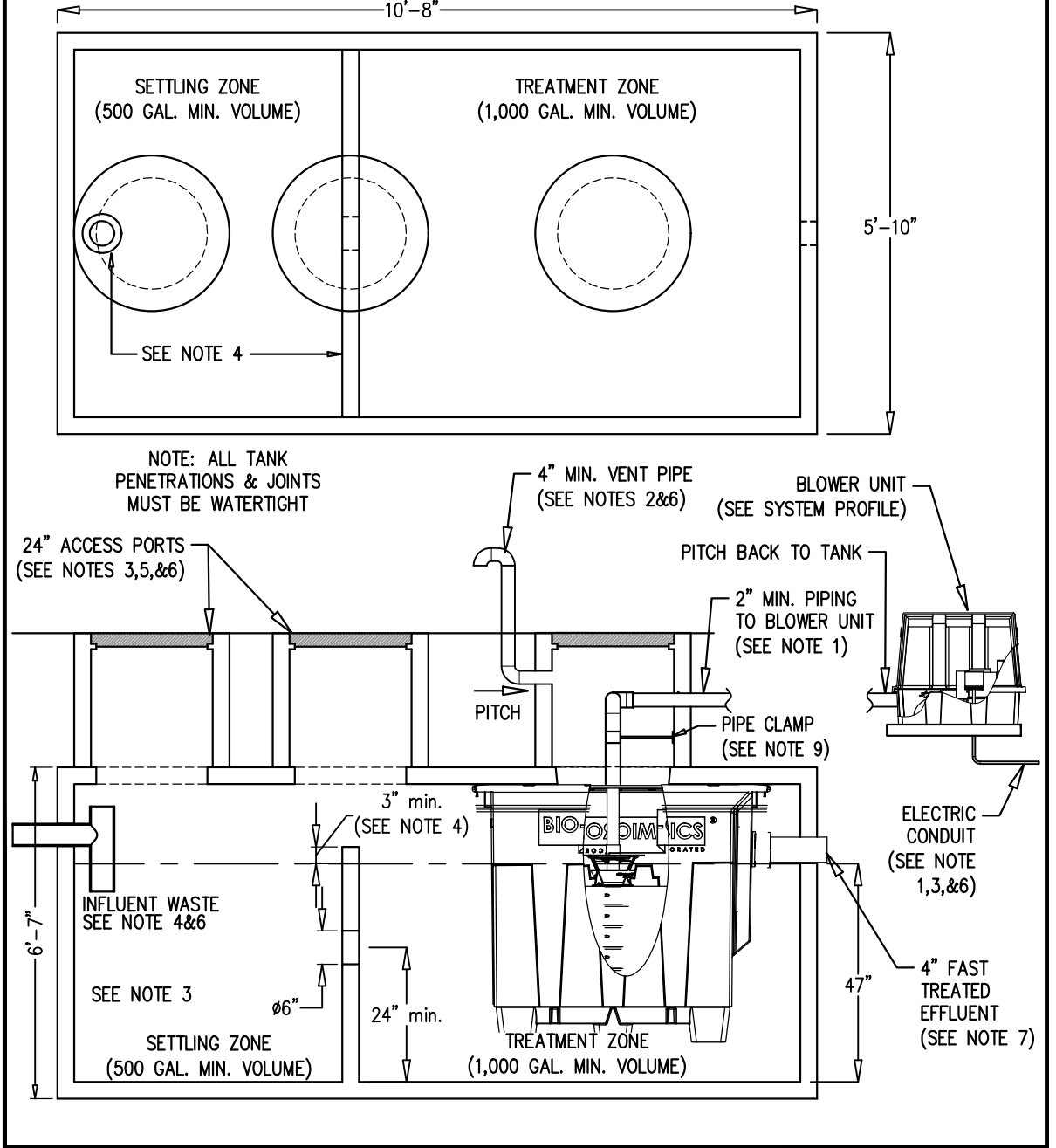
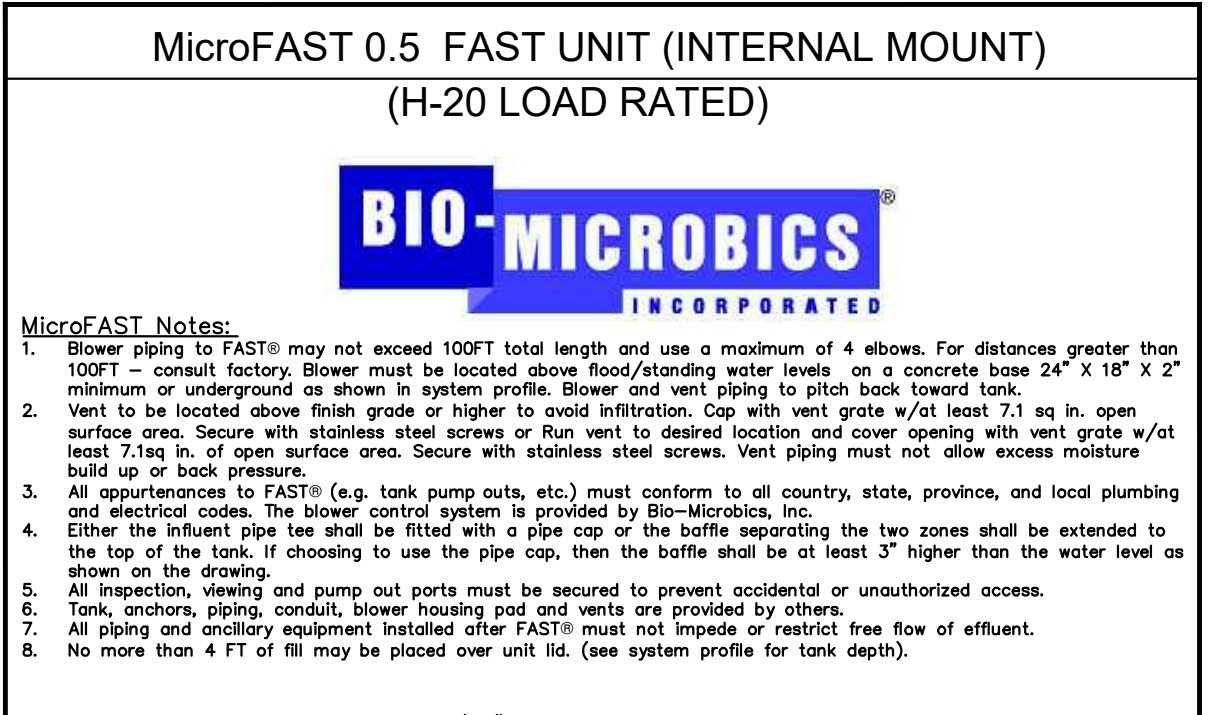
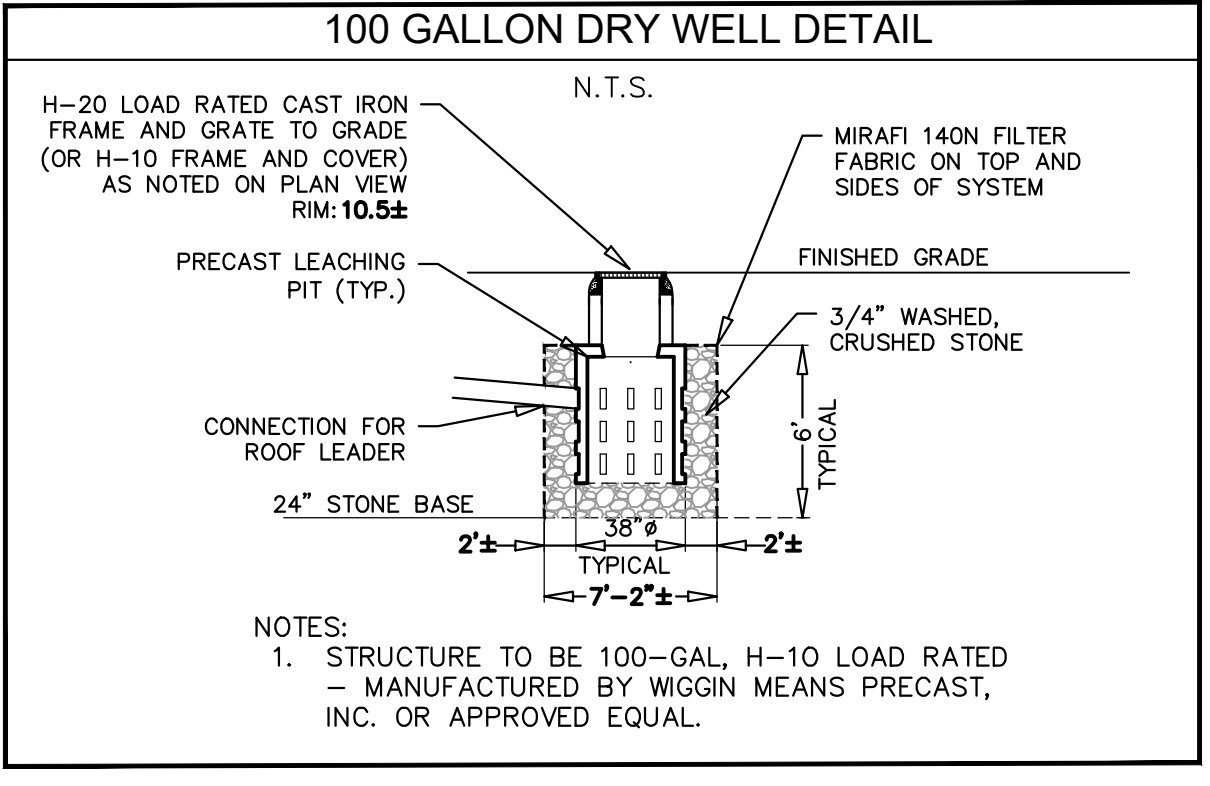
1. The Department may suspend, modify or revoke this Certification for cause, including, but not limited to, non-compliance with the terms of this Certification, non-payment of the annual compliance assurance fee, for obtaining the Certification by misrepresentation or failure to disclose fully all relevant 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)





**LOCAL VARIANCE REQUEST**  
 310 CMR 15.00 (TITLE 5) VARIANCE REQUESTED:  
 310 CMR 15.211 - A 41"± VARIANCE IS REQUESTED FOR A 9"± SETBACK FROM A FRAGMENTED, NON-WATER DEPENDANT COASTAL BANK TO A SOIL ABSORPTION SYSTEM.  
**TOWN OF BOURNE VARIANCE REQUESTED:**  
 A 141"± VARIANCE IS REQUESTED FOR A 9"± SETBACK FROM A FRAGMENTED, NON-WATER DEPENDANT COASTAL BANK TO A SOIL ABSORPTION SYSTEM. THE PROPOSED SYSTEM IS LOCATED >150' FROM MEAN HIGH WATER.



**ZONING REQUIREMENTS**

PRE-EXISTING NON-CONFORMING (a)

ZONE	REQUIRED	PROPOSED
LOT AREA	40,000 s.f.	18,159± s.f.
FRONT YARD	20'	37.4'±
SIDE YARD	12'	14.2'±
REAR YARD	12'	35.3'±
MAX. GROSS FLOOR AREA TO LOT AREA	20% (3,631 s.f. max.)	19.8% (3,601 s.f. max.)
MAX. LOT COVERAGE	20%	16.2% (2,952 s.f. max.)
BUILDING HEIGHT	35'	36.0'± (c)

Notes:  
 (a) SEE TABLE 2456 FOR NON-CONFORMING LOTS IN BOURNE ZONING BY LAWS.  
 (b) EX. BUILDING HEIGHT BASED ON AN AVG. EX. GRADE OF 14.1±.  
 (c) INCREASE ALLOWABLE BY FIVE FEET FOR ROOF ELEMENTS HAVING A SLOPE OF 4" OR MORE PER FOOT.

**SEPTIC DESIGN CALCULATIONS**

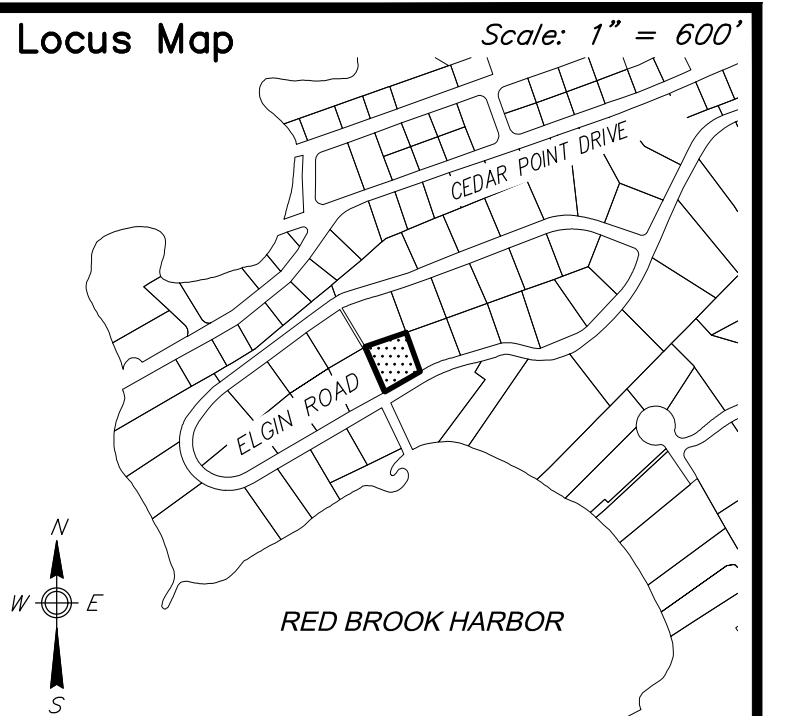
SOIL TEXTURAL CLASS:	CLASS I
PERC. RATE:	< 2 MINUTES/INCH
NO. OF BEDROOMS ALLOWED:	3
DESIGN FLOW REQUIRED:	330
SEPTIC TANK REQUIRED:	1500 GALLONS
SEPTIC TANK PROVIDED:	1500 GALLONS

**LEACHING SYSTEM:**  
 (3) 500 GAL CONCRETE LEACHING CHAMBERS IN A (10') WIDE x (30') LONG x (2') DEEP STONE BED

**EFFECTIVE LEACHING:**  
 10' WIDE x 30' LONG x 2' DEEP  
 BOTTOM AREA = 300 S.F.  
 SIDEWALL AREA = 180 S.F. TOTAL = 480 S.F.  
 LOADING RATE = 0.74 GPD/SF  
 FLOW PROVIDED: 340 GPD > 330 GPD

**SOIL LOGS**

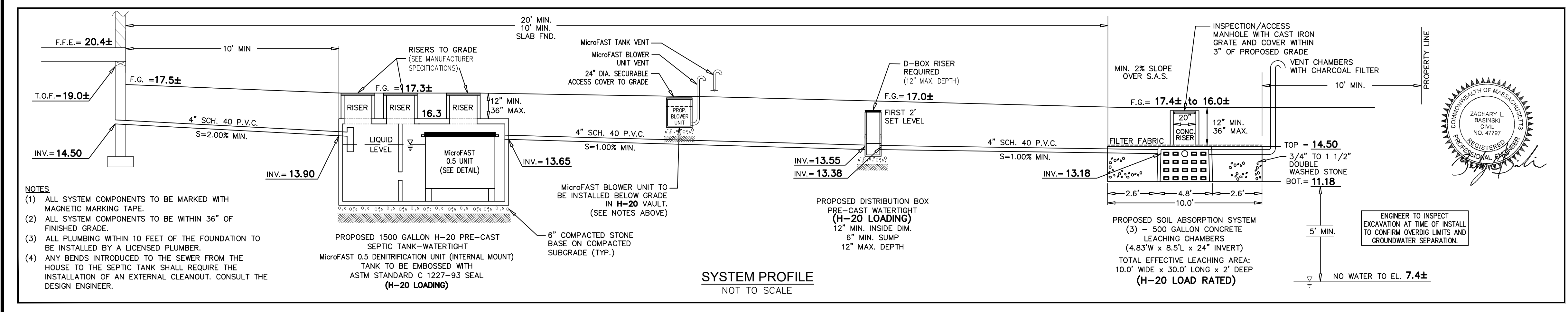
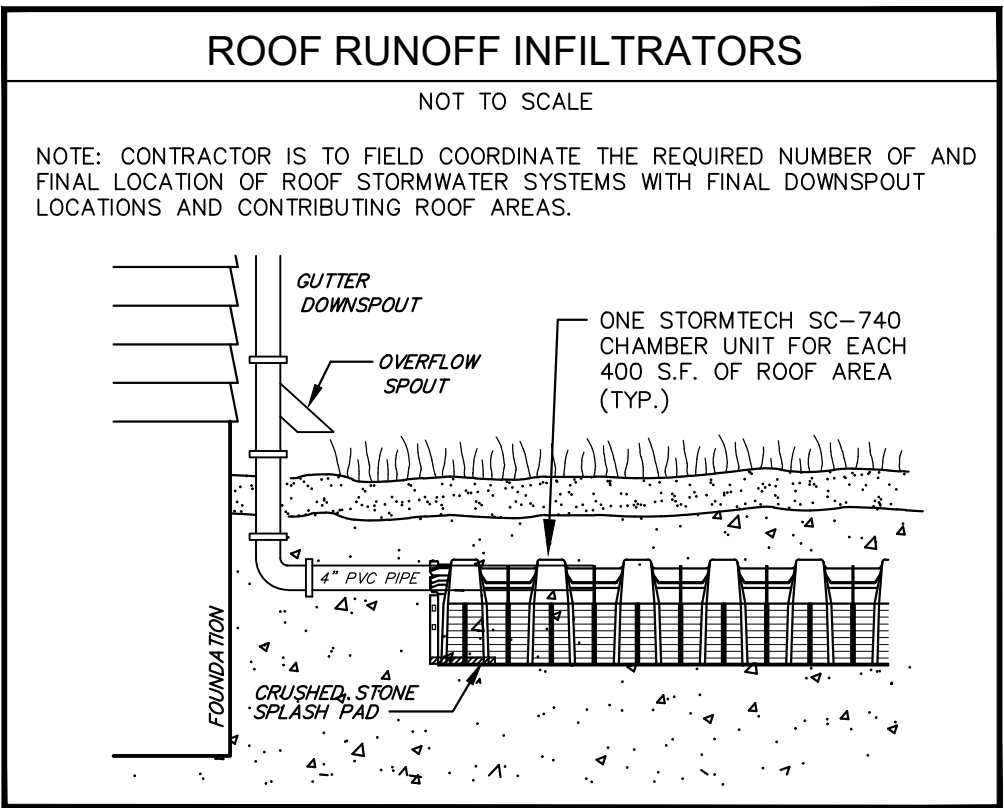
TP NO.	GRD. EL.	GW. EL.	DESCRIPTION
1	17.4	NONE TO 7.4	A/O LOAMY SAND 10YR 3/4
2	17.4	NONE TO 7.4	A/O LOAMY SAND 10YR 3/4
3	17.4	NONE TO 7.4	A/O LOAMY SAND 10YR 3/4
4	17.6	NONE TO 7.4	A/O LOAMY SAND 10YR 3/4
5	16.6	15.4	Bw LOAMY SAND 10YR 5/4
6	15.4	11.6	C1 LOAMY SAND 2.5Y 5/4
7	11.6	7.4	C2 MEDIUM SAND 2.5Y 5/4
8	7.4	7.4	NO MOTTLING NO WATER
9	17.4	17.6	A/O LOAMY SAND 10YR 3/4
10	17.6	16.6	A/O LOAMY SAND 10YR 3/4
11	16.6	15.4	Bw LOAMY SAND 10YR 5/4
12	15.4	11.6	C1 LOAMY SAND 2.5Y 5/4
13	11.6	7.4	C2 MEDIUM SAND 2.5Y 5/4
14	7.4	7.4	NO MOTTLING NO WATER



- Notes**
- BENCHMARK: ELEVATION = 15.25 (NAVD88) TOP OF CONCRETE BOUND
  - ALL CONSTRUCTION METHODS AND MATERIALS TO CONFORM TO TITLE 5 AND THE TOWN OF BOURNE BOARD OF HEALTH REGULATIONS.
  - ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
  - NO FIELD MODIFICATION TO THE SYSTEM SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE DESIGN ENGINEER AND BOARD OF HEALTH.
  - ALL JOINTS AND COVERS TO BE WATERTIGHT.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES.
  - A CERTIFICATE OF COMPLIANCE MUST BE OBTAINED PRIOR TO BACKFILLING SYSTEM.
  - OWNER/APPLICANT:  
TIMOTHY BERNARD  
MICHELLE BERNARD  
72 ELGIN ROAD  
POCASSETT, MA 02559
  - DEED REFERENCE: Deed Bk: 35078 Pg: 212
  - PLAN REFERENCE: Plan Bk: 202 Pg: 11 (LOT 23)
  - THE DESIGN IS INTENDED TO MEET TITLE 5 AND OTHER APPLICABLE REQUIREMENTS. THIS PLAN DOES NOT GUARANTEE THAT THE SYSTEM WILL BE INSTALLED AS DESIGNED, NOR DOES THIS PLAN GUARANTEE THE OPERATION OF THE SYSTEM.
  - THIS SYSTEM IS NOT DESIGNED NOR INTENDED FOR USE WITH A GARBAGE GRINDER.
  - THE SYSTEM OWNER SHALL BE RESPONSIBLE TO PUMP THE SEPTIC TANK AT LEAST ONCE EVERY THREE YEARS.
  - LOCUS DOES NOT FALL WITHIN AN NHESP ESTIMATED HABITAT OF RARE WILDLIFE AND PRIORITY HABITAT OF RARE SPECIES. PROJECT IS EXEMPT.
  - LOCUS DOES FALL WITHIN SPECIAL FLOOD HAZARD ZONE 'AE' (EL. 15) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C-0511-J dated 07/16/2014.
  - SOIL CONDITIONS ENCOUNTERED DURING EXCAVATION MAY DIFFER FROM THE PREVIOUSLY OBSERVED CONDITIONS AT THE TEST PITS. ADDITIONAL REMOVAL AND REPLACEMENT OF SOIL MAY BE REQUIRED IF UNDESIRABLE CONDITIONS ARE ENCOUNTERED. THE DESIGN ENGINEER SHALL BE CONSULTED IF SUCH SUCH CONDITIONS ARE FOUND.
  - THE LOCATION OF UNDERGROUND UTILITIES AS REPRESENTED ON THESE PLANS IS BASED UPON PLANS AND INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES AND MUNICIPAL DEPARTMENTS SUPPLEMENTED BY FIELD IDENTIFICATION WHEREVER POSSIBLE. NO WARRANTY IS MADE AS TO THE ACCURACY OF THESE LOCATIONS OR THAT ALL UNDERGROUND UTILITIES ARE SHOWN. THE CONTRACTOR SHALL CONTACT DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION. DIG SAFE TELEPHONE NUMBER IS 1-800-322-4844.

**BLOWER UNIT INSTALLATION NOTES**

- BLOWER UNIT SHALL BE INSTALLED IN A 20 OUTLET D-BOX WITH A 24" ACCESS COVER TO GRADE.
- BLOWER UNIT TO BE VENTED ABOVE GROUND WITH A 4" PVC PIPE.
- D-BOX CONTAINING BLOWER UNIT IS TO HAVE A WEEP HOLE CUT INTO ONE CORNER AND PITCHED TO ALLOW WATER TO DRAIN OUT.
- CONTRACTOR TO COORDINATE FINAL BLOWER UNIT VAULT DESIGN WITH MICROFAST REPRESENTATIVE, BOARD OF HEALTH AND DESIGN ENGINEER PRIOR TO INSTALLATION.



DATE PERFORMED: JULY 12, 2022  
 SOIL EVALUATOR: ROBERT DEWAR, E.I.T., S.E., #14230  
 WITNESSED BY: TERRI GUARINO, B.O.H. AGENT  
 PERC. RATE: < 2 MINUTES/INCH  
 SOIL CLASS: CLASS I  
 MAX. GROUND WATER ELEV.: NONE TO 7.4  
 METHOD OF DETERMINATION: NO MOTTLING OR WEEPING

**EXCAVATION NOTE**  
 THIS SYSTEM MAY REQUIRE THE EXCAVATION OF ANY UNSUITABLE SOIL WITHIN 5' OF THE SOIL ABSORPTION SYSTEM. SOIL SHALL BE EXCAVATED TO THE EXISTING C1 LAYER. ENGINEER TO CONFIRM SOIL DEPTH PRIOR TO INSTALLATION. THE EXCAVATION SHALL BE INSPECTED BY THE DESIGN ENGINEER PRIOR TO BACKFILLING. SOIL IS TO BE REPLACED WITH SAND CONFORMING TO 310 CMR SECTION 15.255. CONSTRUCTION IN FILL CONTRACTOR IS RESPONSIBLE TO PROVIDE ENGINEER WITH SAND SAMPLE FOR SIEVE ANALYSIS.

**SOIL NOTE**  
 SOIL CONDITIONS ENCOUNTERED DURING EXCAVATION MAY DIFFER FROM THE PREVIOUSLY OBSERVED CONDITIONS AT THE TEST PITS. ADDITIONAL REMOVAL AND REPLACEMENT OF SOIL MAY BE REQUIRED. IF UNDESIRABLE CONDITIONS ARE ENCOUNTERED, THE DESIGN ENGINEER SHALL BE CONSULTED.

Prepared By:  
**BRACKEN ENGINEERING, INC.**  
 49 HERRING POND ROAD BUZZARDS BAY, MA 02532 (tel) 508.833.0070 (fax) 508.833.2282  
 19 OLD SOUTH ROAD NANTUCKET, MA 02554 (tel) 508.325.0044 (www.brackeneng.com)

**PROPOSED SITE & SUBSURFACE SEWAGE DISPOSAL PLAN IN BOURNE, MA**

Prepared For:  
**TIM BERNARD  
 MICHELLE BERNARD**  
 #68 ELGIN ROAD  
 MAP 47.1 PARCEL 108

No.	Date	Revision Description	By
1	OCTOBER 18, 2022	JPH/BEI	ZLB/DAF

Scale: 1" = 60'