No. _____ FEE $250.00

COMMONWEALTH OF MASSACHUSETTS

RECEIVED
By Bourne Health Department at 2:25 pm, Oct 13, 2022

Board of Health, Bourne, *MA.*

APPLICATION FOR DISPOSAL SYSTEM CONSTRUCTION PERMIT

Application for a Permit to Construct( ) Repair( ) Upgrade( ) Abandon( ) - ☒ **Complete System** ☐ **Individual Components**

Location 3 Red Brook Pond Drive	Owner's Name Justin Realty Trust, Carl Forziati, Tr
Map/Parcel# Map 47.4, Parcel 9.8	Address P.O. Box 3077, Pocasset, MA 02559-3077
Lot#	Telephone# 508-446-3769
Installer's Name	Designer's Name Zachary L. Basinski, P.E, Bracken Engineering, Inc.
Address	Address 49 Herring Pond Road, Buzzards Bay, MA 02532
Telephone#	Telephone# 508-833-0070 (Agent)

Type of Building Single-family dwelling Lot Size 45,916+/- sq. ft.

Dwelling - No. of Bedrooms 4 Garbage grinder ( )

Other - Type of Building _____ No. of persons _____ Showers ( ), Cafeteria ( )

Other Fixtures _____

Design Flow (min. required) 110 gpd Calculated design flow 440 GPD Design flow provided 447 gpd

Plan: Date January 18, 2022 Number of sheets 2 Revision Date September 13, 2022

Title 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 5/28/2021

DESCRIPTION OF REPAIRS OR ALTERATIONS New Construction - Installation of a 1,500 gallon (H-20) MicroFast 0.5 septic tank, MicorFast Blower and Vent, D-Box and Presby Enviro-septic Wastewater Treatment System (9' W x 62' 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 _____

ZACHARY L. BASINSKI CIVIL NO. 47797 COMMONWEALTH OF MASSACHUSETTS PROFESSIONAL ENGINEER

Inspections _____

No. _____ FEE _____

COMMONWEALTH OF MASSACHUSETTS

Board of Health, _____, *MA.*

CERTIFICATE OF COMPLIANCE

Description of Work: ☐ **Individual Component(s)** ☐ **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.

No. _____ FEE _____

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.

Form 1255 Rev. 5/96 A.M. Sulkin Co. Charlestown, MA

Date _____ Board of Health _____

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

BRACKEN ENGINEERING, INC.

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

October 12, 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)
3 Red Brook Pond Drive (Map 47.4, Parcel 9.8)

Dear Members of the Board:

On behalf of the owner/applicant, Justin Realty Trust, Carl Forziati, Trustee, please accept this letter as a request for the following variance to the Town of Bourne Health Regulations for proposed septic installation at 3 & 5 Red Brook Pond Drive, Cataumet.

1. A variance to local setback requirements for a 66'± reduction in setback for an 84'± setback to a Bordering Vegetated Wetland from a soil absorption system.

The above variance request is being made as a result of the size and existing topography of the parcel located at 3 Red Brook Pond Drive. The property is an undeveloped 45,916± square foot parcel located in the village of Cataumet. It is surrounded by single family dwellings to the south, west, and east. Red Brook Pond lies to the north and forms the northern property line.

The location of the proposed Soil Absorption System was chosen to maximize setback distances from resource areas, and separation distance to groundwater to minimize any effect on public health, safety and the environment. A Presby Enviro-Septic leaching system was chosen to promote even effluent dispersal throughout the field area. 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 design complies with regulations of 310 CMR 15.00 and 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 next scheduled 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 or jason@brackeneng.com.

Sincerely,

BRACKEN ENGINEERING, INC.

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

Jason P. Heyer
Project Designer

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	Carl Forziati, Trustee, Justin Realty Trust
Facility's Street Address	3 Red Brook Pond Drive (Map 47.4 Parcel 9.8)
Owner's Telephone Number	508-833-0070 (Agent)
Owner's E-mail Address	zac@brackeneng.com (Agent)
Owner's Mailing Address	P.O. Box 3077, Pocasset, MA 02559-3077

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:
Proposed MicroFast 0.5 unit septic tank and blower unit.
Presby Enviro-Septic soil absorption sytem with effective field size of 558 SF

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

110 GPD/ Bedroom

Design flow of system: 4 BDR x 110 GPD = 440 GPD

Total design flow of facility: 471 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 10/12/22

Print Name Carl Forziati, Trustee, Justin Realty Trust

Signature of Preparer Bracken Eng, Inc. Date 10/12/22

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 Commision and deals with nitrate nitrogen (NO3-N) Use the information from your PLAN OF RECORD to provide the following:

3 Red Brook Pond Drive (Existing Conditions)

Number of Bedrooms (Title 5 Definition)	=	0	Bedrooms	
Lot Size (in square feet of upland areas)	=	25,765	sq.ft.	Upland
Impervious Surfaces;**roof area=	-	sq.ft.	**Paved Area =	- sq.ft.
Natural Area = lot area minus all impervious surfaces	=	25,765	sq.ft.	
Lawn Area in sq. ft.	=	1,533	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_3-N / day / bedroom: or 7911 mg NO3-N / day/ bedroom with IA Treatment

Water from Title 5 design = 416.3 H_2O / day / bedroom

1a) Number of bedrooms	=	0	x 14572 =	0.00	mg. NO_3-N / day
1b) Number of bedrooms	=	0	x 416 =	0.00	L H_2O / day

Actual Nitrogen load = 6071.5 mg NO_3-N / day/ bedroom: 3296 mg NO3-N / day/ bedroom with IA Treatment

Actual Water load = 173.5 L H_2O / day / bedroom

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

2a) Number of bedrooms	=	0	x 6071.5=	0.00	mg. NO_3-N / day
2b) Number of bedrooms	=	0	x 173.5 =	0.00	L H_2O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO_3-N load number sq. ft. of roof surface	X	0.19395 mg NO_3-N / sq. ft.
H_2O load number sq. ft. of roof surface	X	0.2586 L / sq. ft.

3a) Roof surface	=	0	sq. ft.	X	0.19395 =	0.00 mg NO_3-N
3b) Roof surface	=	0	sq. ft.	X	0.2586 =	0.00 L H_2O / day

NO_3-N load number sq. ft. of paved surface	X	0.388 mg / sq. ft.
H_2O load number sq. ft. of paved surface	X	0.2586 L / sq. ft.

4a) NO_3-N	=	0	sq. ft. paved surface X 0.388 mg / sq. ft.	0.00	mg NO_3-N
4b) H_2O	=	0	sq. ft. paved surface X 0.2586 L / sq. ft.	0.00	L H_2O

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

5) sq. ft. of lawn = 1533 X 0.933 = 1430.29 mg

NATURAL AREA WATER LOADING

Natural area = lot size - impervious surfaces = 25765 sq. ft.

6) Natural area = 25765 X water recharge factor = 3498.89 L
(0.1358 L / sq. ft. for Bourne)

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO_3N load

1a	(+)	3a	(+)	4a	(+)	5		
0		0.00		0.00		1430.29	1430.29	mg NO_3-N / day

7b)

1b	(+)	3b	(+)	4b	(+)	6		
0		0.00		0.00		3498.89	3498.89	L H_2O / day

7c) DIVIDE 7a by 7b = 0.4 ppm NO_3-N***

Actual Nitrogen & Water Loading

8a) ADD the above NO_3N load:

2a	(+)	3a	(+)	4a	(+)	5		
0		0.00		0.00		1430.29	1430.29	mg NO_3-N / day

8b) ADD the above water (H_2O) load:

2b	(+)	3b	(+)	4b	(+)	6		
0		0.00		0.00		3498.89	3498.89	L H_2O / day

8c) DIVIDE 8a by 8b = 0.4 ppm NO_3-N***

FINAL CALCULATION ADD 7c & 8c (ppm) = 0.8 divide by 2 = *0.4* ppm NO_3-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 AHIEVE THE 5 PPM NITRATE NITROGEN LEVEL*****

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 Commision and deals with nitrate nitrogen (NO3-N) Use the information from your PLAN OF RECORD to provide the following:

3 Red Brook Pond Drive (Proposed Conditions)

Number of Bedrooms (Title 5 Definition)	=	4	Bedrooms	
Lot Size (in square feet of upland areas)	=	25,765	sq.ft.	Upland
Impervious Surfaces;**roof area= 2,076 sq.ft.	**Paved Area =	1,401	sq.ft.	
Natural Area = lot area minus all impervious surfaces	=	22,288	sq.ft.	
Lawn Area in sq. ft.	=	4,830	sq.ft.	
I/A System?	=	Yes		

TITLE 5 FLOW = 110 GAL./ DAY PER BEDROOM

WASTEWATER FLOWS (NITROGEN LOAD & WATER LOAD)

Nitrogen from Title 5 design = 14,572 mg NO_3-N / day / bedroom

Water from Title 5 design = 416.3 H_2O / day / bedroom

1a) Number of bedrooms = 4 x 14572 = 29144.00 mg. NO_3-N / day

1b) Number of bedrooms = 4 x 416 = 1664.00 L H_2O / day

Actual Nitrogen load = 6071.5 mg NO_3-N / day/ bedroom: 3296 mg NO3-N / day/ bedroom with IA Treatment

Actual Water load = 173.5 L H_2O / day / bedroom

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

2a) Number of bedrooms = 4 x 6071.5 12143.00 mg. NO_3-N / day

2b) Number of bedrooms = 4 x 173.5 = 694.00 L H_2O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO_3-N load number sq. ft. of roof surface	X	0.19395 mg NO_3-N / sq. ft.
H_2O load number sq. ft. of roof surface	X	0.2586 L / sq. ft.

3a) Roof surface =	2076 sq. ft.	X	0.19395 =	402.64	mg NO_3-N
3b) Roof surface =	2076 sq. ft.	X	0.2586 =	536.85	L H_2O / day

NO_3-N load number sq. ft. of paved surface	X	0.388 mg / sq. ft.
H_2O load number sq. ft. of paved surface	X	0.2586 L / sq. ft.

4a) NO_3-N =	1401	sq. ft. paved surface X	0.388 mg / sq. ft.	543.59	mg NO_3-N
4b) H_2O =	1401	sq. ft. paved surface X	0.2586 L / sq. ft.	362.30	L H_2O

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

5) sq. ft. of lawn = 4830 X 0.933 = 4506.39 mg

NATURAL AREA WATER LOADING

Natural area = lot size - impervious surfaces = 22288 sq. ft.

6) Natural area = 22288 X water recharge factor = 3026.71 L
(0.1358 L / sq. ft. for Bourne)

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO_3N load

1a	(+)	3a	(+)	4a	(+)	5		
29144		402.64		543.59		4506.39	34596.62	mg NO_3-N / day

7b)

1b	(+)	3b	(+)	4b	(+)	6		
1664		536.85		362.30		3026.71	5589.86	L H_2O / day

7c) DIVIDE 7a by 7b = 6.2 ppm NO_3-N***

Actual Nitrogen & Water Loading

8a) ADD the above NO_3N load:

2a	(+)	3a	(+)	4a	(+)	5		
12143		402.64		543.59		4506.39	17595.62	mg NO_3-N / day

8b) ADD the above water (H_2O) load:

2b	(+)	3b	(+)	4b	(+)	6		
694		536.85		362.30		3026.71	4619.86	L H_2O / day

8c) DIVIDE 8a by 8b = 3.8 ppm NO_3-N***

FINAL CALCULATION ADD 7c & 8c (ppm) = 10.0 divide by 2 = *5.0* ppm NO_3-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 AHIEVE THE 5 PPM NITRATE NITROGEN LEVEL*****

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:

3 Red Brook Pond Drive, Bourne, MA

TITLE REFERENCE FOR PROPERTY SERVED BY ALTERNATIVE SYSTEM

Deed recorded with the **Barnstable** Registry of Deeds in **Book 5711, Page 144 (Lot 9)**
Deed recorded with the **Barnstable** Registry of Deeds in **Book 5711, Page 148 (Lot 8)**

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

Justin Realty Trust, Carl Forziati, Trustee

OWNER(S) MAILING ADDRESS: P.O. Box 3077, Pocasset, MA 02559-3077

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:

Trade name of technology:	*MicroFAST®*
Manufacturer Name:	Bio-Microbics, Inc.
Model number(s):	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

3. Existence System #2. 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:

Trade name of technology:	Presby Enviro-Septic® Wastewater Treatment
Manufacturer Name:	Presby-Environmental, Inc.

4. Approval/Certification. On revised March 19, 2019, modified October 30, 2019, February 22, 2022 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 Accela – 21-CLM000073-APP.

- Approved for Modified General use under 310 CMR 15.287

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)

_____

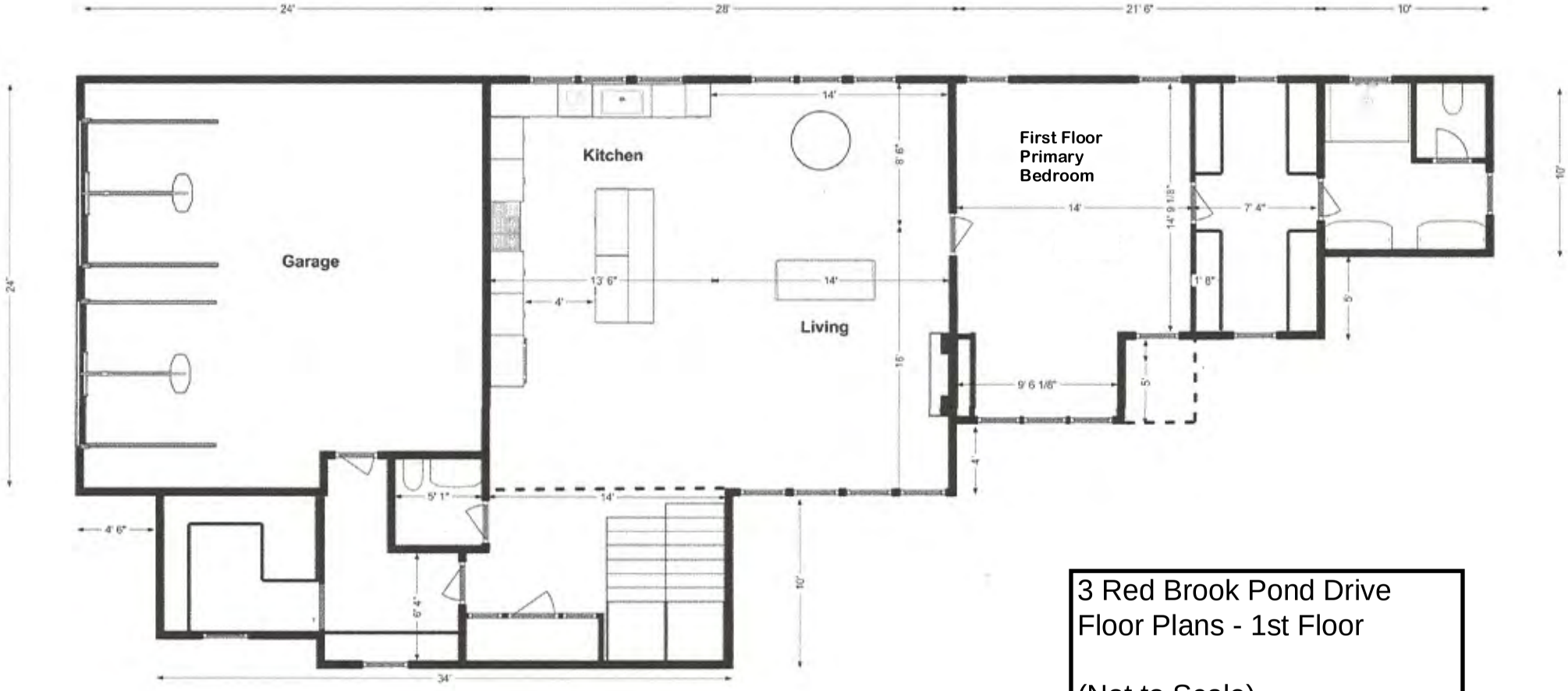
Approved and Accepted By:

_____

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

First Floor

240	24 x 10
80	10 x 8
672	28 x 24
280	20 x 14
50	5x10
100	10 x 10
1322	Total 1st
1248	Total 2nd
2570	

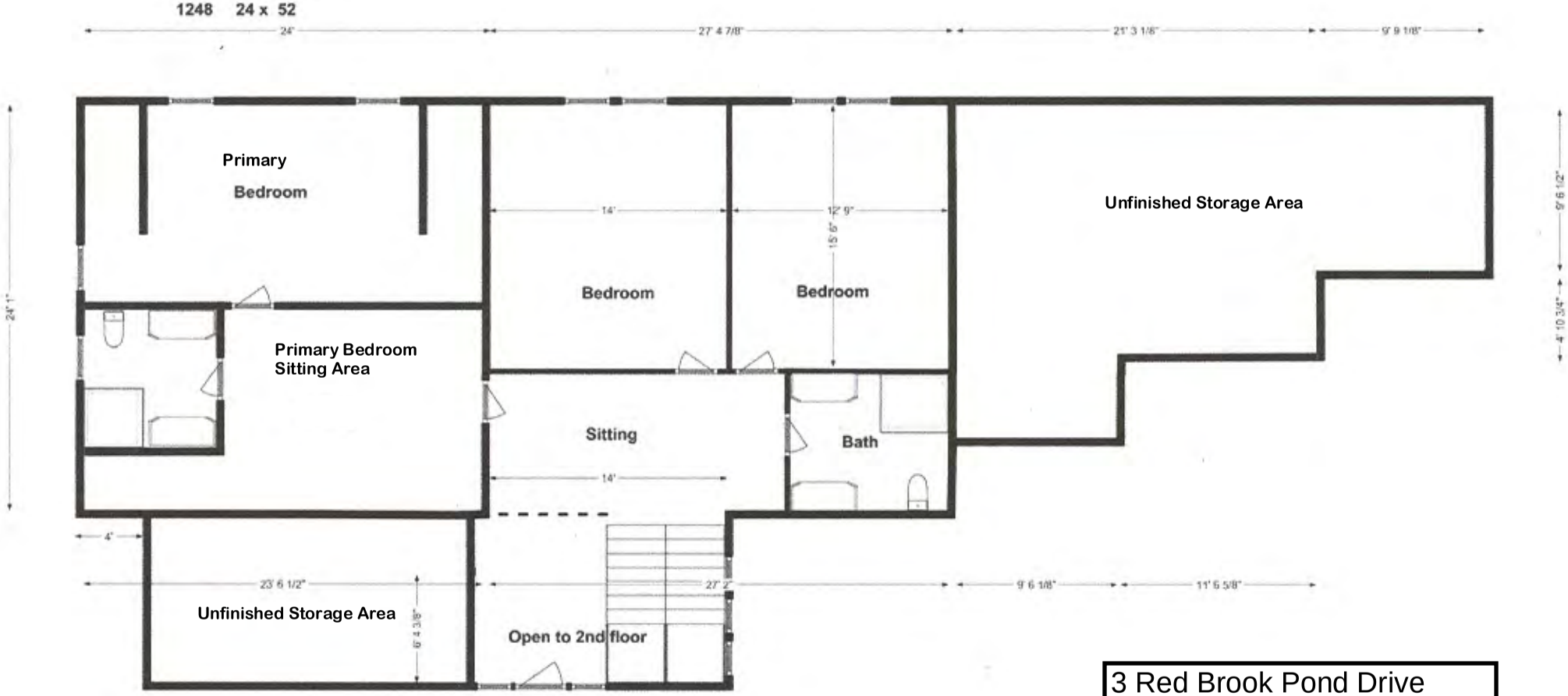


3 Red Brook Pond Drive
Floor Plans - 1st Floor

(Not to Scale)

Second Floor

1248 24 x 52



3 Red Brook Pond Drive
Floor Plans - 2nd Floor

(Not to Scale)

BOOK 5711 PAGE 144 **31252**

I, ALPHONSE L. FORZIATI

of Bourne, Barnstable County, Massachusetts

for NOMINAL consideration paid

grant to CARL FORZIATI and ARTHUR FORZIATI, Trustees of FORZIATI ASSOCIATES REALTY TRUST, under a Declaration of Trust dated January 14, 1985 and recorded at the Barnstable Registry of Deeds in Book 4511, Page 91

of

P.O. Box 521, Pocasset, Barnstable County, Massachusetts 02559

with quitclaim covenants

[redacted]

(Description and encumbrances, if any)

Two certain parcels of land situated in Bourne (Cataumet), Barnstable County, Massachusetts, bounded and described as follows:

LOTS 4 & 9 on a plan of land entitled "Subdivision Plan of Land in Bourne - Cataumet, Mass., for Alphonse L. and Wanda C. Forziati, dated June 19, 1972, John P. Doyle, R.L.S.", recorded at the Barnstable County Registry of Deeds in Plan Book 262, Page 7.

Subject to and with the benefit of matters of record, if any, insofar as the same are now in force and applicable.

Being a portion of the premises described in deed from Ernest T. Ridlon and The National Shawmut Bank of Boston, Trustees of Mary M. Hale Trust dated December 16, 1970 and recorded at the Barnstable County Registry of Deeds in Book 1494, Page 127.

My wife, Wanda C. Forziati, died August 26, 1983.

CONSIDERATION LESS THAN $100.00 -- NO STATE EXCISE STAMPS REQUIRED.

Witness my hand and seal this 7th day of May 19 87

Alphonse L. Forziati
ALPHONSE L. FORZIATI

The Commonwealth of Massachusetts

Barnstable ss. May 7 19 87

Then personally appeared the above-named ALPHONSE L. FORZIATI

and acknowledged the foregoing instrument to be his free act and deed, before me

JOHN FORD O'CONNOR
Notary Public

My Commission expires June 6 19 91

CHAPTER 183 SEC. 6 AS AMENDED BY CHAPTER 497 OF 1969

Every deed presented for record shall contain or have endorsed upon it the full name, residence and post office address of the grantee and a recital of the amount of the full consideration thereof in dollars or the nature of the other consideration therefor, if not delivered for a specific monetary sum. The full consideration shall mean the total price for the conveyance without deduction for any liens or encumbrances assumed by the grantee or remaining thereon. All such endorsements and recitals shall be recorded as part of the deed. Failure to comply with this section shall not affect the validity of any deed. No register of deeds shall accept a deed for recording unless it is in compliance with the requirements of this section.

RECORDED MAY 8 87

BOOK 5711 PAGE 148 31254

I, ALPHONSE L. FORZIATI

of Bourne, Barnstable County, Massachusetts

for NOMINAL consideration paid

grant to CARL FORZIATI and ARTHUR FORZIATI, Trustees of JUSTIN REALTY TRUST under a Declaration of Trust dated April 3, 1984 and recorded at the Barnstable County Registry of Deeds in Book 4056, Page 148 as amended in Book 4132, Page 343

of

P.O. Box 521, Pocasset, Barnstable County, Massachusetts 02559

with quitclaim covenants

XXXXXXXXXX

(Description and encumbrances, if any)

Certain parcels of land situated in Bourne (Cataumet), Barnstable County, Massachusetts, bounded and described as follows:

LOTS 3, 8 & 11 on a plan of land entitled "Subdivision Plan of Land in Bourne - Cataumet, Mass., for Alphonse L. and Wanda C. Forziati, dated June 19, 1972, John P. Doyle, R.L.S.", recorded at the Barnstable County Registry of Deeds in Plan Book 262, Page 7.

Subject to and with the benefit of matters of record, if any, insofar as the same are now in force and applicable.

Being a portion of the premises described in the deed from Ernest T. Ridlon and The National Shawmut Bank of Boston, Trustees of Mary M. Hale Trust dated December 16, 1970 and recorded at the Barnstable County Registry of Deeds in Book 1494, Page 127.

My wife, Wanda C. Forziati, died August 26, 1983.

CONSIDERATION LESS THAN $100.00 -- NO STATE EXCISE STAMPS REQUIRED.

BOOK 5711 PAGE 149

Witness my hand and seal this 7th day of May 19 87

Alphonse L. Forziati
ALPHONSE L. FORZIATI

The Commonwealth of Massachusetts

Barnstable ss. May 7 19 87

Then personally appeared the above-named ALPHONSE L. FORZIATI

and acknowledged the foregoing instrument to be his free act and deed, before me

JOHN FORD O'CONNOR
Notary Public

My Commission expires June 6 19 91

CHAPTER 183 SEC. 6 AS AMENDED BY CHAPTER 497 OF 1969

Every deed presented for record shall contain or have endorsed upon it the full name, residence and post office address of the grantee and a recital of the amount of the full consideration thereof in dollars or the nature of the other consideration therefor, if not delivered for a specific monetary sum. The full consideration shall mean the total price for the conveyance without deduction for any liens or encumbrances assumed by the grantee or remaining thereon. All such endorsements and recitals shall be recorded as part of the deed. Failure to comply with this section shall not affect the validity of any deed. No register of deeds shall accept a deed for recording unless it is in compliance with the requirements of this section.

RECORDED MAY 8 87

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

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), NO3-N (Nitrate nitrogen) and NO2-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), NO3-N (Nitrate nitrogen) and NO2-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)

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

MODIFIED GENERAL USE CERTIFICATION
Pursuant to Title 5, 310 CMR 15.00

Name and Address of Applicant:

Presby Environmental, Inc.
143 Airport Road
Whitefield, NH 03598

Trade name of technology and models: **Enviro-Septic® Wastewater Treatment System** (hereinafter called the "System"). The Advanced Enviro-Septic Design & Installation Manual, System Installation Form and Inspection Checklist are part of this Certification.

Transmittal Number:	Accela - 21-CLM-000073-APP
Date of Issuance:	Revised March 19, 2019, Modified October 30, 2019, February 22, 2022

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental, Protection hereby issues this Certification for General Use to: Presby Environmental, Inc.,143 Airport Road, Whitefield, NH 03598 (hereinafter "the Company"), certifying the System described herein for General Use in the Commonwealth of Massachusetts. The sale, design, installation, and use of the System are conditioned on compliance by the Company, the Designer, the Installer and the System Owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Certification constitutes a violation of 310 CMR 15.000.

/s/ Marybeth Chubb
Marybeth Chubb, Section Chief
Wastewater Management Program
Bureau of Resource Protection

2/22/2022 .
Date

Technology Description

The System is an alternative subsurface Soil Absorption System (SAS) that replaces a conventional SAS designed in accordance with 310 CMR 15.000. The System consists of an 11 5/8-inch diameter corrugated, high-density plastic pipe with a 9.5-inch interior diameter and a standard length per unit of 10 feet. The pipe is perforated with eight holes equally distributed around its inner circumference at each corrugation. Each hole has a plastic skimmer extending inwards. The exterior of the pipe has ridges on the peak of each corrugation and is wrapped with two layers fabric materials. The inner layer is a thick layer of coarse, randomly oriented polypropylene fibers. The outer fabric layer is a thinner non-woven geotextile polypropylene. The System includes required connectors designed to connect pipe units together. The System also includes sand surrounding the pipe units, specified as concrete sand meeting the ASTM C-33 specification, also called System Sand. The System Sand must be placed with a minimum thickness of (6") six inches below, (3") three inches above and six inches to the sides of the pipe units.

Conditions of Approval

The term "System" refers to the Alternative Soil Absorption System in combination with the other components of an on-site treatment and disposal system that may be required to serve a facility in accordance with 310 CMR 15.000.

The term "Approval" refers to the technology-specific Special Conditions, the Standard Conditions for General Use Certification of Alternative Soil Absorption Systems, the General Conditions of 310 CMR 15.287, and any Attachments.

For Alternative Soil Absorption Systems that have been issued General Use Certification for the installation of Systems to serve facilities where the site meets the requirements for new construction, the Department authorizes reductions in the effective leaching area (310 CMR 15.242), subject to the *Standard Conditions that apply to all Alternative Soil Absorption Systems* with General Use Certification found here: https://www.mass.gov/doc/standard-conditions-for-alternative-soil-absorption-systems-with-general-use-certification/download
and subject to the Special Conditions below applicable to this Technology.

Special Conditions

1. The System is approved Patented Sand Filter for use as an Alternative Soil Absorption System. In addition to the Special Conditions contained in this Approval, the System shall comply with all Standard Conditions for Alternative Soil Absorption Systems, except where stated otherwise in these Special Conditions.

2. The System is approved for facilities where a conventional system with a reserve area exists or can be built on-site in full compliance with the new construction requirements of 310 CMR 15.000 and has been approved by the local approving authority.

3. This Certification shall not be used for the installation of a System to upgrade or replace an existing failed or nonconforming system, unless the facility meets the siting requirements for new construction, including a reserve area.

4. The separation distance to the estimated seasonal high groundwater elevation shall be measured from the bottom of the System sand below the Enviro-Septic Wastewater Treatment System.

5. The System shall only be installed in bed or field configuration, as described in 310 CMR 15.252. The System shall not be installed in trench configuration and no sidewall area shall be considered in the total effective leaching area provided. The effective leaching area shall be the bottom area only (length times width) of the sand bed.

6. System does not require a five foot over dig as indicated at 310 CMR 15.255(5).

7. Systems shall be installed with differential venting for aeration and inspection access at end of each run of pipe, section or serial bed and whenever the System is installed under impervious surfaces.

8. Serial distribution laterals shall be limited to no more than 500 gpd with each lateral a maximum of 100 feet, and must be laid level. Multi-level systems shall not be allowed.

9. The Advanced Enviro-Septic proprietary product (AES) will be sized at a minimum of seventy (70) linear feet per bedroom (lf/br) and will not exceed 100 feet in length.

10. System component material specifications for the pipe, plastic components, fabric and sand shall comply with the specifications identified in the initial Enviro-Septic I/A technology approval.

11. Prior approval from the Department for any change from these specifications shall be requested in writing.

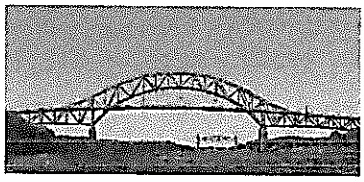
12. Any changes to the approved plans must receive Local Approving Authority (LAA) approval prior to any changes. Before a Certificate of Compliance can be issued by the LAA the System Designer must include any changes to the approved plan into the as-built plans.

13. Design, installation and operation shall be in strict conformance with the Company's DEP approved plans and specifications of Enviro-Septic Wastewater Treatment System Massachusetts Design and Installation Manuals Copyright September 2019, Presby Environmental, Inc., 310 CMR 15.000 and this Approval.

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 3, 2022

Carl Forziati
c/o Bracken Engineering, Inc.
49 Herring Pond Rd.
Buzzards Bay, MA 02532

Re: Abutters List for Map 47.4 Parcel 9.8
Property address: 3 Red Brook Pond Drive

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 47.4 Parcels 9.05, 9.06, 9.07, 9.10 & 9.24.

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

Extract: ABUTTERS LIST
Database: LIVE
Filter: Key IN 10388,10371,10374,10370,10369
Sort:

Report #24: Owner Listing Report

Fiscal Year 2023

Bourne MA

Key	Parcel ID	Owner	Location	LCt/Cl	Bk-Pg(Cert) /Dt	Mailing Street	Mailing City	ST	Zip Cd/County
10369	47.4-9-5	ROSS JOHN C TRS JC ROSS REVOCABLE TRUST	14 RED BROOK HARBOR RD	N 1010	31326/77 6/8/2018	PO BOX 292	CATAUMET	MA	02534
10370	47.4-9-6	DONKIN GAIL TR CATAUMET NOMINEE TR	18 RED BROOK HARBOR RD	N 1010	11930/267 12/21/1998	PO BOX 456	CATAUMET	MA	02534-0456
10371	47.4-9-7	MATTHIES ANNE C TR ANNE C MATHIIES REV TRUST	1141 SHORE RD	N 1010	25065/178 12/7/2010	PO BOX 382	CATAUMET	MA	02534
10374	47.4-9-10	FORZIATI CARL TRS CARL FORZIATI RED BROOK RLTY TRUST	4 RED BROOK POND DR	N 1010	34192/191 6/9/2021	PO BOX 3077	POCASSET	MA	02559
10388	47.4-9-24	FORZIATI ALPHONSE L	0 RED BROOK POND DR	N 1320	1494/127	P O BOX 3077	POCASSET	MA	02559-3077

Total Records 5

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

BRACKEN ENGINEERING, INC.

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

October 26, 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 **Justin Realty Trust, Carl Forziati, TRS** has requested a hearing before the Bourne Board of Health for relief 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 **3 Red Brook Pond Drive (Map 47.4, Parcel 9.8), Cataumet** where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on:

- **A variance to local setback requirements for a 66'± reduction in setback for an 84'± setback to a Bordering Vegetated Wetland from a soil absorption system.**

This hearing is **tentatively** scheduled for Wednesday, November 16th 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 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 or the Bourne Health Department at 508-790-0600, Ext. 1513.

Sincerely,
BRACKEN ENGINEERING INC.

Zachary L. Basinski, PE, C.F.M
Project Manager
Agent for the Applicant

7021 2720 0001 9849 8613

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Postage

Gail Donkin, TR
Cataumet Nominee TR
P.O. Box 456
Cataumet, MA 02534-0456

3 Red Brook Pond Dr, Bourne - BOH

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

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Alphonse L. Forziati
P.O. Box 3077
Pocasset, MA 02559-3077

3 Red Brook Pond Dr, Bourne - BOH

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

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John C. Ross, TRS
JC Ross Revocable Trust
P.O. Box 292
Cataumet, MA 02534

3 Red Brook Pond Dr, Bourne - BOH

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Carl Forziati TRS
Carl Forziati Red Brook Rlty Trust
P.O. Box 3077
Pocasset, MA 02559-3077

3 Red Brook Pond Dr, Bourne - BOH

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

RECEIVED
OCT 26 2022
Bourne Health Department
24 Perry Avenue
Buzzards Bay MA 02532

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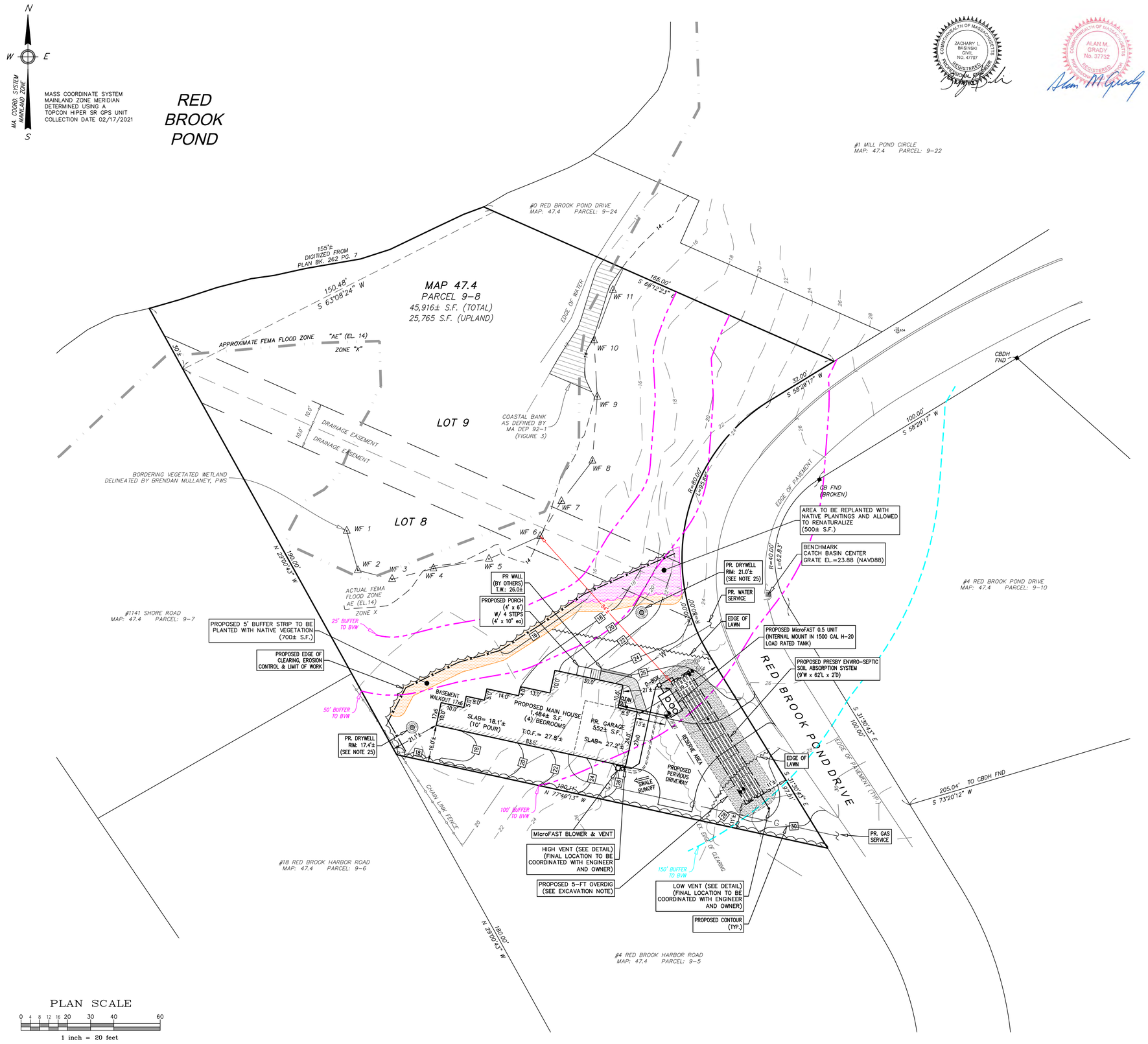
Anne C. Matthies, TR
Anne C. Mathies Rev Trust
P.O. Box 382
Cataumet, MA 02534

3 Red Brook Pond Dr, Bourne - BOH

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

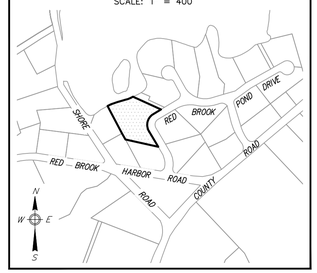


COMMONWEALTH OF MASSACHUSETTS
ZACHARY L. BASINSKI
CIVIL
NO. 47797
REGISTERED PROFESSIONAL ENGINEER

COMMONWEALTH OF MASSACHUSETTS
ALAN M. GRADY
No. 37732
REGISTERED PROFESSIONAL ENGINEER

LOCUS MAP

SCALE: 1" = 400'



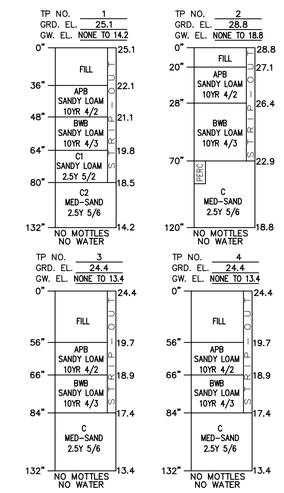
ZONING SUMMARY

ZONE: R-40

	REQUIRED	PROPOSED
LOT AREA:	40,000 S.F.	45,916± S.F.
FRONTAGE:	125' (MIN.)	255.17'±
FRONT YARD:	30'	39.3'±
SIDE YARD:	15'	16.0'±
REAR YARD:	15'	21.1'±
LOT COVERAGE:	20% (MAX.)	4.5% (2,076 s.f.)
BUILDING HEIGHT:	35' (MAX.)	31.7' (a)

(a) – BUILDING HEIGHT BASED UPON AN AVERAGE EXISTING GRADE OF 20.5'

SOIL LOGS



DATE PERFORMED:	MAY 28, 2021
SOIL EVALUATOR:	ROBERT DEWAR – S.E. #14230
WITNESSED BY:	T. GUARINO, HEALTH INSPECTOR
PERC. RATE:	<2 MINUTES per INCH
SOIL CLASS:	CLASS I
MAX. GROUND WATER ELEV.:	NONE to 13.4
METHOD OF DETERMINATION:	NO MOTTLES NO WATER

(SEE SOIL REPORT FOR MORE DETAILED DESCRIPTION)

DISCLAIMER

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.

EXCAVATION NOTE

THIS SYSTEM REQUIRES THE EXCAVATION OF ALL UNSUITABLE SOIL WITHIN 5' OF THE SOIL ABSORPTION SYSTEM. SOIL SHALL BE EXCAVATED TO THE EXISTING SAND 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.

VARIANCE REQUEST

A 66'± VARIANCE IS REQUESTED FROM THE BOURNE BOARD OF HEALTH REGULATIONS FOR A 84'± SETBACK FROM A PROPOSED SOIL ABSORPTION SYSTEM TO A BORDERING VEGETATED WETLAND.

PLANTING NOTE

PROPOSED PLAN SPECIES AND FINAL QUANTITIES TO BE REVIEWED WITH CONSERVATION STAFF BASED ON SPECIES AVAILABILITY PRIOR TO INSTALLATION. PLANTINGS TO BE IN 3 GALLON CONTAINERS AND SPACED APPROXIMATELY 3' ON CENTER UNLESS OTHERWISE DIRECTED.

Notes

1. BENCHMARK: ELEVATION = 23.88 (NAVD88) CENTER OF CATCH BASIN
2. ALL CONSTRUCTION METHODS AND MATERIALS TO CONFORM TO TITLE 5 AND THE TOWN OF **BOURNE** BOARD OF HEALTH REGULATIONS.
3. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
4. NO FIELD MODIFICATION TO THE SYSTEM SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE DESIGN ENGINEER AND BOARD OF HEALTH.
5. ALL JOINTS AND COVERS TO BE WATERTIGHT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES.
7. A CERTIFICATE OF COMPLIANCE MUST BE OBTAINED PRIOR TO BACKFILLING SYSTEM.
8. OWNER:
   #3 JUSTIN REALTY TRUST
   CARL FORZIATI, Trustee
   ARTHUR FORZIATI, Trustee
   P.O. BOX 521
   POCASSET, MA 02559

   #5 FORZIATI ASSOCIATES REALTY TRUST
   CARL FORZIATI, Trustee
   ARTHUR FORZIATI, Trustee
   P.O. BOX 3077
   POCASSET, MA 02559
10. DEED REFERENCE: **Deed Bk: 5711 Pg: 148** (LOT 8) **Deed Bk: 5711 Pg: 144** (LOT 9)
9. PLAN REFERENCE: **Plan Bk: 262 Pg: 7** (LOTS 8 & 9)
10. 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.
11. THIS SYSTEM IS NOT DESIGNED NOR INTENDED FOR USE WITH A GARBAGE GRINDER.
14. THE SYSTEM OWNER SHALL BE RESPONSIBLE TO PUMP THE SEPTIC TANK AT LEAST ONCE EVERY THREE YEARS.
15. LOCUS **DOES NOT** FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA OR BOURNE WATER RESOURCE DISTRICT.
16. LOCUS **DOES NOT** FALL WITHIN AN NHESP ESTIMATED HABITAT OF RARE WILDLIFE AND PRIORITY HABITAT OF RARE SPECIES.
17. LOCUS **PARTIALLY FALLS** WITHIN A SPECIAL FLOOD HAZARD ZONE "AE" (EL. 14) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C-0511-J, dated 7/16/2014.
18. CONTRACTOR TO REFER TO ALL MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS FOR INSTALLATION OF THE MICROFAST UNIT AND PRESBY ENVIRO-SEPTIC SYSTEM.
19. RECORD PROPERTY OWNER IS TO FILE A NOTICE OF DEED RESTRICTION AT THE BARNSTABLE COUNTY REGISTRY OF DEEDS PRIOR TO THE INSTALLATION OF THE SYSTEM, INDICATING THE USE OF AN INNOVATIVE/ALTERNATIVE SEPTIC SYSTEM ON THE PROPERTY AND RESTRICTING THE BEDROOM COUNT AS DESIGNED ON THIS PLAN.
20. HOMEOWNER IS TO ESTABLISH AN OPERATION & MAINTENANCE PLAN WITH A COMPANY CERTIFIED SYSTEM OPERATOR FOR THE MICROFAST UNIT. ALL SYSTEM TESTING, MONITORING & REPORTING IS TO BE CONDUCTED IN ACCORDANCE TO THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) REMEDIAL USE PERMITS.
21. CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM/CONTROL PANELS WITH THE HOMEOWNER & SYSTEM MANUFACTURERS PRIOR TO INSTALLATION.
22. CONTRACTOR TO COORDINATE FINAL LOCATION OF MicroFAST BLOWER UNIT AND VENT WITH OWNER.
23. CONTRACTOR TO COORDINATE FINAL LOCATIONS OF HIGH AND LOW VENTS WITH OWNER AND ENGINEER.
24. NO STRUCTURES PROPOSED ON ANY SLOPE > 25%.
25. ROOF LEADERS TO BE CONNECTED TO THE PROPOSED DRYWELLS. DRYWELLS TO BE CONSTRUCTED A MINIMUM OF 25' FROM THE PROPOSED S.A.S.
26. PROPOSED ELECTRICAL SERVICE NOT SHOWN (FOR CLARITY). CONTRACTOR TO COORDINATE PROPOSED ELECTRIC SERVICE WITH UTILITY COMPANY.
27. CONTRACTOR TO COORDINATE CONNECTION OF ALL UTILITIES WITH ASSOCIATED UTILITY COMPANY.

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 SUBSURFACE SEWAGE DISPOSAL PLAN IN BOURNE, MASSACHUSETTS

Prepared For:

JUSTIN REALTY TRUST

#3 RED BROOK POND DRIVE
MAP 47.4 PARCEL 9-8

No.	Date	Revision Description	By
2	9/13/22	REV. LIMIT OF LAWN FOR BOARD OF HEALTH	JPH
1	2/25/22	REVISED PER CONSERVATION COMMENTS	RED

Date:	Drawn:	Checked:	Sheet:
JANUARY 18, 2022	RED/BEI	ZLB/AMG	1 of 2

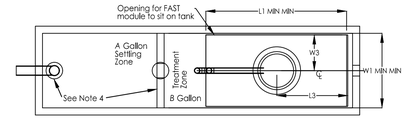
S:\Autocad Drawings\Bourne\Red Brook Pond Drive\3&5 Red Brook Pond – Forzati\3-5 Red Brook Pond Rd – Site Plan.dwg

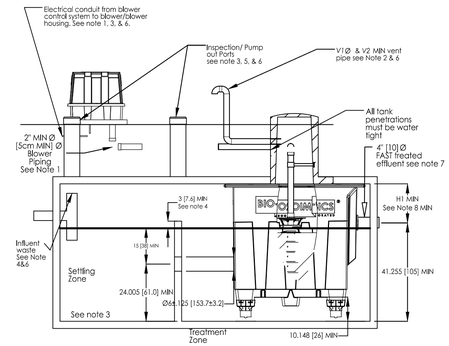
MicroFAST 0.5 FAST UNIT (INTERNAL MOUNT)

BIO-MICROBICS® INCORPORATED

MicroFAST Notes:

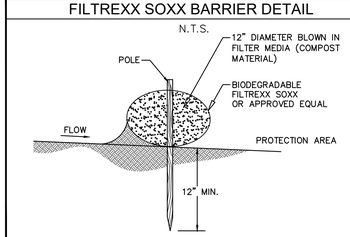
1. Blower piping to FAST® may not exceed 100FT [30.5m] total length and use a maximum of 4 elbows. For distances greater than 100FT [30.5m] – consult factory. Blower must be located above flood/standing water levels on a concrete base 24" X 18" X 2"[61X45.7X5cm] minimum.
2. Vent to be located above finish grade or higher to avoid infiltration. Cap with vent grate w/at least 7.1 sq in. [45.8 sq. cm] open surface area. Secure with stainless steel screws or Run vent to desired location and cover opening with vent grate w/at least 7.1sq in. [45.8 sq. cm] of open surface area. Secure with stainless steel screws. Vent piping must not allow excess moisture build up or back pressure.
3. All appurtenances to FAST® (e.g. tank pump outs, etc.) must conform to all country, state, province, and local plumbing and electrical codes. The blower control system is provided by Bio–Microbics, Inc.
4. 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, then the baffle shall be at least 3"[8cm] higher than the water level as shown on the drawing.
5. All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access.
6. Tank, anchors, piping, conduit, blower housing pad and vents are provided by others.
7. All piping and ancillary equipment installed after FAST® must not impede or restrict free flow of effluent.
8. No more than 4 FT [1.2 m] of fill may be placed over unit lid. Unit may stand inside tank MicroFAST® 0.5 with feet. Refer to installation manual for more details.





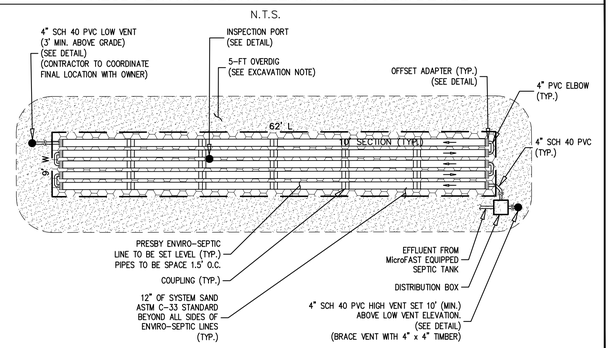
FILTREXX SOXX BARRIER DETAIL

N.T.S.



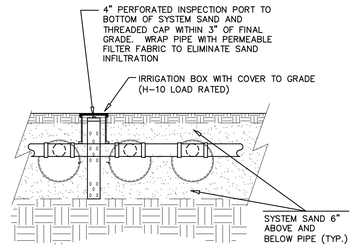
PRESBY ENVIRO-SEPTIC LEACHING SYSTEM DETAIL

N.T.S.



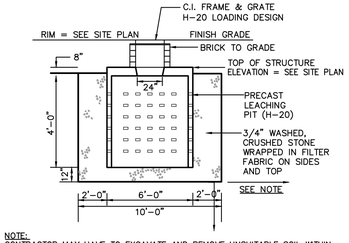
INSPECTION PORT DETAIL

N.T.S.



DRY WELL DETAIL

N.T.S.



NOTE:
CONTRACTOR MAY HAVE TO EXCAVATE AND REMOVE UNSUITABLE SOIL WITHIN 5' OF STONE AND DOWN TO THE SAND LAYER. EXISTING SOIL CONDITIONS MAY DICTATE DEEPER EXCAVATION. REPLACE WITH CLEAN SAND.

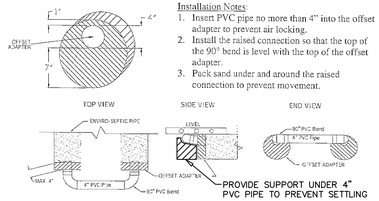
OFFSET ADAPTER WITH ENVIRO-SEPTIC PIPE RAISED CONNECTION DETAIL

N.T.S.

Raised connections consist of offset adapters, 4" PVC sewer and drain pipe, and 90° elbows. Use raised connections to connect lines of Enviro-Septic© pipe. They enable greater liquid storage capacity and increase the bacterial surfaces being developed. Here are some diagrams along with installation notes.

Installation Notes:

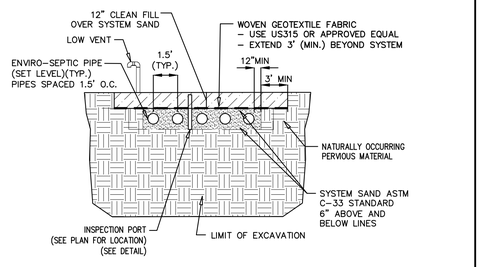
1. Insert PVC pipe no more than 4" into the offset adapter to prevent air locking.
2. Install the raised connection so that the top of the 90° bend is level with the top of the offset adapter.
3. Pack sand under and around the raised connection to prevent movement.



PROVIDE SUPPORT UNDER 4" PVC PIPE TO PREVENT SETTLING

TYPICAL ENVIRO-SEPTIC IN-GROUND LEVEL SECTION

N.T.S.

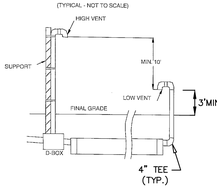


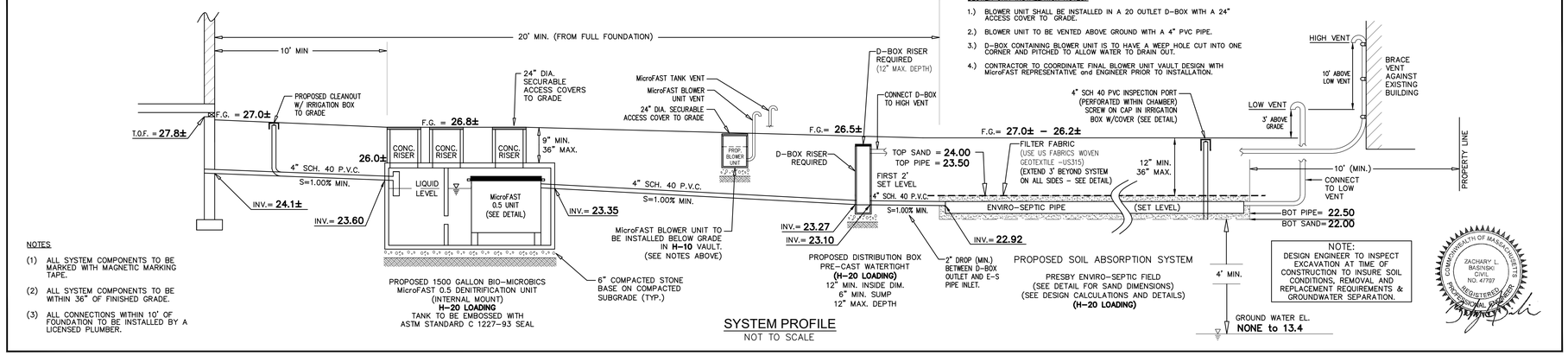
DIFFERENTIAL VENTING DETAIL

N.T.S.

THIS DIAGRAM SHOWS A HIGH VENT INSTALLED IN A D-BOX. THIS CONFIGURATION IS REQUIRED IN PUMPED SYSTEMS OR WHEN OTHER RESTRICTIONS OR VENTS ARE INSTALLED BETWEEN THE LOW VENT AND THE ROOF VENT, SUCH AS A MicroFAST UNIT).

DIFFERENTIAL VENTING
(TYPICAL - NOT TO SCALE)





NOTE:
DESIGN ENGINEER TO INSPECT EXCAVATION AT TIME OF CONSTRUCTION TO INSURE SOIL CONDITIONS, REMOVAL AND REPLACEMENT REQUIREMENTS & GROUNDWATER SEPARATION.

ZACHARY L. BASINSKI CIVIL NO. 47707 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

NOTES

(1) ALL SYSTEM COMPONENTS TO BE MARKED WITH MAGNETIC MARKING TAPE.

(2) ALL SYSTEM COMPONENTS TO BE WITHIN 36" OF FINISHED GRADE.

(3) ALL CONNECTIONS WITHIN 10' OF FOUNDATION TO BE INSTALLED BY A LICENSED PLUMBER.

SYSTEM PROFILE

NOT TO SCALE

BLOWER UNIT INSTALLATION NOTES:

1.) BLOWER UNIT SHALL BE INSTALLED IN A 20 OUTLET D-BOX WITH A 24" ACCESS COVER TO GRADE.

2.) BLOWER UNIT TO BE VENTED ABOVE GROUND WITH A 4" PVC PIPE.

3.) D-BOX CONTAINING BLOWER UNIT IS TO HAVE A WEEP HOLE CUT INTO ONE CORNER AND PITCHED TO ALLOW WATER TO DRAIN OUT.

4.) CONTRACTOR TO COORDINATE FINAL BLOWER UNIT VAULT DESIGN WITH MicroFAST REPRESENTATIVE and ENGINEER PRIOR TO INSTALLATION.

DESIGN CALCULATIONS

SOIL TEXTURAL CLASS:	CLASS I
PERC. RATE:	<2 MINUTES/INCH
NO. OF BEDROOMS:	4
DESIGN FLOW REQUIRED:	440 GPD
SEPTIC TANK REQUIRED:	1,500 GALLONS
SEPTIC TANK PROVIDED:	MicroFAST 0.5 Unit

LEACHING SYSTEM:

PRESBY ENVIRO-SEPTIC WASTEWATER TREATMENT SYSTEM
558 S.F. AREA x 2' DEEP SYSTEM (SEE DETAIL FOR FIELD DIMENSIONS)

EFFECTIVE LEACHING: (BASED ON REMEDIAL USE APPROVAL)

ENVIRO-SEPTIC PIPE REQUIRED: 70 L.F. PER 110 GAL/DAY
110 GAL/DAY / 70 L.F. = 1.57 GAL/DAY/L.F.

ENVIRO-SEPTIC PIPE PROVIDED
1 SECTION WITH 5 LINES OF 60' LENGTH EACH
TOTAL LENGTH = 1 x (5 x 60') = 300 L.F.
300 L.F. * 1.57 GAL/DAY/L.F.= 471 GAL/DAY > 440 GAL/DAY
LINES SPACED 1.50" ON CENTER

Prepared By:
BRACKEN ENGINEERING, INC
49 HERRING POND ROAD
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PROPOSED SUBSURFACE SEWAGE DISPOSAL PLAN IN BOURNE, MASSACHUSETTS

Prepared For:

JUSTIN REALTY TRUST

#3 RED BROOK POND DRIVE
MAP 47.4 PARCEL 9–8

No.	Date	Revision Description	By
2	9/13/22	NO CHANGES	JPH
1	2/25/22	REVISED PER CONSERVATION COMMENTS	RED

Date: JANUARY 18, 2022 | Drawn: RED/BEI | Checked: ZLB/AMG | Sheet: 2 of 2

D:\Autocad Drawings\Bourne\Red Brook Pond Drive\3&5 Red Brook Pond – Fordath\3–5 Red Brook Pond Rd – Site Plan.dwg