

RECEIVED

By Bourne Health Department at 12:05 pm, Nov 08, 2023



53 STATE STREET | BOSTON, MA 02109 | P:617-330-7000
600 UNICORN PARK DRIVE | WOBURN, MA 01801 | P:781-933-5505

Tyler M. Franklin
Direct Dial: 617-330-7084
E-mail: tfranklin@rubinrudman.com
Return Address: Boston

November 8, 2023

By Electronic Mail: TGuarino@townofbourne.com

Town of Bourne Board of Health
Terry Guarino, RS, CHO
Bourne Town Hall
24 Perry Ave
Buzzards Bay, MA 02532

RE: **Variance Requests**
176 Scraggy Neck Road, Bourne, MA 02532 (Map 51.0, Parcel 1)

Dear Members of the Board,

On behalf of the Applicant The Long Point Trust (Stephen and Marybeth Bisson, Trustees), Rubin and Rudman LLP hereby submits this letter to the Bourne Board of Health (“Board”) to address several allegations raised in Hill Law’s January 23, 2023 letter concerning the Applicant’s variance requests from the Bourne Board of Health Regulations and supplemental submittals by Bracken Engineering, Inc. (“BEI”) and McArdle Gannon Associates, Inc. concerning a proposed residential construction project with associated installation of an innovative/alternative septic absorption system (“Project”) at 176 Scraggy Neck Road (“Site”). The variance requests are necessary to upgrade the existing septic system due to the size and topography of the lot as well as the location of the abutting Resource Areas.

The arguments against the variance requests raised in Hill Law’s letter fail for several reasons.

First, as described by BEI in its submittals, the Applicants have submitted applications for all necessary variances relative to the new innovative/alternative septic absorption system (“I/A system”) because the Board of Health of Regulations (the “BOH Regulations”) do not impose a 150 foot setback from Coastal Bank. See Application for Septic Variance Request Package dated August 22, 2022, revised January 11, 2023, revised November 8, 2023.

The Coastal Banks existing on-site consist mainly of non-eroding, well-vegetated wooded areas (forested upland) subject to protection under M.G.L. c. 131, § 40 or Resource Areas protected under WPA Regulations at 310 CMR 10.00. These banks function exclusively as vertical buffers

November 8, 2023

Page 2

for storm waters. The Applicants have had three consultants, BEI (Civil Engineers), Environmental Consulting & Restoration, LLC (“ECR”)(Coastal Geologists), and McArdle Gannon Associates, Inc. (“MGA”) (Geotechnical Engineers), review the proposed Project and conclude that the Project, and associated I/A system, will in no way adversely affect the Coastal Banks, or any other Resource Area, at the Site. See ECR Submittal dated August 19, 2022, attached as Exhibit 1; see also MGA Submittal dated November 9, 2022, attached as Exhibit 2. In fact, because the proposed I/A system will be located greater than 50 feet from the top of a Coastal Bank and 100 feet from the closest Salt Marsh, it will be a significant improvement over the existing cesspool located at the top of the Coastal Bank and 31± linear feet from the Salt Marsh. Additional improvements with the proposed I/A system include MicroFast denitrification and an increased separation from the system to the water table. The Bourne Conservation Commission’s November 23, 2022 Order of Conditions approving the Project definitively demonstrates that the proposed Project will not adversely effect Resource Areas at the Site. See November 23, 2022 Order of Conditions attached as Exhibit 3.

The BOH Regulations state, “a 150 foot setback will be required for all leaching facilities from the edge of a wetland resource or watercourse, as defined by 10 CMR 15.01 Title V.” The BOH Regulations are based on the transport rates in glacial outwash soils to protect water bodies and Resource Areas that could be impacted by septic system contaminants based on actual groundwater flow. Since Coastal Banks are not associated with groundwater flow, they should not technically be applicable to the setback requirement.

The BOH Regulations were last amended on June 1, 1988. The BOH Regulations explicitly adopted the Title V Regulations in force at that time. Notably, Section 15.01 of the Title V Regulations adopted when the BOH Regulations were last amended failed to define “wetland resources” but did define “watercourse.” The definition of “watercourse” is:

Watercourse. Any natural or man-made stream, pond, lake, wetland, coastal wetland, swamp **or other body of water** and should include wet meadows, marshes, swamps, bogs and areas where ground water, flowing or standing surface water or ice provide a significant part of the supporting substrate for a plant community for at least five months of the year. See 310 CMR 15.01 (effective December 31, 1986) attached hereto as Exhibit 4.

Under the operative Title V Regulations, Coastal Bank is not a “body of water” and, therefore, is not considered a regulated coastal wetland within the definition of “watercourse.” This conclusion is supported by the requirement in the operative Title V Regulations, 310 CMR 15.03(7) at FN (2), that, “[a]ll distances [concerning the location and distance of setbacks] shall be measured from the average of the mean annual flood elevation in inland areas and from Mean High Water in coastal areas.” For these reasons, the only Resource Area to which a variance is needed under the BOH Regulations for this Site is the Salt Marsh, which is a coastal wetland and watercourse per the operative Title V Regulations.

Hill Law's contention that the term "coastal wetland" within the definition of "watercourse" suggests the intent to protect Coastal Bank as found at this Site ignores the content and context of the rest of that definition which clearly demonstrates an intent to protect water resource areas that intersect with the water table – which Coastal Bank does not. Indeed, the definition of "Coastal Wetland" in the operative Title V Regulation is further evidence that the intent was only to protect those "banks ... subject to tidal action" which, again, the Coastal Banks at this Site are not.¹

For these reasons, Hill Law's argument that the 150 foot setback applies to Coastal Bank and that Applicant's need to identify setback distances of the Project from Coastal Bank #3 is unavailing.

Nevertheless, the Applicants have requested several variances from the 150 foot setback to the proposed I/A system from Coastal Bank and Salt Marsh to be consistent with past practices of the Board and look forward to discussing these issues with the Board at the upcoming hearing.

Second, despite Hill Law's contention to the contrary, a Title V variance is not required for the I/A system when it is more than 50 feet from Bordering Vegetated Wetland ("BVW"), Salt Marsh, or the landward edge of the top of all Coastal Banks on Site. Notably, there is no setback requirement in Title V to the toe of a Coastal Bank.²

Third, in accordance with the BOH Regulations, a hydrogeologic study is not required because the I/A system will be more than 100 feet from the watercourse. Importantly, the Coastal Banks at the Site are unrelated to groundwater flow, quality, or potential impacts from the I/A system such that a hydrogeologic study is unnecessary.

Several recent decisions by the Board supports the granting of the requested variances and a finding that a hydrogeologic study is unnecessary for this Project.

On May 4, 2023, the Board approved a very similar project at 68 Elgin Road. In that project, relative to the proposed construction of a single-family dwelling, the applicant sought relief from the Board relative to Title V and the BOH Regulations for the installation of an I/A system. Of note, the applicant sought and received from the Board a 41 foot variance to the Title V setback requirements (310 CMR 15.211) "for the placement of a soil absorption system within 9 feet of a fragmented, non-water dependent coastal bank." See 68 Elgin Road Project Board of Health Documents attached as Exhibit 5. Additionally, the applicant sought and received a 141 foot variance "to the Bourne Board of Health setback requirement for the placement of the soil absorption system within 9 feet of the fragmented, non-water dependent coastal bank." As detailed in its decision, the Board "felt as if these variances were in order where the sewage disposal system

¹Coastal Wetland "shall mean any bank, marsh, swamp, flat or other lowland subject to tidal action." 310 CMR 15.01 (effective 12/31/86).

²Per 310 CMR 15.211, FN3, Coastal Bank setback measured from the "most landward edge" of the "top" of the Coastal Bank.

will be comprised of a BioMicrobics MicroFAST 0.5 de-nitrification unit which will offer a substantial degree of environmental protection as it is approved by MassDEP for nitrogen reduction.” Id. The Board also found that the “variances requested were based on the existing topography of the lot, and the setbacks to the coastline are greater than 150 feet.” Id. The Board did not require the applicant to perform a hydrogeologic study prior to approving the I/A system. Id.

Unlike 68 Elgin Road, this Project does not propose a septic system within 50 feet of the top of a Coastal Bank or any other Resource Area. Thus, a Title V variance is unnecessary. Even if a variance was required, the Elgin Road decision demonstrates that a variance should be granted where the I/A system proposed for this Project is identical to that approved at Elgin Road, the location of the proposed system is also dictated by the Site’s topography, and the proposed system is located more than 100 feet from the coastline. The Board’s approval of the Elgin Road I/A system, without requiring a hydrogeologic study, also undermines Hill Law’s contention that one is required for the Project.

Other recent decisions by the Board that support approval of the Applicant’s present variance requests include:

- **10 Harbor Way** – October 16, 2023 – associated with the new construction of single-family residence, granting variance to Bourne Board of Health Regulations 150 foot setback requirement for the placement of a soil absorption system within 105 feet of a non-eroding Coastal Bank. See 10 Harbor Way BOH Documents attached as Exhibit 6.
- **60 Red Brook Harbor** – October 11, 2023 – associated with the razing and new construction of a single-family residence, granting a variance to Bourne Board of Health Regulations 150 foot setback requirement for the placement of a soil absorption system within 141 feet to a Coastal Bank and a 85 foot variance for the placement of a reserve area to a Coastal Bank. See 60 Red Brook Harbor BOH Documents attached as Exhibit 7.
- **819 Head of the Bay Road “Lot 1”** – September 19, 2022 – renewal of prior grant of a 40 foot variance from Bourne Board of Health Regulations 150 foot setback for the placement of a leaching facility within 110 feet of a Coastal Bank. See 819 Head of the Bay Road BOH Documents attached as Exhibit 8.
- **4 Kennebec Avenue** – June 13, 2022 – associated with the razing and new construction of single-family residence, granting 150 foot variance from Bourne Board of Health Regulations 150 foot setback for proposed I/A system to a non-eroding Coastal Bank. See 4 Kennebec Avenue BOH Documents attached as Exhibit 9.
- **72 Elgin Road** – March 30, 2020 - associated with the razing and new construction of single-family residence, granting 150 foot variance from Bourne Board of Health

Regulations 150 foot setback as well as a 50 foot variance from Title 5's 50 foot setback for a proposed conventional septic system and a soil absorption system on a fragmented Coastal Bank. See 72 Elgin Road BOH Documents attached as Exhibit 10.

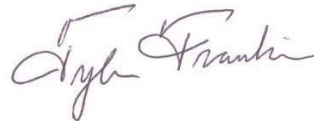
- **18 Windsor Road** – April 17, 2019 – associated with the razing and new construction of single-family residence, granting 150 foot variance from Bourne Board of Health Regulations 150 foot setback requirement for the placement of a soil absorption system on a fragmented, non-eroding Coastal Bank. And granting a 50 foot variance from Title 5 for the placement of a soil absorption system on a fragmented, non-eroding Coastal Bank. See 18 Windsor Road BOH Documents attached as Exhibit 11.

In addition, BEI has submitted revised nitrogen loading calculations which demonstrates nitrogen loading for the proposed 4-bedroom system is only 2.19 parts per million (PPM) well below the typical standard of 5 PPM. Moreover, as designed the system is located at the highest portion of the lot and maintains a 7.7 foot separation to groundwater, where a minimum of 5 feet is required.

For all of these reasons, the Applicants have satisfied the standards necessary for the proposed Project to be approved by the Board of Health.

We look forward to discussing this Project with you at the November 15, 2023 hearing.

Very truly yours,



Tyler M. Franklin

Enclosures

**176 Scraggy Neck Road
(Map 71, Parcel 1, Lot 2)**

TABLE OF CONTENTS

RUBIN AND RUDMAN LLP NARRATIVE, PREPARED BY TYLER M. FRANKLIN,
DATED 11/8/23

EXHIBITS

- A. ENVIRONMENTAL CONSULTING & RESTORATION, LLC REPORT, DATED
8/19/2022
- B. MCARDLE GANNON ASSOCIATES, INC., GEOTECHINICAL REPORT DATED
11/9/2022
- C. TOWN OF BOURNE – ORDER OF CONDITIONS SE 7-2208 ISSUED 11/23/2022
- D. COMMONWEALTH OF MASSACHUSETTS – 310 CMR 11.00 – 17.00, DATED
12/31/1986
- E. BOARD OF HEALTH SUBMISSION – 68 ELGIN ROAD
- F. BOARD OF HEALTH SUBMISSION – 10 HARBOR WAY
- G. BOARD OF HEALTH SUBMISSION – 60 RED BROOK HARBOR ROAD
- H. BOARD OF HEALTH SUBMISSION – 819 HEAD OF THE BAY ROAD
- I. BOARD OF HEALTH SUBMISSION – 4 KENNEBEC AVENUE
- J. BOARD OF HEALTH SUBMISSION – 72 ELGIN ROAD
- K. BOARD OF HEALTH SUBMISSION – 18 WINSOR ROAD



August 19, 2022

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

**RE: Response to Horsley letter July 11, 2022
176 Scraggy Neck Road (Map 51.0, Parcel 1)**

Dear Members of the Board:

Please accept this letter as a review of plan revisions to the May 16, 2022 *Proposed Conditions Plan* and a response to the July 11, 2022 letter submitted by Scott W. Horsley.

Environmental Consulting and Restoration, LLC. (ECR) was retained by Bracken Engineering, Inc. to review updated modifications to the NOI application from LEC, recent plan revisions and opposition comments. This project review is based on my training and experience over the past 45+ years in coastal geomorphology and floodplain management.

The site generally consists of an upland promontory surrounded by a combination of Salt Marsh, Coastal Bank(s), and Land Subject to Coastal Storm Flowage. The upland comprises very stable glacial deposits, Carver coarse sand, 8 to 15 percent slopes and a variety of vegetation. The floodplain has been mapped by FEMA as a Zone AE (el. 15). The Coastal Banks have been properly delineated and characterized on the plan using the DEP Wetlands Policy 92-1 and the local wetlands bylaw regulation, section BRW 1.02(g). The function of these banks is exclusively limited to a vertical buffer for storm waters. Supplying sediment to any adjacent coastal beaches, dunes or barrier beaches is not a function of these banks. There are no signs or evidence of erosion on the slopes or bottom of these banks due to coastal flooding, stormwater runoff or groundwater breakout. The Coastal Banks are vegetated and very stable.

But for maintenance of an existing gravel driveway and restoration/mitigation plantings in a secondary Coastal Bank, no work is proposed directly in a resource area that is regulated by state and local wetland performance standards. All components of the proposed septic system will be located over 100 feet from Mean High Water (MHW), over 100 feet from the Salt Marsh, and over 50 feet from the two primary Coastal Banks, located east and west of the proposed system. The tops of these banks are located at elevations 3-5 feet above the soil absorption system (SAS) and the bottoms of the banks are located 2.5-3 feet above groundwater at the Salt Marsh/Coastal Bank boundary. Therefore, construction and performance of the septic system will not have an adverse impact on the delineated resource areas.

Mr. Horsley submitted a copy of the shoreline change map produced by MA Coastal Zone Management Office to bring attention to the receding shorelines. Mapping of MHW location along transects in sandy, unvegetated shorelines is the purpose of these maps. The map does not show any transect data landward of the Salt Marsh which abuts the bottom of the primary Coastal Bank flanking the west side of the property nor the embayment flanking the east side of the property. Mapping of historical shorelines within a Salt Marsh is highly suspect because of the dense vegetation and any future impacts of the redevelopment project (e.g., sewage disposal) that may be implied or otherwise are without merit.

In my professional opinion, the function of these Coastal Banks will be no less important than they currently are and, even with sea level rise, the septic system will be located well below any erosion impacts that may occur at the marsh/bank boundary or on the face of the banks. More importantly, the septic system install and future use will in no way adversely impact the CB through erosion/destabilization.

Upon review of this supplemental information, please contact me at (617) 543-1654 or stan@ecrwetlands.com with any questions or requests for additional information.

Sincerely,
Environmental Consulting & Restoration, LLC

Stan Humphries

Stan Humphries
Coastal Geologist



November 9, 2022
MGA Job No. W0960

Don Bracken, P.E.
Bracken Engineering, Inc.
49 Herring Pond Road
Buzzards Bay, Massachusetts 02532

RE: Geotechnical Review – Coastal Bank Impacts – 176 Scraggy Neck Road, Bourne,
Massachusetts

Don:

At your request, McArdle Gannon Associates, Inc. (MGA) has prepared this letter summarizing our geotechnical review of the proposed new dwelling and primary septic soil absorption system in regard to their impacts (if any) on the existing coastal bank(s) as a result of the proposed redevelopment of 176 Scraggy Neck Road in Bourne, Massachusetts.

BACKGROUND

Our understanding of the project, as presented herein, is based on our discussions with you and review of the following documents:

- A plan set entitled “Proposed Site Plan in Bourne, MA” dated May 16, 2022, Revision 3 dated September 26, 2022 by Bracken Engineering, Inc. (Bracken), and
- A plan entitled “Surficial Materials Map of the Onset Quadrangle, Massachusetts,” dated 2018, by The United States Geological Survey (USGS).

The site is located on the Scraggy Neck peninsula at 176 Scraggy Neck Road in Bourne, Massachusetts. The property (Lot 2) comprises a total area of approximately 6.9± acres, of which 1.18± acres is upland area. Lot 2 is bounded by a 25-foot wide access drive and utility easement to the east, Red Brook Harbor to the west, and wetlands to the north and south. The site is currently developed with an existing 1-story residence that we understand will be demolished.

Existing site grades generally slope down to the north, south and west from a high point of about Elevation 18± feet along the eastern property line, to Elevations between 6.5± to -1± feet at southern, western, and northern property limits.

A new **1- to 2-story** 2,735± square foot residence with a partial crawl space is planned in the eastern portion of the property. Portions of the new building will be located within the 50-foot

coastal bank buffer and within an AE flood zone (Elevation 15 feet). The first floor of the residence will have a finished floor elevation (FFE) at Elevation 18.0 feet, with the crawl space slab at Elevation 13.0 feet. The attached garage in the southern portion of the building will have an FFE at Elevation 14.5 feet. A new Presby Enviro-Septic soil absorption system is located just east of the new building.

Based on our review of a series of test pit logs prepared by Bracken for the septic leaching field design, we anticipate generalized soil conditions at the site consist of surficial topsoil/subsoil deposits underlain by natural outwash deposits (sand) with an estimated seasonal high groundwater at Elevation 1.9± feet within the septic leaching field.

REVIEW COMMENTS

Proposed Dwelling: A portion of the northern edge of the proposed house is located between about 3.7± and 4.3± feet from Coastal Bank #3. Assuming the new exterior wall foundations (or those footings in unheated areas) will be founded 4 feet below finish grade for frost protection, temporary shoring will be necessary to allow safe access for foundation construction and to protect the coastal bank in this area of the site. We anticipate either soldier piles with wood lagging or steel sheet piling could be installed between the house and Coastal Bank #3 prior to foundation construction. Design of the temporary shoring system should be performed by a Massachusetts registered professional engineer. Elsewhere, excavations for the new building are not expected to encroach upon or impact the coastal banks.

Presby Enviro-Septic Soil Absorption System: Excavation for the Presby Enviro-Septic soil absorption system is expected to extend about 3.3± feet below existing grades with the bottom of the system shown at Elevation 9.7± feet. Assuming the perimeter of the excavation is laid back in general accordance with OSHA trench safety guidelines using the most conservative soil type (Type C), an overdig of about 5± feet is anticipated. Given that the closest portion of the new field is located about 7.5± to 11± feet from Coastal Bank #3, we don't believe excavation and installation of the system will impact the coastal bank.

If you have any questions or require clarification, please do not hesitate to call.

MCARDLE GANNON ASSOCIATES, INC.



Wayne A. McArdle, P.E.
Principal

WAM/slh



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
SE7-2208
MassDEP File #
eDEP Transaction #
Bourne
City/Town

A. General Information

Please note:
this form has
been modified
with added
space to
accommodate
the Registry
of Deeds
Requirements

Important:
When filling
out forms on
the
computer,
use only the
tab key to
move your
cursor - do
not use the
return key.



1. From: Bourne
Conservation Commission

2. This issuance is for (check one):
a. Order of Conditions b. Amended Order of Conditions

3. To: Applicant:

Stephen and Marybeth

a. First Name

Bisson, Trustees

b. Last Name

The Long Point Trust

c. Organization

P.O. Box 10

d. Mailing Address

Cataumet

e. City/Town

MA

f. State

02534

g. Zip Code

4. Property Owner (if different from applicant):

a. First Name

b. Last Name

c. Organization

d. Mailing Address

e. City/Town

f. State

g. Zip Code

5. Project Location:

176 Scraggy Neck Road

a. Street Address

Bourne

b. City/Town

51

c. Assessors Map/Plat Number

1

d. Parcel/Lot Number

Latitude and Longitude, if known:

41d40'12.07 "N

m s

70 37' 29.81"W

d m s



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 SE7-2208
 MassDEP File #
 eDEP Transaction #
 Bourne
 City/Town

A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):
 Barnstable
 a. County Barnstable b. Certificate Number (if registered land) 257
 22554
 c. Book 257 d. Page 11/23/2022

7. Dates: 05/18/2022 11/17/2022 11/23/2022
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):
 Existing Conditions Plan, Proposed Conditions Plan, and Septic Details
 a. Plan Title Bracken Engineering, Inc. Donald F. Bracken, Jr. and Alan M. Grady
 b. Prepared By 9/26/22 c. Signed and Stamped by 1:30
 9/26/22 d. Final Revision Date e. Scale 9/26/2022
 Restoration/Mitigation Plan f. Additional Plan or Document Title g. Date 9/26/2022

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:
 Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

a. Public Water Supply b. Land Containing Shellfish c. Prevention of Pollution
 d. Private Water Supply e. Fisheries f. Protection of Wildlife Habitat
 g. Groundwater Supply h. Storm Damage Prevention i. Flood Control

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

a. the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
SE7-2208
MassDEP File # _____
eDEP Transaction # _____
Bourne
City/Town

B. Findings (cont.)

Denied because:

- b. the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3. Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) _____ a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input type="checkbox"/> Bank	_____ a. linear feet	_____ b. linear feet	_____ c. linear feet	_____ d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
6. <input type="checkbox"/> Land Under Waterbodies and Waterways	_____ a. square feet _____ e. c/y dredged	_____ b. square feet _____ f. c/y dredged	_____ c. square feet	_____ d. square feet
7. <input type="checkbox"/> Bordering Land Subject to Flooding	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
Cubic Feet Flood Storage	_____ e. cubic feet	_____ f. cubic feet	_____ g. cubic feet	_____ h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	_____ a. square feet	_____ b. square feet		
Cubic Feet Flood Storage	_____ c. cubic feet	_____ d. cubic feet	_____ e. cubic feet	_____ f. cubic feet
9. <input type="checkbox"/> Riverfront Area	_____ a. total sq. feet	_____ b. total sq. feet		
Sq ft within 100 ft	_____ c. square feet	_____ d. square feet	_____ e. square feet	_____ f. square feet
Sq ft between 100-200 ft	_____ g. square feet	_____ h. square feet	_____ i. square feet	_____ j. square feet



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
SE7-2208
MassDEP File #
eDEP Transaction #
Bourne
City/Town

B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	_____	_____		
	a. square feet	b. square feet		
	_____	_____		
	c. c/y dredged	d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	_____	_____	_____	_____
	a. square feet	b. square feet	c. nourishment	d. nourishment
14. <input type="checkbox"/> Coastal Dunes	_____	_____	_____	_____
	a. square feet	b. square feet	c. nourishment	d. nourishment
15. <input type="checkbox"/> Coastal Banks	_____	_____		
	a. linear feet	b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	_____	_____		
	a. square feet	b. square feet		
17. <input type="checkbox"/> Salt Marshes	_____	_____	_____	_____
	a. square feet	b. square feet	c. square feet	d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	_____	_____		
	a. square feet	b. square feet		
	_____	_____		
	c. c/y dredged	d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	_____	_____	_____	_____
	a. square feet	b. square feet	c. square feet	d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	_____	_____		
	a. c/y dredged	b. c/y dredged		
21. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	16,106 +/-	16,106 +/-		
	a. square feet	b. square feet		
22. <input type="checkbox"/> Riverfront Area	_____	_____		
	a. total sq. feet	b. total sq. feet		
Sq ft within 100 ft	_____	_____	_____	_____
	c. square feet	d. square feet	e. square feet	f. square feet
Sq ft between 100-200 ft	_____	_____	_____	_____
	g. square feet	h. square feet	i. square feet	j. square feet



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
SE7-2208
MassDEP File #
eDEP Transaction #
Bourne
City/Town

B. Findings (cont.)

* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23. Restoration/Enhancement *:

a. square feet of BVW

b. square feet of salt marsh

24. Stream Crossing(s):

a. number of new stream crossings

b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided for in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on _____ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 SE7-2208
 MassDEP File #

 eDEP Transaction #
 Bourne
 City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]
 "File Number SE7-2208 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2208

MassDEP File #

eDEP Transaction #

Bourne

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
- (1) is subject to the Massachusetts Stormwater Standards
- (2) is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
- ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
- iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2208

MassDEP File #

eDEP Transaction #

Bourne

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2208

MassDEP File #

eDEP Transaction #

Bourne

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See attached text

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
SE7-2208
MassDEP File #
eDEP Transaction #
Bourne
City/Town

D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No
2. The Bourne Conservation Commission hereby finds (check one that applies):
 - a. that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw	2. Citation
---------------------------------	-------------

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.
 - b. that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

<u>Bourne wetland protection bylaw</u>	<u>Article 3.7</u>
1. Municipal Ordinance or Bylaw	2. Citation
3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.
The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

see attached text



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 SE7-2208
 MassDEP File #

eDEP Transaction #
 Bourne
 City/Town

E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

11/23/22
 1. Date of Issuance

Please indicate the number of members who will sign this form.

4
 2. Number of Signers

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

[Signature]
 Signature

Greg Bern
 Printed Name

[Signature]
 Signature

BOB GRAY
 Printed Name

[Signature]
 Signature

Peter Palko
 Printed Name

Thomas L. Ligor
 Signature

Thomas L. Ligor
 Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

by hand delivery on

by certified mail, return receipt requested, on

Date

11/23/22
 Date



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2208

MassDEP File #

eDEP Transaction #

Bourne

City/Town

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

Applicant's Name: The Long Point Trust
Address: 176 Scraggy Neck Road

DEP # SE7-2208
Bourne #:

This Order of Conditions is being issued based upon strict accordance with the information submitted in the Notice of Intent filed on 5/18/22 and the Plan of Record titled *Proposed Site Plan in Bourne, MA Prepared For Stephen & Marybeth Bisson Trustees of the Long Point Trust #176 Scraggy Neck Road Map 51 Parcel 1 (Lot 2)* dated Rev. 9/26/22 and stamped by Alan M. Grady and Donald F. Bracken Jr.

Additional materials reviewed include: Restoration/Mitigation Plan dated 9/28/22 by Bracken Engineering.

In addition to the GENERAL CONDITIONS referenced in the Order of Conditions, the Commission has found it necessary to impose the following Special Conditions pursuant to M.G.L. Ch. 131, s.40 and the Town of Bourne Natural Resources Protection Bylaw Article 3.7.

THE SPECIAL CONDITIONS AND BYLAW CONDITIONS CHECKED BELOW APPLY TO YOUR PROPOSAL. NOTE THAT THE ABOVE LISTED GENERAL CONDITIONS ARE AUTOMATICALLY PART OF THIS ORDER OF CONDITIONS.

SPECIAL CONDITIONS Pursuant to M.G.L. C. 131, s. 40.

*** (Pre-Construction) ***

- 1. This Order of Conditions shall apply to any successor in interest or successor in control of the property.
- 2. NO WORK SHALL BEGIN until General Condition #9 has been complied with. The Commission must be in receipt of the Registry information certificate BEFORE work begins. An Enforcement Order will be issued if work is prematurely begun without compliance with this condition.
- 3. ALL CONSTRUCTION MUST COMPLY WITH THE ABOVE-REFERENCED PLANS AND THE CONDITIONS OF THIS ORDER. ANY CHANGES INTENDED TO BE MADE IN THE PLANS OR IN THE WORK, SHALL REQUIRE THE APPLICANT TO FILE A NEW NOTICE OF INTENT, OR TO INQUIRE OF THE COMMISSION IN WRITING WHETHER THE CHANGE IS SUBSTANTIAL ENOUGH TO REQUIRE A NEW FILING. NO CHANGE IN PLAN OR WORK, UNDER THIS FILING IS PERMISSIBLE WITHOUT A NEW NOTICE OF INTENT, OR PERMISSION FROM THE COMMISSION. FAILURE TO COMPLY WITH THIS CONDITION WILL RESULT IN THE ORDER OF CONDITIONS (PERMIT) BEING REVOKED.
- 4. The Plan of Record shall be in full compliance with Appendix G of 780 CMR Massachusetts State Building Code and the requirements the Federal Emergency Management Agency (FEMA). Specific design requirements for construction in flood zones (A, A1-A30, AE, AC, AH, V1-V30, and VE) shall be determined by the Town of Bourne Building Inspector. The final foundation design APPROVED by the Building Inspector shall automatically become a part of the Plan of Record. Noncompliance with any of the requirements of Appendix G of 780 CMR or those of the Building Inspector shall constitute a violation of the Order of Conditions and will be grounds for Enforcement Action and/or the non-issuance of the Certificate of Compliance. Upon requesting a Certificate of Compliance the applicant must present PROOF that his/her project has been designed according to the Plan of Record and to the satisfaction of the Building Inspector.
- 5. Prior to the installation of the subsurface sewage disposal system, you are advised of the necessity to comply with, or receive a variance from, the local Board of Health Regulations & Bylaws and obtain a valid health permit. The Order of Conditions re-emphasizes this requirement and prohibits any construction prior to obtaining a Board of Health permit. A leaching facility must be 150' from any wetland resource area (including the top of the coastal bank) unless a variance or other approval has been granted by the Board of Health.

- 6. Since the building was or is to be constructed after August 10, 1978, and is or will be within 100' of the top of an eroding coastal bank, (310 CMR, 10.30), this Order and the Certificate of Compliance incorporate 310 CMR 10.30(5) which states: "no coastal engineering structure, such as a bulkhead, revetment, or seawall shall be permitted on an eroding bank at any time in the future to protect the project allowed by this Order of Conditions."
- 7. The applicant as a condition of this Order, grants to the Commission members, and agents of the Commission the right to enter, inspect, and sample the premises to evaluate compliance with the conditions and performance standards stated in this Order, the Act, and 310 CMR 10.00 and the Town of Bourne Wetlands Protection Bylaw Article 3.7, and may require the submittal of any data deemed necessary by the Commission for that evaluation.
- 8. An on-site pre-construction inspection meeting must be held between the Bourne Conservation Commission and/or agent, the contractor responsible for implementing the project, and if applicable, the outside consultant/representative responsible for permitting. The Bourne Conservation Commission must be contacted in writing at least two weeks prior to the scheduled meeting. All erosion controls must be installed at the location of the project prior to the pre-construction meeting, unless otherwise agreed upon by the applicant and the Bourne Conservation Commission.
- 9. The landowner and/or his contractor will notify the Commission in writing 5 days prior to the start of work. The letter shall state the name, address, telephone number (business & home phone) of the project supervisor who will be responsible for insuring on-site compliance with this Order. All sedimentation/erosion control devices shall be installed BEFORE the start of work.
- 10. This document shall be included in all construction contracts and subcontracts dealing with the work proposed and shall supersede other contract requirements.
- 11. No underground petroleum product storage tanks are allowed within 100' of any wetland or within any velocity (V) floodzone as indicated on the most recent FEMA floodzone maps.

*** (Construction) ***

- 12. The project engineer and contractors (and all subcontractors) must be informed of the conditions of this Order. A copy of this Order of Conditions must be available at all times at the construction site for reference. The Applicant is held responsible for compliance with this Order of Conditions.
- 13. Whatever erosion control measures are indicated on the plan, they shall consist of at least a double row of staked hay-bales and these must be maintained throughout the construction period. It is the applicant's responsibility to take additional appropriate measures to control sedimentation/erosion into the wetland areas.
- 14. The Applicant must employ and maintain suitable erosion control measures such as staked hay bales, siltation curtains, bark mulch, jute netting, etc. as shown on the Plan of Record and/or addressed in the Notice of Intent. This siltation control shall be maintained until all disturbed areas are successfully revegetated. Additional erosion controls shall be kept on-site in order to respond to unforeseen circumstances.
- 15. The applicant, owner, successors or assignees shall be responsible for maintaining any on-site drainage structures and out falls, assuring the lasting integrity of vegetative cover on the site and site activities so as to prevent erosion, siltation, sedimentation, chemical contamination or other detrimental impact to the on-site wetland resource area(s) and/or off-site wetland resource area(s). The maintenance activities specified in this Order shall not expire with the issuance of the Certificate of Compliance and shall continue in perpetuity. It is the responsibility of the property owner of record to see that maintenance conditions are complied with as required by this Order.

- 16. Gutters, downspouts and drywell must be installed to collect all roof runoff.
- 17. All drainage must be directed into a leaching type catch basin before being discharged towards or into any wetland or surface water body. All catch basins must incorporate measures to insure the removal of pollutants such as oil and gas and must provide for adequate sediment retention. The basins and oil absorbent material shall be regularly cleaned and maintained.
- 18. Any refuse material generated through the project construction will be removed to an approved landfill, and in no case will these materials be allowed to be buried or disposed of on site or on abutting property. REMOVAL MUST BE DONE WEEKLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. REFUSE MUST NOT BE ALLOWED TO ENTER ANY WETLAND AREAS.
- 19. Used petroleum products from the operation or maintenance of construction equipment and construction debris shall be collected weekly and disposed of off-site at an approved landfill. No on-site disposal is permitted.
- 20. Only rubber tired or tracked vehicles utilizing swamp mats/planks will be permitted to traverse the following resource areas: beaches, dunes, and saltmarshes.
- 21. Use of heavy equipment shall be confined to inside the limit of work as shown on the Plan of Record. All work shall be accomplished from the UPLAND side of the limit of work line.
- 22. The use of heavy equipment upon the saltmarsh, dunes or coastal beach is PROHIBITED. All work within these resource areas must be done by hand or with suitable equipment approved by the Commission
- 23. The proposed stairs shall be elevated __ feet above the existing grade. All pilings should be supported by SONO tube footings. Excavated materials shall be removed from the coastal bank.
- 24. Driveway must be constructed out of pervious material in perpetuity.
- 25. A landscaping plan including the size, quantity, species and location of plantings including square footage of lawn, mulch, etc. must be submitted and approved by the Conservation Agent and/or the Commission prior to receiving the occupancy permit.
- 26. All vegetation must be predominantly native and non-invasive. All plants must be allowed to grow to maturity before pruning. All plantings will be monitored for a minimum of two growing seasons and any plants that do not survive must be replaced.

*** (Post Construction) ***

- 27. Upon completion of your project you must apply for a Certificate of Compliance. This Order will not be considered complied with until the Certificate of Compliance has been requested, granted and RECORDED at the Registry of Deeds in Barnstable. To insure timely issuance of the Certificate of Compliance you must request the Certificate within 30 days of the completion of your project.
- 28. Prior to the issuance of a Certificate of Compliance, the project engineer or consultant shall certify that the project has been completed in compliance with this Order and the original Plan of Record. Any variations from the approved plan should be clearly noted and reasons given to justify the noncompliance. (see Bylaw condition/requirement also)

29. An as-built plan, signed and stamped by a registered professional engineer or land surveyor in the Commonwealth of Massachusetts shall be submitted to the Commission at the same time as a written request for a Certificate of Compliance and shall specify how the completed plan differs from that shown on the plans referred to in the Order of Conditions. The as-built plan shall include, but not be limited to the following:

All pipe/culvert inverts for inflow and outfalls, pipe slope, size and composition; location of other drainage structures; limits of fill or alteration; location of any structure and pavement within 100' of any wetland resource area (including the top of the coastal bank); the edge of each wetland resource area; the grade contours within 100' of the wetland resource areas

SPECIAL CONDITIONS pursuant to the Bourne Wetland Protection By-Law Article 3.7

1. The total lawn area for this lot shall not exceed ___ s.f. Lawn fertilizer is a known source of nitrogen loading, which causes pollution of coastal waters. Phosphates are known causes of freshwater eutrophication.
2. All new habitable buildings, and accessories thereto, shall be setback at least fifty (50) feet from any wetland resource area as per Article 3.7 Town of Bourne Wetlands Protection By-Laws unless the Commission has specifically approved a lesser setback distance.
3. A natural vegetation (buffer zone) must be maintained between any resource area and altered area as per the site plan of record.
4. No clear-cutting of standing trees, brush, or surface vegetation is allowed outside of the approved limit of work as shown on the approved Plan of Record. Any additional vista pruning or vegetation removal not identified on the Plan of Record will require additional coordination and/or filing with the Conservation Commission.
5. All excavation will immediately halt if any historical or archeological artifacts are uncovered and the Applicant will report this information immediately to the Commission, the Town of Bourne Historical Commission and the Massachusetts Historical Commission. Failure to report this information will be grounds to revoke this permit.
6. During construction for this project, an on-site foreman, directing engineer or designated construction manager and the excavating contractor shall have a copy of this Order at the site, shall familiarize him or herself with the conditions of this permit, and shall adhere to said conditions.
7. To insure timely issuance of the Certificate of Compliance, requests should be made within 30 days of the completion of the project.
8. In order to determine whether or not the Order of Conditions (OOC) has been properly complied with, the Commission requires that you provide a copy of the foundation As-built. This is necessary to determine if you have complied with your original Plan of Record and Notice of Intent prior to the Commission issuing the Certificate of Compliance.
9. The installation of a garbage grinder is strictly PROHIBITED under this Order of Conditions and it is recommended that the applicant have the Septic System serviced (checked & pumped if necessary) every two years. This condition shall continue in perpetuity.
10. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a Section 10 and/or Section 404 Permit from the United States Army Corps of Engineers for the proposed project.

- 11. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a Water Quality Certificate from the DEP Division of Water Pollution Control relative to 401
- 12. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a License from the DEP Division of Wetlands and Waterways relative to Chapter 91, The Public Waterfront Act & its regulations at 310 CMR 9.00.

*** (Docks, Piers, Floats, Dredging, etc.) ***

- 13. Post dredging soundings shall be made by the project engineer and submitted to the Con-Com for review.
- 14. The structure shall be continuously maintained in a manner that will insure safe use and shall be subject to inspection by the Harbormaster at anytime.
- 15. The public shall not be hindered from free access over or under the proposed structure for the purposes of fishing or fowling between the tide lines.
- 16. The structure shall be subject to annual review and approval by the Harbormaster in accordance with M.G.L. Chapter 91, Section 10A and/or current Town of Bourne Waterways Regulations.
- 17. No ramps, floats or other parts of the proposed structure are to be stored upon the saltmarsh, coastal dune, coastal bank or any other wetland resource area except the floodzone. All floats and other seasonal structures must be removed from the waterways from October 15 to April 1st and stored in a suitable UPLAND AREA.
- 18. Any changes in the configuration of the proposed structure would require an additional filing with the Commission and/or approval of the Harbormaster.
- 19. Any shellfish that must be relocated as a result of the proposed construction will be done at the applicant's expense and under the direction of the Department of Natural Resources (Shellfish Warden)
- 20. Should the proposed float(s) and/or other parts of the proposed structure break loose it will be the responsibility of the applicant to recover same and repair any damage to property of other parties that occurred due to the loose structure.
- 21. If it should be determined at a later date that this structure is an interference to navigation, the applicant will be required to down size the structure accordingly under the direction of the Harbormaster.
- 22. Piles must be driven, not jetted into the substrate.
- 23. Only non-leaching CCA treated lumber/piles or galvanized steel piles will be permitted for use on structures that will be placed into the water. No creosote is allowed.
- 24. Deck spacing must be spaced at 3/4 - 1" apart to allow for light penetration to the vegetation below the decking.
- 25. If ice damage or extreme weather conditions cause piling(s) to be damaged, an RDA must be filed to restore the stability, safety and function of the structure. The Conservation Commission may use discretion for cases that may disturb the wetland resource areas to a point that may require the filing of a Notice of Intent.

ADDITIONAL SPECIAL CONDITIONS pursuant to the Bourne Wetland Protection By-Law Article 3.7

ASC-1) All planting areas must be monitored for three years and an annual monitoring report must be submitted to the Conservation Department. Any plants that do not survive must be replaced.

ASC-2) Temporary shoring must be installed to protect the coastal bank during foundation construction.

ASC-3) Vehicular access routes to the site must be inspected weekly to ensure no road or vegetation damage occurs. If damage is observed, the area must be restored.

General condition Number(s), Special Condition Number(s), Bylaw Conditions Number(s) above shall continue in perpetuity beyond the limitations of this Order and with the sale of the property to others.

The Applicant is reminded of his/her right to Appeal this Order or any part herein. This Appeal must be a dual appeal to both DEP within 10 days and to Superior Court pursuant to M.G.L c. 249 s. 4 within 60 calendar days of the issuance of this Order of Conditions.

The Commonwealth of Massachusetts

DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING



310 CMR 11.00 - 17.00

Office of the Secretary of State
Michael Joseph Conolly, Secretary

\$2.25

PLU #17

91887



The Commonwealth of Massachusetts
SECRETARY OF STATE

REGULATION FILING AND PUBLICATION

1. REGULATION CHAPTER NUMBER AND HEADING:

310 CMR 11.00 - 17.00

2. NAME OF AGENCY:

DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

3. THIS DOCUMENT IS REPRINTED FROM THE CODE OF MASSACHUSETTS REGULATIONS AND CONTAINS THE FOLLOWING:

310 CMR 11.00 ENVIRONMENTAL CODE TITLE I: GENERAL APPLICATION AND ADMINISTRATION
12.00 - 14.00 RESERVED
15.00 THE STATE ENVIRONMENTAL CODE TITLE V: MINIMUM REQUIREMENTS FOR
THE SUBSURFACE DISPOSAL OF SANITARY SEWAGE
16.00 - 17.00 RESERVED

UNDER THE PROVISIONS OF MASSACHUSETTS GENERAL LAWS, CHAPTER 30A, SECTION 6 AND CHAPTER 233, SECTION 75 THIS DOCUMENT MAY BE USED AS EVIDENCE OF THE ORIGINAL DOCUMENTS ON FILE WITH THE STATE SECRETARY.

COMPILED AS IN FULL FORCE AND EFFECT 12/31/86

A TRUE COPY, ATTEST:

Michael Joseph Connolly
MICHAEL JOSEPH CONNOLLY,

SECRETARY OF STATE

310 CMR: DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

310 CMR 11.00: GENERAL APPLICATION AND ADMINISTRATION ENVIRONMENTAL
CODE, TITLE 1

Section

- 11.01: Scope of Application; Effective Date
- 11.02: Local Rules and Regulations
- 11.03: Inspection -- Interference
- 11.04: Methods of Enforcement by Local Boards of Health
- 11.05: Emergency
- 11.06: Enforcement by the Department of Environmental Quality Engineering of
Commonwealth
- 11.07: Service of Orders
- 11.08: Hearing
- 11.09: Appeal
- 11.10: Penalties
- 11.11: Variance
- 11.12: Variance, Grant of Special Permission: Expiration, Modification, Suspension of
- 11.13: Partial Invalidity

11.01: Scope of Application; Effective Date

(1) Application. The State Environmental Code shall apply throughout the Commonwealth unless and to the extent that the provisions of any title are expressly limited.

(2) Effective Date. This title shall be effective and have the force of law upon filing with the Secretary of State. Every other title shall be effective and have the force of law in accordance with the provisions of each. If a title fails to state a date from when it is to be effective, it shall become effective from the day following the date it is filed with the Secretary of State.

11.02: Local Rules and Regulations

Unless otherwise expressly provided in any other title, the legally designated health authority of any city, town, county or other legally constituted governmental unit within the Commonwealth having the usual powers and duties of the board of health may, as it considers necessary to promote and protect the health and well being of the particular locality under its jurisdiction, adopt under its own legal power as exists in the General Laws any rules or regulations containing requirements stricter than those contained in this code. Nor should the existence of this code limit or otherwise affect the power of any health authority with respect to any matter for which this code makes no provision.

11.03: Inspection -- Interference

(1) Inspection. In order properly to carry out their respective responsibilities under this code and properly to protect the health, environment and well-being of the people of the Commonwealth, the board of health and the Department of Environmental Quality Engineering or the authorized agent or representative of either are authorized to enter, examine, or survey at any reasonable time such places as they consider necessary, and otherwise to conduct such examination or survey as is expressly provided in any other title.

(2) Interference. If any owner, occupant, or other person refuses, impedes, inhibits, interferes with, restricts, or obstructs entry and free access to every part of the structure, operation or premise where inspection authorized by this code is sought, the board of health or the Commissioner of the Department of Environmental Quality Engineering or the authorized agency or representative of either may:

- (a) seek in a court of competent jurisdiction a search warrant so as to apprise the owner, occupant or other person concerning the nature of the inspection and justification for it and may seek the assistance of police authorities in presenting said warrant and/or

11.03: continued

(b) revoke or suspend any license, permit or other permission regulated under this code where inspection of the structure, operation or premises is sought to determine compliance with this code.

11.04: Methods of Enforcement by Local Boards of Health

Unless otherwise expressly provided in any title of this code, each board of health may enforce this code by fine in accordance with 310 CMR 11.10, or otherwise at law or in equity in the same manner that local rules and regulations are enforced.

11.05: Emergency

(1) General. Whenever an emergency exists in which the interest of protecting the public health or the environment requires that ordinary procedures be dispensed with, the board of health or its authorized agent, acting in accordance with the provisions of Section 30 of Chapter 111 of the General Laws, may, without notice or hearing, issue an order reciting the existence of the emergency and requiring that such action be taken as the board of health deems necessary to meet the emergency. Notwithstanding any other provision of this code, any person to whom such order is directed shall comply therewith within the time specified in the order. Each day's failure to comply with the order shall constitute a separate offense. Upon compliance with the order and within seven days after the day the order has been served, he may file a written petition in the office of the board of health requesting a hearing. He shall be granted a hearing as soon as possible. The procedures for such hearing shall otherwise conform with the hearing requirements which would have existed had the order been issued under non-emergency circumstances.

(2) Emergency Powers of the Department. No provision of this regulation shall be construed as a limitation on the emergency powers of the Department of Environmental Quality Engineering of the Commonwealth.

11.06: Enforcement by Department of Environmental Quality Engineering of the Commonwealth

(1) General. If as a result of any study, inspection, or survey made under 310 CMR 11.03 or under the provisions of any other title of this code the Commissioner of Environmental Quality Engineering or his authorized representative determines that compliance with this code has not been effected, he shall, in writing, notify the appropriate board of health of such determination, allotting a reasonable time in which compliance shall be effected, and requesting that the board of health, in writing, notify the Commissioner of Environmental Quality Engineering of what action it has taken, and what other action has been taken to effect compliance with this code. If the Commissioner is not so notified, or if after notification he determines that action sufficient to effect compliance with the provisions of this code has not been taken, the local board of health shall be deemed to have failed to effect compliance with this code.

(2) Failure to Enforce Code by Board of Health. Whenever any local board of health has failed after a reasonable length of time to enforce this code, the Commissioner of Environmental Quality Engineering of the Commonwealth or his designated representative may act for the Commonwealth in any way that the local board of health is authorized to act to effect compliance.

11.07: Service of Orders

Unless otherwise stated in any title of this code, orders issued under the provisions of this code shall be served on all persons responsible for the violation of regulations. These orders shall be served in the following manner:

- (a) personally, by any person authorized to serve civil process, or
- (b) by any person authorized to serve civil process by leaving a copy of the order at his last and usual place of abode, or

11.07: continued

- (c) by sending him a copy of the order by registered or certified mail, return receipt requested, if he is within the Commonwealth, or
- (d) if his last and usual place of abode is unknown or outside the Commonwealth, by posting a copy of the order in a conspicuous place on or about the premises and by advertising it for at least three out of five consecutive days in one or more newspapers of general circulation within the municipality wherein the building or premises affected is situated.

11.08: Hearing

(1) Procedure for Requesting and Holding Hearing. Unless otherwise specified in this code, the person or persons to whom any order has been served pursuant to any regulation of this code may request a hearing before the board of health by filing with the board of health within 7 days after the day the order was served, a written petition requesting a hearing on the matter. Upon receipt of such petition, the board of health shall set a time and place for such hearing and shall inform the petitioner thereof in writing. The hearing shall be commenced not later than 30 days after the day on which the order was served. The board of health, upon application of the petitioner, may postpone the date of hearing for a reasonable time beyond such 30-day period if in the judgment of the board of health the petitioner has submitted a good and sufficient reason for such postponement.

(2) Hearing of Petitioner. At the hearing the petitioner shall be given an opportunity to be heard and to show why the order should be modified or withdrawn.

(3) Procedure by the Board After Hearing. After the hearing the board of health shall sustain, modify, or withdraw the order and shall inform the petitioner in writing of its decision. If the board of health sustains or modifies the order, it shall be carried out within the time period allotted in the original order or in the modification.

(4) Public Record. Every notice, order, or other record prepared by the board of health in connection with the hearing shall be entered as a matter of public record in the office of the clerk of the city or town, or in the office of the board of health.

(5) Hearing Petition Not Submitted, or Sustaining of Order. If a written petition for a hearing is not filed with the board of health within 7 days after the day an order has been served or if after a hearing the order has been sustained in any part, each day's failure to comply with the order as issued or modified shall constitute an additional offense.

11.09: Appeal

Any person aggrieved by the final decision of the board of health with respect to the denial of plan approval, the denial of revocation or failure to renew a license, or with respect to any order issued under the provisions of this code may seek relief therefrom in any court of competent jurisdiction, as provided by the laws of this Commonwealth.

11.10: Penalties

(1) Interference After Search Warrant Presented. Any owner, occupant, or other person who refuses, impedes, inhibits, interferes with, restricts or obstructs entry and free access to every part of the structure, operation or premises where inspection authorized by this code is sought after a search warrant has been obtained and presented in accordance with 310 CMR 11.03(2) shall be fined not less than ten nor more than five hundred dollars.

(2) Failure to Comply With an Order. Any person who shall fail to comply with any order issued pursuant to the provisions of this code shall upon conviction be fined not less than ten nor more than five hundred dollars. Each day's failure to comply with an order shall constitute a separate violation.

11.10: continued

(3) Penalties Not Otherwise Provided. Any person who shall violate any provision of this code for which penalty is not otherwise provided in any of the General Laws or in any other provision of this code shall upon conviction be fined not less than ten nor more than five hundred dollars.

11.11: Variance

The board of health may vary the application of any provision of this article with respect to any particular case when, in its opinion, the enforcement thereof would do manifest injustice; provided, that the decision of the board of health shall not conflict with the spirit of these minimum standards. Any variance granted by the board of health shall be in writing. A copy of any such variance shall, while it is in effect, be available to the public at all reasonable hours in the office of the clerk of the city or town, or in the office of the board of health, and notice of the grant of variance shall be filed with the Commissioner of Environmental Quality Engineering of the Commonwealth.

11.12: Variance, Grant of Special Permission: Expiration, Modification, Suspension of

Any variance or other modification authorized to be made by this Title may be subject to such qualification, revocation, suspension, or expiration as the board of health or Commissioner of Environmental Quality Engineering expresses in its grant. A variance or other modification authorized to be made by this Title may otherwise be revoked, modified, or suspended, in whole or in part, only after the holder thereof has been notified in writing and has been given an opportunity to be heard, in conformity with the requirements for an order and hearing of 310 CMR 11.07 and 11.08.

11.13: Partial Invalidity

If any Title, regulation, paragraph, sentence, clause, phrase, or word of this code shall be declared invalid for any reason whatsoever, that decision shall not affect any other portion of this code, which shall remain in full force and effect; and to this end the provisions of this code are hereby declared severable.

REGULATORY AUTHORITY

310 CMR 11.00: M. G. L. c. 21A, s. 13.

310 CMR: DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

(310 CMR 12.00 THROUGH 14.00: Reserved)

NON-TEXT PAGE

310 CMR: DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

310 CMR 15.00: MINIMUM REQUIREMENTS FOR THE SUBSURFACE DISPOSAL OF
SANITARY SEWAGE STATE ENVIRONMENTAL CODE, TITLE 5

Section

PART I SUBSTANTIVE PROVISIONS

- 15.01: Definitions
- 15.02: General Requirements
- 15.03: Location
- 15.04: Building Sewers in Unsewered Areas
- 15.05: Grease Traps
- 15.06: Septic Tanks
- 15.07: Dosing Tanks
- 15.08: Siphons
- 15.09: Pumps
- 15.10: Distribution Boxes
- 15.11: Leaching Pits
- 15.12: Leaching Galleries
- 15.13: Leaching Chambers
- 15.14: Leaching Trenches
- 15.15: Leaching Fields
- 15.16: Privies and Chemical Toilets
- 15.17: Humus Toilets
- 15.18: Miscellaneous Disposal
- 15.19: Transportation and Disposal of Privy, Cesspool, and Septic Tank Contents

PART II ENFORCEMENT

- 15.20: Variance
- 15.21: Variance, Grant of Special Permission: Expiration, Modification, Suspension of
- 15.22: General Enforcement
- 15.23: Orders: Service and Content
- 15.24: Hearing
- 15.25: Appeal
- 15.26: Penalties
- 15.27: Severability
- (15.28 through 15.98: Reserved)
- 15.99: Forms (Note: Forms apply to all of 310 CMR 15.00)

310 CMR 15.00, Title 5 of the Massachusetts State Environmental Code has been promulgated to provide minimum standards for the protection of public health and the environment when circumstances require the use of individual systems for the disposal of sanitary sewage in areas where municipal sewage systems are not accessible. The following rules, regulations, and standards are deemed by the Department of Environmental Quality Engineering to be generally adequate to protect the public health and the environment in the interests of present and future citizens of the Commonwealth.

Specific, identifiable local conditions may require more stringent regulations to protect these interests. However, in the absence of such specific conditions, the following Code when properly enforced, should afford adequate protection. In general, enforcement, proper care and maintenance, rather than more stringent regulation, are the best means to assure that such systems will serve the purpose intended and prevent danger to public health and the environment.

PART I: SUBSTANTIVE PROVISIONS

15.01: Definitions

The words, terms, or phrases listed below for the purpose of this Title shall be defined and interpreted as follows:

Approving Authority. The legally constituted body having the rightful power to permit, certify, or approve works for the disposal of sewage or for the treatment of sewage or industrial wastes.

15.01: continued

Building Sewer. The pipe which begins 10 feet outside the inner face of the building wall and extends to a public sewer, septic tank, or other place of sewage disposal.

Cellar Wall. The inside of the cellar wall above the footings and below the ground surface.

Cesspool. A covered pit with open-jointed lining in its bottom portions into which raw sewage is discharged, the liquid portion of the sewage being disposed of by seeping or leaching in the surrounding porous soil, and the solids or sludge being retained in the pit to undergo partial decomposition before occasional or intermittent removal.

Coastal Wetland, shall mean any bank, marsh, swamp, flat or other lowland subject to tidal action.

Cover Material. The earth materials placed on top of leaching facilities to bring the area to finish grade.

Designer. The person authorized by law to prepare plans for subsurface sewage disposal facilities for submittal to public agencies.

Deep Observation Hole. An open pit dug to permit the examination of the soil and to determine the ground water elevation.

Disposal Works Installer. Any person, firm, corporation, or contractor who installs, alters, constructs, or repairs individual sewage disposal systems.

Distribution Box. A watertight structure which receives settled sewage and distributes it in substantially equal portions to two or more lines leading to a leaching area.

Distribution Line. The pipe used for dispersion of sewage into leaching trenches or leaching fields.

Dosing Tank. A watertight structure placed between a septic tank and distribution box, and equipped with a siphon or a pump designed to discharge settled sewage intermittently to a leaching facility and to provide a rest period between such discharges.

Fill. The earth materials placed beneath and around a leaching facility.

Grease Trap. A watertight structure in which grease is separate from sewage.

Grey Water. Sanitary sewage, excluding the waste discharges from water closets, i.e., any water-carried putrescible waste resulting from the discharge of laundry tubs, washing machines, sinks, showers, dishwashers, or any other source.

Ground Water Elevation. That elevation at which water is observed weeping or flowing from the walls of or standing in a deep observation hole.

H-20 Loading. Standard H-20 truck loading as specified by the American Association of State Highway Officials.

Humus Toilet. A self-contained toilet from which no liquid or solid waste materials are regularly discharged and from which a humus-like end product is produced.

Impervious Material. Material having a percolation rate greater than 30 minutes per inch, including, but not limited to bedrock, peat, loam and organic matter.

Individual Sewage Disposal System. A subsurface sewage disposal system owned and operated by a person as defined in this regulation.

15.01: continued

Industrial Waste. Any water carried or liquid waste resulting from any process of industry, manufacture, trade, or business, or from the development or recovery of any natural resource.

Invert. The lowest portion of the internal cross section of a pipe.

Leaching Facility. An approved structure used for the dispersion of sewage effluent into the soil. These include leaching pits, galleries, chambers, trenches, and fields as described in 310 CMR 15.11 through 15.15.

Lot. An area of land in one ownership, with definite boundaries.

Maximum Ground Water Elevation. Maximum ground water elevation means the height of the ground water table when it is at its maximum level or elevation. This level is usually reached during the months of December through April, and allowances should be made therefore at other times of the year.

Mean High Water. The average of the (tidal) high waters over a 19 year period.

Multiple Compartment Tanks. A septic tank containing more than one settling compartment in series.

Open Drain. Any ditch used for the conveyance of water.

Owner. Every person who alone, or jointly, or severally with others (a) has legal title to any dwelling or dwelling unit, or (b) has care, charge, or control of any dwelling or dwelling unit as agent, executor, executrix, administrator, administratrix, trustee, lessee, or guardian of the estate of the holder of legal title. Each such person thus representing the holder of legal title is bound to comply with the provisions of these minimum standards as if he were the owner. Owner also means every person who operates a rooming house.

Percolation Test. A means of determining the suitability of soil for the subsurface disposal of sewage.

Person. Every individual, partnership, corporation, firm, association, or group, including a city, town, county, the Commonwealth, or other governmental unit, owning property or carrying on an activity regulated by this Title.

Privy. A structure used for the disposal of excreta without water transport. It consists of a shelter built above a pit or vault in the ground into which excrement is deposited.

Reserve Area. An additional area of at least equal capacity as the original sewage disposal area, suitable for subsurface sewage disposal, and upon which no permanent structures will be constructed.

Sanitary Sewage. Any water-carried putrescible waste resulting from the discharge of water closets, laundry tubs, washing machines, sinks, showers, dishwashers, or any other source.

Sanitary Sewer. A pipe which carries sewage without storm, surface, or ground waters.

Scum. A mass of solids floating at the surface of a septic tank.

Septage. That material removed from any part of an individual sewage disposal system.

Septic Tank. A watertight receptacle which receives the discharge of sewage from a building sewer, and is designed and constructed so as to permit the retention of scum and sludge, digestion of the organic matter, and discharge of the liquid portion to a leaching facility.

15.01: continued

Sewage. Sewage means sanitary sewage.

Sewage Disposal Area. The area used for subsurface dispersion of the liquid portion of sewage.

Subsurface Drain. Any underground conduit used for the conveyance of water, including curtain drain.

Swamp. shall mean areas where ground water is at or near the surface of the ground for a significant part of the growing season or where runoff water from surface drainage frequently collects above the soil surface.

Watercourse. Any natural or man-made stream, pond, lake, wetland, coastal wetland, swamp or other body of water and shall include wet meadows, marshes, swamps, bogs and areas where ground water, flowing or standing surface water or ice provide a significant part of the supporting substrate for a plant community for at least five months of the year.

15.02: General Requirements*

(1) Disposal Works Construction Permit. No individual sewage disposal system or other means of sewage disposal shall be located, constructed, altered, repaired, or installed where a common sanitary sewer is accessible adjoining the property and where permission to enter such sewer can be obtained from the authority having jurisdiction over it (310 CMR 15.03(11)) or if a common sanitary sewer is not accessible until a permit for its location, construction, alteration, repair, or installation shall have been issued by the Board of Health. A permit shall not be issued for any system of individual sewage disposal when the total volume of the sewage to be disposed of on any lot is in excess of 15,000 gallons per day, or where sewage treatment facilities are proposed on the lot to be served, until the plans for such system have been approved by the Massachusetts Department of Environmental Quality Engineering in accordance with M.G.L. c. 111, s. 17. Where sewage flows on a lot exceed 15,000 gallons per day, the Department of Environmental Quality Engineering may require additional treatment of the waste prior to its disposal to the ground.

(2) Disposal Works Installer's Permit.** No person or firm shall engage in the construction, alteration, installation, or repair of any individual sewage disposal system without first obtaining a Disposal Works Installer's Permit from the Board of Health. Such permits shall expire at the end of the year in which they are issued unless earlier revoked for cause by the Board of Health.

(3) Septage Handler's Permit. No person or firm shall engage in the pumping or transport of the contents of any part of an individual sewage disposal system without first obtaining a Septage Handler's Permit from the Board of Health, in accordance with M.G.L. c. 111, s. 31A. The application for such permit shall state the site of the disposal, and such site and method of disposal must have been approved by the Department of Environmental Quality Engineering, regardless of the stated volume of material disposed of at that site. Such permits shall be contingent upon compliance with 310 CMR 15.19(1) and shall expire at the end of the year in which they are issued unless earlier revoked for cause. A list of permits issued shall be submitted to the appropriate regional office of the Department of Environmental Quality Engineering at the beginning of each calendar year.

*The applicant should be aware of his obligation to comply with the requirements established by the Division of Water Pollution Control pursuant to M.G.L. c. 21 s. 43, and the Wetlands Protection Act, M.G.L. c. 131, s. 40.

**All systems for the purification or disposal of industrial wastes must be approved by the Department of Environmental Quality Engineering for any flow, as required by M.G.L. c. 111, s. 17.

15.02: continued

(4) Application for Disposal Works Construction Permit. An application for a disposal works construction permit shall be submitted to the Board of Health and must be accompanied by a plan of the proposed sewage disposal facilities. Such permit shall be invalidated if conditions different than those set forth in the application are found prior to or during actual construction of the individual sewage disposal system. In any event, a permit so granted shall expire two years from the date of issue unless construction of the system of individual sewage disposal is begun before the expiration date or unless this Title has been revised.

(5) Plan of Sewage Disposal System. The submitted plan must show as a minimum: the lot to be served, location and dimensions of the system (including reserve area), design calculations, existing and proposed contours, location and log of deep observation holes, location and results of percolation tests, location of any streams, surface and subsurface drains and wetlands within 100 feet of the sewage disposal system, known sources of water supply within 200 feet of the sewage disposal system, location of any proposed well to serve the lot, location of water lines on the property, maximum ground water elevation in the area of the sewage disposal system, and a profile of the system. The plan must be prepared by a Professional Engineer or other professional authorized by law to prepare such plans.

(6) Use. The use of an individual sewage disposal system shall be in compliance with the terms of the permit issued therefore and shall not exceed the design capacity of the system. Design capacity shall not be reduced for seasonal use.

(7) Building or Plumbing Permits/Subdivision Plans. No building permit, foundation permit, special building permit, or plumbing permit shall be issued until a Sewer Entrance Permit or Disposal Works Construction Permit has first been obtained, unless the Board of Health determines that the existing sewage disposal system is adequate for a proposed alteration or addition to an existing dwelling.

(8) Certificate of Compliance. A new individual sewage disposal system and alteration or repairs to an existing individual system shall not be placed in service, nor shall new dwellings or buildings or additions thereto, which must rely on new individual sewage disposal systems for sewage disposal, be occupied until the Board of Health has issued a Certificate of Compliance indicating that said disposal system has been located, constructed, altered, or repaired in compliance with the terms of the permit and the requirements of this Title. The Board of Health shall require inspection of all construction by the designer or by an agent of the Board of Health and require him to certify in writing that all work has been completed in accordance with the terms of the permit and the approved plans. Such written certification by the designer is mandatory for all work approved by the Department of Environmental Quality Engineering with the additional provision that a copy of the written certification must be submitted to the Department of Environmental Quality Engineering by the designer.

(9) Fees. A fee for the issuance of a construction permit may be charged by the Board of Health at the time an application is made for the permit.

(10) Inspection. The Board of Health or Department of Environmental Quality Engineering may, within its jurisdiction, inspect the installation of all individual sewage disposal systems and may, at any stage of construction, require necessary modifications if conditions are encountered that were not originally observed. In order to facilitate timely inspections, the installer shall provide a reasonable period of notification when requesting an inspection, and the inspection shall be performed within a reasonable period of time by the Board of Health or its agent.

(11) Discharge to Watercourses. Sanitary sewage, grey water, the effluent from any sewage or waste treatment plant, or other polluting water, shall not be discharged into or allowed to flow by means of pipes, drains, etc., into any

15.02: continued

lake, pond, stream, tidal water, watercourse, or open or covered drain tributary thereto, unless approved by the Massachusetts Department of Environmental Quality Engineering.

(12) Connection to Common Sanitary Sewer.* Individual sewage disposal systems or other means of sewage disposal shall not be approved where a common sanitary sewer is accessible adjoining the property and where permission to enter such a sewer can be obtained from the authority having jurisdiction over it. The Board of Health may require the owner or occupant of an existing building or buildings, wherever a common sanitary sewer is accessible in an abutting way, to cause such building or buildings to be connected with the common sanitary sewer in a manner and within a period of time satisfactory to the Board of Health.

(13) Volume of Sanitary Sewage. Each unit of the disposal system shall be designed to treat adequately the estimated volume of sanitary sewage to be discharged from the premises to be served. The volume of such flow should be based on the estimated maximum contributory population and the resultant maximum expected daily quantities of sewage as determined from the table below. No cooling water, ground water, discharge of roof drains, or other uncontaminated water shall be discharged to the sanitary sewage disposal system.

SEWAGE FLOW ESTIMATES **

<u>Type of Establishment</u>	<u>Gallons per Person Per Day</u>
Boarding Schools, Colleges _____	65
Nursing Home and Rest Home _____	100
School, without cafeteria, gymnasium or showers _____	10
School, with cafeteria, but not gymnasium or showers _____	15
School, with cafeteria, gymnasium and showers _____	20
Swimming Pool _____	10
Camp, resident washroom and toilets _____	25
Camp, resident mess hall _____	10
Camp, day washroom and toilets _____	10
Camp, day mess hall _____	3
Camp Ground showers and toilets per site _____	75
Gymnasium per spectator _____	3
Gymnasium per participant _____	25
Theater, Auditorium _____	3
Public Park toilet wastes only _____	5
Public Park bathhouse, showers, and flush toilets _____	10
Factory or Industrial Plant, without cafeteria _____	15
Factory or Industrial Plant, with cafeteria _____	20
Work or Construction Camp _____	50

*The applicant should be aware of his obligation to comply with the requirements established by the Division of Water Pollution Control pursuant to M.G.L. c. 21, s. 43.

**Estimated sewage flows other than those listed should be considered in relation to actual meter readings of established flows from known or similar installations. Generally, estimated sewage flows will be based on 200 percent of average water meter readings in order to assimilate maximum daily flows.

15.02: continued

SEWAGE FLOW ESTIMATES (continued)

	<u>Gallons per day</u>
Single and multiple dwelling units Per Bedroom	
motels, hotels, boarding houses _____	110
Tennis Club per court _____	250
Bowling Alley per alley _____	100
Country Club dining room per seat _____	10
Country Club snack bar or lunch room per seat _____	10
Country Club locker and showers per locker _____	20
Church per seat _____	3
Church vestry/kitchen per person at capacity _____	5
Trailer, dump station per site or per trailer _____	50
Mobile Home Park per site _____	200
Office Building per 1,000 sq. ft _____	75
Dry Goods Stores per 100 sq. ft _____	5
Drive In per stall _____	5
Nonsingle family, Automatic clothes washer per washing machine _____	400
Hospital per bed _____	200
Service station, excluding thruway per island _____	300
Skating Rink 3,000 gallons per day plus 5 gallons per seat	
	<u>Gallons per Seat or Chair per Day</u>
Restaurant, food service establishment, lounge, tavern _____	35
Restaurant, thruway service area _____	150
Restaurant, kitchen flow _____	15
Barber Shop/Beauty Salon _____	100

NOTE: Laundromat wastes are considered industrial wastes and must be approved by the Department of Environmental Quality Engineering.

(14) Type of System. Except as provided in 310 CMR 15.18, an individual sewage disposal system shall consist of a septic tank discharging its effluent to a suitable subsurface sewage disposal area as hereinafter described. Where buildings are served by more than one system, each system shall consist of a septic tank discharging its effluent to a suitable subsurface sewage disposal area. Separate systems for laundry waste disposal are not recommended.

(15) Drainage. An individual disposal system shall be located in an area where no surface water will accumulate. Provision shall be made to minimize the flow of surface water over the area.

(16) Cover Material. Earth materials used to cover subsurface sewage disposal facilities shall be free from large stones, frozen clumps of earth, masonry, stumps, or waste construction material. Machinery which may crush or disturb the alignment of pipe in the disposal system shall not be allowed on any part of the disposal area.

(17) Construction in Fill. Where an individual sewage disposal system is to be constructed wholly or partially in fill, the fill shall be properly placed and compacted to minimize settlement or it shall be allowed to settle for a minimum of 12 months whichever occurs first. The fill material shall be clean coarse washed sand or other clean granular material essentially free from clay, fines, dust, organic matter, large stones, masonry, stumps, frozen clumps of earth, wood, tree branches, and waste construction material, and shall have a percolation rate of less than 2 minutes per inch before and after placement. Before the fill is put in place, all trees, brush, and stumps shall be removed from the area to be filled. Topsoil, peat, and other impervious materials shall be removed from all areas beneath the leaching facility and for a distance of 25 feet in all directions therefrom when the leaching facility is above natural ground elevation; or impervious materials shall be removed for 10 feet in all directions therefrom when the leaching facility is below natural ground elevation. No sewage disposal system shall be constructed in fill placed upon

15.02: continued

impervious material unless the requirements of 310 CMR 15.03(6) have been met.

(18) Multiple Use. The use of a subsurface sewage disposal system by more than one lot is prohibited.

(19) Maintenance. Every owner or agent of premises in which there are any private sewers, individual sewage disposal systems, or other means of sewage disposal shall keep the sewers and disposal systems in proper operational condition and shall have such works cleaned or repaired at such time as ordered by the Board of Health. If the owner or agent of the premises fails to comply with such order, the Board of Health may cause the works to be cleaned or repaired and all expenses incurred to be paid by the owner. Sewage disposal works shall be maintained in a manner that will not create objectionable conditions or cause the works to become a source of pollution to any of the waters of the Commonwealth.

(20) Discharge to Surface of Ground. No sanitary sewage shall be allowed to discharge or spill onto the surface of the ground or to flow into any gutter, street, roadway, or public place; nor shall such material discharge onto any private property.

(21) Flow Measurement. Meters, dosing counters, or other flow measuring devices shall be installed to record accurately the flow of sewage when required by the Board of Health or the Department of Environmental Quality Engineering.

(22) Reserve Area. A reserve area of at least equal capacity, suitable for subsurface sewage disposal and upon which no permanent structures will be constructed, must be provided for all sewage disposal systems.

15.03: Location

(1) General. The location and installation of each individual sewage disposal system, or other means of disposal, shall be such that with responsible maintenance it will function in a satisfactory manner and will not create a nuisance or discharge into any watercourse of the Commonwealth. In determining a suitable location for the system, consideration shall be given to the size and shape of the lot, slope, natural and adjusted drainage, existing and known future water supplies, depth to ground water, presence of impervious material, soil classifications, and reserve area. No Disposal Works Construction Permit as described in 310 CMR 15.02(1) shall be issued until a representative of the Approving Authority has:

- (a) Performed a site examination
- (b) Witnessed deep observation holes
- (c) Witnessed percolation tests

(2) Site Examination. The site examination shall be made to determine if the size of the lot is compatible with the proposed sewage disposal system and should be made with regards to the distances as outlined in 310 CMR 15.03(7) and the requirements of 310 CMR 15.02(5).

(3) Deep Observation Holes. The purpose of the deep observation holes is to determine the character of the soil in the leaching area and specifically to determine the ground water elevation and the presence of bedrock or impervious material.

On any lot, in the area to be used for leaching, except as noted below, there will be at least two deep observation holes plus any additional number which, in the opinion of the Approving Authority, will be necessary to determine the consistency (or lack thereof) of the character of the soil. The observation holes shall be examined to a depth of at least 4 feet below the bottom of the proposed leaching facility, but in no case shallower than 10 feet, unless this depth is unattainable because of bedrock, etc. The ground water elevation should be determined when the ground water is at its maximum elevation.

15.03: continued

EXCEPTION: In cases where three or more contiguous single family lots are being examined at the same time by the same engineer the requirement of two deep observation holes per lot is reduced to one deep observation hole per lot, provided that the character of the soils remain consistent in the opinion of the Approving Authority. The deep observation holes shall be conducted in the area to be used for leaching on each lot.

(4) **Percolation Test.** The purpose of the percolation test is to determine the suitability of the soil at the leaching elevation and to a depth of four feet below this elevation. In cases where the soil varies with depth as indicated by the deep observation hole, percolation tests at various elevations may be required by the Approving Authority.

(a) At least one percolation test shall be performed at the site of each disposal area in the soil to be used for leaching. Additional tests will be required where the soil structure varies or where large disposal areas are required. Percolation tests can be performed at any time during the year.

(b) Percolation tests as prescribed in this section shall be performed at no expense to the Approving Authority by a Registered Professional Engineer, Registered Sanitarian, or other person who, in the opinion of the Approving Authority, is qualified to perform such tests. All percolation tests shall be performed in the presence of a representative of the Approving Authority. The cost of labor and equipment necessary to dig observation holes and the provision of water for the performance of percolation tests shall not be at the expense of the Approving Authority.

(c) Percolation tests shall not be made in holes that have remained open to the atmosphere for more than three days, nor shall they be made in frozen soil. Percolation tests may be performed when the elevation of the soil to be tested is below the frozen soil layer.

(d) Percolation tests shall not be made in filled ground unless the requirements of 310 CMR 15.02(17) have been made.

(e) The minimum leaching area to be installed shall be determined from the following table, with the estimated daily sewage flow as determined in accordance with 310 CMR 15.03(13). The slowest percolation rate obtained shall govern leaching area requirements.

LEACHING AREA REQUIREMENTS

Percolation Rate Minutes Per Inch	Sidewall Area (1) (2)		Bottom Area (3)	
	Square Feet Per Gallon	Gallons Per Square Foot	Square Feet Per Gallon	Gallons Per Square Foot
2.0 or less	0.4	2.50	1.0	1.00
4.0	0.5	2.00	1.2	0.83
6.0	0.6	1.66	1.4	0.71
8.0	0.8	1.25	1.6	0.63
10.0	1.0	1.00	1.8	0.55
15.0	1.5	0.66	2.3	0.43
20.0	2.0	0.50	3.0	0.33
25.0	2.5	0.40	No bottom area	
30.0	3.0	0.33	allowed	
over 30.0		UNSUITABLE	over 20 minutes per inch	

[1] No sidewall area is allowed for leaching fields.

[2] Sidewall area is the pervious vertical interface of the excavation for the leaching facility below the invert elevation of the inlet, or the lowest invert elevation of the distribution line.

[3] Bottom area is the pervious horizontal interface of the excavation for the leaching facility.

[4] Systems for more than 2,000 gallons per day shall not be installed where the percolation rate is slower than 20 minutes per inch.

15.03: continued

[5] Soil with a percolation rate of over 30 minutes per inch is considered impervious and, therefore, unsuitable for the subsurface disposal of sewage.

✓ [6] Area requirements will be increased by 50 percent when garbage grinders are installed.

[7] Sewage systems to be constructed in fill must be designed according to the percolation rate of the underlying original soil.

[8] See Illustration A in 310 CMR 15.11, Illustration B in 310 CMR 15.14, and Illustration C in 310 CMR 15.15.

(5) Percolation Test Procedures

(a) Prepare a test hole into the proposed leaching strata within the disposal area of 12 inches in diameter with vertical sides 18 inches deep.

(b) Establish a fixed point at the top of the test hole from which all measurements can be taken.

(c) Scratch the bottom and sides of the test hole to remove any smeared soil surfaces. Either add two inches of coarse sand to protect the bottom from scouring, or insert a board or other impervious object in the hole so that water may be poured down or on it during the filling operation.

(d) Carefully fill the hole with clear water to a minimum depth of 12 inches and maintain the water level by adding water as necessary for purpose of soil saturation, but in no case less than 15 minutes after first filling the hole.

(e) After saturation, if the water level drops to a depth of 9 inches in less than 30 minutes, measure the length of time in minutes for it to drop from a depth of 9 inches to a depth of 6 inches. If the rate is erratic in the opinion of the Approving Authority, the hole shall be refilled and soaked until the drop per increment of time is steady. The time for the level to drop from a depth of 9 inches to a depth of 6 inches divided by 3, will be the percolation rate in minutes per inch.

(f) If the initial 3-inch drop requires more than 30 minutes (rate equal to more than 10 minutes per inch) the soil shall be saturated by filling the hole to the top and maintaining it full for at least 4 hours. The soil should then be permitted to swell overnight so that the soil conditions will approach those which exist during the wettest season of the year. After the overnight swelling period, the test shall be made again by filling the hole to a 12-inch depth and maintaining that level for 15 minutes, letting the level drop to 9 inches, then timing the drop between 9 inches and 6 inches. The time elapsed between 9 inches and 6 inches, divided by 3, shall be the percolation rate.

(g) In certain soils, particularly coarse sands, the soil is so pervious as to make the percolation tests as described above difficult, impractical, and meaningless. Therefore, at the discretion of the Approving Authority, the test as described above may be waived and a rate of two minutes per inch can be assumed provided that at least 24 gallons of water is added to the percolation holes within 15 minutes and it is impossible to obtain a liquid depth of 9 inches or the percolation rate is faster than 30 seconds per inch.

(6) Required Depth of Pervious Material. Subsurface sewage disposal systems shall be located in an area where there is at least a 4 foot depth of naturally occurring pervious soil below the entire area of the leaching facility. The naturally occurring pervious soil shall have a percolation rate less than or equal to 30 minutes per inch or 20 minutes per inch for systems over 2000 gallons per day and the 4 foot stratum must be free of impervious materials, such a layers of clay, silt, subsoil or loam.

(7) Distances.(1)(2) No disposal facility shall be closer than the distances stated to the components listed in the following table. The distance shall be increased where required by conditions peculiar to a location.

310 CMR: DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

15.03: continued

Component	Septic Tank (Feet)	Leaching Facility (Feet)	Building Sewer (Feet)	Privy (Feet)
Well or suction line	50	100(1)	(3)	100(1)
Water supply line (Pressure)	(4)	(4)	(4)	(4)
Property line	10	10	--	30
Cellar wall or inground swimming pool	10	20	--	30
Surface water supplies (reservoirs) or tributaries to reservoirs, including open and subsurface drains	50(2)(5)	100(1)(2)(5)	(5)	100(1)(2)(5)
Watercourses(see definition)	25(2)(5)	50(2)(5)	--	50(2)(5)
Subsurface Drains	25	25	--	25
Leaching catch basin or dry well	--	25	--	--
Downhill slope measured from the top of the leaching facility	150 times the slope (expressed as a fraction) (See Illustration A in 310 CMR 15.11, Illustration B in 310 CMR 15.14, and Illustration C in 310 CMR 15.15)			

[1] 100 feet is a minimum acceptable distance and no variance shall be granted for a lesser distance except with prior written approval of the Department of Environmental Quality Engineering.

[2] All distances shall be measured from the average of the mean annual flood elevation in inland areas and from Mean High Water in coastal areas.

[3] 10 feet if constructed of durable corrosion resistant material with watertight joints, or 50 feet if any other type of pipe is used.

[4] It is suggested that the disposal facilities be installed at least 10 feet from, and 18 inches below water supply lines. Wherever sewer lines must cross water supply lines, both pipes shall be constructed of class 150 pressure pipe and should be pressure tested to assure watertightness.

[5] The applicant should be aware of his obligation to comply with the requirements of the Wetlands Protection Act, M.G.L. c.131, s. 40.

15.04: Building Sewers in Unsewered Areas

(1) Size. The building sewer shall be of such size as required by the Approving Authority to serve the connected fixtures. In no case shall the building sewer be less than 4 inches in diameter.

(2) Material. The building sewer shall be constructed of cast-iron, schedule 40 PVC, vitrified clay, asbestos cement or other material acceptable to the Approving Authority.

(3) Joints. All pipe joints of the building sewer shall be made watertight and protected against damage by roots. Poured-type joints shall be properly wiped on the inside to present no obstruction of flow.

(4) Base. The building sewer shall be laid on a firm base.

15.04: continued

(5) Grade. The building sewer shall be designed to provide a minimum velocity of sewage flow of 2 feet per second when flowing full. This requirement is met when a 4-inch building sewer is laid at a slope of not less than .01 (1/8-inch per foot). A slope of .02 (1/4-inch per foot) is desirable.

(6) Alignment. The building sewer shall be laid on a continuous grade and as nearly as possible in a straight line.

(7) Manholes. Manholes, with metal frames and covers at grade, shall be provided at the junction of two or more sewers, at all sharp changes in direction or grade of sewers, and at intervals no greater than 300 feet except that manholes will not be necessary where building sewers join lateral sewers if a long radius bend is provided. All gravity sewer manholes shall have an open channel depth equal to or greater than the diameter of the inlet sewer and the change of direction in each manhole shall not exceed 90 degrees. (Change of direction is the interior angle between the new direction of flow and the imaginary extension of the original direction of flow.)

(8) Ventilation. The building sewer shall be vented through the vent stack or main vent of the building served by it, and no trap shall be installed in the building sewer or building drain.

15.05: Grease Traps

(1) Installation. Grease traps must be provided at installations such as restaurants, nursing homes, schools, hospitals, or other installations from which large quantities of grease can be expected to be discharged.

(2) Location. Grease traps shall be installed on a separate building sewer serving that part of the plumbing system into which the grease will be discharged. The discharge from the grease trap must flow to a properly designed septic tank or a building sewer prior to the septic tank.

(3) Capacities. Grease traps shall have a minimum depth of 4 feet and a minimum capacity of 1000 gallons, and shall have sufficient capacity to provide at least a 24 hour detention period for the kitchen flow. Kitchen flow shall be calculated in accordance with 310 CMR 15.02(13).

(4) Construction. Grease traps shall be watertight and constructed of sound and durable materials not subject to excessive corrosion, decay, or frost damage, or to cracking or buckling due to settlement or backfilling. Tanks and covers shall be designed and constructed so as to withstand normal structural loadings. A tank installed in ground water shall be weighted to prevent the tank from floating when it is emptied.

(5) Depth of Tees. The inlet tee shall extend to the mid depth of the tank. The outlet tee shall extend to within 12 inches of the bottom of the tank. Tees shall be cast iron or Schedule 40 PVC and properly supported by a hanger, strap or other device.

(6) Baffles. Baffles may be provided as necessary to maximize the separation of grease from the sewage. Baffles may not be considered a substitute for the inlet and outlet tees.

(7) Base. Grease traps shall be installed on a level stable base that will not settle.

(8) Materials. Grease traps may be constructed of poured reinforced concrete, precast reinforced concrete, or prefabricated material acceptable to the Approving Authority.

(9) Access Manholes. Grease traps shall be provided with a minimum 24 inch diameter manhole frame and cover to grade over the inlet and outlet.

15.06: continued

(10) Accessibility. Grease traps shall be located on the lot so as to be accessible for servicing and cleaning.

(11) Invert Elevation. The invert elevation of the inlet of a grease trap shall be at least 2 inches above the invert elevation of the outlet. Inlet and outlet shall be located at the center line of the tank, and at least 12 inches above the maximum ground water elevation.

(12) Backfill. Backfill around the grease trap shall be placed in such a manner as to prevent damage to the tank.

(13) Cleaning. Grease traps shall be inspected monthly and shall be cleaned when the level of grease is 25 percent of the effective depth of the trap or at least every 3 months.

15.06: Septic Tanks

(1) Capacities. A septic tank shall have an effective liquid capacity of not less than 150 percent of the design flow estimated, but in no case less than 1000 gallons.

(2) Garbage Disposal. Garbage grinders are not recommended where they discharge to subsurface disposal facilities. When they are installed, the liquid capacity of the septic tanks shall be at least 200 percent of the estimated design flow, but in no case less than 1500 gallons.

(3) Liquid Depth. The liquid depth of the tank shall be a minimum of 4 feet. The tank may be oval, circular, rectangular, or square in plan, provided the distance between the outlet and inlet of the tank is at least equal to the liquid depth of the tank.

(4) Compartments. Multi-compartment tanks with transverse baffles may be used provided that:

- (a) The number of compartments does not exceed two.
- (b) The total capacity is not less than 2000 gallons.
- (c) The capacity of the first compartment is at least equal to the capacity of the second compartment.

(5) Tanks in Series. Tanks in series may be approved provided that the capacity of the first tank is at least equal to the required capacity pursuant to 310 CMR 15.06(1), and provided that the number of tanks does not exceed two.

(6) Tanks in Parallel. Septic tanks shall not be installed in such a manner that the sewage flow from a single sewer is divided, with one portion being discharged to one tank and the remaining portion being discharged to a second tank.

(7) Construction. Septic tanks shall be watertight and constructed of sound and durable materials not subject to excessive corrosion, decay, or frost damage, or to cracking or buckling due to settlement or backfilling. Tanks and covers shall be designed and constructed so as to withstand anticipated loadings. Any tank installed in a location where there is high ground water shall be weighted to prevent the tank from floating when it is emptied.

(8) Tees. Inlet and outlet tees shall be of cast-iron, Schedule 40 PVC, or cast-in-place concrete, and shall extend a minimum of 6 inches above the flow line of the septic tank and be on the center line of the septic tank located directly under the clean-out manhole. There shall be an air space of at least 3 inches between the tops of the tees and the inside of the tank cover, and the tops of the tees shall be left open to provide ventilation or separate ventilation shall be provided.

(9) Depth of Tees. The inlet tee (baffles are not acceptable) shall extend a minimum of 10 inches below the flow line. The outlet shall be provided with a tee extending below the flow line in accordance with the following table:

15.06: continued

<u>Liquid Depth in Septic Tank</u>	<u>Depth of Outlet Tee below Flow Line</u>
4 feet	14 inches
5 feet	19 inches
6 feet	24 inches
7 feet	29 inches
8 feet	34 inches

(10) Base. Septic tanks shall be installed on a level stable base that will not settle.

(11) Materials. Septic tanks may be constructed of poured reinforced concrete, precast reinforced concrete, or prefabricated material acceptable to the Approving Authority.

(12) Access Manholes. At least one 24-inch manhole with a readily removable cover of durable material shall be provided for each compartment. Inlet and outlet tees shall be made accessible for cleaning by providing manholes over the tees. Manhole covers for septic tanks serving single family dwellings shall not be more than 12 inches below finished grade and may, at the discretion of the Approving Authority, be required to be brought to finished grade. Septic tanks serving other establishments with flows under 2000 gallons per day shall be provided with at least one 24-inch diameter manhole located over the inlet tee and a metal frame and cover to finished grade. Septic tanks designed for flows in excess of 2000 gallons per day shall be provided with at least two 24-inch diameter manholes (over inlet and outlet tees) with metal frames and covers at finished grade. Distance between access manholes shall not exceed 18 feet on center.

(13) Accessibility. Septic tanks shall be located on the lot so as to be accessible for servicing and cleaning.

(14) Invert Elevation. The invert elevation of the inlet of a septic tank shall be at least 2 inches above the invert elevation of the outlet.

(15) Backfill. Backfill around the septic tank shall be placed in such a manner as to prevent damage to the tank.

(16) Cleaning. Septic tanks should be inspected and cleaned at least annually.

(17) Ground Water. The invert elevation of the septic tank outlet shall be at least one foot above the maximum ground water elevation.

(18) Pumping to Septic Tank. Pumping of sewage to a septic tank shall not be allowed without the written approval of the Department of Environmental Quality Engineering.

15.07: Dosing Tanks

(1) General. A dosing tank shall be provided for Leaching Chamber and Leaching Field systems where the volume of waste to be disposed of is in excess of 2000 gallons per day.

(2) Alternation. Dosing shall alternate when the total volume of waste to be disposed of exceeds 5000 gallons per day. Alternating siphons and pumps shall discharge to separate disposal areas of equal size.

(3) Capacity. Dosing tanks shall have capacity to discharge a volume adequate to cover the dosed leaching area to a depth of at least 1 inch, in not over 15 minutes.

(4) Construction. Dosing tanks shall be constructed of concrete or other material as approved by the Department of Environmental Quality Engineering and conform with 310 CMR 15.06(7) and shall be cast without joints and watertight if installed below ground water level.

15.07: continued

- (5) Base. Dosing tanks shall be constructed on a level stable base that will not settle.
- (6) Ventilation. Dosing tanks shall be constructed in a manner that will permit venting through the building sewer or other suitable outlet.
- (7) Ground Water. The invert elevation of the inlet shall be at least 1 foot above maximum ground water elevation and the tank shall be waterproof and watertight.
- (8) Manholes. To provide access and to facilitate repair or adjustment of the siphons or pumps, dosing tanks should be provided with manholes at least 24 inches in diameter with metal frames and covers to grade over each pump or siphon.
- (9) Inspections. Annual inspections are recommended to determine if the pumps or siphons are in working order.

15.08: Siphons

- (1) Construction. Siphons shall be constructed of cast-iron or other material approved by the Department of Environmental Quality Engineering and shall be installed in strict conformance with the manufacturers specifications.

15.09: Pumps

- (1) Location. Pumps shall not be installed prior to a septic tank without the approval of the Department of Environmental Quality Engineering.
- (2) Number. At least 2 pumps shall be installed, except in cases where repairs to systems under 1000 gallons per day are being made or for single family residences.
- (3) Installation. All pumps shall be installed in strict conformance with the manufacturer's specifications. Pumps for settled sewage shall be capable of passing at least 1-1/4 inch solids.
- (4) Controls. Pump controls shall be moisture proof and operate in the following sequence:
 - (a) Pumps off
 - (b) Lead pump on
 - (c) Alarm on and Lag pump on
 - (d) Pumps must alternate and, in cases where the flow is in excess of 5000 gallons per day, they must serve separate disposal areas.
- (5) Alarm. All pumps shall be equipped with an alarm powered by a circuit separate from the pump power.
- (6) Standby Power. Standby power shall be provided at apartment houses, condominiums, elderly housing, and all other premises which are not vacated during power failure. An empty emergency overflow tank with 24 hour storage capacity may be substituted where such tank can be placed completely above ground water.

15.10: Distribution Boxes

- (1) Distribution Box. A distribution box shall be installed between a septic tank and a leaching facility to provide equal distribution.
- (2) Inlet. Where the distribution system is dosed or the slope of the inlet pipe is greater than 0.08, the distribution box shall be provided with an inlet tee cut-off one inch above the outlet invert.

15.10: continued

- (3) Outlet Elevation. The invert elevation of all the outlets shall be the same, and shall be at least 2 inches below the inlet. Outlet pipes shall be level for at least 2 feet.
- (4) Sump. The distribution box shall be provided with a sump extending 6 inches below the bottom of the outlet pipe.
- (5) Construction. Distribution boxes shall be constructed of concrete or other durable material. They shall be watertight and designed to accommodate the necessary distribution laterals.
- (6) Number of Outlets. There shall be at least one 4 inch outlet for every pair of 4-inch distribution laterals, and at least one 6-inch outlet for every two pairs of 4-inch distribution laterals.
- (7) Base. Distribution boxes shall be installed on a level stable base that will not settle.
- (8) Ventilation. The distribution box shall be constructed in such a manner as to provide ventilation of the disposal field, either through a special vent or back through the building sewer.
- (9) Manholes. Distribution boxes shall be provided with readily removable covers of durable material. Systems designed for over 2000 gallons per day shall have a minimum 18 inch manhole over each distribution box, with metal frame and cover to finished grade.

15.11: Leaching Pits*

- (1) Use. Leaching pits are preferred where their installation is possible.
- (2) Leaching Area. The leaching area required shall be determined in accordance with the provisions of 310 CMR 15.03. The leaching area shall be considered as the pervious bottom area of the excavation and the sidewall areas of the excavation below the invert of the inlet. Impervious area of the sidewall below the inlet shall not be considered as available leaching area.
- (3) Ground Water. Leaching pits shall not be constructed in areas where the maximum ground water elevation is less than 4 feet below the bottom of the excavation.
- (4) Spacing. When more than one leaching pit is installed, they shall be designed such that they will function in parallel, and the distance between excavation sidewalls shall be no less than twice the effective width or twice the effective depth of the pit, whichever is greater.
- (5) Manholes. There shall be a minimum of one inspection manhole per pit. For systems designed for over 2000 gallons per day, the manholes shall be at least 18 inches in diameter with metal frames and covers to finished grade.
- (6) Construction. The lining of the pit shall be constructed of brick, perforated concrete, or interlocking concrete blocks laid dry with open joints in a manner to prevent displacement. At least 12 inches and not more than 48 inches of 3/4 to 1-1/2 inch stone shall be placed around the liner. The liner shall be built to allow the liquid to pass easily through openings to the surrounding stone. The cover shall be constructed of reinforced concrete or other approved material.
- (7) Stone. The stone shall consist of washed stone ranging from 3/4 to 1-1/2 inches in size and be free of iron, fines, and dust in place. The stone shall be covered with at least a 2 inch layer of washed stone ranging from 1/8 to 1/2 inch

* See Figure 1 in 310 CMR 15.12.

15.11: continued

in size, and be free of iron, fines, and dust in place. All stone must have less than 0.2 percent material finer than a number 200 sieve as determined by the AASHTO Test Methods T-11 and T-27 (latest edition).

(8) Reserve Area. A reserve area sufficient to replace the capacity of the original leaching area must be provided. The area between the leaching pits may be used for part of the reserve area.

(9) Impervious Material. Excavations into or fill upon impervious material shall not be allowed. Excavations through impervious material may be allowed if at least 4 feet of naturally occurring pervious material, as demonstrated by a percolation test, remains beneath the lowest point of excavation. All construction after excavation through impervious material shall be in accordance with 310 CMR 15.02(17).

(10) Surface Drainage. The grade above and adjacent to a leaching pit system shall slope at least 2 percent to prevent the accumulation of surface water.

(11) Cover Material. The minimum depth of cover material over the stone shall be 12 inches. Earth materials used to cover leaching pit systems shall be free of large stones, frozen clumps of earth, masonry, stumps, or waste construction material. Machinery which may crush or disturb the alignment of pipe in the disposal system shall not be allowed on any part of the disposal area.

(12) Sloping Ground. When pits are built at different elevations, construction shall be such as to prevent the sewage from upper pits from flowing into lower pits.

(13) Excavation. Excavation may be made by machinery provided that the soil at the bottom of the disposal system is not compacted. The bottom of each system shall be level.

(14) Location under Area Subject to Vehicular Traffic. When leaching pit systems are constructed under areas subject to vehicular traffic, the pits shall be capable of withstanding H-20 wheel loads.

(15) Frozen Conditions. No pits shall be constructed in frozen soil. Pits may be constructed in cases where the construction elevation is below the depth of the frost line.

15.12: Leaching Galleries *

(1) Leaching Area. The leaching area required shall be determined in accordance with the provisions of 310 CMR 15.03. The leaching area shall be considered as the pervious bottom area of the excavation and the sidewall areas of the excavation below the invert of the inlet. Impervious area of the sidewall below the inlet shall not be considered as available leaching area.

(2) Ground Water. Leaching galleries shall not be constructed in areas where the maximum ground water elevation is less than 4 feet below the bottom of the excavation.

(3) Distribution. An inlet must be provided at least every 20 feet.

(4) Spacing. When more than one gallery is installed, the distance between excavation sidewalls shall be no less than twice the effective width or twice the effective depth of the gallery, whichever is greater.

(5) Manholes. For systems designed for over 2000 gallons per day, the manholes shall be at least 18 inches in diameter with metal frames and covers to

* See Figure 1 in 310 CMR 15.12

15.12: continued

finished grade. For gallery trenches less than 100 feet long, there shall be a minimum of one manhole. For gallery trenches greater than 100 feet long, there shall be a minimum of one manhole per 100 linear feet of each trench.

(6) Construction. The galleries shall be constructed with open joints or perforated walls in a manner to prevent displacement. At least 12 inches and not more than 48 inches of 3/4 to 1-1/2 inch stone shall be placed beyond the liner. The liner shall be built to allow the liquid to pass easily through openings to the surrounding stone. The cover shall be constructed of reinforced concrete or other approved material.

(7) Stone. The stone shall consist of washed stone ranging from 3/4 to 1-1/2 inches in size and be free of iron, fines, and dust in place. The stone shall be covered with at least a 2 inch layer of washed stone ranging from 1/8 to 1/2 inch in size, and be free of iron, fines, and dust in place. All stone must have less than 0.2 percent material finer than a number 200 sieve as determined by the AASHTO Test Methods T-11 and T-27 (latest edition).

(8) Reserve Area. A reserve area sufficient to replace the capacity of the original leaching area must be provided. The area between the galleries may be used for part of the reserve area.

(9) Impervious Material. Excavations into or fill upon impervious material shall not be allowed. Excavations through impervious material may be allowed if at least 4 feet of naturally occurring pervious material, as demonstrated by a percolation test, remains beneath the lowest point of excavation. All construction after excavation through impervious material shall be in accordance with 310 CMR 15.02(17).

(10) Surface Drainage. The grade above and adjacent to a leaching gallery system shall slope at least 2 percent to prevent the accumulation of surface water.

(11) Cover Material. The minimum depth of cover material over the stone shall be 12 inches. Earth materials used to cover leaching gallery systems shall be free of large stones, frozen clumps of earth, masonry, stumps, or waste construction material. Machinery which may crush or disturb the alignment of pipe in the system shall not be allowed on any part of the disposal area.

(12) Sloping Ground. When galleries are built at different elevations, construction shall be such as to prevent the sewage from upper galleries from flowing into the lower galleries.

(13) Excavation. Excavation may be made by machinery provided that the soil at the bottom of the gallery excavation is not compacted. The bottom of each gallery system shall be level.

(14) Location under Area Subject to Vehicular Traffic. When gallery systems are constructed under areas subject to vehicular traffic, the galleries shall be capable of withstanding H-20 wheel loads.

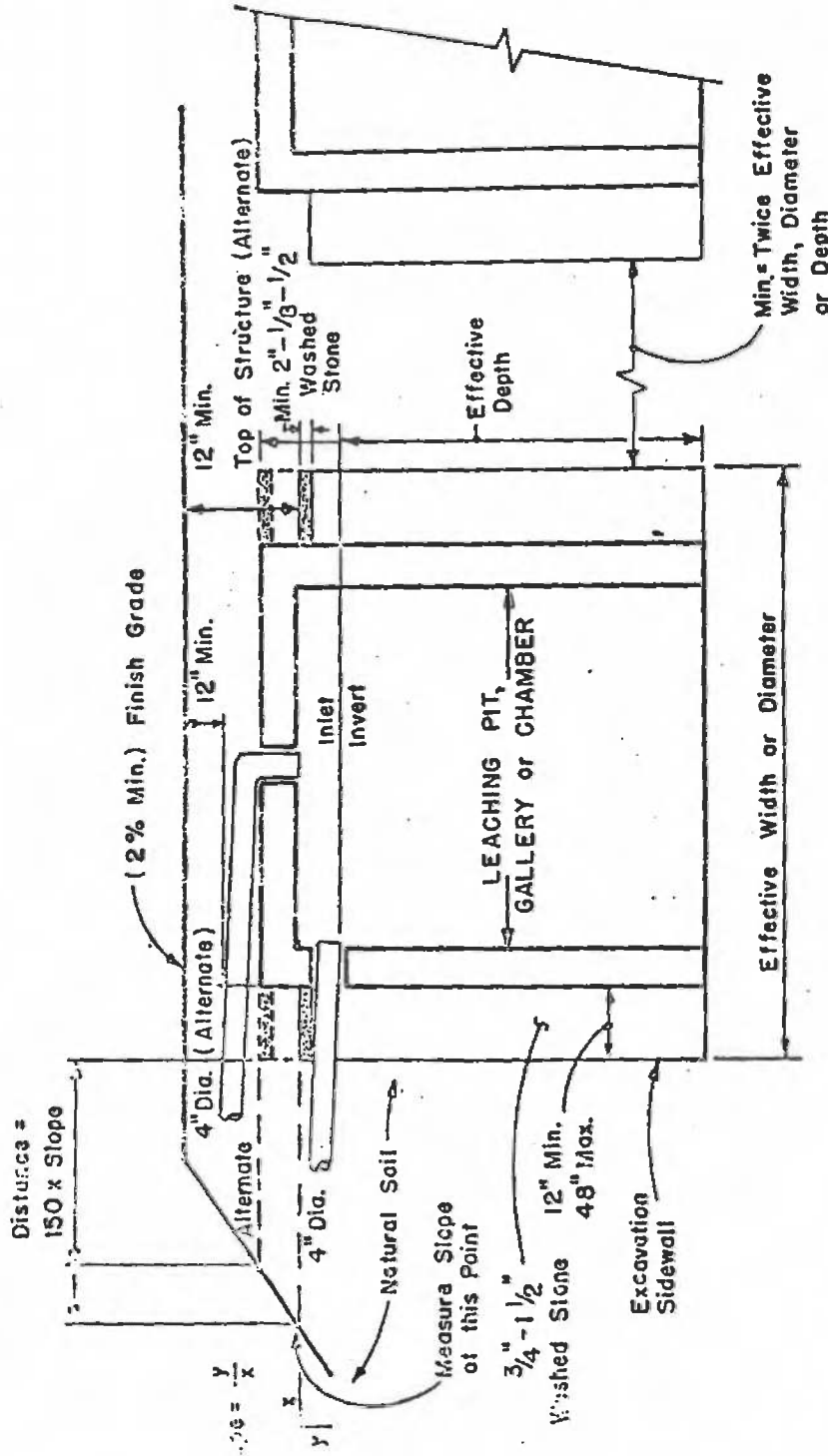
(15) Frozen Conditions. No galleries shall be constructed in frozen soil. Galleries may be installed in cases where the construction elevation is below the depth of the frost line.

(16) Joints. Horizontal joints shall be covered with a material suitable to prevent infiltration of overburden.

15.12: continued

FIGURE 1.

LEACHING PITS, GALLERIES CHAMBERS (ILLUSTRATION A)



LEACHING PITS, GALLERIES, CHAMBERS

No Scale

Illustration A

15.13: Leaching Chambers*

- (1) Leaching Area. The leaching area required shall be determined in accordance with the provisions of 310 CMR 15.03. The leaching area shall be considered as the pervious bottom area of the excavation and the sidewall areas of the excavation below the invert of the inlet. Impervious area of the sidewall below the inlet shall not be considered as available leaching area.
- (2) Ground Water. Leaching chambers shall not be constructed in areas where the maximum ground water elevation is less than 4 feet below the bottom of the excavation.
- (3) Distribution. Effluent shall be applied to the leaching area in a uniform manner, either by integral or separate piping. Suitable splash pads of washed stone, concrete or similar material or velocity reducing pits shall be installed to prevent scouring of the leaching surface. If the leaching chambers are to be installed in a trench formation, the effluent shall be applied every 20 feet. If a bed formation is utilized, the maximum leaching area per distribution line shall not exceed 60 feet by 60 feet.
- (4) Spacing. The minimum distance between the excavation sidewalls of adjacent leaching chamber fields shall be 4 feet. The minimum distance between leaching chamber trench walls shall be twice the effective width or twice the effective depth of the trench, whichever is greater.
- (5) Manholes. There shall be a minimum of 1 inspection manhole for each 2000 feet of leaching area. Manholes shall be located so as to provide access to distribution inlets and the leaching area. For systems designed for over 2000 gallons per day, the manholes shall be at least 18 inches in diameter with metal frames and covers to finished grade.
- (6) Construction. The chambers shall be constructed with open joints or perforated walls in a manner to prevent displacement. At least 12 inches and not more than 48 inches of 3/4 to 1-1/2 inch stone shall be placed around the periphery of the chambers. The chambers shall be built to allow the liquid to pass easily through openings to the surrounding stone. The cover shall be constructed of reinforced concrete or other approved material.
- (7) Stone. The stone shall consist of washed stone ranging from 3/4 to 1-1/2 inches in size and be free of iron, fines, and dust in place. The stone shall be covered with at least a 2 inch layer of washed stone ranging from 1/8 to 1/2 inch in size, and be free of iron, fines, and dust in place. All stone must have less than 0.2 percent material finer than a number 200 sieve as determined by the AASHTO Test Methods T-11 and T-27 (latest edition).
- (8) Reserve Area. A reserve area sufficient to replace the capacity of the original leaching area must be provided.
- (9) Impervious Material. Excavations into or fill upon impervious material shall not be allowed. Excavations through impervious material may be allowed if at least 4 feet of naturally occurring pervious material, as demonstrated by a percolation test, remains beneath the lowest point of excavation. All construction after excavation through impervious material shall be in accordance with 310 CMR 15.02(17).
- (10) Surface Drainage. The grade above and adjacent to a leaching chamber system shall slope at least 2 percent to prevent the accumulation of surface water.
- (11) Cover Material. Earth materials used to cover chamber systems shall be free of large stones, frozen clumps of earth, masonry, stumps, or waste construction material. Machinery which may crush or disturb alignment of pipe in the system shall not be allowed on any part of the disposal area.

*See Figure 1 in 310 CMR 15.12.

15.13: continued

(12) Sloping Ground. When chambers are built at different elevations, construction shall be such as to prevent the sewage from upper chambers from flowing into lower chambers.

(13) Excavation. Excavation may be made by machinery provided that the soil at the bottom of the disposal system is not compacted. The bottom of each chamber unit shall be level.

(14) Location under Area Subject to Vehicular Traffic. When chamber systems are constructed under areas subject to vehicular traffic, the chamber shall be capable of withstanding H-20 wheel loads.

(15) Frozen Conditions. No chambers shall be constructed in frozen soil. Chambers may be installed in cases where the construction elevation is below the depth of the frost line.

(16) Joints. Horizontal joints shall be covered with a material suitable to prevent infiltration of overburden.

(17) Ventilation. Leaching chamber systems designed to be dosed must be vented at the downstream end of the system.

15.14: Leaching Trenches*

(1) Leaching Area. The leaching area required shall be determined in accordance with the provisions of 310 CMR 15.03. The leaching area shall be considered as the pervious bottom area of the excavation and the sidewall areas of the excavation below the invert of the inlet. Impervious area of the sidewall below the inlet shall not be considered as available leaching area.

(2) Ground Water. Leaching trenches shall not be constructed in areas where the maximum ground water elevation is less than 4 feet below the bottom of the trench.

(3) Spacing. When more than one leaching trench is installed, the distance between excavation sidewalls shall be no less than twice the effective width or twice the effective depth of the trench, whichever is greater. In no case, shall the distance between excavation sidewalls be less than 6 feet if the area between the trenches is to be used for reserve area or 4 feet if the area between the trenches is not to be used for reserve area.

(4) Width. The minimum width of the leaching trench bottom shall be 12 inches.

(5) Length. The maximum length of each leaching trench shall be 100 feet.

(6) Construction. Distribution lines shall have a minimum diameter of 4 inches and shall be laid true to line and grade. The distribution pipe may consist of perforated tile, perforated bituminized fiber, perforated plastic, or vitrified clay pipe laid with an adequate number of open joints. All distribution pipes from the distribution box to the leaching trench shall be unperforated and shall be laid with tight joints. The depth to the crown of the pipe forming the distribution lines shall be not less than 12 inches from finished grade. The distribution pipe shall have a minimum slope of 0.005.

(7) Stone. The stone shall consist of washed stone ranging from 3/4 to 1-1/2 inches in size and be free of iron, fines, and dust in place. It shall extend the full width of the trench, shall be not less than 6 inches deep beneath the bottom of the distribution pipes and shall extend at least to the top of the distribution pipes. The stone shall be covered with at least a 2 inch layer of washed stone ranging from 1/8 to 1/2 inch in size, and be free of iron, fines, and dust in place.

* See Figure 1 in 310 CMR 15.14

15.14: continued

All stone must have less than 0.2 percent material finer than a number 200 sieve as determined by the AASHTO Test Methods T-11 and T-27 (latest edition).

(8) Reserve Area. A reserve area sufficient to replace the capacity of the original leaching area must be provided. The area between leaching trenches may be used for part of the reserve area.

(9) Impervious Material. Excavations into or fill upon impervious material shall not be allowed. Excavations through impervious material may be allowed if at least 4 feet of naturally occurring pervious material, as demonstrated by a percolation test, remains beneath the lowest point of excavation. All construction after excavation through impervious material shall be in accordance with 310 CMR 15.02(17).

(10) Surface Drainage. The grade above and adjacent to a leaching trench shall slope at least 2 percent to prevent the accumulation of surface water.

(11) Cover Material. The minimum depth of cover material shall be 12 inches. Earth materials used to cover leaching trench systems shall be free of large stones, frozen clumps of earth, masonry, stumps or waste construction material. Machinery which may crush or disturb the alignment of pipe in the disposal system shall not be allowed on any part of the disposal area.

(12) Sloping Ground. When trenches are built at different elevations, construction shall be such as to prevent the sewage from upper trenches from flowing into lower trenches.

(13) Excavation. Excavation may be made by machinery provided that the soil at the bottom of the disposal trench is not compacted. The bottom of each trench shall be level.

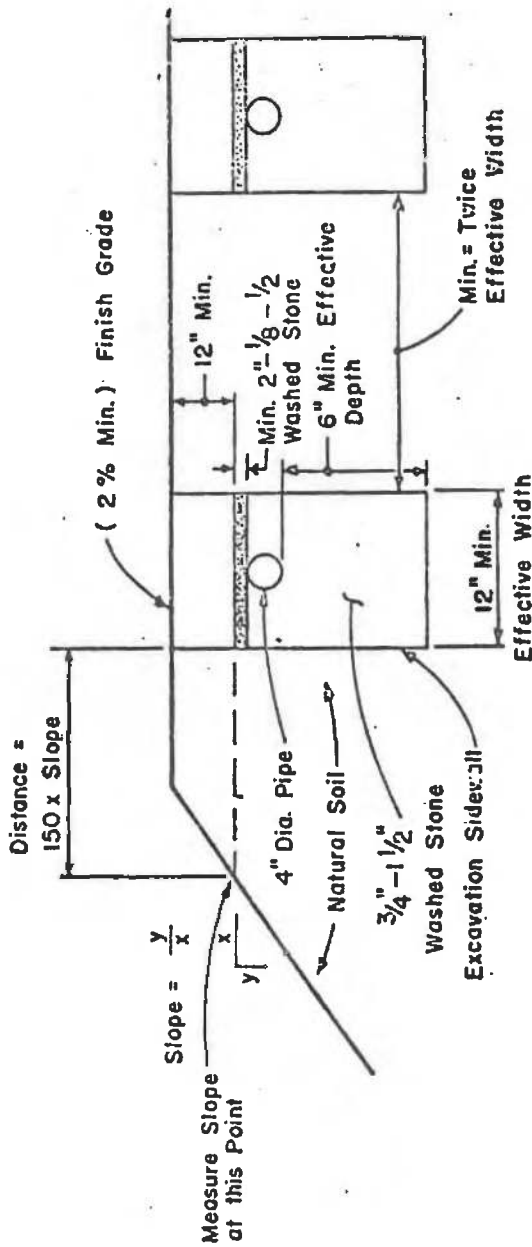
(14) Location Under Area Subject to Vehicular Traffic. When leaching trench systems are constructed under areas subject to vehicular traffic, the trenches shall be capable of withstanding H-20 wheel loads.

(15) Frozen Conditions. No trench shall be constructed in frozen soil. Trenches may be installed in cases where the construction elevation is below the depth of the frost line.

(16) Ventilation. Leaching trench systems designed to be dosed must be vented at the downstream end of the system.

15.14: continued

FIGURE 1.
LEACHING TRENCH (ILLUSTRATION B)



LEACHING TRENCH

No Scale

Illustration B

15.15: Leaching Fields*

- (1) Use. Leaching fields are not permitted in locations where the percolation rate is slower than 20 minutes per inch.
- (2) Leaching Area. The leaching area required shall be determined in accordance with provisions of 310 CMR 15.03. The leaching area shall be considered at the pervious bottom area of the excavation.
- (3) Ground Water. Leaching fields shall not be constructed in areas where the maximum ground water elevation is less than 4 feet below the bottom of the field.
- (4) Construction. Distribution lines shall have a minimum diameter of 4 inches and shall be laid true to line and grade. The distribution pipe may consist of perforated tile, perforated bituminized fiber, perforated plastic or open-jointed VC. All distribution pipes from the distribution box to the leaching field shall be unperforated and shall be laid with tight joints. The depth to the crown of the pipe forming the distribution lines shall be not less than 12 inches from finished grade.

Leaching fields shall be constructed in accordance with the following table:

Minimum lines per field	2
Maximum length per line	100 feet
Slope of distribution lines	0.005
Maximum distance between distribution lines	6 feet
Minimum distance between walls of adjacent fields	4 feet

- (5) Stone. The stone shall consist of washed stone ranging from 3/4 to 1-1/2 inches in size and be free of iron, fines, and dust in place. It shall extend the full width of the field, shall be not less than 6 inches deep beneath the bottom of the distribution pipes and shall extend at least to the top of the distribution pipes. The stone shall be covered with at least a 2 inch layer of washed stone ranging from 1/8 to 1/2 inch in size, and be free of iron, fines, and dust in place. All stone must have less than 0.2 percent material finer than a number 200 sieve as determined by the AASHO Test Methods T-11 and T-27 (latest edition).
- (6) Reserve Area. A reserve area sufficient to replace the capacity of the original leaching area must be provided.
- (7) Impervious Material. Excavations into or fill upon impervious material shall not be allowed. Excavations through impervious material may be allowed if at least 4 feet of naturally occurring pervious material, as demonstrated by a percolation test, remains beneath the lowest point of excavation. All construction after excavation through impervious material shall be in accordance with 310 CMR 15.02(17).
- (8) Surface Drainage. The grade above and adjacent to a leaching field system shall slope at least 2 percent to prevent the accumulation of surface water.
- (9) Cover Material. The minimum depth of cover material shall be 12 inches. Earth materials used to cover leaching fields shall be free of large stones, frozen clumps of earth, masonry, stumps, or waste construction material. Machinery which may crush or disturb the alignment of pipe in the disposal system shall not be allowed on any part of the disposal area.
- (10) Sloping Ground. When fields are built at different elevations, construction shall be such as to prevent the sewage from upper fields from flowing into lower fields.

*See Figure 1 in 310 CMR 15.15.

15.15: continued

(11) Excavation. Excavation may be made by machinery provided that the soil at the bottom of the leaching field is not compacted. The bottom of each leaching field shall be level.

(12) Location Under Area Subject to Vehicular Traffic. When leaching field systems are constructed under areas subject to vehicular traffic, the fields shall be capable of withstanding H-20 wheel loads.

(13) Frozen Conditions. No field shall be constructed in frozen soil. Fields may be installed in cases where the construction elevation is below the depth of the frost line.

(14) Ventilation. Leaching field systems designed to be dosed must be vented at the downstream end of the system.

LEACHING FIELD ILLUSTRATION C

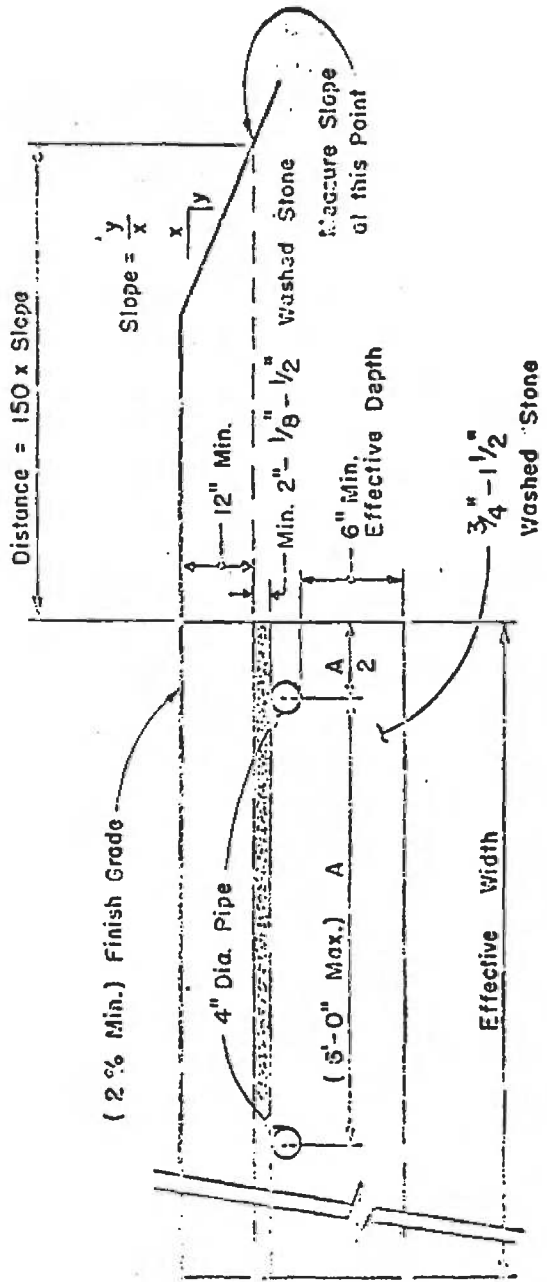


FIGURE 1.

LEACHING FIELDS

No Scale

Illustration C

15.16: Privies and Chemical Toilets

(1) Use. A privy or chemical toilet shall not be constructed or continued in use unless the Board of Health has approved in writing, its construction or continued use based upon a determination by the Board of Health that the privy or chemical toilet will not (a) endanger the health of any person or, (b) cause a nuisance.

(2) Location. Privies shall be located in accordance with the requirements of 310 CMR 15.03. No variance from any of the percolation rate requirements or leaching area loading rates outlined in this Title shall be allowed for the disposal of grey water from a lot to be served by a privy or chemical toilet, but a reduction not to exceed 40% of the design flow for subsurface sewage disposal may be allowed for the reduced water usage.

(3) Construction. Privies shall be constructed with self-closing seat covers and fly-tight vaults, and with a screened vent from the vault to the atmosphere.

(4) Maintenance. When a privy vault becomes filled to within 2 feet of the surface of the ground, it shall either be cleaned and the contents disposed of in a sanitary manner approved by the Board of Health, or it shall be covered with a minimum of 2 feet of clean compacted earth.

15.17: Humus Toilets

(1) Use. A humus toilet shall not be constructed or continued in use unless the Board of Health has approved, in writing, its construction or continued use based upon determination by the Board of Health that the humus toilet will not endanger the health of any person or cause a nuisance and that the end product will be disposed of in a sanitary manner.

(2) Location. Humus toilets shall only be located where a full-sized properly functioning subsurface sewage disposal system is available or can be constructed on the lot to be served in compliance with this Title; or where a common sanitary sewer is accessible in an abutting way and where permission to enter such a sewer can be obtained from the authority having jurisdiction over it. No variance from any of the percolation rate requirements or leaching area loading rates outlined in this Title shall be allowed for the disposal of grey water from a lot to be served by a humus toilet, but a reduction not to exceed 40% of the design flow for subsurface sewage disposal may be allowed for the reduced water usage.

(3) Maintenance. The end product from a humus toilet must be disposed of by burial in a manner and location approved by the Board of Health, and it shall be covered with a minimum of 2 feet of clean compacted earth.

15.18: Miscellaneous Disposal

(1) Use. The use of any disposal facility other than those described herein is prohibited unless approved in writing by the Department of Environmental Quality Engineering. It is the intent of this Title that the Department shall approve innovative disposal systems if it can be demonstrated that their impact on the environment and hazard to public health is not greater than that of other approved systems. No variances to this regulation shall be granted.

(2) Drains. No rain water leader, cooling water drain, cellar drain, or other drain other than one for sanitary sewage shall discharge into or be connected with any sewage disposal system.

(3) Leaching catch basins. No leaching catch basins or dry wells designed for the collection of surface drainage shall be allowed within 25 feet of any leaching facility of a subsurface sewage disposal system.

15.19: Transportation and Disposal of Privy, Cesspool, and Septic Tank Contents

(1) Permits. No person shall engage in the pumping or transportation of the contents of privies, cesspools, septic tanks, or other offensive substances without first obtaining a permit from the Board of Health in accordance with M.G.L. c. 111, s. 31A and 310 CMR 15.02(3).

(2) Equipment. No person shall use equipment to remove or transport the contents of privies, cesspools, or septic tanks or other offensive substances unless such equipment has first been inspected and approved by the Board of Health.

(a) Mobile Tank. Mobile tanks shall be securely mounted on trucks. They shall be watertight and provided with a leak-proof cover and tight discharge valves.

(b) Venting of Mobile Tanks. Mobile tanks shall be provided with a vent constructed in a manner that will permit the escape of gas, but not the liquid contents of the tank.

(c) Hose. Suction or pressure hose shall be in good repair.

(d) Pumps. Pumps shall be maintained in a condition that will prevent the leakage of sewage.

(3) Disposal. Disposal of the substances listed in 310 CMR 15.19(1) shall be by discharge to a sanitary sewer or to works designed for the purpose. If disposal is by discharge into a sanitary sewer, it shall be in a manner and at such times as may be acceptable to the authority having jurisdiction over the sewer. If disposal is by works designed for the purpose, the area shall be in a location approved in writing by the Board of Health. The location and method of disposal must be approved in writing by the Department of Environmental Quality Engineering.

(4) Transportation. The contents of privies, cesspools, and septic tanks shall be transported in a manner that will not create a nuisance or a health hazard.

(5) Intercommunity Disposal. The contents of privies, chemical toilets, septic tanks, holding tanks, or other sewage or waste receptacles originating in any city or town may be disposed of in a sanitary manner in any other city or town subject to the written approval of the Boards of Health of the Municipalities in which the wastes originate and the disposal works are located, and the written approval of the Authority having control of the receiving sewer or disposal site. If disposal is into sewers tributary to the Metropolitan District Commission Sewerage System, written approval of the Commission shall also be obtained.

(6) Fees. A fee for the issuance of a permit for the pumping or transportation of the contents of privies, cesspools, septic tanks, or other offensive substances may be charged by the Board of Health at the time an application is made for the permit.

PART II ENFORCEMENT

15.20: Variance

Variations may be granted only as follows: The Board of Health may vary the application of any provisions of this Title (except where expressly forbidden elsewhere in this Title) with respect to any particular case when, in its opinion (1) the enforcement thereof would do manifest injustice; and (2) the applicant has proved that the same degree of environmental protection required under this Title can be achieved without strict application of the particular provision.

Every request for a variance shall be made in writing and shall state the specific variance sought and the reasons therefore. No variance shall be granted for a new sewage disposal system, nor for an enlargement to an existing system which increases capacity to accommodate additional flows, except after the applicant has notified all abutters by certified mail at his own expense at least 10 days before the Board of Health meeting at which the variance request will be on the agenda. The notification shall state the specific variance sought and the reasons therefore. A variance may be issued for the repair of an

15.20: continued

existing sewage disposal system without the requirement of notification of all abutters by the applicant.

Any variance granted by the Board of Health shall be in writing. Any denial of a variance shall also be in writing and shall contain a brief statement of the reasons for the denial. A copy of each variance shall be conspicuously posted for thirty days following its issuance; and shall be available to the public at all reasonable hours in the office of the city or town clerk or the office of the Board of Health while it is in effect. Notice of the grant of each variance shall be filed with the Department of Environmental Quality Engineering, which shall approve, disapprove, or modify the variance within thirty days from receipt thereof. If the Department fails to comment within thirty days, its approval will be presumed. No work shall be done under any variance until the Department approves it or thirty days elapse without its comment, unless the Board of Health or the Department certifies in writing that an emergency exists.

15.21: Variance, Grant of Special Permission: Expiration, Modification, Suspension of

Any variance or other modification authorized to be made by this Title may be subject to such qualification, revocation, suspension, or expiration as the Board of Health or Department of Environmental Quality Engineering expresses in its grant. A variance or other modification authorized to be made by this Title may otherwise be revoked, modified, or suspended, in whole or in part, only after the holder thereof has been notified in writing and has been given an opportunity to be heard, in conformity with the requirements of Title 1 (310 CMR 11.00) for orders and hearings.

15.22: General Enforcement

The provisions of Title 1 of this Environmental Code (310 CMR 11.00) shall govern the enforcement of this Title as supplemented by the following Regulations.

15.23: Orders: Service and Content

- (1) If an examination as provided for in Title 1 (310 CMR 11.00) reveals failure to comply with the provisions of this Title, the Board of Health or Department of Environmental Quality Engineering shall order the persons responsible to comply with the violated provision.
- (2) Every Order authorized by this Title shall be in writing. Orders issued under the provisions of 310 CMR 15.23(1) shall be served on all persons responsible for the violated regulations. All Orders shall be served on the designated person:
 - (a) Personally, by any person authorized to serve civil process, or
 - (b) By leaving a copy of the Order at his last and usual place of abode, or
 - (c) By sending him a copy of the Order by registered or certified mail, return receipt requested, if he is within the Commonwealth, or
 - (d) If his last and usual place of abode is unknown or outside the Commonwealth, by posting a copy of the Order in a conspicuous place on or about the affected premises.
- (3) Subject to the emergency provision of Title 1, any Order issued under the provision of this Title shall:
 - (a) Include a statement of the violation or defect, and may suggest action which, if taken, will effect compliance with this Title, and
 - (b) Allot a reasonable time for any action it requires, and
 - (c) Inform the person to whom it is directed of his right to a hearing and of his responsibility to request the hearing, and to whom the request shall be made.

15.24: Hearing

- (1) Procedure for Requesting and Holding Hearing. Unless otherwise specified in this Title, the person or persons to whom any order has been served pursuant

15.24: continued

to any Regulation of this Title may request a hearing before the Agency that issued the order by filing with said Agency within 7 days after the day the order was served a written petition requesting a hearing on the matter. Upon receipt of such petition, the Agency shall set a time and place for such hearing and shall inform the petitioner thereof in writing. The hearing shall be commenced not later than 45 days after the day on which the Order was served. The Agency, upon application of the petitioner, may postpone the date of hearing for a reasonable time beyond such 45 day period if in the judgement of the Agency the petitioner has submitted a good and sufficient reason for such postponement.

(2) Hearing of Petitioner. At the hearing, the petitioner shall be given an opportunity to be heard and to show cause why the Order should be modified or withdrawn.

(3) Procedure by the Agency after Hearing. After the hearing, the Board of Health or Department of Environmental Quality Engineering shall sustain, modify, or withdraw the Order and shall inform the petitioner in writing of its decision. If the Board of Health or Department of Environmental Quality Engineering sustains or modifies the Order, it shall be carried out within the time period allotted in the original Order or in the modification.

(4) Public Record. Every notice, Order, or other record prepared by the Board of Health or Department of Environmental Quality Engineering in connection with the hearing shall be entered as a matter of public record in the office of the clerk of the city or town, or in the office of the Board of Health or Department of Environmental Quality Engineering.

(5) Hearing Petition Not Submitted, or Sustaining of Order. If a written petition for a hearing is not filed with the Board of Health or Department of Environmental Quality Engineering within 7 days after the day an Order has been served or if after a hearing the Order has been sustained in any part, each day's failure to comply with the Order as issued or modified shall constitute an additional offense.

15.25: Appeal

Any person aggrieved by the decision of the Board of Health or Department of Environmental Quality Engineering may seek relief therefrom within 30 days in any court of competent jurisdiction, as provided by the laws of this Commonwealth.

15.26: Penalties

(1) Any person who shall violate any provision of this Title for which penalty is not otherwise provided in any of the General Laws or in any other provision of this Title or Title 1 of this Environmental Code (310 CMR 11.00) shall upon conviction be fined not less than 10 nor more than 500 dollars.

(2) Any person who shall fail to comply with any Order issued pursuant to the provisions of this Title shall, upon conviction, be fined not less than 10 nor more than 500 dollars. Each day's failure to comply with an Order shall constitute a separate violation.

15.27: Severability

Each Regulation in Part I and Part II of this Title shall be construed as separate to the end that if any regulation or sentence, clause, or phase thereof shall be held invalid for any reason, the remainder of that regulation and all other regulations shall continue in full force.

310 CMR 15.28 through 15.98: RESERVED

15.99: Forms

The following forms apply to all of 310 CMR 15.00.

15.99: Forms

..... SUGGESTED FORM

BOARD OF HEALTH

_____ MASSACHUSETTS

CERTIFICATE OF COMPLIANCE

THIS IS TO CERTIFY, That the Individual Sewage Disposal System installed ()
or repaired () by _____ at _____

installer

_____ has been constructed in accordance with the provisions
of Title 5 of The State Environmental Code as described in the application for
Disposal Works Construction Permit No. _____ dated _____

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

DATE _____ Inspector _____

BOARD OF HEALTH

_____ MASSACHUSETTS

DISPOSAL WORKS CONSTRUCTION PERMIT

No. _____

Permission is hereby granted _____ to construct () or
repair () an Individual Sewage System at No. _____ as shown on the
application for Disposal Works Construction Permit No. _____

Dated _____

DATE _____ Board of Health _____

310 CMR: DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

15.99: Forms continued

No. _____ SUGGESTED FORM _____ Fee _____

BOARD OF HEALTH

_____ MASSACHUSETTS

APPLICATION FOR DISPOSAL WORKS CONSTRUCTION PERMIT

Application is hereby made for a permit to Construct () or Repair () an Individual Sewage Disposal System at:

Location-Address _____ or Lot No. _____

Owner _____ Address _____

Contractor _____ Address _____

Type of Building _____ Size Lot _____ Sq. feet _____

Dwelling-No. of Bedrooms _____ Expansion Attic () Garbage Grinder ()

Other-Type of Building _____ No. of person _____ Showers ()

Cafeteria () Other fixtures _____

Design Flow _____ gallons per person per day. Total daily flow _____ gallons

Septic Tank-Liquid Capacity _____ gallons Length _____ Width _____

Diameter _____ feet Depth _____ feet

Disposal Trench-No. _____ Width _____ Total Length _____ Total leaching area _____ sq.ft.

Disposal Bed No. _____ Diameter _____ Depth below inlet _____
Total leaching area _____ sq.ft.

Other Distribution box () Dosing tank ()

Percolation Test Results Performed by _____ Date _____

Test Pit No. 1 _____ minutes per inch Depth of Test Pit _____

Test Pit No. 2 _____ minutes per inch Depth of Test Pit _____

Depth to Ground _____

Description of Soil _____

Nature of Repairs or Alterations-Answer when applicable _____

310 CMR: DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

15.99: Forms continued

Agreement:

The undersigned agrees to construct the aforescribed individual sewage disposal system in accordance with the provisions of Title 5 of the Environmental Code. The undersigned further agrees not to place the system in operation until a Certificate of Compliance has been issued by this Board of Health.

Owner

date

Application Approved by _____

date

Application Disapproved for the following reasons: _____

Permit No. _____

Issued _____

date

REGULATORY AUTHORITY

310 CMR 15.00: M. G. L. c. 21A, s. 13.

NON-TEXT PAGE

310 CMR: DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

(310 CMR 16.00 and 17.00: RESERVED)

12/31/86

310 CMR - 321 REVISIONS

310 CMR: DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

(PAGES 322 THROUGH 324 ARE RESERVED FOR FUTURE USE)

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

November 3, 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 14th 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.

A handwritten signature in black ink, appearing to read 'Zachary L. Basinski', is 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', is 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

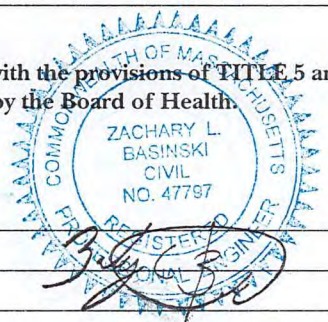
Table with 2 columns: Location, Map/Parcel#, Lot#, Installer's Name, Address, Telephone# and Owner's Name, Address, Telephone#, Designer's Name, Address, Telephone#.

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.

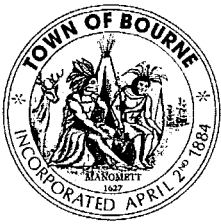
COMMONWEALTH OF MASSACHUSETTS

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

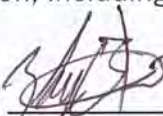
8. Enclose a **letter of request for variances/ waivers** which makes reference to the specific provisions of Title 5 and/ or the Board Bourne of Health Regulations for which a variance is sought. Please use this opportunity to demonstrate compliance with 310 CMR 15.410, and to justify the relevant facts 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 (NO₃-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)	=	3	Bedrooms
Lot Size (in square feet of upland areas)	=	18,159	sq.ft. Upland
Impervious Surfaces;**roof area	=	2,947	sq.ft.
**Paved Area	=	1,489	sq.ft.
Natural Area = lot area minus all impervious surfaces	=	13,723	sq.ft.
Lawn Area in sq. ft.	=	5,000	sq.ft.

TITLE 5 FLOW = 110 GAL./ DAY PER BEDROOM

WASTEWATER FLOWS (NITROGEN LOAD & WATER LOAD)

Nitrogen from Title 5 design = 14,572 mg NO₃-N / day / bedroom: or 7911 mg NO₃-N / day/ bedroom with IA Treatment

Water from Title 5 design = 416.3 H₂O / day / bedroom

1a) Number of bedrooms = 3 x 7911 = 23733.00 mg. NO₃-N / day

1b) Number of bedrooms = 3 x 416 = 1248.00 L H₂O / day

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

Actual Water load = 173.5 L H₂O / day / bedroom

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

2a) Number of bedrooms = 3 x 3296 = 9888.00 mg. NO₃-N / day

2b) Number of bedrooms = 3 x 173.5 = 520.50 L H₂O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO₃-N load number sq. ft. of roof surface X 0.19395 mg NO₃-N / sq. ft.

H₂O 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 NO₃-N

3b) Roof surface = 2947 sq. ft. X 0.2586 = 762.09 L H₂O / day

NO₃-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.

H₂O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO₃-N = 1489 sq. ft. paved surface X 0.388 mg / sq. ft. = 577.73 mg NO₃-N

4b) H₂O = 1489 sq. ft. paved surface X 0.2586 L / sq. ft. = 385.06 L H₂O

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 NO₃N load

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

7b)

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

7c) DIVIDE 7a by 7b = 6.9 ppm NO₃-N*****

Actual Nitrogen & Water Loading

8a) ADD the above NO₃N load:

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

8b) ADD the above water (H₂O) load:

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

8c) DIVIDE 8a by 8b = 4.4 ppm NO₃-N*****

FINAL CALCULATION ADD 7c & 8c (ppm) = 11.4 divide by 2 = 5.7 ppm NO₃-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*****

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 20th day of April, 2022.

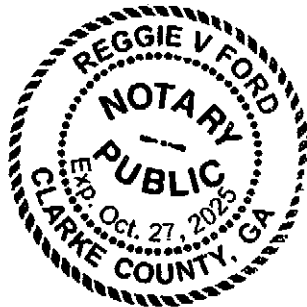
Joel D. Black
JOEL D. BLACK

STATE OF GEORGIA

Clarke _____, ss.
COUNTY

On this 20th 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:

Trade name of technology:	<i>MicroFAST®</i>
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

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

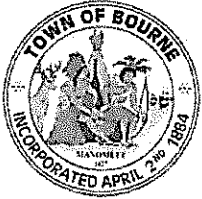
_____, ss

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.

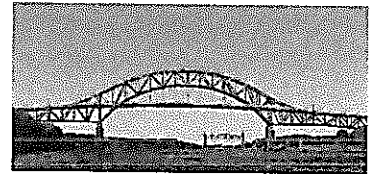
(official signature and seal of notary)

Approved and Accepted By:

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



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

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 14th 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.

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



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

CERTIFICATION FOR GENERAL USE

Pursuant to Title 5, 310 CMR 15.000

Name and Address of Applicant:

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

Trade name of technology and models:

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

Transmittal Number: X232831

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

Authority for Issuance:

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

David Ferris, Director
Wastewater Management Program
Bureau of Water Resources

March 20, 2015

Date

I. Purpose

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

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 as pump run times, occupancy rate, etc.
11. Field Testing: Temperature, turbidity, pH and DO shall be measured and recorded in the field whenever the effluent is sampled for TN. See applicable sections of the Department's Field Testing Protocol at <http://www.mass.gov/dep/water/laws/policies.htm#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

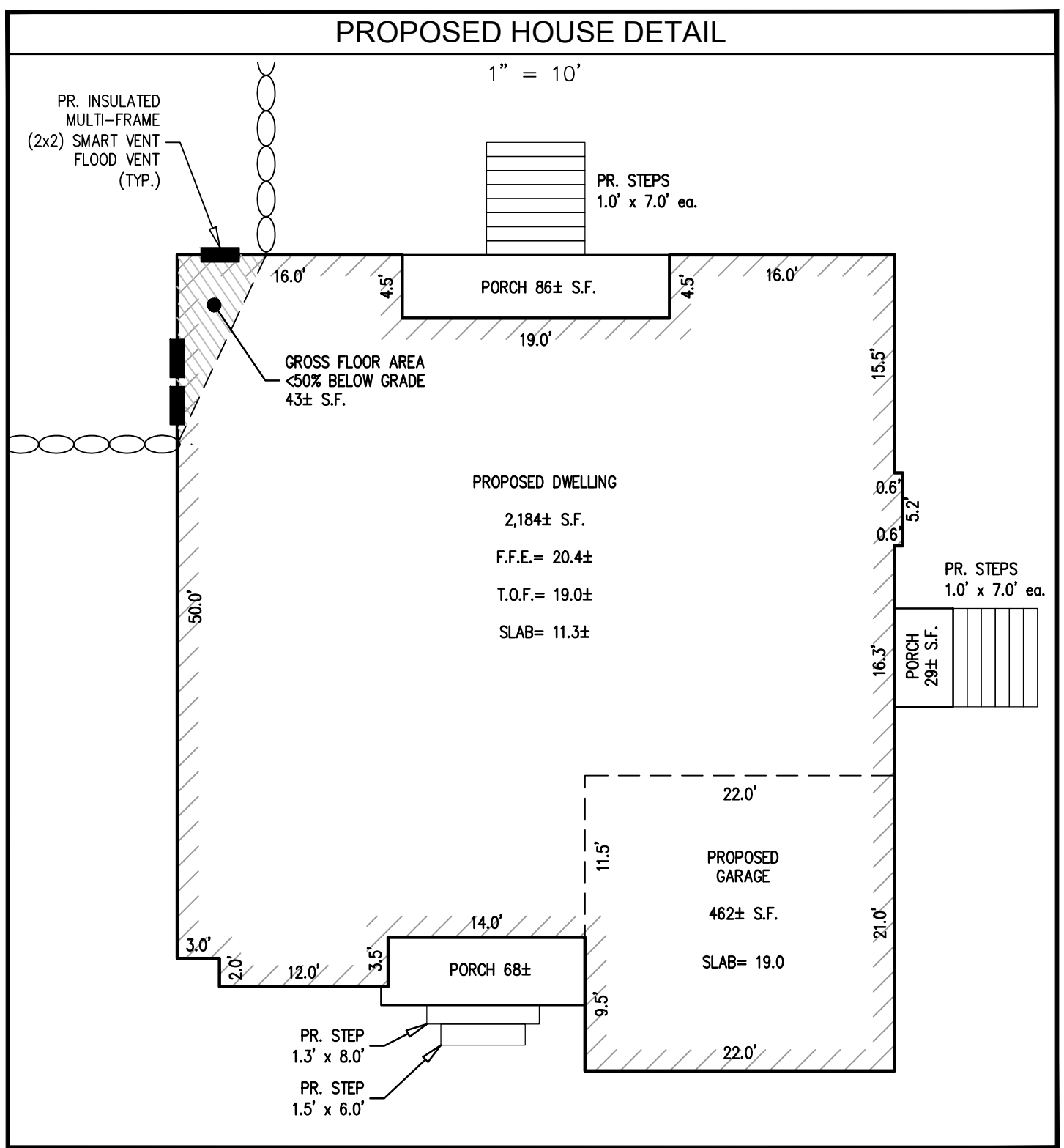
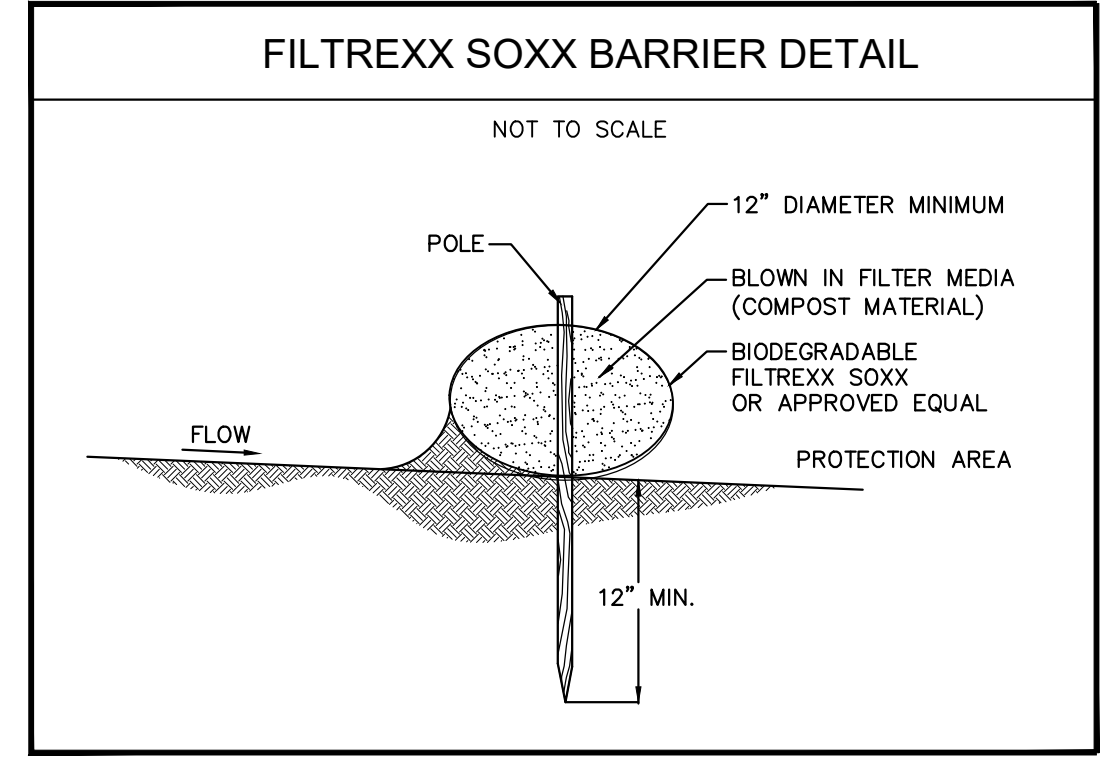
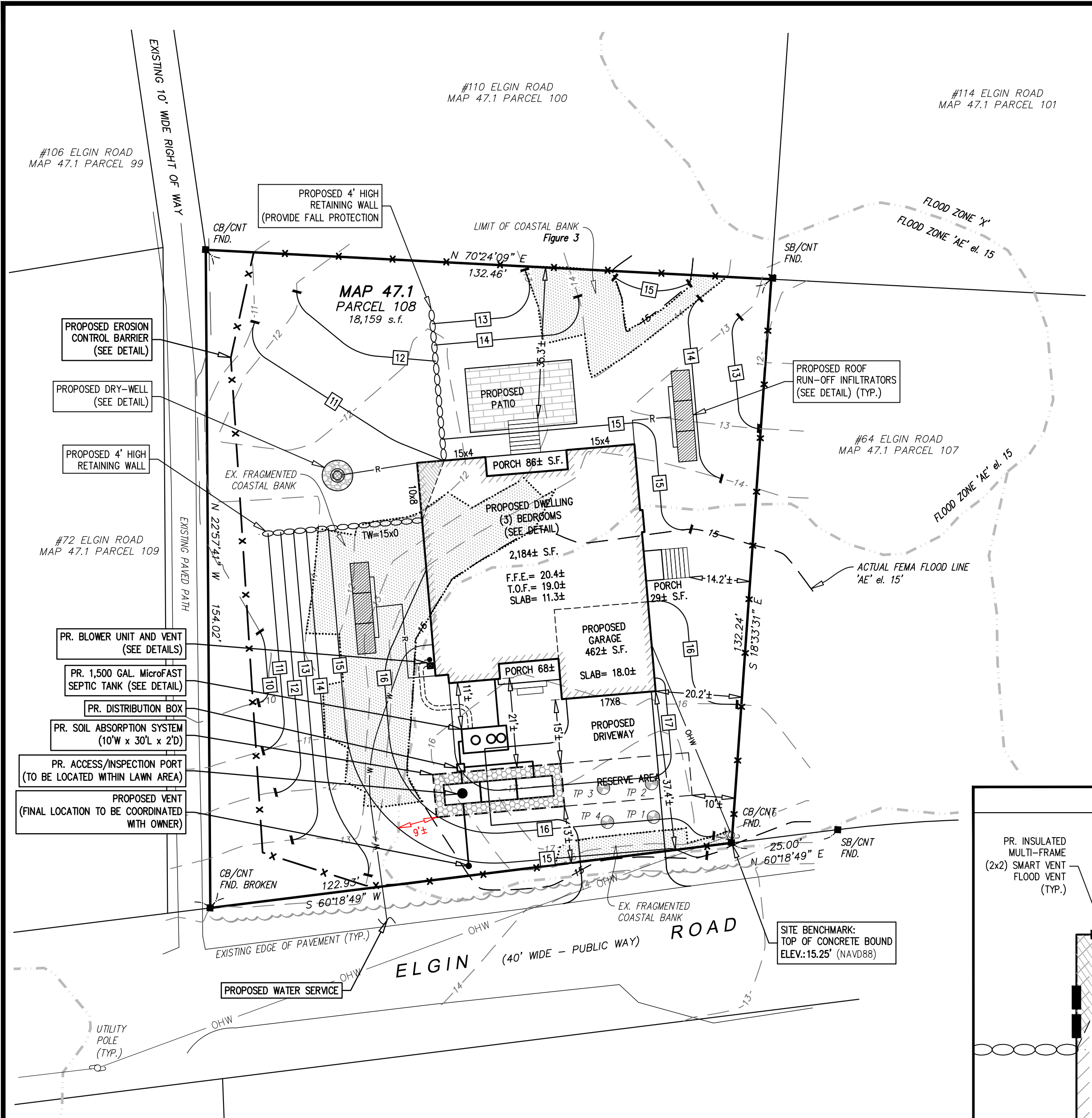
1. All notices and documents required to be submitted to the Department by this Certification shall be submitted to:

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)



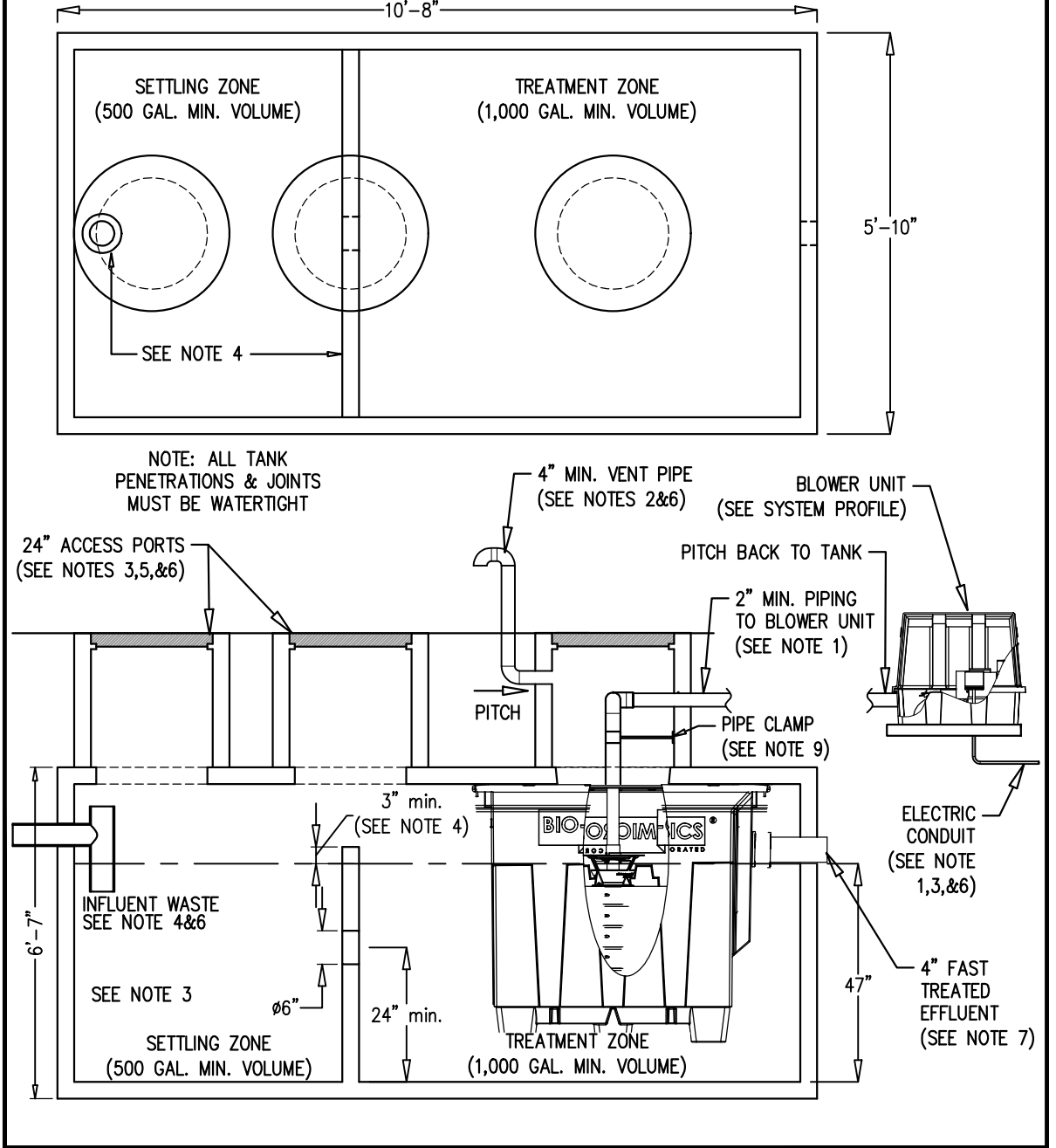
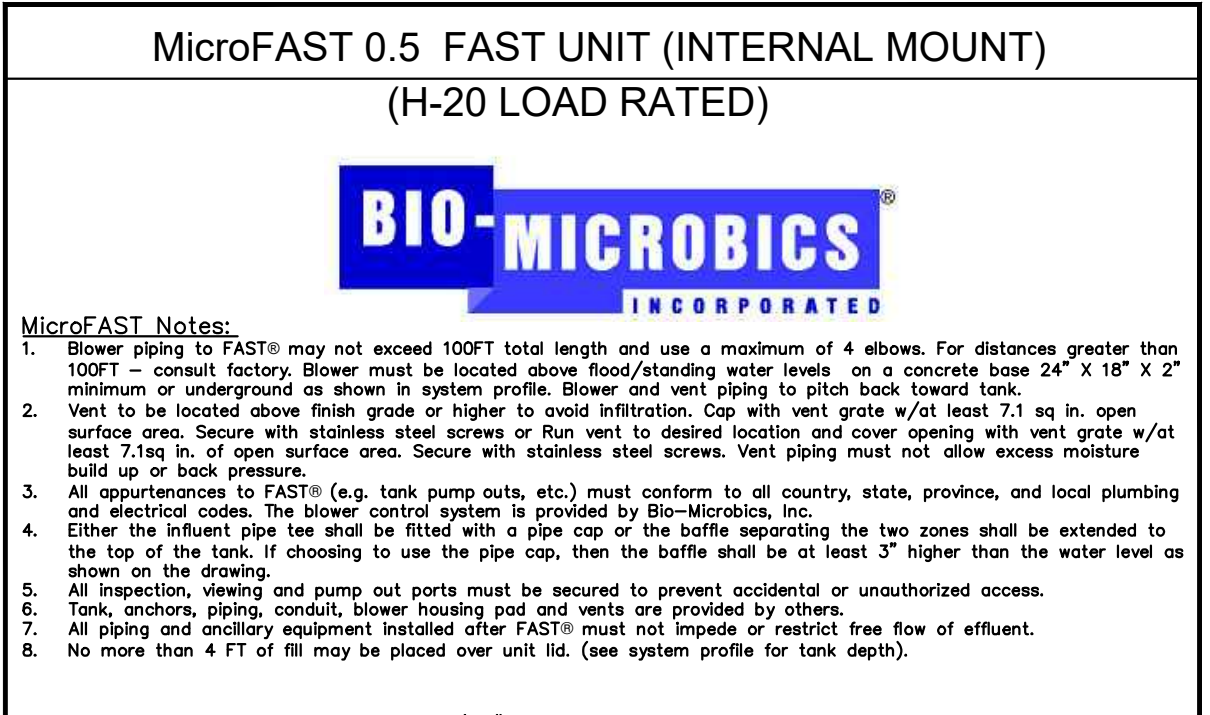
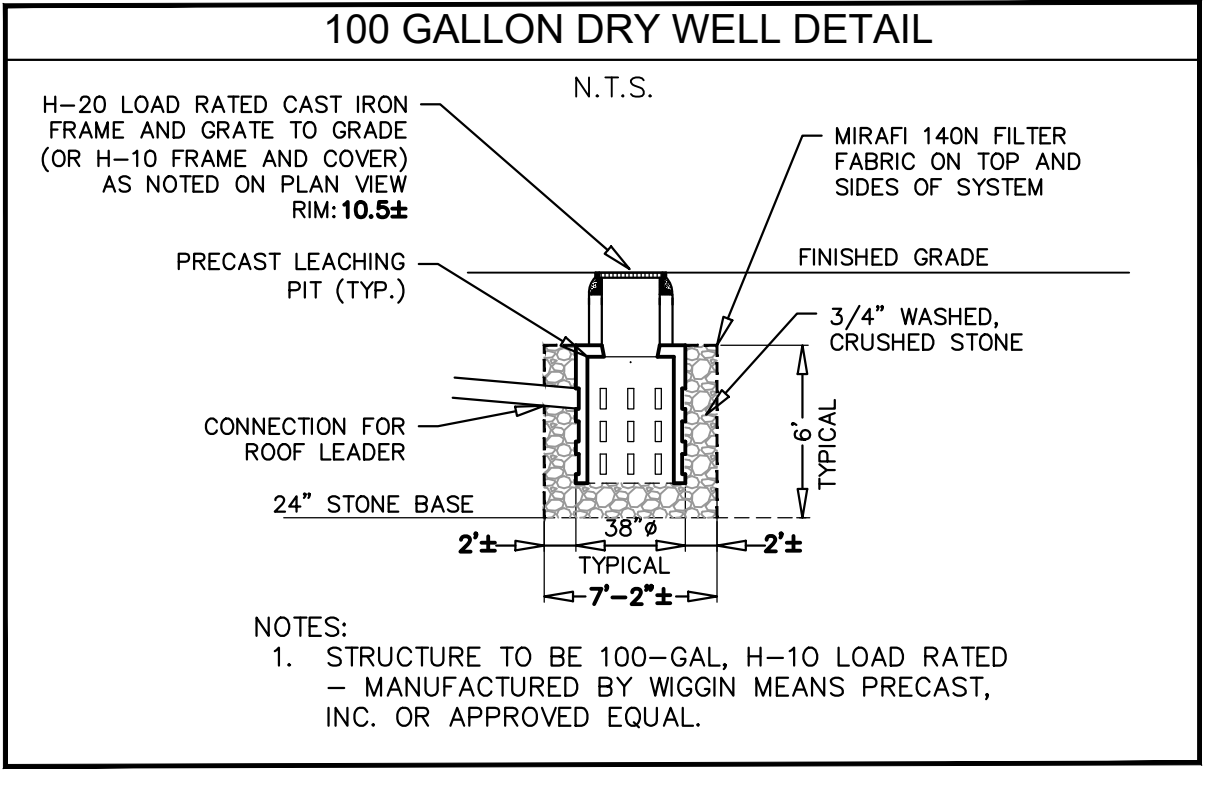
LOCAL VARIANCE REQUEST

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%	19.8%
	(3,631 s.f. max.)	(3,601 s.f. max.)
MAX. LOT COVERAGE:	20%	16.2%
	(3,631 s.f. max.)	(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

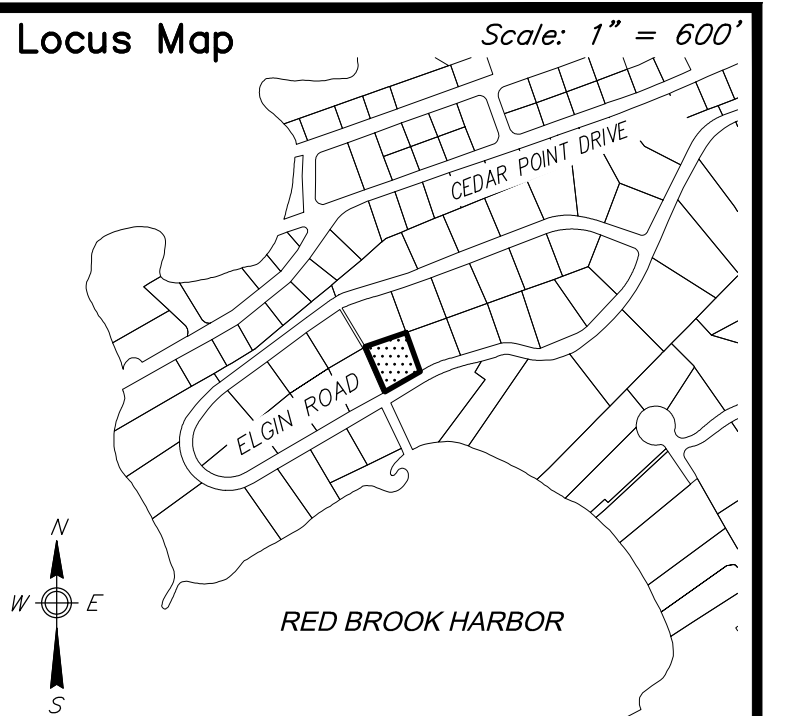
EFFECTIVE LEACHING:

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.	1	2
GRD. EL.	17.4	17.4
GW. EL.	NONE TO 7.4	NONE TO 7.4
0'	A/O LOAMY SAND 10YR 3/4	A/O LOAMY SAND 10YR 3/4
10'	Bw LOAMY SAND 10YR 5/4	Bw LOAMY SAND 10YR 5/4
24'	C1 LOAMY SAND 2.5Y 5/4	C1 LOAMY SAND 2.5Y 5/4
70'	C2 MEDIUM SAND 2.5Y 6/4	C2 MEDIUM SAND 2.5Y 6/4
120'	NO MOTTLES NO WATER	NO MOTTLES NO WATER

TP NO.	3	4
GRD. EL.	17.4	17.6
GW. EL.	NONE TO 7.4	NONE TO 7.4
0'	A/O LOAMY SAND 10YR 3/4	A/O LOAMY SAND 10YR 3/4
10'	Bw LOAMY SAND 10YR 5/4	Bw LOAMY SAND 10YR 5/4
24'	C1 LOAMY SAND 2.5Y 5/4	C1 LOAMY SAND 2.5Y 5/4
72'	C2 MEDIUM SAND 2.5Y 6/4	C2 MEDIUM SAND 2.5Y 6/4
120'	NO MOTTLES NO WATER	NO MOTTLES NO WATER

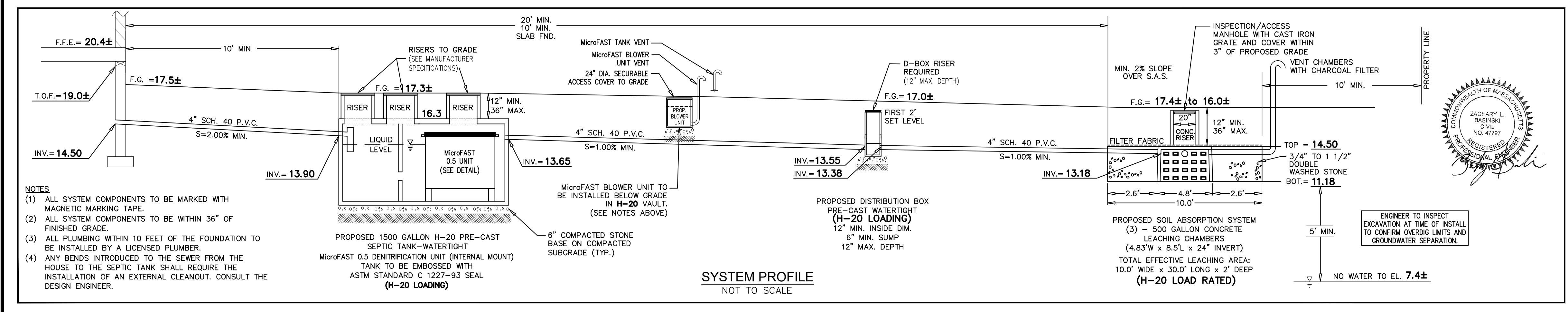
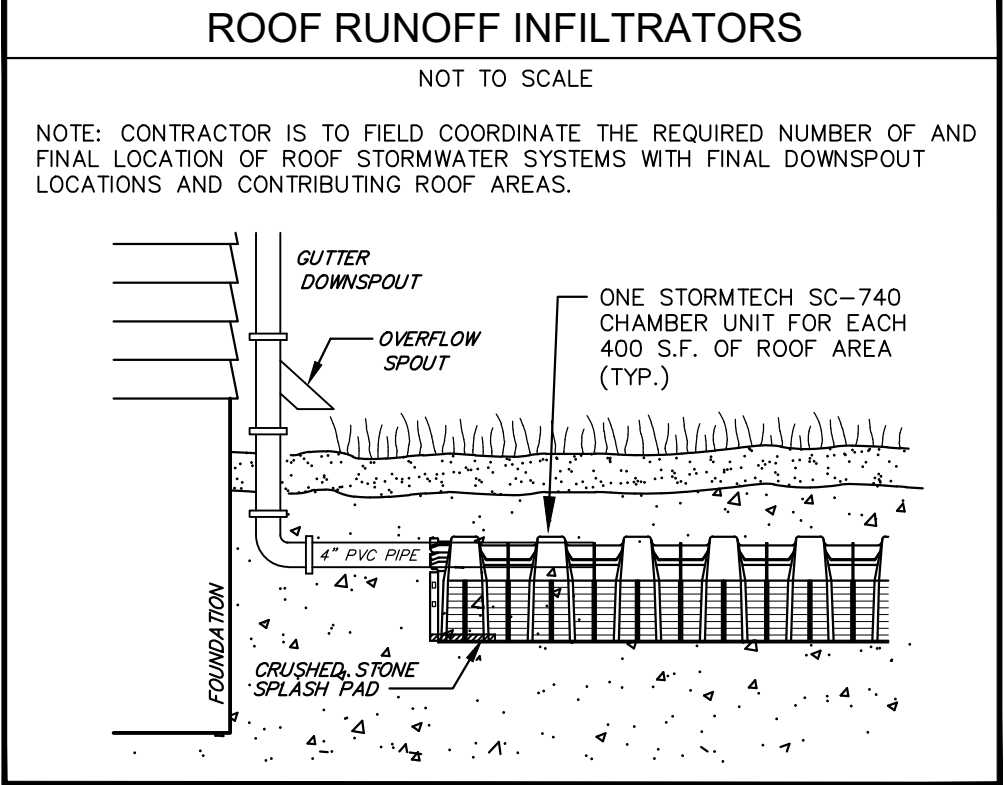


Notes

- 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 MOTTLES 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	Checked: ZLB/DAF	1 of 1



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
SE7-2223
MassDEP File #
eDEP Transaction #
Bourne
City/Town

A. General Information

Please note: this form has been modified with added space to accommodate the Registry of Deeds Requirements

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

1. From: Bourne
Conservation Commission

2. This issuance is for (check one):
a. Order of Conditions b. Amended Order of Conditions

3. To: Applicant:
Timothy Bernard
a. First Name b. Last Name

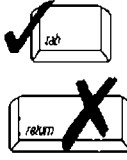
c. Organization
72 Elgin Road
d. Mailing Address
Bourne MA 02559
e. City/Town f. State g. Zip Code

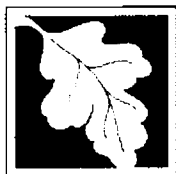
4. Property Owner (if different from applicant):
Timothy & Michelle Bernard
a. First Name b. Last Name

c. Organization
SAME
d. Mailing Address
Bourne MA 02559
e. City/Town f. State g. Zip Code

5. Project Location:
68 Elgin Road Bourne
a. Street Address b. City/Town
47.1 108
c. Assessors Map/Plat Number d. Parcel/Lot Number

Latitude and Longitude, if known: N41d40'm46.76"s W70d37'm08.36"s
d. Latitude e. Longitude





Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 SE7-2223
 MassDEP File #
 eDEP Transaction #
 Bourne
 City/Town

A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):
 Barnstable
 a. County Barnstable b. Certificate Number (if registered land) 212
 c. Book 35078 d. Page 212
7. Dates: 11/02/2022 2/02/2023 2/03/2023
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance
8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):
 Proposed Site & Subsurface Sewage Disposal Plan in Bourne MA
 a. Plan Title Proposed Site & Subsurface Sewage Disposal Plan in Bourne MA
 b. Prepared By Bracken Engineering, Inc. c. Signed and Stamped by Zachary L. Basinski, PE-Alan M. Grady PLS
 d. Final Revision Date 10/18/2022 Rev. 1/13/2023 e. Scale 1"=20'
 f. Additional Plan or Document Title _____ g. Date _____

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:
 Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:
- a. Public Water Supply b. Land Containing Shellfish c. Prevention of Pollution
 d. Private Water Supply e. Fisheries f. Protection of Wildlife Habitat
 g. Groundwater Supply h. Storm Damage Prevention i. Flood Control
2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

- a. the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 SE7-2223
 MassDEP File # _____
 eDEP Transaction # _____
 Bourne
 City/Town

B. Findings (cont.)

Denied because:

- b. the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
- 3. Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) _____ a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input type="checkbox"/> Bank	_____ a. linear feet	_____ b. linear feet	_____ c. linear feet	_____ d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
6. <input type="checkbox"/> Land Under Waterbodies and Waterways	_____ a. square feet _____ e. c/y dredged	_____ b. square feet _____ f. c/y dredged	_____ c. square feet	_____ d. square feet
7. <input type="checkbox"/> Bordering Land Subject to Flooding	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
Cubic Feet Flood Storage	_____ e. cubic feet	_____ f. cubic feet	_____ g. cubic feet	_____ h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	_____ a. square feet	_____ b. square feet		
Cubic Feet Flood Storage	_____ c. cubic feet	_____ d. cubic feet	_____ e. cubic feet	_____ f. cubic feet
9. <input type="checkbox"/> Riverfront Area	_____ a. total sq. feet	_____ b. total sq. feet		
Sq ft within 100 ft	_____ c. square feet	_____ d. square feet	_____ e. square feet	_____ f. square feet
Sq ft between 100-200 ft	_____ g. square feet	_____ h. square feet	_____ i. square feet	_____ j. square feet



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 SE7-2223
 MassDEP File #
 eDEP Transaction #
 Bourne
 City/Town

B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	<u> </u> a. square feet	<u> </u> b. square feet		
	<u> </u> c. c/y dredged	<u> </u> d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. nourishment cu yd	<u> </u> d. nourishment cu yd
14. <input type="checkbox"/> Coastal Dunes	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. nourishment cu yd	<u> </u> d. nourishment cu yd
15. <input checked="" type="checkbox"/> Coastal Banks	<u> </u> a. linear feet 2,464	<u> </u> b. linear feet 2,464		
16. <input type="checkbox"/> Rocky Intertidal Shores	<u> </u> a. square feet	<u> </u> b. square feet		
17. <input type="checkbox"/> Salt Marshes	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	<u> </u> a. square feet	<u> </u> b. square feet		
	<u> </u> c. c/y dredged	<u> </u> d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	<u> </u> a. square feet	<u> </u> b. square feet	<u> </u> c. square feet	<u> </u> d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	<u> </u> a. c/y dredged	<u> </u> b. c/y dredged		
21. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	<u> </u> a. square feet 12,500	<u> </u> b. square feet 12,500		
22. <input type="checkbox"/> Riverfront Area	<u> </u> a. total sq. feet	<u> </u> b. total sq. feet		
Sq ft within 100 ft	<u> </u> c. square feet	<u> </u> d. square feet	<u> </u> e. square feet	<u> </u> f. square feet
Sq ft between 100-200 ft	<u> </u> g. square feet	<u> </u> h. square feet	<u> </u> i. square feet	<u> </u> j. square feet



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 SE7-2223
 MassDEP File #
 eDEP Transaction #
 Bourne
 City/Town

B. Findings (cont.)

* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23. Restoration/Enhancement *:
- a. square feet of BVW _____ b. square feet of salt marsh _____
24. Stream Crossing(s):
- a. number of new stream crossings _____ b. number of replacement stream crossings _____

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided for in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on _____ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2223

MassDEP File #

eDEP Transaction #

Bourne

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]

"File Number SE7-2223 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2223

MassDEP File #

eDEP Transaction #

Bourne

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
- (1) is subject to the Massachusetts Stormwater Standards
- (2) is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
 - ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
 - iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2223

MassDEP File #

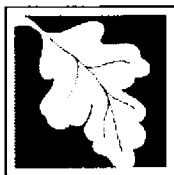
eDEP Transaction #

Bourne

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;
- v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.
- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:
 - i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and
 - ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2223

MassDEP File #

eDEP Transaction #

Bourne

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See attached text

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 SE7-2223
 MassDEP File #
 eDEP Transaction #
 Bourne
 City/Town

D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No
2. The Bourne Conservation Commission hereby finds (check one that applies):
 - a. that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw	2. Citation
---------------------------------	-------------

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

- that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

<u>Bourne wetland protection bylaw</u>	<u>Article 3.7</u>
1. Municipal Ordinance or Bylaw	2. Citation

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.
 The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

see attached text



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2223

MassDEP File #

eDEP Transaction #

Bourne

City/Town

E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

2/03/23

1. Date of Issuance

Please indicate the number of members who will sign this form.

4

This Order must be signed by a majority of the Conservation Commission.

2. Number of Signers

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Robert M. Gray
Signature

ROBERT M. GRAY
Printed Name

[Signature]
Signature

Susan J. Nelson
Printed Name

[Signature]
Signature

Greg Berona
Printed Name

[Signature]
Signature

PS S Z WED
Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

by hand delivery on

by certified mail, return receipt requested, on

Date

2/03/23
Date



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

SE7-2223

MassDEP File #

eDEP Transaction #

Bourne

City/Town

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
SE7-2223
 MassDEP File #

 eDEP Transaction #
Bourne
 City/Town

G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Bourne
 Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Bourne
 Conservation Commission

Please be advised that the Order of Conditions for the Project at:

<u>68 Elgin Road</u>	<u>SE7-2223</u>
Project Location	MassDEP File Number

Has been recorded at the Registry of Deeds of:

<u>Barnstable</u>	_____	_____
County	Book	Page

for: Property Owner

and has been noted in the chain of title of the affected property in:

_____	_____
Book	Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

Applicant's Name: Timothy Bernard
Address: 68 Elgin Road

DEP #: SE7-2223
Bourne #:

This Order of Conditions is being issued based upon strict accordance with the information submitted in the Notice of Intent filed on 11/02/2022 and the Plan of Record dated Rev. 1/13/23 and stamped by Zachary L. Basinski, PE-Alan M. Grady PLS

In addition to the GENERAL CONDITIONS referenced in the Order of Conditions, the Commission has found it necessary to impose the following Special Conditions pursuant to M.G.L. Ch. 131, s.40 and the Town of Bourne Natural Resources Protection Bylaw Article 3.7.

THE SPECIAL CONDITIONS AND BYLAW CONDITIONS CHECKED BELOW APPLY TO YOUR PROPOSAL. NOTE THAT THE ABOVE LISTED GENERAL CONDITIONS ARE AUTOMATICALLY PART OF THIS ORDER OF CONDITIONS.

SPECIAL CONDITIONS Pursuant to M.G.L. C. 131, s. 40.

*** (Pre-Construction) ***

- 1. This Order of Conditions shall apply to any successor in interest or successor in control of the property.
- 2. NO WORK SHALL BEGIN until General Condition #9 has been complied with. The Commission must be in receipt of the Registry information certificate BEFORE work begins. An Enforcement Order will be issued if work is prematurely begun without compliance with this condition.
- 3. ALL CONSTRUCTION MUST COMPLY WITH THE ABOVE-REFERENCED PLANS AND THE CONDITIONS OF THIS ORDER. ANY CHANGES INTENDED TO BE MADE IN THE PLANS OR IN THE WORK, SHALL REQUIRE THE APPLICANT TO FILE A NEW NOTICE OF INTENT, OR TO INQUIRE OF THE COMMISSION IN WRITING WHETHER THE CHANGE IS SUBSTANTIAL ENOUGH TO REQUIRE A NEW FILING. NO CHANGE IN PLAN OR WORK, UNDER THIS FILING IS PERMISSIBLE WITHOUT A NEW NOTICE OF INTENT, OR PERMISSION FROM THE COMMISSION. FAILURE TO COMPLY WITH THIS CONDITION WILL RESULT IN THE ORDER OF CONDITIONS (PERMIT) BEING REVOKED.
- 4. The Plan of Record shall be in full compliance with Appendix G of 780 CMR Massachusetts State Building Code and the requirements the Federal Emergency Management Agency (FEMA). Specific design requirements for construction in flood zones (A, A1-A30, AE, AC, AH, V1-V30, and VE) shall be determined by the Town of Bourne Building Inspector. The final foundation design APPROVED by the Building Inspector shall automatically become a part of the Plan of Record. Noncompliance with any of the requirements of Appendix G of 780 CMR or those of the Building Inspector shall constitute a violation of the Order of Conditions and will be grounds for Enforcement Action and/or the non-issuance of the Certificate of Compliance. Upon requesting a Certificate of Compliance the applicant must present PROOF that his/her project has been designed according to the Plan of Record and to the satisfaction of the Building Inspector.
- 5. Prior to the installation of the subsurface sewage disposal system, you are advised of the necessity to comply with, or receive a variance from, the local Board of Health Regulations & Bylaws and obtain a valid health permit. The Order of Conditions re-emphasizes this requirement and prohibits any construction prior to obtaining a Board of Health permit. A leaching facility must be 150' from any wetland resource area (including the top of the coastal bank) unless a variance or other approval has been granted by the Board of Health.
- 6. Since the building was or is to be constructed after August 10, 1978, and is or will be within 100' of the top of an eroding coastal bank, (310 CMR, 10.30), this Order and the Certificate of Compliance incorporate 310 CMR 10.30(5) which states: "no coastal engineering structure, such

as a bulkhead, revetment, or seawall shall be permitted on an eroding bank at any time in the future to protect the project allowed by this Order of Conditions."

- 7. The applicant as a condition of this Order, grants to the Commission members, and agents of the Commission the right to enter, inspect, and sample the premises to evaluate compliance with the conditions and performance standards stated in this Order, the Act, and 310 CMR 10.00 and the Town of Bourne Wetlands Protection Bylaw Article 3.7, and may require the submittal of any data deemed necessary by the Commission for that evaluation.
- 8. An on-site pre-construction inspection meeting must be held between the Bourne Conservation Commission and/or agent, the contractor responsible for implementing the project, and if applicable, the outside consultant/representative responsible for permitting. The Bourne Conservation Commission must be contacted in writing at least two weeks prior to the scheduled meeting. All erosion controls must be installed at the location of the project prior to the pre-construction meeting, unless otherwise agreed upon by the applicant and the Bourne Conservation Commission.
- 9. The landowner and/or his contractor will notify the Commission in writing 5 days prior to the start of work. The letter shall state the name, address, telephone number (business & home phone) of the project supervisor who will be responsible for insuring on-site compliance with this Order. All sedimentation/erosion control devices shall be installed BEFORE the start of work.
- 10. This document shall be included in all construction contracts and subcontracts dealing with the work proposed and shall supersede other contract requirements.
- 11. No underground petroleum product storage tanks are allowed within 100' of any wetland or within any velocity (V) floodzone as indicated on the most recent FEMA floodzone maps.

*** (Construction) ***

- 12. The project engineer and contractors (and all subcontractors) must be informed of the conditions of this Order. A copy of this Order of Conditions must be available at all times at the construction site for reference. The Applicant is held responsible for compliance with this Order of Conditions.
- 13. Whatever erosion control measures are indicated on the plan, they shall consist of at least a double row of staked hay-bales and these must be maintained throughout the construction period. It is the applicant's responsibility to take additional appropriate measures to control sedimentation/erosion into the wetland areas.
- 14. The Applicant must employ and maintain suitable erosion control measures such as staked hay bales, siltation curtains, bark mulch, jute netting, etc. as shown on the Plan of Record and/or addressed in the Notice of Intent. This siltation control shall be maintained until all disturbed areas are successfully revegetated. Additional erosion controls shall be kept on-site in order to respond to unforeseen circumstances.
- 15. The applicant, owner, successors or assignees shall be responsible for maintaining any on-site drainage structures and out falls, assuring the lasting integrity of vegetative cover on the site and site activities so as to prevent erosion, siltation, sedimentation, chemical contamination or other detrimental impact to the on-site wetland resource area(s) and/or off-site wetland resource area(s). The maintenance activities specified in this Order shall not expire with the issuance of the Certificate of Compliance and shall continue in perpetuity. It is the responsibility of the property owner of record to see that maintenance conditions are complied with as required by this Order.
- 16. Gutters, downspouts and drywell must be installed to collect all roof runoff.
- 17. All drainage must be directed into a leaching type catch basin before being discharged towards

or into any wetland or surface water body. All catch basins must incorporate measures to insure the removal of pollutants such as oil and gas and must provide for adequate sediment retention. The basins and oil absorbent material shall be regularly cleaned and maintained.

- 18. Any refuse material generated through the project construction will be removed to an approved landfill, and in no case will these materials be allowed to be buried or disposed of on site or on abutting property. REMOVAL MUST BE DONE WEEKLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. REFUSE MUST NOT BE ALLOWED TO ENTER ANY WETLAND AREAS.
- 19. Used petroleum products from the operation or maintenance of construction equipment and construction debris shall be collected weekly and disposed of off-site at an approved landfill. No on-site disposal is permitted.
- 20. Only rubber tired or tracked vehicles utilizing swamp mats/planks will be permitted to traverse the following resource areas: beaches, dunes, and saltmarshes.
- 21. Use of heavy equipment shall be confined to inside the limit of work as shown on the Plan of Record. All work shall be accomplished from the UPLAND side of the limit of work line.
- 22. The use of heavy equipment upon the saltmarsh, dunes or coastal beach is PROHIBITED. All work within these resource areas must be done by hand or with suitable equipment approved by the Commission
- 23. The proposed stairs shall be elevated __ feet above the existing grade. All pilings should be supported by SONO tube footings. Excavated materials shall be removed from the coastal bank.
- 24. Driveway must be constructed out of pervious material in perpetuity.
- 25. A landscaping plan including the size, quantity, species and location of plantings including square footage of lawn, mulch, etc. must be submitted and approved by the Conservation Agent and/or the Commission prior to receiving the occupancy permit.
- 26. All vegetation must be predominantly native and non-invasive. All plants must be allowed to grow to maturity before pruning. All plantings will be monitored for a minimum of two growing seasons and any plants that do not survive must be replaced.

*** (Post Construction) ***

- 27. Upon completion of your project you must apply for a Certificate of Compliance. This Order will not be considered complied with until the Certificate of Compliance has been requested, granted and RECORDED at the Registry of Deeds in Barnstable. To insure timely issuance of the Certificate of Compliance you must request the Certificate within 30 days of the completion of your project.
- 28. Prior to the issuance of a Certificate of Compliance, the project engineer or consultant shall certify that the project has been completed in compliance with this Order and the original Plan of Record. Any variations from the approved plan should be clearly noted and reasons given to justify the noncompliance. (see Bylaw condition/requirement also)
- 29. An as-built plan, signed and stamped by a registered professional engineer or land surveyor in the Commonwealth of Massachusetts shall be submitted to the Commission at the same time as a written request for a Certificate of Compliance and shall specify how the completed plan

differs from that shown on the plans referred to in the Order of Conditions. The as-built plan shall include, but not be limited to the following:

All pipe/culvert inverts for inflow and outfalls, pipe slope, size and composition; location of other drainage structures; limits of fill or alteration; location of any structure and pavement within 100' of any wetland resource area (including the top of the coastal bank); the edge of each wetland resource area; the grade contours within 100' of the wetland resource areas

SPECIAL CONDITIONS pursuant to the Bourne Wetland Protection By-Law Article 3.7

- 1. The total lawn area for this lot shall not exceed ___ s.f. Lawn fertilizer is a known source of nitrogen loading, which causes pollution of coastal waters. Phosphates are known causes of freshwater eutrophication.
- 2. All new habitable buildings, and accessories thereto, shall be setback at least fifty (50) feet from any wetland resource area as per Article 3.7 Town of Bourne Wetlands Protection By-Laws unless the Commission has specifically approved a lesser setback distance.
- 3. A Minimum distance of ___ feet of natural vegetation (buffer zone) must be maintained between any resource area and altered area.
- 4. No clear-cutting of standing trees, brush, or surface vegetation is allowed outside of the approved limit of work as shown on the approved Plan of Record. Any additional vista pruning or vegetation removal not identified on the Plan of Record will require additional coordination and/or filing with the Conservation Commission.
- 5. All excavation will immediately halt if any historical or archeological artifacts are uncovered and the Applicant will report this information immediately to the Commission, the Town of Bourne Historical Commission and the Massachusetts Historical Commission. Failure to report this information will be grounds to revoke this permit.
- 6. During construction for this project, an on-site foreman, directing engineer or designated construction manager and the excavating contractor shall have a copy of this Order at the site, shall familiarize him or herself with the conditions of this permit, and shall adhere to said conditions.
- 7. To insure timely issuance of the Certificate of Compliance, requests should be made within 30 days of the completion of the project.
- 8. In order to determine whether or not the Order of Conditions (OOC) has been properly complied with, the Commission requires that you provide a copy of the foundation As-built. This is necessary to determine if you have complied with your original Plan of Record and Notice of Intent prior to the Commission issuing the Certificate of Compliance.
- 9. The installation of a garbage grinder is strictly PROHIBITED under this Order of Conditions and it is recommended that the applicant have the Septic System serviced (checked & pumped if necessary) every two years. This condition shall continue in perpetuity.
- 10. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a Section 10 and/or Section 404 Permit from the United States Army Corps of Engineers for the proposed project.
- 11. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a Water Quality Certificate from the DEP Division of Water Pollution Control relative to 401
- 12. This Order of Conditions (OOC) is not valid until the applicant applies for and receives a License from the DEP Division of Wetlands and Waterways relative to Chapter 91, The Public

Waterfront Act & its regulations at 310 CMR 9.00.

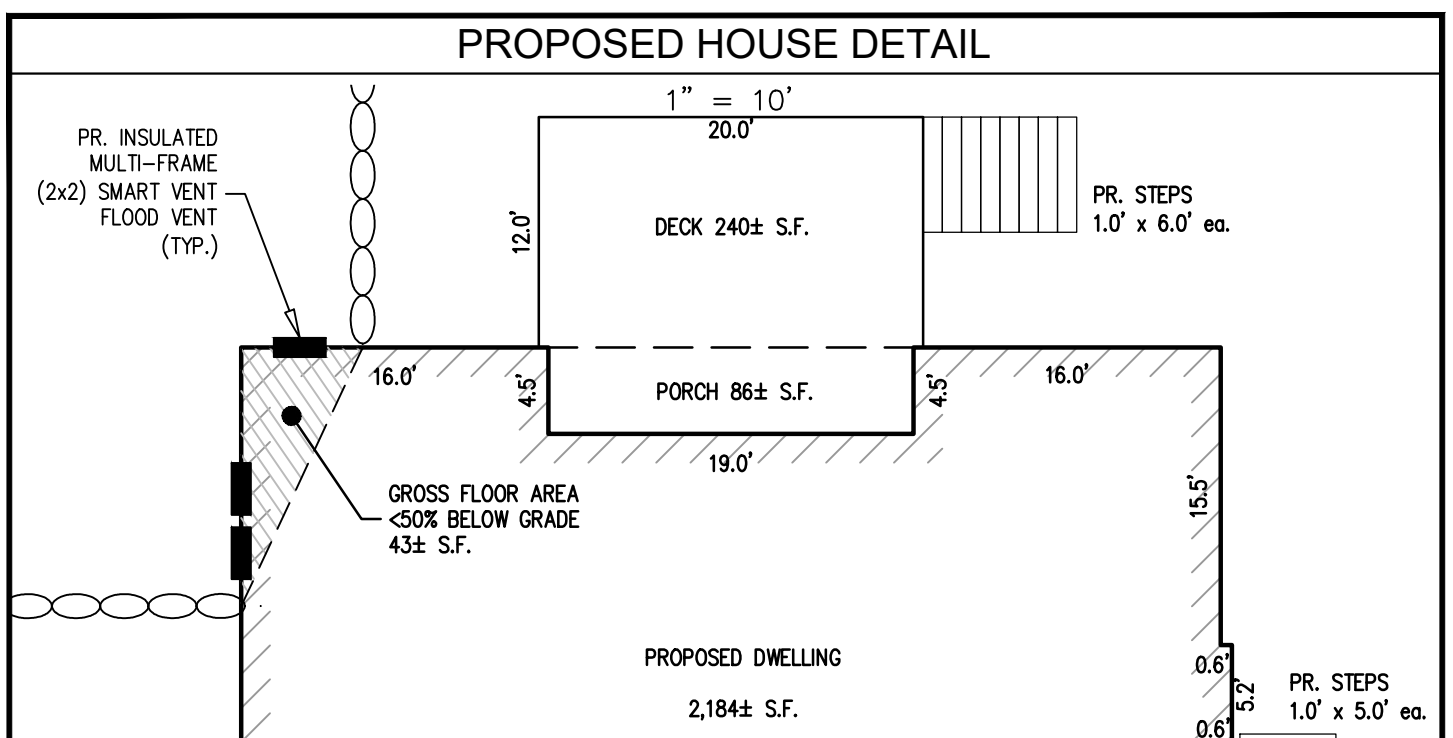
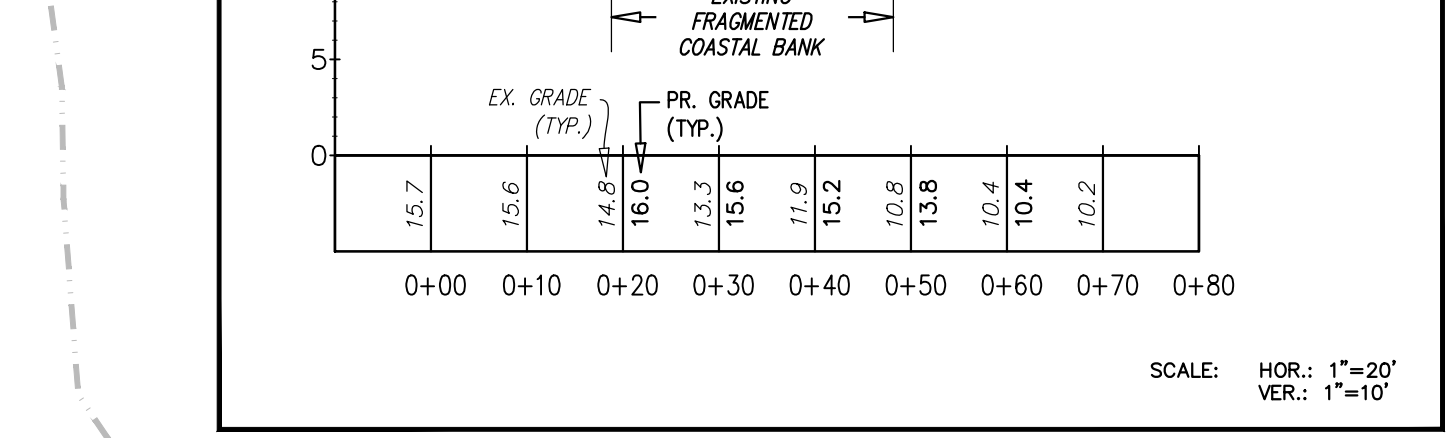
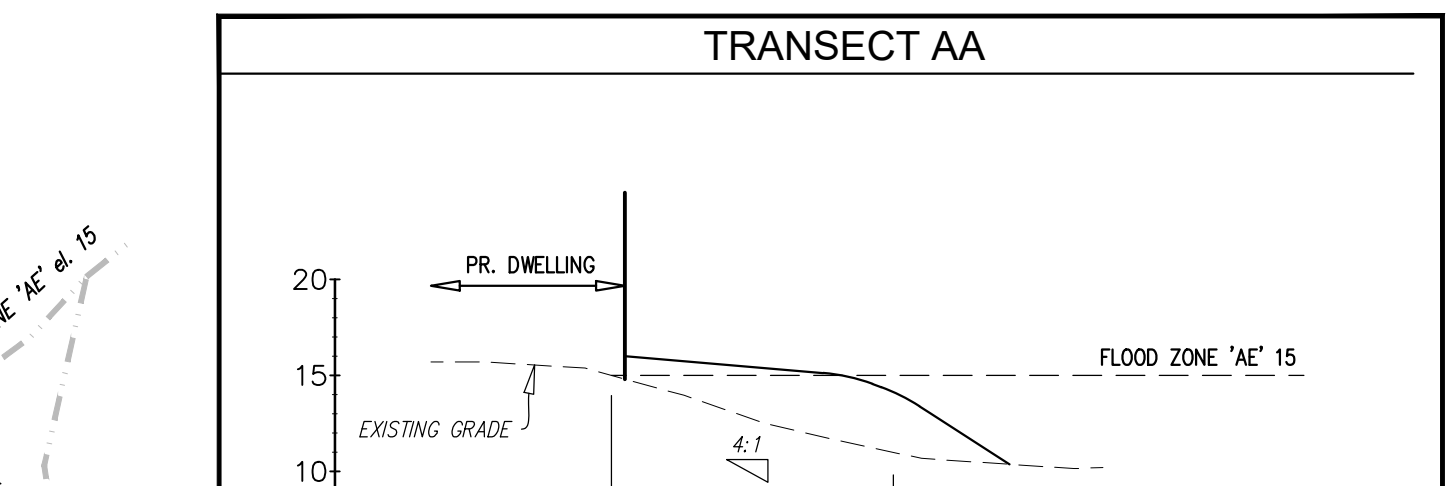
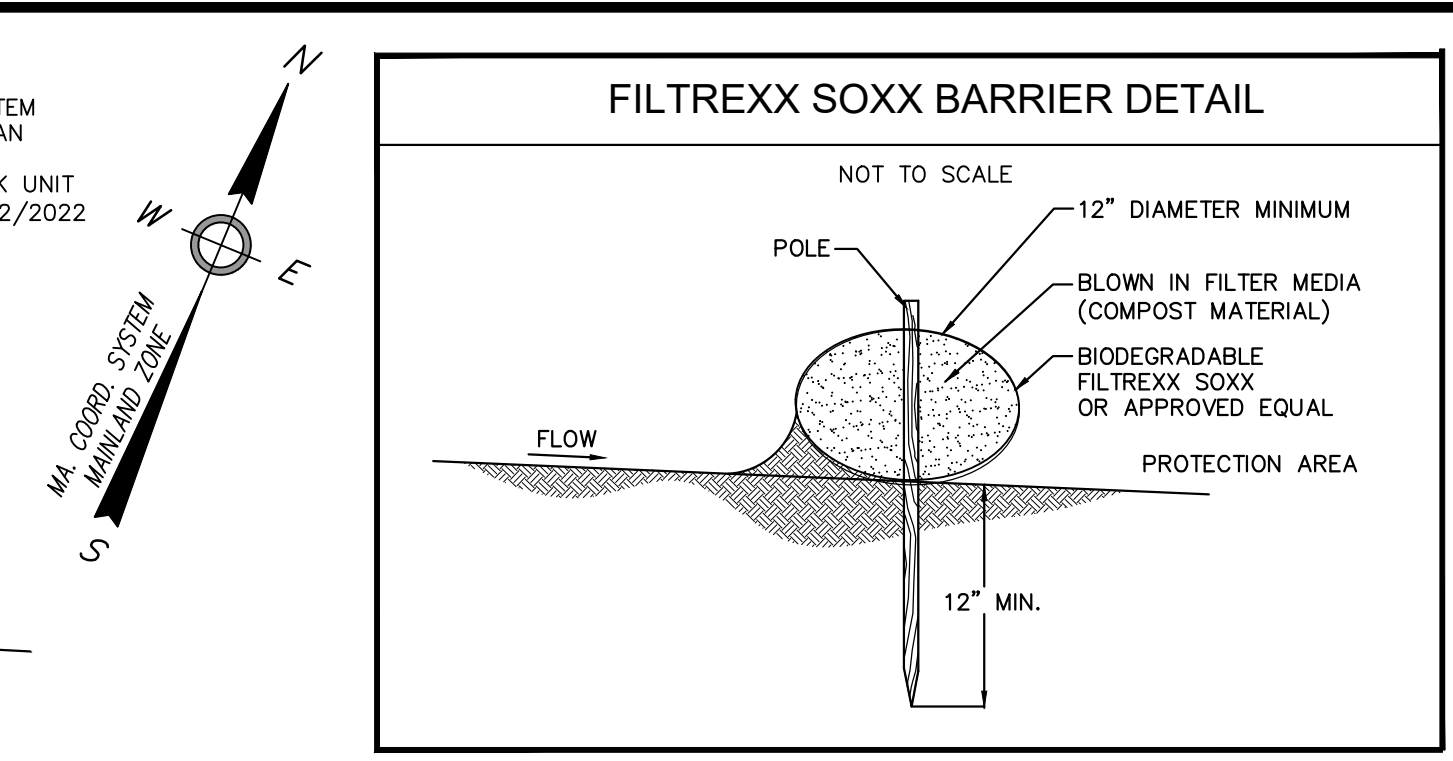
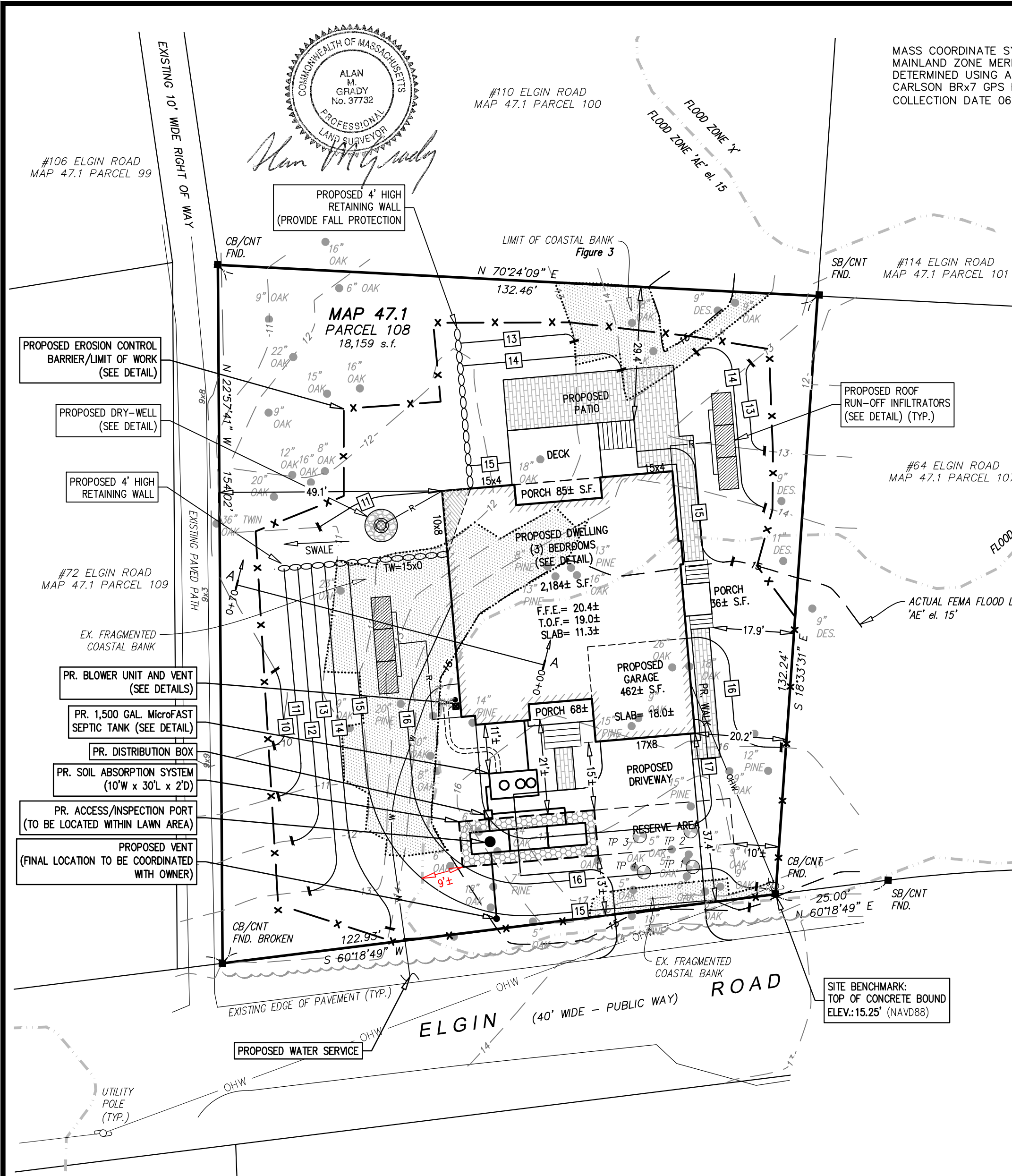
*** (Docks, Piers, Floats, Dredging, etc.) ***

- 13. Post dredging soundings shall be made by the project engineer and submitted to the Con-Com for review.
- 14. The structure shall be continuously maintained in a manner that will insure safe use and shall be subject to inspection by the Harbormaster at anytime.
- 15. The public shall not be hindered from free access over or under the proposed structure for the purposes of fishing or fowling between the tide lines.
- 16. The structure shall be subject to annual review and approval by the Harbormaster in accordance with M.G.L. Chapter 91, Section 10A and/or current Town of Bourne Waterways Regulations.
- 17. No ramps, floats or other parts of the proposed structure are to be stored upon the saltmarsh, coastal dune, coastal bank or any other wetland resource area except the floodzone. All floats and other seasonal structures must be removed from the waterways from October 15 to April 1st and stored in a suitable UPLAND AREA.
- 18. Any changes in the configuration of the proposed structure would require an additional filing with the Commission and/or approval of the Harbormaster.
- 19. Any shellfish that must be relocated as a result of the proposed construction will be done at the applicant's expense and under the direction of the Department of Natural Resources (Shellfish Warden)
- 20. Should the proposed float(s) and/or other parts of the proposed structure break loose it will be the responsibility of the applicant to recover same and repair any damage to property of other parties that occurred due to the loose structure.
- 21. If it should be determined at a later date that this structure is an interference to navigation, the applicant will be required to down size the structure accordingly under the direction of the Harbormaster.
- 22. Piles must be driven, not jetted into the substrate.
- 23. Only non-leaching CCA treated lumber/piles or galvanized steel piles will be permitted for use on structures that will be placed into the water. No creosote is allowed.
- 24. Deck spacing must be spaced at 3/4 - 1" apart to allow for light penetration to the vegetation below the decking.
- 25. If ice damage or extreme weather conditions cause piling(s) to be damaged, an RDA must be filed to restore the stability, safety and function of the structure. The Conservation Commission may use discretion for cases that may disturb the wetland resource areas to a point that may require the filing of a Notice of Intent.

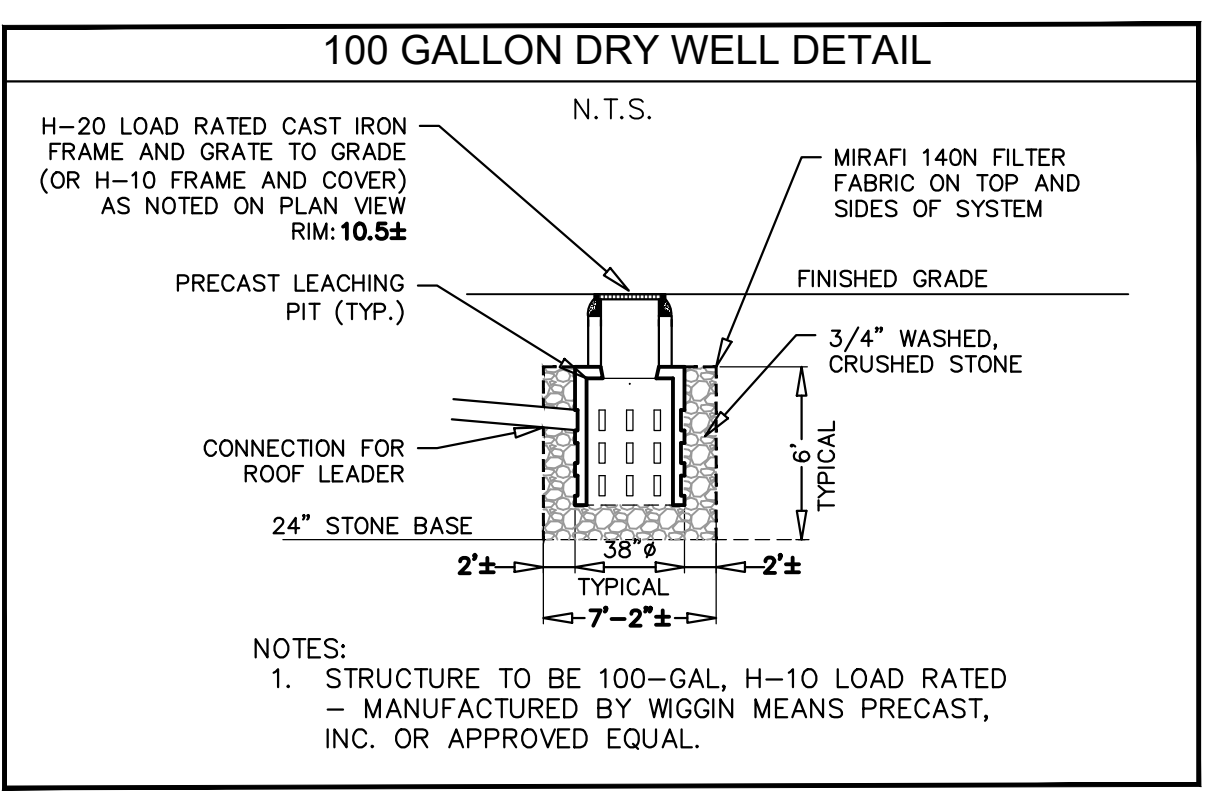
ADDITIONAL SPECIAL CONDITIONS pursuant to the Bourne Wetland Protection By-Law Article 3.7

General condition Number(s), Special Condition Number(s), Bylaw Conditions Number(s) above shall continue in perpetuity beyond the limitations of this Order and with the sale of the property to others.

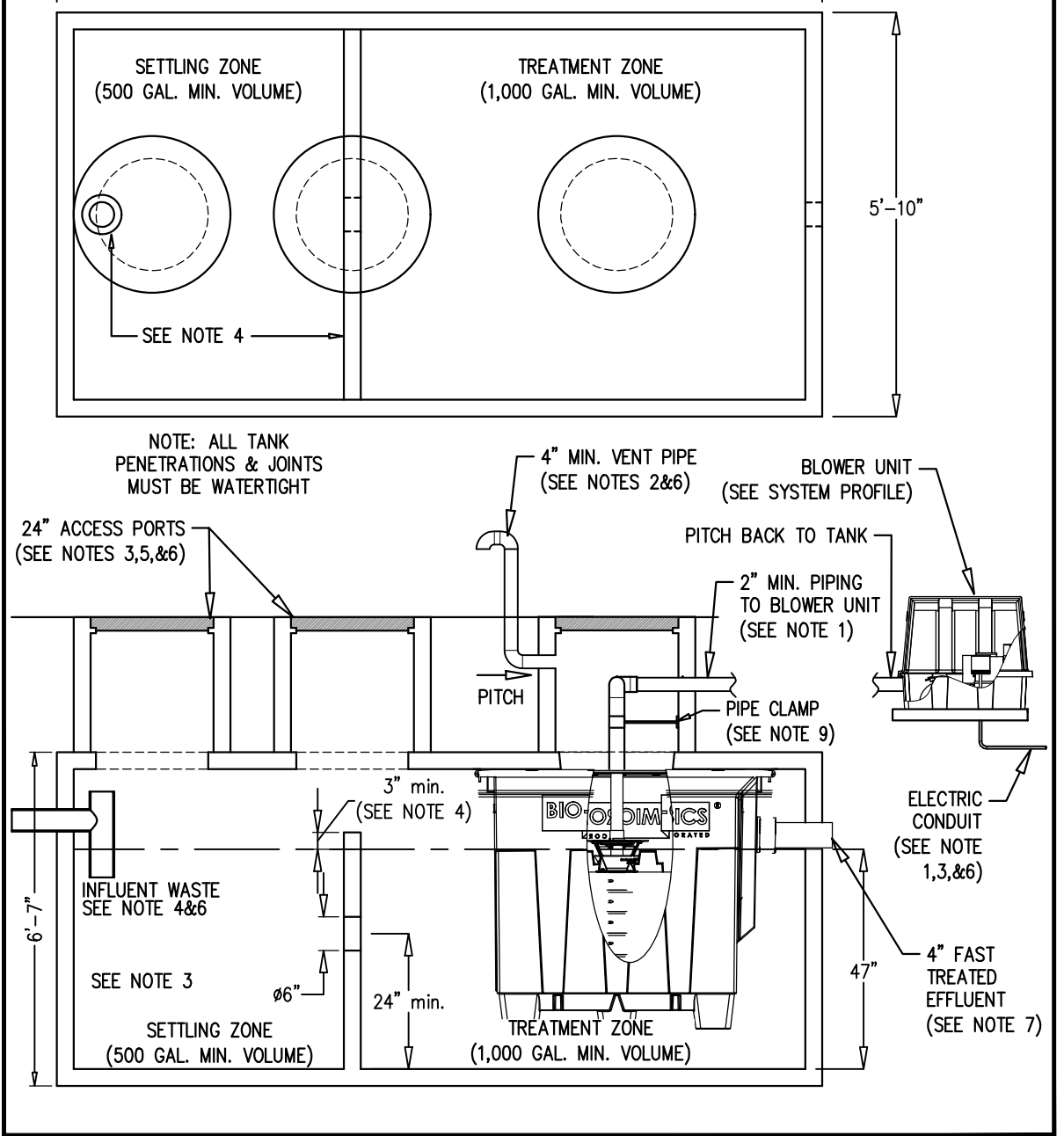
The Applicant is reminded of his/her right to Appeal this Order or any part herein. This Appeal must be a dual appeal to both DEP within 10 days and to Superior Court pursuant to M.G.L c. 249 s. 4 within 60 calendar days of the issuance of this Order of Conditions.



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.



MicroFAST 0.5 FAST UNIT (INTERNAL MOUNT) (H-20 LOAD RATED)
BIO-MICROBICS INCORPORATED
 MicroFAST Notes:
 1. Blower piping to FASTs may not exceed 100FT total length and use a maximum of 4 elbows. For distances greater than 100FT - consult factory. Blower must be located above flood/flooding water levels on a concrete base 24" x 16" x 2" minimum or underground as shown in system profile. Blower and vent piping to pitch back toward tank.
 2. Vent to be located above finish grade or higher to avoid infiltration. Cap with vent grate w/ at least 7.1 sq. in. open surface area. Secure with stainless steel screws or run vent to desired location and cover opening with vent grate w/ at least 7.1 sq. in. of open surface area. Secure with stainless steel screws. Vent piping must not allow excess moisture build up or back pressure.
 3. All appliances to FASTs (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 baffles 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" 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 pod and vents are provided by design.
 7. All piping and ancillary equipment installed after FASTs must not impede or restrict free flow of effluent.
 8. No more than 4 FT of fill may be placed over unit lid. (see system profile for tank depth).



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'	17.9'
REAR YARD:	12'	29.4'
MAX. GROSS FLOOR AREA TO LOT AREA:	20% (3,631 s.f. max.)	19.7% (1,583± s.f.)
MAX. LOT COVERAGE:	20% (3,631 s.f. max.)	17.6% (1,213± s.f.)
BUILDING HEIGHT:	35'	34.8'± (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

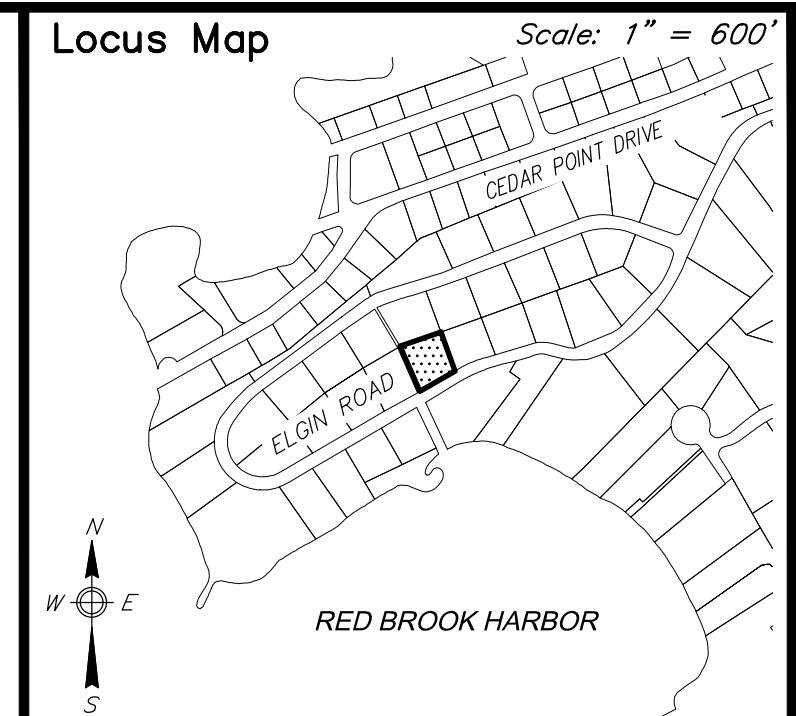
SOIL TEXTURAL CLASS:	CLASS 1
PERC. RATE:	< 2 MINUTES/INCH
NO. OF BEDROOMS ALLOWED:	3
DESIGN FLOW REQUIRED:	330
SEPTIC TANK REQUIRED:	1500 GALLONS
SEPTIC TANK PROVIDED:	1500 GALLONS

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

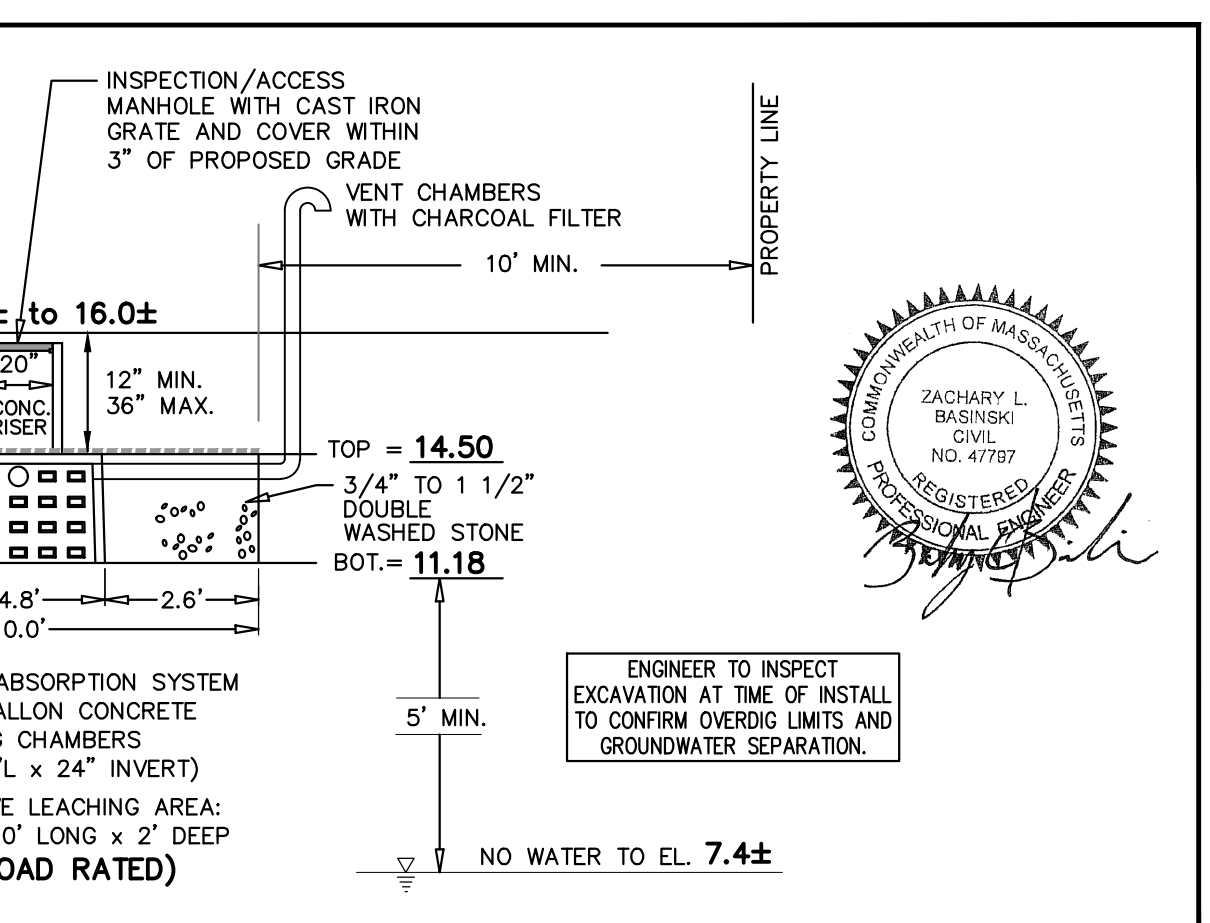
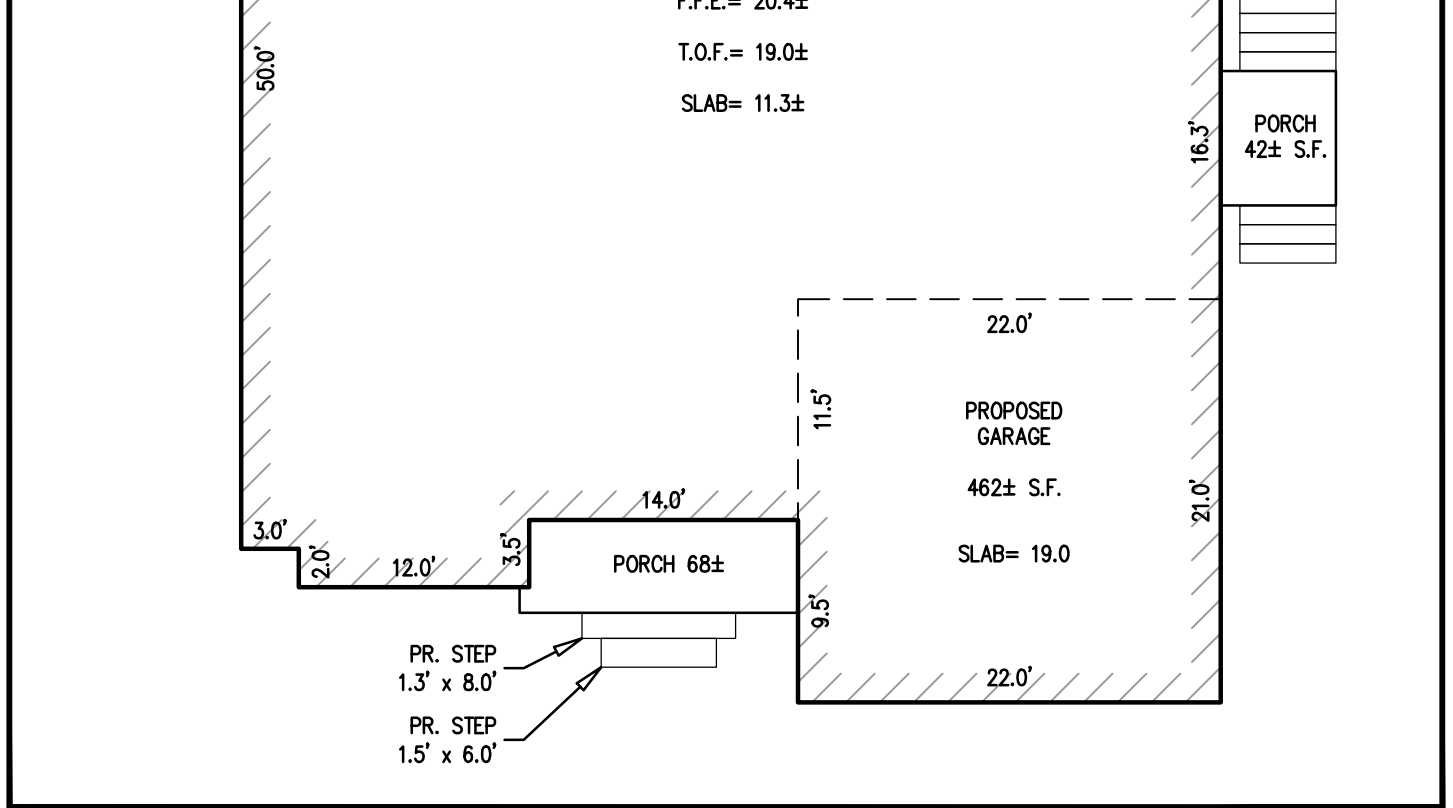
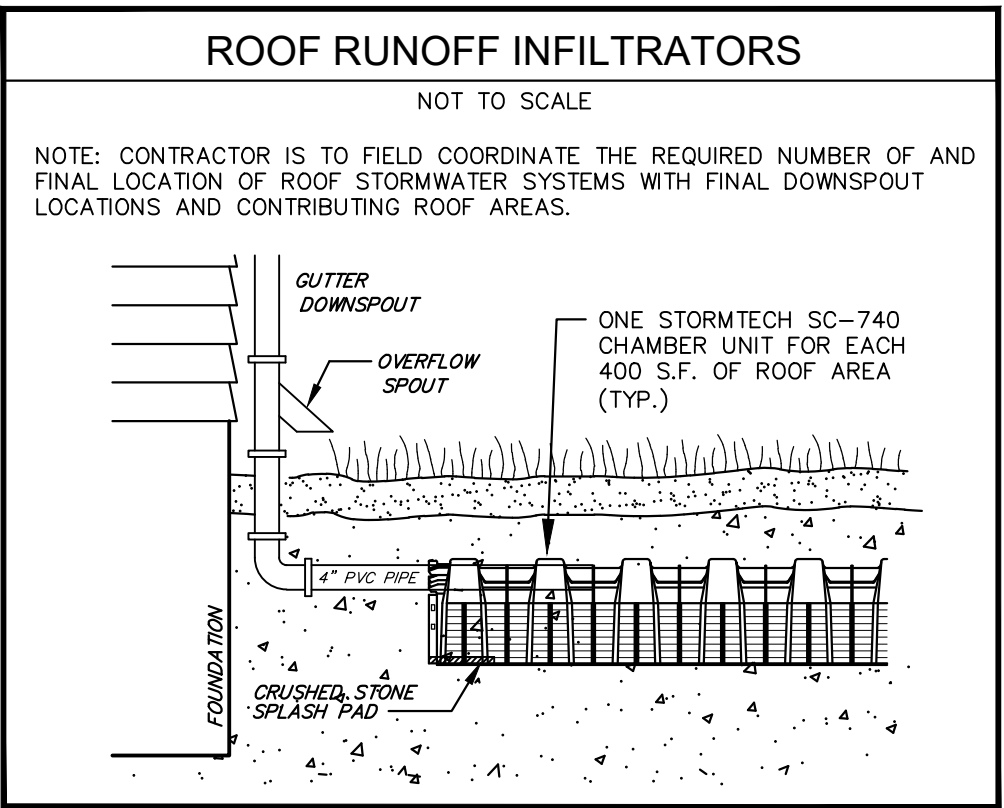
TP NO.	1	2
GRD. EL.	17.4	17.4
GW. EL.	NONE TO 7.4	NONE TO 7.4
0'	A/O LOAMY SAND 10YR 3/4	A/O LOAMY SAND 10YR 3/4
10'	Bw LOAMY SAND 10YR 5/4	Bw LOAMY SAND 10YR 5/4
24'	C1 LOAMY SAND 2.5Y 5/4	C1 LOAMY SAND 2.5Y 5/4
70'	C2 MEDIUM SAND 2.5Y 6/4	C2 MEDIUM SAND 2.5Y 6/4
120'	NO MOTTLING NO WATER	NO MOTTLING NO WATER
TP NO.	3	4
GRD. EL.	17.4	17.6
GW. EL.	NONE TO 7.4	NONE TO 7.4
0'	A/O LOAMY SAND 10YR 3/4	A/O LOAMY SAND 10YR 3/4
10'	Bw LOAMY SAND 10YR 5/4	Bw LOAMY SAND 10YR 5/4
24'	C1 LOAMY SAND 2.5Y 5/4	C1 LOAMY SAND 2.5Y 5/4
72'	C2 MEDIUM SAND 2.5Y 6/4	C2 MEDIUM SAND 2.5Y 6/4
120'	NO MOTTLING NO WATER	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 INSTALLATION.
 - OWNER/APPLICANT:
TIMOTHY BERNARD
MICHELLE BERNARD
72 ELGIN ROAD
POCASSET, 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 HPS ESTIMATED HABITAT OF RARE WILDLIFE AND PRIOR 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.

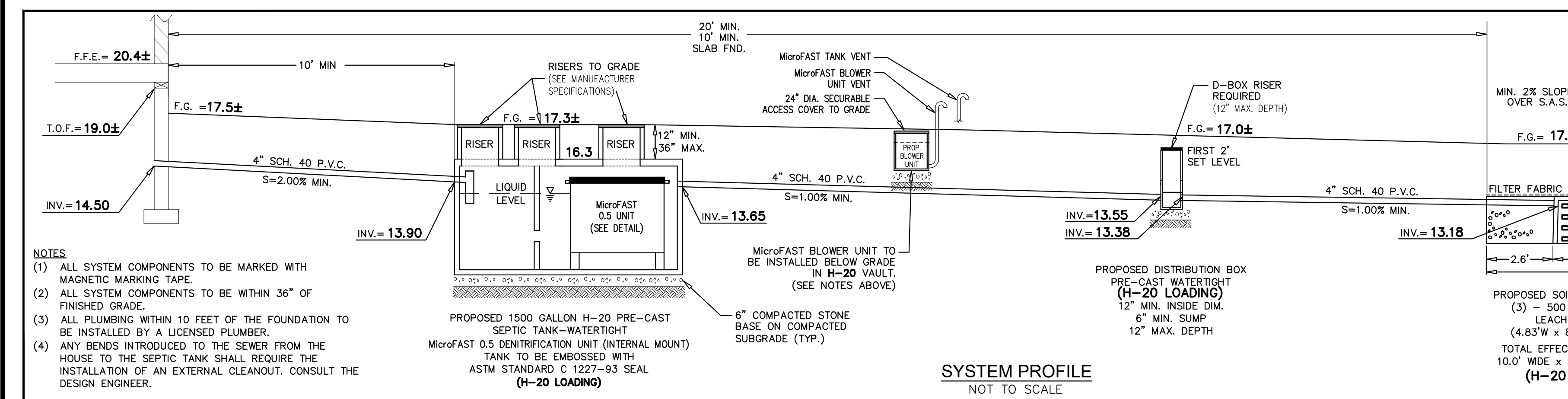
BLOWER UNIT INSTALLATION NOTES

- 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.



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
 19 OLD SOUTH ROAD NANTUCKET, MA 02554
 (tel) 508.833.0070 (tel) 508.325.0044
 (fax) 508.833.2282 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	1/13/23	REVISE LIMIT OF WORK, ADD EXISTING TREE LOCATIONS, REVISE STEPS/DECK/PATIO, ADD TRANSECT, REVISE GRADING	JPH
2	3/16/23	REVISE DECK/PORCH FOOTPRINT & DIMS.	JPH

Date: OCTOBER 18, 2022 Drawn: JPH/BEI Checked: ZLB/DAF Sheet: 1 of 1

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 Rd, Cataumet, MA

TITLE REFERENCE FOR PROPERTY SERVED BY ALTERNATIVE SYSTEM *[check and complete each that applies]:*

- Deed recorded with the Barnstable Registry of Deeds in Book 30578, Page 212
 Certificate of Title No. _____ issued by the Land Registration Office of the _____
Registry District
 Source of title other than by deed _____

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

Timothy Bernard and Michelle Bernard

OWNER(S) MAILING ADDRESS:

72 Elgin Rd, Pocasset, MA 02559

[If Alternative System Owner(s) is other than Property Owner(s), complete the following:]

Alternative System Owner Name:

Alternative System Owner Address:

Alternative System Owner Telephone Number: _____ E-mail Address: _____

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. 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

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

<https://www.mass.gov/guides/title-5-innovativealternative-technology-approval-letters>

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 [*Transmittal Number*].

[Check one of the following, as applicable:]

- Approved for remedial use under 310 CMR 15.284
- Approved for piloting under 310 CMR 15.285
- Provisionally approved under 310 CMR 15.286
- Certified for general use under 310 CMR 15.288

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

WITNESS the execution hereof under seal this 10th day of May, 2023, made by the above-named Alternative System Owner(s).

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

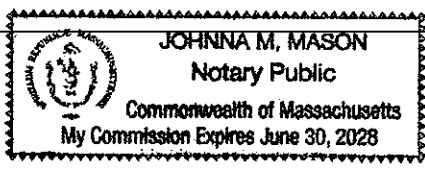
Print Name(s): Timothy J. Bernard and Michelle C. Bernard

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss

On this 10th day of May, 2023, before me, the undersigned notary public, personally appeared Timothy J. & Michelle C. Bernard (name of document signer), proved to me through satisfactory evidence of identification, which were MA license, 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.

[Signature]
(Official signature and seal of notary)



[Complete the following Property Owners Consent if Alternative System Owner is other than the Property Owner:]

CONSENTED TO:

[Property Owner(s)]

Print Name(s): _____

COMMONWEALTH OF MASSACHUSETTS

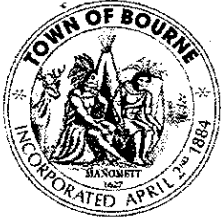
_____, ss

On this ____ day of _____, 20__, before me, the undersigned notary public, personally appeared _____ (name of document signer), 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:

T. Quarino 5/9/2023
Agent of the Board of Health
Health Department
Town of Bourne



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



May 4, 2023

Timothy Bernard & Michelle Bernard
72 Elgin Road
Pocasset, MA 02559

**RE: 68 Elgin Road, Cataumet (Book 35078, Page 212)
Notice of Approved Innovative/ Alternative (“I/A”) Technology System**

To Whom It May Concern:

At the duly posted public meeting on February 22, 2023, the Bourne Board of Health unanimously voted to approve variances from the Board of Health 150’ Setback Regulations and Title 5 of the State Environmental Code for the new innovative/ alternative septic system at 68 Elgin Road, Cataumet (map 47.1, parcel 108). As illustrated on the Proposed Site & Subsurface Sewage Disposal Plan dated October 18, 2022, and revised on March 16, 2023, by Bracken Engineering, Inc., the proposed septic system required the following relief:

- ◇ 310 CMR 15.211—A 41 foot variance from the State setback requirement for the placement of the soil absorption system within 9 feet of a fragmented, non-water dependent coastal bank; and
- ◇ A 141 foot variance to the Bourne Board of Health setback requirement for the placement of the soil absorption system within 9 feet of the fragmented, non-water dependent coastal bank.

The Board felt as if these variances were in order where the sewage disposal system will be comprised of a BioMicrobics MicroFAST 0.5 de-nitrification unit which will offer a substantial degree of environmental protection as it is approved by MassDEP for nitrogen reduction. The variances requested were based on the existing topography of the lot, and the setbacks to the coastline are greater than 150 feet. The architectural plans for the new single-family home depict that the dwelling will not exceed three-bedrooms per the Board of Health definition, and that 6 foot cased openings shall be provided for the den and office.

These approvals are valid for up to two years pursuant to the Board’s variance and permit validity regulations, and contingent upon an I/A Disclosure Notice being recorded with the chain of title for the property. The Board of Health requires receipt of a copy of the recorded Disclosure Notice as well as an Operation and Maintenance Agreement prior to issuance of a disposal works construction permit. Pursuant to state and local requirements, this operation and maintenance agreement will need to be maintained for the life of the system. Should you have any questions, please do not hesitate to contact the Health Department.

Sincerely,

Terri Guarino, RS, CHO
Health Agent

C.C. Bracken Engineering, Inc.

BARNSTABLE REGISTRY OF DEEDS
John F. Meade, Register

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

August 16, 2023

Hand Delivery & Email [tguarino@townofbourne.com]

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

**RE: Bourne Board of Health Variance – Proposed Septic Upgrade
10 Harbor Way (Map 45, Parcel 19) / 0 Lighthouse Lane (Map 45, Parcel 14)**

Dear Members of the Board:

On behalf of the current owners of #10 Harbor Way, Stanley DaVitoria & Ludo Gardini, please accept this letter as a request to reinstate the following variances from the Town of Bourne Health Regulations for the proposed septic installation at the above referenced property. Bracken Engineering, Inc. (BEI) cordially request the following *Local Variances*:

- **A 45' local variance from the BOURNE BOARD OF HEALTH Regulations for a 105' setback from a proposed soil absorption system from a non-eroding Coastal Bank.**
- **A 5' local variance from the BOURNE BOARD OF HEALTH Regulations for a 145' setback from a proposed soil absorption system to Mean High Water.**

The proposed project was before the Board on May 17, 2017, requesting the above variances which were approved with the following conditions:

10 Harbor Way – Notice of Alternative Sewage Disposal System and Grant of Title 5 Nitrogen Loading Restriction and Easement on Facility Land – Recorded BK 29680, Pg 222

0 Lighthouse Lane – Grant of Title 5 Nitrogen Loading Restriction and Easement on Nitrogen Credit Land and a Septic Easement for the benefit of 10 Harbor Way – Recorded BK 29680, Pg 230

1 Lighthouse Lane – 10' Wide Septic Force Main Easement for the benefit of 10 Harbor Way – Recorded BK 30640, Pg 190.

Bracken Engineering, Inc. is requesting that the Bourne Board of Health deviate from the goal of full compliance by allowing the *Local Variances* requested above. The above *Local Variances* requests are being made because of the relatively small lot and its proximity to adjacent 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 August 23rd 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
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., CFM
3644070_1

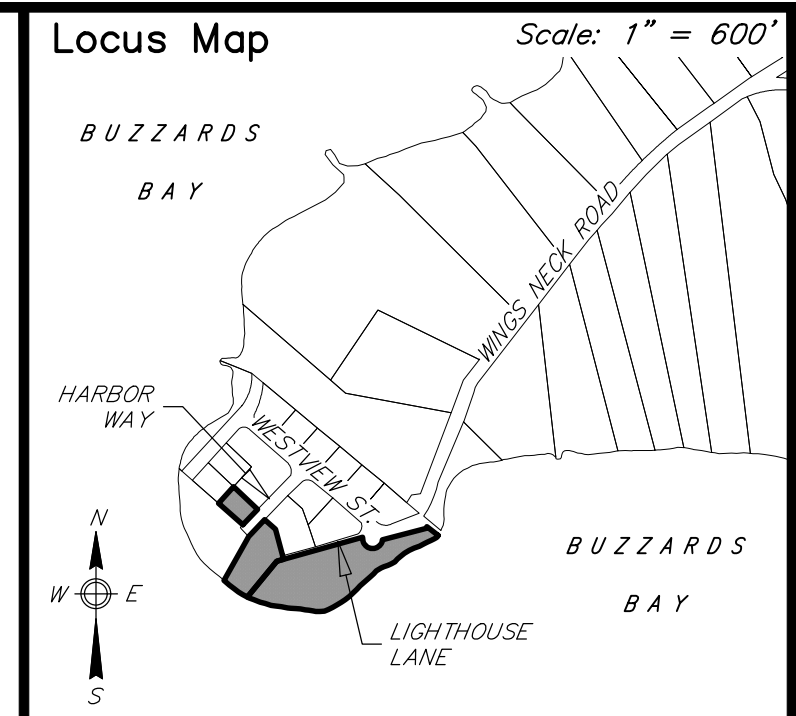
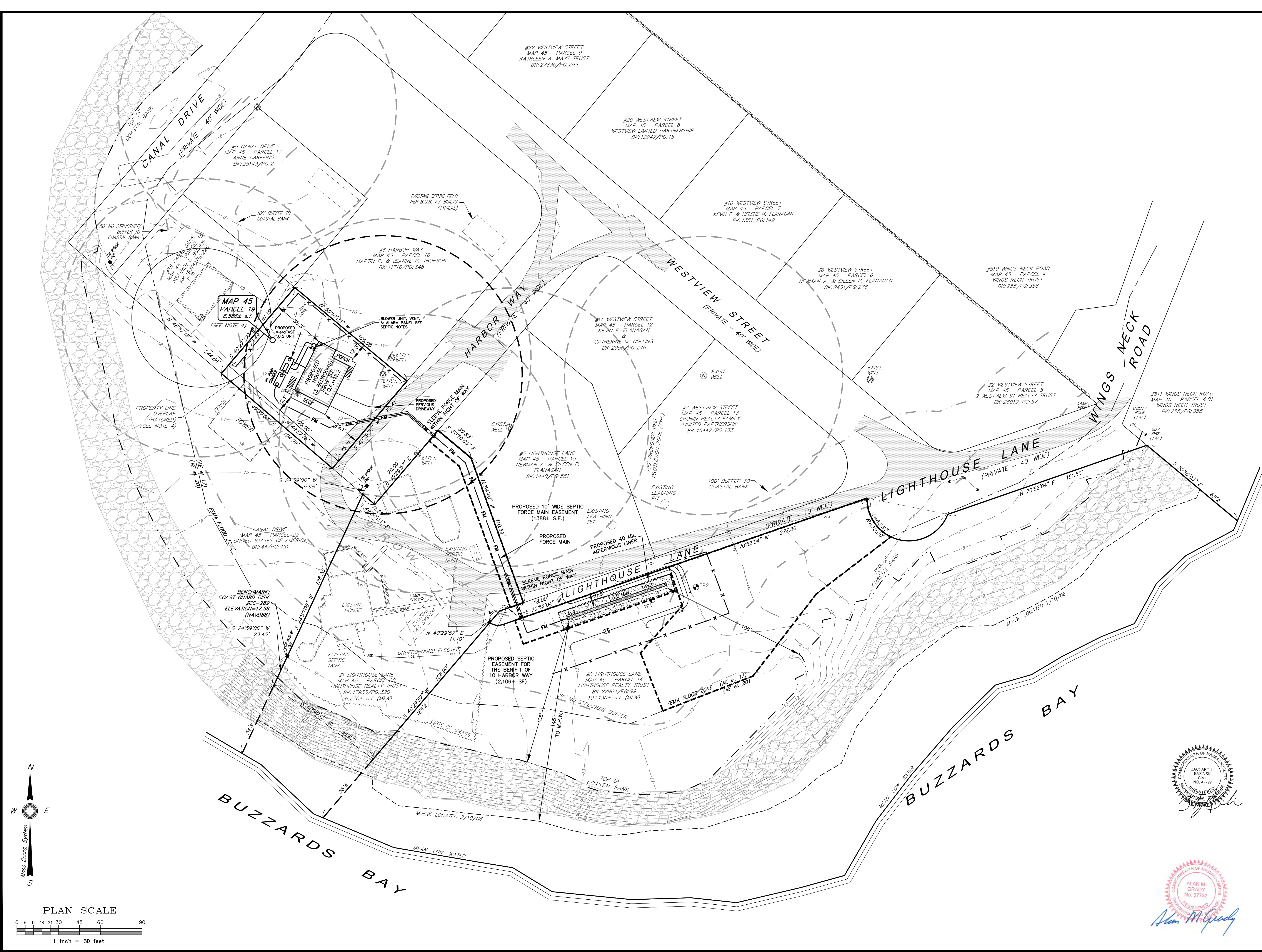
A handwritten signature in black ink, appearing to read 'Jason P. Heyer', written over a horizontal line.

Jason P. Heyer, CFM



Senior Project Manager

Project Designer



Benchmark
 COAST GUARD DISK #CC-289
 ELEVATION = 17.96 (NAVD88)

Owners

LOCUS: #10 HARBOR WAY
 MAP 45 PARCEL 19

OWNER: STANLEY DAVITORIA
 #95 MOUNTAIN AVENUE
 WALDEN, MA 02148
 LUDO GARDINI
 #298 NEWTON STREET 2nd FLR.
 WALTHAM, MA 02453

DEED REF: Bk: 20251, Pg: 125

PLAN REF: Pl. Bk: 115, Pg: 95 (LOT 13)

LOCUS: #1 LIGHTHOUSE LANE
 MAP 45 PARCEL 20

OWNER: THE LIGHTHOUSE REALTY TRUST
 c/o CHRISTINA STEVENS
 P.O. Box 221
 SOUTH CHATHAM, MA. 02659

DEED REF: Bk: 17933, Pg: 320

LOCUS: #0 LIGHTHOUSE LANE
 MAP 45 PARCEL 14

OWNER: THE LIGHTHOUSE REALTY TRUST
 c/o CHRISTINA STEVENS
 22 RED GATE LANE
 SOUTHBORO, MA. 01772

DEED REF: Bk: 22904, Pg: 99

PLAN REF: Pl. Bk: 597, Pg: 29 (PARCEL 14)

Notes

- LOCI FALL WITHIN A SPECIAL FLOOD HAZARD ZONE AE17 AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C0491J dated 07/16/2014.
- LOCI DO NOT FALL WITHIN THE NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE AND PRIORITY HABITATS OF RARE SPECIES.
- PROVIDE REQUIRED FLOOD VENTS IN ACCORDANCE WITH MASSACHUSETTS BUILDING CODE & NFIP REQUIREMENTS.
- LOT AREA PER RECORD PLAN (8,586 s.f.), EFFECTIVE LOT AREA (7,832 s.f.) EXCLUDING IDENTIFIED PROPERTY LINE OVERLAP AREA.

VARIANCE REQUEST

TO ALLOW 104.8 FEET FROM S.A.S. TO COASTAL BANK A 45.2 FOOT VARIANCE FROM 150 FEET REQUIRED.

ZONING SUMMARY
 REFER TO BYLAW SECTION 2450

	REQUIRED	PROPOSED
LOT AREA:	80,000	7,832± S.F. (6)
FRONT YARD:	20'	29.1'
SIDE YARD:	12'	12.1'
REAR YARD:	12'	43.6'
LOT COVERAGE:	25% (5) (MAX.)	17.0% (7,832 S.F.) (1,325 S.F.)
GROSS FLR AREA:	24% (5) (MAX.)	23.0% (1,802 S.F.) (2,805± S.F.)
BUILDING HEIGHT:	27' (5)	31.2' (5) (c)

(5) SEE TABLE 2456 FOR NON-CONFORMING LOTS IN BOURNE ZONING BY LAWS.
 (6) BUILDING HEIGHT UP TO 5' EXTRA PER ZONING BY-LAW SECTION 8 2500(4).
 (c) HEIGHT BASED ON AN EXISTING AVERAGE GRADE CALCULATION OF 12.0'.
 (d) EFFECTIVE LOT AREA OF #10 HARBOR WAY (SEE NOTE 4 ABOVE).

Prepared By:

BRACKEN ENGINEERING, INC.
 49 HERRING POND ROAD BUZZARDS BAY, MA 02532
 (tel) 508.833.0070 (fax) 508.833.2282

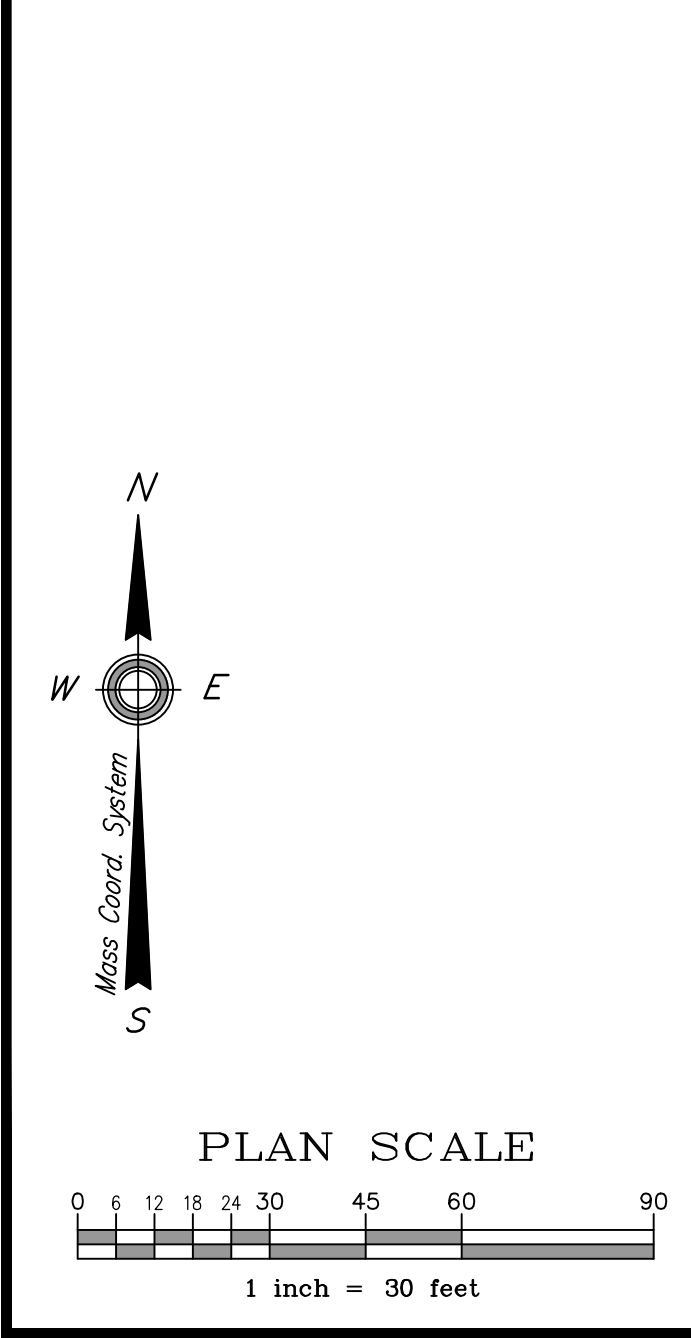
19 OLD SOUTH ROAD NANTUCKET, MA 02554
 (tel) 508.325.0044 (fax) www.brackeneng.com

PROPOSED SITE PLAN IN BOURNE, MASSACHUSETTS

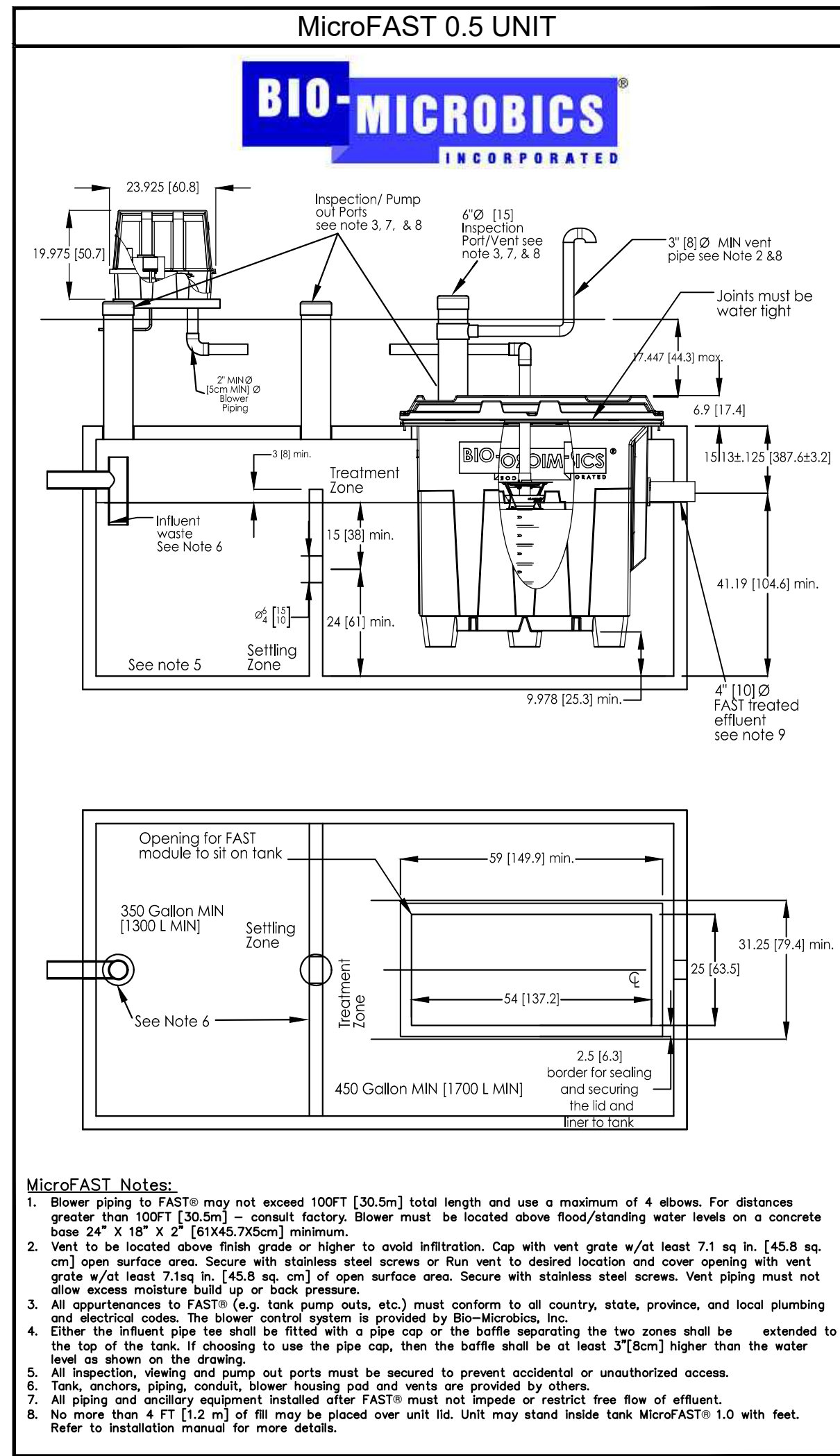
Prepared For:
STANLEY DAVITORIA & LIGHTHOUSE REALTY TRUST
 #10 HARBOR WAY - MAP 45 PARCEL 19
 #1 LIGHTHOUSE LANE - MAP 45 PARCEL 20
 #0 LIGHTHOUSE LANE - MAP 45 PARCEL 14

No.	Date	Revision Description	By
4	08/15/23	UPDATE OWNERSHIP	BEI
3	04/25/17	REVISED WELL AND SEPTIC LOCATIONS	BEI
2	10/25/16	REVISED PROPOSED HOUSE	BEI
1	2/23/16	REVISED EASEMENT - ELIMINATE PROPOSED WALL	BEI

Date: NOVEMBER 30, 2015 Drawn: RMM/ERC/DLH Checked: DFB/AMG Sheet: 1 of 2

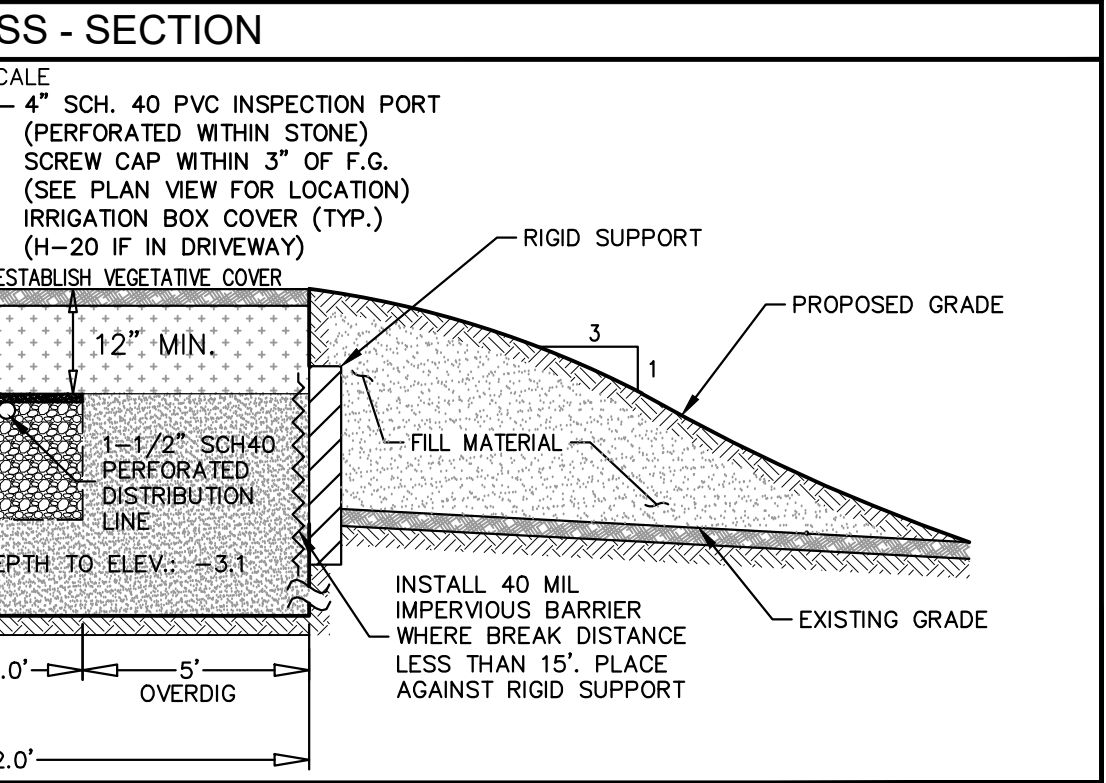
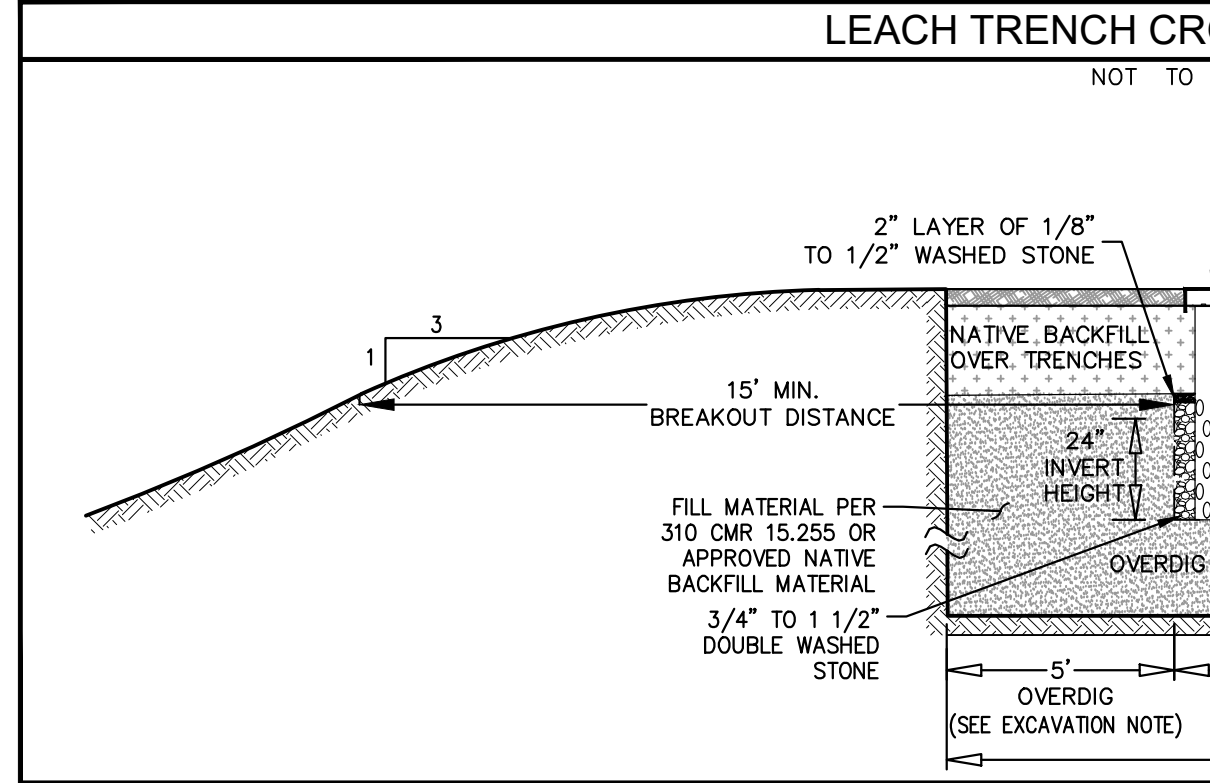
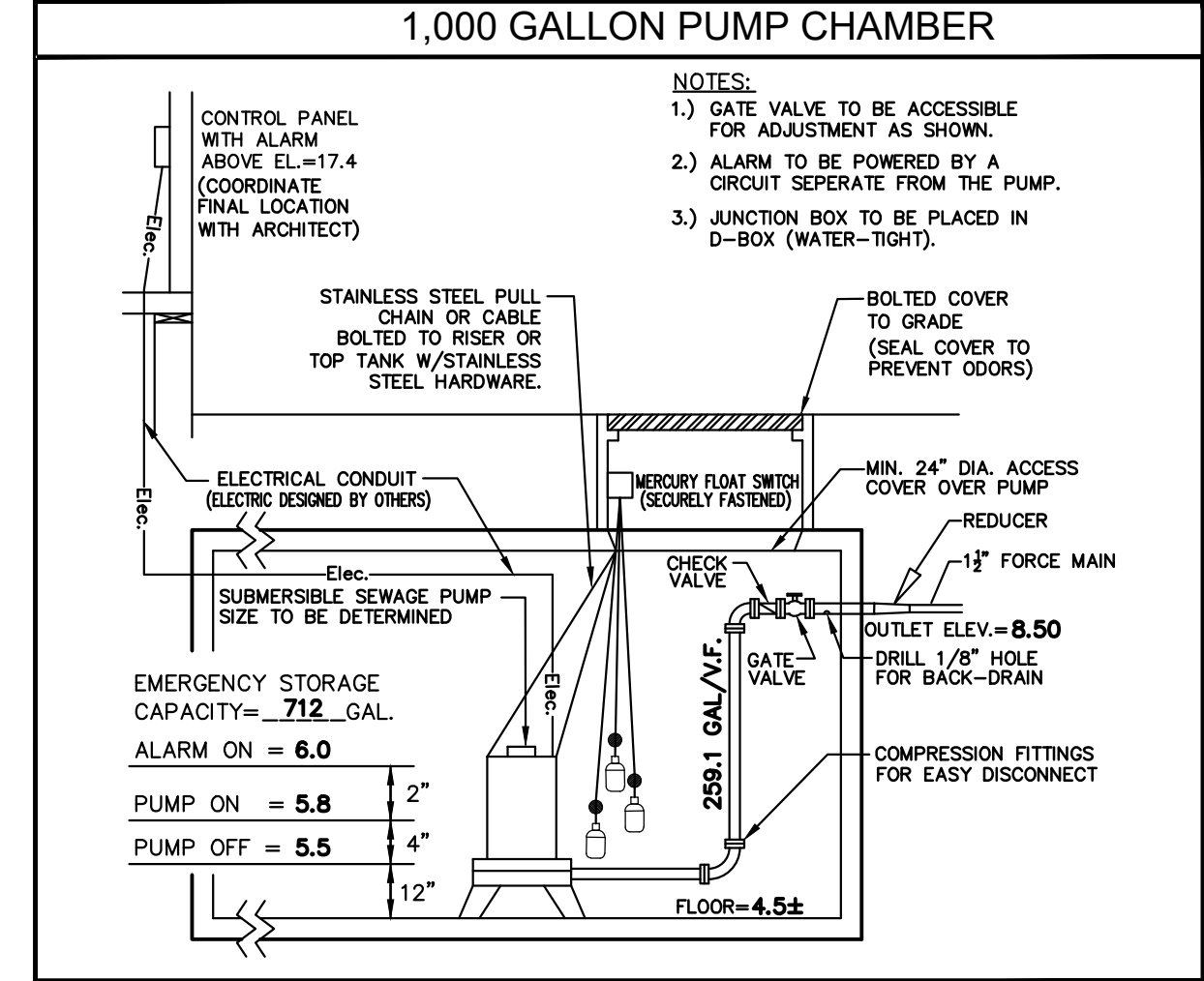


COPYRIGHT (C) BY BRACKEN ENGINEERING, INC. ALL RIGHTS RESERVED. ANY USE OF THIS DRAWING FOR ANY PURPOSES OTHER THAN THAT AUTHORIZED BY BRACKEN ENGINEERING, INC. IS STRICTLY PROHIBITED. THE USER ASSUMES ALL LIABILITY FOR ANY DAMAGE, LOSS, OR INJURY RESULTING FROM THE USE OF THIS DRAWING. THE WRITTEN PERMISSION OF BRACKEN ENGINEERING, INC. SHALL BE REQUIRED TO REPRODUCE OR TRANSMIT THIS DRAWING IN ANY FORM OR BY ANY MEANS, ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING OR OTHERWISE, WITHOUT THE EXPRESS WRITTEN CONSENT OF BRACKEN ENGINEERING, INC.



PROPOSED SEPTIC NOTES

- ALL CONSTRUCTION METHODS AND MATERIALS TO CONFORM TO TITLE V 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.
- CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF SOIL OR SITE CONDITIONS DIFFER FROM THOSE SHOWN.
- THE DESIGN IS INTENDED TO MEET TITLE V 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.
- REFER TO THE REQUIRED OPERATION & MAINTENANCE PLANS, TO BE SUPPLIED BY THE MANUFACTURER FOR REQUIRED MAINTENANCE PROCEDURES OF THE MICROFAST SYSTEM.
- THE SEPTIC SYSTEM IS TO BE STAKED OUT BY A PROFESSIONAL LAND SURVEYOR PRIOR TO CONSTRUCTION.
- THE 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 OF THE OPERATION.
- HOMEOWNER IS TO ESTABLISH AN OPERATION & MAINTENANCE PLAN WITH A COMPANY CERTIFIED SYSTEM OPERATOR FOR THE MICROFAST. ALL SYSTEM TESTING, MONITORING & REPORTING IS TO BE CONDUCTED IN ACCORDANCE TO THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) GENERAL USE PERMIT.
- CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM PANELS WITH THE ARCHITECT, HOMEOWNER & SYSTEM MANUFACTURER PRIOR TO INSTALLATION.
- ALL PANELS, ALARMS, AND BLOWER UNITS ARE TO BE INSTALLED ABOVE FLOOD ZONE ELEVATION 17.4.
- THE SYSTEM OWNER SHALL BE RESPONSIBLE TO PUMP THE SEPTIC TANK AT LEAST ONCE EVERY THREE YEARS.
- PROPOSED SEPTIC FORCEMAIN EASEMENT (1,388± s.f.) TO BE ESTABLISHED ON #1 LIGHTHOUSE LANE FOR THE BENEFIT OF #10 HARBOR WAY.
- PROPOSED NITROGEN LOADING AGGREGATE EASEMENT (12,227± s.f.) AND DEED RESTRICTIONS TO BE ESTABLISHED ON #9 LIGHTHOUSE LANE FOR THE BENEFIT OF #10 HARBOR WAY.
- APPROVAL OF NITROGEN LOADING AGGREGATE PLAN IN ACCORDANCE WITH §216 OF 310 CMR 15.00 (TITLE 5) IS REQUIRED.



DESIGN CALCULATIONS

SOIL TEXTURAL CLASS: CLASS 1

PERC. RATE: < 5 MINUTES/INCH

NO. OF BEDROOMS: 3

DESIGN FLOW REQUIRED: 330 GPD

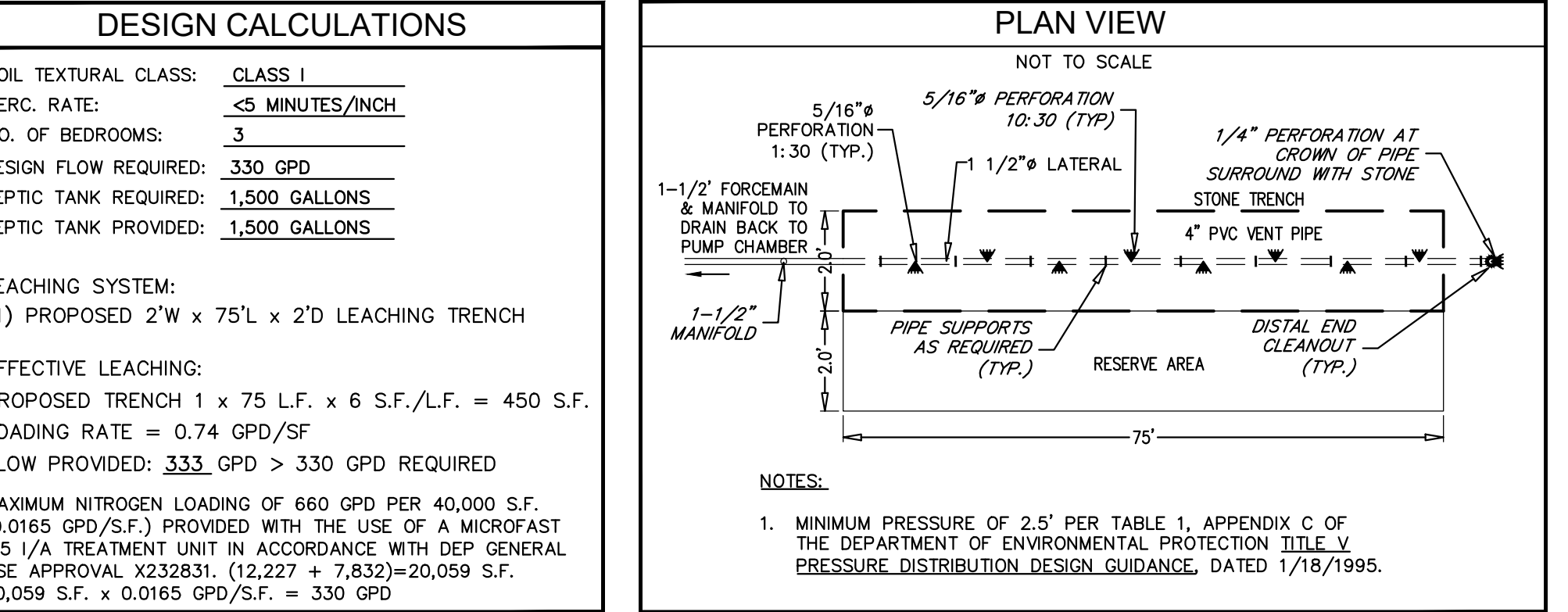
SEPTIC TANK REQUIRED: 1,500 GALLONS

SEPTIC TANK PROVIDED: 1,500 GALLONS

LEACHING SYSTEM:
(1) PROPOSED 2' W x 75' L x 2' D LEACHING TRENCH

EFFECTIVE LEACHING:
PROPOSED TRENCH 1 x 75 L.F. x 6 S.F./L.F. = 450 S.F.
LOADING RATE = 0.74 GPD/SF
FLOW PROVIDED: 333 GPD > 330 GPD REQUIRED

MAXIMUM NITROGEN LOADING OF 660 GPD PER 40,000 S.F. (0.0165 GPD/S.F.) PROVIDED WITH THE USE OF A MICROFAST 0.5 1/A TREATMENT UNIT IN ACCORDANCE WITH DEP GENERAL USE APPROVAL X232831. (12,227 + 7,832)=20,059 S.F. 20,059 S.F. x 0.0165 GPD/S.F. = 330 GPD



SOIL LOGS

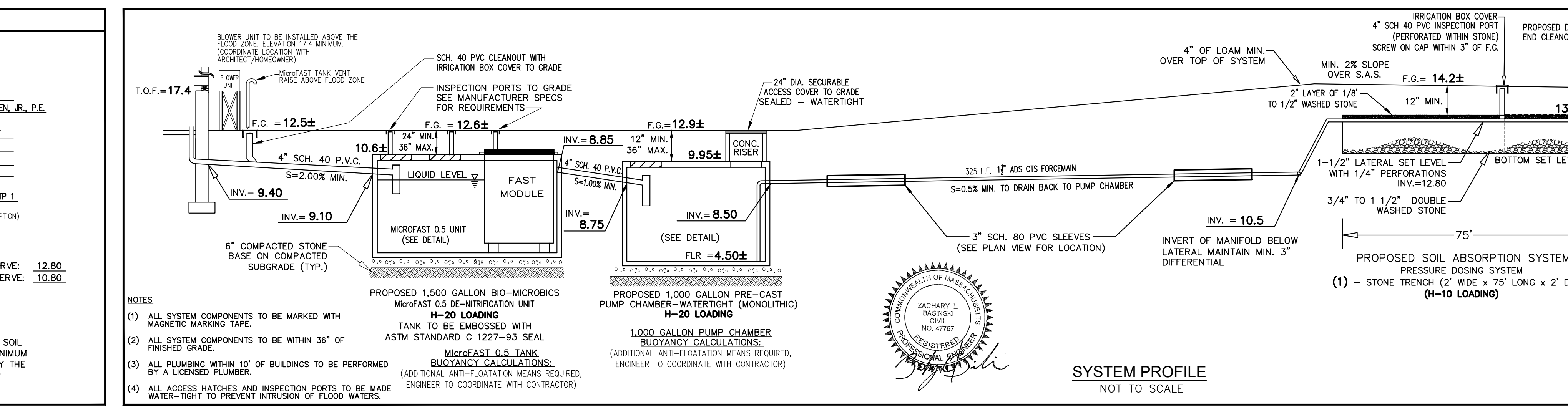
TP NO.	1	2
GRD. EL.	11.8	10.9
GW. EL.	5.8	0.0

DATE PERFORMED: MARCH 24, 2005
SOIL EVALUATOR: DONALD F. BRACKEN, JR., P.E.
WITNESSED BY: HEATHER GALLANT
PERC. RATE: < 5 MP
SOIL CLASS: CLASS 1
MAX. GROUND WATER ELEV.: 5.8
METHOD OF DETERMINATION: WEEPING TP 1 (SEE SOIL REPORT FOR MORE DETAILED DESCRIPTION)

INVERT PRIMARY: 12.80
BOTTOM PRIMARY: 10.80
INVERT RESERVE: 12.80
BOTTOM RESERVE: 10.80

EXCAVATION NOTE

THE SYSTEM WILL REQUIRE THE EXCAVATION OF UNSUITABLE SOIL WITHIN 5' OF THE SOIL ABSORPTION SYSTEM DOWN TO THE C2 SAND LAYER, APPROXIMATELY 168" DEPTH MINIMUM (DEEPER EXCAVATION MAY BE REQUIRED). THE EXCAVATION SHALL BE INSPECTED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION. SOIL IS TO BE REPLACED WITH SAND CONFORMING TO 310 CMR SECTION 15.255, CONSTRUCTION IN FILL.



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 PLAN IN BOURNE, MASSACHUSETTS

Prepared For:

STANLEY DAVITORIA & LIGHTHOUSE REALTY TRUST

#10 HARBOR WAY - MAP 45 PARCEL 19
#1 LIGHTHOUSE LANE - MAP 45 PARCEL 20
#1 LIGHTHOUSE LANE - MAP 45 PARCEL 14

No.	Date	Revision Description	By
4	08/15/23	UPDATE OWNERSHIP	BEI
3	04/25/17	REVISED WELL AND SEPTIC LOCATIONS	BEI
2	10/25/16	REVISED PROPOSED HOUSE	BEI
1	2/23/16	REVISED EASEMENT - ELIMINATE PROPOSED WALL	BEI

Date: NOVEMBER 30, 2015 Drawn: RMM/ERC/DLH Checked: DFB/AMG Sheet: 2 of 2



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



Kaitlyn F. Shea
Assistant Health Agent

October 16, 2023

Stanley Davitoria &
Ludo Gardini
195 Mountain Ave
Malden, MA 02148

**RE: 10 Harbor Way, Pocasset (Book 34788, Page 41)
Notice of Approved Innovative/ Alternative ("I/A") Technology System**

To Whom It May Concern:

On August 23, 2023, the Bourne Board of Health held a public meeting and discussed the request for relief from the Bourne Board of Health 150' Setback Regulations and Title 5 of the State Environmental Code, 310 CMR 15.405, for the installation of a sewage disposal system at your property at 10 Harbor Way, Pocasset, MA (map 45, parcel 19). The Board of Health approved the following reductions in setback distances based on the Proposed Site Plan by Bracken Engineering, Inc.:

- ◇ *A 45' reduction for a 105' setback from a proposed soil absorption system to a non-eroding Coastal Bank; and,*
- ◇ *A 5' reduction for a 145' setback from a proposed soil absorption system to Mean High Water.*

The Board felt as if this system would provide a substantial degree of environmental protection and improvement to the site, as it will be the best available I/A technology system approved for nitrogen reduction. This design incorporates a MassDEP approved MicroFAST treatment system for general use, which is approved for total nitrogen reduction.

This decision also requires that this new system be installed and operational without further delay, and that an I/A Disclosure Notice be recorded with the chain of title for the property. In order to begin construction of your sewage disposal system, a licensed septic installer will need to sign the construction permit application on file, and copies of the operation and maintenance agreement and recorded deed notice will need to be submitted to the Health Department.

Sincerely,

Terri Guarino
Terri Guarino, RS, CHO
Health Agent

No. _____

FEE \$250.00

COMMONWEALTH OF MASSACHUSETTS

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 <u>10 HARBOR WAY / 0 LIGHTHOUSE LANE (Easement)</u>	Owner's Name <u>STANLEY DAVITORIA & LUDO GARDINI</u>
Map/Parcel# <u>MAP 45, PARCELS 19 & 14</u>	Address <u>195 MOUNTAIN AVE, MALDEN, MA 02148</u>
Lot#	Telephone# <u>AGENT - 508-833-0070</u>
Installer's Name	Designer's Name <u>Zachary L. Basinski, PE Bracken Engineering</u>
Address	Address <u>49 Herring Pond Road, Buzzards Bay, MA 02532</u>
Telephone#	Telephone# <u>508-833-0070</u>

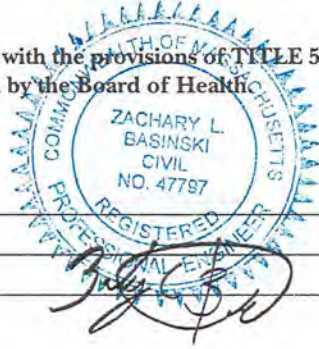
Type of Building SINGLE-FAMILY DWELLING Lot Size 8,586+/- sq. ft.
 Dwelling - No. of Bedrooms 3 Garbage grinder ()
 Other - Type of Building _____ No. of persons _____ Showers (), Cafeteria ()
 Other Fixtures _____
 Design Flow (min. required) 110 gpd Calculated design flow 330 Design flow provided 333 gpd
 Plan: Date 11/30/2015 Number of sheets 2 Revision Date 8/15/2023
 Title PROPOSED SITE PLAN IN BOURNE
 Description of Soil(s) See Plan for full description
 Soil Evaluator Form No. T5 Forms 11 & 12 Name of Soil Evaluator Donald F. Bracken, Jr., PE Date of Evaluation 3/24/2005

DESCRIPTION OF REPAIRS OR ALTERATIONS _____
Installation of a 1,500 gal. MicroFast 0.5 septic tank, blower unit, D-Box and 1,000 gal. pump chamber.
SAS consisting of one (1) 2' W x 75' L x 2' D trench.

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 _____



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.

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

August 16, 2023

Hand Delivery & Email [tguarino@townofbourne.com]

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

**RE: Bourne Board of Health Variance – Proposed Septic Upgrade
10 Harbor Way (Map 45, Parcel 19) / 0 Lighthouse Lane (Map 45, Parcel 14)**

Dear Members of the Board:

On behalf of the current owners of #10 Harbor Way, Stanley DaVitoria & Ludo Gardini, please accept this letter as a request to reinstate the following variances from the Town of Bourne Health Regulations for the proposed septic installation at the above referenced property. Bracken Engineering, Inc. (BEI) cordially request the following *Local Variances*:

- **A 45' local variance from the BOURNE BOARD OF HEALTH Regulations for a 105' setback from a proposed soil absorption system from a non-eroding Coastal Bank.**
- **A 5' local variance from the BOURNE BOARD OF HEALTH Regulations for a 145' setback from a proposed soil absorption system to Mean High Water.**

The proposed project was before the Board on May 17, 2017, requesting the above variances which were approved with the following conditions:

10 Harbor Way – Notice of Alternative Sewage Disposal System and Grant of Title 5 Nitrogen Loading Restriction and Easement on Facility Land – Recorded BK 29680, Pg 222

0 Lighthouse Lane – Grant of Title 5 Nitrogen Loading Restriction and Easement on Nitrogen Credit Land and a Septic Easement for the benefit of 10 Harbor Way – Recorded BK 29680, Pg 230

1 Lighthouse Lane – 10' Wide Septic Force Main Easement for the benefit of 10 Harbor Way – Recorded BK 30640, Pg 190.

Bracken Engineering, Inc. is requesting that the Bourne Board of Health deviate from the goal of full compliance by allowing the *Local Variances* requested above. The above *Local Variances* requests are being made because of the relatively small lot and its proximity to adjacent 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 August 23rd 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
Sincerely,

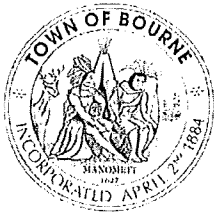
BRACKEN ENGINEERING, INC.

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

Zachary L. Basinski, P.E., CFM
Senior Project Manager

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

Jason P. Heyer, CFM
Project Designer



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



May 18, 2017

Elizabeth Warden
34 Marisol
Newport Coast, CA 92657

Dear Ms. Warden:

At the duly posted public hearing on May 17, 2017, the Bourne Board of Health discussed and unanimously voted to approve a modified site layout, final floor plans, and a revised drinking water well location for your property at 10 Harbor Way, Bourne, MA (map 45.0, parcel 19). As you are aware, the Board previously approved a Nitrogen Loading Facility Aggregation Plan and a 45 foot variance from the Board of Health 150 Foot Setback Regulation for the proposed septic system on April 13, 2016.

According to the November 30, 2015 Proposed Site Plan, revised on April 25, 2017, the Board granted a 17.5 foot variance from the well to the property line, and also a 8 foot variance from a private way/ common drive. The modified floor plans received by the Board of Health on May 3, 2017 indicate that the proposed dwelling will remain a two-floor, three-bedroom, single-family home. Pursuant to the Board of Health's decision in on April 13, 2016, the maximum allowable daily design flow for the lot shall be restricted to 330 gallons per day with the use of a nitrogen reducing innovative/ alternative treatment system.

This office is in receipt of the MassDEP well completion report, pumping test report, and water quality results from the Barnstable County Health Laboratory for this installed well. Enclosed is a copy of the Water Supply Certificate issued for this address. It is understood that an Aqua-Pure Reverse Osmosis Drinking Water System will be installed to rectify the elevated sodium concentration in the water supply.

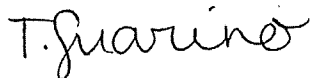
Please be advised that these approvals are valid for two years and any modification to the approved Plans will require another hearing before the Board of Health. The following documents and their exhibits have been previously endorsed and the issuance of a disposal works construction permit shall be contingent upon their recordation at the Barnstable County Registry of Deeds and copies submitted to this office:

- 10 Harbor Way- Notice of Alternative Sewage Disposal System and Grant of Title 5 Nitrogen Loading Restriction and Easement on Facility Land;
- 0 Lighthouse Lane- Grant of Title 5 Nitrogen Loading Restriction and Easement on Nitrogen Credit Land and a Septic Easement for the benefit of 10 Harbor Way; and
- 1 Lighthouse Lane- 10' Wide Septic Force Main Easement for the benefit of 10 Harbor Way

Additionally, it is understood that the owner/ operator has read and agrees to the Bourne Board of Health Alternative Testing and Fine Regulations as a condition of this approval and will maintain a valid Operation

and Maintenance Agreement with a licensed wastewater operator in perpetuity. A copy of this Operation and Maintenance Agreement must be submitted to this office prior to issuance of a Certificate of Compliance for the sewage disposal system. Should you have any questions, please do not hesitate to contact the Board of Health office at 508-759-0600 ext. 1513. Thank you.

Sincerely,

A handwritten signature in cursive script that reads "T. Guarino".

Terri Guarino, RS
Health Agent

C.C. Zachary L. Baskinski, P.E.

Enclosed: Water Supply Certificate, Bourne Board of Health I/A Septic Alternative Testing Regulation



TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue

Buzzards Bay, MA 02532

www.townofbourne.com/health

Phone (508) 759-0600 ext. 1513

Fax (508) 759-0679



Terri A. Guarino
Health Agent

April 27, 2016

Elizabeth Warden
34 Marisol
Newport Coast, CA 92657

Dear Ms. Warden:

At the duly posted public hearing on April 13, 2016, the Bourne Board of Health discussed and voted to approve a Nitrogen Loading Facility Aggregation Plan and a 45 foot variance from the Board of Health 150 Foot Setback Regulation for the benefit of your property at 10 Harbor Way, Bourne, MA (map 45.0, parcel 19). The Board determined that the Nitrogen Loading Facility Aggregation Plan received February 25, 2016, prepared by Bracken Engineering, Inc. meets the requirements of the State Environmental Code, Title 5, 310 CMR 15.216. The maximum allowable daily design flow for the lot shall be restricted to 330 gallons per day with the use of a nitrogen reducing innovative/ alternative treatment system as indicated in the November 30, 2015 Proposed Site Plan, revised February 23, 2016.

Please be advised that these approvals are valid for two years and any modification to the approved Plans will require another hearing before the Board of Health. The following documents and their exhibits have been endorsed and the issuance of a disposal works construction permit shall be contingent upon their recordation at the Barnstable County Registry of Deeds:

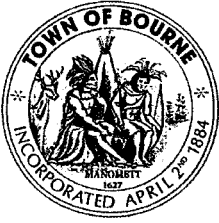
- 10 Harbor Way- Notice of Alternative Sewage Disposal System and Grant of Title 5 Nitrogen Loading Restriction and Easement on Facility Land
- 0 Lighthouse Lane- Grant of Title 5 Nitrogen Loading Restriction and Easement on Nitrogen Credit Land and a Septic Easement for the benefit of 10 Harbor Way
- 1 Lighthouse Lane- 10' Wide Septic Force Main Easement for the benefit of 10 Harbor Way

Additionally, it is understood that the owner/ operator has read and agrees to the Bourne Board of Health Alternative Testing and Fine Regulations as a condition of this approval and will maintain a valid Operation and Maintenance Agreement with a licensed wastewater operator in perpetuity. Should you have any questions, please do not hesitate to contact the Board of Health office at 508-759-0600 ext. 1513. Thank you.

Sincerely,

Terri Guarino, RS
Health Agent

C.C. Zachary L. Baskinski, P.E.



Bourne Board of Health Application for Septic Variance or Waiver Requests



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

1. Facility Name and Address:

Owner's Name

Stanley Davitoria & Ludo Gardini

Facility's Street Address

10 Harbor Way (Map 45, Parcel 19) & 0 Lighthouse Lane (Map 45, Parcel 14)

Owner's Telephone Number

617-839-2542

Owner's E-mail Address

davitoria@comcast.net

Owner's Mailing Address

195 Mountain Avenue, Malden, MA 02148 & 296 Newton Street, 2nd Floor, Waltham

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, MA 02532

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

Residential Commercial Institutional School Industrial Mixed Use

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

Single-family dwelling, 3 bedrooms

5. Type of System Proposed (check all that apply): Conventional Title 5 I/A System

Pumped System Gravity System Pressure Dosed Tight Tank Other

6. Describe the existing and proposed septic system components: PROPOSED:
1,500 gallon MicroFast 0.5 septic tank, 1,000 gallon pump chamber, blower unit and d-box
SAS of one (1) 2'W x 75'L x 2'D Leaching trench

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

110 GPD	EXISTING	PROPOSED
Design flow of system:	0	330
Total design flow of facility: <i>(if more than one system on subject property)</i>	0	330


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

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

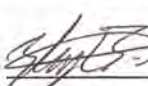
- \$125 filing fee + any other applicable permit application fees paid to the Town of Bourne.
- Application for a Disposal System Construction Permit (may be filled out by installer).
- Six copies of Letter of Request describing nature of variances.
- Six sets of complete engineered plans and specifications,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

10. Certification:

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

Facility Owner's Signature  BRACKEN ENGINEERING, INC Date 8/15/23

Print Name Zachary L. Basinski, PE, CFM | Bracken Engineering, Inc. - as AGENT

Signature of Preparer  BRACKEN ENGINEERING, INC Date 8/15/23

Print Name Zachary L. Basinski, PE, CFM | Bracken Engineering, Inc.

Town of Bourne - Water Resources Nitrogen Loading and Mitigation Worksheet

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



Project Nitrogen Load	Wastewater	New Construction of Undeveloped Parcels																			
1.	Project Title-5 wastewater flows: <input style="width:50px;" type="text" value="0.0"/> gpd	<input style="width:50px;" type="text" value="0.0"/> gpd	(a)																		
	Actual wastewater flows: <input style="width:50px;" type="text" value="0.0"/> * 175 gpd per dwelling unit	<input style="width:50px;" type="text" value="0.0"/> * 175 gpd per dwelling unit	(b)																		
	Average wastewater flows: <input style="width:50px;" type="text" value="0.0"/> gpd	<input style="width:50px;" type="text" value="0.0"/> gpd	(a)+(b) +2= (A)																		
Place <input checked="" type="checkbox"/> in applicable box:		* Title-5 flows prescribed by TB91-001 for commercial uses																			
	<table style="width:100%; border: none;"> <tr> <td style="width:5%; text-align: center;">Yes</td> <td style="width:5%; text-align: center;">No</td> <td></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Will the project be connected to sewer ?</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Is project Title-5 wastewater flow 10,000 gpd or greater ?</td> </tr> </table>	Yes	No		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Will the project be connected to sewer ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is project Title-5 wastewater flow 10,000 gpd or greater ?											
Yes	No																				
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Will the project be connected to sewer ?																			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is project Title-5 wastewater flow 10,000 gpd or greater ?																			
Place <input checked="" type="checkbox"/> in applicable box and multiply unsewered wastewater flow by applicable conversion factor:																					
	<table style="width:100%; border: none;"> <tr> <td style="width:5%; text-align: center;"><input type="checkbox"/></td> <td style="width:25%;">Standard Title-5 System (35-ppm-N)</td> <td style="width:5%; text-align: center;">x</td> <td style="width:15%;">0.048359</td> <td rowspan="4" style="font-size: 2em; vertical-align: middle;">}</td> <td rowspan="4" style="vertical-align: middle;">Type of system: <input style="width:50px;" type="text" value="MicroFast"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>DEP-approved I/A System (25-ppm-N)</td> <td style="text-align: center;">x</td> <td>0.034542</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>DEP-approved I/A System (19-ppm-N)</td> <td style="text-align: center;">x</td> <td>0.026252</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>DEP-approved Enhanced I/A (12-ppm-N)</td> <td style="text-align: center;">x</td> <td>0.016580</td> </tr> </table>	<input type="checkbox"/>	Standard Title-5 System (35-ppm-N)	x	0.048359	}	Type of system: <input style="width:50px;" type="text" value="MicroFast"/>	<input type="checkbox"/>	DEP-approved I/A System (25-ppm-N)	x	0.034542	<input type="checkbox"/>	DEP-approved I/A System (19-ppm-N)	x	0.026252	<input checked="" type="checkbox"/>	DEP-approved Enhanced I/A (12-ppm-N)	x	0.016580		
<input type="checkbox"/>	Standard Title-5 System (35-ppm-N)	x	0.048359	}	Type of system: <input style="width:50px;" type="text" value="MicroFast"/>																
<input type="checkbox"/>	DEP-approved I/A System (25-ppm-N)	x	0.034542																		
<input type="checkbox"/>	DEP-approved I/A System (19-ppm-N)	x	0.026252																		
<input checked="" type="checkbox"/>	DEP-approved Enhanced I/A (12-ppm-N)	x	0.016580																		
	Wastewater nitrogen load (Title-5 flows) = <input style="width:50px;" type="text" value="0.00"/> kg-N/yr		(B)																		
	Wastewater nitrogen load (Actual flows) = <input style="width:50px;" type="text" value="0.00"/> kg-N/yr		(C)																		
Stormwater Runoff																					
	Town of Bourne	Recharge rate for Bourne (inches; for natural areas from Technical Bulletin 91-001): <input style="width:50px;" type="text" value="21"/>	(RECH)																		
	Project site area: <input style="width:50px;" type="text" value="0.180"/> acres		(D)																		
	Project site wetland area: <input style="width:50px;" type="text" value="0.000"/> acres		(E)																		
	Project site upland area: <input style="width:50px;" type="text" value="0.180"/> acres		(F)																		
	Pervious unpaved upland: <input style="width:50px;" type="text" value="0.144"/> acres		(G)																		
	<input style="width:50px;" type="text" value="0"/> % using LID	Paved area: <input style="width:50px;" type="text" value="353"/> s.f.	(H)																		
	Factor may be adjusted for employment of LID → LID = low impact development	x 1.4158E-04 = <input style="width:50px;" type="text" value="0.04997915"/> kg-N/yr	(I)																		
	Roof area: <input style="width:50px;" type="text" value="1,200"/> s.f.		(J)																		
	x 7.0792E-05 = <input style="width:50px;" type="text" value="0.0850"/> kg-N/yr		(K)																		
Fertilizer																					
	Previous unpaved upland - roof area =	Managed turf/ lawn area: <input style="width:50px;" type="text" value="5,528"/> s.f.																			
	x 3.4019E-04																				

Facility Address: #10 Harbor Way
 Preparer's Name: Bracken Engineering, Inc.
 Date: 08/14/2023
 Watershed: Pocasset Harbor

= kg-N/yr (L)

Total Nitrogen Load

Total project nitrogen load (Title-5 flows): kg-N/yr (M)= (B)+(I)+(K)+(L)

Total project nitrogen load (Actual flows): kg-N/yr (N)= (C)+(I)+(K)+(L)

Nitrogen load per acre (Average): kg-N/yr/acre (O)= (M)+(N) ÷2 ÷(F)

Nitrogen Loading Concentration

Project nitrogen loading concentration (Title-5 flows): ppm-N (P)= $(a) \div 723.76 + (G) \times (\text{RECH}) \div 9.7286 + (H) \div 10,594 + (K) \div 0.75$

Project nitrogen loading concentration (Actual flows): ppm-N (Q)= $(b) \div 723.76 + (G) \times (\text{RECH}) \div 9.7286 + (H) \div 10,594 + (K) \div 0.75$

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

next page -->

Resource/ Impact Based Criteria

Marine Water Recharge Areas / Coastal Embayments

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

Name of Watershed

(from Regional Policy Plan Data Viewer):

Pocasset Harbor

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

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

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

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

Groundwater Quality

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

Potential Public Water Supply Areas

4. Yes No
Is project in a Potential Public Water Supply Area (PPWSA) ?

(If 'No', then go to line 5.)

Does the project's nitrogen loading concentration (**R**) exceed the greater of **1 ppm** ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Wellhead Protection Areas

5.

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>

 Is project in a Wellhead Protection Area (WHPA): Zone I, Zone II, or IWPA ?

Does the project's nitrogen loading concentration (**R**) exceed the greater of **5 ppm** ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Fresh Water Recharge Areas

6.

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Is the project located in a freshwater recharge area (FWRA) hydraulically upgradient of a stream or fresh surface water body?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR2)

Other Potential Impacts

7.

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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

Town of Bourne - Water Resources Nitrogen Loading and Mitigation Worksheet

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



Project Nitrogen Load	Wastewater	New Construction of Undeveloped Parcels	
1.	Project Title-5 wastewater flows:	<input type="text" value="330.0"/> gpd	<input type="text" value="(a)"/>
	Actual wastewater flows:	<input type="text" value="175.0"/> * 175 gpd per dwelling unit	<input type="text" value="(b)"/>
	Average wastewater flows:	<input type="text" value="252.5"/> gpd	<input type="text" value="(a)+(b) ÷ 2 = (A)"/>
		* Title-5 flows prescribed by TB91-001 for commercial uses	
Facility Address: #0 Lighthouse Lane Preparer's Name: Bracken Engineering, Inc. Date: 08/14/2023 Watershed: Pocasset Harbor			
Place <input checked="" type="checkbox"/> in applicable box:			
	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Will the project be connected to sewer ?
	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is project Title-5 wastewater flow 10,000 gpd or greater ?
Place <input checked="" type="checkbox"/> in applicable box and multiply unsewered wastewater flow by applicable conversion factor:			
	<input type="checkbox"/>	Standard Title-5 System (35-ppm-N)	x 0.048359
	<input type="checkbox"/>	DEP-approved I/A System (25-ppm-N)	x 0.034542
	<input type="checkbox"/>	DEP-approved I/A System (19-ppm-N)	x 0.026252
	<input checked="" type="checkbox"/>	DEP-approved Enhanced I/A (12-ppm-N)	x 0.016580
			Type of system: <input type="text" value="MicroFast"/>
Wastewater nitrogen load (Title-5 flows) =		<input type="text" value="5.47"/> kg-N/yr	<input type="text" value="(B)"/>
Wastewater nitrogen load (Actual flows) =		<input type="text" value="2.90"/> kg-N/yr	<input type="text" value="(C)"/>
Stormwater Runoff			
Town of Bourne		Recharge rate for Bourne (inches; for natural areas from Technical Bulletin 91-001): <input type="text" value="21"/> (RECH)	
Project site area:		<input type="text" value="1.431"/> acres	<input type="text" value="(D)"/>
Project site wetland area:		<input type="text" value="0.000"/> acres	<input type="text" value="(E)"/>
Project site upland area:		<input type="text" value="1.431"/> acres	<input type="text" value="(F)"/>
Pervious unpaved upland:		<input type="text" value="1.431"/> acres	<input type="text" value="(G)"/>
<input type="text" value="0"/> % using LID	Paved area:	<input type="text" value="0"/> s.f.	<input type="text" value="(H)"/>
Factor may be adjusted for employment of LID → LID = low impact development		x 1.4158E-04 = <input type="text" value="0"/> kg-N/yr	<input type="text" value="(I)"/>
Roof area:		<input type="text" value="0"/> s.f.	<input type="text" value="(J)"/>
		x 7.0792E-05 = <input type="text" value="0.0000"/> kg-N/yr	<input type="text" value="(K)"/>
Fertilizer			
Previous unpaved upland - roof area =			
Managed turf/ lawn area:		<input type="text" value="2,085"/> s.f.	
		x 3.4019E-04 = <input type="text" value="0.709"/> kg-N/yr	<input type="text" value="(L)"/>

Town of Bourne - Water Resources Nitrogen Loading and Mitigation Worksheet

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



Total Nitrogen Load

Total project nitrogen load (Title-5 flows): kg-N/yr (M)= (B)+(I)+(K)+(L)

Total project nitrogen load (Actual flows): kg-N/yr (N)= (C)+(I)+(K)+(L)

Nitrogen load per acre (Average): kg-N/yr/acre (O)= (M)+(N) ÷2 ÷(F)

Nitrogen Loading Concentration

Project nitrogen loading concentration (Title-5 flows): ppm-N (P)= $\frac{(M)}{(a) \div 723.76 + (G) \times (RECH) \div 9.7286 + (H) \div 10,594 + (K) \div 0.75}$

Project nitrogen loading concentration (Actual flows): ppm-N (Q)= $\frac{(N)}{(b) \div 723.76 + (G) \times (RECH) \div 9.7286 + (H) \div 10,594 + (K) \div 0.75}$

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

next page -->

Resource/ Impact Based Criteria

Marine Water Recharge Areas / Coastal Embayments

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

Name of Watershed

(from Regional Policy Plan Data Viewer):

Pocasset Harbor

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

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

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

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

Groundwater Quality

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

Town of Bourne - Water Resources Nitrogen Loading and Mitigation Worksheet

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



Potential Public Water Supply Areas

4. **Yes** **No**
 Is project in a Potential Public Water Supply Area (PPWSA) ?
(If 'No', then go to line 5.)
- Does the project's nitrogen loading concentration (R) exceed the greater of 1 ppm ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)
- Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Wellhead Protection Areas

5. **Yes** **No**
 Is project in a Wellhead Protection Area (WHPA): Zone I, Zone II, or IWPA ?
- Does the project's nitrogen loading concentration (R) exceed the greater of 5 ppm ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)
- Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Fresh Water Recharge Areas

6. **Yes** **No**
 Is project wastewater disposed of within 300 feet of a stream or fresh surface water body?
(If 'No', then go to line 7.)
- Is the project located in a freshwater recharge area (FWRA) hydraulically upgradient of a stream or fresh surface water body?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR2)

Other Potential Impacts

7. **Yes** **No**
 Will the project withdraw more than 20,000 gallons of water per day ?
(If 'Yes', then the project must provide documentation demonstrating that there will not be significant impacts to water levels, surface waters and wetlands)
8. **The project must demonstrate compliance with Objective WR4, including use of Low Impact Development to mitigate impacts of stormwater runoff and O & M plans for maintaining stormwater infrastructure and landscaping.**

QUITCLAIM DEED

Elizabeth Gillis Warden, being married to William P. Warden, non-titled spouse, both of 34 Marisol, Newport Coast, CA 92657

For consideration paid of Six Hundred Thirty-Five Thousand and 00/100 (\$635,000.00) Dollars

Hereby grants to Stanley Davitoria, of 195 Mountain Avenue, Malden, MA 02148, and Ludo Gardini, of 296 Newton Street 2nd Floor, Waltham, MA, as tenants in common,

With Quitclaim Covenants

The land situated in Bourne (Pocasset), Barnstable County, Massachusetts, being Lot 13 as shown on a plan of land entitled, "Subdivision Plan of Land in Bourne (Pocasset), Mass. Subdivision of Lot A as shown on a plan by me dated June 2, 1949, and filed in the Barnstable Registry of Deeds, Plan Book 88, Page 3, Scale 1 in = 40 ft., March 14, 1950, Rutherford J. Kelley, Reg. Land Sur. 223 Wren St. W. Roxbury, Mass." Said plan being recorded with the Barnstable County Registry of Deeds in Plan Book 115 Page 95, to which plan reference is made for a more detailed description.

Said Lot 13 contains 8,646 square feet according to said plan.

The above premises are conveyed subject to and with the benefit of all rights, rights of way, easements, restrictions and reservations of record, if any, insofar as the same are in force and applicable.

The undersigned hereby releases any homestead rights in the subject property, and states, under the pains and penalties of perjury, that there are no persons entitled to any homestead rights in the subject premises as set forth in M.G.L. Chapter 188.

For title reference, see Deed recorded with the Barnstable County Registry of Deeds in Book 20251 Page 125.

Property Address: 10 Harbor Way, Bourne (Pocasset), MA 02559

Executed as a sealed instrument this 9th day of December, 2021.

Elizabeth Gillis Warden
Elizabeth Gillis Warden

William P. Warden
William P. Warden, non-titled spouse

STATE OF CALIFORNIA

Orange County, ss.

On this 9th of December, 2021, before me, the undersigned notary public, Elizabeth Gillis Warden, personally appeared, proved to me through satisfactory evidence of identification, which was California Driver License, to be the person whose name is signed above, and acknowledged to me that she signed it voluntarily and for its stated purpose and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of her knowledge and belief.



Sarah Elzahr
Notary Public: Sarah Elzahr
My Commission Expires: 3/11/2022

GRANT OF EASEMENT

Easement, made this 13th day of July, 2017, by and between **CHRISTINA STEVENS, TRUSTEE OF THE LIGHTHOUSE REALTY TRUST**, under Declaration of Trust dated September 9, 2003, recorded with Barnstable County Registry of Deeds in Book 17933, Page 314, having a mailing address of 22 Red Gate Lane in Southboro Massachusetts, 01772, (hereinafter the "Grantor"), and **ELIZABETH GILLIS WARDEN**, of 34 Marisol, Newport Coast California, 92657, (hereinafter, the "Grantee") and her heirs and assigns.

Whereas, the Grantor is the fee simple owner of a parcel of land located at 1 Lighthouse Lane, Bourne, Barnstable County, Massachusetts, and 0 Lighthouse Lane, Bourne, Barnstable County, Massachusetts, shown of the attached plan as "Proposed Easement Plan In Bourne, Massachusetts, Prepared for Elizabeth Gillis Warden & Lighthouse Realty Trust" dated February 22, 2016, Bracken Engineering, Inc., Buzzards Bay, Massachusetts," (hereinafter, "Plan") and the Grantee is the fee simple owner of an adjoining parcel of land located at 10 Harbor Way, Bourne, Barnstable County, Massachusetts, as shown upon the plan hereto annexed and marked Exhibit "A"; and

Whereas, the Grantee intends to install a septic system over and under a portion of the Grantor's property, which installation will be used in connection with a septic system servicing the Grantee's property. Which area is shown on the said plan as "Proposed 10' Wide Septic Force Main Easement for the Benefit of 10 Harbor Way", and "Proposed Septic Easement for the Benefit of 10 Harbor Way;"

Witnesseth, that, in consideration of the sum of \$1.00 paid by the Grantee to the Grantor, the receipt whereof is hereby acknowledged, the Grantor hereby grants to the Grantee, their heirs and assigns forever, an easement over that portion of the Grantor's, land shown and designated above, together with the right to use said area for the passage of sewage water and waste from the land of the Grantee and for that purpose the right to construct and install said system and to make and at all times repair and maintain all such connections with the said sewer or drains as may be reasonable and proper, making good, nevertheless, at their own expense, all damage or disturbance which may be caused to the said land of the Grantor in relation to such connections, repairs or maintenance.

For Grantor's title see Massachusetts Quitclaim Deed to Christina Stevens, Trustee of the Lighthouse Realty Trust, dated May 9, 2008, recorded with the Barnstable County Registry of Deeds in Book 22904, Page 99. For Grantee's title see Massachusetts Quitclaim Deed to Elizabeth Gillis Warden, dated September 1, 2005 recorded

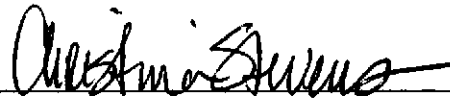
~~dated~~ September 13, 2005, recorded with the Barnstable County Registry of Deeds in Book 20251, Page 125.

PROPERTY LOCATIONS: 1 LIGHHOUSE LANE, BOURNE, MASSACHUSETTS, 02559,

0 LIGHHOUSE LANE, BOURNE, MASSACHUSETTS, 02559, and

10 HARBOR WAY, BOURNE, MASSACHUSETTS, 02559

WITNESS the execution hereof under seal this 13 day of July, 2017.

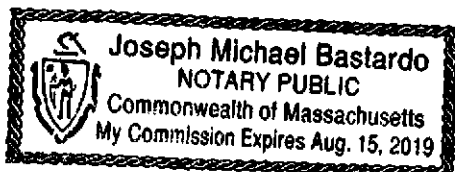

Christina Stevens

Elizabeth Gillis Warden

COMMONWEALTH OF MASSACHUSETTS

Worcester, ss.

On this 13th day of July, 2017, before me, the undersigned notary public, personally appeared **CHRISTINA STEVENS**, who proved to me through satisfactory evidence of identification, which was photographic identification with signature issued by a federal or state governmental agency, oath or affirmation of a credible witness, personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document in my presence, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his knowledge and belief.




Notary Public: Joseph Bastardo
My Commission Expires: 8-15-19

dated September 13, 2005, recorded with the Barnstable County Registry of Deeds in Book 20251, Page 125.


PROPERTY LOCATIONS: 1 LIGHTHOUSE LANE, BOURNE, MASSACHUSETTS, 02559,

0 LIGHTHOUSE LANE, BOURNE, MASSACHUSETTS, 02559, and

10 HARBOR WAY, BOURNE, MASSACHUSETTS, 02559

WITNESS the execution hereof under seal this 4th day of April, 2017.

Christina Stevens



Elizabeth Gillis Warden

COMMONWEALTH OF MASSACHUSETTS

_____, ss.

On this _____ day of _____, 2017, before me, the undersigned notary public, personally appeared **CHRISTINA STEVENS**, who proved to me through satisfactory evidence of identification, which was photographic identification with signature issued by a federal or state governmental agency, oath or affirmation of a credible witness, personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document in my presence, and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his knowledge and belief.

Notary Public:
My Commission Expires:

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA

COUNTY OF Orange

On April 4, 2017, before me, **Cindy Lou Buffa**, Notary Public, personally appeared,

Elizabeth Gillis Warden

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Cindy Lou Buffa (seal)
My Commission Expires: 04-08-2017



Notary Name: Cindy Lou Buffa

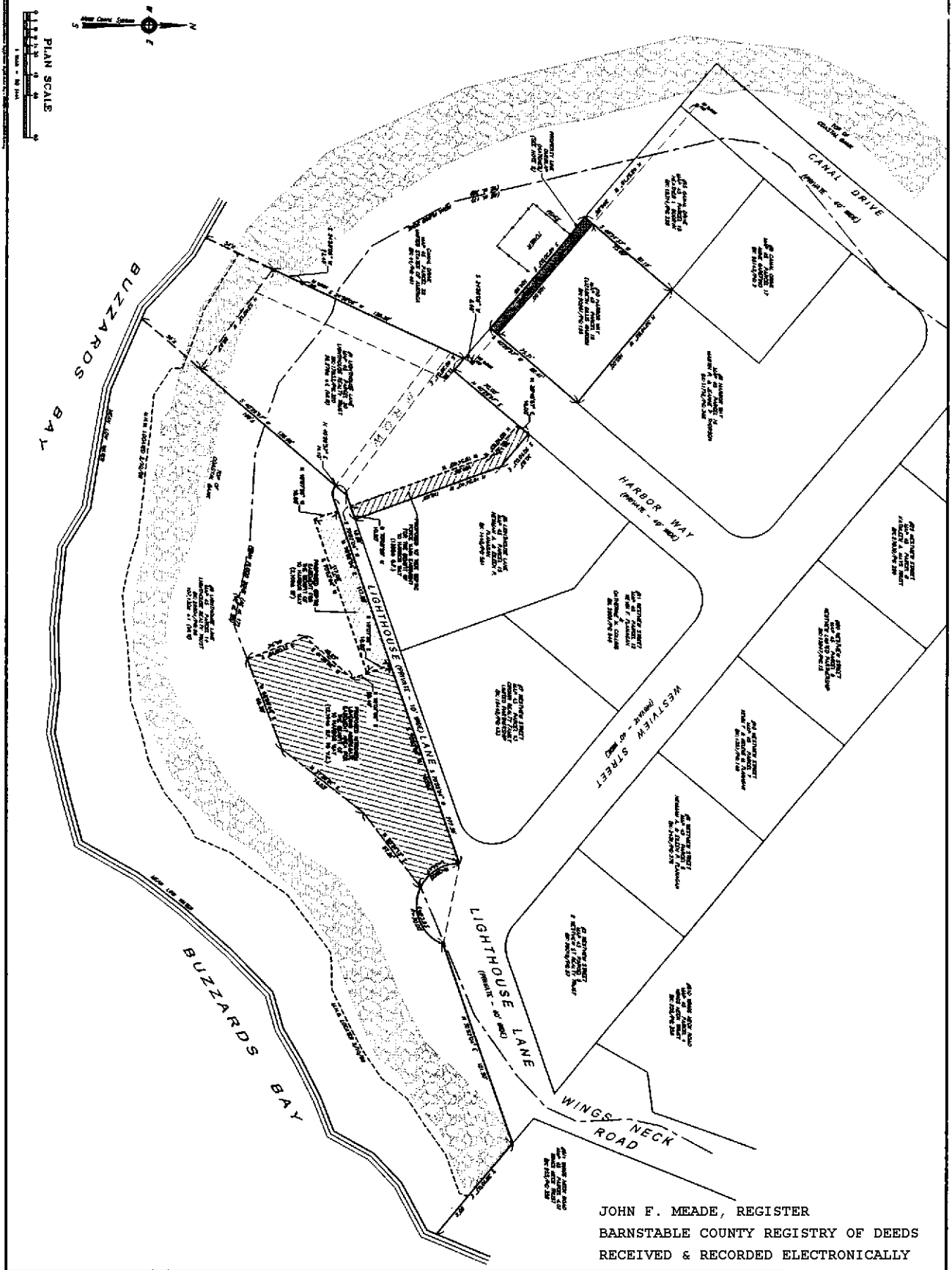
Notary Registration Number: 2018548

Notary Phone: 714-803-2590

County of Principal Place of Business: Orange County

Easement

COPYRIGHT (C) BY BRACEN ENGINEERING INC. ALL RIGHTS RESERVED.
THIS PLAN IS THE PROPERTY OF BRACEN ENGINEERING INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF BRACEN ENGINEERING INC.



JOHN F. MEADE, REGISTER
BARNSTABLE COUNTY REGISTRY OF DEEDS
RECEIVED & RECORDED ELECTRONICALLY

Proposed by:
BRACEN ENGINEERING INC.
1500 South Street
Barnstable, MA 02532
Tel: 508-538-1111
Fax: 508-538-1112

Proposed for:
ELIZABETH GILLS WARDEN & LIGHTHOUSE REALTY TRUST
11 Lighthouse Lane - Apt 45 Parcel 20
10 Lighthouse Lane - Apt 46 Parcel 19
10 Lighthouse Lane - Apt 48 Parcel 14

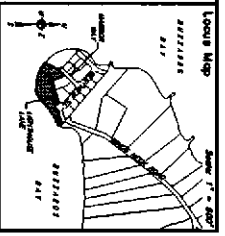
Project No. 23-000
Date: 08/14/14

Notes:

1. SEE THE STATE OF MASSACHUSETTS DEED RECORDS FOR THE RECORDING OF THE DEEDS FOR THE LIGHHOUSE LANE TRACT AND THE LIGHHOUSE LANE TRACT.
2. THE LIGHHOUSE LANE TRACT IS A TRACT OF LAND THAT IS BOUND BY BUZZARDS BAY TO THE WEST, LIGHHOUSE LANE TO THE EAST, AND WINGS NECK ROAD TO THE SOUTH.
3. THE LIGHHOUSE LANE TRACT IS A TRACT OF LAND THAT IS BOUND BY BUZZARDS BAY TO THE WEST, LIGHHOUSE LANE TO THE EAST, AND WINGS NECK ROAD TO THE SOUTH.
4. THE LIGHHOUSE LANE TRACT IS A TRACT OF LAND THAT IS BOUND BY BUZZARDS BAY TO THE WEST, LIGHHOUSE LANE TO THE EAST, AND WINGS NECK ROAD TO THE SOUTH.
5. THE LIGHHOUSE LANE TRACT IS A TRACT OF LAND THAT IS BOUND BY BUZZARDS BAY TO THE WEST, LIGHHOUSE LANE TO THE EAST, AND WINGS NECK ROAD TO THE SOUTH.
6. THE LIGHHOUSE LANE TRACT IS A TRACT OF LAND THAT IS BOUND BY BUZZARDS BAY TO THE WEST, LIGHHOUSE LANE TO THE EAST, AND WINGS NECK ROAD TO THE SOUTH.
7. THE LIGHHOUSE LANE TRACT IS A TRACT OF LAND THAT IS BOUND BY BUZZARDS BAY TO THE WEST, LIGHHOUSE LANE TO THE EAST, AND WINGS NECK ROAD TO THE SOUTH.
8. THE LIGHHOUSE LANE TRACT IS A TRACT OF LAND THAT IS BOUND BY BUZZARDS BAY TO THE WEST, LIGHHOUSE LANE TO THE EAST, AND WINGS NECK ROAD TO THE SOUTH.
9. THE LIGHHOUSE LANE TRACT IS A TRACT OF LAND THAT IS BOUND BY BUZZARDS BAY TO THE WEST, LIGHHOUSE LANE TO THE EAST, AND WINGS NECK ROAD TO THE SOUTH.
10. THE LIGHHOUSE LANE TRACT IS A TRACT OF LAND THAT IS BOUND BY BUZZARDS BAY TO THE WEST, LIGHHOUSE LANE TO THE EAST, AND WINGS NECK ROAD TO THE SOUTH.

Legend:

- Proposed Easement
- Existing Easement
- Proposed Structure
- Existing Structure
- Proposed Drains
- Existing Drains
- Proposed Access
- Existing Access
- Proposed Utility Lines
- Existing Utility Lines
- Proposed Drains
- Existing Drains
- Proposed Access
- Existing Access
- Proposed Utility Lines
- Existing Utility Lines



ATTACHMENT 1

Upon recording, mail to:
Bourne Board of Health
Bourne Town Hall
24 Perry Avenue
Buzzards Bay, MA 02532

GRANT OF TITLE 5 NITROGEN LOADING RESTRICTION AND EASEMENT ON FACILITY LAND
(restriction of bedrooms or design flow on Grantor's facility land)
310 CMR 15.216

This GRANT OF TITLE 5 Nitrogen Loading Restriction AND EASEMENT on Facility Land made as of this 26 day of MAY, 2016 by Elizabeth Gills Warden, of 34 Marisol, Newport Coast, California ("Grantor").

Gillis
WITNESSETH

WHEREAS, Grantor being the owner in fee simple of that certain parcel of vacant land located in Bourne, Barnstable County, Massachusetts, with the buildings and improvements thereon, pursuant to a deed from Lighthouse Realty Trust to Grantor, dated September 1, 2005, and recorded with Barnstable County Registry of Deeds in Book 20251, Page 125, said parcel of land being more particularly bounded and described in Exhibit A, attached hereto and made a part hereof, and being shown on a plan entitled, "Subdivision Plan of Land in Bourne (Pocasset) Mass.", dated March 14, 1950, prepared by Ruthford J Kelly, recorded with Barnstable County Registry of Deeds on Page 95, in Plan Book 115 ("Property"); and

WHEREAS, Grantor desires to restrict the number of bedrooms as defined pursuant to 310 CMR 15.002 and/or the wastewater discharge design flow in any improvements located on the Property through the use of this Nitrogen Loading Restriction and Easement on Facility Land; and

WHEREAS, the Facility Land has the benefit of a Nitrogen Loading Restriction and Easement over approximately 0.28 acres, being more particularly bounded and described in Grant of Title 5 Nitrogen Loading Restriction and Easement on Nitrogen Credit Land, recorded with the Barnstable County Registry of Deeds at Book _____, Page _____; and

WHEREAS, the Nitrogen Loading Facility Aggregation Plan has been approved by the Bourne Board of Health in accordance with the Department's "Guidelines for Title 5 Aggregation of Plans and Nitrogen Loading;" said approval being based upon the agreement by Grantor to incur certain obligations regarding the number of bedrooms, as defined in 310 CMR 15.002, and/or the wastewater discharge design flow in any improvements located on the Property and maintenance of the Facility Land Restriction and Easement to ensure protection of the nitrogen loading limitation of 440 gpd/acre discharge standard pursuant to 310 CMR 15.214 in nitrogen-sensitive areas or in areas serving new construction where the residential use of both on-site systems and drinking water supply wells are proposed; and to grant to the municipality acting by and through the Bourne Board of Health a perpetual easement to ensure maintenance of the Property including, but not limited to, removal of any prohibited uses and in connection herewith a perpetual easement to pass and repass over the Property for purposes of inspecting the Property to ensure compliance with and fulfillment of the terms of the Facility Land Restriction/Easement as hereafter set forth;

NOW, THEREFORE, pursuant to the provisions of 310 CMR 15.216, Grantor does hereby GRANT to the Town of Bourne, a Massachusetts municipal corporation situated in Barnstable County, having an address at 24 Perry Avenue, Buzzards Bay, Massachusetts, acting by and through its Board of Health ("Local Approving Authority") for nominal, non-monetary consideration, with QUITCLAIM COVENANTS, a TITLE 5 NITROGEN LOADING RESTRICTION AND EASEMENT ON FACILITY LAND ("Facility Land Restriction/Easement") in, on, upon, through, over and under the Property, the terms and conditions of which are as follows:

PURPOSE:

The purpose of this restriction and easement is to protect and preserve the quality and quantity of ground water resources in the area of the public and private wells in the Town of Bourne, Massachusetts in order to ensure a safe and

M.R. BOOK 29680 PAGE 230

FOR CONSIDERATION OF \$1.00
O LIGHTHOUSE LANE

healthy public and private water supply for the present and future inhabitants of the area. It shall also be for the specific purpose of limiting the introduction of nitrogen and other pollutants into, and maintaining the natural uptake of pollutants and the recharge of the ground water which takes place on the Property for the said water supply.

OBLIGATIONS AND EASEMENT:

1. Prohibitions. Grantor agrees to restrict the number of bedrooms, as defined pursuant to 310 CMR 15.002, in any improvements on the Property to three (3) bedrooms.

2. Easements. In creating this Facility Land Restriction and Easement, Grantor hereby grants to the Local Approving Authority, its agents, contractors, subcontractors and employees a perpetual EASEMENT to enter upon and the right to bring equipment onto the Property to do any and all acts deemed necessary to maintain the Property in a manner which ensures protection of the nitrogen loading limitation of 440 gpd/acre discharge standard pursuant to 310 CMR 15.214 together with a right to pass and repass by foot and by vehicle over the Property for said purposes, and for purposes of inspecting the Property to ensure compliance with and fulfillment of the terms of this Facility Land Restriction/Easement.

3. Severability. If any court or other tribunal determines that any provision of this instrument is invalid or unenforceable, such provision shall be deemed to have been modified automatically to conform to the requirements for validity and enforceability as determined by such court or tribunal. In the event the provision invalidated is of such a nature that it cannot be so modified, the provision shall be deemed deleted from this instrument as though it had never been included herein. In either case, the remaining provisions of this instrument shall remain in full force and effect.

4. Enforcement. Grantor expressly acknowledges that a violation of the terms of this instrument could result in the following:

(i) upon determination by a court of competent jurisdiction, in the issuance of criminal and civil penalties, and/or equitable remedies, including, but not limited to, injunctive relief, such injunctive relief could include the issuance of an order to modify or remove any improvements constructed upon the Property in violation of the terms of this Facility Land Restriction/Easement; and

(ii) in the assessment of penalties and enforcement action by the Local Approving Authority and DEP to enforce the terms of this Facility Land Restriction/Easement, pursuant to Title 5; M.G.L. c.111, §§ 17, 31, 122, 124, 125, 125A, 127A through 127O, and 129; and M.G.L. c.83, §11.

5. Provisions to Run with the Land. This Facility Land Restriction/Easement sets forth the rights, liabilities, agreements and obligations upon and subject to which the Property or any portion thereof, shall be left unimproved or according to which said Property may be improved, held, used, occupied, leased, sold, hypothecated, encumbered, or conveyed. The rights, liabilities, agreements and obligations herein set forth shall run with the Property, as applicable thereto, and any portion thereof and shall inure to the benefit of and be binding upon Grantor and all parties claiming by, through or under the Local Approving Authority or Grantor. The rights hereby granted to the Local Approving Authority and its successors and assigns constitute their perpetual right to enforce this Facility Land Restriction/Easement. Grantor hereby covenants for himself/herself/itself and his/her/its executors, administrators, heirs, successors and assigns, to stand seized and hold title to the Property, as applicable thereto, and any portion thereof, subject to this Facility Land Restriction/Easement, provided, however, that a violation of this Facility Land Restriction/Easement shall not result in a forfeiture or reversion of Grantor's title to the Property, as applicable thereto.

6. Concurrence Presumed. It being agreed that Grantor and all parties claiming by, through or under Grantor shall be deemed to be in accord with the provisions herein set forth and to agree for and among themselves and any party claiming by, through or under them, and their respective agents, contractors, sub-contractors and employees, that the Facility Land Restriction/Easement herein established shall be adhered to and not violated and that their respective interests in the Property and the Facility Land Restriction and Easement, as applicable thereto, shall be subject to the provisions herein set forth.

7. Incorporation into Deeds, Mortgages, leases and Instruments of Transfer. Grantor hereby agrees to incorporate this Facility Land Restriction/Easement, in full or by reference, into all deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer by which an interest in and/or a right to use the Property, or any portion thereof, is conveyed.

8. Recordation. Grantor shall record and/or register this Facility Land Restriction/Easement with the appropriate Registry of Deeds and/or Land Registration Office within 30 days of the latter of: receipt from the Local Approving Authority of the approved Facility Land Restriction/Easement pursuant to 310 CMR 15.216. Grantor shall file with the Local Approving Authority a certified Registry copy of this Facility Land Restriction/Easement as recorded and/or registered within 30 days of its date of recordation and/or registration.

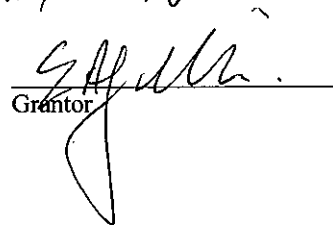
9. Amendment and Release. This Facility Land Restriction/Easement may be amended or released only upon approval by the Local Approving Authority. Release of this Facility Land Restriction/Easement shall be granted by the Local Approving Authority in the event the Property is connected to a municipal sewer system and the septic system serving the Property is abandoned in accordance with 310 CMR 15.354 or the Property is no longer located within a nitrogen sensitive area pursuant to 310 CMR 15.215. Any such amendment or release shall be recorded and/or registered with the appropriate Registry of Deeds and/or Land Registration Office and a certified Registry copy of said amendment or release shall be filed with the Local Approving Authority within 30 days of its date of recordation and/or registration.

10. Term. This Facility Land Restriction/Easement shall run in perpetuity and is intended to conform to M.G.L. c.184, §26, as amended.

11. Rights Reserved. This Facility Land Restriction/Easement is granted to the Local Approving Authority in connection with the approval of a Nitrogen Loading Facility Aggregation Plan pursuant to 310 CMR 15.216 and the Department's "Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading." It is expressly agreed that acceptance of the Facility Land Restriction/Easement by the Local Approving Authority shall not operate to bar, diminish, or in any way affect any legal or equitable right of the Local Approving Authority to issue any future order with respect to the Property or in any way affect any other claim, action, suit, cause of action, or demand which the Local Approving Authority may have with respect thereto. Nor shall acceptance of the Facility Land Restriction/Easement serve to impose any obligations, liabilities, or any other duties upon the Local Approving Authority.

12. Effective Date. This Facility Land Restriction/Easement shall become effective upon its recordation and/or registration with the appropriate Registry of Deeds and/or Land Registration Office.

WITNESS the execution hereof under seal this 26 day of MAY, 2016


Grantor

CALIFORNIA ALL PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA }

COUNTY OF ORANGE }

On 5.25.2016 before me, MICHAEL CARON Notary
Date Insert Name and Title of the officer

Public, personally appeared ELIZABETH GILUS WARDEN

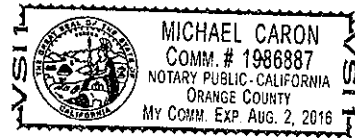
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: [Handwritten Signature]



----- OPTIONAL -----

Though this section is optional, completing this information can deter alteration of the document or fraudulent attachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Title 5 Nitrogen Loading Restriction and Easement on Facility Land Document Date: May 25, 2016
Number of Pages: _____ Signer(s) Other Than Named Above: Terri A. Guarino, RS

Capacity(ies) Claimed by Signer(s)

Signers Name: Guarino 5/25/2016

- Corporate Officer - Title(s) _____
- Partner - Limited General
- Individual Attorney in Fact
- Trustee Guardian or Conservator
- Other: Health Agent

Signer is Representing: Town of Bourne Board of Health

Signers Name: _____

- Corporate Officer - Title(s) _____
- Partner - Limited General
- Individual Attorney in Fact
- Trustee Guardian or Conservator
- Other: _____

Signer is Representing: _____

EXHIBIT A

QUITCLAIM DEED

I, Christina Stevens, Trustee of the Lighthouse Realty Trust u/d/t dated September 9, 2003, recorded with the Barnstable County Registry of Deeds in Book 17933, Page 314, of Southboro, Massachusetts,

for consideration paid of ONE AND 00/100THS (\$1.00) DOLLARS,

grant to Elizabeth Gillis Warden, of #34 Marisol, Newport Coast, CA 92657,

with QUITCLAIM COVENANTS,

The land, situated in Bourne (Pocasset), Barnstable County, Massachusetts, being Lot 13 as shown on a plan of land entitled "Subdivision Plan of Land in Bourne (Pocasset), Mass. Subdivision of Lot A as shown on a plan by me dated June 2, 1949, and filed in the Barnstable Registry of Deeds, Plan Book 88, Page 3 Scale: 1 in = 40 ft. March 14, 1950, Ruthford J. Kelly, Reg. Land Sur. 223 Wren St. W. Roxbury, Mass." which said plan is duly recorded with the Barnstable County Registry of Deeds in Plan Book 115, Page 95, to which plan reference is made for a more detailed description.

Said lot contains 8,646 s.f. according to said plan.

Subject to and with the benefit of all rights, privileges, rights of way, easements, layouts and takings, and restrictions and reservations of record which are now in force and applicable to the premises.

Said land is also known and identified as Parcel 19.00 on Bourne Assessors' Map 045.0.

Being a portion of the premises conveyed to me by deed of Elizabeth Flanagan Gillis dated September 9, 2003, recorded with the Barnstable County Registry of Deeds in Book 17933, Page 320, to which deed reference is made for my title.

The undersigned Trustee hereby certifies in accordance with the terms of said Trust:

1. I am the sole incumbent Trustees of the Trust;
2. The Trust has not been terminated or revoked and all amendments hereto, if any, have been duly recorded with said Registry of Deeds;

Property Address:

10 Harbor Way
Pocasset, Mass.

EXHIBIT A

3. Pursuant to the Trust, when specifically authorized and directed by the beneficiaries of the Trust, the Trustee has full right, authority and power to deal with any property owned or held by the Trust with the same force and effect as though such property were individually owned;

4. The Trustee has been authorized in writing by all of the beneficiaries of the Trust to execute, seal and deliver this deed for \$1.00 consideration to the grantee for recording. The Trust's performance of the obligations hereunder does not and will not conflict with, and is not and will not be in violation of, and does not and will not constitute a default under any mortgage or other agreement or instrument of which the Trust is a party or by which it is bound, or the provisions of the Trust instrument and presently in effect or any statute, rule, or regulation, order, writing injunction, or decree of any agency or instrumentality of any government or of any court having jurisdiction over the Trust.

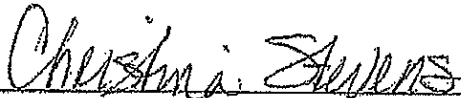
5. There is no litigation pending or threatened restricting or enjoining or in any manner questioning or affecting the validity or enforceability of any one or more of the following: (a) the authority of the Trust and the Trustee to enter into or execute the documents hereunder, or the validity of any term or provision thereof; (b) the legal existence or organization of the Trust and its qualification to do business in the Commonwealth of Massachusetts; or, (c) the title of the Trustee of the Trust to that office.

6. No beneficiary of the Trust is a minor, incompetent, a corporation selling all or substantially all of its Massachusetts assets, a personal representative of an estate subject to possible estate tax liens, or is now deceased or under any legal disability.

7. The Trustee's representations and warranties in the documents regarding this transaction are true and complete as of the date hereof.

Consideration for this deed is less than \$100.00. No deed tax stamps are required.

WITNESS my hand and seal this 1 day of Sept, 2005.



Christina Stevens, Trustee of Lighthouse
Realty Trust

EXHIBIT A

COMMONWEALTH OF MASSACHUSETTS)
) ss:
COUNTY OF Barnstable)

On this 1 day of September, 2005, before me, the undersigned notary public, personally appeared the above-named Christina Stevens, Trustee as aforesaid, proved to me through satisfactory evidence of identification, which were MA Drivers License & Sovereign Bank Card, to be the person whose name is signed to the preceding or attached document, and acknowledged to me that she signed it voluntarily for its stated purpose on behalf of said Trust.

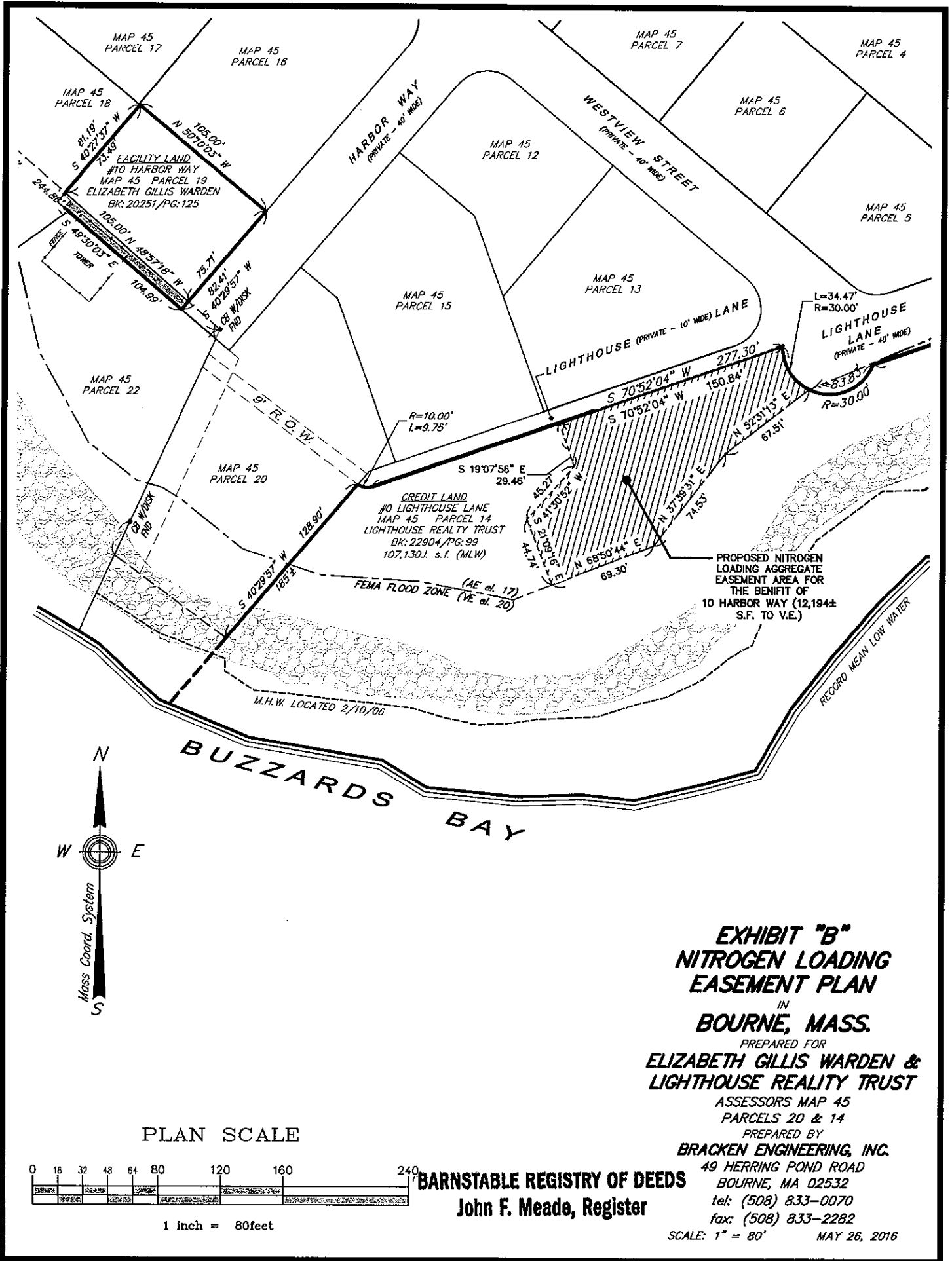
Janet T. Crowell
Janet T. Crowell, Notary Public

My Commission expires:
3-10-11

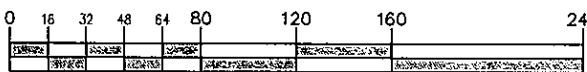


BARNSTABLE REGISTRY OF DEEDS

oldd:\Trusts\gillisdocs\deedlot13



PLAN SCALE



1 inch = 80feet

EXHIBIT "B"
NITROGEN LOADING
EASEMENT PLAN
 IN
BOURNE, MASS.

PREPARED FOR
ELIZABETH GILLIS WARDEN &
LIGHTHOUSE REALTY TRUST

ASSESSORS MAP 45
 PARCELS 20 & 14

PREPARED BY
BRACKEN ENGINEERING, INC.

49 HERRING POND ROAD

BOURNE, MA 02532

tel: (508) 833-0070

fax: (508) 833-2282

SCALE: 1" = 80'

MAY 26, 2016

BARNSTABLE REGISTRY OF DEEDS

John F. Meade, Register

ATTACHMENT 2

Upon recording, mail to:
Bourne Board of Health
Bourne Town Hall
24 Perry Avenue
Buzzards Bay, MA 02532

GRANT OF TITLE 5 NITROGEN LOADING RESTRICTION AND EASEMENT
ON NITROGEN CREDIT LAND
(where Grantee seeks nitrogen credit land from third party Grantor)
310 CMR 15.216

This GRANT OF TITLE 5 Nitrogen Loading Restriction AND EASEMENT on Nitrogen Credit Land made as of this 24 day of May, 2016, by Lighthouse Realty Trust, of Southborough, Worcester County, Massachusetts ("Grantor").

WITNESSETH

WHEREAS, Grantor being the owner in fee simple of that certain parcel of vacant land located in Bourne, Barnstable County, Massachusetts, with the buildings and improvements thereon, pursuant to a deed from Elizabeth Flanagan Gillis to Grantor, dated May 9th, 2008, and recorded with Barnstable County Registry of Deeds in Book 22904, Page 99, said parcel of land being more particularly bounded and described in Exhibit A, attached hereto and made a part hereof, and being shown on a plan entitled, "Plan of Land in Bourne, Massachusetts owned by Lighthouse Realty Trust", dated November 11, 2004, prepared by Bracken Engineering, Inc., recorded with Barnstable County Registry of Deeds on Page 29, in Plan Book 597 ("Property"); and

WHEREAS, Elizabeth Gills Warden, of 34 Marisol, Newport Coast, California, ("Grantee of the Benefited Property") being the owner in fee simple of that certain parcel of vacant land located in Bourne, Barnstable County, Massachusetts, with the buildings and improvements thereon, pursuant to a deed from Lighthouse Realty Trust to Grantee of the Benefited Property, dated September 1, 2005, and recorded with Barnstable County Registry of Deeds in Book 20251 Page 125, said parcel of land being more particularly bounded and described in Exhibit B, attached hereto and made a part hereof, and being shown on a plan entitled, "Subdivision Plan of Land in Bourne (Pocasset) Mass.", dated March 14, 1950, prepared by Ruthford J Kelly, recorded with Barnstable County Registry of deeds on Page 95, in Plan Book 115 ("Benefited Property"); and

WHEREAS, the Benefited Property has the benefit of a Nitrogen Loading Restriction and Easement, being more particularly bounded and described in, a Grant of Title 5 Nitrogen Loading Restriction and Easement on Facility Land, recorded with the Barnstable County Registry of Deeds at Book _____, Page _____ ("Facility Land Restriction and Easement"); and

WHEREAS, the Nitrogen Loading Facility Aggregation Plan has been approved by the Bourne Board of Health in accordance with the Department's "Guidelines for Title 5 Aggregation of Plans and Nitrogen Loading;" said approval being based upon the agreement by Grantor to incur certain obligations regarding the number of bedrooms, as the term bedroom is defined at 310 CMR 15.002 ("Bedroom") and the Board of Health regulation dated effective April 24, 1992 regarding bedroom definition, and/or the wastewater discharge design flow in any improvements located on the Property and maintenance of the Facility Land Restriction and Easement to ensure protection of the nitrogen loading limitation of 440 gpd/acre discharge standard pursuant to 310 CMR 15.214 in nitrogen-sensitive areas or in areas serving new construction where the residential use of both on-site systems and drinking water supply wells are proposed; and to grant to the Grantee of the Benefited Property and to the municipality acting by and through the Bourne Board of Health a perpetual easement to ensure maintenance of the Property as nitrogen credit land including, but not limited to, removal of any prohibited uses and in connection herewith a perpetual easement to pass and repass over the Property for purposes of inspection to ensure compliance with and fulfillment of the terms of this Nitrogen Credit Land Restriction/Easement as hereafter set forth;

NOW, THEREFORE, pursuant to the provisions of 310 CMR 15.216, Grantor does hereby GRANT to the Grantee of the Benefited Property and to the Town of Bourne, a Massachusetts municipal corporation situated in Barnstable County, having an address at 24 Perry Avenue, Buzzards Bay, Massachusetts, acting by and through its Board of Health ("Local Approving Authority") for nominal, non-monetary consideration, with QUITCLAIM COVENANTS, a TITLE 5 NITROGEN LOADING RESTRICTION AND EASEMENT on NITROGEN CREDIT LAND ("Nitrogen

M.R. BOOK 29680 PAGE 232

FOR CONSIDERATION OF \$1.00 #0 LIGHTHOUSE LAKE

9

Credit Land Restriction/Easement") consisting of approximately 0.28 acres in, on, upon, through, over and under the Property, the terms and conditions of which are as follows:

PURPOSE:

The purpose of this restriction and easement is to protect and preserve the quality and quantity of ground water resources in the area of the public and private wells in the Town of Bourne, Massachusetts in order to ensure a safe and healthy public and private water supply for the present and future inhabitants of the area. It shall also be for the specific purpose of limiting the introduction of nitrogen and other pollutants into, and maintaining the natural uptake of pollutants and the recharge of the ground water which takes place on the Property for the said water supply and for the specific benefit of the above referenced Benefited Property.

OBLIGATIONS AND EASEMENT:

1. Prohibitions. Grantor agrees to maintain the Property as nitrogen credit land by prohibiting activities which have a detrimental effect on nitrogen loading on the Property, including but not limited to wastewater discharges, the use of nitrogen fertilizer, placement of any temporary/ portable structures, commercial/ recreational usage, the introduction of artificial impervious surfaces, the raising, breeding or keeping of animals, livestock or poultry for commercial purposes, and the creation or introduction of land under water. A change in the condition of the Property which results in the Property or a portion thereof being within a Velocity Zone or a Regulatory Floodway will render the Property or said portion thereof ineligible for nitrogen credit pursuant to 310 CMR 15.216.

2. Easements. In creating this Nitrogen Credit Land Restriction and Easement, Grantor hereby grants to the Grantee of the Benefited Property and to the Bourne Board of Health, its agents, contractors, subcontractors and employees a perpetual EASEMENT to enter upon and the right to bring equipment onto the Property to do any and all acts deemed necessary to maintain the Property as nitrogen credit land, together with a right to pass and repass by foot and by vehicle over Property for said purposes, and for purposes of inspecting the Property to ensure compliance with and fulfillment of the terms of this Nitrogen Credit Land Restriction/Easement.

3. Severability. If any court or other tribunal determines that any provision of this instrument is invalid or unenforceable, such provision shall be deemed to have been modified automatically to conform to the requirements for validity and enforceability as determined by such court or tribunal. In the event the provision invalidated is of such a nature that it cannot be so modified, the provision shall be deemed deleted from this instrument as though it had never been included herein. In either case, the remaining provisions of this instrument shall remain in full force and effect.

4. Enforcement. Grantor expressly acknowledges that a violation of the terms of this instrument could result in the following:

(i) upon determination by a court of competent jurisdiction, in the issuance of criminal and civil penalties, and/or equitable remedies, including, but not limited to, injunctive relief, such injunctive relief could include the issuance of an order to modify or remove any improvements constructed upon the Property in violation of the terms of this Nitrogen Credit Land Restriction/Easement; and

(ii) in the assessment of penalties and enforcement action by the Bourne Board of Health and DEP to enforce the terms of this Nitrogen Credit Land Restriction/Easement, pursuant to Title 5; M.G.L. c.111, §§ 17, 31, 122, 124, 125, 125A, 127A through 127O, and 129; and M.G.L. c.83, §11.

5. Provisions to Run with the Land. This Nitrogen Credit Land Restriction/Easement sets forth the rights, liabilities, agreements and obligations upon and subject to which the Property or any portion thereof, shall be left unimproved or according to which said Property may be improved, held, used, occupied, leased, sold, hypothecated, encumbered, or conveyed. The rights, liabilities, agreements and obligations herein set forth shall run with the Property and the Benefited Property, as applicable thereto, and any portion thereof and shall inure to the benefit of and be binding upon Grantor, Grantee of the Benefited Property, and all parties claiming by, through or under the Bourne Board of Health or Grantor. The rights hereby granted to the Grantee of the Benefited Property, the Bourne Board of Health, and their respective successors and assigns, constitute their perpetual right to enforce this Nitrogen Credit Land Restriction/Easement. Grantor hereby covenants for himself/herself/itself and his/her/its executors, administrators, heirs, successors and assigns, to stand seized and hold title to the Property, as applicable thereto, and any portion thereof, subject to this Nitrogen Credit Land

Restriction/Easement, provided, however, that a violation of this Nitrogen Credit Land Restriction/Easement shall not result in a forfeiture or reversion of Grantor's title to the Property, as applicable thereto.

6. Concurrence Presumed. It being agreed that Grantor and all parties claiming by, through or under Grantor shall be deemed to be in accord with the provisions herein set forth and to agree for and among themselves and any party claiming by, through or under them, and their respective agents, contractors, sub-contractors and employees, that the Nitrogen Credit Land Restriction/Easement herein established shall be adhered to and not violated and that their respective interests in the Property and the Nitrogen Credit Land Restriction and Easement, as applicable thereto, shall be subject to the provisions herein set forth.

7. Incorporation into Deeds, Mortgages, leases and Instruments of Transfer. Grantor hereby agrees to incorporate this Nitrogen Credit Land Restriction/Easement, in full or by reference, into all deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer by which an interest in and/or a right to use the Property, or any portion thereof, is conveyed.

8. Recordation. Grantor shall record and/or register this Nitrogen Credit Land Restriction/Easement with the appropriate Registry of Deeds and/or Land Registration Office within 30 days of the latter of: receipt from the Bourne Board of Health of the approved Restriction/Easement pursuant to 310 CMR 15.216. Grantor shall file with the Bourne Board of Health a certified Registry copy of this Nitrogen Credit Land Restriction/Easement as recorded and/or registered within 30 days of its date of recordation and/or registration.


9. Amendment and Release. This Nitrogen Credit Land Restriction/Easement may be amended or released only upon approval by the Bourne Board of Health. Release of this Nitrogen Credit Land Restriction/Easement shall be granted by the Bourne Board of Health in the event the Benefited Property is connected to a municipal sewer system and the septic system serving the Benefited Property is abandoned in accordance with 310 CMR 15.354 or the Benefited Property is no longer located within a nitrogen sensitive area pursuant to 310 CMR 15.215. Any such amendment or release shall be recorded and/or registered with the appropriate Registry of Deeds and/or Land Registration Office and a certified Registry copy of said amendment or release shall be filed with the Bourne Board of Health within 30 days of its date of recordation and/or registration.

10. Term. This Nitrogen Credit Land Restriction/Easement shall run in perpetuity and is intended to conform to M.G.L. c.184, §26, as amended.

11. Rights Reserved. This Nitrogen Credit Land Restriction/Easement is granted to the Grantee of the Benefited Property and the Bourne Board of Health in connection with the approval of a Nitrogen Loading Facility Aggregation Plan pursuant to 310 CMR 15.216 and the Department's "Guidelines for Title 5 Aggregation of Flows and Nitrogen Loading." It is expressly agreed that acceptance of the Nitrogen Credit Land Restriction/Easement by the Bourne Board of Health shall not operate to bar, diminish, or in any way affect any legal or equitable right of the Bourne Board of Health to issue any future order with respect to the Property and the Benefited Property, as applicable thereto, or in any way affect any other claim, action, suit, cause of action, or demand which the Bourne Board of Health may have with respect thereto. Nor shall acceptance of Nitrogen Credit Land Restriction/Easement serve to impose any obligations, liabilities, or any other duties upon the Bourne Board of Health.

12. Effective Date. This Nitrogen Credit Land Restriction/Easement shall become effective upon its recordation and/or registration with the appropriate Registry of Deeds and/or Land Registration Office.

WITNESS the execution hereof under seal this 24 day of May, 2016.


Grantor

COMMONWEALTH OF MASSACHUSETTS

Hampton City, §§

May 24, 2016

Christina Stevans

Then personally appeared the above-named _____ and acknowledged the foregoing instrument to be _____ free act and deed before me.

Notary Public:

My commission expires: February 3, 2023

The Bourne Board of Health hereby approves and accepts this Grant of Title 5 Nitrogen Loading Restriction and Easement on Nitrogen Credit Land.

Terri A. Guarino, R.S.
Health Director
Town of Bourne

Date: May 26, 2016

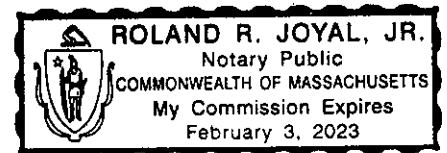


EXHIBIT A

Property Address: 0 Lighthouse Ln. Wings Neck (Bourne) MA 02532

QUITCLAIM DEED

I, Elizabeth Flanagan Gillis, of 774 Sanddollar Drive, Sanibel Island, Florida 33957

For nominal consideration paid

Grant to Christina Stevens, Trustee of the Lighthouse Realty Trust, under Declaration of Trust dated September 9, 2003, recorded with Barnstable County Registry of Deeds in Book 17933, Page 314, having a mailing address of P.O. Box 694, South Chatham, MA 02659

with QUITCLAIM COVENANTS

A parcel of land shown as Parcel 14 on a certain plan of land, entitled "Plan of Land in Bourne, Massachusetts, Owned by: Lighthouse Realty Trust, prepared by Bracken Engineering, Inc., Scale: 1"=40', Dated: November 16, 2004", said plan recorded in Plan Book 597, Page 29.

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

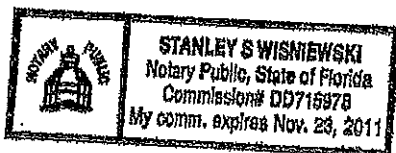
For title reference see Deed dated December 29, 2004 and recorded with the Barnstable County Registry of Deeds at Book 19522, Page 171.

Witness my hand and seal this 9 day of May, 2008.

Elizabeth Flanagan Gillis
Elizabeth Flanagan Gillis

STATE OF FLORIDA

On this 9 day of May, 2008, before me, the undersigned notary public, personally appeared Elizabeth Flanagan Gillis, proved to me through satisfactory evidence of identification, which was photographic identification with signature issued by a federal or state governmental agency, oath or affirmation of a credible witness, personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document(s), and acknowledged to me that he/she/they signed it voluntarily for its stated purpose.



[Signature]
Notary Public:
My Commission Expires: Nov 23, 2011

EXHIBIT B

QUITCLAIM DEED

I, Christina Stevens, Trustee of the Lighthouse Realty Trust u/d/t dated September 9, 2003, recorded with the Barnstable County Registry of Deeds in Book 17933, Page 314, of Southboro, Massachusetts,

for consideration paid of ONE AND 00/100THS (\$1.00) DOLLARS,

grant to Elizabeth Gillis Warden, of #34 Marisol, Newport Coast, CA 92657,

with QUITCLAIM COVENANTS,

The land, situated in Bourne (Pocasset), Barnstable County, Massachusetts, being Lot 13 as shown on a plan of land entitled "Subdivision Plan of Land in Bourne (Pocasset), Mass. Subdivision of Lot A as shown on a plan by me dated June 2, 1949, and filed in the Barnstable Registry of Deeds, Plan Book 88, Page 3 Scale: 1 in = 40 ft. March 14, 1950, Ruthford J. Kelly, Reg. Land Sur. 223 Wren St. W. Roxbury, Mass." which said plan is duly recorded with the Barnstable County Registry of Deeds in Plan Book 115, Page 95, to which plan reference is made for a more detailed description.

Said lot contains 8,646 s.f. according to said plan.

Subject to and with the benefit of all rights, privileges, rights of way, easements, layouts and takings, and restrictions and reservations of record which are now in force and applicable to the premises.

Said land is also known and identified as Parcel 19.00 on Bourne Assessors' Map 045.0.

Being a portion of the premises conveyed to me by deed of Elizabeth Flanagan Gillis dated September 9, 2003, recorded with the Barnstable County Registry of Deeds in Book 17933, Page 320, to which deed reference is made for my title.

The undersigned Trustee hereby certifies in accordance with the terms of said Trust:

1. I am the sole incumbent Trustees of the Trust;
2. The Trust has not been terminated or revoked and all amendments hereto, if any, have been duly recorded with said Registry of Deeds;

Property Address:

10 Harbor Way
Pocasset, Mass.

EXHIBIT B

3. Pursuant to the Trust, when specifically authorized and directed by the beneficiaries of the Trust, the Trustee has full right, authority and power to deal with any property owned or held by the Trust with the same force and effect as though such property were individually owned;

4. The Trustee has been authorized in writing by all of the beneficiaries of the Trust to execute, seal and deliver this deed for \$1.00 consideration to the grantee for recording. The Trust's performance of the obligations hereunder does not and will not conflict with, and is not and will not be in violation of, and does not and will not constitute a default under any mortgage or other agreement or instrument of which the Trust is a party or by which it is bound, or the provisions of the Trust instrument and presently in effect or any statute, rule, or regulation, order, writing injunction, or decree of any agency or instrumentality of any government or of any court having jurisdiction over the Trust.

5. There is no litigation pending or threatened restricting or enjoining or in any manner questioning or affecting the validity or enforceability of any one or more of the following: (a) the authority of the Trust and the Trustee to enter into or execute the documents hereunder, or the validity of any term or provision thereof; (b) the legal existence or organization of the Trust and its qualification to do business in the Commonwealth of Massachusetts; or, (c) the title of the Trustee of the Trust to that office.

6. No beneficiary of the Trust is a minor, incompetent, a corporation selling all or substantially all of its Massachusetts assets, a personal representative of an estate subject to possible estate tax liens, or is now deceased or under any legal disability.

7. The Trustee's representations and warranties in the documents regarding this transaction are true and complete as of the date hereof.

Consideration for this deed is less than \$100.00. No deed tax stamps are required.

WITNESS my hand and seal this 1 day of Sept, 2005.

Christina Stevens
Christina Stevens, Trustee of Lighthouse
Realty Trust

EXHIBIT B

COMMONWEALTH OF MASSACHUSETTS)
) SS:
COUNTY OF Barnstable)

On this 1 day of September, 2005, before me, the undersigned notary public, personally appeared the above-named Christina Stevens, Trustee as aforesaid, proved to me through satisfactory evidence of identification, which were MA Drivers License & Sovereign Bank Card, to be the person whose name is signed to the preceding or attached document, and acknowledged to me that she signed it voluntarily for its stated purpose on behalf of said Trust.

J. Crowell
Janet T. Crowell, Notary Public

My Commission expires:
3-10-11



BARNSTABLE REGISTRY OF DEEDS

oldd:\Trusts\gil\isdocs\deedlot13

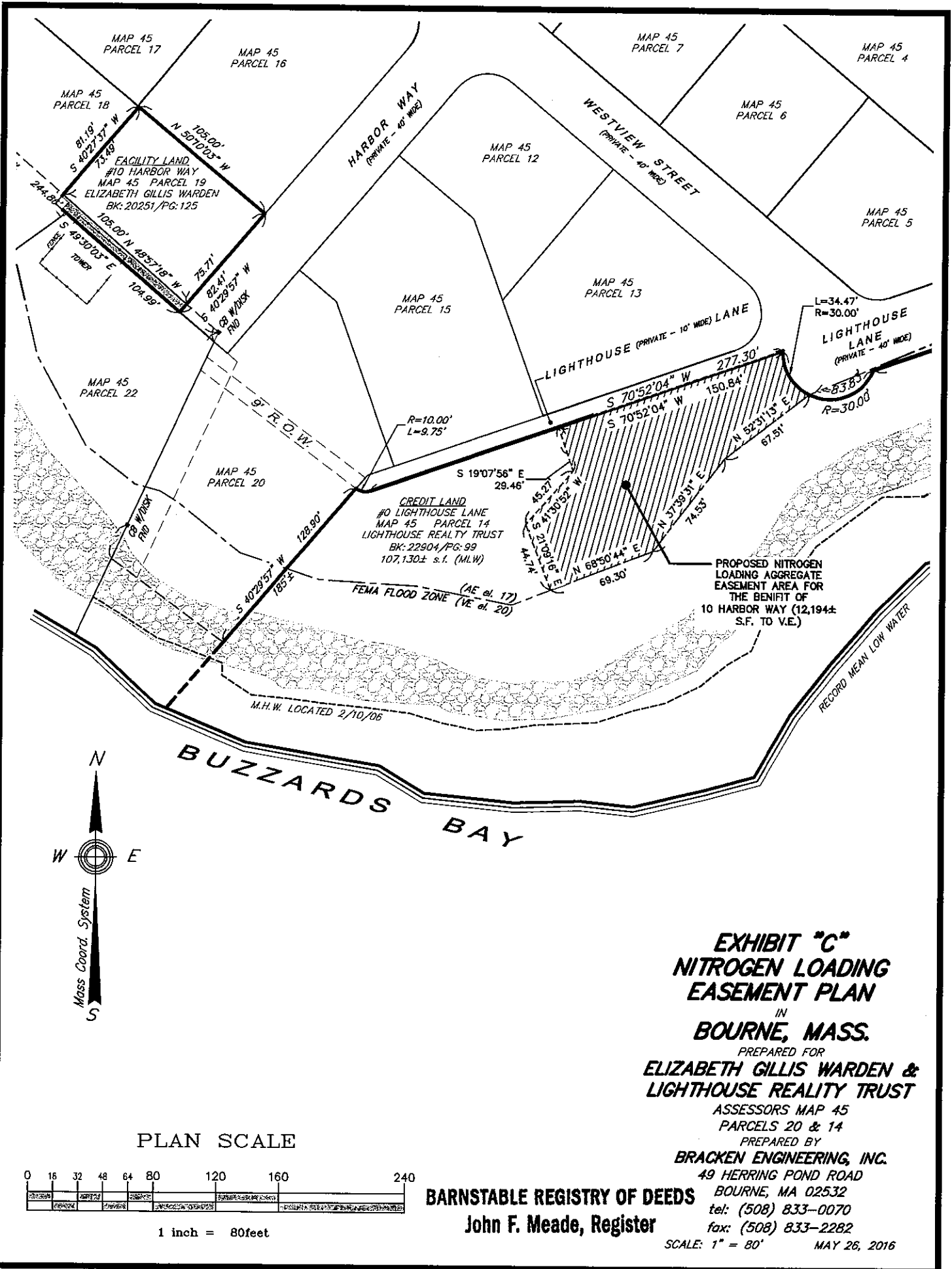


EXHIBIT "C"
NITROGEN LOADING
EASEMENT PLAN

IN
BOURNE, MASS.

PREPARED FOR
ELIZABETH GILLIS WARDEN &
LIGHTHOUSE REALTY TRUST

ASSESSORS MAP 45
 PARCELS 20 & 14

PREPARED BY
BRACKEN ENGINEERING, INC.

49 HERRING POND ROAD

BOURNE, MA 02532

tel: (508) 833-0070

fax: (508) 833-2282

SCALE: 1" = 80' MAY 26, 2016

PLAN SCALE



1 inch = 80feet

BARNSTABLE REGISTRY OF DEEDS
John F. Meade, Register

NOTICE OF ALTERNATIVE SEWAGE DISPOSAL SYSTEM
M.G.L. c. 21A, § 13 and 310 CMR 15.287(10)

ADDRESS OF PROPERTY SERVED BY ALTERNATIVE SYSTEM:

10 Harbor Way, Bourne, MA

TITLE REFERENCE FOR PROPERTY SERVED BY ALTERNATIVE SYSTEM

Deed recorded with the **Barnstable County** Registry of Deeds in **Book 34788, Page 41**

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

Stanley Davitoria and Ludo Gardini

OWNER(S) MAILING ADDRESS: 195 Mountain Avenue Malden, MA 02148

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:	<i>MicroFAST®</i>
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

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 _____, 2023, made by the above-named Alternative System Owner.

Stanley Davitoria

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss

On this _____ day of _____, 2023, 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 signed it voluntarily for its stated purpose.

(official signature and seal of notary)

WITNESS the execution hereof under seal this ____ day of _____, 2023, made by the above-named Alternative System Owner.

Ludo Gardini

COMMONWEALTH OF MASSACHUSETTS

_____, SS

On this _____ day of _____, 2023, 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 signed it voluntarily for its stated purpose.

(official signature and seal of notary)

Approved and Accepted By:

Agent of the Board of Health
Health Department
Town of Bourne



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

CERTIFICATION FOR GENERAL USE

Pursuant to Title 5, 310 CMR 15.000

Name and Address of Applicant:

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

Trade name of technology and models:

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

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

Authority for Issuance:

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

David Ferris, Director
Wastewater Management Program
Bureau of Water Resources

March 20, 2015
Date

I. Purpose

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

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 as pump run times, occupancy rate, etc.
11. Field Testing: Temperature, turbidity, pH and DO shall be measured and recorded in the field whenever the effluent is sampled for TN. See applicable sections of the Department's Field Testing Protocol at <http://www.mass.gov/dep/water/laws/policies.htm#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)

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

August 10, 2023

CERTIFIED MAIL

RE : Notice of Public Hearing

Dear Abutter:

In accordance with the Bourne Board of Health Regulations you are hereby notified that **Stanley DaVitoria & Ludo Gardini** have requested a hearing before the Bourne Board of Health for relief from the Bourne Board of Health Regulations for the installation of an upgraded septic system utilizing Innovative/Alternative technologies. The locations for which approval is sought is **10 Harbor Way (Map 45, Parcel 19), and 0 Lighthouse Lane (Map 45, Parcel 14), Wings Neck** where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on the following *Local Variances*:

- **A 45' local variance from the BOURNE BOARD OF HEALTH Regulations for a 105' setback from a proposed soil absorption system from a non-eroding Coastal Bank.**
- **A 5' local variance from the BOURNE BOARD OF HEALTH Regulations for a 145' setback from a proposed soil absorption system to Mean High Water.**

This hearing is **tentatively** scheduled for Wednesday, August 23rd at **5:30 p.m.** in Conference Room #2 at the Bourne Veteran's Memorial Community Building, 239 Main Street, Buzzards Bay. ***Please confirm the date, time and location of the meeting with the Town, in case of any changes.*** Information regarding the hearing may be available for your review one week prior to the meeting by contacting the Bourne Health Department at 508-759-0600, 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. 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 508-759-0600, Ext. 1513.

Sincerely,

BRACKEN ENGINEERING INC.

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

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



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



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

Rui Pereira, MAA
Director of Assessing

August 4, 2023

Stanley A. DaVitoria
c/o Bracken Engineering, Inc.
49 Herring Pond Rd
Buzzards Bay, MA 02532

Re: Abutters List for Map 45 Parcel 19
Property address: 10 Harbor Way

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 45 Parcels 15, 16, 17, 18, 20 & 22.

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

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

See enclosed for abutters mailing addresses.

Board of Assessors

*Ellen Doyle Sullivan -
Donna Barakauskas
Michael Leitzel*

Extract: ABUTTERS LIST
 Database: LIVE
 Filter: Key IN 10074,10075,10076,10077,10079,10081
 Sort:

Report #24: Owner Listing Report
 Fiscal Year 2024

Bourne MA

Key	Parcel ID	Owner	Location	LC/CI	Bk-Pg(Cert) /Dt	Mailing Street	Mailing City	ST	Zip Cd/County
10074	45.0-15-0	FLANAGAN NEWMAN A & EILEEN P FLANAGAN	5 LIGHTHOUSE LN	N 1010	01440/0581	P O BOX 1315	POCASSET	MA	02559-1315
10075	45.0-16-0	STEIN ANDREW B & SUSAN STEIN	6 HARBOR WAY	N 1090	34458/162 9/10/2021	102 LINCOLN LANE	SUDBURY	MA	01776
10076	45.0-17-0	GAREFINO ANNE TRUSTEE THE ANNE GAREFINO TRUST	9 CANAL DR	N 1010	32496/325 11/25/2019	449 28TH AVENUE	VENICE	CA	90201
10077	45.0-18-0	BUDRYK HEATHER L	15 CANAL DR	N 1010	19314/225 12/6/2004	PO BOX 571	POCASSET	MA	02559
10079	45.0-20-0	STEVENS CHRISTINA TR OF THE LIGHTHOUSE REALTY TRUST	1 LIGHTHOUSE LN	N 1090	17933/320 11/17/2003	PO BOX 221	SOUTH CHATHAM	MA	02659
10081	45.0-22-0	UNITED STATES OF AMERICA COAST GUARD	0 CANAL DR	N 9000	00044/0491	PO BOX 1555	BUZZARDS BAY	MA	02532

Total Records 6



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



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

Rui Pereira, MAA
Director of Assessing

August 10, 2023

Stanley A. DaVitoria
c/o Bracken Engineering, Inc.
49 Herring Pond Rd.
Buzzards Bay, MA 02532

Re: Abutters List for Map 45 Parcel 14
Property address: 0 Lighthouse Lane

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 45 Parcels 5, 13, 15 & 20.

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

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

See enclosed for abutters mailing addresses.

Board of Assessors

*Ellen Doyle Sullivan -
Donna Barakauskas
Michael Leitzel*

Extract: ABUTTERS LIST
 Database: LIVE
 Filter: Key IN 10065,10072,10074,10079
 Sort:

Report #24: Owner Listing Report
 Fiscal Year 2024

Bourne MA

Key	Parcel ID	Owner	Location	LC/CJ	Bk-Pq(Cert) /DI	Mailing Street	Mailing City	ST	Zip Cd/County
10065	45.0-5-0	MOLLOY JAMES F TR 2 WESTVIEW ST REALTY TRUST	2 WESTVIEW ST	N 1010	26019/57 1/20/2012	16 TABOR PLACE	BROOKLINE	MA	02445
10072	45.0-13-0	GRONIN REALTY FAMILY LIMITED PARTNERSHIP	7 WESTVIEW ST	N 1010	15442/133 8/6/2002	PO BOX 802	POCASSET	MA	02559
10074	45.0-15-0	FLANAGAN NEWMAN A & EILEEN P FLANAGAN	5 LIGHTHOUSE LN	N 1010	01440/0581	P O BOX 1315	POCASSET	MA	02559-1315
10079	45.0-20-0	STEVENS CHRISTINA TR OF THE LIGHTHOUSE REALTY TRUST	1 LIGHTHOUSE LN	N 1090	17933/320 11/17/2003	PO BOX 221	SOUTH CHATHAM	MA	02659

Duplicate w/10 Harbor Wy

Duplicate w/10 Harbor Wy

Total Records 4

7022 2410 0003 3888 9498

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage: \$.63
Certified Fee: \$ 4.35
Return Receipt Fee: \$ 3.55
Total Postage & Fees: \$ 8.53



CHRISTINA STEVENS TR
THE LIGHTHOUSE REALTY TRUST
PO BOX 571
SOUTH CHATHAM, MA 02659
10 Harbor Way, Bourne - BOH

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

7022 2410 0003 3888 9542

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage: \$.63
Certified Fee: \$ 4.35
Return Receipt Fee: \$ 3.55
Total Postage & Fees: \$ 8.53



CRONIN REALTY FAMILY LIMITED
PARTNERSHIP
P.O. BOX 802
POCASSET, MA 02559
10 Harbor Way, Bourne - BOH

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

7022 2410 0003 3888 9450

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage: \$.63
Certified Fee: \$ 4.35
Return Receipt Fee: \$ 3.55
Total Postage & Fees: \$ 8.53



NEWMAN & EILEEN FLANAGAN
PO BOX 1315
POCASSET, MA 02559-1315
10 Harbor Way, Bourne - BOH

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

7022 2410 0003 3888 9467

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage: \$.63
Certified Fee: \$ 4.35
Return Receipt Fee: \$ 3.55
Total Postage & Fees: \$ 8.53



ANDREW D. & SUSAN STEIN
102 LINCOLN LANE
SUDBURY, MA 01776
10 Harbor Way, Bourne - BOH

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

7022 2410 0003 3888 9528

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage: \$.63
Certified Fee: \$ 4.35
Return Receipt Fee: \$ 3.55
Total Postage & Fees: \$ 8.53



JAMES F. MOLLOY, TR
2 WESTVIEW ST REALTY TRUST
16 TABOR PLACE
BROOKLINE, MA 02445
10 Harbor Way, Bourne - BOH

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

7022 2410 0003 3888 9504

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage: \$.63
Certified Fee: \$ 4.35
Return Receipt Fee: \$ 3.55
Total Postage & Fees: \$ 8.53



UNITED STATES OF AMERICA
COAST GUARD
PO BOX 1555
BUZZARDS BAY, MA 02532
10 Harbor Way, Bourne - BOH

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

7022 2410 0003 3888 9481

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage:	\$.63
Certified Fee:	\$	4.35
Return Receipt Fee:	\$	3.55
Total Postage & Fees:	\$	8.53



HEATHER L BUDRYK
 PO BOX 571
 POCASSET, MA 02559
 10 Harbor Way, Bourne - BOH

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

7022 2410 0003 3888 9474

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage:	\$.63
Certified Fee:	\$	4.35
Return Receipt Fee:	\$	3.55
Total Postage & Fees:	\$	8.53



ANNE GAREFINO, TRS
 THE ANNE GAREFINO TRUST
 449 28TH AVE
 VENICE, CA 90201

10 Harbor Way, Bourne - BOH

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

A 48 HOUR NOTIFICATION IS REQUIRED PRIOR TO THE SET. THE CSL ON RECORD WILL RELAY THIS TO THE LOCAL BUILDING AUTHORITY. IF ANY CONNECTIONS HAVE BEEN CONCEALED PRIOR TO INSPECTION, THE BUILDING OFFICIAL MAY REQUEST HAVING THE REMOVAL OF ELEMENTS THAT CONCEAL THE CONNECTIONS TO PROVIDE ACCESS. THIS WOULD NOT CONSTITUTE "DESTRUCTIVE DISSASSEMBLY". ALL CONNECTIONS ON SITE MUST BE INSPECTED BY THE LOCAL AUTHORITY.

BUILDER TO INSTALL & SUPPLY WHOLE HOUSE VENTILATION & TO BE APPROVED & INSPECTED ON-SITE BY LOCAL BUILDING OFFICIAL DUCT TIGHTNESS AND BLOWER DOOR TESTING DONE ON-SITE BY BUILDERS' HERS RATER

ALL CEILING GYP MUST BE MECHANICALLY FASTENED
THIS HOUSE IS NOT LOCATED IN A FLOOD ZONE
DRYER SHOWN TO BE ELECTRIC. IF A GAS DRYER IS SUBSTITUTED ON-SITE IT MUST BE LISTED AS BATHROOM USE (G2406)

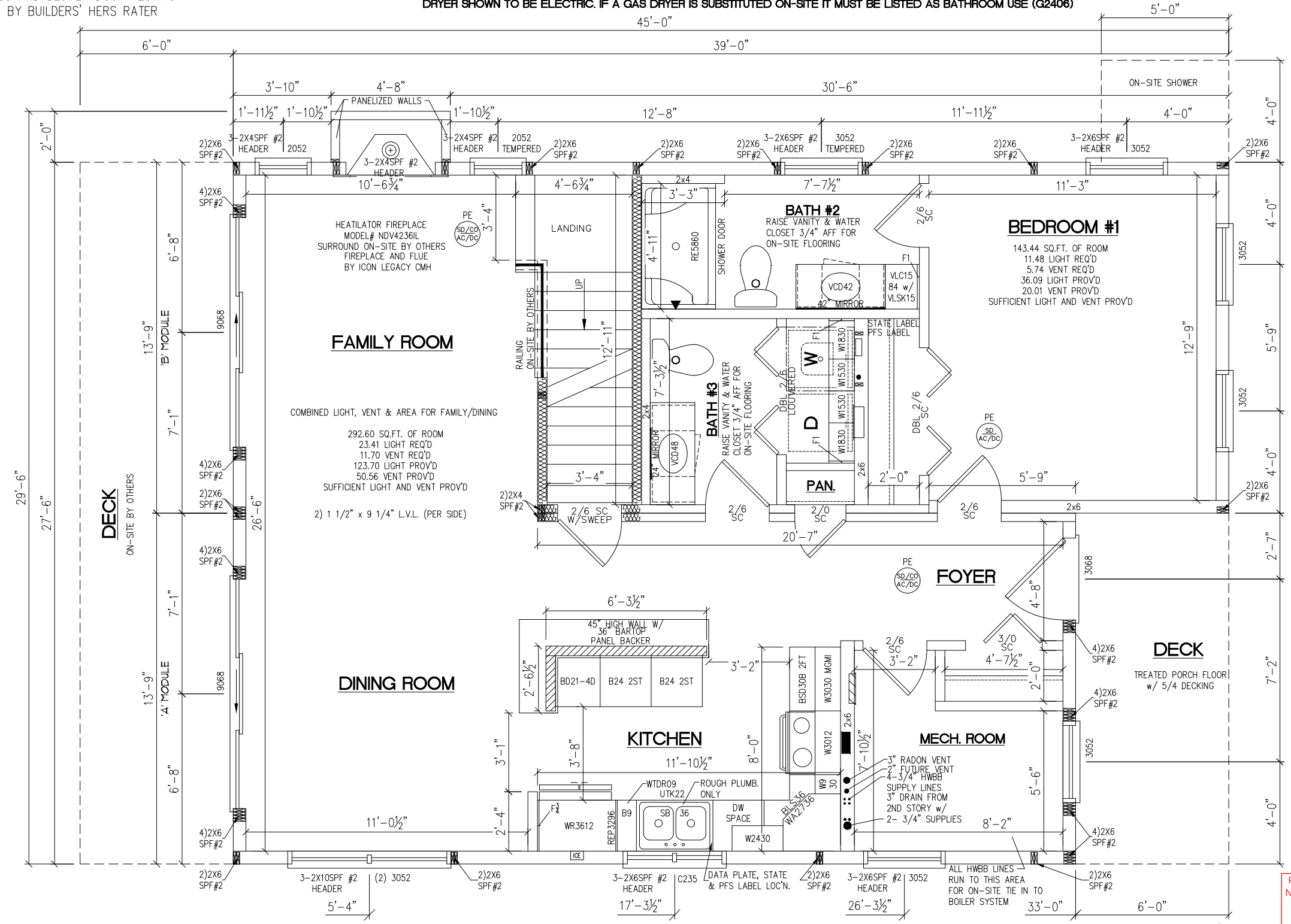
*TEMPERATURE CONTROL VALVE TO BE INSTALLED TO ALL TUBS AND SHOWERS
 *BUILDER IS RESPONSIBLE TO COMPLY WITH R612.2 (WINDOW SILLS)
 OF THE 2015 IRC (DONE ON-SITE IF APPLICABLE)
 -WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72 INCHES ABOVE THE FINISHED GRADE OR SURFACE BELOW
 -WHERE THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24 INCHES ABOVE THE FINISHED FLOOR OF THE ROOM IN WHICH THE WINDOW IS LOCATED
 -OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4 INCH DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 24 INCHES OF THE FINISHED FLOOR

SITE ADDRESS
10 HARBOR WAY
POCASSET, MA 02559
BUILDER:
256 PLEASANT BAY ROAD
HARWICH, MA 02645

246 SAND HILL ROAD
 SELINGROVE, PA 17870
 PHONE: (570) 374-3280
 FAX: (570) 374-1122
 WWW.ICONLEGACY.COM



RAISE ALL INTERIOR DOORS 3/4" TO ALLOW FOR ON-SITE FLOOR COVERING



- NOTES:
- 2X6 EXTERIOR WALLS @ 16 O.C.
 - 2X4 MARRIAGE WALLS @ 16 O.C.
 - 8'-0" CEILING HEIGHT 1ST & 2ND FLOORS
 - ANDERSEN 400 TILT WASH DOUBLE HUNG WINDOWS
 - 48,000 TOTAL BTU HEAT LOSS
 - RAFTERS:
 - 12/12 STORAGE RAFTER @ 16 O.C.
 - 5/12 NON-STORAGE RAFTER @ 16 O.C.

MA STATE BUILDING CODE -(780 CMR) 8TH EDITION
 MA FUEL/GAS/PLUMBING (248 CMR)
 2009 INTERNATIONAL MECHANICAL CODE W/ MA AMENDMENTS
 2017 NATIONAL ELECTRICAL CODE W/ MA AMENDMENTS
 2015 INTERNATIONAL ENERGY CONS. CODE W/ MA AMENDMENTS

2x10 SPF#2 P.T. FLOOR JOIST @ 16" O.C.
 w/APPROVED FASTENERS FOR P.T. LUMBER
 FLOOR TO BE CONSTRUCTED IN ACCORDANCE
 WITH R502 INCLUDING TENSION DEVICE

PFS Corporation
Northeast Region
APPROVED
H Raup - 3
7/20/17
Approval limited to
Factory Built Portion

DATE	REVISION	BY
11/15/16	PRELIM	PIF
02/15/17	REV. PRELIM	TLM
6/2/17	FINAL	HLB

BUILDER	PLEASANT BAY HOMES
OWNER/PROJECT	ELIZABETH GILLIS 2
ADDRESS	10 HARBOR WAY
CITY	POCASSET
COUNTY	WINDHAM (WPH)
STATE	MA
ZIP	02559
SNOW LOAD (LBS)	30
WIND SPEED (MPH)	110
AREA	BARNSTABLE
PERMIT NO	6861
SERIAL NO	1,980
TYPE	CAPE
FILE NAME	O#6861

1ST STORY FLOOR PLAN



SERIAL #/ ORDER #
O#6861

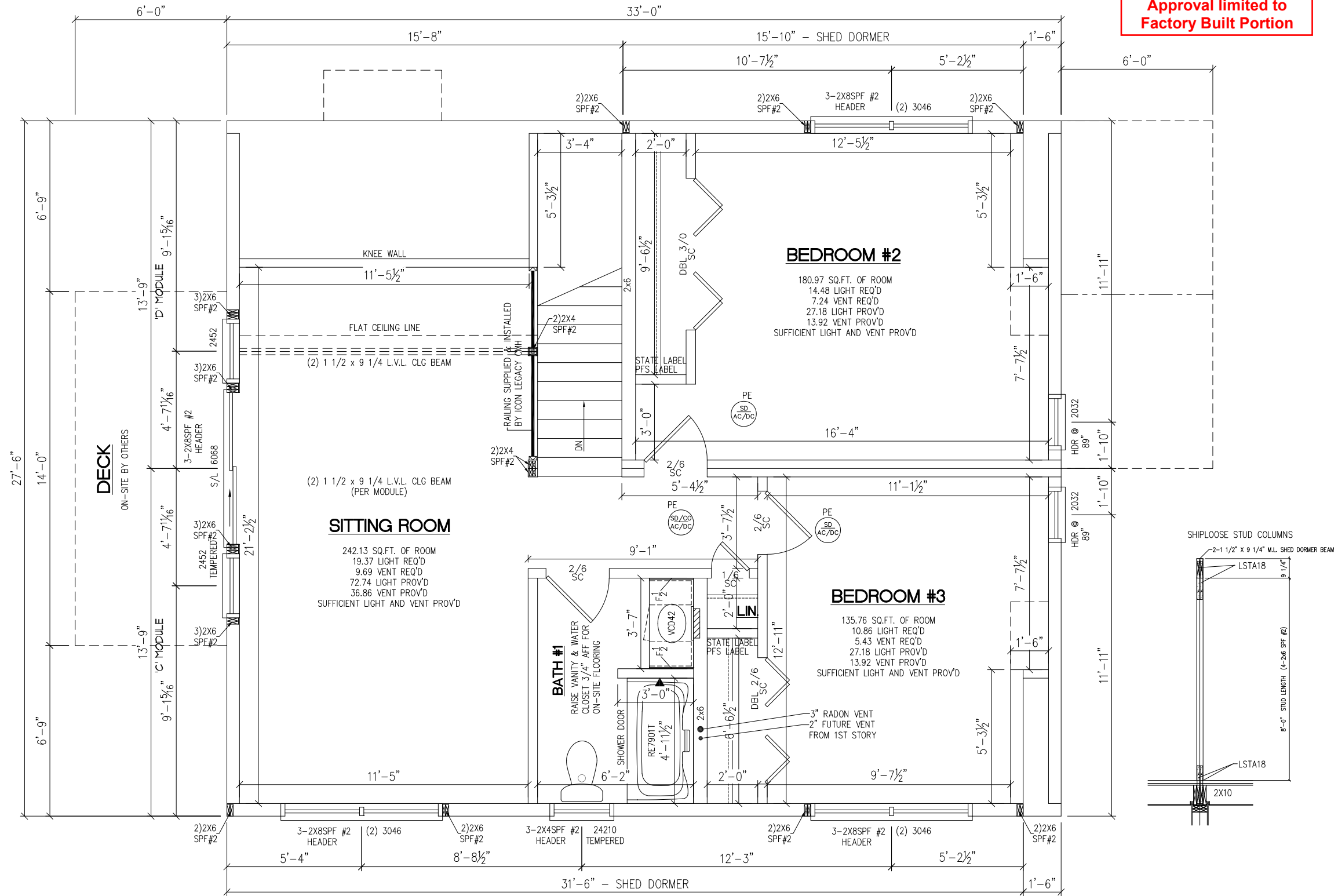
PAGE #
FP1

RAISE ALL INTERIOR DOORS 3/4" TO ALLOW FOR ON-SITE FLOOR COVERING

PFS Corporation
 Northeast Region
APPROVED
 H Raup - 3
 7/20/17
 Approval limited to
 Factory Built Portion



246 SAND HILL ROAD
 SELINSGROVE, PA 17870
 PHONE: (570) 374-3280
 FAX: (570) 374-1122
 WWW.ICONLEGACY.COM



REVISION	DATE	BY
PRELIM	11/15/16	PIF
REV. PRELIM	02/15/17	TLM
FINAL	6/2/17	HLB

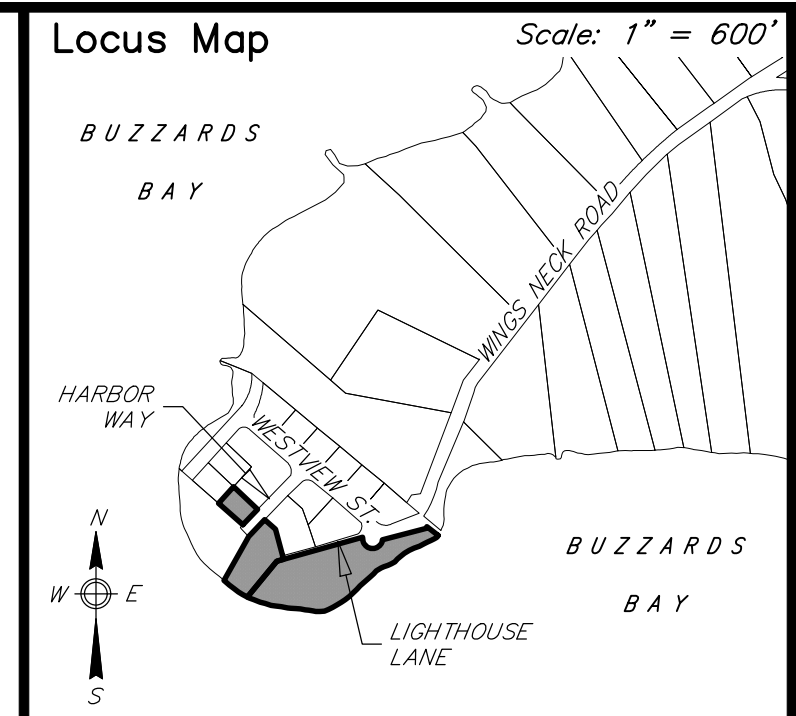
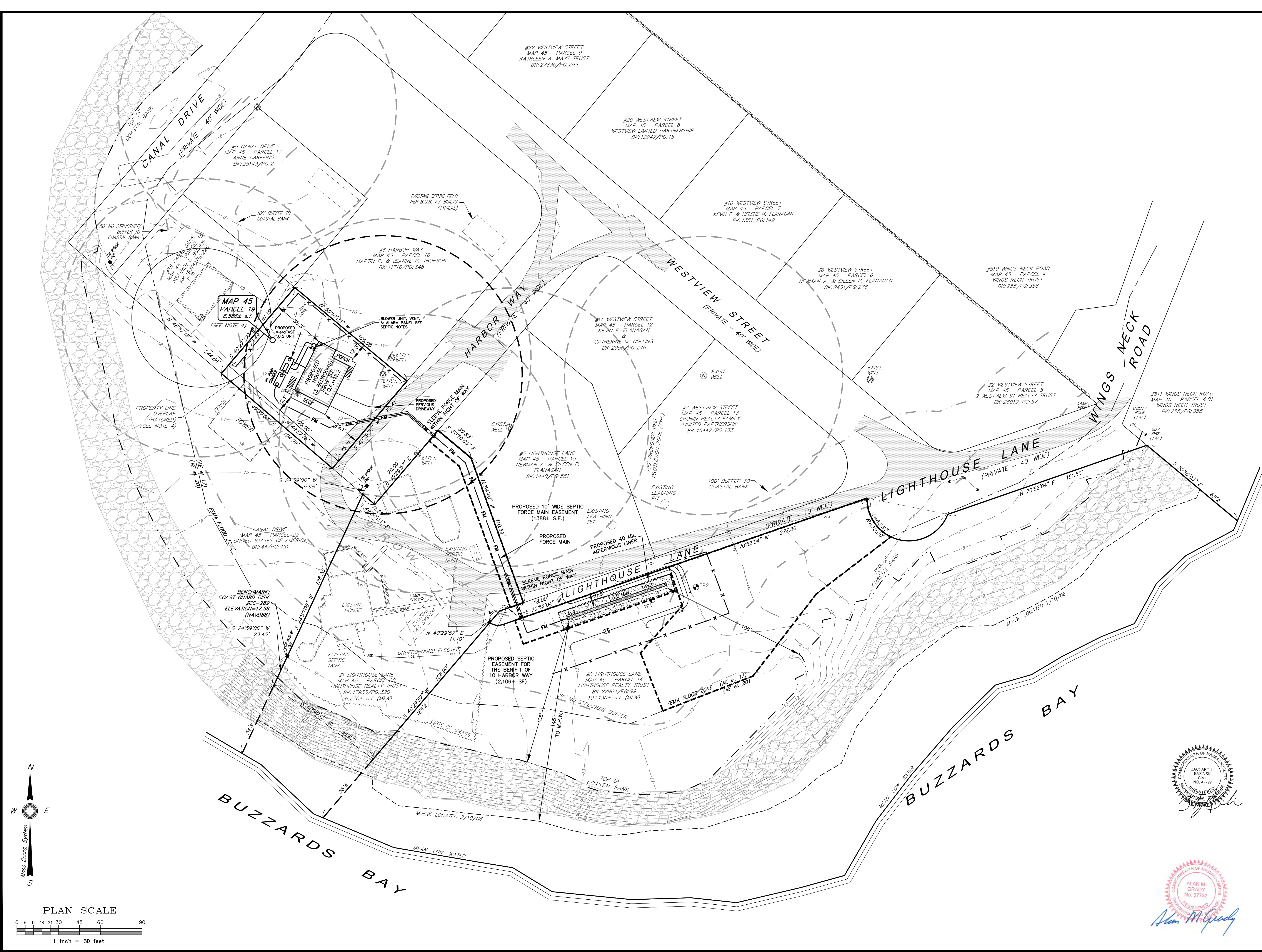
ZIP	02559
STATE	MA
CITY	POCASSET
COUNTY	BARNSTABLE
SNOW LOAD (LBS)	30
WIND SPEED (MPH)	110
TYPE	CAPE
SERIAL NO	1,980
FILE NAME	O#6861

THIS BUILDING HAS BEEN
 EXTRACTED FROM AN APPROVED
 SYSTEMS OR PER MODEL APPROVAL
jea

SERIAL # / ORDER #
O#6861

PAGE #
FP2

2ND STORY FLOOR PLAN



Benchmark
 COAST GUARD DISK #CC-289
 ELEVATION = 17.96 (NAVD88)

Owners

LOCUS: #10 HARBOR WAY
 MAP 45 PARCEL 19

OWNER: STANLEY DAVITORIA
 #95 MOUNTAIN AVENUE
 WALDEN, MA 02148
 LUDO GARDINI
 #298 NEWTON STREET 2nd FLR.
 WALTHAM, MA 02453

DEED REF: Bk: 20251, Pg: 125

PLAN REF: Pl. Bk: 115, Pg: 95 (LOT 13)

LOCUS: #1 LIGHTHOUSE LANE
 MAP 45 PARCEL 20

OWNER: THE LIGHTHOUSE REALTY TRUST
 c/o CHRISTINA STEVENS
 P.O. Box 221
 SOUTH CHATHAM, MA. 02659

DEED REF: Bk: 17933, Pg: 320

LOCUS: #0 LIGHTHOUSE LANE
 MAP 45 PARCEL 14

OWNER: THE LIGHTHOUSE REALTY TRUST
 c/o CHRISTINA STEVENS
 22 RED GATE LANE
 SOUTHBORO, MA. 01772

DEED REF: Bk: 22904, Pg: 99

PLAN REF: Pl. Bk: 597, Pg: 29 (PARCEL 14)

Notes

- LOCI FALL WITHIN A SPECIAL FLOOD HAZARD ZONE AE17 AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C0491J dated 07/16/2014.
- LOCI DO NOT FALL WITHIN THE NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE AND PRIORITY HABITATS OF RARE SPECIES.
- PROVIDE REQUIRED FLOOD VENTS IN ACCORDANCE WITH MASSACHUSETTS BUILDING CODE & NFIP REQUIREMENTS.
- LOT AREA PER RECORD PLAN (8,586 s.f.), EFFECTIVE LOT AREA (7,832 s.f.) EXCLUDING IDENTIFIED PROPERTY LINE OVERLAP AREA.

VARIANCE REQUEST

TO ALLOW 104.8 FEET FROM S.A.S. TO COASTAL BANK A 45.2 FOOT VARIANCE FROM 150 FEET REQUIRED.

ZONING SUMMARY
 REFER TO BYLAW SECTION 2450

	REQUIRED	PROPOSED
LOT AREA:	80,000	7,832± S.F. (G)
FRONT YARD:	20'	29.1'
SIDE YARD:	12'	12.1'
REAR YARD:	12'	43.6'
LOT COVERAGE:	25% (G) (MAX)	17.0% (1,325 S.F.) (1,325 S.F.)
GROSS FLR AREA:	24% (G) (MAX)	23.0% (1,802 S.F.) (1,802 S.F.) (2,805± S.F.)
BUILDING HEIGHT:	27' (G)	31.2' (B) (C)

(G) SEE TABLE 2456 FOR NON-CONFORMING LOTS IN BOURNE ZONING BY LAWS.
 (B) BUILDING HEIGHT UP TO 5' EXTRA PER ZONING BY-LAW SECTION 8 2500(G).
 (C) HEIGHT BASED ON AN EXISTING AVERAGE GRADE CALCULATION OF 12.0'.
 (D) EFFECTIVE LOT AREA OF #10 HARBOR WAY (SEE NOTE 4 ABOVE).

Prepared By:

BRACKEN ENGINEERING, INC.

49 HERRING POND ROAD
 BUZZARDS BAY, MA 02532

19 OLD SOUTH ROAD
 NANTUCKET, MA 02554

(tel) 508.833.0070
 (fax) 508.833.2282

(tel) 508.325.0044
 www.brackeneng.com

PROPOSED SITE PLAN
 IN BOURNE, MASSACHUSETTS

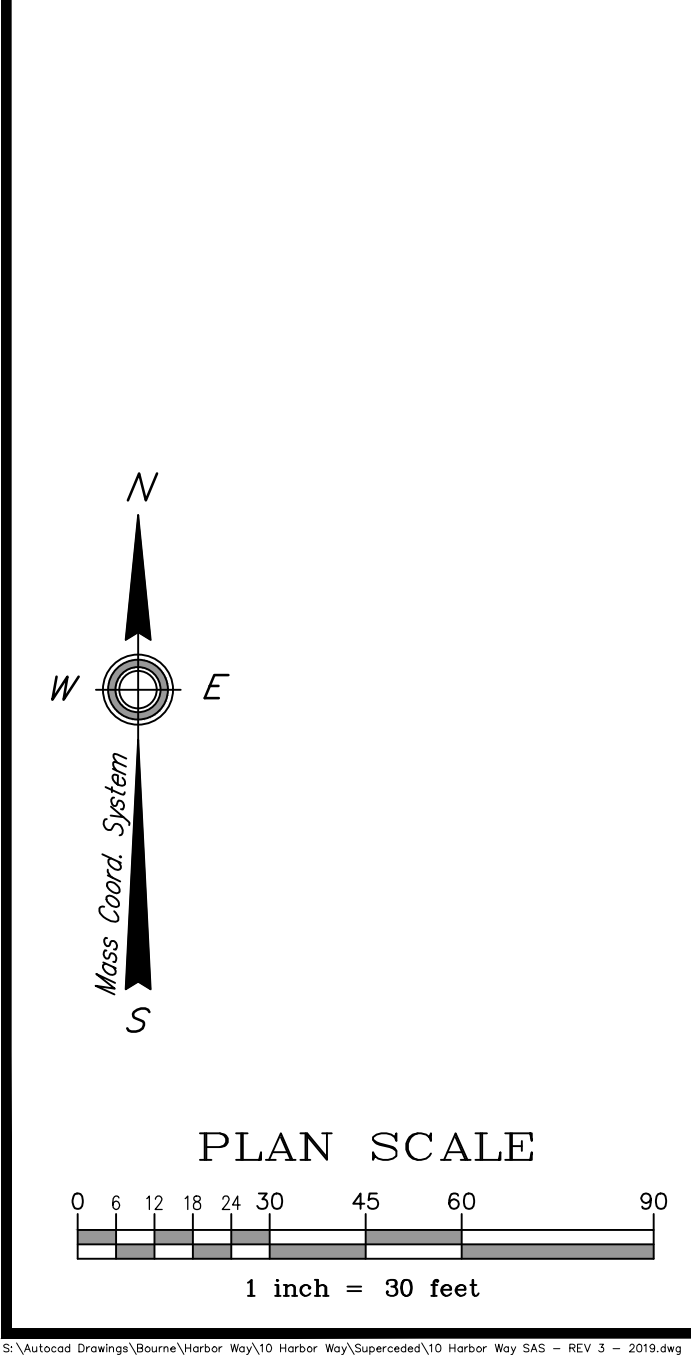
Prepared For:

**STANLEY DAVITORIA &
 LIGHTHOUSE REALTY TRUST**

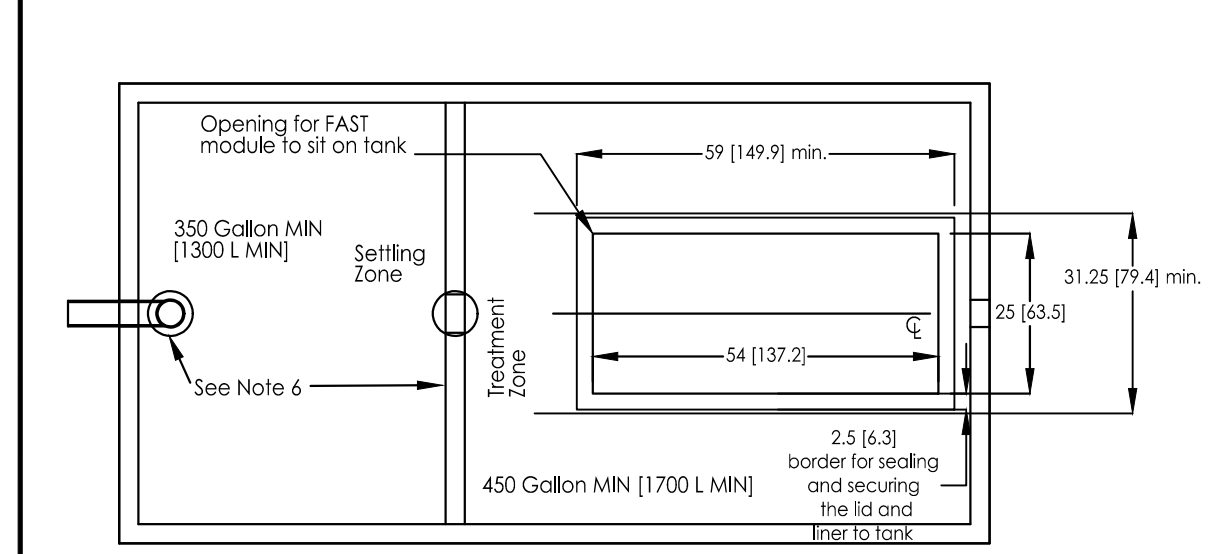
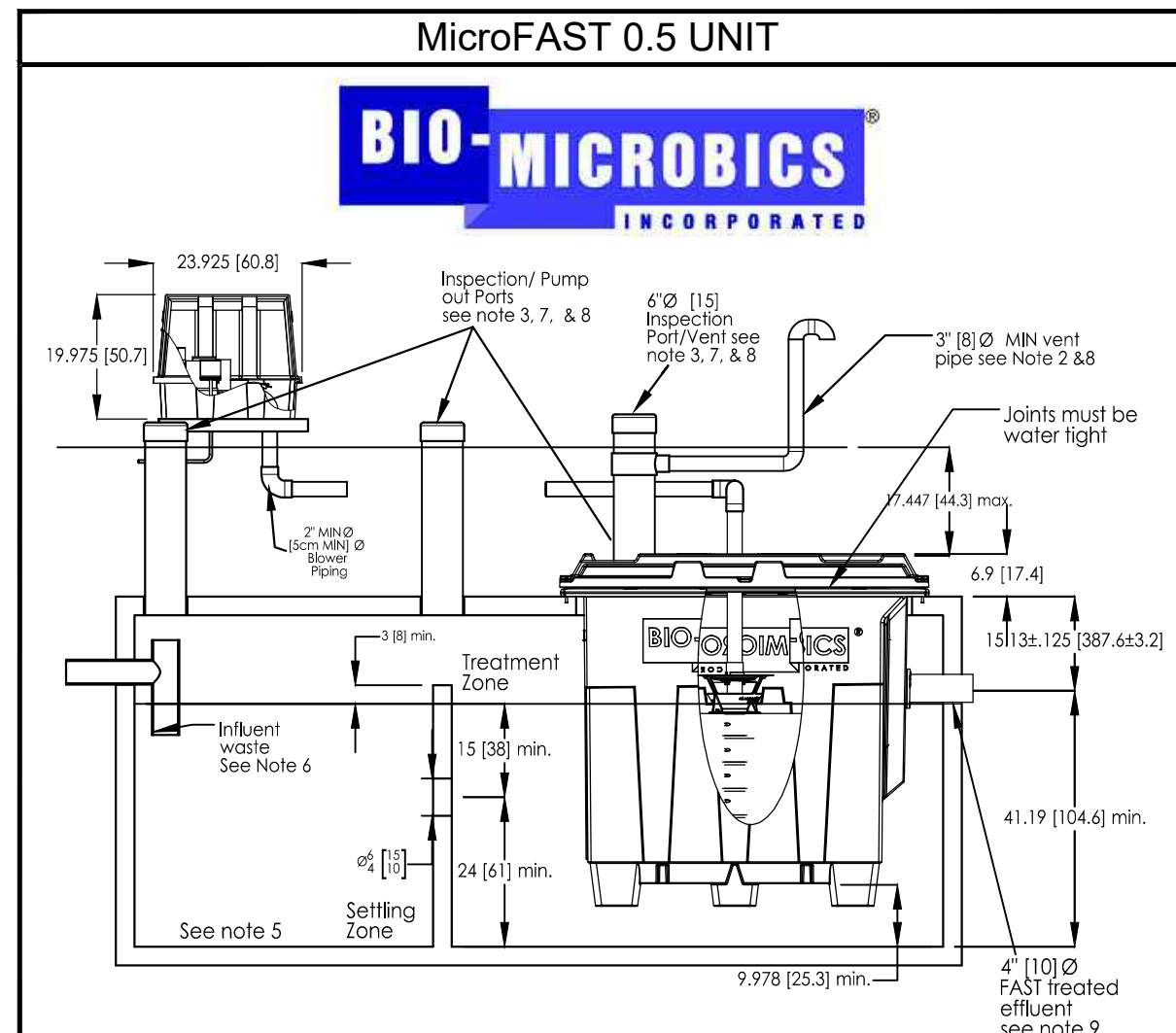
#10 HARBOR WAY - MAP 45 PARCEL 19
 #1 LIGHTHOUSE LANE - MAP 45 PARCEL 20
 #0 LIGHTHOUSE LANE - MAP 45 PARCEL 14

No.	Date	Revision Description	By
4	08/15/23	UPDATE OWNERSHIP	BEI
3	04/25/17	REVISED WELL AND SEPTIC LOCATIONS	BEI
2	10/25/16	REVISED PROPOSED HOUSE	BEI
1	2/23/16	REVISED EASEMENT - ELIMINATE PROPOSED WALL	BEI

Date: NOVEMBER 30, 2015 Drawn: RMM/ERC/DLH Checked: DFB/AMG Sheet: 1 of 2

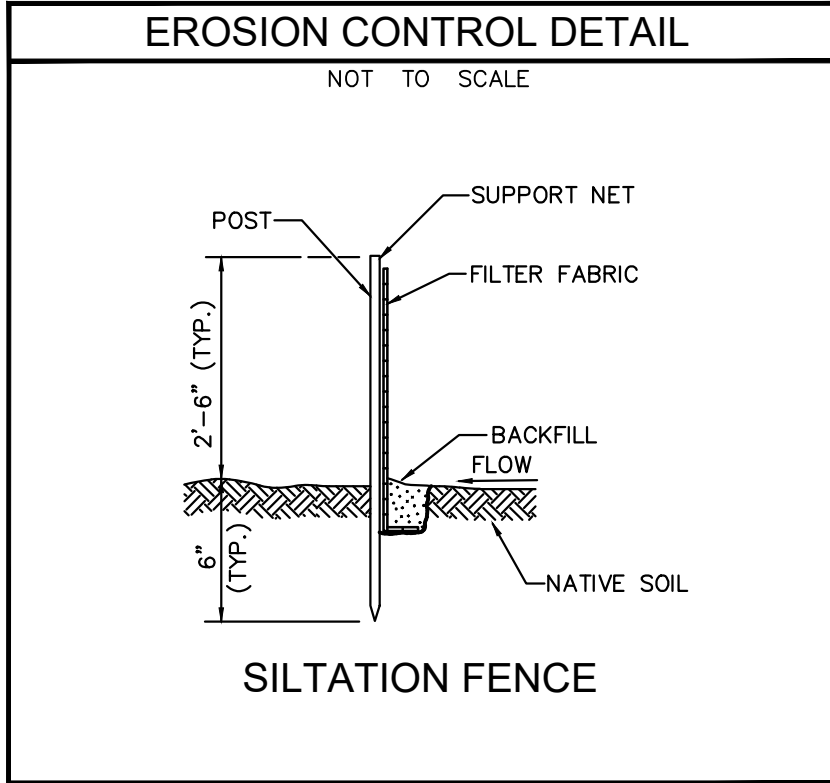
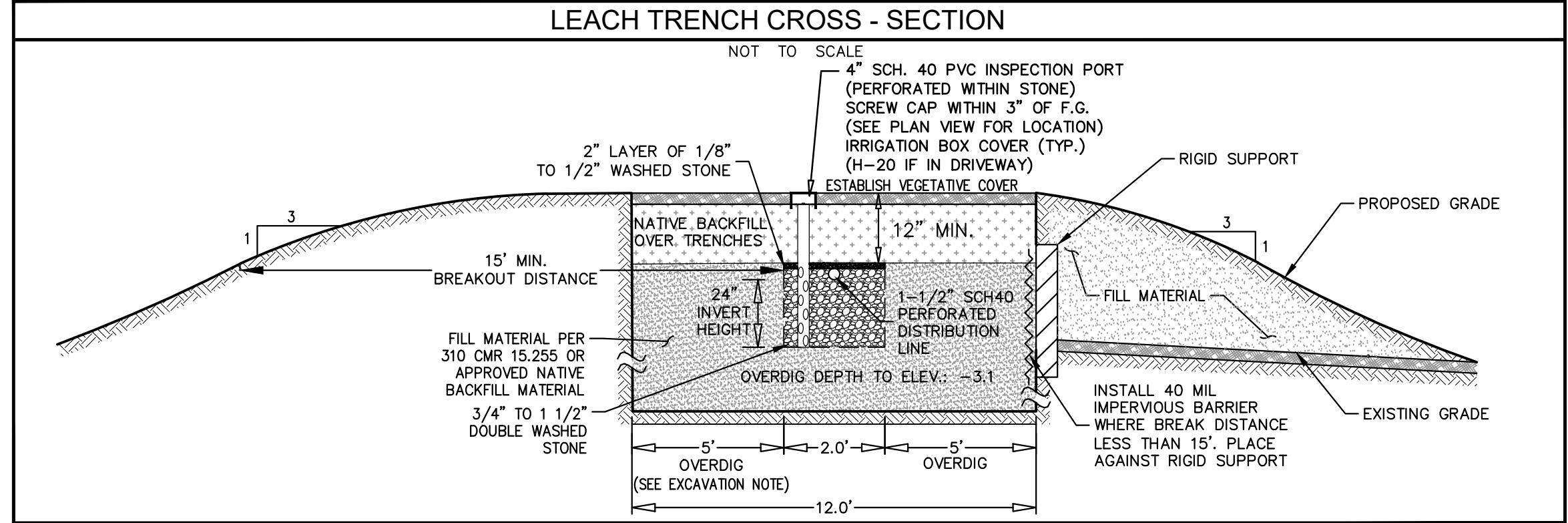
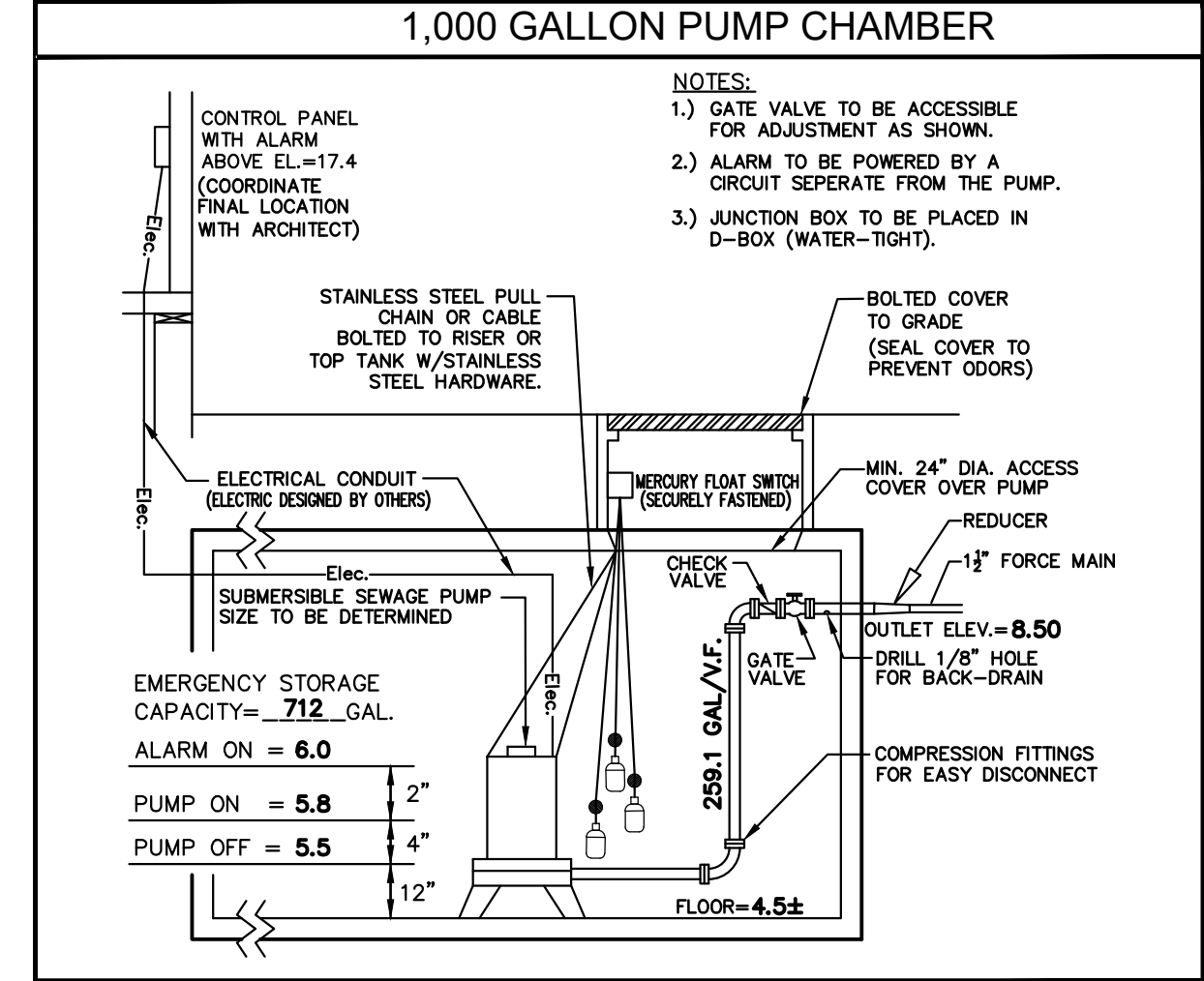


COPYRIGHT (C) BY BRACKEN ENGINEERING, INC. ALL RIGHTS RESERVED. ANY REPRODUCTION OR TRANSMISSION IN ANY FORM OR BY ANY MEANS, ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING OR OTHERWISE, WITHOUT THE EXPRESS WRITTEN CONSENT OF BRACKEN ENGINEERING, INC. IS PROHIBITED. ANY UNAUTHORIZED REPRODUCTION OR TRANSMISSION OF THIS DOCUMENT WITHOUT THE WRITTEN PERMISSION OF BRACKEN ENGINEERING, INC. SHALL RENDER IT INVALID AND UNUSABLE.



- MicroFAST Notes:**
- 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.
 - Vent to be located above finish grade or higher to avoid infiltration. Cap with vent grate w/at least 71 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 71sq 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.
 - All appurtenances to FAST® (Log 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.
 - 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.
 - All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access.
 - Tank, anchors, piping, conduits, blower housing and vents are provided by others.
 - All piping and ancillary equipment installed after FAST® must not impede or restrict free flow of effluent.
 - No more than 4 FT [1.2 m] of fill may be placed over unit lid. Unit may stand inside tank MicroFAST® 1.0 with feet. Refer to installation manual for more details.

- PROPOSED SEPTIC NOTES**
- ALL CONSTRUCTION METHODS AND MATERIALS TO CONFORM TO TITLE V 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.
 - CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF SOIL OR SITE CONDITIONS DIFFER FROM THOSE SHOWN.
 - THE DESIGN IS INTENDED TO MEET TITLE V 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.
 - REFER TO THE REQUIRED OPERATION & MAINTENANCE PLANS, TO BE SUPPLIED BY THE MANUFACTURER FOR REQUIRED MAINTENANCE PROCEDURES OF THE MICROFAST SYSTEM.
 - THE SEPTIC SYSTEM IS TO BE STAKED OUT BY A PROFESSIONAL LAND SURVEYOR PRIOR TO CONSTRUCTION.
 - THE 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 OF THE OPERATION.
 - HOMEOWNER IS TO ESTABLISH AN OPERATION & MAINTENANCE PLAN WITH A COMPANY CERTIFIED SYSTEM OPERATOR FOR THE MICROFAST. ALL SYSTEM TESTING, MONITORING & REPORTING IS TO BE CONDUCTED IN ACCORDANCE TO THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) GENERAL USE PERMIT.
 - CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM PANELS WITH THE ARCHITECT, HOMEOWNER & SYSTEM MANUFACTURER PRIOR TO INSTALLATION.
 - ALL PANELS, ALARMS, AND BLOWER UNITS ARE TO BE INSTALLED ABOVE FLOOD ZONE ELEVATION 17.4.
 - THE SYSTEM OWNER SHALL BE RESPONSIBLE TO PUMP THE SEPTIC TANK AT LEAST ONCE EVERY THREE YEARS.
 - PROPOSED SEPTIC FORCEMAIN EASEMENT (1,388± s.f.) TO BE ESTABLISHED ON #1 LIGHTHOUSE LANE FOR THE BENEFIT OF #10 HARBOR WAY.
 - PROPOSED NITROGEN LOADING AGGREGATE EASEMENT (12,227± s.f.) AND DEED RESTRICTIONS TO BE ESTABLISHED ON #1 LIGHTHOUSE LANE FOR THE BENEFIT OF #10 HARBOR WAY.
 - APPROVAL OF NITROGEN LOADING AGGREGATE PLAN IN ACCORDANCE WITH §216 OF 310 CMR 15.00 (TITLE 5) IS REQUIRED.



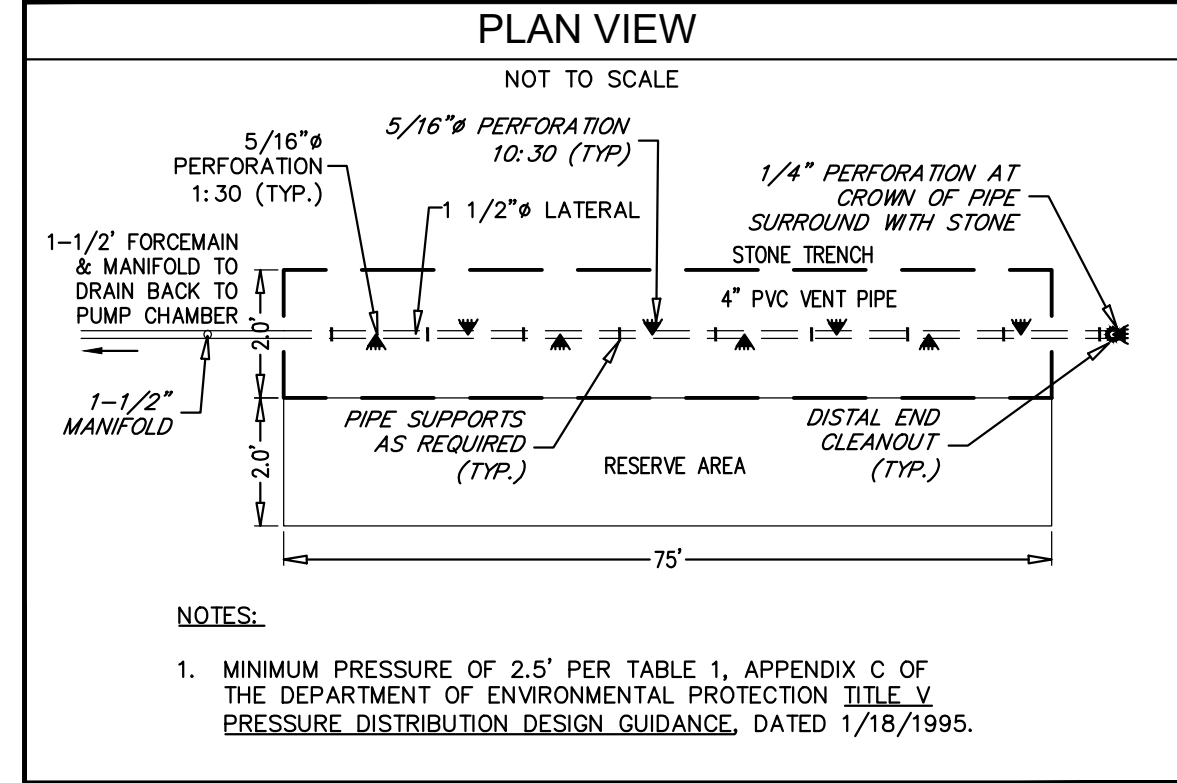
DESIGN CALCULATIONS

SOIL TEXTURAL CLASS:	CLASS 1
PERC. RATE:	< 5 MINUTES/INCH
NO. OF BEDROOMS:	3
DESIGN FLOW REQUIRED:	330 GPD
SEPTIC TANK REQUIRED:	1,500 GALLONS
SEPTIC TANK PROVIDED:	1,500 GALLONS

LEACHING SYSTEM:
 (1) PROPOSED 2' W x 75' L x 2' D LEACHING TRENCH

EFFECTIVE LEACHING:
 PROPOSED TRENCH 1 x 75 L.F. x 6 S.F./L.F. = 450 S.F.
 LOADING RATE = 0.74 GPD/SF
 FLOW PROVIDED: 333 GPD > 330 GPD REQUIRED

MAXIMUM NITROGEN LOADING OF 660 GPD PER 40,000 S.F. (0.0165 GPD/S.F.) PROVIDED WITH THE USE OF A MICROFAST 0.5 1/A TREATMENT UNIT IN ACCORDANCE WITH DEP GENERAL USE APPROVAL X232831. (12,227 + 7,832) = 20,059 S.F. 20,059 S.F. x 0.0165 GPD/S.F. = 330 GPD

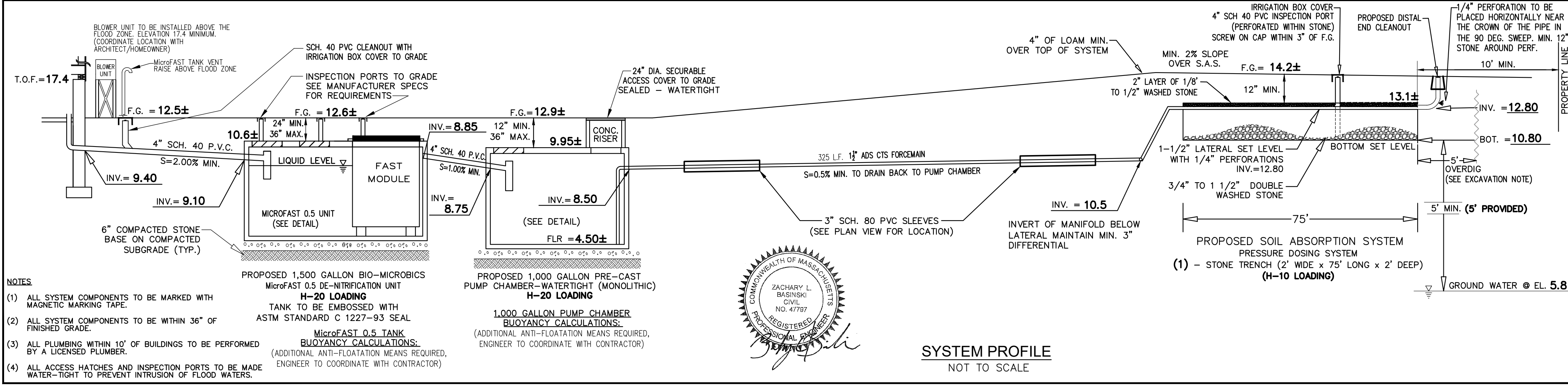


SOIL LOGS

TP NO.	1	2
GRD. EL.	11.8	10.9
GW. EL.	5.8	0.0
0'	A LOAMY SAND	A LOAMY SAND
16'	A LOAMY SAND FRAGILE	B LOAMY SAND
36'	C1 SANDY LOAM WITH POCKETS LOAMY SAND	C1 SANDY LOAM WITH POCKETS LOAMY SAND
WEEPING @ 72"		
WATER @ 152"		
168"	C2 MEDIUM-COARSE SAND LOOSE	C2 MEDIUM-COARSE SAND LOOSE
220"	WATER @ 152"	NO MOTTLES

EXCAVATION NOTE

THE SYSTEM WILL REQUIRE THE EXCAVATION OF UNSUITABLE SOIL WITHIN 5' OF THE SOIL ABSORPTION SYSTEM DOWN TO THE C2 SAND LAYER, APPROXIMATELY 168" DEPTH MINIMUM (DEEPER EXCAVATION MAY BE REQUIRED). THE EXCAVATION SHALL BE INSPECTED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION. SOIL IS TO BE REPLACED WITH SAND CONFORMING TO 310 CMR SECTION 15.255, CONSTRUCTION IN FILL.



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 PLAN IN BOURNE, MASSACHUSETTS

Prepared For:

STANLEY DAVITORIA & LIGHTHOUSE REALTY TRUST

#10 HARBOR WAY - MAP 45 PARCEL 19
 #1 LIGHTHOUSE LANE - MAP 45 PARCEL 20
 #1 LIGHTHOUSE LANE - MAP 45 PARCEL 14

No.	Date	Revision	Description	By
4	08/15/23	UPDATE OWNERSHIP		BEI
3	04/25/17	REVISED WELL AND SEPTIC LOCATIONS		BEI
2	10/25/16	REVISED PROPOSED HOUSE		BEI
1	2/23/16	REVISED EASEMENT - ELIMINATE PROPOSED WALL		BEI

Date: NOVEMBER 30, 2015 Drawn: RMM/ERC/DLH Checked: DFB/AMG Sheet: 2 of 2



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



Kaitlyn F. Shea
Assistant Health Agent

October 11, 2023

Karen Fish-Will
100 Black Rock Rd
Hingham, MA 02043

**RE: 60 Red Brook Harbor Road, Cataumet (Book 35190, Page 131)
Notice of Approved Innovative/ Alternative (“I/A”) Technology System**

On August 23, 2023, the Bourne Board of Health held a public meeting and discussed the request for relief from the Bourne Board of Health 150’ Setback Regulations for the installation of a sewage disposal system at your property at 60 Red Brook Harbor Rd, Cataumet, MA (map 47.4, parcel 11). This proposal includes replacing a failed system and razing and rebuilding a single-family dwelling. As illustrated on the Site Plan dated August 15, 2023 by Bracken Engineering, Inc., the proposed septic system requires the following variances:

- *A 9’ variance from the required 150 foot setback for the placement of a soil absorption system 141 feet from a Coastal Bank; and*
- *An 85’ variance from the required 150 foot setback for the placement of the reserve area 65 feet from a Coastal Bank.*

The Board felt that these variances were in order and that the proposed septic system will be comprised of a MicroFAST 0.9 unit for denitrification. This will replace an existing failed, single cesspool, and offer a substantial degree of environmental protection to the facility by adding advanced treatment and reducing the total nitrogen loading by 21%. The number of bedrooms will increase from five to six in total, with the system falling 219’ from the salt marsh and coastal beach.

This variance is valid for up to two years from the date of approval pursuant to the Board’s variance validity regulation and contingent upon an alternative septic disclosure notice recorded in the deed of the property. The Board of Health shall receive a copy of the recorded documents and an Operation and Maintenance Agreement prior to issuance of a disposal works construction permit. The Board’s approval was also conditioned that a 6 foot cased opening be added to the proposed “exercise room” and a seasonal-use deed restriction be recorded for the proposed pool house, and that no heating facilities be installed in the pool house.

It is understood that the owner(s) have familiarized themselves with the Bourne Board of Health I/A Septic System Regulations and specific testing requirements for the I/A technology. Should you have any questions, please do not hesitate to contact the Board of Health office at 508-759-0600 ext. 1513. Thank you.

Sincerely,

Terri Guarino

Terri Guarino, RS, CHO
Health Agent

C.C. Bracken Engineering, Inc.

No. _____

FEE \$250.00

COMMONWEALTH OF MASSACHUSETTS

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 <u>60 Red Brook Harbor Road</u>	Owner's Name <u>Karen Fish-Will</u>
Map/Parcel# <u>Map 47.4, Parcel 11</u>	Address <u>100 Black Rock Road, Hingham, MA 02043</u>
Lot#	Telephone# <u>617-429-2700</u>
Installer's Name	Designer's Name <u>Zachary L. Basinski, PE Bracken Engineering</u>
Address	Address <u>49 Herring Pond Road, Buzzards Bay, MA 02532</u>
Telephone#	Telephone# <u>508-833-0070</u>

Type of Building SINGLE-FAMILY DWELLING Lot Size 152,151 sq. ft.
 Dwelling - No. of Bedrooms 6 Garbage grinder ()
 Other - Type of Building _____ No. of persons _____ Showers (), Cafeteria ()
 Other Fixtures _____
 Design Flow (min. required) 110 gpd Calculated design flow 660 Design flow provided 666 gpd
 Plan: Date 8/15/2023 Number of sheets 2 Revision Date _____
 Title SUBSURFACE SEWAGE DISPOSAL PLAN IN BOURNE
 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 07/19/2022

DESCRIPTION OF REPAIRS OR ALTERATIONS _____
Installation of a 1,500 gal. MicroFast 0.9 septic tank, blower unit, D-Box and 1,000 gal. pump chamber.
SAS consisting of five (5) 500 gal. leaching chambers in a 12.83' x 50.5' x 2' stone bed.

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 place the system in operation until a Certificate of Compliance has been issued by the Board of Health.

Signed _____ Date _____

Inspections _____



No. _____

COMMONWEALTH OF MASSACHUSETTS

FEE _____

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.

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

August 16, 2023

Hand Delivery & Email [tguarino@townofbourne.com]

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

**RE: Bourne Board of Health Variance
60 Red Brook Harbor Road (Map 47.4 Parcel 11)**

Dear Members of the Board:

On behalf of the owners/applicant, Karen Fish-Will, please accept this letter as a request for the following variances from the Town of Bourne Health Regulations for a proposed septic installation at the above referenced property. We request the following *Local Variances*:

- A 9' *local variance* is requested from the BOURNE BOARD OF HEALTH Regulations for a 141' setback from a proposed soil absorption system to a Coastal Bank.
- An 85' *local variance* is requested from the BOURNE BOARD OF HEALTH Regulations for a 65' setback from a reserve area to a Coastal Bank.
- A *local variance* is requested from the BOURNE BOARD OF HEALTH Regulations for the use of a conventional soil absorption system with I/A technology within 150' of a Coastal Bank.

The proposed project includes the raze and rebuild of an existing single-family dwelling and Title V septic upgrade. The proposed septic system is an Innovative/Alternative (I/A) septic system, consisting of a MicroFAST 0.5 Unit, and a conventional septic system. The I/A system will replace a failed, single cesspool. The proposed soil absorption system, MicroFAST tank and pump chamber are sited outside of the 150-foot buffer zone from water dependent resource areas (Salt Marsh & Coastal Beach). The following local variances are being requested from an existing, non-eroding Coastal Bank. The employment of I/A technology results in a benefit to the environment by reducing the nitrogen loading from 4.63 ppm to 3.66 ppm or 21%.

Bracken Engineering, Inc. is requesting that the Bourne Board of Health deviate from the goal of full compliance by allowing the *Local Variances* requested above. The above *Local Variances* requests are being made because of the topography of the lot and proximity to wetland resource areas. 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 August 23rd 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
Sincerely,

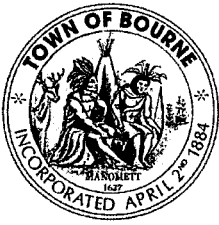
BRACKEN ENGINEERING, INC.

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

Zachary L. Basinski, P.E., CFM
Senior Project Manager

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

Jason P. Heyer, CFM
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, increases in flow, or repairs and upgrades to on-site sewage disposal systems with design flows of less than 10,000 gallons/ day.

1. Facility Name and Address:

Owner's Name
 Karen Fish-Will
 Facility's Street Address
 60 Red Brook Harbor Road (Cataumet) - Map 47.4, Parcel 77
 Owner's Telephone Number
 617-429-2700
 Owner's E-mail Address
 karen@peabodyproperties.com
 Owner's Mailing Address
 100 Black Rock Road, Hingham, MA 02043

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, MA 02532

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

- Residential Commercial Institutional School Industrial Mixed Use

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

Single-family dwelling, 6 bedrooms

5. Type of System Proposed (check all that apply): Conventional Title 5 I/A System

- Pumped System Gravity System Pressure Dosed Tight Tank Other

6. Describe the existing and proposed septic system components: PROPOSED:
1,500 gallon MicroFast 0.9 septic tank, blower unit, d-box and 1,000 gallon pump chamber
SAS consisting of (5)-500 gallon leaching chambers in a 12.83'x50.5'x2' stone bed

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

110 GPD	EXISTING	PROPOSED
Design flow of system:	550	660
Total design flow of facility: <i>(if more than one system on subject property)</i>	550	660

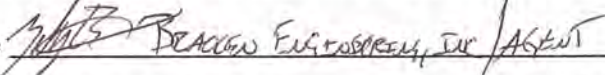
8. Enclose a **letter of request for variances/waivers** which makes reference to the specific provisions of Title 5 and/ or the Board Bourne of Health Regulations for which a variance is sought. Please use this opportunity to demonstrate compliance with 310 CMR 15.410, and to justify the relevant facts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

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


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

10. Certification:

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

Facility Owner's Signature  BRACKEN ENGINEERING, INC / AGENT Date 8/15/23

Print Name Zachary L. Basinski, PE, CFM | Bracken Engineering, Inc. - as AGENT

Signature of Preparer  BRACKEN ENGINEERING, INC Date 8/15/23

Print Name Zachary L. Basinski, PE, CFM | Bracken Engineering, Inc.



Town of Bourne - Water Resources Nitrogen Loading and Mitigation Worksheet

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

Facility Address: 60 Red Brook Harbor Road
 Preparer's Name: Bracken Engineering, Inc.
 Date: 8/2/2023
 Watershed: Red Brook Harbor

Project Nitrogen Load

	Proposed Wastewater	New Construction/ Raze & Rebuild, Increases in Flow, or Repairs/ Upgrades	
1.	Project Title-5 wastewater flows:	<input type="text" value="660.0"/> gpd	(a)
	Actual wastewater flows:	<input type="text" value="175.0"/> *	(b)
	Average wastewater flows:	<input type="text" value="417.5"/> gpd	(a)+(b) ÷2= (A)
		* Title-5 flows prescribed by TB91-001 for commercial uses	

Place in applicable box:

Yes No Will the project be connected to sewer ?

Is project Title-5 wastewater flow 10,000 gpd or greater ?

Place in applicable box and multiply unsewered wastewater flow by applicable conversion factor:

<input type="checkbox"/>	Standard Title-5 System (35-ppm-N)	x	0.048359	} Type of system: <input type="text" value="MicroFast"/>
<input type="checkbox"/>	DEP-approved I/A System (25-ppm-N)	x	0.034542	
<input checked="" type="checkbox"/>	DEP-approved I/A System (19-ppm-N)	x	0.026252	
<input type="checkbox"/>	DEP-approved Enhanced I/A (12-ppm-N)	x	0.016580	

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

Wastewater nitrogen load (**Actual flows**) = kg-N/yr (C)

Existing Conditions

Calculate (A') through (P') as w/ (A) through (P):

Title-5 wastewater flows:	<input type="text" value="550.0"/> gpd	
Actual wastewater flows:	<input type="text" value="175.0"/> *	
Avg. wastewater flows:	<input type="text" value="362.5"/> gpd	(A')

Place in applicable box:

Yes No Is existing development on sewer ?
 (If 'Yes', then go to line 2.)

<input checked="" type="checkbox"/>	Standard Title-5 System	} Type of system: <input type="text" value="MicroFast"/>
<input type="checkbox"/>	DEP-approved I/A System (commercial)	
<input type="checkbox"/>	DEP-approved I/A System (residential)	
<input type="checkbox"/>	DEP-approved enhanced I/A	

Wastewater nitrogen load (**Title-5 flows**) = kg-N/yr (B')

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

Stormwater Runoff

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

Project site area: acres (D)

Project site wetland area: acres (E)

Project site upland area: acres (F)

Pervious unpaved upland: acres (G)

% using LID Paved area: s.f. (H)

Factor may be adjusted for employment of LID → x 1.4158E-04 = kg-N/yr (I)
 LID = low impact development

Roof area: s.f. (J)

x 7.0792E-05 = kg-N/yr (K)

Project site area: acres (D)

Project site wetland area: acres (E)

Project site upland area: acres (F)

Pervious unpaved upland: acres (G')

Paved area: s.f. (H')

Paving runoff offset: kg-N/yr (I')

Roof area: s.f. (J')

Roof runoff offset: kg-N/yr (K')

Fertilizer

Previous unpaved upland - roof area =

Managed turf/ lawn area s.f.

x 3.4019E-04 = kg-N/yr (L)

Managed Turf/ lawn area: s.f.

Fertilizer offset: kg-N/yr (L')



Town of Bourne - Water Resources Nitrogen Loading and Mitigation Worksheet

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

Facility Address: 60 Red Brook Harbor Road
Preparer's Name: Bracken Engineering, Inc.

Date: 8/2/2023

Watershed: Red Brook Harbor

Total Nitrogen Load

Total project nitrogen load (Title-5 flows): kg-N/yr (M)= (B)+(I)+(K)+(L)

Total project nitrogen load (Actual flows): kg-N/yr (N)= (C)+(I)+(K)+(L)

Nitrogen load per acre (Average): kg-N/yr/acre (O)= (M)+(N) ÷2 ÷(F)

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

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

Nitrogen offset per acre: kg-N/yr/acre (O')

Proposed Nitrogen Loading Concentration

Project nitrogen loading concentration (Title-5 flows): ppm-N (P)= $(a) \div 723.76 + (G) \times (\text{RECH}) \div 9.7286 + (H) \div 10,594 + (K) \div 0.75$

Project nitrogen loading concentration (Actual flows): ppm-N (Q)= $(b) \div 723.76 + (G) \times (\text{RECH}) \div 9.7286 + (H) \div 10,594 + (K) \div 0.75$

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

Existing nitrogen loading concentrations:

Title-5 flows ppm-N (P')

Actual flows ppm-N (Q')

Average ppm-N (R')

Resource/ Impact Based Criteria

Marine Water Recharge Areas / Coastal Embayments

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

Name of Watershed

(from Regional Policy Plan Data Viewer): Red Brook Harbor

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

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

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

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

Groundwater Quality

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

Potential Public Water Supply Areas

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

Yes No Does the project's nitrogen loading concentration (R) exceed the greater of **1 ppm** or the existing concentration (R') ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)



Town of Bourne - Water Resources Nitrogen Loading and Mitigation Worksheet

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

Facility Address: 60 Red Brook Harbor Road
Preparer's Name: Bracken Engineering, Inc.

Date: 8/2/2023

Watershed: Red Brook Harbor

Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Wellhead Protection Areas

5. Is project in a Wellhead Protection Area (WHPA) ?

Does the project's nitrogen loading concentration (R) exceed the greater of 5 ppm or the existing concentration (R') ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Fresh Water Recharge Areas

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

Is the project located in a freshwater recharge area (FWRA) hydraulically upgradient of a stream or fresh surface water body?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR2)

Other Potential Impacts

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

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

NOTICE OF ALTERNATIVE SEWAGE DISPOSAL SYSTEM
M.G.L. c. 21A, § 13 and 310 CMR 15.287(10)

ADDRESS OF PROPERTY SERVED BY ALTERNATIVE SYSTEM:

60 Red Brook Harbor Road, Bourne, MA

TITLE REFERENCE FOR PROPERTY SERVED BY ALTERNATIVE SYSTEM

Deed recorded with the **Barnstable** Registry of Deeds in **Book 35190, Page 131**

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

Karen Fish-Will

OWNER(S) MAILING ADDRESS: 100 Black Rock Road, Hingham, MA 02043

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:	<i>MicroFAST®</i>
Manufacturer Name:	Bio-Microbics, Inc.
Model number(s):	MicroFAST 0.9 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.

Karen Fish-Will

COMMONWEALTH OF MASSACHUSETTS

Barnstable, 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 signed it voluntarily for its stated purpose.

(official signature and seal of notary)

Approved and Accepted By:

Agent of the Board of Health
Health Department
Town of Bourne



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

CERTIFICATION FOR GENERAL USE

Pursuant to Title 5, 310 CMR 15.000

Name and Address of Applicant:

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

Trade name of technology and models:

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

Transmittal Number: X232831

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

Authority for Issuance:

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

David Ferris, Director
Wastewater Management Program
Bureau of Water Resources

March 20, 2015

Date

I. Purpose

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

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)

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

August 10, 2023

CERTIFIED MAIL

RE : Notice of Public Hearing

Dear Abutter:

In accordance with the Bourne Board of Health Regulations you are hereby notified that **Karen Fish-Will** has requested a hearing before the Bourne Board of Health for relief from the Bourne Board of Health Regulations for the installation of an upgraded septic system utilizing Innovative/Alternative technologies. The location of the property for which approval is sought is **60 Red Brook Harbor Road (Map 47.4, Parcel 11), Cataumet** where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on the following *Local Variances*:

- **A 9' local variance is requested from the BOURNE BOARD OF HEALTH Regulations for a 141' setback from a proposed soil absorption system to a Coastal Bank.**
- **A 46' local variance is requested from the BOURNE BOARD OF HEALTH Regulations for a 104' setback from a reserve area to a Coastal Bank.**

This hearing is **tentatively** scheduled for Wednesday, August 23rd at **5:30 p.m.** in Conference Room #2 at the Bourne Veteran's Memorial Community Building, 239 Main Street, Buzzards Bay. ***Please confirm the date, time and location of the meeting with the Town, in case of any changes.*** Information regarding the hearing may be available for your review one week prior to the meeting by contacting the Bourne Health Department at 508-759-0600, 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. 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 508-759-0600, Ext. 1513.

Sincerely,

BRACKEN ENGINEERING INC.

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

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



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



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

Rui Pereira, MAA
Director of Assessing

August 7, 2023

Karen Fish-Will
c/o Bracken Engineering, Inc.
49 Herring Pond Rd.
Buzzards Bay, MA 02532

Re: Abutters List for Map 47.4 Parcel 11
Property address: 60 Red Brook Harbor 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 23 Parcel 6; Map 47.4 Parcels 12, 13 & 15.

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

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

See enclosed for abutters mailing addresses.

Board of Assessors

*Ellen Doyle Sullivan -
Donna Barakauskas
Michael Leitzel*

Extract: ABUTTERS LIST
 Database: LIVE
 Filter: Key IN 4379,10392,10393,10398
 Sort:

Report #24: Owner Listing Report
 Fiscal Year 2024

Bourne MA

Key	Parcel ID	Owner	Location	LC/CI	Bk-Pa(Cert) /DI	Mailing Street	Mailing City	ST	Zip Cd/County	
4379	23.0-6-0	COMMONWEALTH OF MASSACHUSETTS EXEC OFFICE OF TRANS & CONSTR	0 OLD MONUMENT NECK RD	N 9240	03498/0092	10 PARK PLAZA SUITE 3170	BOSTON	MA	02116	
10392	47.4-12-0	STONE ROBIN M TR OF THE REDBROOK HARBOR TRUST	66 RED BROOK HARBOR RD	N 1010	19845/198 5/20/2005	PO BOX 68	CATAUMET	MA	02534	
10393	47.4-13-0	STONE ROBIN M TR RED BROOK HARBOR TRUST	0 RED BROOK HARBOR RD	Y 1060	176742 5/20/2005	PO BOX 68	CATAUMET	MA	02534	
10393	47.4-15-0	PARKER BRUCE R & PATRICIA A	67 RED BROOK HARBOR RD	N 1010	31294/106 5/25/2018	P.O. BOX 512	CATAUMET	MA	02534	
Total Records		4								

7022 2410 0003 3888 9429

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage: \$.63
Certified Fee: \$ 4.35
Return Receipt Fee: \$ 3.55
Total Postage & Fees: \$ 8.53



Commonwealth of MA
Ex. Office of Trans & Construction
10 Park Plaza, Suite 3170
Boston, MA 02116

60 Red Brook Harbor Road, Bourne - **BH**

See Reverse for Instructions

7022 2410 0003 3888 9443

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage: \$.63
Certified Fee: \$ 4.35
Return Receipt Fee: \$ 3.55
Total Postage & Fees: \$ 8.53



Bruce R. & Patricia Parker
P.O. Box 512
Cataumet, MA 02534

60 Red Brook Harbor Road, Bourne - **BH**

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

7022 2410 0003 3888 9436

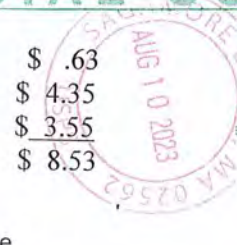
U.S. Postal Service™
CERTIFIED MAIL® RECEIPT

Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

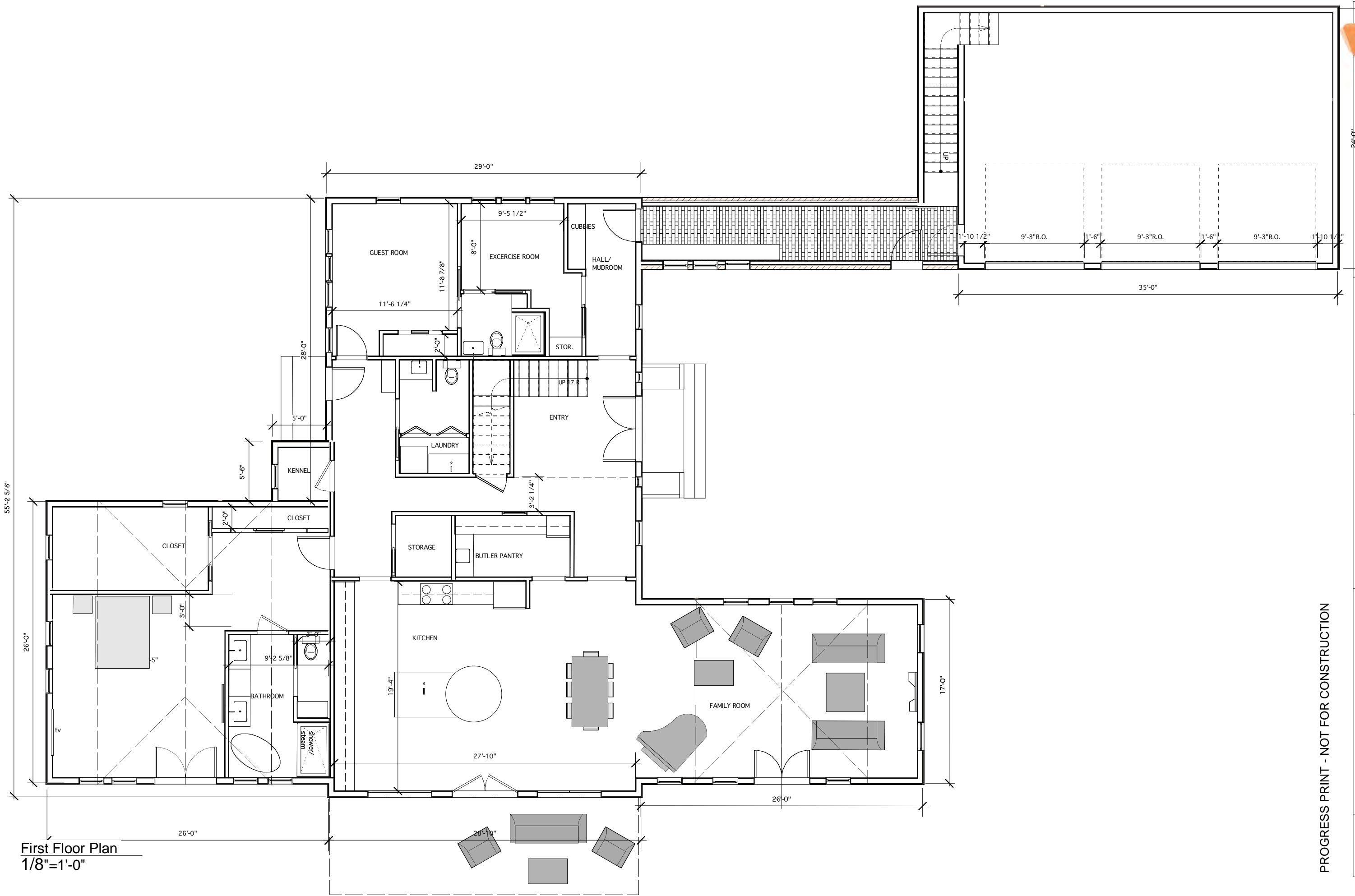
Postage: \$.63
Certified Fee: \$ 4.35
Return Receipt Fee: \$ 3.55
Total Postage & Fees: \$ 8.53



Robin M. Stone, Trustee
The Redbrook Harbor Trust
P.O. Box 68
Cataumet, MA 02534

60 Red Brook Harbor Road, Bourne - **BH**

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



First Floor Plan
1/8"=1'-0"

PROGRESS PRINT - NOT FOR CONSTRUCTION

A-2

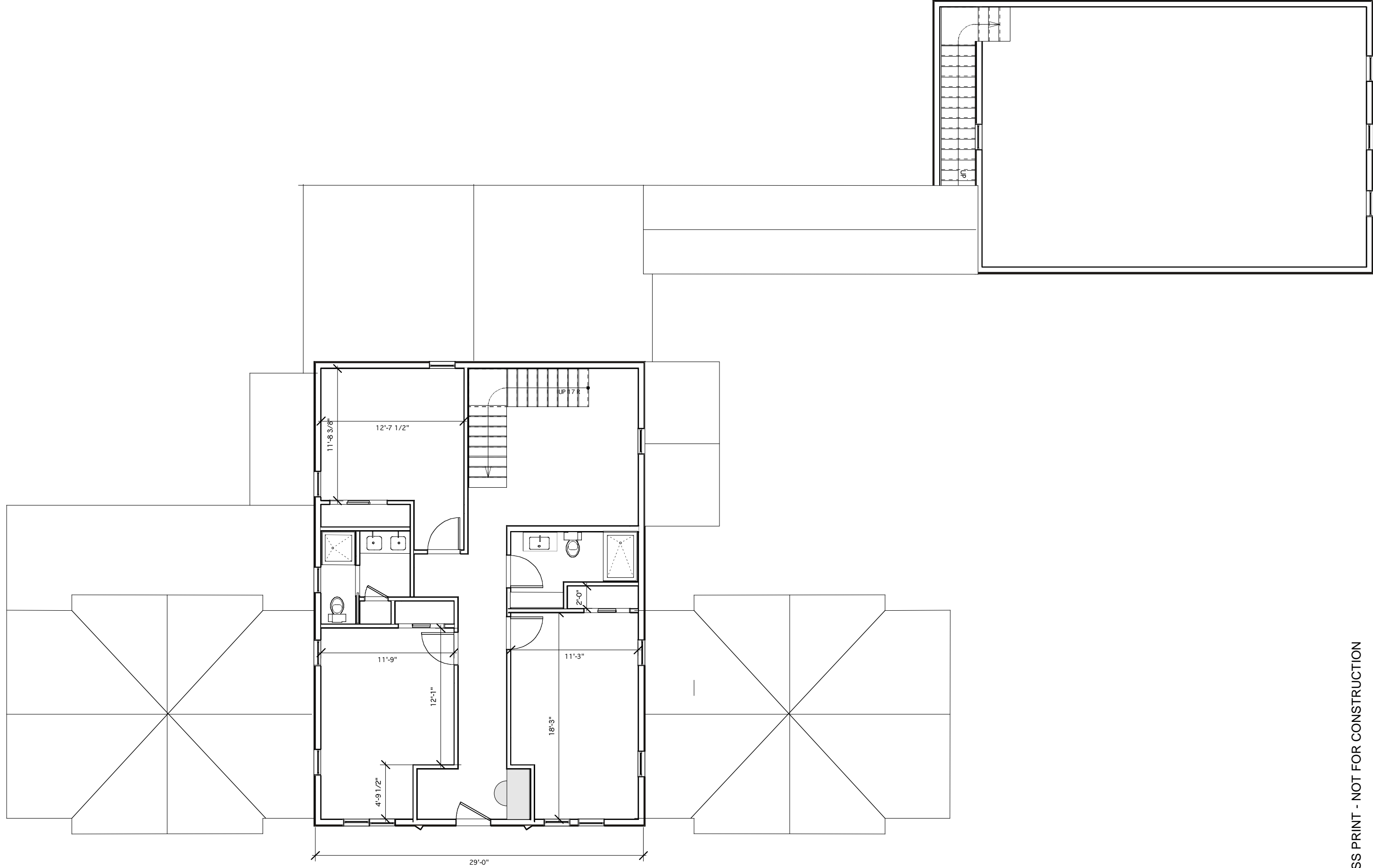
Fish-Will Residence
60 Red Brook Harbor Rd.
Pocasset, MA

07-10-2023

Civil Engineer:
Bracken Engineering, Inc.

Carol Stenberg, Colibri Architects
58 Brierwood Lane
Burlington, VT 05408
802-999-4095

colibri architects



Second Floor Plan
 1/8"=1'-0"

PROGRESS PRINT - NOT FOR CONSTRUCTION

A-3

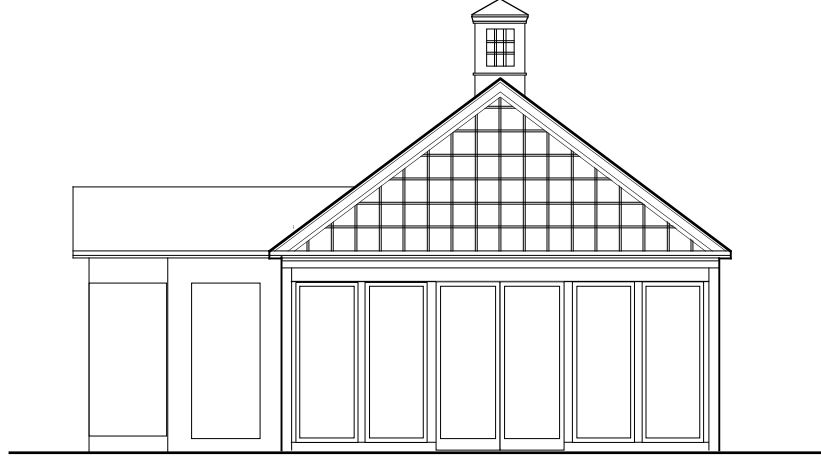
Fish-Will Residence
 60 Red Brook Harbor Rd.
 Pocasset, MA

07-10-2023

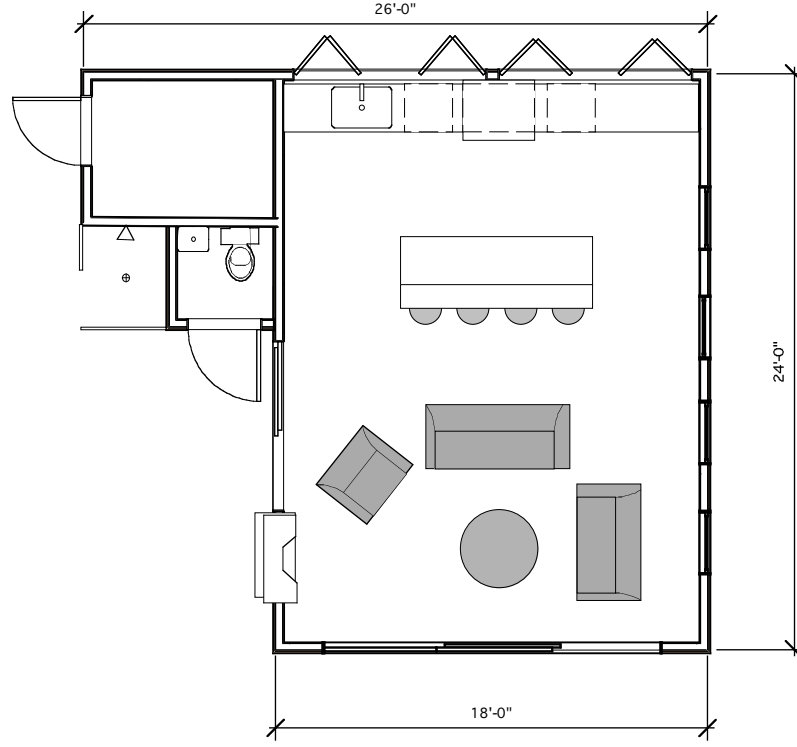
Carol Stenberg, Colibri Architects
 58 Brierwood Lane
 Burlington, VT 05408
 802-999-4096

Civil Engineer:
 Bracken Engineering, Inc.






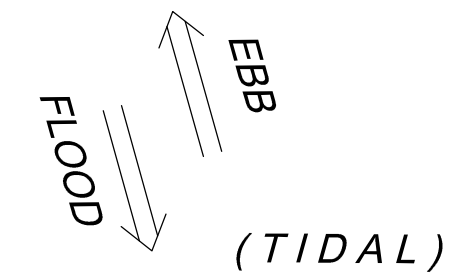
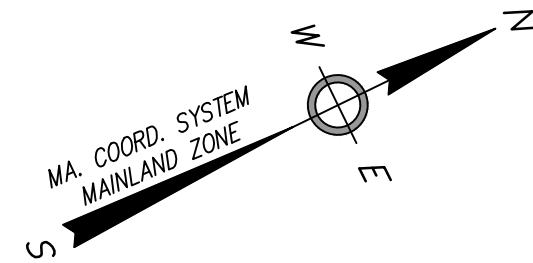
Poolhouse Elevation
1/8"-1'-0"



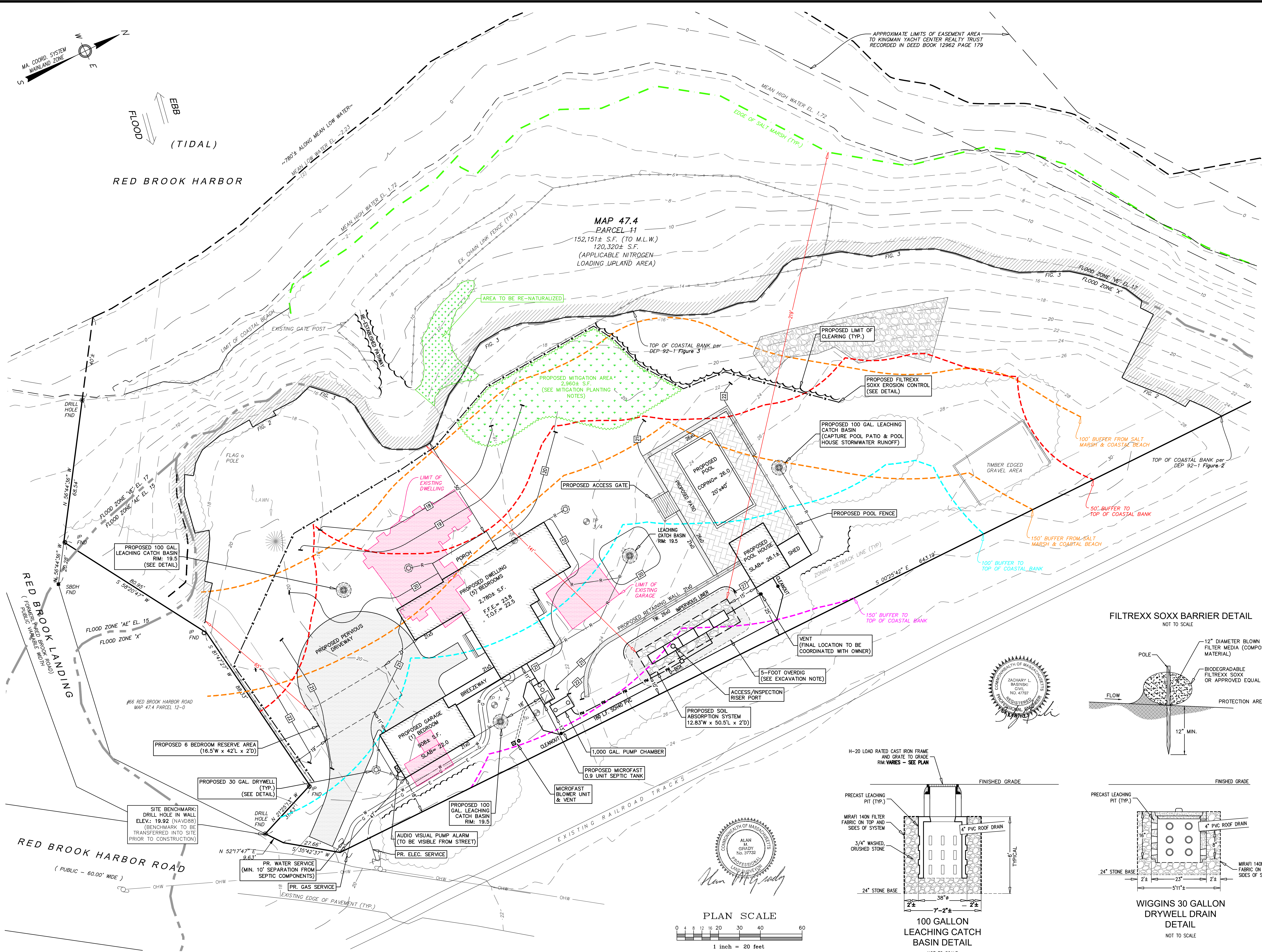
Poolhouse Floor Plan
1/8"-1'-0"

INITIAL BID SET - NOT FOR CONSTRUCTION

A-10	Fish-Will Residence 60 Red Brook Harbor Rd. Cataumet, MA 08-15-2023	Carol Stenberg, Colibri Architects 58 Brierwood Lane Burlington, VT 05408 802-999-4095	Civil Engineer: Bracken Engineering, Inc.	 colibri architects
-------------	--	---	--	---

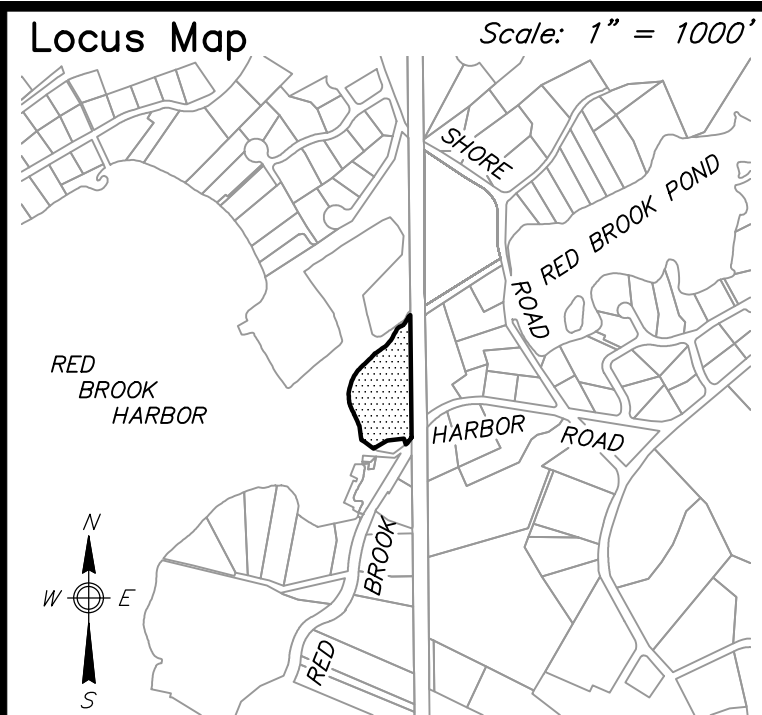


RED BROOK HARBOR



**MAP 47.4
PARCEL 11**
152,151± S.F. (TO M.L.W.)
120,320± S.F.
(APPLICABLE NITROGEN-LOADING UPLAND AREA)

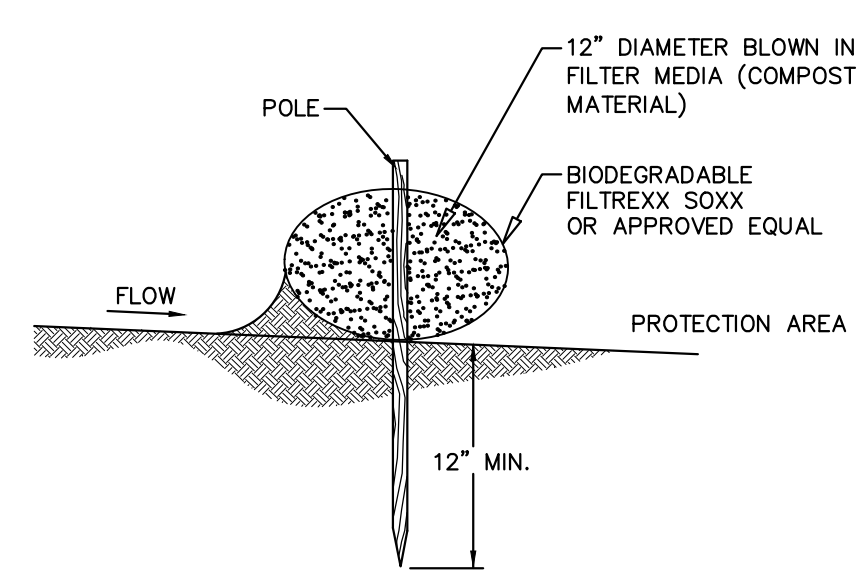
APPROXIMATE LIMITS OF EASEMENT AREA TO KINGMAN YACHT CENTER REALTY TRUST RECORDED IN DEED BOOK 12962 PAGE 179



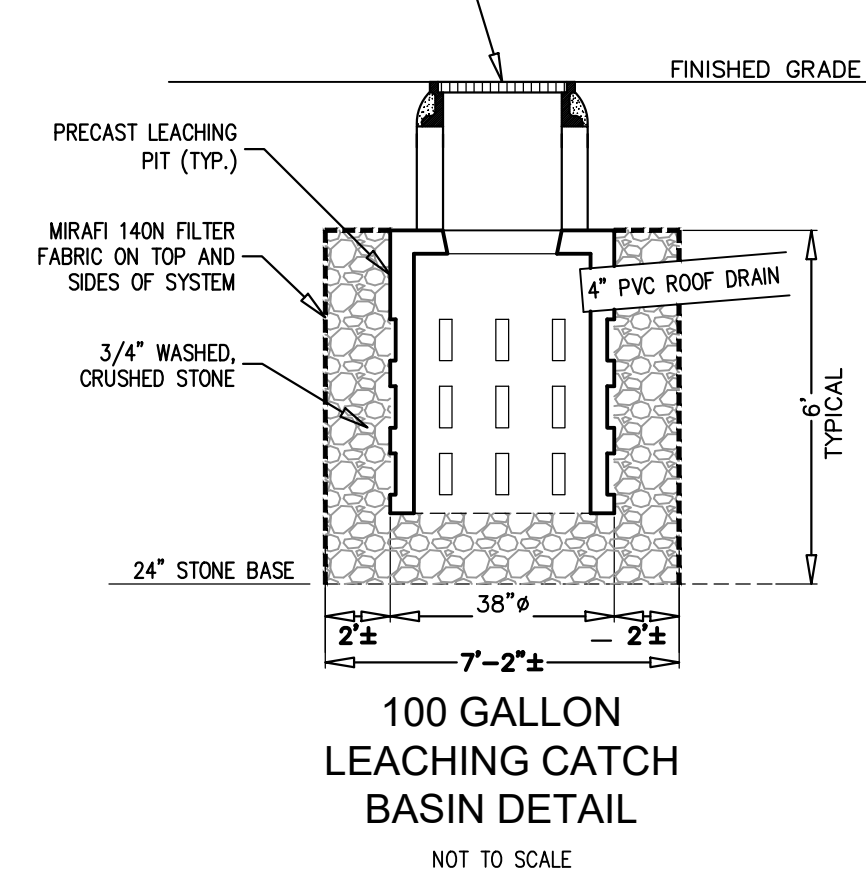
Notes

- BENCHMARKS: ELEV. = 19.92 (NAVD88) DRILL HOLE IN RETAINING WALL
- 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.
- OWNERS: KAREN FISH-WILL
100 BLACK ROCK ROAD
HINGHAM, MA 02043
- DEED REFERENCE: Deed Bk: 35190 Pg: 131
- PLAN REFERENCES: Plan Bk: 122 Pg: 47
- 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.
- THE RECORD PROPERTY OWNER IS TO RECORD A DEED NOTICE 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.
- LOCUS DOES NOT FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA.
- LOCUS DOES NOT FALL WITHIN THE NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE AND PRIORITY HABITATS OF RARE SPECIES.
- LOCUS PARTIALLY FALLS WITHIN FEMA FLOOD ZONE "AE" (EL. 15) & "VE" (EL. 17) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP 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 & REPLACEMENT OF SOIL MAY BE REQUIRED. IF UNDESIRABLE CONDITIONS ARE ENCOUNTERED, THE DESIGN ENGINEER SHALL BE CONSULTED.
- 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 WITH THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) REMEDIAL USE PERMITS.
- CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM/CONTROL PANELS WITH THE HOMEOWNER & SYSTEM MANUFACTURERS PRIOR TO INSTALLATION.
- CONTRACTOR IS TO COORDINATE THE FINAL LOCATION OF MICROFAST BLOWER UNIT AND VENT WITH OWNER.
- CONTRACTOR TO COORDINATE ALL UTILITY CONNECTIONS WITH RESPECTIVE COMPANIES AND/OR MUNICIPAL DEPARTMENTS.

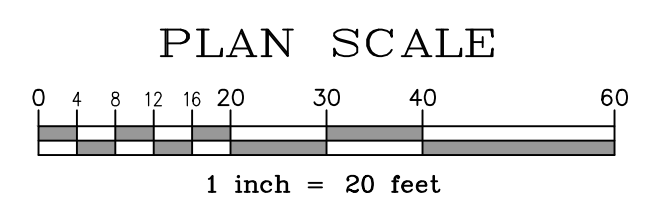
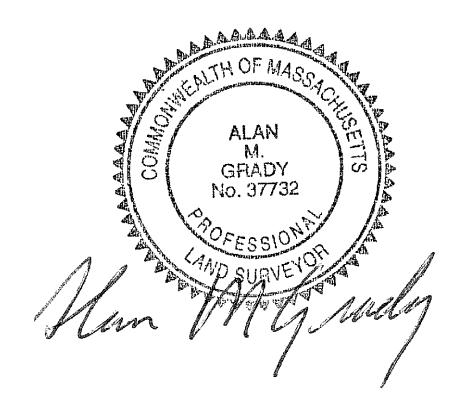
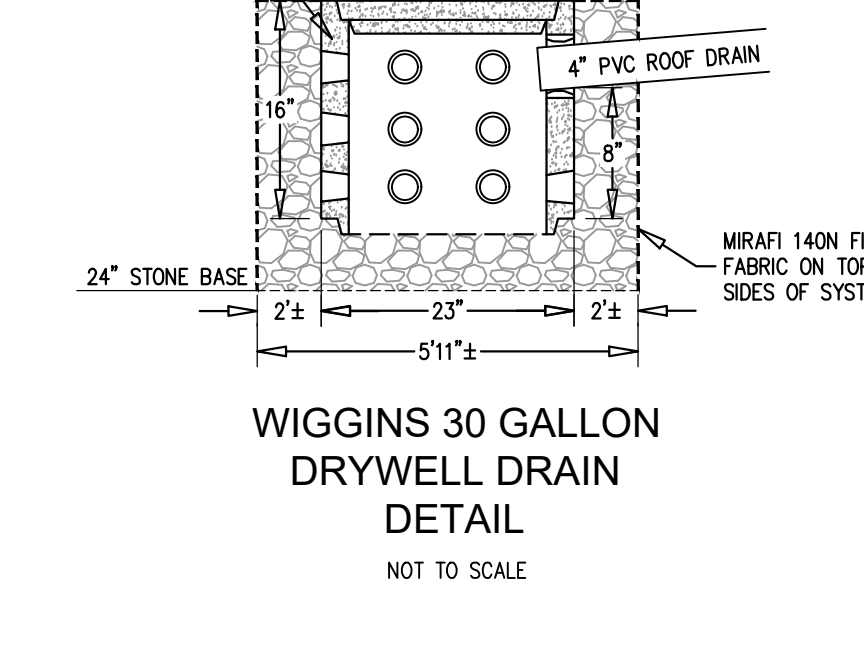
FILTREXX SOXX BARRIER DETAIL
NOT TO SCALE



100 GALLON LEACHING CATCH BASIN DETAIL
NOT TO SCALE



WIGGINS 30 GALLON DRYWELL DETAIL
NOT TO SCALE



Prepared By:

 49 HERRING POND ROAD BUZZARDS BAY, MA 02532
 19 OLD SOUTH ROAD NANTUCKET, MA 02554
 (tel) 508.833.0070
 (fax) 508.833.2282
 www.brackeneng.com

PROPOSED SUBSURFACE SEWAGE DISPOSAL PLAN
 IN BOURNE, MASSACHUSETTS
 Prepared For:
KAREN FISH-WILL
 #60 RED BROOK HARBOR ROAD
 MAP 47.4 PARCEL 11

No.	Date	Revision Description	By
1	AUGUST 15, 2023	Drawn: JPH/DAF/BEI Checked: ZLB/AMG	1 of 2

MITIGATION PLANTING NOTES

- ALL PLANTING ACTIVITIES AND DESIGN SHALL BE COORDINATED WITH TOWN OF BOURNE CONSERVATION STAFF.
- THIS SITE PLAN PROPOSES MITIGATION IN THE FORM OF NATIVE PLANT RESTORATION IN A TOTAL OF APPROXIMATELY 2,960 S.F.
- TEMPORARY IRRIGATION WILL BE REQUIRED FOR THE FIRST TWO TO THREE (2-3) GROWING SEASONS WHILE PLANTS ESTABLISH. ONCE PLANTS ARE ESTABLISHED IRRIGATION WILL BE REMOVED.
- FINAL PLANTING QUANTITY, SPECIES AND LAYOUT SHALL BE COORDINATED WITH CONSERVATION STAFF BASED ON SPECIES AVAILABILITY AT THE TIME OF INSTALLATION. PLANTINGS SHALL BE 3' O/C UNLESS OTHERWISE NOTED ON THE PLAN.
- THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, SUPERVISION, TOOLS, EQUIPMENT, FUEL, POSER, SANITARY FACILITIES AND INCIDENTALS NECESSARY FOR THE FURNISHING, PERFORMANCE AND COMPLETION OF WORK.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF PERSONNEL AND PROTECTION OF PROPERTY AT THE SITE OR ADJACENT THERETO INCLUDING TREES, SHRUBS, LAWNS, PAVEMENTS, ROADWAYS, STRUCTURES, AND UNDERGROUND UTILITIES NOT DESIGNED FOR REMOVAL, RELOCATION OR REPLACEMENT.
- EXISTING EROSION CONTROL MEASURES ON SITE TO BE MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITIES HAVE CEASED AND THE SITE IS STABILIZED.
- ALL DISTURBED AREAS WITHIN AND AROUND THE PROPOSED MITIGATION PLANTINGS SHALL BE SEEDED WITH GRASS AND WILDFLOWER SEED MIX (SEE BELOW).
 THE MITIGATION SEED MIXTURE SHALL CONTAIN THE FOLLOWING:
 • AUTUMN BENTGRASS (ARGROSTIS PERENNANS)
 • BUTTERFLY MILKWEED (ASCLEPIAS TUBEROSA)
 • PURPLE CONEFLOWER (ECHINACEA PURPUREA)
 • SHEEP FESCUE (FESTUCA OVINA)
 • RED RESCUE (FESTUCA RUBRA)
 • PATH RUSH (JUNCUS TENUIS)
 • BLACK-EYED SUSAN (RUDEBECKIA HIRTA)
 • LITTLE BLUESTEM GRASS (SCHIZOPYRUM SCOPARIUM)
 GRASS & WILDFLOWER SEED MIX SHALL BE SPREAD ACROSS ANY DISTURBED AREAS AND AROUND ALL OF THE PROPOSED PLANTINGS WITHIN THE PROPOSED GRADING AREAS.
- MITIGATION PLANTINGS SHALL BE COMPRISED OF THE FOLLOWING NATIVE SPECIES UNLESS OTHERWISE NOTED ON THE PLAN.
 NORTHERN BAYBERRY SWEET PEPPERBUSH
 COMPACT INKBERRY SHADBUSH
 HIGHBUSH INKBERRY WINTERBERRY
 ARROWWOOD
- FINAL LAYOUT, SPECIES TYPE AND QUANTITY SHALL BE ACCORDING TO PLANTING PLAN BY OTHERS.



DESIGN CALCULATIONS

SOIL TEXTURAL CLASS: CLASS I
 PERC. RATE: <2 MINUTES/INCH
 NO. OF BEDROOMS: 6
 DESIGN FLOW REQUIRED: 660
 SEPTIC TANK REQUIRED: 1500 GALLONS
 SEPTIC TANK PROVIDED: MicroFAST 0.9 UNIT

LEACHING SYSTEM:
 (5) 500 GAL CONCRETE LEACHING CHAMBERS IN A (12.83') WIDE x (50.5') LONG x (2') DEEP STONE BED

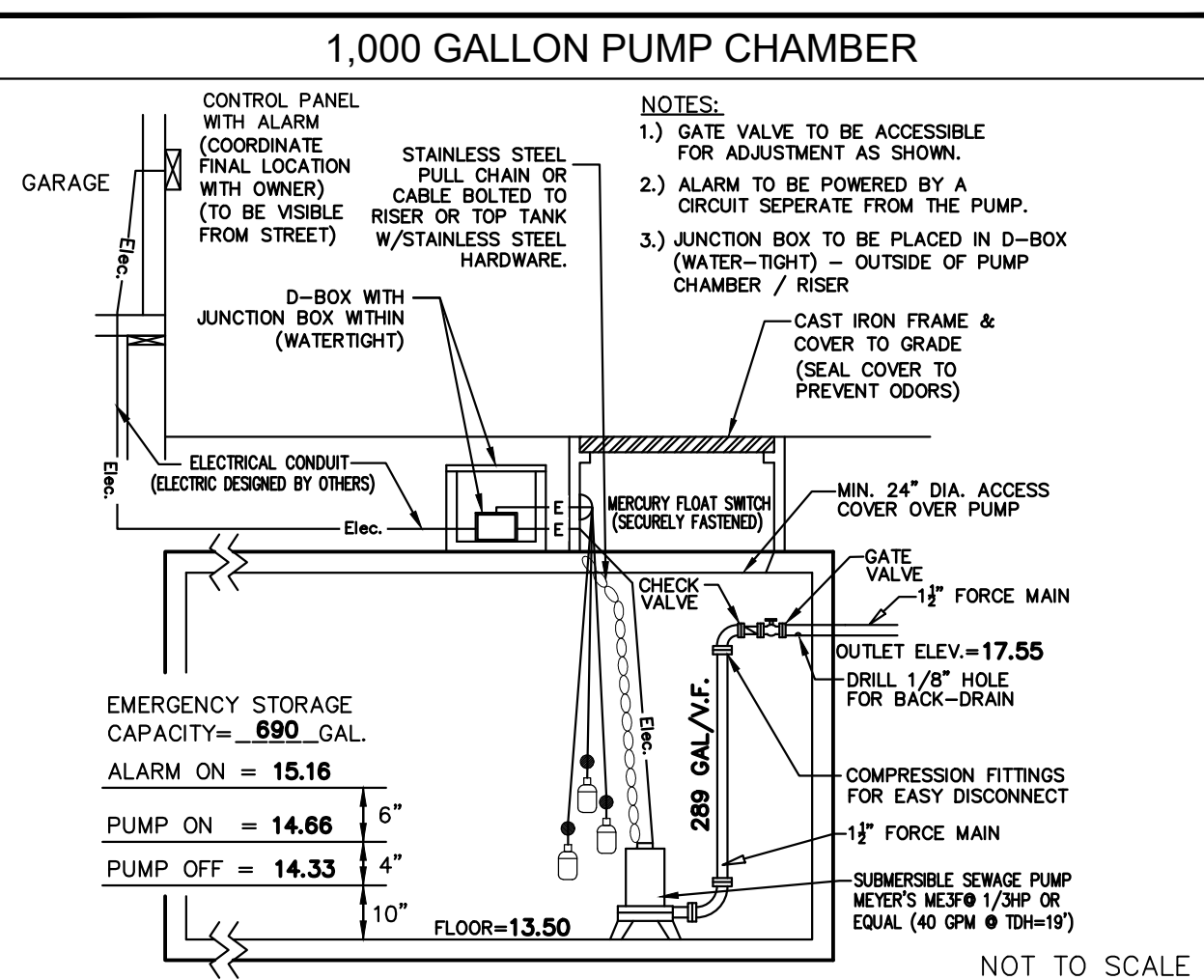
EFFECTIVE LEACHING:
 12.83' WIDE x 50.5' LONG x 2' DEEP
 BOTTOM AREA = 647 S.F.
 SIDEWALL AREA = 253 S.F. TOTAL = 900 S.F.
 LOADING RATE = 0.74 GPD/SF
 FLOW PROVIDED: 666 GPD > 660 GPD

RESERVE AREA CALCULATIONS
 18.5' WIDE x 42' LONG x 2' DEEP
 BOTTOM AREA = 623 S.F.
 SIDEWALL AREA = 234 S.F. TOTAL = 927 S.F.
 LOADING RATE = 0.74 GPD/SF
 FLOW PROVIDED: 685 GPD > 660 GPD

VARIANCE / WAIVER REQUESTS

IN ACCORDANCE WITH MA 310.15.00 (TITLE 5) AND LOCAL BOURNE BOARD OF HEALTH REGULATIONS, THE FOLLOWING VARIANCES AND WAIVERS ARE REQUESTED:

- A 85' LOCAL VARIANCE IS REQUESTED FROM THE BOURNE BOARD OF HEALTH REGULATIONS FOR A 65' SETBACK FROM A PROPOSED RESERVE AREA TO THE TOP OF A COASTAL BANK.
- A 9' LOCAL VARIANCE IS REQUESTED FROM THE BOURNE BOARD OF HEALTH REGULATIONS FOR A 141' SETBACK FROM A PROPOSED SOIL ABSORPTION SYSTEM THE TOP OF A COASTAL BANK.
- A LOCAL VARIANCE IS REQUESTED FROM THE BOURNE BOARD OF HEALTH REGULATIONS FOR THE USE OF A CONVENTIONAL SOIL ABSORPTION SYSTEM WITH 1/A TECHNOLOGY WITHIN 150' OF A COASTAL BANK. SYSTEM FALLS 219' FROM WATER DEPENDENT RESOURCE AREAS (COASTAL BEACH & SALT MARSH).

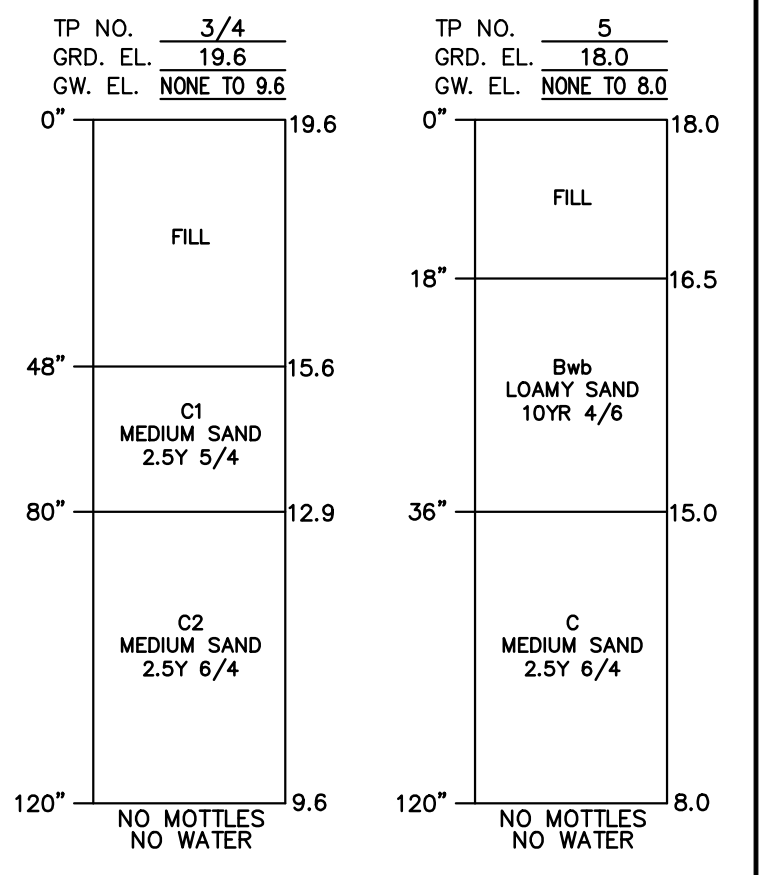
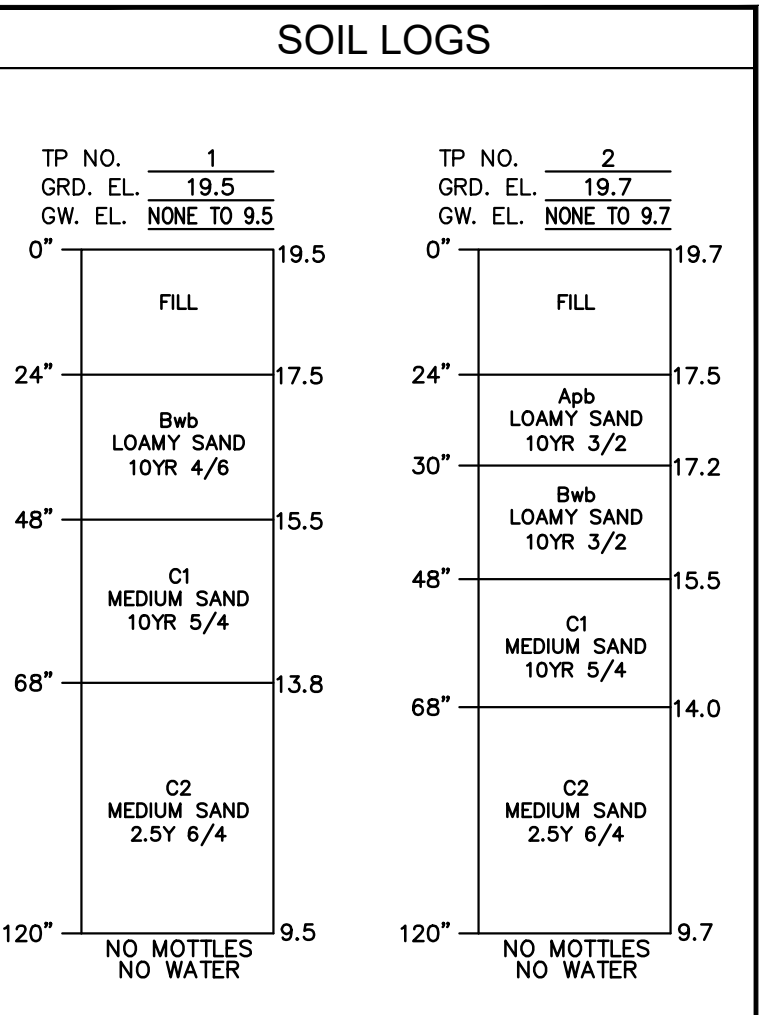
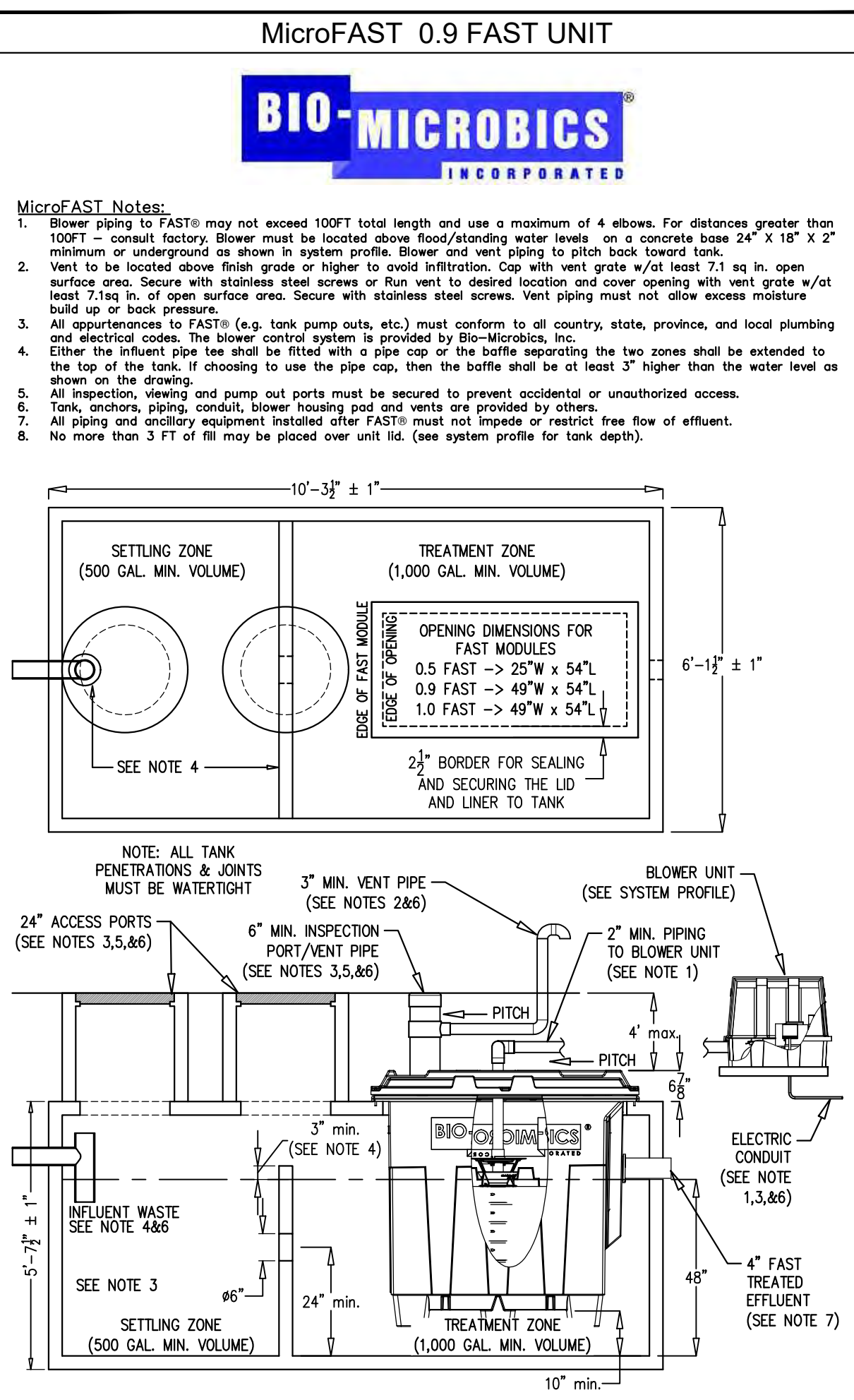


ZONING REQUIREMENTS

ZONE: B-2*

	REQUIRED	EXISTING	PROPOSED
LOT AREA:	40,000 s.f.*	152,151± s.f.	152,151± s.f.
FRONTAGE:	125'	SEE PLAN	SEE PLAN
FRONT YARD:	30'	49'	47'
SIDE YARD:	15'	12'	18'
REAR YARD:	15'	>15'	>15'

*PER SECTION 2500 FOOTNOTE (I) REQUIREMENTS OF THE R-40 DISTRICT SHALL APPLY TO PERMITTED DWELLINGS.



DATE PERFORMED: JULY 19, 2022
 SOIL EVALUATOR: ROBERT E. DEWAR, E.I.T.
 WITNESSED BY: TERRI GUARINO - HEALTH AGENT
 PERC. RATE: <2 MINUTES PER INCH
 SOIL CLASS: CLASS I
 MAX. GROUND WATER ELEV.: NONE TO 8.0
 METHOD OF DETERMINATION: NO WATER NO REDOX
 (SEE SOIL REPORT FOR MORE DETAILED DESCRIPTION)

EXCAVATION NOTE

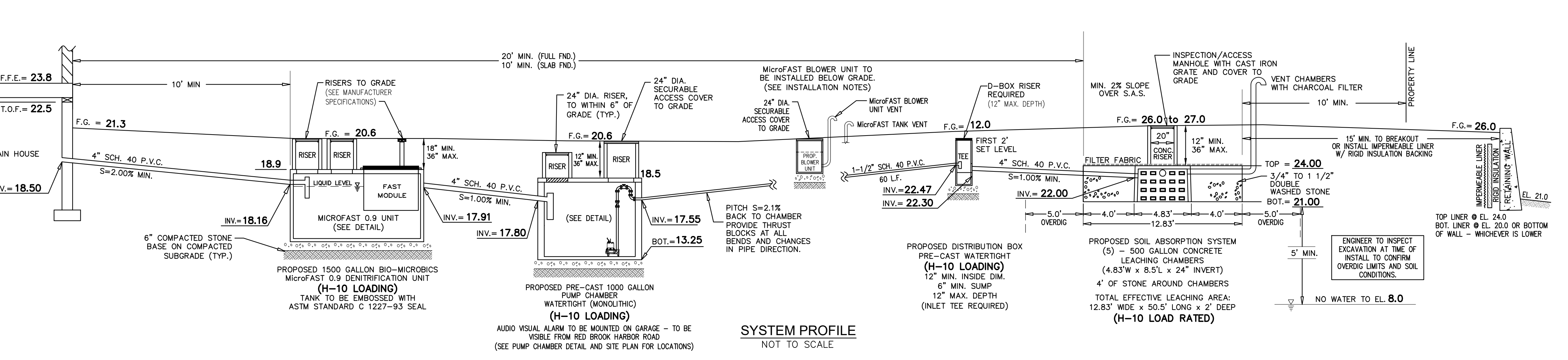
THIS SYSTEM REQUIRES THE EXCAVATION OF ALL SPOILED/UNSATURABLE SOIL WITHIN 5' OF THE SOIL ABSORPTION SYSTEM. SOIL SHALL BE EXCAVATED TO THE EXISTING C HORIZON. ENGINEER TO CONFIRM SOIL DEPTH PRIOR TO INSTALLATION. THE EXCAVATION SHALL BE INSPECTED BY THE DESIGN ENGINEER PRIOR TO BACKFILLING. SOIL IS 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.

ADDITIONAL 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.

BLOWER UNIT INSTALLATION NOTES:

- BLOWER UNIT SHALL BE INSTALLED IN A POLYLOK BASIN WITH AN ACCESS COVER TO GRADE. CONTRACTOR TO COORDINATE FINAL BLOWER UNIT VENT DESIGN WITH MICROFAST REPRESENTATIVE PRIOR TO INSTALLATION.
- BLOWER UNIT TO BE VENTED ABOVE GROUND WITH A 4" PVC PIPE.



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:
KAREN FISH-WILL
 #60 RED BROOK HARBOR ROAD MAP 47.4 PARCEL 11

No.	Date	Revision Description	By

Date: AUGUST 15, 2023 Drawn: JPH/DAF/BE Checked: ZLB/AMG Sheet: 2 of 2



ENGINEERING A BETTER TOMORROW
ENGINEERING | SITE WORK | LAND SURVEYING

August 15, 2018

RECEIVED

AUG 22 2018

Bourne Board of Health
24 Perry Avenue
Buzzards Bay, MA 02740

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

**RE: Variance Request for Proposed Septic System
(Lot 1) 819 Head of the Bay Road – Bourne, MA**

Dear Members:

In accordance with the State Environmental Code, Title 5: 310 CMR 15.410, please accept this letter of request to be heard before the Board of Health at their next meeting to discuss relief from Board of Health Regulations for the installation of a new septic system at (Lot 1) 819 Head of the Bay Road, Bourne, MA. We respectfully request consideration of the following variances to accommodate our project:

- Reduction in the setback of the soil absorption system from a coastal bank from 150' to about 110'.

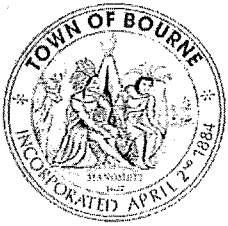
Enclosed is the completed variance application and design plans. We have notified all abutters as required and attached proof of mailing. Thank you in advance for your consideration of this request.

Very truly yours,

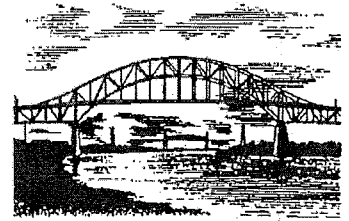
FARLAND CORP., INC.

Christopher K. Gilbert

Christopher K. Gilbert, EIT
Project Manager



Bourne Board of Health
Application for Septic
Variance Requests



In accordance with the established procedures of the Bourne Board of Health, this application for septic
variances and waivers is relevant to requests for relief 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.

RECEIVED

AUG 22 2018

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

1. Facility Name and Address:

Owner's Name: 819 Bourne Realty Trust
Facility's Street Address: 819 Head of the Bay Road (Lot I)
Owner's Telephone Number: 508-951-9701
Owner's E-mail Address: awarren@bottico.com
Owner's Mailing Address: 7 Turnpike Street - South Easton, MA 02375

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

Preparer's Name: Chris Gilbert
Company: Farland Corp. Inc.
Telephone Number: 508-717-3479
E-mail Address: cgilbert@farlandcorp.com
Mailing Address: 401 County Street
State/ Zip Code: New Bedford, MA 02740

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

- Residential (checked), Commercial, Institutional, School, Industrial

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

Proposed 4 Bedroom Single Family Dwelling

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

- Conventional Title 5 (checked), I/A System, Pumped System, Gravity System (checked), Pressure Dosed, Other

6. Describe the proposed septic system components: 1, 500 Gallon Septic Tank,
2 Trenches of 6 Culture Recharger 150 HD Chambers each,
spaced 12' on center.

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

500 GPD
Design flow of proposed system:
440 GPD
Total design flow of facility:

8. Enclose a letter of request for variances which makes reference to the specific provisions of Title 5 and 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 the regulations.

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

- Application Fees paid to the Town of Bourne.
- Letter of request (see samples)
- Six sets of complete plans and specifications. One with original stamp of design engineer.
- Nitrogen Loading Calculation Sheet(s)
- 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)

N/A Proposals for installation of Innovative/ Alternative 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

N/A Hydrogeologic data for all leaching facilities proposed within 100ft of a wetland/ watercourse

N/A Percentage of Increase Worksheet is 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 Brent L Warren Tr Date 8/15/18

Print Name Brent Warren, Trustee

Signature of Preparer Chris R Gilbert Date 8/15/18

Print Name Christopher K. Gilbert

Completed Application Received: _____

Reviewed By: _____

Hearing Date: 9.12.18 6PM

Permit #: 33-18

Circle all that apply: Approved Continued Disapproved Other

Notes: 8/22/18 Application has incorrect meeting date on abutter notifications. Requested revised letters with correct date/time + proof of certified mailing. Requested draft floor plans to demonstrate # of Bedrooms per Bourne Bott definition. (Tg) Can Comm?

★ Condition #8

NOT justified by applicant.
Recommend F/A septic system for Nitrogen reduction and pressure distribution or equivalent alternative SAS for virus attenuation

Town of Bourne

CONSERVATION COMMISSION

"Lot 1"

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 (NO₃-N). Use the information from your PLAN OF RECORD to provide the following:

Number of bedrooms (Title 5 definition) = 4 bedrooms
 Lot size (in square feet) = 104,400 sq. ft.
 Impervious surfaces; **Roof area = 1773 sq. ft. **Paved area = 0 sq. ft.
 Natural Area = lot area minus all impervious surfaces = 102,627 sq. ft.
 Lawn area in sq. ft. = 10,632 sq. ft.

RECEIVED
AUG 22 2010

TITLE 5 FLOW = 110 GAL. / DAY PER BEDROOM
 WASTEWATER FLOWS (NITROGEN LOAD & WATER LOAD)

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

Nitrogen from Title 5 design = 14,572 mg NO₃-N / day / bedroom
 Water from Title 5 design = 416.3 L H₂O / day / bedroom

1a) Number of bedrooms = 4 X 14,572 = 58,288 mg. NO₃-N / day
 1b) Number of bedrooms = 4 X 416 = 1664 L H₂O / day

Actual Nitrogen load = 6071.5 mg NO₃-N / day / bedroom
 Actual Water load = 173.5 L H₂O / day / bedroom

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

2a) Number of bedrooms = 4 X 6071.5 = 24,286 mg. NO₃-N / day
 2b) Number of bedrooms = 4 X 173.5 = 694 L H₂O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO₃-N load number sq. ft. of roof surface X 0.19395 mg NO₃-N / sq. ft.
 H₂O load number sq. ft. of roof surface X 0.2586 L / sq. ft.

3a) Roof surface = 1773 sq. ft. X 0.19395 = 343.9 mg NO₃-N
 3b) Roof surface = 1773 sq. ft. X 0.2586 = 458.5 L H₂O

NO₃-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.
 H₂O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO₃-N = 0 sq. ft. paved surface X 0.388 mg / sq. ft. = 0 mg NO₃-N
 4b) H₂O = 0 sq. ft. paved surface X 0.2586 L / sq. ft. = 0 L H₂O

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

$$5) \text{ sq. ft. of lawn} = \underline{10,632} \times 0.933 = \underline{9,919.7} \text{ mg}$$

NATURAL AREA WATER LOADING

$$\text{Natural area} = \text{lot size} - \text{impervious surface} = \underline{102,627} \text{ sq.ft.}$$

$$6) \text{ Natural area} = \underline{102,627} \times \text{water recharge factor} = \underline{13,936.7} \text{ L}$$

(0.1358 L / sq. ft. for Bourne)¹

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO₃N load:

$$\begin{array}{rcccccc} 1a & + & 3a & + & 4a & + & 5 \\ \hline 56,288 & + & 343.9 & + & 0 & + & 9,919.7 \\ \hline & & & & & & 68,551.6 \end{array} \text{ mg NO}_3\text{-N / day}$$

7b) ADD the above water (H₂O) load:

$$\begin{array}{rcccccc} 1b & + & 3b & + & 4b & + & 6 \\ \hline 1,664 & + & 458.5 & + & 0 & + & 13,936.7 \\ \hline & & & & & & 16,059.2 \end{array} \text{ L H}_2\text{O / day}$$

$$7c) \text{ DIVIDE } 7a \text{ by } 7b = \underline{4.27} \text{ ppm NO}_3\text{-N}^{*****}$$

Actual Nitrogen & Water Loading

8a) ADD the above NO₃N load:

$$\begin{array}{rcccccc} 2a & + & 3a & + & 4a & + & 5 \\ \hline 24,286 & + & 343.9 & + & 0 & + & 9,919.7 \\ \hline & & & & & & 34,549.6 \end{array} \text{ mg NO}_3\text{-N / day}$$

8b) ADD the above water (H₂O) load:

$$\begin{array}{rcccccc} 2b & + & 3b & + & 4b & + & 6 \\ \hline 694 & + & 458.5 & + & 0 & + & 13,936.7 \\ \hline & & & & & & 15,089.2 \end{array} \text{ L H}_2\text{O / day}$$

$$8c) \text{ DIVIDE } 8a \text{ by } 8b = \underline{2.29} \text{ ppm NO}_3\text{-N}^{*****}$$

$$\text{FINAL CALCULATION ADD } 7c \text{ \& } 8c \text{ (ppm)} = \underline{6.56} \text{ divide by } 2 = \underline{3.28} \text{ ppm NO}_3\text{-N}$$

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*****

¹ Water recharge factors for data line 6: @21' / yr. use 0.1358 in Bourne and Falmouth; @ 19" / yr. use 0.1228 for Mashpee & Sandwich; @ 18" / yr. 0.1164 for Barnstable, Dennis & Yarmouth; @ 17" / yr. use 0.1101 for Brewster & Harwich; @ 16" / yr. use 0.1031 for Chatham, Eastham, Orleans, Provincetown, Truro & Wellfleet.



August 28, 2018

Town of Bourne
24 Perry Avenue
Buzzards Bay, MA 02532

RE: Notice of Public Hearing

Dear Town of Bourne:

In accordance with the State Environmental Code, Title 5: 310 CMR 15.411, you are hereby notified that 819 Bourne Realty Trust has requested a hearing before the Bourne Board of Health for relief from Bourne Board of Health Regulations for the installation of a septic system. The location of the property for this proposal is (Lot 1) 819 Head of the Bay Road, Bourne, MA where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on:

- Reduction in the setback of the soil absorption system from a coastal bank from 150' to about 110'.

This hearing is tentatively scheduled for September 12, 2018 at 6:00pm in the Lower Conference Room of the Bourne Town Hall. Information regarding the hearing may be available for your review one week prior to the meeting at the Bourne Health Department, 24 Perry Avenue, Buzzards Bay, Monday through Friday from 8:30am until 4:30pm.

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

Very truly yours,

FARLAND CORP., INC.

Christopher K. Gilbert
Christopher K. Gilbert, EIT
Project Manager

RECEIVED
AUG 31 2018
Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532



August 15, 2018

RECEIVED

AUG 22 2018

Town of Bourne
24 Perry Avenue
Buzzards Bay, MA 02532

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

RE: Notice of Public Hearing

Dear Abutter,

In accordance with the State Environmental Code, Title 5: 310 CMR 15.411, you are hereby notified that 819 Bourne Realty Trust has requested a hearing before the Bourne Board of Health for relief from Bourne Board of Health Regulations for the installation of a septic system. The location of the property for this proposal is (Lot 1) 819 Head of the Bay Road, Bourne, MA where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on:

- Reduction in the setback of the soil absorption system from a coastal bank from 150' to about 110'.

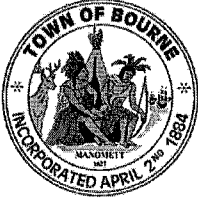
This hearing is tentatively scheduled for August 29, 2018 at 7:00pm in the Lower Conference Room of the Bourne Town Hall. Information regarding the hearing may be available for your review one week prior to the meeting at the Bourne Health Department, 24 Perry Avenue, Buzzards Bay, Monday through Friday from 8:30am until 4:30pm.

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

Very truly yours,

FARLAND CORP., INC.

Christopher K. Gilbert
Christopher K. Gilbert, EIT
Project Manager



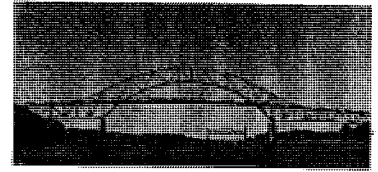
TOWN OF BOURNE

Board of Assessors

24 Perry Avenue

Buzzards Bay, MA 02532

(508) 759-0600 Ext. 1510 ♦ Fax (508) 759-8026



RECEIVED

AUG 22 2018

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

Anne Ekstrom, Chairman
Priscilla A. Koleshis, Clerk
Michael Leitzel, Member

August 17, 2018

Farland Corp, Inc.
Attn: Chris Gilbert
401 County St
New Bedford, MA 02740

Re: Abutters List for Map 14 Parcel 51
819 Head of the Bay Rd.

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 14 Parcels 31, 32, 48, 70, 71 & 80.

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

Anne Ekstrom
Priscilla Koleshis
Michael Leitzel

List Enclosed

Extract: 1 Abutters List
 Database: LIVE
 Filter: Key IN 15517,2428,2429,2740,2741,2750
 Sort: Bourne MA

Report #24: Owner Listing Report
 Fiscal Year 2019

Key	Parcel ID	Owner	Location	LC/CI	Bk-Pg(Cert)/Dt	Mailing Street	Mailing City	ST	Zip Cd/County
2428	14.0-31-0	TOWN OF BOURNE	0 PINE RIDGE RD	N 9300	27835/264 11/21/2013	24 PERRY AVE	BUZZARDS BAY	MA	02532
2429	14.0-32-0	HERBST-THERMANN ANNETTE ETUX JEFFREY M HERBST	854 HEAD OF THE BAY RD	N 0160	22371/148 9/28/2007	854 HEAD OF THE BAY RD	BUZZARDS BAY	MA	02532
15517	14.0-48-0	HIDEAWAY VILLAGE ASSN	9-S BOG VIEW DR	N 1020	3870/191 9/20/1983	C/O MERCANTILE PROPERTY MGMT PO BOX 790	BUZZARDS BAY	MA	02532-0790
2740	14.0-70-0	BALLINGER EDWARD P & SALLY A BALLINGER	800 HEAD OF THE BAY RD	N 1010	10187/29 5/6/1996	800 HEAD OF THE BAY ROAD	BUZZARDS BAY	MA	02532-2168
2741	14.0-71-0	GIARD DOUGLAS M & JOAN E GIARD	2 MORNING MIST LN	N 1010	10752/246 5/16/1997	2 MORNING MIST LN	BUZZARDS BAY	MA	02532-2169
2750	14.0-80-0	PIECHOTA REGINALD J JR	1 MORNING MIST LN	N 1010	10407/332 9/27/1996	1 MORNING MIST LANE	BUZZARDS BAY	MA	02532-2100

Total Records 6

310 CMR 15.211: Setback Distances for System Components in Feet

Instructions: Check the boxes for any requests for reductions in setback distances which may apply and fill in the proposed actual setback distances in the columns on the right for all components

RECEIVED

AUG 22 2018

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

"Lot 1"

Minimum Required

Proposed Setback

Septic Tank
Holding Tank
Pump Chamber
Treatment Unit
Grease Traps

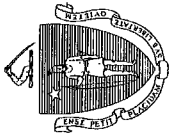
Soil
Absorption
System

Septic Tank
Holding Tank
Pump Chamber
Treatment Unit
Grease Traps

Soil
Absorption
System

	Minimum Required	Soil Absorption System	Proposed Setback	Soil Absorption System
<input type="checkbox"/> Property Line	10	10		
<input type="checkbox"/> Cellar or Crawl Space Wall, Inground Swimming Pool, foundation drain	10	20		
<input type="checkbox"/> Slab Foundation	10	10		
<input type="checkbox"/> Water Supply Line (pressure)	10	10		
<input type="checkbox"/> Surface Waters (except wetlands)	25	150		
<input checked="" type="checkbox"/> Salt Marshes, Inland and Coastal Banks**	25	150		110'±
<input type="checkbox"/> Surface Water Supply - Reservoirs and Impoundments	400	400		
<input type="checkbox"/> Tributaries to Surface Water Supplies	200	200		
<input type="checkbox"/> Wetlands bordering Surface Water Supply or Tributary thereto**	100	150		
<input type="checkbox"/> Certified Vernal Pools**	50	150		
<input type="checkbox"/> Private Water Supply Well or Suction Line	50	100		
<input type="checkbox"/> Downhill Slope	N/A	15		
<input type="checkbox"/> Irrigation Well	10	25		
<input type="checkbox"/> Open Surface or Subsurface Drains which discharge to Surface Water Supplies of Tributaries thereto	50	100		
<input type="checkbox"/> Drains (excluding foundation drains) which intercept seasonal high groundwater table	25	50		
<input type="checkbox"/> Other Open Surface or Subsurface Drains (excluding foundation drains)	5	10		
<input type="checkbox"/> Leaching Catch Basins & Dry Wells	10	25		
<input type="checkbox"/> Zone I Public Water Supply Well	not permitted	not permitted		

**Per local regulation, for all leaching facilities within 100 feet of a wetland or watercourse, the applicant must provide hydrogeologic data acceptable to the Approving Authority demonstrating that the location of the soil absorption system is hydraulically downgradient from the water resource area. Surface topography alone is not determinative.



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (continued)

Deep Observation Hole Number: 2-1

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features (mottles)			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-4	A	10YR 3/2				Loamy Sand					
4-24	B	10YR 5/6				Sand					
24-108	C	2.5Y 5/4				Sand					

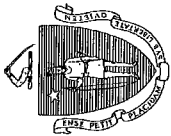
Additional Notes:

No Redox or Groundwater encountered

RECEIVED

AUG 22 2018

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02537



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

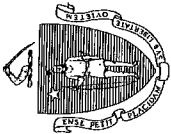
C. On-Site Review (continued)

Deep Observation Hole Number: 2-2

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features (mottles)			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Consistence (Moist)	Soil Structure	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-4	A	10YR 3/2				Loamy Sand					
4-26	B	10YR 4/6				Sand					
26-120	C	2.5Y 5/6				Sand					

Additional Notes:

No Redox or Groundwater encountered



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

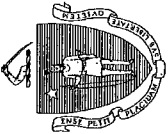
C. On-Site Review (continued)

Deep Observation Hole Number: 2-3

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features (mottles)			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-6	A	10YR 3/2				Loamy Sand					
6-26	B	10YR 5/6				Sand					
26-108	C	2.5Y 5/6				Sand					

Additional Notes:

No Redox or Groundwater encountered



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (continued)

Deep Observation Hole Number: 2-4

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features (mottles)			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Consistence (Moist)	Soil Structure	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-6	A	10YR 3/2				Loamy Sand					
6-24	B	10YR 5/6				Sand					
24-120	C	2.5Y 5/8				Sand					

Additional Notes:

No Redox or Groundwater encountered

AUG 22 2018

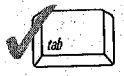
Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532



Commonwealth of Massachusetts City/Town of Bourne Percolation Test Form 12

Percolation test results must be submitted with the Soil Suitability Assessment for On-site Sewage Disposal. DEP has provided this form for use by local Boards of Health. Other forms may be used, but the information must be substantially the same as that provided here. Before using this form, check with the local Board of Health to determine the form they use.

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Site Information

819 Bourne Realty Trust
 Owner Name
 819 Head of the Bay Road (Lot 1)
 Street Address or Lot #
 Bourne
 City/Town
 Christopher Gilbert (Farland Corp.)
 Contact Person (if different from Owner)

MA
 State
 (508) 717-3479
 Telephone Number

02532
 Zip Code

B. Test Results

	4/19/17 Date	2:50pm Time	4/19/17 Date	3:13 Time
Observation Hole #	1-2		1-4	
Depth of Perc	36"		36"	
Start Pre-Soak	2:50pm		3:13pm	
End Pre-Soak	24 Gal. Poured		24 Gal. Poured	
Time at 12"				
Time at 9"				
Time at 6"				
Time (9"-6")				
Rate (Min./Inch)	<2 min/in.		<2 min/in.	
	Test Passed: <input checked="" type="checkbox"/>		Test Passed: <input checked="" type="checkbox"/>	
	Test Failed: <input type="checkbox"/>		Test Failed: <input type="checkbox"/>	

Christopher Gilbert, EIT, SE
 Test Performed By:
 Town of Bourne Board of Health
 Witnessed By:
 Comments:



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



September 28, 2018

Mr. Christopher Gilbert
Farland Corp., Inc.
401 County Street
New Bedford, MA 02740

Dear Mr. Gilbert:

At the duly posted public meeting on September 26, 2018, the Bourne Board of Health unanimously voted to approve a variance from the Board of Health 150' Setback Regulations for the proposed alternative septic system at 819 Head of the Bay Rd, Lot 1, Bourne, MA (map 14, parcel 51), owned by the 819 Bourne Realty Trust. As illustrated on the Site Plan dated March 20, 2018 and revised on September 19, 2018 by Farland Corp. Inc., the proposed septic system requires a 40 foot variance from the required 150 foot setback distance from the soil absorption system to the top of the coastal bank.

The Board felt as if this variance was in order where the proposed sewage disposal system will be comprised of a BioMicrobics MicroFAST 0.5 de-nitrification unit which will offer a substantial degree of environmental protection as it is approved by MassDEP for nitrogen reduction and the actual nitrogen load for the project as designed is less than 3.5 ppm. This variance is valid for two years from the date of approval and contingent upon an Innovative/ Alternative (I/A) Septic System Disclosure Notice recorded in the deed of the property, and confirmation that the architectural plans meet the Board of Health definition of a four-bedroom, single-family dwelling. It is understood that the owner(s) have familiarized themselves with the Bourne Board of Health I/A Septic System Regulations and specific testing requirements for the I/A technology as a condition of this approval.

The Board of Health requires receipt of a copy of the recorded disclosure notice and an Operation and Maintenance Agreement prior to issuance of a disposal works construction permit. It is also imperative that, should the property be subdivided into two lots, the existing nonconforming sewage disposal system for the structure in existence on Lot 1 shall be located and removed from Lot 2 prior to any transfers in title or changes in ownership. Please be advised that future modifications to the dwelling and/or sanitary sewage facility may require another hearing before the Bourne Board of Health. Should you have any questions, please do not hesitate to contact the Board of Health office at 508-759-0600 ext. 1513. Thank you.

Sincerely,

Terri Guarino, R.S.
Health Agent

C.C. Brent Warren, Trustee



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



September 19, 2022

Christopher Gilbert, EIT
Farland Corp., Inc.
401 County St.
New Bedford, MA 02740

Dear Mr. Gilbert:

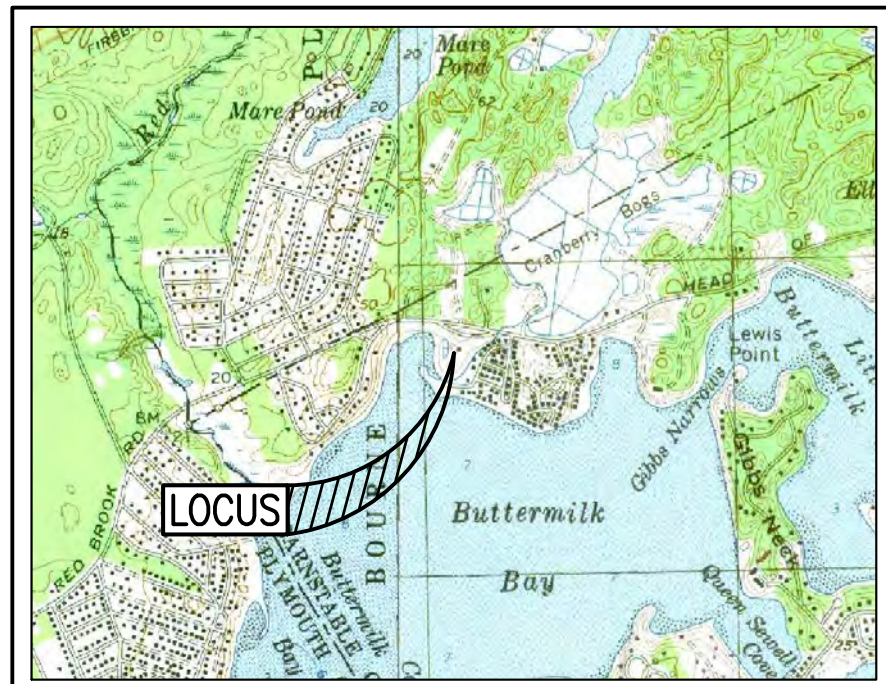
On September 14, 2022, the Bourne Board of Health held a public meeting and discussed your request for relief from the Bourne Board of Health 150 Foot Setback Regulation for the installation of a new sewage disposal system at 819 Head of the Bay Road "Lot 1", previously approved on September 26, 2018. On behalf of your clients, Messias Vasconcelos and Ana Alves, the Board of Health approved the renewal of the following variance from the Bourne Board of Health 150 Foot Setback Regulations, based on the plans of record dated revised August 11, 2022, by Farland Corp, Inc.:

- *A 40 foot variance from the local Bourne Board of Health 150 Foot Setback Regulations for the placement of the leaching facility within 110 feet of a coastal bank.*

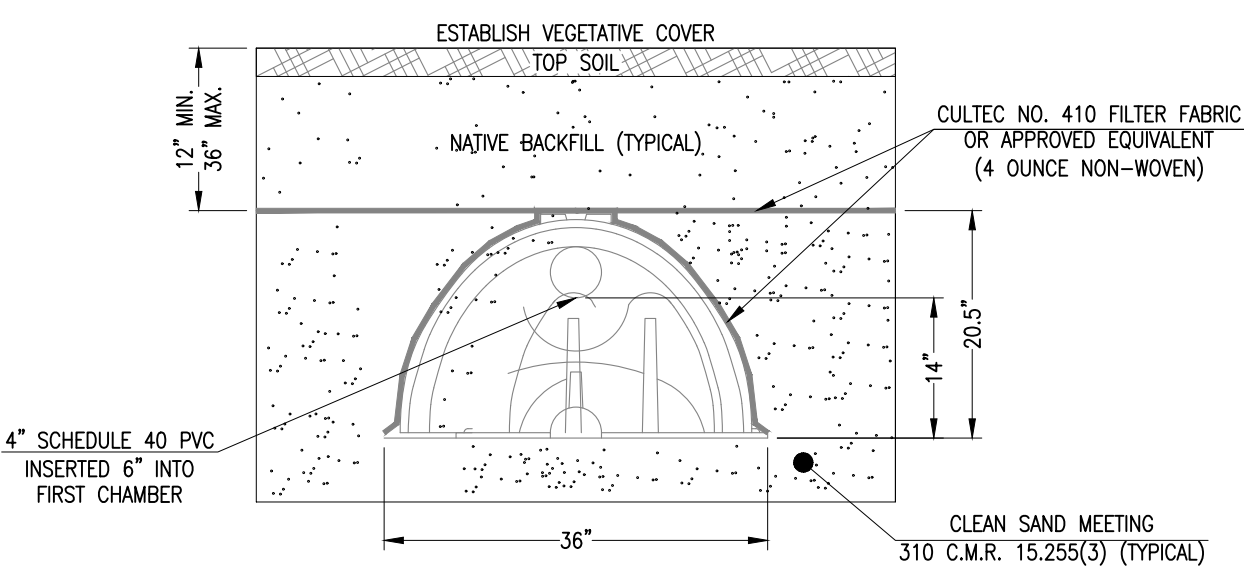
These variances are valid for two years from the date of approval and contingent upon the placement of the alarm panel visible from the street, as well as an alternative septic disclosure notice be recorded with the Registry of Deeds. The Board of Health shall receive a copy of these recorded documents and an operation and maintenance agreement prior to issuance of a disposal works construction permit. Should you have any questions, please do not hesitate to contact me at 508-759-0600 ext. 1513. Thank you.

Sincerely,

Terri Guarino, RS, CHO
Health Agent



LOCUS MAP SCALE: 1"=2,000'±



TRENCH CROSS SECTION (NOT TO SCALE)

RECORD OWNER:
 ASSESSORS MAP 14 LOT 51 "LOT 1"
 MESSIAS C. VASCONCELOS & ANA M. ALVES
 218 MAYNARD STREET
 ATTLEBORO, MA 02703
 DEED BOOK 34718 PAGE 172
 PLAN BOOK 558 PAGE 69
 PLAN BOOK 557 PAGE 73
 PLAN BOOK 693 PAGE 44

SEPTIC DESIGN: (NOT DESIGNED FOR CARBAGE GRINDER)

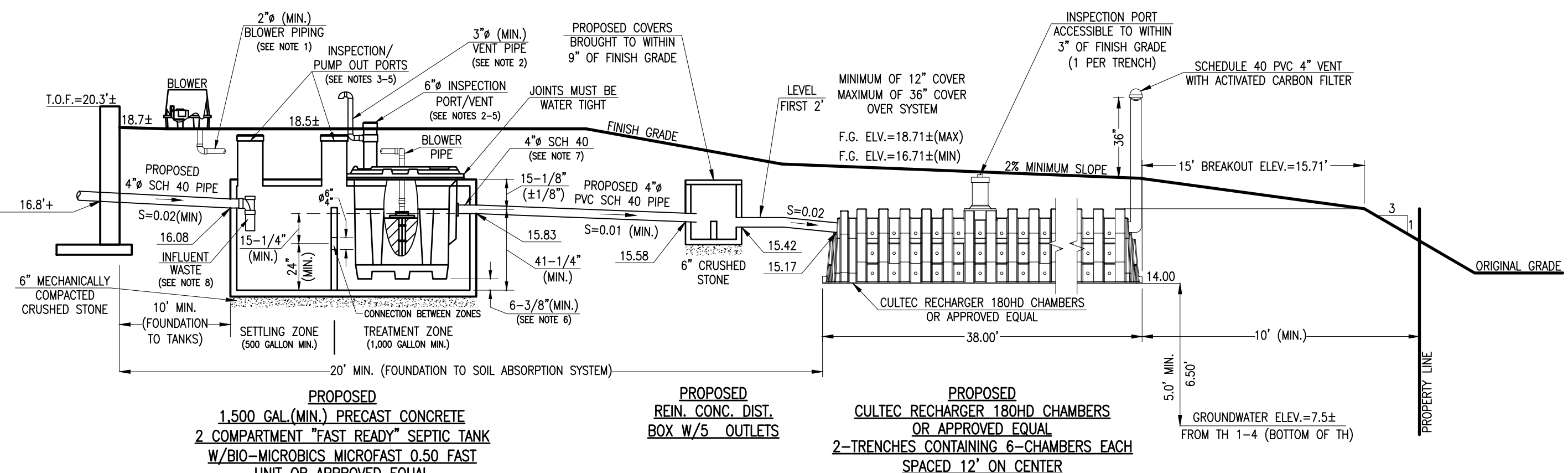
- DESIGN DAILY FLOW: 4 BR. x 110 GPD = 440 GPD (MIN)
- SEPTIC TANK: 440 GPD x 2 = 880 GAL. USE: 1,500 GALLON TANK
- DESIGN PERCOLATION RATE: P.R. = LESS THAN 2 MIN/IN, CLASS 1, ELR = 0.74 GPD/SF
- LEACHING TRENCHES:
 REQUIRED AREA: 440 GPD/(0.74 GPD/SF) = 595 SF (MIN)
 PROPOSED AREA:
 2 TRENCH x 36' LF x 8.9 SF/LF = 676 SF
 CAPACITY: 676 SF x 0.74 GPD/SF = 500 GPD > 440 GPD
 USE: 12 CULTEC RECHARGER 180HD CHAMBERS

SEPTIC NOTES:

- T.H. 1.1 THROUGH 1.4 PERFORMED BY CHRIS GILBERT OF FARLAND CORP., INC. AND WITNESSED THE TOWN OF BOURNE BOARD OF HEALTH ON APRIL 19, 2017.
- ENGINEER SHALL SET BENCHMARK WITHIN 50' OF SYSTEM PRIOR TO START OF CONSTRUCTION.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL STANDARDS AND REGULATIONS.
- ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
- SOIL TESTING PERFORMED IN ACCORDANCE WITH THE INSTRUCTIONS OF MASSACHUSETTS ENVIRONMENTAL CODE, TITLE 5.
- EXISTING SOIL ABSORPTION SYSTEM TO BE ABANDONED OR REMOVED IN ACCORDANCE WITH 310 CMR 15.354.
- THERE ARE NO KNOWN SURFACE WATER SUPPLIES OR WETLANDS BORDERING SURFACE WATER SUPPLIES OR PUBLIC WELLS WITHIN 200' OF SITE.
- THERE ARE NO KNOWN PRIVATE WELLS WITHIN 200' OF SITE.
- THERE ARE NO KNOWN BORDERING VEGETATED WETLANDS, INLAND BANKS, OR SURFACE WATERS WITHIN 150' OF LEACHING AREA.
- THERE ARE NO KNOWN SURFACE OR SUBSURFACE DRAINS WHICH ARE USED TO LOWER THE GROUND WATER ON THE SITE.
- THERE ARE NO KNOWN VERNAL POOLS WITHIN 100' OF SITE.
- SITE IS NOT WITHIN 100 YEAR FLOOD PLAIN OR A NITROGEN SENSITIVE AREA.
- EFFLUENT BEING DISCHARGED TO THE SYSTEM CAN BE ASSOCIATED WITH NORMAL STRENGTH DOMESTIC USE ONLY.
- FOR PROPER PERFORMANCE, THE SEPTIC TANK SHOULD BE PUMPED ANNUALLY.
- ANY ALTERATIONS MUST BE APPROVED IN WRITING BY THE DESIGN ENGINEER. ANY CONDITIONS ENCOUNTERED DURING CONSTRUCTION DIFFERING FROM THOSE SHOWN HEREON OR REPORTED HEREIN SHALL BE REPORTED TO THE DESIGN ENGINEER BEFORE CONSTRUCTION CONTINUES.
- TEST HOLE INFORMATION SHOWN HEREON IS LIMITED TO SOIL CONDITIONS FOUND AT THAT PARTICULAR TEST HOLE LOCATION AND IS NOT TO BE CONSIDERED AN IMPLIED OR EXPRESSED WARRANTY OF SOIL CONDITIONS BEYOND THE LIMITS OF SUCH TEST HOLES.
- SYSTEM CAN NOT BE BACKFILLED OR CONCEALED UNTIL DESIGN FIRM AND BOARD OF HEALTH HAVE INSPECTED THE SYSTEM AND PERMISSION TO BACKFILL HAS BEEN GIVEN.
- DESIGN FIRM MUST PREPARE AND SUBMIT "AS BUILT" PLAN TO BOARD OF HEALTH. THIS PLAN MUST CERTIFY THAT THE SYSTEM WAS INSTALLED IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS AND THAT IT COMPLIES WITH PROPOSED PLAN. THEREFORE, THE CONTRACTOR MUST NOTIFY THOMPSON FARLAND, INC. IN ADVANCE FOR PERIODIC INSPECTIONS OF THE CONSTRUCTION AT THE FOLLOWING MINIMUM POINTS:
 A. SEPTIC TANK EXCAVATION WITH STONE PRIOR TO SEPTIC TANK PLACEMENT.
 B. LEACHING FIELD EXCAVATION PRIOR TO BACK FILLING WITH "SEWER SAND".
 C. "SEWER SAND" BACKFILL - MUST PASS SIEVE TEST.
 D. ALL PIPING AND CHAMBER ELEVATIONS PRIOR TO BACKFILL.
 E. FINAL GRADINGS OVER ENTIRE SYSTEM.

GENERAL NOTES:

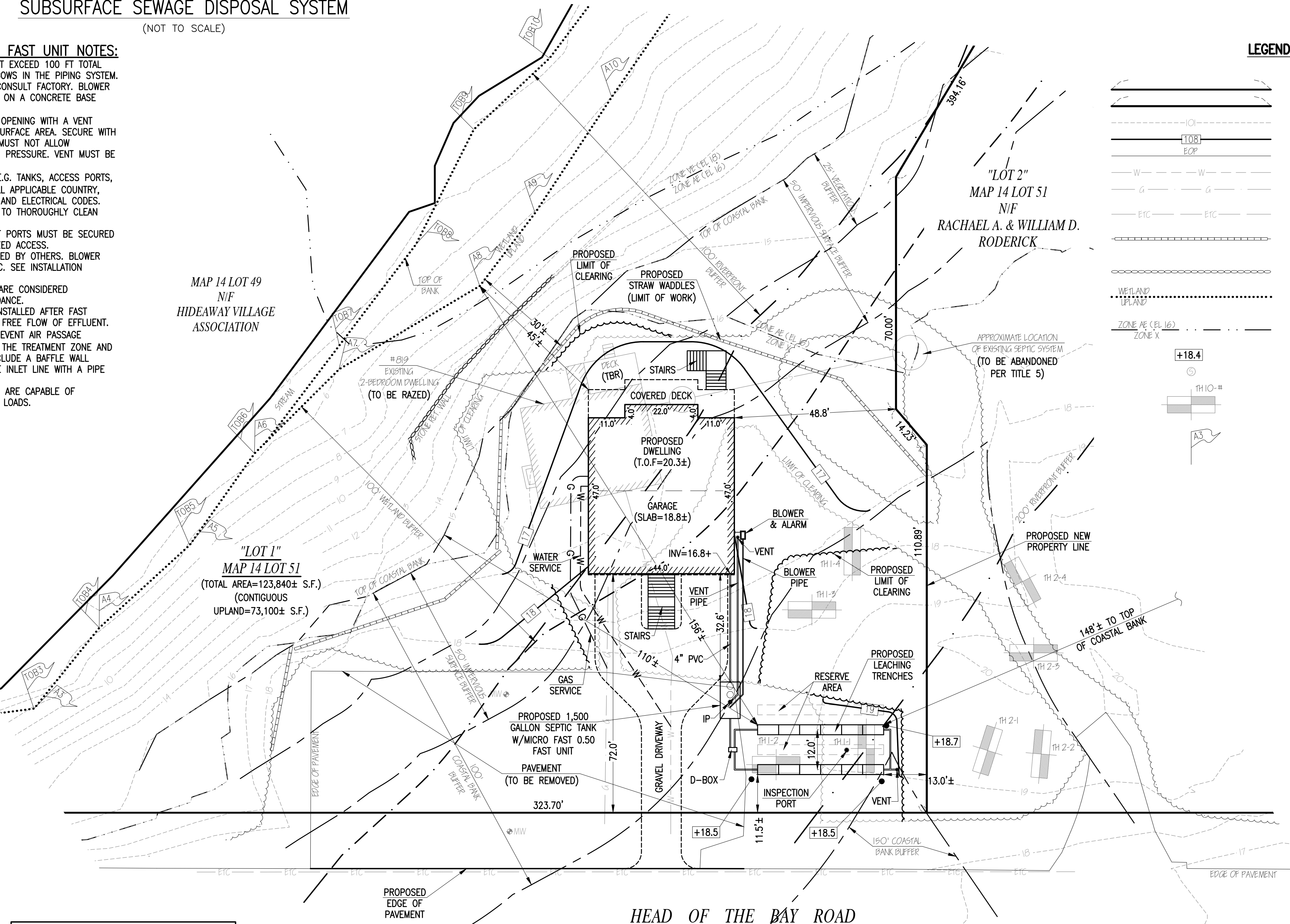
- SURVEY LOCATIONS PERFORMED BY FARLAND CORP., INC. BETWEEN JUNE 2017 AND FEBRUARY 2018.
- EXISTING SITE FEATURES ARE SHOWN PER PLAN ENTITLED "EXISTING CONDITIONS PLAN, FOR 819 HEAD OF THE BAY ROAD, BOURNE, MASSACHUSETTS", DATED MARCH 9, 2007, PREPARED FOR JLD, LLC, BY ATLANTIC DESIGN ENGINEERS, LLC.
- ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- WETLAND DELINEATED BY ECOSYSTEM SOLUTIONS IN FEBRUARY 2018.
- THE LOCATION OF UNDERGROUND UTILITIES WAS TAKEN FROM THE BEST AVAILABLE INFORMATION AND IS NOT WARRANTED TO BE CORRECT, NOR THAT ALL UNDERGROUND UTILITIES ARE SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES AND AGENCIES PRIOR TO CONSTRUCTION FOR THE LOCATION OF UNDERGROUND UTILITIES.
- THE LIMIT OF WORK DEPICTED ON THIS PLAN FALLS IN ZONE "X" AS SHOWN ON THE FLOOD INSURANCE RATE MAP NO. 25001C0313J, EFFECTIVE DATE: JULY 16, 2014.
- ORDER OF CONDITIONS ISSUED BY THE BOURNE CONSERVATION COMMISSION JUNE 14, 2018.



SUBSURFACE SEWAGE DISPOSAL SYSTEM (NOT TO SCALE)

BIO-MICROBICS MICROFAST 0.5 FAST UNIT NOTES:

- AIRLINE PIPING TO FAST SYSTEM MAY NOT EXCEED 100 FT TOTAL LENGTH AND HAVE A MAXIMUM OF 4 ELBOWS IN THE PIPING SYSTEM. FOR DISTANCES GREATER THAN 100 FT CONSULT FACTORY. BLOWER MUST BE LOCATED ABOVE FLOOD LEVELS ON A CONCRETE BASE 26"x20"x2" MIN.
- VENT TO DESIRED LOCATION AND COVER OPENING WITH A VENT GRATE WITH AT LEAST 7 SQ. IN. OPEN SURFACE AREA. SECURE WITH STAINLESS STEEL SCREWS. VENT PIPING MUST NOT ALLOW CONDENSATE BUILD UP OR CREATE BACK PRESSURE. VENT MUST BE ABOVE FINISHED GRADE OR HIGHER.
- ALL APPURTENANCES TO FAST SYSTEM (E.G. TANKS, ACCESS PORTS, ELECTRICAL, ETC.) MUST CONFORM TO ALL APPLICABLE COUNTRY, STATE, PROVINCE, AND LOCAL PLUMBING AND ELECTRICAL CODES. PUMP OUT ACCESS SHALL BE ADEQUATE TO THOROUGHLY CLEAN OUT BOTH ZONES.
- ALL INSPECTION, VIEWING AND PUMP OUT PORTS MUST BE SECURED TO PREVENT ACCIDENTAL OR UNAUTHORIZED ACCESS.
- TANK, PIPING, CONDUIT, ETC. ARE PROVIDED BY OTHERS. BLOWER CONTROL SYSTEM BY BIO-MICROBICS, INC. SEE INSTALLATION MANUAL.
- IF LESS THAN THE SPECIFIED MINIMUMS ARE CONSIDERED NECESSARY, CONSULT FACTORY FOR GUIDANCE.
- ALL PIPING AND ANCILLARY EQUIPMENT INSTALLED AFTER FAST SYSTEM MUST NOT IMPEDE OR RESTRICT FREE FLOW OF EFFLUENT.
- THE TANK(S) SHALL BE DESIGNED TO PREVENT AIR PASSAGE BETWEEN THE SETTLING ZONE/TANK AND THE TREATMENT ZONE AND PREVENTING AN AIR LOCK. EXAMPLES INCLUDE A Baffle WALL SEALED TO THE LID OR TREATMENT ZONE INLET LINE WITH A PIPE CAP. CONSULT FACTORY FOR GUIDANCE.
- INSTALLATIONS USING A FAST SYSTEM LID ARE CAPABLE OF WITHSTANDING AASHTO H-10 EQUIVALENT LOADS.



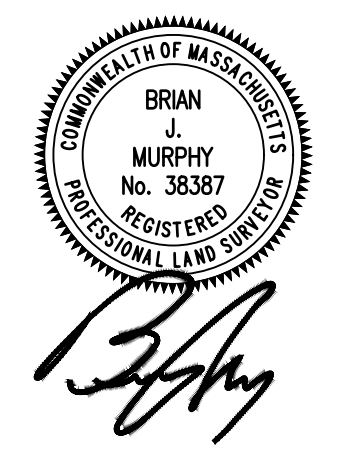
- ZONING DATA -

DESCRIPTION	REQUIRED
DISTRICT:	RESIDENCE 80 "R-80"
LOT AREA	80,000 S.F.
UPLAND AREA	72,000 S.F.
LOT FRONTAGE	150 FT
FRONT SETBACK	40 FT
SIDE SETBACK	25 FT
REAR SETBACK	25 FT

SOIL LOGS

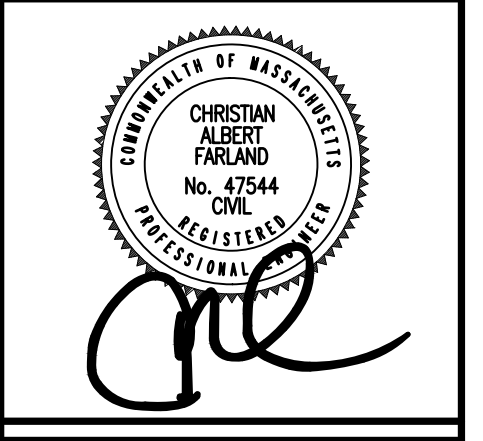
T.H. #	DEPTH	SOIL TYPE	PERC. (MIN/IN)
T.H. #1-1 ELEV.=19.4± 4/19/17	0'-6"	A HORIZON LOAMY SAND 10YR 3/2	18.9
	6'-24"	B HORIZON SAND 10YR 5/6	17.4
	24'-120"	C HORIZON SAND 2.5Y 6/6	9.4
T.H. #1-2 ELEV.=18.5± 4/19/17	0'-4"	A HORIZON LOAMY SAND 10YR 3/2	18.2
	4'-24"	B HORIZON SAND 10YR 5/6	16.5
	24'-108"	C HORIZON SAND 2.5Y 6/4	9.5
T.H. #1-3 ELEV.=17.3± 4/19/17	0'-5"	A HORIZON LOAMY SAND 10YR 3/2	16.9
	5'-28"	B HORIZON SAND 10YR 5/6	15.0
	28'-108"	C HORIZON SAND 2.5Y 6/6	8.3
T.H. #1-4 ELEV.=17.5± 4/19/17	0'-7"	A HORIZON LOAMY SAND 10YR 3/2	15.2
	7'-28"	B HORIZON SAND 10YR 5/6	15.2
	28'-120"	C HORIZON SAND 2.5Y 6/6	7.5

- LEGEND**
- PROPERTY LINE
 - PROPOSED PROPERTY LINE
 - CONTOUR LINE
 - PROPOSED CONTOUR LINE
 - EDGE OF PAVEMENT
 - WATER LINE
 - GAS LINE
 - ELECTRIC, TELEPHONE & CABLE
 - PROPOSED STRAW WADDLES (LIMIT OF WORK)
 - STONE WALL
 - WETLAND LINE
 - FEMA LINE
 - PROPOSED SPOT ELEVATION
 - SEWER MANHOLE
 - TEST HOLE
 - WETLAND FLAG



REVISIONS

NO.	DATE	DESCRIPTION
1	4/12/18	CONSERVATION COMMISSION COMMENTS
2	5/7/18	4 BEDROOM SEPTIC
3	8/21/18	HEALTH AGENT COMMENTS
4	9/19/18	MICRO FAST SYSTEM
5	8/11/22	PROPOSED DWELLING



401 COUNTY STREET
 NEW BEDFORD, MA 02740
 P.508.717.3479
 OFFICES IN:
 TAUNTON
 MARLBOROUGH
 WARWICK, RI

DRAWN BY: CKG/SP
 DESIGNED BY: CKG
 CHECKED BY: CAF/BJM

SUBSURFACE SEWAGE DISPOSAL SYSTEM
 — LOT 1 HEAD OF THE BAY ROAD —
ASSESSORS MAP 14 LOT 51
BOURNE, MASSACHUSETTS
 PREPARED BY: MESSIAS VASCONCELOS & ANA ALVES
 FOR: 9 SOUTHWIND DRIVE, ATTLEBORO, MA 02703

MARCH 20, 2018
 SCALE: 1"=20'
 JOB NO. 22-542
 LATEST REVISION:
 AUGUST 11, 2018



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



September 19, 2022

Christopher Gilbert, EIT
Farland Corp., Inc.
401 County St.
New Bedford, MA 02740

Dear Mr. Gilbert:

On September 14, 2022, the Bourne Board of Health held a public meeting and discussed your request for relief from the Bourne Board of Health 150 Foot Setback Regulation for the installation of a new sewage disposal system at 819 Head of the Bay Road "Lot 1", previously approved on September 26, 2018. On behalf of your clients, Messias Vasconcelos and Ana Alves, the Board of Health approved the renewal of the following variance from the Bourne Board of Health 150 Foot Setback Regulations, based on the plans of record dated revised August 11, 2022, by Farland Corp, Inc.:

- *A 40 foot variance from the local Bourne Board of Health 150 Foot Setback Regulations for the placement of the leaching facility within 110 feet of a coastal bank.*

These variances are valid for two years from the date of approval and contingent upon the placement of the alarm panel visible from the street, as well as an alternative septic disclosure notice be recorded with the Registry of Deeds. The Board of Health shall receive a copy of these recorded documents and an operation and maintenance agreement prior to issuance of a disposal works construction permit. Should you have any questions, please do not hesitate to contact me at 508-759-0600 ext. 1513. Thank you.

Sincerely,

Terri Guarino, RS, CHO
Health Agent



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



September 28, 2018

Mr. Christopher Gilbert
Farland Corp., Inc.
401 County Street
New Bedford, MA 02740

Dear Mr. Gilbert:

At the duly posted public meeting on September 26, 2018, the Bourne Board of Health unanimously voted to approve a variance from the Board of Health 150' Setback Regulations for the proposed alternative septic system at 819 Head of the Bay Rd, Lot 1, Bourne, MA (map 14, parcel 51), owned by the 819 Bourne Realty Trust. As illustrated on the Site Plan dated March 20, 2018 and revised on September 19, 2018 by Farland Corp. Inc., the proposed septic system requires a 40 foot variance from the required 150 foot setback distance from the soil absorption system to the top of the coastal bank.

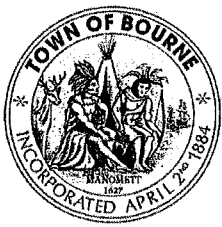
The Board felt as if this variance was in order where the proposed sewage disposal system will be comprised of a BioMicrobics MicroFAST 0.5 de-nitrification unit which will offer a substantial degree of environmental protection as it is approved by MassDEP for nitrogen reduction and the actual nitrogen load for the project as designed is less than 3.5 ppm. This variance is valid for two years from the date of approval and contingent upon an Innovative/ Alternative (I/A) Septic System Disclosure Notice recorded in the deed of the property, and confirmation that the architectural plans meet the Board of Health definition of a four-bedroom, single-family dwelling. It is understood that the owner(s) have familiarized themselves with the Bourne Board of Health I/A Septic System Regulations and specific testing requirements for the I/A technology as a condition of this approval.

The Board of Health requires receipt of a copy of the recorded disclosure notice and an Operation and Maintenance Agreement prior to issuance of a disposal works construction permit. It is also imperative that, should the property be subdivided into two lots, the existing nonconforming sewage disposal system for the structure in existence on Lot 1 shall be located and removed from Lot 2 prior to any transfers in title or changes in ownership. Please be advised that future modifications to the dwelling and/or sanitary sewage facility may require another hearing before the Bourne Board of Health. Should you have any questions, please do not hesitate to contact the Board of Health office at 508-759-0600 ext. 1513. Thank you.

Sincerely,

Terri Guarino, R.S.
Health Agent

C.C. Brent Warren, Trustee



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



Kaitlyn F. Shea
Assistant Health Agent

June 13, 2022

C/O Christina Winterfeldt
Brennan Family Trust
161 Worcester Road, Suite 501
Framingham, MA 01701

RE: 4 Kennebec Avenue, Pocasset (Book 33346, Page 318)

Dear Trustees:

At the duly posted public meeting on May 25, 2022, the Bourne Board of Health unanimously voted to approve the following variances from the Bourne Board of Health 150' Setback Regulations and system local upgrade approvals from Title 5 of the State Environmental Code for the proposed innovative/ alternative ("I/A") septic system at 4 Kennebec Avenue, Pocasset, MA (map 47.1, parcel 45). As illustrated on the Subsurface Sewage Disposal Plan dated revised on April 8, 2022, by Bracken Engineering, Inc., the proposed septic system requires the following relief:

- *A 150 foot reduction in the required local 150 foot setback from the soil absorption system to a non-eroding coastal bank*
- *Per 310 CMR 15.405(1)(a), a 4 foot reduction in the required 10 foot setback from the soil absorption system to 531 Circuit Ave property line.*
- *Per 310 CMR 15.405(1)(a), a 5 foot reduction in the required 10 foot setback from the soil absorption system to the Circuit Ave Layout property line.*
- *Per 310 CMR 15.405(1)(a), a 5 foot reduction in the required 10 foot setback from the soil absorption system to the Kennebec Ave Layout property line.*
- *Per 310 CMR 15.405(1)(a), a 4 foot reduction in the required 10 foot setback from the MicroFAST equipped septic tank to the 531 Circuit Ave property line.*
- *Per 310 CMR 15.405(1)(a), a 4 foot reduction in the required 10 foot setback from the MicroFAST equipped septic tank to the 8 Kennebec Ave property line.*
- *Per 310 CMR 15.405(1)(a), a 4 foot reduction in the required 10 foot setback from the pump chamber to the 8 Kennebec Ave property line.*
- *Per 310 CMR 15.405(1)(b), a 4 foot reduction in the required 10 foot setback from the MicroFAST equipped septic tank to the crawl space wall.*

- *Per 310 CMR 15.405(1)(b), a 4 foot reduction in the required 10 foot setback from the pump chamber to the crawl space wall.*

These approvals were also based on the architecturals received by the Board of Health on April 20, 2022, showing that all existing structures on the parcel will be razed and new house will be constructed not to exceed two-bedrooms. The Board felt as if the proposed sewage disposal system and reconstruction will provide an enhanced degree of environmental protection than the existing site conditions by reducing lot coverage of impervious surfaces and the design flow to one two-bedroom dwelling unit, and by replacing a failed cesspool with an MicroFAST de-nitrification unit and a Geoflow Subsurface Drip Wastewater Disposal System approved by MassDEP for remedial use.

The Board of Health also took into consideration the Cape Cod Commission's Technical Bulletin 91-001, Nitrogen Loading Calculation Sheet for Residential Housing, and as a condition of this approval has prohibited activities which have a detrimental effect on nitrogen loading on the Property, including but not limited to the wastewater discharges, the use of nitrogen and/ or phosphorous containing fertilizer, or the introduction of any other artificial impervious surfaces than what have been approved within the application submitted.

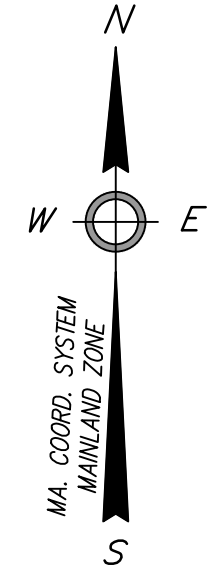
The deadline to upgrade the existing failed cesspool is September 12, 2022 unless extended by the Board of Health. Please be advised that this innovative/ alternative septic system shall require an alternative septic disclosure notice and a two-bedroom deed restriction recorded in the deed of the property. Additionally, MassDEP and the Bourne Board of Health requires an operation and maintenance contract be held for perpetuity of this system and effluent sampling subject to meeting the $\leq 19\text{mg/L}$ Total Nitrogen standard measured as the total of TKN, $\text{NO}_2\text{-N}$, and $\text{NO}_3\text{-N}$. It is understood that the owners have familiarized themselves with the Bourne Board of Health I/A Septic System Testing Regulations and conditions of this approval and agrees to fulfill these requirements.

The Board of Health shall receive copies of these documents prior to issuance of a disposal works construction permit. Please be advised that there are no implied approvals for future modifications/ additions/ renovations/ and/or repairs or changes to the dwelling or sanitary sewage facility. Any such work may require another hearing before the Bourne Board of Health. Should you have any questions, please do not hesitate to contact the Board of Health office at 508-759-0600 ext. 1513. Thank you.

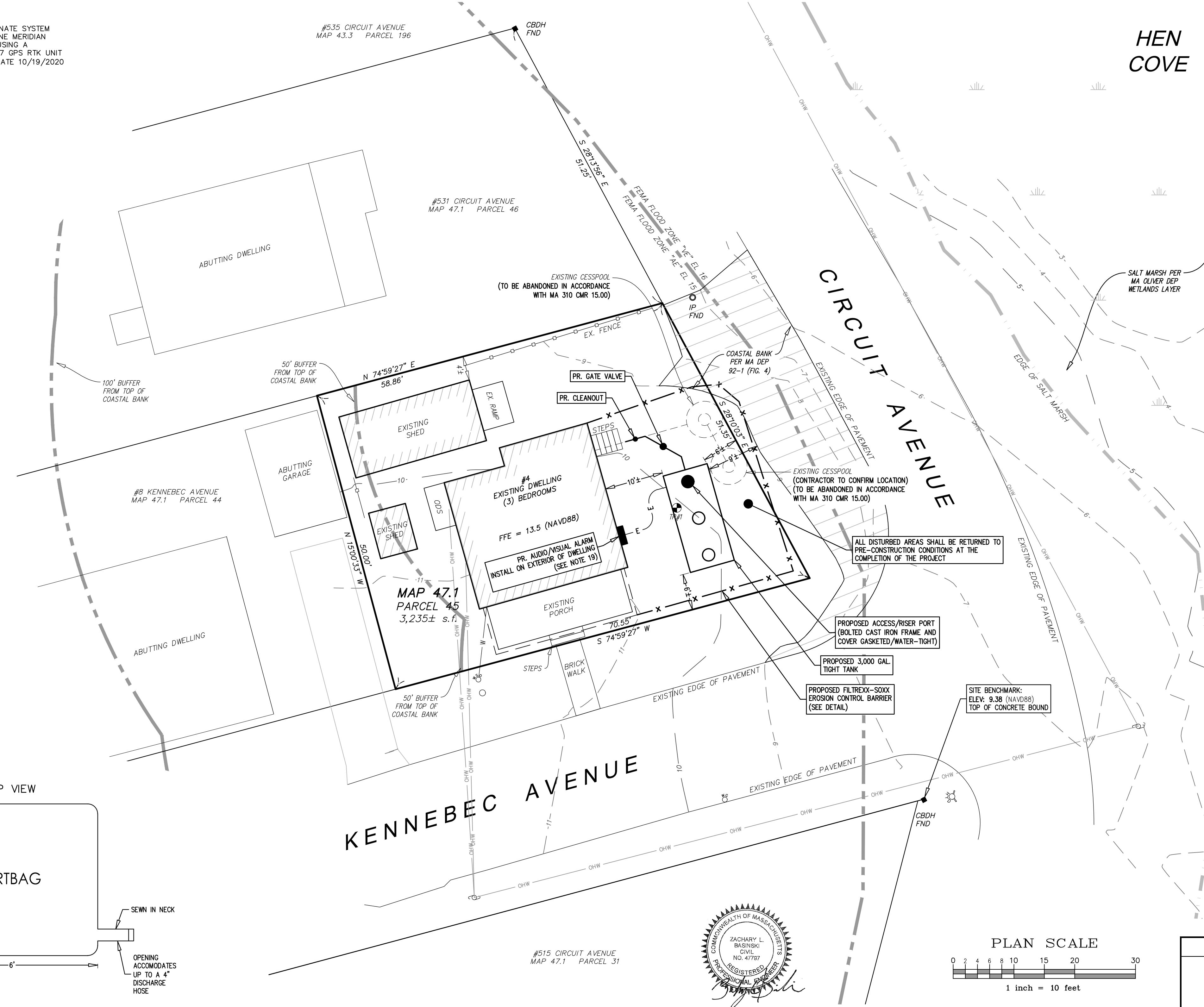
Sincerely,



Terri Guarino, RS, CHO
Health Agent



MASS COORDINATE SYSTEM
MAINLAND ZONE MERIDIAN
DETERMINED USING A
CARLSON BR7 GPS RTK UNIT
COLLECTION DATE 10/19/2020



HEN COVE

LOCAL UPGRADE APPROVAL REQUESTED:

15.405.3(b) - LOCAL UPGRADE APPROVAL IS REQUESTED FOR THE USE OF A TIGHT TANK IN ACCORDANCE WITH THE PROVISIONS OF 310 CMR 15.280.

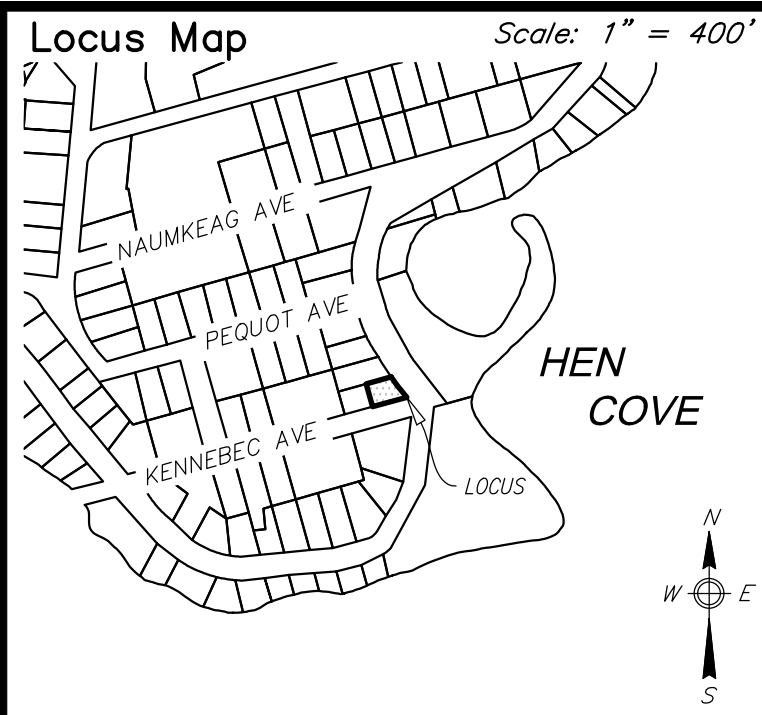
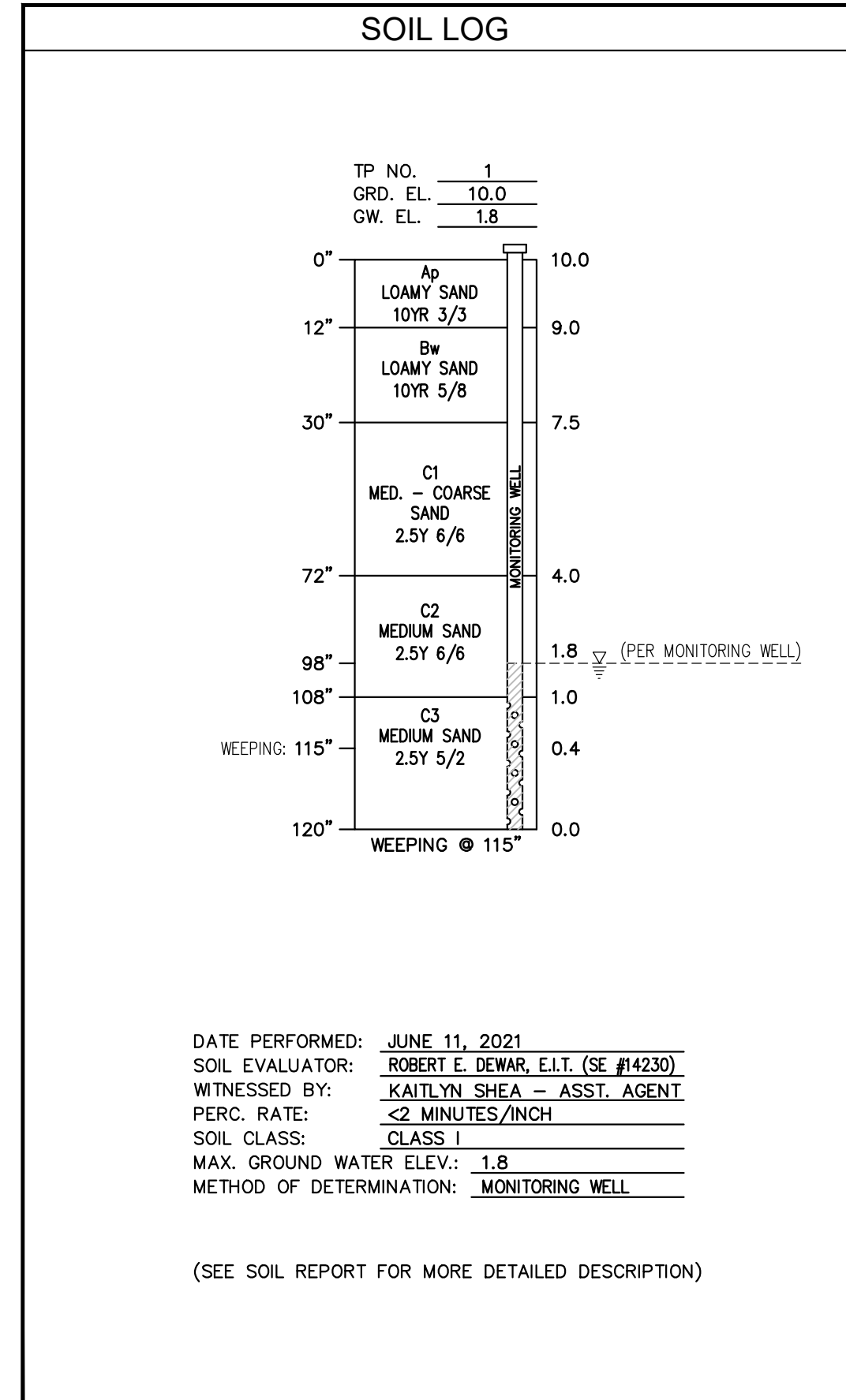
15.405.1(g) - LOCAL UPGRADE APPROVAL IS REQUESTED FOR A 4'± REDUCTION IN SETBACK TO A PROPERTY LINE FROM A SEPTIC COMPONENT FOR A 6'± SETBACK TO A PROPERTY LINE FROM THE PROPOSED TIGHT TANK (CIRCUIT AVENUE).

15.405.1(g) - LOCAL UPGRADE APPROVAL IS REQUESTED FOR A 4'± REDUCTION IN SETBACK TO A PROPERTY LINE FROM A SEPTIC COMPONENT FOR A 6'± SETBACK TO A PROPERTY LINE FROM THE PROPOSED TIGHT TANK (KENNEBEC AVENUE).

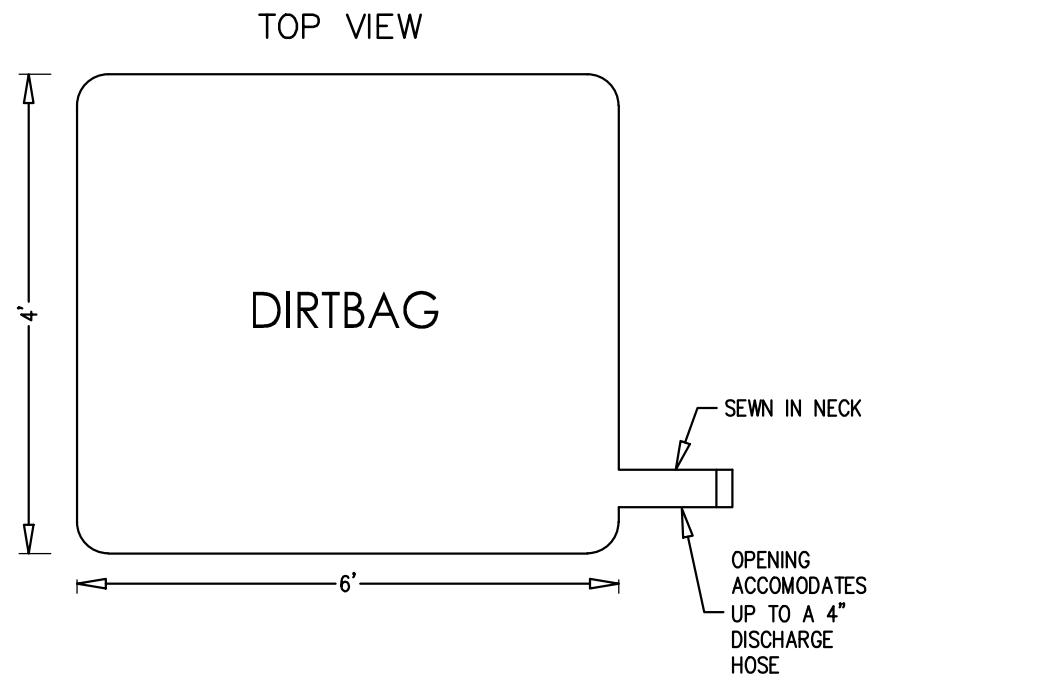
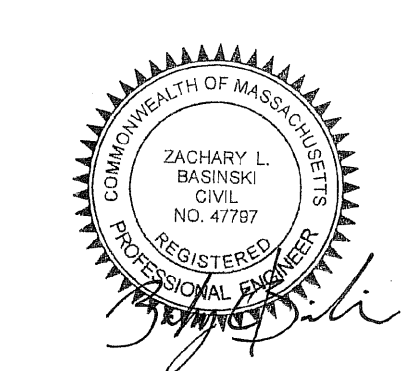
15.405.1(f) - LOCAL UPGRADE APPROVAL IS REQUESTED FOR A 16'± REDUCTION IN SETBACK TO A COASTAL BANK FROM A HOLDING TANK FOR A 9'± SETBACK TO THE PROPOSED TIGHT TANK.

DESIGN CALCULATIONS

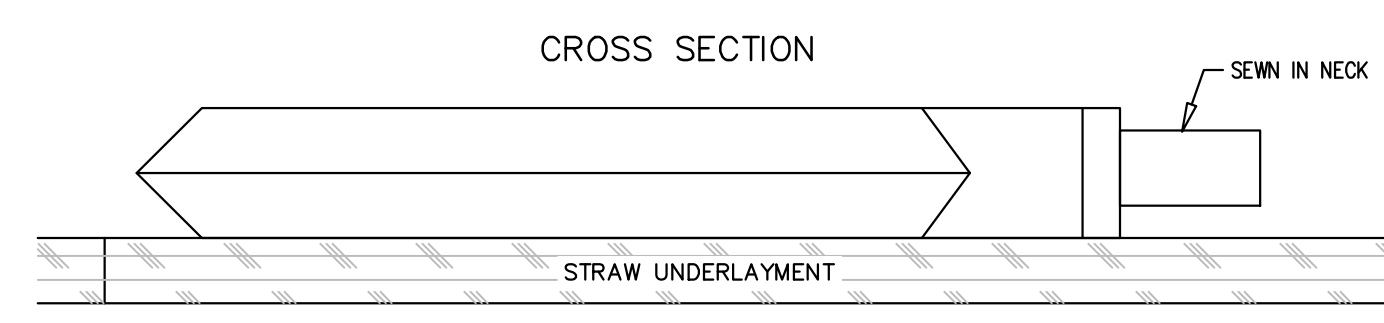
NUMBER OF BEDROOMS: 3 BEDROOMS
DESIGN FLOW REQUIRED: 110 GPD PER BEDROOM = 330 GPD
TIGHT TANK PROVIDED: 500% DAILY FLOW = 1,650 GPD (2,000 GAL. MIN.)
TIGHT TANK PROVIDED: 3,000 GALLONS
PUMPING SCHEDULE: IN ACCORDANCE WITH APPROVAL



- Notes**
- BENCHMARK: ELEVATION = 9.38 (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: FAITH V. EASTER, TRUSTEE
BRENNAN FAMILY TRUST
161 WORCESTER ROAD - SUITE 501
FRAMINGHAM, MA 01701
 - APPLICANT: ROBIN MALLOVE
175 GREAT NECK ROAD
WATERFORD, CT 06385
 - DEED REFERENCE: Deed Bk: 33346 Pg: 318
 - PLAN REFERENCE: Plan Bk: 117 Pg: 1 (LOT 304)
 - 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.
 - LOCUS DOES NOT FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA.
 - LOCUS DOES NOT FALL WITHIN AN NHESP ESTIMATED HABITAT OF RARE WILDLIFE AND PRIORITY HABITAT OF RARE SPECIES.
 - LOCUS DOES FALL WITHIN A SPECIAL FLOOD HAZARD ZONE "AE" (EL. 15) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP NO. 25001C-0492-J, dated 7/14/2014.
 - PRIOR TO ISSUANCE OF THE DISPOSAL WORKS CONSTRUCTION PERMIT, A COPY OF EITHER THE LOCAL APPROVING AUTHORITIES OR THE DEPARTMENT WRITTEN APPROVAL SHALL BE REGISTERED IN THE CHAIN OF TITLE AT THE BARNSTABLE COUNTY REGISTRY OF DEEDS.
 - PRIOR TO THE CERTIFICATE OF COMPLIANCE BEING ISSUED, THE RECORD PROPERTY OWNER IS TO FILE A NOTICE OF DEED RESTRICTION AT THE BARNSTABLE COUNTY REGISTRY OF DEEDS, INDICATING THE USE OF A TIGHT TANK SEPTIC SYSTEM ON THE PROPERTY.
 - AUDIO/VISUAL ALARM PANEL TO BE PLACED ON THE EXTERIOR, EAST SIDE OF THE EXISTING DWELLING. PANEL IS TO BE INSTALLED ABOVE THE BASE FLOOD ELEVATION (>15.4) AND VISIBLE FROM KENNEBEC OR CIRCUIT AVENUE. CONTRACTOR TO FIELD COORDINATE FINAL LOCATION WITH OWNER.
 - THE USE OF A "DIRTBAG" DE-WATERING SYSTEM MAY BE REQUIRED DURING THE INSTALLATION OF THE PROPOSED TIGHT TANK. GROUNDWATER ELEVATION AND SIZE OF EXCAVATION AT THE TIME OF INSTALLATION SHALL DICTATE USE OF DE-WATERING SYSTEM. (SEE DETAIL).
 - CONTRACTOR SHALL COORDINATE FINAL LOCATION OF DE-WATERING SYSTEM WITH CONSERVATION STAFF & DESIGN ENGINEER, IF NEEDED.



- NOTES:**
- DIRTBAG TO BE MANUFACTURED BY ACF ENVIRONMENTAL OR APPROVED EQUAL.
 - DIRTBAG TO BE PLACED ON STRAW BASE
 - SEAMS MUST BE HIGH STRENGTH DOUBLE STITCHED "J" SEAMS.
 - SEAM MUST BE TESTED UNDER ASTM-4884.

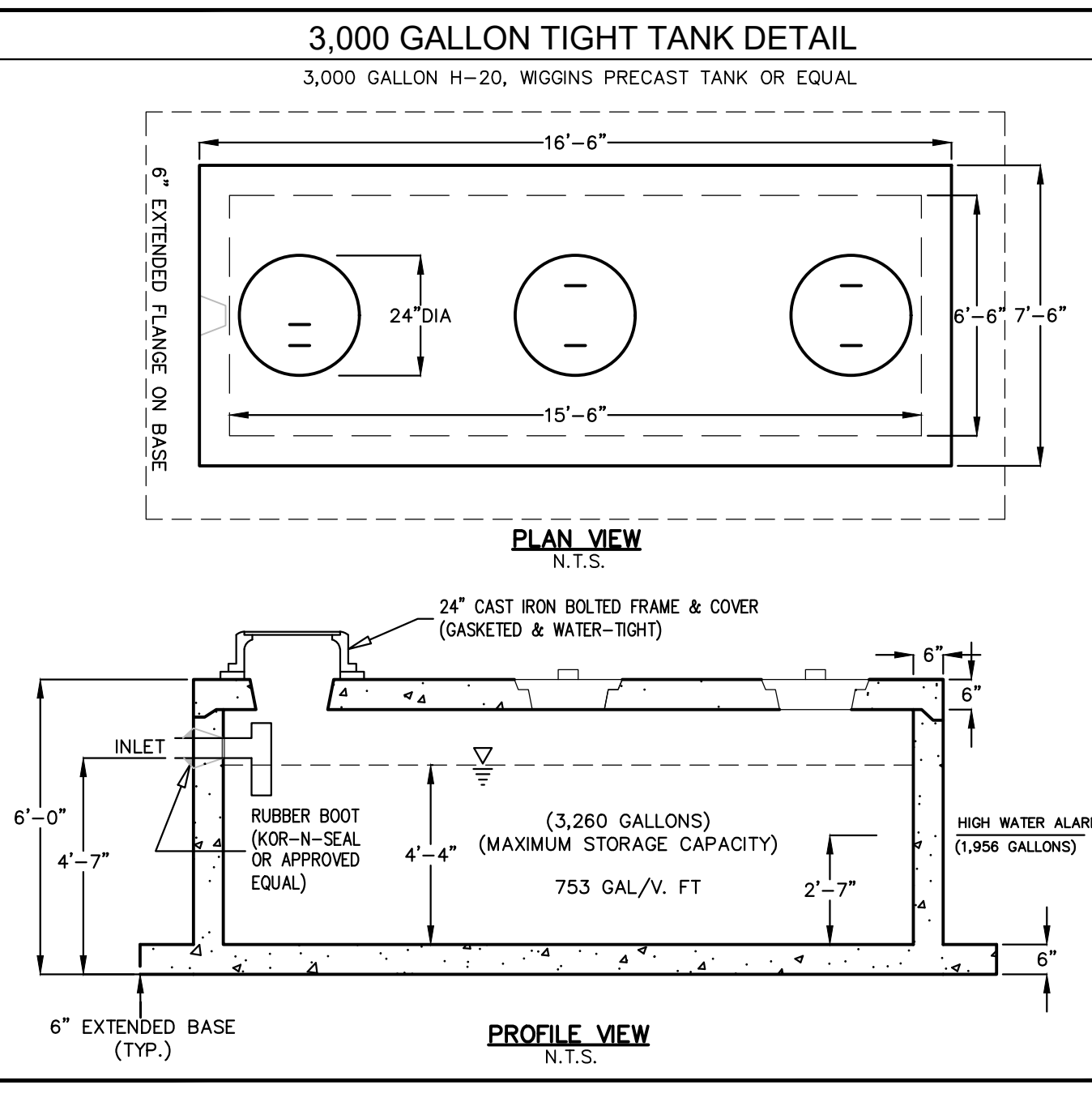
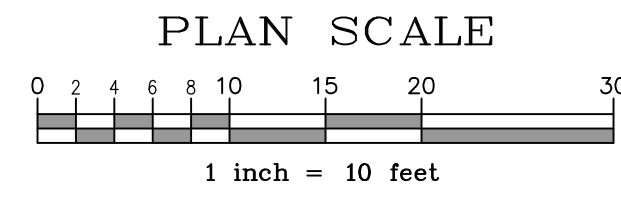
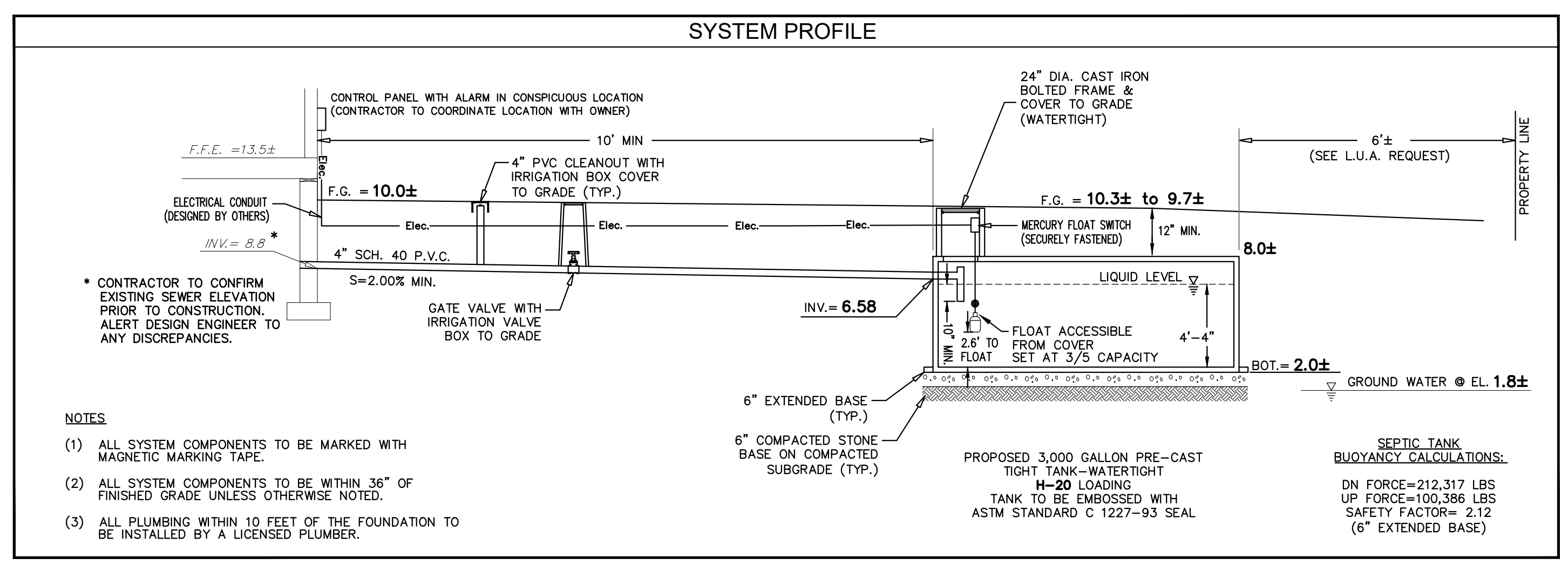


DB55 FABRIC PROPERTIES		
PROPERTY	TEST METHOD	MARV
TENSILE STRENGTH	ASTM D-4632	205 LBS
ELONGATION	ASTM D-4632	50%
CBR PUNCTURE	ASTM D-6241	525 LBS
UV RESISTANCE	ASTM D-4355	70%
AOS	ASTM D-4751	80 US SIEVE
PERMITTIVITY	ASTM D-4491	1.4 SEC-1
FLOW RATE	ASTM D-4491	90 GPM/SF



DIRTBAG DETWATERING BAG DETAIL

NOT TO SCALE
(SEE NOTE 20 & 21)



Prepared By:

BRACKEN ENGINEERING, INC.

49 HERRING POND ROAD BUZZARDS BAY, MA 02532
(tel) 508.833.0979 (fax) 508.833.2282

19 OLD SOUTH ROAD NANTUCKET, MA 02554
(tel) 508.325.0044 (www.brackeneng.com)

PROPOSED SEWAGE DISPOSAL PLAN IN BOURNE, MA

Prepared For:
ROBIN MALLOVE
#4 KENNEBEC AVENUE
MAP 47.1 PARCEL 45

No.	Date	Revision Description	By
1	OCTOBER 18, 2022		JPH/BE
2			ZLB/AMG

Drawn: JPH/BE
Checked: ZLB/AMG
Sheet: 1 of 1

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

April 20, 2022

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

**RE: Septic Upgrade
 4 Kennebec Avenue (Map 47.1, Parcel 45)**

Dear Members of the Board:

On behalf of the homeowner, The Brennan Family Trust c/o Christina Winterfeldt, Bracken Engineering, Inc. (BEI), is requesting the following variances to the Town of Bourne Board of Health Regulations and system approval pursuant to 310 CMR 15.403 through 15.405 State Environmental Code (Contents for Local Upgrade Approval). Due to the size and topography of the lot as well as the location of the abutting resource areas, the following relief/variances under local upgrade approval are requested in order to upgrade the existing system:

Septic Component	Setback Object	Required Setback Distance (ft)	Proposed Setback Distance (ft)	Relief Requested (ft)
S.A.S.	#531 Circuit Ave	10	6±	4±
S.A.S.	Circuit Ave Layout	10	5±	5±
S.A.S.	Kennebec Ave Layout	10	5±	5±
Septic Tank (MicroFAST)	#531 Circuit Ave	10	6±	4±
Septic Tank (MicroFAST)	#8 Kennebec Ave	10	6±	4±
Pump Chamber	#8 Kennebec Ave	10	6±	4±
Septic Tank (MicroFAST)	Crawlspace Wall	10	6±	4±
Pump Chamber	Crawlspace Wall	10	6±	4±
S.A.S.	Coastal Bank	50	0±	50±

In addition, a variance to local setback requirements is requested for a 150'± reduction in setback for a 0'± setback to a non-eroding coastal bank from a soil absorption system.



BEI is requesting that the Bourne Board of Health diverge from the goal of full compliance by allowing the relief/variances listed above. The design allows for the best feasible upgrade within the borders of the lot, and has the least effect on public health, safety, and the environment.

Enclosed are six (6) copies of the Variance Application, Existing and Proposed Nitrogen Loading Calculations, Subsurface Sewage Disposal Plan dated 2/15/22, **revised** 4/8/2022 and \$125.00 for the Public Hearing Fee.

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 robert@brackeneng.com.

Sincerely,

BRACKEN ENGINEERING, INC.

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

Robert E. Dewar, E.I.T
Project Engineer



Bourne Board of Health Application for Septic Variance Requests



In accordance with the established procedures of the Bourne Board of Health, this application for septic variances and waivers is relevant to requests for relief 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	Brennan Family Trust c/o Christina Winterfeldt
Facility's Street Address	4 Kennebec Avenue (Map 47.1, Parcel 45), Pocasset
Owner's Telephone Number	Applicant - 508-479-7128
Owner's E-mail Address	Applicant - chriswin12@aol.com
Owner's Mailing Address	161 Worcester Road - Suite 501, Framingham, MA 01770

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

6. Describe the proposed septic system components: 1,500 gal. septic tank w/MicroFast 0.5 unit,
1,000 gallon pump chamber and Geo-Flow Drip soil absorption system.
Remedial Use

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

Design flow of proposed system: 110 GPD x 3 Bedrooms = 330 GPD

Total design flow of facility: 330 GPD

8. Enclose a letter of request for variances which makes reference to the specific provisions of Title 5 and 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 the regulations.

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


- Application Fees paid to the Town of Bourne.
- Letter of request (see samples)
- Six sets of complete plans and specifications. One with original stamp of design engineer.
- Nitrogen Loading Calculation Sheet(s)
- 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 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 is 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 Engineering, Inc Date 4/18/2022
AGENT FOR OWNER

Print Name Christina Winterfeldt

Signature of Preparer  Bracken Engineering, Inc Date 4/18/2022

Print Name Zachary L. Basinski, PE, CFM of Bracken Engineering, Inc.

For Office Use Only

Completed Application Received: _____

Reviewed By: _____

Hearing Date: _____

Permit #: _____

Circle all that apply:

Approved

Continued

Disapproved

Other

Notes: _____

No. _____

FEE \$250.00

COMMONWEALTH OF MASSACHUSETTS

Board of Health, Bourne, MA.

APPLICATION FOR DISPOSAL SYSTEM CONSTRUCTION PERMIT

Application for a Permit to Construct () Repair () Upgrade () Abandon () Complete System Individual Components

Table with 2 columns: Applicant/Installer info and Owner/Address info. Includes fields for Location, Map/Parcel#, Lot#, Installer's Name, Address, Telephone#, Owner's Name, Address, Telephone#.

Type of Building Single-family dwelling Lot Size 3,235+/- sq. ft. Dwelling - No. of Bedrooms 3 Garbage grinder () Other - Type of Building No. of persons Showers (), Cafeteria () Design Flow (min. required) 110 gpd Calculated design flow 330 GPD Design flow provided 374 gpd Plan: Date February 15, 2022 Number of sheets 2 Revision Date April 8, 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 June 11, 2021

DESCRIPTION OF REPAIRS OR ALTERATIONS Installation of a 1,500 gallon MicroFast 0.5 unit, 1,000 gallon pump chamber and GeoFlow Irrigation disposal field.

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 _____

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.

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 (NO₃-N) Use the information from your PLAN OF RECORD to provide the following:

4 Kennebec Avenue (Existing Conditions)

Number of Bedrooms (Title 5 Definition)	=	3	Bedrooms
Lot Size (in square feet of upland areas)	=	3,235	sq.ft. Upland
Impervious Surfaces;**roof area	=	1,148	sq.ft.
**Paved Area	=	-	sq.ft.
Natural Area = lot area minus all impervious surfaces	=	2,087	sq.ft.
Lawn Area in sq. ft.	=	2,087	sq.ft.

TITLE 5 FLOW = 110 GAL./ DAY PER BEDROOM

WASTEWATER FLOWS (NITROGEN LOAD & WATER LOAD)

Nitrogen from Title 5 design = 14,572 mg NO₃-N / day / bedroom: or 7911 mg NO₃-N / day/ bedroom with IA Treatment

Water from Title 5 design = 416.3 H₂O / day / bedroom

1a) Number of bedrooms = 3 x 14572 = 43716.00 mg. NO₃-N / day

1b) Number of bedrooms = 3 x 416 = 1248.00 L H₂O / day

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

Actual Water load = 173.5 L H₂O / day / bedroom

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

2a) Number of bedrooms = 3 x 6071.5 = 18214.50 mg. NO₃-N / day

2b) Number of bedrooms = 3 x 173.5 = 520.50 L H₂O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO₃-N load number sq. ft. of roof surface X 0.19395 mg NO₃-N / sq. ft.

H₂O load number sq. ft. of roof surface X 0.2586 L / sq. ft.

3a) Roof surface = 1148 sq. ft. X 0.19395 = 222.65 mg NO₃-N

3b) Roof surface = 1148 sq. ft. X 0.2586 = 296.87 L H₂O / day

NO₃-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.

H₂O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO₃-N = 0 sq. ft. paved surface X 0.388 mg / sq. ft. 0.00 mg NO₃-N

4b) H₂O = 0 sq. ft. paved surface X 0.2586 L / sq. ft. 0.00 L H₂O

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

$$5) \text{ sq. ft. of lawn} = 2087 \times 0.933 = 1947.17 \text{ mg}$$

NATURAL AREA WATER LOADING

$$\text{Natural area} = \text{lot size} - \text{impervious surfaces} = 2087 \text{ sq. ft.}$$

$$6) \text{ Natural area} = 2087 \times \text{water recharge factor} = 283.41 \text{ L} \\ (0.1358 \text{ L / sq. ft. for Bourne})$$

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO₃N load

1a	(+)	3a	(+)	4a	(+)	5	
43716		222.65		0.00		1947.17	45885.83 mg NO ₃ -N / day

7b)

1b	(+)	3b	(+)	4b	(+)	6	
1248		296.87		0.00		283.41	1828.29 L H ₂ O / day

$$7c) \text{ DIVIDE 7a by 7b} = \underline{25.1} \text{ ppm NO}_3\text{-N}^{*****}$$

Actual Nitrogen & Water Loading

8a) ADD the above NO₃N load:

2a	(+)	3a	(+)	4a	(+)	5	
18214.5		222.65		0.00		1947.17	<u>20384.33</u> mg NO ₃ -N / day

8b) ADD the above water (H₂O) load:

2b	(+)	3b	(+)	4b	(+)	6	
520.5		296.87		0.00		283.415	<u>1100.79</u> L H ₂ O / day

$$8c) \text{ DIVIDE 8a by 8b} = \underline{18.5} \text{ ppm NO}_3\text{-N}^{*****}$$

$$\text{FINAL CALCULATION ADD 7c \& 8c (ppm)} = \underline{43.6} \text{ divide by 2} = \underline{21.8} \text{ ppm NO}_3\text{-N}$$

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*****

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 (NO₃-N) Use the information from your PLAN OF RECORD to provide the following:

4 Kennebec Avenue (Proposed Conditions)

Number of Bedrooms (Title 5 Definition) =					3	Bedrooms	
Lot Size (in square feet of upland areas)	=				3,235	sq.ft.	
Impervious Surfaces;**roof area=		983	sq.ft.	**Paved Area	=	-	sq.ft.
Natural Area = lot area minus all impervious surfaces	=					2,252	sq.ft.
Lawn Area in sq. ft.	=					1,977	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 NO₃-N / day / bedroom

Water from Title 5 design = 416.3 H₂O / day / bedroom

1a) Number of bedrooms = 3 x 14572 = 21858.00 mg. NO₃-N / day

1b) Number of bedrooms = 3 x 416 = 1248.00 L H₂O / day

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

Actual Water load = 173.5 L H₂O / day / bedroom

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

2a) Number of bedrooms = 3 x 6071.5 = 9107.25 mg. NO₃-N / day

2b) Number of bedrooms = 3 x 173.5 = 520.50 L H₂O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO₃-N load number sq. ft. of roof surface X 0.19395 mg NO₃-N / sq. ft.

H₂O load number sq. ft. of roof surface X 0.2586 L / sq. ft.

3a) Roof surface = 983 sq. ft. X 0.19395 = 190.65 mg NO₃-N

3b) Roof surface = 983 sq. ft. X 0.2586 = 254.20 L H₂O / day

NO₃-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.

H₂O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO₃-N = 0 sq. ft. paved surface X 0.388 mg / sq. ft. = 0.00 mg NO₃-N

4b) H₂O = 0 sq. ft. paved surface X 0.2586 L / sq. ft. = 0.00 L H₂O

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

$$5) \text{ sq. ft. of lawn} = 1977 \times 0.933 = 1844.54 \text{ mg}$$

NATURAL AREA WATER LOADING

$$\text{Natural area} = \text{lot size} - \text{impervious surfaces} = 2252 \text{ sq. ft.}$$

$$6) \text{ Natural area} = 2252 \times \text{water recharge factor} = 305.82 \text{ L} \\ (\text{0.1358 L / sq. ft. for Bourne})$$

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO₃N load

1a	(+)	3a	(+)	4a	(+)	5	
21858		190.65		0.00		1844.54	23893.19 mg NO ₃ -N / day

7b)

1b	(+)	3b	(+)	4b	(+)	6	
1248		254.20		0.00		305.82	1808.03 L H ₂ O / day

7c) **DIVIDE 7a by 7b** = 13.2 ppm NO₃-N*****

Actual Nitrogen & Water Loading

8a) ADD the above NO₃N load:

2a	(+)	3a	(+)	4a	(+)	5	
9107.25		190.65		0.00		1844.54	<u>11142.44</u> mg NO ₃ -N / day

8b) ADD the above water (H₂O) load:

2b	(+)	3b	(+)	4b	(+)	6	
520.5		254.20		0.00		305.822	<u>1080.53</u> L H ₂ O / day

8c) **DIVIDE 8a by 8b** = 10.3 ppm NO₃-N*****

FINAL CALCULATION ADD 7c & 8c (ppm) = 23.5 divide by 2 = **11.8** ppm NO₃-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*****

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:

4 Kennebec Avenue, Bourne, MA

TITLE REFERENCE FOR PROPERTY SERVED BY ALTERNATIVE SYSTEM

Deed recorded with the **Barnstable** Registry of Deeds in **Book 33346, Page 318**

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

Brennan Family Trust, Faith V. Easter, Trustee

OWNER(S) MAILING ADDRESS: 161 Worcester Road – Suite 501, Framingham, MA 01701

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:	<i>MicroFAST[®]</i>
Manufacturer Name:	Bio-Microbics, Inc.
Model number(s):	MicroFAST 0.5 Unit

2. Approval/Certification. On 6/16/2006, modified 1/23/2008, revised 11/5/2012, 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 W072367.

- Approved for remedial use under 310 CMR 15.284

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: Geoflow Subsurface Drip Wastewater Disposal System

Manufacturer Name: Geoflow, Inc.

4. Approval/Certification. On 11/08/2015 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 W032585.

- Approved for remedial use under 310 CMR 15.284

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

DRAFT



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

APPROVAL FOR REMEDIAL USE

Pursuant to Title 5, 310 CMR 15.000

Name and Address of Applicant:

J & R Sales and Service
44 Commercial Street
Raynham, MA 02767

Trade name of technology and models:

Geoflow Subsurface Drip Wastewater Disposal System – Geoflow WASTEFLOW Classic WF16-4-24, WF16-4-12, WF – Special Order and Geoflow WASTEFLOW PC WFPC16-4-24, WFPC16-4-12, WFPC16-4-6, WFPC16-2-24, WFPC16-2-12, WFPC16-2-6 and WFPC-Special Order Subsurface Disposal System (hereinafter called the “System”). A schematic drawing of a typical System, Design Manual and inspection checklist are available from the manufacturer.

Transmittal Number: W032585
Date of Issuance: June 22, 2011, revised March 20, 2015
Modified November 8, 2018 (changed ownership)

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection hereby issues this Approval for Remedial Use to: J&R Sales and Service, 44 Commercial Street, Raynham, MA 02767 (hereinafter “the Company”), approving the System described herein for remedial use in the Commonwealth of Massachusetts. Sale and use of the System are conditioned on compliance by the Company and the System owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Approval constitutes a violation of 310 CMR 15.000.

/signed/

Marybeth Chubb, Section Chief
Bureau of Water Resources
Wastewater Management Program

November 8, 2018
Date

I. Purpose

1. The purpose of this Approval is to allow use of the System in Massachusetts to repair subsurface sewage disposal systems, on a Remedial Use basis.
2. With the necessary permits and approvals required by 310 CMR 15.000, this Approval for Remedial Use authorizes the use and installation of the System in Massachusetts.
3. The System may only be installed on facilities that meet the criteria of 310 CMR 15.284(2). The System is used to dispose of wastewater from an alternative system approved in accordance with 310 CMR 15.280 through 15.289 with effluent discharge concentrations that meet or exceed secondary treatment standards of 30 mg/L biochemical oxygen demand (BOD5) and 30 mg/L total suspended solids (TSS).
4. This Approval for Remedial Use authorizes the use of the System where the local approving authority finds that the System is for upgrade of a failed, failing or nonconforming system and the design flow for the facility is less than 10,000 gallons per day (GPD).

II. Design and Construction Standards Standards

1. The System, a subsurface drip distribution technology, is equivalent to a pressure distribution system designed in accordance with the Department's Pressure Distribution Guidance. In the event of conflict between the terms and conditions of this System's technology approval and Title 5, this approval shall control.
2. The System is a pressure distributed subsurface wastewater drip dispersal (disposal) system that replaces a soil absorption system (SAS) designed in accordance with 310 CMR 15.000. The System is designed to distribute effluent from an innovative treatment system and discharge it at a minimum depth of 6 inches below finished grade; it includes a pump, control panel, a filter module/hydraulic unit and drip dispersal zone(s). The dispersal zone includes small diameter flexible polyethylene tubing turbulent flow emitters regularly spaced inside the line. The System can be designed with either Classic turbulent flow emitters or with pressure compensating emitters typically located at one or two foot spacing within the tubing. The tubing is extruded with an inner lining of an anti-microbial agent to prevent bacterial growth. Dispersal field dosing is timed and controlled electronically to provide pre-programmed volumes of effluent for discharge to each dispersal zone. The System includes a return line that allows periodic flushing of the dispersal tubing. All drip zone supply and return pipes that are maintained filled with effluent after a pump cycle shall be buried below the frost line or properly insulated. All drip tubing and shallow manifolds shall be designed to drain into the soil or back to the pump chamber upon completion of the pump cycle. Each zone shall have air release valves at the high points of manifolds and check valves on each return manifold in multi-zone systems. The system shall be equipped with a totalizing flow meter.
3. The System may be installed in the A, B or C soil horizon or in fill material meeting the specifications at 310 CMR 15.255(3) at a minimum depth of 6 inches below the finished grade.
4. All access ports and manhole covers shall be installed and maintained at grade to allow for maintenance of the System.

5. The control panel including alarms and controls shall be mounted in a location always accessible to the System operator.
6. The System may be installed in soils with a percolation rate of up to 90 minutes per inch (MPI). The System shall not be installed in Class IV soils as defined in 310 CMR 15.243.
7. Effluent loading rates shall be as specified in 310 CMR 15.242(1)(a) and (b) with the exception of Class IV soils.
8. The System shall be designed and constructed with drip tubing with a spacing of 24 inches unless obstructions are encountered or in cases where more than the required tubing is provided and equally distributed within the approved appropriately sized subsurface disposal area in which case a minimum separation of 12 inches is allowed. As much as possible the System shall be designed to provide equal distribution across the designated disposal area.
9. The System does not require a five foot over dig as indicated at 310 CMR 15.255(5).
10. The System includes the following:
 - a. Pumps capable of providing pressure of 10-45 psi throughout the dispersal zone(s). Each drip dispersal zone shall be dosed a minimum of six times per day, or as recommended by the Company. Duplex pumping shall be provided for facilities with design flows of 2000 gpd or greater. The pump chamber, combined with available storage in the pretreatment units, shall provide at least one-day storage as required by 310 CMR 15.231.
 - b. Timed dosing for the drip system with a timer controller capable of operating the system during peak flow events without high-level alarms.
 - c. A self cleaning filter capable of screening particles larger than 100 microns prior to discharge of the effluent to the drip tubing. Filter(s) backwash shall be conveyed back to the pump tank, a separate settling tank or to the septic tank.
 - d. Air vents in a zone shall be placed at a higher elevation than the drip tubing in that zone but below the ground surface. Air vents shall be accessible from finished grade and insulated to prevent freezing.
 - e. Drip tubing lines installed as level as possible on contour and a minimum of 6 inches below finished grade. Drip line spacing is typically 24 inches with drip tubing emitters spaced 24 inches on center. More than the minimum length of tubing may be utilized within a properly sized soil absorption system. When the drip lines spacing is greater than 24 inches by 24 inches, the size of the dispersal field shall be increased to provide equal distribution with adequate tubing separation. All drip line flushwater shall be conveyed back to the pump tank, a separate settling tank or to septic tank.
 - f. The effective effluent dispersal area is calculated using the total area of the drip tubing system including a one-foot addition on each side or two square feet per foot of drip tube when tubing is spaced two feet apart. No sidewall credit shall be given for this System.
 - g. The dispersal area shall not be installed under a paved surface, or in areas of routine traffic, parking or storage of heavy equipment. In addition no planting or soil excavation shall be done in or within 5 feet of the drip disposal area after its installation. The system

may be designed to allow for installation of drip tubing up to five feet from a building cellar wall.

- h. No change in existing surface slope over the dispersal field is required to comply with 310 CMR 15.240(10).
11. All System control units, valve boxes, drip dispersal lines, conveyance lines and other System appurtenances shall be designed and installed to prevent freezing per the Company's recommendations.
12. The System designer shall provide plans and specifications prepared in accordance with 310 CMR 15.220 for all proposed System installations to the approving authority with required standard details and installation instructions.
13. Drip tubing may be installed with a vibratory plow, a static plow, a narrow trencher (<6" width), by hand trenching, or by scarifying the surface and bedding the drip tubing in clean sand meeting the requirements for fill material in Title 5 at 310 CMR 15.255(3) with cover consisting of sand and topsoil meeting the 6 inch minimum depth requirement. Vegetative cover must be replaced for installations where it is removed or buried during installation.
14. Drip tubing shall not be installed when soils are frozen or saturated.
15. Prior to System start up, a clean water test of the System shall be performed in the presence of the Company's representative and the approving authority to check for leaks and to ascertain and verify system design flush and dose rates.
16. System unit malfunction and high water alarms shall each be connected to an independent power source from the operating pump(s) run from the main power source of the facility.
17. For Systems with a design flow of 2,000 gpd or greater, the System shall be equipped to provide a flow meter and automatic remote telemetric notification to the operation and maintenance (O&M) provider.
18. Installation of inspection ports is not required for this System.

III. Allowable Soil Absorption System Design

1. Any reduction in System design sizing or setbacks shall be based on the MassDEP approved reduction allowed for the alternative treatment system that precedes the System or by variance or local upgrade approval in accordance with Title 5.

IV. General Conditions

1. All provisions of 310 CMR 15.000 are applicable to the use of this System, the System owner and the Company, except those that specifically have been varied by the terms of this Approval.
2. Any required operation and maintenance, monitoring and testing shall be performed in accordance with a Department approved 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 and 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 sewer system. No System shall be installed, upgraded or expanded, if it is feasible to connect the facility to a sanitary sewer, unless as allowed by 310 CMR 15.004. When a sanitary sewer connection becomes feasible, the facility served by the System shall be connected to the sewer, within 60 days of such feasibility, and the System shall be abandoned in compliance with 310 CMR 15.354, unless a later time is allowed, in writing, by the approving authority.
6. Design, installation and operation shall be in strict conformance with the Company's DEP approved plans and specifications, 310 CMR 15.000 and this Approval.

V. Conditions Applicable to the System Owner

1. The System is approved for the treatment and disposal of sanitary sewage only. Any wastes that are non-sanitary sewage generated or used at the facility served by the System shall not be introduced into the System and shall be lawfully disposed.
2. Effluent discharge concentrations from the treatment unit that discharges to the System shall meet or exceed secondary treatment standards of 30 mg/l BOD5 and 30 mg/l TSS. The effluent pH shall not be less than 6.0 or more than 9.0 unless approved by the Department.
3. Any effluent discharge samples shall be taken at a flowing discharge point, i.e. distribution box, pump chamber or other Department approved location downstream of the treatment unit. The System designer, subject to written approval by the Department, shall determine sampling locations.
4. The System owner shall have the Company or its designee conduct a design review for any proposed non-residential System or any residential System with a design flow 2,000 GPD or greater to ensure that the proposed use of the System is consistent with the unit's capabilities.
5. Operation and Maintenance Agreement:
 - A. Throughout its life, the owner shall operate and maintain the System in accordance with the Company and designer's operation and maintenance requirements and this Approval. To ensure proper operation and maintenance (O&M), the owner shall enter into an O&M agreement. No O&M agreement shall be for less than one year.
 - B. No System shall be used until an O&M agreement is submitted to the approving authority which:
 - i. Provides for the contracting of a person or firm trained by the Company as provided in Section VI (5) and competent in providing services consistent with the System's

- specifications, with the operation and maintenance requirements specified by the Company and the designer, and with any specified by the Department;
- ii. Contains procedures for notification to the Department and the local board of health within five days of a System failure or alarm event and for corrective measures to be taken immediately;
 - iii. Provides the name of an operator, which must be a Massachusetts certified operator if one is required by 257 CMR 2.00, that will operate and monitor the System;
 - iv. For residential Systems installed with a reduced SAS the operator must inspect, field test and maintain the System at least every six months and anytime there is an alarm event. For residential Systems with standard sized SAS inspection and field testing shall be conducted once per year. For all other Systems the operator must inspect, field test and maintain the System at least every three months and anytime there is an alarm event. The System owner shall notify the Department and the local approving authority in writing within seven days of any cancellation, expiration or any other change in the terms and/or conditions of their O&M agreement.
6. Prior to transferring 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 this 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 thereof a copy of this Approval for the System.
 7. By January 31st of each year for the previous year, the System owner shall submit to the local approving authority all data collected in accordance with item 5, above, including all Department Title 5 IA O&M checklists and System technology checklists completed during the previous calendar year by the System operator for each inspection performed.
 8. After final inspection of the System by the Approving Authority but prior to the issuance of a Certificate of Compliance for the System, the System owner shall record and/or register in the appropriate Registry of Deeds and/or Land Registration Office, a Notice disclosing both the existence of the alternative septic system subject to this Approval on the property and the Department's approval of the System. If the property subject to the Notice is unregistered land, the Notice shall be marginally referenced on the owner's deed to the property. Within 30 days of recording and/or registering the Notice, the System owner shall submit the following to the Department and the local approving authority: (i) a certified Registry copy of the Notice bearing the book and page/instrument number and/or document number; and (ii) if the property is unregistered land, a Registry copy of the owner's deed to the property, bearing the marginal reference.

VI. 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 Approval 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 Approval applicable to the Company shall be applicable to successors and assigns of the Company, unless the Department determines otherwise.

2. The Company shall develop and submit to the Department within 60 days of the effective date of this Approval: minimum installation requirements; an operating manual, including information on substances that should not be discharged to the System; and a recommended schedule for maintenance of the System essential to consistent successful performance of the installed Systems.
3. The Company shall make available, in print and electronic format, the referenced procedures and protocol in Sections V (5) and VI (3) to owners, operators, designers and installers of the System.
4. The Company shall institute and maintain a program of operator training and continuing education, as approved by the Department. The company shall update the list of qualified operators and make the list known to users of the technology.
5. The Company or its designee shall conduct a design review for any proposed non-residential System or any residential System with a design flow 2,000 GPD or greater to ensure that the proposed use of the System is consistent with the unit's capabilities.
6. The Company shall furnish the Department any information that the Department requests regarding the System within 21 days of the receipt of that request.
7. The Company shall include copies of this Approval and the procedures and protocol described in Sections V (5) and VI (3) for each System that is sold. Also, 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 Approval and the procedures and protocol described in Sections V (5) and VI (3).
8. The Company shall comply with 310 CMR 15.000 and all the Department policies and guidance that apply and as they may be amended from time to time.

VII. Reporting

1. All notices and documents required to be submitted to the Department by this Approval 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 Approval for cause, including, but not limited to, non-compliance with the terms of this Approval, non-payment of the annual compliance assurance fee, for obtaining the Approval 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 Approval, 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 Approval and/or the System against the owner, or operator of the System and/or the Company.



Department of Environmental Protection

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

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

RICHARD K. SULLIVAN JR.
Secretary

KENNETH L. KIMMELL
Commissioner

REVISION OF APPROVAL FOR REMEDIAL USE

Pursuant to Title 5, 310 CMR 15.00

Name and Address of Applicant:

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

Trade name of technology and models: MicroFAST® Treatment System Models *MicroFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5 and 9.0*; HighStrengthFAST® Treatment System Models *HighStrength FAST® 1.0, 1.5, 3.0, 4.5 and 9.0* and NitriFAST® Treatment System Models *NitriFAST® 0.5, 0.75, 1.0, 1.5, 3.0, 4.5 and 9.0* (hereinafter called the "System"). Schematic Drawings illustrating each System, a design and installation manual, an owner's manual, an operation and maintenance manual, and an inspection checklist are part of this Approval.

Transmittal Number: W 072367
Date of Issuance: June 16, 2006 (modified January 23, 2008)
Revision date: November 05, 2012

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental, Protection hereby issues this Approval for Remedial Use to: Bio-Microbics, Inc., 8450 Cole Parkway, Shawnee, KS 66227, (hereinafter "the Company"), approving the System described herein for Remedial 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, the Service Contractor, and the System Owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Approval constitutes a violation of 310 CMR 15.000.

David Ferris, Director
Wastewater Management Program,
Bureau of Resource Protection

November 05, 2012

Date

Technology Description

The System is a Secondary Treatment Unit (STU). The Systems, MicroFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5 and 9.0, and HighStrengthFAST® 1.0, 1.5, 3.0, 4.5 and 9.0, and, NitriFAST® 0.5, 0.75, 0.9, 1.5, 3.0, 4.5 and 9.0 units are installed in a tank or tanks having a primary settling zone and an aerobic biological zone. Solids settle in the primary settling zone that is quiescent. In the aerobic zone, the sewage is continually agitated and aerated. Bacteria in the sewage attach to the surface of a submerged plastic media; they reproduce by consuming the organic material in the sewage.

Conditions of Approval

The term “System” refers to the STU 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.

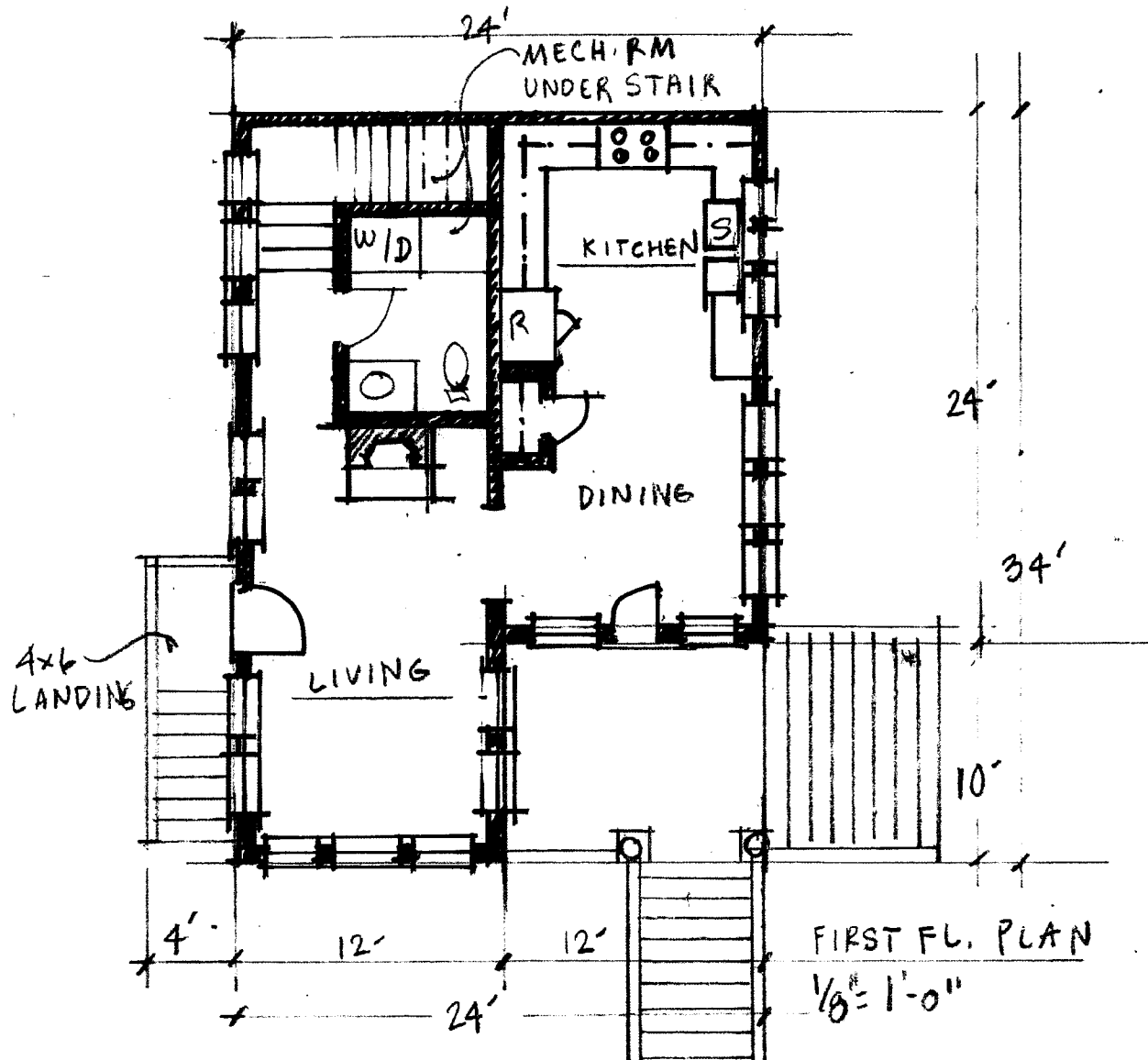
The term “Approval” refers to the technology-specific Special Conditions, the conditions applicable to all STU’s with Remedial Use Approval, the General Conditions of 310 CMR 15.287, and any Attachments.

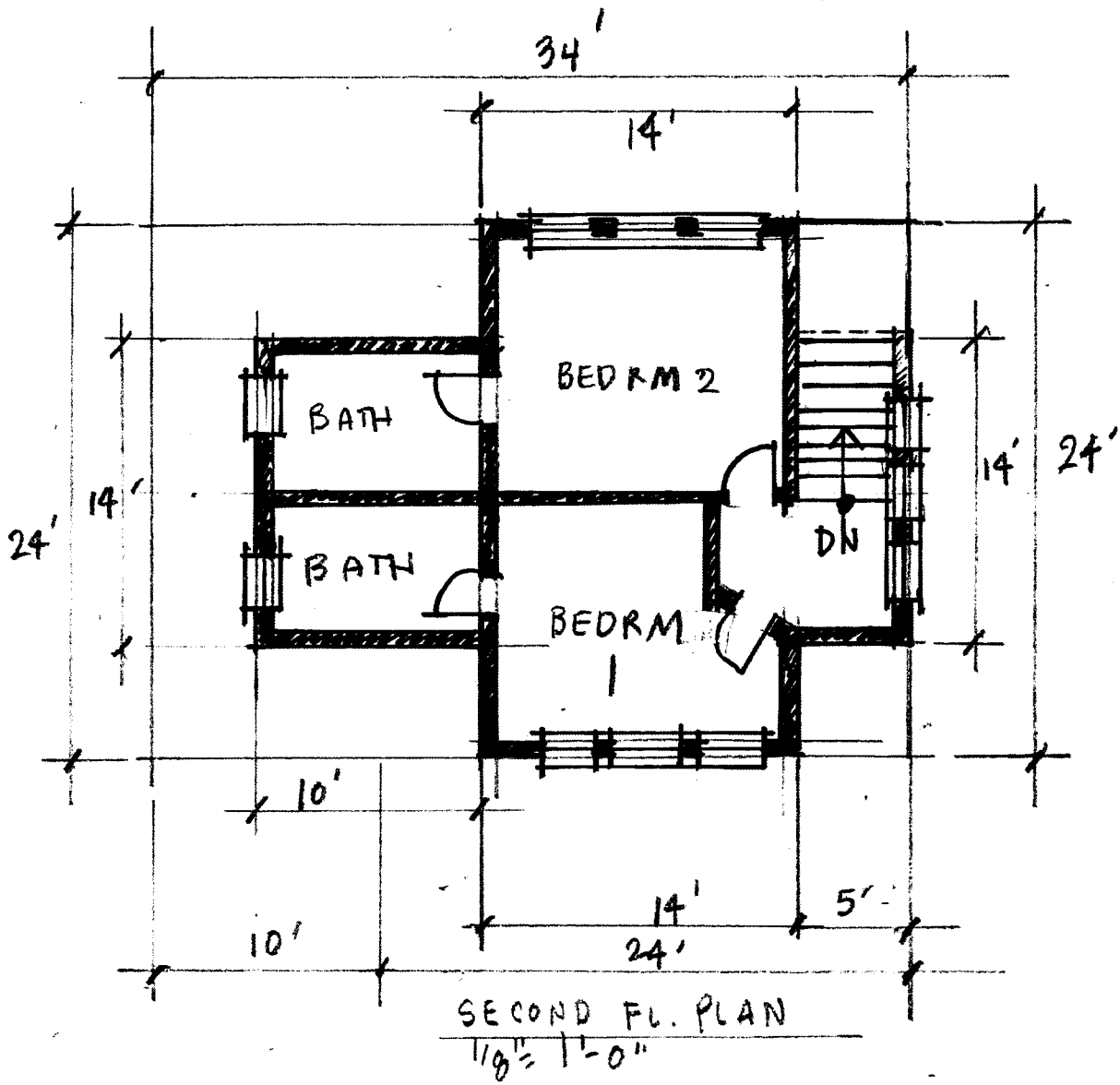
For Secondary Treatment Units that have been issued Remedial Use Approval for the upgrade or replacement of an existing failed or nonconforming system., the Department authorizes reductions in the effective leaching area (310 CMR 15.242), the depth to groundwater (310 CMR 15.212), and/or the depth of naturally occurring pervious material (310 CMR 15.240(1)) subject to the conditions that apply to all Secondary Treatment Units Approved for Remedial Use and subject to the Special Conditions applicable to the Technology.

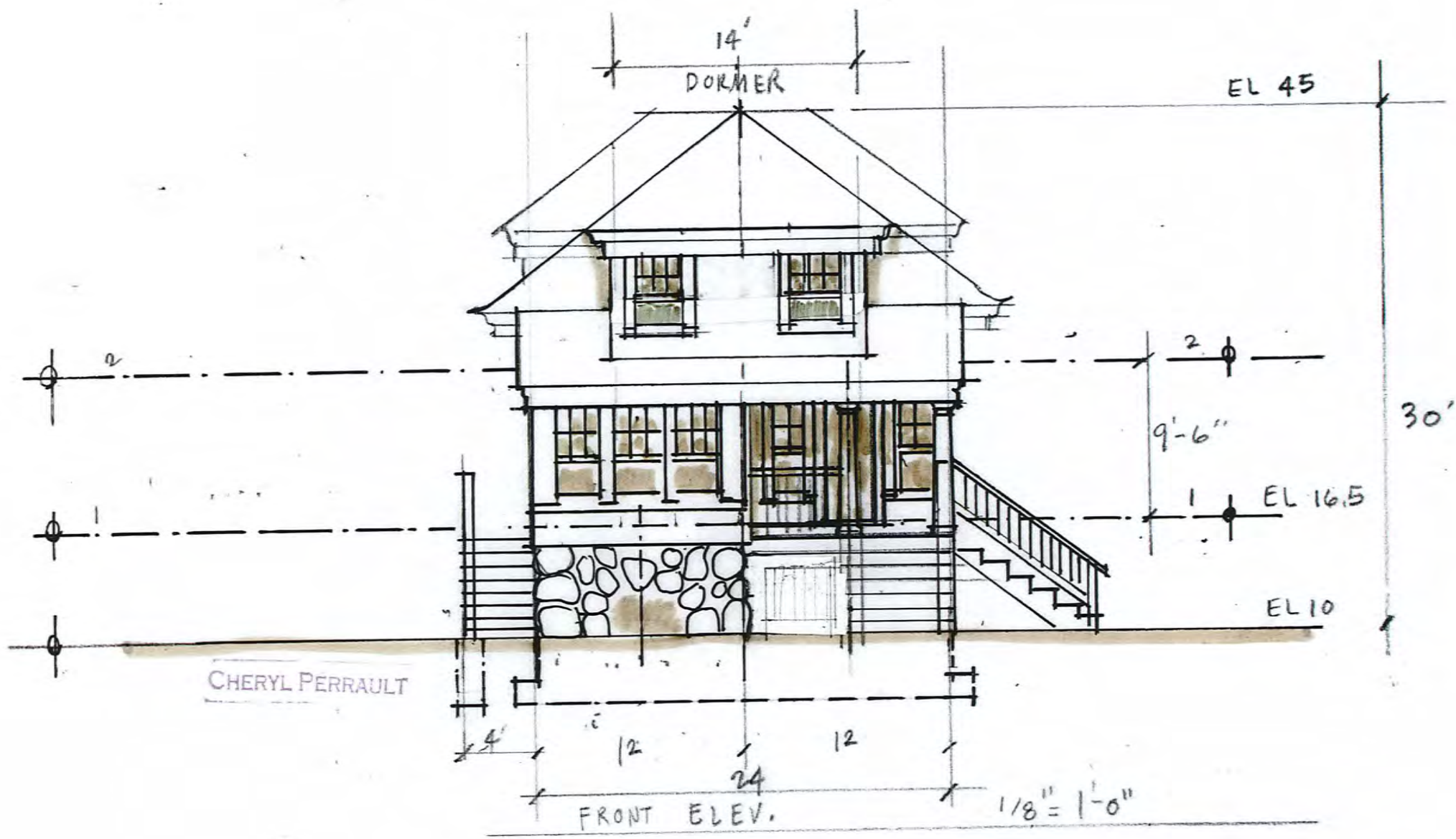
Special Conditions

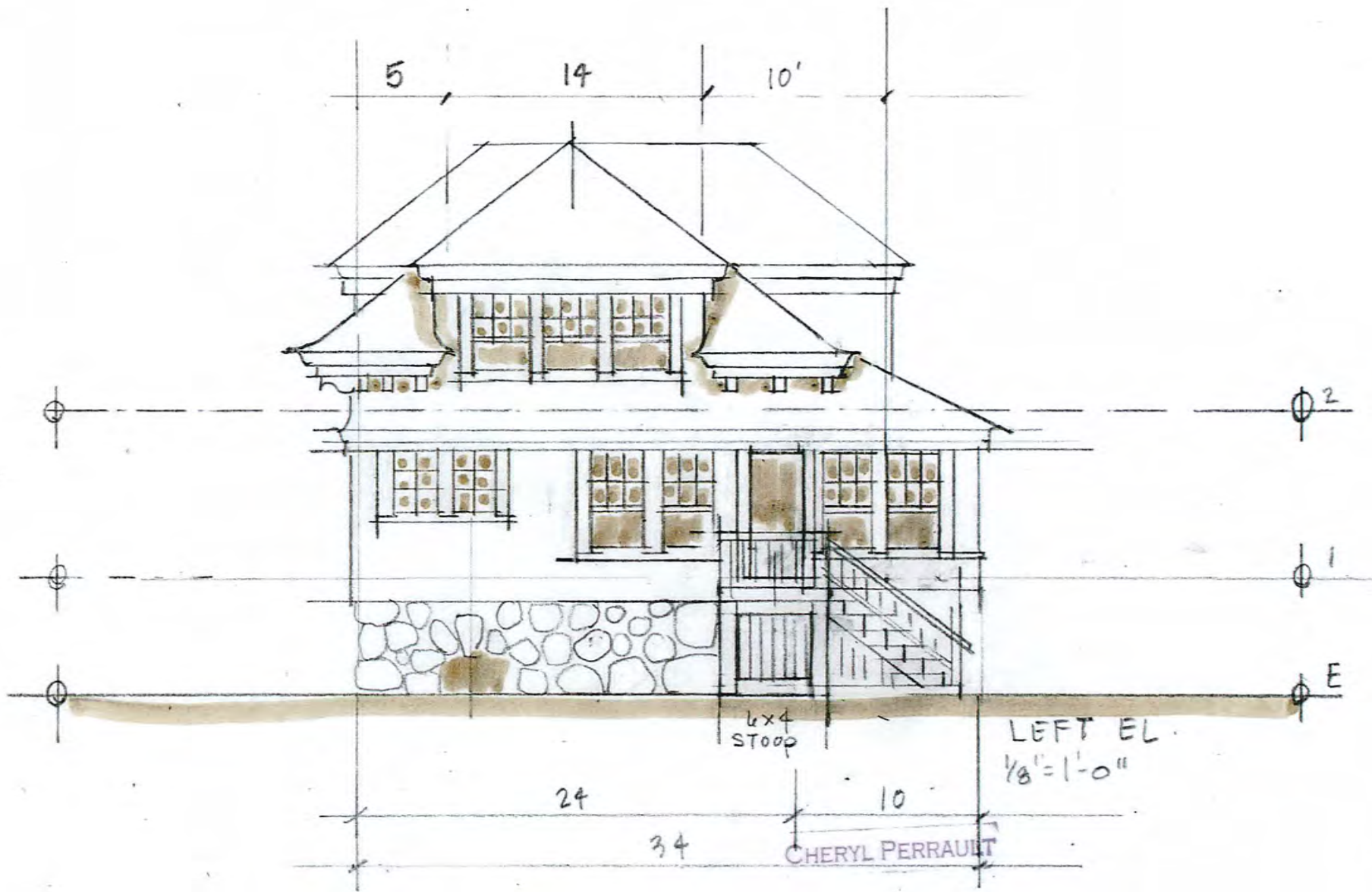
1. The System is Secondary Treatment Unit Approved for Remedial Use. In addition to the Special Conditions contained in this Approval, the System shall comply with all the “Standard Conditions for Secondary Treatment Units Approved for Remedial Use”, except where stated otherwise in these Special Conditions.
2. The System is approved for facilities where the local approving authority finds that:
 - a) there is no increase in the actual or proposed design flow;
 - b) the System is for the upgrade of a failed, failing or nonconforming system; and
 - c) a conventional system with a reserve area, designed in accordance with the standards of 310 CMR 15.100 through 15.255, cannot feasibly be built on-site.

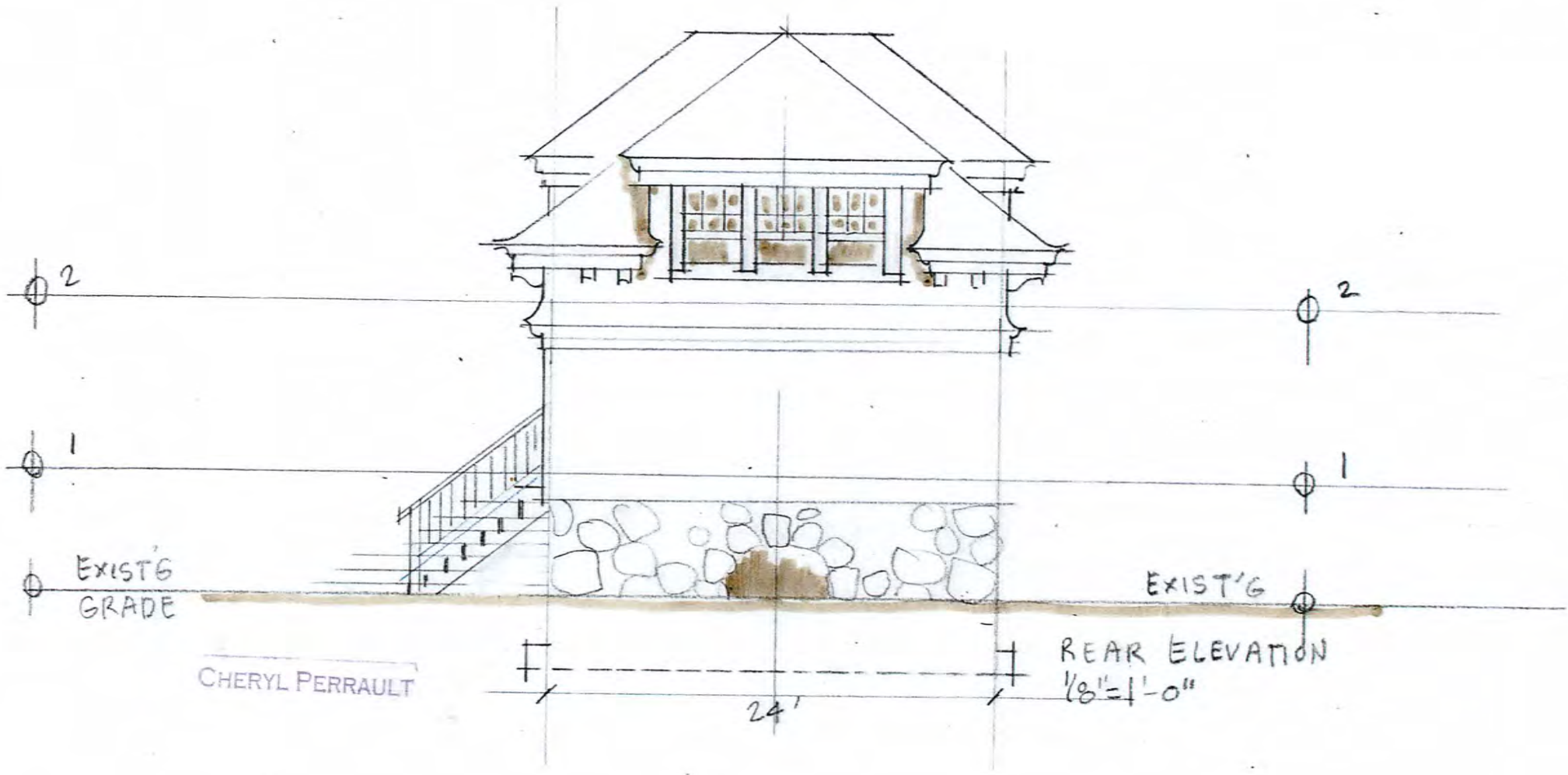
3. The MicroFAST® 0.5, 0.75 and 0.9, HighStrengthFAST® 1.0 and NitriFAST® 0.5, 0.75 and 0.9 are installed in the second compartment of a two-compartment tank with a total liquid capacity of at least 1,500 gallons constructed in accordance with 310 CMR 15.226.
4. The MicroFAST®, HighStrengthFAST® and NitriFAST® 1.5 are installed in the second compartment of a two compartment 3,000-gallon tank constructed in accordance with 310 CMR 15.226.
5. The MicroFAST®, HighStrengthFAST® and NitriFAST® 3.0, 4.5, and 9.0 units are installed in a separate tank constructed in accordance with 310 CMR 15.226. The units are 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).
6. Access shall be provided to all tanks in the primary settling and aerobic biological zones in accordance with 310 CMR 15.228 (2). The primary settling tank shall have at least three manholes with readily removable impermeable covers of durable material provided at grade. Two manholes, over the inlet and outlet of the primary settling tank, shall have a minimum opening of 20 inches. All access ports and manhole covers shall be installed and maintained at grade to allow for maintenance of the System.











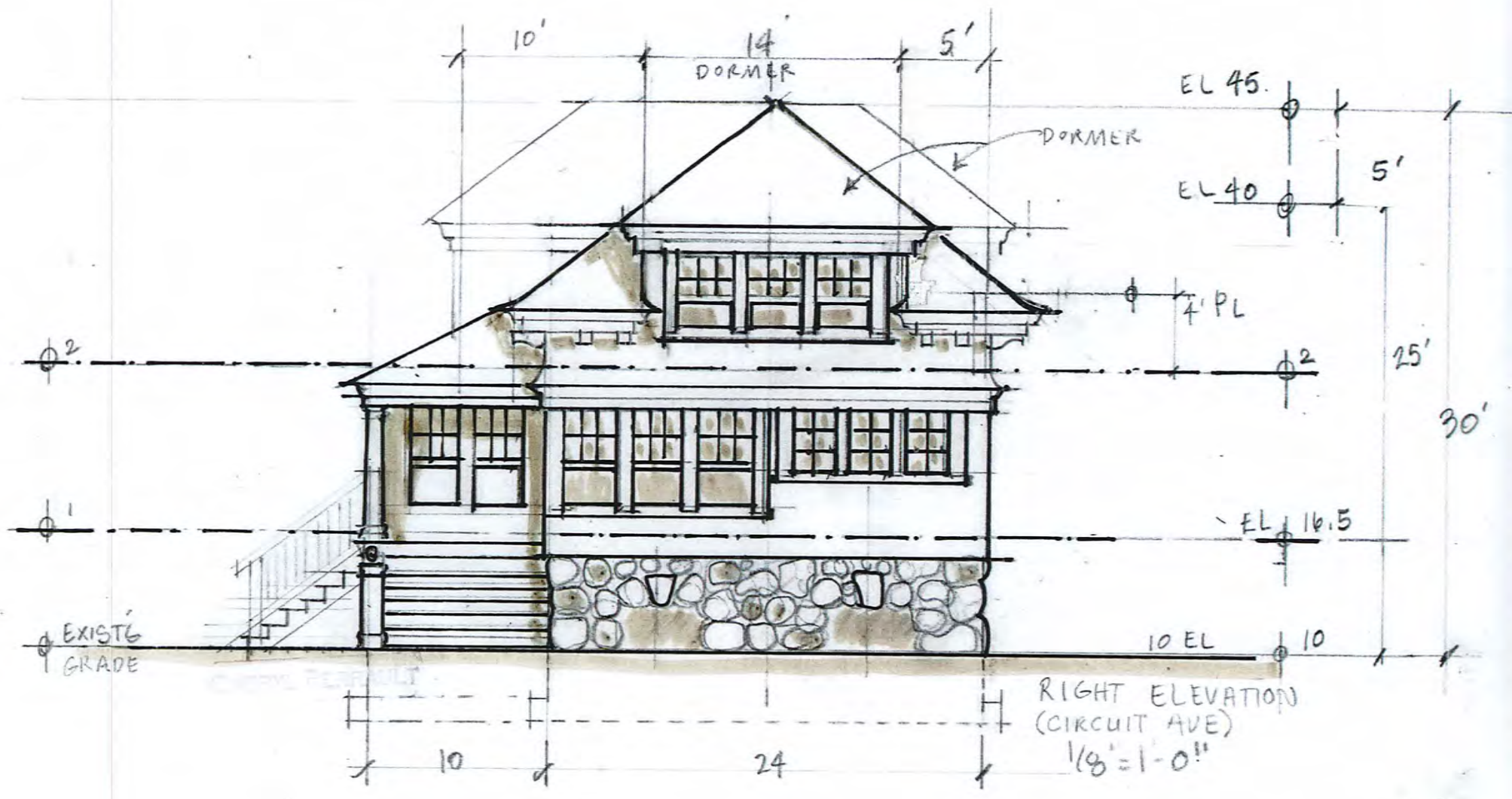
EXIST'G
GRADE

CHERYL PERRAULT

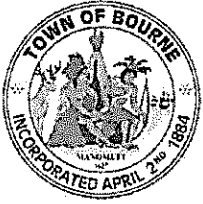
24'

REAR ELEVATION
1/8" = 1'-0"

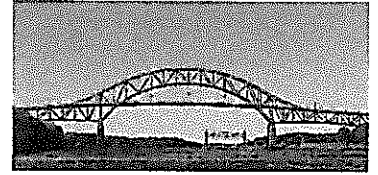
EXIST'G
GRADE



RIGHT ELEVATION
(CIRCUIT AVE)
 $1/8" = 1'-0"$



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

March 31, 2022

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

Re: Abutters List for Map 47.1 Parcel 45
Property address: 4 Kennebec Ave.

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 44 & 46.

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: 1 Abutters List
Database: LIVE
Filter: Key IN 10188,10190
Sort:

Report #24: Owner Listing Report
Fiscal Year 2023

Bourne MA

Key	Parcel ID	Owner	Location	LC/CI	Bk-Pol(Cert) /Dt	Mailing Street	Mailing City	ST	Zip Cd/County
10188	47.1-44-0	LUETH DWIGHT & SALLY LUETH & CHARLES LUETH	8 KENNEBEC AVE	N 1010	28522/304 11/21/2014	39 EMERSON ROAD	WELLESLEY	MA	02481
10190	47.1-46-0	MCPHERSON CAROLINE & GREGG TRS OF MCPHERSON FAMILY TRUST	531 CIRCUIT AVE	N 1010	30965/79 12/15/2017	12207 LAWLER STREET	LOS ANGELES	CA	90066

Total Records 2

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

April 20, 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 **The Brennan Family Trust c/o Christina Winterfeldt** has requested a hearing before the Bourne Board of Health for relief from the Bourne Board of Health Regulations for the installation of an upgraded Innovative/Alternative Septic System. The location of the property for which approval is sought is **4 Kennebec Avenue (Map 47.1, Parcel 45), Pocasset** where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on:

- **CMR 15.401(1)(a) – reduction in the required setback to existing abutting property lines.**

Septic Component	Setback Object	Proposed Setback Distance (ft)	Relief Requested (ft)
S.A.S.	#531 Circuit Ave	6±	4±
S.A.S.	Circuit Ave Layout	5±	5±
S.A.S.	Kennebec Ave Layout	5±	5±
Septic Tank (MicroFAST)	#531 Circuit Ave	6±	4±
Septic Tank (MicroFAST)	#8 Kennebec Ave	6±	4±
Pump Chamber	#8 Kennebec Ave	6±	4±

- **CMR 15.401(1)(b) – reduction in the required setback to existing cellar wall, crawlspace or slab foundation for #4 Kennebec Avenue**

Septic Component	Setback Object	Proposed Setback Distance (ft)	Relief Requested (ft)
Septic Tank (MicroFAST)	Crawlspace Wall	6±	4±
Pump Chamber	Crawlspace Wall	6±	4±

- **CMR 15.401(1)(f) – a 50'± reduction in setback for a 0'± setback to a Coastal Bank.**
- **A variance to local setback requirements is requested for a 150'± reduction in setback for a 0'± setback to a non-eroding Coastal Bank from a Soil Absorption System.**

This hearing is tentatively scheduled for Wednesday, May 11, 2022 at **5:00 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

7020 1810 0000 2123 9662

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage: \$.53
Certified Fee: \$ 3.75
Return Receipt Fee: \$ 3.05
Total Postage & Fees: \$ 7.33

Postage
\$ _____

Caroline & Gregg McPherson, TRS
McPherson Family Trust
12207 Lawler Street
Los Angeles, CA 90066
4 Kennebec Ave., Bourne - BOH



for Instructions

7020 1810 0000 2123 9655

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

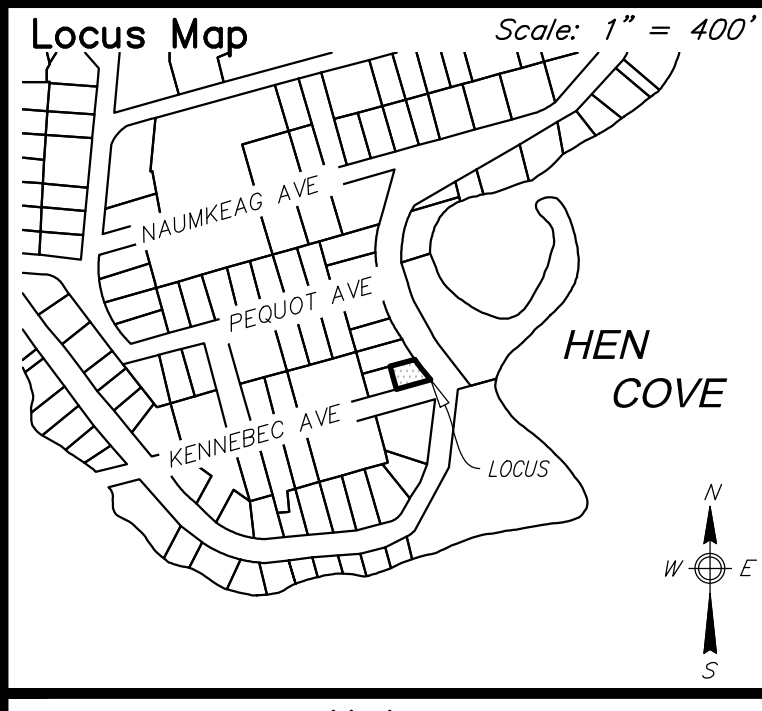
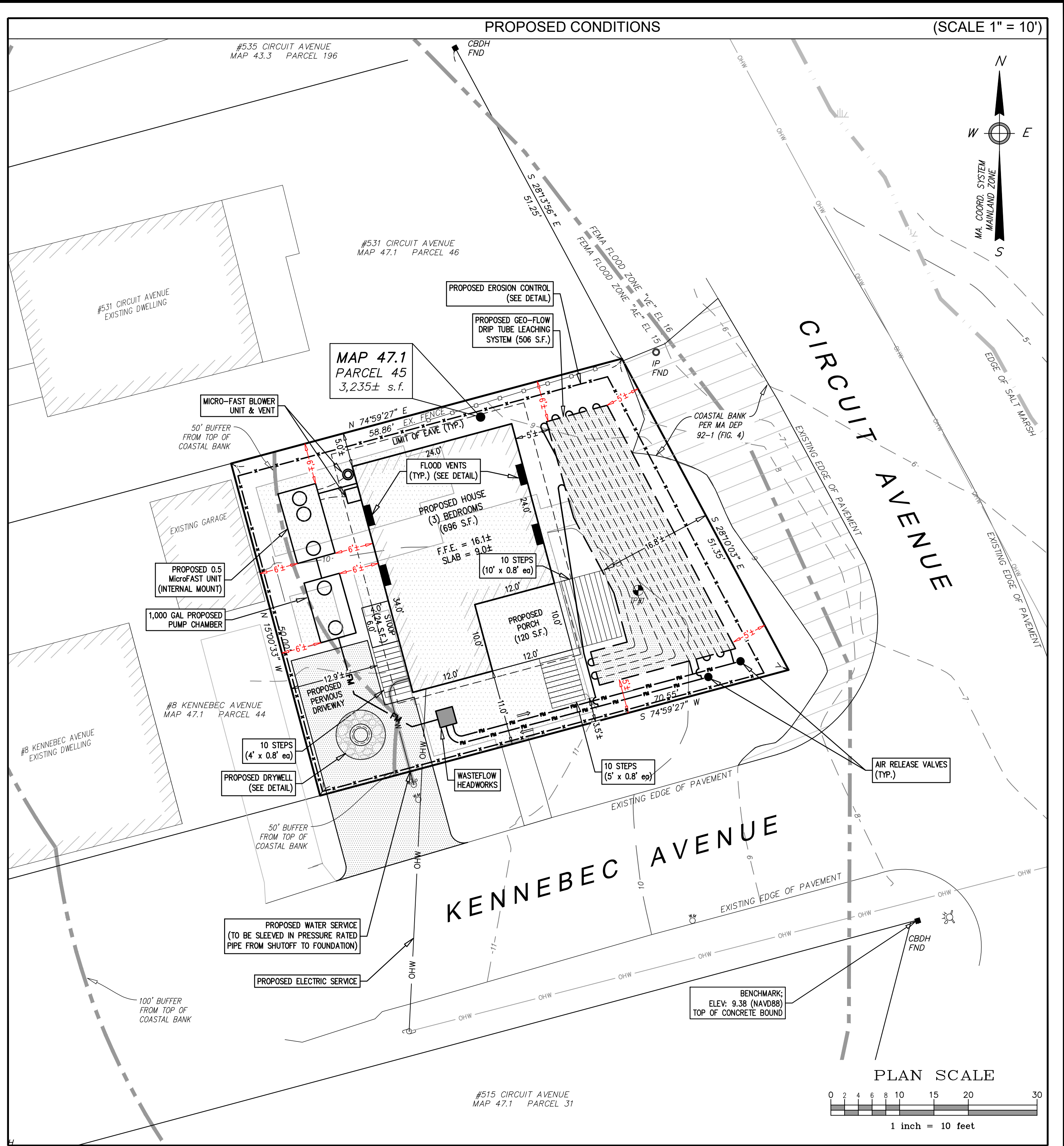
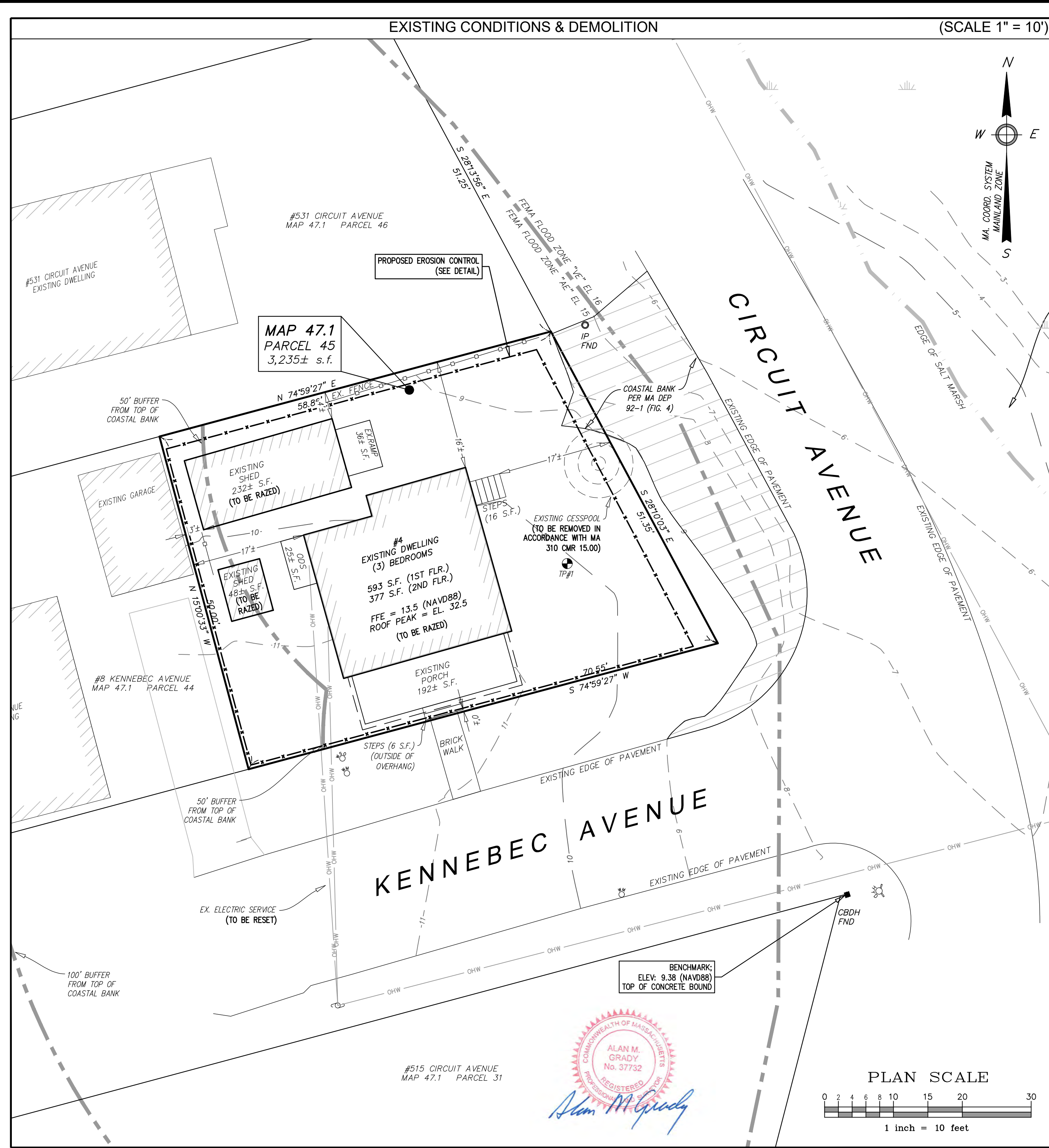
Postage: \$.53
Certified Fee: \$ 3.75
Return Receipt Fee: \$ 3.05
Total Postage & Fees: \$ 7.33

Postage
\$ _____

Dwight Lueth, Sally Lueth &
Charles Lueth
39 Emerson Road
Wellesley, MA 02481
4 Kennebec Ave., Bourne - BOH

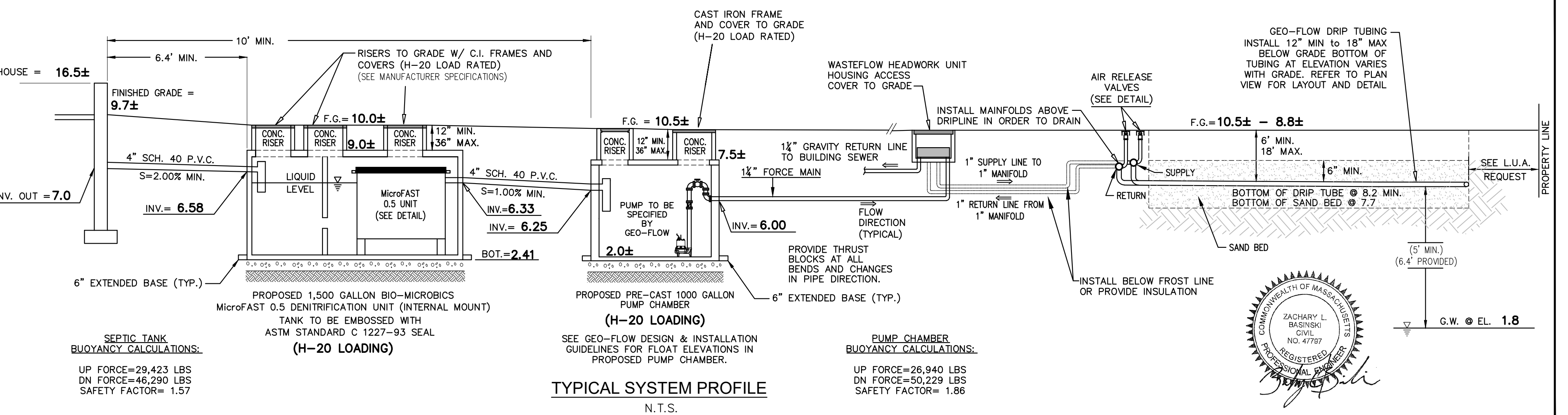


for Instructions



- Notes**
- BENCHMARK: ELEVATION = 9.38 (NAVDB8) 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: FAITH V. EASTER, TRUSTEE, BRENNAN FAMILY TRUST, 161 WORCESTER ROAD, SUITE 501, FRAMINGHAM, MA 01701.
 - APPLICANT: CHRISTINA WINTERFELDT, 4 OLD ORCHARD ROAD, SHERBORN, MA 01770.
 - DEED REFERENCE: Deed Bk: 33346 Pg: 318.
 - PLAN REFERENCE: Plan Bk: 117 Pg: 1 (LOT 304).
 - 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 A ZONE II WELLHEAD PROTECTION AREA.
 - LOCUS DOES NOT FALL WITHIN AN NHESP ESTIMATED HABITAT OF RARE WILDLIFE AND PRIORITY HABITAT OF RARE SPECIES.
 - LOCUS DOES FALL WITHIN A SPECIAL FLOOD HAZARD ZONE "AE" (EL. 15) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C-0492-J, dated 7/14/2014, (B.F.E. = 15.0, D.F.E. = 16.0).
 - CONTRACTOR TO REFER TO ALL MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS FOR INSTALLATION OF THE MICROFAST UNIT AND GEO-FLOW DRIP-TUBE SYSTEM.
- ** SEE ADDITIONAL NOTES ****
- PRE-EXISTING NON-CONFORMING (a)**
- | ZONE: | R-40 | REQUIRED EXISTING | PROPOSED |
|-------------------------------|---------------------|---------------------|---------------------|
| LOT AREA: | 40,000 s.f. | 3,235± S.F. | 3,235± S.F. |
| FRONT YARD: | 20' | 0.3± (STEPS) | 3.5± |
| SIDE YARD (NORTH): | 12' | 4.0± (SHED) | 5.0± |
| SIDE YARD (WEST): | 12' | 15.9± (HOUSE) | 2.7± (SHED) |
| | | 16.5± (HOUSE) | 12.9± |
| GROSS FLOOR AREA TO LOT AREA: | 25% (809 s.f. max.) | 38% (1,230± s.f.) | 38.4% (1,242± s.f.) |
| LOT COVERAGE: | 25% (809 s.f. max.) | 35.5% (1,162± s.f.) | 29.7% (962± s.f.) |
| BUILDING HEIGHT: | 25'(max) | 22.2'(b) | 29.8'(b)(c) |
- Notes:**
- SEE TABLE 245E FOR NON-CONFORMING LOTS IN BOURNE ZONING BY LAWS.
 - EX. BUILDING HEIGHT BASED ON AN AVG. EX. GRADE OF 10.3
 - INCREASE ALLOWABLE BY FIVE FEET FOR ROOF ELEMENTS HAVING A SLOPE OF 4° OR MORE PER FOOT.

- REFER TO THE REQUIRED OPERATION & MAINTENANCE PLAN, TO BE SUPPLIED BY THE MANUFACTURER, FOR REQUIRED MAINTENANCE PROCEDURES.
 - THE CONTRACTOR TO BE PLACED AROUND HYDRAULIC UNIT AND PIPING, AS REQUIRED.
 - ALL TANKS, INCLUDING SEPTIC TANKS, WASTEFLOW HEADWORK UNIT, AND PUMP CHAMBERS SHALL BE EITHER:
 - WATERTIGHT THROUGH MANUFACTURER'S SPECIFICATION AND WARRANTY; OR
 - MADE WATERTIGHT BY THE MANUFACTURER, EQUIPMENT SUPPLIER OR INSTALLER USING ASPHALT OR SYNTHETIC POLYMER SEALER SPECIFIED BY THE CONCRETE OR SYNTHETIC MATERIAL MANUFACTURER, AS SPECIFIED IN 310 CMR 15.22(1).
 - TANKS TO BE TESTED FOR WATER TIGHTNESS.
 - THE CONTRACTOR SHALL BE CERTIFIED BY GEFLOW.
 - MARK SYSTEM COMPONENTS WITH MAGNETIC TAPE.
 - ALL WORK WITHIN 10' OF BUILDING TO BE PERFORMED BY LICENSED PLUMBER.
 - SOIL CONDITIONS ENCOUNTERED DURING INSTALLATION MAY DICTATE THE USE OF A SAND BED UNDER THE PROPOSED DRIP TUBING. IF UNFAVORABLE CONDITIONS ARE FOUND CONTACT THE DESIGN ENGINEER.
- NOTES:**
- ALL SYSTEM COMPONENTS TO BE MARKED WITH MAGNETIC TAPE.
 - ALL SYSTEM COMPONENTS TO BE WITHIN 36" OF FINISHED GRADE UNLESS OTHERWISE NOTED.
 - ALL PLUMBING WITHIN 10 FEET OF THE FOUNDATION TO BE INSTALLED BY A LICENSED PLUMBER.



- ADDITIONAL NOTES**
- THE 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.
 - 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.
 - ALARM PANEL IS TO BE PLACED ON EAST SIDE OF PROPOSED HOUSE. CONTRACTOR TO COORDINATE FINAL LOCATION WITH OWNER AND MANUFACTURER.
 - CONTRACTOR TO COORDINATE FINAL PLACEMENT OF THE MICROFAST BLOWER UNIT WITH OWNER, ENGINEER & MANUFACTURER. IF PLACED BELOW GRADE IN DRIVEWAY, BLOWER IS TO BE INSTALLED IN A CONCRETE H2O LOAD RATED VAULT AND VENTED.
 - 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.
 - NO STRUCTURES PROPOSED ON ANY SLOPE > 25%.
 - CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM PANELS WITH THE HOMEOWNER & SYSTEM MANUFACTURER PRIOR TO INSTALLATION. ALARM PANELS MUST BE INSTALLED ABOVE THE BASE FLOOD ELEVATION (SEL. 15.4).
 - CONTRACTOR TO COORDINATE PLACEMENT OF ALL VENTS AND THE BLOWER UNIT WITH THE MANUFACTURER AND HOMEOWNER PRIOR TO INSTALLATION.
 - NO STRUCTURES OR VEHICULAR TRAFFIC SHALL BE ALLOWED OVER THE PROPOSED GEO-FLOW DRIP SOIL ABSORPTION SYSTEM.
 - CONTRACTOR SHALL RETAIN THE SERVICES OF A MA LICENSED SURVEYOR FOR THE PURPOSES OF CONSTRUCTION STAKEOUT FOR THE DURATION OF THE PROJECT.

Prepared By:

BRACKEN ENGINEERING, INC.

49 HERRING POND ROAD, BUZZARDS BAY, MA 02532. (tel) 508.833.0070 (fax) 508.833.2322.

19 OLD SOUTH ROAD, NANTUCKET, MA 02554. (tel) 508.325.0044 (fax) 508.325.2222. www.brackeneng.com

SUBSURFACE SEWAGE DISPOSAL PLAN IN BOURNE, MASSACHUSETTS

Prepared For:

BRENNAN FAMILY TRUST

#4 KENNEBEC AVENUE, MAP 47.1 PARCEL 45.

No.	Date	Revision Description	By
1	04/08/22	REVISED FOR B.O.H. & Z.B.A. SUBMISSION	RED

Date: FEBRUARY 15, 2022 Drawn: RED/BEI Checked: Sheet: ZLB/AMG 1 of 2

LOCAL UPGRADE APPROVALS REQUESTED

- 15.405(1)(c) - A REDUCTION IN THE REQUIRED SETBACK TO EXISTING ABUTTING PROPERTY LINES:

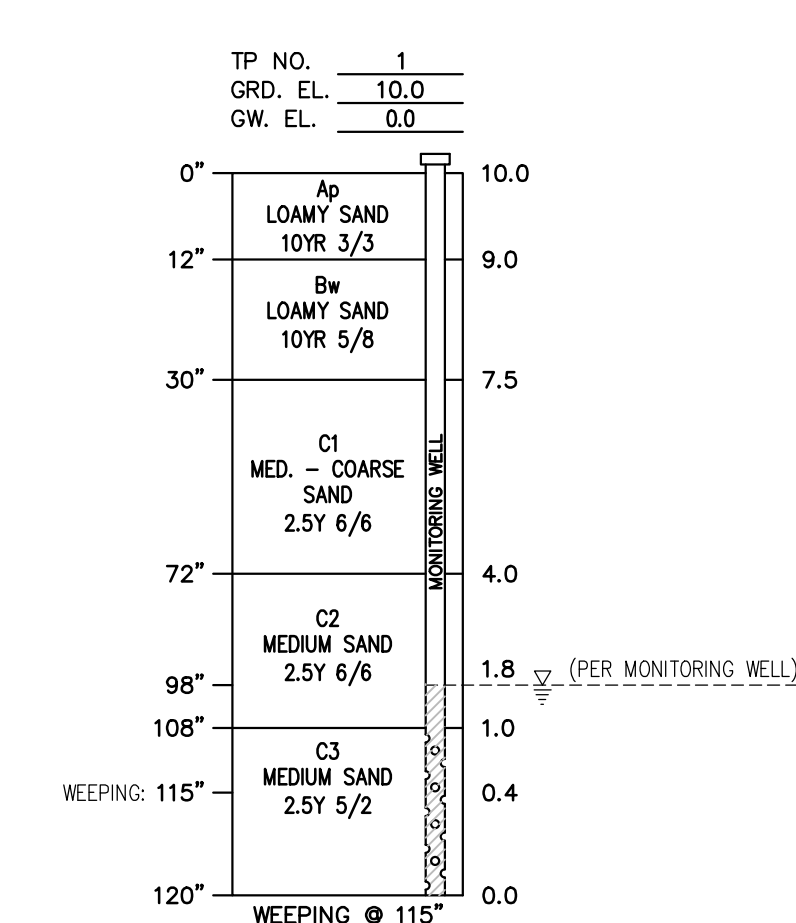
PROPERTY ADDRESS	VARIANCE REQUESTED	PROPOSED SETBACK
#531 CIRCUIT AVENUE	4'±	6'± (MicroFAST TANK)
#531 CIRCUIT AVENUE	4'±	6'± (SOIL ABSORPTION SYSTEM)
CIRCUIT AVENUE LAYOUT	5'±	5'± (SOIL ABSORPTION SYSTEM)
KENNEBEC AVENUE LAYOUT	5'±	5'± (SOIL ABSORPTION SYSTEM)
#8 KENNEBEC AVENUE	4'±	6'± (MicroFAST TANK)
#8 KENNEBEC AVENUE	4'±	6'± (PUMP CHAMBER)
- 15.405(1)(b) - A REDUCTION IN THE REQUIRED SETBACK TO EXISTING CELLAR WALL, CRAWLSPACE, OR SLAB FOUNDATION:

PROPERTY ADDRESS	VARIANCE REQUESTED	PROPOSED SETBACK
#4 KENNEBEC AVENUE	4'±	6'± (MicroFAST TANK)
#4 KENNEBEC AVENUE	4'±	6'± (PUMP CHAMBER)
- A VARIANCE TO LOCAL SETBACK REQUIREMENTS IS REQUESTED FOR A 150'± REDUCTION IN SETBACK FOR A 0'± SETBACK TO A NON-ERODING COASTAL BANK FROM A SOIL ABSORPTION SYSTEM.
- 15.405(1)(f) - A 50'± REDUCTION IN SETBACK FOR A SETBACK OF 0'± TO A COASTAL BANK.

FLOOD ZONE NOTES

- ALL UTILITIES TO BE PLACED NO LOWER THAN ELEVATION 16.1.
- ALL STRUCTURAL COMPONENTS PLACED BELOW EL. 16.1 TO BE CONSTRUCTED OF WATERPROOF MATERIALS.
- BOTTOM OF FLOOD ZONES TO BE PLACED WITHIN 1'-FT OF TOP OF SLAB ELEVATION OR EXTERIOR GRADE - WHICHEVER IS HIGHER.
- CEILING HEIGHT OF CRAWLSPACE AREA TO BE < 6'-6".
- INSTALL A MINIMUM OF 1 SMART VENT PER 200 S.F. OF FOUNDATION. FOUNDATION TO BE MEASURED TO THE EXTERIOR OF THE WALLS. VENTS TO BE PLACED ON A MINIMUM OF TWO WALLS.

SOIL LOG

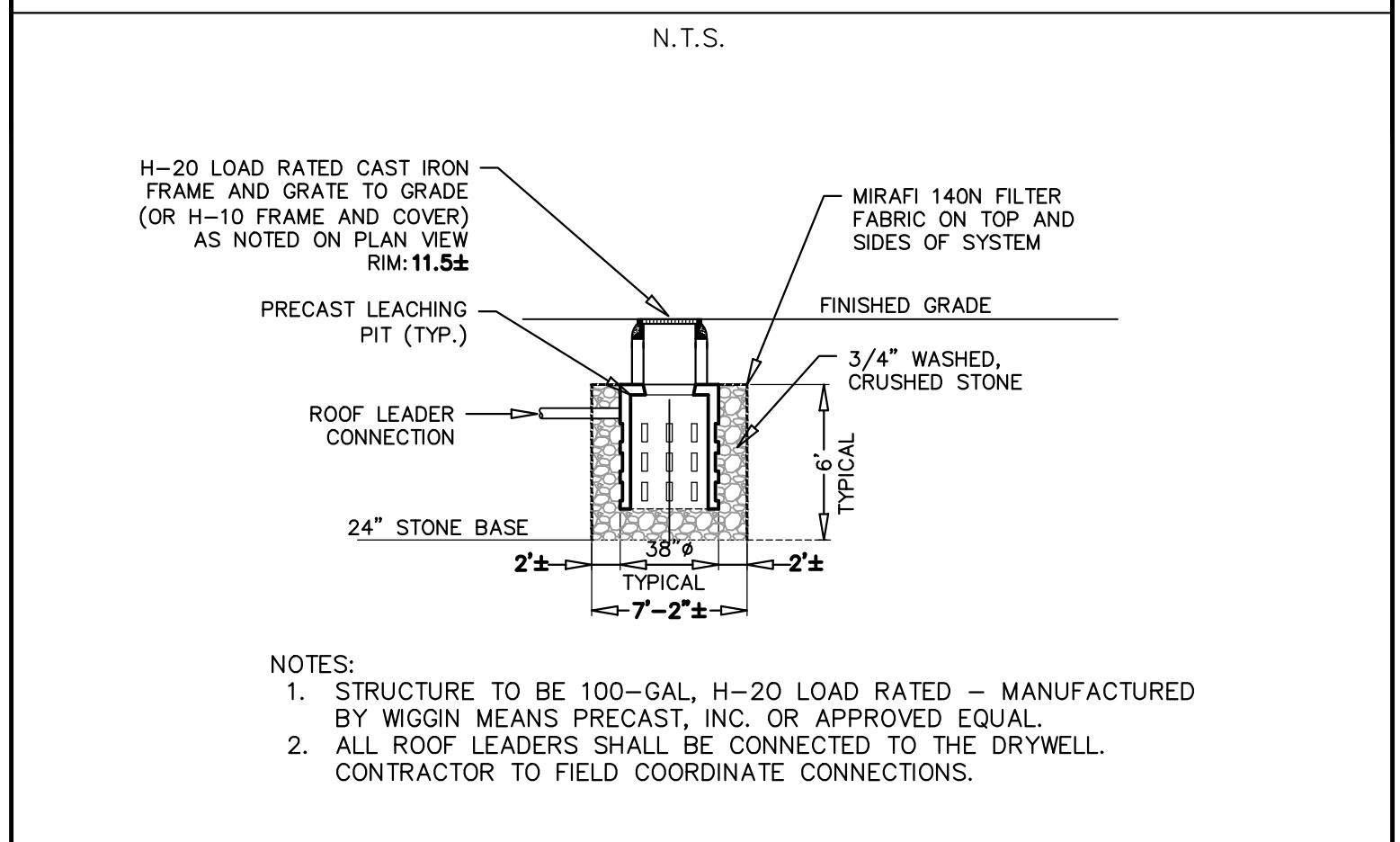


DATE PERFORMED: JUNE 11, 2021
 SOIL EVALUATOR: ROBERT E. DEWAR, E.L.T. (SE #14230)
 WITNESSED BY: KAITLYN SHEA - ASST. AGENT
 PERC. RATE: < 2 MINUTES/INCH
 SOIL CLASS: CLASS 1
 MAX. GROUND WATER ELEV.: 1.8
 METHOD OF DETERMINATION: MONITORING WELL
 (SEE SOIL REPORT FOR MORE DETAILED DESCRIPTION)

EXCAVATION NOTE

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

100 GALLON DRY WELL DETAIL

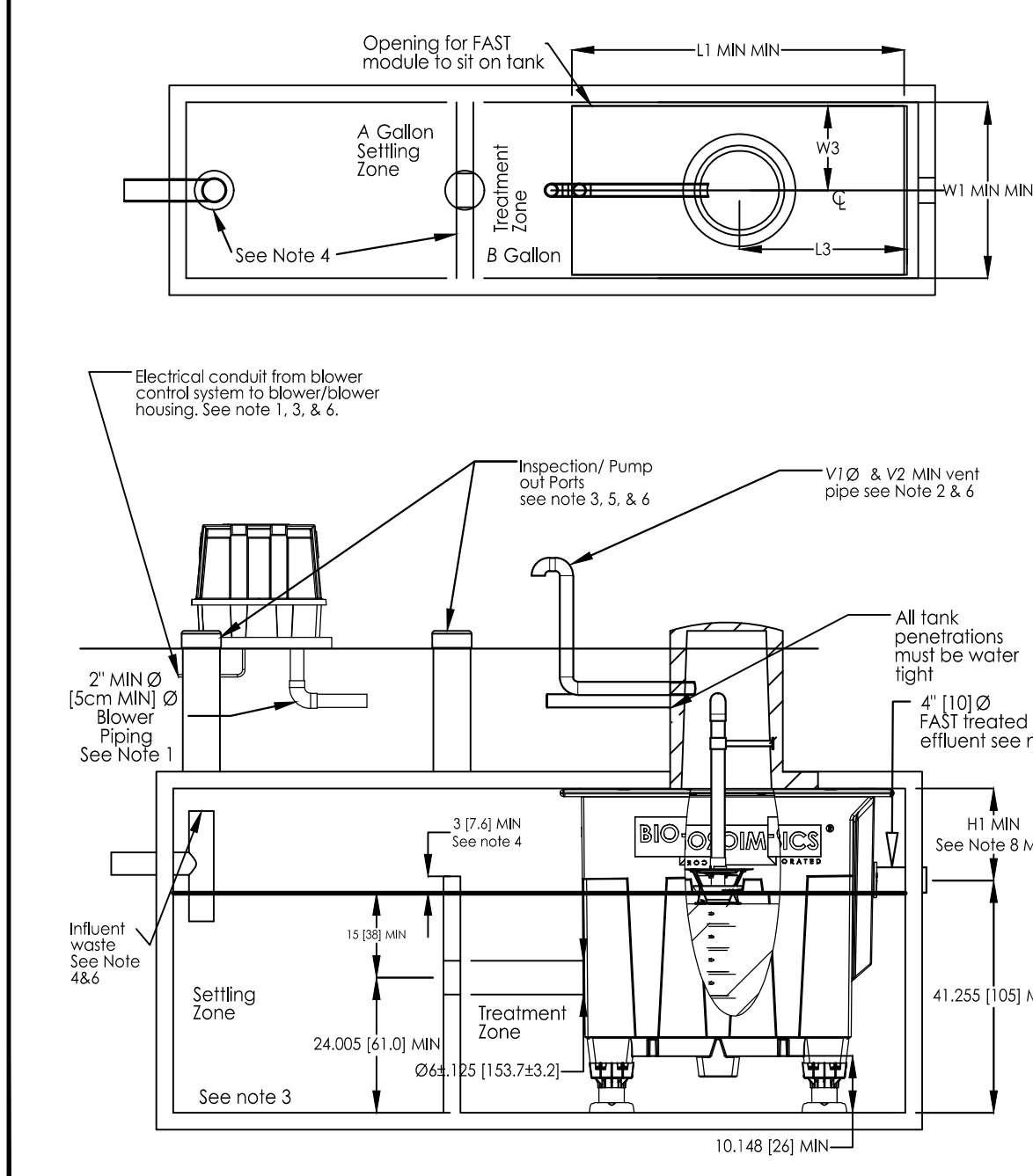


- NOTES:
 1. STRUCTURE TO BE 100-GAL, H-20 LOAD RATED - MANUFACTURED BY WIGGIN MEANS PRECAST, INC. OR APPROVED EQUAL.
 2. ALL ROOF LEADERS SHALL BE CONNECTED TO THE DRYWELL. CONTRACTOR TO FIELD COORDINATE CONNECTIONS.

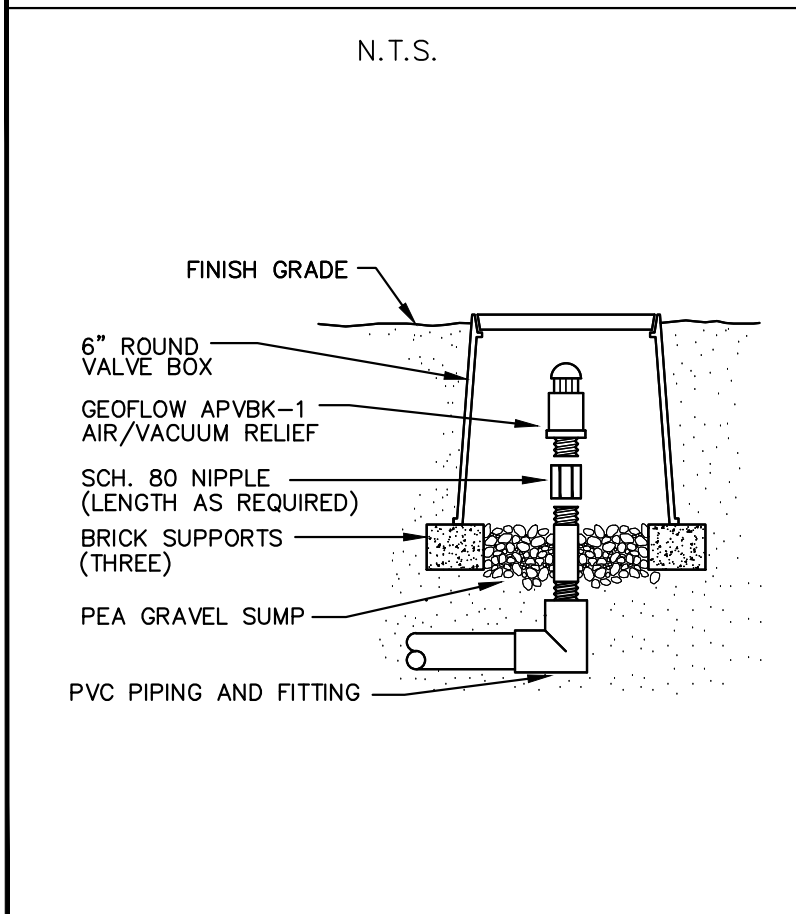
MicroFAST 0.5 FAST UNIT (INTERNAL MOUNT)



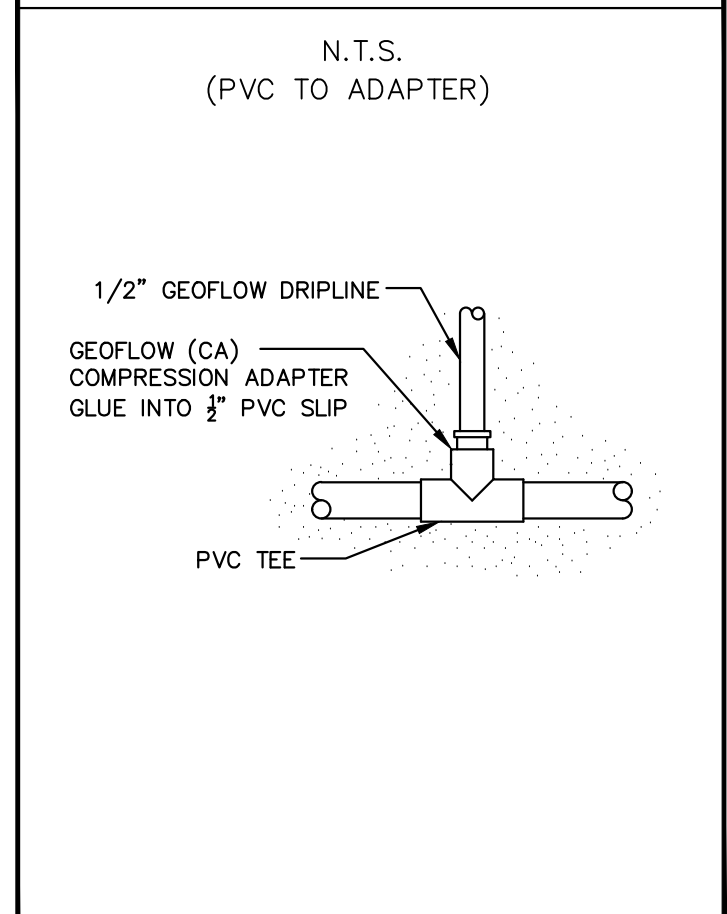
- MicroFAST Notes:**
- Blower piping to FAST® may not exceed 100FT [30.5m] total length and use a maximum of 4 elbows. For distances greater than 100FT [30.5m] - consult factory. Blower must be located above flood/standing water levels on a concrete base 24" x 18" x 2" (61x46.7x5cm) minimum.
 - Vent 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 7.1 sq 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.
 - All appliances 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.
 - 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.
 - All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access.
 - Tank anchors, piping, conduit, blower housing, pop and vents are provided by others.
 - All piping and ancillary equipment installed after FAST® must not impede or restrict free flow of effluent.
 - 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.



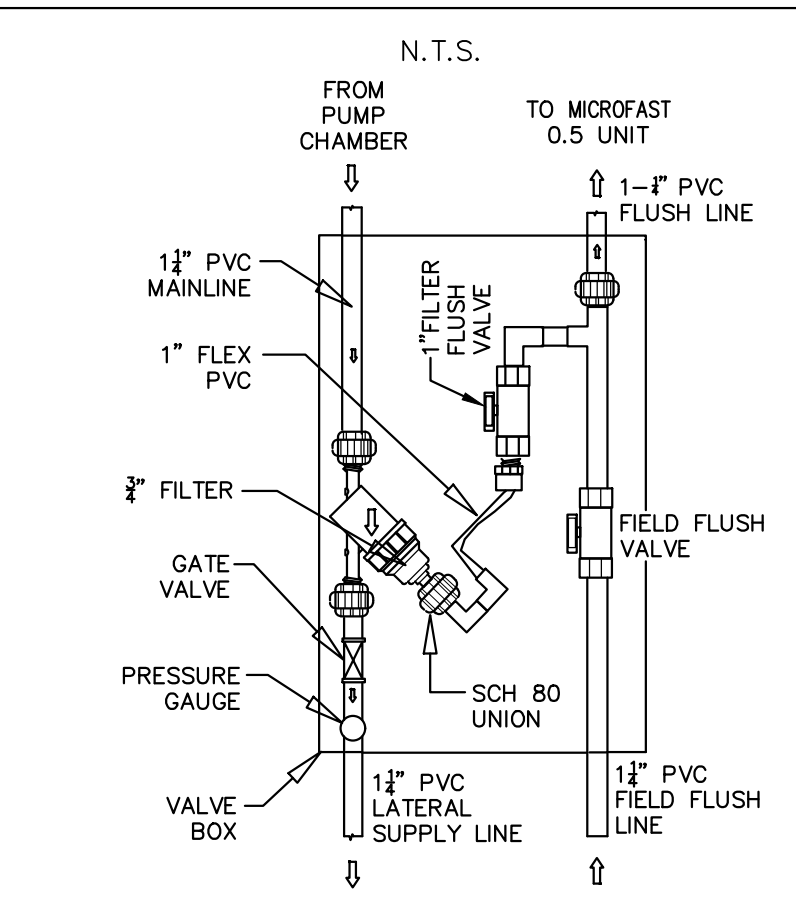
1" AIR/VACUUM RELIEF DETAIL



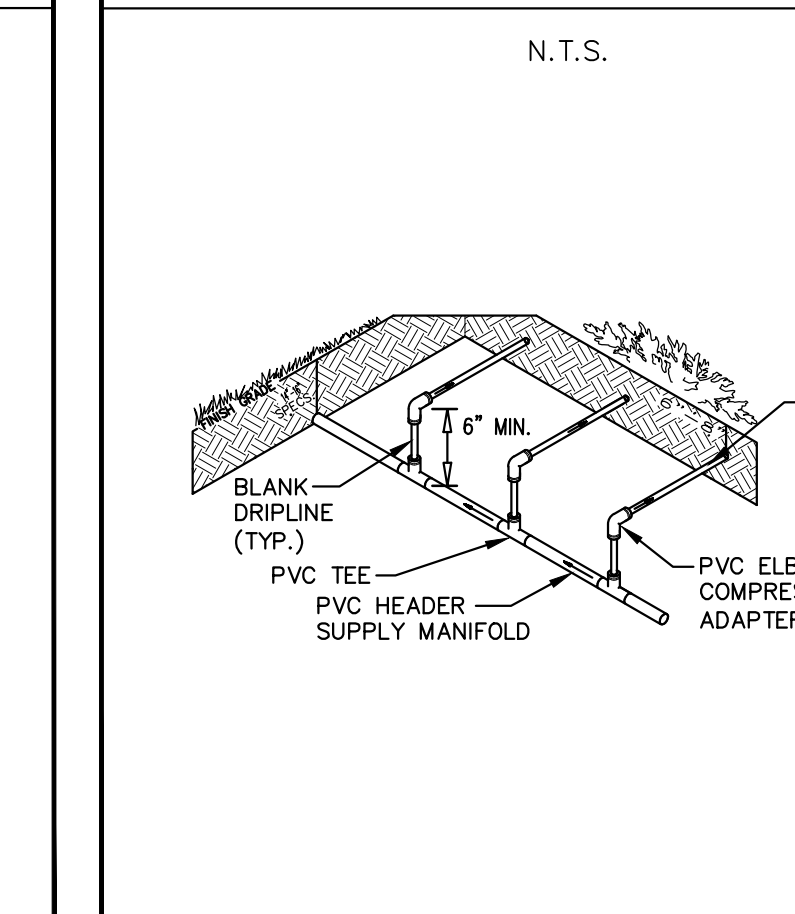
MANIFOLD CONNECTION DETAIL



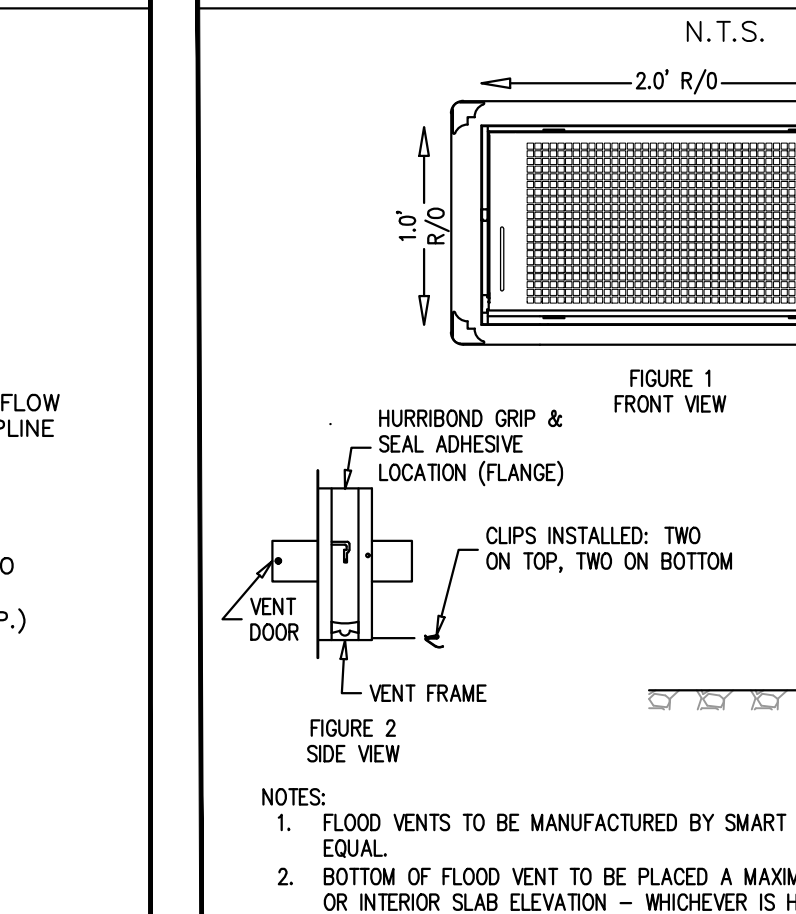
WASTEFLOW HEADWORK DETAIL



END FEED / FLUSH MANIFOLD DETAIL

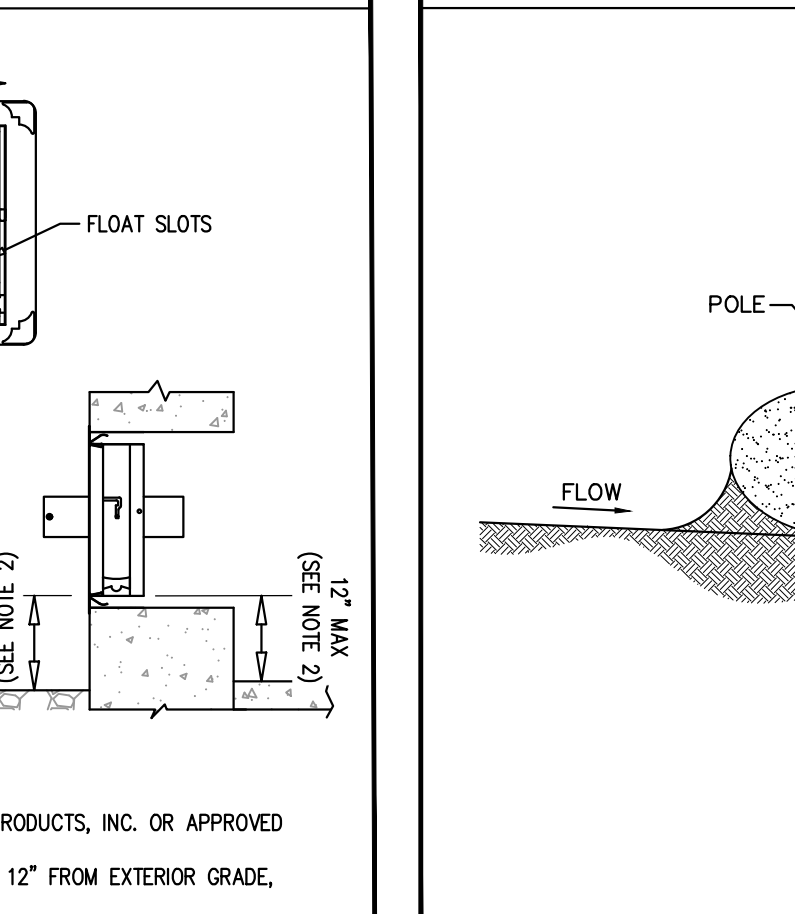


SMARTVENT DUAL FUNCTION FLOOD VENT DETAIL



- NOTES:
 1. FLOOD VENTS TO BE MANUFACTURED BY SMART VENT PRODUCTS, INC. OR APPROVED EQUAL.
 2. BOTTOM OF FLOOD VENT TO BE PLACED A MAXIMUM OF 12" FROM EXTERIOR GRADE, OR INTERIOR SLAB ELEVATION - WHICHEVER IS HIGHER.

FILTREXX SOXX BARRIER DETAIL



DESIGN CALCULATIONS

SOIL TEXTURAL CLASS: CLASS 1
 DESIGN PERC. RATE: < 2 MINUTES/INCH
 NO. OF BEDROOMS: 3 BEDROOMS
 DESIGN FLOW REQUIRED: 330 GPD
 SEPTIC TANK REQUIRED: 1,500 GALLONS
 SEPTIC TANK PROVIDED: 1,500 GAL. W/ MICROFAST 0.5
 PUMP CHAMBER PROVIDED: 1,000 GALLON PRECAST TANK

LEACHING SYSTEM:
 GEO-FLOW IRRIGATION DISPOSAL FIELD
 SAND BED TO BE 506 S.F. WITH
 463 LF OF GEO-FLOW DRIP TUBING

EFFECTIVE LEACHING: (BASED ON GENERAL USE APPROVAL)
 LOADING RATE = 0.74 GPD/S.F.
 (330 GPD)(0.74 GPD/SF) = 446 S.F. REQUIRED BED
 (446 S.F.)(1" S.F./L.F. DRIP TUBING (1" SPACING)) = 446 L.F. REQUIRED

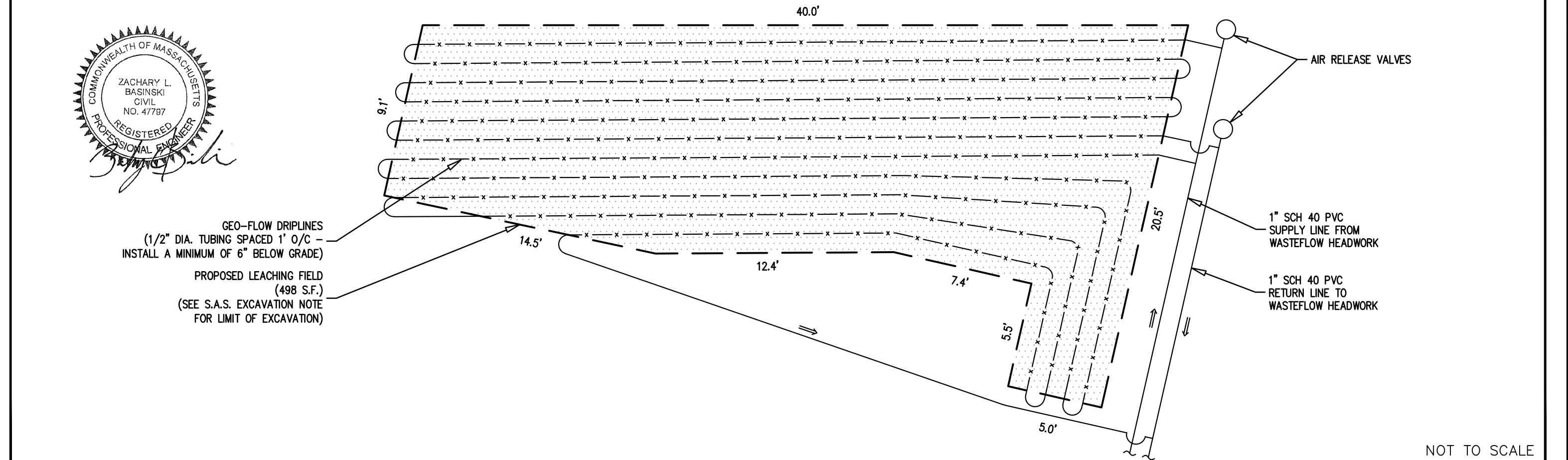
(506 S.F. PROVIDED)(0.74 GPD/SF) = 374 GPD > 330 GPD

PUMP CHAMBER CALCULATIONS
 DOSING AND DRAIN BACK REQUIREMENTS
 PER GEO-FLOW SPECIFICATIONS.
 CONTRACTOR TO COORDINATE WITH
 MANUFACTURER'S REPRESENTATIVE.

GENERAL CONSTRUCTION NOTES "GEOFLOW" DRIP DISPERSAL SYSTEMS

- THE SYSTEM SHALL NOT BE INSTALLED IN WET OR FROZEN SOILS.
- DO NOT PARK, DRIVE LARGE EQUIPMENT, OR STORE MATERIALS ON THE DISPERSAL AREA. NO ACTIVITY SHOULD OCCUR ON DISPERSAL AREA OTHER THAN THE MINIMUM REQUIRED TO INSTALL THE SYSTEM.
- ALL INSTALLATION AND CONSTRUCTION TECHNIQUES SHALL CONFORM TO STATE AND LOCAL CODES PERTAINING TO ON-SITE SEWAGE SYSTEMS AND THE PERMIT FOR THE SITE.
- THE INSTALLATION SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND PROCEDURES AS SUPPLIED BY THE MANUFACTURER OF THE EQUIPMENT.
- THE CONTRACTOR SHALL BE CERTIFIED TO INSTALL THIS TYPE OF SYSTEM AND SHOULD HOLD A PRE-CONSTRUCTION MEETING WITH THE INDIVIDUALS RESPONSIBLE FOR THE SITE DESIGN AND INSPECTIONS. THE MEETING SHOULD BE HELD PRIOR TO THE BEGINNING OF THE SITE WORK TO ENSURE PROTECTION OF THE SITE CONDITIONS AND TO ENSURE THAT THE SYSTEM IS INSTALLED ACCORDING TO DESIGN.
- IF SITE CONDITIONS ARE DETERMINED TO REQUIRE THE INSTALLATION OF THE SYSTEM TO DEVIATE FROM THE DESIGN PLANS, ALL WORK SHALL STOP IMMEDIATELY AND THE DESIGNER AND HEALTH AGENT SHALL BE NOTIFIED. ANY ON GOING WORK SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- DRIP TUBING MAY BE INSTALLED WITH A VIBRATORY PLOW, A STATIC PLOW, A NARROW TRENCHER (<6" WIDTH), BY HAND TRENCHING, OR BY SCARIFYING THE SURFACE AND BEDDING THE DRIP TUBING IN CLEAN SAND MEETING THE REQUIREMENTS FOR FILL MATERIAL IN TITLE V AT 310 CMR 15.255(3) WITH COVER CONSISTING OF SAND AND TOPSOIL MEETING THE 6" TO 12" DEPTH REQUIREMENT THE DESIGNER MAY INDICATE FOR THE TUBING TO BE INSTALLED UP TO 24" BELOW GRADE. ALL DRIP TUBING IS TO BE INSTALLED PARALLEL WITH THE CONTOUR. VEGETATIVE COVER MUST BE REPLACED FOR INSTALLATIONS WHERE IT IS REMOVED OR BURIED DURING INSTALLATION.
- ALL CUTTING OF RIGID PVC PIPE, FLEXIBLE PVC AND DRIP TUBING OF SIZE 1/2" OR SMALLER SHALL BE ACCOMPLISHED WITH PIPE CUTTERS APPROVED BY MANUFACTURER. NO SAWING OF PVC, FLEXIBLE PVC OR DRIP TUBING OF SIZE 1/2" OR SMALLER. ALL RIGID PVC PIPE, FLEXIBLE PVC AND DRIP TUBING IN THE WORK AREA SHALL HAVE THE ENDS COVERED WITH DUCT TAPE IS ALLOWED. TAPE AFTER CUTTING TO PREVENT CONSTRUCTION DEBRIS FROM ENTERING THE PIPE. PRIOR TO GLUING, ALL JOINTS SHALL BE INSPECTED. ALL PVC PIPE AND FITTINGS IN THE FIELD SHALL BE SCH 40. ALL GLUED JOINTS SHALL BE CLEANED AND CLEARED OF ANY DEBRIS. PRIMED WITH PVC PRIMER PRIOR TO BEING GLUED. ALL FORCE MAINS SHALL BE TESTED FOR LEAKS PRIOR TO BEING BACKFILLED BY PRESSURIZING THE SYSTEM AND OBSERVING FOR LEAKAGE.
- AIR RELIEF VALVES SHALL BE PLACED AT A HIGHER ELEVATION THAN THE DRIP TUBING IN THAT ZONE BUT BELOW THE GROUND SURFACE. AIR VENTS SHALL BE ACCESSIBLE FROM FINISHED GRADE AND INSULATED TO PREVENT FREEZING.
- THE SUPPLY LINES, DRIP TUBING MANIFOLDS, AND HEADERS SHALL BE SLOPED TO ALLOW EFFLUENT TO DRAIN BACK TO THE EFFLUENT PUMP (DOSING) CHAMBER BY GRAVITY TO PREVENT FREEZING OR INSTALLED AT A DEPTH OF AT LEAST FOUR FEET. THE DRIP TUBING SHALL BE DESIGNED TO DRAIN INTO THE SOIL UPON COMPLETION OF THE PUMP CYCLE.
- THE INSTALLER SHALL MAINTAIN ON-SITE, AT ALL TIMES DURING CONSTRUCTION, A COPY OF THE APPROVED PLANS, THE OWNER'S MANUAL, THE O&M MANUAL, AND A COPY OF THE APPROVAL.

TYPICAL DISPOSAL SYSTEM SCHEMATIC



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

SUBSURFACE SEWAGE DISPOSAL PLAN IN BOURNE, MASSACHUSETTS

Prepared For:
BRENNAN FAMILY TRUST
 #4 KENNEBEC AVENUE
 MAP 47.1 PARCEL 45

No.	Date	Revision Description	By
1	04/08/22	REVISED FOR B.O.H. & Z.B.A. SUBMISSION PER GEO-FLOW SPECIFICATIONS.	RED

Date: FEBRUARY 15, 2022 Drawn: RED/BEI Checked: ZLB/AMG Sheet: 2 of 2

No. 95-21

FEE 150.00

COMMONWEALTH OF MASSACHUSETTS

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 <u>72 Elgin Road</u>	Owner's Name
Map/Parcel# <u>m: 47.1 p: 109</u>	Address
Lot# <u>24</u>	Telephone#
Installer's Name <u>T.F. SMITH CONSTRUCTION</u>	Designer's Name <u>Cape & Islands</u>
Address <u>PO BOX 961 HANSON MA 02341</u>	Address <u>Engineering</u>
Telephone# <u>339-832-1510</u>	Telephone#

Type of Building _____ Lot Size _____ sq. ft.
 Dwelling - No. of Bedrooms _____ Garbage grinder ()
 Other - Type of Building _____ No. of persons _____ Showers (), Cafeteria ()
 Other Fixtures _____
 Design Flow (min. required) _____ gpd Calculated design flow _____ Design flow provided 448 gpd
 Plan: Date _____ Number of sheets _____ Revision Date _____
 Title _____
 Description of Soil(s) _____
 Soil Evaluator Form No. _____ Name of Soil Evaluator _____ Date of Evaluation _____

DESCRIPTION OF REPAIRS OR ALTERATIONS _____

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 _____ Approved: T. Guarino 5/25/2021
Notify BOH @ Excavation

AS BUILT ATTACHED

No. 95-21

FEE 150.00

COMMONWEALTH OF MASSACHUSETTS

Board of Health, Bourne, 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: T.F. Smith Construction Corp.
at 72 Elgin Road

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. 95-21, dated 5-25-2021. Approved Design Flow 448 (gpd)

Installer T.F. Smith Construction Corp.
Designer: Cape & Islands Eng. Inspector: K. Her Date: 6/13/21

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

No. 95-21

FEE 150.00

18-2-20
VOID

COMMONWEALTH OF MASSACHUSETTS

Board of Health, Bourne, MA.

DISPOSAL SYSTEM CONSTRUCTION PERMIT

Permission is hereby granted to; Construct Repair () Upgrade () Abandon () an individual sewage disposal system at 72 Elgin Road as described in the application for

Disposal System Construction Permit No. 95-21, dated 5/25/2021

Provided: Construction shall be completed within one years of the date of this permit. All local conditions must be met. open hole inspection needed

TF
SMITH

No. ~~18-20~~
18-2-20

FEE 150.00

COMMONWEALTH OF MASSACHUSETTS

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 72 Elgin Rd.	Owner's Name Tim Bernard
Map/Parcel# map 47.1 pcl 109	Address
Lot# 24	Telephone#
Installer's Name Don Swire (Longfellow)	Designer's Name Cape Islands Engineering Inc.
Address 367 MAIN ST FALMOUTH	Address 800 Falmouth Rd, Ste 501C, Mashpee, MA
Telephone# 508-326-8378	Telephone# 508-477-7272

Type of Building _____ Lot Size 18,848 sq. ft.
 Dwelling - No. of Bedrooms 4 Garbage grinder ()
 Other - Type of Building _____ No. of persons 8 Showers (), Cafeteria ()
 Other Fixtures _____
 Design Flow (min. required) 110 gpd Calculated design flow 440 Design flow provided 448 gpd
 Plan: Date 1-3-20 Number of sheets 1 Revision Date _____
 Title Site & Sewage design Plan
 Description of Soil(s) 0-12" F, 12-40" Sandy loam, 16"-44" clay sandy 44"-110" sandy loam, 110"-80" LS, 80"-140" sand
 Soil Evaluator Form No. _____ Name of Soil Evaluator Paul Injaki Rivera Date of Evaluation 5-9-19

VOID

DESCRIPTION OF REPAIRS OR ALTERATIONS _____

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 [Signature] Date 1/17/20

Inspections Notify BOH @ excavation to verify soils

No. ~~18-20~~
18-2-20

FEE 150.00

COMMONWEALTH OF MASSACHUSETTS

Board of Health, Bourne, MA.

CERTIFICATE OF COMPLIANCE

Description of Work: Individual Component(s) Complete System
 The undersigned hereby certify that the Sewage Disposal System: Constructed (x), 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. ~~18-20~~, dated 3/30/20. Approved Design Flow 448 (gpd)
 Installer _____
 Designer: _____ Inspector: _____ Date: _____
 The issuance of this permit shall not be construed as a guarantee that the system will function as designed.

VOID

No. ~~18-20~~ 18-2-20

FEE 150.00

COMMONWEALTH OF MASSACHUSETTS

Board of Health, Bourne, MA.

DISPOSAL SYSTEM CONSTRUCTION PERMIT

Permission is hereby granted to; Construct (x) Repair () Upgrade () Abandon () an individual sewage disposal system at 72 Elgin Road as described in the application for Disposal System Construction Permit No. 18-2-20, dated 3/30/20.

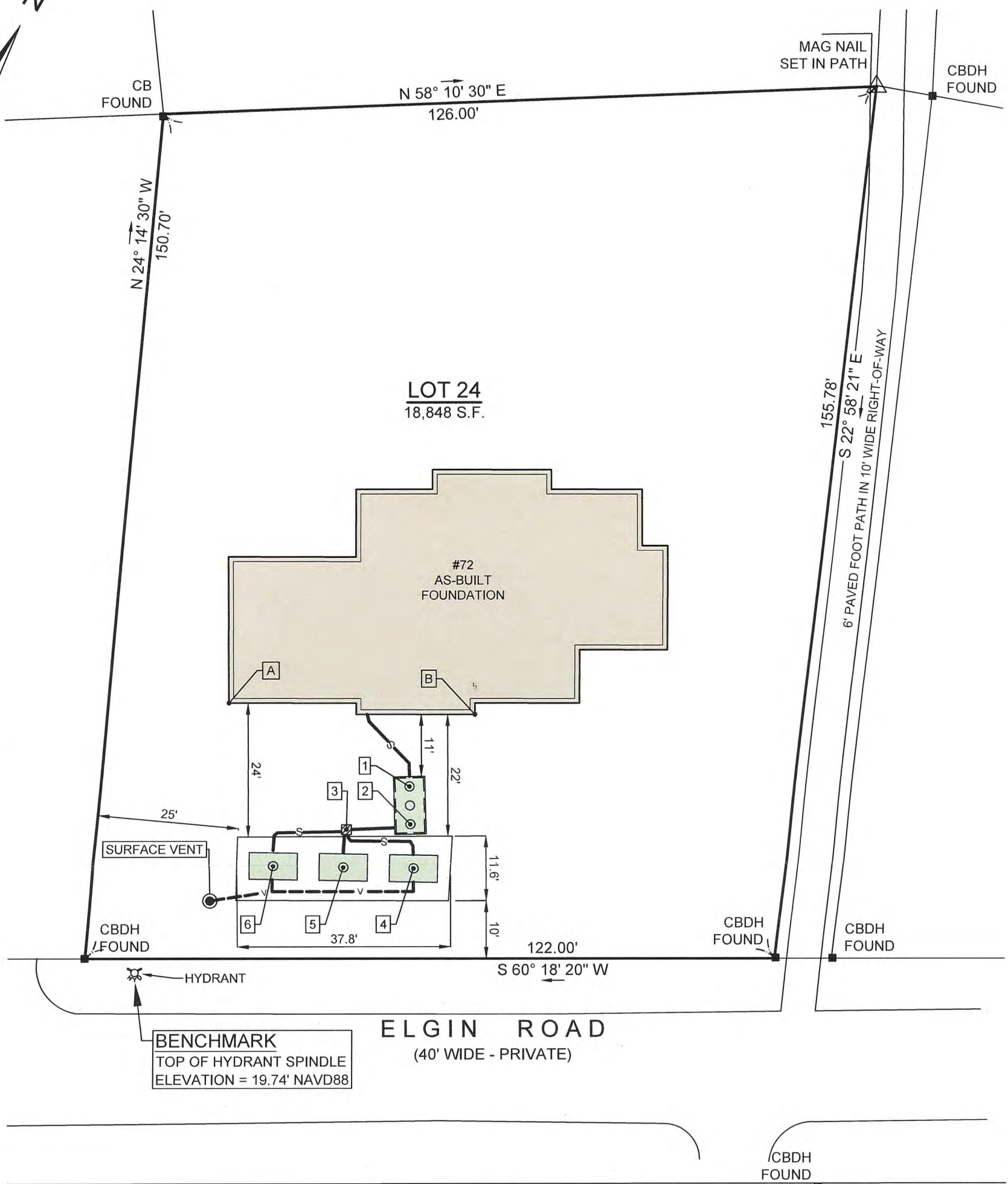
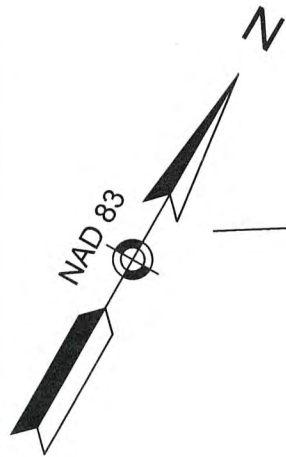
Notify BOH @ excavation to verify soils

VOID

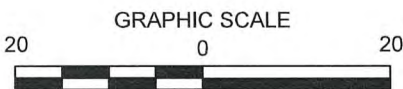
Provided: Construction shall be completed within three years of the date of this permit. All local conditions must be met.

Form 1255 Rev. 5/96 A.M. Sulkim Co. Charlestown, MA Date 3/30/20 Board of Health T. Guarana

Longfellow



BENCHMARK
TOP OF HYDRANT SPINDLE
ELEVATION = 19.74' NAVD88



AS-BUILT ELEVATIONS

DESCRIPTION	ELEVATION
BUILDING SEWER OUTLET	13.57
SEPTIC TANK 4" INLET	13.45
SEPTIC TANK 4" OUTLET	13.24
D-BOX 4" INLET	13.09
D-BOX 4" OUTLET	12.92
CHAMBERS 4" INLET	12.47
BOTTOM OF CHAMBERS	10.47

SEPTIC AS-BUILT TIES

LOCATION	A	B
INLET TANK COVER - 1	35.2'	17.3'
OUTLET TANK COVER - 2	38.6'	22.7'
DISTRIBUTION BOX - 3	30.6'	30.6'
SAS CHAMBER - 4	43.9'	29.6'
SAS CHAMBER - 5	35.6'	35.9'
SAS CHAMBER - 6	30.1'	44.8'

GENERAL NOTES

LOCATIONS ARE BASED ON AN "ON THE GROUND" INSTRUMENT SURVEY AND ELEVATIONS BASED ON THE NAVD 1988 DATUM. COORDINATE SYSTEM USED IS THE MA-MAINLAND COORDINATE SYSTEM, DATUM: NAD 83, UNITS: U.S. SURVEY FEET.

DRAFT

RECEIVED

MAY 25 2023

Bourne Health Department
24 Perry Avenue
Buzzards Bay MA 02532



SUMMERFIELD PARK
800 FALMOUTH ROAD SUITE 301C
MASHPEE, MA 02649

508.477.7272 PHONE
508.477.9072 FAX

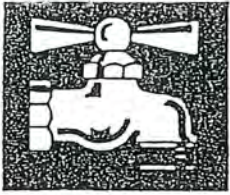
www.CapeEng.com

NOTICE
THIS PLAN MAY NOT BE ADDED TO, DELETED FROM, OR ALTERED IN ANY WAY BY ANYONE OTHER THAN CAPE & ISLANDS ENGINEERING, INC.

UNLESS AND UNTIL SUCH TIME AS AN ORIGINAL STAMP AND SIGNATURE APPEARS ON THIS PLAN NO PERSON OR PERSONS, MUNICIPAL OR PUBLIC OFFICIAL MAY RELY UPON THE INFORMATION CONTAINED HEREIN; AND THIS PLAN REMAINS THE PROPERTY OF CAPE AND ISLANDS ENGINEERING, INC.

COPYRIGHT (C) BY CAPE & ISLANDS ENGINEERING, INC. ALL RIGHTS RESERVED

Date: JUNE 4, 2021	Prepared For:	TIM BERNARD 65 KINGSBURY STREET NEEDHAM, MA 02492
	Project:	72 ELGIN ROAD BOURNE, MASSACHUSETTS
	Drawing Title:	SEPTIC SYSTEM AS-BUILT PLAN



BOURNE WATER DISTRICT

211 Barlow's Landing Road, P.O. Box 1447
Pocasset, Massachusetts 02559-1447
Office: 508-563-2294 Fax: 508-564-4661

DATE: 11/2/2020

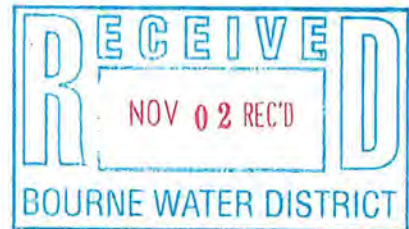
TOWN OF BOURNE
BOARD OF HEALTH
24 PERRY AVE.
BUZZARDS BAY, MA 02532

THE BOURNE WATER DISTRICT WILL SUPPLY WATER

TO Timothy Bernard

FOR 72 Elgin Rd.


SUPERINTENDENT OR MANAGER





Town of Bourne
Board of Health
508-759-0600 x. 1513



RECEIVED

APR 18 2019

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

Percolation Test Application Form

Facility Address: 72 Elgin Road

Assessor's Map/ Parcel/ Lot #: map 47.1 parcel 109

Owner's Name: Janet Black Tr/Black Family Nom Trust

Name of Soil Evaluator: Raul Lizardi-Riveri License #: SE-2758

Telephone Number: 508-477-7272 E-mail: Raul@capeeng.com

Name of Excavator: All Track, Inc

➤ Reason for Perc/ Soil Evaluation: New Construction / Increase in Flow
(please circle any that apply) Septic Repair/ Upgrade
Other (describe): _____

➤ Water Supply: Public
(please circle any that apply) Private (distance from well): _____

➤ Approximate Distance from Wetland or Water Resource Area: _____ (feet)
If test is to be conducted within 100 feet, the Bourne Conversation Agent must be notified in advance

➤ Please enclosed payment, either cash or check payable to the Town of Bourne:

\$150 for 1 hour
\$75 for each additional 1/2 hour

Total Amount Enclosed:
\$150.00

PAID
4.19 CH

FOR BOARD OF HEALTH OFFICE USE ONLY

Date of Perc Test: 5/8/19

Initials: KL

Time of Perc Test: 12:15

Confirmed: YES NO

Witnessed By: Raul Lizardi-Riveri

High Tide: YES NO P.P

Performed By: Terri Guarino

More Testing Needed: YES NO

Soil Suitability Assessment for Sewage Disposal

DEEP OBSERVATION HOLE LOG				Hole #	Perc #
Depth from Surface (in.)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-9	Fill				H ₂ O @ 148"
	Ab	SL			Not suitable
	Bb	SL			(DID NOT VERIFY 4' naturally occurring pervious material)

DEEP OBSERVATION HOLE LOG				Hole #	Perc #
Depth from Surface (in.)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-12"	Fill				H ₂ O @ 129 129"
12-16"	A _b	SL	7.5Y 3/1		
16-44"	B _b	LS	2.5Y 4/8		COBBLES
44-60"	C ₁	SL	5YR 4/6		40% gravel
60-80"	C ₂	LS	5YR 5/6		
80-140"	C ₃	M Sand	5YR 5/4		

DEEP OBSERVATION HOLE LOG				Hole #	Perc #
Depth from Surface (in.)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-20"	Fill				H ₂ O @ 129"
20-24"	Ab	SL	7.5Y 3/1		
24-50"	B _b	LS	2.5Y 4/8		COBBLES
50-62"	C ₁	SL	5YR 4/6		40% gravel
62-80"	C ₂	LS	5YR 5/6		
80-140"	C ₃	M-sand	5YR 5/4		Stripout to C ₃

DEEP OBSERVATION HOLE LOG				Hole #	Perc #
Depth from Surface (in.)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-29"	Fill				H ₂ O @ 92"
29-34"	A	SL	7.5Y 3/1		
34-50"	B _b	LS	2.5Y 4/8		100" - 7'-140" eq C sand
50-60"	C ₁	LS			
60-78"	C ₂	LS			
78"-100"	C ₃	MS			
100" - 7'-140"	Fill	C sand			

DETERMINATION FOR SEASONAL HIGH GROUNDWATER TABLE

Method Used: Frimptel Depth Standing in obs. hole: _____ in.
 Depth to soil mottles: NA in. Depth to weeping from side of obs. hole: _____ in.
 Does at least four feet of natural occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? (YES/NO) YES - C₃ horizon Stripout to C₃



43.3

HEN COVE

PATUISSET

RED BROOK

HARBOR

47.2

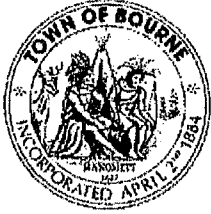
AERO SERVICE
 Philadelphia, Pennsylvania 19155
 PREPARED FOR THE TOWN OF BOURNE
 FOR TAX PURPOSES ONLY
 NOT TO BE USED FOR CONVEYANCE

DATE OF REVISION 1-1-75
 DATE OF COMPILATION MAY 11, 1971 DATE OF PHOTOGRAPHY APRIL 16, 1972
 PROPERTY DATA FROM DEED RESEARCH, FIELD RECONNAISSANCE AND RECORD PLATS
 SHEET LAYOUT BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM

TOWN OF BOURNE
 MASSACHUSETTS
 SCALE 1" = 100'

LEGEND			
	County line		Map parcel number
	Town line		Original lot number
	Military reservation line		Map scale dimension
	Water domain line		Plot dimension
	Easement line		Declarator name symbol
	Original lot line		All dimensions shown in feet
	Property line		

PROPERTY MAP
 SHEET 47.1



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue

Buzzards Bay, MA 02532

www.townofbourne.com/health

Phone (508) 759-0600 ext. 1513

Fax (508) 759-0679



March 30, 2020

Mr. Raul Lizardi-Rivera, P.E.
Cape & Islands Engineering
800 Falmouth Road, Suite 301C
Mashpee, MA 02649

Dear Mr. Lizardi-Rivera:

On March 18, 2020, the Bourne Board of Health held a remote meeting and discussed your request for variances from Title 5, 310 CMR 15.211 and Bourne Board of Health 150 Foot Setback Regulations for the new construction of a sewage disposal system at 72 Elgin Road, Pocasset, MA. The Board of Health approved a zero foot setback from the septic tank and leaching facility to the Fragmented Coastal Bank based on the plans dated January 3, 2020 by Cape & Islands Engineering.

The Board felt as if these approvals were in order where the Fragmented Coastal Bank is a land feature based on slope criteria and is not a primary seaward facing Coastal Bank. The proposed septic system offers a nine (9) foot vertical separation to the adjusted groundwater table and is over 150 feet to the mean high water mark.

These variances are valid for two years from the date of approval. Please be advised that any changes to the sewage disposal plans or the new dwelling may require another hearing before the Bourne Board of Health to discuss and vote on the matter. Please do not hesitate to contact my office with questions or concerns. The Town buildings are presently closed to the public, but we do have staff available during business hours to answer questions over the telephone.

Sincerely,

Terri Guarino

Terri Guarino, RS, CHO
Health Agent
508-759-0600 x. 1513

Sent via electronic mail to [raul@capeeng.com]

Book 32784 page 334



TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532

www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



Terri A. Guarino
Health Agent

RECEIVED

2020 MAY -8 AM 10: 29

TOWN CLERK BOURNE

MINUTES March 18, 2020

Members in attendance: Kathy Peterson, Chairperson; Stanley Andrews; Galon Barlow Jr.; Donald Uitti; and Kelly Mastria.

Support Staff in attendance: Terri Guarino, Health Agent; Kaitlyn Shea, Health Inspector and Syreeta Amaral, Administrative Assistant

Meeting was called to order at 06:00pm

Ms. Peterson asked if anyone was recording at this time.

- 1. ISWM Update-- General discussion and update on landfill operations with Daniel Barrett, Operations Manager at Bourne Landfill.** Daniel Barrett was present to speak to the Board about the ISWM update. **See Exhibit A.** Mr. Barrett started by explaining to the Board that phase 6 is 95% complete. All that remains is to finish up the heat tracing installation and to install the indicator level in the tank. MA DEP Southeastern region issued a final authorization to operate for phase 6 on January 17th, 2020. Phase 4 Stage 2 of the project is complete and is at final grade receiving intermediate cover in anticipation of MA DEP review of a modified closure design. Stage 5 is also at final grade and is receiving intermediate cover in anticipation of the MA DEP review of a modified closure design. He expects to submit the modified closure design by early April 2020. Mr. Barrett continued with a request to the Board in regards to changing the start time to 6:00 AM for the delivery of Covanta ash. This will provide a cushion to make adjustments for interruptions in normal operations such as seasonal traffic. He noted further that the new start time will be immediately discontinued if the Board of Health or ISWM receives any complaints. Ms. Peterson asked if there were any questions or comments from the Board. Mr. Barlow Jr. noted that we need to make sure that any odor issues are addressed. Mr. Barrett responded that the existing transfer station has a misting system and clear plastic flaps on the doors that were put in place to address dust and odor issues and that the situation will be monitored continuously. There were no other questions or comments. **Mr. Andrews made a motion to allow ISWM to operate starting at 6:00AM for Covanta ash only on a trial basis unless complaints are made to either ISWM or the Board of Health. Mrs. Mastria seconded the motion. Roll call vote to approve. Mr. Andrews...yes, Mr. Barlow Jr...yes, Mrs. Mastria...yes, Mr. Uitti...yes and Ms. Peterson...yes. All were in favor and the motion passed unanimously.**
- 2. Joe Sullivan on behalf of the Bourne Police Department – Discussion and possible vote on interim wastewater solution for the new Bourne Police Station.** Mr. Andrews asked to recuse himself from this agenda item. Ms. Peterson agreed. Mr. Joe Sullivan who is the project manager was present to update the Board. Mr. Sullivan stated that the initial plan was to have the waste treatment facility up and running 2-3 months ahead of the police station completion but due to the DEP and design requirements it extended the bidding time almost 6 to 8 months. As a result of this the new Bourne Police Station is scheduled to open without the use of the wastewater treatment facility. He requests the ability to use the 10,375 gallon waste water tank as a tight tank until the waste water treatment facility is completed. Using the funds from the Bourne Police building project fund, Mr. Sullivan proposes pumping the tank on a monthly basis and the installation of a solar powered, battery operated alarm system so that the water level is never in jeopardy of rising to critical levels. Ms. Peterson asked if there were any

questions. There were no questions. **Ms. Peterson made a motion to approve the interim waste water solution proposed by Project Manager, Joe Sullivan and approved by MA DEP prior to completion of the wastewater treatment plant. Mrs. Mastria seconded the motion. Roll call vote to approve. Mr. Barlow Jr...yes, Mr. Uitti...yes, Mrs. Mastria...yes, Ms. Peterson...yes. All were in favor and the motion passed unanimously.**

- 3. 9 Captains Row – Continued from February 12, 2020 – Zachary Basinski P.E. of Bracken Engineering, Inc. on behalf of owners Marjory Baruch and & Wu-The Hsiang- Requesting a variance to locate a proposed SAS on an abutting facility located at 28 Captains Row (owned by BAG Realty Trust, James Gonet and Larry Bruch, Trustees) pursuant to an easement.** Kelly Mastria asked to recuse herself from the agenda item. Ms. Peterson agreed. Mr. Robert Dewar P.E. of Bracken Engineering was present to update the board on the project. The requested updated easement documents were received by the Health Department on February 26, 2020. In response to a prior question from the Board regarding abutters, Mr. Dewar indicated that there was no impact on direct abutters from an environmental standpoint. Ms. Peterson asked if the Board had any questions on the project. There were no additional questions from the Board. **Mr. Andrews made a motion to approve the project due to the system being more than 150' from the resource and is maximum feasible compliance. As an addition to his motion, the easement for 28 Captains Row granted by the owner BAG Realty Trust, James Gonet and Larry Bruch, Trustees states that the property is to be used for this system and not to be used for any other project. This motion includes required I/A testing agreements and all documents to be recorded in the Barnstable County Registry of Deeds Mr. Uitti seconded the motion. Roll call vote to approve Mr. Andrews...yes, Mr. Uitti...yes, Mr. Barlow Jr...yes, Ms. Peterson...yes. All were in favor and the motion to approve passed unanimously.**
- 4. 305 Circuit Avenue— Marilyn Powers, Owner--Discussion and possible vote on a request for an extension to upgrade a failed Title 5 system.** Mr. Zach Basinski P.E. of Bracken Engineering was present to speak to the board about the project. Ms. Peterson noted that the Health Department was in receipt of a listing agreement for the property. Ms. Peterson asked who the real estate agent on the listing represented. Miss Guarino replied that Tracy Berestecky who is with Kinlin Grover is representing the sellers who are Elizabeth J Powers, Michael Powers and James Powers. Mr. Andrews asked Mr. Basinski how long he needed to prepare the project. Mr. Basinski replied that he needed 90 days. Ms. Peterson asked the board if they had any questions. There were no questions from the Board. **Mr. Andrews made a motion to approve the extension of the upgrade to the septic system for 90 days. Mr. Uitti seconded the motion. Roll call to approve Mr. Andrews...yes, Mr. Uitti...yes, Mr. Barlow Jr...yes, Mrs. Mastria...yes, Ms. Peterson...yes. All were in favor and the motion to approve passed unanimously.**
- 5. 146 Jefferson Rd – Gregory Morse of Morse Engineering Co., Inc. on behalf of Matthew Donahue – Requesting a 43.20 foot variance from the Bourne Board of Health 150' Setback Regulations to locate an upgraded leaching field 106.8 feet away from a coastal bank.** Mr. Gregory Morse was present to represent the project. He explained that the system located at 146 Jefferson Rd is a failed system that abuts the Cape Cod Canal on the north side of the property. Mr. Morse continues by adding that the plan includes a new MicroFast denitrification tank, a pump chamber and a pressure dosed leaching field which will be located in the front yard. This places the S.A.S at 106.8 feet within the coastal bank which complies with MA Title 5 requirements but does not comply with the Bourne Board of Health regulations that require the SAS to be 150' foot or further away from the coastal bank. Due to the size of the property this is not possible. Ms. Peterson asked if there were any questions from the Board. Mrs. Mastria added only that she would like to hear what Health Agent Terri Guarino has to say about the system. Miss Guarino stated that the 40 mil barrier listed on the plan was consistent with Title 5 requirements and that this system is a significant upgrade to the existing failed cesspool located on the property. Mr. Morse added that the system was also reviewed and approved by the Town of Bourne's Conservation Committee. **Mr. Barlow Jr. motioned to approve the 43.20 foot variance from the Bourne Board of Health regulations requiring a 150' setback from a leaching field to a coastal bank. Mr. Andrews seconded the motion. Roll call vote to approve Mr. Andrews...yes, Mr. Uitti...yes, Mr. Barlow Jr....yes, Mrs. Mastria...yes, Ms. Peterson...yes. All were in favor and the motion passed unanimously.**

6. **72 Elgin Rd - Raul Lizardi-Rivera P.E. of Cape and Islands Engineering on behalf of owner Tim Bernard – Requesting variances from MA Title 5 and Bourne Board of Health regulations requiring 50 feet from the septic tank to a fragmented coastal bank and 50 feet from an S.A.S. to a fragmented coastal bank.** Mr. Andrews asked to recuse himself from this agenda item. Ms. Peterson agreed. Mr. Raul Lizardi-Rivera P.E of Cape and Islands Engineering was present to speak to the Board on behalf of the project. Mr. Lizardi-Rivera started by informing the Board that this project is for a new dwelling which will be located at 72 Elgin Rd. It was reviewed and approved by the Town of Bourne's Conservation Committee. Mr. Lizardi-Rivera stated that the property is located within a flood zone which created the fragmented coastal bank. Ms. Peterson asked Miss Guarino for her input on the project. Miss Guarino stated that she has had many conversations with Mr. Lizardi-Rivera about the project and that she believes that this is the best solution for the property. Ms. Peterson asked for clarification on what kind of system will be installed at the property. Mr. Lizardi-Rivera responded that the system will be a conventional gravity system. Ms. Peterson asked if there were any questions from the Board. Mrs. Mastria asked Miss Guarino whether she was ok with this system being a conventional system. Miss Guarino stated that with the vertical separation from groundwater being 9' which is almost double the required amount, she was comfortable with a conventional system being installed at the property. **Mr. Barlow Jr. motioned to approve the variances from MA Title 5 and Bourne Board of Health regulations requiring 50 feet from the septic tank to a fragmented coastal bank and 50 feet from an S.A.S. to a fragmented coastal bank. Mr. Uitti seconded the motion. Roll call vote to approve. Mr. Barlow Jr....yes, Mrs. Mastria...yes, Mr. Uitti...yes, Ms. Peterson...yes. All were in favor and the motion passed unanimously.**
7. **Sam's Food Store - 261 Main St. Buzzards Bay – Penalties for violation of the Family Smoking Prevention and Tobacco Control Act and Board of Health Tobacco Regulations.** Mr. Barlow Jr. asked to recuse himself from this agenda item. Ms. Peterson agreed. Ms. Peterson asked Miss Guarino to inform the Board on the incident which occurred at Sam's Food Store. Miss Guarino started by informing the Board that a notice was signed on September 25, 2019 acknowledging the vaping ban emergency order, the store was inspected and passed on October 25, 2019, and Sam's Store was sent the JUUL pod information as additional clarification on December 20, 2019 by electronic mail. On February 12, 2020, Bob Collette of Barnstable County's Public Health Department conducted an inspection at Sam's Food Store and found them not to be in compliance with the Family Smoking Prevention and Tobacco Control Act by selling JUUL pods. Mr. Jawad Nasar who was present at the meeting stated that he was not aware that he was in violation of any regulations and noted that with all of the confusion concerning the new laws this violation was not intentional. Miss Guarino agreed with Mr. Nasar that there have been many changes in regards to this law within the past months and can understand why he could be confused by the new laws. Ms. Peterson asked if the Board had any questions or comments on the item. Mr. Andrews stated that he asked for the office to resend the information due to the format being incredibly difficult to read. When it was resent to Mr. Andrews he still found it to extremely difficult to follow, Miss Guarino stated that Mr. Bob Collette came into the town hall to discuss and explain the new format. He did admit that the new format was causing some difficulties. Mr. Andrews stated that with the new format it is almost impossible to issue an enforcement order. Miss Guarino agreed with Mr. Andrews. Ms. Peterson asked for any other comments from the Board. Mrs. Mastria, Mr. Uitti and Ms. Peterson all agreed with Mr. Andrews's statement that the document was almost impossible to read. **Mr. Andrews made a motion to find Sam's Food Store at fault for selling the contra banded JUUL pods but not to issue a fine due to the clarity of the violation document provided by Barnstable County and the confusion caused by changes in the law. Mrs. Mastria seconded the motion. Roll call vote to approve Mr. Andrews...yes, Mr. Uitti...yes, Mrs. Mastria...yes, Mr. Barlow Jr...yes and Ms. Peterson...yes. All were in favor and the motion passed unanimously.**
8. **Tobacco Regulations - Discussion and possible vote to amend existing Board of Health Tobacco Regulations pursuant to MGL c. 111, §131.** Mr. Andrews motioned to continue this agenda item due to the poor connection on the conference call. Mr. Uitti seconded the motion. Roll call vote to approve. Mr. Andrews...yes, Mr. Uitti...yes, Mr. Barlow...yes, Mrs. Mastria...yes, Ms. Peterson...yes. All were in favor and the motion passed unanimously.



Town of Bourne Board of Health Remote Meeting Notice



Agenda March 18, 2020

Date
Wednesday
March 18, 2020

Time
6:00 p.m.

Means of Access
Free Conference Call
Dial-in Number: (712) 770-5015
Access Code: 197816

RECEIVED
MAR 16 PM 12:28
MAY ALLEN 900 AM

Note this meeting is being recorded and all members are participating remotely. All Town Buildings are closed to the public. If anyone participating in the conference call is also recording, they need to acknowledge such at this time.

All items within the meeting agenda are subject to deliberation and vote(s) by the Board of Health.

OPEN SESSION 6:00 P.M. – Call meeting to order.

1. ISWM Update – Dan Barrett General Manager of ISWM -- General discussion and update on landfill operations.
2. Joe Sullivan on behalf of the Bourne Police Department – Discussion and possible vote on interim wastewater solution for the new Bourne Police Station.
3. 9 Captains Row – *Continued from February 12, 2020* – Zachary Basinski P.E. of Bracken Engineering, Inc. on behalf of owners Marjory Baruch and & Wu-The Hsiang- Requesting a variance to locate a proposed SAS on an abutting facility located at 28 Captains Row (owned by BAG Realty Trust, James Gonet and Larry Bruch, Trustees) pursuant to an easement.
4. 305 Circuit Avenue— Marilyn Powers, Owner--Discussion and possible vote on a request for an extension to upgrade a failed Title 5 system.
5. 146 Jefferson Rd – Gregory Morse P.E. of Morse Engineering Co., Inc. on behalf of owner Matthew Donohue – Requesting a 43.20 foot variance from the Bourne Board of Health 150' Setback Regulations to locate an upgraded leaching field 106.8 feet away from a coastal bank.
6. 72 Elgin Rd – Raul Lizardi-Rivera P.E. of Cape and Islands Engineering on behalf of owner Tim Bernard – Requesting variances from MA Title 5 and Bourne Board of Health regulations requiring 50 feet from the septic tank to a fragmented coastal bank and 50 feet from an S.A.S. to a fragmented coastal bank.
7. Sam's Food Store - 261 Main St. Buzzards Bay --Penalties for violation of the Family Smoking Prevention & Tobacco Control Act and Board of Health Tobacco Regulations.
8. Tobacco Regulations - Discussion and possible vote to amend existing Board of Health Tobacco Regulations pursuant to MGL c. 111, §131. Update definitions and penalties for violations to be consistent with the State Regulations.
9. Approve the Minutes— Approve the minutes from the previous meetings dated December 11, 2019, January 8, 2020 and February 12, 2020.
10. Set tentative date for next meeting and adjourn.

Signed: *T. Guarino*
Title: Health Agent
Date: March 16, 2020



Bourne Board of Health Application for Septic Variance Requests



In accordance with the established procedures of the Bourne Board of Health, this application for septic variances and waivers is relevant to requests for relief 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	Janet Black, Trustee, Black Family Nom. TR.	
Facility's Street Address	72 Elgin Road, Bourne (Pocasset), MA	
Owner's Telephone Number	(508) 477-7272	
Owner's E-mail Address	raul@capeeng.com	
Owner's Mailing Address	71 Elgin Road, Pocasset, MA 02559	

RECEIVED

JAN 29 2020

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

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

Preparer's Name	Raul Lizardi-Rivera, P.E.	APPLICANT: Tim Bernard
Company	Cape & Islands Engineering, Inc.	
Telephone Number	508-477-7272	
E-mail Address	raul@capeeng.com	
Mailing Address	800 Falmouth Road, Suite 301C, Mashpee,	65 Kingsbury Street,
State/ Zip Code	MA 02649	Needham, MA 02492

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

Residential
 Commercial
 Institutional
 School
 Industrial

4. Describe Facility (i.e. single-family dwelling, 45 seat restaurant): Proposed four (4) bedroom Single Family Dwelling, new Title 5 sewage Disposal System.

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

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

6. Describe the proposed septic system components: Traditional 1,500 gallon tank, 2-box and Chamber leaching system All Pre-Cast Units. SAS consists of three (3) Chambers with Crushed Stone granules

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

440 gpd
Design flow of proposed system:
440 gpd
Total design flow of facility:
448 gpd

RECEIVED

JAN 29 2020

Bourne Health Department
24 Perry Avenue
Bourne, MA 02532

8. Enclose a letter of request for variances which makes reference to the specific provisions of Title 5 and 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 the regulations.

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

- Application Fees paid to the Town of Bourne.
- Letter of request (see samples)
- Six sets of complete plans and specifications. One with original stamp of design engineer.
- Nitrogen Loading Calculation Sheet(s)
- 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 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 is 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 Janet Black, Trustee Date 1/17/2020

Print Name JANET BLACK, Trustee

Signature of Preparer Raul Lizardi Rivera Date 1/28/2020

Print Name Raul Lizardi Rivera

For Office Use Only

Completed Application Received: _____

Reviewed By: TG

Hearing Date: 2/26/2020

Permit #: 18-20

Circle all that apply: Approved Continued Disapproved Other

Notes: Need proof of certified mailings TG 1/29/2020

RECEIVED

JAN 29 2020

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532



CAPE & ISLANDS ENGINEERING

CIVIL ENGINEERING - LAND SURVEYING - ENVIRONMENTAL PERMITTING

INCORPORATED

SUMMERFIELD PARK
800 FALMOUTH ROAD, SUITE 301C
MASHPEE, MA 02649
(508) 477-7272 FAX (508) 477-9072
email: info@CapeEng.com

January 29, 2020

Ms. Terri Guarino, R.S., C.H.O.,
Bourne Board of Health Agent
24 Perry Avenue
Bourne, MA 02532

RE: Parcel 109, 72 Elgin Road, Bourne (Pocasset), MA – Applicant: Tim Bernard

Dear Ms. Guarino:

On behalf of our client, Tim Bernard, we request the Bourne Board of Health approval of a new Title 5 Septic Design at the above referenced address.

Based on a drawing by our firm, dated January 3, 2020, two (2) variances in accordance to Sections 15.410 and 15.411 are required to install the proposed on-site septic system. The required 25 feet setbacks from the Fragmented Coastal Bank to Septic System; and 50 feet setbacks from the Soil Absorption to Fragmented Coastal Bank from Section 15.211 of Title 5 will need to be waived. Because of the existing and unique site topographic features of this lot, which includes a Fragmented Coastal Bank on a large portion of the lot, the presence of non-natural soils and adjusted high groundwater level as encountered during exploratory soil tests and the site relatively low surface elevations, the required setbacks for a conforming Septic System to the Fragmented Coastal Bank are impossible to attain on the property. Enforcement of the provisions of 310 CMR 15.211 from which a variance is sought would be manifestly unjust. Due to these circumstances, the setback distances requested are as follows:

<u>NO</u>	<u>DESCRIPTION</u>	<u>REQUIRED</u>	<u>PROPOSED</u>	<u>REQUESTED</u>
1.	Septic Tank Setback to Fragmented Coastal Bank	50'	0'	25'
2.	S.A.S. Setback to Fragmented Coastal Bank	50'	0'	50'

A Notice of Intent application has been submitted to the Bourne Conservation Commission. The soil absorption system as proposed is 0' away from to the Fragmented Coastal Bank and the septic tank is 0' away from the Fragmented Coastal Bank. The Fragmented Coastal Bank is a land feature based on slope criteria and it is not a primary seaward facing Coastal Bank, it is not a sediment supply to other wetlands and it is, at least in part, the result of prior land manipulation activities. The Fragmented Coastal Bank at this site does not serve the values and functions of a primary seaward facing Coastal Bank. The proposed Title 5 septic system conforms to all other regulatory setbacks and provides 9' separation to the adjusted high groundwater level, over 150 feet setback to the waters of Buzzards Bay and provides at least the same level of environmental protection equivalent to that of a full compliance septic system.

If you have any questions please feel free to contact me.

Sincerely,

Raul Lizardi-Rivera, P.E.
Director of Engineering

Encl. 7 Copies of Request and Plan
Filing fee

Cc: Tim Bernard

RECEIVED

JAN 29 2020

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

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 (NO₃-N). Use the information from your PLAN OF RECORD to provide the following:

Number of bedrooms (Title 5 definition)	=	<u>4</u>	bedrooms
Lot size (in square feet)	=	<u>18,848</u>	sq. ft.
Impervious surfaces; **Roof area = <u>3,470</u> sq. ft. **Paved area =	=	<u>888</u>	sq. ft.
Natural Area = lot area minus all impervious surfaces	=	<u>14,490</u>	sq. ft.
Lawn area in sq. ft.	=	<u>2,000</u>	sq. ft.

TITLE 5 FLOW = 110 GAL. / DAY PER BEDROOM
 WASTEWATER FLOWS (NITROGEN LOAD & WATER LOAD)

RECEIVED

JAN 29 2020

Bourne Health Department
 24 Perry Avenue
 Buzzards Bay, MA 02532

Nitrogen from Title 5 design = 14,572 mg NO₃-N / day / bedroom

Water from Title 5 design = 416.3 L H₂O / day / bedroom

1a) Number of bedrooms = 4 X 14,572 = 58,288 mg. NO₃-N / day

1b) Number of bedrooms = 4 X 416 = 1,664 L H₂O / day

Actual Nitrogen load = 6071.5 mg NO₃-N / day / bedroom

Actual Water load = 173.5 L H₂O / day / bedroom

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

2a) Number of bedrooms = 4 X 6071.5 = 24,286 mg. NO₃-N / day

2b) Number of bedrooms = 4 X 173.5 = 694 L H₂O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO₃-N load number sq. ft. of roof surface X 0.19395 mg NO₃-N / sq. ft.

H₂O load number sq. ft. of roof surface X 0.2586 L / sq. ft.

3a) Roof surface = 3,470 sq. ft. X 0.19395 = 673 mg NO₃-N

3b) Roof surface = 3,470 sq. ft. X 0.2586 = 897 L H₂O

NO₃-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.

H₂O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO₃-N = 888 sq. ft. paved surface X 0.388 mg / sq. ft. = 344 mg NO₃-N

4b) H₂O = 888 sq. ft. paved surface X 0.2586 L / sq. ft. = 230 L H₂O

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

5) sq. ft. of lawn = 2,000 X 0.933 = 1,866 mg

NATURAL AREA WATER LOADING

Natural area = lot size - impervious surface = 14,490 sq.ft.

5) Natural area = 14,490 X water recharge factor = 1,968 L
(0.1358 L / sq. ft. for Bourne)¹

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO₃N load:

1a + 3a + 4a + 5
58,288 + 673 + 344 + 1,866 = 61,171 mg NO₃-N / day

7b) ADD the above water (H₂O) load:

1b + 3b + 4b + 6
1,664 + 897 + 230 + 1,968 = 4,759 L H₂O / day

7c) DIVIDE 7a by 7b = 12.9 ppm NO₃-N*****

RECEIVED

JAN 29 2020

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

Actual Nitrogen & Water Loading

8a) ADD the above NO₃N load:

2a + 3a + 4a + 5
24,286 + 673 + 344 + 1,866 = 27,169 mg NO₃-N / day

8b) ADD the above water (H₂O) load:

2b + 3b + 4b + 6
694 + 897 + 230 + 1,968 = 3,789 L H₂O / day

8c) DIVIDE 8a by 8b = 7.2 ppm NO₃-N*****

FINAL CALCULATION ADD 7c & 8c (ppm) = 20.1 divide by 2 = 10 ppm NO₃-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*****

¹ Water recharge factors for data line 6: @21' / yr. use 0.1358 in Bourne and Falmouth; @ 19" / yr. use 0.1228 for Mashpee & Sandwich; @ 18" / yr. 0.1164 for Barnstable, Dennis & Yarmouth; @ 17" / yr. use 0.1101 for Brewster & Harwich; @ 16" / yr. use 0.1031 for Chatham, Eastham, Orleans, Provincetown, Truro & Wellfleet.

January 16, 2020

Ms. Terri Guarino, R.S., C.H.O.
Bourne Board of Health Agent
24 Perry Avenue
Bourne, MA 02532

**RE: Application for new Title 5 Sewage Disposal System, 72 Elgin Road,
Bourne, (Pocasset) MA**

Dear Ms. Guarino:

This letter is in regard the above referenced application.

Please accept this letter as my written authorization to allow Matthew C. Costa, P.L.S., R.S. of Cape & Islands Engineering, Inc. and/or his Associates to represent this property on my behalf.

If you have any questions, please feel free to contact me.

Sincerely,

Janet Black, Trustee

Janet Black, Trustee
Black Family Nominee Trust
71 Elgin Road
Pocasset, MA 02559

RECEIVED

JAN 29 2020

Bourne Health Department
24 Perry Avenue
Bourne, MA 02532

310 CMR 15.211: Setback Distances for System Components in Feet

Instructions: Check the boxes for any requests for reductions in setback distances which may apply and fill in the proposed actual setback distances in the columns on the right for all components

	Minimum Required		Proposed Setback	
	Septic Tank Holding Tank Pump Chamber Treatment Unit Grease Traps	Soil Absorption System	Septic Tank Holding Tank Pump Chamber Treatment Unit Grease Traps	Soil Absorption System
<input type="checkbox"/> Property Line	10	10		
<input type="checkbox"/> Cellar or Crawl Space Wall, Inground Swimming Pool, foundation drain	10	20		
<input type="checkbox"/> Slab Foundation	10	10		
<input type="checkbox"/> Water Supply Line (pressure)	10	10		
<input type="checkbox"/> Surface Waters (except wetlands)	25	150		
<input checked="" type="checkbox"/> Salt Marshes, Inland and <u>Coastal</u> Banks**	25	150	0	0
<input type="checkbox"/> Surface Water Supply - Reservoirs and Impoundments	400	400		
<input type="checkbox"/> Tributaries to Surface Water Supplies	200	200		
<input type="checkbox"/> Wetlands bordering Surface Water Supply or Tributary thereto**	100	150		
<input type="checkbox"/> Certified Vernal Pools**	50	150		
<input type="checkbox"/> Private Water Supply Well or Suction Line	50	100		
<input type="checkbox"/> Downhill Slope	N/A	15		
<input type="checkbox"/> Irrigation Well	10	25		
<input type="checkbox"/> Open Surface or Subsurface Drains which discharge to Surface Water Supplies of Tributaries thereto	50	100		
<input type="checkbox"/> Drains (excluding foundation drains) which intercept seasonal high groundwater table	25	50		
<input type="checkbox"/> Other Open Surface or Subsurface Drains (excluding foundation drains)	5	10		
<input type="checkbox"/> Leaching Catch Basins & Dry Wells	10	25		
<input type="checkbox"/> Zone I Public Water Supply Well	not permitted	not permitted		

**Per local regulation, for all leaching facilities within 100 feet of a wetland or watercourse, the applicant must provide hydrogeologic data acceptable to the Approving Authority demonstrating that the location of the soil absorption system is hydraulically downgradient from the water resource area. Surface topography alone is not determinative.

JAN 29 2020

RECEIVED

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532



CAPE & ISLANDS ENGINEERING

CIVIL ENGINEERING - LAND SURVEYING - ENVIRONMENTAL PERMITTING

INCORPORATED

SUMMERFIELD PARK
800 FALMOUTH ROAD, SUITE 301C
MASHPEE, MA 02649
(508) 477-7272 FAX (508) 477-9072
email: info@CapeEng.com

January 29, 2020

Abutters to referenced property.

RE: Notice of Board of Health Public Hearing, 72 Elgin Road, Pocasset (Bourne)

Dear Abutter:

In accordance with the State Environmental Code, Title 5: 310 CMR 15.00 and Section 1 of the Town of Bourne Board of Health Regulations, you are hereby notified that Tim Bernard has requested a hearing before the Bourne Board of Health for relief from Title 5 and/or the Bourne Board of Health Regulations for the installation of a Title 5 sewage disposal system. The location of the property for this proposal is 72 Elgin Road, Bourne (Pocasset), MA where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on:

NO	DESCRIPTION	REQUIRED	PROPOSED	REQUESTED
1.	S.A.S. Setback to Fragmented Coastal Bank	50'	0'	25'
2.	Septic Tank to Fragmented Coastal Bank	25'	0'	50'

This hearing is tentatively scheduled for Wednesday, February 26, 2020 at 6:00 pm in the Lower Conference Room of the Bourne Town Hall. Information regarding the hearing may be available for your review one week prior to the meeting at the Bourne Health Department, 24 Perry Avenue, Buzzards Bay, Monday through Friday from 8:30am until 4:30pm.

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

Sincerely,

Jean E. Duff-Still
Permitting Specialist

Cc: Board of Health
Tim Bernard

RECEIVED
JAN 29 2020
Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532



TOWN OF BOURNE

Board of Assessors

24 Perry Avenue

Buzzards Bay, MA 02532

(508) 759-0600 Ext. 1510 ♦ Fax (508) 759-8026



Bruce Cabral, MAA
Director of Assessing

Priscilla A. Koleshis, Chairperson
Michael Leitzel, Clerk
Ellen Doyle Sullivan, Member

January 10, 2020

Cape & Islands Engineering, Inc.
Jean E. Duff-Still
800 Falmouth Rd, Ste. 301C
Mashpee, MA 02649

Re: Abutters List for Map 47.1 Parcel 109
Subject Property: 72 Elgin Rd

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 98, 99, 100, 108, 110, 117 & 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.

RECEIVED

JAN 29 2020

Board of Assessors

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

Priscilla Koleshis

Michael Leitzel

Ellen Doyle Sullivan

Report #24: Owner Listing Report
Fiscal Year 2021

1 Abutters List
Database: LIVE
Key IN 10241, 10242, 10243, 10251, 10253, 10260, 10262
Filter:
Sort:

Key	Parcel ID	Owner	Location	LC/CI	Bk-Pri(Cert) ID	Mailing Street	Mailing City	ST	Zip Cd/Counv
10241	47.1-98-0	HENROZ MARC-ANTOINE ETUX YANNICK K BOEDTS	102 ELGIN RD N 1010	N	25494/207 6/7/2011	AVENUE JEU DE PAUME 24	BRUSSELS	MA	02559
10242	47.1-99-0	HANDY POINT ASSOCIATION INC C/O TREASURER	106 ELGIN RD N 1060	N	1921/333 8/23/1973	PO BOX 863	POCASSET	MA	02559
10243	47.1-100-0	SULLIVAN JOSEPH R JR	110 ELGIN RD N 1010	N	23956/243 8/11/2009	PO BOX 574	POCASSET	MA	02559-0574
10251	47.1-108-0	BLACK JOEL D	68 ELGIN RD N 1300	N	02282/0274	71 ELGIN ROAD	POCASSET	MA	02559
10253	47.1-110-0	FISHER RICHARD W & MARY E-TR FISHER FAMILY INVESTMENT TRUST	76 ELGIN RD N 1010	N	30455/184 5/1/2017	76 ELGIN RD	POCASSET	MA	02559
10260	47.1-117-0	BLACK JANET TR OF BLACK FAMILY NOMINEE TRUST	71 ELGIN RD N 1010	N	23600/205 4/10/2009	71 ELGIN ROAD	POCASSET	MA	02559
10262	47.1-120-0	GOLDBERG JUDITH N & C RUSSELL HANSEN JR TRS RPG NOM TR	63 ELGIN RD N 1010	N	13263/276 9/27/2000	130 MOUNT AUBURN ST UNIT 412	CAMBRIDGE	MA	02138

Total Records

7

RECEIVED
JAN 29 2020
Bourne Health Department
24 Perry Avenue
Buzards Bay, MA 02532

RECEIVED

MAR 16 2020

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee
 Extra Services & Fees (shown box, add fee as appropriate)
 Return Receipt (hardcopy)
 Return Receipt (electronic)
 Certified Mail Restricted Delivery
 Adult Signature Required
 Adult Signature Restricted Delivery
 Merchandise
 Signature Confirmation®
 Restricted Delivery

Postmark Here
MAR - 6 2020

47-1-100
Sullivan, Joseph R. Jr.
PO Box 374
Pocasset, MA 02559-0374
72 Elgin Road-BOH

PS Form 3811, July 2015 PSN 7530-02-000-9003

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee
 Extra Services & Fees (shown box, add fee as appropriate)
 Return Receipt (hardcopy)
 Return Receipt (electronic)
 Certified Mail Restricted Delivery
 Adult Signature Required
 Adult Signature Restricted Delivery
 Merchandise
 Signature Confirmation®
 Restricted Delivery

Postmark Here
MAR - 6 2020

47-1-99
Handy Point Associations Inc.
c/o Treasurer
PO Box 863
Pocasset, MA 02559-0863
72 Elgin Road-BOH

PS Form 3811, July 2015 PSN 7530-02-000-9003

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee
 Extra Services & Fees (shown box, add fee as appropriate)
 Return Receipt (hardcopy)
 Return Receipt (electronic)
 Certified Mail Restricted Delivery
 Adult Signature Required
 Adult Signature Restricted Delivery
 Merchandise
 Signature Confirmation®
 Restricted Delivery

Postmark Here
MAR - 6 2020

47-1-98
Henroz, Marc-Antoine et ux
Yannick K Boeds
Avenue Jeu De Paume 24
Brussels, 1150 Belgium
72 Elgin Road-BOH

PS Form 3811, July 2015 PSN 7530-02-000-9003

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee
 Extra Services & Fees (shown box, add fee as appropriate)
 Return Receipt (hardcopy)
 Return Receipt (electronic)
 Certified Mail Restricted Delivery
 Adult Signature Required
 Adult Signature Restricted Delivery
 Merchandise
 Signature Confirmation®
 Restricted Delivery

Postmark Here
MAR - 6 2020

47-1-108
Black, Joel D
71 Elgin Road
Pocasset, MA 02559
72 Elgin Road-BOH

PS Form 3811, July 2015 PSN 7530-02-000-9003

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee
 Extra Services & Fees (shown box, add fee as appropriate)
 Return Receipt (hardcopy)
 Return Receipt (electronic)
 Certified Mail Restricted Delivery
 Adult Signature Required
 Adult Signature Restricted Delivery
 Merchandise
 Signature Confirmation®
 Restricted Delivery

Postmark Here
MAR - 6 2020

47-1-117
Black, Janet Tr of Black
Family Nominee Tr
71 Elgin Road
Pocasset, MA 02559
72 Elgin Road-BOH

PS Form 3811, July 2015 PSN 7530-02-000-9003

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee
 Extra Services & Fees (shown box, add fee as appropriate)
 Return Receipt (hardcopy)
 Return Receipt (electronic)
 Certified Mail Restricted Delivery
 Adult Signature Required
 Adult Signature Restricted Delivery
 Merchandise
 Signature Confirmation®
 Restricted Delivery

Postmark Here
MAR - 6 2020

47-1-110
Fisher, Richard W & Mary E Tr
Fisher Family Investment Trust
76 Elgin Road
Pocasset, MA 02559
72 Elgin Road-BOH

PS Form 3811, July 2015 PSN 7530-02-000-9003

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee
 Extra Services & Fees (shown box, add fee as appropriate)
 Return Receipt (hardcopy)
 Return Receipt (electronic)
 Certified Mail Restricted Delivery
 Adult Signature Required
 Adult Signature Restricted Delivery
 Merchandise
 Signature Confirmation®
 Restricted Delivery

Postmark Here
MAR - 6 2020

47-1-120
Goldberg, Judith N & C Russell
Hansen Jr Trs RFG Noni Trust
130 Mount Auburn St, Unit 412
Cambridge, MA 02138
72 Elgin Road-BOH

PS Form 3811, July 2015 PSN 7530-02-000-9003

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee
 Extra Services & Fees (shown box, add fee as appropriate)
 Return Receipt (hardcopy)
 Return Receipt (electronic)
 Certified Mail Restricted Delivery
 Adult Signature Required
 Adult Signature Restricted Delivery
 Merchandise
 Signature Confirmation®
 Restricted Delivery

Postmark Here
MAR - 6 2020

47-1-120
Goldberg, Judith N & C Russell
Hansen Jr Trs RFG Noni Trust
130 Mount Auburn St, Unit 412
Cambridge, MA 02138
72 Elgin Road-BOH

PS Form 3811, July 2015 PSN 7530-02-000-9003

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee
 Extra Services & Fees (shown box, add fee as appropriate)
 Return Receipt (hardcopy)
 Return Receipt (electronic)
 Certified Mail Restricted Delivery
 Adult Signature Required
 Adult Signature Restricted Delivery
 Merchandise
 Signature Confirmation®
 Restricted Delivery

Postmark Here
MAR - 6 2020

47-1-120
Goldberg, Judith N & C Russell
Hansen Jr Trs RFG Noni Trust
130 Mount Auburn St, Unit 412
Cambridge, MA 02138
72 Elgin Road-BOH

PS Form 3811, July 2015 PSN 7530-02-000-9003

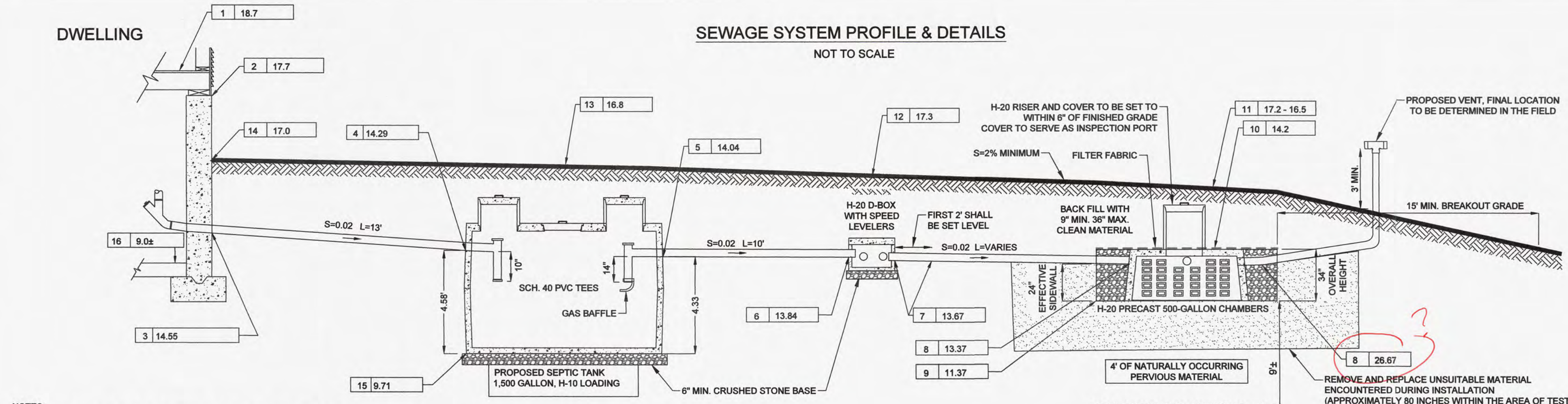


SCHEDULE OF ELEVATIONS

Table with 16 rows detailing elevations for various levels: 1 FIRST FLOOR, 2 TOP OF FOUNDATION, 3 PIPE INV. AT FOUNDATION, etc.

DWELLING

SEWAGE SYSTEM PROFILE & DETAILS



- NOTES: 1. FURNISH RISERS TO SET COVERS WITHIN 6 INCHES OF FINISH GRADE. 2. H-10 SEPTIC TANK AND H-20 DISTRIBUTION BOX (D-BOX) AND CHAMBERS, AND SCHEDULE 40 PVC PIPE THROUGHOUT.

USE (3) 500-GALLON CHAMBERS WITH DOUBLE WASHED CRUSHED STONE 45" AT ENDS AND BETWEEN EACH CHAMBER & 29" ALONG SIDES EFFECTIVE DIMENSIONS: LENGTH = 41.5', WIDTH = 9.7', HEIGHT = 2.0'

CONSERVATION NOTES

THE LIMIT OF WORK WILL CONSIST OF A ROW OF STAKED SEDIMENT STOP OR COMPOST ROLL WITH SILTATION FENCE BACKING. THE LIMIT OF WORK WILL BE INSTALLED PRIOR TO ANY WORK, EXCAVATION, CONSTRUCTION OR CLEARING OF VEGETATION...

GENERAL NOTES

LOCATIONS ARE BASED ON AN "ON THE GROUND" INSTRUMENT SURVEY AND ELEVATIONS BASED ON THE NAVD 1988 DATUM. COORDINATE SYSTEM USED IS THE MA-MAINLAND COORDINATE SYSTEM, DATUM: NAD 83, UNITS: U.S. SURVEY FEET.

DESIGN DATA

- 1. TYPE OF ESTABLISHMENT: 4-BEDROOM RESIDENCE
2. SEWAGE SYSTEM DESIGN FLOW: 110 GALLONS PER BEDROOM = 110 x 4 = 440 GPD
3. NOTE: THIS SEPTIC SYSTEM IS NOT DESIGNED FOR A GARBAGE GRINDER

SOIL EVALUATOR'S LOG

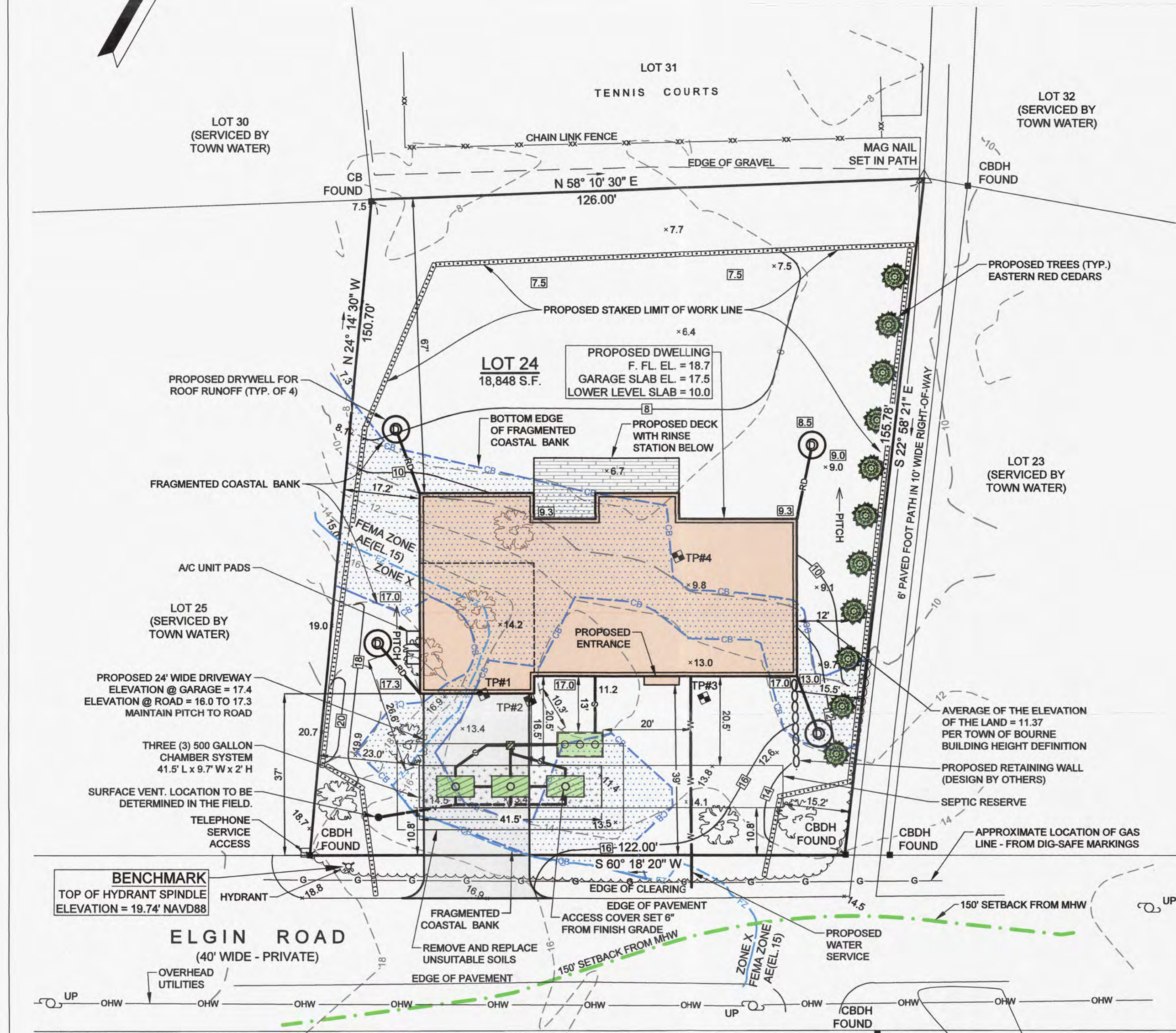
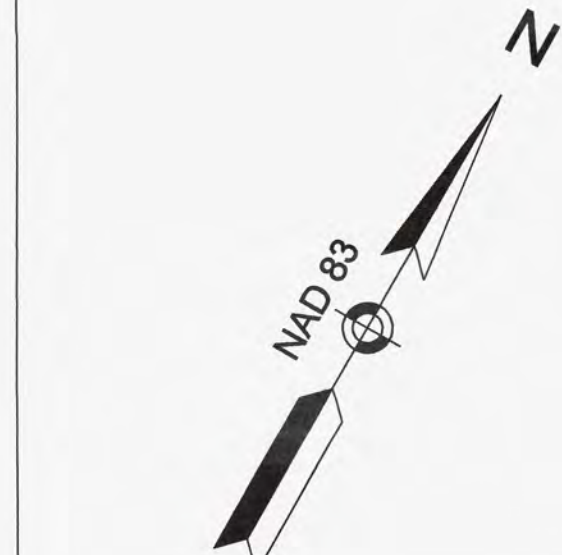
Table showing soil observations for three deep observation holes (TP#1, TP#2, TP#3, TP#4) with depth, soil texture, color, and moisture data.

LOCAL BOARD OF HEALTH REGULATION NOTES

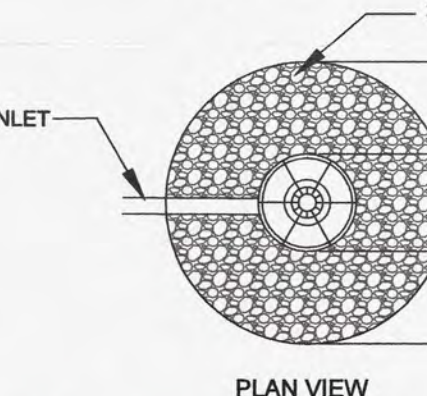
THE PROPOSED SEPTIC SYSTEM LOCATION IS APPROXIMATELY 184 FEET FROM THE NEAREST WATERCOURSE (MEAN HIGH WATER, MHW) EXCEEDING THE LOCAL 150 FEET MINIMUM REQUIREMENT.

LOCAL UPGRADE APPROVAL REQUEST

Table with 4 columns: NO., DESCRIPTION, REQUIRED, PROPOSED, VARIANCE REQUESTED. Row 1: SEPTIC TANK TO FRAGMENTED COASTAL BANK.



DRY WELL NOTES



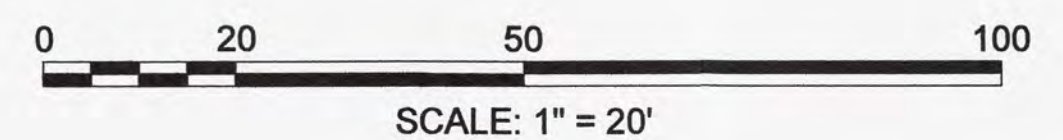
A SYSTEM OF GUTTERS, DOWNSPOUTS AND DRY WELLS SHALL BE USED TO RECHARGE ROOF RUNOFF.

LEGEND

- CB CONCRETE BOUND
■ SB STONE BOUND
○ HYDRANT
○ UTILITY POLE

PROJECT STATISTICS

- 1. WITHIN LAND SUBJECT TO COASTAL STORM FLOWAGE
1.1. TOTAL DISTURBANCE 14,300± S.F.
1.2. PERMANENT DISTURBANCE 6,240± S.F.



SCALE: 1" = 20'

SEPTIC SYSTEM NOTES

- 1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STATE ENVIRONMENTAL CODE, TITLE 5 (310 CMR 15.00), AND THE LOCAL BOARD OF HEALTH.
2. THERE SHALL BE NO CHANGES MADE IN THIS PLAN WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER AND LOCAL BOARD OF HEALTH.

RECEIVED

JAN 29 2020
Bourne Health Department
24 Perry Avenue
Bourne, MA 02532



NOTICE: THIS PLAN MAY NOT BE ADDED TO, DELETED FROM, OR ALTERED IN ANY WAY BY ANYONE OTHER THAN CAPE & ISLANDS ENGINEERING, INC.

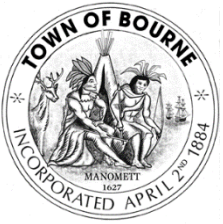
Table with columns: DATE, DESCRIPTION, BY, CHK. Includes project details for 72 ELGIN ROAD, BOURNE, MASSACHUSETTS.



SUMMERFIELD PARK
800 FALMOUTH ROAD SUITE 301C
MASSHREE, MA 02849

WORK COPY

WORK COPY



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



March 30, 2020

Mr. Raul Lizardi-Rivera, P.E.
Cape & Islands Engineering
800 Falmouth Road, Suite 301C
Mashpee, MA 02649

Dear Mr. Lizardi-Rivera:

On March 18, 2020, the Bourne Board of Health held a remote meeting and discussed your request for variances from Title 5, 310 CMR 15.211 and Bourne Board of Health 150 Foot Setback Regulations for the new construction of a sewage disposal system at 72 Elgin Road, Pocasset, MA. The Board of Health approved a zero foot setback from the septic tank and leaching facility to the Fragmented Coastal Bank based on the plans dated January 3, 2020 by Cape & Islands Engineering.

The Board felt as if these approvals were in order where the Fragmented Coastal Bank is a land feature based on slope criteria and is not a primary seaward facing Coastal Bank. The proposed septic system offers a nine (9) foot vertical separation to the adjusted groundwater table and is over 150 feet to the mean high water mark.

These variances are valid for two years from the date of approval. Please be advised that any changes to the sewage disposal plans or the new dwelling may require another hearing before the Bourne Board of Health to discuss and vote on the matter. Please do not hesitate to contact my office with questions or concerns. The Town buildings are presently closed to the public, but we do have staff available during business hours to answer questions over the telephone.

Sincerely,

Terri Guarino

Terri Guarino, RS, CHO
Health Agent
508-759-0600 x. 1513

Sent via electronic mail to [raul@capeeng.com]



Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



April 17, 2019

Mr. Zachary Basinski, P.E.
Bracken Engineering, Inc.
49 Herring Pond Road
Buzzards Bay, MA 02532

Dear Mr. Basinski:

At the duly posted public meeting on April 10, 2019, the Bourne Board of Health unanimously voted to approve variances for the proposed innovative/ alternative ("I/A") septic system at 18 Winsor Road, Bourne, MA (map 51.1, parcel 21) on behalf of your clients, John and Elizabeth LoMedico. As illustrated on the Subsurface Disposal Plan dated revised on March 12, 2019 by Bracken Engineering, Inc., the proposed sewage disposal system requires the following variances:

- A 150 foot variance from the Board of Health 150' setback regulation for the placement of a soil absorption system on a fragmented, non-eroding coastal bank; and
- A 50 foot variance from Title 5 for the placement of a soil absorption system on a fragmented, non-eroding coastal bank.

This approval was based on the architecturals dated March 25, 2019 by William F. Lee, II, AIA Architect and Associates indicating that the existing nine-bedroom dwelling will be razed, a new five-bedroom dwelling and detached garage with one-bedroom above will be constructed. The Board felt as if these variances were in order where the new dwellings and upgraded I/A septic system will reduce the nitrogen loading from 6.6 ppm to 2.4 ppm at the facility. The proposed septic system shall include a MicroFAST 0.9 de-nitrification unit and a Geoflow subsurface drip wastewater disposal system. The proposed location of the soil absorption system maximizes the vertical and horizontal separation, respectively, to groundwater and the adjacent salt marsh.

These variances are valid for two years from the date of approval and contingent upon an alternative septic disclosure notice recorded in the deed of the property. The Board of Health shall receive a copy of this recorded document and an Operation and Maintenance Agreement prior to issuance of a disposal works construction permit. This information must be received prior to sign off on any applicable building permit applications. Please be advised that there are no implied approvals for future modifications/ additions/ renovations/ and/or repairs to the dwelling or sanitary sewage facility. Any such work may require another hearing before the Bourne Board of Health. Additionally, it is understood that the owners have familiarized themselves with the MassDEP Conditions and Bourne Board of Health I/A Septic System Testing Regulations. Should you have any questions, please do not hesitate to contact the Board of Health office at 508-759-0600 ext. 1513. Thank you.

Sincerely,

Terri Guarino, RS
Health Agent

C.C. John and Elizabeth LoMedico [jlomedico@comcast.net]

Sent via Regular and Electronic Mail

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

March 28, 2019

Town of Bourne
Board of Health
24 Perry Avenue
Bourne, MA 02532

Re: 18 Winsor Road, Map 51.1 – Parcel 21

Dear Board Members:

Please accept this letter as a variance request to the Town of Bourne's Board of Health Regulations and Section 15.211 of the State Environmental Code 310CMR15.000 (Title 5) for the above referenced project. The applicant proposes to upgrade and modifying a sewage disposal system to accommodate the raze and rebuild of an existing single-family dwelling.

The following setback variances from the proposed soil absorption system to a fragmented, non-eroding coastal bank, are requested:

- **50 foot variance from Title 5**
- **150 foot variance from the Board of Health Regulations.**

The land formation in question is a vegetated upland area classified, based on topography, as a non-water dependent coastal bank per MA D.E.P. Policy 92-1. It is currently wooded and non-eroding and will remain in this state with the exception of a portion of the proposed garage. The proposed soil absorption system lies outside of the area in question however approximately 15 s.f. of the bank will be temporarily disturbed to allow the installation of associated piping and appurtenances related to the soil absorption field. The 949 s.f. soil absorption field itself would lie within the 150' buffer of the coastal bank.

The proposed location of the soil absorption system (SAS) was chosen to maximize the vertical and horizontal separation, respectively, to groundwater and the adjacent Salt Marsh on the property. The Salt Marsh surrounds the property on the south, west, and north sides and the proposed location of the SAS is over 150 feet from this resource area on all sides. The proposed system also includes Innovative/Alternative technology in the form of a MicroFAST unit that will provide enhanced nitrogen removal and further protect the adjacent wetland resource areas.

With the incorporation of the MicroFAST unit, the nitrogen loading generated from the property will be decreased from 6.6 parts per million (ppm) under existing conditions to 2.4 ppm under proposed conditions. Nitrogen loading calculation worksheets have been prepared and are included with this application. The number of bedrooms on the property has also been decreased from 9 in the existing dwelling to 6 under proposed conditions, with 5 contained within the main house and 1 within the detached garage.

In accordance with Section 15.410 of Title 5, the requested variance provides relief from Title 5 that results in the greatest environmental protection that could not otherwise be achieved with the strict application of the provision of 310 CMR 15.000, from which the variance is sought.

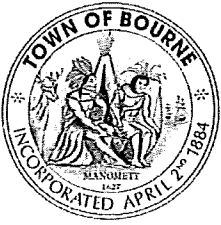
In closing and on behalf of the Applicants, John and Elizabeth LoMedico, BEI would like to thank you for your time and consideration of this matter. If you have any questions regarding this or require any further information, please contact our office at 508-833-0070 or email the undersigned at zac@brackeneng.com.

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, P.E.
Project Manager



Bourne Board of Health Application for Septic Variance Requests



In accordance with the established procedures of the Bourne Board of Health, this application for septic variances and waivers is relevant to requests for relief 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	John J. & Elizabeth R. LoMedico
Facility's Street Address	18 Winsor Road
Owner's Telephone Number	978-483-0298
Owner's E-mail Address	jlomedico@comcast.net
Owner's Mailing Address	254 Shawmut Avenue, Boston, MA 02109

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

Preparer's Name	Zachary L. Basinski, PE
Company	Bracken Engineering, Inc.
Telephone Number	508-833-0070
E-mail Address	zac@brackeneng.com
Mailing Address	49 Herring Pond Road
State/ Zip Code	Buzzards Bay, 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 Proposed (check all that apply): Conventional Title 5 I/A System
 Pumped System Gravity System Pressure Dosed Other

6. Describe the proposed septic system components: GeoFlow drip irrigation disposal system.
Effective field to be 949 SF effective area with 474 LF total of GeoFlow drip tubing.

7. Design Flow per 310 CMR 15.203 (in gallons/ day):
110 GPD/Bedroom - 6 bedroom system
Design flow of proposed system: 702 GPD
Total design flow of facility: 702 GPD

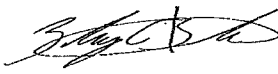
8. Enclose a letter of request for variances which makes reference to the specific provisions of Title 5 and the Board Bourne of Health Regulations for which a variance is sought. Please use this opportunity to demonstrate compliance with 310 CMR 15.410, and to justify the relevant facts and circumstances 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 the regulations.

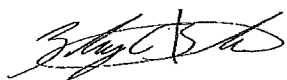
9. In order for this Application to be deemed complete, it must be accompanied by all of the following:

- Application Fees paid to the Town of Bourne.
- Letter of request (see samples)
- Six sets of complete plans and specifications. One with original stamp of design engineer.
- Nitrogen Loading Calculation Sheet(s)
- 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 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 is required for waivers or increases in flow

10. Certification:

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

Facility Owner's Signature  Date 3/28/19
Print Name John LoMedico
Bracken Engineering, Inc., Agent

Signature of Preparer  Date 3/28/19
Print Name Zachary L. Basinski, PE
Bracken Engineering, Inc.

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 (NO₃-N) Use the information from your PLAN OF RECORD to provide the following:

18 Winsor Road (Existing Conditions)

Number of Bedrooms (Title 5 Definition)	=	9	Bedrooms
Lot Size (in square feet of upland areas)	=	98,685	sq.ft.
Impervious Surfaces; **roof area	=	3,771	sq.ft.
**Paved Area	=	7,265	sq.ft.
Natural Area = lot area minus all impervious surfaces	=	87,649	sq.ft.
Lawn Area in sq. ft.	=	21,104	sq.ft.
I/A System?	=	NO	

TITLE 5 FLOW = 110 GAL./ DAY PER BEDROOM

WASTEWATER FLOWS (NITROGEN LOAD & WATER LOAD)

Nitrogen from Title 5 design = 14,572 mg NO₃-N / day / bedroom

Water from Title 5 design = 416.3 H₂O / day / bedroom

1a) Number of bedrooms = 9 x 14,572 = 131148.00 mg. NO₃-N / day

1b) Number of bedrooms = 9 x 416 = 3744.00 L H₂O / day

Actual Nitrogen load = 6071.5 mg NO₃-N / day/ bedroom

Actual Water load = 173.5 L H₂O / day / bedroom

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

2a) Number of bedrooms = 9 x 6071.5 = 54643.50 mg. NO₃-N / day

2b) Number of bedrooms = 9 x 173.5 = 1561.50 L H₂O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO₃-N load number sq. ft. of roof surface X 0.19395 mg NO₃-N / sq. ft.

H₂O load number sq. ft. of roof surface X 0.2586 L / sq. ft.

3a) Roof surface = 3771 sq. ft. X 0.19395 = 731.39 mg NO₃-N

3b) Roof surface = 3771 sq. ft. X 0.2586 = 975.18 L H₂O / day

NO₃-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.

H₂O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO₃-N = 7265 sq. ft. paved surface X 0.388 mg / sq. ft. = 2818.82 mg NO₃-N

4b) H₂O = 7265 sq. ft. paved surface X 0.2586 L / sq. ft. = 1878.73 L H₂O

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

$$5) \text{ sq. ft. of lawn} = 21104 \times 0.933 = 19690.03 \text{ mg}$$

NATURAL AREA WATER LOADING

$$\text{Natural area} = \text{lot size} - \text{impervious surfaces} = 87649 \text{ sq. ft.}$$

$$6) \text{ Natural area} = 87649 \times \text{water recharge factor} = 11902.73 \text{ L} \\ (\text{0.1358 L / sq. ft. for Bourne})$$

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO₃N load

1a	(+)	3a	(+)	4a	(+)	5	
131148		731.39		2818.82		19690.03	154388.24 mg NO ₃ -N / day

7b)

1b	(+)	3b	(+)	4b	(+)	6	
3744		975.18		1878.73		11902.73	18500.64 L H ₂ O / day

$$7c) \text{ DIVIDE 7a by 7b} = \underline{8.3} \text{ ppm NO}_3\text{-N}^{*****}$$

Actual Nitrogen & Water Loading

8a) ADD the above NO₃N load:

2a	(+)	3a	(+)	4a	(+)	5	
54643.5		731.39		2818.82		19690.03	<u>77883.74</u> mg NO ₃ -N / day

8b) ADD the above water (H₂O) load:

2b	(+)	3b	(+)	4b	(+)	6	
1561.5		975.18		1878.73		11902.7	<u>16318.14</u> L H ₂ O / day

$$8c) \text{ DIVIDE 8a by 8b} = \underline{4.8} \text{ ppm NO}_3\text{-N}^{*****}$$

$$\text{FINAL CALCULATION ADD 7c \& 8c (ppm)} = \underline{13.1} \text{ divide by 2} = \underline{6.6} \text{ ppm NO}_3\text{-N}$$

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*****

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 (NO₃-N) Use the information from your PLAN OF RECORD to provide the following:

18 Winsor Road (Proposed Conditions)

Number of Bedrooms (Title 5 Definition)	=	6	Bedrooms
Lot Size (in square feet of upland areas)	=	98,685	sq.ft.
Impervious Surfaces; **roof area=	5,610	sq.ft.	**Paved Area = 9,802 sq.ft.
Natural Area = lot area minus all impervious surfaces	=	83,273	sq.ft.
Lawn Area in sq. ft.	=	18,567	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 NO₃-N / day / bedroom

Water from Title 5 design = 416.3 H₂O / day / bedroom

1a) Number of bedrooms = 6 x 14,572 = 43716.00 mg. NO₃-N / day

1b) Number of bedrooms = 6 x 416 = 2496.00 L H₂O / day

Actual Nitrogen load = 6071.5 mg NO₃-N / day/ bedroom

Actual Water load = 173.5 L H₂O / day / bedroom

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

2a) Number of bedrooms = 6 x 6071.5 = 18214.50 mg. NO₃-N / day

2b) Number of bedrooms = 6 x 173.5 = 1041.00 L H₂O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO₃-N load number sq. ft. of roof surface X 0.19395 mg NO₃-N / sq. ft.

H₂O load number sq. ft. of roof surface X 0.2586 L / sq. ft.

3a) Roof surface = 5610 sq. ft. X 0.19395 = 544.03 mg NO₃-N

3b) Roof surface = 5610 sq. ft. X 0.2586 = 1450.75 L H₂O / day

NO₃-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.

H₂O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO₃-N = 9802 sq. ft. paved surface X 0.388 mg / sq. ft. 1901.59 mg NO₃-N

4b) H₂O = 9802 sq. ft. paved surface X 0.2586 L / sq. ft. 2534.80 L H₂O

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

$$5) \text{ sq. ft. of lawn} = 18567 \times 0.933 = 8661.51 \text{ mg}$$

NATURAL AREA WATER LOADING

$$\text{Natural area} = \text{lot size} - \text{impervious surfaces} = 83273 \text{ sq. ft.}$$

$$6) \text{ Natural area} = 83273 \times \text{water recharge factor} = 11308.47 \text{ L} \\ (\text{0.1358 L / sq. ft. for Bourne})$$

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO₃N load

1a	(+)	3a	(+)	4a	(+)	5	
43716		544.03		1901.59		8661.51	54823.12 mg NO ₃ -N / day

7b)

1b	(+)	3b	(+)	4b	(+)	6	
2496		1450.75		2534.80		11308.47	17790.02 L H ₂ O / day

$$7c) \text{ DIVIDE 7a by 7b} = \underline{3.1} \text{ ppm NO}_3\text{-N}^{*****}$$

Actual Nitrogen & Water Loading

8a) ADD the above NO₃N load:

2a	(+)	3a	(+)	4a	(+)	5	
18214.5		544.03		1901.59		8661.51	<u>29321.62</u> mg NO ₃ -N / day

8b) ADD the above water (H₂O) load:

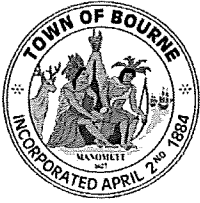
2b	(+)	3b	(+)	4b	(+)	6	
1041		1450.75		2534.80		11308.5	<u>16335.02</u> L H ₂ O / day

$$8c) \text{ DIVIDE 8a by 8b} = \underline{1.8} \text{ ppm NO}_3\text{-N}^{*****}$$

$$\text{FINAL CALCULATION ADD 7c \& 8c (ppm)} = \underline{4.9} \text{ divide by 2} = \underline{2.4} \text{ ppm NO}_3\text{-N}$$

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*****



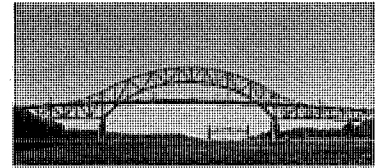
TOWN OF BOURNE

Board of Assessors

24 Perry Avenue

Buzzards Bay, MA 02532

(508) 759-0600 Ext. 1510 ♦ Fax (508) 759-8026



Anne Ekstrom, Chairman
Priscilla A. Koleshis, Clerk
Michael Leitzel, Member

Bruce Cabral, MAA
Director of Assessing

March 20, 2019

John & Elizabeth LoMedico
c/o Bracken Engineering, Inc.
49 Herring Pond Road
Buzzards Bay, MA 02532

Re: Abutters List for Map 51.1 Parcel 21
Subject Property: 18 Winsor Rd

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 51.1 Parcels 1, 3, 22, 23, 42 & 43.

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

Anne Ekstrom
Priscilla Koleshis
Michael Leitzel

List Enclosed

Extract: 1 Abutters List
 Database: LIVE
 Filter: Key IN 10762,10763,10780,10781,10802,10803
 Sort:

Report #24: Owner Listing Report
 Fiscal Year 2019

Bourne MA

Key	Parcel ID	Owner	Location	LC/CI	Bk-Pq(Cert) /Dt	Mailing Street	Mailing City	ST	Zip Cd/County
10762	51.1-1-0	KEENE HENRY R SR & JANE A KEENE	0 WINSOR RD	N 1320	01220/0396	74 MARTIN BATES ST	DEDHAM	MA	02026-4118
10763	51.1-3-0	GALLIGAN MARYFRANCES B TR GALLIGAN BEACH NOM TR	170 SCRAGGY NECK RD	Y 1010	7/13/2000	4 LAUREL TERRACE	WELLESLEY HILLS	MA	02481
10780	51.1-22-0	KEENE HENRY R JR TR OF THE 10 WINSOR ROAD REAL ESTATE TR	0 WINSOR RD	N 1320	10541/73 12/24/1996	PO BOX 485	MARION	MA	02738-0485
10781	51.1-23-0	KEENE HENRY R JR TR OF THE 10 WINSOR ROAD REAL ESTATE TRUST	10 WINSOR RD	N 1010	10541/73 12/24/1996	PO BOX 485	MARION	MA	02738
10802	51.1-42-0	CATAUMET VENTURES LLC	25 WINSOR RD	N 1010	29318/35 12/7/2015	C/O CRESSET DEVELOPMENT LLC 29 ACADEMY LN	CONCORD	MA	01742
10803	51.1-43-0	KEENAN JOHN JR TRS CJJ REALTY TRUST	7 WINSOR RD	Y 1010	187663 10/13/2016	P O BOX 340	CATAUMET	MA	02534-0340

Total Records 6

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

March 29, 2019

RE : Notice of Public Hearing

Dear Abutter :

In accordance with the State Environmental Code, Title5: 310 CMR 15.00, you are hereby notified that John and Elizabeth LoMedico have requested a hearing before the Bourne Board of Health for relief from Title 5 and/or the Bourne Board of Health Regulations for the installation of an upgraded Septic System. The location of the property for this proposal is 18 Winsor Road, Bourne, MA where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on :

- **310 CMR 15.411 – A variance is requested to construct a soil absorption system which partially falls within a fragmented, non-eroding coastal bank (per D.E.P. policy 92-1).**
- **150' Setback from a Wetland Resource Area: A variance is requested for a proposed soil absorption field to fall within the 150' setback of a coastal bank.**

The land formation in question is classified as a coastal bank per MA D.E.P. Policy 92-1. The proposed system would have approximately 15 s.f. of its 949 s.f. total area fall within the fragmented coastal bank. The remaining 934 s.f. would lie within the 150' buffer from a wetland resource area. The proposed location of the soil absorption system was chosen to maximize the separation to existing groundwater and to maximize the distance to the Salt Marsh adjacent to the property. The system also includes Innovative/Alternative (I/A) technology that will enhance nitrogen removal and further protect adjacent resource areas.

This hearing is tentatively scheduled for April 10, 2019 at 6:00 p.m. in the Lower conference room of the Bourne Town Hall. Information regarding the hearing may be available for your review one week prior to the meeting at the Bourne Health Department, 24 Perry Avenue, Buzzards Bay, Monday through Friday from 8:30 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.

A handwritten signature in black ink, appearing to read 'Zachary L. Basinski', is written over a faint, larger version of the signature.

Zachary L. Basinski, PE
Agent for the Applicant

7017 1450 0002 3641 0564

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee

Postage:	\$.50
Certified Fee:	\$ 3.50
Return Receipt Fee:	\$ 2.80
Total Postage & Fees:	\$ 6.80

Cataumet Ventures LLC
c/o Cresset Development LLC
29 Academy Lane
Concord, MA 01742

18 Winsor Road, Bourne - BOH VARIANCE

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



7017 1450 0002 3641 0557

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage:	\$.50
Certified Fee:	\$ 3.50
Return Receipt Fee:	\$ 2.80
Total Postage & Fees:	\$ 6.80

Henry R. Keene, Jr., TR
10 Winsor Road Real Estate Trust
P.O. Box 485
Marion, MA 02738-0485

18 Winsor Road, Bourne - BOH VARIANCE

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



7017 1450 0002 3641 0540

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage:	\$.50
Certified Fee:	\$ 3.50
Return Receipt Fee:	\$ 2.80
Total Postage & Fees:	\$ 6.80

Mary Frances B. Galligan, Trustee
Galligan Beach Nom. TR
4 Laurel Terrace
Wellesley Hills, MA 02481

18 Winsor Road, Bourne - BOH VARIANCE

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



7017 1450 0002 3641 0571

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Postage:	\$.50
Certified Fee:	\$ 3.50
Return Receipt Fee:	\$ 2.80
Total Postage & Fees:	\$ 6.80

John Keenan, Jr., TRS
CJJ Realty Trust
P.O. Box 340
Cataumet, MA 02534-0340

18 Winsor Road, Bourne - BOH VARIANCE

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



7017 1450 0002 3641 0533

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

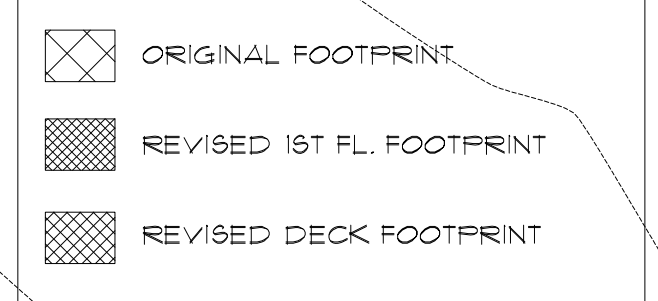
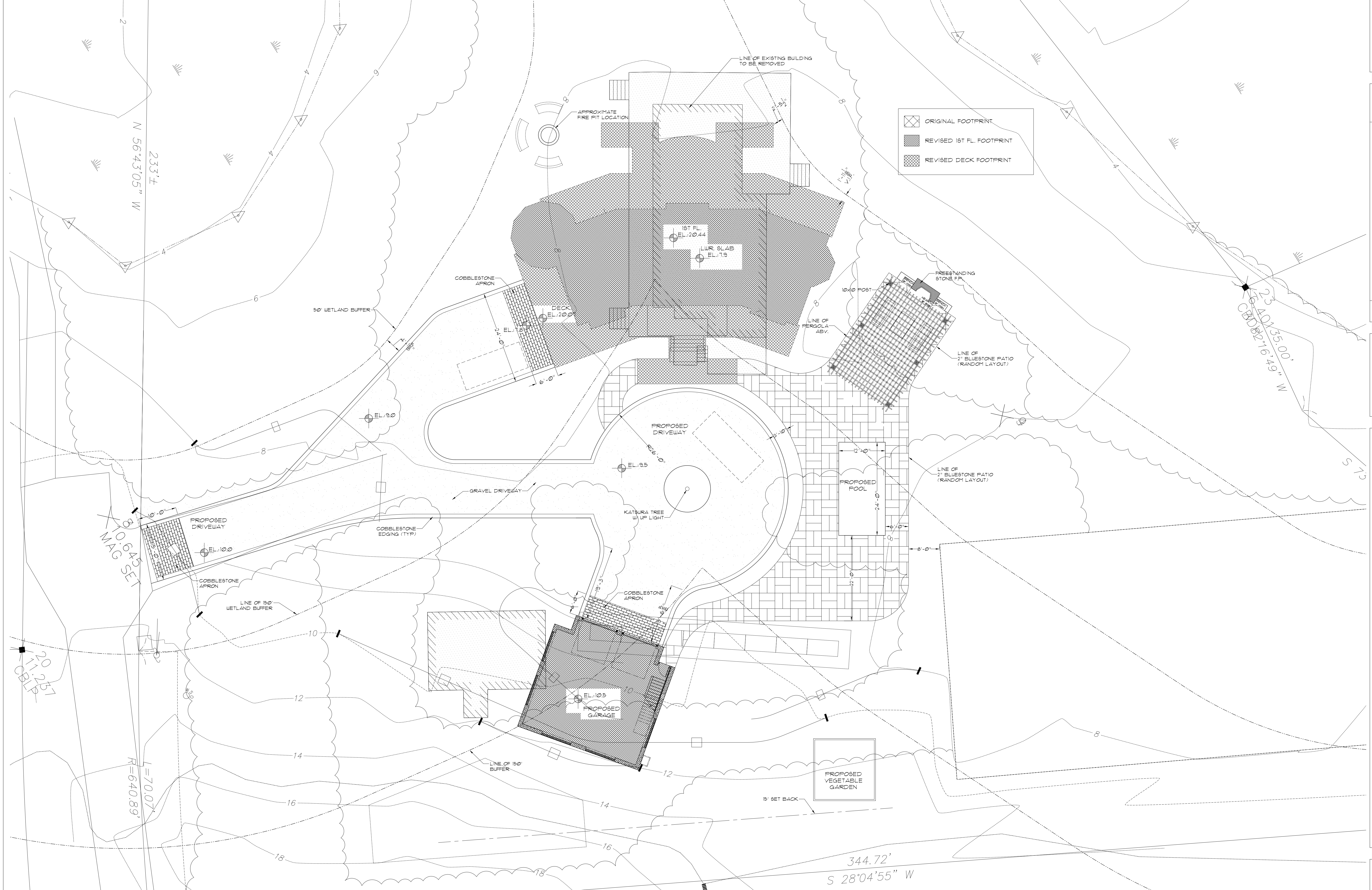
Postage:	\$.50
Certified Fee:	\$ 3.50
Return Receipt Fee:	\$ 2.80
Total Postage & Fees:	\$ 6.80

Henry R. Keene, Sr.
Jane A. Keene
74 Martin Bates Street
Dedham, MA 02026-4118

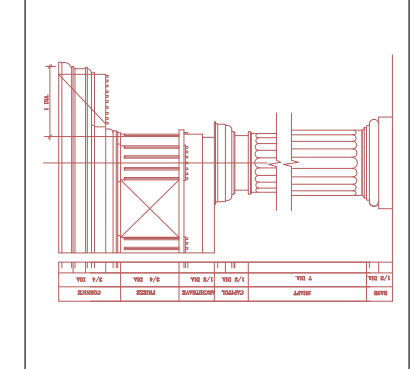
18 Winsor Road, Bourne - BOH VARIANCE

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





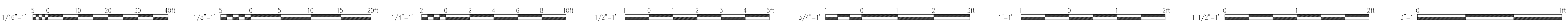
SITE PLAN
SCALE: 3/32"=1'-0"



NO.	REVISIONS	BY	DATE

DRAWING TITLE: PROPOSED NEW RESIDENCE FOR LISA AND JOHN LOMEDICO
 LOCATION: 18 WINSOR RD, CATAUMET, MA
W I L I A M F. L E E, I I, A I A
 ARCHITECT AND ASSOCIATES
 636 MAYFLOWER STREET, DUXBURY, MA 02332-3617
 PHONE 781 - 562 - 1534 EMAIL BILLLEEARCHITECT@AOL.COM

CONSTRUCTION DOCUMENT NO.	DATE: 9/25/09
DRAWN BY: ANS	SCALE: AS NOTED
DRAWING NUMBER	DRAWING NUMBER
SHEET 5/16	SHEET 5/16



BEAM POCKET NOTE:

HOUSE:
 4x3x1/2" GALVANIZED x 12" LONG, W/ 2 STRAP ANCHORS CAST INTO CONCRETE, WELD STEEL BEAM TO ANGLE, TYP.

GARAGE:
 4x3x1/2" GALVANIZED x 12" LONG, W/ 2 STRAP ANCHORS CAST INTO CONCRETE, WELD STEEL BEAM TO ANGLE, TYP.

SILL ANCHOR NOTE:

ANCHOR SILL PLATE TO CONCRETE WALL WITH 5/8" DIAMETER BOLTS AT 36" O.C. MAX AND NOT MORE THAN 12" FROM CORNERS. EXTEND BOLT 8" INTO CONCRETE. PROVIDE PLATE WASHER 3 x 1/4 x 3 ON TOP OF SILL WITH NUT 4 WASHER.

STRUCTURAL ENGINEER'S CERTIFICATION NOTE:

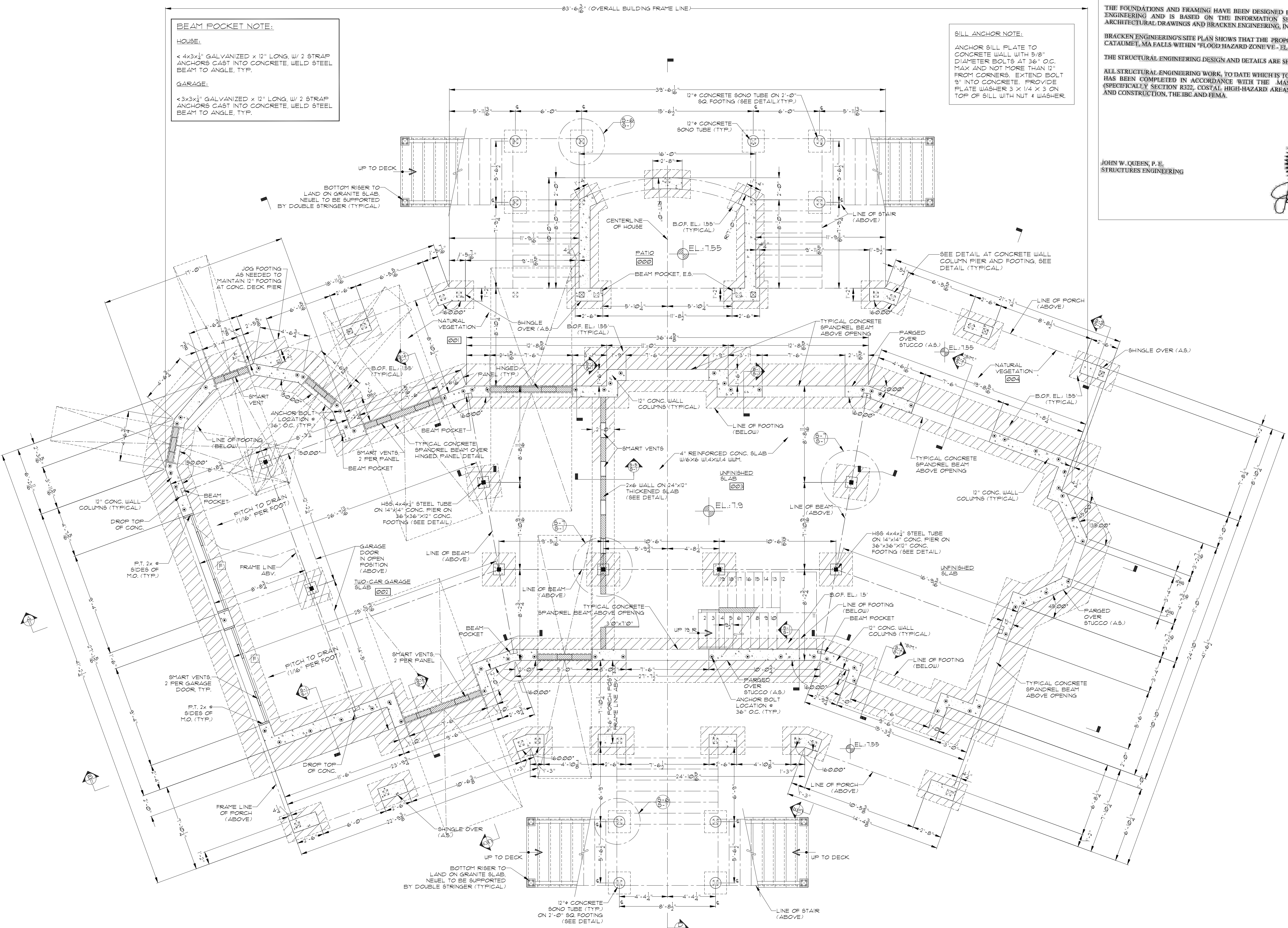
THE FOUNDATIONS AND FRAMING HAVE BEEN DESIGNED BY JOHN W. QUEEN, P. E., STRUCTURES ENGINEERING AND IS BASED ON THE INFORMATION SHOWN ON WILLIAM F. LEE, A. I. A. ARCHITECTURAL DRAWINGS AND BRACKEN ENGINEERING, INC. SITE PLAN DRAWINGS.

BRACKEN ENGINEERING'S SITE PLAN SHOWS THAT THE PROPOSED STRUCTURES AT 18 WINSOR ROAD, CATAUMET, MA FALLS WITHIN "FLOOD HAZARD ZONE VE - EL. 17.0".

THE STRUCTURAL ENGINEERING DESIGN AND DETAILS ARE SHOWN ON WILLIAM LEE'S DRAWINGS.

ALL STRUCTURAL ENGINEERING WORK, TO DATE WHICH IS TO BE CONSIDERED AS THE FINAL DESIGN HAS BEEN COMPLETED IN ACCORDANCE WITH THE MASSACHUSETTS STATE BUILDING CODE (SPECIFICALLY SECTION R322, COSTAL HIGH-HAZARD AREAS), ASCE 24 FLOOD RESISTANT DESIGN AND CONSTRUCTION, THE IBC AND FEMA.

JOHN W. QUEEN, P. E.
 STRUCTURES ENGINEERING



FOUNDATION PLAN
 SCALE: 1/4"=1'-0"

NO.	REVISIONS	DATE

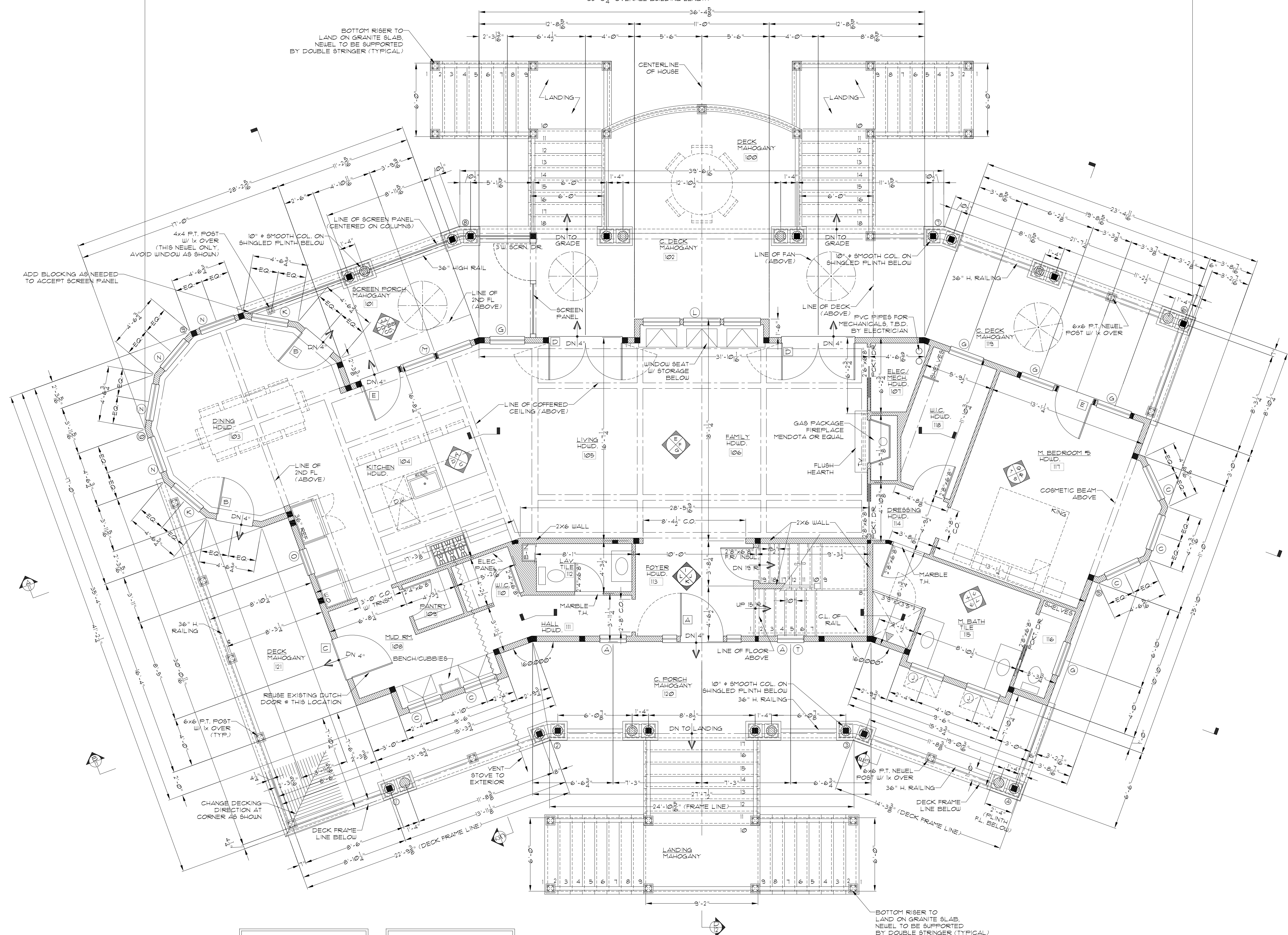
DRAWING TITLE: PROPOSED NEW RESIDENCE FOR LISA AND JOHN LOVEDICO

LOCATION: 18 WINSOR RD, CATAUMET, MA

WILLIAM F. LEE, AIA
 ARCHITECT AND ASSOCIATES
 636 MAYFLOWER STREET, DUXBURY, MA 02332-3617
 PHONE 781 - 562 - 1534 EMAIL BILL@ARCHITECT@AOL.COM

CONSTRUCTION DOCUMENT NO.	3/25/13
DATE:	3/25/13
DRAWN BY:	LB
SCALE:	AS NOTED
DRAWING NUMBER	
SHEET	6

ALL DESIGNS, CONSTRUCTION DRAWINGS AND SPECIFICATIONS ARE THE INTELLECTUAL PROPERTY OF THE ARCHITECT. THE ARCHITECT SHALL RETAIN SOLE COPYRIGHT OF SUCH AS INSTRUMENTS OF SERVICE AND ARE FOR THE PURPOSE OF EXECUTING THE CONSTRUCTION PHASE OF THIS PROJECT. ANY OTHER USE OF THESE DOCUMENTS OR PORTIONS THEREOF IS STRICTLY PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE ARCHITECT.



ABBREVIATIONS:

- D.W. = DRY WELL
- D.S. = DOWN SPOUT
- P.D. = PERIMETER DRAIN
- F.S. = FACE OF STUD
- T.O.W. = TOP OF WALL
- B.O.F. = BOTTOM OF FOOTING
- V.I.F. = VERIFY IN FIELD
- T.H. = THRESHOLD
- F.R. = FACE OF RIM
- L.B.D. = LEDGER BOARD
- P.T. = PRESURE TREATED
- A.S. = ALL SIDES
- H.D. = HOLD DOWN
- P.B. = POST BELOW
- P.A. = POST ABOVE
- B.W. = BASEMENT WINDOW
- O.H. = OVER HEAD
- M.O. = MASONRY OPENING
- C.L. = CENTERLINE
- T.B.D. = TO BE DETERMINED
- N.T.S. = NOT TO SCALE

DESIGN LOADS:

LIVE LOADS

ATTIC	25#/s.f.
SLEEPING ROOMS	40#/s.f.
OTHER ROOMS	45#/s.f.
SNOW (GROUND)	35#/s.f.

WIND SPEED
(TABLE R3012 IN 9TH EDITION OF 2003 MASSACHUSETTS RESIDENTIAL CODE)
133 MPH

EXPOSURE C

DEFLECTION

RAPTERS	L/180
FLOORS (WOOD)	L/480
FLOORS (TILE)	L/720

FIRST FLOOR PLAN
SCALE: 1/4"=1'-0"

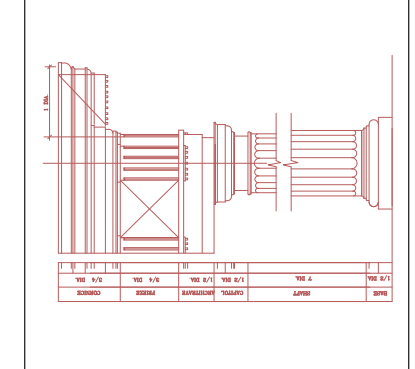
SQUARE FOOT SUMMARY

FIRST FLOOR:	1914 S.F.
SECOND FLOOR:	1709 S.F.
TOTAL:	3611 S.F.

COVERED DECK:	820 S.F.
SCREEN PORCH:	163 S.F.
DECK:	599 S.F.

ELEVATION NOTE:
SOME STRUCTURAL DETAILS WILL BE NOTED IN ARCHITECTURAL NOTATIONS

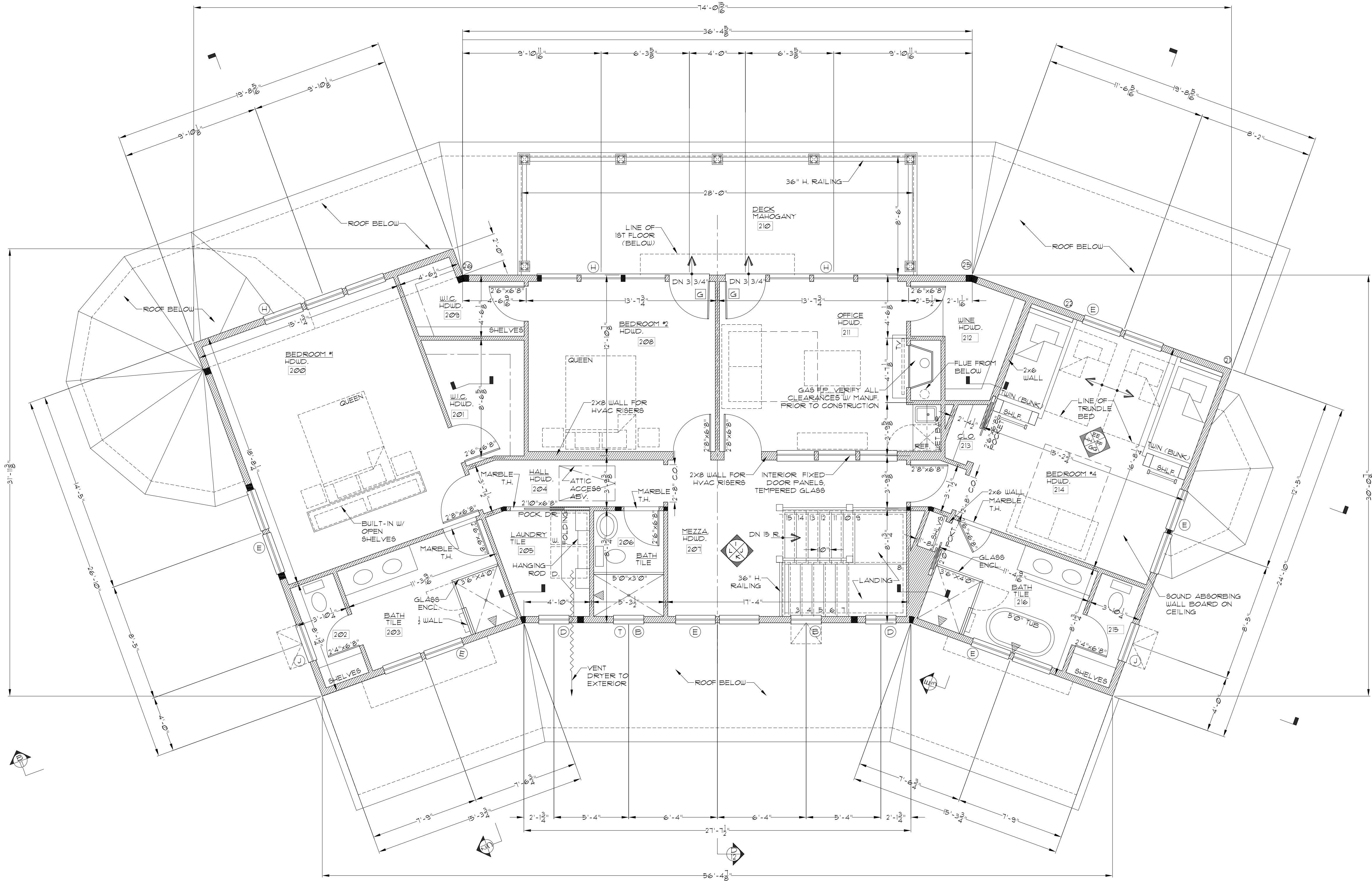
DOOR & WINDOW SCHEDULE ON SHEET 3



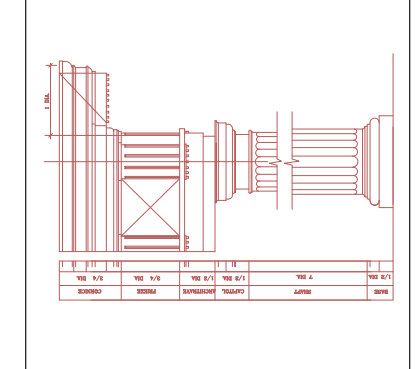
NO.	REVISIONS	BY	DATE

DRAWING TITLE PROPOSED NEW RESIDENCE FOR LISA AND JOHN LOMEDICO
LOCATION 18 WINSOR RD
 CATAUMET, MA
W I L I A M F. L E E, I I, A I A
 ARCHITECT AND ASSOCIATES
 636 MAYFLOWER STREET
 DUXBURY, MA 02332-3617
 PHONE 781 - 562 - 1534
 EMAIL BILL@ARCHITECT@AOL.COM

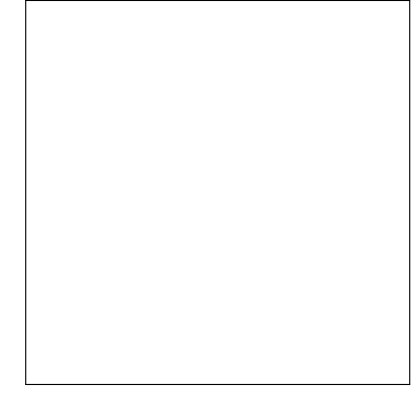
CONSTRUCTION DOCUMENT No.	
DATE:	3/25/09
DRAWN BY:	LB
SCALE:	AS NOTED
DRAWING NUMBER	
SHEET	1



SECOND FLOOR PLAN
SCALE: 1/4"=1'-0"

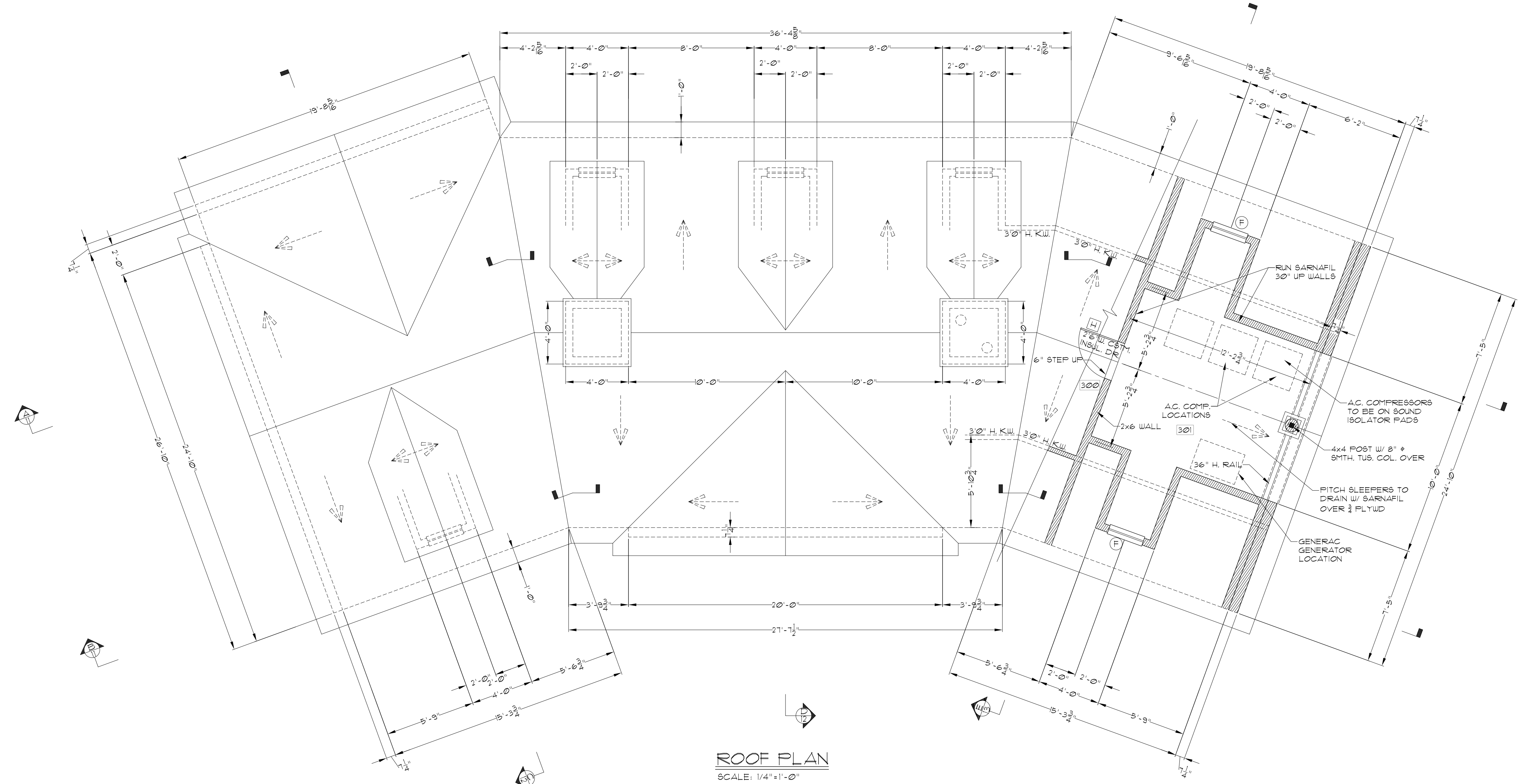


NO.	REVISIONS	BY	DATE



DRAWING TITLE PROPOSED NEW RESIDENCE FOR LISA AND JOHN LOMEDICO
LOCATION 18 WINSOR RD
 CATAUMET, MA
W I L I A M F. L E E, I I, A I A
 ARCHITECT AND ASSOCIATES
 636 MAYFLOWER STREET □ DUXBURY, MA 02332-3617
 PHONE 781 - 562 - 1534 EMAIL BILLLEEARCHITECT@AOL.COM

CONSTRUCTION DOCUMENT NO.	
DATE	9/25/03
DRAWN BY	LB
SCALE	AS NOTED
DRAWING NUMBER	
SHEET	2



ROOF PLAN
SCALE: 1/4"=1'-0"

WINDOW SCHEDULE

MARK	QTY.	LOCATION	RO. SIZE		DESIGNATION	DESCRIPTION	MANUFACTURER
			WxH				
(A)	4	FOYER, UNFIN. STOR.	2'-1" x 3'-1"		CUCFELP2436 (CUSTOM)	CUSTOM 4 LT. OVAL. SEE ELEVATION FOR LAYOUT TEMPERED UNIT AT STAIRS	MARVIN-ULTIMATE
(B)	2	BATH, STAIRS	2'-1" x 2'-3 5/8"		CUAWN2428	4 LT. AWNING, FIXED TEMPERED UNIT IN BATH	MARVIN-ULTIMATE
(C)	5	MUD RM, M. BEDRM.	2'-10 1/4" x 4'-8"		CUDHNG2824	6/1 DOUBLE HUNG	MARVIN-NEXT GENERATION
(D)	2	LAUNDRY, STAIRS.	2'-2 1/4" x 4'-8"		CUDHNG2824	4/1 DOUBLE HUNG	MARVIN-NEXT GENERATION
(E)	6	BATH, BED #1/4, MEZZA.	*		(2) CUDHNG2824	DOUBLE 6/1 DOUBLE HUNG W/ SNGLE. 3 1/2" STRUCT. MULL. BTWN.	MARVIN-NEXT GENERATION
(F)	1	ATTIC	2'-2 1/4" x 3'-4"		CUDHNG2816	6/1 DOUBLE HUNG	MARVIN-NEXT GENERATION
(G)	5	M. BATH, M. BEDROOM	2'-10 1/4" x 4'-8"	*	CUDHNG2824 CUSTOM TRANSOM	6/1 DOUBLE HUNG W/ CUSTOM 1'4" H. (FRAME) DIRECT SET 3 LT. TRANSOM ABV.	MARVIN-NEXT GENERATION
(H)	3	BED #1/2, OFFICE	*		(3) CUDHNG2824	TRIPLE 6/1 DOUBLE HUNG W/ DBLE. 3 1/2" STRUCT. MULL. BTWN.	MARVIN-NEXT GENERATION
(J)	4	BATHS, M. BATH	2'-9" x 2'-7 5/8"		CUAWN3232	6 LT. AWNING	MARVIN-ULTIMATE
(K)	2	DINING RM.	*		CUSTOM	3'0" x 5'10" (FRAME) CUSTOM FIXED TILT-TURN. SEE ELEV. FOR LAYOUT. (TEMPERED)	
(L)	1	FAMILY RM.	*		(3) CUDHNG2824 CUSTOM TRANSOM	TRIPLE 6/1 DOUBLE HUNG W/ DBLE. 3 1/2" STRUCT. MULL. BTWN. W/ CUSTOM 1'4" H. (FRAME) DIRECT SET 3 LT. TRANSOM ABOVE	MARVIN-NEXT GENERATION
(M)	1	KITCHEN	*		(2) CUDHNG2824 CUSTOM TRANSOM	DOUBLE 6/1 DOUBLE HUNG W/ SNGLE. 3 1/2" STRUCT. MULL. BTWN. W/ CUSTOM 1'4" H. (FRAME) DIRECT SET 3 LT. TRANSOM ABOVE	MARVIN-NEXT GENERATION
(N)	4	DINING RM.	*		CUSTOM	3'0" x 5'10" (FRAME) CUSTOM TILT-TURN. SEE ELEV. FOR LAYOUT. (TEMPERED)	MARVIN- MAGNUM
(O)	1	KITCHEN	2'-1" x 3'-7 5/8"	*	CUCA2444 CUSTOM TRANSOM	3 LT. CASEMENT W/ CUSTOM 1'4" H. (FRAME) DIRECT SET 2 LT. TRANSOM ABV. SEE ELEVATION FOR LAYOUT	MARVIN-ULTIMATE

TOTAL No. OF UNITS = 41

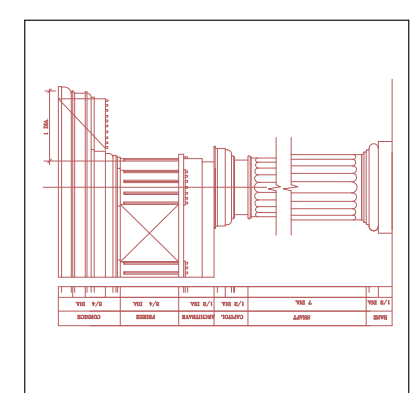
- WINDOW NOTES:**
- * MARVIN REP. TO PROVIDE RO.
 - STRUCTURAL MULLION BETWEEN ALL DBLE/TRIPLE UNITS
 - ALL WINDOWS SHALL HAVE 5/4x5" CASING
 - ALL WINDOW TRANSOMS TO BE DIRECT SET
 - (T) = TEMPERED GLASS UNIT

EXTERIOR DOOR SCHEDULE

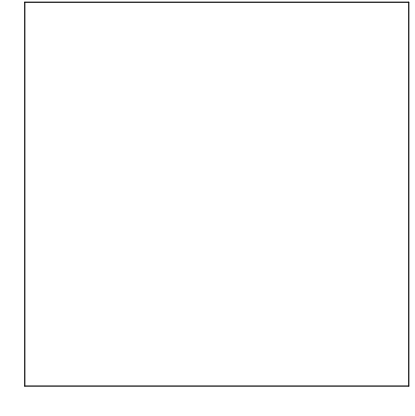
MARK	QTY.	LOCATION	RO.		DESIGNATION	DESCRIPTION	MANUFACTURER
			WxH				
(A)	1	FOYER	3'-6" x 7'-1"	(UNIT)	T.B.D.	6 PANEL LEFT-HANDED INSULING DR. W/ FLANKING 12" W. 3 LT./1 PANEL SIDE LIGHTS W/ DBLE. 2" STRUCT. MULL. SEE ELEV. FOR LAYOUT.	SIMPSON OR EQUAL
(B)	2	DINING RM.	3'-2 7/16" x 6'-10 1/2"		3068	INSULING 1 LT. FRENCH DOOR	MARVIN-ULTIMATE
(C)	1	MUDROOM	V.I.F.		T.B.D.	EXISTING DUTCH DOOR TO BE RE-USED. ADD CUSTOM 1'4" H. (FRAME) TRANSOM (HORIZ. DIRECT MULL). VERIFY FOR R.O. PRIOR TO FRAMING	V.I.F. CUSTOM
(D)	2	LIVING RM., FAMILY	6'-1 5/8" x 6'-10 1/2"	*	6068 CUSTOM TRNSM	INSULING DOUBLE FRENCH DOOR W/ CUSTOM 1'4" H. (FRAME) DIRECT SET CUSTOM 5 LT. TRANSOM ABOVE	MARVIN-ULTIMATE
(E)	2	M. BEDRM., KITCHEN	3'-2 7/16" x 6'-10 1/2"	*	3068 CUSTOM TRNSM	INSULING 1 LT. FRENCH DOOR W/ CUSTOM 1'4" H. (FRAME) DIRECT SET CUSTOM 5 LT. TRANSOM ABOVE	MARVIN-ULTIMATE
(F)	2	GARAGE	8'-0" x 9'-0"	ARCHED (UNIT)	T.B.D.	DBLE. 10 LT./1 BEADED PANEL OVERHEAD CARRIAGE HOUSE GARAGE DOOR. SEE ELEV. FOR LAYOUT.	CLOPAY OR EQUAL
(G)	2	OFFICE, BED #2	2'-10 7/16" x 6'-10 1/2"		2868	INSULING 1 LT. FRENCH DOOR	MARVIN-ULTIMATE
(H)	1	ATTIC/MECHANICAL SPACE	2'-6" x 6'-0"	(UNIT)	CUSTOM	INSULING INSULATED DOOR	MARVIN-ULTIMATE

TOTAL No. OF UNITS: 13

- DOOR NOTES:**
- * MARVIN REP. TO PROVIDE RO.
 - ALL DOORS SHALL HAVE 5/4x5" CASING
 - ALL DOOR TRANSOMS TO BE DIRECT SET. DOUBLE DOOR TRANSOMS TO BE FASTENED TO FRAMING ABV.

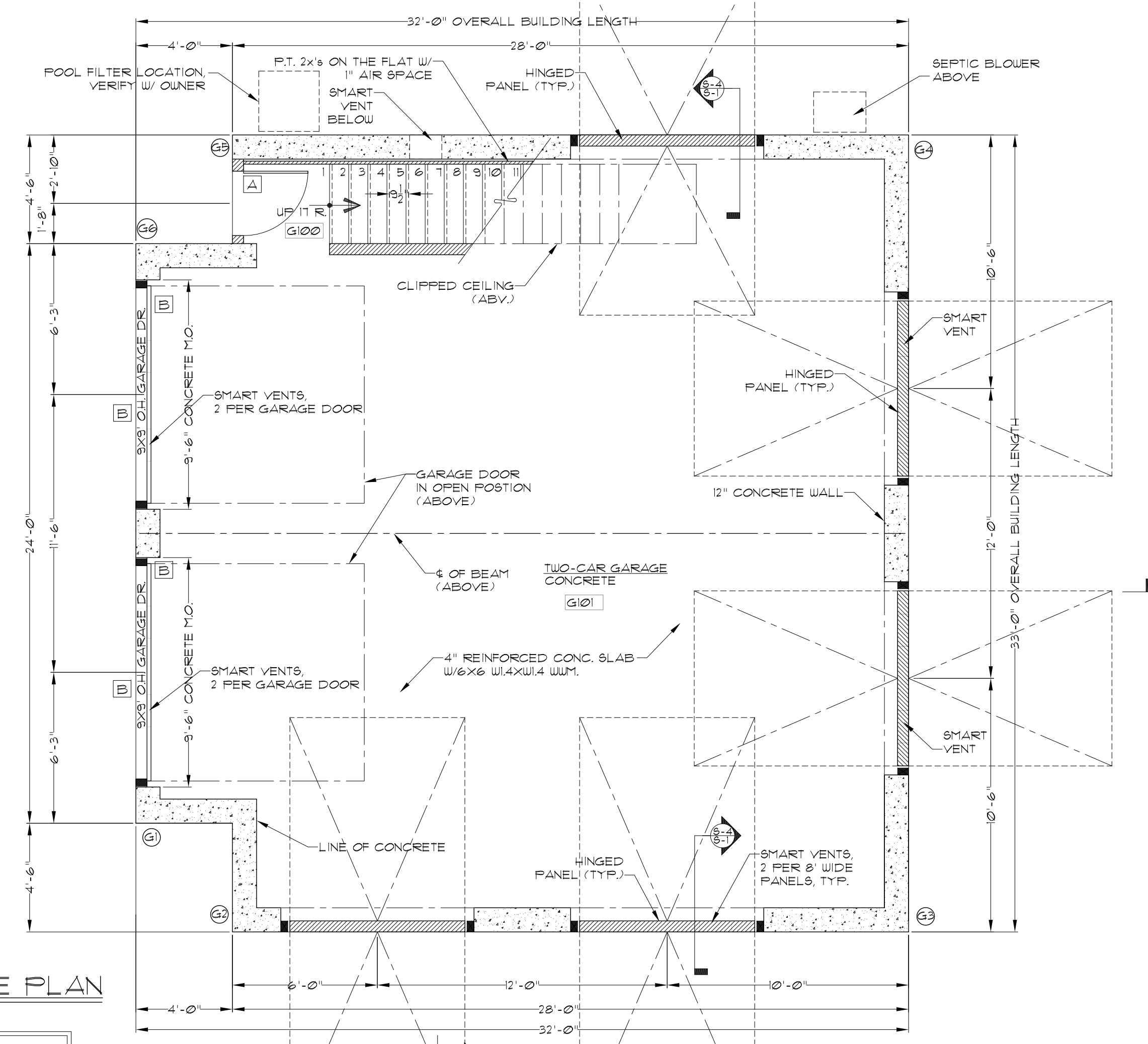


NO.	REVISIONS	BY	DATE



DRAWING TITLE: PROPOSED NEW RESIDENCE FOR LISA AND JOHN LOMEDICO
 LOCATION: 18 WINSOR RD, CATAMET, MA
 W I L I A M F. L E E, I I, A I A
 ARCHITECT AND ASSOCIATES
 636 MAYFLOWER STREET, DUXBURY, MA 02832-3617
 PHONE 781 - 562 - 1534 EMAIL: BILLLEEARCHITECT@AOL.COM

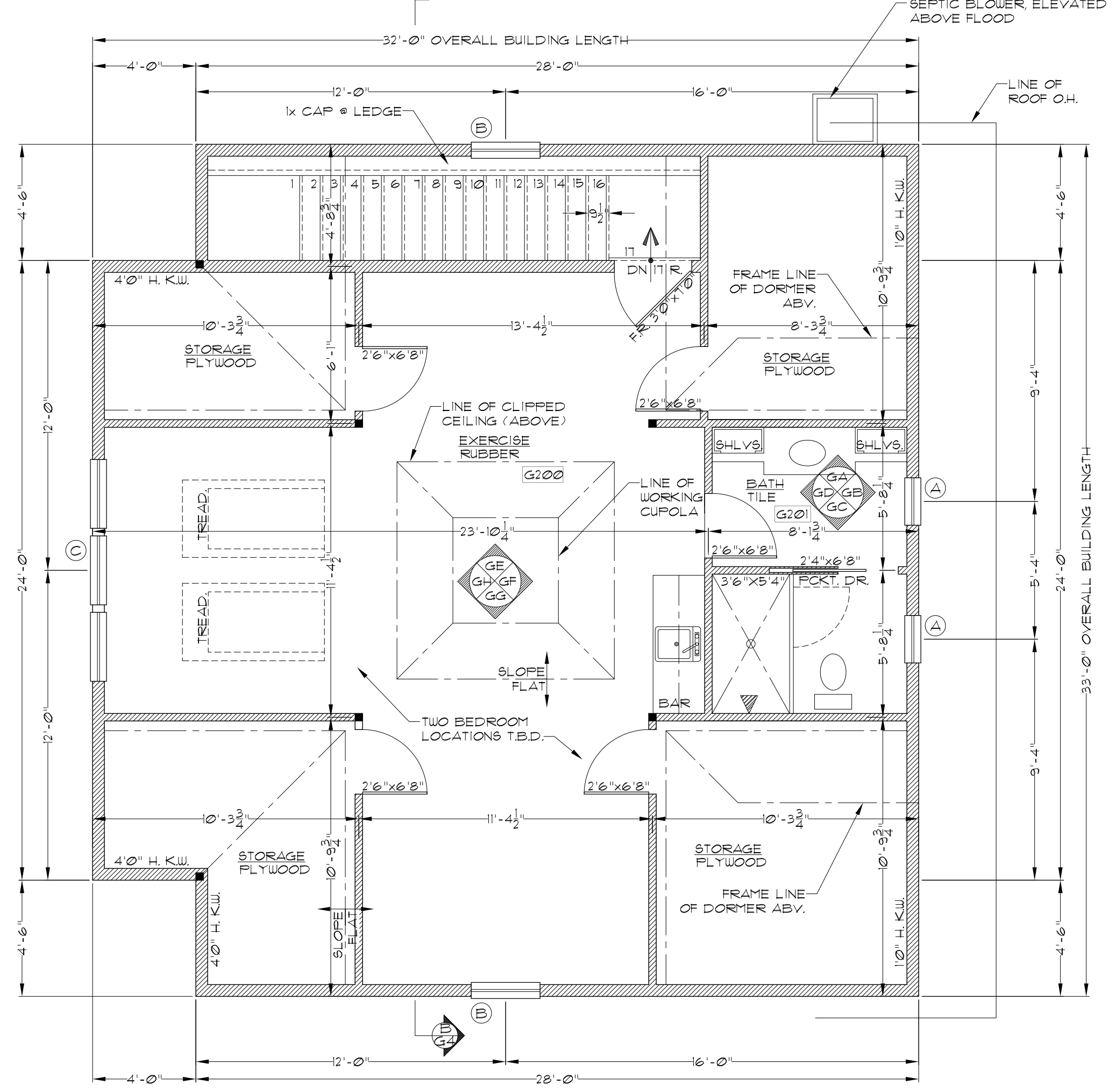
CONSTRUCTION DOCUMENT No.	DATE: 3/25/09	DRAWN BY: LB	SCALE: AS NOTED
			DRAWING NUMBER
			SHEET 3



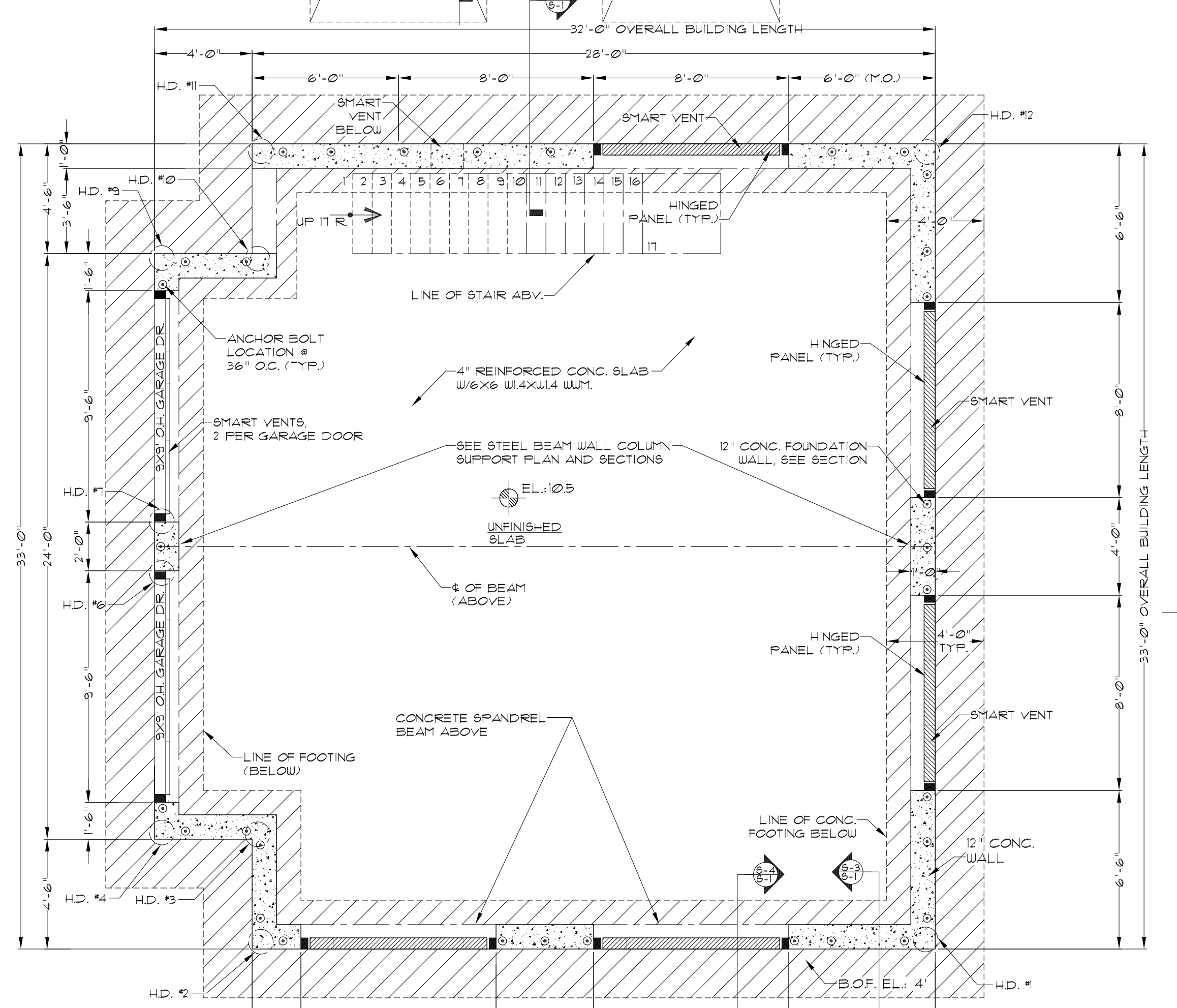
FIRST FLR GARAGE PLAN
SCALE: 1/4"=1'-0"

SQUARE FOOT SUMMARY

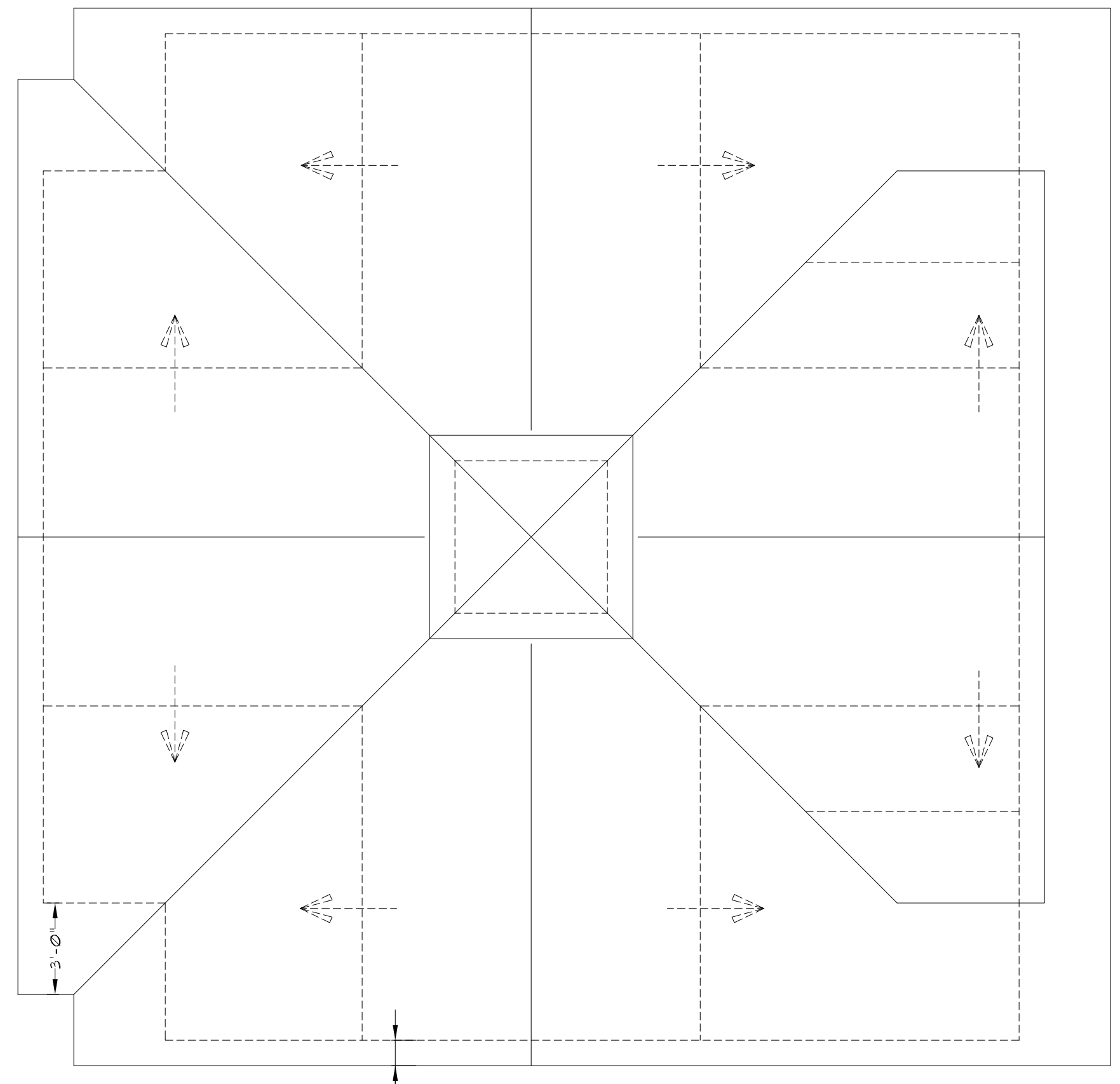
FIRST FLR GARAGE (UNFINISHED)	- 1020 SF.
SECOND FLR GARAGE (FINISHED)	- 674 SF.



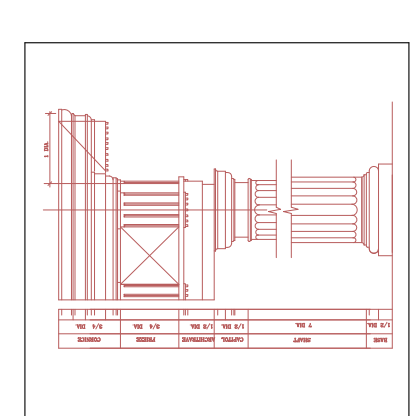
SECOND FLR GARAGE PLAN
SCALE: 1/4"=1'-0"



FOUNDATION GARAGE PLAN
SCALE: 1/4"=1'-0"



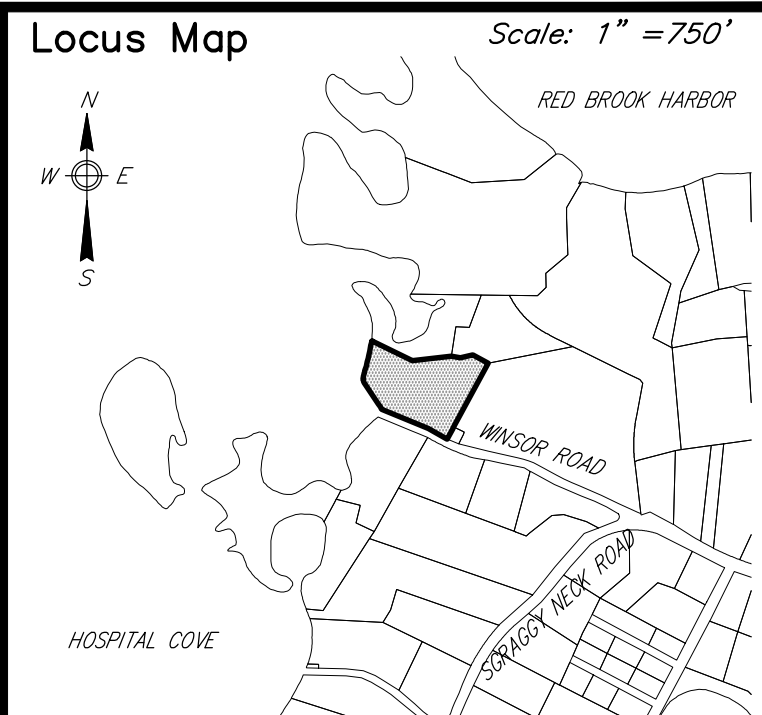
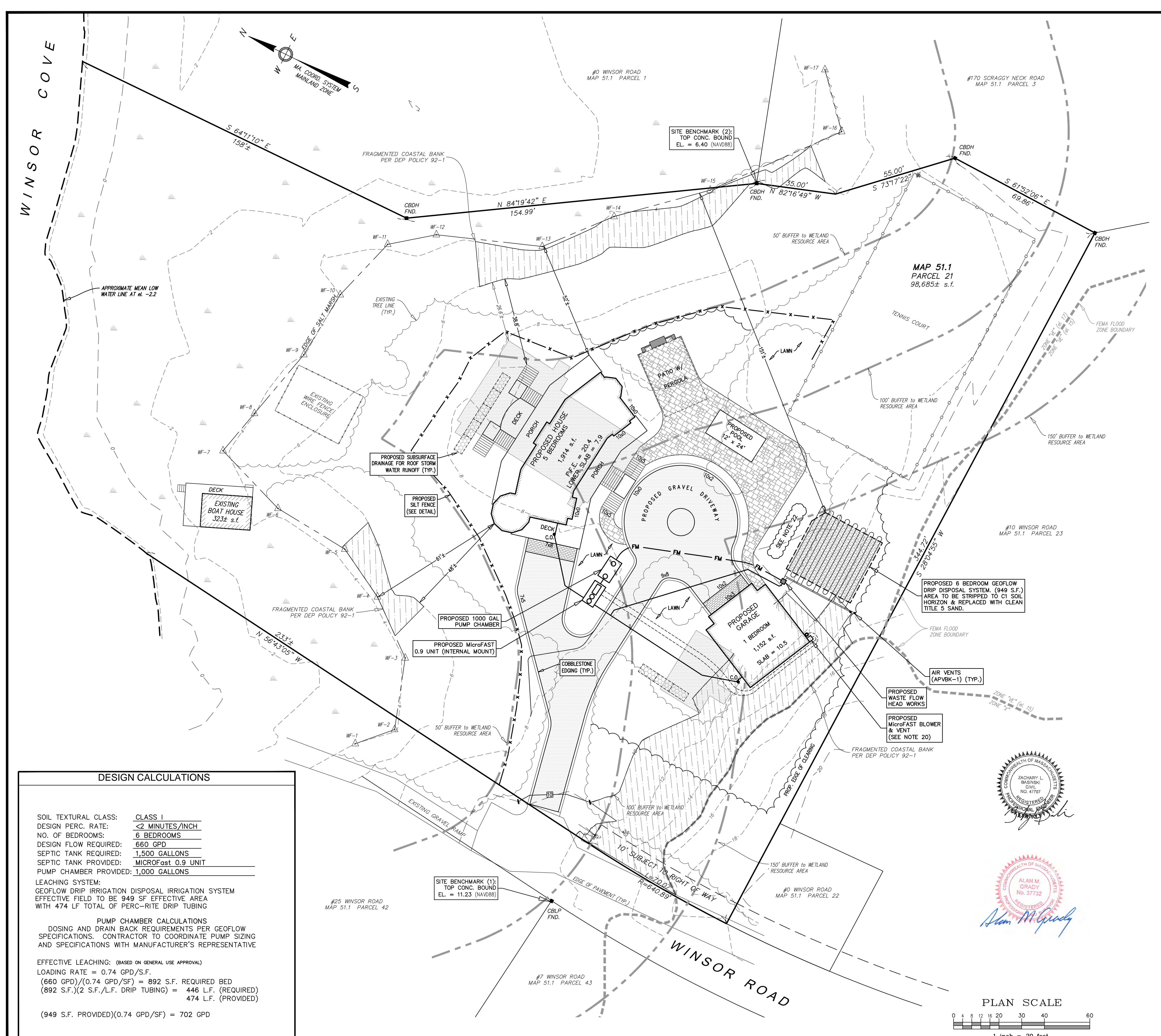
ROOF PLAN
SCALE: 1/4"=1'-0"



NO.	REVISIONS	BY	DATE

DRAWING TITLE PROPOSED NEW RESIDENCE FOR LISA AND JOHN LOMEDICO
LOCATION 18 WINSOR RD, CATAMET, MA
ARCHITECT WILIAM F. LEE, I, AIA
 ARCHITECT AND ASSOCIATES
 636 MAYFLOWER STREET, DUXBURY, MA 02332-3617
 PHONE 781 - 562 - 1534 EMAIL BILLLEEARCHITECT@AOL.COM

CONSTRUCTION DOCUMENT NO.	
DATE	3/25/09
DRAWN BY	LB
SCALE	AS NOTED
DRAWING NUMBER	
SHEET	GI



- ### Notes
- BENCHMARK (1): ELEVATION = 11.23 (NAVD88) TOP OF CONCRETE BOUND
 - BENCHMARK (2): ELEVATION = 6.40 (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.
 - OWNERS: JOHN J. LOMEDICO, ELIZABETH R. LOMEDICO, 234 SHAWMUT AVENUE, BOSTON, MA 02109
 - DEED REFERENCE: Deed Bk: 31160 Pg: 268
 - PLAN REFERENCES: Plan: Bk: 39 Pg: 83
 - 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 FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA.
 - LOCUS DOES NOT FALL WITHIN AN NHESP ESTIMATED HABITAT OF RARE WILDLIFE AND PRIORITY HABITAT OF RARE SPECIES. PROJECT IS EXEMPT.
 - LOCUS FALLS WITHIN A SPECIAL FLOOD HAZARD ZONE "VE" (EL. 17) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No: 25001C-0492-J dated 07/16/2014.
 - CONTRACTOR TO REFER TO ALL MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS FOR INSTALLATION OF THE MicroFAST 0.9 UNIT & GEOFLOW DRIP SYSTEM.
 - THE 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 (MicroFAST TANK & GEOFLOW DRIP FIELD).
 - HOMEOWNER IS TO ESTABLISH AN OPERATION & MAINTENANCE PLAN WITH A COMPANY CERTIFIED SYSTEM OPERATOR FOR THE MicroFAST & GEOFLOW DRIP SYSTEMS. ALL SYSTEM TESTING, MONITORING & REPORTING IS TO BE CONDUCTED IN ACCORDANCE TO THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) GENERAL USE PERMITS.
 - CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM PANELS WITH THE HOMEOWNER & SYSTEM MANUFACTURERS PRIOR TO INSTALLATION. ALARM PANELS MUST BE INSTALLED ABOVE FLOOD ZONE ELEVATION 19.
 - CONTRACTOR TO COORDINATE PLACEMENT OF ALL VENTS AND THE BLOWER PACK UNIT WITH MANUFACTURER AND OWNER PRIOR TO INSTALLATION. BLOWER UNIT MUST BE ELEVATED ABOVE FLOOD ZONE ELEVATION 19.
 - PROVIDE BARRIER TO PREVENT FUTURE VEHICULAR TRAFFIC OVER SOIL ABSORPTION SYSTEM.

ZONING SUMMARY

ZONE:	R-40	REQUIRED	EXISTING	PROPOSED
LOT AREA:	40,000 s.f.	98,855± s.f.	98,855± s.f.	
FRONTAGE:	125'	303.07'	303.07'	
FRONT YARD:	30'	>30'	>30'	
SIDE/REAR YARD:	15'	>15'	>15'	
LOT COVERAGE:	20% (MAX)	4.1% (410± s.f.)	6.0% (595± s.f.)	
BUILDING HEIGHT:	35' (MAX)	<35'	39.6'	
AVERAGE EXISTING GRADE LINE CALCULATED AS EL. 8.2				

Note:
(a) 5' INCREASE WITH ROOF PITCH > 4"/12" (SEE FOOTNOTE "O" TABLE 2500)

SOIL LOGS

TP NO.	1	2	3	4
GRD. EL.	10.8	10.9	11.2	11.7
GW. EL.	NONE TO 1.3	NONE TO 1.4	NONE TO 16.4	NONE TO 18.6
0"	Oe	Oe	Oe	Oe
4"	Bw FINE SAND 2.5Y 5/6	Bw FINE SAND 2.5Y 5/6	Bw LOAMY SAND 10YR 3/4	Bw FINE SAND 10YR 3/4
32"	C MEDIUM - COARSE SAND 2.5Y 5/4	C MEDIUM - COARSE SAND 2.5Y 5/4	C1 FINE SAND 2.5Y 5/4	C1 FINE SAND 2.5Y 5/4
114"	WEEPING	WEEPING	WEEPING	WEEPING
120"	WEEPING @ 1.3	WEEPING @ 1.4	WEEPING	WEEPING
7"	Bw LOAMY SAND 10YR 3/4	Bw LOAMY SAND 10YR 3/4		
26"	MED C1 FINE SAND 2.5Y 5/4	MED C1 FINE SAND 2.5Y 5/4		
103"	C2 FINE SAND 5Y 1/5	C2 FINE SAND 5Y 1/5		
106"	STANDING WATER @ 2.4	STANDING WATER @ 2.9		
DATE PERFORMED: AUGUST 1, 2018				
SOIL EVALUATOR: ROBERT DEWAR, EIT, SE				
WITNESSED BY: ZACH SEABURY, B.O.H. AGENT				
PERC. RATE: <2 MINUTES/INCH				
SOIL CLASS: CLASS I				
MAX. GROUND WATER ELEV.: NONE TO 2.9				
METHOD OF DETERMINATION: OBSERVATION OF GROUNDWATER				
INVERT PRIMARY: 9.8± - 12.5±				
(SEE SOIL REPORT FOR MORE DETAILED DESCRIPTION)				

DESIGN CALCULATIONS

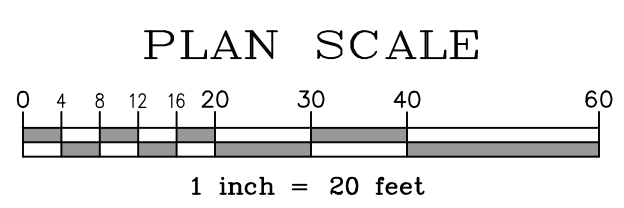
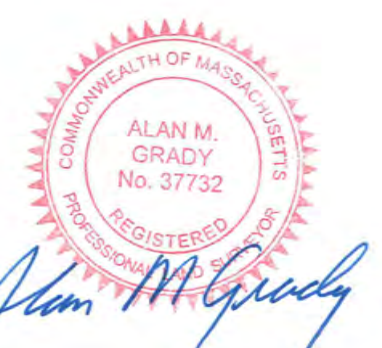
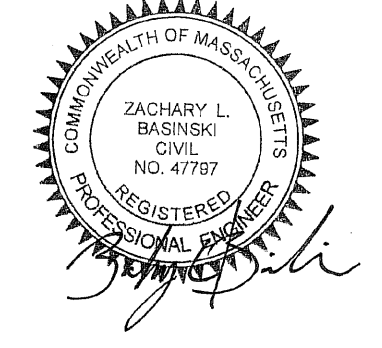
SOIL TEXTURAL CLASS:	CLASS I
DESIGN PERC. RATE:	<2 MINUTES/INCH
NO. OF BEDROOMS:	6 BEDROOMS
DESIGN FLOW REQUIRED:	660 GPD
SEPTIC TANK REQUIRED:	1,500 GALLONS
SEPTIC TANK PROVIDED:	MICROFAST 0.9 UNIT
PUMP CHAMBER PROVIDED:	1,000 GALLONS

LEACHING SYSTEM:
GEOFLOW DRIP IRRIGATION DISPOSAL IRRIGATION SYSTEM
EFFECTIVE FIELD TO BE 949 SF EFFECTIVE AREA WITH 474 LF TOTAL OF PERC-RITE DRIP TUBING

PUMP CHAMBER CALCULATIONS
DOSING AND DRAIN BACK REQUIREMENTS PER GEOFLOW SPECIFICATIONS. CONTRACTOR TO COORDINATE PUMP SIZING AND SPECIFICATIONS WITH MANUFACTURER'S REPRESENTATIVE

EFFECTIVE LEACHING: (BASED ON GENERAL USE APPROVAL)
LOADING RATE = 0.74 GPD/S.F.
(660 GPD)/(0.74 GPD/SF) = 892 S.F. REQUIRED BED
(892 S.F.)(2 S.F./L.F. DRIP TUBING) = 446 L.F. (REQUIRED)
474 L.F. (PROVIDED)

(949 S.F. PROVIDED)(0.74 GPD/SF) = 702 GPD

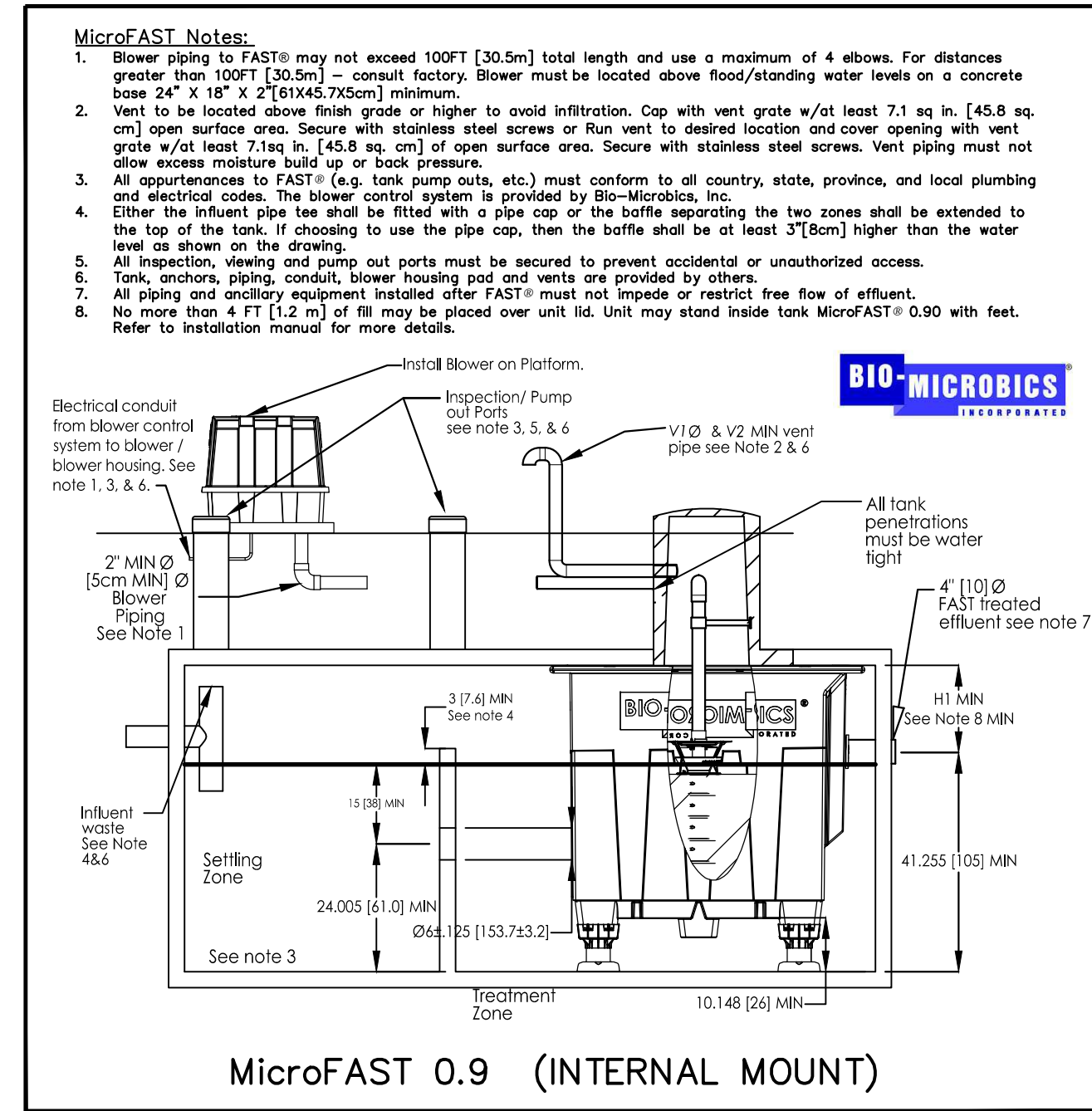
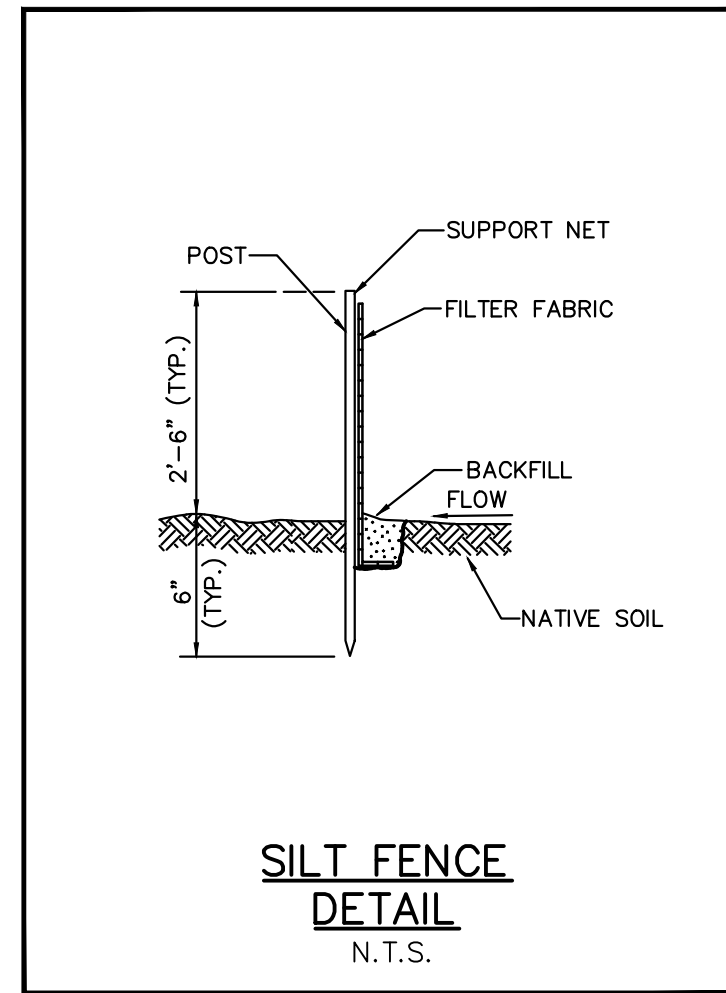
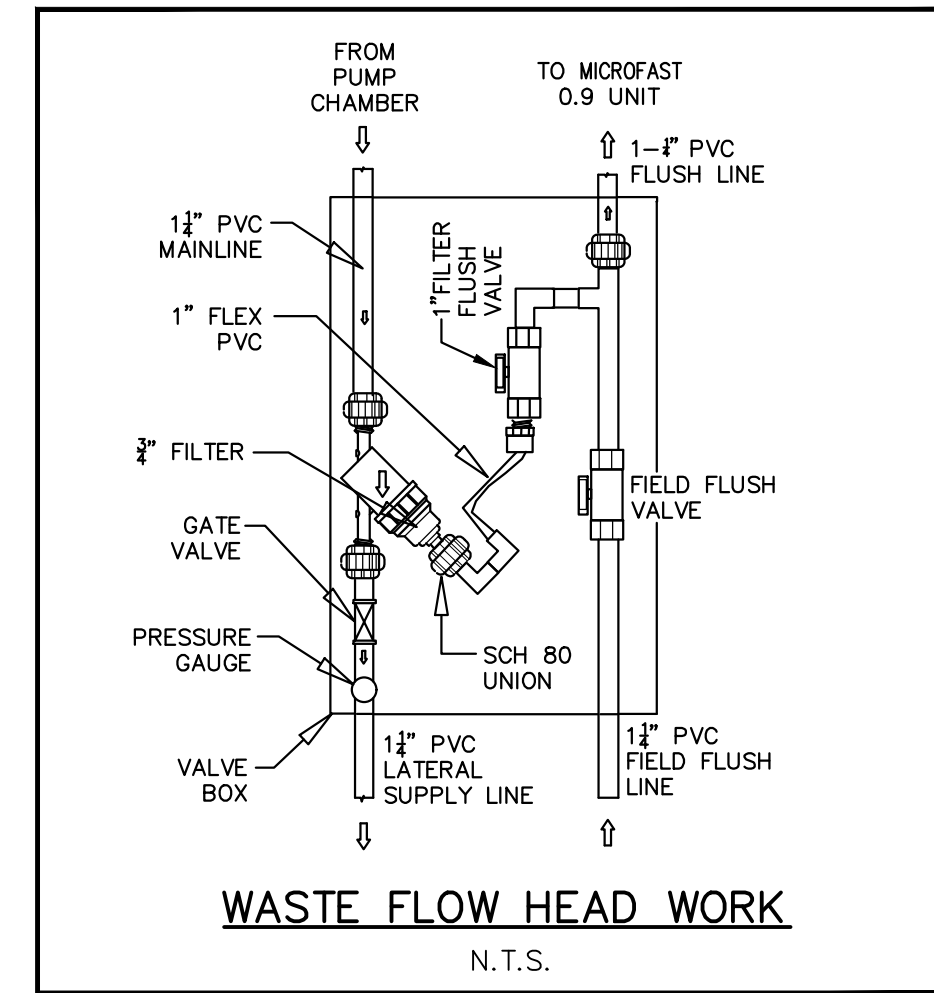
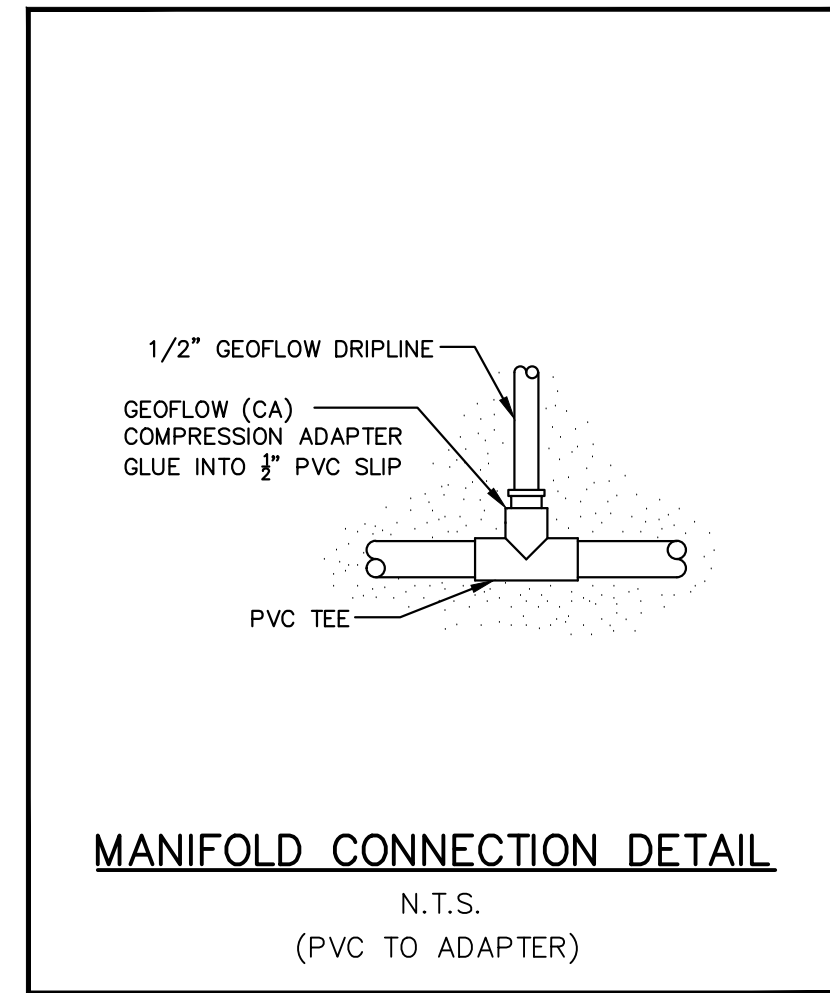
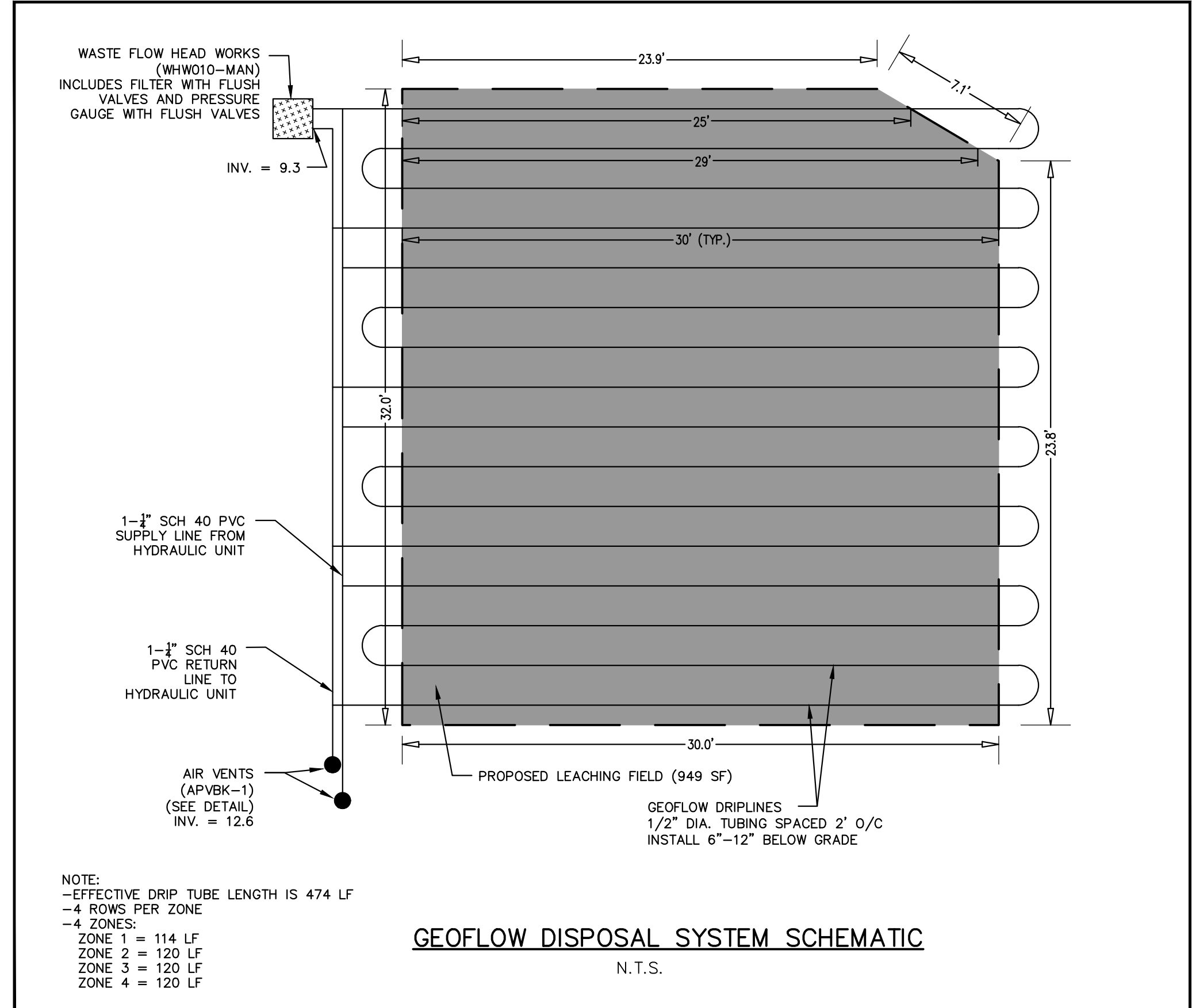
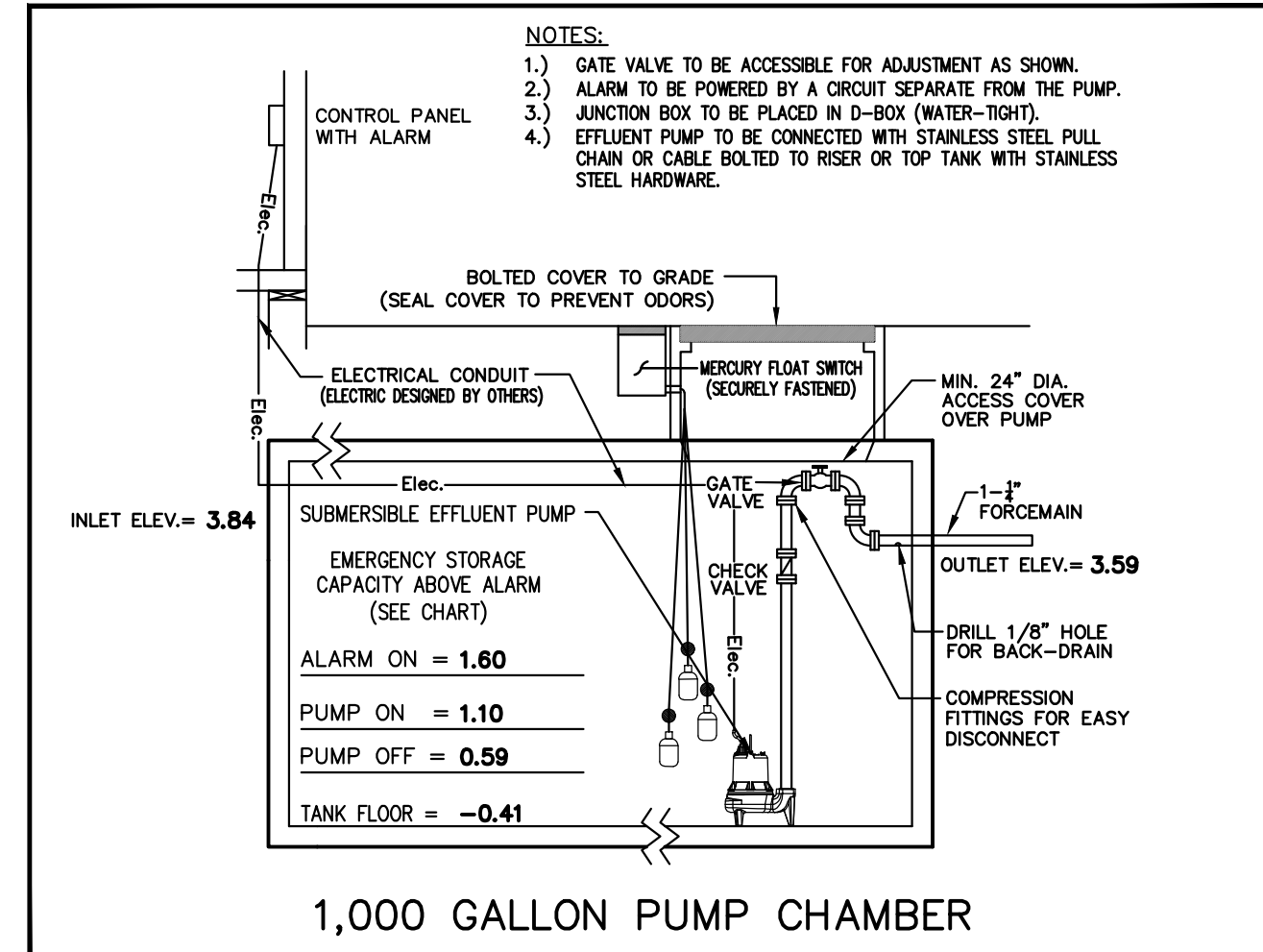
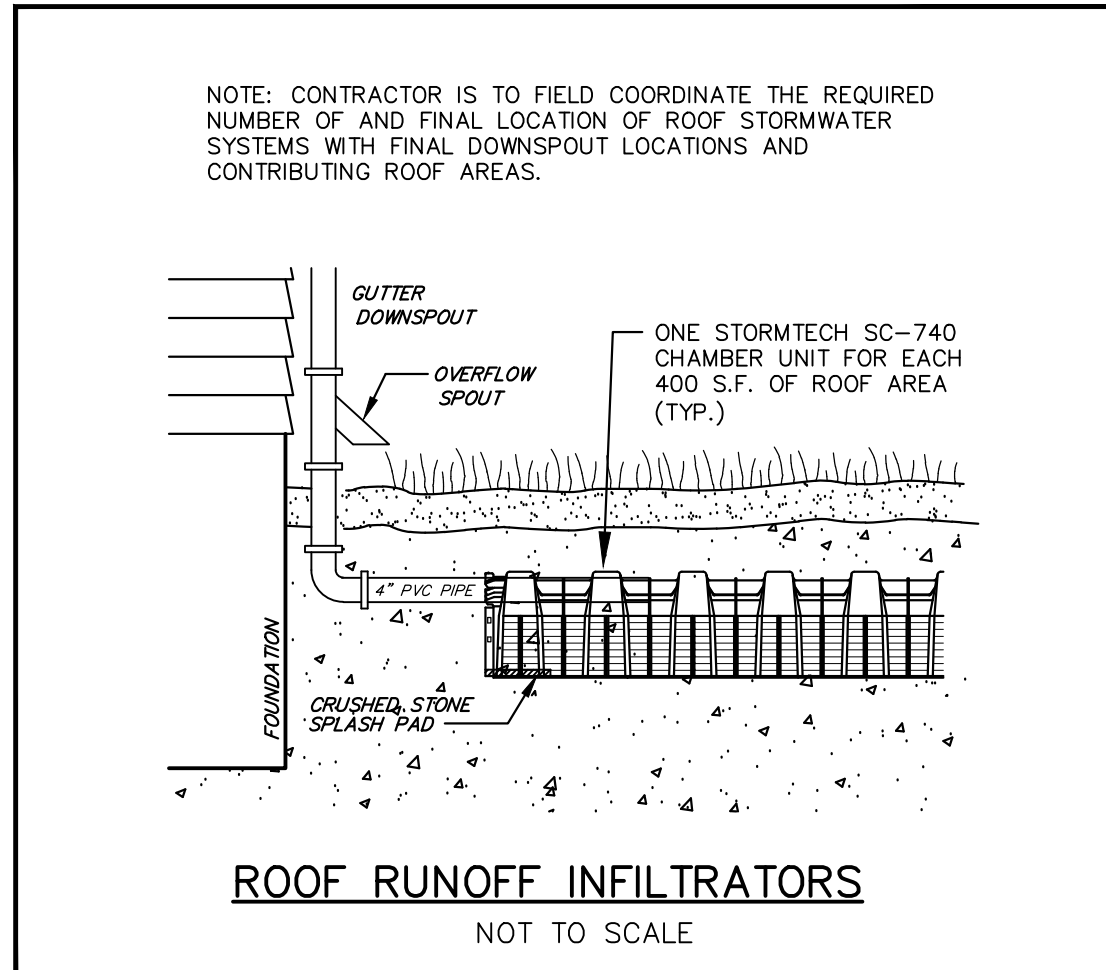
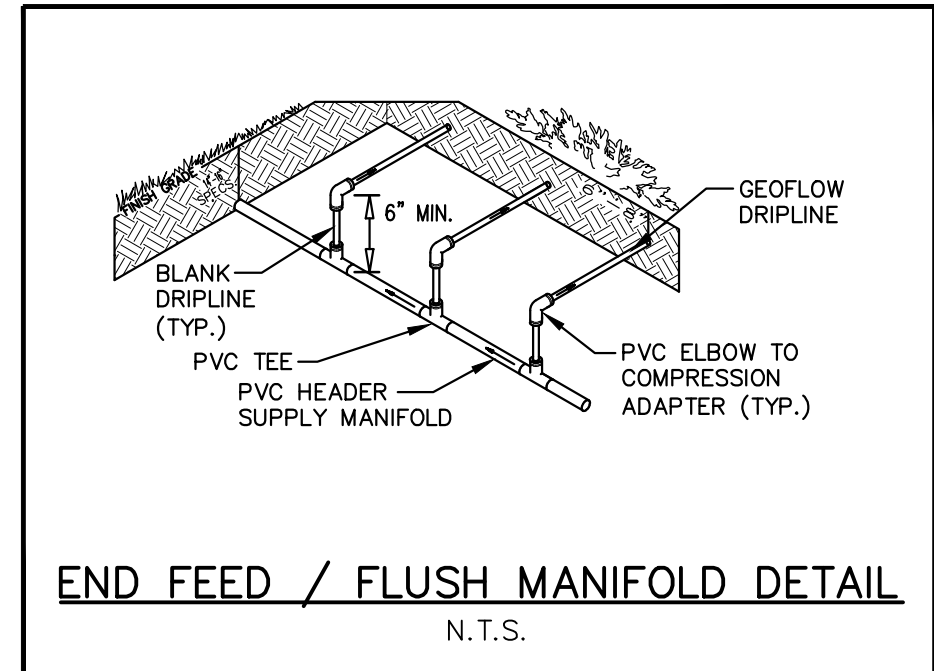


Prepared By:
BRACKEN ENGINEERING, INC.
49 HERRING POND ROAD, BOURNE, MA 02532
(tel) 508.833.0070 (fax) 508.833.2282
19 OLD SOUTH ROAD, NANTUCKET, MA 02554
(tel) 508.325.0044 (www.brackeneng.com)

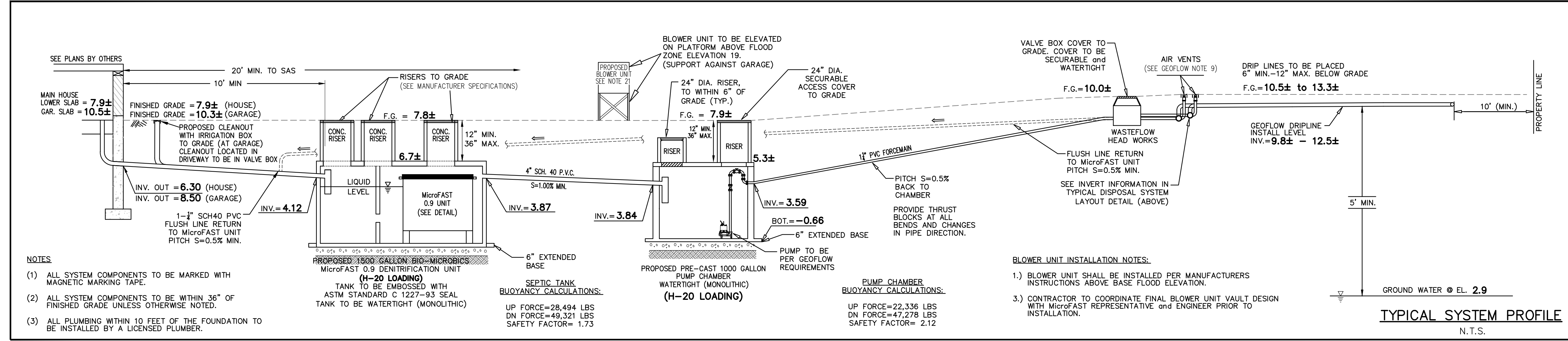
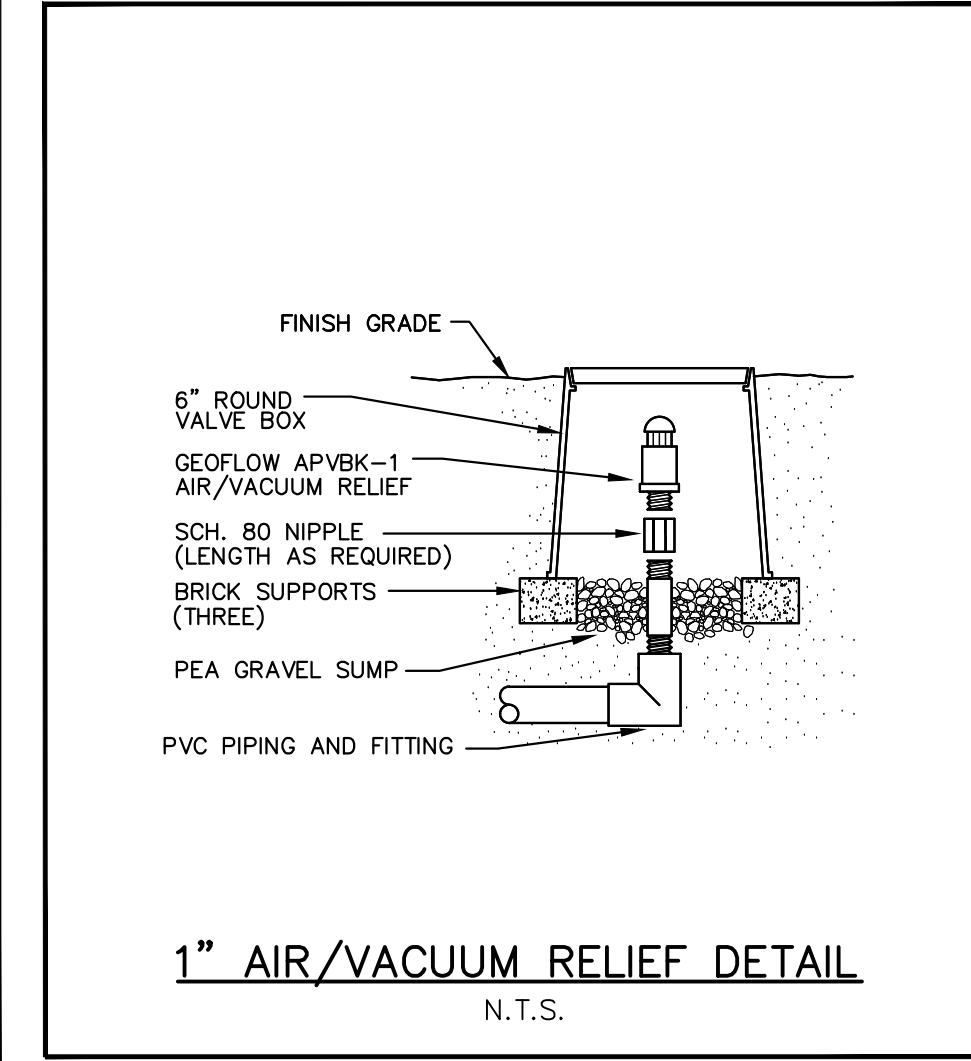
PROPOSED SUBSURFACE DISPOSAL PLAN
IN BOURNE, MASSACHUSETTS
Prepared For:
JOHN & LISA LOMEDICO
#18 WINSOR ROAD
MAP 51.1 PARCEL 21

No.	Date	Revision Description	By
2	3/12/19	REV. HSE LAYOUT & ADD MICROFAST	RED
1	12/12/18	REV. SEPTIC TANK LABEL TO "2000 GAL"	RED

Date: NOVEMBER 30, 2018
Drawn: RMM/BE
Checked: ZLB/AMG
Sheet: 1 of 2



- ### GENERAL CONSTRUCTION NOTES "GEOFLOW" DRIP DISPERSAL SYSTEMS
1. THE SYSTEM SHALL NOT BE INSTALLED IN WET OR FROZEN SOILS.
 2. DO NOT PARK, DRIVE LARGE EQUIPMENT, OR STORE MATERIALS ON THE DISPERSAL AREA. NO ACTIVITY SHOULD OCCUR ON DISPERSAL AREA OTHER THAN THE MINIMUM REQUIRED TO INSTALL THE SYSTEM.
 3. ALL INSTALLATION AND CONSTRUCTION TECHNIQUES SHALL CONFORM TO STATE AND LOCAL CODES PERTAINING TO ON-SITE SEWAGE SYSTEMS AND THE PERMIT FOR THE SITE.
 4. THE INSTALLATION SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND PROCEDURES AS SUPPLIED BY THE MANUFACTURER OF THE EQUIPMENT.
 5. THE CONTRACTOR SHALL BE CERTIFIED TO INSTALL THIS TYPE OF SYSTEM AND SHOULD HOLD A PRE-CONSTRUCTION MEETING WITH THE INDIVIDUALS RESPONSIBLE FOR THE SITE DESIGN AND INSPECTIONS. THE MEETING SHOULD BE HELD PRIOR TO THE BEGINNING OF THE SITE WORK TO ENSURE PROTECTION OF THE SITE CONDITIONS AND TO ENSURE THAT THE SYSTEM IS INSTALLED ACCORDING TO DESIGN.
 6. IF SITE CONDITIONS ARE DETERMINED TO REQUIRE THE INSTALLATION OF THE SYSTEM TO DEVIATE FROM THE DESIGN PLANS, ALL WORK SHALL STOP IMMEDIATELY AND THE DESIGNER AND HEALTH AGENT SHALL BE NOTIFIED. ANY ON GOING WORK SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 7. DRIP TUBING MAY BE INSTALLED WITH A VIBRATORY FLOW, A STATIC FLOW, A NARROW TRENCHER (<6\"/>



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 DISPOSAL PLAN IN BOURNE, MASSACHUSETTS
 Prepared For:
JOHN & LISA LOMEDICO
 #18 WINSOR ROAD MAP 51.1 PARCEL 21

No.	Date	Revision Description	By
2	3/12/19	ADD MICROFAST & REVISE SEPTIC LAYOUT/DETAILS	RED
1	12/12/18	REV. SEPTIC TANK LABEL TO "2000 GAL"	RED

Date: NOVEMBER 30, 2018 Drawn: RMM/BEI Checked: ZLB/AMG Sheet: 2 of 2