

MAIN OFFICE:

49 Herring Pond Road
Buzzards Bay, MA 02532
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19 Old South Road
Nantucket, MA 02554
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www.brackeneng.com

June 14, 2022

RECEIVED

By Bourne Health Department at 9:09 am, Jan 12, 2023

Revised August 22, 2022, Revised January 11, 2023

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

**RE: Variance Request
176 Scraggy Neck Road (Map 51.0, Parcel 1)**

Dear Members of the Board:

On behalf of the homeowner, The Long Point Trust c/o Marybeth and Steven Bisson, Bracken Engineering, Inc. (BEI), is requesting a variance to the Town of Bourne Board of Health Regulations to replace an existing cottage with a new single-family dwelling at the above referenced location. Attached with this request are revised plans by this firm dated 9/26/22 and revised Architectural plans dated 7/21/22 to address some of the concerns raised by staff at a site meeting on July 19, 2022.

A Variance is Requested to the following Local Regulation:

150 FOOT SETBACK REG
TOWN OF BOURNE
BOARD OF HEALTH

“A 150 foot setback will be required for all leaching facilities from the edge of a wetland resource or watercourse, as defined in 310 CMR 15.01 Title V. Setback distance shall be measured during periods of highest ground or surface water conditions.”

This Regulation was last amended on June 1, 1988. 310 CMR 15.01 refers to the “old” Title V in effect when the Board of Health adopted this Regulation. Section 15.01 does not have a definition for “wetland resource” but there is a definition for “watercourse” which includes “wetland”. The definition reads as follows:

“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.”

The only applicable resource area that a variance is required for this property is the Salt Marsh which is a coastal wetland and watercourse per the definition above. Based on the above definition, a coastal wetland must be considered as a “body of water”. This is also confirmed in the old Title V 310 CMR 15.03 Location (7) Distances. (1)(2) for setbacks to Watercourses, footnote [2] “All distances shall be

measured from the average of the mean annual flood elevation in inland areas and from the Mean High



Water in coastal areas.”

Although in our opinion, variances are not required for setbacks to coastal banks, we request the following variances from the 150-foot setback to the proposed Soil Absorption System (SAS) and Reserve Area (RA) to be consistent with past practices of the Board:

- SAS to the Salt Marsh southwest from 150' to 138' (**12' variance**)
- SAS to the Salt Marsh northeast from 150' to 101' (**49' variance**)
- SAS to Coastal Bank southwest from 150' to 66' (**84' variance**)
- SAS to Coastal Bank northeast from 150' to 57' (**93' variance**)
- RA to the Salt Marsh to the south from 150' to 126' (**24' variance**)
- RA to the Salt Marsh to the northeast from 150' to 112' (**38' variance**)
- RA to Coastal Bank southwest from 150' to 51' (**99' variance**)
- RA to Coastal Bank northwest from 150' to 64' (**86' variance**)

The coastal banks existing on-site consist mainly of 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 for storm waters. Please refer to the attached letter from Stan Humphries, Coastal Geologist with Environmental Consulting & Restoration, LLC (ECR) submitted with this request in response to the Horsley letter submitted to the Board dated July 11, 2022. This letter states that the proposed septic system will in no way adversely impact the coastal bank through erosion/destabilization. Also refer to the letter from McArdle Gannon Associates, Inc. Geotechnical Engineers dated November 9, 2022 indicating in their opinion that construction of the dwelling and septic system will not impact the coastal bank.

The Regulation was 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.

Also, there are no Title V variances required with this application. The proposed system is located greater than 50' from a BVW, Salt Marsh and the top of any coastal bank. Note: the coastal bank setback is measured from the “most landward edge” of the “top” of coastal bank per 310 CMR 15.211: Minimum Setback Distances footnote (3).

In accordance with the Regulation, a Hydrogeologic study is not required because the SAS and RA are greater than 100 feet from a wetland or watercourse per the applicable definition. As required, this application includes the following documentation prepared by a Professional Engineer:

- Proposed site plan (3 Sheets) which includes: existing conditions information, proposed design information, septic system design and details, wetland resource areas and setbacks to septic system components;
- Soil Evaluation Form including groundwater monitoring information over a tidal cycle;
- Existing and proposed Nitrogen Loading Calculations.



Based on the submitted information, the variances should be granted because of the following:

- The new system will replace an existing cesspool located only 31' from the salt marsh and on the coastal bank. This cesspool provides no treatment, the bottom is only a few feet above the water table and is a direct contaminant source to the salt marsh;
- Nitrogen loading for the proposed 4-bedroom system is only 2.03 parts per million (PPM) well below the typical standard of 5 PPM. Please note that the proposed number of bedrooms has been reduced from 5 to 4 bedrooms as suggested by the Board's Agent;
- The system has been designed to include MicroFast denitrification system;
- The system includes the design of a Presby soil absorption system that is equivalent to a pressure distribution system;
- The system location is located at the highest portion of the lot and maintains a 7.7' separation to groundwater, where a minimum of 5' is required;
- A deed restriction shall be placed on the property limiting it to four bedrooms;

In summary, the upgraded system with the increased flow provides better protection of public health and safety and the environment than the existing system with no increase in flow. Given the size of the property and the facts and circumstances of this particular case, it would be manifestly unjust to apply strict adherence to this Regulation. Furthermore, not granting the variance would deprive the owner of reasonable use of the property when specifically evaluating this property with surrounding properties and previous approvals by the Board.

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 don@brackeneng.com.

Sincerely,

BRACKEN ENGINEERING, INC.

A handwritten signature in black ink, appearing to read 'Donald F. Bracken, Jr.', written in a cursive style.

Donald F. Bracken, Jr., P.E.
Presidentglenn

cc: Marybeth & Steven Bisson
Glenn Wood Esq.



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: 176 Scraggy Neck Road
 Preparer's Name: Bracken Engineering, Inc.
 Date: 1/9/2023
 Watershed: Pocasset Harbor

Project Nitrogen Load	Proposed Wastewater	New Construction/ Raze & Rebuild, Increases in Flow, or Repairs/ Upgrades		Existing Conditions																				
<p>1. Place <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No in applicable box:</p> <p><input type="checkbox"/> Will the project be connected to sewer ?</p> <p><input checked="" type="checkbox"/> If (1) Is project Title-5 wastewater flow 10,000 gpd or greater ?</p> <p>Place <input type="checkbox"/> Yes <input type="checkbox"/> No in applicable box and multiply unsewered wastewater flow by applicable conversion factor:</p> <table style="font-size: small;"> <tr><td><input type="checkbox"/> Standard Title-5 System (35-ppm-N)</td><td>x</td><td>0.048359</td><td rowspan="4" style="font-size: 2em; vertical-align: middle;">}</td><td rowspan="4">Type of system: <input type="checkbox"/> MicroFast</td></tr> <tr><td><input type="checkbox"/> DEP-approved I/A System (25-ppm-N)</td><td>x</td><td>0.034542</td></tr> <tr><td><input checked="" type="checkbox"/> DEP-approved I/A System (19-ppm-N)</td><td>x</td><td>0.026252</td></tr> <tr><td><input type="checkbox"/> DEP-approved Enhanced I/A (12-ppm-N)</td><td>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 type="checkbox"/> 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	<p>Project Title-5 wastewater flows: <input type="text" value="440.0"/> gpd (a)</p> <p>Actual wastewater flows: <input type="text" value="137.5"/> * (b)</p> <p>Average wastewater flows: <input type="text" value="288.8"/> gpd (a)+(b)+2= (A)</p> <p>* Title-5 flows prescribed by TB91-001 for commercial uses</p>	<p>Calculate (A') through (P') as w/ (A) through (P):</p> <p>Title-5 wastewater flows: <input type="text" value="110.0"/> gpd</p> <p>Actual wastewater flows: <input type="text" value="137.5"/> * (A')</p> <p>Avg. wastewater flows: <input type="text" value="123.8"/> gpd (A')</p>		<p>Place <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No in applicable box:</p> <p><input type="checkbox"/> Is existing development on sewer ? (If 'Yes', then go to line 2.)</p> <table style="font-size: small;"> <tr><td><input checked="" type="checkbox"/> Standard Title-5 System</td><td rowspan="4" style="font-size: 2em; vertical-align: middle;">}</td><td rowspan="4">Type of system: <input type="checkbox"/> MicroFast</td></tr> <tr><td><input type="checkbox"/> DEP-approved I/A System (commercial)</td></tr> <tr><td><input type="checkbox"/> DEP-approved I/A System (residential)</td></tr> <tr><td><input type="checkbox"/> DEP-approved enhanced I/A</td></tr> </table>	<input checked="" type="checkbox"/> Standard Title-5 System	}	Type of system: <input type="checkbox"/> 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
<input type="checkbox"/> Standard Title-5 System (35-ppm-N)	x	0.048359	}			Type of system: <input type="checkbox"/> MicroFast																		
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<input checked="" type="checkbox"/> DEP-approved I/A System (19-ppm-N)	x	0.026252																						
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<input type="checkbox"/> DEP-approved I/A System (residential)																								
<input type="checkbox"/> DEP-approved enhanced I/A																								
	<p>Wastewater nitrogen load (Title-5 flows) = <input type="text" value="11.55"/> kg-N/yr (B)</p> <p>Wastewater nitrogen load (Actual flows) = <input type="text" value="3.61"/> kg-N/yr (C)</p>			<p><input type="text" value="5.32"/> kg-N/yr (B')</p> <p><input type="text" value="6.65"/> kg-N/yr (C') wastewater offsets</p>																				
Stormwater Runoff																								
Town of Bourne Recharge rate for Bourne (inches; for natural areas from Technical Bulletin 91-001):: <input type="text" value="21"/> (RECH)																								
	<p>Project site area: <input type="text" value="6.853"/> acres (D)</p> <p>Project site wetland area: <input type="text" value="4.855"/> acres (E)</p> <p>Project site upland area: <input type="text" value="1.997"/> acres (F)</p> <p>Pervious unpaved upland: <input type="text" value="1.898"/> acres (G)</p> <p><input type="text" value="0"/> % using LID Paved area: <input type="text" value="0"/> s.f. (H)</p> <p>Factor may be adjusted for employment of LID → LID = low impact development x 1.4158E-04 = <input type="text" value="0"/> kg-N/yr (I)</p> <p>Roof area: <input type="text" value="4,317"/> s.f. (J)</p> <p>x 7.0792E-05 = <input type="text" value="0.3056"/> kg-N/yr (K)</p>			<p>Project site area: <input type="text" value="6.853"/> acres (D)</p> <p>Project site wetland area: <input type="text" value="4.855"/> acres (E)</p> <p>Project site upland area: <input type="text" value="1.997"/> acres (F)</p> <p>Pervious unpaved upland: <input type="text" value="1.975"/> acres (G')</p> <p>Paved area: <input type="text" value="0"/> s.f. (H')</p> <p>Paving runoff offset: <input type="text" value="0.0000"/> kg-N/yr (I')</p> <p>Roof area: <input type="text" value="985"/> s.f. (J')</p> <p>Roof runoff offset: <input type="text" value="0.0697"/> kg-N/yr (K')</p>																				
Fertilizer																								
	<p>Previous unpaved upland - roof area = <input type="text" value="6.583"/> s.f.</p> <p>Managed turf/ lawn area x 3.4019E-04 = <input type="text" value="2.239"/> kg-N/yr (L)</p>			<p>Managed Turf/ lawn area: <input type="text" value="8,917"/> s.f.</p> <p>Fertilizer offset: <input type="text" value="3.034"/> kg-N/yr (L')</p>																				
Total Nitrogen Load																								
	<p>Total project nitrogen load (Title-5 flows): <input type="text" value="14.10"/> kg-N/yr (M)= (B)+(I)+(K)+(L)</p> <p>Total project nitrogen load (Actual flows): <input type="text" value="6.15"/> kg-N/yr (N)= (C)+(I)+(K)+(L)</p> <p>Nitrogen load per acre (Average): <input type="text" value="1.48"/> kg-N/yr/acre (O)= (M)+(N) +2 +(F)</p>			<p>Existing nitrogen load (Title-5 flows): <input type="text" value="8.42"/> kg-N/yr (M')</p> <p>Existing nitrogen load (Actual flows): <input type="text" value="9.75"/> kg-N/yr (N')</p> <p>Nitrogen offset per acre: <input type="text" value="1.33"/> kg-N/yr/acre (O')</p>																				
Proposed Nitrogen Loading Concentration																								
	<p>Project nitrogen loading concentration (Title-5 flows): <input type="text" value="2.76"/> ppm-N (P)=</p> <p>Project nitrogen loading concentration (Actual flows): <input type="text" value="1.31"/> ppm-N (Q)=</p> <p>Project nitrogen loading concentration (Average): <input type="text" value="2.03"/> ppm-N (R)= (P)+(Q) +2</p>	<p>(P)= $(a)+723.76 + \frac{(M)}{(G)x(RECH)+9.7286 + (H)+10,594 + (K)+0.75}$</p> <p>(Q)= $(b)+723.76 + \frac{(N)}{(G)x(RECH)+9.7286 + (H)+10,594 + (K)+0.75}$</p> <p>(R)= (P)+(Q) +2</p>		<p>Existing nitrogen loading concentrations:</p> <p>Title-5 flows <input type="text" value="1.87"/> ppm-N (P')</p> <p>Actual flows <input type="text" value="2.15"/> ppm-N (Q')</p> <p>Average <input type="text" value="2.01"/> ppm-N (R')</p>																				

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 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)

Yes No Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

Wellhead Protection Areas

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

Yes No Does the project's nitrogen loading concentration (R) exceed the greater of 5 ppm or the existing concentration (R')?
(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)

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

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

Other Potential Impacts

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.



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
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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
 d. Final Revision Date Restoration/Mitigation Plan e. Scale 9/26/2022
 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:
SE7-2208
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
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Provided by MassDEP:
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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
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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.



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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.



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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;



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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.



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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.



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D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No
2. The Bourne hereby finds (check one that applies):
Conservation Commission
- 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:

Bourne wetland protection bylaw

Article 3.7

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



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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 Beem
 Printed Name

[Signature]
 Signature

BOB GRAY
 Printed Name

[Signature]
 Signature

Peter Pawlo
 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
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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.



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 1½ 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. Excavations for the remaining portions of the new building, including the garage and decks, 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.

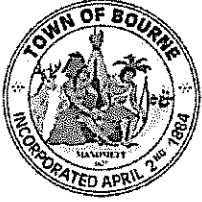
If you have any questions or require clarification, please do not hesitate to call.

MCARDLE GANNON ASSOCIATES, INC.

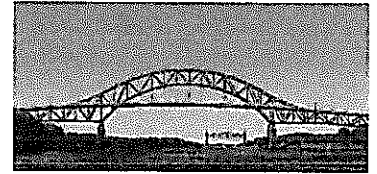


Wayne A. McArdle, P.E.
Principal

WAM/slh



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

January 10, 2023

The Long Point Trust
c/o Bracken Engineering, Inc.
49 Herring Pond Rd.
Buzzards Bay, MA 0255932

Re: Abutters List for Map 51 Parcel 1
Property address: 176 Scraggy Neck 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 Parcel 45; Map 51.1 Parcels 1 & 3.

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: ABUTTERS LIST
 Database: LIVE
 Filter: Key IN 14473,10762,10763
 Sort:

Report #24: Owner Listing Report
 Fiscal Year 2023

Bourne MA

Key	Parcel ID	Owner	Location	L/CU/CI	Blk-Pa(Cert) /Dt	Mailing Street	Mailing City	ST	Zip Cd/County
14473	47.0-45-0	BISSON STEPHEN & MARYBETH TRS OF LONG POINT TRUST	178-180 SCRAGGY NECK RD	N 1090	22554/257 12/19/2007	PO BOX 10	CATAUMET	MA	02534
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

Total Records 3

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

January XX, 2023

Certificate of Mailing

RE : Notice of Public Hearing

Dear Abutter:

In accordance with the Town of Bourne Board of Health Regulations, you are hereby notified that **The Long Point Trust, Stephen & Marybeth Bisson, Trustees** have requested a hearing before the Bourne Board of Health for relief from the Bourne Board of Health Regulations for the installation of an Innovative/Alternative Septic System. The location of the property for which approval is sought is **176 Scraggy Neck Road (Map 51, Parcel 1 (Lot 2)), Cataumet** where you are listed as an abutter. At said hearing the Board will discuss and possibly vote on:

The following variances requested from the 150-foot setback to the proposed Soil Absorption System (SAS) and Reserve Area (RA):

- SAS to the Salt Marsh southwest from 150' to 138' (**12' variance**)
- SAS to the Salt Marsh northeast from 150' to 101' (**49' variance**)
- SAS to Coastal Bank southwest from 150' to 66' (**84' variance**)
- SAS to Coastal Bank northeast from 150' to 57' (**93' variance**)
- RA to the Salt Marsh to the south from 150' to 126' (**24' variance**)
- RA to the Salt Marsh to the northeast from 150' to 112' (**38' variance**)
- RA to Coastal Bank southwest from 150' to 51' (**99' variance**)
- RA to Coastal Bank northwest from 150' to 64' (**86' variance**)

This hearing is tentatively scheduled for Wednesday, **February XXth** 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 don@brackeneng.com or the Bourne Health Department at 508-790-0600, Ext. 1513.

Sincerely,

BRACKEN ENGINEERING INC.

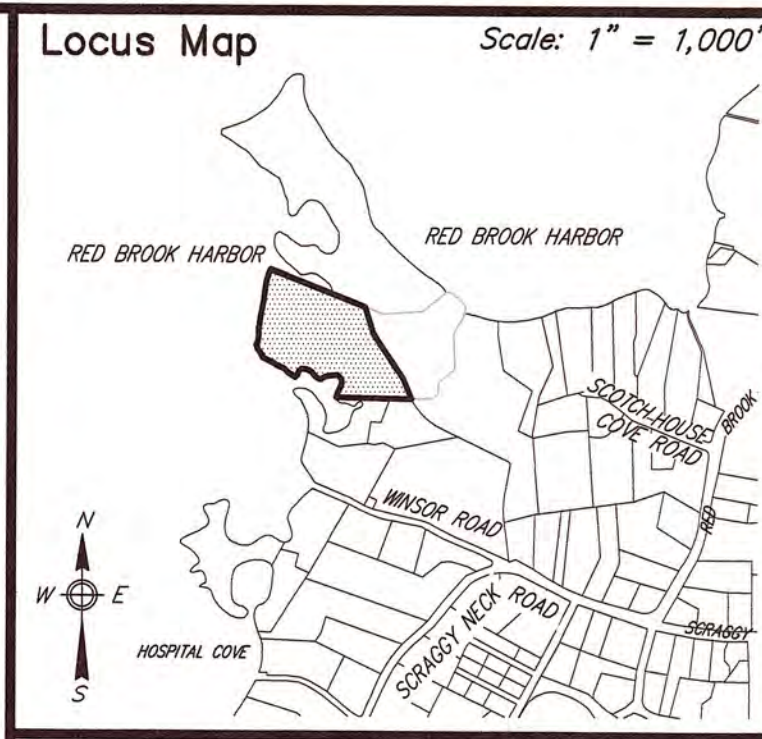
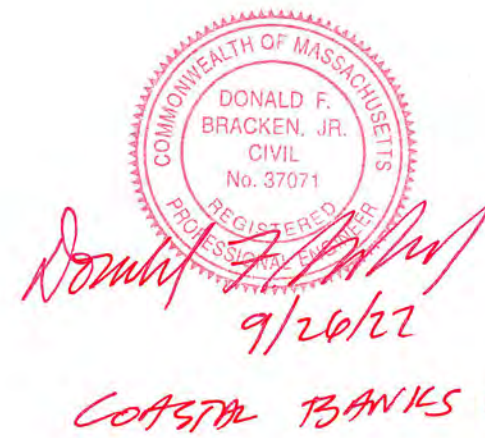
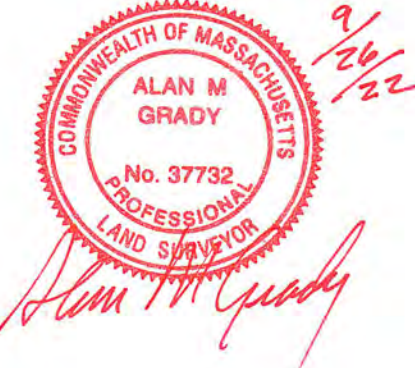
A handwritten signature in black ink, appearing to read 'Donald F. Bracken, Jr.', is written over a horizontal line.

Donald F. Bracken, Jr., PE
President
Agent for the Applicant

RED BROOK HARBOR



MASS COORDINATE SYSTEM
MAINLAND ZONE MERIDIAN
DETERMINED USING A
TOPCON HIPER SR GPS RTK UNIT
COLLECTION DATE 03/03/2020



- Notes**
- LOCUS: #176 SCRAGGY NECK ROAD MAP 51 PARCEL 01 (LOT 2)
 - OWNER: STEPHEN BISSON and MARYBETH BISSON trustees of THE LONG POINT TRUST PO BOX 10 CATAUMET MA, 02534
 - DEED REF: Bk: 22554 Pg: 257
 - PLAN REF: Plan Bk: 687 Pg: 11 (LOT 2)
 - PORTIONS OF THE LOCUS FALL WITHIN A SPECIAL FLOOD HAZARD ZONE VE(EL 19), VE(EL 17) AND AE(EL 15) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAPS No. 25001C-0492-J & 25001C-0511-J, BOTH dated 07/16/2014.
 - LOCUS PARTIALLY FALLS WITHIN AN NHESP ESTIMATED HABITAT OF RARE WILDLIFE AND PRIORITY HABITAT OF RARE SPECIES.
 - LOCUS DOES NOT FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA OR BOURNE WATER RESOURCE DISTRICT.
 - THE LOCATION OF UNDERGROUND UTILITIES AS REPRESENTED ON THESE PLANS IS BASED UPON PLANS AND INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES OR 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.
 - MEAN HIGH WATER ELEVATION DETERMINED USING THE BUZZARDS BAY ESTUARY TIDAL DATUM VIEWER AND COASTAL LIDAR DATA PROVIDED BY NOAA NCEI COASTAL LIDAR ARCHIVE. MEAN LOW WATER ELEVATION WAS DETERMINED USING THE BUZZARDS BAY ESTUARY TIDAL DATUM VIEWER AND INTERPOLATION USING GROUND SHOTS BY THIS FIRM.

- LEGEND**
- EXISTING CONTOUR
 - EXISTING COASTAL BANK
 - LIMIT OF SALT MARSH LINE
 - 100' SALT MARSH BUFFER
 - 50' COASTAL BANK BUFFER
 - 50' BOTTOM COASTAL BANK BUFFER
 - FLOOD ZONE LINE per FEMA FIRM
 - ACTUAL "AE" FLOOD LINE el. 15'
 - LIMIT OF NHESP JURISDICTION

Prepared By:
BRACKEN ENGINEERING, INC.
 49 HERRING POND ROAD BUZZARDS BAY, MA 02532 (tel) 608.833.0070 (fax) 608.833.2282
 19 OLD SOUTH ROAD NANTUCKET, MA 02554 (tel) 608.325.0044 (fax) 608.325.0044 www.brackeneng.com

EXISTING CONDITIONS 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)

No.	Date	Revision Description	By
3	9/26/22	MISC. LABELS	JPH
2	8/22/22	MISC. LABELS	JPH
1	6/14/22	NO CHANGES	JPH

Date: MAY 16, 2022 Drawn: JPH/BEI Checked: DFB/AMG Sheet: 1 of 3

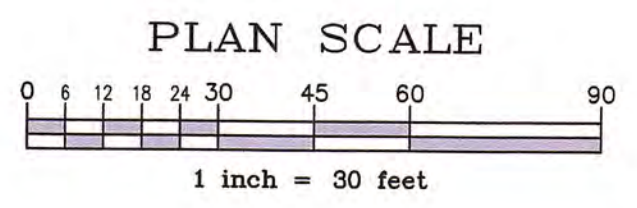
LOT 2
 MAP 51 PARCEL 1
 TOTAL AREA = 298,496± S.F. (6.9± AC.)
 UPLAND AREA = 51,482± S.F. (1.18± AC.)

UPLAND AREA 7,588± S.F.

APPROXIMATE MHW EL. 1.7' (SEE NOTE 9)

#178 SCRAGGY NECK ROAD MAP 47 PARCEL 45

RED BROOK HARBOR

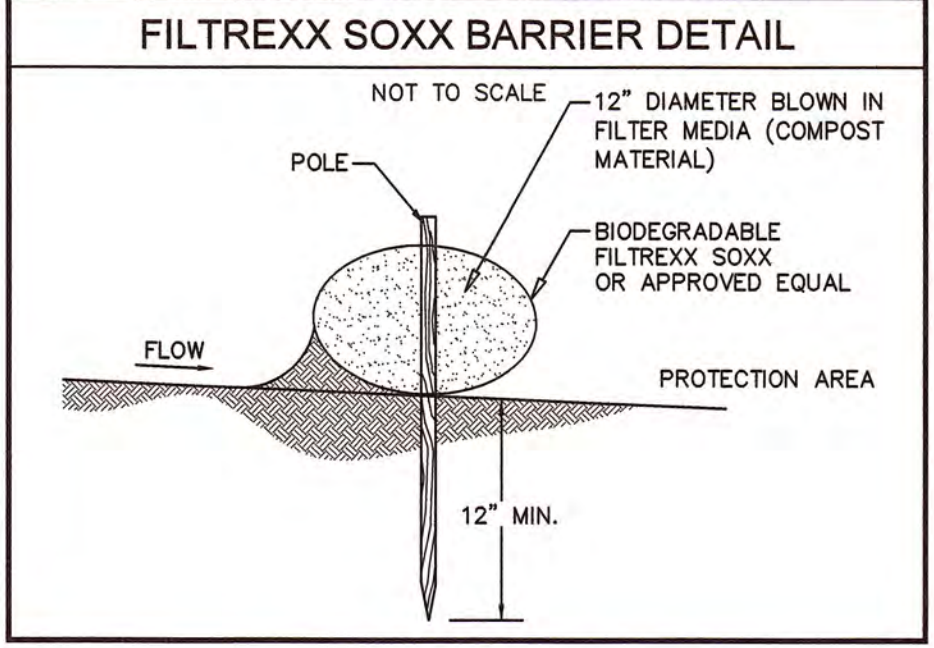


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DONALD F. BRACKEN JR.
 CIVIL
 No. 37071
 9/26/22

Notes

- BENCHMARK: ELEVATION = 19.31 (NAVD88)
- 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:
STEPHEN BISSON
MARYBETH BISSON Trustees of
THE LONG POINT TRUST
P.O. BOX No. 10
CATAUMET MA, 02563
- DEED REFERENCE: Deed Bk: 22554 Pg: 257
- PLAN REFERENCE: Plan Bk: 687 Pg: 11 (LOT 2)
- 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 PARTIALLY FALLS WITHIN AN NHESP ESTIMATED HABITAT OF RARE WILDLIFE AND PRIORITY HABITAT OF RARE SPECIES.
- THE PROPOSED SEPTIC SYSTEM DOES FALL WITHIN A SPECIAL FLOOD HAZARD ZONE "AE" (EL. 15) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C-0492-J & 25001C-0511-J BOTH dated 7/16/2014.
- CONTRACTOR TO REFER TO ALL MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS FOR INSTALLATION OF THE MICROFAST UNIT AND PRESBY ENVIRO-SEPTIC 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.
- 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.
- CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM/CONTROL PANELS WITH THE HOMEOWNER & SYSTEM MANUFACTURERS PRIOR TO INSTALLATION.
- CONTRACTOR TO COORDINATE FINAL LOCATIONS OF HIGH AND LOW VENTS WITH OWNER AND ENGINEER.
- 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.



DESIGN CALCULATIONS

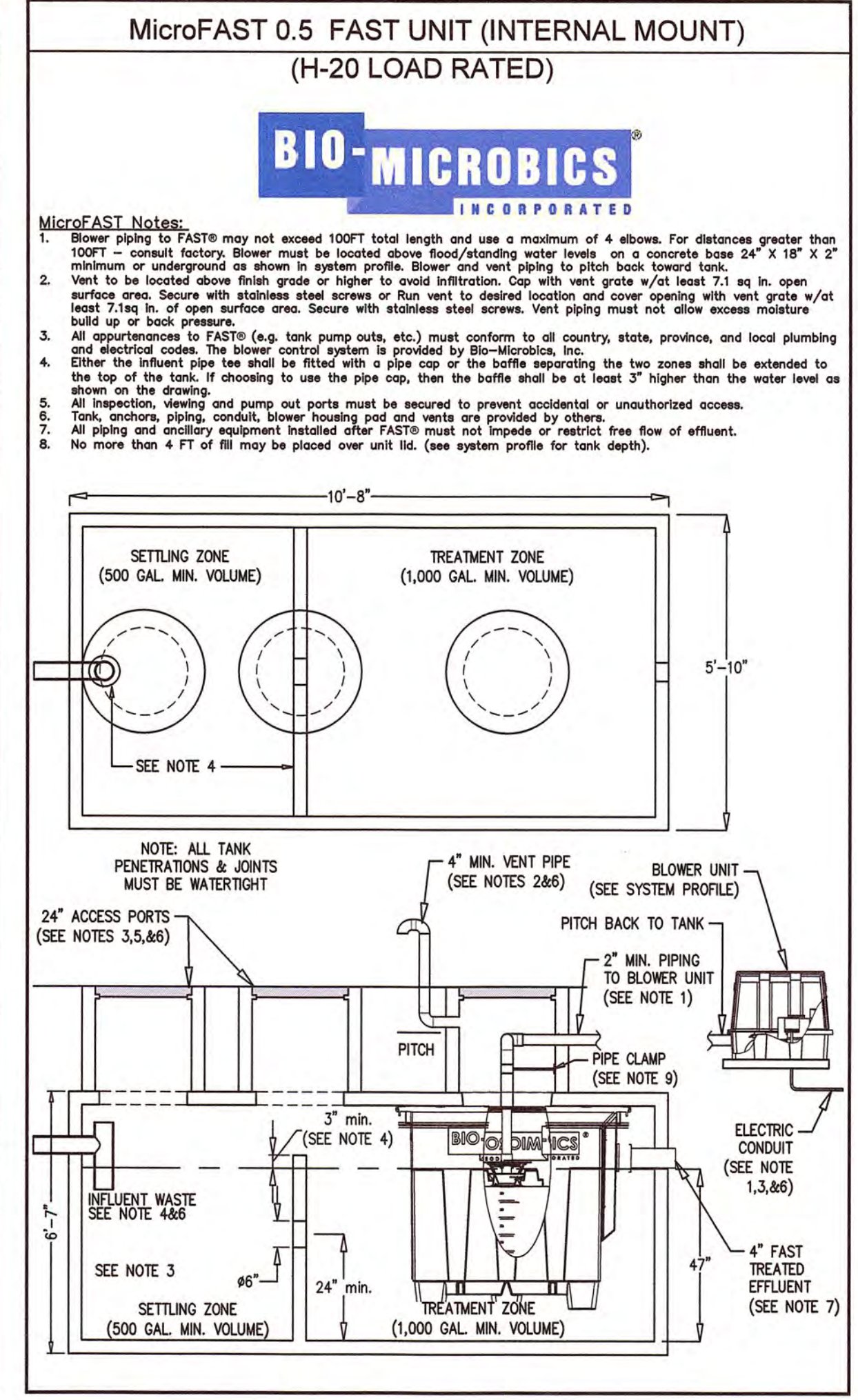
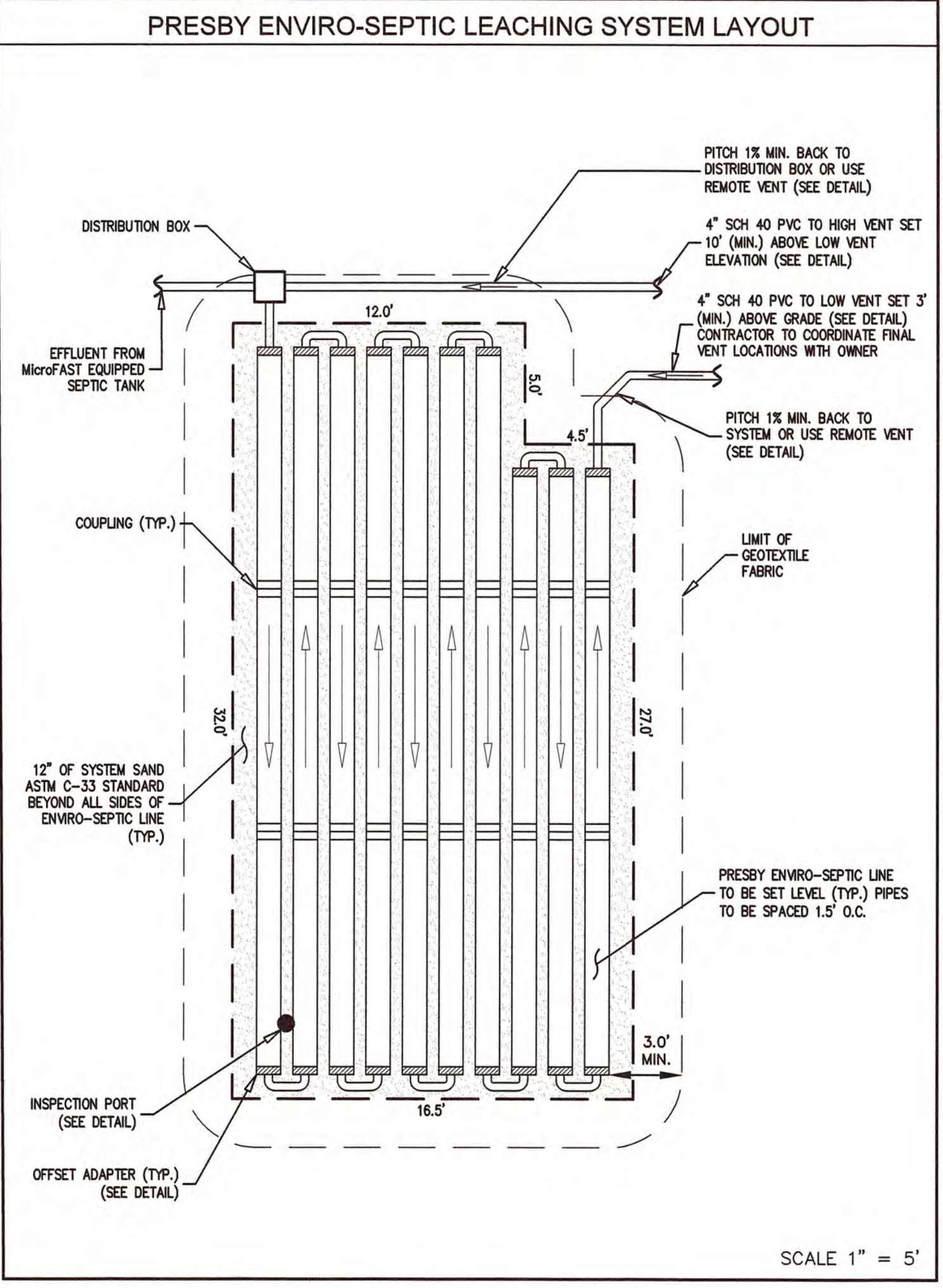
SOIL TEXTURAL CLASS: CLASS I
 PERC. RATE: <2 MINUTES/INCH
 NO. OF BEDROOMS: 4
 DESIGN FLOW REQUIRED: 440 GPD
 SEPTIC TANK REQUIRED: 1,500 GALLONS
 SEPTIC TANK PROVIDED: MicroFAST 0.5 Unit

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

EFFECTIVE LEACHING: (BASED ON GENERAL USE APPROVAL)
 TRANSMITTAL No. Accelo-21-CLM-000073-APP
 ENVIRO-SEPTIC PIPE REQUIRED: 70 L.F. PER 110 GAL/DAY
 110 GAL/DAY / 70 L.F. = 1.57 GAL/DAY/L.F.

ENVIRO-SEPTIC PIPE PROVIDED
 10 SERIAL LINES AT 285 L.F. TOTAL
 TOTAL LENGTH = 7 x 30 L.F. + 3 x 25 L.F. = 285 L.F.
 285 L.F. * 1.57 GAL/DAY/L.F. = 447.45 GAL/DAY > 440 GAL/DAY
 LINES SPACED 1.50' ON CENTER

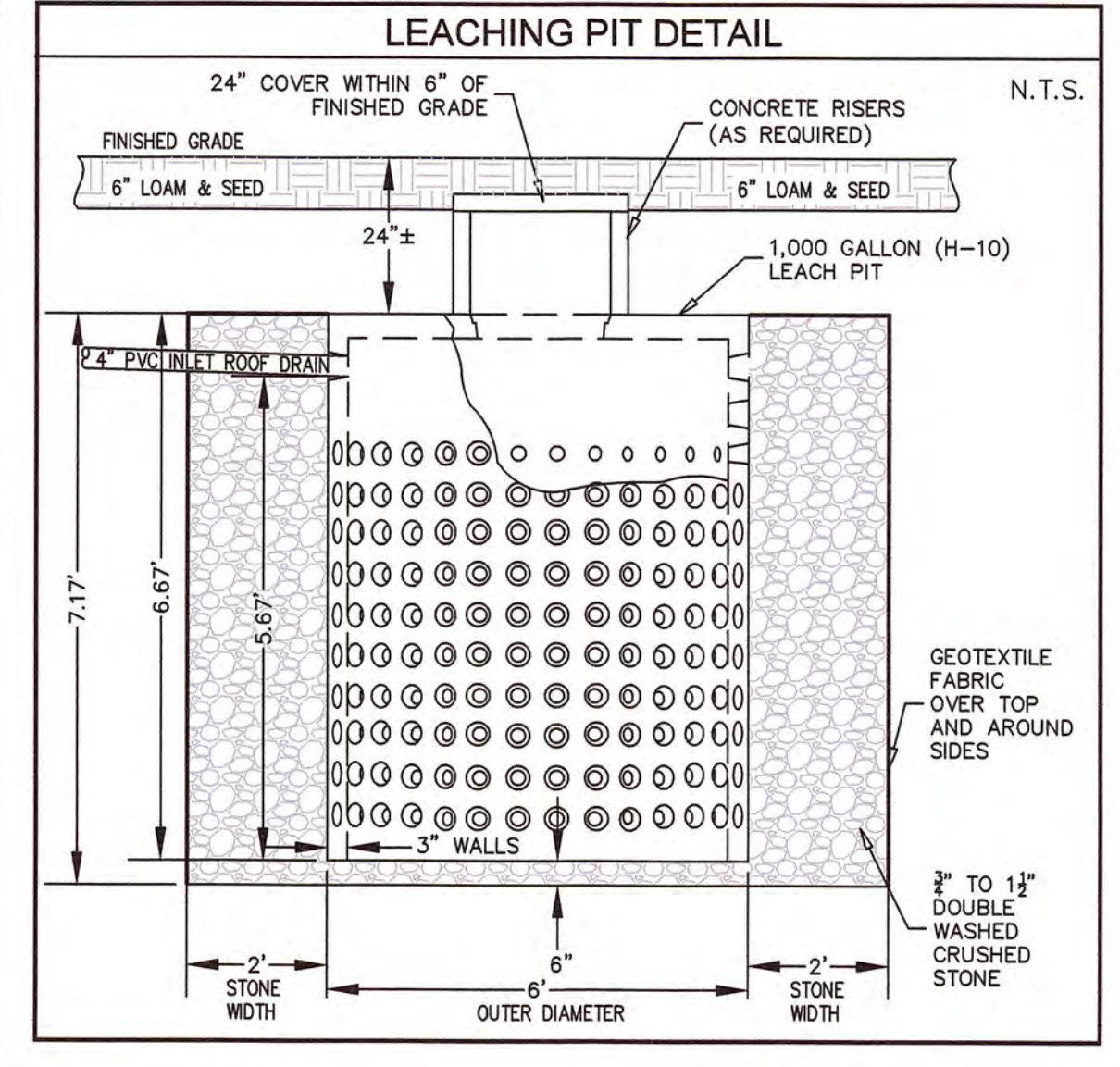
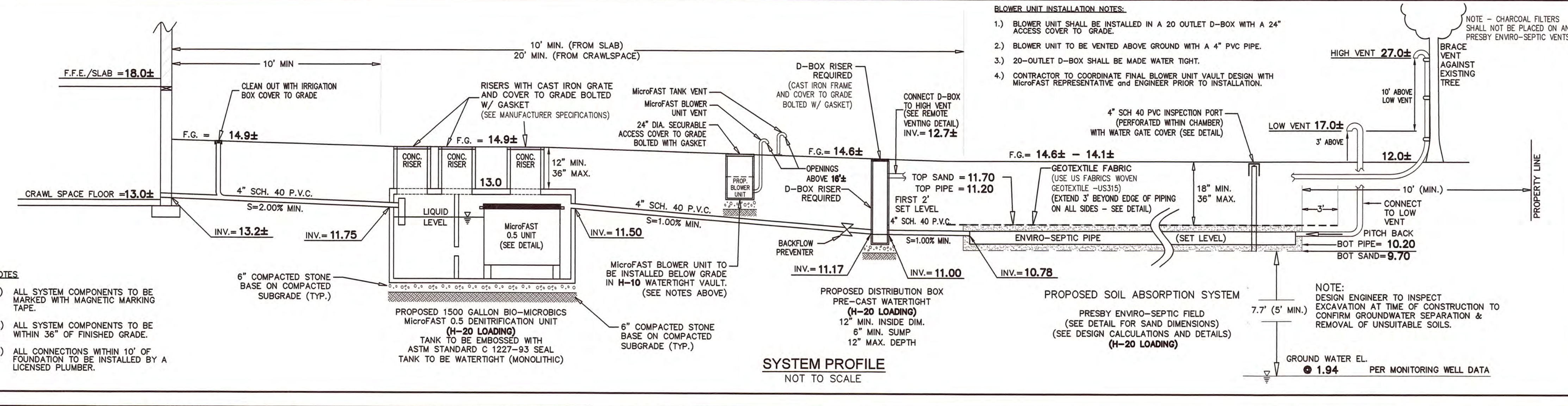
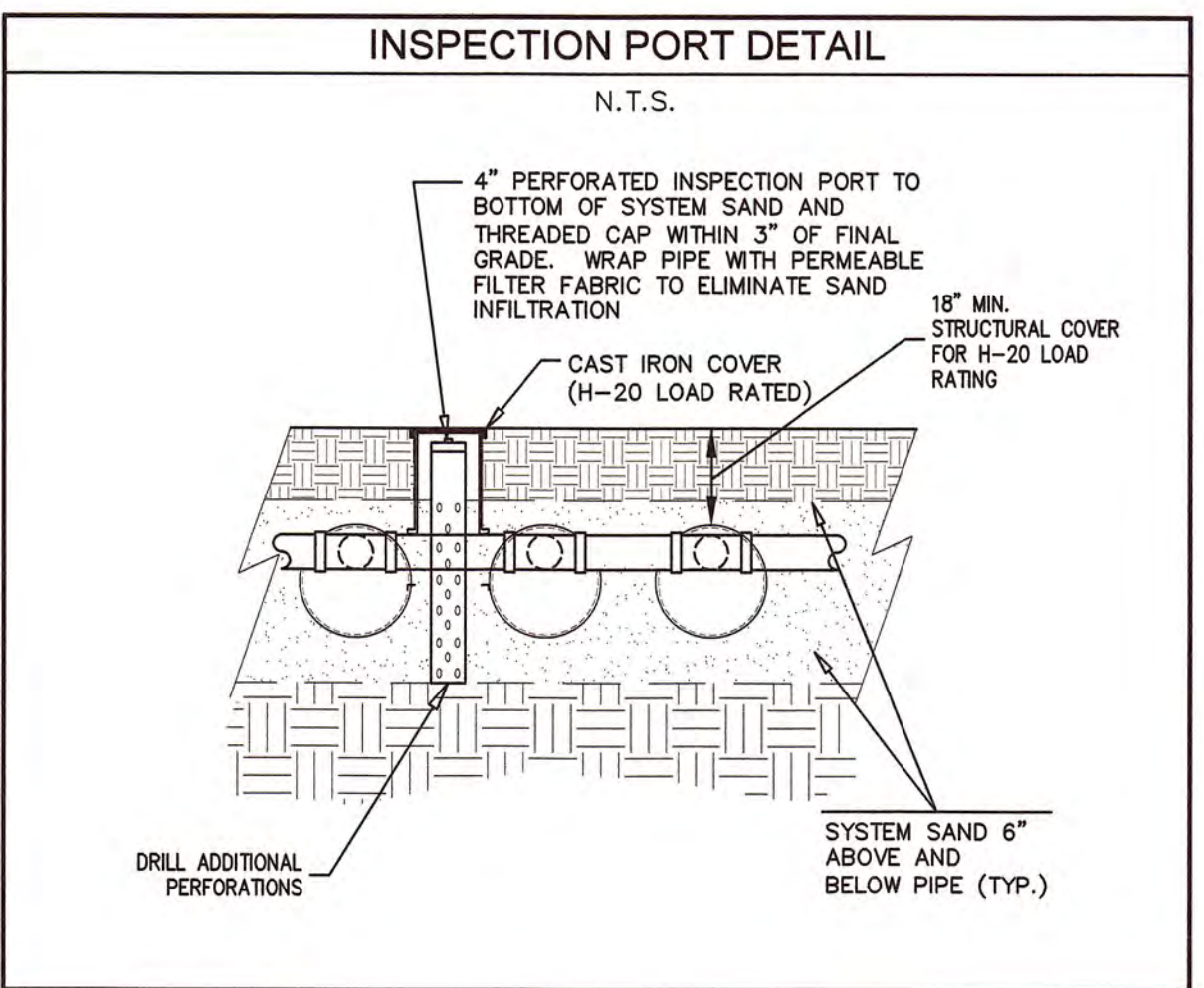
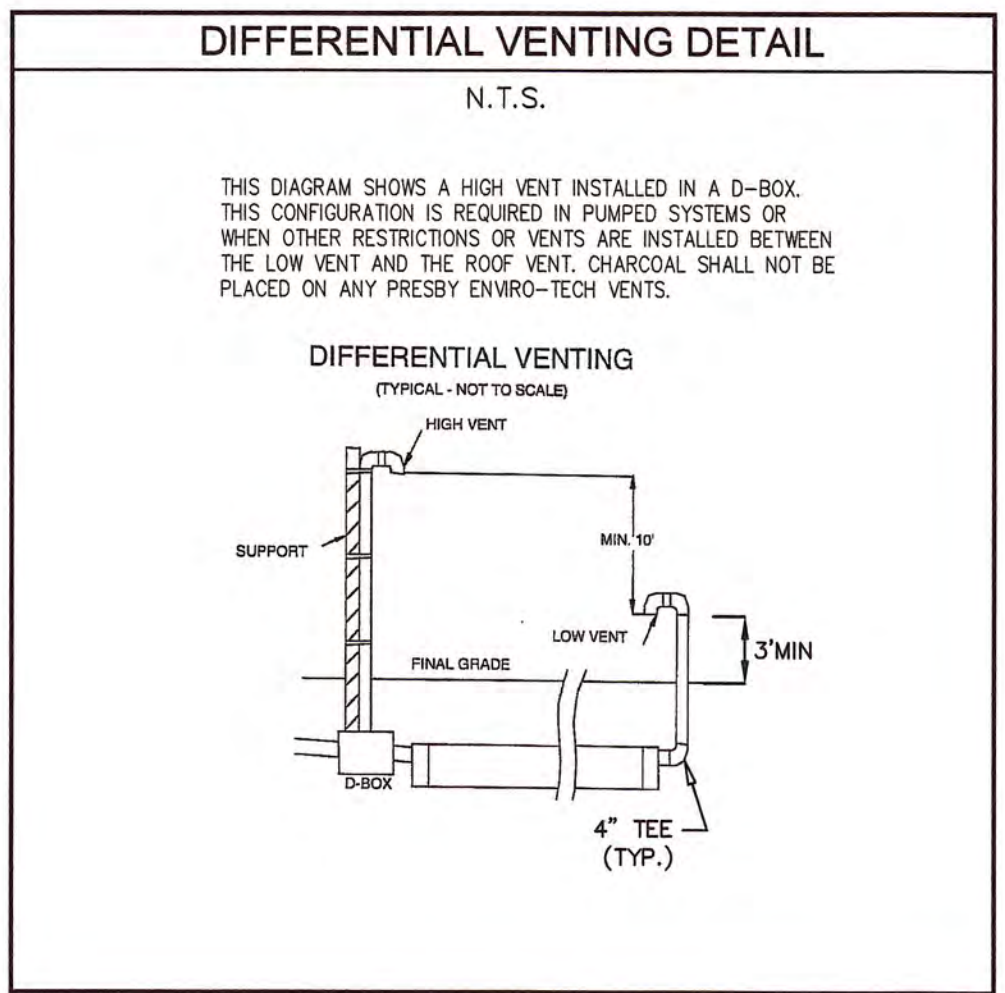
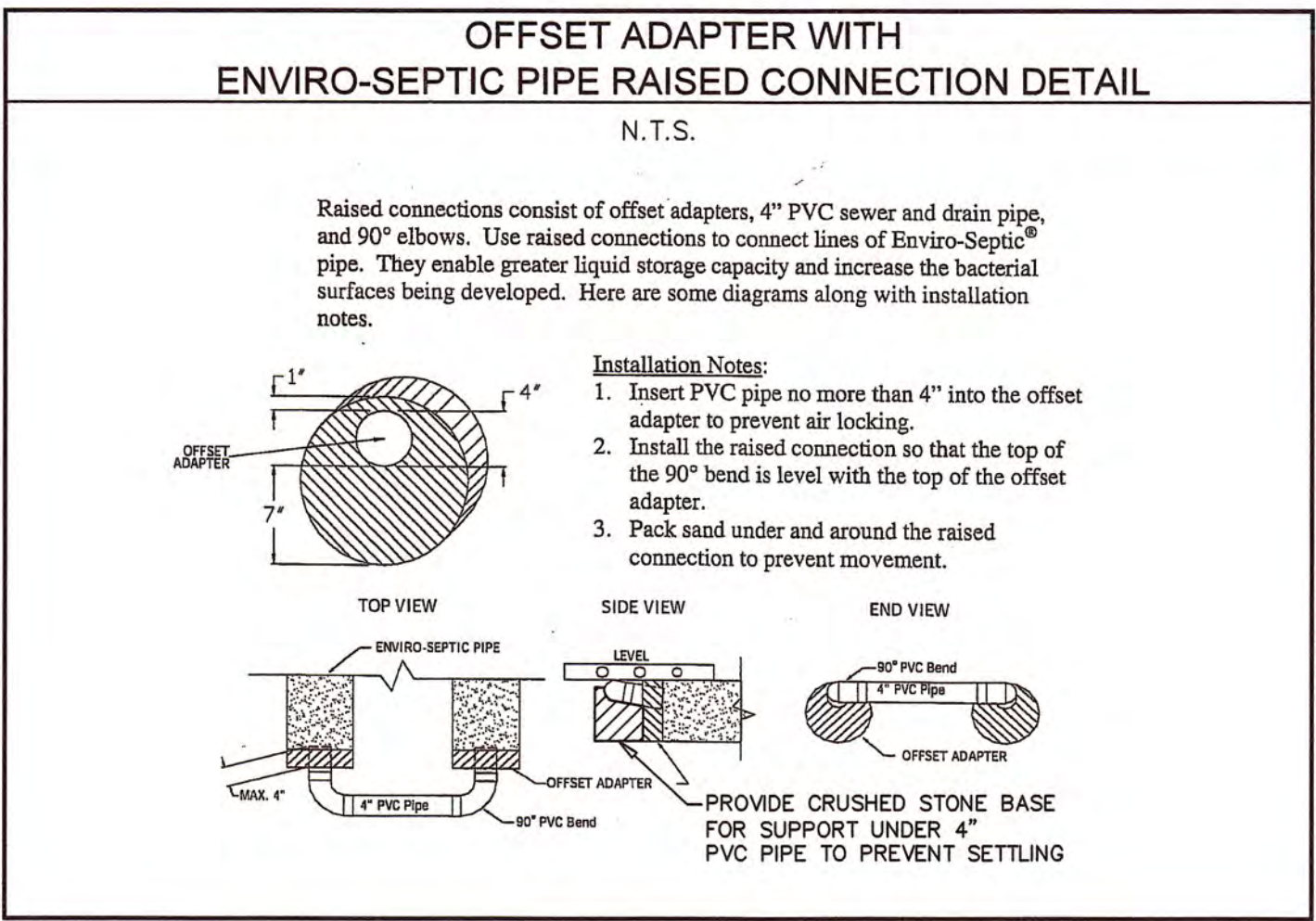
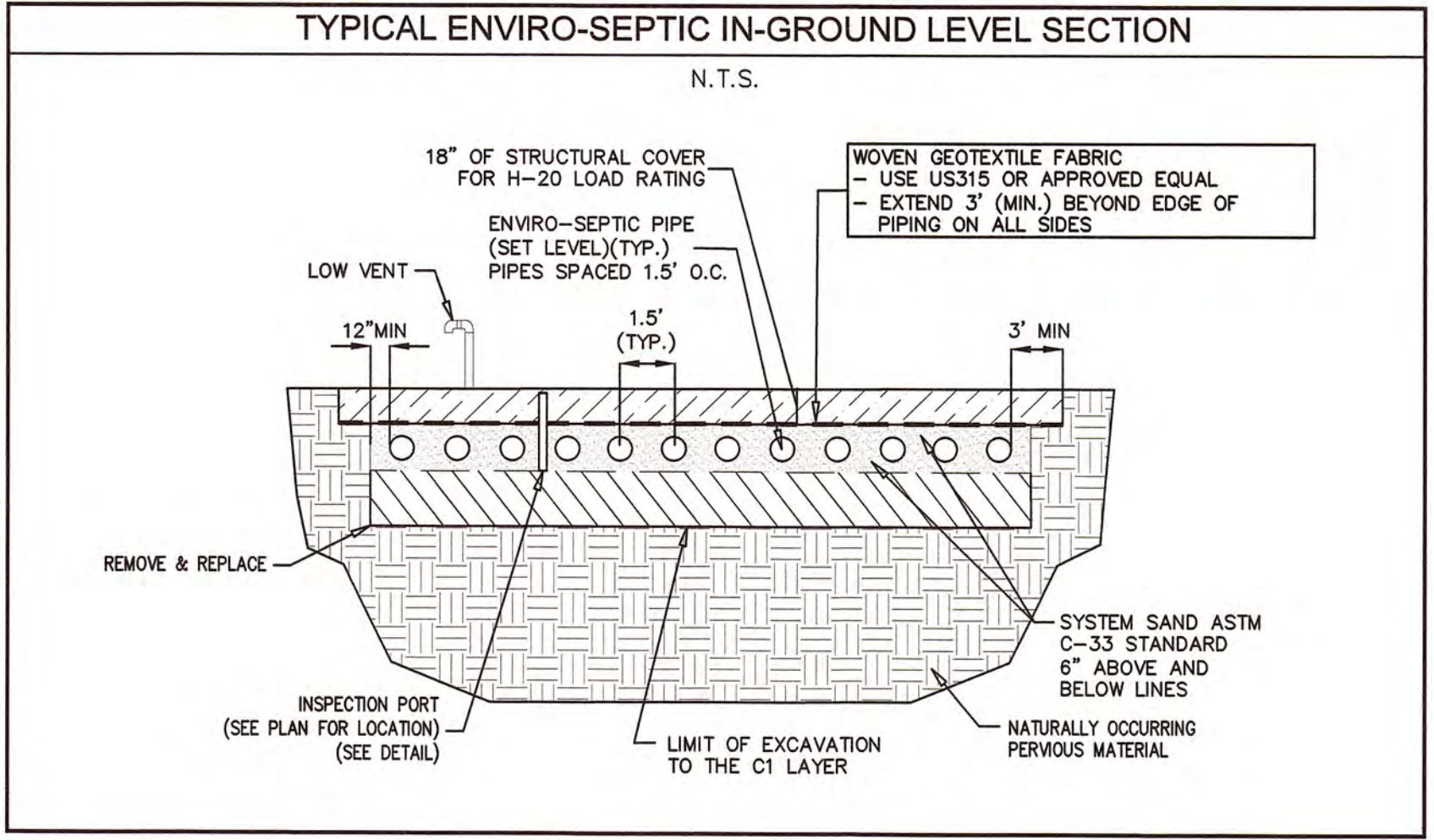
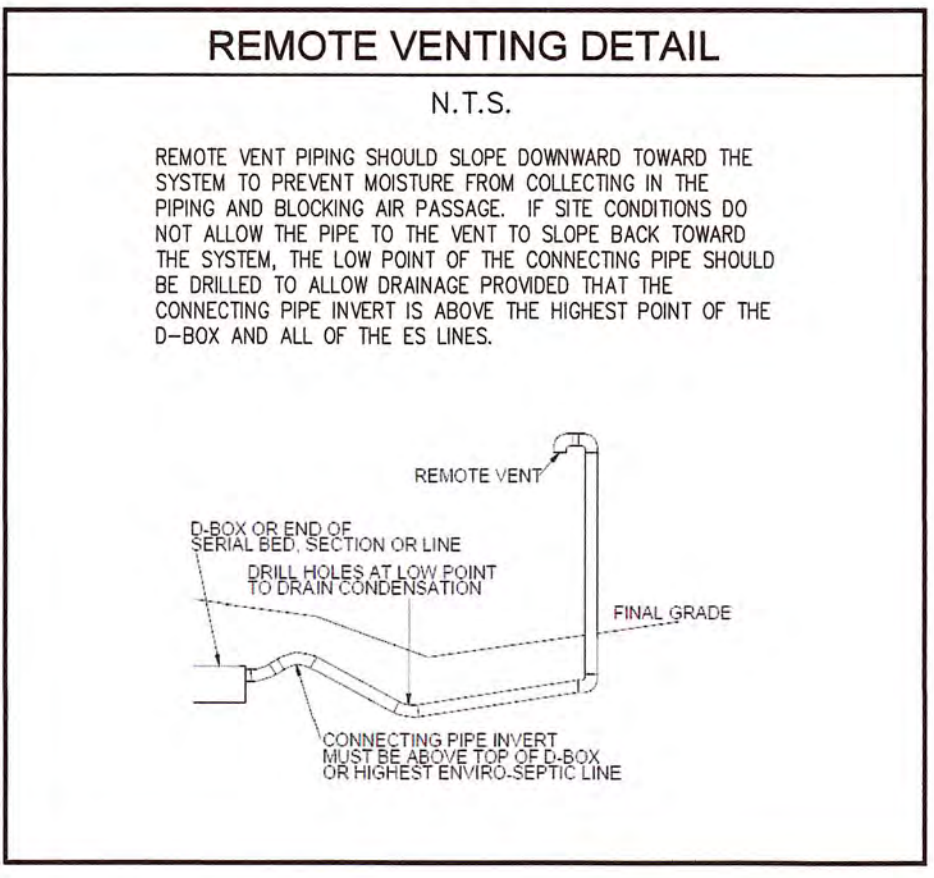
CONVENTIONAL SYSTEM DESIGN:
 12.83' WIDE x 33' LONG x 2' DEEP
 BOTTOM AREA = 423 S.F. TOTAL = 606 S.F.
 SIDEWALL AREA = 183 S.F.
 LOADING RATE = 0.74 GPD/SF
 FLOW PROVIDED: 448 GPD > 440 GPD



SOIL LOGS

TP NO.	1	2	3	4
GRD. EL.	12.3	12.7	12.8	12.8
GW. EL.	NONE to 2.5	NONE to 2.1	NONE to 2.1	NONE to 2.1
0'	A/O LOAMY SAND 10YR 4/1	FILL	A/O LOAMY SAND 10YR 4/1	A/O LOAMY SAND 10YR 4/1
12"	Bw LOAMY SAND 10YR 5/4	Apb LOAMY SAND 10YR 3/2	Bw LOAMY SAND 10YR 5/4	Bw LOAMY SAND 10YR 5/4
36"	C1 MEDIUM SAND 2.5Y 5/6	Bw MEDIUM SAND 10YR 5/4	C MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6
80"	C2 MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6
100"	C3 MEDIUM SAND 2.5Y 6/4	C MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6
WEEPING AT 128"	WEEPING @ 128"	NO MOTTLES NO WATER	NO MOTTLES NO WATER	NO MOTTLES NO WATER
140"	WEEPING @ 128"	NO MOTTLES NO WATER	NO MOTTLES NO WATER	NO MOTTLES NO WATER

EXCAVATION NOTE
 THIS SYSTEM REQUIRES THE EXCAVATION OF ALL UNSUITABLE AND/OR SPOILED SOIL BELOW THE SOIL ABSORPTION SYSTEM. SOIL SHALL BE EXCAVATED TO THE EXISTING C SAND LAYER. ENGINEER TO CONFIRM SOIL DEPTH PRIOR TO INSTALLATION. THE EXCAVATION SHALL BE INSPECTED BY THE DESIGN ENGINEER PRIOR TO BACKFILLING. SOIL IS TO BE REPLACED WITH SAND CONFORMING TO 310 OMR SECTION 15.255. CONSTRUCTION IN FILL. CONTRACTOR IS RESPONSIBLE TO PROVIDE ENGINEER WITH SAND SAMPLE FOR SIEVE ANALYSIS.



Prepared By:

BRACKEN ENGINEERING, INC.

48 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) 508.325.0044

SEPTIC DETAILS IN BOURNE, MA

Prepared For:
STEPHEN & MARYBETH BISSON TRUSTEES OF THE LONG POINT TRUST
#176 SCRAGGY NECK ROAD
MAP 51 PARCEL 1 (LOT 2)

No.	Date	Revision Description	By
3	9/26/22	REVISE SEPTIC DETAIL LAYOUT	JPH
2	8/22/22	REVISE SEPTIC LAYOUT, MISC. DETAILS	JPH
1	6/14/22	REVISE SEPTIC LAYOUT, MISC. DETAILS	JPH

Date: MAY 16, 2022
 Drawn: JPH/BEI
 Checked: DFB/AMG
 Sheet: 3 of 3

NO PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF BRACKEN ENGINEERING, INC. SMALL PRINT: THE INFORMATION CONTAINED HEREIN IS UNDESIGNATED AND UNGUARANTEED.