



## **SITE DESIGN ENGINEERING, LLC.**

11 Cushman Street, Middleboro, MA 02346  
P: 508-967-0673 F: 508-967-0674

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December 9, 2020

SDE No. 19221

Nantucket Board of Health  
3 East Chestnut Street  
Nantucket, MA 02554

**Subject:       Variance Request  
                  167 Hummock Pond Road  
                  Nantucket, Massachusetts  
                  Tax Map 65 Parcel 36**

Dear Members of the Board:

The owners of property at 167 Hummock Pond Road last appeared before you in January of this year with this request seeking a septic system variance. The variance request asks for relief relative to allowing a flow rate greater than 110 gpd per 10,000 sf of lot area through the use of an I/A treatment system. The Board voted to continue the meeting pending receipt of a full septic system design and permit application. With this letter we are filing the requested septic system design plans and permit application materials for the Boards review and consideration. The original variance request is provided again below for reference along with an explanation of the proposed septic system design.

### **Variance Request.**

The applicants are asking the Board to grant a variance from the Town of Nantucket Board of Health Regulations Sections 56.02 and 64.04B1 to allow a flow greater than 110 gallons per day per 10,000 square-feet of lot area. The owners of the property are seeking to obtain approvals to construct a commercial kitchen in the existing building on the property. Prior to filing for a building permit the owners must obtain the Boards approval for construction of a new septic system. The property is located within the Hummock Pond Road Watershed District Zone B. The proposed kitchen and existing one bedroom apartment will generate a calculated flow of 1,110 gallons per day (gpd). The existing lot area is approximately 12,600 sf. The building will be connected to Town water in Hummock Pond Road and the existing well will remain for irrigation use only.

### **Septic System Design.**

The applicants will utilize a SeptiTech treatment system in conjunction with a nitrogen loading/aggregation plan to accommodate the proposed septic system flow. The applicant has entered into a use and easement agreement with Jim Powers on abutting properties at 163 and 165 Hummock Pond Road to provide the required land area needed to allow the calculated flow rate and nitrogen loading. The calculations of the allowable septic system flow rate are enclosed with this application. The calculations considered the existing and potential sources of nitrogen loading to determine a septic flow rate that can range between 2,875-3,890 gpd (26 to 35 bedrooms). The flow rate can vary depending on the intensity of the property uses including amount of lawn and building area. We are requesting an allowed aggregate septic system site flow rate of 2,875 gpd for the combined properties.

Page 2 of 2  
SDE No. 19221  
167 Hummock Pond Road  
December 9, 2020

Please call me at (508) 503-3500 or email me at ([dmulloy@sde-ldec.com](mailto:dmulloy@sde-ldec.com)) with any questions. I will be attending your meeting on January 16 to discuss this request in greater detail.

Respectfully,



Daniel C. Mulloy, P.E.  
Site Design Engineering, LLC.

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P: 508-967-0673 F: 508-967-0674

BOARD OF HEALTH

TOWN OF NANTUCKET

No. \_\_\_\_\_

Fee \$950.00

APPLICATION FOR DISPOSAL WORKS CONSTRUCTION PERMIT

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

167 Hummock Pond Rd
Location - Address

Map 65 Parcel 36
Assessors map and parcel no.

167 Hummock Pond Rd LLC
Owner

167 Hummock Pond Rd, Nantucket MA 02554
Address

Jamre Marks Excavating
Installer

2 Tombs Ct, Nantucket MA 02554
Address

Type of Building Dwelling X No. of Bedrooms 1 Expansion Attic ( ) \* Size Lot 170,046 sq. feet
Garbage Grinder ( )

Other X Type of Building Kitchen No. of persons 1,000 gpd Showers ( ) - Cafeteria ( )

Other fixtures \_\_\_\_\_

Design Flow \_\_\_\_\_ gallons per person per day. Total daily flow 1,110 gallons.

Septic Tank X Liquid capacity see plans gallons Length \_\_\_\_\_ Width \_\_\_\_\_ Diameter \_\_\_\_\_ Depth \_\_\_\_\_

Disposal Trench X No. 1 Width 20.2' Total Length 45.25' Total Leaching area 1,520 sq. ft.

Seepage Pit No. \_\_\_\_\_ Diameter \_\_\_\_\_ Depth below inlet \_\_\_\_\_ Total Leaching area \_\_\_\_\_ gal.

Other Distribution box ( ) \_\_\_\_\_ Dosing tank ( ) \_\_\_\_\_

Percolation Test Results Performed by Dan Mulloy PE Date 9-3-20
Test Pit No. 13 < 22 minutes per inch Depth of Test Pit 132" Depth to ground water > 132"
Test Pit No. 15 < 22 minutes per inch Depth of Test Pit 126" Depth to ground water > 126"

Description of Soil Sand

Nature of Repairs or Alterations — Answer when applicable \_\_\_\_\_

- Agreement:
(1) The undersigned agrees to install the aforescribed Individual Sewage Disposal System in accordance with the provisions of new Title 5 of the State Sanitary Code.
(2) A representative of the Nantucket Board of Health shall be present at all percolation tests whenever possible. The undersigned agrees to notify a representative of the Nantucket Board of Health no less than 24 hours prior to performing the percolation test.
(3) A representative of the Nantucket Board of Health shall inspect the Individual Sewage Disposal System prior to covering. The undersigned agrees to notify a representative of the Nantucket Board of Health no less than 24 hours prior to covering the system.
(4) The undersigned further agrees not to place the system in operation until a Certificate of Compliance has been issued by the Board of Health.

Signed [Signature] Date 12/9/20

Application Approved By \_\_\_\_\_ Date \_\_\_\_\_

Application Disapproved for the following reasons: \_\_\_\_\_

NOTES: Issued \_\_\_\_\_ Date \_\_\_\_\_

## AGGREGATION OF FLOWS & NITROGEN LOADING ANALYSIS

Location : 167 Hummock Pond Road, Nantucket

Date : 9/21/2020

Project No.: 19221

3 Lots Combination ( 167 , 165 , 163 Hummock Pond Road)

	I / A System	Totals
<b>System wastewater discharge nitrate-nitrogen concentrations ( mg/L ) =</b>	19	
<i>( see <u>Note 1. &amp; 7.</u> )</i> <b>nitrate-nitrogen concentrations loading equivalent ( mg ) =</b>	<b>72</b>	
<b>Sewage Design Flow ( gpd ) =</b>		
	2,875	2,875
<i>( see <u>note 5.</u> )</i> <b>Lawn /Agriculture Area in Area of Impact ( sf ) =</b>	48,500	48,500
<b>Natural Surface : Area of land in Area of Impact ( acres ) =</b>	2.83	2.83
<b><u>Loading Calculations</u></b>		
<i>( see <u>note 1.</u> )</i> <b>Wastewater Loading ( mg ) =</b>	206,014	206,014
<i>( see <u>note 2.</u> )</i> <b>Lawn Fertilizer Loading ( mg ) =</b>	45,251	45,251
<b>Total Load of Wastewater + Fertilizer ( mg ) =</b>	251,265	251,265
<b><u>Volume Calculations</u></b>		
<i>( see <u>note 4.</u> )</i> <b>Wastewater Volume ( L ) =</b>	10,868	10,868
<i>( see <u>note 3.</u> )</i> <b>Natural Surface Volume ( L ) =</b>	14,325	14,325
<b>Total Volume of Wastewater + Recharge ( liters, L ) =</b>	25,193	25,193
<b>Nitrates Concentration ( mg / L ) =</b>	<b>10.00 &gt;</b>	<b>9.97</b>

Notes:

The following values are from Mass DEP Guidelines for Title 5 : Aggregation of Flows and Nitrogen Loading , 310 CMR 15.216 , revised 2/22/16

1. One gallon of wastewater discharge @ 35 mg/L nitrate contains 132 mg of nitrate.
2. On average, 1,000 sf of lawn receives 933 mg of nitrate per day in fertilizer.
3. 18-in. per year of recharge over one acre of land = 5,062 liters per day.
4. One gallon = 3.78 liters
5. Lawn Area includes agricultural , nitrogen-based fertilizer, and raising and grazing of livestock.
6. Per 310 CMR 15.002 Definitions : 40,000 sf = 1 acre , unit of land
7. Technology utilized (SeptiTech) allowed wastewater discharge @ 19 mg/L nitrate per 660 GPD/acre-gpda-loading, contains 72 mg of nitrate.

# AGGREGATION OF FLOWS CREDIT LAND AREA CALCULATION

Location : 167 Hummock Pond Road, Nantucket

Date : 9/21/2020

Project No.: 19221

3 Lots Combination ( 167 , 165 , 163 Hummock Pond Road)

## 167 Hummock Pond Road

Facility Land Area		Lawn Area in AOI		Impervious Area	
Map 65 , Lot 36 (167)	12,597	Lawn & Landscaping	500	Buildings	1,531
		Agriculture, Farming		Pavements	700
		Livestock, Grazing		Ponds	
<b>Totals :</b>	<b>12,597</b>	0.31	<b>500</b>		<b>2,231</b>
		acres			
<b>Credit Land =</b>	<b>9,866</b>	<b>0.25</b>			

## 165 Hummock Pond Road

Facility Land Area		Lawn Area in AOI		Impervious Area	
Map 65 , Lot 38.1 (165)	71,844	Lawn & Landscaping	10,000	Buildings	2,000
		Agriculture, Farming	3,000	Pavements	
		Livestock, Grazing		Ponds	
<b>Totals :</b>	<b>71,844</b>	1.80	<b>13,000</b>		<b>2,000</b>
		acres			
<b>Credit Land =</b>	<b>56,844</b>	<b>1.42</b>			

## 163 Hummock Pond Road

Facility Land Area		Lawn Area in AOI		Impervious Area	
Map 65 , Lot 38 (163)	85,605	Lawn & Landscaping	10,000	Buildings	4,000
		Agriculture, Farming	25,000	Pavements	
		Livestock, Grazing		Ponds	
<b>Totals :</b>	<b>85,605</b>	2.14	<b>35,000</b>		<b>4,000</b>
		acres			
<b>Credit Land =</b>	<b>46,605</b>	<b>1.17</b>			

<b>Total Credit Land =</b>	<b>113,315</b>	<b>2.83</b>			
	sq.ft.	acres			

Use	Total
Lawn & Landscaping	20,500
Agriculture, Farming	28,000
Buildings	7,531
Pavements	700



Commonwealth of Massachusetts

City/Town of Nantucket

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

A. Facility Information

167 Hummock Pond Rd., LLC.

Owner Name

167 Hummock Pond Rd.

Street Address

Nantucket

City

MA

State

65/36

Map/Lot #

02554

Zip Code

B. Site Information

1. (Check one) [X] New Construction [ ] Upgrade [ ] Repair

2. Soil Survey Available? [X] Yes [ ] No If yes: NRCS Source 294B Soil Map Unit

Evesboro sand

Soil Name

Glaciofluvial deposits

Geologic/Parent Material

Soil Limitations

3. Surficial Geological Report Available? [ ] Yes [ ] No

Landform

If yes: Year Published/Source Publication Scale Map Unit

4. Flood Rate Insurance Map

Above the 500-year flood boundary? [X] Yes [ ] No If Yes, continue to #5.

Within the 100-year flood boundary? [ ] Yes [X] No

5. Within a velocity zone? [ ] Yes [X] No

6. Within a Mapped Wetland Area? [ ] Yes [X] No

MassGIS Wetland Data Layer:

Wetland Type

7. Current Water Resource Conditions (USGS): 9/20 Month/Year

Range: [ ] Above Normal [X] Normal [ ] Below Normal

8. Other references reviewed:



Commonwealth of Massachusetts

City/Town of Nantucket

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: TP-1 Date: 9/3/20 Time: 10am Weather: Sunny

1. Location

Ground Elevation at Surface of Hole: 21.6 feet Latitude/Longitude: /

Description of Location:

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) None Surface Stones (e.g., cobbles, stones, boulders, etc.) Slope (%)

3. Distances from: Open Water Body >100 feet Drainage Way Landform Position on Landscape (SU, SH, BS, FS, TS) Wetlands >100 feet

Property Line >10 feet Drinking Water Well Other feet

4. Parent Material: Glaciofluvial deposits Unsuitable Materials Present: Yes No

If Yes: Disturbed Soil Fill Material Impervious Layer(s) Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No If yes: Depth Weeping from Pit Depth Standing Water in Hole

Estimated Depth to High Groundwater: >130 inches 10.76 elevation



**Commonwealth of Massachusetts**

City/Town of Nantucket

**Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal**

**C. On-Site Review** (continued)

Deep Observation Hole Number: TP-1

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
6	A	10YR 5/1				Loamy Sand					
28	B	10YR 6/8				Loamy Sand					
66	C1	2.5Y 8/6				Sand					
130	C2	2.5Y 8/7				Silt Sand					Firm

Additional Notes:

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Commonwealth of Massachusetts

City/Town of Nantucket

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (continued)

Deep Observation Hole Number: TP-2 Date: 9/3/20 Time: 10am Weather: Sunny

1. Location

Ground Elevation at Surface of Hole: 21.3 feet Latitude/Longitude: /

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) None Surface Stones (e.g., cobbles, stones, boulders, etc.) Slope (%) Brush/woods Vegetation Landform Position on Landscape (SU, SH, BS, FS,)

3. Distances from: Open Water Body >100 feet Drainage Way feet Wetlands >100 feet Property Line >10 feet Drinking Water Well feet Other feet

4. Parent Material: Glaciofluvial deposits Unsuitable Materials Present: [ ] Yes [x] No

If Yes: [ ] Disturbed Soil [ ] Fill Material [ ] Impervious Layer(s) [ ] Weathered/Fractured Rock [ ] Bedrock

5. Groundwater Observed: [ ] Yes [x] No If yes: Depth Weeping from Pit Depth Standing Water in Hole Estimated Depth to High Groundwater: >120 inches 11.30 elevation



**Commonwealth of Massachusetts**

City/Town of Nantucket

**Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal**

**C. On-Site Review** (continued)

Deep Observation Hole Number: TP-2

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
10	A	10YR 5/1				Loamy Sand					
24	B	10YR 6/8				Loamy Sand					
78	C1	2.5 8/6				Sand					
120	C2	2.5 8/4				Sand					Loose

Additional Notes:

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Commonwealth of Massachusetts

City/Town of Nantucket

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: TP-3 Date: 9/3/20 Time: 10am Weather: Sunny

1. Location

Ground Elevation at Surface of Hole: 20.5 feet Latitude/Longitude: /

Description of Location:

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) None Surface Stones (e.g., cobbles, stones, boulders, etc.) Slope (%) Brush/Woods Vegetation Landform Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body >100 feet Drainage Way feet Wetlands >100 feet Property Line >10 feet Drinking Water Well feet Other feet

4. Parent Material: Glaciofluvial deposits Unsuitable Materials Present: Yes No

If Yes: Disturbed Soil Fill Material Impervious Layer(s) Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No If yes: Depth Weeping from Pit Depth Standing Water in Hole

Estimated Depth to High Groundwater: >132 inches 9.5 elevation



**Commonwealth of Massachusetts**

City/Town of Nantucket

**Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal**

**C. On-Site Review** (continued)

Deep Observation Hole Number: TP-3

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
8	A	10YR 5/1				Loamy Sand					
24	B	10YR 6/6				Loamy Sand					
60	C1	2.5Y 8/4				Sand					Loose
132	C2	2.5Y 8/2				Sand					Loose

Additional Notes:

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Commonwealth of Massachusetts

City/Town of Nantucket

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (continued)

Deep Observation Hole Number: TP-4 Date: 9/3/20 Time: 10am Weather: Sunny

1. Location

Ground Elevation at Surface of Hole: 21.1 feet Latitude/Longitude: /

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) None Surface Stones (e.g., cobbles, stones, boulders, etc.) Slope (%)

Brush/woods Vegetation Landform Position on Landscape (SU, SH, BS, FS, Wetlands >100 feet)

3. Distances from: Open Water Body >100 feet Drainage Way Property Line >10 feet Drinking Water Well Other Wetlands >100 feet

4. Parent Material: Glaciofluvial deposits Unsuitable Materials Present: [ ] Yes [X] No

If Yes: [ ] Disturbed Soil [ ] Fill Material [ ] Impervious Layer(s) [ ] Weathered/Fractured Rock [ ] Bedrock

5. Groundwater Observed: [ ] Yes [X] No If yes: Depth Weeping from Pit Depth Standing Water in Hole

Estimated Depth to High Groundwater: >132 inches 10.1 elevation



**Commonwealth of Massachusetts**

City/Town of Nantucket

**Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal**

**C. On-Site Review** (continued)

Deep Observation Hole Number: TP-4

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
8	A	10YR 5/1				Loamy Sand					
28	B	10YR 6/6				Loamy Sand					
60	C1	2.5 8/4				Sand					Loose
132	C2	2.5 8/2				Sand					Loose

Additional Notes:

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Commonwealth of Massachusetts

City/Town of Nantucket

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: TP-5 Date: 9/3/20 Time: 10am Weather: Sunny

1. Location

Ground Elevation at Surface of Hole: 20.1 feet Latitude/Longitude: /

Description of Location:

2. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) None Surface Stones (e.g., cobbles, stones, boulders, etc.) Slope (%) Brush/Woods Vegetation Landform Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body >100 feet Drainage Way feet Wetlands >100 feet Property Line >10 feet Drinking Water Well feet Other feet

4. Parent Material: Glaciofluvial deposits Unsuitable Materials Present: Yes No

If Yes: Disturbed Soil Fill Material Impervious Layer(s) Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No If yes: Depth Weeping from Pit Depth Standing Water in Hole Estimated Depth to High Groundwater: >126 inches 9.60 elevation



**Commonwealth of Massachusetts**

City/Town of Nantucket

**Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal**

**C. On-Site Review** (continued)

Deep Observation Hole Number: TP-5

Depth (in.)	Soil Horizon/ Layer	Soil Matrix: Color- Moist (Munsell)	Redoximorphic Features			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
8	A	10YR 5/1				Loamy Sand					
26	B	10YR 6/6				Loamy Sand					
44	C1	2.5Y 8/2				Sand					Pockets LS
126	C2	2.5Y 8/3				Sand					

Additional Notes:

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**Commonwealth of Massachusetts**

City/Town of Nantucket

**Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal**

**D. Determination of High Groundwater Elevation**

1. Method Used:	Obs. Hole # <u>TP-1</u>	Obs. Hole # <u>TP-2</u>
<input type="checkbox"/> Depth observed standing water in observation hole	_____ inches	_____ inches
<input checked="" type="checkbox"/> Depth weeping from side of observation hole	<u>130"</u> inches	<u>120"</u> inches
<input type="checkbox"/> Depth to soil redoximorphic features (mottles)	_____ inches	_____ inches
<input type="checkbox"/> Depth to adjusted seasonal high groundwater ( $S_h$ ) (USGS methodology)	_____ inches	_____ inches

_____	Index Well Number	_____	Reading Date										
$S_h = S_c - [S_r \times (OW_c - OW_{max}) / OW_r]$													
Obs. Hole #	_____	$S_c$	_____	$S_r$	_____	$OW_c$	_____	$OW_{max}$	_____	$OW_r$	_____	$S_h$	_____
Obs. Hole #	_____	$S_c$	_____	$S_r$	_____	$OW_c$	_____	$OW_{max}$	_____	$OW_r$	_____	$S_h$	_____

**E. Depth of Pervious Material**

1. Depth of Naturally Occurring Pervious Material
  - a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?
 

Yes       No
  - b. If yes, at what depth was it observed?
 

Upper boundary: <u>24</u> inches	Lower boundary: <u>120</u> inches
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  - c. If no, at what depth was impervious material observed?
 

Upper boundary: _____ inches	Lower boundary: _____ inches
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Commonwealth of Massachusetts

City/Town of Nantucket

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:	Obs. Hole # <u>TP-3</u>	Obs. Hole # <u>TP-4</u>
<input type="checkbox"/> Depth observed standing water in observation hole	_____ inches	_____ inches
<input checked="" type="checkbox"/> Depth weeping from side of observation hole	<u>132"</u> inches	<u>132"</u> inches
<input type="checkbox"/> Depth to soil redoximorphic features (mottles)	_____ inches	_____ inches
<input type="checkbox"/> Depth to adjusted seasonal high groundwater (S <sub>h</sub> ) (USGS methodology)	_____ inches	_____ inches

_____	Index Well Number	_____	Reading Date										
$S_h = S_c - [S_r \times (OW_c - OW_{max}) / OW_r]$													
Obs. Hole #	_____	S <sub>c</sub>	_____	S <sub>r</sub>	_____	OW <sub>c</sub>	_____	OW <sub>max</sub>	_____	OW <sub>r</sub>	_____	S <sub>h</sub>	_____
Obs. Hole #	_____	S <sub>c</sub>	_____	S <sub>r</sub>	_____	OW <sub>c</sub>	_____	OW <sub>max</sub>	_____	OW <sub>r</sub>	_____	S <sub>h</sub>	_____

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material
  - a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?
 

Yes       No
  - b. If yes, at what depth was it observed?
 

Upper boundary: 24 inches      Lower boundary: 132 inches
  - c. If no, at what depth was impervious material observed?
 

Upper boundary: \_\_\_\_\_ inches      Lower boundary: \_\_\_\_\_ inches



Commonwealth of Massachusetts

City/Town of Nantucket

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

<input type="checkbox"/> Depth observed standing water in observation hole	Obs. Hole # <u>TP-5</u>	Obs. Hole # _____
	_____ inches	_____ inches
<input checked="" type="checkbox"/> Depth weeping from side of observation hole	<u>126"</u>	_____ inches
	_____ inches	_____ inches
<input type="checkbox"/> Depth to soil redoximorphic features (mottles)	_____ inches	_____ inches
	_____ inches	_____ inches
<input type="checkbox"/> Depth to adjusted seasonal high groundwater (S <sub>h</sub> ) (USGS methodology)	_____ inches	_____ inches
	_____ inches	_____ inches

_____	Index Well Number	_____	Reading Date				
$S_h = S_c - [S_r \times (OW_c - OW_{max}) / OW_r]$							
Obs. Hole # _____	S <sub>c</sub> _____	S <sub>r</sub> _____	OW <sub>c</sub> _____	OW <sub>max</sub> _____	OW <sub>r</sub> _____	S <sub>h</sub> _____	
Obs. Hole # _____	S <sub>c</sub> _____	S <sub>r</sub> _____	OW <sub>c</sub> _____	OW <sub>max</sub> _____	OW <sub>r</sub> _____	S <sub>h</sub> _____	

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?

Yes       No

b. If yes, at what depth was it observed?

Upper boundary:	<u>26</u>	Lower boundary:	<u>126</u>
	inches		inches

c. If no, at what depth was impervious material observed?

Upper boundary:	_____	Lower boundary:	_____
	inches		inches



**Commonwealth of Massachusetts**

City/Town of Nantucket

**Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal**

**F. Board of Health Witness**

Artell Crowley  
Name of Board of Health Witness

Nantucket  
Board of Health

**G. Soil Evaluator Certification**

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

*Daniel C. Mulloy*  
Signature of Soil Evaluator

12/9/20  
Date

Daniel C. Mulloy / #1702  
Typed or Printed Name of Soil Evaluator / License #

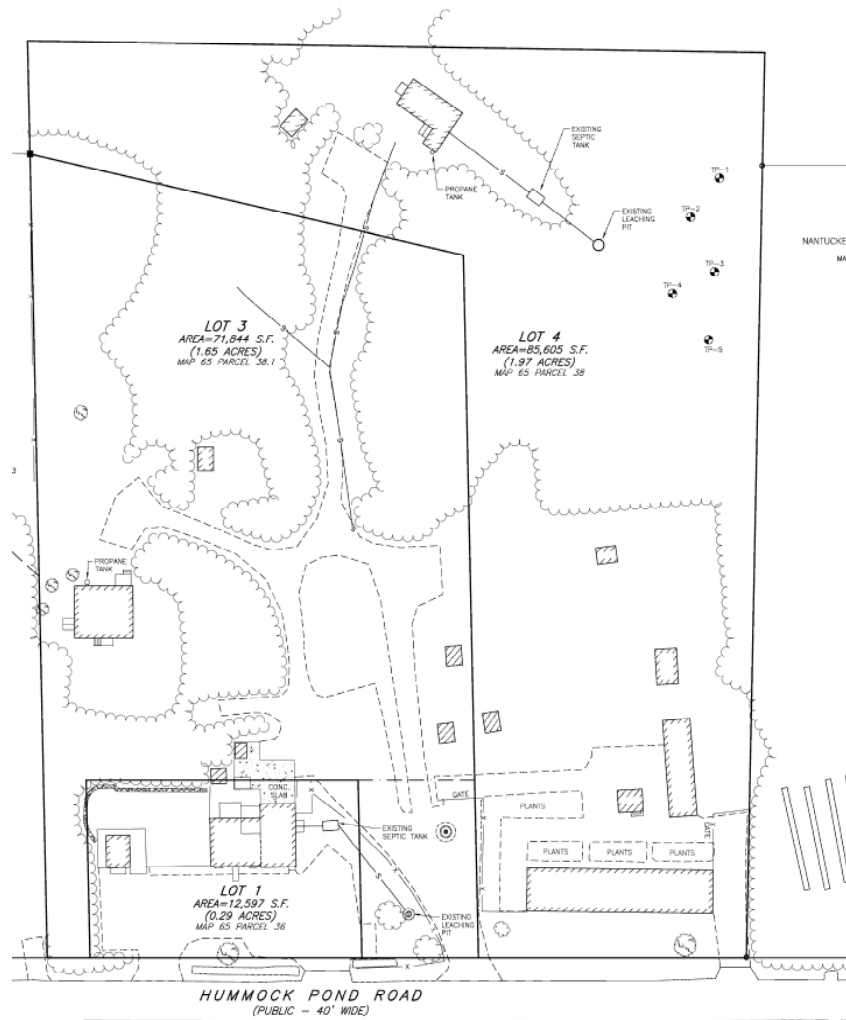
6-30-23  
Expiration Date of License

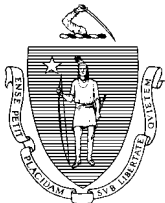
**Note:** In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with [Percolation Test Form 12](#).



Field Diagrams

Use this sheet for field diagrams:





Commonwealth of Massachusetts  
 City/Town of Nantucket  
**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**

167 Hummock Pond Rd., LLC.  
 Owner Name  
 167 Hummock Pond Rd.  
 Street Address or Lot #  
 Nantucket MA 02554  
 City/Town State Zip Code  
 Contact Person (if different from Owner) Telephone Number

**B. Test Results**

	9/3/20 Date	10:00 am Time	9/3/20 Date	10:00am Time
Observation Hole #	TP-2		TP-3	
Depth of Perc	36"		36"	
Start Pre-Soak	10:15		10:30	
End Pre-Soak	25 gal		25 gal	
Time at 12"	in less		in less	
Time at 9"	than		than	
Time at 6"	15 min.		15 min.	
Time (9"-6")				
Rate (Min./Inch)	<2		<2	
	Test Passed: <input checked="" type="checkbox"/>		Test Passed: <input checked="" type="checkbox"/>	
	Test Failed: <input type="checkbox"/>		Test Failed: <input type="checkbox"/>	

Daniel C. Mulloy  
 Test Performed By:  
 Artell Crowley  
 Board of Health Witness

Comments:  
 \_\_\_\_\_  
 \_\_\_\_\_



Commonwealth of Massachusetts  
 City/Town of Nantucket  
**Percolation Test**  
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**A. Site Information**

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 Nantucket MA 02554  
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**B. Test Results**

	9/3/20 Date	10:30 am Time	9/3/20 Date	10:30 am Time
Observation Hole #	TP-4		TP-5	
Depth of Perc	36"		36"	
Start Pre-Soak	10:45		11:00	
End Pre-Soak	25 gal		25 gal	
Time at 12"	in less		in less	
Time at 9"	than		than	
Time at 6"	15 min.		15 min.	
Time (9"-6")				
Rate (Min./Inch)	<2		<2	
	Test Passed: <input checked="" type="checkbox"/>		Test Passed: <input checked="" type="checkbox"/>	
	Test Failed: <input type="checkbox"/>		Test Failed: <input type="checkbox"/>	

Daniel C. Mulloy  
 Test Performed By:  
 Artell Crowley  
 Board of Health Witness

Comments:  
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