Determination for Seasonal High Water Table

Method Used: Test Hole Number 16 - 5H

☐ Depth observed standing in observation hole _______ inches
☐ Depth weeping standing in observation hole _______ inches
☒ Depth to soil mottles _______ inches
☐ Ground water adjustment _______ feet

Index Well Number __________ Reading Date __________ Index well level __________
Adjustment factor __________ Adjusted ground water __________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material? __________

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.

Signature _________________________ Date _________________________

NOTE: See accompanying cover letter which is part of this report.
<table>
<thead>
<tr>
<th>Percolation Test*</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date:</strong></td>
<td>9/15/2011</td>
</tr>
<tr>
<td><strong>Time:</strong></td>
<td>11:40 AM</td>
</tr>
<tr>
<td><strong>Observation Hole:</strong></td>
<td>16-1A</td>
</tr>
<tr>
<td>Depth of Perc</td>
<td>60''</td>
</tr>
<tr>
<td>Start Pre-soak</td>
<td>11:25 AM</td>
</tr>
<tr>
<td>End Pre-soak</td>
<td>11:30 AM</td>
</tr>
<tr>
<td>Time at 12''</td>
<td>11:40</td>
</tr>
<tr>
<td>Time at 9''</td>
<td>11:45</td>
</tr>
<tr>
<td>Time at 6''</td>
<td>11:50</td>
</tr>
<tr>
<td>Time (9''-6)</td>
<td>30 min</td>
</tr>
<tr>
<td>Rate Min./Inch</td>
<td>10 ml/&quot;</td>
</tr>
</tbody>
</table>

* Minimum of 1 percolation test must be performed in both the primary area AND reserve area.

Site Passed:  
Performed By:  R. Blanchette / E. Fredette
Witnessed By: D. Rogers (Newbury BOH)

Comments: 
**Percolation Test**

<table>
<thead>
<tr>
<th>Observation Hole#</th>
<th>Date</th>
<th>Start</th>
<th>End</th>
<th>Time at 12&quot;</th>
<th>Time at 9&quot;</th>
<th>Time (9&quot;-6)</th>
<th>Rate Min./Inch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9/1/2011</td>
<td>:24:00</td>
<td>:24:10</td>
<td>:12:00</td>
<td>:12:10</td>
<td>:12:10</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4:1</td>
<td>105 min</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

---

* Minimum of 1 percolation test must be performed in both the primary area AND reserve area.

Site Passed ☑ Site Failed ☐

Performed By: R. Blanchette / E. Fredette

Witnessed By: D. Rogers (Newbury B01)

Comments: [Blank]
<table>
<thead>
<tr>
<th>Observation Hole#</th>
<th>Date: 10/6/2016</th>
<th>Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of Perc</td>
<td>60 ft.</td>
<td></td>
</tr>
<tr>
<td>Start Pre-soak</td>
<td>11:20 AM</td>
<td>11:20</td>
</tr>
<tr>
<td>End Pre-soak</td>
<td>11:30</td>
<td>11:30</td>
</tr>
<tr>
<td>Time at 12&quot;</td>
<td>11:44</td>
<td>11:44</td>
</tr>
<tr>
<td>Time at 9&quot;</td>
<td>12:25</td>
<td>12:25</td>
</tr>
<tr>
<td>Time at 6&quot;</td>
<td>5:50</td>
<td>5:50</td>
</tr>
<tr>
<td>Time (9&quot; - 6&quot;)</td>
<td>9:50</td>
<td></td>
</tr>
<tr>
<td>Rate Min./Inch</td>
<td>8.8 in.</td>
<td></td>
</tr>
</tbody>
</table>

* Minimum of 1 percolation test must be performed in both the primary area AND reserve area.

Site Passed [✓]  Site Failed [☐]

Performed By: R. Blanchette / E. Fredette
Witnessed By: D. Rogers (Newbury BOH)
Comments: 

16-5G
15 Coleman Road

1003

COMMONWEALTH OF MASSACHUSETTS
Newbury, Massachusetts

<table>
<thead>
<tr>
<th>Date:</th>
<th>10/6/2012</th>
<th>Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation Hole#</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth of Perc</td>
<td>60&quot;</td>
<td></td>
</tr>
<tr>
<td>Start Pre-soak</td>
<td>11:31</td>
<td>11:31</td>
</tr>
<tr>
<td>End Pre-soak</td>
<td>11:40</td>
<td>11:50</td>
</tr>
<tr>
<td>Time at 12&quot;</td>
<td></td>
<td>11:50</td>
</tr>
<tr>
<td>Time at 9&quot;</td>
<td>12:21</td>
<td>8:50 1:00 (60+12:50)</td>
</tr>
<tr>
<td>Time at 6&quot;</td>
<td>158</td>
<td></td>
</tr>
<tr>
<td>Time (9&quot;-6)</td>
<td>09:05</td>
<td>108</td>
</tr>
<tr>
<td>Rate Min./Inch</td>
<td>0.2</td>
<td></td>
</tr>
</tbody>
</table>

* Minimum of 1 percolation test must be performed in both the primary area AND reserve area.

Site Passed [✓] Site Failed [ ]

Performed By: R. Blanchette / E. Fredette

Witnessed By: D. Rogers (Newbury BOH)

Comments: [ ]
Determination for Seasonal High Water Table

Method Used:  Test Hole Number 16 - 5G

☐ Depth observed standing in observation hole __________ inches

☐ Depth weeping standing in observation hole __________ inches

☒ Depth to soil mottles __________ inches

☐ Ground water adjustment __________ feet

Index Well Number __________ Reading Date __________ Index well level __________

Adjustment factor __________ Adjusted ground water __________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material? __________

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.

Signature __________ Date __________

NOTE: See accompanying cover letter which is part of this report.
**Deep Hole Number**: 16-5H  
**Date**: 10/6/2016  
**Time**: 11:30AM  
**Weather**: Clear, 40°F

**Location (identify on site plan)**: Refer to Site Plan (attached)

**Land Use**: Woodland
**Vegetation**: Hardwood trees
**Landform**: Drumlin

**Position on landscape (sketch on the back)**: Refer to Site Plan (attached)

**Distances from:**
- **Open Water Body**: >100 feet
- **Possible Wet Area**: >100 feet
- **Drinking Water Well**: >100 feet
- **Drainage way**: >100 feet
- **Property Line**: >10 feet
- **Other**:

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color</th>
<th>Soil Moisture</th>
<th>Other (Structure, Stones, Boulier, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>A</td>
<td>sL</td>
<td>1A 4E 31/3</td>
<td>Moist, Fruity</td>
<td></td>
</tr>
<tr>
<td>9 - 20</td>
<td>B</td>
<td>sL</td>
<td>75 4E 51/8</td>
<td>Fruity</td>
<td></td>
</tr>
<tr>
<td>20 - 30</td>
<td>B/C</td>
<td>SL</td>
<td>25 4E 64</td>
<td>Fruity</td>
<td></td>
</tr>
<tr>
<td>30 - 90</td>
<td>C</td>
<td>SL</td>
<td>25 4E 51/4</td>
<td>3000 Gravelly</td>
<td></td>
</tr>
</tbody>
</table>

**Receiving Layers**

**Parent Material (geologic)**: Tilled

**Depth to Bedrock**: 

**Depth to Groundwater**: 

**Standing Water in the Hole**: 

**Weeping from Pit Face**: 

**Estimated Seasonal High Ground Water**: 30'
October 10, 2016

Mark Woodbury
17 Coleman Road
Newbury, MA 01922

Re: Soil and percolation tests at 15 Coleman Road -- CE #16031

Dear Mr. Woodbury,

In accordance with your request, soil and percolation tests were conducted on the subject lot(s) on October 5 & 6, 2016, in order to determine the feasibility of subsurface sewage effluent disposal for single family dwellings. Soil tests were observed and percolation tests were performed in accordance with the enclosed Evaluation Form (11) and Percolation Test Form (12).

Soil tests at sites 16-1A, 16-1B, 16-6A, 16-6C, 16-6D, 16-6E, 16-10D, 16-10E, 16-10F, 16-3A, 16-3C, 16-3D, 16-3E, 16-3F, 16-5A, 16-5C, 16-5D, 16-5F, 16-5G, and 16-5H meet the minimum requirements of Title 5 of the State Environmental Code for the subsurface disposal of sewage effluent, acceptable percolation rate. However, it is important to note at this time that all other requirements of Title 5 and any local regulations must be met in order that a sanitary system design can be accepted and approved by the local Board of Health.

Soil tests at sites 16-1C, 16-4A, 16-4B, 16-6B, 16-10A, 16-10B, 16-10C, 16-14A, 16-14B, 16-13A, 16-13B, 16-13C, 16-11A, 16-9A, 16-9B, 16-3B, 16-7A, 16-5B, and 16-5E do not meet the minimum requirements of Title 5 of the State Environmental Code for the subsurface disposal of sewage effluent. These locations had shallow depths to ledge and did not have four feet of naturally occurring pervious material. The locations of tests which do not meet the requirements are unsuitable for the subsurface disposal of sewage effluent.

If you have any questions regarding this matter, please feel free to contact me at this office.

Very truly yours,
W. C. Cammett Engineering, Inc.

Robert B. Blanchette, Jr.

Emily A. Fredette

cc: Board of Health
Title: M\Winword\2016\16031\6\F\16035 SOIL.doc
Commonwealth of Massachusetts  
Newbury, Massachusetts  

Soil Suitability Assessment for On-site Sewage Disposal

**Performed by:**  R. Blanchette, E. Fredette  
**Witnessed by:**  D. Rogers  
**Job No.:**  16031  

<table>
<thead>
<tr>
<th>Location Address or Lot #</th>
<th>Owner's Name</th>
</tr>
</thead>
</table>
| 15 Coleman Road  
Newbury, MA  
Proposed Lots 1-13 | Mark Woodbury  
17 Coleman Road  
Newbury, MA 01922  
(978) 857-7960 |

- New Construction: X  
- Repair: [ ]

**Office Review**

- Published Soil Survey Available: X  
- Year Published: 2015  
- Drainage Class: Well-Drained  
- Publication Scale: 1:50,000  
- Soil Limitations: Very stony, depth to water table, bedrock

- Surficial Geologic Report Available: X  
- Year Published: 2014  
- Geologic Material (Map Unit): Till/Bedrock, fine grained deposit  
- Publication Scale: 1:250,000

- Landform: Drumlin

**Flood Insurance Rate Map:**
- Above 500 year flood boundary: X  
- Within 500 year flood boundary: [ ]  
- Within 100 year flood boundary: X  

**Wetland Area:**
- National Wetland Inventory Map (map unit) **On-site delineation by Basbanes Wetland Consulting**  
- Wetlands Conservancy Program Map (map unit) **In 2016**

**Current Water Resource Conditions (USGS):**
- Range: Above Normal [ ]  
- Normal [ ]  
- Below Normal: X

**Other References Reviewed:**
**FORM 11 - SOIL EVALUATOR FORM**

**On-Site Review**

Deep Hole Number: 16 - 1A
Location (identify on site plan): Refer to Site Plan (Attached)
Date: 10/5/2016
Time: 8:00 AM
Weather: Clear, 40°F

- **Land Use:** Woodland
- **Vegetation:** Hardwood trees
- **Landform:** Drumlin

Position on landscape (sketch on the back): Refer to Site Plan (Attached)

**Distances from:**
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: >100 feet
- Property Line: ≤10 feet
- Other: __________

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, % Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>Ap</td>
<td>LS</td>
<td>10 YR 3/2</td>
<td>Dry, very</td>
<td>gravelly, firm</td>
</tr>
<tr>
<td>10 - 12</td>
<td>Bw</td>
<td>LS</td>
<td>7.5 YR 5/8</td>
<td>Very friable</td>
<td></td>
</tr>
<tr>
<td>12 - 42</td>
<td>C1</td>
<td>Loamy fine sand</td>
<td>2.5 Y 5/4</td>
<td>Friable</td>
<td></td>
</tr>
<tr>
<td>42 - 84</td>
<td>Cd</td>
<td>SL</td>
<td>2.5 Y 5/4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Receiving Layers**

**Parent Material (geologic):** Fill

**Design Class:** III

**Depth to Bedrock:**

**Depth to Groundwater:**

- Standing Water in the Hole: __________
- Weeping from Pit Face: __________

**Estimated Seasonal High Ground Water:** 30"
FORM 11 - SOIL EVALUATOR FORM

Job # 16031

Determination for Seasonal High Water Table

Method Used:

☐ Depth observed standing in observation hole

☐ Depth weeping standing in observation hole

☒ Depth to soil mottles

☐ Ground water adjustment

Test Hole Number 16 - 1A

_________ inches

_________ inches

30 inches

_________ feet

Index Well Number ___________

Adjustment factor ___________

Reading Date ___________

Adjusted ground water ___________

Index well level ___________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material?

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.

Signature [Signature] Date 10/21/2016

NOTE: See accompanying cover letter which is part of this report.
### On-Site Review

**Deep Hole Number**: 16-16  
**Date**: 10/6/2010  
**Time**: 3:00 pm  
**Weather**: Clear, Windy

**Location (identify on site plan)**: Refer to Site Plan (attached)

**Land Use**: Woodland  
**Vegetation**: Hardwood trees

**Landform**: Downhill

**Position on landscape (sketch on the back)**: Refer to Site Plan (attached)

**Distances from**:
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Property Line: <100 feet
- Other: __________

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, % Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 12</td>
<td>A</td>
<td>S-L</td>
<td>10YR 3/3</td>
<td></td>
<td>Fine sandy loam</td>
</tr>
<tr>
<td>12 - 18</td>
<td>B</td>
<td>S-L</td>
<td>7.5 YR 5/8</td>
<td></td>
<td>Fine gravel</td>
</tr>
<tr>
<td>18 - 26</td>
<td>C1</td>
<td>S-L</td>
<td>2.5 Y 6/4</td>
<td>7.5 Y 5/8</td>
<td>Tight</td>
</tr>
<tr>
<td>26 - 128</td>
<td>C2</td>
<td>S-L</td>
<td>2.5 Y 4/4</td>
<td></td>
<td>Fines, gravelly</td>
</tr>
</tbody>
</table>

**Receiving Layers**:  
**Design Class**:  
**Parent Material (geologic)**: Till  
**Depth to Bedrock**:  
**Depth to Groundwater**:  
**Standing Water in the Hole**:  
**Weeping from Pit Face**:  
**Estimated Seasonal High Ground Water**: 18"
Determination for Seasonal High Water Table

Method Used:  Test Hole Number

☐ Depth observed standing in observation hole ___ inches
☐ Depth weeping standing in observation hole ___ inches
☒ Depth to soil mottles ___ inches
☐ Ground water adjustment ___ feet

Index Well Number __________ Reading Date __________ Index well level __________
Adjustment factor __________ Adjusted ground water __________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material?  

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.

Signature ___________________________________ Date __________________

NOTE: See accompanying cover letter which is part of this report.
On-Site Review

Job. # (603)

Deep Hole Number (6 - 12) Date 10/10/2016 Time 3:10 pm Weather Clear, 60°F

Location (identify on site plan) refer to Site Plan (attached)

Land Use Woodland

Vegetation Hardwood trees

Landform Drumlin

Position on landscape (sketch on the back) refer to Site Plan (attached)

Distances from:
- Open Water Body >100 feet
- Possible Wet Area >100 feet
- Drinking Water Well >100 feet

Drainage way 100 feet

Property Line 10 feet

Other

---

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 12</td>
<td>A</td>
<td>SL</td>
<td>10 YR 3/3</td>
<td></td>
<td>massive, friable</td>
</tr>
<tr>
<td>12 - 30</td>
<td>B</td>
<td>SL</td>
<td>15 YR 5/6</td>
<td></td>
<td>friable</td>
</tr>
<tr>
<td>30 - 27</td>
<td>BC</td>
<td>SL</td>
<td>25 YR 6/4</td>
<td></td>
<td>friable; ledge</td>
</tr>
</tbody>
</table>

Receiving Layers

Parent Material (geologic) till

Depth to Bedrock: 27"

Depth to Groundwater:

Standing Water in the Hole: 

Weeping from Pit Face:

Estimated Seasonal High Ground Water:
**Determination for Seasonal High Water Table**

Method Used:  

Test Hole Number \( H = 10 \)  

- Depth observed standing in observation hole  _____ inches  
- Depth weeping standing in observation hole  _____ inches  
- Depth to soil motles  _____ inches  
- Ground water adjustment  _____ feet  

Index Well Number  
Adjustment factor  
Reading Date  
Adjusted ground water  

**Depth of Naturally Occurring Pervious Material**

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?  **No**  

If not, what is the depth of naturally occurring pervious material?  287/15th

**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.

Signature  
Date

**NOTE:** See accompanying cover letter which is part of this report.
W.C. Carmmett Engineering, Inc.  
297 Elm St., Amesbury, MA 01913

FORM 11 - SOIL EVALUATOR FORM  
Job. # (1003)  
PAGE 2

On-Site Review

Deep Hole Number 16 - 4A  
Location (identify on site plan)  
Date 10/16/2014  
Time 8:00 AM  
Weather Clear, 36°F

Land Use Woodland  
Vegetation Hardwood trees  
Landform Drumlin  
Slope (%)  
Surface Stones None

Position on landscape (sketch on the back)  refer to Site Plan (attached)

Distances from:  
Open Water Body >100 feet  
Possible Wet Area >100 feet  
Drinking Water Well >100 feet  
Drainage way >100 feet  
Property Line ≤10 feet  
Other

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizons</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>A</td>
<td>SL</td>
<td>10 YL 3/3</td>
<td></td>
<td>friable, mottled</td>
</tr>
<tr>
<td>10 - 12</td>
<td>B</td>
<td>SL</td>
<td>7.5 Y 5/4</td>
<td></td>
<td>mottled</td>
</tr>
<tr>
<td>12 - 40</td>
<td>Cd</td>
<td>SL</td>
<td>7.5 Y 5/4</td>
<td></td>
<td>gravelly, dense</td>
</tr>
</tbody>
</table>

Receiving Layers  
Design Class  
Parent Material (geologic) till  
Depth to Bedrock: 40'  

Depth to Groundwater:  
Standing Water in the Hole:  
Weeping from Pit Face:  

Estimated Seasonal High Ground Water:  

40' c ledge
**Determination for Seasonal High Water Table**

Method Used:

<table>
<thead>
<tr>
<th>Option</th>
<th>Depth</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth observed standing in observation hole</td>
<td>inches</td>
<td></td>
</tr>
<tr>
<td>Depth weeping standing in observation hole</td>
<td>inches</td>
<td></td>
</tr>
<tr>
<td>Depth to soil mottles</td>
<td>inches</td>
<td></td>
</tr>
<tr>
<td>Ground water adjustment</td>
<td>feet</td>
<td></td>
</tr>
</tbody>
</table>

Test Hole Number 14A

Index Well Number

Adjustment factor

Index well level

Adjusted ground water

**Depth of Naturally Occurring Porous Material**

Does at least four feet of naturally occurring porous material exist in all areas observed throughout the area proposed for the soil absorption system? **No**

If not, what is the depth of naturally occurring porous material? **3'**

**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.

Signature __________________________ Date ________________

NOTE: See accompanying cover letter which is part of this report.
On-Site Review

Deep Hole Number: 16 - 48
Location (identify on site plan): refer to site plan (attached)

Land Use: Woodland
Vegetation: hardwood trees
Landform: Drumlin

Position on landscape (sketch on the back): refer to site plan (attached)

Distance:
- Open Water Body: 2100 feet
- Possible Wet Area: 2100 feet
- Drinking Water Well: 2100 feet
- Drainage way: 2100 feet
- Property Line: 2100 feet
- Other:

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>A</td>
<td>SL</td>
<td>10 4R 3/3</td>
<td>friable</td>
<td>massive</td>
</tr>
<tr>
<td>9 - 18</td>
<td>B</td>
<td>SL</td>
<td>7.5 4R 5/8</td>
<td>friable</td>
<td></td>
</tr>
<tr>
<td>18 - 24</td>
<td>C</td>
<td>SL</td>
<td>2.5 6/4</td>
<td>dense, gravelly, ledge</td>
<td>24 h</td>
</tr>
</tbody>
</table>

Receiving Layers: 

Design Class: 

Parent Material (geologic): 11

Depth to Bedrock: 24 h

Depth to Groundwater: 

Standing Water in the Hole: 

Weeping from Pit Face: 

Estimated Seasonal High Ground Water: 

Determination for Seasonal High Water Table

Method Used:  
Test Hole Number 16 - 4B

☐ Depth observed standing in observation hole inches
☐ Depth weeping standing in observation hole inches
☐ Depth to soil mottles inches
☐ Ground water adjustment feet

Index Well Number_________________Reading Date_________________Index well level_________________
Adjustment factor_________________Adjusted ground water_________________

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? No

If not, what is the depth of naturally occurring pervious material? 15'

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.

Signature ______________________ Date ___________________

NOTE: See accompanying cover letter which is part of this report.
On-Site Review

Deep Hole Number: 16-6A  Date: 05/15/2010  Time: 8:30 AM  Weather: Clear, 40°F

Location (identify on site plan): Refer to Site Plan (Attached)

Land Use: Woodland  Vegetation: Hardwood trees  Landform: Drumlin

Surface Stones: None  Slope (%): Refer to Site Plan (Attached)

Position on landscape (sketch on the back): Refer to Site Plan (Attached)

Distances from:
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: >100 feet
- Property Line: ≤10 feet
- Other:

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>Ap</td>
<td>S1</td>
<td>10YR 2.5/2</td>
<td>massive, friable</td>
<td></td>
</tr>
<tr>
<td>9 - 15</td>
<td>Bw</td>
<td>S1</td>
<td>7.5 YR 5/8</td>
<td>friable</td>
<td></td>
</tr>
<tr>
<td>15 - 24</td>
<td>Cl</td>
<td>fine S1</td>
<td>2.5 Y 6/4</td>
<td>gravelly</td>
<td></td>
</tr>
<tr>
<td>24 - 9.6</td>
<td>Cd</td>
<td>S1</td>
<td>2.5 Y 5/4</td>
<td>gravelly, dense</td>
<td></td>
</tr>
</tbody>
</table>

Receiving Layers: 

Design Class: II

Parent Material (geologic): Till

Depth to Bedrock: 

Depth to Groundwater: Standing Water in the Hole: Weeping from Pit Face: 

Estimated Seasonal High Ground Water: 24'
Determination for Seasonal High Water Table

Method Used:  

☐ Depth observed standing in observation hole  

☐ Depth weeping standing in observation hole  

☒ Depth to soil mottles  

☐ Ground water adjustment  

Test Hole Number 16 - 16A  

Depth observed standing in observation hole  

Depth weeping standing in observation hole  

Depth to soil mottles 24 inches  

Ground water adjustment  

Index Well Number  

Adjustment factor  

Reading Date  

Adjusted ground water  

Index well level  

Depth of Naturally Occurring Pervious Material

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  

If not, what is the depth of naturally occurring pervious material?  

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.

Signature  

Date  

NOTE: See accompanying cover letter which is part of this report.
**FORM 11 - SOIL EVALUATOR FORM**

**Job. # 1603**

<table>
<thead>
<tr>
<th>Deep Hole Number</th>
<th>Date</th>
<th>Time</th>
<th>Weather</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>10/06/2010</td>
<td>8:15 AM</td>
<td>Clear, 34°F</td>
</tr>
</tbody>
</table>

**On-Site Review**

- **Deep Hole Number**: 14
- **Date**: 10/06/2010
- **Time**: 8:15 AM
- **Weather**: Clear, 34°F

### Location (identify on site plan)

- **Deep Hole Number**: refer to Site Plan (attached)

### Land Use

- **Woodland**

### Vegetation

- **Hardwood Trees**

### Landform

- **Dumlin**

### Position on landscape (sketch on the back)

- Refer to Site Plan (attached)

### Distances from:

- **Open Water Body**: >100 feet
- **Possible Wet Area**: >100 feet
- **Drinking Water Well**: >100 feet
- **Drainage way**: >100 feet
- **Property Line**: <10 feet
- **Other**:

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>A</td>
<td>SL</td>
<td>10 YR 3/3</td>
<td></td>
<td>fine, massive</td>
</tr>
<tr>
<td>9 - 15</td>
<td>B</td>
<td>SL</td>
<td>7.5 YL 5/8</td>
<td></td>
<td>fragmented</td>
</tr>
<tr>
<td>15 - 48</td>
<td>C1</td>
<td>SL</td>
<td>2.5 Y 5/4</td>
<td></td>
<td>dense, granular</td>
</tr>
</tbody>
</table>

### Receiving Layers

- **Parent Material (geologic)**: till

### Design Class

- **Depth to Bedrock**: 48" edcuent

### Depth to Groundwater

- **Standing Water in the Hole**: —
- **Weeping from Pit Face**: —

### Estimated Seasonal High Ground Water

- **15"**
**Determination for Seasonal High Water Table**

**Method Used:**  
- Depth observed standing in observation hole  
- Depth weeping standing in observation hole  
- Depth to soil mottles  
- Ground water adjustment

**Test Hole Number** 16 - 08

**Index Well Number**  
**Reading Date**  
**Index well level**

**Adjustment factor**  
**Adjusted ground water**

**Depth of Naturally Occurring Pervious Material**

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

**No**

If not, what is the depth of naturally occurring pervious material?  

**39'**

**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.

**Signature**  
**Date**

**NOTE:** See accompanying cover letter which is part of this report.
**FORM 11 - SOIL EVALUATOR FORM**

**On-Site Review**

<table>
<thead>
<tr>
<th>Deep Hole Number</th>
<th>16 - 6C</th>
<th>Date</th>
<th>10/04/2010</th>
<th>Time</th>
<th>8:35 AM</th>
<th>Weather</th>
<th>Clear, 37°F</th>
</tr>
</thead>
</table>

**Location (identify on site plan):**  Refer to Site Plan (attached)

| Land Use       | Woodland  \\
|----------------|-----------|
| Vegetation     | Hardwood trees  \\
| Landform       | Drumlin  \\

**Position on landscape (sketch on the back):** Refer to Site Plan (attached)

**Distances from:**
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: >100 feet
- Property Line: ≤10 feet
- Other: 

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Motting</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>Ap</td>
<td>SL</td>
<td>10 YL 3/2</td>
<td></td>
<td>massive, fine</td>
</tr>
<tr>
<td>9 - 18</td>
<td>Bk</td>
<td>SL</td>
<td>7.5 YR 5/4</td>
<td></td>
<td>fine</td>
</tr>
<tr>
<td>18 - 24</td>
<td>Cl</td>
<td>FSL</td>
<td>3.5 Y 6/4</td>
<td></td>
<td>fine</td>
</tr>
<tr>
<td>24 - 78</td>
<td>Cd</td>
<td>SL</td>
<td>2.5 Y 5/4</td>
<td></td>
<td>gravel, dense</td>
</tr>
</tbody>
</table>

**Receiving Layers**

**Design Class**

**Parent Material (geologic):** Till

**Depth to Bedrock:**

**Depth to Groundwater:**

- Standing Water in the Hole: 
- Weeping from Pit Face: 

**Estimated Seasonal High Ground Water:** 84"
Determination for Seasonal High Water Table

Method Used:

- Depth observed standing in observation hole
- Depth weeping standing in observation hole
- Depth to soil mottles
- Ground water adjustment

Test Hole Number:  \[ K_0 - 0.0 \] inches

Depth to soil mottles: 24 inches

Ground water adjustment: feet

Index Well Number
Adjustment factor
Reading Date
Adjusted ground water

Index well level

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material?

Certification

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Signature __________________________ Date __________________________

NOTE: See accompanying cover letter which is part of this report.
## On-Site Review

- **Deep Hole Number:** 16-04
- **Date:** 10/06/2016
- **Time:** 2:40 pm
- **Weather:** Clear, 55°F
- **Land Use:** Woodland
- **Vegetation:** Hardwood trees
- **Landform:** Down
- **Location (identify on site plan):** Refer to Site Plan (attached)
- **Surface Stones:** None
- **Slope (%):**
- **Position on landscape (sketch on the back):** Refer to Site Plan (attached)

### Distances from:

- **Open Water Body:** 100 feet
- **Possible Wet Area:** 100 feet
- **Drinking Water Well:** 100 feet
- **Drainage way:** 100 feet
- **Property Line:** 10 feet
- **Other:**

## DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Moisture</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 7</td>
<td>A</td>
<td>S2</td>
<td>10 YR 3/13</td>
<td></td>
<td>Missing Gravel</td>
</tr>
<tr>
<td>9 - 15</td>
<td>B</td>
<td>S2</td>
<td>7.5 YR 5/6</td>
<td></td>
<td>Granular</td>
</tr>
<tr>
<td>15 - 27</td>
<td>C1</td>
<td>S2</td>
<td>2.5 Y 6/4</td>
<td></td>
<td>Gravel</td>
</tr>
<tr>
<td>27 - 115</td>
<td>Ca</td>
<td>S2</td>
<td>2.5 Y 5/4</td>
<td></td>
<td>Gravel, dense</td>
</tr>
</tbody>
</table>

### Receiving Layers

**Design Class:** II

**Parent Material (geologic):** Till

**Depth to Bedrock:**

**Depth to Groundwater:**

**Standing Water in the Hole:**

**Weeping from Pit Face:**

**Estimated Seasonal High Ground Water:** 27"
Determination for Seasonal High Water Table

Method Used: Test Hole Number \(10 - 60\)

- Depth observed standing in observation hole __________ inches
- Depth weeping standing in observation hole __________ inches
- Depth to soil mottles __________ inches
- Ground water adjustment __________ feet

Index Well Number Reading Date Adjusted ground water
Adjustment factor __________ Index well level __________

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? \(\text{Yes}\)

If not, what is the depth of naturally occurring pervious material? __________

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.

Signature ___________________________ Date ___________________________

NOTE: See accompanying cover letter which is part of this report.
**FORM 11 - SOIL EVALUATOR FORM**

**Job. # 16031**

**On-Site Review**

- Deep Hole Number: 16 - 10E
- Date: 10/16/2010
- Time: 2:45 pm
- Weather: Clear, 63°F
- Location (identify on site plan): Refer to Site Plan (attached)
- Land Use: Woodland
- Vegetation:Hardwood trees
- Landform: Drumlin
- Position on landscape (sketch on the back): Refer to Site Plan (attached)
- Distances from:
  - Open Water Body: >100 feet
  - Possible Wet Area: >100 feet
  - Drinking Water Well: >100 feet
  - Drainage way: ≤100 feet
  - Property Line: ≤10 feet
  - Other:

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 8</td>
<td>Ap</td>
<td>SL</td>
<td>10 YR 3/3</td>
<td>massive, friable</td>
<td></td>
</tr>
<tr>
<td>8 - 17</td>
<td>Bw</td>
<td>SL</td>
<td>7.5 YR 5/8</td>
<td>friable</td>
<td></td>
</tr>
<tr>
<td>17 - 84</td>
<td>C</td>
<td>SL</td>
<td>2.5 Y 5/4</td>
<td>dense, gravel</td>
<td></td>
</tr>
</tbody>
</table>

- Receiving Layers:
- Design Class:
- Parent Material (geologic): Till
- Depth to Bedrock:
- Depth to Groundwater:
  - Standing Water in the Hole:
  - Weeping from Pit Face:
- Estimated Seasonal High Ground Water: 17"
Determination for Seasonal High Water Table

Method Used:

☐ Depth observed standing in observation hole __________ inches
☐ Depth weeping standing in observation hole __________ inches
☒ Depth to soil mottles __________ inches
☐ Ground water adjustment __________ feet

Index Well Number __________ Reading Date __________ Index well level __________
Adjustment factor __________ Adjusted ground water __________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material?

Certification

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Signature ___________________________ Date ___________________________

NOTE: See accompanying cover letter which is part of this report.
On-Site Review

Deep Hole Number: 16 - 10A  Date: 02/01/2010  Time: 8:40 AM  Weather: Clear, 51°F

Location (identify on site plan): refer to Site Plan (attached)
Land Use: Woodland  Vegetation: Hardwood trees  Landform: Drumlin

Position on landscape (sketch on the back): refer to Site Plan (attached)

Distances from:
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: >100 feet
- Property Line: <10 feet
- Other: ___________

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 6&quot;</td>
<td>A</td>
<td>FSL</td>
<td>10YR 3/2</td>
<td>leading edge 6&quot;</td>
<td></td>
</tr>
<tr>
<td>6&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Receiving Layers: __________  Design Class: __________
Parent Material (geologic): TILL  Depth to Bedrock: 6"

Depth to Groundwater: __________  Standing Water in the Hole: __________  Weeping from Pit Face: __________

Estimated Seasonal High Ground Water: __________
**On-Site Review**

- **Deep Hole Number**: 16-108
- **Date**: 10/5/2016
- **Time**: 8:50 AM
- **Weather**: Clear, 51°

**Location (identify on site plan)**: Refer to Site Plan (attached)

**Land Use**: woodland

**Vegetation**: hardwood trees

**Landform**: Drumlin

**Position on landscape (sketch on the back)**: Refer to Site Plan (attached)

**Distances from:**
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Water Revenue Drainage Way: >100 feet
- Property Line: ≤10 feet
- Other

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, % Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 6</td>
<td>A</td>
<td>SL</td>
<td>10 YR 3/2</td>
<td></td>
<td>Massive, friable</td>
</tr>
<tr>
<td>6 - 12</td>
<td>B</td>
<td>SL</td>
<td>7.5 YR 5/8</td>
<td></td>
<td>Ledge @12&quot;  friable</td>
</tr>
</tbody>
</table>

**Receiving Layers**

**Design Class**

**Parent Material (geologic)**: till

**Depth to Bedrock**: 12'

**Depth to Groundwater**

- **Standing Water in the Hole**: 
- **Weeping from Pit Face**: 

**Estimated Seasonal High Ground Water**: 

---

W.C. Cammell Engineering, Inc.  
297 Elm St., Amesbury, MA 01913
**FORM 11 - SOIL EVALUATOR FORM**

**Job #: 16031**

**On-Site Review**

- **Deep Hole Number:** 16 - 10C
- **Date:** 18/5/2010
- **Time:** 9:00 AM
- **Weather:** Clear, 52°F
- **Location (identify on site plan):** Refer to Site Plan (Attached)
- **Land Use:** Woodland
- **Vegetation:** Hardwood trees
- **Landform:** Drumlin
- **Surface Stones:** None
- **Slope (%):**
- **Position on landscape (sketch on the back):** Refer to Site Plan (Attached)
- **Surface Stones:** None

**Distances from:**
- **Open Water Body:** >100 feet
- **Possible Wet Area:** >100 feet
- **Drinking Water Well:** >100 feet
- **Drainage way:** >100 feet
- **Property Line:** >10 feet
- **Other:**

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>A</td>
<td>fsl</td>
<td>10 YR 3/2</td>
<td></td>
<td>Master, friable</td>
</tr>
<tr>
<td>10 - 18</td>
<td>B</td>
<td>Fine SL</td>
<td>5Y 4/2 5/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 - 20</td>
<td>C'd</td>
<td>fsl</td>
<td>2Y 4/4 5/4</td>
<td></td>
<td>Ledge @ 20°, gravelly, dense</td>
</tr>
</tbody>
</table>

**Receiving Layers** __________

**Design Class** __________

**Parent Material (geologic):** Tilt

**Depth to Bedrock:** 20'

**Depth to Groundwater:**

- **Standing Water in the Hole:**
- **Weeping from Pit Face:** __________

**Estimated Seasonal High Ground Water:** __________
On-Site Review

Deep Hole Number: 16 - 10D  
Location (identify on site plan): Refer to Site Plan (attached)

Land Use: Woodland  
Vegetation: Hardwood trees

Position on landscape (sketch on the back): Refer to Site Plan (attached)

Distances from:
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: >100 feet
- Property Line: <10 feet

DEPTH OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
</table>
| 6 - 9                       | A            | SL                  | 10 YR 3/3            |               | Massive, fine
| 9 - 24                      | B            | SL                  | 7.5 YR 5/8           |               | fine
| 24 - 36                     | C1           | FSL                 | 2.5 Y 4/4            |               | v-fine
| 36 - 84                     | C2           | SL                  | 2.5 Y 5/4            |               | gravelly, dense

Receiving Layers:  
Design Class:  
Parent Material (geologic): Till  
Depth to Bedrock:  
Depth to Groundwater:  
Standing Water in the Hole:  
Weeping from Pit Face:  
Estimated Seasonal High Ground Water: 36"
Determination for Seasonal High Water Table

Method Used:

☐ Depth observed standing in observation hole _______ inches
☐ Depth weeping standing in observation hole _______ inches
☒ Depth to soil mottles _______ inches
☐ Ground water adjustment _______ feet

Test Hole Number 16 - 10 D

Index Well Number ___________________ Reading Date ___________________ Index well level ___________________
Adjustment factor ___________________ Adjusted ground water ___________________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material? ____________

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.

Signature __________________________ Date __________________

NOTE: See accompanying cover letter which is part of this report.
FORM 11 - SOIL EVALUATOR FORM

On-Site Review

Deep Hole Number: NE-10E

Date: 10/10/2016

Time: 10:00 am

Weather: Clear, SWe

Location (identify on site plan): refer to Site Plan (attached)

Land Use: Woodland

Vegetation: Hardwood trees

Landform: Drumlin

Position on landscape (sketch on the back): refer to Site Plan (attached)

Distances from:

- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: >100 feet
- Property Line: >10 feet
- Other: 

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 9</td>
<td>A</td>
<td>SL</td>
<td>10 48 3/3</td>
<td></td>
<td>muscle, friable</td>
</tr>
<tr>
<td>9 – 18</td>
<td>B</td>
<td>SL</td>
<td>7.5 48 5/6</td>
<td></td>
<td>friable</td>
</tr>
<tr>
<td>18 – 20</td>
<td>BC</td>
<td>SL</td>
<td>2.5 4 6/4</td>
<td></td>
<td>friable</td>
</tr>
<tr>
<td>30 – 80</td>
<td>C</td>
<td>SL</td>
<td>2.5 4 5/4</td>
<td></td>
<td>dense, gravel</td>
</tr>
</tbody>
</table>

Receiving Layers

Design Class

Parent Material (geologic): till

Depth to Bedrock:

Depth to Groundwater:

Standing Water in the Hole: 

Weeping from Pit Face: 

Estimated Seasonal High Ground Water: 30'
Determination for Seasonal High Water Table

Method Used:

☐ Depth observed standing in observation hole ______ inches

☐ Depth weeping standing in observation hole ______ inches

☒ Depth to soil mottles ______ inches

☐ Ground water adjustment ______ feet

Index Well Number ___________ Reading Date ___________ Index well level ___________
Adjustment factor ___________ Adjusted ground water ___________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material? ___________

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.

Signature ___________ Date ___________

NOTE: See accompanying cover letter which is part of this report.
**On-Site Review**

- **Deep Hole Number:** 16-10F
- **Date:** 10/16/2004
- **Time:** 2:30 pm
- **Weather:** Clear, 70°F

**Location (Identify on site plan):** Refer to Site Plan (Attached)

- **Land Use:** Woodland
- **Vegetation:** Hardwood Trees
- **Landform:** Drumlin
- **Position on landscape (sketch on the back):** Refer to Site Plan (Attached)

**Distances from:**
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: >100 feet
- Property Line: <10 feet
- Other:  

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 4</td>
<td>A</td>
<td>SL</td>
<td>10 ye 3/3</td>
<td>massive, fine</td>
<td></td>
</tr>
<tr>
<td>4 - 20</td>
<td>B</td>
<td>SL</td>
<td>9.5 ye 5/1</td>
<td>fine</td>
<td></td>
</tr>
<tr>
<td>20 - 30</td>
<td>B/C</td>
<td>SL</td>
<td>25 y 6/4</td>
<td>fine</td>
<td></td>
</tr>
<tr>
<td>30 - 80</td>
<td>C</td>
<td>SL</td>
<td>25 y 5/4</td>
<td>large oxies, dense, grading</td>
<td></td>
</tr>
</tbody>
</table>

**Receiving Layers:**

- **Design Class:** I

**Parent Material (geologic):** Fill

**Depth to Bedrock:**

**Depth to Groundwater:**

**Standing Water in the Hole:**  

**Weeping from Pit Face:**  

**Estimated Seasonal High Ground Water:** 30'
Determination for Seasonal High Water Table

Method Used:

☐ Depth observed standing in observation hole _______ inches

☐ Depth weeping standing in observation hole _______ inches

☐ Depth to soil mottles _______ inches

☐ Ground water adjustment _______ feet

Index Well Number ___________ Reading Date ___________ Index well level ___________

Adjustment factor ___________ Adjusted ground water ___________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material? ___________

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.

Signature _________________________ Date ___________

NOTE: See accompanying cover letter which is part of this report.
## W.C. Cammett Engineering, Inc.
297 Elm St., Amesbury, MA 01913

**FORM 11 - SOIL EVALUATOR FORM**

**On-Site Review**

- Deep Hole Number: 14A
- Location (identify on site plan): refer to Site Plan (attached)
- Date: 2/1/2010
- Time: 9:10 AM
- Weather: Clear, 48°F
- Land Use: Woodland
- Vegetation: Hardwood trees
- Slope (%): None
- Landform: Drumlin
- Position on landscape (sketch on the back): refer to Site Plan (attached)
- Distances from:
  - Open Water Body: >100 feet
  - Possible Wet Area: >100 feet
  - Drinking Water Well: >100 feet
  - Drainage way: >100 feet
  - Property Line: ≤10 feet
  - Other: __________

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Murad)</th>
<th>Soil Montling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>A</td>
<td>SL</td>
<td>10 42.3/3</td>
<td>Friable, Massie</td>
<td></td>
</tr>
<tr>
<td>7 - 17</td>
<td>B</td>
<td>SL</td>
<td>7.5 4 51.80</td>
<td>Friable</td>
<td></td>
</tr>
<tr>
<td>17 - 20</td>
<td>B/C</td>
<td>SL</td>
<td>2.5 Y 01.4</td>
<td>Ledge, ≤ 20°</td>
<td></td>
</tr>
</tbody>
</table>

**Receiving Layers**

Parent Material (geologic): TILL

Depth to Bedrock: 20

Depth to Groundwater:

Standing Water in the Hole: __________

Weeping from Pit Face: __________

Estimated Seasonal High Ground Water: __________
On-Site Review

Deep Hole Number 16 - 148
Location (identify on site plan) Refer to Site Plan (Attached)
Land Use Woodland
Vegetation hardwood trees
Landform Drumlin
Position on landscape (sketch on the back) Refer to Site Plan (Attached)

Dissances from:
- Open Water Body >100 feet
- Possible Wet Area >100 feet
- Drinking Water Well >100 feet
- Drainage way >100 feet
- Property Line >10 feet
- Other

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulder, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 7</td>
<td>A</td>
<td>SL</td>
<td>10 Ye3/1</td>
<td>mottled</td>
<td></td>
</tr>
<tr>
<td>7 - 17</td>
<td>B</td>
<td>SL</td>
<td>7/5 Ye 5/8</td>
<td>fine</td>
<td></td>
</tr>
<tr>
<td>17 - 22</td>
<td>B/C</td>
<td>SL</td>
<td>2.5 Y 6/4</td>
<td>very</td>
<td></td>
</tr>
<tr>
<td>22 - 26</td>
<td>Cd</td>
<td>SL</td>
<td>2.5 Y 5/4</td>
<td>ledge 26'</td>
<td></td>
</tr>
</tbody>
</table>

Receiving Layers

Parent Material (geologic) Till

Depth to Bedrock: 26'

Depth to Groundwater:
- Standing Water in the Hole: 
- Weeping from Pit Face: 
- Estimated Seasonal High Ground Water: 89'
Determination for Seasonal High Water Table

Method Used:  

- [ ] Depth observed standing in observation hole ______ inches
- [ ] Depth weeping standing in observation hole ______ inches
- [x] Depth to soil mottles ______ inches
- [ ] Groundwater adjustment ______ feet

Test Hole Number 16 - 148

Index Well Number ___________________ Reading Date ___________________ Index well level ___________________
Adjustment factor ___________________ Adjusted groundwater ___________________

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? No

If not, what is the depth of naturally occurring pervious material? 19

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.

Signature ___________________ Date ___________________

NOTE: See accompanying cover letter which is part of this report.
**On-Site Review**

Deep Hole Number: K - 13A  
Date: 10/5/2016  
Time: 9:30 am  
Weather: Clear, 50°F

Location (identify on site plan): Refer to Site Plan (attached)

Land Use: Woodland  
Slope (%): Surface Stones: None

Vegetation: Hardwood trees

Landform: Drumlin

Position on landscape (sketch on the back): Refer to Site Plan (attached)

Distances from:
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: <100 feet
- Property Line: <10 feet
- Other: ____________

---

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>A</td>
<td>SL</td>
<td>10  YR 3/3</td>
<td>Massive, friable</td>
<td></td>
</tr>
<tr>
<td>10 - 12</td>
<td>B</td>
<td>SL</td>
<td>2.5  YR 5/4</td>
<td>friable</td>
<td></td>
</tr>
<tr>
<td>12 - 21</td>
<td>C</td>
<td>SL</td>
<td>2.5  Y 4/4</td>
<td>Very friable</td>
<td></td>
</tr>
<tr>
<td>21 - 51</td>
<td>D</td>
<td>SL</td>
<td>2.5  Y 5/4</td>
<td>Silt, gravelly, dense</td>
<td></td>
</tr>
</tbody>
</table>

Receiving Layers:  
Design Class: ____________

Parent Material (geologic): Till  
Depth to Bedrock: 51"

Depth to Groundwater:  
Standing Water in the Hole: — Weeping from Pit Face: ____________

Estimated Seasonal High Ground Water: 21"
Determination for Seasonal High Water Table

Method Used:  

☐ Depth observed standing in observation hole  inches

☐ Depth weeping standing in observation hole  inches

☒ Depth to soil mottles  21 inches

☐ Ground water adjustment  feet

Index Well Number  Reading Date  Index well level
Adjustment factor  Adjusted ground water

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?  No

If not, what is the depth of naturally occurring pervious material?  45".

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.

Signature  Date

NOTE: See accompanying cover letter which is part of this report.
**On-Site Review**

Deep Hole Number: 16-138  
Date: 10/4/2016  
Time: 9:40 AM  
Weather: Clear, 54°F

Location (identify on site plan): Refer to Site Plan (Attached)

- Land Use: Woodland
- Vegetation: Hardwood trees
- Landform: knob
- Position on landscape (sketch on the back): Refer to Site Plan (Attached)

Distances from:
- Open Water Body: >100 feet
- Possible Wet Area: >210 feet
- Drinking Water Well: >210 feet
- Drainage way: >100 feet
- Property Line: >10 feet

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>A</td>
<td>fsl</td>
<td>10-V6 3/13</td>
<td></td>
<td>none, structurally weak, compacted</td>
</tr>
<tr>
<td>10 - 12</td>
<td>B</td>
<td>fsl</td>
<td>7.5Y 5/1B</td>
<td></td>
<td>fractured</td>
</tr>
<tr>
<td>12 - 21</td>
<td>C1</td>
<td>fsl</td>
<td>2.5Y 5/1H</td>
<td></td>
<td>fractured</td>
</tr>
<tr>
<td>21 - 40</td>
<td>C2</td>
<td>sL</td>
<td>2.5Y 5/1H</td>
<td></td>
<td>loose @ 40&quot;</td>
</tr>
</tbody>
</table>

Receiving Layers

<table>
<thead>
<tr>
<th>Parent Material (geologic)</th>
<th>Depth to Bedrock:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Till</td>
<td>40'</td>
</tr>
</tbody>
</table>

Depth to Groundwater:

<table>
<thead>
<tr>
<th>Standing Water in the Hole:</th>
<th>Weeping from Pit Face:</th>
</tr>
</thead>
</table>

Estimated Seasonal High Ground Water: 24'
Determination for Seasonal High Water Table

- Test Hole Number: 16 - 138

- Depth observed standing in observation hole
  - inches

- Depth weeping standing in observation hole
  - inches

- Depth to soil mottles
  - 21 inches

- Ground water adjustment
  - feet

Index Well Number
Adjustment factor
Reading Date
Adjusted ground water
Index well level

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? No

If not, what is the depth of naturally occurring pervious material? 24

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.

Signature ___________________________ Date ___________________________

NOTE: See accompanying cover letter which is part of this report.
On-Site Review

Deep Hole Number: 16 - 18
Location (identify on site plan): Refer to Site Plan (attached)
Land Use: Woodland
Vegetation: Hardwood trees
Landform: Drumlin
Position on landscape (sketch on the back): Refer to Site Plan (attached)

Distances from:
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: >100 feet
- Property Line: <10 feet
- Other:

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 6</td>
<td>A</td>
<td>f5L</td>
<td>10 YR 3/3</td>
<td>Massive, fraud</td>
<td></td>
</tr>
<tr>
<td>6 - 12</td>
<td>B</td>
<td>f5L</td>
<td>15 YR 5/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 - 21</td>
<td>C1</td>
<td>f5L</td>
<td>2.5 Y 6/4</td>
<td>Freeze</td>
<td></td>
</tr>
<tr>
<td>21 - 24</td>
<td>C0</td>
<td>sl</td>
<td>2.5 Y 5/4</td>
<td>Large 0.24, gravelly, dense</td>
<td></td>
</tr>
</tbody>
</table>

Receiving Layers

Parent Material (geologic): Till
Depth to Bedrock: 24"

Depth to Groundwater:
Standing Water in the Hole: 
Weeping from Pit Face:
Estimated Seasonal High Ground Water: 21"
Determination for Seasonal High Water Table

Method Used:

☐ Depth observed standing in observation hole ________ inches
☐ Depth weeping standing in observation hole ________ inches
☐ Depth to soil mottles ________ inches
☐ Ground water adjustment ________ feet

Test Hole Number 14 - 13C

Index Well Number Reading Date Index well level
Adjustment factor Adjusted ground water

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material? 15”

Certification

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Signature ___________________________ Date __________________

NOTE: See accompanying cover letter which is part of this report.
**FORM 11 - SOIL EVALUATOR FORM**

**On-Site Review**

Deep Hole Number: Le-NA  
Location (identify on site plan): refer to site plan (attached)  
Date: 10/5/2010  
Time: 10:00 AM  
Weather: Some Clouds, 56°F

- Land Use: Woodland
- Vegetation: Hardwood trees
- Landform: Drumlin
- Slope (%):  
- Surface Stones: None
- Positive on landscape (sketch on the back): refer to site plan (attached)

Distances from:
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: >100 feet
- Property Line: <10 feet
- Other: ________

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>A</td>
<td>f8L</td>
<td>10 YR 3/3</td>
<td>massive, firm</td>
<td></td>
</tr>
<tr>
<td>10 - 15</td>
<td>B</td>
<td>f6L</td>
<td>7.5 YR 5/3</td>
<td>firm</td>
<td></td>
</tr>
<tr>
<td>15 - 32</td>
<td>C1</td>
<td>f6L</td>
<td>2.5 Y 6/1</td>
<td>V. firm %</td>
<td></td>
</tr>
<tr>
<td>32 - 340</td>
<td>C2</td>
<td>5L</td>
<td>2.5 Y 5/4</td>
<td>ledge @ 3%</td>
<td></td>
</tr>
</tbody>
</table>

Receiving Layers:  
Parent Material (geologic): Ill  
Depth to Bedrock: 30'  
Depth to Groundwater:  
Standing Water in the Hole:  
Weeping from Pit Face:  
Estimated Seasonal High Ground Water: 32'
FORM 11 - SOIL EVALUATOR FORM
PAGE 3

Job # 16031

Determination for Seasonal High Water Table

Method Used: 

☐ Depth observed standing in observation hole 

☐ Depth weeping standing in observation hole 

☒ Depth to soil mottles 

☐ Ground water adjustment 

Test Hole Number K - 11A

Index Well Number 

Adjustment factor 

Reading Date 

Adjusted ground water 

Index well level 

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? No

If not, what is the depth of naturally occurring pervious material? 210

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.

Signature ___________________________ Date ___________________________

NOTE: See accompanying cover letter which is part of this report.
## Deep Observation Hole Log

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 16''</td>
<td>A</td>
<td>10 42.313</td>
<td>5L</td>
<td></td>
<td>ledge @ 16''</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Receiving Layers

Parent Material (geologic) : till

Depth to Groundwater:

Standing Water in the Hole: 

Weeping from Pit Face: 

Estimated Seasonal High Ground Water: 

Design Class

Depth to Bedrock: 16''
**W.C. Câmmett Engineering, Inc.**  
297 Elm St., Amesbury, MA 01913

**FORM 11 - SOIL EVALUATOR FORM**  
Job. # (1031)  
PAGE 2

**On-Site Review**

- **Deep Hole Number**: 16 - 1B  
- **Date**: 5/10  
- **Time**: 10:15 AM  
- **Weather**: Some Clouds, 57°F

**Location (identify on site plan)**: Refer to Site Plan (Attached)

- **Land Use**: Woodland  
- **Vegetation**: Hardwood trees  
- **Landform**: Drumlin

**Position on landscape (sketch on the back)**: Refer to Site Plan (Attached)

**Distances from:**
- Open Water Body: > 100 feet
- Possible Wet Area: > 100 feet
- Drinking Water Well: > 100 feet
- Drainage way: > 100 feet
- Property Line: > 10 feet
- Other: __________

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones,Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>A</td>
<td>SL</td>
<td>10 YR 3/3</td>
<td>mottled, gray</td>
<td></td>
</tr>
<tr>
<td>10 - 18</td>
<td>B</td>
<td>SL</td>
<td>2.5 YR 5/8</td>
<td>fine</td>
<td></td>
</tr>
<tr>
<td>18 - 32</td>
<td>C</td>
<td>FSL</td>
<td>2.5 Y 6/4</td>
<td>siltstone, none, gravel</td>
<td></td>
</tr>
</tbody>
</table>

**Receiving Layers**

- **Parent Material (geologic)**: Till  
- **Depth to Bedrock**: 32"  
- **Depth to Groundwater**: 18"  
- **Standing Water in the Hole**:  
- **Weeping from Pit Face**:  
- **Estimated Seasonal High Ground Water**: 18"  

**Design Class**: __________
**Determination for Seasonal High Water Table**

<table>
<thead>
<tr>
<th>Method Used:</th>
<th>Test Hole Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16 - 96</td>
</tr>
</tbody>
</table>

- Depth observed standing in observation hole: _inches_
- Depth weeping standing in observation hole: _inches_
- Depth to soil mottles: _18_ inches
- Ground water adjustment: _feet_

<table>
<thead>
<tr>
<th>Index Well Number</th>
<th>Reading Date</th>
<th>Index well level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Depth of Naturally Occurring Pervious Material**

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_

If not, what is the depth of naturally occurring pervious material? _20"

**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.

Signature ___________________________ Date _____________________

**NOTE:** See accompanying cover letter which is part of this report.
**Deep Hole Number:** 16 - 3A  
**Date:** 05/10/2016  
**Time:** 10:50 AM  
**Weather:** Sunny, Cloudy, 50°F

**Location (identify on site plan):** Refer to Site Plan (attached)

**Land Use:** Woodland  
**Vegetation:** Hardwood trees  
**Landform:** Drumlin  
**Position on landscape (sketch on the back):** Refer to Site Plan (attached)

**Distances from:**  
- Open Water Body: >100 feet  
- Possible Wet Area: >100 feet  
- Drinking Water Well: >100 feet  
- Drainage Way: >100 feet  
- Property Line: <10 feet  
- Other: __________

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stenosis, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>A</td>
<td>SL</td>
<td>10 YR 3/2</td>
<td>V. friable</td>
<td>mesive f.</td>
</tr>
<tr>
<td>9 - 18</td>
<td>B</td>
<td>SL</td>
<td>15YR 5/8</td>
<td>friable</td>
<td></td>
</tr>
<tr>
<td>18 - 36</td>
<td>B/C</td>
<td>SL</td>
<td>2.5 Y 6/4</td>
<td>V. friable</td>
<td></td>
</tr>
<tr>
<td>36 - 84</td>
<td>Cd</td>
<td>SL</td>
<td>2.5 Y 5/4</td>
<td>Yewlly, dense</td>
<td></td>
</tr>
</tbody>
</table>

**Receiving Layers:**  
**Design Class:** T

**Parent Material (geologic):** Till  
**Depth to Bedrock:** __________

**Depth to Groundwater:**  
- Standing Water in the Hole: __________  
- Weeping from Pit Face: __________

**Estimated Seasonal High Ground Water:** 34"
Determination for Seasonal High Water Table

Method Used:  

☐ Depth observed standing in observation hole _______ inches
☐ Depth weeping standing in observation hole _______ inches
☒ Depth to soil mottles _______ inches
☐ Ground water adjustment _______ feet

Test Hole Number 16 - 3A

Index Well Number _______ Reading Date _______ Index well level _______
Adjustment factor _______ Adjusted ground water _______

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material? _______

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.

Signature _______ Date _______

NOTE: See accompanying cover letter which is part of this report.
### Deep Hole Number
**14-3B**

### Location (identify on site plan)
**Refer to Site Plan (attached)**

### On-Site Review
- **Date:** 10/5/14
- **Time:** 10:20 AM
- **Weather:** Clear, 59°F
- **Slope (%):**
- **Surface Stones:** None
- **Vegetation:** Woodland
- **Landform:** Downland
- **Position on landscape (sketch on the back):** Refer to Site Plan (attached)

### Distances from:
- **Open Water Body:** >100 feet
- **Possible Wet Area:** >100 feet
- **Drinking Water Well:** >100 feet
- **Drainage way:** >100 feet
- **Property Line:** 310 feet
- **Other:**

### Deep Observation Hole Log

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>A</td>
<td>SL</td>
<td>10 YR 3/3</td>
<td></td>
<td>Massive, fragile</td>
</tr>
<tr>
<td>10 - 14</td>
<td>B</td>
<td>SL</td>
<td>7.5 YR 5/3</td>
<td></td>
<td>Fine, fine</td>
</tr>
<tr>
<td>14 - 24</td>
<td>C</td>
<td>FSL</td>
<td>2.5 Y 6/4</td>
<td></td>
<td>Very fine, fine</td>
</tr>
<tr>
<td>24 - 48</td>
<td>D</td>
<td>SL</td>
<td>2.5 Y 5/4</td>
<td>Ledge @ 48°</td>
<td>gravel, dense</td>
</tr>
</tbody>
</table>

### Receiving Layers
- **Design Class:**

### Parent Material (geologic)
- **Till**

### Depth to Bedrock
- **48 ft**

### Depth to Groundwater
- **Standing Water in the Hole:**
- **Weeping from Pit Face:**
- **Estimated Seasonal High Ground Water:** 24 ft
Determination for Seasonal High Water Table

Method Used:  Test Hole Number 16 - 3B

☐ Depth observed standing in observation hole ___ inches
☐ Depth weeping standing in observation hole ___ inches
☒ Depth to soil mottles ___ 24 inches
☐ Ground water adjustment ___ feet

Index Well Number __________________________ Reading Date __________________________ Index well level __________________________
Adjustment factor __________________________ Adjusted ground water __________________________

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?  No

If not, what is the depth of naturally occurring pervious material?  42 1/11

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.

Signature __________________________ Date __________________________

NOTE: See accompanying cover letter which is part of this report.
On-Site Review

Deep Hole Number: 16 - BC
Date: 5/20/2010
Time: 10:30 AM
Location (identify on site plan): Refer to Site Plan (Attached)
Weather: Clear, 59°F

Land Use: Woodland
Vegetation: Hardwood trees
Landform: Drumlin

Slope (%): None
Surface Stones: None

Position on landscape (sketch on the back): Refer to Site Plan (Attached)

Distances from:
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Other:
- Drainage way: >100 feet
- Property Line: ≤10 feet

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>A</td>
<td>SL</td>
<td>10 YR 5/3</td>
<td></td>
<td>Massive, Arable</td>
</tr>
<tr>
<td>7 - 15</td>
<td>B</td>
<td>SL</td>
<td>7.5 YR 5/8</td>
<td></td>
<td>Fine</td>
</tr>
<tr>
<td>15 - 24</td>
<td>B/C</td>
<td>fSL</td>
<td>2.5 Y 6/4</td>
<td></td>
<td>Very Fine</td>
</tr>
<tr>
<td>24 - 84</td>
<td>CD</td>
<td>SL</td>
<td>2.5 Y 5/4</td>
<td></td>
<td>dense gravelly</td>
</tr>
</tbody>
</table>

Receiving Layers

Parent Material (geologic): Till

Depth to Bedrock:

Depth to Groundwater: Standing Water in the Hole: Weep from Pit Face:

Estimated Seasonal High Ground Water: 24 ft
Determination for Seasonal High Water Table

Method Used:  

Test Hole Number  16 - 3C

☐ Depth observed standing in observation hole            _______ inches
☐ Depth weeping standing in observation hole            _______ inches
☒ Depth to soil mottles                                  _______ inches
☐ Ground water adjustment                               _______ feet

Index Well Number  _______  Reading Date  _______  Index well level  _______
Adjustment factor  _______  Adjusted ground water       _______

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material?  

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.

Signature  ___________________________  Date  ________________

NOTE: See accompanying cover letter which is part of this report.
**FORM 11 - SOIL EVALUATOR FORM**

**On-Site Review**

<table>
<thead>
<tr>
<th>Deep Hole Number</th>
<th>116-3D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>10/5/14</td>
</tr>
<tr>
<td>Time</td>
<td>10:40 AM</td>
</tr>
<tr>
<td>Weather</td>
<td>Clear, 59°F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Location (identify on site plan)</th>
<th>refer to site plan (attached)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Use</td>
<td>Woodland</td>
</tr>
<tr>
<td>Vegetation</td>
<td>Hardwood species</td>
</tr>
<tr>
<td>Slope (%)</td>
<td>Surface Stones</td>
</tr>
<tr>
<td>Surface Stones</td>
<td>None</td>
</tr>
</tbody>
</table>

**Position on landscape (sketch on the back)**

**Distances from:**
- Open Water Body: 7,100 feet
- Possible Wet Area: 7,100 feet
- Drinking Water Well: 2,100 feet
- Drainage way: 2,100 feet
- Property Line: 2,100 feet
- Other: 2,100 feet

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 8</td>
<td>A</td>
<td>S L</td>
<td>10 YR 3/3</td>
<td></td>
<td>mature, fresh</td>
</tr>
<tr>
<td>8 - 13</td>
<td>B</td>
<td>S L</td>
<td>2 YR 4/5</td>
<td></td>
<td>rocky</td>
</tr>
<tr>
<td>18 - 24</td>
<td>C</td>
<td>F L</td>
<td>2 YR 4 4/4</td>
<td></td>
<td>v foraminis</td>
</tr>
<tr>
<td>24 - 30</td>
<td>E</td>
<td>S L</td>
<td>2 YR 4 5/4</td>
<td></td>
<td>gravel, dense</td>
</tr>
</tbody>
</table>

**Receiving Layers**

**Parent Material (geologic)**

**Design Class**

**Depth to Bedrock:**

- Standing Water in the Hole: ________________
- Weeping from Pit Face: ________________

**Depth to Groundwater:**

- Estimated Seasonal High Ground Water: ________________
Determination for Seasonal High Water Table

Method Used: Test Hole Number 16 - 3D

☐ Depth observed standing in observation hole ______ inches
☐ Depth weeping standing in observation hole ______ inches
☒ Depth to soil mottles 27 inches
☐ Ground water adjustment ______ feet

Index Well Number ___________________ Reading Date ___________________ Index well level ___________________
Adjustment factor ___________________ Adjusted ground water ___________________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material? 

Certification

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Signature __________________________ Date __________________________

NOTE: See accompanying cover letter which is part of this report.
**FORM 11 - SOIL EVALUATOR FORM**

**PAGE 2**

**Job. #**

**On-Site Review**

- **Deep Hole Number**: 10 - 36
- **Date**: 10/5/16
- **Time**: 10:45 AM
- **Weather**: Clear, 59°F

**Location (identify on site plan)**

- **Land Use**: Woodland
- **Vegetation**: Hardwood Trees
- **Landform**: Dune

**Slope (%)**

**Surface Stones**: None

**Position on landscape (sketch on the back)**

- See attached site plan

**Distances from:**
- Open Water Body: ______ feet
- Possible Wet Area: ______ feet
- Drinking Water Well: ______ feet
- Drainage way: ______ feet
- Property Line: ______ feet
- Other: ______

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>A</td>
<td>S2</td>
<td>10 YR 3/3</td>
<td>Fragile, massive</td>
<td></td>
</tr>
<tr>
<td>10 - 12</td>
<td>B</td>
<td>S2</td>
<td>10 YR 6/8</td>
<td>Firm</td>
<td></td>
</tr>
<tr>
<td>12 - 32</td>
<td>BC</td>
<td>F62</td>
<td>2.5 Y 6/4</td>
<td>Very F.</td>
<td></td>
</tr>
<tr>
<td>32 - 47</td>
<td>C</td>
<td>S1</td>
<td>2.5 Y 5/4</td>
<td>Dense, gravel</td>
<td></td>
</tr>
</tbody>
</table>

**Receiving Layers**

**Design Class**

**Parent Material (geologic)**

**Depth to Bedrock**: 67' 

**Depth to Groundwater**

- **Standing Water in the Hole**: __________
- **Weeping from Pit Face**: __________

**Estimated Seasonal High Ground Water**: 32'
Determination for Seasonal High Water Table

Method Used:  

☐ Depth observed standing in observation hole
☐ Depth weeping standing in observation hole
☒ Depth to soil mottles
☐ Ground water adjustment

Test Hole Number 16 - 3E

Index Well Number

Reading Date

Adjusted ground water

Index well level

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material?

Certification

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Signature

Date

NOTE: See accompanying cover letter which is part of this report.
**FORM 11 - SOIL EVALUATOR FORM**
PAGE 2

**On-Site Review**

- **Deep Hole Number**: 16 - 3F
- **Date**: 10/16/2016
- **Time**: 10:10 am
- **Weather**: Clear, 50°F
- **Location (identify on site plan)**: Refer to Site Plan (attached)
  - **Land Use**: Woodland
  - **Vegetation**: Deciduous trees
  - **Slope (%)**: Surface Stones: None
  - **Surface Stones**: None

**Position on landscape (sketch on the back)**: Refer to Site Plan (attached)

**Distances from:**
- Open Water Body: >200 feet
- Possible Wet Area: >200 feet
- Drinking Water Well: >200 feet

**Drainage way**: >100 feet
**Property Line**: >100 feet
**Other**: >10 feet

---

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Graves)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>A</td>
<td>SL</td>
<td>10 YR 3/3</td>
<td></td>
<td>Massil Formed</td>
</tr>
<tr>
<td>10 - 20</td>
<td>B</td>
<td>SL</td>
<td>7.5 YR 5/8</td>
<td></td>
<td>London</td>
</tr>
<tr>
<td>20 - 22</td>
<td>Bk</td>
<td>SL</td>
<td>7.5 YR 6/4</td>
<td></td>
<td>London</td>
</tr>
<tr>
<td>22 - 94</td>
<td>Bk L</td>
<td>SL</td>
<td>2.5 YR 5/4</td>
<td></td>
<td>Gravely</td>
</tr>
</tbody>
</table>

**Receiving Layers**

**Parent Material (geologic)**: Till

**Design Class**

**Depth to Bedrock:**

**Depth to Groundwater:**

**Standing Water in the Hole:**

**Weeping from Pit Face:**

**Estimated Seasonal High Ground Water:** 22
**Determination for Seasonal High Water Table**

<table>
<thead>
<tr>
<th>Method Used:</th>
<th>Test Hole Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth observed standing in observation hole</td>
<td>16 - 3F</td>
</tr>
<tr>
<td>Depth weeping standing in observation hole</td>
<td>inches</td>
</tr>
<tr>
<td>Depth to soil mottles</td>
<td>22 inches</td>
</tr>
<tr>
<td>Ground water adjustment</td>
<td>feet</td>
</tr>
</tbody>
</table>

Index Well Number | Reading Date | Index well level | Adjusted ground water |

**Depth of Naturally Occurring Pervious Material**

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**

If not, what is the depth of naturally occurring pervious material?

**Certification**

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Signature [Signature] Date [Date]

**NOTE:** See accompanying cover letter which is part of this report.
**On-Site Review**

Deep Hole Number: 16 - J4
Date: 10/5/2010
Time: 11:20 AM
Weather: Clear, 60°F

Location (identify on site plan): Refer to Site Plan (Attached)
Land Use: Woodland
Vegetation: Hardwood Trees
Landform: Drumlin

Position on landscape (sketch on the back): Refer to Site Plan (Attached)

Distances from:
- Open Water Body: >100 feet
- Possible Wet Area: >100 feet
- Drinking Water Well: >100 feet
- Drainage way: >100 feet
- Property Line: >10 feet
- Other: 

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 6</td>
<td>A</td>
<td>SL</td>
<td>10 4E 8L3</td>
<td></td>
<td>Matrix, Friable</td>
</tr>
<tr>
<td>6 - 11</td>
<td>B</td>
<td>SL</td>
<td>7.5 4E 5L3</td>
<td></td>
<td>Friable</td>
</tr>
<tr>
<td>11 - 24</td>
<td>B/C</td>
<td>SL</td>
<td>2.5 4E 5L4</td>
<td></td>
<td>Friable</td>
</tr>
<tr>
<td>24 - 44</td>
<td>Cd</td>
<td>SL</td>
<td>2.5 4E 5L4</td>
<td>Ledge, 2 44&quot;</td>
<td>Dross, Gravelly</td>
</tr>
</tbody>
</table>

Receiving Layers: 
Design Class: 

Parent Material (geologic): Till 
Depth to Bedrock: 44" 11

Depth to Groundwater: 
Standing Water in the Hole: 
Weeping from Pit Face: 

Estimated Seasonal High Ground Water: 24"
Determination for Seasonal High Water Table

Method Used:  
Test Hole Number 16 - 7A

☐ Depth observed standing in observation hole ______ inches
☐ Depth weeping standing in observation hole ______ inches
☐ Depth to soil mottles 24 inches
☐ Ground water adjustment ______ feet

Index Well Number ____________ Reading Date ____________ Index well level ____________
Adjustment factor ____________ Adjusted ground water ____________

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?  No

If not, what is the depth of naturally occurring pervious material? 38"

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.

Signature __________________________ Date __________________________

NOTE: See accompanying cover letter which is part of this report.
**FORM 11 - SOIL EVALUATOR FORM**

**On-Site Review**

- **Deep Hole Number**: U-5A
- **Date**: 10/5/2000
- **Time**: 11:00 AM
- **Weather**: Clear, 59°F
- **Location (identify on site plan)**: Refer to Site Plan (Attached)
- **Land Use**: Woodland
- **Vegetation**: Hardwood trees
- **Landform**: Drumlin
- **Slope (%)**: 
- **Surface Stones**: None
- **Position on landscape (sketch on the back)**: Refer to Site Plan (Attached)
- **Distances from:**
  - Open Water Body: >100 feet
  - Possible Wet Area: >10 feet
  - Drinking Water Well: >10 feet
- **Drainage way**: >100 feet
- **Property Line**: >10 feet
- **Other**: 

### DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>A</td>
<td>SL</td>
<td>10YR 3/3</td>
<td></td>
<td>Carbon, Hake</td>
</tr>
<tr>
<td>9 - 16</td>
<td>B</td>
<td>SL</td>
<td>7.5Y 4/1</td>
<td></td>
<td>Fria, Hake</td>
</tr>
<tr>
<td>16 - 24</td>
<td>B/C</td>
<td>SL</td>
<td>2.5Y 6/4</td>
<td></td>
<td>Fria</td>
</tr>
<tr>
<td>24 - 54</td>
<td>C/D</td>
<td>SL</td>
<td>2.5Y 6/4</td>
<td></td>
<td>Gravel, Dune</td>
</tr>
</tbody>
</table>

**Receiving Layers**: 

**Design Class**: II

**Parent Material (geologic)**: Till

**Depth to Bedrock**: 

**Depth to Groundwater**: 

- **Standing Water in the Hole**: 
- **Weeping from Pit Face**: 

**Estimated Seasonal High Ground Water**: 24′
Determination for Seasonal High Water Table

Method Used: Test Hole Number 16 - 3A

- Depth observed standing in observation hole __________ inches
- Depth weeping standing in observation hole __________ inches
- Depth to soil motiles __________ inches
- Ground water adjustment __________ feet

Index Well Number __________ Reading Date __________ Index well level __________
Adjustment factor __________ Adjusted ground water __________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material? __________

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.

Signature __________ Date __________

NOTE: See accompanying cover letter which is part of this report.
**FORM 11 - SOIL EVALUATOR FORM**

**On-Site Review**

- **Deep Hole Number:** 10 - 5
- **Location (identify on site plan):** See attached site plan
- **Date:** 10/15/10
- **Time:** 11:10 A.M.
- **Weather:** Clear, 59°F
- **Land Use:** Woodland
- **Vegetation:** Hardwood trees
- **Slope (%):** None
- **Surface Stones:** None
- **Landform:** 700
- **Position on landscape (sketch on the back):** See attached site plan
- **Distances from:**
  - Open Water Body: 700 feet
  - Drainage way: 7100 feet
  - Possible Wet Area: 7100 feet
  - Property Line: 710 feet
  - Drinking Water Well: 7100 feet
  - Other: 

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, % Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 10</td>
<td>A</td>
<td>SCl</td>
<td>10 Ye 31S</td>
<td>Massive, Freile</td>
<td></td>
</tr>
<tr>
<td>10 - 110</td>
<td>B</td>
<td>SCl</td>
<td>11 Ye 51S</td>
<td>Freile</td>
<td></td>
</tr>
<tr>
<td>110 - 22</td>
<td>BC</td>
<td>SCl</td>
<td>25 Ye 81T</td>
<td>Light 0.22</td>
<td></td>
</tr>
</tbody>
</table>

**Receiving Layers:**

- **Parent Material (geologic):** Hill

- **Design Class:**

- **Depth to Bedrock:** 22"

- **Standing Water in the Hole:**

- **Weeping from Pit Face:**

- **Depth to Groundwater:**

- **Estimated Seasonal High Ground Water:**
## On-Site Review

- **Deep Hole Number**: 16 - 5C
- **Date**: 10/6/2010
- **Time**: 9:00am
- **Weather**: Cloudy, 50°F

### Location (identify on site plan)
- **Land Use**: Woodland
- **Vegetation**: Hardwood trees
- **Landform**: Drumlin

### Position on landscape (sketch on the back)
- **Slope (%):**
- **Surface Stones**: None

### Distances from:
- **Open Water Body**: > 100 feet
- **Possible Wet Area**: > 100 feet
- **Drinking Water Well**: > 100 feet
- **Drainage way**: > 100 feet
- **Property Line**: > 10 feet
- **Other**:

## DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulder, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>A</td>
<td>5C</td>
<td>10 YE 5/3</td>
<td>Moist, Finely</td>
<td></td>
</tr>
<tr>
<td>9 - 18</td>
<td>B</td>
<td>5L</td>
<td>2.5 YE 5/8</td>
<td>Fawn</td>
<td></td>
</tr>
<tr>
<td>14 - 30</td>
<td>01</td>
<td>5L</td>
<td>2.5Y 6/8</td>
<td>Fine, some gravel</td>
<td></td>
</tr>
<tr>
<td>30 - 84</td>
<td>C2</td>
<td>5L</td>
<td>2.5Y 5/4</td>
<td>Gravel, dense</td>
<td></td>
</tr>
</tbody>
</table>

### Receiving Layers

- **Design Class**: II

### Parent Material (geologic)
- **Fill**

### Depth to Bedrock:

### Depth to Groundwater:
- **Standing Water in the Hole:**
- **Weeping from Pit Face:**

### Estimated Seasonal High Ground Water:
- **30''**
Determination for Seasonal High Water Table

Method Used:  Test Hole Number 10 - SC

- Depth observed standing in observation hole ___ inches
- Depth weeping standing in observation hole ___ inches
- Depth to soil mottles 30 inches
- Ground water adjustment ___ feet

Index Well Number Reading Date Index well level
Adjustment factor Adjusted ground water

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material?

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.

Signature ___________________________ Date ________________

NOTE: See accompanying cover letter which is part of this report.
**On-Site Review**

- **Deep Hole Number:** 10 - 5D
- **Date:** 10/16/2016
- **Time:** 9:15am
- **Weather:** Clear, 51°F
- **Location (identify on site plan):** Refer to Site Plan (Attached)
- **Land Use:** Woodland
- **Slope (%):** None
- **Vegetation:** Hardwood trees
- **Surface Stones:** None
- **Landform:** Downhill
- **Position on landscape (sketch on the back):** Refer to Site Plan (Attached)
- **Open Water Body Distance:** 100 feet
- **Drainage way Distance:** 100 feet
- **Possible Wet Area Distance:** 100 feet
- **Property Line Distance:** 10 feet
- **Drinking Water Well Distance:** 100 feet
- **Other:**

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, % Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>A</td>
<td>S2</td>
<td>10 YR 7/3</td>
<td></td>
<td>Massive, Fine</td>
</tr>
<tr>
<td>9 - 12</td>
<td>B</td>
<td>S2</td>
<td>7.5 YR 5/4</td>
<td></td>
<td>Gravel, Fine</td>
</tr>
<tr>
<td>13 - 32</td>
<td>B/C</td>
<td>S2</td>
<td>25 YR 6/4</td>
<td></td>
<td>Gravel</td>
</tr>
<tr>
<td>32 - 84</td>
<td>C</td>
<td>S2</td>
<td>25 YR 5/4</td>
<td></td>
<td>Gravel</td>
</tr>
</tbody>
</table>

**Receiving Layers:**

**Parent Material (geologic):** Till

**Depth to Bedrock:**

**Depth to Groundwater:**

**Standing Water in the Hole:**

**Weeping from Pit Face:**

**Estimated Seasonal High Ground Water:** 32 ft
Determination for Seasonal High Water Table

Method Used:  Test Hole Number 16 - 5D

☐ Depth observed standing in observation hole _______ inches
☐ Depth weeping standing in observation hole _______ inches
☒ Depth to soil mottles _______ inches
☐ Ground water adjustment _______ feet

Index Well Number ____________ Reading Date ____________ Index well level
Adjustment factor ____________ Adjusted ground water ____________

Depth of Naturally Occurring Pervious Material

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

If not, what is the depth of naturally occurring pervious material? _______

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.

Signature __________________________ Date ____________________

NOTE: See accompanying cover letter which is part of this report.
**On-Site Review**

Deep Hole Number: 16 - SE  
Date: 06/10/2016  
Time: 10:30 AM  
Weather: Clear, 80°F

Location (identify on site plan): Refer to Site Plan (Attached)

Land Use: Woodland  
Vegetation: Hardwood trees  
Landform: Drumlin  
Position on landscape (sketch on the back): Refer to Site Plan (Attached)

Distances from:
- Open Water Body: >100 feet  
- Possible Wet Area: >100 feet  
- Drinking Water Well: >100 feet

**DEEP OBSERVATION HOLE LOG**

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 7</td>
<td>A</td>
<td>FYRIDE SIl</td>
<td>10 YR 3/1</td>
<td></td>
<td>Moist, Ferrous</td>
</tr>
<tr>
<td>7 - 12</td>
<td>B</td>
<td>SL</td>
<td>7.5 YR 5/6</td>
<td></td>
<td>Fuzzy</td>
</tr>
<tr>
<td>12 - 24</td>
<td>B/C</td>
<td>SIl</td>
<td>2.5 Y 4/4</td>
<td></td>
<td>Fuzzy</td>
</tr>
<tr>
<td>24 - 35&quot;</td>
<td>Cd</td>
<td>SL</td>
<td>2.5 Y 5/4</td>
<td></td>
<td>Layer @ 35&quot;</td>
</tr>
</tbody>
</table>

Receiving Layers:  
Design Class:  
Parent Material (geologic): Till  
Depth to Bedrock: 35"

Depth to Groundwater:
- Standing Water in the Hole:  
- Weeping from Pit Face:  
- Estimated Seasonal High Ground Water: 24"
Determination for Seasonal High Water Table

Method Used: Test Hole Number 16 - SE

☐ Depth observed standing in observation hole _______ inches
☐ Depth weeping standing in observation hole _______ inches
☒ Depth to soil mottles _______ 24 inches
☐ Ground water adjustment _______ feet

Index Well Number __________ Reading Date __________ Index well level __________
Adjustment factor __________ Adjusted ground water __________

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? ☒ No

If not, what is the depth of naturally occurring pervious material? 28''

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.

Signature __________________________ Date __________________________

NOTE: See accompanying cover letter which is part of this report.
On-Site Review

Deep Hole Number: 16 - 5F  
Date: 10/6/2001  
Time: 9:45 AM  
Weather: Clear, Windy

Location (identify on site plan): refer to site plan (attached)

Land Use: Woodland  
Vegetation: hardwood trees  
Landform: Drumlin

Position on landscape (sketch on the back): refer to site plan (attached)

Distsances from:
- Open Water Body: 200 feet
- Possible Wet Area: 200 feet
- Drinking Water Well: 200 feet
- Drainage way: 100 feet
- Property Line: 10 feet
- Other:  

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Moisture</th>
<th>Other (Structure, Stones, Boulders, Consistency, % Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 8</td>
<td>A</td>
<td>SL</td>
<td>10 4E 313</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 - 16</td>
<td>B</td>
<td>SL</td>
<td>10 4E 513</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 - 26</td>
<td>BC</td>
<td>SL</td>
<td>2.5 4 64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 - 72</td>
<td>CD</td>
<td>SL</td>
<td>2.5 4 5/4</td>
<td></td>
<td>dense gravelly</td>
</tr>
</tbody>
</table>

Receiving Layers:  
Design Class:  

Parent Material (geologic): Till  
Depth to Bedrock:  
Depth to Groundwater:  
Standing Water in the Hole:  
Weeping from Pit Face:  
Estimated Seasonal High Ground Water: 21
**Determination for Seasonal High Water Table**

Method Used:  
- [ ] Depth observed standing in observation hole  
- [ ] Depth weeping standing in observation hole  
- [x] Depth to soil mottles 20 inches  
- [ ] Ground water adjustment  

Test Hole Number  
16 - 5F

Index Well Number  
Adjustment factor  
Reading Date  
Adjusted ground water  
Index well level  

**Depth of Naturally Occurring Pervious Material**

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**

If not, what is the depth of naturally occurring pervious material?  

**Certification**

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Signature  
Date  

**NOTE:** See accompanying cover letter which is part of this report.
Deep Hole Number: 16 - 5G  
Location (identify on site plan):  
Date: 10/10/2010  
Time: 9:30 AM  
Weather: Overcast  

Land Use: Woodland  
Vegetation: Hardwood Trees  
Landform: Drumlin  
Position on landscape (sketch on the back):  

On-Site Review

Distsances from:
- Open Water Body: 100 feet
- Possible Wet Area: 100 feet
- Drinking Water Well: 100 feet
- Drainage way: 100 feet
- Property Line: 16 feet
- Other:  

Refer to Site Plan (attached)  

DEEP OBSERVATION HOLE LOG

<table>
<thead>
<tr>
<th>Depth from Surface (Inches)</th>
<th>Soil Horizon</th>
<th>Soil Texture (USDA)</th>
<th>Soil Color (Munsell)</th>
<th>Soil Mottling</th>
<th>Other (Structure, Stones, Boulders, Consistency, %Gravel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 8</td>
<td>A</td>
<td>SL</td>
<td>6R 3/13</td>
<td></td>
<td>Minor, frothy</td>
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<tr>
<td>8 - 14</td>
<td>B</td>
<td>SL</td>
<td>2.5 R 5/8</td>
<td></td>
<td>Fine</td>
</tr>
<tr>
<td>14 - 26</td>
<td>B/C</td>
<td>SL</td>
<td>2.5 Y 1/4</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>26 - 84</td>
<td>CD</td>
<td>SL</td>
<td>2.5 Y 5/4</td>
<td></td>
<td>Mixed, gravelly</td>
</tr>
</tbody>
</table>

Receiving Layers:  
Design Class: I  

Parent Material (geologic): Till  
Depth to Bedrock:  

Depth to Groundwater:  
Standing Water in the Hole:  
Weeping from Pit Face:  

Estimated Seasonal High Ground Water: 2'10"