GEOTECHNICAL DATA REPORT

For the Rehabilitation of:
STATE ROUTE 8/11
BELGRADE, MAINE

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Kennebec County
WIN 12773.00
Soils Report 2017-52
Federal No. STP-1277(300)X

November 27, 2017
# Table of Contents

1.0 **INTRODUCTION** ........................................................................................................... 1

2.0 **GEOLOGIC SETTING** ................................................................................................. 1

3.0 **SUBSURFACE INVESTIGATION** ............................................................................... 1

4.0 **LABORATORY TESTING** ........................................................................................... 2

5.0 **SUBSURFACE CONDITIONS** .................................................................................... 2

5.1 **SAND AND GRAVELLY SAND** .................................................................................. 2

5.2 **SILT OR SANDY SILT** ............................................................................................... 2

5.3 **ORGANIC SOILS (PEAT)** .......................................................................................... 2

6.0 **GEOTECHNICAL RECOMMENDATIONS** .................................................................. 3

6.1 **SHALLOW REFUSALS** .............................................................................................. 3

6.2 **ORGANIC SOILS (PEAT)** ........................................................................................ 4

7.0 **CLOSURE** ................................................................................................................ 4

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**Sheets**

Sheet 1 – Location Map
Sheets 2 through 26 - Boring Location Plans

**Appendices**

Appendix A – Boring Logs
Appendix B – Laboratory Test Results
1.0 INTRODUCTION

The purpose of this report is to document subsurface information collected and make geotechnical design and construction recommendations for the rehabilitation of an approximately 3.02-mile portion of State Route 8/11 in Belgrade. The project is needed to improve drainage, roadway structure, and safety. This report presents the results of a limited geotechnical investigation performed along the project site and the results of a limited laboratory testing program conducted on soils recovered during the geotechnical investigation. State Route 8/11 is a Highway Corridor Priority 3 road.

2.0 GEOLOGIC SETTING

The project begins approximately 0.05 miles northerly of Route 27 in Belgrade and extends northerly 3.02 miles on Route 8/11 as shown on Sheet 1 – Location Map.

According to the Maine Geologic Survey (MGS) map titled Surficial Geology Belgrade Quadrangle, Maine Open-File No. 05-45 (2005) the surficial soils along the project consist of till. These soils typically consist of a mixture of clay, silt, sand, pebbles, cobbles and boulders predominantly sandy containing some gravel.

According to the map titled Bedrock Geologic Map of Maine (1985) published by the MGS, the bedrock in the vicinity of the site consists of interbedded pelite and limestone and/or dolostone and of the Sangerville Formation on the northwest of Route 8/11 and limestone and/or dolostone of the Patch Mountain Member of the Sangerville Formation to the southwest of Route 8/11.

3.0 SUBSURFACE INVESTIGATION

Subsurface conditions along the project were explored by drilling a total of twenty-one (21) test borings and seventy-six (76) probes. The borings and probes were drilled between July 31 and August 3, 2012 by the MaineDOT drill crew using solid stem auger techniques. The boring depths ranged from approximately 3.1 to 10.0 feet below ground surface (bgs). The probe depths ranged from approximately 0.8 to 10.0 feet bgs. Five (5) of the borings and many of the probes encountered a shallow refusal surface. The exact nature of the refusal surface was not determined in the explorations. Boring locations are shown on the Sheets 2 through 26 Boring Location Plans. Boring Logs and the Auger Probe Summary Sheets are presented in Appendix A – Boring Logs.

Soil samples were obtained from the auger flights in several of the borings. No soil samples were obtained in the probe. Details and sampling methods used, field data obtained, and soil conditions encountered are presented in the boring logs provided in Appendix A – Boring Logs.

A Northeast Transportation Training and Certification Program (NETTCP) Certified Subsurface Inspector logged the subsurface conditions encountered. The MaineDOT Geotechnical Team member selected the boring locations, drilling methods, designated type and depth of sampling, reviewed field logs for accuracy and identified laboratory testing requirements. The borings and probes were located in the field by taping to site features after completion of the drilling program.
4.0 LABORATORY TESTING

A laboratory testing program was conducted on select soil samples obtained in the borings to assist in soil classification. Laboratory testing consisted of sixteen (16) standard grain size analyses with natural water content. The results of the laboratory tests are in Appendix B - Laboratory Test Results. Laboratory test results are also summarized on the boring logs in Appendix A – Boring Logs.

5.0 SUBSURFACE CONDITIONS

Subsurface conditions encountered at the test borings generally consisted of sand, gravelly sand, and silt overlying rock. Discontinuous silty sand and organic soils (peat) layers were encountered at isolated locations. The boring locations are shown on Sheets 2 through 26 - Boring Location Plans. The boring logs are in Appendix A – Boring Logs.

5.1 Sand and Gravelly Sand

The subsurface investigation found layers of sand and gravelly sand under the roadway pavement. The sand consisted of brown to dark brown, damp to moist, fine to coarse sand, some to trace silt, some to trace gravel. The gravelly sand consisted of dark brown, damp, gravelly sand, trace silt. The thickness of the sand and gravelly sand layer ranged from approximately 0.7 feet to greater than 5.0 feet. Grain size analyses conducted on ten (10) samples of the sand and gravelly sand resulted in the soil being classified as an A-2-4, A-1-b, or A-4 under the AASHTO Soil Classification System and an SM, SW, or SW-SM under the Unified Classification System. The measured natural water contents of the samples tested ranged from approximately 2 to 14 percent.

5.2 Silt or Sandy Silt

In some areas the sand and gravelly sand is underlain by a layer of silt or sandy silt. The silt consisted brown, dry to moist, silt, some clay, some sand, trace gravel and brown, damp to moist, sandy silt, trace gravel. The thickness of the silt or sandy silt ranged from approximately 0 to greater than 3.8 feet. Grain size analyses conducted on six (6) samples of the silt or sandy silt resulted in the soil being classified as an A-4 under the AASHTO Soil Classification System and an ML or CL-ML under the Unified Classification System. The measured natural water contents of the samples tested ranged from approximately 8 to 40 percent.

5.3 Organic Soils (Peat)

A thin layer of organic soils (peat) was observed in boring HB-BEL-120 at Station 155+00. The thickness of the peat was approximately 0.2 feet. No laboratory testing was done on the peat.
6.0 Geotechnical Recommendations

There are two (2) areas of geotechnical concern on this project:

- Shallow refusals
- Organic Soils (Peat)

6.1 Shallow Refusals

Based on the results of the borings and probes, rock removal will be necessary near the following stations where a shallow refusal surface was encountered:

<table>
<thead>
<tr>
<th>Stations</th>
<th>Range of Approximate Depths to Weathered Rock (feet bgs)</th>
<th>Range of Approximate Depths to Refusal (feet bgs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>48-50 to 59+00</td>
<td>2.0 to 4.2</td>
<td>2.3 to 4.7</td>
</tr>
<tr>
<td>61+00 to 67+00</td>
<td>1.9 to 4.8</td>
<td>2.3 to 5.0</td>
</tr>
<tr>
<td>90+50 to 96+00</td>
<td>1.8 to 4.1</td>
<td>2.3 to 4.4</td>
</tr>
<tr>
<td>136+00 to 147+50</td>
<td>0.8 to 3.9</td>
<td>1.2 to 5.0</td>
</tr>
<tr>
<td>164+50 to 165+50</td>
<td>3.2</td>
<td>3.0 to 5.0</td>
</tr>
</tbody>
</table>

Weathered rock was encountered in many of the borings and probes overlying the more solid competent rock. Rock excavation for the proposed closed drainage system will be necessary near these stations. Additional shallow rock may be encountered during construction of the drainage system at other locations. No rock cores were taken along the project and the actual nature of the refusal surface was not determined. The nature, slope and degree of fracturing in the rock surface will not be evident until the excavations are made and rock is exposed.

It should be anticipated that if shallow rock is encountered during excavation work, removal will be necessary. Machinery capable of removing intact rock, such as heavy duty backhoes with rock ripping teeth, hydraulic thumbs or pneumatic rock breaking equipment, should be anticipated for this work. There is also a possibility that rock excavation will require blasting. Construction activities should not be permitted to disturb the rock mass or to create any rock falls or any open fissures.

Blasting should be conducted in accordance with MaineDOT Standard Specification Sections 105.2.7 and 203. The Contractor is required to conduct pre-blast surveys as well as blast vibration monitoring at any nearby structures in accordance with industry standards at the time of the blast. Pre-blast surveys shall be provided to the Resident prior to blasting at the site. Strict measures should be implemented to control flyrock. The method of flyrock control shall be subject to approval by the Department. Such approval will not relieve the Contractor from adequately protecting adjacent property and work areas.
6.2 Organic Soils (Peat)

A thin layer of organic soils (peat) was observed in boring HB-BEL-120 at Station 155+00. The thickness of the peat was approximately 0.2 feet. In this area, the road profile will be raised approximately 1 foot. These soils are highly compressible and permeable particularly during the early stages of loading.

Organic soils encountered in excavations for any structure during construction shall be removed and replaced with granular borrow. Based on the soils encountered in the boring, silt is present beneath the peat. The silt soils shall be excavated using a smooth-edged backhoe bucket to minimize disturbance to the layer. If a smooth-edged bucket is not used, all disturbed soils caused by the bucket teeth shall be removed by hand prior to placement of new materials. The use of heavy equipment on the silt shall be prohibited.

7.0 CLOSURE

This Geotechnical Data Report has been prepared for the use of the MaineDOT Highway Program for specific application to the proposed reconstruction of State Route 8/11 in Belgrade, Maine in accordance with generally accepted geotechnical and foundation engineering practices. No other intended use or warranty is expressed or implied.

MaineDOT conducted a limited number of soil explorations at discrete locations along the project and a limited number of laboratory tests. MaineDOT shall not be responsible for the Bidder’s or Contractor’s interpretations, estimates, or conclusions derived from the geotechnical information. Data provided may not be representative of the subsurface conditions between boring locations.

In the event that any changes in the nature, design, or location of the proposed project are planned, this report should be reviewed by a geotechnical engineer to assess the appropriateness of the conclusions and recommendations and to modify the recommendations as appropriate to reflect the changes in design. These analyses and recommendations are based in part upon a limited subsurface investigation at discrete exploratory locations completed at the site. If variations from the conditions encountered during the investigation appear evident during construction, it may also become necessary to re-evaluate the recommendations made in this report.

It is recommended that a geotechnical engineer be provided the opportunity for a review of the design and specifications in order that the earthwork and foundation recommendations and construction considerations presented in this report are properly interpreted and implemented in the design and specifications.
Sheets
Appendix A

Boring Logs
### Unified Soil Classification System

<table>
<thead>
<tr>
<th>MAJOR DIVISIONS</th>
<th>GROUP SYMBOLS</th>
<th>TYPICAL NAMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>COARSE-GRAINED SOILS</td>
<td>CLEAN GRAVELS</td>
<td>GW</td>
</tr>
<tr>
<td></td>
<td>(little or no fines)</td>
<td>GP</td>
</tr>
<tr>
<td></td>
<td>GRAVEL WITH FINES (Appreciable amount of fines)</td>
<td>GM</td>
</tr>
<tr>
<td></td>
<td>(more than half of coarse fraction is smaller than No. 200 sieve size)</td>
<td>GC</td>
</tr>
<tr>
<td></td>
<td>FINE SANDS</td>
<td>SW</td>
</tr>
<tr>
<td></td>
<td>(little or no fines)</td>
<td>SP</td>
</tr>
<tr>
<td></td>
<td>SANDS WITH FINES (Appreciable amount of fines)</td>
<td>SM</td>
</tr>
<tr>
<td></td>
<td>(more than half of coarse fraction is smaller than No. 200 sieve size)</td>
<td>SC</td>
</tr>
<tr>
<td>FINE-GRAINED SOILS</td>
<td>SILTS AND CLAYS</td>
<td>ML</td>
</tr>
<tr>
<td></td>
<td>(liquid limit less than 50)</td>
<td>CL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OL</td>
</tr>
<tr>
<td></td>
<td>SILTS AND CLAYS</td>
<td>MH</td>
</tr>
<tr>
<td></td>
<td>(liquid limit greater than 50)</td>
<td>CH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OH</td>
</tr>
<tr>
<td>HIGHLY ORGANIC SOILS</td>
<td>Pt</td>
<td>Peat and other highly organic soils.</td>
</tr>
</tbody>
</table>

### Modified Burmister System

<table>
<thead>
<tr>
<th>Descriptive Term</th>
<th>Portion of Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trace</td>
<td>0 - 10</td>
</tr>
<tr>
<td>Little</td>
<td>11 - 20</td>
</tr>
<tr>
<td>Some</td>
<td>21 - 35</td>
</tr>
<tr>
<td>Adjective (e.g., sandy, clayey)</td>
<td>36 - 50</td>
</tr>
</tbody>
</table>

### Terms Describing Density/Consistency

<table>
<thead>
<tr>
<th>Cohesionless Soils</th>
<th>Standard Penetration Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density of unsaturated sands, gravelly, sandy or silty clays and (3) clayey silts. Consistency is rated according to undrained shear strength as indicated.</td>
<td></td>
</tr>
</tbody>
</table>

### Rock Quality Designation (RQD):  

- RQD (%) = sum of the lengths of intact pieces of core > 4 inches length or core advance
- *Minimum NG rock core (1.88 in. OD of core)

<table>
<thead>
<tr>
<th>Rock Mass Quality</th>
<th>RQD (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Poor</td>
<td>525</td>
</tr>
<tr>
<td>Poor</td>
<td>26 - 50</td>
</tr>
<tr>
<td>Fair</td>
<td>51 - 75</td>
</tr>
<tr>
<td>Good</td>
<td>76 - 90</td>
</tr>
<tr>
<td>Excellent</td>
<td>91 - 100</td>
</tr>
</tbody>
</table>

### Desired Rock Observations (in this order, if applicable):
- Color (Munsell color chart)
- Texture (aphanitic, fine-grained, etc.)
- Rock Type (granite, schist, sandstone, etc.)
- Hardness (very hard, hard, mod. hard, hard, etc.)
- Weathering (fresh, very slight, slight, moderate, mod. severe, severe, etc.)
- Geologic discontinuities/jointing:
  - spacing (very close - <2 inch, close - 2-12 inch, mod. - 13-30 inch, wide - >10 feet)
  - tightness (tight, open, or healed)
- Infilling (grain size, color, etc.)
- Formation (Waterville, Ellsworth, Cape Elizabeth, etc.)
- RQD and correlation to rock mass quality (very poor, poor, etc.)
- ref: ASTM D6032 and AASHTO Standard Specification for Highway Bridges, 17th Ed. Table 4.4.8.1.2A

### Sample Container Labeling Requirements:

- WIN: Blow Counts
- Bridge Name / Town: Sample Recovery
- Boring Number: Date
- Sample Number: Personnel Initials
- Sample Depth: Sample of excavation or core depth.
Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: A 3.02 mile portion of Route 8
Location: Belgrade, Maine
Boring No.: HB-BEL-101
WIN: 12773.00

Drilling Contractor: MaineDOT
Elevation (ft.): 335.1
Auger ID/OD: 5" Dia.

Operator: E. Giguere
Datum: NAVD88
Sampler: Off Flights

Logged By: G. Lidstone
Rig Type: CME 45C
Hammer Wt./Fall: N/A

Date Start/Finish: 7/31/06-7/31/06
Drilling Method: Solid Stem Auger
Core Barrel: N/A

Boring Location: 17+58, 7.5 ft Rt.
Casing ID/OD: N/A
Water Level*: None Observed

Definitions:
- S = Sample off Auger Flights
- SSA = Solid Stem Auger
- MU = Unsuccessful Split Spoon Sample Attempt
- RC = Roller Cone
- MV = Unsuccessful Field Vane Shear Test Attempt
- MU = Unsuccessful Thin Wall Tube Sample Attempt
- WDT = Weight of 1 Person
- SSP = Peak Remolded Field Vane Undrained Shear Strength (psf)
- HSA = Hollow Stem Auger
- N = N-value
- SSA = Solid Stem Auger
- V = Field Vane Shear Test
- U = Unsuccessful Thin Wall Tube Sample
- SPT = Standard Penetration Test (blows/ft)
- NV = Natural Gas
- MV = Unsuccessful Field Vane Shear Test Attempt
- W = Water
- V = Field Vane Shear Test
- P = Pocket Penetrometer

Remarks:
Overhead wires at Sta. 17+50.

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.
Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: A 3.02 mile portion of Route 8

Location: Belgrade, Maine

Boring No.: HB-BEL-102

WIN: 12773.00

Drilling Contractor: MaineDOT

Operator: E. Giguere

Datum: NAVD88

Logged By: G. Lidstone

Rig Type: CME 45C

Date Start/Finish: 7/31/06-7/31/06

Drilling Method: Solid Stem Auger

Core Barrel: N/A

Casing ID/OD: N/A

Auger ID/OD: 5” Dia.

Hammer Wt./Fall: N/A

Definitions:
- **D = Split Spoon Sample**
- **R = Rock Core Sample**
- **SSA = Solid Stem Auger**
- **HSA = Hollow Stem Auger**
- **RC = Roller Cone**
- **MV = Unsuccessful Field Vane Shear Test Attempt**
- **V = Field Vane Shear Test**
- **MU = Unsuccessful Thin Wall Tube Sample Attempt**
- **WOT = Weight of 1 Person**
- **SP = Peak Remolded Field Vane Undrained Shear Strength (psf)**
- **SU = Lab Vane Undrained Shear Strength (psf)**
- **qC = Unconfined Compressive Strength (psi)**
- **N-value = Raw Field SPT N-value**
- **PV = Pocket Vane Shear Strength (psf)**
- **W = Water Content, percent**
- **WC = Water Content, percent = Similar or Equal too**
- **C = Consolidation Test**

Visual Description and Remarks:

- **8.4” HMA**
- Unbound Pavement
- Brown, damp, fine to coarse SAND, some silt, trace gravel.

Bottom of Exploration at 5.0 feet below ground surface.

NO REFUSAL

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.
Boring No.: HB-BEL-103

Maine Department of Transportation
Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: A 3.02 mile portion of Route 8
Location: Belgrade, Maine

WIN: 12773.00

Drilling Contractor: MaineDOT
Elevation (ft): 341.7
Auger ID/OD: 5” Dia.

Operator: E. Giguiere
Datum: NAVD88
Sampler: Off Flights

Logged By: G. Lidstone
Rig Type: CME 45C
Hammer Wt./Fall: N/A

Date Start/Finish: 7/31/06-7/31/06
Drilling Method: Solid Stem Auger
Core Barrel: N/A

Boring Location: 28+00, 7.5 ft Rt.
Casing ID/OD: N/A
Water Level: None Observed

Definitions:
- S = Sample off Auger Flights
- SSA = Solid Stem Auger
- SSA = Split Spoon Sample
- R = Rock Core Sample
- MD = Successful Split Spoon Sample Attempt
- HSA = Hollow Stem Auger
- U = Thin Wall Tube Sample
- RC = Roller Cone
- NV = Unsuccessful Thin Wall Tube Sample Attempt
- WOH = Weight of 140lb. Hammer
- WRC = Weight of Rods or Casing
- WOF = Weight of 1 Person
- LL = Liquid Limit
- UC = Unconfined Compressive Strength
- PI = Plastic Limit
- G = Grain Size Analysis
- C = Consolidation Test
- N = N-value

Laboratory Testing Results/AASHTO and Unified Class.

Visual Description and Remarks

Sample Information

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Sample No.</th>
<th>Pen./Rec. (in.)</th>
<th>Sample Depth (ft)</th>
<th>Blows (/6 in.)</th>
<th>Shear Strength (psf)</th>
<th>N-value</th>
<th>Graphic Log</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>S3</td>
<td>15 - 2.7</td>
<td>SSA</td>
<td>340.9</td>
<td>9.6” HMA</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S4</td>
<td>2.7 - 5.0</td>
<td>SSA</td>
<td>339.0</td>
<td>9.6” HMA</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>336.7</td>
<td></td>
<td>2.7</td>
<td>Bottom of Exploration at 5.0 feet below ground surface. NO REFUSAL</td>
</tr>
</tbody>
</table>

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Remarks:

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.
**Maine Department of Transportation**  
**Soil/Rock Exploration Log**  
**US CUSTOMARY UNITS**  

<table>
<thead>
<tr>
<th>Drilling Contractor:</th>
<th>MaineDOT</th>
<th>Elevation (ft.)</th>
<th>337.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator:</td>
<td>E. Giguere</td>
<td>Datum:</td>
<td>NAVD88</td>
</tr>
<tr>
<td>Logged By:</td>
<td>G. Lidstone</td>
<td>Rig Type:</td>
<td>CME 45C</td>
</tr>
<tr>
<td>Date Start/Finish:</td>
<td>7/31/06-7/31/06</td>
<td>Drilling Method:</td>
<td>Solid Stem Auger</td>
</tr>
<tr>
<td>Boring Location:</td>
<td>35+00, 8.3 ft Lt.</td>
<td>Casing ID/OD:</td>
<td>N/A</td>
</tr>
<tr>
<td>Definitions:</td>
<td>D = Split Spone Sample</td>
<td>Sample Information</td>
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</tr>
<tr>
<td></td>
<td>SSA = Solid Stem Auger</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MU = Unsuccessful Thin Wall Tube Sample Attempt</td>
<td>Sample Information</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R = Rock Core Sample</td>
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<td></td>
<td>U = Thin Wall Tube Sample</td>
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<tr>
<td></td>
<td>MV = Unsuccessful Field Vane Shear Test Attempt</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>V = Field Vane Shear Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W = Weight of 140lb, Hammer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = Value = Raw Field SPT N-value</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WOR/C = Weight of Rods or Casing</td>
<td></td>
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<tr>
<td></td>
<td>T_p = Pockt Tnitaire Shear Strength (psf)</td>
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<tr>
<td></td>
<td>N-value = Raw Field SPT N-value</td>
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<td></td>
<td>WC = Water Content, percent</td>
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</tr>
<tr>
<td></td>
<td>C = Consolidation Test</td>
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<td></td>
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<tr>
<td></td>
<td>A = Auger Flights</td>
<td></td>
<td></td>
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<tr>
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<td>SSA = Solid Stem Auger</td>
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<td></td>
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<tr>
<td></td>
<td>MU = Unsuccessful Thin Wall Tube Sample Attempt</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>R = Rock Core Sample</td>
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<td>U = Thin Wall Tube Sample</td>
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<td>MV = Unsuccessful Field Vane Shear Test Attempt</td>
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<tr>
<td></td>
<td>V = Field Vane Shear Test</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>W = Weight of 140lb, Hammer</td>
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<td></td>
<td>N = Value = Raw Field SPT N-value</td>
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</tr>
<tr>
<td></td>
<td>WOR/C = Weight of Rods or Casing</td>
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<tr>
<td></td>
<td>T_p = Pockt Tnitaire Shear Strength (psf)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N-value = Raw Field SPT N-value</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WC = Water Content, percent</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C = Consolidation Test</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**  
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.  
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

---

**Maine Department of Transportation**  
**Project:** A 3.02 mile portion of Route 8  
**Location:** Belgrade, Maine  
**Boring No.:** HB-BEL-104  
**WIN:** 12773.00  
---

**Remarks:**  
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.  
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.
### Soil/Rock Exploration Log

**Project:** A 3.02 mile portion of Route 8  
**Location:** Belgrade, Maine  
**Boring No.:** HB-BEL-105  
**WIN:** 12773.00

<table>
<thead>
<tr>
<th>Drilling Contractor:</th>
<th>MaineDOT</th>
<th><strong>Elevation (ft):</strong></th>
<th>401.3</th>
<th><strong>Auger ID/OD:</strong></th>
<th>5&quot; Dia.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator:</td>
<td>E. Giguere</td>
<td><strong>Datum:</strong></td>
<td>NAVD88</td>
<td><strong>Sampler:</strong></td>
<td>Off Flights</td>
</tr>
<tr>
<td>Logged By:</td>
<td>G. Lidstone</td>
<td><strong>Rig Type:</strong></td>
<td>CME 45C</td>
<td><strong>Hammer Wt./Fall:</strong></td>
<td>N/A</td>
</tr>
<tr>
<td>Date Start/Finish:</td>
<td>7/31/06-7/31/06</td>
<td><strong>Drilling Method:</strong></td>
<td>Solid Stem Auger</td>
<td><strong>Core Barrel:</strong></td>
<td>N/A</td>
</tr>
<tr>
<td>Boring Location:</td>
<td>47+50, 8.0 ft R.</td>
<td><strong>Casing ID/OD:</strong></td>
<td>N/A</td>
<td><strong>Water Level:</strong></td>
<td>None Observed</td>
</tr>
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</table>

**Definitions:**  
<table>
<thead>
<tr>
<th>D = Split spoon Sample</th>
<th>R = Rock Core Sample</th>
<th>SSA = Solid Stem Auger</th>
<th>HSA = Hollow Stem Auger</th>
<th>RC = Roller Cone</th>
<th>WDTF = Weight of 1 Person</th>
<th>WDTA = Weight of TAS Thin Wall Tube Sample Attempt</th>
<th>SSA = Solid Stem Auger</th>
<th>HSA = Hollow Stem Auger</th>
<th>RC = Roller Cone</th>
</tr>
</thead>
<tbody>
<tr>
<td>S = Sample off Auger Flights</td>
<td>SSA = Successful Thin Wall Tube Sample Attempt</td>
<td>R = Rock Core Sample</td>
<td>SSA = Solid Stem Auger</td>
<td>HSA = Hollow Stem Auger</td>
<td>RC = Roller Cone</td>
<td>WDTF = Weight of 1 Person</td>
<td>WDTA = Weight of TAS Thin Wall Tube Sample Attempt</td>
<td>SSA = Solid Stem Auger</td>
<td>HSA = Hollow Stem Auger</td>
</tr>
<tr>
<td>MV = Unsuccessful Vane Shear Test Attempt</td>
<td>SSA = Solid Stem Auger</td>
<td>HSA = Hollow Stem Auger</td>
<td>RC = Roller Cone</td>
<td>WDTF = Weight of 1 Person</td>
<td>WDTA = Weight of TAS Thin Wall Tube Sample Attempt</td>
<td>SSA = Solid Stem Auger</td>
<td>HSA = Hollow Stem Auger</td>
<td>RC = Roller Cone</td>
<td>WDTF = Weight of 1 Person</td>
</tr>
<tr>
<td>V = Field Vane Shear Test</td>
<td>SSA = Solid Stem Auger</td>
<td>HSA = Hollow Stem Auger</td>
<td>RC = Roller Cone</td>
<td>WDTF = Weight of 1 Person</td>
<td>WDTA = Weight of TAS Thin Wall Tube Sample Attempt</td>
<td>SSA = Solid Stem Auger</td>
<td>HSA = Hollow Stem Auger</td>
<td>RC = Roller Cone</td>
<td>WDTF = Weight of 1 Person</td>
</tr>
</tbody>
</table>

**Sample Information**

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Sample No.</th>
<th>Pen./Rec. (in.)</th>
<th>Sample Depth (ft.)</th>
<th>Blows (/6 in.)</th>
<th>Shear Strength (psf)</th>
<th>or RQD (%)</th>
<th>N-value</th>
<th>Casing Blows</th>
<th>Elevation (ft.)</th>
<th>Graphic Log</th>
<th>Visual Description and Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>-</td>
<td>0</td>
<td>400</td>
<td>1.2&quot; HMA</td>
<td></td>
<td></td>
<td></td>
<td>400.8</td>
<td>-</td>
<td>Unbound Pavement</td>
</tr>
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</table>

56 12 - 5.0

396.3

5

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Sample No.</th>
<th>Pen./Rec. (in.)</th>
<th>Sample Depth (ft.)</th>
<th>Blows (/6 in.)</th>
<th>Shear Strength (psf)</th>
<th>or RQD (%)</th>
<th>N-value</th>
<th>Casing Blows</th>
<th>Elevation (ft.)</th>
<th>Graphic Log</th>
<th>Visual Description and Remarks</th>
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<tbody>
<tr>
<td>5</td>
<td>56</td>
<td>12</td>
<td>12</td>
<td>400.8</td>
<td>1.2&quot; HMA</td>
<td></td>
<td></td>
<td></td>
<td>400.8</td>
<td>-</td>
<td>Unbound Pavement</td>
</tr>
</tbody>
</table>

### Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.
Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: A 3.02 mile portion of Route 8
Location: Belgrade, Maine
Boring No.: HB-BEL-106
WIN: 12773.00

Drilling Contractor: MaineDOT
Operator: E. Giguere
Datum: NAVD88
Logged By: G. Lidstone
Date Start/Finish: 7/31/06-7/31/06
Logging Method: Solid Stem Auger
Core Barrel: N/A

Depth (ft.)

Sample No.
Pen./Rec. (in.)
Sample Depth (ft.)
Blows (/6 in.)
Shear Strength (psf) or RQD (%)
N-value
Casing Blows
Elevation (ft.)

Visual Description and Remarks

Laboratory Testing Results/ AASHTO and Unified Class.

Definitions:
- D = Spilt Spoon Sample
- R = Rock Core Sample
- SSA = Solid Stem Auger
- HSA = Hollow Stem Auger
- RC = Roller Cone
- WOT = Weight of Thin Wall Tube Sample Attempt
- WOH = Weight of 140 lb. Hammer
- WD = Weight of Dried Sample
- WTA = Weight of Tube Attempt
- WA = Weight of Auger
- LL = Liquid Limit
- PI = Plastic Limit
- ML = Plastic Limit
- N value = Raw Field SPT N value
- G = Grain Size Analysis
- WC = Water Content, percent
- C = Consolidation Test

- @ = Similar or Equal too

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Bottom of Exploration at 4.4 feet below ground surface. RÉFUSAL.
<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Sample No.</th>
<th>Pen./Rec. (in.)</th>
<th>Sample Depth (ft.)</th>
<th>Blows (/6 in.)</th>
<th>Shear Strength (psf) or RQD (%)</th>
<th>N-value</th>
<th>Casing Blows</th>
<th>Elevation (ft.)</th>
<th>Graphic Log</th>
<th>Visual Description and Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0.9 - 1.7</td>
<td>SSA</td>
<td>393.7</td>
<td>Dark brown, damp, Gravelly SAND, trace silt, (Fill).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>392.9</td>
<td>Brown, moist, fine to coarse SAND, some silt, trace gravel.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>391.8</td>
<td>Weathered ROCK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>391.6</td>
<td>Bottom of Exploration at 3.0 feet below ground surface.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>REFUSAL</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Definitions: D = Split Spoon Sample  
S = Sample off Auger Flights  
M = Unsuccessful Split Spoon Sample Attempt  
SSA = Solid Stem Auger  
RC = Roller Cone  
MV = Unsuccessful Field Vane Shear Test Attempt  
HSA = Hollow Stem Auger  
WOC = Weight of Casing or Rods  
RC = Roller Cone  

Remarks: Stratification lines represent approximate boundaries between soil types; transitions may be gradual.  
Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.
**Maine Department of Transportation**  
**Soil/Rock Exploration Log**  
**US CUSTOMARY UNITS**

**Project:** A 3.02 mile portion of Route 8  
**Location:** Belgrade, Maine  
**Boring No.:** HB-BEL-108  
**WIN:** 12773.00

**Drilling Contractor:** MaineDOT  
**Elevation (ft.)** 384.9  
**Auger ID/OD:** 5" Dia.

**Operator:** E. Giguere  
**Datum:** NAVD88  
**Sampler:** Off Flights

**Logged By:** G. Lidstone  
**Rig Type:** CME 45C  
**Hammer Wt./Fall:** N/A

**Date Start/Finish:** 8/2/06-8/2/06  
**Drilling Method:** Solid Stem Auger  
**Core Barrel:** N/A

**Boring Location:** 70+00, 5.3 ft Rt.  
**Casing ID/OD:** N/A  
**Water Level:** None Observed

---

**Definitions:**
- D = Split Spoon Sample  
- U = Successful Thin Wall Tube Sample Attempt  
- S = Sample off Auger Flights  
- B = Bucket Sample off Auger Flights  
- MD = Successful Split Spoon Sample Attempt  
- U = Thin Wall Tube Sample  
- MV = Unsuccessful Field Vane Shear Test Attempt  
- V = Field Vane Shear Test  
- RC = Roller Cone  
- WOH = Weight of 140lb. Hammer  
- WOR = Weight of Rods or Casing  
- WC = Water Content, percent  
- @ = Similar or Equal too  
- C = Consolidation Test

**Remarks:**

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

---

**Visual Description and Remarks**

**Graphic Log**

**Casing Blow:** 384.3  
**Elevation:** 7.8" HMA

**Sample Information**

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Sample No.</th>
<th>Pen./Rec. (in.)</th>
<th>Sample Depth</th>
<th>Blows (/6 in.)</th>
<th>N-value</th>
<th>Shear Strength (psf)</th>
<th>RQD (%)</th>
<th>N-value</th>
<th>Casing Blow</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SSA</td>
<td>384.3</td>
<td>0</td>
<td>0</td>
<td>-0.7</td>
<td>Unbound Pavement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>384.1</td>
<td>0</td>
<td>0</td>
<td>0.8</td>
<td>Dark brown, damp, Gravelly SAND, trace silt, (Fill).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Brown, moist, fine to coarse SAND, some silt, trace gravel.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>381.4</td>
<td>0</td>
<td>0</td>
<td>3.5</td>
<td>Brown, moist, SILT, some clay, some sand, trace gravel.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bottom of Exploration at 5.0 feet below ground surface. NO REFUSAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Laboratory Testing Results/AASHTO and Unified Class.**

Page 1 of 1  
Boring No.: HB-BEL-108
**Geotechnical Log**

**Maine Department of Transportation**

**Soil/Rock Exploration Log**

**Location:** Belgrade, Maine

**Project:** A 3.02 mile portion of Route 8

**Boring Location:** 75+27, 9.0 ft Rl.

**Win:** 12773.00

**Boring No.:** HB-BEL-109

**Drilling Contractor:** MaineDOT

**Elevation (ft.):** 383.3

**Auger ID/OD:** 5” Dia.

**Datum:** NAVD88

**Sampler:** Off Flights

**Operator:** E. Giguere

**Rig Type:** CME 45C

**Hammer Wt./Fall:** N/A

**Logged By:** G. Lidstone

**Date Start/Finish:** 8/2/06-8/2/06

**Boring Method:** Solid Stem Auger

**Core Barrel:** N/A

**Definitions:**
- D = Spilt Spoon Sample
- MU = Unsuccessful Thin Wall Tube Sample Attempt
- S = Sample off Auger Flights
- R = Rock Core Sample
- SSA = Solid Stem Auger
- MD = Unsuccessful Split Spoon Sample Attempt
- HSA = Hollow Stem Auger
- U = Thin Wall Tube Sample
- RC = Roller Cone
- MV = Unsuccessful Field Vane Shear Test Attempt
- WOK = Weight of 140lb. Hammer
- V = Field Vane Shear Test
- PP = Pocket Penetrometer
- WROC = Weight of Rods or Casing

**Visual Description and Remarks**

- **Sample No.**
- **Pen./Rec. (in.):**
- **Sample Depth (ft.):**
- **Blows (/6 in.):**
- **Shear Strength (psf) or RQD (%):**
- **N-value:**
- **Casing Blows:**
- **Elevation (ft.):**
- **Graphic Log:**
- **Sample Information**

**Dark brown, damp, fine to coarse SAND, some gravel, little silt, (Fill). Cobble from 1.1-1.6 ft bgs.**

**9” HMA**

**Brown, damp, Silty fine to coarse SAND, trace gravel.**

**Bottom of Exploration at 5.0 feet below ground surface. NO REFUSAL**

**Remarks:**

- Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
- Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.
### Soil/Rock Exploration Log

**Project:** A 3.02 mile portion of Route 8  
**Location:** Belgrade, Maine  
**Boring No.:** HB-BEL-110  
**WIN:** 12773.00

**Drilling Contractor:** MaineDOT  
**Elevation (ft.):** 391.4  
**Auger ID/OD:** 5" Dia.  
**Operator:** E. Giguere  
**Datum:** NAVD88  
**Logged By:** G. Lidstone  
**Rig Type:** CME 45C  
**Date Start/Finish:** 8/206-8/206  
**Drilling Method:** Solid Stem Auger  
**Core Barrel:** N/A  
**Boring Location:** 79+00, 8.7 ft Rt.  
**Casing ID/OD:** N/A  
**Water Level:** None Observed

**Definitions:**
- D = Split Spoon Sample
- S = Sample off Auger Flights
- R = Rock Core Sample
- SSA = Solid Stem Auger
- HSA = Hollow Stem Auger
- RC = Roller Cone
- MV = Unsuccessful Field Vane Shear Test Attempt
- WOH = Weight of 140 lb, Hammer
- PP = Pocket Penetrometer
- N-value = Raw Field SPT N-value
- T<sub>v</sub> = Pocket Vane Shear Strength (psf)
- WC = Water Content, percent
- G = Grain Size Analysis
- C = Consolidation Test

**Visual Description and Remarks**
- **Depth (ft.):** 0  
  **Sample No.:** SSA  
  **Pen./Rec. (in.):** 390.6  
  **Sample Depth (ft.):** 389.7
  - Dark brown, damp, Gravelly SAND, trace silt, (Fill).
  - Brown, dry, SILT, some fine to medium sand, trace gravel, (Till).
  - Occasional cobbles

**Remarks:**
- Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
- Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

**Page 1 of 1**
**Maine Department of Transportation**

**Soil/Rock Exploration Log**

**US CUSTOMARY UNITS**

**Project:** A 3.02 mile portion of Route 8

**Location:** Belgrade, Maine

**Boring No.:** HB-BEL-111

**WIN:** 12773.00

---

**Drilling Contractor:** MaineDOT

**Elevation (ft.)** 389.3

**Auger ID/OD:** 5” Dia.

**Operator:** E. Giguere

**Datum:** NAVD88

**Sampler:** Off Flights

**Logged By:** G. Lidstone

**Rig Type:** CME 45C

**Drilling Method:** Solid Stem Auger

**Core Barrel:** N/A

**Date Start/Finish:** 8/2/06-8/2/06

**Boring Location:** 87+50, 5.0 ft Rt.

**Casing ID/OD:** N/A

**Drilling Method:** Solid Stem Auger

---

**Definitions:**

- D = Spilt Spoon Sample
- R = Rock Core Sample
- SSA = Solid Stem Auger
- HSA = Hollow Stem Auger
- RC = Roller Cone
- SSA = Solid Stem Auger
- WDN = Weight of Displacement
- MU = Unsuccessful Thin Wall Tube Sample Attempt
- SSA = Solid Stem Auger
- WDFT = Weight of 1 Person
- SS = Sample off Auger Flights
- SSA = Solid Stem Auger
- RC = Roller Cone
- U = Thin Wall Tube Sample
- SSA = Solid Stem Auger
- RC = Roller Cone
- MV = Unsuccessful Field Vane Shear Test Attempt
- SSA = Solid Stem Auger
- V = Field Vane Shear Test
- SSA = Solid Stem Auger
- P = Pocket Penetrometer

**Laboratory Testing Results/ AASHTO and Unified Class.**

**Remarks:** Stratification lines represent approximate boundaries between soil types; transitions may be gradual. Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

**Bottom of Exploration at 5.0 feet below ground surface. NO REFUSAL.**
### Soil/Rock Exploration Log

**Location:** Belgrade, Maine  
**Project:** A 3.02 mile portion of Route 8  
**Boring No.:** HB-BEL-112

<table>
<thead>
<tr>
<th>Elevation (ft)</th>
<th>390.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Datum:</td>
<td>NAVD88</td>
</tr>
<tr>
<td>Rig Type:</td>
<td>CME 45C</td>
</tr>
<tr>
<td>Drilling Method:</td>
<td>Solid Stem Auger</td>
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<tr>
<td>Rig Type:</td>
<td>CME 45C</td>
</tr>
<tr>
<td>Hammer Wt./Fall:</td>
<td>N/A</td>
</tr>
<tr>
<td>Water Level:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Sample Information**

- **Depth (ft):** 0
- **Sample No.:** SSA
- **Pen./Rec. (in.):** 7.8” HMA
- **Sample Depth:** 390.1
- **Blows (/6 in.):**
  - SSA: 390.1
- **Shear Strength:**
  - SSA: 7.8” HMA
- **N-value:**
  - SSA: 0.7
- **Casing Blows:**
  - SSA: 0.7

**Visual Description and Remarks**

- **Bottom of Exploration at 3.5 feet below ground surface.**

**Remarks:**

- Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
- Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

**Definitions:**

- **B =** Split Spoon Sample
- **S =** Sample off Auger Flights
- **R =** Rock Core Sample
- **RC =** Roller Cone
- **MV =** Unsuccessful Field Vane Test Attempt
- **VC =** Weight of Rods or Casing
- **SU =** Lab Vane Undrained Shear Strength (psf)
- **SL =** Lab Vane Undrained Shear Strength (psf)
- **BP =** Pocket Penetrometer
- **SPT =** Standard Penetration Test
- **WC =** Water Content, percent
- **G =** Grain Size Analysis
- **C =** Consolodation Test
- **D =** Spilt Spoon Sample
- **MU =** Unsuccessful Thin Wall Tube Sample Attempt
- **WO1P =** Weight of 1 Person
- **WOR/C =** Weight of Rods or Casing
- **WC =** Water Content, percent
- **NATURAL =** Similar or Equal to
- **LL =** Liquid Limit
- **PL =** Plastic Limit
- **PI =** Plastic Index
- **SU =** Undrained Shear Strength
- **N-value =** Raw Field SPT N-value
- **G =** Grain Size Analysis
- **C =** Consolodation Test

**Table:**

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Sample No.</th>
<th>Pen./Rec. (in.)</th>
<th>Sample Depth</th>
<th>Blows (/6 in.)</th>
<th>Shear Strength</th>
<th>N-value</th>
<th>Casing Blows</th>
<th>Elevation (ft.)</th>
<th>Graphic Log</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SSA</td>
<td>7.8” HMA</td>
<td>390.1</td>
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</tr>
<tr>
<td>388.3</td>
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</table>

*Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.*

**Remarks:**

- Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
- Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

**Maine Department of Transportation**  
**Soil/Rock Exploration Log**  
**US CUSTOMARY UNITS**  

**Project:** A 3.02 mile portion of Route 8  
**Location:** Belgrade, Maine  
**Boring No.:** HB-BEL-113  
**WIN:** 12773.00

**Drilling Contractor:** MaineDOT  
**Operator:** E. Giguere  
**Datum:** NAVD88  
**Logged By:** G. Lidstone  
**Date Start/Finish:** 8/2/06-8/2/06  
**Drilling Method:** Solid Stem Auger  
**Core Barrel:** N/A  
**Boring Location:** 100+00, 7.5 ft Rt.  
**Casing ID/OD:** N/A  
**Elevation (ft):** 384.2  
**Auger ID/OD:** 5” Dia.  
**Rig Type:** CME 45C  
**Hammer Wt./Fall:** N/A  
**Casing Blows:** N/A  
**Visual Description and Remarks**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Sample No.</th>
<th>Pen./Rec. (in.)</th>
<th>Sample Depth (ft)</th>
<th>Blows (/6 in.)</th>
<th>Shear Strength (psf)</th>
<th>or RQD (%)</th>
<th>N-value</th>
<th>Casing Blows</th>
<th>Elevation (ft)</th>
<th>Graphic Log</th>
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</table>

**Remarks:**

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

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---

**Definitions:**
- $D =$ Split Spoon Sample
- $S =$ Sample off Auger Flights
- $R =$ Rock Core Sample
- $SSA =$ Solid Stem Auger
- $HSA =$ Hollow Stem Auger
- $RC =$ Roller Cone
- $WOTP =$ Weight of Thin Wall Tube Sample Attempt
- $WOC =$ Weight of Rod or Casing
- $LL =$ Liquid Limit
- $PL =$ Plastic Limit
- $G =$ Grain Size Analysis
- $WP =$ Pocket Penetrometer
- $S =$ Sample off 8.4” HMA
- $G =$ Graphite
- $WC =$ Water Content, percent $+= Similar or Equal too
- $C =$ Consolidation Test

**Bottom of Exploration at 5.0 feet below ground surface. NO REFUSAL**

---

**Page 1 of 1**  
**Boring No.: HB-BEL-113**
**Maine Department of Transportation**

**Soil/Rock Exploration Log**

**US CUSTOMARY UNITS**

**Project:** A 3.02 mile portion of Route 8  
**Location:** Belgrade, Maine  
**Boring No.:** HB-BEL-114  
**WIN:** 12773.00

**Drilling Contractor:** MaineDOT  
**Elevation (ft.):** 372.2  
**Auger ID/OD:** 5” Dia.

**Operator:** E. Giguere  
**Datum:** NAVD88  
**Sampler:** Off Flights

**Logged By:** G. Lidstone  
**Rig Type:** CME 45C  
**Hammer Wt./Fall:** N/A

**Date Start/Finish:** 8/206-8/206  
**Drilling Method:** Solid Stem Auger  
**Core Barrel:** N/A

**Boring Location:** 110+00, 5.5 ft Rt.  
**Casing ID/OD:** N/A  
**Water Level:** None Observed

---

### Sample Information

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Sample No.</th>
<th>Pen./Rec. (in.)</th>
<th>Sample Depth (ft.)</th>
<th>Blows (/6 in.)</th>
<th>Shear Strength (psf)</th>
<th>RQD (%)</th>
<th>N-value</th>
<th>Casing Depth (ft.)</th>
<th>Elevation (ft.)</th>
<th>Graphic Log</th>
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<tr>
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<td>8.4</td>
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<td>HMA</td>
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<td></td>
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<td>0.8</td>
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<tr>
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<td>HMA</td>
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<td>370.5</td>
<td>1.7</td>
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</tr>
<tr>
<td>8.4</td>
<td>HMA</td>
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<td>369.7</td>
<td>2.5</td>
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<td>5.0</td>
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<td></td>
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</tbody>
</table>

**Remarks:**

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Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Bottom of Exploration at 5.0 feet below ground surface.

NO REFUSAL

---

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### Maine Department of Transportation

**Soil/Rock Exploration Log**

**US CUSTOMARY UNITS**

**Project:** A 3.02 mile portion of Route 8

**Location:** Belgrade, Maine

**Boring No.:** HB-BEL-115

**WIN:** 12773.00

---

**Drilling Contractor:** MaineDOT  
**Operator:** E. Giguere  
**Logged By:** G. Lidstone  
**Date Start/Finish:** 8/206-8/206  
**Drilling Method:** Solid Stem Auger

---

**Elevation (ft.):** 355.1  
**Auger ID/OD:** 5” Dia.

---

**Datum:** NAVD88  
**Sampler:** Off Flights  
**Rig Type:** CME 45C  
**Hammer Wt./Fall:** N/A  
**Core Barrel:** N/A

---

**Boring Location:** 117+50, 7.5 ft Rt.  
**Casing ID/OD:** N/A  
**Water Level:** 3.6 ft bgs.

---

**Definitions:**
- D = Split Spoon Sample
- R = Rock Core Sample
- SSA = Solid Stem Auger
- HSA = Hollow Stem Auger
- RC = Roller Cone
- MV = Unsuccessful Field Vane Shear Test Attempt
- WOH = Weight of 140 lb. Hammer
- Y = Field Vane Shear Test, PP = Pocket Penetrometer
- WOR/C = Weight of Rods or Casing

---

**Visual Description and Remarks**

**Sample Information**

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Sample No.</th>
<th>Pen./Rec. (in.)</th>
<th>Sample Depth (ft.)</th>
<th>Blows (/6 in.)</th>
<th>Shear Strength (psf) or RQD (%)</th>
<th>N-value</th>
<th>Casing Blows</th>
<th>Elevation (ft.)</th>
<th>Graphic Log</th>
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<tr>
<td>0</td>
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<td></td>
<td></td>
<td>353.9</td>
<td>7.2&quot; HMA</td>
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<tr>
<td>3.6 - 4.2</td>
<td>351.5</td>
<td>350.9</td>
<td></td>
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<td>Dark brown, wet, fine to coarse SAND, some gravel, trace silt.</td>
<td>3.6</td>
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<tr>
<td></td>
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<td>Brown, moist, Silty SAND, trace gravel.</td>
<td>1.2</td>
<td></td>
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</tbody>
</table>

**Remarks:**

Bottom of Exploration at 5.0 feet below ground surface. NO REFUSAL.

---

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---

Page 1 of 1
Maine DOT

Elevation (ft.): 352.1

Date Start/Finish: 8/2/06-8/2/06

Boring Location: 125+00, 5.5 ft Rt.

Definitions:
S = Sample off Auger Flights
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOC = Weight of 140lb. Hammer
WOR/C = Weight of Rods or Casing

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

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Remarks:

NO REFUSAL
**Maine Department of Transportation**

**Soil/Rock Exploration Log**

**US CUSTOMARY UNITS**

**Project:** A 3.02 mile portion of Route 8  
**Location:** Belgrade, Maine  
**Boring No.:** HB-BEL-117

**Drilling Contractor:** MaineDOT  
**Elevation (ft.):** 374.1  
**Auger ID/OD:** 5” Dia.

**Operator:** E. Giguere  
**Datum:** NAVD88  
**Sampler:** Off Flights

**Logged By:** G. Lidstone  
**Rig Type:** CME 45C  
**Hammer Wt./Fall:** N/A

**Date Start/Finish:** 8/3/06-8/3/06  
**Drilling Method:** Solid Stem Auger  
**Core Barrel:** N/A

**Boring Location:** 135+00, 8.0 ft Rt.  
**Casing ID/OD:** N/A  
**Water Level:** None Observed

**Drilling Contractor:** MaineDOT  
**Datum:** NAVD88  
**Sampler:** Off Flights

**Date Start/Finish:** 8/3/06-8/3/06  
**Drilling Method:** Solid Stem Auger  
**Core Barrel:** N/A

**Boring Location:** 135+00, 8.0 ft Rt.  
**Casing ID/OD:** N/A  
**Water Level:** None Observed

<table>
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<th>Depth (ft.)</th>
<th>Sample No.</th>
<th>Pen./Rec. (in.)</th>
<th>Sample</th>
<th>Sample Depth</th>
<th>Blows (/6 in.)</th>
<th>Shear Strength (psf)</th>
<th>or RQD (%)</th>
<th>N-value</th>
<th>Casings Blows Elevation Graphic Log</th>
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<td>371.8</td>
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<td>369.1</td>
<td>Bottom of Exploration at 5.0 feet below ground surface. NO REFUSAL</td>
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</table>

**Definitions:**
- D = Split Spoon Sample
- S = Sample off Auger Flights
- R = Rock Core Sample
- SSD = Solid Stem Auger
- HSS = Hollow Stem Auger
- RC = Roller Cone
- MV = unsuccessful field vane shear test attempt
- WOH = weight of 140 lb. hammer
- PP = pocket penetrometer
- WOC = Weight of Rods or Casing
- WC = Water Content, percent ~ = Similar or Equal too
- C = Consolidation Test
- M = Unsuccessful Thin Wall Tube Sample Attempt
- SSA = Solid Stem Auger
- HSA = Hollow Stem Auger
- WOF = Weight of 1 Person
- WPT = Weight Remolded Field Vane Undrained Shear Strength (psf)
- SI = Lab Vane Undrained Shear Strength (psf)
- SC = Lab Vane Compressive Strength (psf)
- SI = Unconfined Compressive Strength (psf)
- PI = Plastic Limit
- LL = Liquid Limit
- G = Grain Size Analysis
- C = Consolidation Test
- N = N-value

**Remarks:**

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.`
<table>
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<tr>
<th>Depth (ft.)</th>
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<th>Pen./Rec. (in.)</th>
<th>Sample Depth</th>
<th>Blows (/6 in.)</th>
<th>Shear Strength (psf)</th>
<th>N-value</th>
<th>Casing Blows</th>
<th>Elevation (ft.)</th>
<th>Graphic Log</th>
<th>Visual Description and Remarks</th>
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</table>
| 0          |             |                |               |               | SSA 388.0          |         |             |                |             | 6.6" HMA
| 0          |             |                |               |               | Unbound Pavement    |         |             |                |             | 0.6
| 0          |             |                |               |               | GRAVEL              |         |             |                |             | 0.8
| 0          |             |                |               |               | Brown, damp, fine to coarse SAND, some silt, trace gravel |         |             |                |             | 1.0
| 0          |             |                |               |               | Augered into Rock   |         |             |                |             | 1.7
| 0          |             |                |               |               | Bottom of Exploration at 2.1 feet below ground surface |         |             |                |             | 2.1

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**Maine Department of Transportation**

**Soil/Rock Exploration Log**

**US CUSTOMARY UNITS**

**MaineDOT**

**Location:** Belgrade, Maine

**Project:** A 3.02 mile portion of Route 8

**Boring No.:** HB-BEL-118

**Datum:** NAVD88

**Operator:** E. Giguere

**Logged By:** G. Lidstone

**Date Start/Finish:** 8/3/06-8/3/06

**Drilling Method:** Solid Stem Auger

**Auger ID/OD:** 5" Dia.

**Hammer Wt./Fall:** N/A

**Casing ID/OD:** N/A

**Rig Type:** CME 45C

**Elevation (ft.)**

**WOF/P:** Weight of 1 Person

**S:** Sample off Auger Flights

**R:** Rock Core Sample

**MU:** Unsuccessful Thin Wall Tube Sample Attempt

**RC:** Roller Cone

**HSA:** Hollow Stem Auger

**SSA:** Solid Stem Auger

**SDD:** Split Spoon Sample

**RC:** Roller Cone

**WON:** Weight of 140 lb. Hammer

**WOC:** Weight of Rod or Casing

**Tt:** Pockt Vane Shear Strength (psf)

**G:** Grain Size Analysis

**PL:** Plastic Limit

**LL:** Liquid Limit

**N:** N-value

**N-value:** Raw Field SPT N-value

**C:** Consolidation Test

**WC:** Water Content, percent, or Similar or Equal too

**Remarks:**

**Maine Department of Transportation**

**Project:** A 3.02 mile portion of Route 8

**Location:** Belgrade, Maine

**Boring No.:** HB-BEL-118

**Datum:** NAVD88

**Operator:** E. Giguere

**Logged By:** G. Lidstone

**Date Start/Finish:** 8/3/06-8/3/06

**Drilling Method:** Solid Stem Auger

**Auger ID/OD:** 5" Dia.

**Hammer Wt./Fall:** N/A

**Casing ID/OD:** N/A

**Rig Type:** CME 45C

**Elevation (ft.)**

**WOF/P:** Weight of 1 Person

**S:** Sample off Auger Flights

**R:** Rock Core Sample

**MU:** Unsuccessful Thin Wall Tube Sample Attempt

**RC:** Roller Cone

**HSA:** Hollow Stem Auger

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**Maine Department of Transportation**

**Soil/Rock Exploration Log**

**US CUSTOMARY UNITS**

**Project:** A 3.02 mile portion of Route 8  
**Location:** Belgrade, Maine  
**Boring No.:** HB-BEL-119

**Drilling Contractor:** MaineDOT  
**Elevation (ft.):** 374.1  
**Auger ID/OD:** 5” Dia.

**Operator:** E. Giguere  
**Datum:** NAVD88  
**Sampler:** Off Flights

**Logged By:** G. Lidstone  
**Rig Type:** CME 45C  
**Hammer Wt./Fall:** N/A

**Date Start/Finish:** 8/306-8/306  
**Drilling Method:** Solid Stem Auger  
**Core Barrel:** N/A

**Boring Location:** 150+00, 8.5 ft Rt.  
**Casing ID/OD:** N/A  
**Water Level:** None Observed

**Definitions:**
- D = Split Spoon Sample  
- R = Rock Core Sample  
- SSA = Solid Stem Auger  
- S = Sample off Auger Flights  
- MD = Unsuccessful Split Spoon Sample Attempt  
- RC = Roller Cone  
- MV = Unsuccessful Field Vane Shear Test Attempt  
- W = Unsuccessful Thin Wall Tube Sample Attempt  
- HSA = Hollow Stem Auger  
- U = Thin Wall Tube Sample  
- WOH = Weight of 140lb. Hammer  
- V = Field Vane Shear Test  
- PP = Pocket Penetrometer  
- N-value = Raw Field SPT N-value  
- WC = Water Content, percent  
- Pl = Plastic Limit  
- G = Grain Size Analysis  
- PP = Pocket Penetrometer  
- T = Pocket Vane Shear Strength (psf)  
- N = Number of Rods or Casing  
- LL = Liquid Limit  
- WC = Water Content, percent  
- C = Consolidation Test  
- W = Weight of Rods or Casing  
- N-value = Raw Field SPT N-value  

**Remarks:**

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<th>Elevation (ft.)</th>
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<th>Visual Description and Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
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<td>351.2</td>
<td>SSA</td>
<td>Dark brown, damp, Gravelly SAND, trace silt, (Fill).</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>350.4</td>
<td></td>
<td>Brown, moist, fine to coarse SAND, some silt, trace gracel.</td>
<td>1.5</td>
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<tr>
<td>10</td>
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<td>347.7</td>
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<td>Cobble from 3.0-3.5 ft bgs.</td>
<td>1.2</td>
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<tr>
<td>15</td>
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<td>346.8</td>
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**Remarks:**

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.
**Maine Department of Transportation**  
**Soil/Rock Exploration Log**  
**US CUSTOMARY UNITS**

**Project:** A 3.02 mile portion of Route 8  
**Location:** Belgrade, Maine  
**Boring No.:** HB-BEL-121  
**WIN:** 12773.00

**Drilling Contractor:** MaineDOT  
**Elevation (ft.):** 401.4  
**Auger ID/OD:** 5" Dia.

**Operator:** E. Giguere  
**Datum:** NAVD88  
**Sampler:** Off Flights

**Logged By:** G. Lidstone  
**Rig Type:** CME 45C  
**Hammer Wt./Fall:** N/A

**Date Start/Finish:** 8/3/06-8/3/06  
**Drilling Method:** Solid Stem Auger  
**Core Barrel:** N/A

**Boring Location:** 165+00, 7.0 ft Rt.  
**Casing ID/OD:** N/A  
**Water Level:** None Observed

---

**Definitions:**  
- D = Split Spoon Sample  
- S = Sample off Auger Flights  
- R = Rock Core Sample  
- SSA = Solid Stem Auger  
- M = Split Spoon Sample Attempt  
- RC = Roller Cone  
- MV = Unsuccessful Field Vane Shear Test Attempt  
- HSA = Hollow Stem Auger  
- UW = Unsuccessful Thin Wall Tube Sample Attempt  
- WC = Water Content, percent  
- V = Field Vane Shear Test  
- PP = Pocket Penetrometer  
- N = Number of Blow  
- JL = Liquid Limit  
- U = Thin Wall Tube Sample  
- UC = Unconfined Compressive Strength (psf)  
- W = Weight of Rods or Casing  
- WOF = Weight of 1 Person  
- WOC = Weight of Rods and Casing  
- G = Grain Size Analysis  
- P = Plastic Limit  
- N-value = Raw Field SPT N-value  
- VR = Pocket Vane Shear Strength (psf)  
- C = Consolidation Test  
- P = Pocket Penetrometer  
- LL = Liquid Limit  
- G = Grain Size Analysis

**Remarks:**

- Stratification lines represent approximate boundaries between soil types; transitions may be gradual.  
- Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

---

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**Visual Description and Remarks**

- 9.6" HMA Unbound Pavement.
- 1.0 GRAVEL.
- 1.3 Brown, moist, fine to coarse SAND, some silt, trace gravel.
- 3.2 Weathered Rock

**Bottom of Exploration at 5.0 feet below ground surface.**

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<th>Weathered Rock (Feet)</th>
<th>Refusal (Feet)</th>
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## Towns: Belgrade

**Project Number:** 12773.00

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<tr>
<td>147+71</td>
<td>9.5 Lt.</td>
<td>5.0</td>
<td>375.5</td>
<td>Water at 1.3' bgs.</td>
<td>5.0</td>
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</tr>
<tr>
<td>164+00</td>
<td>6.5 Rt.</td>
<td>5.0</td>
<td>389.5</td>
<td></td>
<td>395.1</td>
<td></td>
</tr>
<tr>
<td>164+50</td>
<td>7.0 Rt.</td>
<td>3.0</td>
<td>395.1</td>
<td></td>
<td>399.7</td>
<td></td>
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<tr>
<td>165+50</td>
<td>6.5 Rt.</td>
<td>5.0</td>
<td>399.7</td>
<td></td>
<td>5' Solid Stem Auger</td>
<td></td>
</tr>
</tbody>
</table>

Logged By: G. Lidstone

Drill Rig: CME 45C
Appendix B

Laboratory Test Results
<table>
<thead>
<tr>
<th>Boring &amp; Sample Identification Number</th>
<th>Station (Feet)</th>
<th>Offset (Feet)</th>
<th>Depth (Feet)</th>
<th>Reference Number</th>
<th>G.S.D.C. Sheet</th>
<th>W.C.</th>
<th>% Passing 200 Sieve</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>HB-BEL-101, S1</td>
<td>17+58</td>
<td>7.5 Rt.</td>
<td>0.55-2.5</td>
<td>207009</td>
<td>1</td>
<td>3.9</td>
<td>22.7</td>
<td>SM A-2-4 II</td>
</tr>
<tr>
<td>HB-BEL-101, S2</td>
<td>17+58</td>
<td>7.5 Rt.</td>
<td>2.5-5.0</td>
<td>207010</td>
<td>1</td>
<td>12.4</td>
<td>23.1</td>
<td>SM A-2-4 II</td>
</tr>
<tr>
<td>HB-BEL-103, S3</td>
<td>28+00</td>
<td>7.5 Rt.</td>
<td>1.5-2.7</td>
<td>207011</td>
<td>1</td>
<td>19.2</td>
<td>68.3</td>
<td>CL-ML A-4 IV</td>
</tr>
<tr>
<td>HB-BEL-103, S4</td>
<td>28+00</td>
<td>7.5 Rt.</td>
<td>2.7-5.0</td>
<td>207012</td>
<td>1</td>
<td>9.6</td>
<td>50.2</td>
<td>ML A-4 IV</td>
</tr>
<tr>
<td>HB-BEL-104, S5</td>
<td>35+00</td>
<td>8.3 Rt.</td>
<td>1.6-5.0</td>
<td>207013</td>
<td>1</td>
<td>13.5</td>
<td>34.6</td>
<td>SM A-2-4 II</td>
</tr>
<tr>
<td>HB-BEL-105, S6</td>
<td>47+50</td>
<td>8.0 Rt.</td>
<td>1.2-5.0</td>
<td>207014</td>
<td>1</td>
<td>7.6</td>
<td>78.1</td>
<td>ML A-4 IV</td>
</tr>
<tr>
<td>HB-BEL-106, S7</td>
<td>55+00</td>
<td>7.5 Rt.</td>
<td>0.80-1.3</td>
<td>207015</td>
<td>2</td>
<td>3.0</td>
<td>3.0</td>
<td>SW A-1-b 0</td>
</tr>
<tr>
<td>HB-BEL-106, S8</td>
<td>55+00</td>
<td>7.5 Rt.</td>
<td>1.3-3.3</td>
<td>207016</td>
<td>2</td>
<td>35.3</td>
<td>56.1</td>
<td>ML A-4 IV</td>
</tr>
<tr>
<td>HB-BEL-107, S9</td>
<td>62+87</td>
<td>8.5 Rt.</td>
<td>0.90-1.7</td>
<td>207017</td>
<td>2</td>
<td>1.5</td>
<td>4.6</td>
<td>SW A-1-b 0</td>
</tr>
<tr>
<td>HB-BEL-109, S10</td>
<td>75+27</td>
<td>9.0 Rt.</td>
<td>0.75-1.1</td>
<td>207018</td>
<td>2</td>
<td>3.3</td>
<td>18.4</td>
<td>SM A-1-b II</td>
</tr>
<tr>
<td>HB-BEL-109, S11</td>
<td>75+27</td>
<td>9.0 Rt.</td>
<td>2.1-3.2</td>
<td>207019</td>
<td>2</td>
<td>13.4</td>
<td>45.9</td>
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</tr>
<tr>
<td>HB-BEL-111, S12</td>
<td>87+50</td>
<td>5.0 Rt.</td>
<td>2.6-5.0</td>
<td>207020</td>
<td>2</td>
<td>13.4</td>
<td>53.8</td>
<td>ML A-4 IV</td>
</tr>
<tr>
<td>HB-BEL-113, S13</td>
<td>100+00</td>
<td>7.5 Rt.</td>
<td>1.3-3.7</td>
<td>207021</td>
<td>3</td>
<td>11.8</td>
<td>46.6</td>
<td>SM A-4 III</td>
</tr>
<tr>
<td>HB-BEL-115, S14</td>
<td>117+50</td>
<td>7.5 Rt.</td>
<td>3.6-4.2</td>
<td>207022</td>
<td>3</td>
<td>14.1</td>
<td>6.5</td>
<td>SW-SM A-1-b 0</td>
</tr>
<tr>
<td>HB-BEL-116, S15</td>
<td>125+00</td>
<td>5.5 Rt.</td>
<td>2.7-5.0</td>
<td>207023</td>
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<td>8.5</td>
<td>30.3</td>
<td>SM A-2-4 II</td>
</tr>
<tr>
<td>HB-BEL-117, S16</td>
<td>135+00</td>
<td>8.0 Rt.</td>
<td>2.3-5.0</td>
<td>207024</td>
<td>3</td>
<td>39.9</td>
<td>72.9</td>
<td>ML A-4 IV</td>
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</tbody>
</table>

Classification of these soil samples is in accordance with AASHTO Classification System M-145-40. This classification is followed by the "Frost Susceptibility Rating" from zero (non-frost susceptible) to Class IV (highly frost susceptible).

The "Frost Susceptibility Rating" is based upon the MDOT and Corps of Engineers Classification Systems.

**GSDC** = Grain Size Distribution Curve as determined by AASHTO T 88-93 (1996) and/or ASTM D 422-63 (Reapproved 1998)

**WC** = water content as determined by AASHTO T 265-93 and/or ASTM D 2216-98

**LL** = Liquid limit as determined by AASHTO 90-96 and/or ASTM D 4318-98

**PI** = Plasticity Index as determined by AASHTO 90-96 and/or ASTM D4318-98
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE

GRAVEL
SAND
SILT
CLAY

UNIFIED CLASSIFICATION

<table>
<thead>
<tr>
<th>Boring/Sample No.</th>
<th>Station</th>
<th>Offset, ft</th>
<th>Depth, ft</th>
<th>Description</th>
<th>W, %</th>
<th>LL</th>
<th>PL</th>
<th>PI</th>
</tr>
</thead>
<tbody>
<tr>
<td>HB-BEL-106/S7</td>
<td>55+00</td>
<td>7.5 RT</td>
<td>0.80-1.3</td>
<td>SAND, some gravel, trace silt.</td>
<td>3.0</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>HB-BEL-106/S8</td>
<td>55+00</td>
<td>7.5 RT</td>
<td>1.3-3.3</td>
<td>Sandy SILT, trace gravel.</td>
<td>35.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HB-BEL-107/S9</td>
<td>62+87</td>
<td>8.5 RT</td>
<td>0.90-1.7</td>
<td>Gravelly SAND, trace silt.</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HB-BEL-109/S10</td>
<td>75+27</td>
<td>9.0 RT</td>
<td>0.75-1.1</td>
<td>SAND, some gravel, little silt.</td>
<td>3.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HB-BEL-109/S11</td>
<td>75+27</td>
<td>9.0 RT</td>
<td>2.1-3.2</td>
<td>Silty SAND, trace gravel.</td>
<td>13.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HB-BEL-111/S12</td>
<td>87+50</td>
<td>5.0 RT</td>
<td>2.6-5.0</td>
<td>Sandy SILT with clay, trace gravel.</td>
<td>13.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WIN
012773.00
Belgrade
Town
Reported by/Date
WHITE, TERRY A 9/1/2006