

**MAINE DEPARTMENT OF TRANSPORTATION
HIGHWAY PROGRAM
GEOTECHNICAL SECTION
AUGUSTA, MAINE**

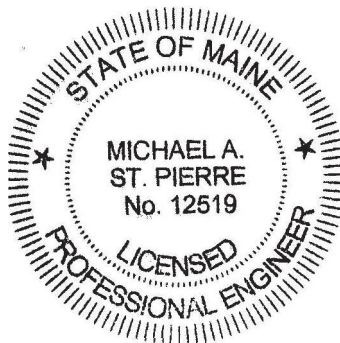
GEOTECHNICAL DATA REPORT

For the Rehabilitation of:

**SULLIMOND BROOK BRIDGE
OUELLETTE ROAD
CROSS LAKE TOWNSHIP, MAINE**

Prepared by:

Yueh-Ti Lee
Assistant Geotechnical Engineer



A handwritten signature in black ink, appearing to read "Michael St. Pierre".

Michael St. Pierre, P.E.
2026.04.01 11:47:18 -04'00'

Reviewed by:

Michael St Pierre, P.E.
Principal Geotechnical Engineer

Aroostook County
WIN 28270.00

March 27, 2026

Soils Report 2026-17
Bridge No. 6261

INTRODUCTION

The purpose of this Geotechnical Data Report is to document subsurface information collected for the proposed rehabilitation of Sullimond Brook Bridge (Bridge #6261). This report presents the results of a limited geotechnical investigation performed at the existing bridge. Bridge #6261 is located on Ouellette Road, approximately 0.91 of a mile north of Route 161, as shown on the attached Location Map. Ouellette Road is a Highway Corridor Priority 4 road. The existing structure consists of a 12-foot-diameter Corrugated Metal Pipe (CMP) culvert. The proposed replacement structure will match the existing bridge in type and dimensions.

SUBSURFACE INVESTIGATION

Subsurface conditions were explored by drilling one (1) boring (BB-CLDB-102) at the corner of the existing structure by the MaineDOT drill crew. The exploration is presented on the attached Boring Location Plan. The details and sampling methods used, field data obtained, soil conditions encountered, and exploration locations are presented on the attached Boring Log.

An NETTCP certified Subsurface Inspector logged the subsurface conditions encountered. The MaineDOT geotechnical engineer selected the boring location and drilling methods, designated type and depth of sampling techniques, reviewed boring log and identified field testing requirements. The boring was located in the field using taped measurements at the completion of the drilling program.

LABORATORY TESTING

A laboratory testing program was conducted on select soil samples obtained in the boring to assist in soil classification. Laboratory testing consisted of five (5) standard grain size analyses with natural water content and three (3) standard grain size analyses with hydrometer and natural water content. The results of the laboratory tests are summarized in the attached Laboratory Testing Summary Sheet and Grain Size Distribution Curves. Laboratory test results for the samples obtained in the boring are also summarized on the attached Boring Log.

CLOSURE

This Geotechnical Data Report has been prepared to document the geotechnical work conducted at Bridge #6261 on Ouellette Road in Cross Lake Township, 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 at the culvert. No interpretations or conclusions have been derived from this geotechnical information. Data provided may not be representative of the subsurface conditions between exploration locations.

Attachments:

Location Map
Boring Location Plan with Boring Log
Key to Soil and Rock Descriptions and Terms
Boring Log
Lab Testing Summary Sheet
Grain Size Distribution Curves



CROSS LAKE TOWNSHIP, MAINE



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.5
Miles
1 inch = 0.57 miles

Date: 2/18/2026
Time: 8:26:56 AM

<p>SHEET NUMBER</p> <p style="font-size: 2em; text-align: center;">1</p> <p>OF 2</p>	<p style="text-align: center;">CROSS LAKE TOWNSHIP</p> <p style="text-align: center;">OUELLETTE ROAD</p> <p style="text-align: center;">LOCATION MAP</p>	<p style="text-align: center;">STATE OF MAINE</p> <p style="text-align: center;">DEPARTMENT OF TRANSPORTATION</p> <hr/> <p style="text-align: center;">FEDERAL NO. 2827000</p> <hr/> <p style="text-align: center;">WIN</p> <p style="text-align: center;">28270.00</p> <p style="text-align: right;">HIGHWAY PLANS</p>
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UNIFIED SOIL CLASSIFICATION SYSTEM				MODIFIED BURMISTER SYSTEM																															
MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES																															
COARSE-GRAINED SOILS (more than half of material is larger than No. 200 sieve size)	GRAVELS (more than half of coarse fraction is larger than No. 4 sieve size)	CLEAN GRAVELS	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.			<u>Descriptive Term</u> trace little some adjective (e.g. Sandy, Clayey)																												
		(little or no fines)	GP	Poorly-graded gravels, gravel sand mixtures, little or no fines.																															
		GRAVEL WITH FINES (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures.																															
	SANDS (more than half of coarse fraction is smaller than No. 4 sieve size)	CLEAN SANDS	SW	Well-graded sands, Gravelly sands, little or no fines				<u>Portion of Total (%)</u> 0 - 10 11 - 20 21 - 35 36 - 50																											
		(little or no fines)	SP	Poorly-graded sands, Gravelly sand, little or no fines.																															
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures																															
FINE-GRAINED SOILS (more than half of material is smaller than No. 200 sieve size)	SILTS AND CLAYS (liquid limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, Silty or Clayey fine sands, or Clayey silts with slight plasticity.			TERMS DESCRIBING DENSITY/CONSISTENCY <u>Coarse-grained soils</u> (more than half of material is larger than No. 200 sieve): Includes (1) clean gravels; (2) Silty or Clayey gravels; and (3) Silty, Clayey or Gravelly sands. Density is rated according to standard penetration resistance (N-value). <u>Density of Cohesionless Soils</u> Very loose Loose Medium Dense Dense Very Dense <u>Standard Penetration Resistance N₆₀-Value (blows per foot)</u> 0 - 4 5 - 10 11 - 30 31 - 50 > 50 <u>Fine-grained soils</u> (more than half of material is smaller than No. 200 sieve): Includes (1) inorganic and organic silts and clays; (2) Gravelly, Sandy or Silty clays; and (3) Clayey silts. Consistency is rated according to undrained shear strength as indicated. <table border="1"> <thead> <tr> <th>Consistency of Cohesive soils</th> <th>SPT N₆₀-Value (blows per foot)</th> <th>Approximate Undrained Shear Strength (psf)</th> <th>Field Guidelines</th> </tr> </thead> <tbody> <tr> <td>Very Soft</td> <td>WOH, WOR, WOP, <2</td> <td>0 - 250</td> <td>Fist easily penetrates</td> </tr> <tr> <td>Soft</td> <td>2 - 4</td> <td>250 - 500</td> <td>Thumb easily penetrates</td> </tr> <tr> <td>Medium Stiff</td> <td>5 - 8</td> <td>500 - 1000</td> <td>Thumb penetrates with moderate effort</td> </tr> <tr> <td>Stiff</td> <td>9 - 15</td> <td>1000 - 2000</td> <td>Indented by thumb with great effort</td> </tr> <tr> <td>Very Stiff</td> <td>16 - 30</td> <td>2000 - 4000</td> <td>Indented by thumbnail</td> </tr> <tr> <td>Hard</td> <td>>30</td> <td>over 4000</td> <td>Indented by thumbnail with difficulty</td> </tr> </tbody> </table>	Consistency of Cohesive soils		SPT N ₆₀ -Value (blows per foot)	Approximate Undrained Shear Strength (psf)	Field Guidelines	Very Soft	WOH, WOR, WOP, <2	0 - 250	Fist easily penetrates	Soft	2 - 4	250 - 500	Thumb easily penetrates	Medium Stiff	5 - 8	500 - 1000	Thumb penetrates with moderate effort	Stiff	9 - 15	1000 - 2000	Indented by thumb with great effort	Very Stiff	16 - 30	2000 - 4000	Indented by thumbnail	Hard	>30	over 4000	Indented by thumbnail with difficulty
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CL	Inorganic clays of low to medium plasticity, Gravelly clays, Sandy clays, Silty clays, lean clays.																																		
OL	Organic silts and organic Silty clays of low plasticity.																																		
SILTS AND CLAYS (liquid limit greater than 50)	MH	Inorganic silts, micaceous or diatomaceous fine Sandy or Silty soils, elastic silts.																																	
	CH	Inorganic clays of high plasticity, fat clays.																																	
	OH	Organic clays of medium to high plasticity, organic silts.																																	
HIGHLY ORGANIC SOILS	Pt	Peat and other highly organic soils.																																	
Desired Soil Observations (in this order, if applicable): Color (Munsell color chart) Moisture (dry, damp, moist, wet) Density/Consistency (from above right hand side) Texture (fine, medium, coarse, etc.) Name (Sand, Silty Sand, Clay, etc., including portions - trace, little, etc.) Gradation (well-graded, poorly-graded, uniform, etc.) Plasticity (non-plastic, slightly plastic, moderately plastic, highly plastic) Structure (layering, fractures, cracks, etc.) Bonding (well, moderately, loosely, etc.,) Cementation (weak, moderate, or strong) Geologic Origin (till, marine clay, alluvium, etc.) Groundwater level				Rock Quality Designation (RQD): $RQD (\%) = \frac{\text{sum of the lengths of intact pieces of core}^* > 4 \text{ inches}}{\text{length of core advance}}$ *Minimum NQ rock core (1.88 in. OD of core) Rock Quality Based on RQD <table border="1"> <thead> <tr> <th>Rock Quality</th> <th>RQD (%)</th> </tr> </thead> <tbody> <tr> <td>Very Poor</td> <td>≤25</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>				Rock Quality	RQD (%)	Very Poor	≤25	Poor	26 - 50	Fair	51 - 75	Good	76 - 90	Excellent	91 - 100																
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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, etc.) Weathering (fresh, very slight, slight, moderate, mod. severe, severe, etc.) Geologic discontinuities/jointing: -dip (horiz - 0-5 deg., low angle - 5-35 deg., mod. dipping - 35-55 deg., steep - 55-85 deg., vertical - 85-90 deg.) -spacing (very close - <2 inch, close - 2-12 inch, mod. close - 1-3 feet, wide - 3-10 feet, very wide >10 feet) -tightness (tight, open, or healed) -infilling (grain size, color, etc.) Formation (Waterville, Ellsworth, Cape Elizabeth, etc.) RQD and correlation to rock quality (very poor, poor, etc.) ref: ASTM D6032 and FHWA NHI-16-072 GEC 5 - Geotechnical Site Characterization, Table 4-12 Recovery (inch/inch and percentage) Rock Core Rate (X.X ft - Y.Y ft (min:sec))				Sample Container Labeling Requirements: WIN Bridge Name / Town Boring Number Sample Number Sample Depth Blow Counts Sample Recovery Date Personnel Initials																															
Maine Department of Transportation Geotechnical Section Key to Soil and Rock Descriptions and Terms Field Identification Information																																			