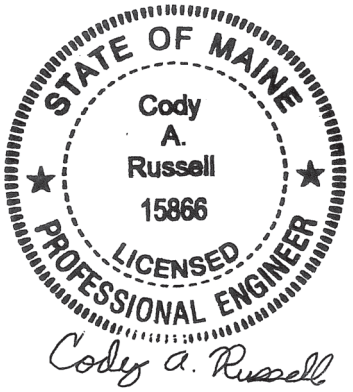
MAINE DEPARTMENT OF TRANSPORTATION
HIGHWAY PROGRAM
GEOTECHNICAL SECTION
AUGUSTA, MAINE

GEOTECHNICAL DATA REPORT

For the Rehabilitation of

LARGE CULVERT #46309
ROUTE 302
CASCO, MAINE

Prepared by:
Yueh-Ti Lee
Assistant Geotechnical Engineer



Reviewed by:
Cody Russell, P.E.
Senior Geotechnical Engineer

Cumberland County
WIN 24249.00

Soils Report 2025-24
December 30, 2025

INTRODUCTION

The purpose of this Geotechnical Data Report is to document subsurface information collected for the proposed rehabilitation of an approximately 72-inch diameter, 106-foot long corrugated metal pipe (CMP) culvert (Large Culvert #46309). This report presents the results of a limited geotechnical investigation performed at the existing culvert. Large Culvert #46309 is located on Route 302, approximately 0.10 of a mile north of Bramble Hill Road, as shown in the attached Location Map. Route 302 is a Highway Corridor Priority 1 road. The proposed rehabilitation consists of a 71-inch diameter, 106-foot long UV slipline.

SUBSURFACE INVESTIGATION

Subsurface conditions were explored by drilling one (1) boring (HB-CAS-101) and one (1) probe (HB-CAS-102) drilled at opposite, diagonal corners of the existing structure by the MaineDOT drill crew. Exploration locations are presented in the attached Boring Location Plan. The details and sampling methods used, field data obtained, soil conditions encountered, and exploration locations are presented in the attached Boring Logs.

An NETTCP certified Subsurface Inspector logged the subsurface conditions encountered. The MaineDOT geotechnical engineer selected the boring and probe locations and drilling methods, designated type and depth of sampling techniques, reviewed boring and probe logs and identified field testing requirements. The borings and probes were 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 borings to assist in soil classification. Laboratory testing consisted of three (3) standard grain size analyses with natural water content and two (2) 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 borings are also summarized on the attached Boring Logs.

CLOSURE

This Geotechnical Data Report has been prepared to document the geotechnical work conducted at Large Culvert #46309 on Route 302 in Casco, 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:

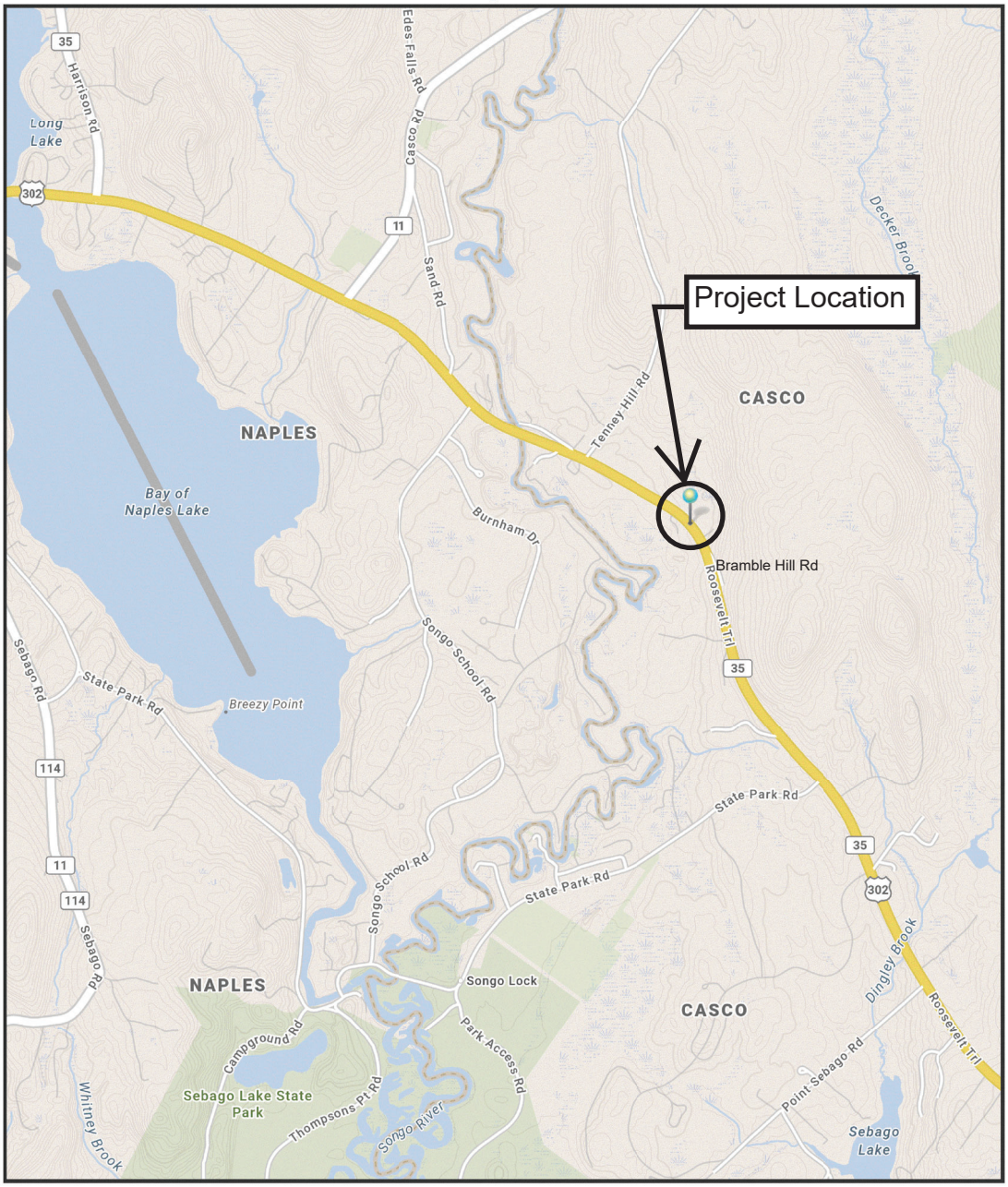
Location Map
Boring Location Plan with Boring Logs
Key to Soil and Rock Descriptions and Terms
Boring Logs
Lab Testing Summary Sheet
Grain Size Distribution Curves

Date:5/30/2025

Division: GEOTECH

Username: Terry.White

CASCO, MAINE



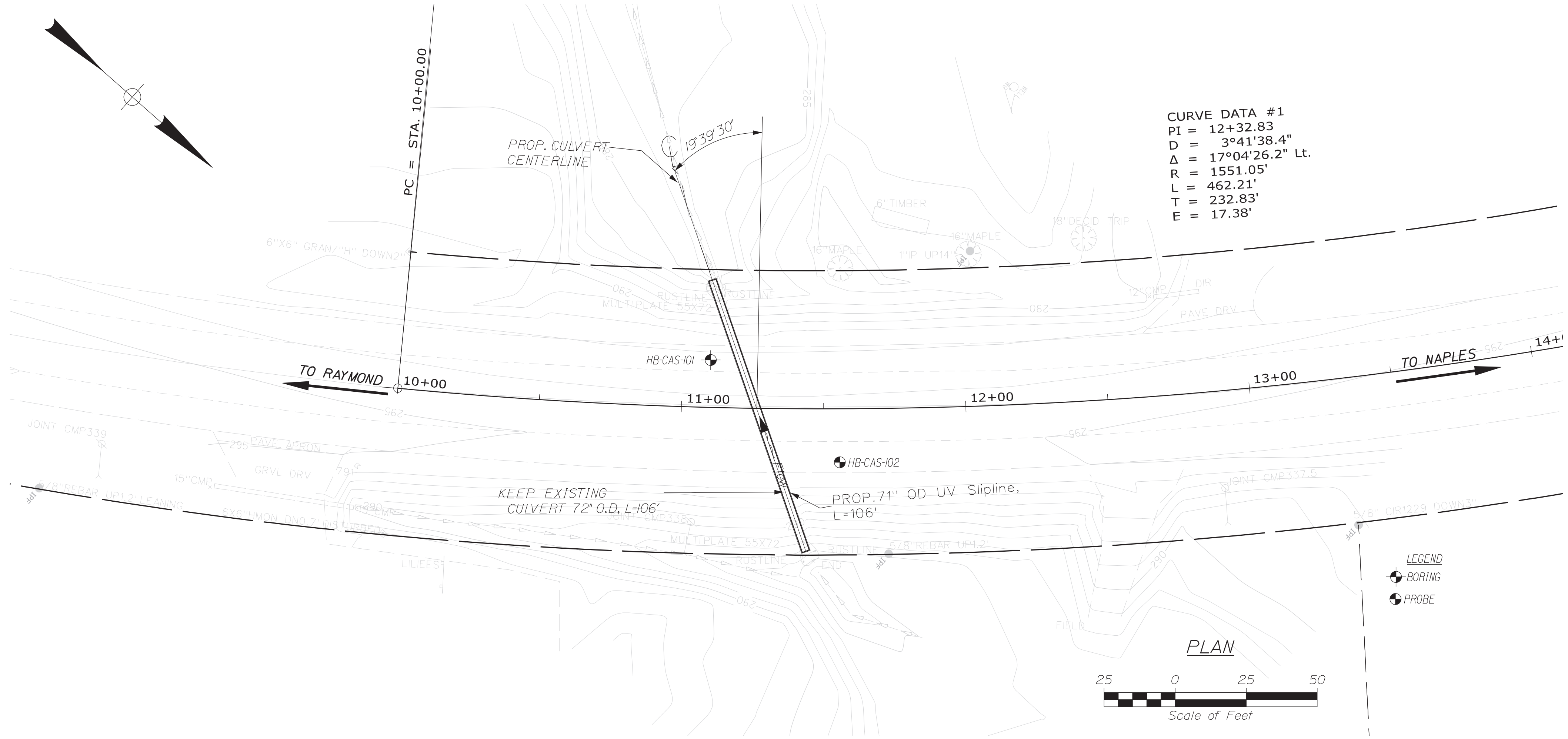
The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information.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

0.5 Miles

1 inch =0.57 miles

Date: 5/30/2025
Time: 7:59:24 AM

SHEET NUMBER 1 OF 2	CASCO ROUTE 302 LOCATION MAP	STATE OF MAINE DEPARTMENT OF TRANSPORTATION 2424900 WIN 24249.00 HIGHWAY PLANS



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

Project: Route 302 Large Culvert
Location: Casco, Maine
Boring No.: HB-CAS-101
WIN: 24249.00

Driller:	MaineDOT	Elevation (ft.)	293.2	Auger ID/OD:	5" Dia.
Operator:	Daggett	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	7/1/2020; 08:30-11:30	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	11+09.9, 16.6 ft Lt.	Casing ID/OD:	N/A	Water Level*:	11.0 ft bgs.
Hammer Efficiency Factor: 0.886		Hammer Type:	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample Attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample Attempt
V = Field Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Field Vane Shear Test Attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = Weight of 140lb. Hammer
WOR/C = Weight of Rods or Casing
WO1P = Weight of One Person
S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw Field SPT N-value
Hammer Efficiency Factor = Rig Specific Annual Calibration Value
N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
T_v = Pocket Torvane Shear Strength (psf)
WC = Water Content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0							SSA	292.7		6.5" HMA. 0.5	
	1D	24/14	1.00 - 3.00	9/12/10/6	22	32				Brown, damp, dense, fine to coarse SAND, little gravel, little silt, (Fill).	G#336986 A-1-b, SW-SM WC=3.9%
5	2D	24/18	5.00 - 7.00	5/12/13/7	25	37				Tan, damp, dense, fine to coarse SAND, some gravel, little silt, with old pavement, (Fill).	G#336987 A-1-b, SM WC=6.6%
								284.7		8.5	
10	3D	24/22	10.00 - 12.00	1/1/2/2	3	4				Grey, wet, very loose, Silty fine to medium SAND.	G#336988 A-4, SM WC=26.8%
15								278.2		15.0	
	4D	24/17	15.00 - 17.00	3/4/6/7	10	15				Grey, wet, stiff, SILT, little clay, trace fine to medium sand.	G#336989 A-4, CL WC=29.7%
20	5D	24/20	20.00 - 22.00	WOH/WOH/WOH/WOH	---					Grey, wet, very soft, SILT, little clay, little fine to medium sand.	G#336990 A-4, CL WC=49.0%
								271.2		22.0 Bottom of Exploration at 22.0 feet below ground surface. NO REFUSAL	
25											

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

Boring No.: HB-CAS-101

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

Project: Route 302 Large Culvert
Location: Casco, Maine
Boring No.: HB-CAS-102
WIN: 24249.00

Drilling Contractor:	MaineDOT	Elevation (ft.)	294.8	Auger ID/OD:	5" Dia.
Operator:	Daggett	Datum:	NAVD88	Sampler:	N/A
Logged By:	B. Wilder	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	7/1/2020; 11:30-12:00	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	11+55.6, 18.8 ft Rt.	Casing ID/OD:	N/A	Water Level*:	None Observed

Definitions: D = Split Spoon Sample
S = Sample off Auger Flights
B = Bucket Sample off Auger Flights
MD = Unsuccessful Split Spoon Sample Attempt
U = Thin Wall Tube Sample
MV = Unsuccessful Field Vane Shear Test Attempt
V = Field Vane Shear Test, PP= Pocket Penetrometer
MU = Unsuccessful Thin Wall Tube Sample Attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = Weight of 140lb. Hammer
WOR/C = Weight of Rods or Casing
WO1P = Weight of 1 Person
S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-value = Raw Field SPT N-value
T_v = Pocket Torvane Shear Strength (psf)
WC = Water Content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0						SSA			Probe, no material samples taken.	
5										
10										
15										
20							274.3		20.5 Bottom of Exploration at 20.5 feet below ground surface. NO REFUSAL	
25										

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

Boring No.: HB-CAS-102

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
2424900
HIGHWAY PLANS
WIN
24249.00

PROJ. MANAGER	LaRay Hamilton	BY	DATE
DESIGN-DETAILED	Y-T LEE	T.WHITE	MAY 2025
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE
P.E. NUMBER
DATE

CASCO
ROUTE 302

BORING LOCATION PLAN WITH BORING LOGS

SHEET NUMBER
2
OF 2

Filename: ...\GEOTECH\MSTA\002_BLP WBL1.dgn Division: GEOTECH Username: Yueh-Ti.Lee Date:1/6/2026

UNIFIED SOIL CLASSIFICATION 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 (little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, 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.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SANDS (more than half of coarse fraction is smaller than No. 4 sieve size)	CLEAN SANDS (little or no fines)	SW	Well-graded sands, Gravelly sands, 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
			SC	Clayey sands, sand-clay 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.
			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

Maine Department of Transportation
Geotechnical Section
Key to Soil and Rock Descriptions and Terms
Field Identification Information

MODIFIED BURMISTER SYSTEM

Descriptive Term	Portion of Total (%)
trace	0 - 10
little	11 - 20
some	21 - 35
adjective (e.g. Sandy, Clayey)	36 - 50

TERMS DESCRIBING DENSITY/CONSISTENCY

Coarse-grained soils (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).

Density of Cohesionless Soils	Standard Penetration Resistance N-Value (blows per foot)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

Fine-grained soils (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.

Consistency of Cohesive soils	SPT N-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

Rock Quality Designation (RQD):

$$\text{RQD (\%)} = \frac{\text{sum of the lengths of intact pieces of core* > 4 inches}}{\text{length of core advance}}$$

*Minimum NQ rock core (1.88 in. OD of core)

Rock Quality Based on RQD

Rock Quality	RQD (%)
Very Poor	≤25
Poor	26 - 50
Fair	51 - 75
Good	76 - 90
Excellent	91 - 100

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

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 302 Large Culvert

Location: Casco, Maine

Boring No.: HB-CAS-101

WIN: 24249.00

Driller:	MaineDOT	**Elevation (ft.)**	293.2	**Auger ID/OD:**	5" Dia.
Operator:	Daggett	**Datum:**	NAVD88	**Sampler:**	Standard Split Spoon
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	140#/30"
Date Start/Finish:	7/1/2020; 08:30-11:30	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	11+09.9, 16.6 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	11.0 ft bgs.
Hammer Efficiency Factor:	0.886	**Hammer Type:**	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample Attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample Attempt
V = Field Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Field Vane Shear Test Attempt
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = Weight of 140lb. Hammer
WOR/C = Weight of Rods or Casing
WO1P = Weight of One Person
S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw Field SPT N-value
Hammer Efficiency Factor = Rig Specific Annual Calibration Value
N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
T_v = Pocket Torvane Shear Strength (psf)
WC = Water Content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample Information: Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							SSA	292.7		6½" HMA.	
										0.5	
	1D	24/14	1.00 - 3.00	9/12/10/6	22	32				Brown, damp, dense, fine to coarse SAND, little gravel, little silt, (Fill).	G#336986 A-1-b, SW-SM WC=3.9%
5	2D	24/18	5.00 - 7.00	5/12/13/7	25	37				Tan, damp, dense, fine to coarse SAND, some gravel, little silt, with old pavement, (Fill).	G#336987 A-1-b, SM WC=6.6%
								284.7		8.5	
10	3D	24/22	10.00 - 12.00	1/1/2/2	3	4				Grey, wet, very loose, Silty fine to medium SAND.	G#336988 A-4, SM WC=26.8%
15	4D	24/17	15.00 - 17.00	3/4/6/7	10	15		278.2		15.0 Grey, wet, stiff, SILT, little clay, trace fine to medium sand.	G#336989 A-4, CL WC=29.7%
20	5D	24/20	20.00 - 22.00	WOH/WOH/WOH/ WOH	---					Grey, wet, very soft, SILT, little clay, little fine to medium sand.	G#336990 A-4, CL WC=49.0%
								271.2		22.0 **Bottom of Exploration at 22.0 feet below ground surface.** NO REFUSAL	
25											

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: Route 302 Large Culvert
Location: Casco, Maine

Boring No.: HB-CAS-102
WIN: 24249.00

Drilling Contractor:	MaineDOT	**Elevation (ft.)**	294.8	**Auger ID/OD:**	5" Dia.
Operator:	Daggett	**Datum:**	NAVD88	**Sampler:**	N/A
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	7/1/2020; 11:30-12:00	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	11+55.6, 18.8 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Spilt Spoon Sample; S = Sample off Auger Flights; B = Bucket Sample off Auger Flights; MD = Unsuccessful Split Spoon Sample Attempt; U = Thin Wall Tube Sample; MV = Unsuccessful Field Vane Shear Test Attempt; V = Field Vane Shear Test, PP= Pocket Penetrometer
MU = Unsuccessful Thin Wall Tube Sample Attempt; R = Rock Core Sample; SSA = Solid Stem Auger; HSA = Hollow Stem Auger; RC = Roller Cone; WOH = Weight of 140lb. Hammer; WOR/C = Weight of Rods or Casing
WO1P = Weight of 1 Person; S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf); $S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf); q_p = Unconfined Compressive Strength (ksf); N-value = Raw Field SPT N-value; T_v = Pocket Torvane Shear Strength (psf); WC = Water Content, percent ≅ = Similar or Equal too
LL = Liquid Limit; PL = Plastic Limit; PI = Plasticity Index; G = Grain Size Analysis; C = Consolidation Test

Depth (ft.)	Sample Information: Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA			Probe, no material samples taken.	
5										
10										
15										
20							274.3		20.5 **Bottom of Exploration at 20.5 feet below ground surface.** NO REFUSAL	
25										

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.

State of Maine - Department of Transportation

Laboratory Testing Summary Sheet

Town(s): Casco Work Number: 24249.00

Boring & Sample Identification Number	Station (Feet)	Offset (Feet)	Depth (Feet)	Reference Number	G.S.D.C. Sheet	W.C. %	L.L.	P.I.	Classification		
									Unified	AASHTO	Frost
HB-CAS-101, 1D	11+09.9	16.6 Lt.	1.0-3.0	336986	1	3.9			SW-SM	A-1-b	0
HB-CAS-101, 2D	11+09.9	16.6 Lt.	5.0-7.0	336987	1	6.6			SM	A-1-b	II
HB-CAS-101, 3D	11+09.9	16.6 Lt.	10.0-12.0	336988	1	26.8			SM	A-4	III
HB-CAS-101, 4D	11+09.9	16.6 Lt.	15.0-17.0	336989	1	29.7			CL	A-4	IV
HB-CAS-101, 5D	11+09.9	16.6 Lt.	20.0-22.0	336990	1	49.0			CL	A-4	IV

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 MaineDOT and Corps of Engineers Classification Systems.

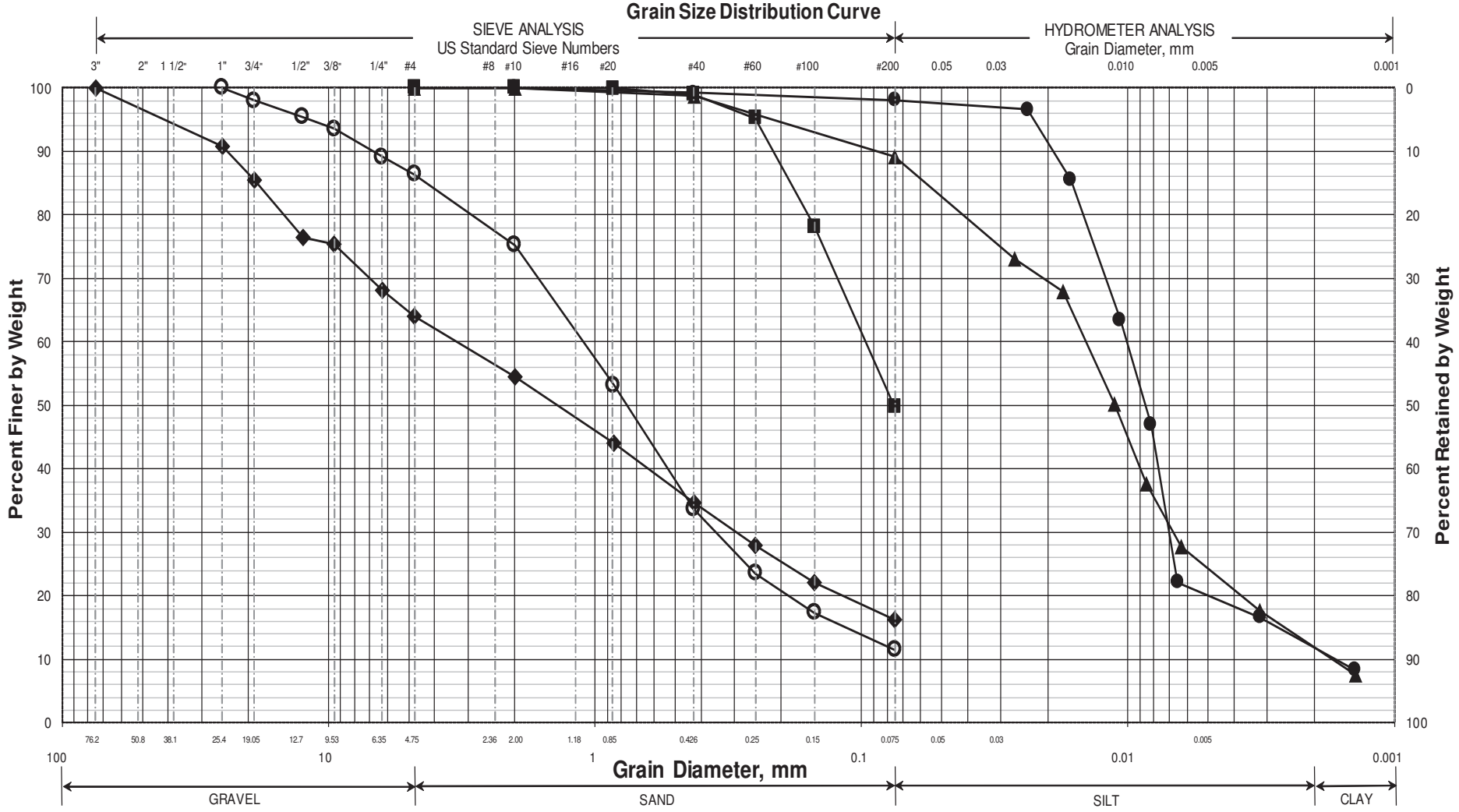
GSDC = Grain Size Distribution Curve as determined by AASHTO T 88-93 (1996) and/or ASTM D 422-63 (Reapproved 1998)

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

LL = Liquid limit as determined by AASHTO T 89-96 and/or ASTM D 4318-98 NP = Non Plastic

PI = Plasticity Index as determined by AASHTO 90-96 and/or ASTM D4318-98

Maine Department of Transportation
Grain Size Distribution Curve



UNIFIED CLASSIFICATION

	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	WC, %	LL	PL	PI
○	HB-CAS-101/1D	11+09.9	16.6 LT	1.0-3.0	SAND, little gravel, little silt.	3.9			
◆	HB-CAS-101/2D	11+09.9	16.6 LT	5.0-7.0	SAND, some gravel, little silt.	6.6			
■	HB-CAS-101/3D	11+09.9	16.6 LT	10.0-12.0	Silty SAND.	26.8			
●	HB-CAS-101/4D	11+09.9	16.6 LT	15.0-17.0	SILT, little clay, trace sand.	29.7			
▲	HB-CAS-101/5D	11+09.9	16.6 LT	20.0-22.0	SILT, little clay, little sand.	49.0			
×									

WIN
024249.00
Town
Casco
Reported by/Date
WHITE, TERRY A 9/11/2020