Maine Department of Transportation
Highway Program

GEOTECHNICAL SERIES 100 REPORT

Route 2, Center Street
Old Town, Maine

Prepared by:
Scott A. Hayden, C.G.
Soils Research Scientist

Penobscot County PIN 19208.00 Soils Report No. 2011-119
Federal Number AC-STP-1920(800)X TEDOCS# 1162396
November 29, 2011

Highway Program

Brad Foley, Program Manager

Memorandum

DATE: November 29, 2011

TO: Shawn Davis **DEPT:** Region 4

FROM: Scott A. Hayden **DEPT:** Highway Program

SUBJECT: Soils – Old Town Route 2 (Center Street), Pin 19208.00, Report # 2011-119

Subsurface Investigation - Site Description

A subsurface investigation has been completed for a 130' segment of Route 2 (Center Street) in the town of Old Town to examine pavement rutting and shoving. The subsurface investigation included power auger borings and falling weight deflectomer.

The area of investigation begins at the intersection of Center Street and Water Street and extends north to the south bridge joint of Bridge #2928. This segment of roadway is part of the approach to the bridge. The roadway consists of 3 travel lanes; a southbound through-turn right lane, a southbound turn left lane, and a northbound through lane (See Figure 1).

Pavement conditions are poor in the southbound lanes due to severe rutting and pavement shoving. Pavement conditions in the northbound lane are relatively good in comparison to the southbound lanes. No traffic information was available for this project. However, the direction and type of traffic is likely contributing to the poor pavement conditions in the southbound lanes. After crossing Bridge #2928, vehicles traveling southbound descend the estimated 6% grade bridge approach and decelerate sharply throughout the area of investigation in order to stop for the traffic light at the intersection of Center Street and Water Street. It is anticipated that much of this southbound traffic consist of loaded truck traffic proceeding to the paper mill or interstate.

Subsurface Explorations

Subsurface explorations were conducted by Maine DOT using a CME 45C truck mounted drill rig. Bore hole logging was performed by Maine DOT. A total of 12 power augers borings and 12 pavement cores were conducted along the investigation area. Power auger borings were conducted using 5" solid stem augers. Boring locations were determined based upon visual site observations. Soil sampling and in-situ tests were performed using the Standard Penetration Test (SPT) Method. A 1-3/8" (ID) split-spoon sampler was used. The spoon was driven with a 140-lb hammer using a 30 inch drop. Blow counts were recorded per 6 inch driving interval. The N-value was estimated from the recorded blow counts.

At stations 10+60 and 11+00 power auger borings/pavement cores were conducted transversely across the 3 travel lanes. In the southbound lanes borings/pavement cores were conducted within the inside wheel path, outside wheel path, and the center point of each lane. In the northbound lane borings/cores were conducted only at the center point of the lane.

Continuous spoon sampling and blow counts were recorded for the borings conducted at the lane center point. At all other boring locations, soil sampling was conducted directly from the auger flights. At the request of the Project Manager (Shawn Davis), no samples were submitted to the Bangor Lab for testing. See Figure 2 for a sketch map of the boring locations listing the pavement and base/fill thicknesses.

Existing Pavement Thickness

The overall pavement thickness ranged between 5" and 9¼" with an average thickness of 7¼". However, several observations can be made after examining the pavement cores with respect to station and lane location:

Southbound Travel Lanes

- Within the respected lane location, pavement cores are 1- 1¾ inches thicker closest to the bridge (11+00) than cores collected closest to the intersection (10+60)
- Pavement thickness within the rutted wheel paths are slightly thinner (¾") than the pavement thickness encountered at the lane centerpoint in the southbound through - turn right lane,

Northbound Travel Lane

- Pavement cores are 2 inches thicker closest to the intersection (10+60) than cores collected closest to the bridge (11+00)

Existing Base Material

The existing base material is described in the boring logs as dense, gravelly, fine to coarse SAND with some silt. Samples of this material were collected but were not submitted to the lab for testing at the direction of the project manager. Based upon visual observations it is anticipated that this material would be classified (AASHTO) as an A-1-b or A-2-4 soil. This material is similar to granular borrow used for embankment construction. The thickness of this granular layer ranged between 28 – 52 inches with an average thickness of 39 inches. Borings conducted at the lower elevations closest to the intersection (Station 10+60) generally encountered an old pavement layer beneath this granular layer. Standard penetration resistance N-Values ranged between 33 and 85 resulting in a density classification of dense to very dense for coarse-grained soils (See Power Auger Boring Profiles).

These dense granular soils are described as damp. Based upon % passing #200 sieve estimates, it is anticipated that the quality of drainage (AASHTO 1993) is fair to poor. It is anticipated that the soils will become more susceptible to drainage issues proceeding south from the bridge embankment towards the intersection. This is anticipated because the primary source of water moisture will likely transition from surface infiltration only to include the ground water table and surface infiltration. This may be indicative as to why moist soils were encountered at a depth of 3.0' in boring HB-OLDT-102.

Nine of the twelve power auger borings encountered refusals. Power auger refusals at the lower elevations (Station 10+60) were encountered at a depth of 3.9' below the top of existing

pavement. Power auger refusals at the higher elevations (Station 11+00) were encountered at a depth of 4.7' (See Power Auger Boring Profiles).

FWD Information

FWD testing was conducted in the outside wheel path in each of the 3 travel lanes at stations 10+60 and 11+00.

The subgrade resilient modulus values were consistent throughout the testing area. These values ranged between 5738 psi and 10,234 psi with an average value of 7321 psi. These values are suitable.

Pavement modulus values were not consistent when comparing these values from lane to lane. Pavement modulus values were considerably less in the southbound through-turn right lane than those encountered in the southbound turn left lane and northbound lane. See chart below.

Pavement Modulus Comparison

Pavement Modulus	**Southbound Through-Turn Right Lane**	**Southbound Turn Left Lane**	**Northbound Travel Lane**
Range (psi)	102,637 – 113,035	40,355 – 56,145	88,495 – 131,539
Average (psi)	107,836	48,250	110,017

Conclusions

Based upon the existing traffic patterns, pavement core data, and power auger information, it is anticipated that the rutting is more likely due to inadequate structure within the pavement layer. Due to heavy traffic loading, the decelerating nature of the southbound traffic, and existing pavement failure, a specialized HMA mix design should be considered. The use of stone matrix asphalt (SMA) to maximize rutting resistance may be warranted.

Figure 1: Project sketch map with boring/core locations

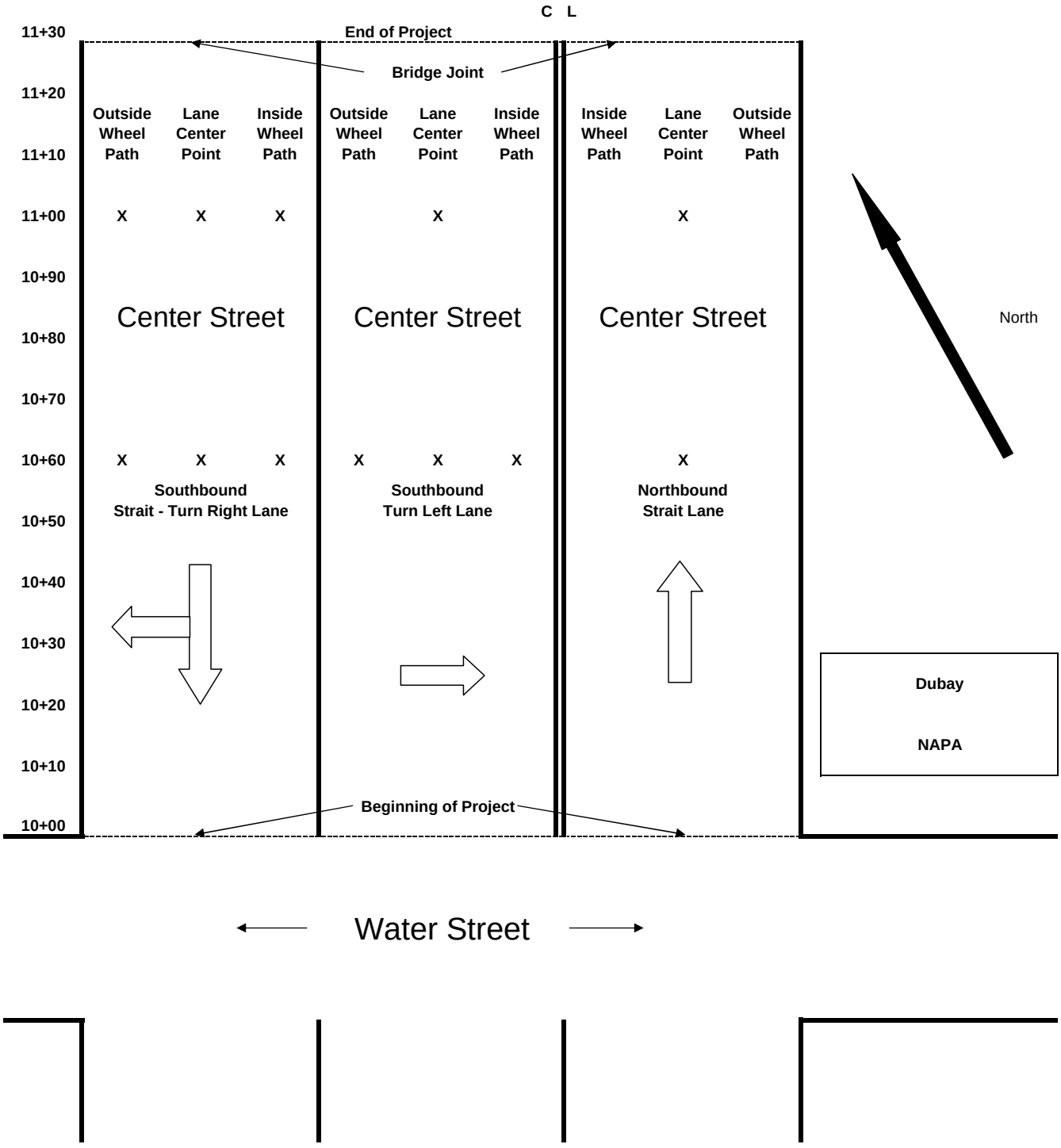


Figure 2: Pavement / Base Depth Summary

11+30	End of Project - Bridge Joint					C	L						
11+20	Outside Wheel Path	Lane Center Point	Inside Wheel Path	Outside Wheel Path	Lane Center Point	Inside Wheel Path	Inside Wheel Path	Lane Center Point	Outside Wheel Path				
11+10	18.1'Lt	15.1'Lt	12.6'Lt		5.2'Lt			5.4'Rt					
11+00	HB-110 8.0" Pave 46" SiSa 4.5' NR	HB-111 9.0" Pave 51" SiSa 5.0' NR	HB-112 7.5" Pave 46" SiSa 4.5' NR		HB-106 9.25"Pave 47" SiSa 4.7' Ref			HB-101 5.0"Pave 52" SiSa 4.8' Ref					
10+90													
10+80	Center Street			Center Street			Center Street						North
10+70	18.0'Lt	15.5'Lt	13.1'Lt	7.6'Lt	4.4'Lt	2.5'Lt		7.3'Rt					
10+60	HB-108 6.75" Pave 29" SiSa 3.8' Ref	HB-107 7.25" Pave 28" SiSa 3.8' Ref	HB-109 6.5" Pave 31" SiSa 3.8' Ref	HB-105 7.0" Pave 30" SiSa 3.8' Ref	HB-103 7.0" Pave 35" SiSa 3.9' Ref	HB-104 7.0" Pave 29" SiSa 3.9' Ref		HB-102 7.0" Pave 40" SiSa 3.9' Ref					
10+50	Southbound Strait - Turn Right Lane			Southbound Turn Left Lane			Northbound Strait Lane						
10+40													
10+30													
10+20												Dubay	
10+10												NAPA	
10+00				Beginning of Project									
	Water Street												

Old Town - Route 2 - Center Street

19208.00

Power Auger Profiles

Southbound Strait/Turn Right Lane

	Outside Wheel Path			Center Point			Inside Wheel Path		
	HB-OLDT-110			HB-OLDT-111			HB-OLDT-112		
		N Value			N Value			N Value	
11+00	0.67'		8" Pavement	0.75'		9" Pavement	0.63'		9" Pavement
		42			42			42	
			Damp, Dense			Damp, Dense			Damp, Dense
			Silty Sand	3.0'		Silty Sand	3.0'		Silty Sand
		41			41			41	
	4.5'						4.5'		
				5.0'					
			4.5' No Refusal			5.0' No Refusal			4.5' No Refusal
	Outside Wheel Path			Center Point			Inside Wheel Path		
	HB-OLDT-108			HB-OLDT-107			HB-OLDT-109		
		N Value			N Value			N Value	
10+60	0.56'		6.75" Pavement	0.63'		7.5" Pavement	0.54'		6.5" Pavement
		53			53			53	
			Damp, Very Dense			Damp, Very Dense			Damp, Very Dense
			Silty Sand			Silty Sand			Silty Sand
	3.0'			3.0'			3.1'		
	3.4'		Old Pavement				3.6'		Old Pavement
	3.8'		Damp, Very Dense	3.8'		Old Pavement	3.8'		Damp, Very Dense
			Silty Sand						Silty Sand
			3.8' Refusal			3.8' Refusal			3.8' Refusal

Southbound Turn Left Lane

	Outside Wheel Path			Center Point			Inside Wheel Path		
	HB-OLDT-106								
		N Value							
	0.77'		9.25" Pavement						
		47							
			Damp, Dense						
	3.0'		Silty Sand						
	4.7'								
			4.7' Refusal						
	Outside Wheel Path			Center Point			Inside Wheel Path		
	HB-OLDT-105			HB-OLDT-103			HB-OLDT-104		
		N Value			N Value			N Value	
	0.58'		7" Pavement	0.58'		7" Pavement	0.58'		7" Pavement
		84			84			84	
			Damp, Dense			Damp, Very Dense			Damp, Very Dense
			Silty Sand			Silty Sand			Silty Sand
	3.1'			3.0'			3.0'		
	3.4'		Old Pavement	3.5'		Old Pavement	3.5'		Old Pavement
	3.8'		Damp, Very Dense	3.8'		Damp, Very Dens	3.9'		Damp, Very Dense
			Silty Sand			Silty Sand			Silty Sand
			3.8' Refusal			3.9' Refusal			3.9' Refusal

Northbound Lane

	Inside Wheel Path			Center Point			Outside Wheel Path		
				HB-OLDT-101					
					N Value				
				0.42'		5" Pavement			
					33				
						Damp, Dense			
				3.0'		Silty Sand			
				3.5'					
					85	Moist, Very Dense			
						Silty Sand			
				4.8'					
						4.8' Refusal			
				Center Point					
				HB-OLDT-102					
					N Value				
				0.58'		7" Pavement			
					42				
						Damp, Dense			
						Silty Sand			
				3.0'					
						Moist, Very Dense			
				3.9'		Silty Sand, Old Pave			
						3.9' Refusal			

Water Street

November 28, 2011

Falling Weight Deflectometer (FWD)
Summary Sheet

Project #: 19208.00
Town(s): Old Town
Route(s): #2
Date Tested: 09/12/2011
Requested By: S Hayden
Direction of Testing: South to North /North to South (2 Lanes)

Of FWD tests: 6 # Of Power Augers/Spoons - 12
Design Life: N/A Future 18-kip ESALs (Design Life): See Below
Initial Serviceability: 4.5 Terminal Serviceability: 2.5
Reliability Level: 95% Overall Standard Deviation: .45

Locations

Station (Feet)	Description
Used Project Stationing	

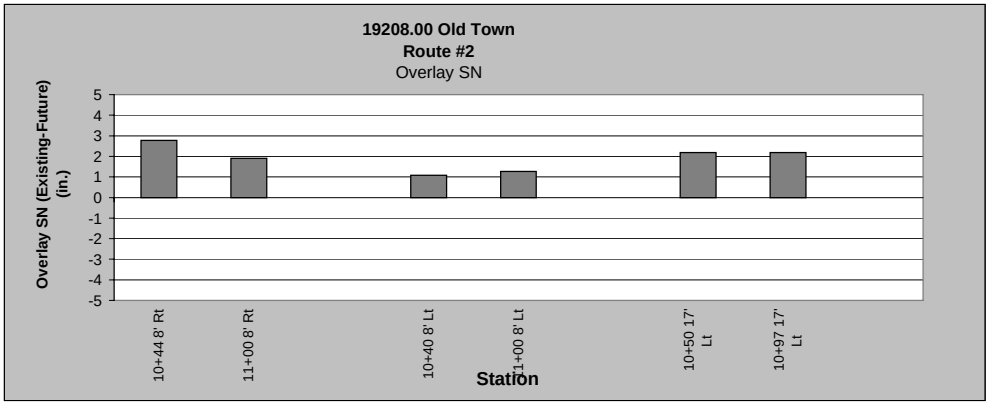
Comments:

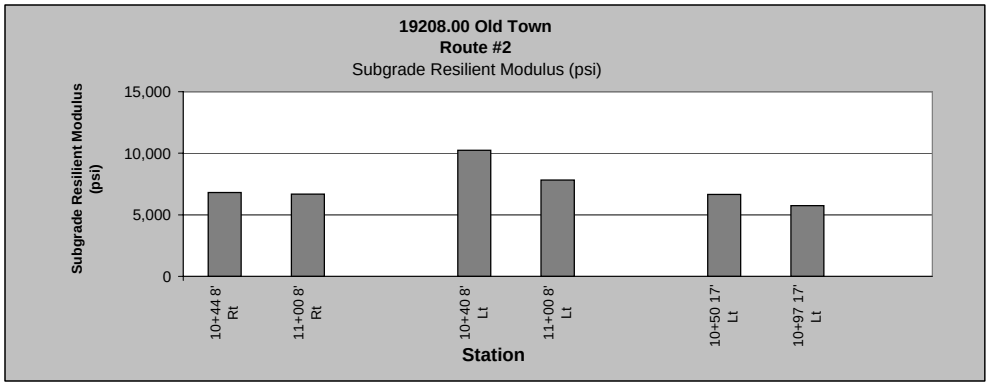
Traffic Data was not available for this project. A value of 450 (18-kip at 2.5) from project 19213.00 Route 2A, Old Town was used. A 12 year design life was used for a Future 18-kip ESAL value of 1,971,000.

19208.00 Old Town
Route #2

Station (Feet)	Existing Structural Number (in.)	Future Traffic Structural Number (in.)	Overlay Structural Number (Existing - Future)	Recommended Pavement Thickness (in.)	Pavement Modulus (psi)	Subgrade Resilient Modulus (psi)	Pavement Depth (in)	Combined Pavement/Gravel Depth Used for Calculation (in)
10+44 8' Rt	6.87	4.09	2.78	-	131,539	6,812	7	30
11+00 8' Rt	6.02	4.12	1.9	-	88,495	6,671	5	30
10+40 8' Lt	4.63	3.55	1.08	-	40,355	10,234	6.5	30
11+00 8' Lt	5.17	3.9	1.27	-	56,145	7,818	7.5	30
10+50 17' Lt	6.32	4.13	2.19	-	102,637	6,653	7.5	30
10+97 17' Lt	6.53	4.34	2.19	-	113,035	5,738	7.5	30

Possible Weak Soils (<3000)
Possible Shallow Bedrock (>8000)
For actual Gravel Depths, see logdraft forms





State of Maine - Department of Transportation

Pavement Core Summary Sheet

Town(s): Old Town Work Number: 19208.00

Station (Feet)	Offset (Feet)	Pavement Depth (Inches)	Unbound Pavement	PC-Number	Saved Core	Comments / Date 11/3/2011
11+00	5.4 Rt.	5.0		1	yes	HB-OLDT-101
10+60	7.3 Rt.	7.0		2	yes	HB-OLDT-102
10+60	4.4 Lt.	7.0		3	yes	HB-OLDT-103
10+60	2.5 Lt.	7.0		4	yes	HB-OLDT-104
10+60	7.6 Lt.	7.0		5	yes	HB-OLDT-105
11+00	5.2 Lt.	9.25		6	yes	HB-OLDT-106
10+60	15.5 Lt.	7.5		7	yes	HB-OLDT-107
10+60	18.0 Lt.	6.75		8	yes	HB-OLDT-108
10+60	13.1 Lt.	6.5		9	yes	HB-OLDT-109
11+00	18.1 Lt.	8.0		10	yes	HB-OLDT-110
11+00	15.1 Lt.	9.0		11	yes	HB-OLDT-111
11+00	12.6 Lt.	7.5		12	yes	HB-OLDT-112

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-101
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	Standard Split Spoon
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	140#/30"
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	11+00, 5.4 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:	0.84	**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 = Insitu Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-1		0.00 - 0.42				SSA	-0.42		5" PAVEMENT, core taken.	
										0.42	
	1D	24/17	1.00 - 3.00	17/16/17/26	33	46				Brown, damp, dense, gravelly, fine to coarse SAND, trace silt.	
										2D (3.0-3.5 ft bgs).	
	2D/A	21.6/18	3.00 - 4.80	24/39/46/50(3.6)	85	119		-3.50		3.50	
										2D/A (3.5-4.8 ft bgs) Brown, moist, very dense, gravelly, fine to coarse SAND, little silt.	
5								-4.80		4.80	
										Bottom of Exploration at 4.80 feet below ground surface. REFUSAL	
10											
15											
20											
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 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-102
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	Standard Split Spoon
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	140#/30"
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	10+60, 7.3 ft Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:	0.84	**Hammer Type:**	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐		

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MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-2		0.00 - 0.58				SSA	-0.58		7" PAVEMENT, core taken. 0.58	
	1D	24/16	1.00 - 3.00	14/21/21/20	42	59				Brown, damp, dense, gravelly, fine to coarse SAND, trace silt.	
								-3.00		3.00	
	2D	10.8/9	3.00 - 3.90	41/50(4.8")	---			-3.90		Brown, damp, very dense, gravelly, fine to coarse SAND, old pavement. 3.90	
5										**Bottom of Exploration at 3.90 feet below ground surface.** REFUSAL	
10											
15											
20											
25											

Remarks:

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Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-103
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	Standard Split Spoon
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	140#/30"
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	10+60, 4.4 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:	0.84	**Hammer Type:**	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐		

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T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-3		0.00 - 0.58				SSA	-0.58		7" PAVEMENT, core taken.	
										0.58	
	1D	24/18	1.00 - 3.00	27/41/43/32	84	118				Brown, damp, very dense, gravelly, fine to coarse SAND, trace silt.	
								-3.00		3.00	
	2D	4.8/4.8	3.00 - 3.40	100(4.8")	---			-3.90		Brown, damp, very dense, gravelly, fine to coarse SAND, little silt, old pavement. Old Pavement ended at 3.5 ft bgs.	
										3.90	
5										**Bottom of Exploration at 3.90 feet below ground surface.** AUGER REFUSAL	
10											
15											
20											
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 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-104
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	N/A
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	10+60, 2.5 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:		**Hammer Type:**	Automatic ☐ Hydraulic ☐ Rope & Cathead ☐		

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U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample attempt
V = Insitu Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-4		0.00 - 0.58				SSA	-0.58		7" PAVEMENT, core taken.	
										0.58	
										Brown, damp, very dense, gravelly, fine to coarse SAND, trace silt. ≅103, 1D	
								-3.00		3.00	
								-3.50		OLD PAVEMENT.	
								-3.90		3.50	
										≅103, 1D	
										3.90	
5										**Bottom of Exploration at 3.90 feet below ground surface.** REFUSAL	
10											
15											
20											
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 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-105
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	N/A
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	10+60, 7.6 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:		**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 = Insitu Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-5		0.00 - 0.58				SSA	-0.58		7" PAVEMENT, core taken. 0.58	
										Brown, damp, very dense, gravelly, fine to coarse SAND, trace silt. ≅103, 1D	
								-3.10		3.10	
								-3.40		OLD PAVEMENT. 3.40	
								-3.80		Brown, damp, very dense, gravelly, fine to coarse SAND, little silt, old pavement. ≅103, 2D 3.80	
5										**Bottom of Exploration at 3.80 feet below ground surface.** REFUSAL	
10											
15											
20											
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 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-106
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	Standard Split Spoon
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	140#/30"
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	11+00, 5.2 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:	0.84	**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 = Insitu Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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.
	Sample Information										
0	PC-6		0.00 - 0.77				SSA			9¼" PAVEMENT, core taken.	
								-0.77		0.77	
	1D	24/15	1.00 - 3.00	19/24/23/14	47	66				Brown, damp, dense, gravelly, fine to coarse SAND, trace silt.	
								-3.00		3.00	
	2D	20.4/13	3.00 - 4.70	31/19/56/50(2.4)	---					Similar to above, except very dense.	
								-4.70		4.70	
5										**Bottom of Exploration at 4.70 feet below ground surface.** REFUSAL	
10											
15											
20											
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 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-107
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	Standard Split Spoon
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	140#/30"
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	10+60, 15.5 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:	0.84	**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 = Insitu Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-7		0.00 - 0.63				SSA	-0.63		7½" PAVEMENT, core taken. 0.63	
	1D	24/19	1.00 - 3.00	19/27/26/27	53	74				Brown, damp, very dense, gravelly, fine to coarse SAND, trace silt.	
								-3.00		3.00	
	2D	6/2	3.00 - 3.50	90(6")	---			-3.80		OLD PAVEMENT. 3.80	
										Bottom of Exploration at 3.80 feet below ground surface. AUGER REFUSAL	
5											
10											
15											
20											
25											

Remarks:

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

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Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-108
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	N/A
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	10+60, 18.0 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:		**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 = Insitu Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-8		0.00 - 0.56				SSA	-0.56		6¾" PAVEMENT, core taken.	
										0.56	
										Brown, damp, very dense, gravelly, fine to coarse SAND, trace silt. ≅107, 1D	
								-3.00		3.00	
								-3.40		OLD PAVEMENT.	
								-3.80		3.40	
										≅107, 1D	
										3.80	
5										**Bottom of Exploration at 3.80 feet below ground surface.** REFUSAL	
10											
15											
20											
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 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-109
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	N/A
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	10+60, 13.1 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:		**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 = Insitu Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-9		0.00 - 0.54				SSA	-0.54		6½" PAVEMENT, core taken. 0.54	
										Brown, damp, very dense, gravelly, fine to coarse SAND, trace silt. ≅107, 1D	
								-3.10		3.10	
								-3.60		OLD PAVEMENT. 3.60	
								-3.80		≅107, 1D 3.80	
5										**Bottom of Exploration at 3.80 feet below ground surface.** REFUSAL	
10											
15											
20											
25											

Remarks:

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

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Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 2 (Center Street)

Location: Old Town, Maine

Boring No.: HB-OLDT-110

WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	N/A
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	11+00, 18.1 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:		**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 = Insitu Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-10		0.00 - 0.67				SSA	-0.67		8" PAVEMENT, core taken. 0.67	
										Brown, damp, dense, gravelly, fine tocoarse SAND, trace silt. ≅111, 1D	
								-4.50		4.50	
5										**Bottom of Exploration at 4.50 feet below ground surface.** NO REFUSAL	
10											
15											
20											
25											

Remarks:

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

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Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-111
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	Standard Split Spoon
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	140#/30"
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	11+00, 15.1 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:	0.84	**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 = Insitu Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-11		0.00 - 0.75				SSA	-0.75		9" PAVEMENT, core taken. 0.75	
	1D	24/16	1.00 - 3.00	11/23/19/15	42	59				Brown, damp, dense, gravelly, fine to coarse SAND, trace silt.	
										Similar to above.	
	2D	24/17	3.00 - 5.00	11/13/28/35	41	57		-5.00		5.00	
5										**Bottom of Exploration at 5.00 feet below ground surface.** NO REFUSAL	
10											
15											
20											
25											

Remarks:

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Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 2 (Center Street)
Location: Old Town, Maine

Boring No.: HB-OLDT-112
WIN: 19208.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	Giles/Daggett	**Datum:**	NAVD88	**Sampler:**	N/A
Logged By:	B. Wilder	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	11/3/11-11/3/11	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	11+00, 12.6 ft Lt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed
Hammer Efficiency Factor:		**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 = Insitu Vane Shear Test, PP = Pocket Penetrometer
MV = Unsuccessful Insitu 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 = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw field SPT N-value
Hammer Efficiency Factor = Annual Calibration Value
N_{60} = SPT N-uncorrected corrected for hammer efficiency
N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected
$S_{u(lab)}$ = Lab Vane 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	PC-12		0.00 - 0.63				SSA	-0.63		7½" PAVEMENT, core taken.	
										0.63	
										Brown, damp, dense, gravelly, fine tocoarse SAND, trace silt. ≅111, 1D	
								-4.50		4.50	
5										**Bottom of Exploration at 4.50 feet below ground surface.** NO REFUSAL	
10											
15											
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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.