Highway Program

Brad Foley, Program Manager

Memorandum

DATE: December 19, 2008

TO: File **DEPT:** Region

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

SUBJECT: Soils – Turner Route 117, Pin 12777.00 – Soils Report 2008-116

The soils information for this project was collected in 2005. In 2005 this project was being fast tracked and the designer wanted the information as soon as possible. Because of this it was requested that no formalize report be done. All information including, boring logs, laboratory testing data, grain size analysis curves, FWD data, and a performance data sheet were sent to the designer upon the designer's request as the data became available (Dec 2005 – Feb 2006).Thus no formalized soils report was ever conducted for this project.

This report has been generated to gather all of the geotechnical information previously sent to the designer between 12/05 and 2/06. It should be noted that the original station at the time of the borings and FWD began at Station 10+00 (east point of traffic island at the intersection of Rte 4). New stationing has been assigned to this project since the time of the borings and FWD. Station 10+00 (old stationing) = 347+00 (new stationing). All information in this baseline report has been changed to reflect the new stationing.

Performance Data Summary Sheet

Turner Rte. 117
CHIP
12777.00
Page 1

Station (FWD)	D E F	Minimum Performance Data Criteria				Boring Location (Plan View)		Base Material		Subgrade Soils	
								AASHTO Class	% #200	AASHTO Class	% #200
						KEY					
Station		Red – Fail Green - Met				Solid Pave Thick Unbound Pave - UP Base Thickness (inches)		Soil Type AASHTO Sample #	% 200 Frost Moisture	Soil Type AASHTO Sample #	% 200 Frost Moisture
						CL					
348+15	0	Pavement Thickness (4 inches)	Base Thickness (12 inches)	Subgrade Modulus (2900 psi)	Darwin Results						
350+65	2						6.6 SP 1.8 UP 19.2	SaG/SiSa A-1-a S4,S1	6-22 0-II Damp	ClSi A-7-5 S2	91 III Moist
352+00	1					PROBE 5.0’ No Ref.	PROBE 10.0’ No Ref	Wet @ 8.5’			
353+00	1					PROBE 10.0’ No Ref					
353+15	0						4.8 SP 3.6 UP 27.6	SaG/SiSa A-1-a S4,S1	6-22 0-II Damp	ClSi A-7-5 S2	91 III Moist
354+00	0					PROBE 10.0’ No Ref					
354+55	0						5.4 SP 100.0	SiGSa A-1-b S3	20.3 II Damp	SiGSa A-1-b S3	20.3 II Damp
355+00	0					PROBE 10.0’ No Ref		Wet @ 6.5’ Frequent Cobbles			
355+50	0						PROBE 5.0’ No Ref				
358+15	0						4.8 SP 55.2	SiSaG A-1-b S5	15 II Moist	SiSaG A-1-b S5	15 II Moist
359+00	0					PROBE 10.0’ No Ref					
359+50	0						PROBE 10.0’ No Ref				
360+65	0						4.8 SP 100.0	SiSaG A-1-b S5	15 II Moist	SiSaG A-1-b S5	15 II Wet 8.7’
361+00	0					PROBE 5.0’ No Ref					

* SP = Solid Pavement Layer
* UP = Unbond Pavement Layer
SP+UP = Total Pavement Thickness
* Base Thickness = Red indicates presence of “treated base”

Performance Data Summary Sheet

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Station (FWD)	D E F	Minimum Performance Data Criteria	Boring Location (Plan View)	Base Material		Subgrade Soils	
				AASHTO Class	% #200	AASHTO Class	% #200
			KEY				
Station		Red – Fail Green - Met	Solid Pave Thick Unbound Pave - UP Base Thickness (inches)	Soil Type AASHTO Sample #	% 200 Frost Moisture	Soil Type AASHTO Sample #	% 200 Frost Moisture
			CL				
361+50	0		PROBE 5.0' No Ref				
363+15	0		6.0 SP 26.4	SiSaG A-1-b S5	15 II Moist	SaSi A-4 S6	54 IV Damp
365+65	0						
368+15	1		5.4 SP 2.4 UP 18.6	SiSaG A-1-b S5	15 II Moist	ClSi A-7-5 S7	96 III Moist
370+65	2						
373+15	2						
375+65	2		7.8 SP 3.0 UP 49.2	SiSaG A-1-b S5	15 II Moist	SaSi A-4 S8	46 IV Moist
378+15	1						
379+00	1		PROBE 5.0' No Ref				
380+50	2		PROBE 10.0' No Ref				
380+65	2		6.0 SP 3.6 UP 4.8	SiSaG A-1-a S4	6 0 Damp	SaSi A-4 S8	46 IV Moist
381+00	1		4.2 SP 1.8 UP 30.0	SiSaG A-1-b S5	15 II Moist	SaSi A-4 S8	46 IV Wet 8.5'
382+00	1		3.0 SP 1.8 UP 25.2	SiSaG A-1-b S5	15 II Moist	SaSi A-4 S8	46 IV Wet 8.0'
383+15	3		6.6 SP 1.8 UP 3.6	SiSaG A-1-a S4	6 0 Damp	SiSa A-4 S11	45 III Moist
384+00	2		PROBE 10.0' No Ref				
384+88	2		PROBE 10.0' No Ref				

* SP = Solid Pavement Layer
* UP = Unbond Pavement Layer
SP+UP = Total Pavement Thickness
* Base Thickness = Red indicates presence of "treated base"

Performance Data Summary Sheet

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Station (FWD)	D E F	Minimum Performance Data Criteria	Boring Location (Plan View)	Base Material		Subgrade Soils	
				AASHTO Class	% #200	AASHTO Class	% #200
			KEY				
Station		Red – Fail Green - Met	Solid Pave Thick Unbound Pave - UP Base Thickness (inches)	Soil Type AASHTO Sample #	% 200 Frost Moisture	Soil Type AASHTO Sample #	% 200 Frost Moisture
			CL				
385+65	1	Pavement Thickness (4 inches) Base Thickness (12 inches) Subgrade Modulus (2900 psi) Darwin Results					
388+15	0						
390+65	0		4.8 SP 1.8 UP 53.4	SiGSa A-2-4 S12	16 II Moist	SiGSa A-2-4 S12	16 II Moist
393+15	0						
395+65	0						
398+15	0						
400+65	0						
403+15	0						
405+65	0						
408+15	0						
410+65	3		4.8 SP 6.0 UP 49.2	SiGSa A-2-4 S12	16 II Moist	SiGSa A-2-4 S12	16 II Moist
413+00	1		PROBE 5.0’ No Ref				
414+00	1		PROBE 5.0’ No Ref				
415+00	2		PROBE 5.0’ No Ref				
415+65	2		3.0 SP 3.0 UP 4.8	SiSaG A-1-a S4	6 0 Damp	GSiSa A-2-4 S13	35 II Moist
416+00	2		PROBE Ref 1.1’				
417+00	1		PROBE 5.0’ No Ref				
418+00	1		PROBE 5.0’ No Ref				

* SP = Solid Pavement Layer
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Station (FWD)	D E F	Minimum Performance Data Criteria				Boring Location (Plan View)	Base Material		Subgrade Soils	
							AASHTO Class	% #200	AASHTO Class	% #200
						KEY				
Station		Red – Fail Green - Met				Solid Pave Thick Unbound Pave - UP Base Thickness (inches)	Soil Type AASHTO Sample #	% 200 Frost Moisture	Soil Type AASHTO Sample #	% 200 Frost Moisture
						CL				
420+65	3									
423+15	3					8.4 SP 1.8 UP 4.2	SiGSa A-1-b S14	4 0 Damp	ClSi A-7-5 S15	84 III Moist
425+65	3									
428+15	3									
430+65	3					6.6 SP 1.8 UP 7.2	SiGSa A-1-b S16	4 0 Damp	ClSi A-7-5 S17	77 III Soft
432+00	3					PROBE 5.0' No Ref				
432+50	3					PROBE 10.0' No Ref				
433+15	3									
433+50	2					PROBE 10.0' No Ref				
435+00	2					PROBE 10.0' No Ref	Wet @ 6.3'			
435+65	2									
436+00	2					PROBE 10.0' No Ref				
438+15	2									
440+65	1									
443+15	0									
445+65	0					7.8 SP 1.2 UP 51.0	SiGSa A-2-4 S12	16 II Moist	SiGSa A-2-4 S12	16 II Moist
448+15	2									
450+65	3					7.2 SP 1.2 UP 6.0	SiGSa A-1-b S16	4 0 Damp	SiSa A-2-4 S19	30 II Moist

Pavement Thickness (4 inches)
Base Thickness (12 inches)
Subgrade Modulus (2900 psi)
Darwin Results

* SP = Solid Pavement Layer
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Performance Data Summary Sheet

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Station (FWD)	D E F	Minimum Performance Data Criteria				Boring Location (Plan View)	Base Material		Subgrade Soils	
							AASHTO Class	% #200	AASHTO Class	% #200
						KEY				
Station		Red – Fail Green - Met				Solid Pave Thick Unbound Pave - UP Base Thickness (inches)	Soil Type AASHTO Sample #	% 200 Frost Moisture	Soil Type AASHTO Sample #	% 200 Frost Moisture
						CL				
453+15	3									
455+65	2									
458+15	2									
458+45	2					7.8 SP 1.8 UP 7.2	SiGSa A-1-b S18	10 0 Damp	SiSa A-3 S20	10 0 Moist
460+65	1									
463+15	1									
465+65	0									
468+15	1					4.8 SP 12.0	SiGSa A-1-b S18	10 0 Damp	SiSa A-3 S20	10 0 Moist
		Pavement Thickness (4 inches)	Base Thickness (12 inches)	Subgrade Modulus (2900 psi)	Darwin Results					

* SP = Solid Pavement Layer
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SP+UP = Total Pavement Thickness
* Base Thickness = Red indicates presence of “treated base”

February 13, 2006

Falling Weight Deflectometer (FWD)
Summary Sheet

Project #: 12777.00
Town(s): Turner
Route(s): #117
Requested By: S. Hayden
Direction of Testing: East

# Of FWD tests: 49	# Of Power Augers/Spoons 56/0
Design Life: 12 Yrs	Future 18-kip ESALs (Design Life): 402,960
Initial Serviceability: 4.5	Terminal Serviceability: 2.5
Reliability Level: 95%	Overall Standard Deviation: .45

Locations

Distance (Feet)	Description

Reported in Actual Stationing

Comments:

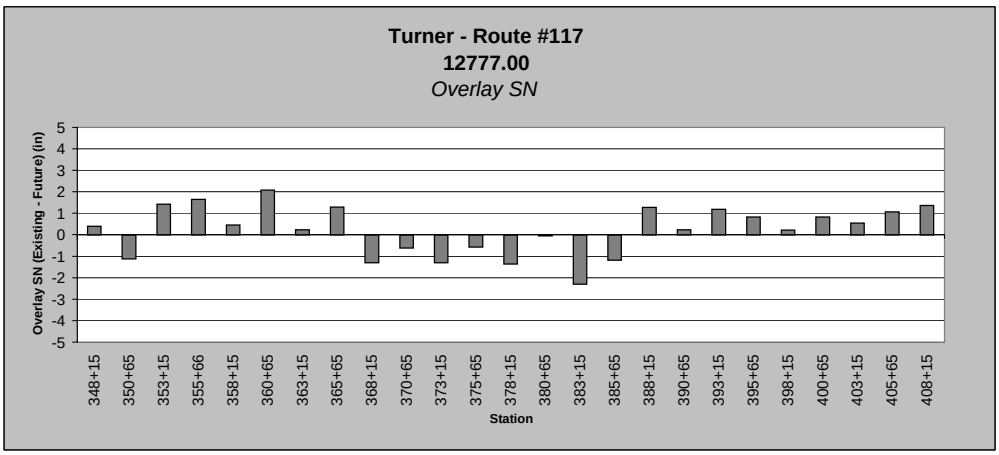
February 8, 2006

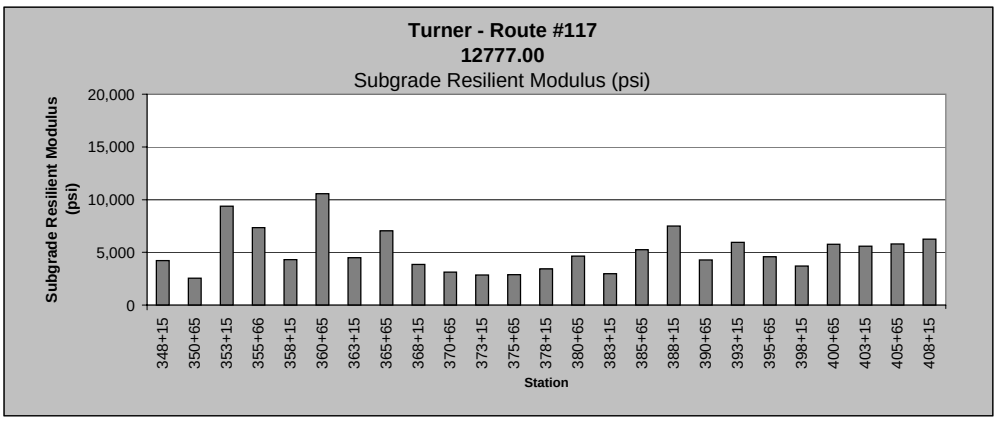
Turner
12777.00
Route #117

Station (Feet)	Existing Structural Number (in.)	Future Traffic Structural Number (in.)	Overlay Structural Number (Existing - Future)	Recommended Pavement Thickness (in.)	Existing Pavement Modulus (psi)	Subgrade Resilient Modulus (psi)	Pavement Depth (in.)	* Combined Pavement/Gravel Depth Used for Calculation (in.)
348+15	4.22	3.82	0.4	-	67,749	4,207	7	23
350+65	3.39	4.52	**-1.13**	**2.57**	34,986	2,558	7	23
353+15	4.29	2.86	1.43	-	62,594	9,389	5	24
355+66	4.78	3.13	1.65	-	86,732	7,355	5	24
358+15	4.23	3.78	0.45	-	60,234	4,324	5	24
360+65	4.82	2.74	2.08	-	88,653	10,551	5	24
363+15	3.97	3.74	0.23	-	49,550	4,477	6	24
365+65	4.47	3.18	1.29	-	70,718	7,039	6	24
368+15	2.63	3.93	**-1.3**	**2.95**	21,621	3,863	5	21
370+65	3.61	4.23	**-0.62**	**1.41**	55,923	3,116	5	21
373+15	3.06	4.36	**-1.3**	**2.95**	33,821	2,859	5	21
375+65	3.76	4.34	**-0.58**	**1.32**	37,400	2,887	8	25
378+15	2.73	4.09	**-1.36**	**3.09**	128,813	3,438	6	**12**
380+65	3.64	3.69	**-0.05**	**0.11**	38,314	4,655	4	24
383+15	2	4.3	**-2.3**	**5.23**	65,518	2,969	7	**11**
385+65	2.35	3.53	**-1.18**	**2.68**	106,747	5,241	7	**11**
388+15	4.38	3.11	1.27	-	66,506	7,496	5	24
390+65	4.02	3.79	0.23	-	51,691	4,283	5	24
393+15	4.56	3.37	1.19	-	75,191	5,963	5	24
395+65	4.53	3.71	0.82	-	73,993	4,579	5	24
398+15	4.2	3.99	0.21	-	58,613	3,706	5	24
400+65	4.25	3.42	0.83	-	61,006	5,757	5	24
403+15	4	3.45	0.55	-	50,811	5,589	5	24
405+65	4.48	3.41	1.07	-	71,414	5,796	5	24
408+15	4.68	3.32	1.36	-	81,137	6,253	5	24

Possible Soft Soil Area

*** For actual Gravel Depths, see attached logdraft forms**





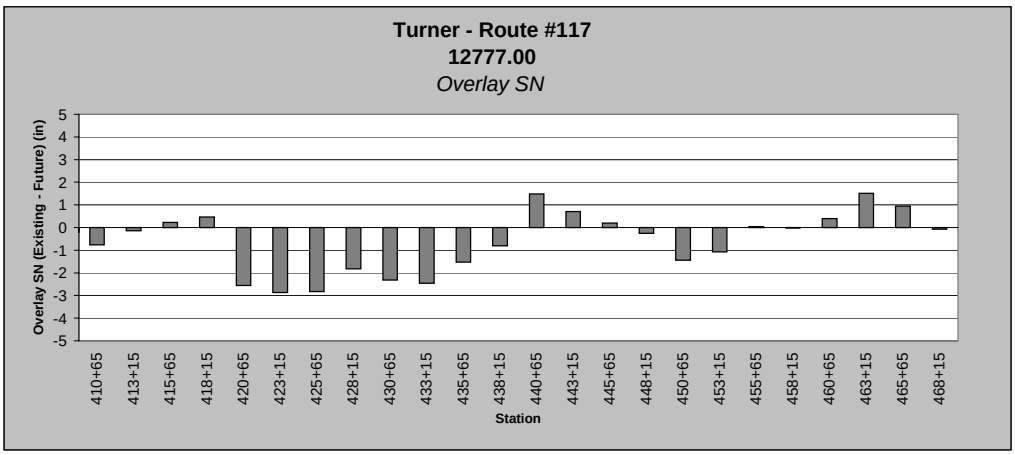
February 8, 2006

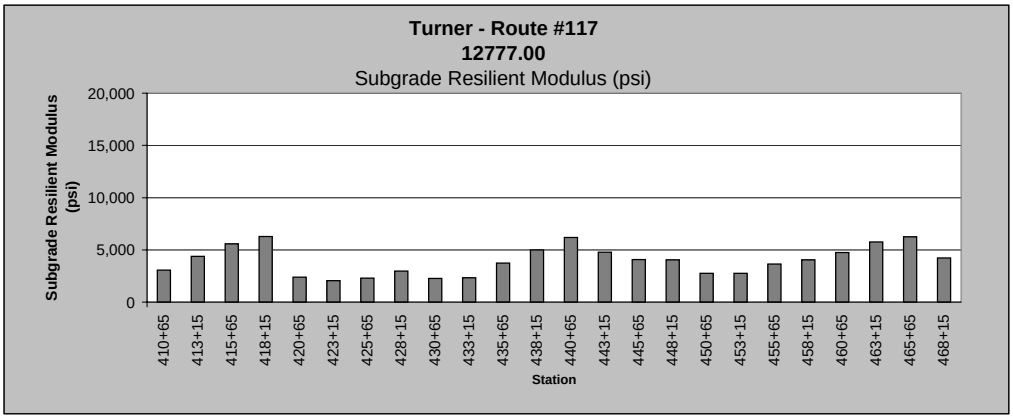
Turner
12777.00
Route #117

Station (Feet)	Existing Structural Number (in.)	Future Traffic Structural Number (in.)	Overlay Structural Number (Existing - Future)	Recommended Pavement Thickness (in.)	Existing Pavement Modulus (psi)	Subgrade Resilient Modulus (psi)	Pavement Depth (in.)	* Combined Pavement/Gravel Depth Used for Calculation (in.)
410+65	3.5	4.26	**-0.76**	**1.73**	34,156	3,057	5	24
413+15	3.63	3.77	**-0.14**	**0.32**	43,290	4,369	3	23
415+65	3.68	3.45	0.23	-	45,027	5,588	3	23
418+15	3.77	3.31	0.46	-	48,389	6,274	3	23
420+65	2.06	4.62	**-2.56**	**5.82**	43,590	2,393	5	**13**
423+15	2	4.87	**-2.87**	**6.52**	40,072	2,040	5	**13**
425+65	1.87	4.69	**-2.82**	**6.41**	32,899	2,286	5	**13**
428+15	2.48	4.3	**-1.82**	**4.14**	61,173	2,975	7	**14**
430+65	2.39	4.71	**-2.32**	**5.27**	54,297	2,253	7	**14**
433+15	2.21	4.67	**-2.46**	**5.59**	43,296	2,317	7	**14**
435+65	2.46	3.98	**-1.52**	**3.45**	59,856	3,730	7	**14**
438+15	2.78	3.59	**-0.81**	**1.84**	85,513	5,007	7	**14**
440+65	4.82	3.33	1.49	-	78,656	6,176	8	25
443+15	4.35	3.65	0.7	-	57,884	4,774	8	25
445+65	4.06	3.86	0.2	-	46,996	4,083	8	25
448+15	3.62	3.88	**-0.26**	**0.59**	37,591	4,028	7	24
450+65	2.97	4.41	**-1.44**	**3.27**	20,835	2,764	7	24
453+15	3.34	4.41	**-1.07**	**2.43**	29,559	2,757	7	24
455+65	4.05	4.01	0.04	-	46,617	3,647	8	25
458+15	3.85	3.87	**-0.02**	**0.05**	40,076	4,054	8	25
460+65	4.06	3.66	0.4	-	47,040	4,758	8	25
463+15	4.92	3.41	1.51	-	83,454	5,772	8	25
465+65	4.26	3.32	0.94	-	61,428	6,244	5	24
468+15	3.75	3.82	**-0.07**	**0.16**	41,768	4,216	5	24

Possible Soft Soil Area

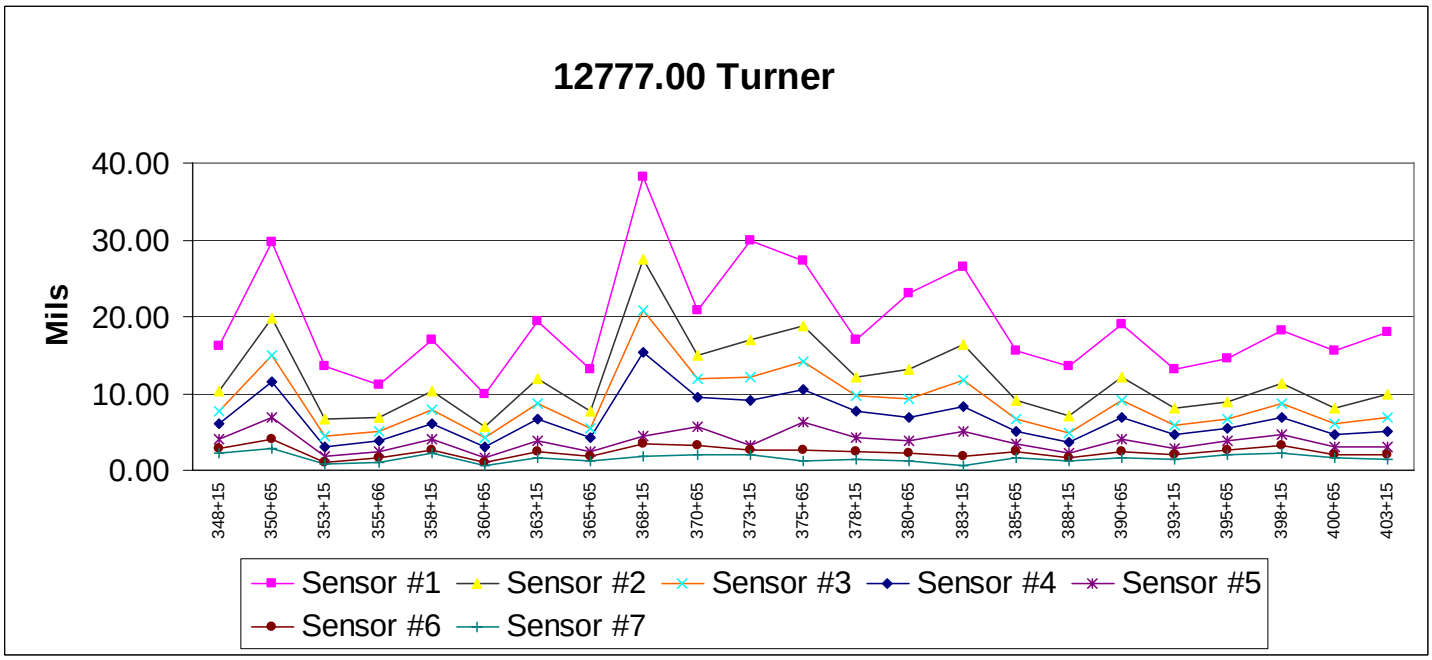
*** For actual Gravel Depths, see attached logdraft forms**

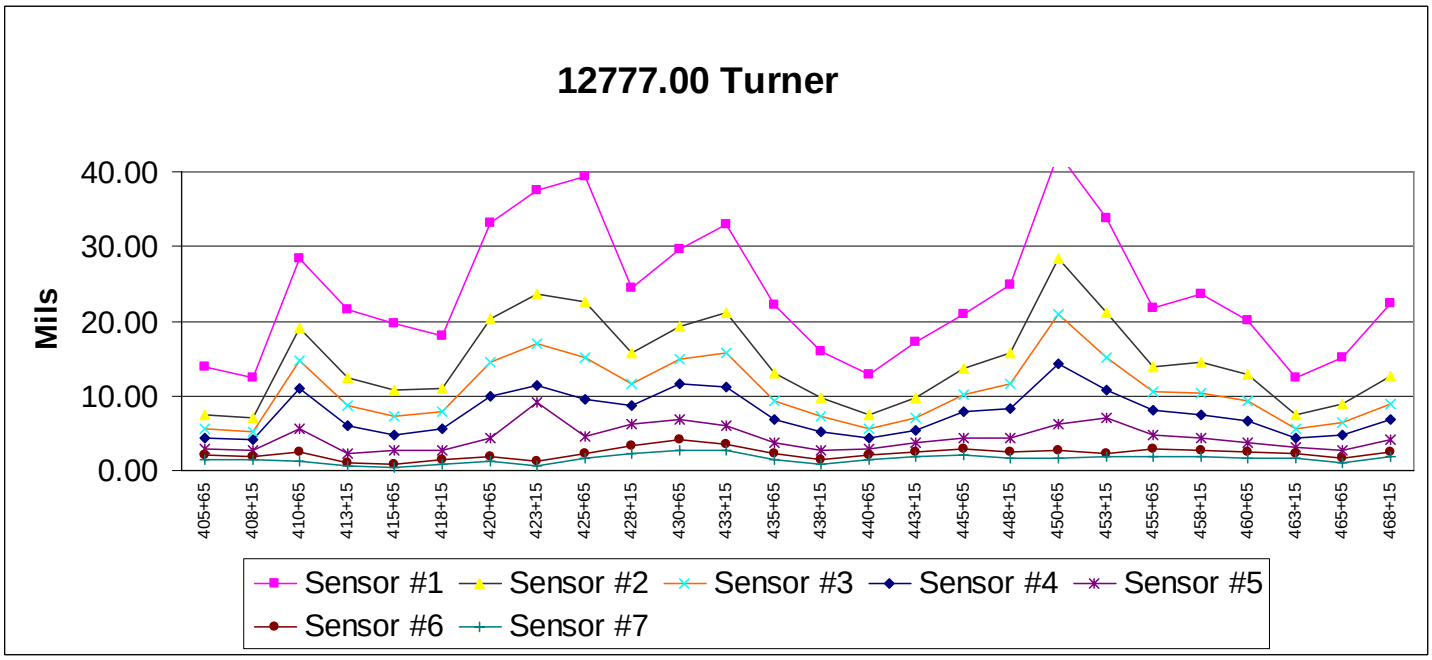




FWD Deflections

Turner Route 117





Turner, Rte 117 Traffic

Turner, Pin 12777 - Section 1 - From Lower St. to Center Bridge Rd. (0.50 miles)
Section 2 - From beginning of project (Rt. 4) to Lower St. this is the longest section being 1.89 miles

	Section 1	Section 2
2006 AADT	4720	2930
2018 AADT	5850	3630
2026 AADT	6610	4100
DHV-% of AADT	13%	11%
Design Hourly Volume	859	451
% Heavy Trucks (AADT)	5%	5%
% Heavy Trucks (DHV)	2%	4%
Dir. Dist.	52%	52%
18 KIP Eq P2.0	97	96
18 KIP Eq P2.5	92	91

If you need anything else, let me know

PAVEMENT DEPTH INFORMATION
Turner
Rte. 117
12777.00

STATION	LEFT			CL	RIGHT		
	Old Station began at 10+00 – New Stationing 10+00 = 347+00						
	15’	**10’**	**5’**		**5’**	**10’**	**15’**
350+65					(7.0’) 6.6 SP 1.8 UP		
353+50						(8.5’) 4.8 SP 3.6 UP	
354+55						(8.0’) 5.4	
358+15						(8.0’) 4.8	
359+50		3.6	3.0	3.6	4.8	3.6	
360+65					(7.5’) 4.8		
363+23						(8.0’) 6.0	
368+15						(8.0’) 5.4 SP 2.4 UP	
376+05					(7.5’) 7.8 SP 3.0 UP		
380+00						(9.0’) 6.0 SP 3.6 UP	
381+00					(7.5’) 4.2 SP 1.8 UP		
382+00		3.0 SP 1.2 UP	3.0 SP 1.2 UP	4.2 SP 1.8 UP	2.4 SP 1.2 UP		
383+15					(7.5’) 6.6 SP 1.8 UP		
393+65						(8.0’) 4.8 SP 1.8 UP	
407+00		3.0 SP 1.2 UP	3.8 SP 1.0 UP	3.4 SP 1.4 UP	3.6 SP 1.2 UP	3.0 SP 1.8 UP	

* SP = Solid Pavement Layer, * UP = Unbond Pavement Layer,
SP+UP = Total Pavement, (7.7’) = actual offset
Non shaded data obtained from power auger borings, shaded data obtained from coring
The contractor is responsible for determining existing pavement thickness project wide.

PAVEMENT DEPTH INFORMATION
Turner
Rte. 117
12777.00

STATION	LEFT			CL	RIGHT		
	15’	**10’**	**5’**		**5’**	**10’**	**15’**
410+65					(7.5’) 4.8 SP 6.0 UP		
415+65						(8.0’) 3.0 SP 3.0 UP	
423+15						(8.5’) 8.4 SP 1.8 UP	
427+00		6.6	6.0	6.6	3.6	6.0	
430+65						(8.5’) 6.6 SP 1.8 UP	
445+65						(9.5’) 7.8 SP 1.2 UP	
450+65		7.2 SP 1.2 UP	5.4 SP 1.8 UP	7.2 SP 1.2 UP	(7.0’) 7.2 SP 1.2 UP		
458+45						(9.0’) 7.8’ SP 1.8 UP	
468+15						(9.0’) 4.8	

* SP = Solid Pavement Layer, * UP = Unbond Pavement Layer,
SP+UP = Total Pavement, (7.7’) = actual offset
Non shaded data obtained from power auger borings, shaded data obtained from coring
The contractor is responsible for determining existing pavement thickness project wide.

State of Maine - Department of Transportation

Laboratory Testing Summary Sheet

Town(s): Turner — Project Number: 12777.00

Boring & Sample Identification Number	Station (Feet)	Offset (Feet)	Depth (Feet)	Reference Number	G.S.D.C. Sheet	W.C.	% Passing 200 Sieve	Classification		
								Unified	AASHTO	Frost
HB-TU-101, S1	350+65	7.0 Rt.	1.1-2.3	180801	1	9.0	21.6	SM	A-2-4	II
HB-TU-101, S2	350+65	7.0 Rt.	2.3-5.0	180802	1	21.0	91.2	ML	A-4	IV
HB-TU-103, S3	354+55	8.0 Rt.	0.70-10.0	180803	1	6.3	20.3	SM	A-1-b	II
HB-TU-104, S4	358+15	8.0 Rt.	0.40-0.90	180804	1	2.6	5.7	GP-GM	A-1-a	0
HB-TU-104, S5	358+15	8.0 Rt.	0.90-5.0	180805	1	10.6	14.6	SM	A-1-b	II
HB-TU-106, S6	363+23	8.0 Rt.	3.0-5.0	180806	1	11.7	54.2	ML	A-4	IV
HB-TU-107, S7	368+15	8.0 Rt.	2.2-5.0	180807	2	24.2	96.0	CL-ML	A-4	IV
HB-TU-109, S8	380+00	9.0 Rt.	1.2-4.5	180808	2	12.5	45.6	SM	A-4	III
HB-TU-109, S9	380+00	9.0 Rt.	4.5-10.0	180809	2	8.4	51.6	ML	A-4	IV
HB-TU-110, S10	381+00	7.5 Rt.	3.0-4.0	180810	2	16.5	48.2	SM	A-4	III
HB-TU-111, S11	382+00	9.0 Rt.	2.5-5.5	180811	2	11.7	44.6	SM	A-4	III
HB-TU-113, S12	390+65	8.0 Rt.	0.80-5.0	180812	2	10.5	15.8	SM	A-2-4	II
HB-TU-115, S13	415+65	8.0 Rt.	0.90-5.0	180813	3	10.5	34.5	SM	A-2-4	II
HB-TU-116, S14	423+15	8.5 Rt.	0.85-1.2	180814	3	5.4	3.6	SW	A-1-b	0
HB-TU-116, S15	423+15	8.5 Rt.	1.2-5.0	180815	3	24.7	83.6	CL-ML	A-4	IV
HB-TU-117, S16	430+65	8.5 Rt.	0.70-1.3	180816	3	4.4	4.3	SW	A-1-b	0
HB-TU-117, S17	430+65	8.5 Rt.	1.3-5.0	180817	3	28.1	76.9	CL-ML	A-4	IV
HB-TU-118, S18	445+65	9.5 Rt.	0.75-1.9	180818	4	4.2	9.9	SW-SM	A-1-b	0
HB-TU-119, S19	450+65	7.0 Rt.	1.2-5.0	180819	4	15.7	30.3	SM	A-2-4	II
HB-TU-120, S20	458+45	9.0 Rt.	1.4-5.0	180820	4	12.8	9.6	SP-SM	A-3	0
HB-TU-121, S21	468+15	9.0 Rt.	2.5-5.0	180821	4	8.9	10.7	SW-SM	A-1-b	0

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.

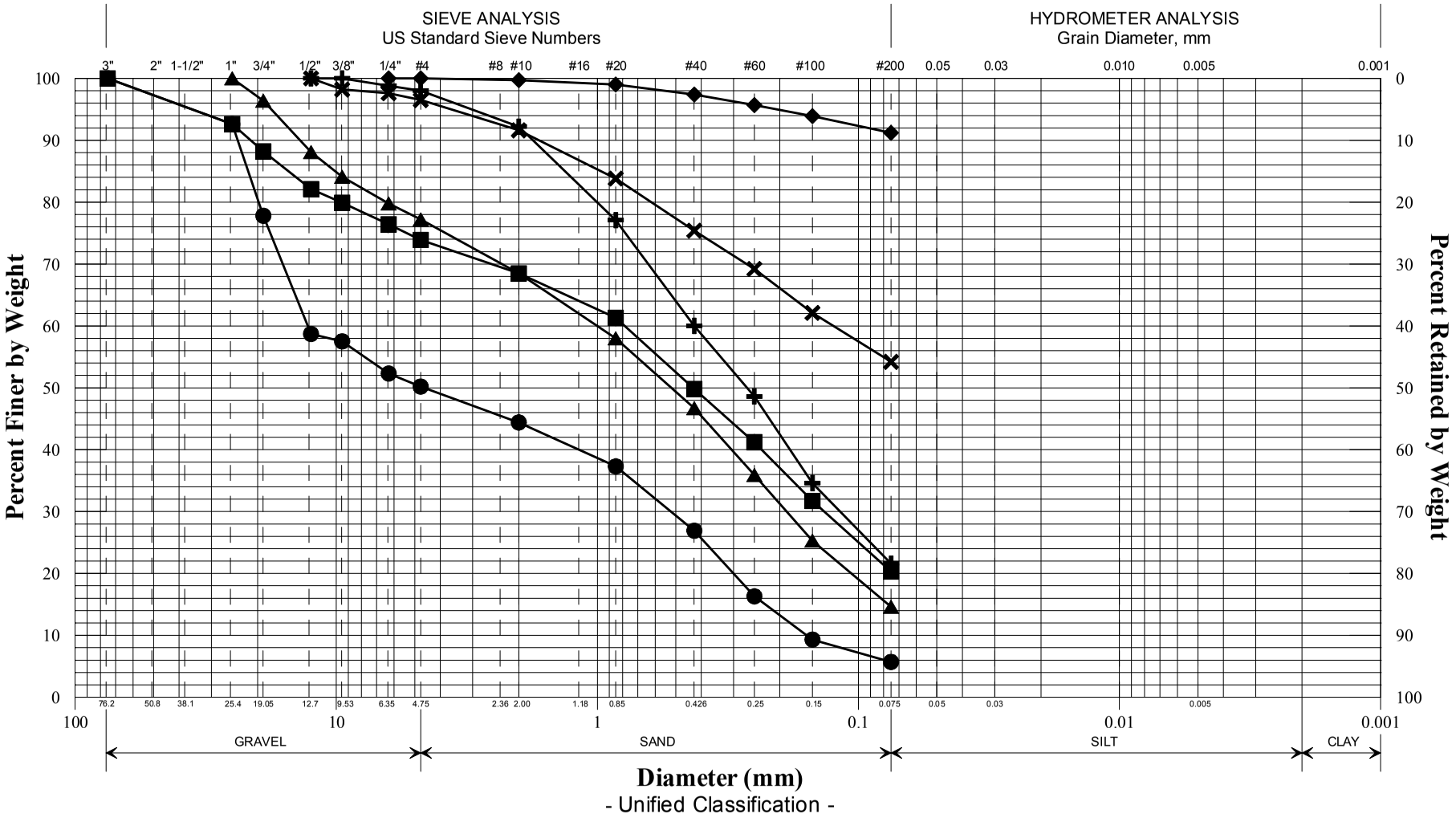
GSDC = Grain Size Distribution Curve as determined by AASHTO T 88-93 (1996) and/or ASTM D 422-63 (Reapproved 1998)

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

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

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

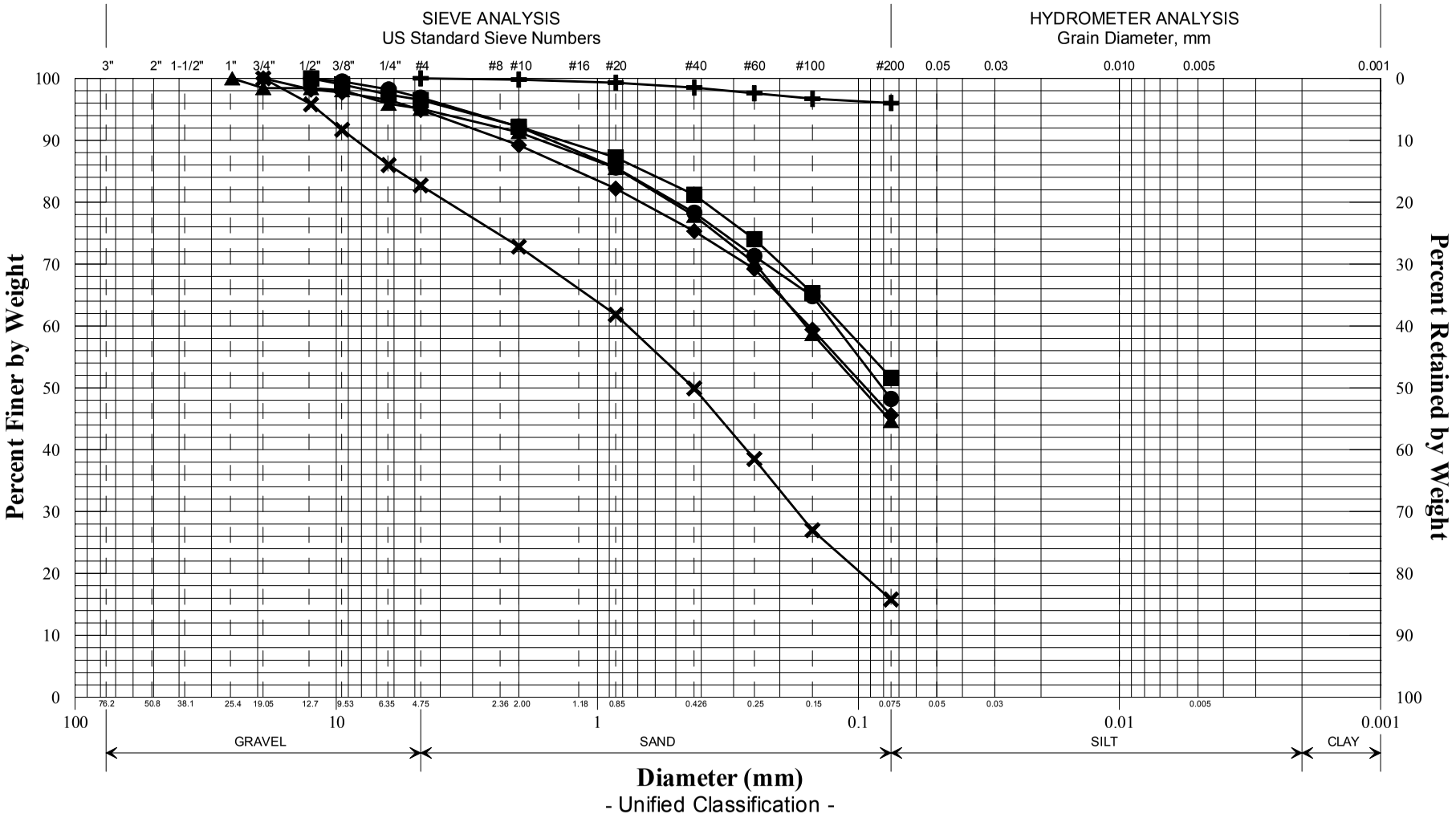
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB-TU-101/S1	350+65	7.0 RT	1.1-2.3	SAND, some silt, trace gravel.	9.0			
◆	HB-TU-101/S2	350+65	7.0 RT	2.3-5.0	SILT, trace sand, trace gravel.	21.0			
■	HB-TU-103/S3	354+55	8.0 RT	0.70-10.0	SAND, some gravel, little silt.	6.3			
●	HB-TU-104/S4	358+15	8.0 RT	0.40-0.90	Sandy GRAVEL, trace silt.	2.6			
▲	HB-TU-104/S5	358+15	8.0 RT	0.90-5.0	SAND, some gravel, little silt.	10.6			
✕	HB-TU-106/S6	363+23	8.0 RT	3.0-5.0	Sandy SILT, trace gravel.	11.7			

PIN
012777.00
Town
Turner
Reported by/Date
WHITE, TERRY A 2/3/2006

State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB-TU-107/S7	368+15	8.0 RT	2.2-5.0	SILT with clay, trace sand.	24.2			
◆	HB-TU-109/S8	380+00	9.0 RT	1.2-4.5	Silty SAND, trace gravel.	12.5			
■	HB-TU-109/S9	380+00	9.0 RT	4.5-10.0	Sandy SILT, trace gravel.	8.4			
●	HB-TU-110/S10	381+00	7.5 RT	3.0-4.0	Silty SAND, trace gravel.	16.5			
▲	HB-TU-111/S11	382+00	9.0 RT	2.5-5.5	Silty SAND, trace gravel.	11.7			
✖	HB-TU-113/S12	390+65	8.0 RT	0.80-5.0	SAND, little gravel, little silt.	10.5			

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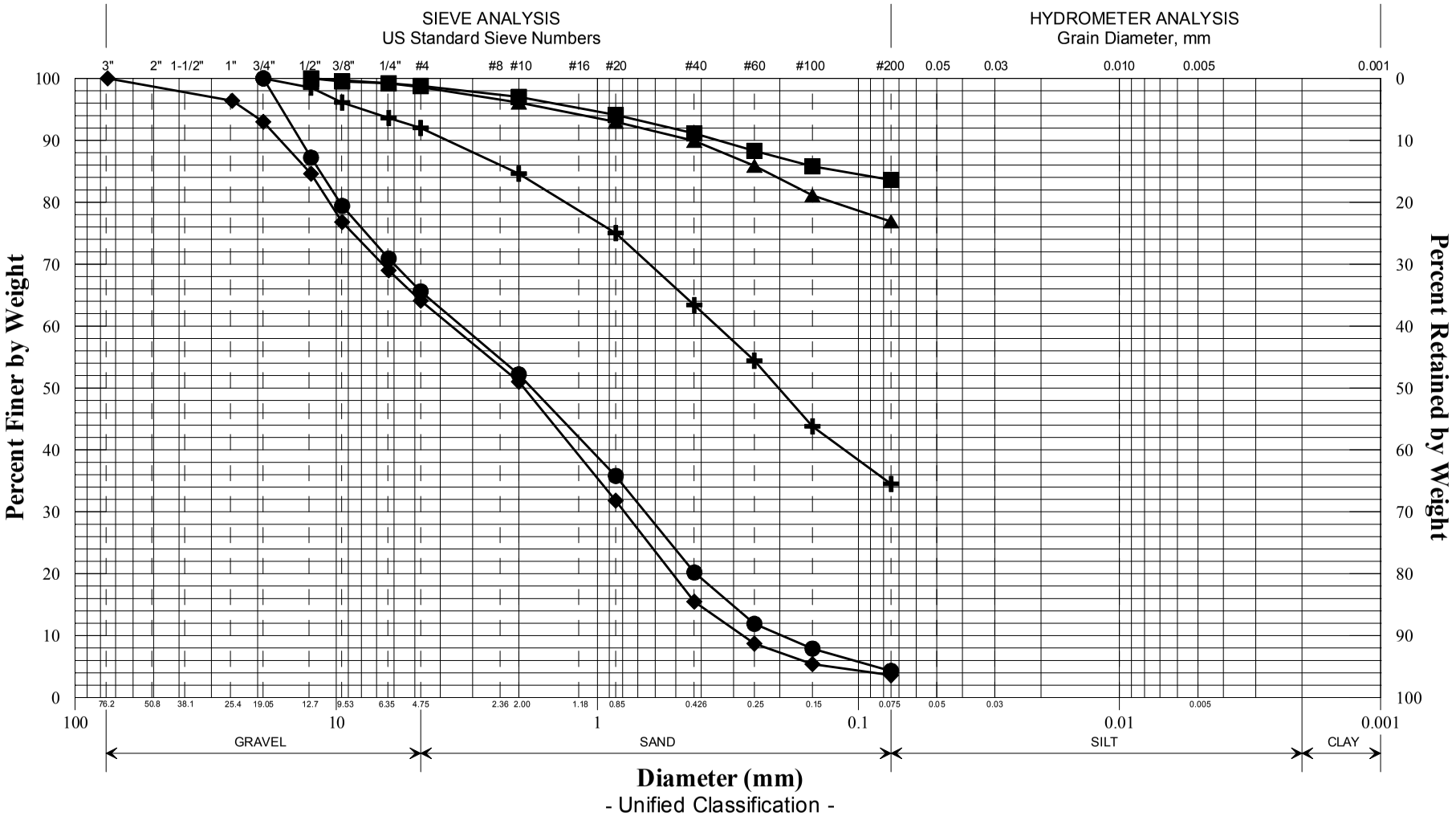
State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB-TU-115/S13	415+65	8.0 RT	0.90-5.0	SAND, some silt, trace gravel.	10.5			
◆	HB-TU-116/S14	423+15	8.5 RT	0.85-1.2	Gravelly SAND, trace silt.	5.4			
■	HB-TU-116/S15	423+15	8.5 RT	1.2-5.0	SILT with clay, little sand, trace gravel.	24.7			
●	HB-TU-117/S16	430+65	8.5 RT	0.70-1.3	SAND, some gravel, trace silt.	4.4			
▲	HB-TU-117/S17	430+65	8.5 RT	1.3-5.0	SILT with clay, some sand, trace gravel.	28.1			
✕									

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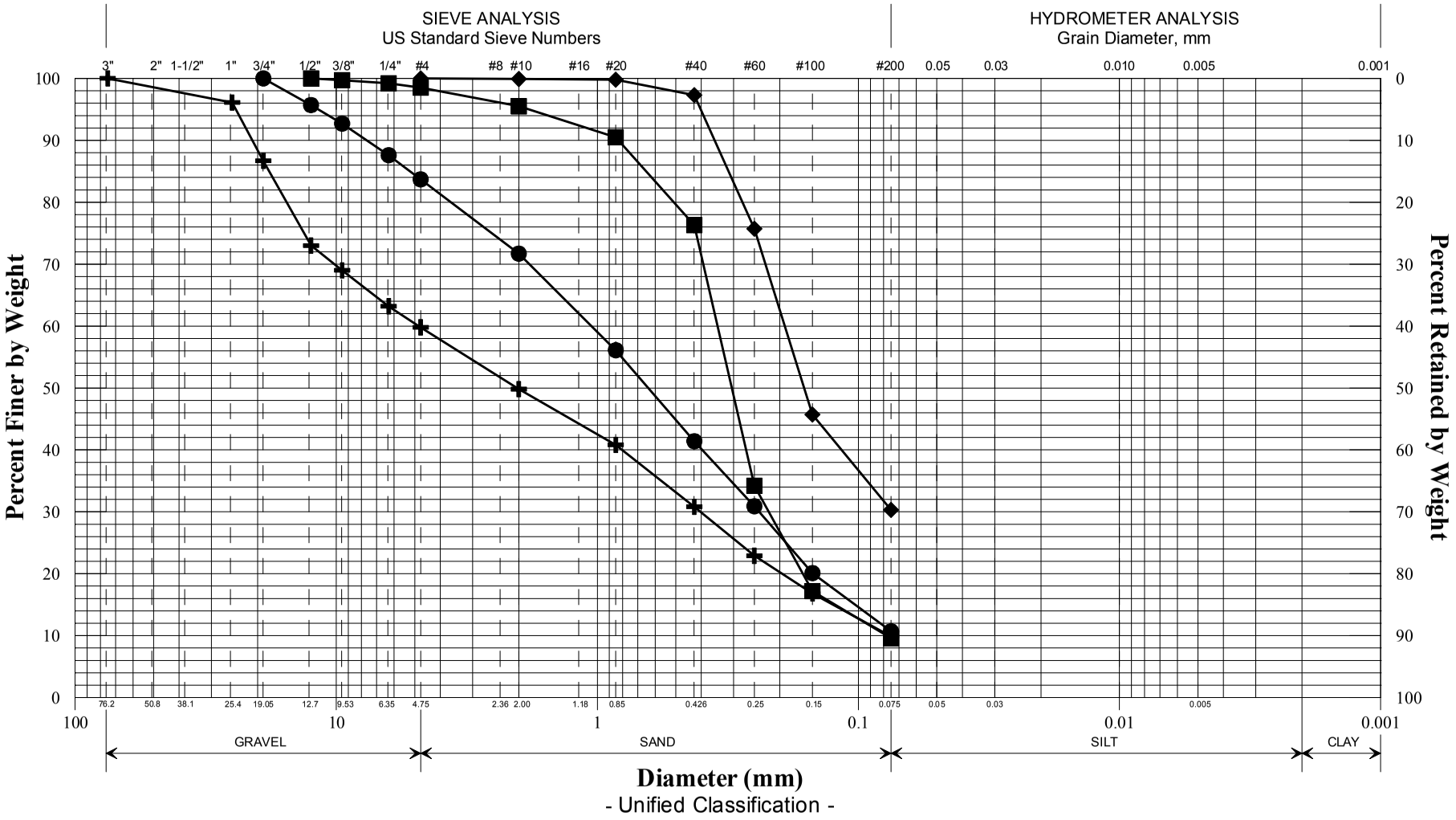
State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB-TU-118/S18	445+65	9.5 RT	0.75-1.9	Gravelly SAND, trace silt.	4.2			
◆	HB-TU-119/S19	450+65	7.0 RT	1.2-5.0	SAND, some silt.	15.7			
■	HB-TU-120/S20	458+45	9.0 RT	1.4-5.0	SAND, trace silt, trace gravel.	12.8			
●	HB-TU-121/S21	468+15	9.0 RT	2.5-5.0	SAND, little gravel, little silt.	8.9			
▲									
✖									

PIN
012777.00
Town
Turner
Reported by/Date
WHITE, TERRY A 2/3/2006

State of Maine - Department of Transportation

Power Auger Probe Summary Sheet

Town(s): Turner Project Number: 12777.00

Station (Feet)	Offset (Feet)	Weathered Rock (Feet)	Refusal (Feet)	No Refusal (Feet)	Water Depth (Ft.)	Comments / Date 12/5,6,7/2005
352+00	10.5 Lt.			5.0		5" SSA
352+50	9.5 Rt.			10.0	8.5	
353+00	10.0 Lt.			10.0		
354+00	12.0 Lt.			10.0		
355+00	12.0 Lt.			10.0	6.5	frequent cobbles
355+50	10.0 Rt.			5.0		
359+00	6.0 Lt.			10.0		
359+50	10.0 Rt.			10.0		0.3' Pavement
359+50	5.0 Rt.					0.4' Pavement
359+50	CL					0.3' Pavement
359+50	5.0 Lt.					0.25' Pavement
359+50	10.0 Lt.					0.3' Pavement
360+00	7.5 Lt.			10.0		
361+00	10.0 Lt.			5.0		
361+50	9.5 Rt.			5.0		
379+00	8.3 Lt.			5.0		
380+50	6.5 Lt.			10.0		* Total thickness of each layer.
381+50	7.0 Lt.			10.0		
382+00	10.0 Lt.					* 0.25' Pavement, 0.1' Unbound
382+00	5.0 Lt.					* 0.25' Pavement, 0.1' Unbound
382+00	CL					* 0.35' Pavement, 0.15' Unbound
382+00	5.0 Rt.					* 0.2' Pavement, 0.1' Unbound
384+00	7.0 Lt.			10.0		
384+88	7.5 Rt.			10.0		Overhead wires at 48+00
407+00	10.0 Lt.					* 0.25' Pavement, 0.1' Unbound
407+00	5.0 Lt.					* 0.32' Pavement, 0.08' Unbound
407+00	CL					* 0.28' Pavement, 0.12' Unbound
407+00	5.0 Rt.					* 0.3' Pavement, 0.1' Unbound
407+00	10.0 Rt.					* 0.25' Pavement, 0.15' Unbound
413+00	6.5 Rt.			5.0		
414+00	8.5 Lt.			5.0		
415+00	8.0 Rt.			5.0		
416+00	8.0 Lt.		1.1			
417+00	6.5 Rt.			5.0		
418+00	21.0 Lt.			5.0		
427+00	10.0 Lt.					0.55' Pavement
427+00	5.0 Lt.					0.5' Pavement
427+00	CL					0.55' Pavement
427+00	5.0 Rt.					0.3' Pavement
427+00	10.0 Rt.					0.5' Pavement
432+00	8.0 Lt.			5.0		
432+50	11.0 Rt.			10.0		
433+50	8.3 Rt.			10.0		
435+00	8.0 Lt.			10.0	6.3	
436+00	7.0 Lt.			10.0		
450+65	10.0 Lt.					* 0.6' Pavement, 0.1' Unbound
450+65	5.0 Lt.					* 0.45' Pavement, 0.15' Unbound
450+65	CL					* 0.6' Pavement, 0.1' Unbound

MaineDOT Drill Crew
Drill Rig: CME 45C
Logged By: G. Lidstone

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 117
Location: Turner, Maine

Boring No.: HB-TU-101
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/5/05-12/5/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	350+65, 7.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.55		PAVEMENT. 0.550	
							-0.70		Unbound PAVEMENT. 0.700	
	S1		1.10 - 2.30				-1.10		GRAVEL, some brown fine to coarse sand, (Fill). ≅S4 1.100	G#180801 A-2-4, SM WC=9.0%
	S2		2.30 - 5.00				-2.30		Brown, moist, fine to medium SAND, trace coarse sand, trace silt. 2.300	G#180802 A-4, ML WC=21.0%
									Brown, moist, SILT, trace fine sand.	
5							-5.00		5.000	
									Bottom of Exploration at 5.00 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-102
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/5/05-12/5/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	353+50, 8.5 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.40		PAVEMENT.	
							-0.70		0.400	
							-1.20		Unbound PAVEMENT.	
									0.700	
									GRAVEL, some brown fine to coarse sand, (Fill). ≅S4	
									1.200	
							-3.00		Brown, moist, fine to medium SAND, trace coarse sand, trace silt. ≅S1	
									3.000	
									Brown, moist, SILT, trace fine sand. ≅S2	
5										
							-5.50		5.500	
									Brown, damp, fine to medium SAND, little gravel, trace silt. ≅S3	
10							-10.00		10.000	
									Bottom of Exploration at 10.00 feet below ground surface.	
									NO REFUSAL	
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-103
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/5/05-12/5/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	354+55, 8.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S3		0.70 - 10.00			SSA	-0.45		PAVEMENT.	
							-0.70		0.450	G#180803
									GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4	A-1-b, SM
									0.700	WC=6.3%
									Brown, damp, fine to medium SAND, little gravel, trace silt.	
5										
10							-10.00		10.000	
									Bottom of Exploration at 10.00 feet below ground surface.	
									NO REFUSAL	
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-104
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/5/05-12/5/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	358+15, 8.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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	S4		0.40 - 0.90			SSA	-0.40		PAVEMENT. 0.400	G#180804 A-1-a, GP-GM WC=2.6%
	S5		0.90 - 5.00				-0.90		GRAVEL, some brown, fine to coarse sand, (Fill). 0.900	G#180805 A-1-b, SM WC=10.6%
									Brown, moist, fine to medium SAND, some gravel, trace coarse sand, trace silt.	
5							-5.00		5.000 **Bottom of Exploration at 5.00 feet below ground surface.** NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-105
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/5/05-12/5/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	360+65, 7.5 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	8.7' bgs.

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.40		PAVEMENT.	
							-0.90		0.400 GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4	
									0.900 Brown, moist, fine to medium SAND, some gravel, trace coarse sand, trace silt. ≅S5	
5										
							-8.70		8.700 Similar to above, but wet.	
10							-10.00		10.000 **Bottom of Exploration at 10.00 feet below ground surface.** NO REFUSAL	
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-106
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/6/05-12/6/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	363+23, 8.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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	-0.50		PAVEMENT.	
							-0.80		0.500 GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4	
									0.800 Brown, moist, fine to medium SAND, some gravel, trace coarse sand, trace silt. ≅S5	
	S6		3.00 - 5.00				-3.00		3.000 Olive, damp, sandy SILT, (Strong Odor).	G#180806 A-4, ML WC=11.7%
5							-5.00		5.000 **Bottom of Exploration at 5.00 feet below ground surface.** NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.
Overhead wires at 26+15.

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 117
Location: Turner, Maine

Boring No.: HB-TU-107
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/6/05-12/6/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	368+15, 8.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

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	-0.45		PAVEMENT.	
									0.450	
							-0.65		Unbound PAVEMENT.	
							-0.90		0.650	
									GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4	
	S7		2.20 - 5.00				-2.20		0.900	G#180807 A-4, CL-ML WC=24.2%
									Brown, moist, fine to medium SAND, some gravel, trace coarse sand, trace silt. ≅S5	
									2.200	
									Brown, moist, CLAY-SILT.	
5							-5.00		5.000	
									Bottom of Exploration at 5.00 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-108
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/6/05-12/6/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	376+05, 7.5 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.65		PAVEMENT. 0.650	
							-0.90		Unbound PAVEMENT. 0.900	
							-1.20		GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4 1.200	
									Brown, moist, fine to medium SAND, some gravel, trace coarse sand, trace silt. ≅S5	
5							-5.00		5.000	
									Bottom of Exploration at 5.00 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-109
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/6/05-12/6/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	380+00, 9.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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	-0.50		PAVEMENT. 0.500	
							-0.80		Unbound PAVEMENT. 0.800	
	S8		1.20 - 4.50				-1.20		GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4 1.200	G#180808 A-4, SM WC=12.5%
									Brown, moist, silty, fine to medium SAND.	
	S9		4.50 - 10.00				-4.50		4.500	
5									Brown, damp, dense, silty, fine to medium SAND, occasional cobbles, (Till).	G#180809 A-4, ML WC=8.4%
10							-10.00		10.000	
									Bottom of Exploration at 10.00 feet below ground surface. NO REFUSAL	
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-110
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/6/05-12/6/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	381+00, 7.5 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	8.5' bgs.

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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	-0.35		PAVEMENT.	
							-0.50		0.350	
							-0.90		Unbound PAVEMENT.	
									0.500	
									GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4	
									0.900	
									Brown, moist, fine to medium SAND, some gravel, trace coarse sand, trace silt.	
	S10		3.00 - 4.00				-3.00		≅S5	G#180810 A-4, SM WC=16.5%
									3.000	
							-4.00		Grey, moist, silty, fine SAND.	
									4.000	
5									Brown, moist, silty, fine to medium SAND. ≅S8	
							-8.50		8.500	
									Similar to above, but wet.	
10							-10.00		10.000	
									Bottom of Exploration at 10.00 feet below ground surface.	
									NO REFUSAL	
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-111
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/6/05-12/6/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	382+00, 9.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	8.0' bgs.

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.25		PAVEMENT.	
							-0.40		0.250	
							-0.70		Unbound PAVEMENT.	
									0.400	
									GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4	
	S11		2.50 - 5.50						0.700	
							-2.50		Brown, moist, fine to medium SAND, some gravel, trace coarse sand, trace silt. ≅S5	G#180811 A-4, SM WC=11.7%
									2.500	
5									Brown, moist, silty, fine SAND, little medium sand, trace gravel.	
							-5.50		5.500	
									Brown, damp, dense, silty, fine to medium SAND, occasional cobbles, (Till). ≅S9	
							-8.00		8.000	
									Similar to above, but wet.	
10							-10.00		10.000	
									Bottom of Exploration at 10.00 feet below ground surface. NO REFUSAL	
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-112
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/6/05-12/6/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	383+15, 7.5 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.55		PAVEMENT. 0.550	
							-0.70		Unbound PAVEMENT. 0.700	
							-1.00		GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4 1.000	
									Brown, moist, silty, fine SAND, little medium sand, trace gravel. ≅S11	
5							-4.50		4.500 Brown, damp, dense, silty, fine to medium SAND, occasional cobbles, (Till). ≅S9	
							-7.00		7.000 Similar to above, but grey.	
10							-10.00		10.000 **Bottom of Exploration at 10.00 feet below ground surface.** NO REFUSAL	
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-113
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/6/05-12/6/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	390+65, 8.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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	S12		0.80 - 5.00			SSA	-0.40		PAVEMENT. 0.400	G#180812 A-2-4, SM WC=10.5%
							-0.55		Unbound PAVEMENT. 0.550	
							-0.80		GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4 0.800	
									Brown, moist, fine to medium SAND, little gravel, trace coarse sand, trace silt.	
5							-5.00		5.000	
									Bottom of Exploration at 5.00 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-114
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/6/05-12/6/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	410+65, 7.5 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

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	-0.40		PAVEMENT. 0.400	
							-0.90		Unbound PAVEMENT. 0.900	
							-1.30		GRAVEL, some brown, fine to coarse sand, (Fill). ≅S4 1.300	
									Brown, moist, fine to medium SAND, little gravel, trace coarse sand, trace silt. ≅S12	
5							-5.00		5.000	
									Bottom of Exploration at 5.00 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-115
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/6/05-12/6/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	415+65, 8.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

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	S13		0.90 - 5.00			SSA	-0.25		PAVEMENT.	
							-0.50		0.250	
							-0.90		Unbound PAVEMENT.	G#180813 A-2-4, SM WC=10.5%
									0.500	
									COBBLE.	
									0.900	
									Brown, moist, silty, fine to medium SAND, trace gravel, trace coarse sand.	
5							-5.00		5.000	
									Bottom of Exploration at 5.00 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.
Farm has three water lines and one sewer line crossing the road.

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 117
Location: Turner, Maine

Boring No.: HB-TU-116
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/7/05-12/7/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	423+15, 8.5 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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	S14		0.85 - 1.20			SSA	-0.70		PAVEMENT. 0.700	
	S15		1.20 - 5.00				-0.85		Unbound PAVEMENT.	G#180814 A-1-b, SW WC=5.4%
							-1.20		0.850 Brown, damp, GRAVEL, some fine to coarse sand, trace silt, (Fill). 1.200	G#180815 A-4, CL-ML WC=24.7%
									Brown, moist, stiff, CLAY-SILT.	
5							-5.00		5.000 **Bottom of Exploration at 5.00 feet below ground surface.** NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-117
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/7/05-12/7/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	430+65, 8.5 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S16		0.70 - 1.30			SSA	-0.55		PAVEMENT. 0.550	G#180816 A-1-b, SW WC=4.4%
	S17		1.30 - 5.00				-0.70		Unbound PAVEMENT.	
							-1.30		0.700 GRAVEL, some brown, fine to coarse sand, trace silt, (Fill). 1.300	G#180817 A-4, CL-ML WC=28.1%
									Olive, moist, soft, SILT, trace clay.	
5							-5.00		5.000 **Bottom of Exploration at 5.00 feet below ground surface.** NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 117
Location: Turner, Maine

Boring No.: HB-TU-118
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/7/05-12/7/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	445+65, 9.5 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S18		0.75 - 1.90			SSA	-0.65		PAVEMENT. 0.650	G#180818 A-1-b, SW-SM WC=4.2%
							-0.75		Unbound PAVEMENT. 0.750	
							-1.90		Damp, GRAVEL, some brown, fine to coarse sand, trace silt, (Fill). 1.900	
									Brown, moist, fine to medium SAND, little gravel, trace coarse sand, trace silt. ≅S12	
5							-5.00		5.000	
									Bottom of Exploration at 5.00 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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 117
Location: Turner, Maine

Boring No.: HB-TU-119
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/7/05-12/7/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	450+65, 7.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.60		PAVEMENT. 0.600	
							-0.70		Unbound PAVEMENT. 0.700	
	S19		1.20 - 5.00				-1.20		GRAVEL, some brown, fine to coarse sand, trace silt, (Fill). ≅S16 1.200	G#180819 A-2-4, SM WC=15.7%
									Grey, moist, silty, fine SAND.	
5							-5.00		5.000	
									Bottom of Exploration at 5.00 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										

Remarks:

Offsets are from existing Roadway CL.

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Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Route 117
Location: Turner, Maine

Boring No.: HB-TU-120
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/7/05-12/7/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	458+45, 9.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
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	-0.65		PAVEMENT. 0.650	
							-0.80		Unbound PAVEMENT.	
	S20		1.40 - 5.00				-1.40		0.800	G#180820
									GRAVEL, some brown, fine to coarse sand, trace silt, (Fill). ≅S18 1.400	A-3, SP-SM
									Brown, moist, fine to medium SAND.	WC=12.8%
5							-5.00		5.000	
									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 117
Location: Turner, Maine

Boring No.: HB-TU-121
PIN: 12777.00

Driller:	MaineDOT	**Elevation (ft.)**		**Auger ID/OD:**	5" Dia.
Operator:	E. Giguere	**Datum:**	NAVD 88	**Sampler:**	Off Flights
Logged By:	G. Lidstone	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	12/7/05-12/7/05	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	468+15, 9.0 Rt.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (psf)
T_v = Pocket Torvane Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
$S_{u(lab)}$ = Lab Vane Shear Strength (psf)
WOH = weight of 140lb. hammer
WOR = weight of rods WOC = weight of casing

Definitions:
WC = water content, percent
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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	-0.40		PAVEMENT.	
									0.400	
							-1.40		GRAVEL, some brown, fine to coarse sand, trace silt, (Fill). ≅S18	
									1.400	
									Brown, moist, fine to medium SAND. ≅S20	
	S21		2.50 - 5.00				-2.50		2.500	G#180821
									Brown, moist, fine to coarse SAND, little gravel.	A-1-b, SW-SM
										WC=8.9%
5							-5.00		5.000	
									Bottom of Exploration at 5.00 feet below ground surface.	
									NO REFUSAL	
10										
15										
20										
25										

Remarks:

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Maine DOT, Materials Testing & Exploration, 219 Hogan Road, Bangor, Maine 04401

HMA PMRAP DESIGN

SUBMITTAL DATA

Job Mix No.
PMRAP-6-5

SAMPLE INFORMATION

Submitter: **LESSARD, DEAN A**

Item No.
310.231

Emulsion Used: **EMULSIFIED ASPHALT-MS-2**

Cement, %: **1.0**

RAP, %: **100**

PIN: **012777.00** Town: **TURNER**

Aggregate, %: **0**

TEST RESULTS

Gyratory Test Results

Sample	1	2	3	4	5
Emulsion, %	2.5	3.0	3.5	4.0	
Bulk Density	2.070	2.069	2.073	2.062	
T.M.D.	2.231	2.205	2.173	2.155	
% of T.M.D.	92.8	93.8	95.4	95.7	
Voids in Mix, %	7.2	6.2	4.6	4.3	

Emulsion, % (Recommended Starting Point) **3.5**

Comments:

AUTHORIZATION AND DISTRIBUTION

Authorized by: **WALKER, ROLLAN T** Date: **1/10/2006**

Paper Copy: Lab File *Electronic: Area Supervisor; Resident; Contractor*