Highway Program

Jeff Adams, Program Manager

Memorandum

DATE: June 15, 2007

TO: Joel Kittridge **DEPT:** Region 2

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

SUBJECT: Final Soils Memo – Leeds, Rte 219, Pin 12669 00
No 2007-109

Site Description

A subsurface investigation has been completed for a 1 6 mile portion of Route 219 in the town of Leeds The project begins 0 28 miles east of the Leeds-Turner town line and extends easterly

The investigation included the use of a drill rig and falling weight deflectometer (FWD) Project stationing was not marked in the field by survey A distance measuring instrument (DMI) was used to locate specific boring and FWD locations The beginning of the project was determined by preliminary design plans All offsets used in this investigation are referenced from the existing roadway centerline

FWD Results

The entire FWD results are included as a separate attachment to this memo A summary of the FWD results follows

% of project found to be deficient	88 %
Range of Recommended Overlay Thickness	0 5" – 6"
Average Recommended Overlay Thickness	3"

The subgrade resilient modulus is very low (< 3000psi) for approximately 21 % of the project length (See FWD Summary Sheet and PDS) It is anticipated that this is due to the presence of moist to wet silty sands containing organics and sandy silt soils These areas could become unstable under traffic if the pavement is removed, especially during the spring Depending on the conditions at the time of construction the use of additional base material may be necessary to enable these soils to support traffic during construction Construction operations should take this into consideration The greatest continuous concentration of low subgrade modulus values was encountered between stations 65+00 – 76+00 due to the presence of organic soils A complete list of areas with a low modulus is listed on Table 1

Table 1.
Low Subgrade Modulus Areas (< 3000 psi)

Station	Soil Type	Water Content	% Passing # 200	Ave Subgrade Modulus (psi)
23+00 – 29+00	SaSı	65	51	1828
54+50 – 56+00	SıSa/w org (10 % ıgn)	58	11	1903
60+00 – 61+00	SıSa/w org (10 % ıgn) ?	58	11	2179
65+00 – 76+00	Sı Sa/w org (9 – 47 % ıgn)	29 - 230	4 - 80	1878
84+50 – 85+50	SıSa	10	43	2788
92+00 – 93+00	SıSa	10	43	2859

Boring Information

The subsurface ınvestıgatıon consısted of 39 power auger borıngs and 25 pavement cores (See Borıng Logs and Pavement Core Summary Sheet) Borıng locatıons were determıned based upon FWD deflectıon results and vısual observatıons durıng an on-sıte vısıt Soıls were descrıbed and sampled ın the field Samples of the exıstıng base materıal and subgrade soıls were collected and analyzed ın the Bangor lab Testıng results are summarızed on the attached Laboratory Testıng Summary Sheet

Pavement Condıtions

Pavement condıtıons vary from very poor to faır Several power auger borıngs and pavement cores encountered an unbound or hıghly frıable pavement layer beneath a solıd pavement layer For a detaıl lıstıng of pavement measurements refer to the "Pavement Depth Informatıon" sheet ıncluded wıth thıs memo A pavement thıckness summary follows

Range of Solıd Pavement (SP) Thıckness	4 8" – 9 9"
Average Solıd Pavement Thıckness	7 5"
Range of Unbound Pavement UP) Thıckness	1 8" – 4 2"
Average Unbound Pavement Thıckness	3 5"
Range of Combıned (SP+UP) Pavement Thıckness	4 8" – 9 9"
Average Combıned Pavement Thıckness	7 5"

Note Pavement thıckness estımates are based upon 33 sample locatıons Measurements were taken from borıng holes and pavement cores Actual pavement thıckness may vary The maxımum sample spacıng ıs 1300 feet

Base Material

Existing Base Material Type	SiGSa, SiSa
Percent Passing #200	5 %-18 %
Range of Base Material Thickness	13" – 30"
Average Base Thickness	25"
Quality of Drainage (AASHTO)	Poor - Fair
Estimated Existing Permeability	4-82 ft/day

The existing base material consists of silty gravelly sand and silty sand This material has approximately 5%-18% passing the #200 sieve Much of this material can be considered as granular borrow Permeability estimates based upon grain size distribution are as low as 4 ft/day in areas These limited performance characteristics should be taken into consideration when developing performance expectations related to strength and drainage

Subgrade Soils

The subgrade soils along this project consist primarily of silty sands However, sandy silts and clay silts were also encountered at a few boring locations Between stations 65+00 – 75+00 organics were encountered (see Organic Soils section below)

A summary of the anticipated subgrade soil type is provided below This summary is derived from boring logs, FWD deflections, and visual observations Actual conditions may vary

Summary of the anticipated subgrade soil type

Station	Soil Type	AASHTO	Sample	% #200	% Ign	Subgrade Modulus x1000	Ave RM x1000
10+00 – 23+50	SiSa	A-2-4	S2,9	12 - 15		3 2 – 7 2	4 2
23+50– 28+00	SaSi	A-4	S5	51		1 5 – 2 0	1.7
28+00 – 65+00	SiSa	A-2-4	S6, 7	12 - 13		2 1 – 4 9	3 7
65+00 – 76+00	SiSa/w org		See Org Summary	3 - 29	9- 47	1 0 – 2 8	1.8
76+00 – 94+00	SiSa/SaSi	A-4	S22	43		2 8 – 3 8	3 1

Organic Soils

Soils containing a high percentage of organics were encountered between stations 65+00 and 76+00 Ideally these soils should be removed if maximum pavement performance is to be realized in this area A detailed description of the presence of organics can be found on the following page A summary of the organic soils is below

Depth to top of organic layer	Range 3 3' – 6 1'	Ave 4 2'
Depth to the bottom of organic layer	Range 4 5' – 9 1'	Ave 6 7'
Organic Layer Thickness	Range 0 9' – 4 9'	Ave 2 4'
Depth to Water	Range 2 9' – 9 1'	Ave 4 9'

If maximum pavement performance is to be achieved the organic materials should be removed

Leeds – Turner 12669.00
Rte 219
Organic Soils Summary – Sta. 65+50 – 74+00

Left								Right						
Station	Soil Type	Sample #	Depth (ft)	Thk (ft)	Ign %	Water Content	% 200	Soil Type	Sample #	Depth (ft)	Thk (ft)	Ign %	Water Content	% 200
65+50								SiSa w/org	207723	52 – 77	25	30	114	7
									Total Organic Thk		25' (52 – 7.7)			
66+50	SiSa w/org	207722	55 – 83	28	17	72	29	SiSa w/org	207725	61 – 70	09	16	49	12
								SiSa w/org	207976	70 – 91	21	60	279	2
		Total Organic Thk.		2.8' (5.5 – 8.3)					Total Organic Thk		3.0' (6.1 – 9.1) Wet @ 9.1'			
67+00	SiSa w/org	~207719	44 – 48	04	~29	173	4	SiSa w/org	207977	60 – 68	08	24		
	SiSa w/org	207721	48 – 67	19	26	89	10	SiSa w/org	207978	68 – 78	10	33	161	9
		Total Organic Thk		2.3' (4.4 – 6.7) Wet @ 5.2'					Total Organic Thk		1.8' (6.0 – 7.8) Wet @ 3.2'			
67+50	SiSa w/org	207719	43 – 47	04	~29	173	4	SiSa w/org	206947	41 – 55	14	10	99	11
	SiSa w/org	~207717	47 – 63	16	NA	30	14							
		Total Organic Thk.		2.0' (4.3 – 6.3) Wet @ 4.7'					Total Organic Thk		1.4' (4.1 – 5.5) Wet @ 4.8'			
68+00	SiSa w/org	207715	40 – 50	10	42	133	5	SiSa w/org	~207725	43 – 48	05	16	49	12
	SiSa w/org	207717	50 – 74	24	NA	30	14	SiSa w/org	~207978	48 – 57	09	33	161	9
		Total Organic Thk.		3.4' (4.0 – 7.4) Wet @ 5.0'					Total Organic Thk.		1.4' (4.3 – 5.7) Wet @ 5.5'			
68+50	SiSa w/org	~207712	44 – 49	05	47	230	9	SiSa w/org	~207725	43 – 48	05	16	49	12
	SiSa w/org	207714	49 – 61	12	9	58	9	SiSa w/org	~207978	48 – 52	04	33	161	9
								ClSi w/org	207980	52 – 70	18	3	29	80
		Total Organic Thk.		1.7' (4.4 – 6.1) Wet @ 4.9'					Total Organic Thk		2.7' (4.3 – 7.0) Wet @ 4.3'			
69+00	SiSa w/org	~207718	35 – 39	04	24	93	8	SiSa w/org	207981	42 – 50	08	48	203	32
	SiSa w/org	~207712	39 – 45	06	47	230	9	ClSi w/org	207980	50 – 70	20	3	29	80
	SiSa w/org	207720	45 – 62	17	14	60	11							
		Total Organic Thk		2.7' (3.5 – 6.2) Wet @ 4.5'					Total Organic Thk		2.8' (4.2 – 7.0) Wet @ 4.2'			

Left

Station	Soil Type	Sample #	Depth (ft)	Thk (ft)	Ign %	Water Content	% 200
69+50	SiSa w/org	207718	35 – 41	06	24	93	8
	SiSa w/org	~207712	41 – 53	12	47	230	9
		Total Organic Thk.		**1.8' (3.5 – 5.3) Wet @ 2.9'**			
70+00	SiSa w/org	~207713	41 – 64	23	24	73	2
	SiSa w/org	207716	64 – 76	12	11	84	29
		Total Organic Thk		**3.5' (4.1 – 7.6) Wet @ 4.1'**			
70+50	wood		33 – 38	05			
	SiSa w/org	~207712	38 – 53	15	47	230	9
	SiSa w/org	207713	53 – 82	29	24	73	2
		Total Organic Thk		**4.9' (3.3 – 8.2) Wet @ 5.3'**			
71+00	wood		33 – 36	03			
	SiSa w/org	207712	36 – 55	19	47	230	9
	SiSa w/org	~207989	55 – 70	15	49	146	7
		Total Organic Thk		**3.7' (3.3 – 7.0) Wet @ 5.5'**			
71+50	SiSa w/org	~207988	34 – 52	18	29	178	4
	SiSa w/org	207989	52 – 69	17	49	146	7
		Total Organic Thk.		**3.5' (3.4 – 6.9) Wet @ 5.2'**			
72+00	SiSa w/org	207988	35 – 61	26	29	178	4
		Total Organic Thk		**2.6' (3.5 – 6.1) Wet @ 6.1'**			
72+50	No Organics Encountered – Water @ 52'						
73+00	SaSi w/org	207987	35 – 45	10	8	39	51
		Total Organic Thk		**1.0' (3.5 – 4.5) Wet @ 6.3'**			
74+00	Only a trace of Organics found @3 5'						

Right

Soil Type	Sample #	Depth (ft)	Thk (ft)	Ign %	Water Content	% 200
SiSa w/org	207982	42 – 58	16	18	129	5
ClSi w/org	~207980	50 – 70	20	3	29	80
	Total Organic Thk		**1.6' (4.2 – 5.8) Wet @ 3.7'**			
SiSa w/org	207983	45 – 80	35	42	233	2
	Total Organic Thk		**3.5' (4.5 – 8.0) Wet @ 3.8'**			
SiSa w/org	207984	61 – 79	18	39	145	3
	Total Organic Thk		**1.8' (6.1 – 7.9) Wet @ 4.5'**			
SiSa w/org	206947	40 – 66	26	10	99	11
	Total Organic Thk		**2.6' (4.0 – 6.6) Wet @ 4.7'**			
SiSa w/org	~206947	39 – 68	29	10	99	11
	Total Organic Thk.		**2.9' (3.9 – 6.8) Wet @ 5.5'**			
SiSa w/org	207985	36 – 45	09	51	217	9
	Total Organic Thk		**0.9' (3.6 – 4.5) Wet @ 4.5'**			
SiSa w/org	~206947	42 – 55	13	10	99	11
	Total Organic Thk		**1.3' (4.2 – 5.5) Wet @ 5.5'**			
No Organics Encountered – Water @ 60'						

Bedrock

No refusals were encountered in any of the borings It is anticipated that bedrock will not be encountered within 5' below the existing road surface

Performance Data Summary

A Performance Data Summary (PDS) sheet has been provided as a separate attachment to this memo The PDS indicates that the majority of the project generally meets 3 of the 4 minimum performance data criteria Although these areas are only deficient in one minimum performance criteria, the roadway is showing signs of distress (rutting and cracking) It is anticipated that this distress is due to the lack of existing ditching

The area of most concern is between stations 65+00 – 75+00 where organics soils were encountered In this area the subgrade modulus is very low and the existing structural number fails to meet the future traffic structural number

The following table list areas of concerns based upon the PDS sheet Please refer to the PDS Sheet for a detailed listing of existing conditions and minimum performance data criteria

Station	Comments
23+00 – 29+00	Very low subgrade resilient modulus values (< 3000 psi) were encountered Moist to wet silty soils exist This area could be problematic if the pavement is removed when moist to wet conditions exist Variable depth fill may be beneficial Additional pavement or base will be required to meet the future structural number and performance expectations
55+00 – 56+00 60+00 – 61+00	Isolated areas of very low subgrade resilient modulus values (< 3000 psi) Additional pavement or base will be needed to meet the future structural number and performance expectations These isolated areas could be problematic if the pavement is removed when moist to wet conditions exist Improvements to the existing drainage will be very important It is anticipated that the existing lack of ditching is responsible for the poor pavement performance
65+00 – 75+00	Very low subgrade resilient modulus values (< 3000 psi) were encountered due to the presence of organic soils This area could be problematic during construction if the existing pavement surface is removed Additional pavement, base and drainage improvements will be required to meet the future structural number and performance expectations The organics soils should be removed if maximum pavement performance is to be achieved
82+00 – 93+00	Isolated areas of low subgrade resilient modulus values (< 3000 psi) Additional pavement or base will be needed to meet the future structural number and performance expectations These isolated areas could be problematic if the pavement is removed during the construction process if wet conditions exist Improvements to the existing drainage will be very important It is anticipated that the existing lack of ditching is responsible for the poor pavement performance

Recommendations

1 It is recommended that the entire project area be drained with aggressive ditching wherever possible Ditching should extend a minimum of 3 feet below finished grade whenever possible

Ditching is critical between stations 31+00 - 63+00 and 76+50 – 90+00 It is anticipated that the existing pavement distress in these areas is primarily the result of a lack of existing ditching

2 It is recommended that the organic soils between stations 65+00 and 75+00 be undercut and replaced with borrow The underlying soil consists of saturated clay silts A reinforcement geogrid (BX 1200) may need to be placed on the saturated clay silt soils to facilitate construction

3 Variable depth gravel should be considered between stations 23+00 – 28+00 and 31+00 – 37+00

4 Between stations 60+00 – 62+00 the existing right backslope consist of highly erodible fine sand To prevent the erosion of this material, it is important that this material be stabilized with vegetation However, special measures may need to be taken to establish vegetation in this sand The resident may want to contact environmental for a specific recommendation for establishing vegetation on this sandy slope

Falling Weight Deflectometer (FWD)
Summary Sheet

Project # 12669 00
Town(s) Leeds-Turner
Route(s) #219
Date Tested 05/26/2006
Requested By S Hayden
Direction of Testing East

Of FWD tests 46
Of Power Augers/Spoons 13/0
Design Life 12 Yrs
Future 18-kip ESALs (Design Life) 1,121,280
Initial Serviceability 4 5
Terminal Serviceability 2 5
Reliability Level 95%
Overall Standard Deviation 45

Locations

Distance (Feet)	Description

Comments

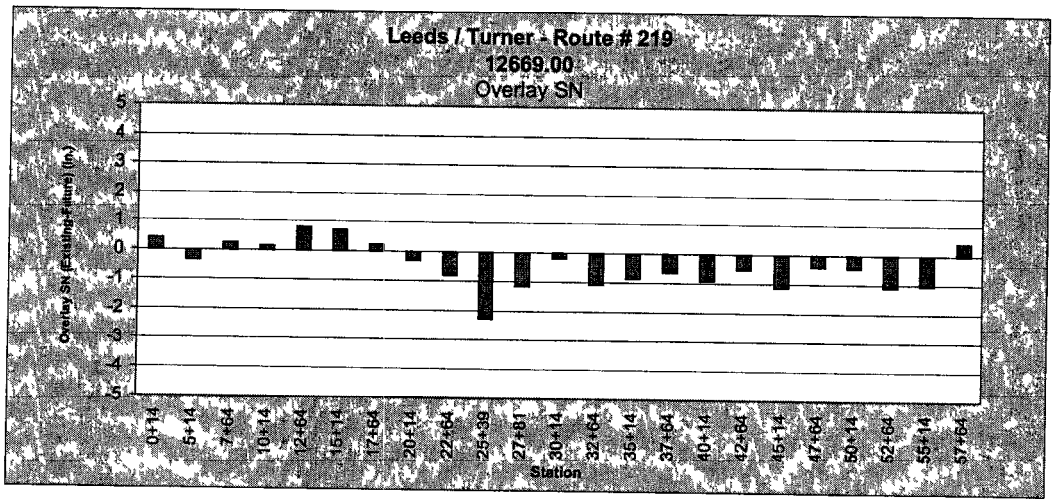
Leeds / Turner - Route # 219
12669.00

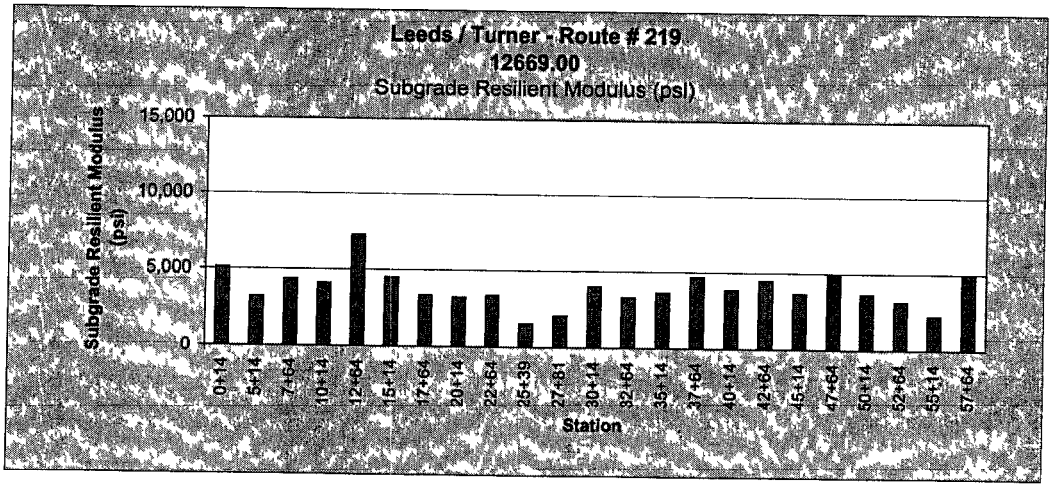
Station (Feet)	Existing Structural Number (in)	Future Traffic Structural Number (in)	Overlay Structural Number (Existing Future)	Recommended Pavement Thickness (in)	Pavement Modulus (psi)	Subgrade Resilient Modulus (psi)	Pavement Depth (in)	* Combined Pavement/Gravel Depth Used for Calculation (in)
0+14	4 57	4 16	0 41	-	57,057	5,109	6	26 4
5+14	4 5	4 85	-0.35	0.8	54,227	3,212	6	26 4
7+64	4 63	4 38	0 25	-	59,234	4,371	6	26 4
10+14	4 64	4 49	0 15	-	59,433	4,055	6	26 4
12+64	4 47	3 68	0 79	-	53,204	7,244	6	26 4
15+14	5 04	4 33	0 71	-	74,624	4,512	7 2	26 6
17+64	5 03	4 8	0 23	-	74,108	3,318	7 2	26 6
20+14	4 54	4 84	-0.3	0.68	54,620	3,228	7 2	26 6
22+64	3 96	4 78	-0.82	1.86	36,093	3 344	7 2	26 6
25+39	3 78	6 06	-2.28	5.18	30,550	1,564	9 6	26 9
27+81	4 38	5 55	-1.17	2.66	49,117	2,092	7 2	26 6
30+14	4 34	4 52	-0.18	0.41	53,603	3,979	6	25 6
32+64	3 71	4 8	-1.09	2.48	33,320	3,298	6	25 6
35+14	3 79	4 67	-0.88	2	35 715	3 605	6	25 6
37+64	3 64	4 3	-0.66	1.5	60,347	4,627	6 6	20 6
40+14	3 64	4 57	-0.93	2.11	60 364	3,848	6 6	20 6
42+64	3 82	4 36	-0.54	1.23	69,914	4,446	6 6	20 6
45+14	3 53	4 67	-1.14	2.59	55,298	3,604	6 6	20 6
47+64	3 76	4 2	-0.44	1	66,758	4,947	6 6	20 6
50+14	4 19	4 66	-0.47	1.07	42,869	3,614	7 2	26 6
52+64	3 78	4 88	-1.1	2.5	31,523	3,138	7 2	26 6
55+14	4 35	5 4	-1.05	2.39	48 140	2,277	7 2	26 6
57+64	4 61	4 19	0 42	-	57,130	4,975	7 2	26 6

Weak Subgrade

Potential Bedrock

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





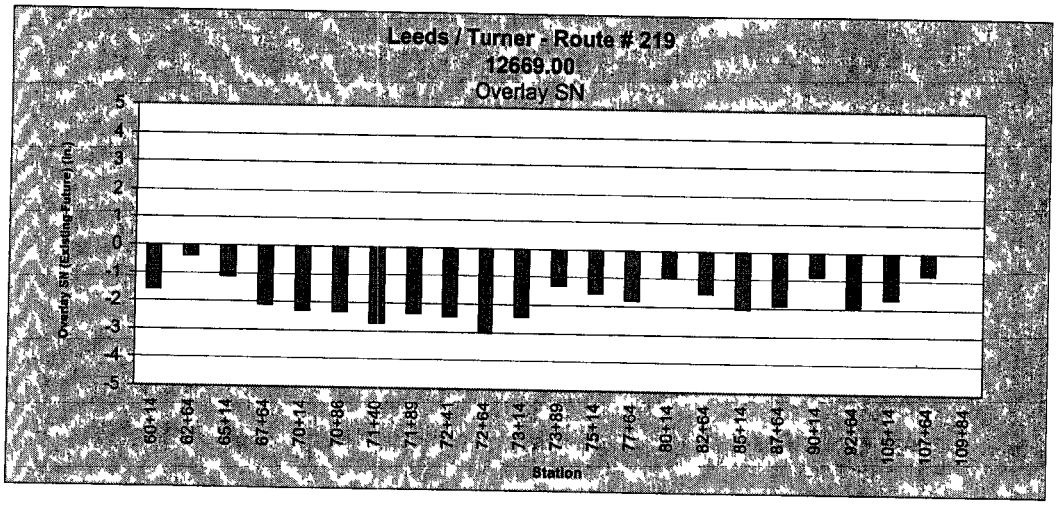
Leeds / Turner - Route # 219
12669.00

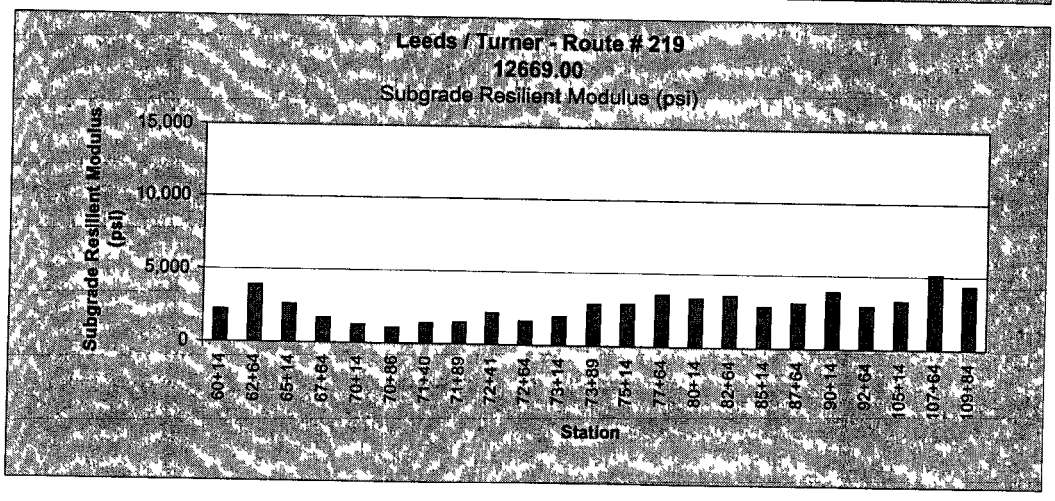
Station (Feet)	Existing Structural Number (in)	Future Traffic Structural Number (in)	Overlay Structural Number (Existing Future)	Recommended Pavement Thickness (in)	Pavement Modulus (psi)	Subgrade Resilient Modulus (psi)	Pavement Depth (in)	* Combined Pavement/Gravel Depth Used for Calculation (in)
60+14	3 87	5 48	-1.61	3.66	33 856	2,179	7 2	26 6
62+64	4 14	4 53	-0.39	0.89	41,387	3,939	7 2	26 6
65+14	4 06	5 2	-1.14	2.59	39,124	2,579	7 2	26 6
67+64	3 83	5 94	-2.11	4.8	41,073	1,672	8 4	24 7
70+14	4 2	6 51	-2.31	5.25	54,137	1,225	8 4	24 7
70+86	4 48	6 81	-2.33	5.3	53,691	1,053	6	26 4
71+40	3 56	6 28	-2.72	6.18	27,561	1,388	4 8	26 2
71+89	3 83	6 18	-2.35	5.34	34,204	1,460	4 8	26 2
72+41	3 07	5 52	-2.45	5.57	47,030	2,130	3 6	**18 9**
72+64	2 98	5 99	-3.01	6.84	42,877	1,620	3 6	**18 9**
73+14	3 27	5 69	-2.42	5.5	56,732	1,923	3 6	**18 9**
73+89	3 77	5 07	-1.3	2.95	80 855	2,785	7 2	**19 4**
75+14	3 5	5 05	-1.55	3.52	64,696	2,831	7 2	**19 4**
77+64	2 93	4 72	-1.79	4.07	37,748	3 483	7 2	**19 4**
80+14	3 86	4 81	-0.95	2.16	86,539	3,293	7 2	**19 4**
82+64	3 2	4 72	-1.52	3.45	52,643	3,479	4 2	**19**
85+14	3 02	5 07	-2.05	4.66	44,133	2,788	4 2	**19**
87+64	3 02	4 93	-1.91	4.34	43,949	3,037	4 2	**19**
90+14	3 69	4 57	-0.88	2	80,606	3,853	4 2	**19**
92+64	3 08	5 03	-1.95	4.43	46,796	2,859	4 2	**19**
105+14	3 17	4 83	-1.66	3.77	51,047	3,242	4 2	**19**
107+64	3 35	4 16	-0.81	1.84	60 248	5,099	4 2	**19**
109+84	4 39	4 39	0	-	135 653	4,356	4 2	**19**

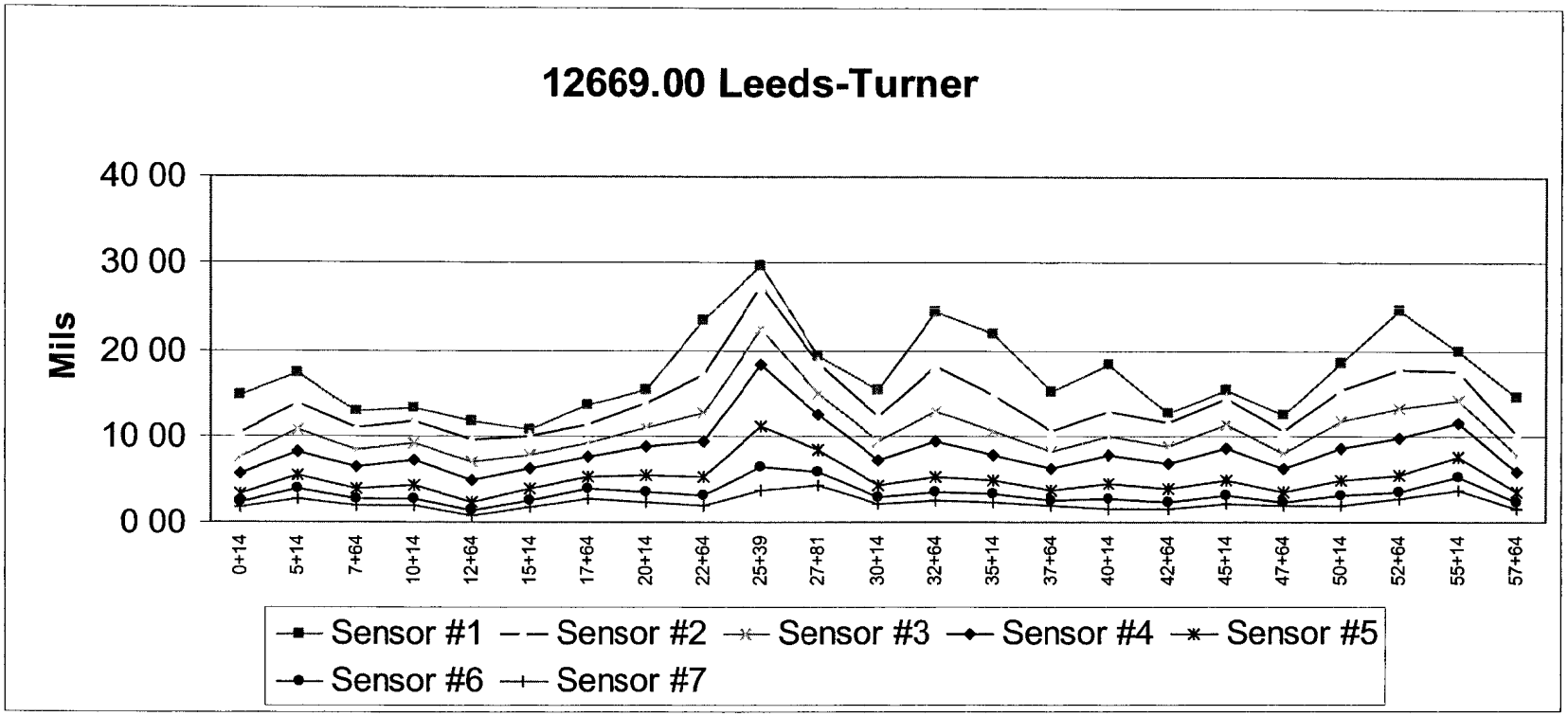
Weak Subgrade

Potential Bedrock

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






12669.00 Leeds-Turner
Mils
40 00
30 00
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10 00
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0+14
5+14
7+64
10+14
12+64
15+14
17+64
20+14
22+64
25+39
27+81
30+14
32+64
35+14
37+64
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42+64
45+14
47+64
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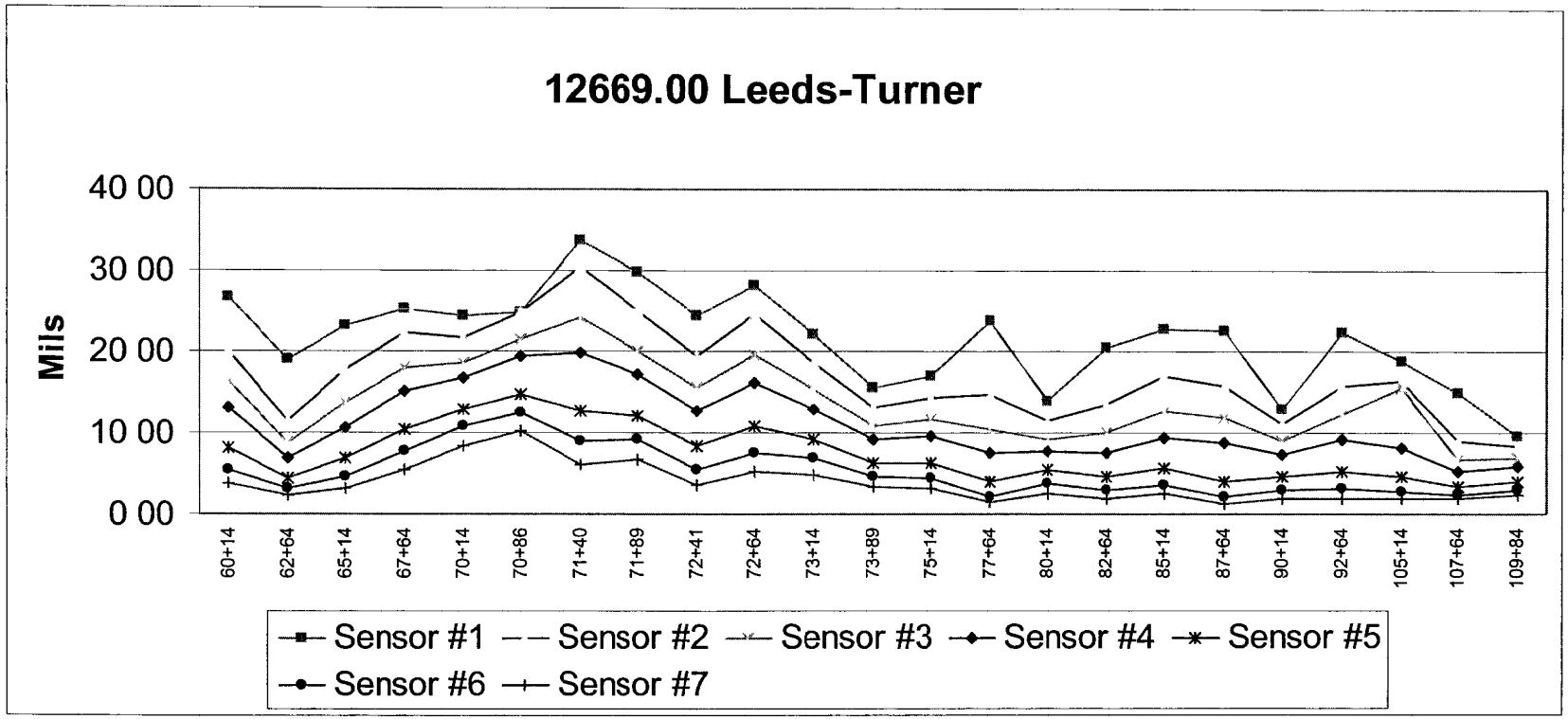
Sensor #5
Sensor #6
Sensor #7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Mils
40 00
30 00
20 00
10 00
0 00
60+14
62+64
65+14
67+64
70+14
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71+40
71+89
72+41
72+64
73+14
73+89
75+14
77+64
80+14
82+64
85+14
87+64
90+14
92+64
105+14
107+64
109+84
Sensor #1
Sensor #2
Sensor #3
Sensor #4
Sensor #5
Sensor #6
Sensor #7

Performance Data Summary Sheet

Leeds – Turner Rte 219
CHIP
12669.00

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
		Pavement Thickness (4 inches)	Base Thickness (18 inches)	Subgrade Modulus (3000 psi)	Structural Number	CL				
0+14	0									
5+14	1									
7+64	0									
10+14	0									
12+64	0					6.0 SP 1.8 UP 28.2	SiGSa A-1-b S8	18 II Damp	SiSa A-2-4 S9	12 II Damp
15+14	0						River Road 15+09			
17+64	0									
20+14	1					7.2 SP 2.4 UP 32.4	SiGSa A-1-b S1	17 II Damp	SiSa A-2-4 S2	15 II Moist
22+64	1									
25+39	2					9.6 SP - 30.0	SiGSa A-1-b S3,4	5-16 0-II Damp	SaSi A-4 S5	51 IV Moist
27+81	2					7.2 SP - 32.4	SiGSa A-1-b S3,4	5-16 0-II Damp	SiSa A-2-4 S7	12 II Wet 4.5'
30+14	1									
32+64	1					6.0 SP - 21.6	SiGSa A-1-b S3,4	5-16 0-II Damp	SiSa A-2-4 S6	13 II Wet 2.3'
35+14	1									
37+64	1									
40+14	1									
42+64	1					6.6 SP - 22.2	SiSa A-2-4 S7	12 II Moist	SiSa A-2-4 S7	12 II Wet 2.4'
45+14	1						Fish Street 44+85			
47+64	1									
50+14	1									
52+64	1									

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

Performance Data Summary Sheet

Leeds – Turner Rte 219
CHIP
12669.00

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
		Pavement Thickness (4 inches)	Base Thickness (18 inches)	Subgrade Modulus (3000 psi)	Structural Number	CL				
55+14	2					7.2 SP - 32.4	SiGSa A-1-b S10	17 II Damp	SiSa A-2-4 S7	12 II Moist
57+64	0									
60+14	2									
62+64	1									
65+14	3								Organics	
67+64	3					8.4 SP - 15.6	SiGSa A-1-b S11	13 II Damp	See Separate Organic Soils Summary	
70+14	2								Organics	
70+86	2					6.0 SP 2.4 UP 26.4	SiGSa A-1-b S11	13 II Damp	See Separate Organic Soils Summary	
71+40	2					4.8 SP 3.0 UP 24.6	SiGSa A-1-b S11, 17	13-15 II Wet	See Separate Organic Soils Summary	
71+89	2								Organics	
72+64	2					3.6 SP 3.6 UP 27.6	SiGSa A-1-b S18	16 II Damp	See Separate Organic Soils Summary	
73+14	2								Organics	
73+89	2									
75+14	2					7.2 SP - 24.0	SiGSa A-1-b S18	16 II Damp	ClSi A-7-5 S21	95 IV Moist
77+64	1									
80+14	1									
82+64	2									
85+14	3					4.2 SP 4.2 UP 13.2	SiGSa A-1-b S18	16 II Damp	SiSa A-4 S22	43 III Damp
87+64	2									
90+14	1									
92+64	2									

* SP = Solid Pavement Layer
* UP = Unbound Pavement Layer
SP+UP = Total Pavement Thickness
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Performance Data Summary Sheet

Leeds – Turner Rte 219
CHIP
12669.00

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				
105+14	1									
107+64	1									
109+84	1									
		Pavement Thickness (4 inches)	Base Thickness (18 inches)	Subgrade Modulus (3000 psi)	Structural Number					

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

PAVEMENT DEPTH INFORMATION
Leeds - Turner
Rte 219
12669 00

STATION	LEFT			CL	RIGHT		
	15'	**10'**	**5'**		**5'**	**10'**	**15'**
12+64					(7 0') 6 0 SP 1 8 UP **7.8**		
20+14		(10.5') 6.6 SP - **6.6**	(4 0') 7.8 SP - **7.8**	9.9 SP - **9.9**	(7.0') 7.2 SP - **7.2**	7.2 SP - **7.2**	
25+39					(7 5') 9 6 SP - **9.6**		
27+64		8.4 SP - **8.4**	7.2 SP - **7.2**	8.4 SP - **8.4**	(7.0') 7 2 SP - **7.2**	7.2 SP - **7.2**	
32+64					(7 0') 6 0 SP - **6.0**		
42+64		8.6 SP - **8.6**	8.4 SP - **8.4**	7.8 SP - **7.8**	(5.5') 6.6 SP - **6.6**	5.4 SP - **5.4**	
55+14					(6 0') 7 2 SP - **7.2**		
67+64						(9 0') 8 4 SP - **8.4**	
70+86						(9 0') 6 0 SP 2 4 UP **8.4**	

* SP – Solid Pavement Layer, * UP – Unbound Pavement Layer,
SP+UP = Total Pavement, (7 7') = actual offset
Non shaded data obtained from power auger borings, shaded data obtained from coring

PAVEMENT DEPTH INFORMATION
Leeds - Turner
Rte 219
12669 00

STATION	LEFT			CL	RIGHT		
	15'	**10'**	**5'**		**5'**	**10'**	**15'**
71+40						(8 5') 4 8 SP 3 0 UP **7.8**	
72+64		3.4 SP 3.6 UP **7.0**	2.0 SP 6.0 UP **8.0**	9.6 SP - **9.6**	(5.8') 3.6 SP 3.6 UP **7.2**	3.0 SP 3.6 UP **6.6**	
75+14					(7 0') 7 2 SP - **7.2**		
85+14		4.8 SP - **4.8**	6.0 SP - **6.0**	7.8 SP - **7.8**	(7.5') 4.2 SP 4.2 UP **8.4**	(10.5') 6.6 SP - **6.6**	

* SP – Solid Pavement Layer, * UP – Unbound Pavement Layer,
SP+UP = Total Pavement, (7 7') = actual offset
Non shaded data obtained from power auger borings, shaded data obtained from coring

State of Maine - Department of Transportation

Pavement Core Summary Sheet

Town(s): Leeds-Turner Project Number: 12669.00

Station (Feet)	Offset (Feet)	Pavement Depth (Feet)	Unbound Pavement	PC-Number	Saved Core	Comments / Date 7/13/2006
20+14	10 0 Rt	0 60		PC-1	yes	
20+14	CL	0 83		PC-2	yes	
20+14	4 0 Lt	0 65		PC-3	yes	Left piece of core in hole
20+14	10 5 Lt	0 55		PC-4	yes	
20+14	7 0 Rt	0 60		SSA		HB-LETU-102
27+64	10 0 Rt	0 60		PC-5		
27+64	CL	0 70		PC-6		
27+64	5 0 Lt	0 60		PC-7		
27+64	10 0 Lt	0 70		PC-8		
27+64	7 0 Rt	0 60		SSA		HB-LETU-104
42+64	10 0 Rt	0 45		PC-9		
42+64	CL	0 65		PC-10		
42+64	5 0 Lt	0 70		PC-11		
42+64	10 0 Lt	0 72		PC-12		
42+64	5 5 Rt	0 55		SSA		HB-LETU-106
57+64	10 0 Rt	0 70		PC-13	yes	
57+64	CL	0 70		PC-14	yes	
57+64	5 0 Lt	0 70		PC-15	yes	
57+64	10 0 Lt	0 30		PC-16	yes	May more, but broken up
57+64		0 75		SSA		
72+64	10 0 Rt	0 25	+0 3	PC-17		
72+64	CL	0 80		PC-18		
72+64	5 0 Lt	0 17	+0 5	PC-19		
72+64	10 0 Lt	0 28	+0 3	PC-20		
72+64	5 8 Rt	0 30	+0 3	SSA		HB-LETU-111
85+14	CL	0 65		PC-21		
85+14	10 5 Rt	0 55		PC-22		
85+14	5 0 Lt	0 50		PC-23		
85+14	10 0 Lt	0 40		PC-24		
85+14	7 5 Rt	0 35	+0 35	SSA		HB-LETU-113

Logged By G Lidstone

3" Thinwall Core

State of Maine - Department of Transportation

Laboratory Testing Summary Sheet

Town(s): Leeds-Turner Project Number: 12669.00

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-LETU-101, S8	12+64	7 0 Rt	0 65-3 0	206941	1	3 3	18 1	SM	A-1-b	II
HB-LETU-101, S9	12+64	7 0 Rt	3 0-5 0	206942	1	9 7	12 4	SM	A-2-4	II
HB-LETU-102, S1	20+14	7 0 Rt	1 2-2 7	206934	1	6 2	17 3	SM	A-1-b	II
HB-LETU-102, S2	20+14	7 0 Rt	2 7-5 0	206935	1	15 7	14 8	SM	A-2-4	II
HB-LETU-103, S3	25+39	7 5 Rt	1 2-2 0	206936	2	6 0	5 0	SP-SM	A-1-b	0
HB-LETU-103, S4	25+39	7 5 Rt	2 0-3 3	206937	2	5 9	16 4	SM	A-1-b	II
HB-LETU-103, S5	25+39	7 5 Rt	3 3-5 0	206938	2	64 6	50 6	ML	A-4	IV
HB-LETU-105, S6	32+64	7 0 Rt	2 3-5 0	206939	2	16 6	13 3	SM	A-2-4	II
HB-LETU-106, S7	42+64	5 5 Rt	1 1-2 4	206940	2	16 4	12 1	SM	A-2-4	II
HB-LETU-107, S10	55+14	6 0 Rt	0 60-3 3	206943	2	3 5	17 3	SM	A-1-b	II
HB-LETU-108, S11	67+64	9 0 Rt	0 70-2 0	206944	3	6 2	13 3	SM	A-1-b	II
HB-LETU-108, S12	67+64	9 0 Rt	2 0-3 2	206945	3	9 3	27 4	SM	A-2-4	II
HB-LETU-108, S13	67+64	9 0 Rt	3 2-4 1	206946	3	19 7	11 1	SP-SM	A-2-4	0
HB-LETU-108, S14	67+64	9 0 Rt	4 1-5 5	206947	3	98 7	10 9	SP-SM	A-2-4	0
				Loss on Ignition (T 267) Loss=9 7% H20=57 9%						
HB-LETU-108, S15	67+64	9 0 Rt	5 5-10 0	206948	3	28 4	92 5	CL	A-7-5	IV
HB-LETU-109, S16	70+86	9 0 Rt	2 9-4 0	206949	3	19 4	37 6	SM	A-4	III
HB-LETU-110, S17	71+40	8 5 Rt	1 8-2 7	206950	4	12 2	15 0	SM	A-1-b	II
HB-LETU-111, S18	72+64	5 8 Rt	0 60-1 8	180576	4	3 0	16 2	SM	A-1-b	II
HB-LETU-111, S19	72+64	5 8 Rt	2 9-4 2	180577	4	21 2	47 4	SM	A-4	III
HB-LETU-111, S20	72+64	5 8 Rt	5 5-7 0	180578	4	17 2	18 6	SM	A-1-b	II
HB-LETU-112, S21	75+14	7 0 Rt	2 6-10 0	180579	4	26 9	94 9	CL	A-7-5	IV
HB-LETU-113, S22	85+14	7 5 Rt	1 8-5 0	180580	4	9 5	42 7	SM	A-4	III

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

Laboratory Testing Summary Sheet

Town(s): Leeds-Turner Project Number: 12669.00

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-LETU-201, S1	65+50	7 0 Rt	5 2-7 7	207723	5	114	6 6	SW-SM	A-1-b	0
				Loss on Ignition (T 267) Loss=29 9% H20=184 5%						
HB-LETU-201, S2	65+50	7 0 Rt	7 7-10 0	207724	5	22 2	81 6	CL	A-7-5	IV
HB-LETU-226, S29	66+50	7 3 Lt	5 5-8 3	207722	5	71 8	28 6	SC-SM	A-2-4	II
				Loss on Ignition (T 267) Loss=16 5% H20=82 4%						
HB-LETU-202, S3	66+50	6 5 Rt	6 1-7 0	207725	5	49 2	12 0	SM	A-2-4	II
				Loss on Ignition (T 267) Loss=16 3% H20=85 2%						
HB-LETU-202, S4	66+50	6 5 Rt	7 0-9 1	207976	5	279	2 2	SP	A-1-a	0
				Loss on Ignition (T 267) Loss=59 9% H20=311 0%						
HB-LETU-225, S28	67+00	7 8 Lt	4 8-6 7	207721	5	89	9 5	SW-SM	A-1-b	0
				Loss on Ignition (T 267) Loss=25 9% H20=100 5%						
HB-LETU-203, S5	67+00	6 2 Rt	6 0-6 8	207977	---	gradation portion spilled during testing				
				Loss on Ignition (T 267) Loss=23 8% H20=111 0%						
HB-LETU-203, S6	67+00	6 2Rt	6 8-7 8	207978	6	161	8 6	SW-SM	A-1-b	0
				Loss on Ignition (T 267) Loss=32 6% H20=160 7%						
HB-LETU-203, S7	67+00	6 2 Rt	7 8-10 0	207979	6	31 0	91 7	CL	A-7-5	IV
HB-LETU-224, S27	67+50	8 0 Lt	4 3-4 7	207719	6	173	3 6	SP	A-1-b	0
HB-LETU-223, S25	68+00	8 2 Lt	4 0-5 0	207715	6	133	5 3	SP-SM	A-3	0
				Loss on Ignition (T 267) Loss=41 5% H20=178 5%						
HB-LETU-223, S26	68+00	8 2 Lt	5 0-7 4	207717	6	30 1	13 5	SM	A-2-4	II
HB-LETU-222, S23	68+50	7 5 Lt	0 40-2 2	207711	7	5 5	14 7	SM	A-1-b	II
HB-LETU-222, S24	68+50	7 5 Lt	4 9-6 1	207714	7	58 0	8 6	SP-SM	A-3	0
				Loss on Ignition (T 267) Loss=8 8% H20=46 0%						
HB-LETU-205, S8	68+50	8 0 Rt	5 2-7 0	207980	7	29 4	79 8	CL-ML	A-4	IV
				Loss on Ignition (T 267) Loss=2 6% H20=27 8%						
HB-LETU-221, S22	69+00	7 4 Lt	4 5-6 2	207720	7	59 6	10 6	SP-SM	A-1-b	0
				Loss on Ignition (T 267) Loss=14 3% H20=104 0%						
HB-LETU-206, S9	69+00	8 0 Rt	4 2-5 0	207981	7	203	3 2	SP	A-1-b	0
				Loss on Ignition (T 267) Loss=47 8% H20=201 1%						
HB-LETU-220, S21	69+50	7 3 Lt	3 5-4 1	207718	8	93 0	7 8	SP-SM	A-3	0
				Loss on Ignition (T 267) Loss=23 5% H20=96 7%						
HB-LETU-207, S10	69+50	8 0 Rt	4 2-5 8	207982	8	129	5 4	SP-SM	A-1-b	0
				Loss on Ignition (T 267) Loss=17 8% H20=92 9%						
HB-LETU-219, S20	70+00	7 0 Lt	6 4-7 6	207716	8	83 9	28 5	SC-SM	A-2-4	II
				Loss on Ignition (T 267) Loss=11 0% H20=65 3%						
HB-LETU-208, S11	70+00	7 5 Rt	4 5-8 0	207983	8	233	2 4	SP	A-1-a	0
				Loss on Ignition (T 267) Loss=41 7% H20=226 7%						
HB-LETU-218, S19	70+50	6 8 Lt	5 3-8 2	207713	8	73 4	1 7	SW	A-1-b	0
				Loss on Ignition (T 267) Loss=23 7% H20=101 4%						
HB-LETU-209, S12	70+50	7 5 Rt	6 1-7 9	207984	8	145	3 0	SW	A-1-b	0
				Loss on Ignition (T 267) Loss=39 1% H20=158 9%						

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

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State of Maine - Department of Transportation

Laboratory Testing Summary Sheet

Town(s): Leeds-Turner Project Number: 12669.00

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-LETU-217, S18	71+00	7 2 Lt	3 6-5 5	207712	9	230	8 6	SW-SM	A-1-a	0
				Loss on Ignition (T 267) Loss=46 9% H20=95 6%						
HB-LETU-216, S17	71+50	6 8 Lt	5 2-6 9	207989	9	146	6 5	SW-SM	A-1-a	0
				Loss on Ignition (T 267) Loss=48 9% H20=184 4%						
HB-LETU-215, S16	72+00	7 3 Lt	3 5-4 8	207988	9	178	3 6	SW	A-1-a	0
				Loss on Ignition (T 267) Loss=28 9% H20=372 0%						
HB-LETU-210, S13	72+00	6 5 Rt	3 6-4 5	207985	9	217	8 8	SW-SM	A-1-a	0
				Loss on Ignition (T 267) Loss=51 4% H20=205 4%						
HB-LETU-210, S14	72+00	6 5 Rt	4 5-10 0	207986	9	20 9	30 0	SM	A-2-4	II
HB-LETU-213, S15	73+00	7 5 Lt	3 5-4 5	207987	9	39 2	50 7	CL-ML	A-4	IV
				Loss on Ignition (T 267) Loss=8 3% H20=36 1%						

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

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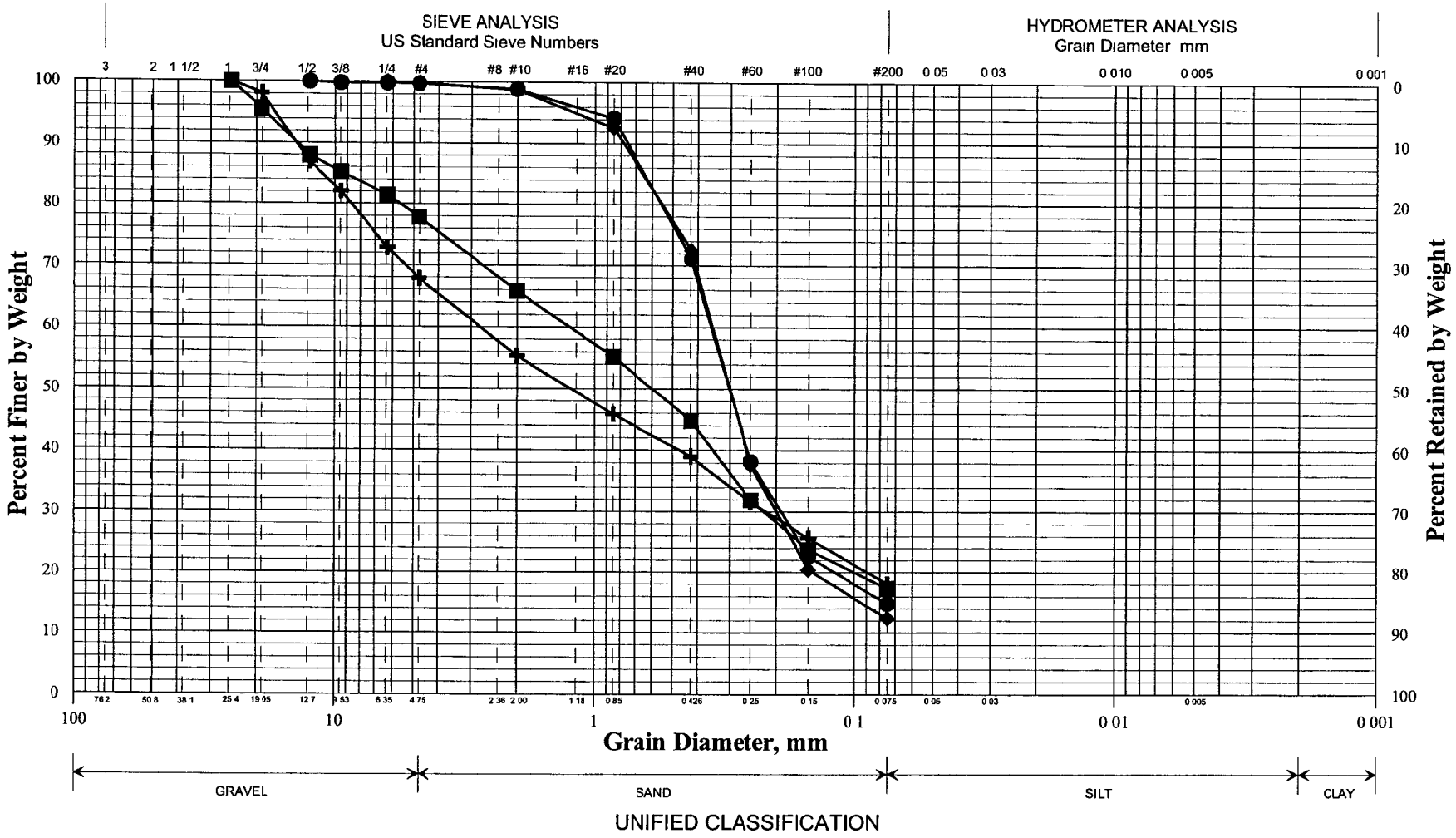
State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W %	LL	PL	PI
✚	HB LETU 101/S8	12+64	7 0 RT	0 65-3 0	SAND some gravel little silt	3 3			
◆	HB LETU-101/S9	12+64	7 0 RT	3 0 5 0	SAND little silt small trace gravel	9 7			
■	HB LETU 102/S1	20+14	7 0 RT	1 2 2 7	SAND some gravel little silt	6 2			
●	HB LETU 102/S2	20+14	7 0 RT	2 7 5 0	SAND little silt trace gravel	15 7			
▲									
✕									

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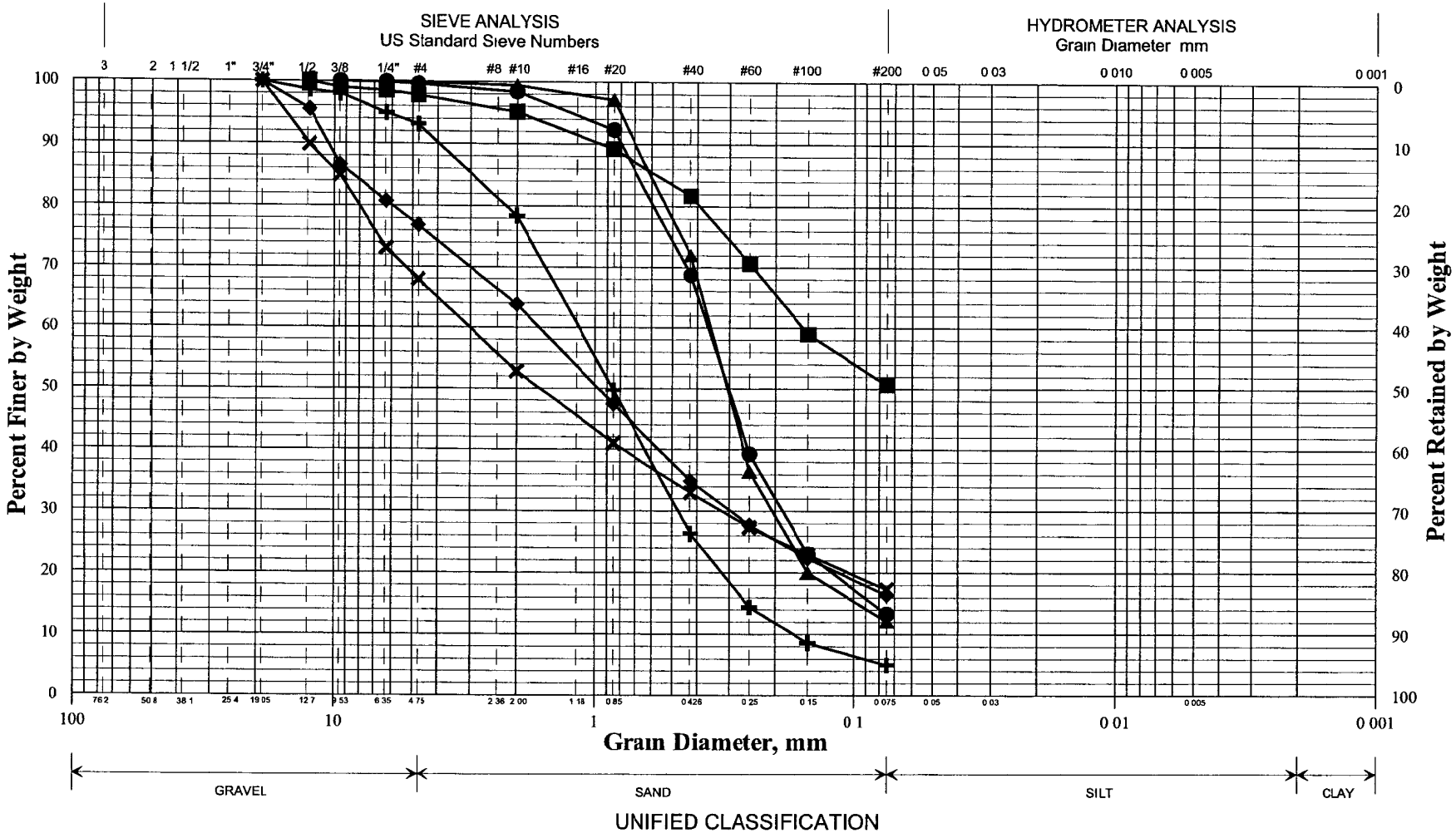
012669 00
Town
Turner Leeds
Reported by/Date
WHITE TERRY A 3/14/2007

SHEET 1

State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB LETU 103/S3	25+39	7 5 RT	1 2-2 0	SAND trace gravel trace silt	6 0			
◆	HB LETU-103/S4	25+39	7 5 RT	2 0-3 3	SAND some gravel little silt	5 9			
■	HB LETU 103/S5	25+39	7 5 RT	3 3 5 0	Sandy SILT trace gravel	64 6			
●	HB LETU 105/S6	32+64	7 0 RT	2 3-5 0	SAND little silt trace gravel	16 6			
▲	HB LETU 106/S7	42+64	5 5 RT	1 1 2 4	SAND little silt small trace gravel	16 4			
✕	HB-LETU 107/S10	55+14	6 0 RT	0 6 3 3	SAND some gravel little silt	3 5			

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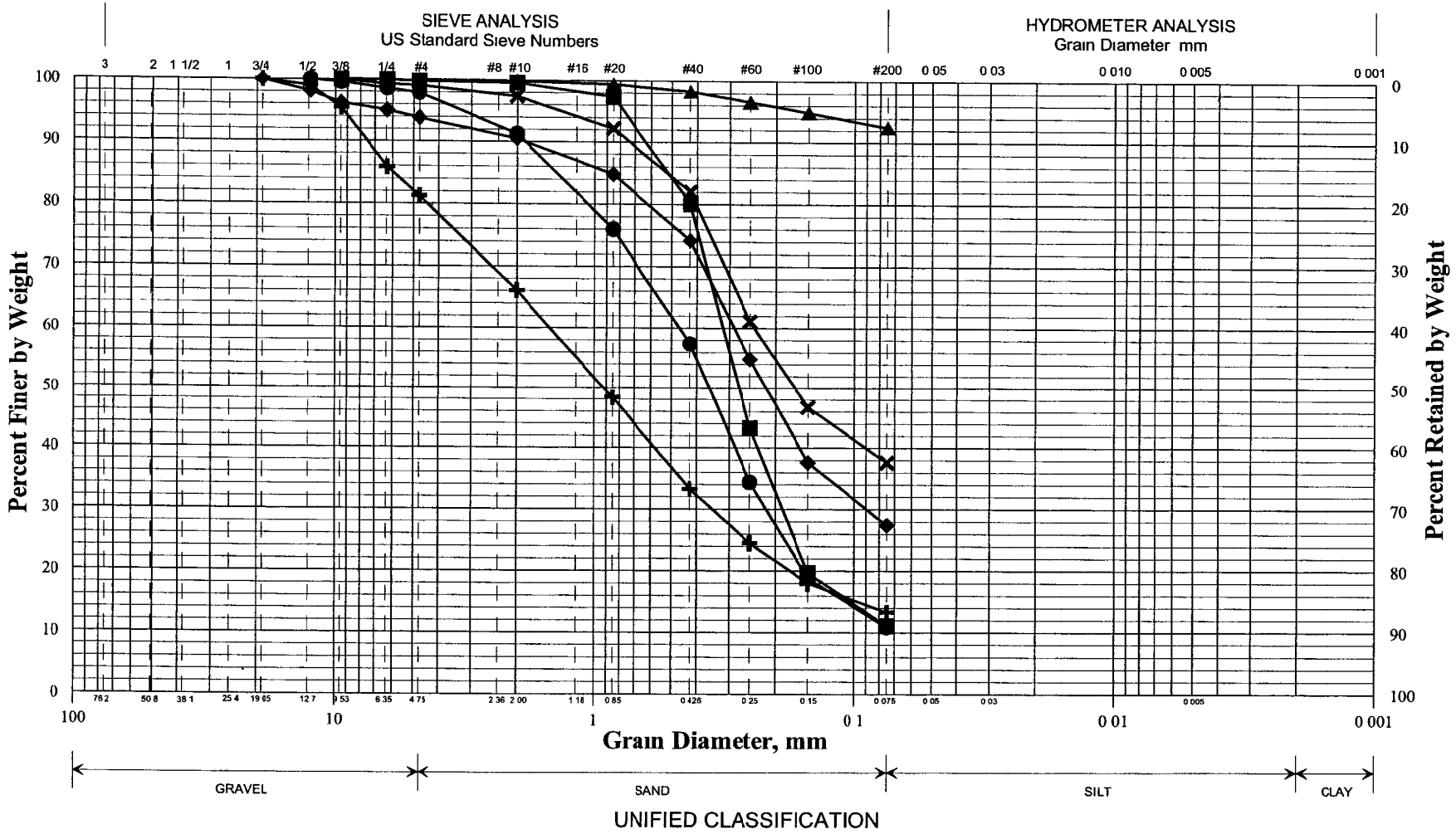
GRAIN SIZE DISTRIBUTION CURVE



UNIFIED CLASSIFICATION

	Boring/Sample No	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB LETU 108/S11	67+64	9 0 RT	0 7-2 0	SAND little gravel little silt	6 2			
◆	HB-LETU 108/S12	67+64	9 0 RT	2 0 3 2	SAND some silt trace gravel	9 3			
■	HB-LETU 108/S13	67+64	9 0 RT	3 2-4 1	SAND little silt trace gravel	19 7			
●	HB LETU 108/S14	67+64	9 0 RT	4 1 5 5	SAND little silt trace gravel	98 7			
▲	HB-LETU 108/S15	67+64	9 0 RT	5 5-10 0	SILT with clay trace sand	28 4			
✕	HB-LETU 109/S16	70+86	9 0 RT	2 9-4 0	Silty SAND small tarce gravel	19 4			

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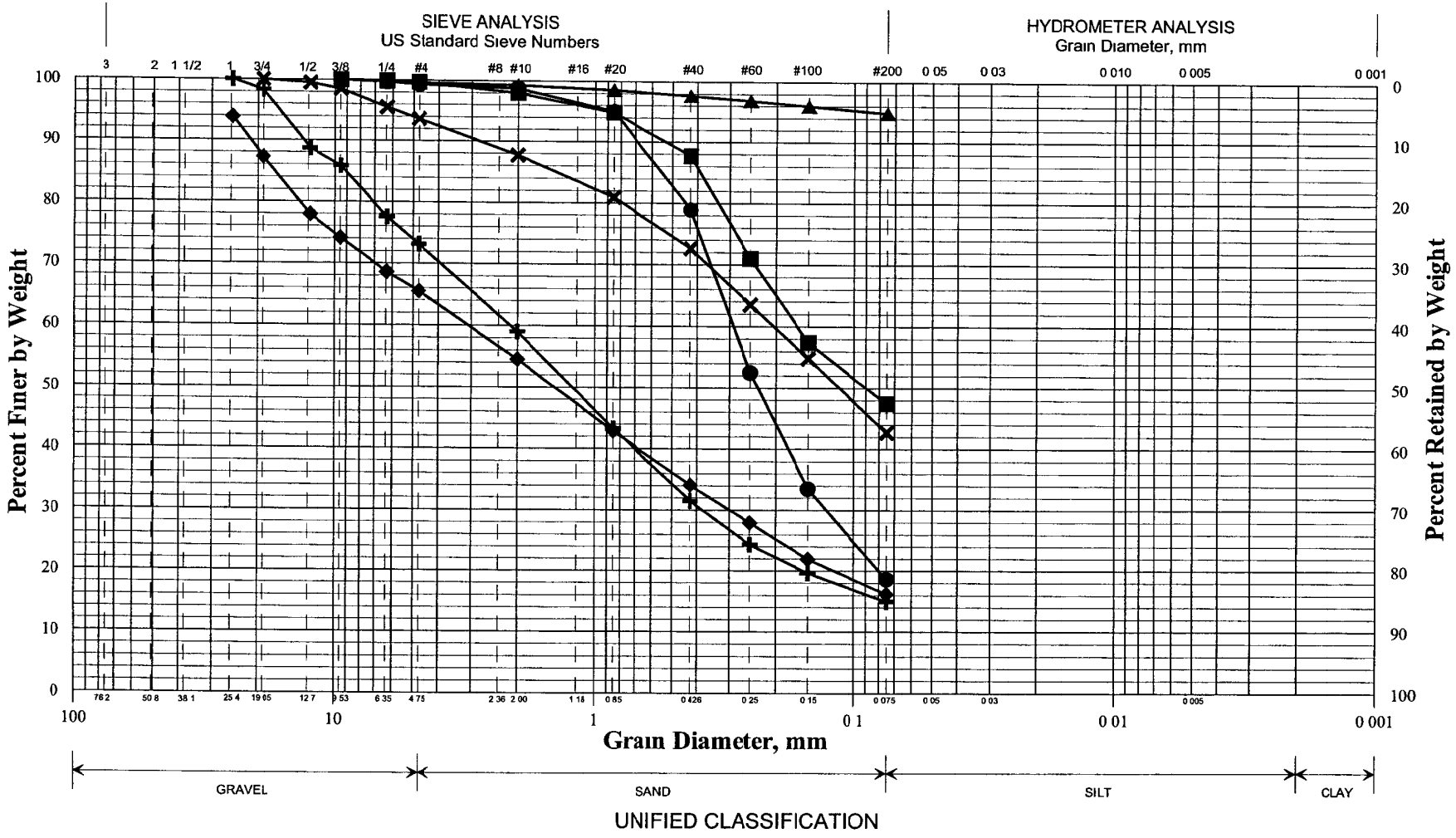
State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE

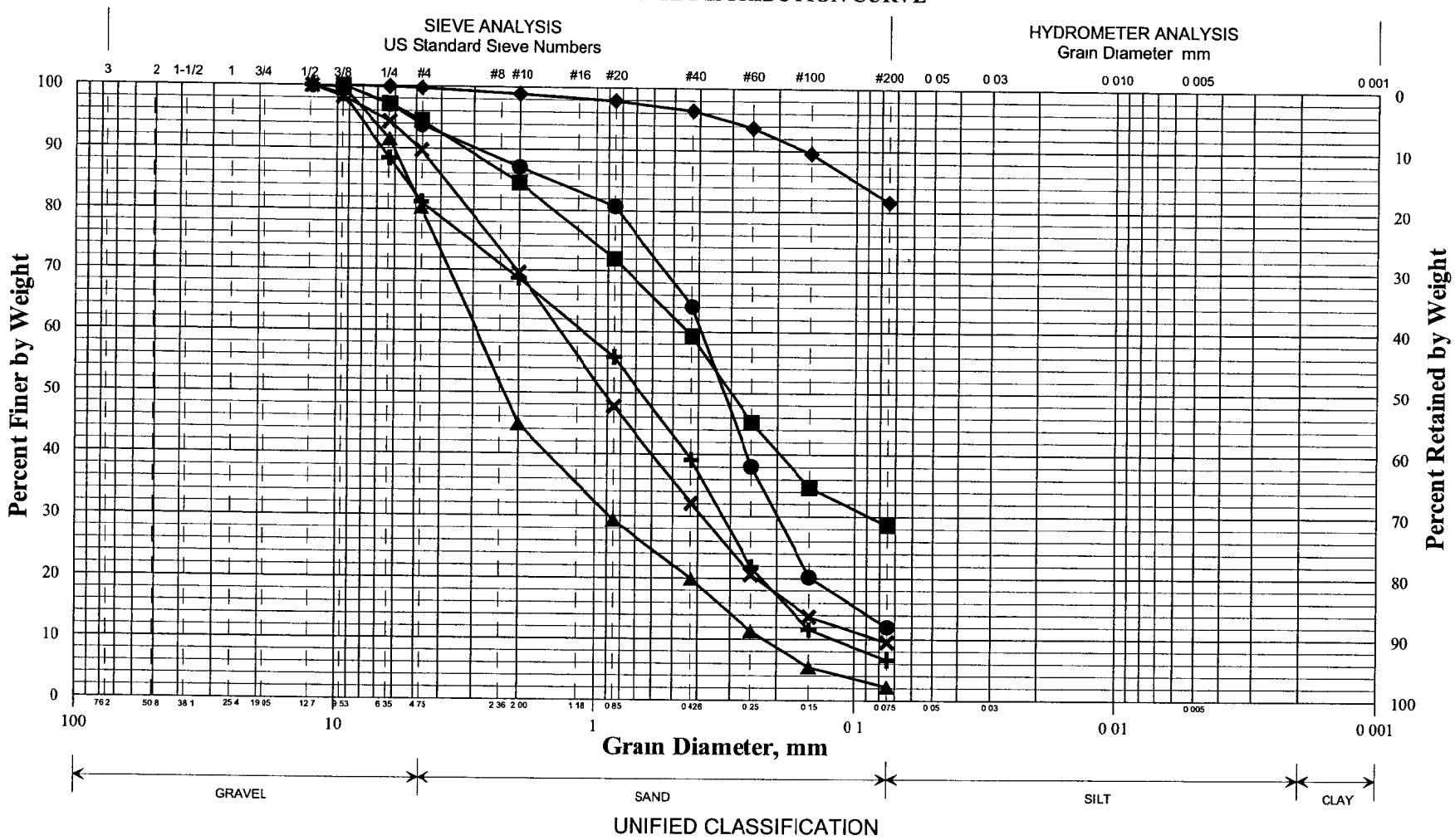


	Boring/Sample No	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB-LETU 110/S17	71+40	8 5 RT	1 8 2 7	SAND some gravel little silt	12 2			
◆	HB-LETU 111/S18	72+64	5 8 RT	0 6 1 8	SAND some gravel little silt	3 0			
■	HB LETU 111/S19	72+64	5 8 RT	2 9-4 2	Silty SAND trace gravel	21 2			
●	HB-LETU 111/S20	72+64	5 8 RT	5 5 7 0	SAND little silt trace gravel	17 2			
▲	HB LETU 112/S21	75+14	7 0 RT	2 6-10 0	SILT with clay trace sand trace gravel	26 9			
✕	HB-LETU 113/S22	85+14	7 5 RT	1 8 5 0	Silty SAND trace gravel	9 5			

PIN
012669 00
Town
Turner Leeds
Reported by/Date
WHITE, TERRY A 3/14/2007

State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE



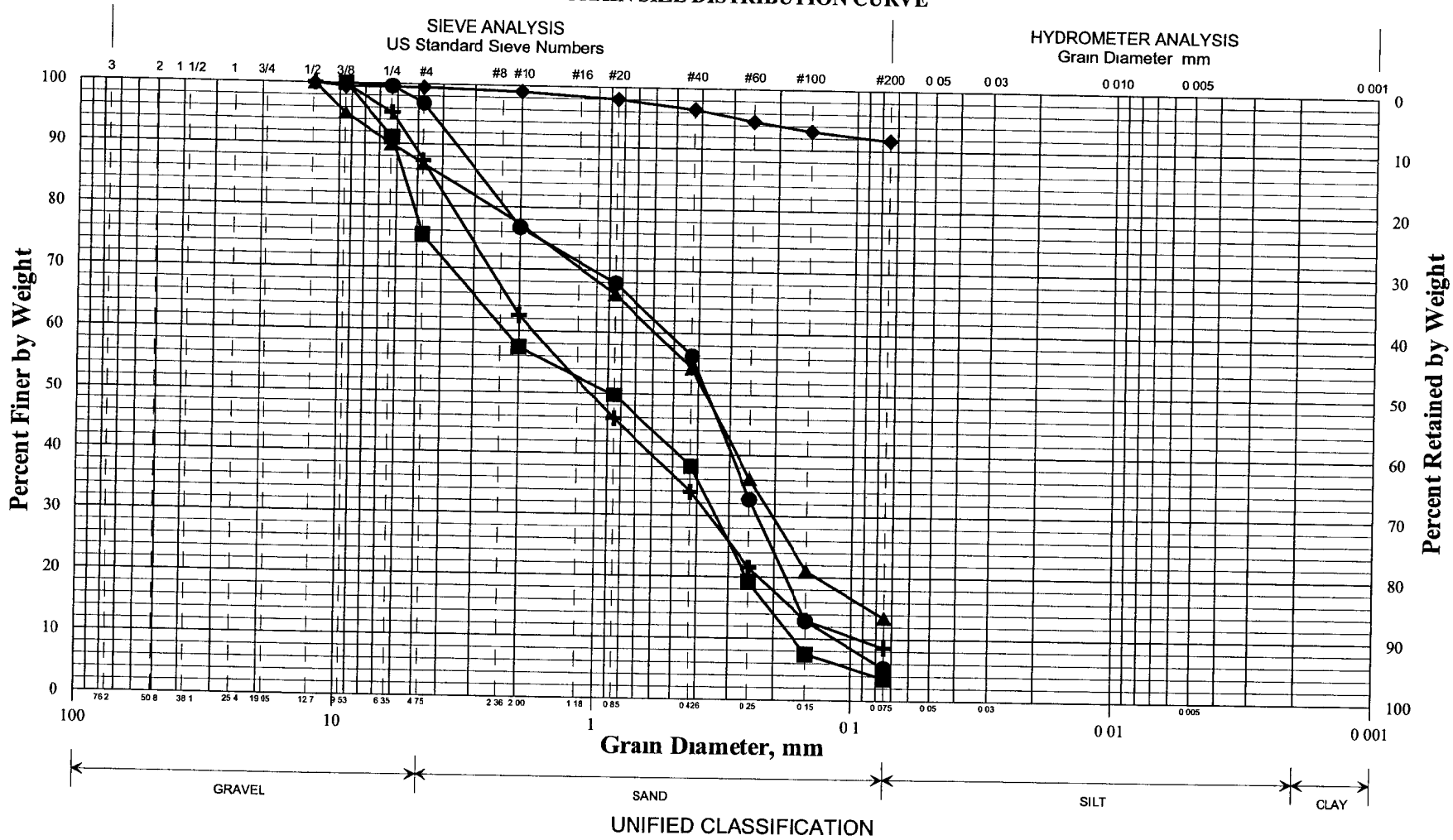
	Boring/Sample No	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB LETU-201/S1	65+50	7 0 RT	5 2 7 7	SAND little gravel trace silt	113 8			
◆	HB LETU 201/S2	65+50	7 0 RT	7 7 10 0	SILT with clay little sand trace gravel	22 2			
■	HB LETU 226/S29	66+50	7 3 LT	5 5 8 3	SAND some silt trace gravel	71 8			
●	HB LETU 202/S3	66+50	6 5 RT	6 1-7 0	SAND little silt trace gravel	49 2			
▲	HB LETU 202/S4	66+50	6 3 RT	7 0 9 1	SAND little gravel trace silt	279 1			
✕	HB-LETU 225/S28	67+00	7 8 LT	4 8 6 7	SAND little gravel trace silt	89 0			

PIN
012669 00
Town
Leeds
Reported by/Date
WHITE TERRY A 6/8/2007

SHEET 5

State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE

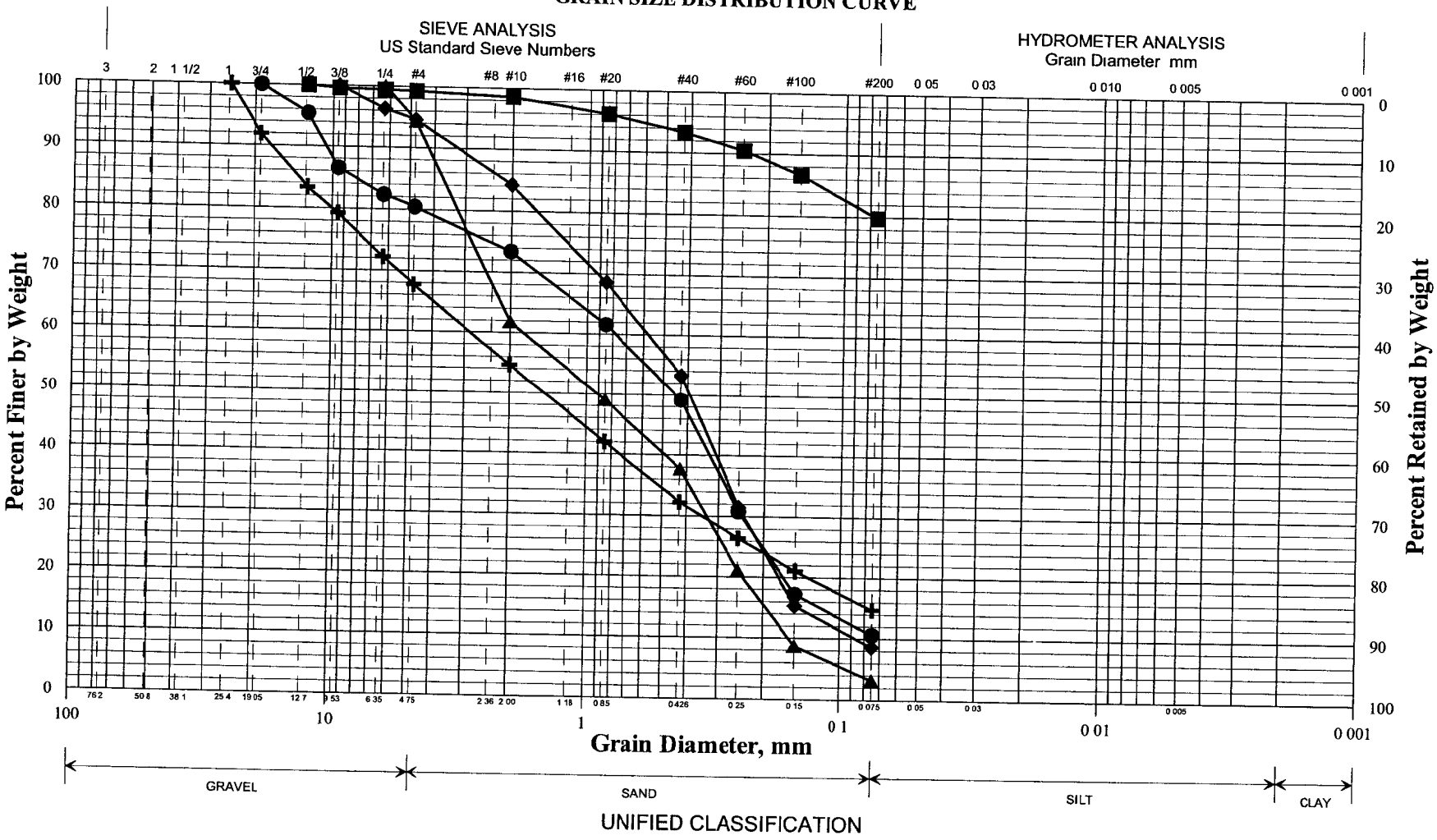


	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB LETU 203/S6	67+00	6 2 RT	6 8-7 8	SAND little gravel trace silt	160 7			
◆	HB LETU 203/S7	67+00	6 2 RT	7 8 10 0	SILT with clay trace sand trace gravel	31 0			
■	HB LETU 224/S27	67+50	8 0 LT	4 3 4 7	SAND some gravel trace silt	172 7			
●	HB LETU 223/S25	68+00	8 2 LT	4 0 5 0	SAND trace silt trace gravel	133 0			
▲	HB-LETU 223/S26	68+00	8 2 LT	5 0-7 4	SAND little gravel little silt	30 1			
×									

PIN
012669 00
Town
Leeds
Reported by/Date
WHITE TERRY A 6/8/2007

State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB LETU 222/S23	68+50	7 5 LT	0 4 2 2	SAND some gravel little silt	5 5			
◆	HB LETU 222/S24	68+50	7 5 LT	4 9 6 1	SAND trace silt trace gravel	5 8 0			
■	HB LETU 205/S8	68+50	8 0 RT	5 2 7 0	SILT with clay little sand trace gravel	2 9 4			
●	HB-LETU 221/S22	69+00	7 4 LT	4 5-6 2	SAND little gravel little silt	5 9 6			
▲	HB-LETU 206/S9	69+00	8 0 RT	4 2 5 0	SAND trace gravel trace silt	2 0 2 6			
✕									

PIN
012669 00
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Leeds
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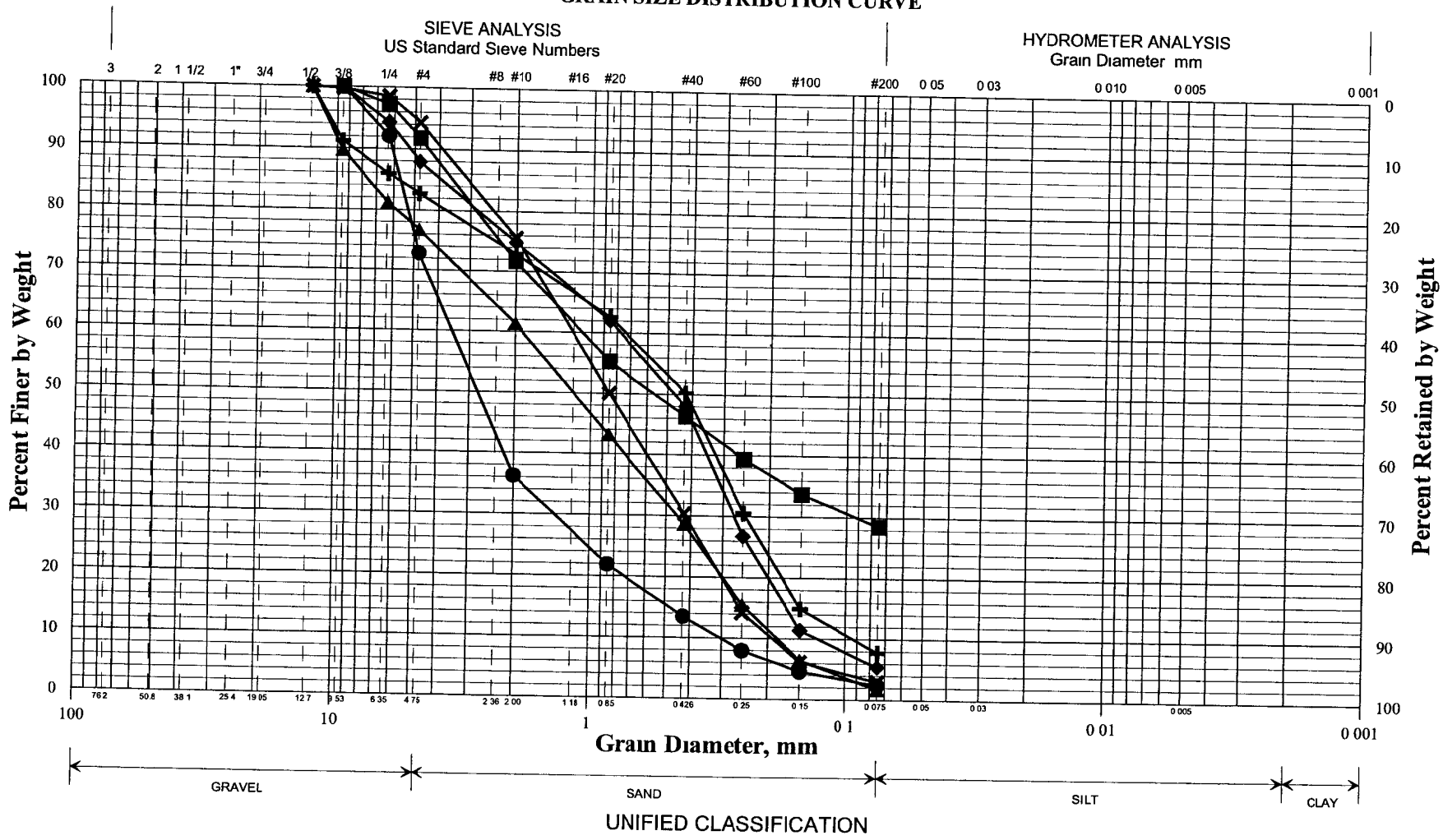
WHITE TERRY A 6/8/2007

State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE



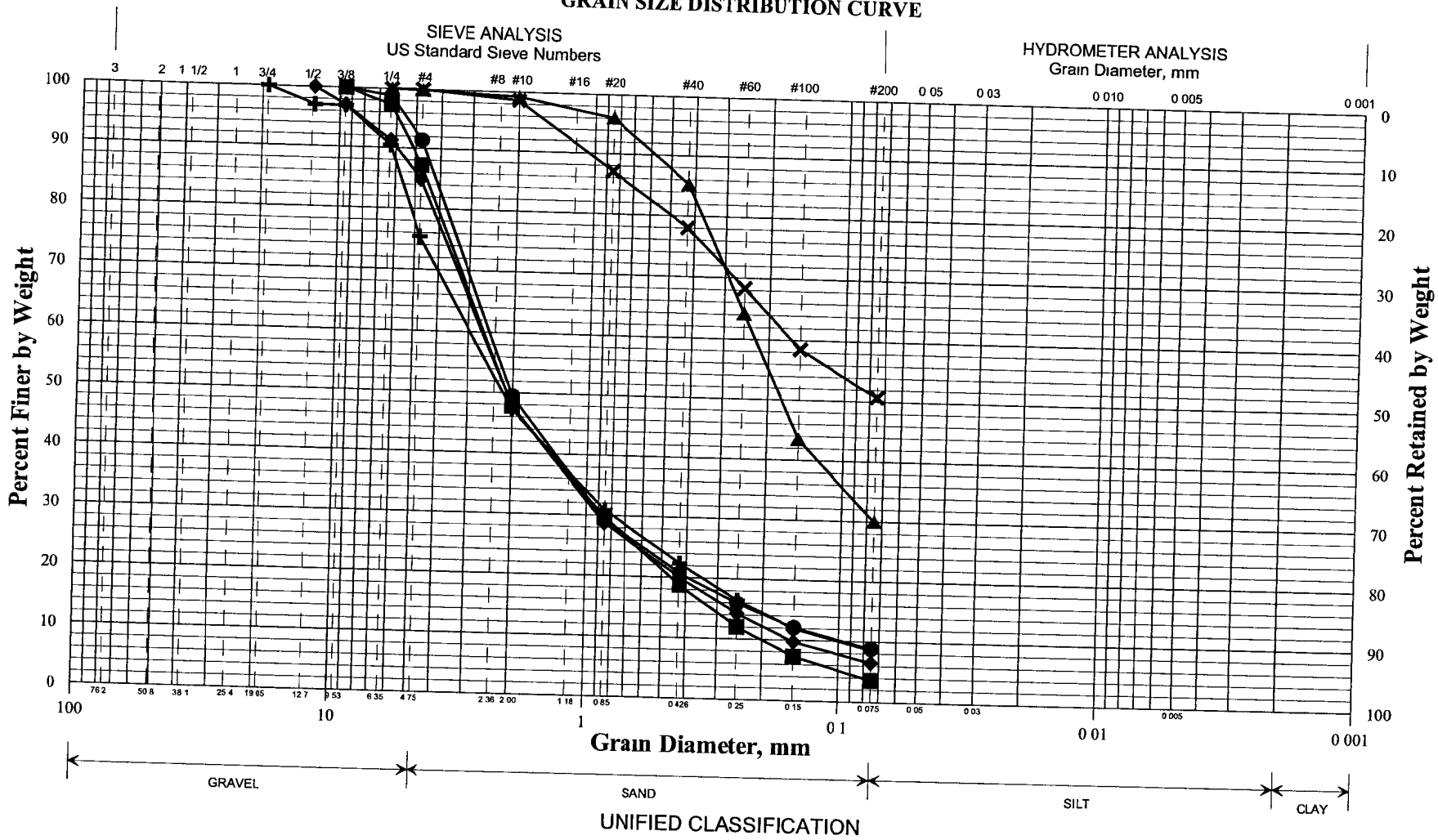
UNIFIED CLASSIFICATION

	Boring/Sample No	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB LETU 220/S21	69+50	7 3 LT	3 5-4 1	SAND little gravel trace silt	9 3 0			
◆	HB LETU 207/S10	69+50	8 0 RT	4 2 5 8	SAND little gravel trace silt	12 8 6			
■	HB LETU 219/S20	70+00	7 0 LT	6 4 7 6	SAND some silt trace gravel	8 3 9			
●	HB LETU 208/S11	70+00	7 5 RT	4 5 8 0	SAND some gravel trace silt	23 3 3			
▲	HB LETU 218/S19	70+50	6 8 LT	5 3-8 2	SAND some gravel trace silt	7 3 4			
✕	HB LETU 209/S12	70+50	7 5 RT	6 1-7 9	SAND trace gravel trace silt	14 4 7			

PIN
012669 00
Town
Leeds
Reported by/Date
WHITE TERRY A 6/8/2007

State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
✚	HB-LETU 217/S18	71+00	7 2 LT	3 6 5 5	SAND some gravel trace silt	229 8			
◆	HB LETU 216/S17	71+50	6 8 LT	5 2 6 9	SAND little gravel trace silt	145 7			
■	HB LETU-215/S16	72+00	7 3 LT	3 5 4 8	SAND little gravel trace silt	177 5			
●	HB LETU 210/S13	72+00	6 5 RT	3 6 4 5	SAND trace silt trace gravel	217 3			
▲	HB-LETU 210/S14	72+00	6 5 RT	4 5 10 0	SAND some silt	20 9			
✕	HB LETU 213/S15	73+00	7 5 LT	3 5-4 5	Sandy SILT with clay trace gravel	39 2			

PIN
012669 00
Town
Leeds
Reported by/Date
WHITE TERRY A 6/8/2007

SHEET 9

State of Maine - Department of Transportation

Power Auger Probe Summary Sheet

Town(s): Leeds-Turner Project Number: 12669.00

Station (Feet)	Offset (Feet)	Weathered Rock (Feet)	Refusal (Feet)	No Refusal (Feet)	Water Depth (Ft)	Comments / Date 7/13/2006
7+64	7 0 Rt			10 0		
57+64	6 5 Rt			5 0		
107+92	16 0 Rt			10 0		

Logged By G Lidstone
Drill Rig CME 45C

5" SSA Probes

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds-Turner Maine

Boring No HB-LETU-101
PIN 12669 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	7/13/06 7/13/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	12+64, 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

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	S8		0 65 - 3 00			SSA	0 50		PAVEMENT	
							-0 65		0 50	G#206941
									Unbound PAVEMENT	A 1-b SM
									0 65	WC=3 3%
									Brown damp, fine to coarse SAND some gravel little silt	
							-3 00		3 00	
	S9		3 00 - 5 00						Brown, damp fine to medium SAND	G#206942
5							5 00		5 00	A 2-4 SM
									Bottom of Exploration at 5 00 feet below ground surface	WC=9 7%
									NO REFUSAL	
10										
15										
20										
25										
30										

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

Boring No HB-LETU-101

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project	Route 219	**Boring No**	HB-LETU-102
Location	Leeds Turner, Maine	**PIN**	12669 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	7/13/06-7/13/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	20+14, 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

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 60	
							0 80		Unbound PAVEMENT — 0 80	G#206934 A-1 b SM WC=6 2%
	S1		1 20 2 70				-1 20		GRAVEL — 1 20	
	S2		2 70 - 5 00				2 70		Brown damp fine to coarse SAND some gravel little silt — 2 70	G#206935 A-2-4 SM WC=15 7%
									Brown moist, fine to medium SAND little silt	
5							-5 00		5 00	
									Bottom of Exploration at 5 00 feet below ground surface	
									NO REFUSAL	
10										
15										
20										
25										
30										

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 219
Location Leeds Turner, Maine

Boring No HB-LETU-103
PIN 12669 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	7/13/06-7/13/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	25+39 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

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 80		PAVEMENT	
	S3		1 20 2 00				1 20		GRAVEL	G#206936 A 1 b SP SM WC=6 0%
	S4		2 00 - 3 30				2 00		Dark brown, damp fine to coarse SAND little silt, trace gravel	G#206937 A 1 b SM WC=5 9%
	S5		3 30 - 5 00				3 30		Brown damp silty fine to coarse SAND, some gravel	G#206938 A 4 ML WC=64 6%
5							5 00		Brown moist, fine sandy SILT, trace wood	
									Bottom of Exploration at 5 00 feet below ground surface NO REFUSAL	
10										
15										
20										
25										
30										

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 219	**Boring No**	HB-LETU-104
Location	Leeds-Turner Maine	**PIN**	12669 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	7/13/06-7/13/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	27+64 7 0 Rt	**Casing ID/OD**	N/A	**Water Level***	4 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

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 60	
							1 20		GRAVEL — 1 20	
							-1 80		Dark brown damp fine to coarse SAND little silt trace gravel ≅S3 — 1 80	
							3 30		Brown damp silty fine to coarse SAND some gravel ≅S4 — 3 30	
							4 50		Brown moist, fine to medium SAND ≅S7 — 4 50	
5							5 00		Similar to above but wet — 5 00	
									Bottom of Exploration at 5 00 feet below ground surface	
									NO REFUSAL	
10										
15										
20										
25										
30										

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 219
Location Leeds Turner Maine

Boring No HB-LETU-105
PIN 12669 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	7/13/06 7/13/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	32+64 7 0 Rt.	**Casing ID/OD**	N/A	**Water Level***	2 3' 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

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 50		PAVEMENT	
							1 20		Dark brown damp, fine to coarse SAND, little silt trace gravel ≅S3	
	S6		2 30 5 00				2 30		Brown damp silty fine to coarse SAND some gravel ≅S4	G#206939 A-2-4 SM WC=16 6%
									Brown wet, fine to medium SAND trace silt	
5							5 00		**Bottom of Exploration at 5 00 feet below ground surface** NO REFUSAL	
10										
15										
20										
25										
30										

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 219	**Boring No**	HB-LETU-106
Location	Leeds Turner Maine	**PIN**	12669 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	7/13/06 7/13/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	42+64, 5 5 Rt.	**Casing ID/OD**	N/A	**Water Level***	2 4 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

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 55	
	S7		1 10 2 40				1 10		GRAVEL	G#206940 A 2-4 SM WC=16 4%
									1 10	
							2 40		Brown moist, fine to medium SAND	
									2 40	
									Similar to above, but wet	
5							5 00		5 00	
									Bottom of Exploration at 5 00 feet below ground surface	
									NO REFUSAL	
10										
15										
20										
25										
30										

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 219
Location Leeds-Turner Maine

Boring No HB-LETU-107
PIN 12669 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	7/13/06 7/13/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	55+14 6 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

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	S10		0 60 3 30			SSA	0 60		PAVEMENT	
									0 60	
									Brown damp fine to coarse SAND some garvel little silt	G#206943 A 1-b SM WC=3 5%
							3 30		3 30	
									Brown moist, fine to medium SAND ≅S7	
5							5 00		5 00	
									Bottom of Exploration at 5 00 feet below ground surface	
									NO REFUSAL	
10										
15										
20										
25										
30										

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 219
Location Leeds Turner, Maine

Boring No HB-LETU-108
PIN 12669 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	7/13/06 7/13/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	67+64 9 0' Rt	**Casing ID/OD**	N/A	**Water Level***	4 8' 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

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	S11		0 70 2 00			SSA	0 70		PAVEMENT — 0 70	G#206944 A-1-b SM WC=6 2%
									Dark brown damp fine to coarse SAND, some gravel little silt (Fill)	
	S12		2 00 3 20				2 00		Olive damp silty fine SAND — 2 00	G#206945 A 2-4 SM WC=9 3%
	S13		3 20 - 4 10				-3 20		Brown, moist, fine to medium SAND — 3 20	G#206946 A 2-4 SP SM WC=19 7%
	S14		4 10 - 5 50				4 10		PEAT — 4 10	G#206947 A 2 4 SP SM WC=98 7%
5	S15		5 50 10 00				5 50		Grey moist, silty CLAY — 5 50	G#206948 A-7 5 CL WC=28 4%
10							10 00		10 00	
15									**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
20										
25										
30										

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 219
Location Leeds Turner, Maine

Boring No HB-LETU-109
PIN 12669 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	7/13/06 7/13/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	70+86 9 0' Rt.	**Casing ID/OD**	N/A	**Water Level***	4 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

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 50		PAVEMENT	
							0 70		Unbound PAVEMENT	
	S16		2 90 4 00						Dark brown damp fine to coarse SAND some gravel little silt (Fill) ≅S11	
							2 90		Olive moist silty fine SAND	G#206949 A 4 SM WC=19 4%
							4 00		PEAT ≅S14	
5										
							6 60		Grey moist, silty CLAY ≅S15	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219	**Boring No**	HB-LETU-110
Location	Leeds-Turner, Maine	**PIN**	12669 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	7/13/06 7/13/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	71+40 8 5 Rt	**Casing ID/OD**	N/A	**Water Level***	5 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

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 65		Unbound PAVEMENT	
	S17		1 80 - 2 70				1 80		Dark brown damp fine to coarse SAND some gravel little silt (Fill) ≅S11	G#206950 A 1-b SM WC=12 2%
							2 70		Brown wet silty fine to coarse SAND little gravel	
							3 90		Olive moist silty fine SAND ≅S16	
5									PEAT ≅S14	
							-6 80		Grey moist, silty CLAY ≅S15	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219	**Boring No**	HB-LETU-111
Location	Leeds Turner Maine	**PIN**	12669 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	7/17/06 7/17/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	72+64 5 8' Rt	**Casing ID/OD**	N/A	**Water Level***	5 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

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	S18		0 60 1 80			SSA	0 30		PAVEMENT	
							0 60		Unbound PAVEMENT	G#180576 A 1 b SM WC=3 0%
	S19		2 90 - 4 20				1 80		GRAVEL some brown damp fine to coarse SAND little silt, (Fill)	
							-2 90		Boulder	G#180577 A 4 SM WC=21 2%
							4 20		Brown moist, silty fine SAND trace medium sand	
5	S20		5 50 7 00				5 50		PEAT ≅S14	G#180578 A-1 b SM WC=17 2%
							7 00		Grey wet fine SAND, trace silt	
							-10 00		Grey moist silty CLAY ≅S15	
10									**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds Turner Maine

Boring No HB-LETU-112
PIN 12669 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	7/17/06 7/17/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	75+14 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

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 60	
									GRAVEL, some brown damp fine to coarse SAND little silt, (Fill) ≅S18	
							1 80		1 80	
	S21		2 60 - 10 00				-2 60		Cobble	
									2 60	G#180579
									Brown, moist, clay SILT	A 7 5 CL
5										WC=26 9%
10							10 00		10 00	
									Bottom of Exploration at 10 00 feet below ground surface	
									NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds Turner Maine

Boring No HB-LETU-113
PIN 12669 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	7/17/06 7/17/06	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	85+14 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

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 35		PAVEMENT	
							0 70		0 35	
	S22		1 80 5 00						Unbound PAVEMENT	
							1 80		0 70	G#180580 A 4 SM WC=9 5%
									GRAVEL some brown, damp fine to coarse SAND little silt, (Fill) ≥S18	
									1 80	
5							5 00		Brown damp silty fine SAND trace medium sand trace coarse sand trace gravel	
									5 00	
									Bottom of Exploration at 5 00 feet below ground surface	
									NO REFUSAL	
10										
15										
20										
25										
30										

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

Boring No HB-LETU-113

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner Maine

Boring No HB-LETU-201
PIN 12669 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	5/21/07 5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	65+50 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

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 55		Unbound PAVEMENT	
							2 10		Brown damp silty fine to coarse SAND some gravel (Fill)	
									Olive moist, silty fine SAND, (Fill?)	
5	S1		5 20 - 7 70				5 20		Dark brown moist soft, sandy SILT with organics	G#207723 A 1 b SW SM WC=114%
	S2		7 70 - 10 00				7 70		Grey moist clay SILT trace fine sand	G#207724 A 7 5 CL WC=22 2%
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds Turner Maine

Boring No HB-LETU-202
PIN 12669 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	5/21/07 5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	66+50 6 5' Rt	**Casing ID/OD**	N/A	**Water Level***	9 1' 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

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 25		PAVEMENT	
							-0 50		0 25 Unbound PAVEMENT	
							-2 00		0 50 Brown damp fine to coarse SAND, some gravel little silt, (Fill)	
									2 00 Olive moist silty fine SAND (Fill)	
							-4 20		4 20 Brown moist, silty fine SAND	
5							6 10		6 10	
	S3		6 10 - 7 00				7 00		Brown, moist, silty fine SAND with peat layers 7 00	G#207725 A 2 4 SM WC=49 2%
	S4		7 00 - 9 10				-9 10		PEAT trace fine sand 9 10	G#207976 A 1 a SP WC=279%
10							10 00		Grey wet silty CLAY ≅S7 10 00 **Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds-Turner Maine

Boring No HB-LETU-203
PIN 12669 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	5/21/07 5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	67+00 6 2' Rt	**Casing ID/OD**	N/A	**Water Level***	3 2' 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

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 50		Unbound PAVEMENT	
							2 50		Dark brown damp silty fine to coarse SAND some gravel (Fill)	
							3 20		Olive damp, silty fine SAND	
									Brown wet silty fine SAND	
5							6 00			
	S5		6 00 6 80				6 80		Dark brown soft sandy SILT little organics	#207977
	~~S6~~		~~6 80 - 7 80~~				7 80		Dark brown moist, soft SILT, some organics little fine sand	G#207978 A 1 b SW SM
	S7		7 80 10 00						Grey wet, silty CLAY	WC=161% G#207979 A 7 5, CL WC=31%
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds Turner Maine

Boring No HB-LETU-204
PIN 12669 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	5/21/07 5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	68+00 6 4 Rt.	**Casing ID/OD**	N/A	**Water Level***	5 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

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 60		Unbound PAVEMENT — 0 25 to 0 60	
							2 50		Dark brown, damp silty fine to coarse SAND, some gravel (Fill) — 0 60 to 2 50	
							3 20		Olive damp silty fine SAND — 2 50 to 3 20	
							-4 30		Brown moist, silty fine SAND — 3 20 to 4 30	
5							-4 80		Brown silty fine SAND with peat layers ≅S3 — 4 30 to 4 80	
							5 70		Dark brown moist soft, SILT some organics little fine sand ≅S6 — 4 80 to 5 70	
							7 50		Grey, moist, clay SILT trace fine sand ≅S2 — 5 70 to 7 50	
									Grey wet silty CLAY ≅S7 — 7 50 to 10 00	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface**	
									NO REFUSAL	
15										
20										
25										
30										

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

Boring No HB-LETU-204

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner, Maine

Boring No HB-LETU-205
PIN 12669 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	5/21/07-5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	68+50 8 0' Rt	**Casing ID/OD**	N/A	**Water Level***	4 3 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

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 20		PAVEMENT	
							0 50		Unbound PAVEMENT — 0 20	
									Brown damp silty fine to coarse SAND cobbles some gravel (Fill) — 0 50	
							-2 80		Brown, moist, silty fine SAND — 2 80	
							4 30		— 4 30	
5	S8		5 20 7 00				4 80		Brown wet silty fine SAND with peat layers ≅S3 — 4 80	G#207980 A 4 CL ML WC=29 4%
							5 20		Dark brown moist, soft SILT some organics little fine sand ≅S6 — 5 20	
							7 00		Grey, moist clay SILT little fine sand trace organics — 7 00	
									Grey moist clay SILT trace fine sand ≅S2	
10							10 00		— 10 00	
									Bottom of Exploration at 10 00 feet below ground surface	
									NO REFUSAL	
15										
20										
25										
30										

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

Boring No HB-LETU-205

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner Maine

Boring No HB-LETU-206
PIN 12669 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	5/21/07-5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	69+00, 8 0' Rt	**Casing ID/OD**	N/A	**Water Level***	4 2 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

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 60		Unbound PAVEMENT	
									Brown damp silty fine to coarse SAND cobbles some gravel, (Fill)	
							-2 80		Brown moist, silty fine SAND trace organics	
	S9		4 20 5 00				4 20		Dark brown, moist, soft SILT little fine sand trace organics	G#207981 A 1 b SP WC=203%
5							5 00		Grey moist clay SILT little fine sand trace organics ≅S8	
							-7 00		Grey moist clay SILT trace fine sand ≅S2	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds Turner Maine

Boring No HB-LETU-207
PIN 12669 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	5/21/07 5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	69+50 8 0 Rt	**Casing ID/OD**	N/A	**Water Level***	3 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

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 20		PAVEMENT	
							-0 50		Unbound PAVEMENT — 0 20	
									Brown damp, fine to coarse SAND cobbles some gravel little silt (Fill) — 0 50	
							-2 40		Olive damp silty fine SAND (Fill?) — 2 40	
							3 70		Brown wet, silty fine SAND — 3 70	
	S10		4 20 - 5 80				-4 20		Dark brown moist soft, sandy SILT some organics — 4 20	G#207982 A 1 b SP SM WC=129%
5							5 80		Grey moist, clay SILT little fine sand trace organics ≅S8 — 5 80	
							7 50		Grey moist, clay SILT, trace fine sand ≅S2 — 7 50	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** — 10 00	
									NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds-Turner Maine

Boring No HB-LETU-208
PIN 12669 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	5/21/07 5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	70+00 7 5' Rt	**Casing ID/OD**	N/A	**Water Level***	3 8 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

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 20		PAVEMENT	
							0 40		Unbound PAVEMENT	
									Brown damp silty fine to coarse SAND cobbles some gravel (Fill)	
							2 80		Brown moist, silty fine SAND	
	S11		4 50 8 00				4 50		PEAT little brown silty fine sand	G#207983 A 1 a SP WC=233%
5										
							8 00		Grey moist, clay SILT trace fine sand ≅S2	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds Turner Maine

Boring No HB-LETU-209
PIN 12669 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	5/21/07-5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	70+50 7 5' Rt	**Casing ID/OD**	N/A	**Water Level***	4 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

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 20		PAVEMENT	
							-0 40		Unbound PAVEMENT	
							2 70		Brown damp silty fine to coarse SAND cobbles some gravel (Fill)	
							-4 50		Brown moist, silty fine SAND	
5							6 10		Brown wet silty fine to medium SAND	
	S12		6 10 7 90				7 90		PEAT some brown silty fine sand	G#207984 A-1-b SW WC=145%
							10 00		Grey, moist clay SILT trace fine sand ≅S2	
10									**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds Turner Maine

Boring No HB-LETU-210
PIN 12669 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	5/21/07-5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	72+00 6 5 Rt	**Casing ID/OD**	N/A	**Water Level***	4 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

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 20		PAVEMENT	
							0 40		Unbound PAVEMENT	
							-2 30		Brown damp silty fine to coarse SAND, cobbles some gravel (Fill)	
							3 00		Similar to above, but no cobbles	
	S13		3 60 - 4 50				3 60		Brown moist, silty fine SAND	G#207985 A-1-a SW-SM WC=217%
	S14		4 50 10 00				4 50		PEAT some brown silty fine sand	G#207986 A-2 4 SM WC=20 9%
5									Grey wet silty fine SAND	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219	**Boring No**	HB-LETU-211
Location	Leeds Turner Maine	**PIN**	12669 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	5/21/07-5/21/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	73+00 7 0' Rt	**Casing ID/OD**	N/A	**Water Level***	6 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

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 50		Unbound PAVEMENT — 0 25	
									Brown damp silty fine to coarse SAND cobbles some gravel (Fill) — 0 50	
							-3 10		Brown damp silty fine to medium SAND — 3 10	
							-3 90		Grey damp sandy SILT — 3 90	
5							-5 00		Grey moist clay SILT, trace fine sand ≅S2 — 5 00	
							6 00		Grey wet, silty fine SAND ≅S14 — 6 00	
10							-10 00		**Bottom of Exploration at 10 00 feet below ground surface** — 10 00	
									NO REFUSAL	
15										
20										
25										
30										

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

Boring No HB-LETU-211

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner Maine

Boring No HB-LETU-212
PIN 12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	74+00 7 5' Lt	**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

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 30		PAVEMENT — 0 30	
							0 50		Unbound PAVEMENT — 0 50	
							2 50		Brown damp fine to coarse SAND some gravel little silt (Fill) — 2 50	
							3 50		Olive, silty fine SAND (Fill?) — 3 50	
							-4 10		Brown moist, silty fine to SAND trace organics — 4 10	
5							5 00		Grey clay SILT trace fine sand ≅S2 — 5 00	
									Bottom of Exploration at 5 00 feet below ground surface	
									NO REFUSAL	
10										
15										
20										
25										
30										

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

Boring No HB-LETU-212

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner Maine

Boring No HB-LETU-213
PIN 12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	73+00 7 5 Lt	**Casing ID/OD**	N/A	**Water Level***	6 3' 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

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 50		Unbound PAVEMENT	
									Brown damp fine to coarse SAND cobbles some gravel little silt (Fill)	
							2 70		Olive damp silty fine SAND (Fill?)	
	S15		3 50 4 50				3 50		Brown moist, clay SILT with dark brown silt layers trace fine sand	G#207987 A 4 CL-ML WC=39 2%
5							-4 50		Grey moist clay SILT trace fine sand ≅S2	
							6 30		Grey wet, silty fine SAND ≅S14	
							8 00		Grey damp, silty CLAY ≅S7	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219			**Boring No**	HB-LETU-214
Location	Leeds Turner Maine			**PIN**	12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	72+50 7 4 Lt	**Casing ID/OD**	N/A	**Water Level***	5 2 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

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 50		Unbound PAVEMENT	
									GRAVEL some brown damp fine to coarse SAND little silt, (Fill)	
							2 80		Olive damp silty fine SAND (Fill?)	
							3 40		PEAT some brown, silty fine sand ≅S13	
							-4 60		Brown moist, clay SILT with dark brown silt layers trace fine sand ≅S15	
5							5 20		Grey, wet, silty fine SAND ≅S14	
							-6 90		Grey, wet silty CLAY ≅S7	
10							-10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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

Boring No HB-LETU-214

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner Maine

Boring No HB-LETU-215
PIN 12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	72+00 7 3 Lt	**Casing ID/OD**	N/A	**Water Level***	6 1' 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

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 50		Unbound PAVEMENT — 0 25	
									Brown damp silty fine to coarse SAND some gravel (Fill) — 0 50	
							2 60		Olive damp silty fine SAND (Fill?) — 2 60	
	S16		3 50 - 4 80				3 50		Dark brown moist soft SILT little fine sand trace organics — 3 50	G#207988 A 1 a, SW WC=178%
5							-4 80		Grey moist, silty fine SAND trace clay trace organics — 4 80	
							-6 10		Grey wet silty fine SAND ≅S14 — 6 10	
							-8 70		Grey wet, silty CLAY ≅S7 — 8 70	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** — 10 00	
									NO REFUSAL	
15										
20										
25										
30										

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 219	**Boring No**	HB-LETU-216
Location	Leeds Turner, Maine	**PIN**	12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	71+50 6 8 Lt	**Casing ID/OD**	N/A	**Water Level***	5 2 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

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 20		PAVEMENT	
							0 50		Unbound PAVEMENT	
									Brown, damp, silty fine to coarse SAND some gravel (Fill)	
							2 60		Brown, moist, silty fine SAND	
							3 40		Brown, moist, silty fine SAND with PEAT layers	
							3 80		Dark brown moist soft, SILT little fine sand trace organics ≅S16	
5	S17		5 20 6 90				-5 20		PEAT trace fine sand	G#207989 A 1 a SW SM WC=146%
							6 90		Grey wet silty CLAY ≅S7	
10							-10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds-Turner Maine

Boring No HB-LETU-217
PIN 12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	71+00 7 2 Lt	**Casing ID/OD**	N/A	**Water Level***	5 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

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 20		PAVEMENT — 0 20	
							0 40		Unbound PAVEMENT — 0 40	
							1 80		Dark brown silty fine to coarse SAND some gravel (Fill) — 1 80	
							2 50		Olive, damp silty fine SAND (Fill) — 2 50	
	S18		3 60 5 50				3 60		Brown moist, silty fine SAND — 3 30	G#207712 A 1 a SW SM WC=230%
5							5 50		WOOD — 3 60	
									PEAT — 5 50	
							7 00		PEAT trace fine sand ≅S17 — 7 00	
									Grey wet silty CLAY ≅S7	
10							10 00		10 00	
									Bottom of Exploration at 10 00 feet below ground surface	
									NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds Turner Maine

Boring No HB-LETU-218
PIN 12669 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	5/22/07-5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	70+50 6 8' Lt	**Casing ID/OD**	N/A	**Water Level***	5 3' 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

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 20		PAVEMENT	
							-0 50		0 20	
							1 20		Unbound PAVEMENT	
							1 60		0 50	
							-2 50		Brown, damp, silty fine to coarse SAND some gravel (Fill)	
							3 30		1 20	
							-3 80		COBBLE	
									1 60	
									Olive silty fine SAND (Fill)	
5									2 50	
	S19		5 30 8 20				5 30		Brown moist, SAND trace silt (Fill)	G#207713 A 1 b SW WC=73 4%
									3 30	
									WOOD	
									3 80	
									PEAT ≅S18	
									5 30	
							-8 20		Dark brown wet, loose, silty fine SAND, some organics trace gravel	
									8 20	
									Grey, wet, silty CLAY ≅S7	
10							-10 00		10 00	
									Bottom of Exploration at 10 00 feet below ground surface	
									NO REFUSAL	
15										
20										
25										
30										

Remarks

Offsets are from Existing Roadway CL

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 219
Location Leeds-Turner, Maine

Boring No HB-LETU-219
PIN 12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	70+00 7 0 Lt	**Casing ID/OD**	N/A	**Water Level***	4 1' 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

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 20		PAVEMENT	
							0 50		Unbound PAVEMENT	
							2 40		Brown, damp silty fine to coarse SAND some gravel (Fill)	
							3 30		Olive moist silty fine SAND (Fill)	
							-4 10		Brown, wet silty fine SAND	
5									Dark brown wet silty fine SAND some organics trace gravel ≅S19	
	S20		6 40 7 60				6 40		Brown, moist, SILT, little fine sand trace clay, trace organics	G#207716 A 2 4 SC SM WC=83 9%
							7 60		Grey wet silty CLAY ≅S7	
10							-10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

Remarks

Offsets are from Existing Roadway CL

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Boring No HB-LETU-219

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner Maine

Boring No HB-LETU-220
PIN 12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	69+50 7 3' Lt	**Casing ID/OD**	N/A	**Water Level***	2 9 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

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 25	
							0 50		Unbound PAVEMENT — 0 50	
							1 80		Brown, damp silty fine to coarse SAND little gravel (Fill) — 1 80	
	S21		3 50 4 10				2 90		Olive damp, silty fine SAND, (Fill) — 2 90	G#207718 A-3 SP SM WC=93%
							3 50		Brown wet, silty fine SAND — 3 50	
5							4 10		WOOD — 4 10	
							5 30		PEAT ≅S18 — 5 30	
									Grey, wet, silty CLAY ≅S7	
10							10 00		10 00	
									Bottom of Exploration at 10 00 feet below ground surface NO REFUSAL	
15										
20										
25										
30										

Remarks

Offsets are from Existing Roadway CL

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Boring No HB-LETU-220

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner Maine

Boring No HB-LETU-221
PIN 12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	69+00 7 4 Lt	**Casing ID/OD**	N/A	**Water Level***	4 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

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 15		PAVEMENT	
							0 40		Unbound PAVEMENT	
									Brown damp silty fine to coarse SAND some gravel (Fill)	
							-2 70		Brown moist, silty fine SAND	
							3 50		WOOD ≅S21	
							3 90		PEAT ≅S18	
5	S22		4 50 6 20				-4 50		Dark brown wet, loose silty fine to medium SAND, some organics trace gravel	G#207720 A 1-b SP SM WC=59 6%
							-6 20		Grey wet silty CLAY ≅S7	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** NO REFUSAL	
15										
20										
25										
30										

Remarks

Offsets are from Existing Roadway CL

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Boring No HB-LETU-221

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner Maine

Boring No HB-LETU-222
PIN 12669 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	5/22/07-5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	68+50 7 5 Lt	**Casing ID/OD**	N/A	**Water Level***	4 9 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

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	S23		0 40 2 20			SSA	0 15		PAVEMENT — 0 15	
							0 40		Unbound PAVEMENT — 0 40	G#207711 A 1 b SM WC=5 5%
							2 20		Brown damp silty fine to coarse SAND some gravel (Fill) — 2 20	
							3 30		Olive damp silty fine SAND (Fill) — 3 30	
	S24		4 90 - 6 10				4 40		Brown moist, silty fine SAND trace roots — 4 40	
5							-4 90		PEAT ≅S18 — 4 90	G#207714 A 3 SP SM WC=58%
							6 10		Dark brown wet loose, silty fine SAND some organics trace gravel — 6 10	
									Grey wet silty CLAY ≅S7	
10							10 00		**Bottom of Exploration at 10 00 feet below ground surface** — 10 00	
									NO REFUSAL	
15										
20										
25										
30										

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

Boring No HB-LETU-222

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner Maine

Boring No HB-LETU-223
PIN 12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	68+00 8 2' Lt	**Casing ID/OD**	N/A	**Water Level***	5 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

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 20		PAVEMENT	
							0 40		Unbound PAVEMENT — 0 20	
							1 70		Dark brown damp, silty fine to coarse SAND trace gravel (Fill) — 0 40	
							-2 80		Brown damp silty fine to coarse SAND some gravel (Fill) — 1 70	
							3 50		— 2 80	
	S25		4 00 5 00				4 00		Olive, damp silty fine SAND (Fill) — 3 50	G#207715 A-3 SP SM WC=133%
5	S26		5 00 - 7 40				5 00		Brown moist, silty fine SAND — 4 00	G#207717 A 2-4, SM WC=30 1%
									Brown moist, silty fine SAND with PEAT layers — 5 00	
							7 40		Dark brown wet loose, silty fine SAND, organics trace gravel — 7 40	
									Grey, moist clay SILT trace fine sand ≅S2	
10							10 00		— 10 00	
									Bottom of Exploration at 10 00 feet below ground surface	
									NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds Turner, Maine

Boring No HB-LETU-224
PIN 12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	67+50 8 0 Lt	**Casing ID/OD**	N/A	**Water Level***	4 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

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 20		PAVEMENT — 0 20	
							0 40		Unbound PAVEMENT — 0 40	
							1 00		Dark brown damp, silty fine to coarse SAND trace gravel (Fill) — 1 00	
							-2 80		Brown silty fine to coarse SAND some gravel (Fill) — 2 80	
							3 10		Olive, damp silty fine SAND — 3 10	
	S27		4 30 4 70				-4 30		Brown moist, silty fine SAND — 4 30	G#207719 A 1 b SP WC=173%
5							-4 70		PEAT — 4 70	
							6 30		Brown wet, loose silty fine SAND organics trace gravel ≅S26 — 6 30	
									Grey wet, silty CLAY ≅S7	
10							10 00		10 00	
									Bottom of Exploration at 10 00 feet below ground surface	
									NO REFUSAL	
15										
20										
25										
30										

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

Boring No HB-LETU-224

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project Route 219
Location Leeds Turner Maine

Boring No HB-LETU-225
PIN 12669 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	5/22/07-5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	67+00, 7 8' Lt	**Casing ID/OD**	N/A	**Water Level***	5 2' 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

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 20		PAVEMENT	
							-0 50		0 20	
							1 10		Unbound PAVEMENT	
									0 50	
									Dark brown damp silty fine to coarse SAND trace gravel (Fill)	
							-2 70		1 10	
									Brown damp silty fine to coarse SAND some gravel (Fill)	
							3 80		2 70	
	S28		4 80 6 70				-4 40		Olive damp, silty fine SAND	
5							-4 80		3 80	G#207721
									Brown moist, silty fine SAND	A 1 b SW SM
									4 40	WC=89%
									PEAT ≅S27	
							-6 70		4 80	
									Brown moist, silty fine SAND with PEAT layers trace clay	
									6 70	
									Grey wet, silty CLAY ≅S7	
10							10 00		10 00	
									Bottom of Exploration at 10 00 feet below ground surface	
									NO REFUSAL	
15										
20										
25										
30										

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 219
Location Leeds-Turner Maine

Boring No HB-LETU-226
PIN 12669 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	5/22/07 5/22/07	**Drilling Method**	Solid Stem Auger	**Core Barrel**	N/A
Boring Location	66+50 7 3 Lt	**Casing ID/OD**	N/A	**Water Level***	None Observed

Definitions
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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 25		PAVEMENT	
							-0 50		0 25	
							0 90		Unbound PAVEMENT	
									0 50	
							-2 40		Dark brown damp silty fine to coarse SAND, trace gravel (Fill)	
									0 90	
									Brown damp silty fine to coarse SAND, some gravel (Fill)	
							4 10		2 40	
									Olive damp, silty fine SAND, (Fill)	
5							-4 90		4 10	
	S29		5 50 - 8 30				5 50		Brown moist, clay SILT trace fine SAND	G#207722 A 2-4 SC-SM WC=71 8%
									4 90	
									Brown moist, silty fine SAND	
									5 50	
									Brown moist, silty fine SAND PEAT layers trace clay	
							8 30		8 30	
									Grey, moist, clay SILT ≅S2	
10							10 00		10 00	
									Bottom of Exploration at 10 00 feet below ground surface	
									NO REFUSAL	
15										
20										
25										
30										

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

Boring No HB-LETU-226