Maine Department of Transportation

Urban and Arterial Highway Program
Geotechnical Section

PRELIMINARY GEOTECHNICAL DESIGN REPORT
for
ROUTE 1 RECONSTRUCTION
FORT KENT – FRENCHVILLE
AROOSTOOK COUNTY, MAINE

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Aroostook County | PIN 10002.00 | Soils Report 2005-101

Federal Number STP – 1000(200) X

February 2005

Station Conversion Sheet

** Converted stations are approximate. While offsets distances are correct as listed, the left and right deleantions must be inverted to correspond with this PIN.

Boring Locations	Converted Station	
10+256	13+599	
10+416	13+439	
10+582	13+273	
10+740	13+115	
10+902	12+953	
11+061	12+794	
11+393	12+462	
11+698	12+157	
11+927	11+928	
12+155	11+700	
12+613	11+242	
13+070	10+785	
13+375	10+480	
13+679	10+176	
13+984	9+871	
14+289	9+566	
14+670	9+185	
15+127	8+728	
15+432	8+423	
15+889	7+966	
16+270	7+585	
16+575	7+280	Beyond scope of PIN 10002.10
16+804	7+051	
17+261	6+594	
17+794	6+061	
18+175	5+680	
18+632	5+223	
17+090	6+765	
19+547	4+308	
19+928	3+927	
20+385	3+470	
20+766	3+089	
20+995	2+860	
21+376	2+479	

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-101

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/10/03-6/10/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 10+256, 1.49 m 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 = In-situ Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = In-situ Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WD = weight of 64 kg 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

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA		PAVEMENT.	
	S1	29.9/29.9	0.25 - 0.55				-0.25	0.25	G#98976 A-2-4, SM WC=3.0%
	S2	67.1/67.1	0.55 - 1.22				-0.55	Brown, damp, sandy GRAVEL, little silt. 0.55	G#98977 A-4, SC-SM WC=17.7
1.2	S3	335.3/335.3	1.22 - 4.57				-1.22	Brown, damp, silty fine to medium SAND, trace coarse sand, trace gravel. 1.22	G#98978 A-4, CL-ML WC=15.3%
2.4								Brown, damp, sandy SILT.	
3.6									
4.8							-4.57	4.57	
6								Bottom of Exploration at 4.57 m below ground surface. No Refusal	
7.2									
8.4									
9.6									

Remarks:

FWD 158 m

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-FRFK-101

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-102
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flight
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/10/03-6/10/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 10+416, 1.31 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

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

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0						SSA	-0.20		PAVEMENT. 0.20	~S1
									Brown, damp, sandy GRAVEL, little silt. 0.76	
	S4	106.7/106.7	0.76 - 1.35				-0.76		Brown, damp, sandy SILT, little gravel. 1.83	G#98979 A-4, SC-SM WC=12.5%
1.2										
	S5	121.9/121.9	1.83 - 3.05				-1.83		Brown, damp, silty fine SAND. 3.05	G#98980 A-4, SM WC=7.7%
2.4										
							-3.05		Bottom of Exploration at 3.05 m below ground surface. No Refusal	
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 318 m

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-FRFK-102

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-103
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Maau	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/10/03-6/10/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 10+582, 1.19 m Rt.	Casing ID/OD:	N/A	Water Level*:	1.98 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.21	PAVEMENT (0.21)	
								Brown, damp, sandy GRAVEL, little silt	S1
							-0.73	Brown, damp, silty fine to medium SAND, trace coarse sand, trace gravel. (0.73)	S2
1.2									
	SG	243.8/243.8	1.98 - 4.42				-1.98	Brown, saturated, silty fine SAND (1.98)	G#98981 A-4, CL-ML WC=17.5%
2.4									
3.6									
							-4.42	Bottom of Exploration at 4.42 m below ground surface. No Refusal (4.42)	
4.8									
6									
7.2									
8.4									
9.6									

Remarks:

FWD 484 m

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-FRFK-103

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1		Boring No.: HB-FRFK-104	
Location: Fort Kent-Frenchville, Maine		PIN:	10002.00
Driller:	MDOT	Elevation (m):	
Operator:	C. Mann	Datum:	NGVD
Logged By:	G. Lidstone	Rig Type:	CME 45C
Date Start/Finish:	6/10/03-6/10/03	Drilling Method:	Solid Stem Auger
Boring Location:	STA 10+740, 2.29 m RT	Casing ID/OD:	N/A
Auger ID/OD:	125 mm		
Sampler:	Off Flights		
Hammer Wt./Fall:	N/A		
Core Barrel:	N/A		
Water Level*:	2.11 m bgs.		

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

Definitions:
S_u = In-situ Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_u = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA			PAVEMENT	
							-0.24		Brown, damp, sandy GRAVEL, little silt. (0.24)	-S1
							-0.76		Brown, damp, silty fine to medium SAND, little gravel (0.76)	
1.2										
							-1.83		Brown, damp, silty fine SAND. (1.83)	-S5
2.4							-2.44		Similar to above, but wet. (2.44)	
							-3.05		(3.05)	
3.6									**Bottom of Exploration at 3.05 m below ground surface.** No Refusal	
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 642 m

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-FRFK-104

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Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1		Boring No.: HB-FRFK-105	
Location: Fort Kent-Frenchville, Maine		PIN:	10002.00
Driller:	MDOT	Elevation (m):	
Operator:	C. Main	Datum:	NGVD
Logged By:	G. Lidstone	Rig Type:	CME 45C
Date Start/Finish:	6/10/03-6/10/03	Drilling Method:	Solid Stem Auger
Boring Location:	STA 10+902, 2.29 m Rt.	Casing ID/OD:	N/A
Auger ID/OD:	125 mm		
Sampler:	Off Flights		
Hammer Wt./Fall:	N/A		
Core Barrel:	N/A		
Water Level*:	1.98 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA			
	S7	32.6/32.6	0.27 - 0.55				-0.22	PAVEMENT 0.22	
	S8	36.6/36.6	0.55 - 0.91				-0.55	Brown, damp, sandy SILT, some gravel. 0.55	G#98982 A-2-4, SC-SM WC=4.6%
	S9	106.7/106.7	0.91 - 1.98				-0.91	Dark brown, moist, silty fine to medium SAND. 0.91	G#98983 A-2-4, SC-SM WC=18.4%
1.2								Grey, moist, silty fine to medium SAND, little gravel.	G#98984 A-2-4, SC-SM WC=9.4%
	S10	106.7/106.7	1.98 - 3.05				-1.98	Grey, wet, sandy SILT, little gravel. 1.98	G#98985 A-4, SM WC=9.3%
2.4							-3.05	Bottom of Exploration at 3.05 m below ground surface. No Refusal 3.05	
3.6									
4.8									
6									
7.2									
8.4									
9.6									

Remarks:

FWD 304 m

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-FRFK-105

Soil/Rock Exploration Log

METRIC UNITS

Project:	U.S. Route 1
Location:	Fort Kent-Frenchville, Maine
Boring No.:	HB-FRFK-106
PIN:	10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	108 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/10/03-6/10/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 11+061, 2.23 m Rt	Casing ID/OD:	N/A	Water Level*:	2.13 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_u = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 54 kg 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

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (/150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.22	PAVEMENT	
	S11	143.3/143.3	0.70 - 2.13					Brown, damp, sandy GRAVEL, little silt — 0.22	~S1
							-0.70	Brown, wet, fine to medium SAND, trace silt — 0.70	G#98986 A-2-4, SM WC=12.7%
1.2									
	S12	182.9/152.9	2.13 - 3.96				-2.13	Brown, saturated, fine sandy SILT — 2.13	G#98987 A-4, CL-ML WC=17.9%
2.4									
3.6							-3.96	Brown, saturated, silty fine to coarse SAND — 3.96	
							-4.57	Bottom of Exploration at 4.57 m below ground surface. No Refusal — 4.57	
4.8									
6									
7.2									
8.4									
9.6									

Remarks:

FWD 963 m

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-FRFK-106

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Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: 0949-B-9-FRFK-107

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Manu	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Ladstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 11+393, 2.44 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (kPa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WCH = weight of 64 kg hammer
WOR = weight of rods

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

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (/150 mm) Shear Strength (kPa) or RQD (%)	N value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.18		PAVEMENT.	
							-0.43		Brown, damp, sandy GRAVEL, little silt. (0.18)	~S1
1.2							-1.52		Brown, damp, sandy SILT, little gravel. (0.43)	~S4
2.4									Bottom of Exploration at 1.52 m below ground surface. (1.52) No Refusal	
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 1295 m

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-FRFK-107

Dec. 29. 2003 3:56PM State of Maine DOT Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-108
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 11+698, 2.13 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WCH = weight of 64 kg hammer
WCR = 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (/150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA				
	S13	146.3/146.3	0.37 - 1.83				-0.20		PAVEMENT	
							-0.37		Brown, damp, sandy GRAVEL, little silt. (0.20)	~S1 G#98988 A-2-4, SM WC=6.4%
1.2									Brown, damp, dense sandy SILT, some gravel. (Till) (0.37)	
							-1.83		Bottom of Exploration at 1.83 m below ground surface. No Refusal (1.83)	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 1600 m

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

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Boring No.: HB-FRFK-108

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-109
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 11+927, 2.13 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results: AASHTO and Unified Class.
0						SSA	-0.20		PAVEMENT.	
							-0.46		Brown, damp, sandy GRAVEL, little silt. (0.20)	~S1
	S14	76.2/76.2	0.76 - 1.52				-0.76		Brown, moist, sandy SILT. (0.46)	~S5
1.2									Grey, wet, silty fine to medium SAND. (0.76)	G#98939 A-4, SC-SM WC=12.1%
							-1.52		(1.52)	
2.4									Bottom of Exploration at 1.52 m below ground surface. No Refusal	
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 1829 m

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-FRFK-109

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1		Boring No.: HB-FRFK-110	
Location: Fort Kent-Frenchville, Maine		PIN:	10002.00
Driller:	MDOT	Elevation (m):	
Operator:	C. Mann	Datum:	NGVD
Logged By:	G. Lidstone	Rig Type:	CME 45C
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger
Boring Location:	STA 12+155, 2.13 m Rt	Casing ID/OD:	N/A
Auger ID/OD:	125 mm		
Sampler:	Off Flights		
Hammer Wt./Fall:	N/A		
Core Barrel:	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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

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

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.21		PAVEMENT (0.21)	
							-0.46		Brown, damp, sandy GRAVEL, little silt. (0.46)	~S1
									Brown, damp, dense sandy SILT, some gravel (Till). (1.07)	~S13
1.2							-1.07		Similar to above, but grey. (1.52)	
							-1.52		**Bottom of Exploration at 1.52 m below ground surface.** No Refusal	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 2057 m

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-FRFK-110

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring: HB-FRFK-111
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 124+613, 2.35 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
Su(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

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

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) % RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S15	44.2/44.2	0.23 - 0.67			SSA	-0.23		PAVEMENT.	
									Brown, damp, sandy GRAVEL, little silt. 0.23	G=98990 A-1-b, SM WC=3.6%
							-0.67		Brown, moist, silty fine to medium SAND, trace gravel, (Fill). 0.67	
1.2							-1.52			
									Bottom of Exploration at 1.52 m below ground surface. No Refusal 1.52	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 2515 m

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-FRFK-111

Dec. 29. 2003 3:15 PM State of Maine DOT Station

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1		Boring No.: HB-FRFK-112	
Location: Fort Kent-Frenchville, Maine		PIN:	10002.00
Driller:	MDOT		
Operator:	C. Mann	Elevation (m):	
Logged By:	G. Lidstone	Datum:	NGVD
Date Start/Finish:	6/19/03-6/19/03	Rig Type:	CME 45C
Boring Location:	STA 13+070, 2.29 m Rt.	Drilling Method:	Solid Stem Auger
		Casing ID/OD:	N/A
		Auger ID/OD:	125 mm
		Sampler:	Off Flights
		Hammer Wt./Fall:	N/A
		Core Barrel:	N/A
		Water Level*:	1.28 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_u = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.20		PAVEMENT	
									Brown, damp, sandy GRAVEL, little silt. 0.20	~S1
1.2	S16	64.0/64.0	1.28 - 1.92				-0.96			
							-1.28		Brown, moist, sandy SILT 0.96	~S3
									Dark brown, wet, soft, sandy SILT, trace organics 1.28	G#98993 A-4, SM WC=22.7%
2.4							-1.92		Brown, damp, sandy SILT, cobbles, some gravel (Till) 1.92	~S13
							-2.44		Bottom of Exploration at 2.44 m below ground surface. 2.44	
									No Refusal	
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 2.972 m

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-FRFK-112

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring: HB-FRFK-113
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 13+375, 2.23 m 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 = In-situ Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = In-situ Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

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

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (/150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.21		PAVEMENT	
									Brown, damp, sandy GRAVEL, little silt — 0.21	~S1
1.2	S17	18.7/18.3	1.13 - 1.31				-1.13			
							-1.31		PEAT — 1.13	G#98994 A-4, CL-ML WC=61.8% ~S3
							-1.52		Brown, moist, sandy SILT — 1.31	
									Bottom of Exploration at 1.52 m below ground surface. No Refusal — 1.52	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 3277 m

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-FRFK-113

Dec. 29. 2003 3:57PM State of Maine DOT Station

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-114
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	139 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 13+679, 2.26 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
S_c = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S18	31.1/31.1	0.21 - 0.52			SSA	-0.21		PAVEMENT.	
	S19	57.9/57.9	0.52 - 1.10				-0.52		Brown, damp, sandy GRAVEL, little silt. (0.21)	G#98998 A-1-b, SC-SM WC=3.2%
1.2							-1.10		Brown, moist, sandy SILT. (0.52)	G#98995 A-4, CL-ML WC=20.5%
							-1.52		Brown, damp, dense, sandy SILT, some gravel, (Till). (1.10)	
2.4									**Bottom of Exploration at 1.52 m below ground surface.** No Refusal (1.52)	
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 5581 m
Petroleum type odor.

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-FRFK-114

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-115

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 13+984, 2.29 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
Su(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.20		PAVEMENT	
							-0.49		Brown, damp, sandy GRAVEL, little silt 0.20	~S1
									Brown, damp, sandy SILT 0.49	~S3
1.2							-1.52			
									Bottom of Exploration at 1.52 m below ground surface. 1.52	
									No Refusal	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 3886 m

Petroleum type odor.

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-FRFK-115

Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-116
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Fliebis
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 14+289, 1.93 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content (percent)
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
GS = Grain Size Analysis
CN = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.22		PAVEMENT	
									Brown, damp, sandy GRAVEL, little silt. 0.22	-SI
							-0.76		Dark brown, damp, silty fine to coarse SAND, little gravel, petroleum type odor (Fill). 0.76	
1.2							-1.22		Brown, damp, sandy SILT, little gravel. 1.22	-SM
							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal 1.52	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 4191 m

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

* Waterlevel 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-FRFK-116

Dec. 29. 2003 3:58PM Dept of Transportation Maine DOT

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-117

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 14+670, 2.59 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WCH = weight of 64 kg hammer
W/OR = weight of rods

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

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows/(150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.22		PAVEMENT	
									Brown, damp, sandy GRAVEL, little silt (0.22)	~/S1
							-0.67		Dark brown, damp, sandy GRAVEL, little silt, petroleum odor (0.67)	
1.2	S20	54.9/54.9	0.98 - 1.52				-0.98		Brown, moist, sandy SILT, trace gravel, trace organics. (0.98)	G#98006 A-4, SC-SM WC=24.2%
							-1.52		**Bottom of Exploration at 1.52 m below ground surface.** (1.52) No Refusal	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 4572 m

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-FRFK-117

Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project:	U.S. Route 1	Boring No.:	HB-FRFK-118
Location:	Fort Kent-Frenchville, Maine	PIN:	10002.00
Driller:	MDOT	Elevation (m):	
Operator:	C. Mann	Datum:	NGVD
Logged By:	G. Lidstone	Rig Type:	CME 45C
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger
Boring Location:	STA 15+127, 2.44 m Rt.	Casing ID/OD:	N/A
Auger ID/OD:	125 mm		
Sampler:	Off Flights		
Hammer Wt./Fall:	N/A		
Core Barrel:	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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{ul\ lab}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.23		PAVEMENT.	
									Brown, damp, sandy GRAVEL, some silt (0.23)	S1
							-0.76		Brown, damp, sandy SILT, some gravel, (FILL) (0.76)	
1.2							-1.52		**Bottom of Exploration at 1.52 m below ground surface.** No Refusal (1.52)	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 5029 m

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-FRFK-118

Dec. 29. 2008 3:58PM Dept of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-119

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 15+432, 2.44 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
W/OH = weight of 64 kg hammer
W/OR = 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.23		PAVEMENT	
							-0.55		Brown, damp, sandy GRAVEL, little silt. 0.23	~S1
									Brown, damp, sandy SILT, some gravel, (Till). 0.55	
1.2							-1.52			
									Bottom of Exploration at 1.52 m below ground surface. No Refusal 1.52	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 5554 m

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-FRFK-119

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-120

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 15+869, 2.29 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (kPa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

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

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.20		PAVEMENT.	
							-0.37		Brown, damp, sandy GRAVEL, little silt — 0.20	~S1
									Brown, damp, sandy SILT, some gravel (Till) — 0.37	
1.2							-1.22		Similar to above, but grey, dense — 1.22	
							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal — 1.52	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 379.1 m

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-FRFK-120

Dec. 29. 2006 3:58PM of Ma DOT tion

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring: FRFK-121
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 16+270, 2.38 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
S_p = Unconfined Compressive Strength (Pa)
$S_{ur(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
D = Grain Size analysis
C = Consolidation test

Depth (m)	Sample No	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0						SSA	-0.22		PAVEMENT	
							-0.49		Brown, damp, sandy GRAVEL, little silt — 0.22	~S1
									Brown, damp, fine sandy SILT — 0.49	
1.2							-1.22		Similar to above, but moist — 1.22	
							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal — 1.52	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 6172 in

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-FRFK-121

Dec. 29. 2003 3:53PM of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-122

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 16+575, 2.59 m 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 = In-situ Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = In-situ Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = natural moisture content
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
HSA = Hollow Stem Auger
GS = Grain Size Analysis

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.23		PAVEMENT.	
									Brown, damp, sandy GRAVEL little silt. (0.23)	-S1
							-0.76		Brown, damp, sandy SILT (0.76)	-S3
1.2							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal (1.52)	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 6477 m

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-FRFK-122

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: FRFK-123

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N.A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N.A
Boring Location:	STA 16+804, 2.59 m 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 (kPa)
S_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA				
	S21	62.8/62.8	0.23 - 0.85				-0.23		PAVEMENT	
									Brown, damp, sandy GRAVEL, little silt — 0.23	G#98997 A-2-4, SC-SM WC=4.1%
	S22	36.6/36.6	0.85 - 1.22				-0.85		Brown, moist, sandy SILT — 0.85	G#98999 A-4, CL-ML WC=18.6%
1.2							-1.22		Grey, damp, dense, sandy SILT — 1.22	
							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal — 1.52	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 6706 m

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-FRFK-123

Dec. 29. 2006 3:59PM of Ma ... tion

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring ... FRFK-124

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 17+261, 2.74 m 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_v = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) / Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.22		PAVEMENT. 0.22	
									Brown, damp, sandy GRAVEL, little silt	~S21
1.2							-1.52		1.52	
									Bottom of Exploration at 1.52 m below ground surface. No Refusal	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

PWD 7163 m

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-FRFK-124

Dec. 29. 2003 3:59PM State of Maine DOT Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-125
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	175 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	OD Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 17+794, 2.29 m 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 = In-situ Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = In-situ Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Soil Rem...
Wc = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.21		PAVEMENT.	
									Brown, damp, sandy GRAVEL, little silt. (0.21)	~S21
1.2							-1.22		Brown, damp, sandy SILT (1.22)	~S3
							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal (1.52)	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 7696 m

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-FRFK-125

Dec. 29. 2003 3:59PM of Maine DOT ation

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring ... FRFK-126

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 18+175, 2.25 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WCH = weight of 64 kg hammer
WCP = weight of mat

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

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.18		PAVEMENT	
									Brown, damp, sandy GRAVEL, little silt 0.18	S21
1.2							-1.07		Brown, damp, sandy SILT 1.07	S3
							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal 1.52	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 8077 m

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-FRFK-126

Dec. 29. 2003 3:59PM State of Maine DOT Station

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-127

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flight
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 18+632, 2.39 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_u = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) / Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S23	100.0/100.0	0.19 - 1.19			SSA	-0.19		PAVEMENT.	
									Brown, damp, sandy GRAVEL, little silt. (0.19)	G#98091 A-1-b, GC-GM WC=3.9%
1.2	S24	33.5/33.5	1.19 - 1.52				-1.19		Brown, moist, silty fine SAND (1.19)	G#98092 A-4, SC-SM WC=10.8%
							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal (1.52)	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 8534 m

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-FRFK-127

Dec. 29. 2003 3:59PM State of Maine DOT

Soil/Rock Exploration Log

METRIC UNITS

Project:	U.S. Route 1	Boring No.:	HB-FRFK-128
Location:	Fort Kent-Frenchville, Maine	PIN:	10002.00
Driller:	MDOT	Elevation (m):	
Operator:	C. Main	Datum:	NGVD
Logged By:	G. Lidstone	Rig Type:	CME 45C
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger
Boring Location:	STA 19+090, 2.44 m Rt.	Casing ID/OD:	N/A
		Auger ID/OD:	125 mm
		Sampler:	Off Flights
		Hammer Wt./Fall:	N/A
		Core Barrel:	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 = In situ Vane Shear Test
SSA = Solid Stem Auger

Definitions
S_u = In situ Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions
WC = Water content (%)
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.21		PAVEMENT.	
									Brown, damp, sandy GRAVEL, little silt. (0.21)	~S23
1.2							-1.04		Brown, moist, silty fine SAND (1.04)	~S24
							-1.52		Bottom of Exploration at 1.52 m below ground surface. (1.52) No Refusal	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 3992 m

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-FRFK-128

Dec. 29. 2003 3:59PM State of Maine DOT Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: U.S. Route 1
Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-129
PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/10/03-6/10/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 19+547, 2.44 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WO = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = Natural Moisture Content
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
GS = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.19		PAVEMENT.	
									Brown, damp, sandy GRAVEL, trace silt. (0.19)	~S23
							-0.70		Brown, damp, sandy SILT, some gravel. (0.70)	
1.2							-1.01		Brown, moist, sandy SILT. (1.01)	~S22
							-1.52		(1.52)	
2.4									Bottom of Exploration at 1.52 m below ground surface. No Refusal	
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 9449 m

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-FRFK-129

Dec. 29. 2006 3:59PM Maine DOT

Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-130

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 19+928, 2.29 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

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

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
0						SSA	-0.17		PAVEMENT	
									Brown, damp, sandy GRAVEL, little silt (0.17)	~S23
							-0.82		Brown, moist, sandy SILT (0.82)	~S22
1.2							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal (1.52)	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 5830 m

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-FRFK-130

Dec. 29. 2003 4:00PM Maine DOT

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1

Location: Fort Kent-Frenchville, Maine

Boring No.: HB-FRFK-131

PIN: 10002.00

Driller:	MDOT	Elevation (m):		Auger ID/OD:	125 mm
Operator:	C. Mann	Datum:	NGVD	Sampler:	Off Flights
Logged By:	G. Lidstone	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	STA 20+385, 2.53 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
S_p = Unconfined Compressive Strength (kPa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = Water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
CR = Corrosivity Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S25	42.1/42.1	0.19 - 0.61			SSA	-0.19		PAVEMENT. 0.19	
									Brown, damp, sandy GRAVEL, little silt. 0.61	G#97251 A-2-4, GC-GM WC=4.1%
	S26	91.4/91.4	0.61 - 1.52				-0.61		Brown, moist, soft, sandy SILT. 1.52	G#99000 A-4, CL-ML WC=22.7%
1.2							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 10287 m

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-FRFK-131

Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project:	U.S. Route 1	Boring No.:	HB-FRFK-132
Location:	Fort Kent-Frenchville, Maine	PIN:	10002.00
Driller:	MDOT	Elevation (m):	
Operator:	C. Manu	Datum:	NGVD
Logged By:	G. Lidstone	Rig Type:	CME 45C
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger
Boring Location:	STA 20+766, 2.5 m Rt.	Casing ID/OD:	N/A
Auger ID/OD:	125 mm		
Sampler:	Off Flights		
Hammer Wt./Fall:	N/A		
Core Barrel:	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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	-0.19		PAVEMENT	
									Brown, damp, sandy GRAVEL, little silt (0.19)	~S25
1.2							-1.13		Brown, moist, sandy SILT, trace gravel (-1.13)	
							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal (-1.52)	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 10668 m

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

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Boring No.: HB-FRFK-132

Soil/Rock Exploration Log

METRIC UNITS

Project:	U.S. Route 1	Boring No.:	HB-FRFK 133
Location:	Fort Kent-Frenchville, Maine	PIN:	10002.00
Driller:	MDOT	Elevation (m):	
Operator:	C. Mann	Datum:	NGVD
Logged By:	G. Lidstone	Rig Type:	CME 45C
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger
Boring Location:	STA 20+995, 2.25 m Rt.	Casing ID/OD:	N/A
		Auger ID/OD:	125 mm
		Sampler:	Off Flights
		Hammer Wt./Fall:	N/A
		Core Barrel:	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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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 (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S27	52.9/52.9	0.21 - 1.04			SSA	-0.21		PAVEMENT.	
									Brown, damp, sandy GRAVEL, little cobbles. 0.21	G#97252 A-1-b, GC-GM WC=4.6%
1.2	S28	48.8/48.8	1.04 - 1.52				-1.04		Brown, moist, sandy SILT. 1.04	G#97253 A-4, CL-ML WC=22.3%
							-1.52		Bottom of Exploration at 1.52 m below ground surface. No Refusal 1.52	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 10897 m

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

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Boring No.: HB-FRFK-133

Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: U.S. Route 1		Boring No.:	HB-FRFK-134
Location: Fort Kent-Frenchville, Maine		PIN:	10002.00
Driller:	MDOT	Elevation (m):	
Operator:	C. Mann	Datum:	NGVD
Logged By:	G. Lidstone	Rig Type:	CME 45C
Date Start/Finish:	6/19/03-6/19/03	Drilling Method:	Solid Stem Auger
Boring Location:	STA 21+376, 2.26 m Rt.	Casing ID/OD:	N/A
Auger ID/OD:	125 mm		
Sampler:	Off Flights		
Hammer Wt./Fall:	N/A		
Core Barrel:	N/A		
Water Level*:	1.49 m 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 (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
S_u(lab) = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg 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 (m)	Sample No	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA				
							-0.21		PAVEMENT.	
									Brown, damp, sandy GRAVEL, little silt. 0.21	~S27
							-0.82		Brown, moist, sandy SILT. 0.82	~S25
1.2										
							-1.49		Similar to above, but saturated. 1.49	
							-1.83		Bottom of Exploration at 1.83 m below ground surface. No Refusal. 1.83	
2.4										
3.6										
4.8										
6										
7.2										
8.4										
9.6										

Remarks:

FWD 11278 m

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

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Boring No.: HB-FRFK-134