STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING LOG

Searsburg Culvert Replacement
24584.1000.32000

Boring No.: **B-101**
Page No.: 1 of 1
Pin No.: STP SCRP(7)
Checked By: JACM

Boring Crew: J. Leonhardt, A. Jensen
Date Started: 9/12/12 Date Finished: 9/12/12
VTSPG NAD83: N 1513635.74 ft E 140262.79 ft
Station: 99+65.97 Offset: 8.75 L
Ground Elevation: 2336.5 ft

	Casing	Sampler
Type:	H.S.A.	SS
I.D.:	3.25 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig: CME 75 ATV Mounted	C_E = 1	

Groundwater Observations

Date	Depth (ft)	Notes
09/12/12	10.0	Estimated

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		ASPHALT PAVEMENT							
		A-4, **Clayey Silt,** Some f.m.c. Sand,little f.c. gravel, very stiff, brown, moist, Rec. = 1.1 ft, (Fill)			20-14-12 (26)				
		A-4, **Similar Soil**, Rec. = 1.5 ft, (Fill			10-12-8-6 (20)	9.9	12.5	31.4	51.2
10		A-4, **Similar Soil**, Rec. = 2.0 ft, (Fill)			7-8-21-11 (29)				
		A-4							
		A-4, **Clayey Silt,** little f.m.c. sand, trace f. gravel, hard, gray/brown, wet, Rec. = 1.0 ft			14-15-100/4" (R)				
		A-4, becomes moist, Rec. = 0.5 ft			30-100/1" (R)				
20		A-2-4, **f.m.c. Sand,** Some clayey Silt, Some f.c. Gravel, very compact, gray/brown, wet, Rec. = 2.0 ft, (Till)			25-44-29-67 (73)	8.6	15.2	45.3	28.4
		A-2-4, **Similar Soil**, Rec. = 2.0 ft, (Till)			40-64-65-75 (129)				
		A-2-4, becomes little f. gravel and moist, Rec. = 1.8 ft, (Till)			24-57-74-100/4" (131)				
30		A-2-4, **Similar Soil**, Rec. = 1.3 ft, (Till)			74-81-100/4" (R)				
		33.5 ft - 38.5 ft, Cobbles & boulders NXDC	R-1	0.56					
		A-2-4, **Similar Soil**, Rec. = 0.3 ft, (Till)			100/4" (R)				
40		Hole stopped @ 38.8 ft							

Remarks:
Standard sampling was conducted through embankment fill to culvert invert elevation.

Water level measurement was based on visual observation, water level not measurable in borehole.

Lab Results for the sample taken from 5 to 7 feet: 51.2% Silt, 31.3% Sand, and 17.4% Gravel.

Hard drilling encountered from 13' to boring termination. Boulders and cobbles were encountered during augering and while driving and washing.

Lab Results for the sample taken from 20 to 22 feet: 45.3% Sand, 28.4% Silt, and 26.3% Gravel.

Auger and spoon refusal at 33.5' on cobble/boulder. Augers were pulled and 3" FJC installed and a 5' core run was completed. Coring went through hard and soft zones during core run, interpreted as a cobble and boulder layer.

Roller bit refusal at 38.8' interpreted as refusal on boulder/cobble. Boring terminated in till layer at 38.8'.

The description of the classification of the materials is based on USCS criteria that gravel is defined as material retained on a #4 sieve or larger. Laboratory data provided follows AASHTO classification guidelines that gravel is defined as material retained on a #10 sieve or larger.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_E is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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BORING LOG

Searsburg Culvert Replacement
24584.1000.32000

Boring No.: **B-102**
Page No.: 1 of 1
Pin No.: STP SCRP(7)
Checked By: JACM

Boring Crew: J. Leonhardt, A. Jensen
Date Started: 9/13/12 Date Finished: 9/13/12
VTSPG NAD83: N 1513687.40 ft E 140180.19 ft
Station: 98+73.88 Offset: 21.29 R
Ground Elevation: 2334.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	3 in	1.5 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig: CME 75 ATV Mounted	C_E = 1	

Groundwater Observations

Date	Depth (ft)	Notes
09/13/12	10.0	Estimated

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-2-4, **f.m.c. Sand,** Some clayey Silt, little f. gravel, trace organics, loose, dark brown, moist, Rec. = 0.8 ft, (Fill)	1-2-4-3 (6)				
		A-2-4, **f.m.c. Sand,** Some clayey Silt, little f.c. gravel, loose, brown, moist, Rec. = 1.2 ft, (Fill)	5-7-1-2 (8)				
10		A-4, **Clayey Silt,** Some f.m.c. Sand, little f.c. gravel, very compact, brown, moist Rec. = 1.3 ft	8-38-25-100/4" (63)				
		A-4, **Clayey Silt,** little f.m.c. sand, little f. gravel, stiff, brown, moist, Rec. = 0.9 ft	6-5-5-5 (10)				
		A-4, **Similar Soil**, Rec. = 1.5 ft	8-5-8-9 (13)				
20		A-4, **Clayey Silt,** trace f.m.c. sand, trace f. gravel, hard, gray/brown, moist, Rec. = 1.7 ft, (Till)	14-12-37-27 (49)				
		A-4, grades to little f.m.c. sand, Rec. = 2.0 ft, (Till)	18-22-22-29 (44)				
		A-4, **Clayey Silt and f.m.c. Sand,** little f. gravel, hard, gray/brown, moist, Rec. = 2.0 ft, (Till)	20-23-33-29 (55)	9.3	11.7	35.8	48.8
30		A-4, **Similar Soil**, Rec. = 0.8 ft, (Till)	9-100/4" (R)				
		A-4, **Similar Soil**, Rec. = 2.0 ft, (Till)	31-23-25-33 (48)				
		A-4, **Similar Soil**, Rec. = 2.0 ft, (Till)	10-15-24-26 (39)				
40		Hole stopped @ 40.0 ft					

Remarks:
Standard sampling was conducted through embankment fill to culvert invert elevation.

Water level measurement was based on visual observation.

Lab Results for the sample taken from 23 to 25 feet: 48.8% Silt, 35.8% Sand, and 15.4% Gravel.

Boulders and cobbles were enocountered while driving and washing casing from 11.9' to 15' and 25' to boring termination.

Boring terminated in till layer.

The description of the classification of the materials is based on USCS criteria that gravel is defined as material retained on a #4 sieve or larger. Laboratory data provided follows AASHTO classification guidelines that gravel is defined as material retained on a #10 sieve or larger.

Notes:
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3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

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PROJECT NAME: SEARSBURG
PROJECT NUMBER: STP SCRP(7)

FILE NAME: dl0cl98_forms.dgn
PROJECT LEADER: K. UPMAL
DESIGNED BY: B. MCADAMS
BORING LOGS

PLOT DATE: 27-FEB-2013
DRAWN BY: B. MCADAMS
CHECKED BY: A. KEMPTON
SHEET 16 OF 35