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

BORING LOG

Barton Bridge No. 58
BO 1449(33) – TH 4
GeoDesign #888-04.8

Boring No.: B-1
Page No.: 1 of 2
Pin No.: 13j078
Checked By: JFW

Boring Crew: John Leonhardt (QC/QA), Alan Baribault (GeoDesign)
Date Started: 1/20/14 Date Finished: 1/30/14
VTSPG NAD83: N 817413.00 ft E 1723105.00 ft
Station: 31+15 Offset: 25.6' LT
Ground Elevation: 857 ft

	Casing	Sampler
Type:	FJ	SS
I.D.:	4 in	1.38 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	CME 550X ATV	CE = 1.4

Groundwater Observations (3)

Date	Depth (ft)	Notes
01/20/14	8.0	In Augers
01/20/14	7.0	Wet Sample
01/28/14	4.8	In casing (8 days).

Depth (ft)	Strata(1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		Asphalt										
		S1 (0' to 2') : Very dense / Refusal tan and brown fine to coarse SAND, some Silt, little fine to coarse Gravel, frozen. Rec. = 1.2 ft				35-95-50 (R)	5.8	26.1	52.4	21.5		
						25-18-23-15 (41)	12.9	10.4	48.7	40.9		
5		S2 (2' to 4'): Dense, tan fine to coarse SAND and SILT, trace fine Gravel, upper 18" frozen, lower 6" moist. Rec. = 2.0 ft				4-8-8-6 (16)						
		S3 (4' to 6'): Medium dense, gray-green SILT and fine to coarse SAND, trace decayed Wood, slight organic odor, moist. Rec. = 1.0 ft				1-2-4-4 (6)	24.5	1.1	26.4	72.5	NP	NP
						2-3-2-3 (5)	25.8	1.0	45.9	53.1		
10		S4 (6' to 8'): Loose, gray with orange mottling SILT, some fine Sand, very moist to wet. Rec. = 1.2 ft (AASHTO M145 Classification: A-4.)				3-8-8-9 (16)						
		S5 (8' to 10'): Loose, gray fine to medium SAND and SILT, trace Wood (in spoon shoe), wet. Rec. = 1.2 ft				12-8-9-6 (17)	13.1	39.7	48.5	11.8		
15		S6 (10' to 12'): Medium dense, gray fine to coarse SAND and SILT, some fine Gravel, wet. Rec. = 1.0 ft				2-5-6-7 (11)						
		S7 (12' to 14'): Medium dense, gray medium to coarse SAND, some fine Gravel, little Silt, wet. Rec. = 1.0 ft										
		S8 (14' to 16'): Medium dense, gray SILT, little fine to coarse Sand, wet. Rec. = 0.8 ft										
20		S9 (19' to 21'): Loose, gray SILT, some fine Sand, wet. Rec. = 1.2 ft				5-3-3-4 (6)						
25		S10 (24' to 26'): Loose, gray SILT, trace fine Sand, trace (–) fine Gravel, wet. Rec. = 1.3 ft (AASHTO M145 Classification: A-4.)				2-2-2-2 (4)	27.7	1.0	2.3	96.7	NP	NP
30		S11 (29' to 31'): Medium dense, gray SILT, little fine Sand, wet. Rec. = 1.3 ft				5-7-8-9 (15)						
		S12 (31.5' to 33.5") Medium dense, gray fine to medium SAND, little (–) Silt, trace coarse Gravel, wet. Rec. = 0.8 ft				15-12-15-24 (27)						
35		S13 (34' to 36'): Medium dense, gray fine to coarse SAND, some fine to coarse Gravel, little Silt, wet. Rec. = 0.6 ft				17-15-10-9 (25)						
40		S14 (39' to 41'): Medium dense, gray fine GRAVEL and fine to coarse SAND, some Silt, wet. Rec. = 0.4 ft				9-6-7-6 (13)						
45		S15 (44' to 44.2'): Refusal, little recovery (cuttings/ fractured gravel, trace Sand). Rec. = 0.04 ft				100/2" (R)						
		C1 (45.5' to 50.5'): Fair quality, dark gray to gray with occasional white bands ~1/4" thick, fresh to slightly weathered, moderately hard PHYLLITE with Quartz banding, fracturing approximately 40 to 70 degrees.	C1	100 (63)	2.75 2 2.2 2.2							

Top of Bedrock @ 45.5 ft

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE 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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55		C2 (50.5' to 55.5'): Fair quality, dark gray to gray with occasional white layers to 3" thick, fresh to slightly weathered, moderately hard PHYLLITE with Quartz banding, fracturing approximately 40 to 70 degrees.	C2	100 (55)	1.9 2 2.2 3.2 3.75 2							

Hole stopped @ 55.5 ft

Remarks:
1) Located in Roaring Brook Road, approximately 4 feet north of south pavement edge and 55 feet west of existing abutment. Northing, easting, and ground surface elevation estimated from an electronic site plan provided by TY Lin and taped measurements made in the field by GeoDesign personnel. Approximate Stationing based on conceptual plans dated October 2, 2013 (proposed roadway alignment).
2) Borehole advanced to 14 feet using 4 1/4" HSA; then switched to 4" FJ drive and wash below. Boring paused from January 20, resumed January 28 due to cold weather.
3) Sample S2 SPT N-values not representative of ASTM D-1586 (borehole not cleared after S1).
4) Wash water gray-brown turning gray by approximately 10 feet. Occasional slight grinding of carbide button roller bit on inferred gravel.
5) Advanced open hole from 24 to 31.5 feet; casing otherwise driven to sampling depth prior to obtaining sample.
6) Roller bit chatter at 31.5 feet (obtained sample); significantly slower advance at 42 feet with roller bit refusal at 42.5 feet deep.
7) Encountered difficulty seating casing, advanced with roller bit to 44 feet and drove casing to 44 feet deep and attempted split spoon sample. Very difficult to remove sampler.
8) Telescoped 3" casing inside 4" casing to 45.5 feet and cleaned with steel roller bit.
9) Rock core return water gray to dark gray, no loss of water observed.

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