



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  
VTSPP NAD83: N 817413.00 ft E 1723105.00 ft  
Station: 31+15 Offset: 25.6' LT  
Ground Elevation: 857 ft

Type: FJ  
I.D.: 4 in  
Hammer Wt: 140 lb  
Hammer Fall: 30 in  
Hammer/Rod Type: Auto/NWJ  
Rig: CME 550X ATV  
Casing Sampler: SS  
Date: 01/20/14  
Depth (ft): 8.0  
Notes: In Augers  
Date: 01/20/14  
Depth (ft): 7.0  
Notes: Wet Sample  
Date: 01/28/14  
Depth (ft): 4.8  
Notes: In casing (8 days).

Depth (ft)	Strat(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 %	
5	X X X	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			
		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				25-18-23-15 (41)	12.9	10.4	48.7	40.9			
		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				4-8-8-6 (16)	24.5	1.1	26.4	72.5	NP	NP	
		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.)				1-2-4-4 (6)	25.8	1.0	45.9	53.1			
		S5 (8' to 10'): Loose, gray fine to medium SAND and SILT, trace Wood (in spoon shoe), wet. Rec. = 1.2 ft				2-3-2-3 (5)							
		S6 (10' to 12'): Medium dense, gray fine to coarse SAND and SILT, some fine Gravel, wet. Rec. = 1.0 ft				3-8-8-9 (16)	13.1	39.7	48.5	11.8			
		S7 (12' to 14'): Medium dense, gray medium to coarse SAND, some fine Gravel, little SILT, wet. Rec. = 1.0 ft				12-8-9-6 (17)							
		S8 (14' to 16'): Medium dense, gray SILT, little fine to coarse Sand, wet. Rec. = 0.8 ft				2-5-6-7 (11)							
		S9 (16' to 18'): 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)							
35		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								
		Top of Bedrock @ 45.5 ft			2								
					2.2								
					2.2								

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
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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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Ground Elevation: 857 ft

Type: FJ  
I.D.: 4 in  
Hammer Wt: 140 lb  
Hammer Fall: 30 in  
Hammer/Rod Type: Auto/NWJ  
Rig: CME 550X ATV  
Casing Sampler: SS  
Date: 01/20/14  
Depth (ft): 8.0  
Notes: In Augers  
Date: 01/20/14  
Depth (ft): 7.0  
Notes: Wet Sample  
Date: 01/28/14  
Depth (ft): 4.8  
Notes: In casing (8 days).

Depth (ft)	Strat(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 %
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							
		Hole stopped @ 55.5 ft			2							
					2.2							
					3.2							
					3.75							
					2							
60		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.										
65												
70												
75												
80												
85												
90												
95												

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GEODESIGN BORING LOG: 888-04.8 BARTON BR. 58.GPJ - VERMONT ADI.GDT. 5/15/14

GEODESIGN BORING LOG: 888-04.8 BARTON BR. 58.GPJ - VERMONT ADI.GDT. 5/15/14



Boring Crew: John Leonhardt (QC/QA), Alan Baribault (GeoDesign)	Type: FJ	Casing: SS	Sampler: SS	Groundwater Observations (3)		
Date Started: 1/30/14 Date Finished: 2/03/14	I.D.: 4 in	1.38 in		Date	Depth (ft)	Notes
VTSPG NAD83: N 817384.00 ft E 1723201.00 ft	Hammer Wt: 140 lb.	140 lb.		02/06/14	6.0	In well.
Station: 32+06.35 Offset: 14.2' RT	Hammer Fall: 30 in.	30 in.		02/07/14	6.0	In well.
Ground Elevation: 854 ft	Hammer/Rod Type: Auto/NWJ					
	Rig: CME 550X ATV	CE = 1.4				

Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Run (Dip deg.)	Core Rec. (ROD %)	Drill Rate (min/ft)	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
0		S1 (0' to 2'): Loose, brown MANURE, some Silt, trace fine SAND, trace Roots and Grass, moist / frozen (upper 10"). Rec. = 1.1 ft					5-2-3-2 (5)						
2		S2 (2' to 4'): Loose, brown fine SAND and SILT, trace Roots, moist. (Possible Fill). Rec. = 1.5 ft					2-2-3-3 (5)	27.1	0.0	48.6	51.4		
4		S3 (4' to 6'): Very loose, brown fine to medium SAND and SILT, very moist to wet at bottom. (Possible Fill). Rec. = 1.4 ft					1-1-1-2 (2)						
6		S4 (6' to 8'): Loose, brown and gray fine to medium SAND, some (+) Silt, trace Wood / organics (in layers), wet. (Possible Fill). Rec. = 1.5 ft					1-2-3-3 (5)	17.6	56.0	39.7	4.4		
8		S5 (8' to 10'): Medium dense, brown and tan fine to coarse GRAVEL and fine to coarse SAND, little Silt, wet. (Possible Fill). Rec. = 1.0 ft					2-4-6-8 (10)						
10		S6 (10' to 12'): Medium dense, brown/tan fine to coarse SAND, some fine to coarse Gravel, little Silt, trace Wood, wet. (Possible Fill). Rec. = 0.4 ft					3-6-10-10 (16)	25.3	1.9	9.4	88.7	NP	NP
12		S7 (12' to 14'): Medium dense, brown /tan/white fine to coarse SAND and fine to coarse GRAVEL, trace (+) Silt, wet. Rec. = 0.4 ft					10-18-11 (18)						
14		S8 (14' to 16'): Dense, gray-brown fine SAND and SILT, wet. Rec. = 0.5 ft					6-17-14-18 (31)						
16		S9 (16' to 18'): Medium dense, gray-brown SILT, trace fine Sand, wet. Rec. = 1.1 ft (AASHTO M145 Classification: A-4.)					5-8-5-6 (11)						
18		S10 (18' to 20'): Loose, gray-brown SILT, trace fine Sand, wet. Rec. = 1.2 ft					5-4-4-3 (8)	26.8	5.2	11.8	83.0		
20		S11 (20' to 22'): Loose, gray-brown SILT, little fine Sand, trace (-) fine Gravel, wet. Rec. = 1.2 ft					3-4-4-4 (8)	11.9	28.4	33.9	37.6		
22		S12 (24' to 26'): Medium dense; S12A (upper 5"): brown and orange fine to coarse SAND, little fine to coarse Gravel, trace Silt, wet (in bag). S12B (lower 7"): gray SILT, little fine Sand, wet. Rec. = 1.0 ft					26-18-44-73 (62)						
24		S13 (29' to 31'): Very dense, gray SILT and fine to coarse SAND, little fine to coarse Gravel, moist. Rec. = 1.5 ft					10-25-31-38 (56)						
26		S14 (34' to 36'): Very dense, gray fine to medium SAND, some Silt, trace fine to coarse Gravel, wet. Rec. = 1.2 ft					24-28-51-44 (79)	21.2	8.7	60.8	30.5		
28		S15 (39' to 41'): Very dense, olive-brown fine to medium SAND and SILT, trace fine Gravel, wet. Rec. = 1.7 ft					33-56-57-48 (R)						
30		S16 (44' to 46'): Very dense/refusal, gray fine to coarse SAND and SILT, little fine to coarse Gravel, moist. Rec. = 1.5 ft		C1	92 (67)	3.8							
32		C1 (46.5' to 51.5'): Fair quality, dark gray to											
34		Top of Bedrock @ 46.5 ft											

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55		gray with occasional white bands, fresh to slightly weathered, moderately hard PHYLLITE. Fracturing approximately horizontal to 30 degrees and near vertical. C2 (51.5 to 56.5): Fair quality, dark gray to gray with occasional white bands, fresh to slightly weathered, moderately hard PHYLLITE. Fracturing approximately horizontal to 30 degrees and near vertical. Hole stopped @ 56.5 ft					4 4 4 8 10						
60		Remarks: 1) 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) Boring advanced to 16 feet using 4.25" HSA, offset 2 feet North and advanced with 4" FJ Casing. 3) Encountered slight auger grinding and roller bit chatter to approximately 16 feet on inferred gravel. Infer gravel at 23 feet based on roller bit grinding. 4) Roller bit grinding and increased casing resistance at approximately 28 feet, infer gravel and top of glacial outwash stratum. 5) Began rock core at 46.5 feet. Drilling times per foot higher due to drill string oscillations. 6) Located approximately 75 feet South of existing SE Bridge corner and 23 feet West of VT-16 pavement. 7) Well installed 2/5/14 offset approximately 10.5 feet northeast (68 feet to SE Bridge corner and 16 feet to VT-16 pavement) with 2" I.D PVC approximately 1.3 feet stickup.											

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