

	STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION	BORING LOG Borlon Bridge #20 BHF 0286 (5) - TH-2 (VT-16) GeoDesign #888-04.9	Boring No.: B-2 Page No.: 1 of 3 Pln No.: 121172 Checked By: JFW/DTH
	Boring Crew: J. Leachford (QC/QA), J. Wimalt (GeoDesign) Date Started: 2/11/14 Date Finished: 2/25/14 VSPG M4083: N 819488.00 ft E 1273373.00 ft Station: 13+07.1 Offset: 2.5 LT Ground Elevation: 856 ft	Type: AUGER SS L.O.: 4 in. 1.38 in. Hammer Wt: 140 lb. 140 lb. Hammer Fall: 30 in. 30 in. Hammer/Rod Type: Auto/HWJ Rig: CHE 550X ATY CE = 1.4	Casing Sampler SS

Depth (ft)	Strat (ft)	CLASSIFICATION OF MATERIALS (Description)	Pen (blows)	Core Rec. %	Moist. Content %	Gravel %	Sand %	Fines %
0	0	6" Asphalt						
0	0	8" Concrete						
0	0	S1 (2' to 4'): Very dense, light brown with gray and dark brown fine to coarse SAND, some (+) SIL, trace fine Gravel, frozen to moist. (PID = 4.5 PPM) Rec. = 2.0 ft	25-53 34			9.0	46.0	45.0
5	5	S2 (4' to 6'): Medium dense, dark brown to brown fine to coarse SAND (grading to fine to medium Sand) and SIL, trace fine Gravel, slightly moist. (PID = 1.9 PPM) Rec. = 2.0 ft	4-2-2-20 (8)					
10	10	S3 (6' to 8'): Loose, SSA - Top 6": Dark brown fine to coarse SAND and SIL, little fine Gravel, wet. S3B - Bottom 2": Gray fine SAND and SIL, some fine to coarse Gravel, wet. (PID = 1.0 PPM) Rec. = 0.8 ft	50-57 (8)	6-5-11		64.0	24.0	12.0
15	15	S4 (8' to 10'): Refusal, piece of fractured coarse GRAVEL stuck in spoon tip. (INFERRED BOULDER FILL) Rec. = 0.1 ft	10-12-8 (8)					
15	15	S5 (10' to 12'): Very dense, dark brown fine to coarse SAND and fine to coarse GRAVEL, little SIL, trace Organics, wet. (PID = 0.8 PPM) Rec. = 0.7 ft	3-20-19 (8)					
20	20	S6 (12' to 14'): Medium dense, dark brown fine to coarse SAND and fine GRAVEL, little (-) SIL, wet. (PID = 0.5 PPM) Rec. = 0.4 ft	6-12-4 (8)			5.0	30.0	65.0
20	20	S7 (14' to 16'): Dense, gray-brown fine to coarse SAND and fine GRAVEL, little SIL, wet. (PID = 0.3 PPM) Rec. = 0.4 ft	4-4-3-5 (8)					
25	25	S8 (16' to 18'): Medium dense, gray SILT, some fine Sand, wet. (PID = 0.8 PPM) Rec. = 0.8 ft	5-8-8-8 (12)					
25	25	S9 (18' to 20'): Loose, gray SILT, some fine Sand, wet. (PID = 0.6 PPM) Rec. = 0.6 ft						
25	25	S10 (20' to 22'): Medium dense, gray SILT, some fine Sand, wet. (PID = 0.5 PPM) Rec. = 1.1 ft	5-5-6-4 (11)					
30	30	S11 (24' to 26'): Medium dense, gray SILT, some fine Sand, wet. (PID = 0.4 PPM) Rec. = 1.3 ft						
30	30	S12 (28' to 31'): Medium dense, gray SILT, little fine Sand, wet. (PID = 0.3 PPM) Rec. = 1.4 ft	6-5-6-4 (10)			5.0	10.0	85.0
35	35	S13 (34' to 36'): Medium dense, gray SILT, little fine Sand, wet. (PID = 0.3 PPM) Rec. = 1.3 ft	5-5-3-4 (10)					
40	40	S14 (39' to 41'): Loose, gray SILT, little fine Sand, wet. Rec. = 1.0 ft	5-5-6-3 (8)					
45	45	S15 (44' to 46'): Medium dense, gray SILT, little fine Sand, wet. Rec. = 1.3 ft	10-8-8-8 (10)			2.0	8.0	90.0
50	50	S16 (49' to 51'): Medium dense, gray SILT, little fine Sand, wet. Rec.	5-9-10-					

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
 2. If 10' below and not been corrected for borehole drag, CE is the hammer energy correction factor.
 3. Water level readings have been made of 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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Depth (ft)	Strat (ft)	CLASSIFICATION OF MATERIALS (Description)	Pen (blows)	Core Rec. %	Moist. Content %	Gravel %	Sand %	Fines %
0	0	= 0.7 ft						
55	55	S17 (54' to 56'): Dense, gray SILT, little fine Sand, wet. Rec. = 0.6 ft						
60	60	S18 (58' to 61'): Dense, gray SILT, little fine Sand, wet. Rec. = 0.8 ft						
65	65	S19A (64' to 64.8'): Refusal, gray fine to coarse SAND, some SIL, little fine to coarse Gravel, wet. Rec. = 1.3 ft S19B (64.8' to 65.4'): Refusal, gray SILT, little fine Sand, wet.	7-48-50-5-5 (8)		23.0	40.0	37.0	36.0
70	70	S20 (66' to 71'): Very dense, gray SILT, little fine Sand wet. (PID = 4.7 PPM) Rec. = 1.7 ft	24-38-56-15 (55)			13.0	87.0	
75	75	C1A (72.5' to 74.5'): Phyllite & Limestone Boulder.	C1 (20-50)	77	2	2		
75	75	C1B (74.5' to 75'): Glacial Till.		2	2			
75	75	C2A (75' to 77.1'): Limestone Boulder.	C2 (20-80)	70	1	1		
75	75	C2B (77.1' to 78'): Inferred soil (no recovery). Hole stopped @ 78.0 ft		1.8	1.8	0.8		

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105	105	Remarks: 1) First attempt ended in refusal of 8 inches deep on concrete. Note piece of rebar in drill cuttings. Move 4 feet north and auger through 5 inches of asphalt and 6 inches of concrete. Borehole advanced with a 4.25" HSA to 4 feet deep prior to switching to 4" O.D. casing and wash-drilling methods. 2) Moisture observations below 6 feet deep may not accurately reflect in situ conditions due to continuously adding water during borehole advance. 3) Note frequent rig chatter from 8 to 10 feet deep through possible bouldery/cobbly soils. 4) Driller advanced casing to 20 feet deep. Borehole progressed open-hole with the roller bit below 20 feet deep. 5) Note approximately 8 inches of slough at the bottom of the borehole prior to sampling S17 at 54 feet deep. Found sampler through slough with 8 blows of the hammer. SPT N-value not per ASTM Standard. 6) After sampling S17, drive 4-inch casing to 40 feet deep prior to continuing advancement of the borehole. 7) Driller notes roller bit appears to be bouncing on denser soils beginning at 59 feet deep. 8) Note approximately 18 inches of slough of the bottom of the borehole prior to sampling S18 at 58 feet deep. Found sampler through slough with 10 blows of the hammer. SPT N-value not per ASTM Standard. 9) After sampling S18, drive 4-inch casing to 50 feet deep. Driller infers casing to have broken at 35 feet deep during advance. 10) Inferred bedrock or possible boulders with soil infilling at joints approximately 8 inches thick below 72.5 feet deep. 11) Borehole backfilled with grout, approximately 50 gal water, 180 pounds type 1/8 portland cement, and 40 pounds bentonite powder. 12) Samples S1 through S15 screened in the field with an Ion Science ProCheck 1000 model PID calibrated to a 100 PPM isotoluene standard. 13) All sample descriptions shown are per the Burmister classification system and are based on visual descriptions made in the field by GeoDesign personnel. Where applicable, laboratory testing results shown are from testing performed by GeoTesting Express, with the Gravel/Sand/Fines breakdown shown per AASHTO M145. 14) Horthing, casing, and ground surface elevation are estimated from an electronic site plan provided by TY Lin and taped measurements made from existing features in the field by GeoDesign personnel.						
125	125	ESTIMATED BOTTOM OF PILE AT ABOUT NO 2 EL 731.5						

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