

VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: 8-201	
		Brattleboro Bridge #9 Replacement in 091-1(05) BR 9				Page No.: 1 of 3	
						Pin No.: 12a026	
						Checked By: JMG	
Boring Crew: T. Farrell (S.B.), J. Winnell (GeoDesign)		Casing Sampler		Groundwater Observations (3)			
Date Started: 3/23/12 Date Finished: 3/26/12		Type: N.S.A. SS		Date		Notes	
VSPG MADS: N 136162.00 H E 1621100.00 H		L.D.: 4.25 in. 1.38 in.		Date		Notes	
Station: 561+92 Offset: S' L		Hommer Wt: N.A. 140 lb.		03/23/12 54.0		Wet sample.	
Ground Elevation: 332 ft		Hommer Fall: N.A. 30 in.					
		Hommer/Rod Type: Auto/AMJ					
		Rig: CME 550K ATV CE = 1.5					
Depth (ft)	Interval (ft)	CLASSIFICATION OF MATERIALS (Description)		Pen (lb/ft)	Core Rec. (ft)	Wet Sample (ft)	Notes
0-5	5	S1) Loose, Top 6" Topsoil. Bottom 10". Brown fine to coarse SAND, silty (-) fine Gravel, trace SIL, moist. (FLL) Rec. = 1.3 ft (AASHTO M145 Classification: A-1-b) (AASHTO M145 Classification: Visual Description (Burnmaster).)		1-3-4 (7)	5.7	44.0	43.0 13.0
5-10	5	S2) Medium dense, light brown fine to coarse SAND, trace fine Gravel, trace SIL, moist. (FLL) Rec. = 1.4 ft (AASHTO M145 Classification: A-1-b) (AASHTO M145 Classification: Visual Description (Burnmaster).)		4-6-4 (10)	6.9	20.4	72.6 7.0
10-15	5	S3) Dense, brown fine to coarse SAND, silty fine to coarse Gravel, silty (-) SIL, very moist. (FLL) Rec. = 1.1 ft (AASHTO M145 Classification: A-1-b) (AASHTO M145 Classification: Visual Description (Burnmaster).)		7-18-21 (39)	9.2	37.2	48.3 14.5
15-20	5	S4) Medium dense, no recovery. (FLL) Rec. = 0.0 ft (AASHTO M145 Classification: Visual Description (Burnmaster).)		10-11-13-15 (24)			
20-25	5	S5) Medium dense, grayish-olive fine to medium SAND, some (-) SIL, silty (-) fine Gravel, moist. (FLL) Rec. = 1.6 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burnmaster).)		3-6-8 (14)	9.5	12.7	52.4 34.9
25-30	5	S6) Medium dense, grayish-olive fine to medium SAND, some SIL, trace fine Gravel, trace (-) root Fibers, moist. (FLL) Rec. = 1.4 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burnmaster).)		16-17-8 (25)	9.3	16.9	52.8 30.3
30-35	5	S7) Dense, grayish-olive fine to medium SAND, some (+) SIL, trace (+) fine to coarse Gravel, moist. (FLL) Rec. = 1.7 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burnmaster).)		10-14-16-17 (33)	8.6	17.6	48.2 33.2
35-40	5	Inferred Boulder or Cobble due to drill rig chatter and auger grinding. (AASHTO M145 Classification: Field Note.)		31-17-14-13	9.0	15.6	53.5 30.9

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		Hommer/Rod Type: Auto/AMJ					
		Rig: CME 550K ATV CE = 1.5					
Depth (ft)	Interval (ft)	CLASSIFICATION OF MATERIALS (Description)		Pen (lb/ft)	Core Rec. (ft)	Wet Sample (ft)	Notes
35-40	5	S8) Dense, grayish-olive fine to medium SAND, some SIL, trace fine to coarse Gravel, moist. (FLL) Rec. = 1.8 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burnmaster).)		(S1)			
40-45	5	S9) Medium dense, grayish-olive fine to medium SAND and SIL, trace fine to coarse Gravel, trace (-) root Fibers, moist. (FLL) Rec. = 1.4 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burnmaster).)		9-5-5-5 (10)	11.7	18.2	55.5 28.3
45-50	5	S10) Medium dense, olive fine to medium SAND, some (+) SIL, trace fine Gravel, trace (-) Organic Fibers, moist. (FLL) Rec. = 1.7 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burnmaster).)		6-13-14 (27)	10.8	12.0	55.8 32.1
50-55	5	S11) Medium dense, olive with gray and black zones fine to medium SAND, some SIL, trace fine to coarse Gravel, trace Organic Fibers, moist. (FLL) Rec. = 2.0 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burnmaster).)		7-10-9-8 (19)	13.9	11.9	58.0 30.1
55-60	5	S12a) Dense, grayish-olive fine to medium SAND, some SIL, trace fine to coarse Gravel, moist. (FLL) Rec. = 1.3 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burnmaster).)		9-19-16 (35)	11.5	62.9	34.0 3.1
60-65	5	S12b) Dense, layered white-black-brown fine to coarse SAND and fine to coarse GRAVEL, silty SIL, trace Wood Pieces, very moist. (SILTY GRAVELLY SAND) (AASHTO M145 Classification: A-1-a) (AASHTO M145 Classification: Visual Description (Burnmaster).)		9-14-21-18 (36)	20.6	18.2	48.2 33.8
65-70	5	S13) Dense, gray fine to coarse SAND, some (+) SIL, silty fine to coarse Gravel, wet. With pulverized rock chips in the spoon tip. (SILTY GRAVELLY SAND) Rec. = 1.8 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burnmaster).)					
70-75	5	Inferred Weathered Rock due to drill rig chatter and auger grinding.					
75-80	5	C1) Very poor quality, Upper 16". Hard, slightly to moderately weathered, closely jointed, gray with white banding LIMESTONE. Strong reaction to dilute HCl. Bottom 18". Moderately hard, slight to moderately weathered, closely jointed to fissured PHYLLITE. Jointing ~80 to 70 degrees from horizontal. No reaction to dilute HCl.		C1	77 (8)	1.3	
80-85	5						Top of Bedrock @ 56.5 ft
85-90	5						
90-95	5						
95-100	5						

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Depth (ft)	Interval (ft)	CLASSIFICATION OF MATERIALS (Description)		Pen (lb/ft)	Core Rec. (ft)	Wet Sample (ft)	Notes
65-70	5	C2) Very poor quality, moderately hard, very closely jointed, moderately weathered with occasional highly weathered jointing, gray with white banding PHYLLITE. Fractured surfaces in the lower 16" show some schistosity. With a 12" seam of white QUARTZITE 14" from the top. Jointing ~80 to 70 degrees from horizontal. No reaction to dilute HCl.		C2	100 (8)	2.2	
70-75	5	C3) Good quality, 0" to 18" and 34" to 59". Hard, fresh, moderately jointed, gray with white banding LIMESTONE. Jointing up to 65 degrees from horizontal. Strong reaction to dilute HCl 16" to 34" and 38" to 60". Hard, fresh, shattered to moderately jointed, gray with white PHYLLITE. Jointing ~ 65 to 75 degrees from horizontal. No reaction to dilute HCl.		C3	100 (75)	2.3	
75-80	5	C4) Poor quality, moderately hard to hard, closely jointed to shattered, moderately weathered, gray with white PHYLLITE. Jointing ~55 degrees from horizontal. Occasional slight reaction to dilute HCl on fractured surfaces.		C4	86 (42)	2.5	
80-85	5	Hole stopped @ 71.5 ft					
85-90	5	Remarks: 1) Ground surface elevation estimated from a topographic site plan provided by VHR. 2) Boring shifted 16" south of surveyed location due to drill rig access constraints. 3) From probe data provided on 1956 original bridge construction plan set, old ground surface was previously at ~285' with bedrock exposed at ~279'. 4) Auger grinding noted from 28.5' to 29' deep on inferred boulder or cobble. 5) Inferred top of rock at 55.9' due to spoon refusal and Phyllite rock chips in the S13 spoon tip. Inserted 3" f J casing through augers to obtain core sample. Set casing into rock and cleared with roller bit to 56.5' deep prior to obtaining C1. 6) Core run C1 stopped after 48" (at 50.5' deep) due to core blockage. Inferred upper 11" of run to be decomposed rock (No recovery and low core time). 7) Core run C2 stopped after 48" (at 64.5' deep) due to blowout in water recirculation hose. 8) Hammer efficiency is assumed. 9) Lab testing gradations reported are per AASHTO M145.					
90-95	5						
95-100	5						

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