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

BORING LOG

Brattleboro Bridge #9 Replacement
IM 091-1(65) BR 9

Boring No.: B-202
Page No.: 1 of 2
Pin No.: 12a026
Checked By: JAG

Boring Crew: B. Fuller (SJB), Wimett/Gilman (GeoDesign)
Date Started: 3/27/12 Date Finished: 3/28/12
VTSPG NAD83: N 136224.00 ft E 1621170.00 ft
Station: 562+86 Offset: 1' L
Ground Elevation: 294 ft

	Casing	Sampler
Type:	H.S.A.	SS
I.D.:	4.25 in	1.38 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 45C SKID	CE = 1.5

Groundwater Observations (3)

Date	Depth (ft)	Notes
03/28/12		None observed.

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 %
		Auger through 3' of Fill prior to sampling S1. (AASHTO M145 Classification: Field Note:.)								
		S1) Loose, no recovery. (FILL) Rec. = 0.0 ft (AASHTO M145 Classification: Visual Description (Burmister).)				6-3-4-11 (7)				
5		S2) Medium dense, grayish olive fine to medium SAND, some Silt, trace fine Gravel, moist. (FILL) Rec. = 1.5 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burmister).)				9-7-8-6 (15)	11.2	12.3	54.1	33.6
10		S3) Medium dense, grayish olive fine to coarse SAND, some Silt, trace fine Gravel, trace Wood, moist (2" piece of wood 9" from top of sample). (FILL) Rec. = 1.5 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burmister).)				3-6-6-5 (12)	14.8	16.6	51.4	32.0
15		S4A (Top 11"): Medium dense, brown fine to coarse SAND, some Silt, trace fine Gravel, moist. (FILL) Rec. = 1.7 ft (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burmister).)				8-10-10-10 (20)	10.7	11.4	56.6	32.0
		S4B(Bottom 9"): Medium dense, grayish olive fine to medium SAND, some Silt, moist (1/4" layering of darker shades observed in sample). (SILTY SAND) (AASHTO M145 Classification: A-2-4) (AASHTO M145 Classification: Visual Description (Burmister).)					12.4	7.9	61.2	30.9
20		S5: Refusal, brown with blue fine to coarse SAND, some Silt, little fine Gravel, moist (Spoon tip contained pulverized blue rock fragments). (WEATHERED ROCK) Rec. = 0.6 ft (AASHTO M145 Classification: A-1-b) (AASHTO M145 Classification: Visual Description (Burmister).)				7-50/4" (100+)	10.2	43.6	39.9	16.5
		Inferred Weathered Rock from 20.8' to 21.4'. (AASHTO M145 Classification: Field Note.)	C1	100 (31)	3					
		C1) Poor quality, moderately hard to hard, closely to very closely jointed, moderately weathered, gray PHYLLITE Fractured surfaces show some schistosity. Jointing ~45 degrees from horizontal. Occasional slight reaction to dilute HCL.			2.75 3.25 5	Top of Bedrock @ 21.4 ft				
25		C2) Fair quality, moderately hard to hard, very closely to closely jointed, moderately weathered, gray with white banding and occasional orange weathering in joints PHYLLITE Jointing ~45 degrees from horizontal. Occasional slight reaction to dilute HCL.	C2	100 (58)	4 6 4 3.5 7					

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.

GEODESIGN BORING LOG BRATTLEBORO IM 091-1(65) BR 9 VTRANS FORMAT.GPJ VERMONT AOT.GDT 12/2/13

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Hammer/Rod Type:	Auto/AWJ	
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Groundwater Observations (3)

Date	Depth (ft)	Notes
03/28/12		None observed.

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 %
35		C3) Poor quality, moderately hard to hard, closely to very closely jointed, slightly weathered, gray with white banding and occasional orange weathering in joints PHYLLITE Jointing ~45 to 50 degrees from horizontal. Occasional slight reaction to dilute HCL.	C3	100 (36)	4 4.5					
		C4) Fair quality, Upper 11": Moderately hard to hard, fresh, closely jointed, gray with occasional white LIMESTONE interbedded with PHYLLITE in beds up to ~1/2" thick. Joints ~ 45 degrees from horizontal. Strong reaction to dilute HCl Bottom 55": Hard, fresh to slightly weathered, moderately to closely jointed, gray with white banding LIMESTONE. Jointing near horizontal. Strong reaction to dilute HCl.	C4	96 (58)	4 4.5					
40		C5) Poor quality, Upper 5": Hard, fresh, closely jointed, gray with white banding LIMESTIONE. Strong reaction to dilute HCl Bottom 37": Moderately hard, slight to moderately weathered, fissured to closely jointed, gray with white banding PHYLLITE. Quartzite intrusion from 10" to 12". Jointed at 35 to 50 degrees from horizontal.	C5	100 (25)	3.25 3.75 7 11					
		Hole stopped @ 39.7 ft								

Remarks:
1) Ground surface elevation estimated from a topographic site plan provided by VHB.
2) From probe data provided on 1956 original bridge construction plan set, old ground surface was previously at ~276' with bedrock expected at around +/- 272' to 273'.
3) Augered to 3' deep through 1' of placed fill for a working pad and ~2' of Coarse Gravel/Cobble surface fill prior to sampling S1.
4) Hollow stem auger refusal at 21' deep.
5) Inserted 3" casing through augers at 21' deep and set casing to 21.4' deep to obtain rock core sample. Reamed hole to 21.4' with rollerbit prior to coring.
6) Core runs C1, and C3 through C5 ended prior to reaching 5' due to core blockage.
7) Lab testing gradations reported are per AASHTO M145.

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