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

BORING LOG

Richford BRF 0302(29)
Richford, VT
GeoDesign # 750-09.13

Boring No.: B-2
Page No.: 1 of 2
Pin No.: 12j158
Checked By: JFW

Boring Crew: J. Leonhardt (TransTech), A. Baribault (GeoDesign)
Date Started: 9/09/13 Date Finished: 9/09/13
VTSPG NAD83: N 909686.67 ft E 1592603.64 ft
Station: 44+15 Offset: 5' R
Ground Elevation: 436.5 ft

	Casing	Sampler
Type:	FJ	SS
I.D.:	4 in	2 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	CME 550X ATV	CE = ~1.5

Groundwater Observations (3)

Date	Depth (ft)	Notes
09/09/13		Not recorded.

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 %
0		6" Asphalt										
		Inferred Fill										
5												
		Inferred Boulder / Cobble										
		Inferred Fill										
10		S1 (9' to 11'): Medium dense, brown fine to coarse SAND and fine to coarse GRAVEL, little Silt, wet. Rec. = 0.83 ft (AASHTO M145 Classification: A-1-b.)				4-9-16-14	11.3	50.1	32.3	17.6	NP	NP
		Inferred Possible Fill										
15		Inferred Silt / Sand										
		Inferred Glacial Till										
20												
25												

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 750-09.13 RICHFORD VTRANS.GPJ VERMONT AOT.GDT 11/22/13

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

BORING LOG

Richford BRF 0302(29)
Richford, VT
GeoDesign # 750-09.13

Boring No.: B-2
Page No.: 2 of 2
Pin No.: 12j158
Checked By: JFW

Boring Crew: J. Leonhardt (TransTech), A. Baribault (GeoDesign)
Date Started: 9/09/13 Date Finished: 9/09/13
VTSPG NAD83: N 909686.67 ft E 1592603.64 ft
Station: 44+15 Offset: 5' R
Ground Elevation: 436.5 ft

	Casing	Sampler
Type:	FJ	SS
I.D.:	4 in	2 in
Hammer Wt:	140 lb.	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	CME 550X ATV	CE = ~1.5

Groundwater Observations (3)

Date	Depth (ft)	Notes
09/09/13		Not recorded.

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 %
35												
40		C1 (40' to 43.5'): Poor quality, moderately hard, sliver-gray-green PHYLLITE. Fractures at approximately 60 to 90 degrees.	C1	67 (33)	2.3 1.5 1.5 2.8							
		Top of Bedrock @ 40.0 ft										
		Hole stopped @ 43.5 ft										
45												
50												
55												

Remarks:
1) Hammer efficiency correction factor is assumed. Strata breaks and composition are inferred from roller bit and casing resistance observed during borehole advance and soil samples collected in nearby Borings B-1 and B-4. Elevation, station and offset are estimated by GeoDesign from site plans provided by VTrans and taped measurements from existing features made in the field by GeoDesign personnel. They should be considered accurate only to the degree implied by the method of location used.
2) Drove casing to near refusal at approximately 7' deep and cleaned out with roller bit. Return water brown, except gray/greenish-gray from 7' to 7.5' deep. Casing drove at approximately 100 to 200 blows per inch from 7' to 7.3' deep.
3) Inferred gravel fill to 5' deep. Infer elevated gravel content from 5' to 9' deep based on roller bit grinding. Inferred cobble/boulder at 7' to 7.5' deep.
4) Infer strata change between 13' and 15' deep due to decrease in resistance and grinding during casing and roller bit advance from 13' to 14' deep and a change in wash water color to gray between 14' and 15' deep.
5) Infer strata change to glacial till at 17' deep based on increased roller bit resistance. Note quartz gravel in the return water.
6) Encountered inferred gravel within the soil matrix based on roller bit resistance at 26', 27.5', 28.5', 30', 33', 34', 35', and 37.5' deep. Encountered roller bit refusal at 40' deep on inferred competent bedrock.
7) Lowered drilling RPM while coring at 42.5' deep due to rig oscillations. Water hose burst while advancing core barrel at 43.5' deep. Terminated boring at 43.5' deep.
8) Borehole backfilled with winter sand mix and topped with approximately 3 inches of cold patch asphalt at the ground surface.
9) All visual descriptions are per the Burmister classification system. All lab gradations are per the AASHTO M 145 classification system.

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 750-09.13 RICHFORD VTRANS.GPJ VERMONT AOT.GDT 11/22/13