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

BORING LOG

Cavendish ER BR 0146(13)

Cavendish, Vermont

Boring No.: B-4
Page No.: 1 of 1
Pin No.: 11c318
Checked By: JAG

Boring Crew: B. DeLude (SJB), J.Gilman (GeoDesign)
Date Started: 3/06/12 Date Finished: 3/07/12
VTSPG NAD83: N 325133.28 ft E 1615335.10 ft
Station: Not Available Offset: Not Available
Ground Elevation: 772.14 ft

	Casing	Sampler
Type:	AUGER	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/NWJ	
Rig:	Diedrich D-50	C_E = 1.5

Groundwater Observations[2]

Date	Depth (ft)	Notes
03/06/12	20.0	Wet sample
03/07/12	12.0	In Augers Overnight

BOTTOM OF ABUT NO. 1 EL. 762.0

ESTIMATED BOTTOM OF PILE AT ABUT. NO. 1 EL. 732.0

Depth (ft)	Strata[1]	CLASSIFICATION OF MATERIALS (Description)	Well Diagram	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft.	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		S1 (0'-0.5'): Refusal, brown fine to coarse SAND, some Silt, little fine to coarse Gravel, frozen/moist. Rock fragments and pulverized flour in spoon tip. Rec. = 0.5 ft					23-10/0" (R)						
5		S2 (5'-7'): Medium dense, gray brown fine to coarse SAND and fine to coarse GRAVEL, trace to little Silt, moist. Rec. = 0.75 ft					16-9-7-7 (16)						
10		S3 (10'-12'): Very dense, white/gray/brown (with some oxidization), fine to coarse SAND and fine to coarse GRAVEL, little Silt, moist. Fragments from gravel/cobbles pulverized in spoon tip. Rec. = 1.08 ft (AASHTO M145 Classification: A-1-b.)					13-27-32-24 (59)		57.6	28.8	13.6	NP	NP
							22-25-50/3" (R)		63.1	25.9	11.0	NP	NP
15		S4 (12'-13.25'): Refusal, brown (with oxidized orange) fine to coarse SAND, little to some Silt, little fine to coarse Gravel, moist. Contains some pulverized rock pieces. Rec. = 1.0 ft (AASHTO M145 Classification: A-1-a.)					36-30-35-41 (65)						
							50/0" (R)						
20		S5 (15'-17'): Similar description as S4 except very dense. Rec. = 1.5 ft											
		S6 (17'): Refusal, no recovery. Rec. = 0.0 ft					19-7-8-17 (15)						
		S7 (20'-22'): Medium dense, brown fine to coarse SAND, little Silt, little fine to coarse Gravel, very moist. Rec. = 1.08 ft											
25		S8 (25'-27'): Very dense, brown and dark brown fine to coarse SAND, some Silt, trace fine to coarse Gravel, wet. One piece angular coarse gravel in sample jar. Rec. = 1.0 ft					24-46-30-26 (76)						
30													
		C1 (32.5' to 36.5'): (Top 16"): Gray, hard, fresh, fine grained Boulder. (Bottom 14"): Gravel and Rock fragments.		C1	63 (38)	3 2 3 2							
35													
40													
45													

Hole stopped @ 36.5 ft
Borehole abandoned after coring through boulder.

Remarks:
1) Ground surface elevation and exploration location surveyed by Vermont Survey and Engineering, Inc.
2) Driller noted difficult drilling from 0' to 17' deep with inferred frequent cobbles and boulders. Cobbles were less frequent and advance faster from 17' to 31.5' deep.
3) Driller noted heaving sands in augers while attempting split spoon sample at 30' deep. Driller advanced augers to refusal at 31.5 deep and advanced roller bit in augers to 32.5' deep into inferred top of bedrock end of first day. Driller cleaned out with roller bit the following day and attempted C1.
4) End of exploration at 36.5' deep after coring boulder and attempting to advance augers below it. Driller could not advance below boulder due to risk of losing tools in hole. Set 3" I.D. PVC casing for geophysical testing to 31' deep (plus 6" bottom cap) with 3' stick up and protective riser. See Well Log.
5) Hammer efficiency is assumed.
6) Soil descriptions are per the Burmister Classification System based on visual observations. Lab testing gradations reported are per AASHTO M145.

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 - NO STA- OFFSET B88-B4 CAVENDISH ER BRF 0146(13) VERMONT AOT.GDT 5/30/13

PROJECT NAME:	CAVENDISH
PROJECT NUMBER:	ER BRF 0146(13)

T·Y·LIN INTERNATIONAL

FILE NAME: z11c318bdrbor4.dgn	PLOT DATE: 7/19/2013
PROJECT LEADER: J. OLUND	DRAWN BY: S. MORGAN
DESIGNED BY: J. OLUND	CHECKED BY: T. POULIN
BORING LOGS 4	SHEET 23 OF 49