VTrans Working to Get You There — Vermont Agency of Transportation	STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY	BORING LOG [illegible] STP [illegible] ([illegible]) [illegible], VT	Boring No.: B3 Page No.: 1 of 3 Pin No.: [illegible] Checked By: JHW

Boring Crew: C. [illegible] ([illegible]), A. [illegible] ([illegible])
Date Started: 5/28/15 Date Finished: 5/28/15
VSP/S [illegible]: N [illegible] ft E [illegible] ft
Station: 289+79 Offset: 11' RT
Ground Elevation: 375 ft

	Casing	Sampler
Type:	[illegible]	SS
I.D.:	2.25 in	1.38 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	N.A.
Hammer/Rod Type:	Auto/[illegible]	
Rig:	[illegible]	CE = 1.35

Groundwater Observations (3)

Date	Depth (ft)	Notes
05/28/15	12.0	Wet Sample

Depth (ft)	Strata	CLASSIFICATION OF MATERIALS (Description)	[illegible]	[illegible]	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
		Asphalt									
		S1 (0.5' - 2.5'): Dense, black (upper 4") and brown fine to coarse Sand, some fine Gravel, some [illegible] Asphalt (upper 4"), little Silt, dry. (General Fill) Rec. = 1.5 ft (AASHTO M145 Classification: A-1-b.)			10-18-15-12 (33)	3.3	43.3	44.4	12.3	NP	NP
2.5											
5.0		S2 (5' - 7'): S2A - (Upper 16"): Medium dense, brown fine to coarse GRAVEL, some fine to coarse Sand, some Silt, trace Silt & Clay, moist. (General Fill) Rec. = 1.3 ft (AASHTO M145 Classification: A-1-b.)			4-8-6-3 (14)	8.9	50.1	27.0	22.9	NP	NP
		S2B (Lower 6") - SILT, brown SILT & CLAY, some fine to medium Sand, trace Roots/Wood, moist. S2B: Torvane = 0.20 - 0.24 tsf. (AASHTO M145 Classification: A-4.)				25.5	1.0	20.9	78.1	26	8
7.5											
10.0		S3 (10' - 12'): Medium, brown with gray mottling SILT & CLAY, some fine to medium Sand, trace fine to coarse Gravel (lower 3"), trace Roots/Sticks, very moist (wet lower 3"). Torvane = 0.28 - 0.42 tsf. Rec. = 1.3 ft (AASHTO M145 Classification: A-4.)			1-2-4-6 (6)	10.9	1.0	25.7	73.3	23	6
12.5		S4 (12' - 14'): [illegible], SILT & CLAY and fine to coarse SAND, some fine Gravel, wet. (AASHTO M145 Classification: A-4). Rec. = 0.1 ft			1-2-1-2 (3)	29.2	31.7	29.6	38.7		
15.0		S5 (15' - 17'): Very soft, gray CLAY & SILT, (occasional possible layers SILT, some fine Sand, trace (-) fine to coarse Sand, wet. Torvane (soft areas) = 1.8 - 2.2 tsf; Torvane (medium areas) = 0.25 - 0.28 tsf. Rec. = 1.7 ft (AASHTO M145 Classification: A-6.)			WOH-WOH-1-2 (1)	30.8	0.4	2.9	96.7	40	18
17.5		S6 (17' - 18.5'): Very dense, gray SILT and fine to coarse SAND, little fine to coarse Gravel, moist. Rec. = 1.5 ft (AASHTO M145 Classification: A-4.)			14-18-38-50/5" (56)		16.4	31.7	51.9	NP	NP
		C1 (18.5' - 21.5'): SILT and fine to coarse SAND, little fine to coarse Gravel.									

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.

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	Casing	Sampler
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Groundwater Observations (3)

Date	Depth (ft)	Notes
05/28/15	12.0	Wet Sample

Depth (ft)	Strata	CLASSIFICATION OF MATERIALS (Description)	[illegible]	[illegible]	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
			17 ([illegible])	2							
22.5											
25.0											
27.5											
30.0		S7 (30' - 31.4'): Very dense, gray SILT and fine to coarse SAND, little fine Gravel (some pulverized), moist. Rec. = 1.4 ft (AASHTO M145 Classification: A-4.)			30-33-45-50/5" ([illegible])	9.2	21.0	30.6	48.4	NP	NP
32.5											
35.0		S8 (35' - 36.5'): Very dense, gray SILT, some fine to coarse Sand, little fine to coarse Gravel (some fractured), moist. Rec. = 1.5 ft (AASHTO M145 Classification: A-4.)			35-30-[illegible]-50/5.5 ([illegible])	10.7	21.8	25.4	52.8	18	3
		Hole stopped @ 36.5 ft No refusal.									
37.5											

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Groundwater Observations (3)

Date	Depth (ft)	Notes
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Remarks:
1. Ground surface elevation, northing, easting, station, and offset shown are approximated from ties made from existing features in the field by [illegible] personnel, the Preliminary Plan Set prepared by [illegible] and dated 4/30/2015, and an electronic site plan titled "[illegible]" provided by [illegible] via email on June 26, 2015.
2. Visual soil descriptions are per the Burmister system. Laboratory gradations where applicable were performed by VTrans and are per AASHTO M145.
3. Grinding on inferred cobbles/gravel within fill soils from approximately 2' to 7' deep.
4. The last blow of sample S2 penetrated approximately 4" past the intended sample depth.
5. HSA refusal at 18.5' deep in dense glacial till soils. Initially believed to be bedrock, so augers were removed and replaced with 3" flush joint casing to prepare for rock coring.
6. Wash water return light brown from ~18' to 18.5' deep. Switched to core barrel and attempted C1 from 18.5' to 21.5' deep through dense glacial till soils.
7. Casing driven to 18.5' deep and advanced open hole with [illegible] rods and a carbide roller bit below this depth. All samples continued to be taken with an [illegible] rod string.
8. Wash water return gray below 25' deep with water loss between 20' and 25' deep.
9. Driller consistently passed the 25' depth without sampling. Similar drilling effort, with occasional grinding on inferred gravel/cobbles was noted.
10. No return water was observed below 30' deep.
11. Borehole backfilled with cuttings and 3 bags of bentonite chips.
12. Hammer energy is assumed.

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