

VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-1						
		Clarendon BRO 1443 (48) Clarendon, VT		Page No.: 1 of 1		Pin No.: 12J160						
		Checked By: JFW										
Boring Crew: J. Leonhardt (TransTech), J. Gilman (GeoDesign)		Casing Sampler		Groundwater Observations								
Date Started: 3/04/13 Date Finished: 3/05/13		Type: FJ SS		Date		Notes						
VTSPG NAD83: N 383263 ft E 1501635 ft		I.D.: 4 in 1.38 in		03/04/13		10.0 Wet sample						
Station: 11+50 Offset: 7LT		Hammer Wt: N.A. 140 lb.										
Ground Elevation: 647 ft		Hammer Fall: N.A. 30 in.										
		Hammer/Rod Type: Manual/Auto/NWJ										
		Rig: SEE REMARK 3 BELOW										
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. (ROD %)	Drill Rate (minutes/ft)	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
5	XXXX	S1 (0.5'-2.0'): Dense, dark brown fine to coarse SAND, some fine to coarse Gravel, little Silt, moist. Rec. = 0.8 ft (AASHTO M145 Classification: A-1-b.)				18-23-20 (43)	4.9	45.9	43.5	10.6	NP	NP
	XXXX	S2 (2'-4'): Medium dense, fine to coarse SAND, some Silt, little fine to coarse Gravel, moist. Rec. = 0.9 ft (AASHTO M145 Classification: A-2-4.)				19-11-7-8 (18)	12.0	22.9	49.2	27.9	NP	NP
	XXXX	S3 (5'-7'): Medium dense, brown fine to coarse SAND, some fine to coarse Gravel, little Silt, moist. Rec. = 1.3 ft (AASHTO M145 Classification: A-1-b.)				5-7-5-8 (12)	8.1	35.2	48.1	16.7	NP	NP
	XXXX	S4 (7'-9'): Loose, brown fine to medium SAND, some (+) Silt, trace fine Gravel, moist (bottom 5" mottled). Rec. = 1.5 ft (AASHTO M145 Classification: A-2-4.)				6-4-3-3 (7)	19.1	9.0	58.8	32.2	NP	NP
10	XXXX	S5 (10'-12'): Medium dense, brown fine to coarse GRAVEL and fine to coarse SAND, trace Silt, wet. Rec. = 0.5 ft (AASHTO M145 Classification: A-1-a.)				10-6-5-7 (11)	14.8	64.5	27.5	8.0	NP	NP
	XXXX	S6 (12'-14'): Medium dense, brown fine to coarse GRAVEL and fine to coarse SAND, trace (+) Silt, wet. Rec. = 0.5 ft (AASHTO M145 Classification: A-1-a.)				8-5-11-16 (16)	11.9	64.6	26.5	8.9	NP	NP
	XXXX	S7 (15'-17'): Medium dense, brown fine to coarse SAND and fine to coarse GRAVEL, little Silt, wet. Rec. = 1.0 ft (AASHTO M145 Classification: A-1-b.)				15-11-17-31 (28)	8.4	61.7	24.0	14.3	NP	NP
	XXXX	S8 (17'-19'): Very dense, mixed color fine to coarse GRAVEL and fine to coarse SAND, little Silt, wet. Rec. = 1.3 ft (AASHTO M145 Classification: A-1-a.)				75-65-44-50 (100+)	11.6	35.0	44.7	20.3	NP	NP
	XXXX	S9 (20'-22'): Very dense, gray fine to medium SAND, some fine to coarse Gravel, some Silt, wet. Rec. = 0.6 ft (AASHTO M145 Classification: A-2-4.)				16-20-45-37 (65)	10.3	41.6	33.8	24.6	NP	NP
	XXXX	S10 (25'-27'): Top 3": Gray fine to medium SAND. Bottom 14": Very dense, gray fine to coarse SAND, some fine to coarse Gravel, some Silt, wet. Rec. = 1.4 ft (AASHTO M145 Classification: A-1-b.)				25-35-42-32 (77)	16.8	11.7	32.5	55.8	NP	NP
	XXXX	S11 (30'-31.7'): Very dense, gray fine to medium SAND and SILT, wet (rock fragments in spoon tip). Rec. = 1.5 ft (AASHTO M145 Classification: A-4.)				28-44-57-100/3 (100+)	16.8	11.7	32.5	55.8	NP	NP
	XXXX	C1 (32'-37'): Good quality, hard, fresh to slightly weathered, moderately jointed, white-gray, DOLOSTONE. Reacts to dilute HCl when powdered. Fractures typically 30 to 70 degrees from horizontal.	C1	93.3 (84)	8							
	XXXX	C2 (37'-42'): Fair quality, hard, slightly weathered, closely to moderately jointed, white-gray DOLOSTONE. Middle 1.5' tan and more weathered. Reacts to dilute HCl when powdered. Fractures typically 20 to 30 degrees from horizontal.	C2	95 (68)	4							
		Remarks: Hole stopped @ 42.0 ft 1) Exploration location taped in the field by GeoDesign. Ground surface elevation, station, and offset shown are estimated from conceptual plans provided by VTTrans. 2) Driller used 3.25" ID HSA to advance to 5 feet deep to create pilot hole for FJ casing advance. 3) Upper 22' of borehole (samples S1 through S9) was performed with a CME 45C Skid Rig with a cathead safety hammer and an assumed hammer correction factor of 1.0. Due to drill rig breakdown, the lower 20' (samples S10 through C2) was completed with a CME 75 Track Rig with an automatic hammer and a hammer correction factor of 1.43. 4) Driller noted a temporary decreased rotary bit resistance at approximately 22 feet deep. 5) Visual soil descriptions are per the Burmister system. 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.												

BOTTOM OF
PILE CAP AB#1
ELEV. 637.50

EST. PILE TIP
ELEV. 615.00

GEODESIGN BORING LOG 750-06-10-CLARENDONBRO1443(48) (P.1) VERMONT AUT.GDT 4/11/13

VTTrans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-2						
		Clarendon BRO 1443 (48) Clarendon, VT		Page No.: 1 of 1		Pin No.: 12J160						
		Checked By: JFW										
Boring Crew: J. Leonhardt (TransTech), J. Gilman (GeoDesign)		Casing Sampler		Groundwater Observations								
Date Started: 3/07/13 Date Finished: 3/07/13		Type: FJ SS		Date		Notes						
VTSPG NAD83: N 383271 ft E 1501647 ft		I.D.: 4 in 1.38 in		03/07/13		9.0 Wet sample						
Station: 11+49 Offset: 8RT		Hammer Wt: N.A. 140 lb.										
Ground Elevation: 647 ft		Hammer Fall: N.A. 30 in.										
		Hammer/Rod Type: Auto/NWJ										
		Rig: CME 75 TRACK C _e = 1.43										
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. (ROD %)	Drill Rate (minutes/ft)	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
5	XXXX	0' - 9': Inferred Sand & Gravel fill.										
	XXXX	S1 (9'-11'): Loose, brown with oxidized zones, fine to coarse SAND, some fine to coarse Gravel, trace Silt, wet. Rec. = 0.5 ft (AASHTO M145 Classification: A-1-a.)				7-6-2-8 (8)	19.4	54.2	37.2	8.6	NP	NP
	XXXX	S2 (19'-21'): Very dense, gray fine to medium SAND and SILT, trace fine to coarse Gravel (top 3" only), wet. Rec. = 1.2 ft (AASHTO M145 Classification: A-4.)				17-31-25-31 (56)	17.8	17.7	46.5	35.8	NP	NP
	XXXX	S3 (29'-31'): Refusal, gray brown fine to coarse SAND and SILT, trace fine Gravel, moist. Rec. = 1.3 ft (AASHTO M145 Classification: A-4.)				45-48-50/3 (100+)	16.2	13.6	36.9	49.5	NP	NP
	XXXX	C1 (30.3'-35.3'): Fair quality, hard, slightly weathered with moderately to highly weathered seams, close to moderately jointed, tan to white-gray DOLOSTONE. Reacts to dilute HCl when powdered. Fractures typically 30 degrees from horizontal.	C1	88 (68)	5.5							
		Remarks: Hole stopped @ 35.3 ft 1) Exploration location taped in the field by GeoDesign. Ground surface elevation, station, and offset shown are estimated from conceptual plans provided by VTTrans. 2) Driller used 3.25" ID HSA to advance to 5 feet deep to create pilot hole for FJ casing advance. 3) Driller noted increased roller bit resistance (near refusal) at approximately 16.5 feet deep. Driller advanced casing to 15 feet deep and was able to continue borehole advance with roller bit. 4) Driller noted difficulty advancing casing from approximately 16.5 to 19 feet deep, and from 22 to 30 feet deep through dense soils. 5) Split spoon, spin casing, and roller bit refusal at 30.3 feet deep. 6) Visual soil descriptions are per the Burmister system. 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.												

BOTTOM OF
PILE CAP AB#1
ELEV. 637.50

EST. PILE TIP

GEODESIGN BORING LOG 750-06-10-CLARENDONBRO1443(48) (P.1) VERMONT AUT.GDT 4/11/13

PROJECT NAME: CLARENDON
PROJECT NUMBER: BRO 1443(48)
FILE NAME: s12j160bor1ng
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. GRIGAS
BORING LOGS I
PLOT DATE: 10-SEP-2015
DRAWN BY: J. GRIGAS
CHECKED BY: G. LAROCHE
SHEET 28 OF 59