

BORING LOG		Boring No.: B-4							
STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		Page No.: 3 of 3							
Bridge No. 93 over C&P Railroad Castleton BR# 015-2(10) (GeoDesign #750-09.14)		Pin No.: 12b138							
Boring Crew: J. Leonhardt (TransTech), J. Gilman (GeoDesign)		Checked By: SPK							
Date Started: 10/16/13	Date Finished: 10/17/13	Type: FJ	Sampler: SS						
VTSPG NAD83: N 403336.83 ft E 1452518.45 ft	Hammer Wt: 140 lb.	I.D.: 4 in	2 in						
Station: 19+28 Offset: 10.50	Hammer Fall: 30 in.	10/17/13	Notes: See Remark 2						
Ground Elevation: 388.9 ft	Hammer/Rod Type: Auto/NWJ								
	Rig: CME 550X ATV								
	C _e = -1.5								
Depth (ft)	Strat ⁽¹⁾	CLASSIFICATION OF MATERIALS (Description)	Blow ⁽²⁾ (N Value) ⁽³⁾	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
105		Remarks: 1. Exploration locations were taped in the field by GeoDesign. Elevations were estimated based on topographic plan provided by VHB. 2. Sample moisture descriptions may not accurately reflect in-situ conditions due to wash-drive drilling methods. Unable to discern ground water elevation due to continuously adding water to the borehole during roller bit advance. 3. Visual soil descriptions are per the Burnmaster system. Lab testing gradations reported are per AASHTO M145. 4. Samples S2 and S4 were not sampled in accordance with ASTM D 1586 procedures (borehole was not advanced between consecutive samples). 5. Driller advanced casing to 9 feet deep and then open hole below 9 feet deep. 6. At end of day on 10/16/13, borehole advanced to 46 feet deep. 7. Borehole caved to approximately 25 feet deep overnight. Driller advanced casing to 19 feet deep and cleaned out to resume advance. 8. Driller noted rig chatter when advancing roller bit 48 to 49 feet deep, and 71 to 71.5 feet deep (possible cobble/gravel). 9. Driller drove split spoon samples S15 and S16 and waited 5 minutes to withdraw to improve recovery. 10. Soil samples were tested by VTrans soil laboratory and results were transmitted to GeoDesign for incorporation into boring logs. 11. While cohesive soils were present in sample S3 at 4' deep, not enough was available to perform Atterberg Limits testing.							
110									
115									
120									
125									
130									
135									
140									
145									
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C _e 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.									

BORING LOG		Boring No.: B-6							
STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		Page No.: 1 of 3							
Bridge No. 93 over C&P Railroad Castleton BR# 015-2(10) (GeoDesign #750-09.14)		Pin No.: 12b138							
Boring Crew: Leonhardt (TransTech), JDG/JFW (GeoDesign)		Checked By: SPK							
Date Started: 10/22/13	Date Finished: 10/24/13	Type: FJ	Sampler: SS						
VTSPG NAD83: N 403359.36 ft E 1452541.92 ft	Hammer Wt: 140 lb.	I.D.: 4 in	2 in						
Station: 19+54 Offset: 8.30	Hammer Fall: 30 in.	10/24/13	Notes: See Remark 2						
Ground Elevation: 413.4 ft	Hammer/Rod Type: Auto/NWJ								
	Rig: CME 550X ATV								
	C _e = -1.5								
Depth (ft)	Strat ⁽¹⁾	CLASSIFICATION OF MATERIALS (Description)	Blow ⁽²⁾ (N Value) ⁽³⁾	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
5		Existing Bridge Deck (Approx.)							
5		Air Space Between Bridge Deck and Ground Surface (See Remark 4).							
10									
15		S1 (13' to 15'): Very loose, tan brown fine to coarse SAND, some Silt, little fine to coarse Gravel, trace Asphalt, dry. Rec. = 0.8 ft (AASHTO M145 Classification: A-2-4.)	2-1-1-1 (2)	9.0	22.8	44.9	32.3	NP	NP
15		S2 (15' to 17'): Loose, tan brown SILT, some fine to coarse Sand, little fine Gravel, little Asphalt, dry. Rec. = 1.0 ft (AASHTO M145 Classification: A-4.)	2-2-2-3 (4)	17.4	17.8	15.9	66.3	NP	NP
15		S3 (17' to 19'): Very loose, brown fine to coarse SAND, some Silt, little fine to coarse Gravel, wet. Rec. = 0.5 ft (AASHTO M145 Classification: A-1-b.)	2-2-1-2 (3)	16.8	19.9	58.7	21.4	NP	NP
15		S4 (19' to 21'): Loose, tan brown SILT and fine to coarse SAND, little fine Gravel, wet. Rec. = 0.8 ft (AASHTO M145 Classification: A-4.)	3-2-2-2 (4)	20.9	23.6	32.6	43.8	NP	NP
15		S5 (21' to 23'): Loose, (Top 10') similar description as S4; (Bottom 12') tan brown with reddish layers Clayey SILT, trace fine to medium Sand, wet. Rec. = 1.8 ft (AASHTO M145 Classification: A-4.)	2-3-3-3 (6)	31.6		1.2	98.8	26	1
15		S6 (24' to 26'): Medium, gray with dark gray layers, SILT & CLAY, trace fine to coarse Sand, trace fine Gravel, wet. Rec. = 2.0 ft (AASHTO M145 Classification: A-4.)	WOH-2-1 (4)	37.2	1.5	1.1	97.4	31	9
15		S7 (29' to 31'): Medium dense, gray Clayey SILT and fine to coarse SAND, little fine to coarse Gravel, wet. Rec. = 0.7 ft	2-6-9-14 (15)	24.3					
15		S8 (34' to 36'): Medium dense, gray fine to coarse SAND, some Silt, some fine to coarse Gravel, wet. Rec. = 0.3 ft (AASHTO M145 Classification: A-2-4.)	8-11-16-19 (27)	11.3	38.7	31.6	29.7	NP	NP
15		S9 (39' to 41'): Medium dense, gray Clayey SILT and fine to coarse SAND, little fine to coarse Gravel, wet. Rec. = 1.1 ft (AASHTO M145 Classification: A-4.)	6-12-14-15 (26)	12.5	27.0	26.2	46.8	27	3
15		S10 (44' to 46'): Dense, gray layered Clayey SILT (grading locally to SILT & CLAY) and fine to coarse SAND, little fine to coarse Gravel (occasionally decomposed), wet. Rec. = 0.75 ft	8-11-19-17 (30)	11.4					
15		S11 (49' to 51'): Medium dense, gray SILT & CLAY (grading locally to Clayey Silt)	8-10-15-11.0						
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C _e 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.									

BORING LOG		Boring No.: B-6							
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VTSPG NAD83: N 403359.36 ft E 1452541.92 ft	Hammer Wt: 140 lb.	I.D.: 4 in	2 in						
Station: 19+54 Offset: 8.30	Hammer Fall: 30 in.	10/24/13	Notes: See Remark 2						
Ground Elevation: 413.4 ft	Hammer/Rod Type: Auto/NWJ								
	Rig: CME 550X ATV								
	C _e = -1.5								
Depth (ft)	Strat ⁽¹⁾	CLASSIFICATION OF MATERIALS (Description)	Blow ⁽²⁾ (N Value) ⁽³⁾	Moisture Content %	Gravel %	Sand %	Fines %	LL %	PI %
55		and fine to coarse SAND, some fine to coarse Gravel, wet. Rec. = 1.5 ft	15 (25)						
60		S12 (59' to 61'): Dense, gray SILT & CLAY (grading locally to Clayey SILT) and fine to coarse SAND, some fine to coarse Gravel, wet. Rec. = 0.83 ft (AASHTO M145 Classification: A-4.)	9-12-18-19 (30)	10.3	29.6	26.7	43.7	24	6
70		S13 (69' to 71'): Dense, gray SILT & CLAY (grading locally to Clayey SILT) and fine to coarse SAND, some fine to coarse Gravel, wet. Rec. = 1.33 ft	11-15-21-23 (36)	11.9					
80		S14 (78' to 81'): Dense, gray SILT & CLAY (grading locally to Clayey SILT) and fine to coarse Sand, little fine to coarse Gravel, wet. Rec. = 1.17 ft (AASHTO M145 Classification: A-4.)	10-16-18-22 (34)	12.5	23.0	26.7	50.3	25	6
90		S15 (89' to 91'): Dense, gray SILT & CLAY (grading locally to Clayey SILT) and fine to coarse SAND, little fine to coarse Gravel, wet. Rec. = 1.0 ft	9-15-19-25 (34)	13.5					
Hole stopped @ 91.0 ft Boring terminated at 91 feet deep with no refusal.									
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PROJECT NAME: CASTLETON	PLOT DATE: 9/19/2014
PROJECT NUMBER: BR# 015-2(10)	DRAWN BY: E.A. FIALA
FILE NAME: z12b138borlog.dgn	CHECKED BY: S.E. BURBANK
DESIGNED BY: GEODESIGN	SHEET 38 OF 82
BORING LOGS (3 OF 4)	

