

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: B-104 SHEET 1 of 1 DATE STARTED: 8/07/09 DATE COMPLETED: 8/07/09					
PROJECT NAME: BRATTLEBORO SITE NAME: MAST ARM SUPPORT STATION: A 11+15 OFFSET: 16.00 VTSPG NAD83: N 128099.43 ft E 1624965.96 ft		PROJECT NUMBER: STP 2000(24) SITE NUMBER: US-5 GROUND ELEVATION: 260.4 ft GROUNDWATER DEPTH: NO WATER TO DEPTH PROJECT PIN NUMBER: 08D044					
BORING CREW CREW CHIEF: GARROW DRILLER: GARROW LOGGER: MAHMUTOVIC		BORING RIG: LARGE SKID RIG w/AUTO HAMMER BORING TYPE: HOLLOW STEM AUGER SAMPLE TYPE: SPLIT BARREL CHECKED BY: TDE					
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		A-2-4, SiSa, brn, Moist, Rec. = 2.0 ft	9	7.5	2.0	68.4	29.6
		A-2-4, SiSa, brn, Moist, Rec. = 1.0 ft	5	6.4	2.2	68.7	29.1
		A-2-4, SiGrSa, brn, Moist, Rec. = 0.7 ft	9	6.1	27.5	46.1	26.4
		Hole stopped @ 7.0 ft					
		DRILLER'S NOTES: 1. Drilled to ledge or boulder.					

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: B-105 SHEET 1 of 1 DATE STARTED: 8/06/09 DATE COMPLETED: 8/06/09					
PROJECT NAME: BRATTLEBORO SITE NAME: MAST ARM SUPPORT STATION: A 13+62 OFFSET: 19.00 VTSPG NAD83: N 128335.87 ft E 1624889.12 ft		PROJECT NUMBER: STP 2000(24) SITE NUMBER: US-5 GROUND ELEVATION: 279.1 ft GROUNDWATER DEPTH: NO WATER TO DEPTH PROJECT PIN NUMBER: 08D044					
BORING CREW CREW CHIEF: GARROW DRILLER: GARROW LOGGER: MAHMUTOVIC		BORING RIG: LARGE SKID RIG w/AUTO HAMMER BORING TYPE: HOLLOW STEM AUGER SAMPLE TYPE: SPLIT BARREL CHECKED BY: TDE					
DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)
		Asphalt Pavement, 0.0 ft - 0.8 ft					
		A-1-b, GrSa, brn, Moist, Rec. = 2.0 ft	15	5.7	41.8	47.0	11.2
		A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft	9	5.2	41.6	47.9	10.5
		A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft	10	7.6	32.8	58.4	8.8
		Gravelly sand with Broken Rock, brn, Moist, Rec. = 0.6 ft, 7.0 ft - 9.0 ft	10	2.7			
		A-3, GrSa, brn, Moist, Rec. = 1.4 ft	32	5.6	20.4	71.5	8.1
		Hole stopped @ 11.0 ft					
		DRILLER'S NOTES: 1. Drilled to ledge or boulder.					

### SOIL CLASSIFICATION

AASHTO	
A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

### SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN kPa	CONSISTENCY
<12	Very Soft
12-24	Soft
24-48	Med. Stiff
48-96	Stiff
96-192	Very Stiff
>192	Hard

### COMMONLY USED SYMBOLS

▼	Water Elevation	PI	Plasticity Index
⊕	Standard Penetration Boring	NP	Non Plastic
⊗	Auger Boring	w	Moisture Content (Dry Wgt. Basis)
⊙	Rod Sounding	D	Dry
S	Sample	M	Moist
N	Standard Penetration Test	MTW	Moist To Wet
	Blow Count Per 300 mm For:	W	Wet
	50.8 mm O.D. Sampler	Sat	Saturated
	35.0 mm I.D. Sampler	Bo	Boulder
	Hammer Weight Of 63.5 kg.	Gr	Gravel
	Hammer Fall Of 762 mm	Sa	Sand
VS	Field Vane Shear Test	SI	Silt
US	Undisturbed Soil Sample	Cl	Clay
B	Blast	HP	Hardpan
DC	Diamond Core	Le	Ledge
MD	Mud Drill	NLTD	No Ledge To Depth
WA	Wash Ahead	CNPF	Can Not Penetrate Further
HSA	Hollow Stem Auger	TLOB	To Ledge Or Boulder
AX	Core Size 30.1mm	NR	No Recovery
BX	Core Size 42.0 mm	Rec.	Recovery
NX	Core Size 54.7 mm	%Rec.	Percent Recovery
M	Double Tube Core Barrel Used	RQD	Rock Quality Designation
LL	Liquid Limit	CBR	California Bearing Ratio
PL	Plastic Limit	<	Less Than
		>	Greater Than

R	Refusal (N > 100)		
OW	Indicates a temporary observation well installed		
COLOR			
blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		

### DEFINITIONS (AASHTO)

<b>BEDROCK (LEDGE)</b> - Rock in its native location of indefinite thickness.	<b>VARVED</b> - Alternate layers of silt and clay.
<b>BOULDER</b> - A rock fragment with an average dimension > 304.8 mm.	<b>HARDPAN</b> - Extremely dense soil, cemented layer, not softened when wet.
<b>COBBLE</b> - Rock fragments with an average dimension between 76.2 and 304.8 mm.	<b>MUCK</b> - Soft organic soil (containing > 10% organic material).
<b>GRAVEL</b> - Rounded particles of rock < 76.2 mm and > 2 mm (#10 sieve).	<b>MOISTURE CONTENT</b> - Weight of water divided by dry weight of soil.
<b>SAND</b> - Particles of rock < 2 mm (#10 sieve) and > 75 μm (#200 sieve).	<b>FLOWING SAND</b> - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
<b>SILT</b> - Soil < 75 μm (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.	<b>STRIKE</b> - Angle from magnetic north to line of intersection of bed with a horizontal plane.
<b>CLAY</b> - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.	<b>DIP</b> - Inclination of bed with a horizontal plane.

### ROCK QUALITY DESIGNATION

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

### CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<2	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: STP 2000(24)

FILE NAME: z08d044borlog.dgn  
PROJECT LEADER: KEN UPMAL  
DESIGNED BY: V. KACOYANNAKIS  
BORING LOGS SHEET 2

PLOT DATE: 3/17/2010  
DRAWN BY: A. ACHARYA  
CHECKED BY: D. SPENCER  
SHEET 135 OF 163