

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: B-101 SHEET 1 of 1 DATE STARTED: 8/05/09 DATE COMPLETED: 8/05/09					
PROJECT NAME: BRATTLEBORO SITE NAME: MAST ARM SUPPORT STATION: A 17+93 OFFSET: 20.00 VTSPG NAD83: N 128741.31 ft E 1624742.79 ft		PROJECT NUMBER: STP 2000(24) SITE NUMBER: US-5 GROUND ELEVATION: 286.11 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 - 0.6 ft Concrete, 0.6 ft - 1.6 ft					
		A-1-b, GrSa, brn, Moist, Rec. = 1.5 ft	10	3.5	22.8	69.7	7.5
		A-1-b, GrSa, brn, Moist, Rec. = 1.6 ft	24	2.9	35.3	58.4	6.3
		A-1-a, SaGr, brn, Moist, Rec. = 1.1 ft, Various types of broken rock were within sample.	38	2.5	53.8	39.4	6.8
		Hole stopped @ 8.0 ft					
		DRILLER'S NOTES: 1. Drilled to ledge or boulder.					

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING NUMBER: B-102 SHEET 1 of 1 DATE STARTED: 8/05/09 DATE COMPLETED: 8/05/09					
PROJECT NAME: BRATTLEBORO SITE NAME: MAST ARM SUPPORT STATION: 40+37 OFFSET: 29.00 VTSPG NAD83: N 127834.79 ft E 1625042.55 ft		PROJECT NUMBER: STP 2000(24) SITE NUMBER: US-5 GROUND ELEVATION: 253.02 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 - 0.4 ft Concrete, 0.4 ft - 1.0 ft	17	6.5	35.9	55.0	9.1
		A-1-b, GrSa, brn, Moist, Rec. = 1.0 ft					
		A-1-b, SaGr, brn, Moist, Rec. = 1.2 ft, Broken rock was within sample.	15	5.7	50.5	35.7	13.8
		A-1-b, SiSaGr, brn, Moist, Rec. = 1.5 ft, Broken rock was within sample.	10	10.2	41.4	37.9	20.7
		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-103 SHEET 1 of 1 DATE STARTED: 8/04/09 DATE COMPLETED: 8/04/09					
PROJECT NAME: BRATTLEBORO SITE NAME: MAST ARM SUPPORT STATION: 40+72 OFFSET: 31.00 VTSPG NAD83: N 127848.99 ft E 1625074.44 ft		PROJECT NUMBER: STP 2000(24) SITE NUMBER: US-5 GROUND ELEVATION: 251.75 ft GROUNDWATER DEPTH: 10.7 ft 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 - 0.4 ft Concrete, 0.4 ft - 1.0 ft	5	18.9			
		Visual Classification, Fill Material (gravel, brick, coal, cinders), brn, Moist, Rec. = 1.2 ft					
		Visual Classification, Fill Material (gravel, brick, cinders), brn, Moist, Rec. = 0.6 ft	5	18.1			
		Visual Classification, Broken Rock (Phyllite), brn, Moist, Rec. = 0.4 ft	5	3.0			
		Visual Classification, Broken Rock (Phyllite), gry, Moist, Rec. = 0.6 ft	35	3.3			
		Visual Classification, Broken Rock (Phyllite), gry, MTW, Rec. = 1.2 ft	20	6.2			
		Hole stopped @ 11.0 ft					
		DRILLER'S NOTES: 1. Drilled to ledge or boulder.					

SOIL CLASSIFICATION

AASHTO	UNDRAINED SHEAR STRENGTH IN kPa	CONSISTENCY
A1 Gravel and Sand	<12	Very Soft
A3 Fine Sand	12-24	Soft
A2 Silty or Clayey Gravel and Sand	24-48	Med. Stiff
A4 Silty Soil - Low Compressibility	48-96	Stiff
A5 Silty Soil - Highly Compressible	96-192	Very Stiff
A6 Clayey Soil - Low Compressibility	>192	Hard
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	R	Refusal (N > 100)
⊕	Standard Penetration Boring	NP	Non Plastic	OW	Indicates a temporary observation well installed
⊗	Auger Boring	w	Moisture Content (Dry Wgt. Basis)	COLOR	
⊙	Rod Sounding	D	Dry	blk	Black
S	Sample	M	Moist	bl	Blue
N	Standard Penetration Test	MTW	Moist To Wet	brn	Brown
	Blow Count Per 300 mm For:	W	Wet	dk	Dark
	50.8 mm O.D. Sampler	Sat	Saturated	gry	Gray
	35.0 mm I.D. Sampler	Bo	Boulder	gn	Green
	Hammer Weight of 63.5 kg.	Gr	Gravel	lt	Light
	Hammer Fall of 762 mm	Sa	Sand	or	Orange
VS	Field Vane Shear Test	SI	Silt	pnk	Pink
US	Undisturbed Soil Sample	Cl	Clay	pu	Purple
B	Blast	HP	Hardpan	rd	Red
DC	Diamond Core	Le	Ledge	tn	Tan
MD	Mud Drill	NLTD	No Ledge To Depth	wh	White
WA	Wash Ahead	CNPF	Can Not Penetrate Further	yel	Yellow
HSA	Hollow Stem Auger	TLOB	To Ledge Or Boulder	mltc	Multicolored
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		

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	N
<5 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

DEFINITIONS (AASHTO)

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

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

FILE NAME: z08d044borlog.dgn
PROJECT LEADER: KEN UPMAL
DESIGNED BY: V. KACOYANNAKIS
BORING LOGS SHEET 1

PLOT DATE: 3/16/2010
DRAWN BY: A. ACHARYA
CHECKED BY: D. SPENCER
SHEET 134 OF 163