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

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

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<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

COMMONLY USED SYMBOLS

▼	Water Elevation
⊛	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler, 1 3/8" I.D. Sampler, Hammer Weight Of 140 Lbs., Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 5/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	To Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
ROD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)

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)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.

BORING NO. B-1

ELEV. 1151.51

DEPTH	BLOWS ON CASING	STANDARD PENETRATION	SAMPLE NUMBER	MOISTURE	COLOR	LABORATORY CLASSIFICATION OF SOIL
		R		DRY	BRN	A-1-b GrSa w/trace of Cl. W=7.9 Rec. 0.4 BOULDERS
		R		M	BRN	A-1-a SaGr W=8.9 Rec. 1.0
		R		DRY	BRN	A-1-b GrSa W=9.0 Rec. 0.9
10		79		DRY	BRN	A-2-4 GrSiSa W=12.9 Rec. 1.5
BOTTOM OF FOOTING ABUTMENT NO. 1 ELEV. 1138.00		R		DRY	BRN	A-2-4 SiSa W=13.7 Rec. 0.6
		R		M	BRN	A-1-b GrSa Rec. 0.3
		R		DRY	BRN	A-2-4 GrSa W=12.2 Rec. 0.4 NO REC.
20						BOULDERS Top of Bedrock @ 22.0'
						Run 1: BXMDC 22.0-27.0 Rec. 3.5
						Run 2: BXMDC 27.0-32.0 Rec. 1.5
						See Geologist's Report
30						Hole stopped @ 32.0' in Bedrock
						Geologist's Report:
						Core consists of medium biotite gneiss. Fractures are moderately weathered surrounded by competent rock. Lost core is probably from the weathered zones. Weathered zones are moderately soft and the fresh rock is hard.
40						RUN RECOV. ROD 1 70% 0 2 30% 0
50						

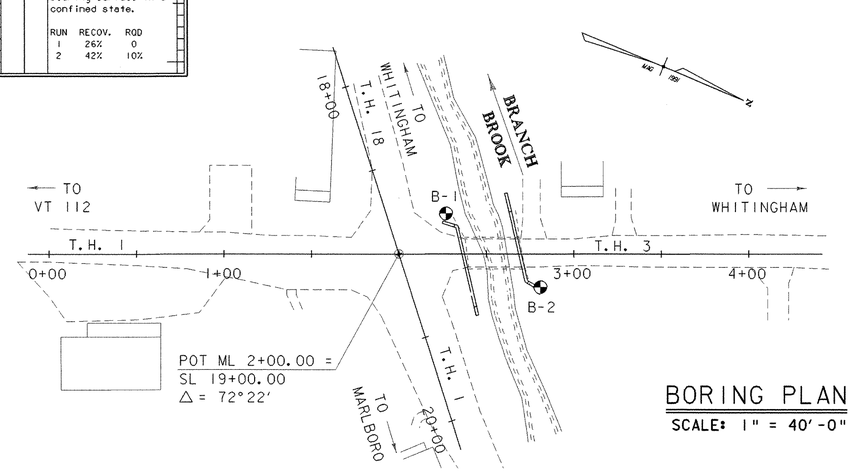
BORING NO. B-2

ELEV. 1153.90

DEPTH	BLOWS ON CASING	STANDARD PENETRATION	SAMPLE NUMBER	MOISTURE	COLOR	LABORATORY CLASSIFICATION OF SOIL
		8		M	BRN	A-2-4 SiSa W=24.2 Rec. 0.6
10						BXDC 9.0-11.0 BOULDERS
BOTTOM OF FOOTING ABUTMENT NO. 2 ELEV. 1138.00		R				NO REC.
20		R		M	BRN	A-1-b SaGr W=11.5 Rec. 0.3 Top of Bedrock @ 23.0'
						Run 1: BXMDC 23.0-28.0 Rec. 1.3
						Run 2: BXMDC 28.0-33.0 Rec. 2.1
30						See Geologist's Report
						Hole stopped @ 33.0' in Bedrock
						Geologist's Report:
40						Core consists of medium grained biotite gneiss. The rock is moderately weathered, moderately soft but will be as competent bearing surface in a confined state.
50						RUN RECOV. ROD 1 26% 0 2 42% 10%

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
B-1	2+27	23' LT	1151.51	1129.51
B-2	2+81	19' RT	1153.90	1130.90



BORING PLAN

SCALE: 1" = 40'-0"

GENERAL NOTES

1. The subsurface explorations shown herein were made between 7-12-93 and 7-14-93 by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	HALIFAX	Bridge No.	28
		Log Sta.	
Highway No.	T. H. 3	Surv. Sta.	2+53

T. H. 3 OVER THE BRANCH BROOK

BORING INFORMATION SHEET

Designed By	S. BAKI	Drawn By	G. ROY
Checked By	Date	Bridge Design Supervisor	
T. SUMNER	8/00	R.R. WHITCOMB	Date 8/00
PROJECT	HALIFAX	PROJECT NO.	BRZ 1442 (18)
I.G.C. Info.	89J092\structures\sJ092bor.dgn		sJ092borJ
Bridge Sheet No.		Sheet 14 of 33	

PLOTTED 17-NOV-2000