

**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

**COMMONLY USED SYMBOLS**

▼	Water Elevation
⊙	Standard Penetration Boring
⊕	Auger Boring
⊖	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per 300 mm For: 50.8 mm O.D. Sampler 35.0 mm I.D. Sampler Hammer Weight Of 63.5 kg. Hammer Fall Of 762 mm
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 30.1mm
BX	Core Size 42.0 mm
NX	Core Size 54.7 mm
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 To Ledge Or Boulder
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)

**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 kPa	CONSISTENCY
<12	Very Soft
12-24	Soft
24-48	Med. Stiff
48-96	Stiff
96-192	Very Stiff
>192	Hard

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

DENSITY (GRANULAR SOILS)	CONSISTENCY (COHESIVE SOILS)
N	N
<5	<2
5-10	2-4
11-24	5-8
25-50	9-15
>50	16-30
	31-60
	>60

COLOR	
blk	Black
bl	Blue
brn	Brown
dk	Dark
gry	Gray
gn	Green
lt	Light
or	Orange
pnk	Pink
pu	Purple
rd	Red
tn	Tan
wh	White
yel	Yellow
mltc	Multicolored

**DEFINITIONS (AASHTO)**

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

**BOULDER** - A rock fragment with an average dimension > 304.8 mm.

**COBBLE** - Rock fragments with an average dimension between 76.2 and 304.8 mm.

**GRAVEL** - Rounded particles of rock < 76.2 mm and > 2 mm (#10 sieve).

**SAND** - Particles of rock < 2 mm (#10 sieve) and > 75 μm (#200 sieve).

**SILT** - Soil < 75 μm (#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.

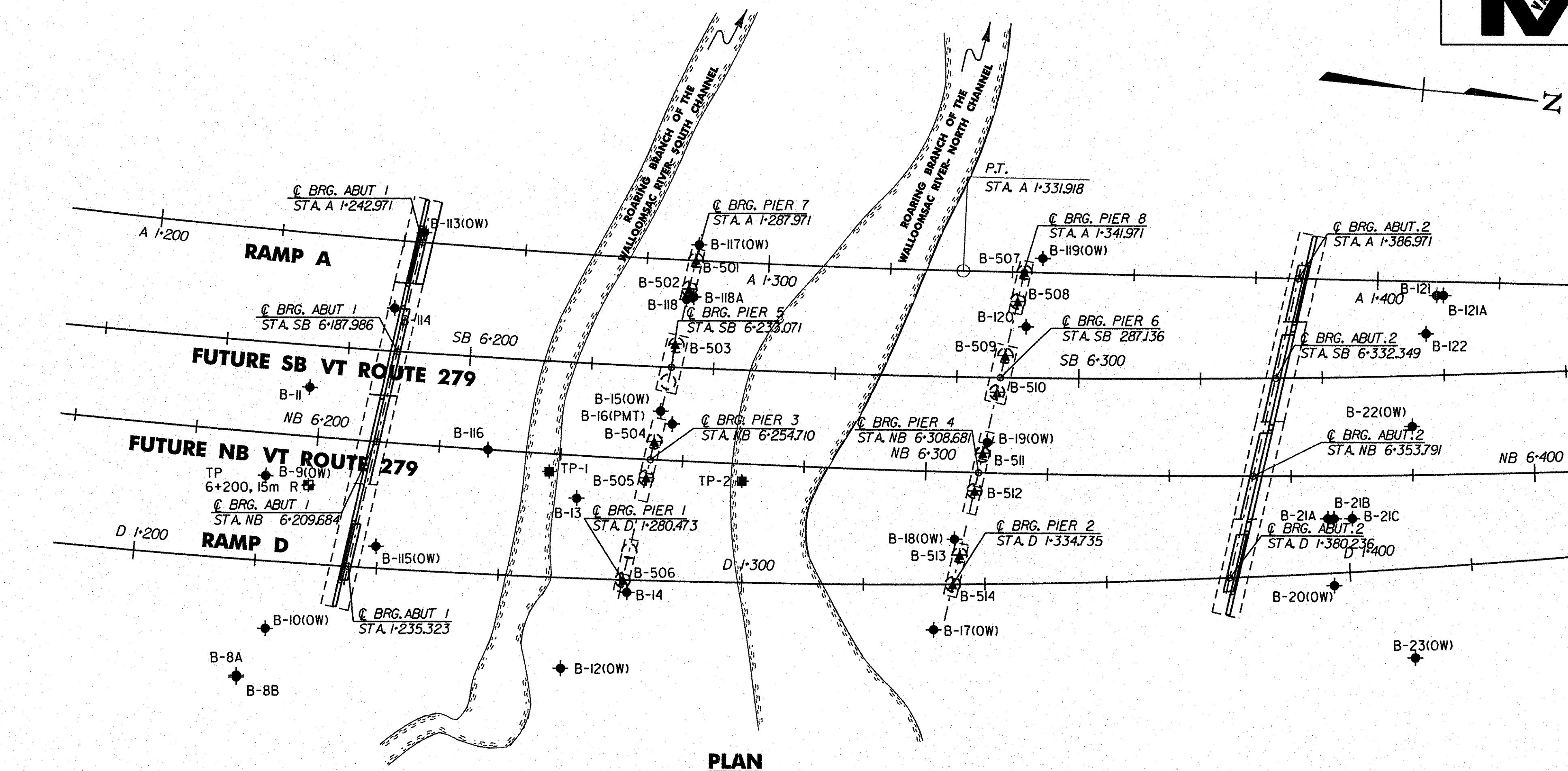
**MUCK** - Soft organic soil (containing > 10% organic material).

**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.



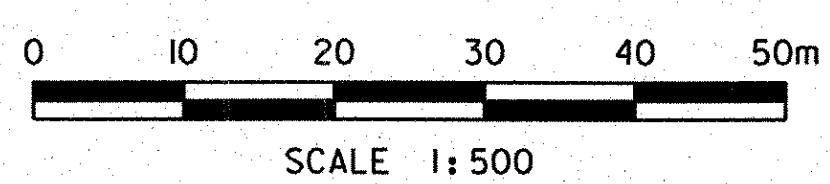
**BORING CHART**

BORING NO.	NB STATION	OFFSET (m)	GROUND ELEV.
* B-8A	6+190	40.0 R	254.35
* B-8B	6+190	40.3 R	254.35
* B-9(O/W)	6+192	7.0 R	254.02
* B-10(O/W)	6+194	32.0 R	253.84
* B-11	6+198	8.0 L	253.41
* B-12(O/W)	6+242	35.0 R	251.60
B-13	6+243	7.0 R	250.42
B-14	6+252	22.0 R	251.75
B-15(O/W)	6+256	8.0 L	250.33
* B-16(PMT)	6+258	6.0 L	250.41
B-17(O/W)	6+302	26.0 R	252.29
B-18(O/W)	6+305	11.0 R	251.79
B-19(O/W)	6+310	5.0 L	251.64
B-20(O/W)	6+367	18.0 R	277.86
* B-21A	6+366	7.0 R	276.36
* B-21B	6+367	7.0 R	276.36
* B-21C	6+370	7.0 R	276.36
* B-22(O/W)	6+380	7.9 L	280.92
* B-23(O/W)	6+380	30.0 R	277.99
B-113(O/W)	6+215	34.9 L	253.60
B-114	6+211	22.0 L	253.04
B-115(O/W)	6+211	17.1 R	253.54
B-116	6+228	0.0 R	250.16
B-117(O/W)	6+261	35.6 L	249.28
B-118	6+259	26.4 L	249.33
B-118A	6+261	26.8 L	249.40
B-119(O/W)	6+319	35.4 L	251.11
B-120	6+316	24.0 L	251.21
B-121	6+384	29.2 L	281.60
B-121A	6+385	29.2 L	281.60
B-122	6+383	23.0 L	276.95
* TP-1	6+239	9.5 R	251.00
* TP-2	6+271	9.0 R	251.00
B-501	6+260.6	33.0 L	249.37
B-502	6+259.7	28.1 L	249.08
B-503	6+258.0	18.9 L	250.16
B-504	6+255.2	3.0 L	250.68
B-505	6+254.2	3.0 R	251.03
B-506	6+251.2	20.0 R	251.77
B-507	6+315.6	32.9 L	250.63
B-508	6+314.6	28.1 L	250.92
B-509	6+312.7	19.2 L	252.03
B-510	6+311.4	13.2 L	251.50
B-511	6+309.3	3.0 L	251.65
B-512	6+308.1	3.0 R	251.76
B-513	6+305.9	13.6 R	251.82
B-514	6+304.9	18.5 R	251.89

\* BORING OR TEST PIT LOGS NOT INCLUDED IN PLANS (SEE NOTE 1).

**NOTES:**

- ADDITIONAL BORINGS AND TEST PITS HAVE BEEN TAKEN IN THE VICINITY OF THIS BRIDGE, OUTSIDE OF THE LIMITS SHOWN ON THIS SHEET. BORING LOGS AND TEST PIT LOCATIONS ARE SHOWN IN THE GEOTECHNICAL ENGINEERING REPORT. THE CONTRACTOR SHOULD REVIEW THE GEOTECHNICAL ENGINEERING REPORT, OCTOBER 2002, PREPARED BY GZA GEOENVIRONMENTAL, INC. FOR THIS BRIDGE. THIS REPORT IS AVAILABLE ON REQUEST FROM THE VAOT.
- IF THERE IS A CONFLICT IN THE INFORMATION ON THE BORING LOGS SHOWN ON BRIDGE SHEETS BR207 THROUGH BR239, THE INFORMATION ON BORING INFORMATION (SHEET 2 OF 2), BRIDGE SHEET BR206, SUPERCEDES THE GENERAL NOTES ON THIS SHEET.
- U.S. CUSTOMARY UNITS AND TERMS USED ON THE ORIGINAL BORING LOGS HAVE BEEN RETAINED, WITH METRIC ADDITIONS AS NECESSARY.



**GENERAL NOTES**

- The subsurface explorations shown herein were made between February 1995 through October 2001 by GZA GeoEnvironmental.
- 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.
- 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.
- 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.
- 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.
- 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.

**LEGEND**

- ★ BRIDGE BORING (2006)
- B-5XX BRIDGE BORING (1999 OR 2001)
- TEST PIT (1999)
- TP-XX TEST PIT (1995)
- TP 6+200



**STATE OF VERMONT AGENCY OF TRANSPORTATION**

Town Of	BENNINGTON	Bridge No.	B15, B15N, B15S
Highway No.	VT RTE 279	Log Sta.	
		Surv. Sta.	
VT ROUTE 279 & RAMPS OVER ROARING BRANCH OF WALLOOSAC RIVER			
<b>BORING INFORMATION (SHEET 1 OF 2)</b>			
Designed By	GZA	Drawn By	L.R. DELL
Checked By	GZA	Date	06/08
		Bridge Design Supervisor	K.M. WOJTKOWSKI Date 06/08
PROJECT	BENNINGTON	PROJECT NO.	AC NH 019-1(51)
TVGA CAD Drawing No.	RR-B-PL.dgn	Date	02/02/2009
Bridge Sheet No.	BR205	Sheet	192 of 367