

**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

**UNIFIED SOIL SYSTEM**

GW/GP	CLEAN GRAVELS (FEW FINES)
GM/GC	GRAVELS (APPRECIABLE FINES)
SW/SP	CLEAN SANDS (FEW FINES)
SM/SC	SAND (APPRECIABLE FINES)
ML/CL	LOW PLASTIC SILTS & CLAYS
OL	LOW PLASTIC ORGANIC SILT
MH/CH	HIGH PLASTIC SILTS & CLAYS
OH	HIGH PLASTIC ORGANIC SILT
PT	HIGHLY ORGANIC SOILS

**MOISTURE**

DESCRIPTIVE TERM	OBSERVED IN FIELD	% ± BY ANALYSIS
DRY	NO VISIBLE WATER	<10
MOIST	DAMP	10 - 20
MOIST TO WET	MOIST TO WET	21 - 50
WET	VISIBLE WATER	51 - 70
SATURATED		>70

**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**

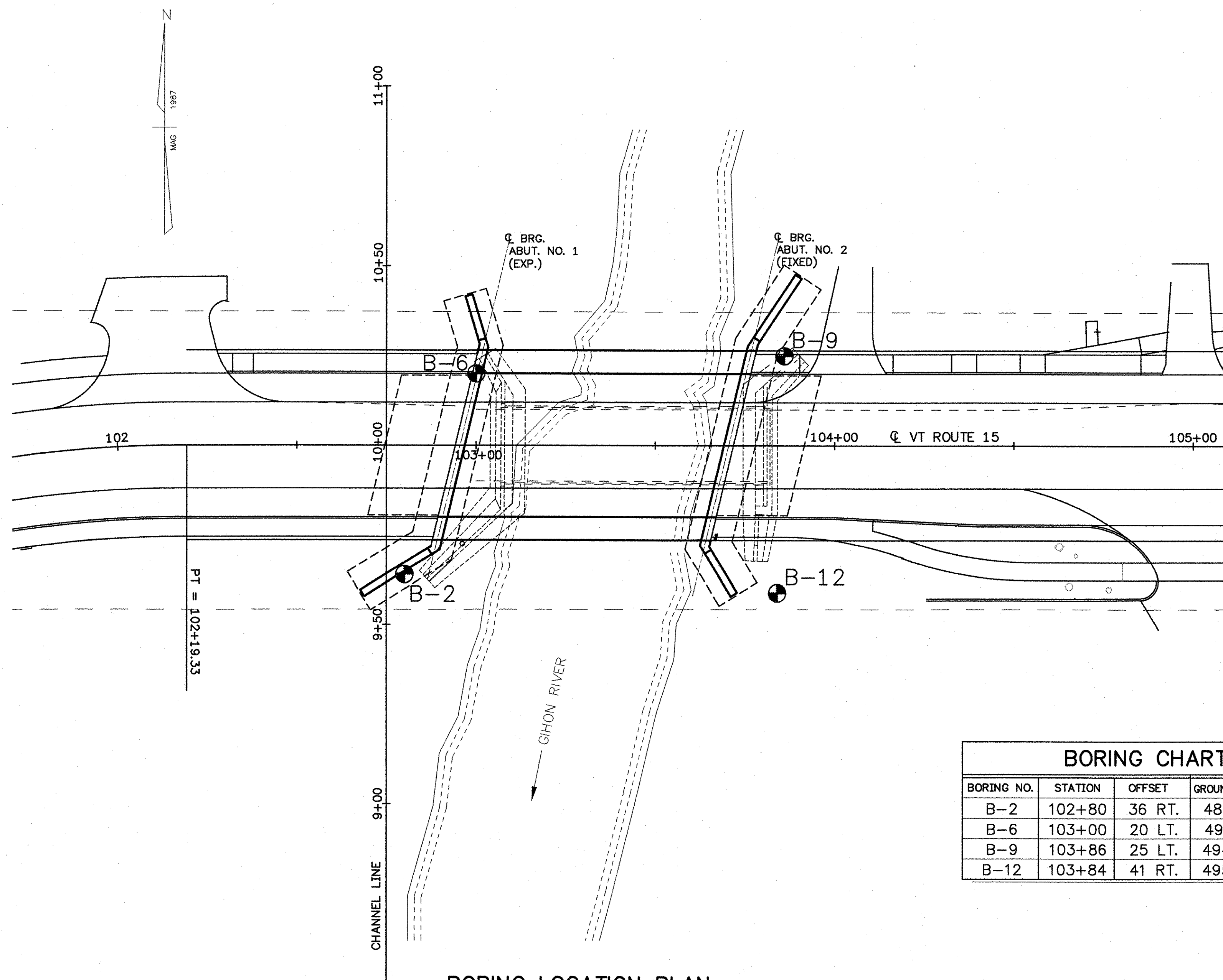
▼	WATER ELEVATION
⊙	STANDARD PENETRATION BORING
⊙	AUGER BORING
⊙	ROD SOUNDING
⊙	SAMPLE
N	STANDARD PENETRATION TEST BLOW COUNT PER FOOT FOR: 2" O.D. SAMPLER 1 3/8" I.D. SAMPLER HAMMER WEIGHT OF 140 LBS. HAMMER FALL OF 30"
VS	FIELD VANE SHEAR TEST
US	UNDISTURBED SOIL SAMPLE
B	BLAST
DC	DIAMOND CORE
MD	MUD 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	CANNOT PENETRATE FURTHER
TLOB	TO LEDGE OR BOULDER
NR	NO RECOVERY
REC.	RECOVERY
%REC.	PERCENT RECOVERY
RQD	ROCK QUALITY DESIGNATION
CBR	CALIFORNIA BEARING RATIO
<	LESS THAN
>	GREATER THAN

**COLOR**

blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gr	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mitc	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 > 12 inches.	<b>HARDPAN</b> - Extremely dense soil, cemented layer, not softened when wet.
<b>COBBLE</b> - Rock fragments with an average dimension between 3 and 12 inches.	<b>MUCK</b> - Soft organic soil (containing > 10% organic material).
<b>GRAVEL</b> - Rounded particles of rock < 3" and > 0.075" (#10 sieve).	<b>MOISTURE CONTENT</b> - Weight of water divided by dry weight of soil.
<b>SAND</b> - Particles of rock < 0.075" (#10 sieve) and > 0.0029" (#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 < 0.0029" (#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.



**BORING LOCATION PLAN**

SCALE 1"=20'  
10 0 10 20  
( IN FEET )

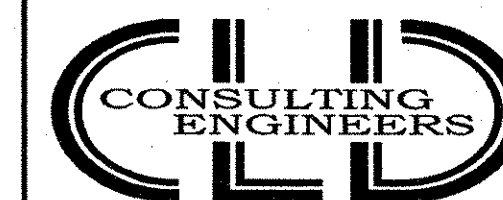
BORING CHART				
BORING NO.	STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
B-2	102+80	36 RT.	487.10	446.60
B-6	103+00	20 LT.	496.51	445.51
B-9	103+86	25 LT.	494.65	438.65
B-12	103+84	41 RT.	495.05	431.55

**GENERAL NOTES**

- The subsurface explorations shown herein were made between 12-10-92 and 01-06-93 by the Agency.
- Soil and rock classifications, properties and descriptions are based on an 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.

**STATE OF VERMONT AGENCY OF TRANSPORTATION**

Town Of	JOHNSON	Bridge No.	37
Highway No.	VT. ROUTE 15	Log Sta.	
VT. ROUTE 15 OVER GIHON RIVER		Surv. Sta.	
<b>BORING INFORMATION SHEET</b>			
Designed By	R.RICARD	Drawn By	D.DUGAL
Checked By	Date	Bridge Design Supervisor	
B.WELCH/R.ROONEY	11/02	J. BYATT	Date 11/06
PROJECT	JOHNSON	PROJECT NO.	BRF 030-2(17)S
I.G.C. Info.		Bridge Sheet No.	Sheet 49 Of 85



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