



**TABLE A**  
**ROCK CORE DESCRIPTIONS**

LOCATION (BH)	CORE RECOVERY				CORE DESCRIPTION	
	RC	DEPTH (m)	REC (%)	RQD (%)	DEPTH (m)	DESCRIPTION
N3	1	1.4 – 2.0	100	100	1.4 – 4.5	GRANITIC GNEISS: Pink, medium crystalline, high strength, slightly weathered, close to moderate (locally very close) spaced flat to dipping cross joints, occasional vertical partings, rough planar, tight to slightly altered with red oxidation stains and/or scale on partings, good to excellent quality.
	2	2.0 – 3.5	100	87		
	3	3.5 – 4.5	100	88		
N4	1	0.4 – 1.9	100	100	0.4 – 3.4	GRANITIC GNEISS: Pink, medium crystalline, with occasional coarse pegmatite, medium to high strength, slightly weathered, close to moderate (locally very close) spaced flat to dipping cross joints, rough planar, tight to slightly altered with red or brown oxidation stains and/or silt on partings, excellent quality.
	2	1.9 – 3.4	100	94		
N5	1	0.1 – 1.7	100	94	0.1 – 3.2	GRANITIC GNEISS: Pink, medium crystalline, high strength, slightly weathered, close to moderate (locally very close) spaced flat to dipping cross joints, rough planar, tight to slightly altered with red oxidation stains and/or silt on partings, occasional vertical fissures, excellent quality.
	2	1.7 – 3.2	99	99		
N6	1	0.1 – 1.7	100	62	0.1 – 3.3	GRANITIC GNEISS: Pink, medium crystalline, high strength, slightly weathered, very close to close becoming close to moderate (locally very close) spaced flat to dipping cross joints, rough planar, tight to slightly altered with red oxidation stains and/or silt on partings, occasional vertical fissures, very poor quality to 0.6 m depth, becoming excellent quality.
	2	1.7 – 3.3	100	92		
N8	1	0.3 – 1.9	100	98	0.3 – 3.5	GRANITIC GNEISS: Pink, medium crystalline, high strength, slightly weathered, close to moderate spaced flat to dipping cross joints, rough planar, tight to slightly altered with red oxidation stains on partings, excellent quality.
	2	1.9 – 3.5	99	99		

Originated: FP  
 Compiled: JFW  
 Checked: GD/ CN



**TABLE A**  
**ROCK CORE DESCRIPTIONS**

LOCATION (BH)	CORE RECOVERY				CORE DESCRIPTION	
	RC	DEPTH (m)	REC (%)	RQD (%)	DEPTH (m)	DESCRIPTION
N9	1	0.8 – 2.0	100	81	0.8 – 4.3	GRANITIC GNEISS: Pink, medium crystalline, high strength, slightly weathered, very close to close (locally moderate) spaced flat to dipping cross joints, rough planar (locally slickensided), tight to slightly altered with red oxidation stains on partings, occasional vertical fissures, fair to good quality.
	2	2.0 – 3.5	93	51		
	3	3.5 – 4.3	97	84		
N10	1	0.5 – 1.3	100	46	0.5 – 3.5	GRANITIC GNEISS: Pink, medium crystalline, high strength, slightly weathered, very close to close becoming close to moderate spaced flat to dipping cross joints, rough planar, tight to slightly altered with red oxidation stains on partings, occasional vertical fissures, with silt on partings, poor to fair, becoming excellent quality.
	2	1.3 – 2.8	100	59		
	3	2.8 – 3.5	100	93		
N11	1	0.5 – 1.8	100	66	0.5 – 3.7	GRANITIC GNEISS: Pink, medium crystalline, high strength, slightly weathered, close to moderate spaced flat to dipping cross joints, with occasional vertical fissures, rough planar, tight to slightly altered with red or black oxidation stains and/or grey silt on partings, fair to excellent quality.
	2	1.8 – 3.3	100	100		
	3	3.3 – 3.7	100	56		
N14	1	0.0 – 0.5	90	40	0.0 – 3.1	GRANITIC GNEISS: Light grey to pink, medium to coarse crystalline, with near vertical banding, medium to high strength, slightly weathered, close (locally moderate) spaced flat to dipping cross joints, rough planar, tight to slightly altered with occasional oxidation stains and/or scale on partings, poor becoming fair to good quality.
	2	0.5 – 1.3	97	86		
	3	1.3 – 2.0	100	88		
	4	2.0 – 3.1	100	51		

Originated: FP  
 Compiled: JFW  
 Checked: GD/ CN



**TABLE A**  
**ROCK CORE DESCRIPTIONS**

LOCATION (BH)	CORE RECOVERY				CORE DESCRIPTION	
	RC	DEPTH (m)	REC (%)	RQD (%)	DEPTH (m)	DESCRIPTION
N15	1	0.0 – 0.5	100	0	0.0 – 3.1	GRANITIC GNEISS: Light grey to pink, medium to coarse crystalline, with numerous red veinlets, brecciated appearance at 1.5 m, medium strength, moderately to slightly weathered, very close to close spaced flat to dipping (locally vertical) cross joints, rough planar, tight to slightly altered with occasional oxidation stains on partings, very poor becoming fair (locally excellent) quality.
	2	0.5 – 1.5	100	51		
	3	1.5 – 2.6	100	93		
	4	2.6 – 3.1	100	55		
N16	1	0.0 – 0.2	72	0	0.0 – 3.1	GRANITIC GNEISS: Pink, medium to coarse crystalline, with occasional layer of pink, coarse crystalline pegmatite, high strength, slightly weathered, very close to close (locally moderate) spaced flat to dipping cross joints, occasional multiple vertical partings, rough planar, tight to slightly altered with oxidation stains and/or silt on partings, very poor to poor becoming fair to good quality.
	2	0.2 – 0.6	100	43		
	3	0.6 – 1.2	85	73		
	4	1.2 – 1.7	86	81		
	5	1.7 – 2.6	92	74		
	6	2.6 – 3.1	78	53		
N19	1	0.0 – 0.2	100	0	0.0 – 3.1	GRANITIC GNEISS: Light grey, medium to coarse crystalline, with occasional dark green hornblende, medium to high strength, unweathered to slightly weathered, very close to close spaced flat to dipping cross joints, rough planar, tight to slightly altered with oxidation stains and/or silt on partings, very poor becoming fair to good (locally poor) quality.
	2	0.2 – 0.4	100	0		
	3	0.4 – 1.0	100	80		
	4	1.0 – 1.8	100	28		
	5	1.8 – 3.1	100	70		

Originated: FP  
 Compiled: JFW  
 Checked: GD/ CN



**TABLE A**  
**ROCK CORE DESCRIPTIONS**

LOCATION (BH)	CORE RECOVERY				CORE DESCRIPTION	
	RC	DEPTH (m)	REC (%)	RQD (%)	DEPTH (m)	DESCRIPTION
N20	1	0.0 – 1.1	100	100	0.0 – 3.1	GRANITIC GNEISS: Light grey to pink, medium to coarse crystalline, near vertical banding, high strength, slightly weathered, close to moderate spaced dipping cross joints, rough planar, tight to slightly altered with oxidation stains on partings, excellent becoming fair quality.
	2	1.1 – 1.3	100	100		
	3	1.3 – 1.9	100	100		
	4	1.9 – 3.1	94	67		
N21	1	0.0 – 0.3	100	100	0.0 – 3.1	GRANITIC GNEISS: Light grey to pink, medium to coarse crystalline, with near vertical banding, high strength, slightly weathered, wide becoming close to moderate (locally very close) spaced flat to dipping (locally vertical) cross joints, rough planar, tight to slightly altered with occasional oxidation stains and/or silt on partings, excellent (locally very poor to poor) becoming good to fair quality.
	2	0.3 – 1.0	100	100		
	3	1.0 – 1.3	100	0		
	4	1.3 – 1.6	100	34		
	5	1.6 – 2.0	100	100		
	6	2.0 – 2.8	97	86		
	7	2.8 – 3.1	100	67		
N22	1	0.0 – 0.7	100	100	0.0 – 3.1	GRANITIC GNEISS: Pink, with near vertical banding, medium to coarse crystalline, high strength, slightly weathered to unweathered, moderate to wide becoming close spaced flat to dipping cross joints, rough planar, tight to slightly altered with oxidation stains and/or silt on partings, excellent to good quality.
	2	0.7 – 1.5	98	98		
	3	1.5 – 2.4	100	79		
	4	2.4 – 3.1	89	89		

Originated: FP  
 Compiled: JFW  
 Checked: GD/ CN



**TABLE A**  
**ROCK CORE DESCRIPTIONS**

LOCATION (BH)	CORE RECOVERY				CORE DESCRIPTION	
	RC	DEPTH (m)	REC (%)	RQD (%)	DEPTH (m)	DESCRIPTION
N25	1	0.0 – 0.4	100	66	0.0 – 3.3	GRANITIC GNEISS: Light grey to pink, medium to coarse crystalline, with near vertical banding, high strength, slightly weathered, close to moderate spaced flat to dipping (locally vertical) cross joints, rough planar, tight to slightly altered with occasional oxidation stains and/or silt on partings, fair (locally poor) becoming good quality.
	2	0.4 – 1.4	100	39		
	3	1.4 – 2.1	98	63		
	4	2.1 – 3.3	98	89		

RQD = Rock Quality Designation

Originated: FP  
 Compiled: JFW  
 Checked: GD/ CN

## EXPLANATION OF TERMS USED IN REPORT

**N VALUE:** THE STANDARD PENETRATION TEST (SPT) N VALUE IS THE NUMBER OF BLOWS REQUIRED TO CAUSE A STANDARD 51mm O.D. SPLIT BARREL SAMPLER TO PENETRATE 0.3m INTO UNDISTURBED GROUND IN A BOREHOLE WHEN DRIVEN BY A HAMMER WITH A MASS OF 63.5kg, FALLING FREELY A DISTANCE OF 0.76m. FOR PENETRATIONS OF LESS THAN 0.3m N VALUES ARE INDICATED AS THE NUMBER OF BLOWS FOR THE PENETRATION ACHIEVED. AVERAGE N VALUE IS DENOTED THUS  $\bar{N}$ .

**DYNAMIC CONE PENETRATION TEST:** CONTINUOUS PENETRATION OF A CONICAL STEEL POINT (51mm O.D. 60° CONE ANGLE) DRIVEN BY 475 J IMPACT ENERGY ON 'A' SIZE DRILL RODS. THE RESISTANCE TO CONE PENETRATION IS MEASURED AS THE NUMBER OF BLOWS FOR EACH 0.3m ADVANCE OF THE CONICAL POINT INTO THE UNDISTURBED GROUND.

SOILS ARE DESCRIBED BY THEIR COMPOSITION AND CONSISTENCY OR DENSENESS.

**CONSISTENCY:** COHESIVE SOILS ARE DESCRIBED ON THE BASIS OF THEIR UNDRAINED SHEAR STRENGTH ( $c_u$ ) AS FOLLOWS:

$c_u$ (kPa)	0 - 12	12 - 25	25 - 50	50 - 100	100 - 200	>200
	VERY SOFT	SOFT	FIRM	STIFF	VERY STIFF	HARD

**DENSENESS:** COHESIONLESS SOILS ARE DESCRIBED ON THE BASIS OF DENSENESS AS INDICATED BY SPT N VALUES AS FOLLOWS:

N (BLOWS/0.3m)	0 - 5	5 - 10	10 - 30	30 - 50	>50
	VERY LOOSE	LOOSE	COMPACT	DENSE	VERY DENSE

ROCKS ARE DESCRIBED BY THEIR COMPOSITION AND STRUCTURAL FEATURES AND / OR STRENGTH.

**RECOVERY:** SUM OF ALL RECOVERED ROCK CORE PIECES FROM A CORING RUN EXPRESSED AS A PERCENT OF THE TOTAL LENGTH OF THE CORING RUN.

**MODIFIED RECOVERY:** SUM OF THOSE INTACT CORE PIECES, 100mm+ IN LENGTH EXPRESSED AS A PERCENT OF THE LENGTH OF THE CORING RUN. THE ROCK QUALITY DESIGNATION (R Q D), FOR MODIFIED RECOVERY, IS:

RQD (%)	0 - 25	25 - 50	50 - 75	75 - 90	90 - 100
	VERY POOR	POOR	FAIR	GOOD	EXCELLENT

**JOINTING AND BEDDING:**

SPACING	50mm	50 - 300mm	0.3m - 1m	1m - 3m	>3m
JOINTING	VERY CLOSE	CLOSE	MOD. CLOSE	WIDE	VERY WIDE
BEDDING	VERY THIN	THIN	MEDIUM	THICK	VERY THICK

## ABBREVIATIONS AND SYMBOLS

### FIELD SAMPLING

S S	SPLIT SPOON	T P	THINWALL PISTON
WS	WASH SAMPLE	OS	OSTERBERG SAMPLE
S T	SLOTTED TUBE SAMPLE	R C	ROCK CORE
B S	BLOCK SAMPLE	P H	T W ADVANCED HYDRAULICALLY
C S	CHUNK SAMPLE	P M	T W ADVANCED MANUALLY
T W	THINWALL OPEN	F S	FOIL SAMPLE
F V	FIELD VANE		

### STRESS AND STRAIN

$u_w$	kPa	PORE WATER PRESSURE
$u$	1	PORE PRESSURE RATIO
$\sigma$	kPa	TOTAL NORMAL STRESS
$\sigma'$	kPa	EFFECTIVE NORMAL STRESS
$\tau$	kPa	SHEAR STRESS
$\sigma_1, \sigma_2, \sigma_3$	kPa	PRINCIPAL STRESSES
$\epsilon$	%	LINEAR STRAIN
$\epsilon_1, \epsilon_2, \epsilon_3$	%	PRINCIPAL STRAINS
E	kPa	MODULUS OF LINEAR DEFORMATION
G	kPa	MODULUS OF SHEAR DEFORMATION
$\mu$	1	COEFFICIENT OF FRICTION

### MECHANICAL PROPERTIES OF SOIL

$m_v$	$kPa^{-1}$	COEFFICIENT OF VOLUME CHANGE
$C_c$	1	COMPRESSION INDEX
$C_s$	1	SWELLING INDEX
$C_\alpha$	1	RATE OF SECONDARY CONSOLIDATION
$c_v$	$m^2/s$	COEFFICIENT OF CONSOLIDATION
H	m	DRAINAGE PATH
$T_v$	1	TIME FACTOR
U	%	DEGREE OF CONSOLIDATION
$\sigma'_{vo}$	kPa	EFFECTIVE OVERBURDEN PRESSURE
$\sigma'_p$	kPa	PRECONSOLIDATION PRESSURE
$\tau_f$	kPa	SHEAR STRENGTH
$c'$	kPa	EFFECTIVE COHESION INTERCEPT
$\phi'$	-°	EFFECTIVE ANGLE OF INTERNAL FRICTION
$c_u$	kPa	APPARENT COHESION INTERCEPT
$\phi_u$	-°	APPARENT ANGLE OF INTERNAL FRICTION
$\tau_R$	kPa	RESIDUAL SHEAR STRENGTH
$\tau_r$	kPa	REMOULDED SHEAR STRENGTH
$S_t$	1	SENSITIVITY = $\frac{c_u}{\tau_r}$

### PHYSICAL PROPERTIES OF SOIL

$\rho_s$	$kg/m^3$	DENSITY OF SOLID PARTICLES	n	1, %	POROSITY	$e_{max}$	1, %	VOID RATIO IN LOOSEST STATE
$\gamma_s$	$kn/m^3$	UNIT WEIGHT OF SOLID PARTICLES	w	1, %	WATER CONTENT	$e_{min}$	1, %	VOID RATIO IN DENSEST STATE
$\rho_w$	$kg/m^3$	DENSITY OF WATER	$S_r$	%	DEGREE OF SATURATION	$I_D$	1	DENSITY INDEX = $\frac{e_{max} - e}{e_{max} - e_{min}}$
$\gamma_w$	$kn/m^3$	UNIT WEIGHT OF WATER	$w_L$	%	LIQUID LIMIT	D	mm	GRAIN DIAMETER
$\rho$	$kg/m^3$	DENSITY OF SOIL	$w_p$	%	PLASTIC LIMIT	$D_n$	mm	n PERCENT - DIAMETER
$\gamma$	$kn/m^3$	UNIT WEIGHT OF SOIL	$w_s$	%	SHRINKAGE LIMIT	$C_u$	1	UNIFORMITY COEFFICIENT
$\rho_d$	$kg/m^3$	DENSITY OF DRY SOIL	$I_p$	%	PLASTICITY INDEX = $w_L - w_p$	h	m	HYDRAULIC HEAD OR POTENTIAL
$\gamma_d$	$kn/m^3$	UNIT WEIGHT OF DRY SOIL	$I_L$	1	LIQUIDITY INDEX = $\frac{w - w_p}{I_p}$	q	$m^3/s$	RATE OF DISCHARGE
$\rho_{sat}$	$kg/m^3$	DENSITY OF SATURATED SOIL	$I_C$	1	CONSISTENCY INDEX = $\frac{w_L - w}{I_p}$	v	m/s	DISCHARGE VELOCITY
$\gamma_{sat}$	$kn/m^3$	UNIT WEIGHT OF SATURATED SOIL	DTPL		DRIER THAN PLASTIC LIMIT	i	1	HYDRAULIC GRADIENT
$\rho'$	$kg/m^3$	DENSITY OF SUBMERGED SOIL	APL		ABOUT PLASTIC LIMIT	k	m/s	HYDRAULIC CONDUCTIVITY
$\gamma'$	$kn/m^3$	UNIT WEIGHT OF SUBMERGED SOIL	WTPL		WETTER THAN PLASTIC LIMIT	j	$kn/m^3$	SEEPAGE FORCE
e	1, %	VOID RATIO						

**RECORD OF BOREHOLE No N1**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 828.8 N; 221 702.2 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT MOISTURE LIMIT CONTENT			UNIT WEIGHT $\gamma$ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100	W <sub>p</sub>	w	W <sub>L</sub>			
185.5	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N2**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 847.7 N; 221 693.2 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20	40	60	80	100					
183.5	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																



**RECORD OF BOREHOLE No N4**      1 of 1      **METRIC**

G.W.P. 5267-05-01      LOCATION Coords: 5 095 850.7 N; 221 699.7 E      ORIGINATED BY F.P.  
 DIST 54      HWY 69      BOREHOLE TYPE NQ Diamond Coring      COMPILED BY G.D.  
 DATUM Geodetic      DATE March 30, 2010      CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80					
182.1	Ground Surface															
0.0	Augered through fill material					182										
181.7																
0.4	Granitic Gneiss bedrock Slightly weathered Medium to high strength Excellent quality		1	RC NQ	REC 100%	181										RQD 100%
			2	RC NQ	REC 100%	180										RQD 94%
178.7						179										
3.4	End of borehole															
	* Borehole charged with drilling water															

**RECORD OF BOREHOLE No N4A**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 850.0 N; 221 703.5 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100						
182.2	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N5**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 850.7 N; 221 695.9 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE NQ Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE March 30, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT			UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80	100	W <sub>p</sub>	w		
182.0 0.0	Ground Surface															
181.9 0.1	Topsoil Granitic Gneiss bedrock Slightly weathered High strength Excellent quality		1	RC NQ	REC 100%											RQD 94%
			2	RC NQ	REC 99%											RQD 99%
178.8 3.2	End of borehole															
	* Borehole charged with drilling water															

**RECORD OF BOREHOLE No N6**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 851.4 N; 221 692.8 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE NQ Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE March 30, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80					
181.9 0.0	Ground Surface															
181.8 0.1	Topsoil Granitic Gneiss bedrock Slightly weathered High strength Very poor to 0.6m depth, becoming excellent quality		1	RC NQ	REC 100%											RQD 62%
			2	RC NQ	REC 100%											RQD 92%
178.6 3.3	End of borehole															
	* Borehole charged with drilling water															

**RECORD OF BOREHOLE No N7**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 853.0 N; 221 706.7 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80					
180.8 0.0	Ground Surface Topsoil															
180.6 0.2 180.1 0.7	Sand, with gravel cobbles and boulders (FILL) End of borehole Refusal on probable bedrock															
	* Borehole dry															

**RECORD OF BOREHOLE No N8**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 877.2 N; 221 691.3 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE NQ Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE March 30, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100
179.8	Ground Surface																
0.0	Topsoil																
179.5	Granitic Gneiss bedrock Slightly weathered High strength Excellent quality		1	RC NQ	REC 100%	179										RQD 98%	
0.3			2	RC NQ	REC 99%	178											RQD 99%
							177										
176.3	End of borehole																
3.5	* Borehole charged with drilling water																

**RECORD OF BOREHOLE No N9**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 878.5 N; 221 702.3 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE NQ Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE March 29, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	SHEAR STRENGTH kPa
180.4	Ground Surface																	
0.0	Sand (FILL)																	
179.6	Granitic Gneiss bedrock Slightly weathered High strength Fair to good quality		1	RC NQ	REC 100%											RQD 81%		
0.8			2	RC NQ	REC 93%												RQD 51%	
			3	RC BQ	REC 97%													RQD 84%
176.1			End of borehole															
4.3	* Borehole charged with drilling water																	

**RECORD OF BOREHOLE No N9A**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 879.4 N; 221 699.4 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT MOISTURE LIMIT CONTENT			UNIT WEIGHT $\gamma$ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100	W <sub>p</sub>	w	W <sub>L</sub>			
180.4	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N10**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 880.8 N; 221 696.2 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE NQ Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE March 29, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100
											○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE			WATER CONTENT (%)			
179.6 0.0	Ground Surface Topsoil																
179.1 0.5	Granitic Gneiss bedrock Slightly weathered High strength Poor to fair becoming excellent quality		1	RC NQ	REC 100%	179										RQD 46%	
			2	RC NQ	REC 100%	178											RQD 59%
			3	RC NQ	REC 100%	177											RQD 93%
176.1 3.5	End of borehole																
	* Borehole charged with drilling water																

**RECORD OF BOREHOLE No N11**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 877.7 N; 221 693.5 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE NQ Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE March 29, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80					
179.5 0.0	Ground Surface Sandy topsoil															
	(FILL)															
179.0 0.5	Granitic Gneiss bedrock Slightly weathered High strength Fair to excellent quality		1	RC NQ	REC 100%	179										RQD 66%
			2	RC NQ	REC 100%	178										RQD 100%
			3	RC NQ	REC 100%	177										RQD 56%
175.8 3.7	End of borehole  * Borehole charged with drilling water					176										

**RECORD OF BOREHOLE No N12**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 880.2 N; 221 690.9 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80					
179.5 0.0	Ground Surface Topsoil															
179.3 0.2	End of borehole Refusal on probable bedrock															
	* Borehole dry															

**RECORD OF BOREHOLE No N13**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 881.5 N; 221 701.9 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100	20					
179.6	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N14**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 958.2 N; 221 683.0 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Rotary Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE November 30, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	SHEAR STRENGTH kPa
180.9	Ground Surface																	
0.0	Granitic Gneiss bedrock Slightly weathered Medium to high strength Poor becoming fair to good quality		1	RC NQ	REC 90%											RQD 40%		
			2	RC NQ	REC 97%	180												RQD 86%
			3	RC NQ	REC 100%	179												RQD 88%
			4	RC NQ	REC 100%	178												RQD 51%
177.8	End of borehole																	
3.1	* Borehole charged with drilling water																	



**RECORD OF BOREHOLE No N15A**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 955.9 N; 221 693.3 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100						
179.1	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N16**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 959.1 N; 221 687.9 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Rotary Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE November 19, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100
179.9	Ground Surface																
0.0	Granitic Gneiss bedrock		1	RC	REC 72%											RQD 0%	
	Slightly weathered		2	RC	REC 100%												RQD 43%
	High strength		3	RC NQ	REC 85%	179											RQD 73%
	Very poor to poor becoming fair to good quality		4	RC NQ	REC 86%												RQD 81%
			5	RC NQ	REC 92%	178											RQD 74%
			6	RC NQ	REC 78%	177											RQD 53%
176.8	End of borehole																
3.1	* Borehole charged with drilling water																

**RECORD OF BOREHOLE No N17**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 958.8 N; 221 685.2 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
					20	40	60	80	100								
180.6	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N18**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 958.5 N; 221 675.2 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100						
181.3	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N19**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 963.0 N; 221 693.7 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Rotary Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE November 30, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)																		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	SHEAR STRENGTH kPa			WATER CONTENT (%)													
179.1	Ground Surface																																	
0.0	Granitic Gneiss bedrock Unweathered to slightly weathered Medium to high strength Very poor becoming fair to good (locally poor) quality		1	RC	REC100%	*	179												RQD 0%															
			2	RC	REC100%																												RQD 0%	
			3	RC NQ	REC 100%																													RQD 80%
			4	RC NQ	REC 100%																													RQD 28%
			5	RC NQ	REC 100%																													RQD 70%
176.0	End of borehole																																	
3.1	* Borehole charged with drilling water																																	

**RECORD OF BOREHOLE No N19A**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 969.8 N; 221 690.0 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
180.2	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N20**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 985.6 N; 221 675.1 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Rotary Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE November 13, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80					
184.1	Ground Surface															
0.0	Granitic Gneiss bedrock Slightly weathered High strength Excellent becoming fair quality		1	RC NQ	REC 100%											RQD 100%
			2	RC	REC 100%											RQD 100%
			3	RC NQ	REC 100%											RQD 100%
			4	RC NQ	REC 94%											RQD 67%
181.0	End of borehole															
3.1	* Borehole charged with drilling water															

**RECORD OF BOREHOLE No N20A**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 984.2 N; 221 675.3 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
183.6	Ground Surface						20	40	60	80	100						
0.0	Bedrock at surface					*											
	* Borehole dry																

**RECORD OF BOREHOLE No N21**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 984.5 N; 221 689.2 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Rotary Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE November 18, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	WATER CONTENT (%)
184.9	Ground Surface															GR SA SI CL		
0.0	Granitic Gneiss bedrock Slightly weathered High strength Excellent (locally very poor to poor) becoming good to fair quality		1	RC	REC 100%											RQD 100%		
			2	RC NQ	REC 100%													RQD 100%
			3	RC	REC 100%													RQD 0%
			4	RC	REC 100%													RQD 34%
			5	RC NQ	REC 100%													RQD 100%
			6	RC NQ	REC 97%													RQD 86%
			7	RC	REC 100%													RQD 67%
181.8	End of borehole																	
3.1	* Borehole charged with drilling water																	

**RECORD OF BOREHOLE No N21A**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 986.1 N; 221 691.2 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100						
185.6	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N22**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 992.8 N; 221 683.2 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Rotary Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE November 16, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT $\gamma$ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa									WATER CONTENT (%)
						20 40 60 80 100											
187.5	Ground Surface																
0.0	Granitic Gneiss bedrock Slightly weathered to unweathered High strength Excellent to good quality		1	RC NQ	REC 100%											RQD 100%	
			2	RC NQ	REC 98%												RQD 98%
			3	RC NQ	REC 100%												RQD 79%
			4	RC NQ	REC 89%												RQD 89%
184.4	End of borehole																
3.1	* Borehole charged with drilling water																

**RECORD OF BOREHOLE No N22A**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 987.7 N; 221 683.7 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
185.7	Ground Surface							20	40	60	80	100					
0.0	Bedrock at surface					*											
	* Borehole dry																

**RECORD OF BOREHOLE No N23**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 985.8 N; 221 681.1 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100	WATER CONTENT (%)					
186.9	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N24**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 988.8 N; 221 674.8 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100	WATER CONTENT (%)					
184.9	Ground Surface																
0.0	Boulders at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N24A**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 990.5 N; 221 676.3 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100	WATER CONTENT (%)					
186.3	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N24B**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 987.3 N; 221 674.9 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100						
184.4	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N25**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 990.8 N; 221 692.4 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Rotary Diamond Coring COMPILED BY G.D.  
 DATUM Geodetic DATE November 17, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80						100	WATER CONTENT (%)
188.1	Ground Surface																	
0.0	Granitic Gneiss bedrock Slightly weathered High strength Fair (locally poor) becoming good quality		1	RC NQ	REC 100%											RQD 66%		
			2	RC NQ	REC 100%													RQD 39%
			3	RC NQ	REC 98%													RQD 63%
			4	RC NQ	REC 98%													RQD 89%
184.8	End of borehole																	
3.3	* Borehole charged with drilling water																	

**RECORD OF BOREHOLE No N25A**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 990.6 N; 221 690.7 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100						
187.7	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N25B**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 992.3 N; 221 688.0 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100						
188.6	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No N26**

1 of 1

**METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 096 009.6 N; 221 681.1 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100						
199.5	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No APS-N1 1 of 1 METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 844.3 N; 221 688.6 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa												
185.0	Ground Surface						20	40	60	80	100						
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No APS-N2 1 of 1 METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 847.1 N; 221 712.4 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Continuous Flight Solid Stem Augers COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80					
181.1	Ground Surface															
0.0	Sandy topsoil cobbles															
180.6	(FILL)															
0.5	End of borehole Refusal on probable bedrock															
	* Borehole dry															

**RECORD OF BOREHOLE No APS-N3 1 of 1 METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 854.3 N; 221 687.4 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			UNIT WEIGHT $\gamma$ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100	W <sub>p</sub>	w	W <sub>L</sub>			
184.4	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No APS-N4 1 of 1 METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 857.1 N; 221 711.3 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Continuous Flight Solid Stem Augers COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80					
180.9	Ground Surface															
0.0	Topsoil															
180.7	Sand, with gravel cobbles and boulders															
180.3																
0.6	Brown Damp (FILL)															
	End of borehole															
	Refusal on probable bedrock															
	* Borehole dry															

**RECORD OF BOREHOLE No APS-N5 1 of 1 METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 851.6 N; 221 711.9 E ORIGINATED BY F.P.  
 DIST 54 HWY 69 BOREHOLE TYPE Continuous Flight Solid Stem Augers COMPILED BY G.D.  
 DATUM Geodetic DATE March 31, 2010 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80					
181.1	Ground Surface															
0.0	Sand, trace gravel cobbles and boulders					181										
180.5	(FILL)															
0.6	End of borehole Refusal on probable bedrock															
	* Borehole dry															

**RECORD OF BOREHOLE No APN-N1 1 of 1 METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 979.3 N; 221 675.9 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT			UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	20	40	60	80	100	W <sub>p</sub>	w		
181.3	Ground Surface	••														
0.0 181.0	Sand, some silt Brown	••														
0.3	End of borehole Refusal on probable bedrock															
	* Borehole dry															

**RECORD OF BOREHOLE No APN-N2 1 of 1 METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 980.3 N; 221 684.5 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100	20					
181.7	Ground Surface																
0.0	Boulders at surface																
	* Borehole dry																

**RECORD OF BOREHOLE No APN-N3 1 of 1 METRIC**

G.W.P. 5267-05-01 LOCATION Coords: 5 095 981.1 N; 221 691.8 E ORIGINATED BY M.R.  
 DIST 54 HWY 69 BOREHOLE TYPE Manual Probing COMPILED BY G.D.  
 DATUM Geodetic DATE December 01, 2009 CHECKED BY C.N.

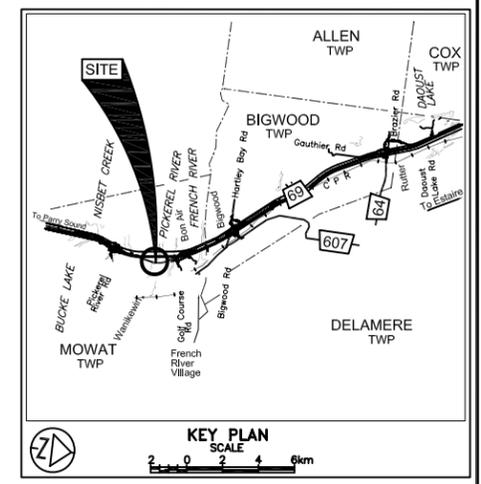
SOIL PROFILE		SAMPLES				GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W <sub>p</sub>	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W <sub>L</sub>	UNIT WEIGHT γ kN/m <sup>3</sup>	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT NUMBER	TYPE	"N" VALUES	20			40	60	80	100						
181.7	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

CONT No  
WP No 5267-05-01



PICKEREL RIVER NBL BRIDGE  
HIGHWAY 69  
BOREHOLE LOCATIONS AND SOIL STRATA

SHEET



- LEGEND**
- Borehole
  - ⊕ Dynamic Cone Penetration Test (Cone)
  - ⊕ Borehole & Cone
  - N Blows/0.3m (Std. Pen Test, 475 J/blow)
  - CONE Blows/0.3m (60 Cone, 475 J/blow)
  - W L at time of investigation: Nov-Dec 2009 and March 2010
  - \* Water level not established
  - ▽ Head
  - ▽ ARTESIAN WATER Encountered
  - PIEZOMETER

BH No	ELEVATION	CO-ORDINATES	
		NORTHINGS	EASTINGS
N1	185.5	5 095 828.8	221 702.2
N2	183.5	5 095 847.7	221 693.2
N3	180.9	5 095 849.5	221 708.6
N4	182.1	5 095 850.7	221 699.7
N4A	182.2	5 095 850.7	221 703.5
N5	182.0	5 095 850.7	221 695.9
N6	181.9	5 095 851.4	221 692.8
N7	180.8	5 095 853.0	221 706.7
N8	179.8	5 095 877.2	221 691.3
N9	180.4	5 095 878.5	221 702.3
N9A	180.4	5 095 879.4	221 699.4
N10	179.6	5 095 880.8	221 696.2

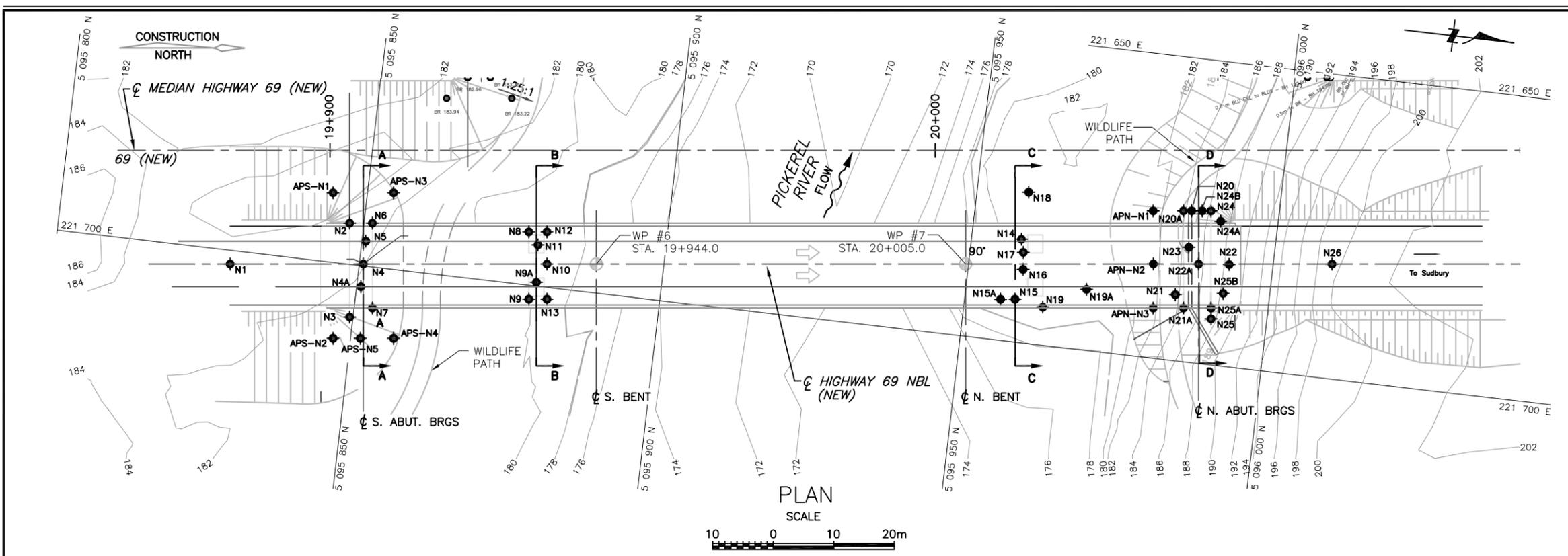
(Legend Continues)

— NOTE —  
The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

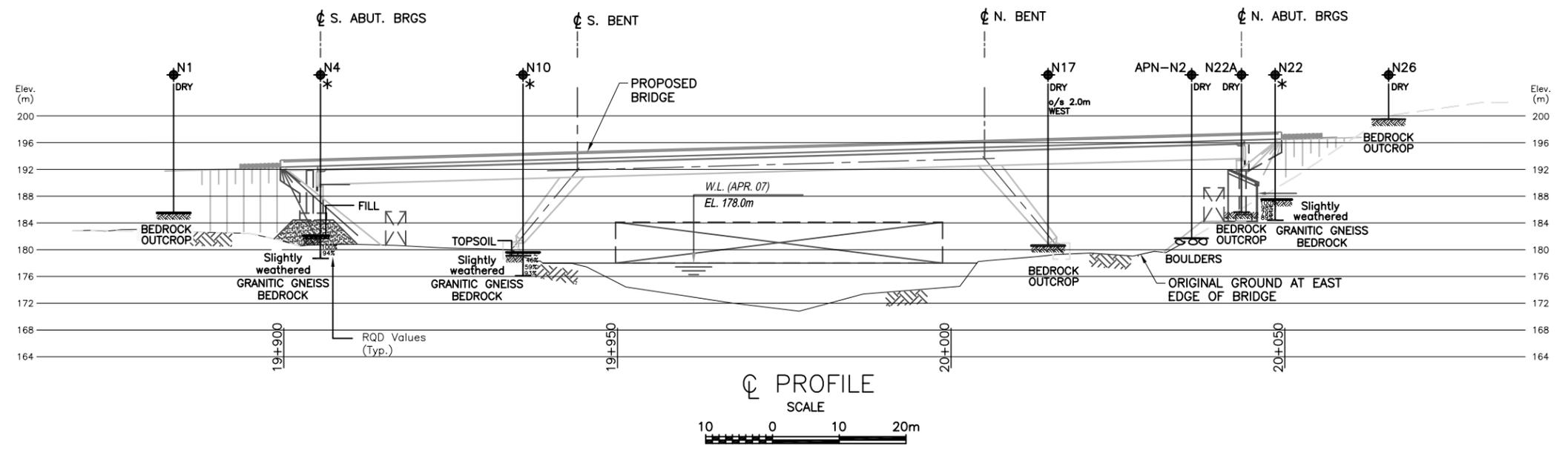
DATE	BY	DESCRIPTION

Geocres No. 41H-89

HWY No 69	CHECKED GD	DATE FEB. 03, 2010	DIST 54
SUBM'D MN	CHECKED CN	SITE 44-429/1	
DRAWN NA	CHECKED CN	APPROVED BRG	DWG PRN-1



PLAN SCALE  
10 0 10 20m



PROFILE SCALE  
10 0 10 20m

(Legend Continued)

BH No	ELEVATION	CO-ORDINATES	CO-ORDINATES
		NORTHINGS	EASTINGS
N25A	187.7	5 095 990.6	221 690.7
N25B	188.6	5 095 992.3	221 688.0
N26	199.5	5 096 009.6	221 681.1
APS-N1	185.0	5 095 844.3	221 688.6
APS-N2	181.1	5 095 847.1	221 712.4
APS-N3	184.4	5 095 854.3	221 687.4
APS-N4	180.9	5 095 857.1	221 711.3
APS-N5	181.1	5 095 851.6	221 711.9
APN-N1	181.3	5 095 979.3	221 675.9
APN-N2	181.7	5 095 980.3	221 684.5
APN-N3	181.7	5 095 981.1	221 691.8

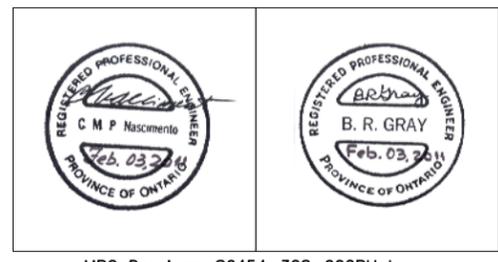
(Legend Continued)

BH No	ELEVATION	CO-ORDINATES	CO-ORDINATES
		NORTHINGS	EASTINGS
N20	184.1	5 095 985.6	221 675.1
N20A	183.6	5 095 984.2	221 675.3
N21	184.9	5 095 984.5	221 689.2
N21A	185.6	5 095 986.1	221 691.2
N22	187.5	5 095 992.8	221 683.2
N22A	185.7	5 095 987.7	221 683.7
N23	186.9	5 095 985.8	221 681.1
N24	184.9	5 095 988.8	221 674.8
N24A	186.3	5 095 990.5	221 676.3
N24B	184.4	5 095 987.3	221 674.9
N25	188.1	5 095 990.8	221 692.4

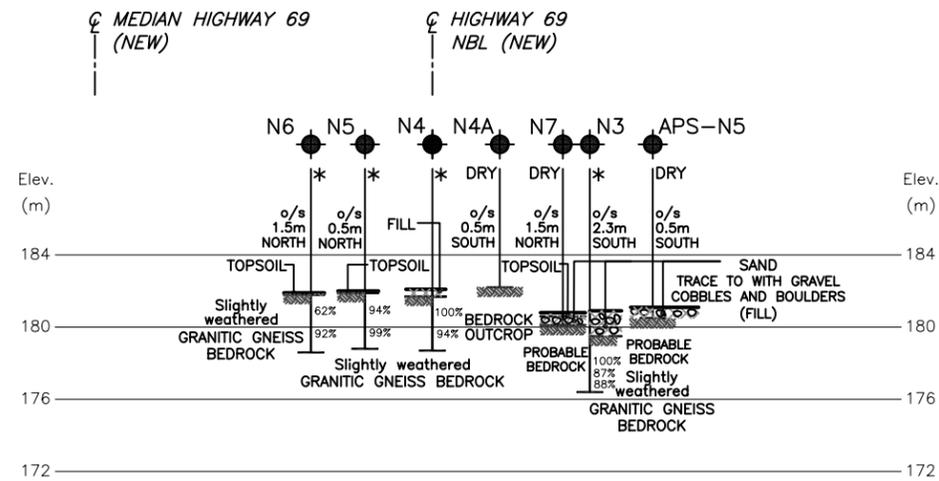
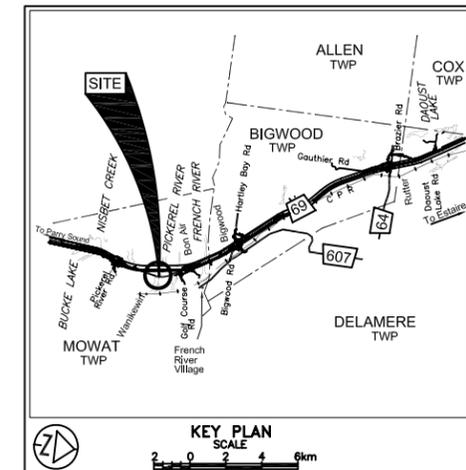
(Legend Continued)

BH No	ELEVATION	CO-ORDINATES	CO-ORDINATES
		NORTHINGS	EASTINGS
N11	179.5	5 095 879.0	221 693.2
N12	179.5	5 095 880.2	221 690.9
N13	179.6	5 095 881.5	221 701.9
N14	180.9	5 095 958.2	221 683.0
N15	179.3	5 095 958.3	221 693.0
N15A	179.1	5 095 955.9	221 693.3
N16	179.9	5 095 959.1	221 687.9
N17	180.6	5 095 958.8	221 685.2
N18	181.3	5 095 958.5	221 675.2
N19	179.1	5 095 963.0	221 693.7
N19A	180.2	5 095 969.8	221 690.0

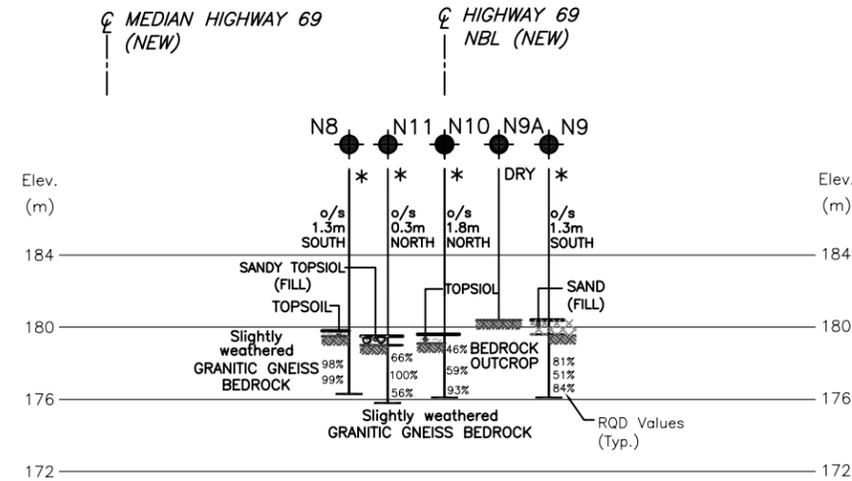
- NOTES:
- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
  - REFER TO DRAWING PRN-2 FOR SECTIONS A-A, B-B, C-C AND D-D.
  - THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
  - DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



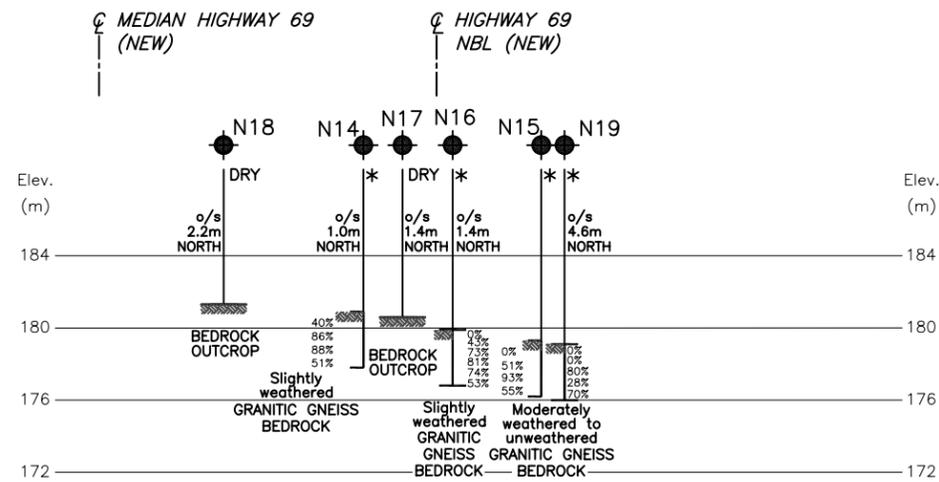
MRC Drawings: S6454-328-002BH.dwg;  
dated October 2009



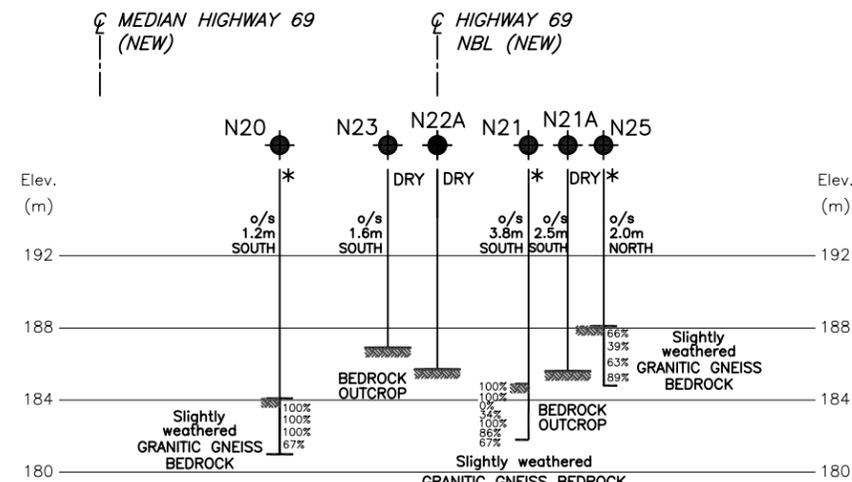
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

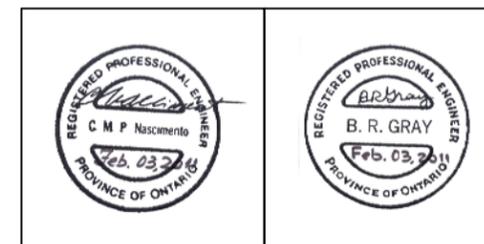


LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 Cone, 475 J/blow)
- W L at time of investigation: Nov-Dec 2009 and March 2010
- \* Water level not established
- Head
- ARTESIAN WATER
- Encountered
- PIEZOMETER

BH No	ELEVATION	CO-ORDINATES	
		NORTHINGS	EASTINGS
SEE DRAWING PRN-1 FOR DETAILS.			

- NOTES:
- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND RECORD OF BOREHOLE LOGS.
  - REFER TO DRAWING PRN-1 FOR BOREHOLE LOCATIONS PLAN AND CENTRELINE PROFILE.
  - THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.
  - DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN. STATIONS ARE IN KILOMETRES AND METRES.



NOTE -  
The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS

DATE	BY	DESCRIPTION

Geocres No. 41H-89

HWY No 69	DIST 54
SUBM'D MN	CHECKED GD
DATE FEB. 03, 2010	SITE 44-429/1
DRAWN NA	CHECKED CN
APPROVED BRG	IDWG PRN-2

Pickerel River Bridge Northbound  
Highway 69 Four-Laning, Site No. 44-429/1  
W.P. 5267-05-01 (Part of G.W.P. 5378-02-00), Index No.: 2413FIR  
PML Ref.: 06TF032L, February 4, 2011

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## **APPENDIX A**

Site Photographs



**Photograph 1:** South pier, facing northeast



**Photograph 2:** Looking north at north pier and north abutment



**Photograph 3:** North pier, facing southwest



**Photograph 4:** North pier, facing east

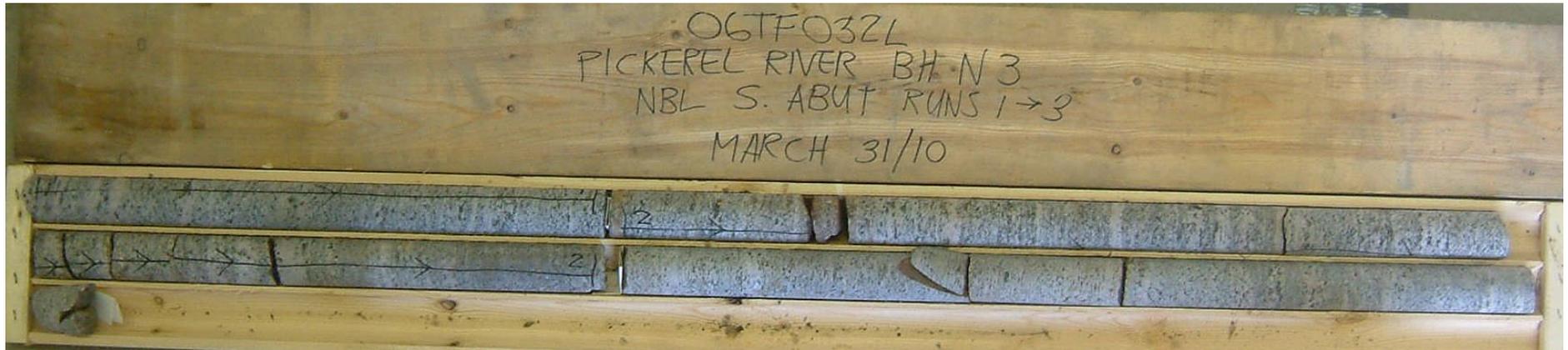
Pickerel River Bridge Northbound  
Highway 69 Four-Laning, Site No. 44-429/1  
W.P. 5267-05-01 (Part of G.W.P. 5378-02-00), Index No.: 2413FIR  
PML Ref.: 06TF032L, February 4, 2011

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## **APPENDIX B**

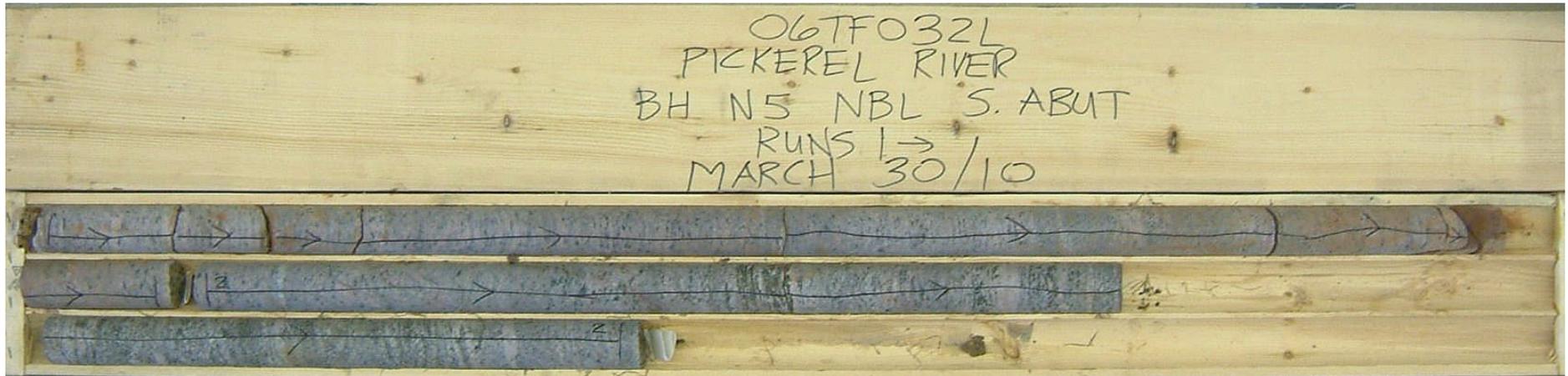
Rock Core Photographs



**Photograph 1:** Borehole N3, samples RC-1 to RC-3 from 1.4 to 4.5 m depth. The RQD values ranged from 87 to 100%, indicating good to excellent quality bedrock.



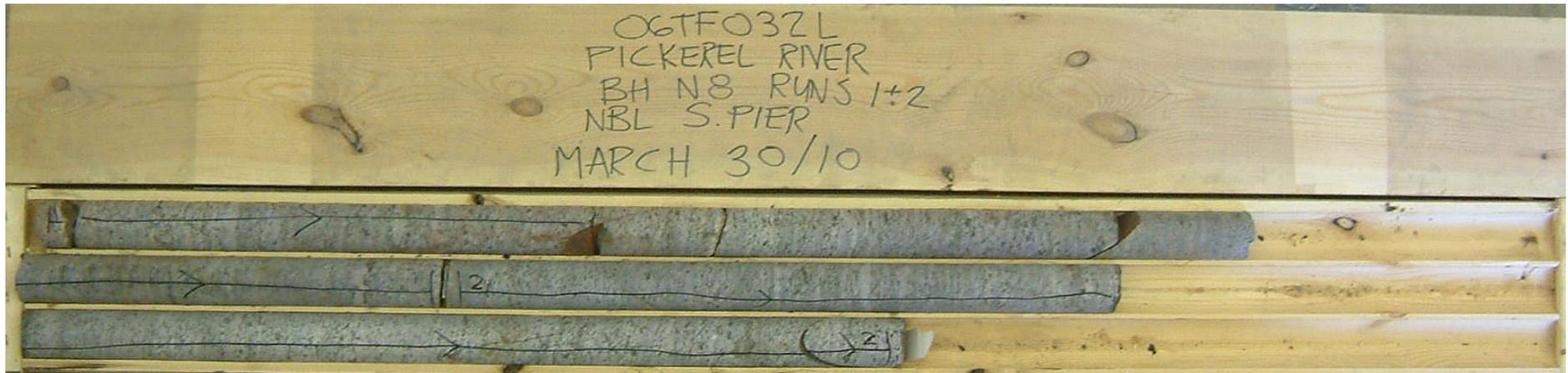
**Photograph 2:** Borehole N4, samples RC-1 and RC-2 from 0.4 to 3.4 m depth. The RQD values were 94 and 100%, indicating excellent quality bedrock.



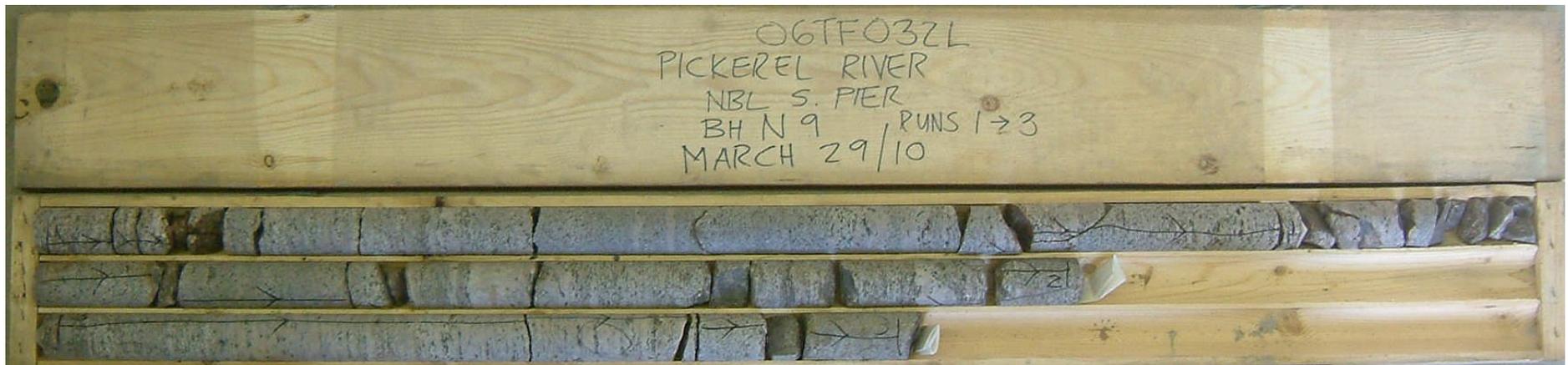
**Photograph 3:** Borehole N5, samples RC-1 and RC-2 from 0.1 to 3.2 m depth. The RQD values were 94 and 99%, indicating excellent quality bedrock.



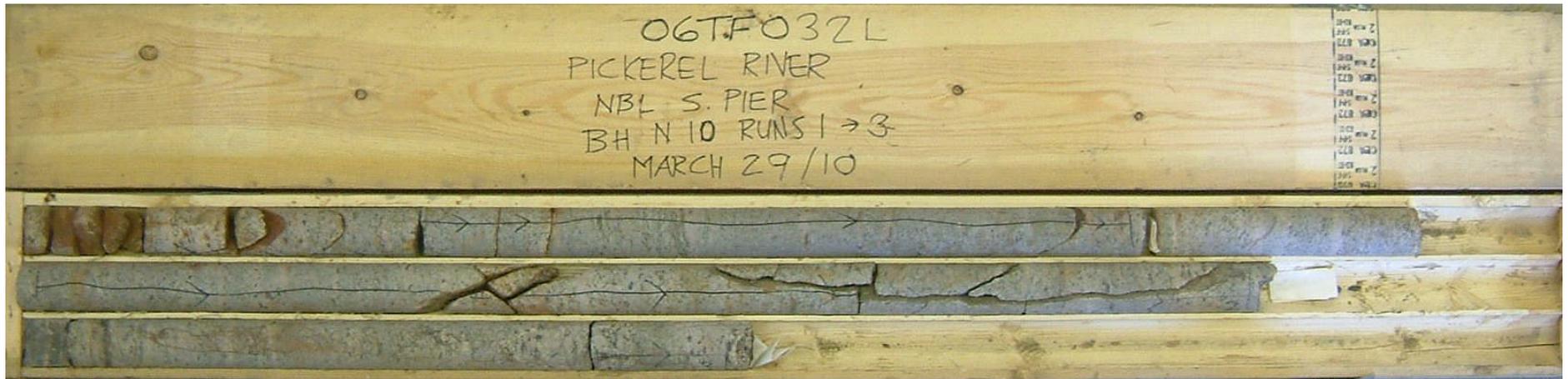
**Photograph 4:** Borehole N6, samples RC-1 and RC-2 from 0.1 to 3.3 m depth. The RQD values were 62 and 92% – very poor quality to 0.6 m depth, becoming excellent quality bedrock.



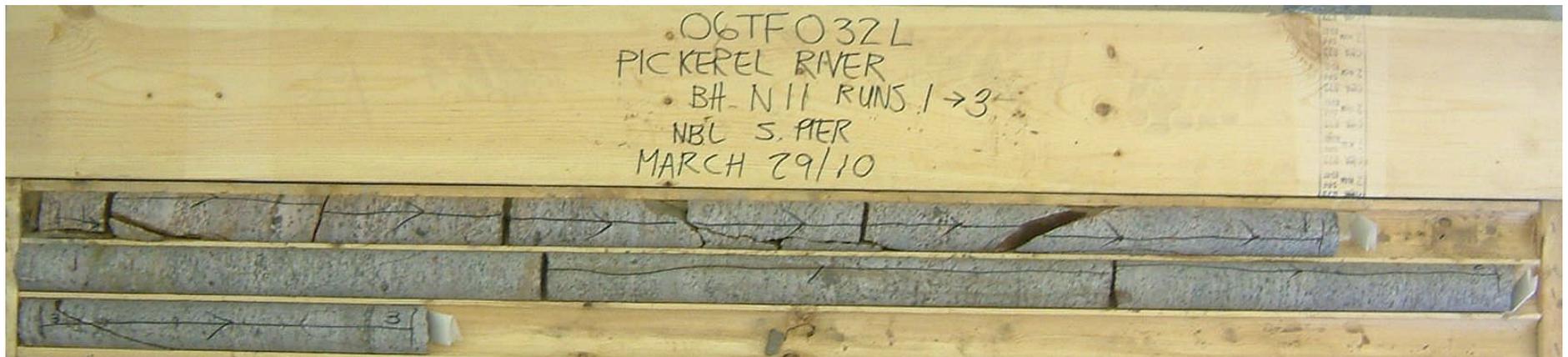
**Photograph 5:** Borehole N8, samples RC-1 and RC-2 from 0.3 to 3.5 m depth. The RQD values were 98 and 99%, indicating excellent quality bedrock.



**Photograph 6:** Borehole N9, samples RC-1 to RC-3 from 0.8 to 4.3 m depth. The RQD values ranged from 51 to 84%, indicating fair to good quality bedrock.



**Photograph 7:** Borehole N10, samples RC-1 to RC-3 from 0.5 to 3.5 m depth. The RQD values ranged from 46 to 93%, indicating poor to fair becoming excellent quality bedrock.



**Photograph 8:** Borehole N11, samples RC-1 to RC-3 from 0.5 to 3.7 m depth. The RQD values ranged from 56 to 100%, indicating fair to excellent quality bedrock.



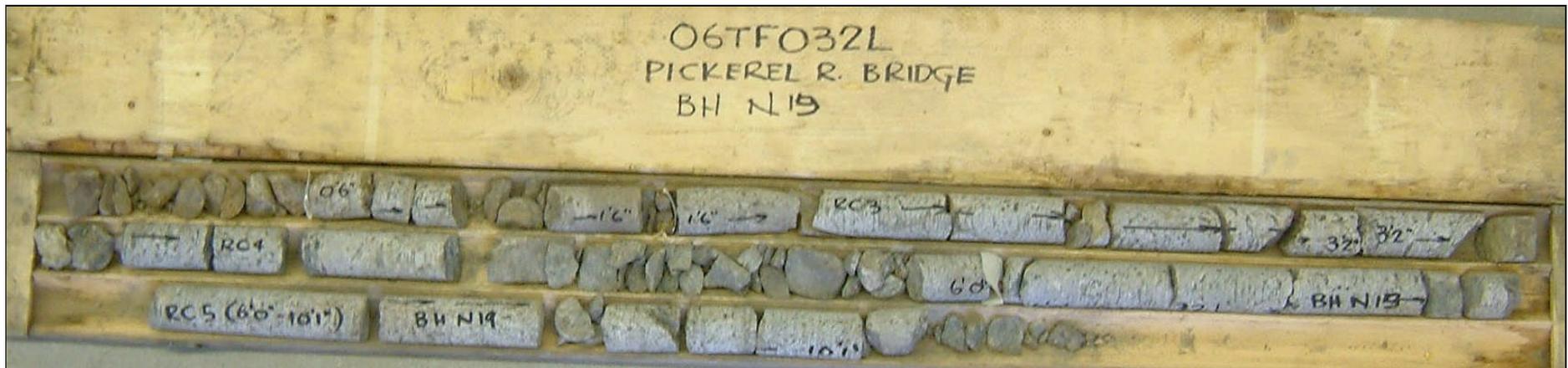
**Photograph 9:** Borehole N14, samples RC-1 to RC-4 from 0.0 to 3.1 m depth. The RQD values ranged from 40 to 88%, indicating poor becoming fair to good quality bedrock.



**Photograph 10:** Borehole N15, samples RC-1 to RC-4 from 0.0 to 3.1 m depth. The RQD values ranged from 0 to 93%, indicating very poor becoming fair (locally excellent) quality bedrock.



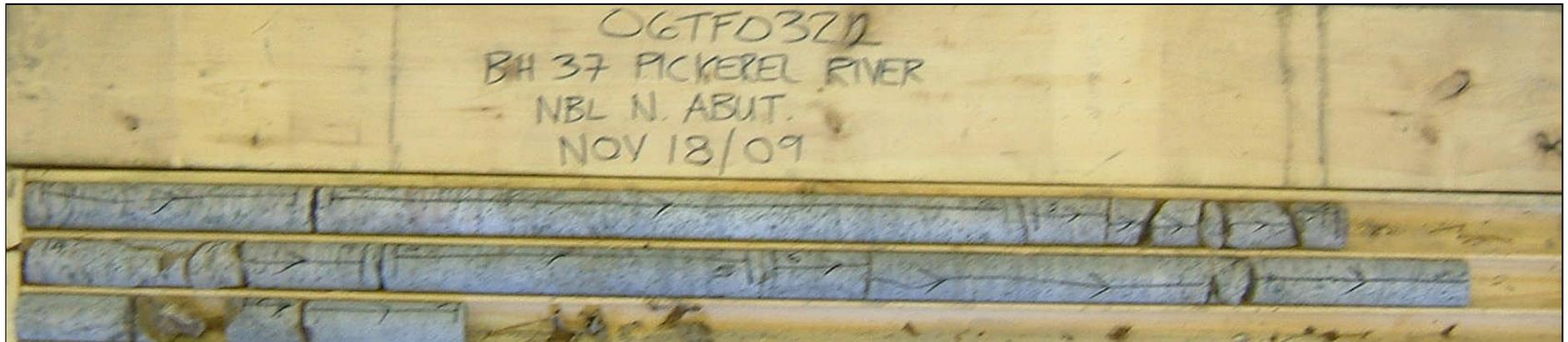
**Photograph 11:** Borehole N16, samples RC-1 to RC-6 from 0.0 to 3.1 m depth. The RQD values ranged from 0 to 81%, indicating very poor to poor becoming fair to good quality bedrock.



**Photograph 12:** Borehole N19, samples RC-1 to RC-5 from 0.0 to 3.1 m depth. The RQD values ranged from 0 to 80%, indicating very poor becoming fair to good (locally poor) quality bedrock.



**Photograph 13:** Borehole N20, samples RC-1 to RC-4 from 0.0 to 3.1 m depth. The RQD values ranged from 67 to 100%, indicating excellent becoming fair quality bedrock.



**Photograph 14:** Borehole N21, samples RC-1 to RC-7 from 0.0 to 3.1 m depth. The RQD values ranged from 0 to 100%, indicating excellent (locally very poor to poor) becoming good to fair quality bedrock.



**Photograph 15:** Borehole N22, samples RC-1 to RC-4 from 0.0 to 3.1 m depth. The RQD values ranged from 79 to 100%, indicating excellent to good quality bedrock.



**Photograph 16:** Borehole N25, samples RC-1 to RC-4 from 0.0 to 3.3 m depth. The RQD values ranged from 39 to 89%, indicating fair (locally poor) becoming good quality bedrock.