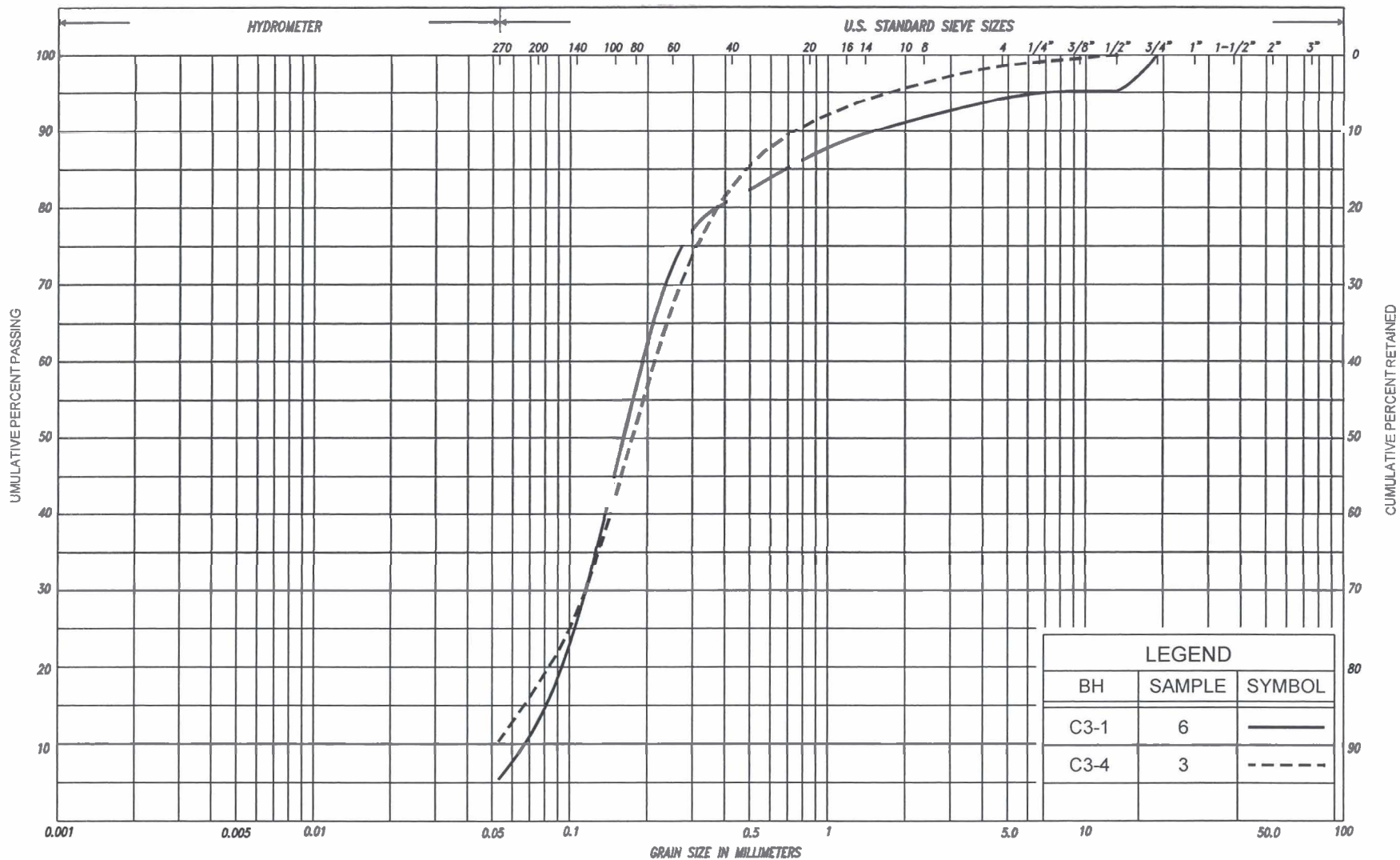


LEGEND		
BH	SAMPLE	SYMBOL
C3-1	1	—

SILT & CLAY				SAND			GRAVEL		COBBLES	UNIFIED
CLAY	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	GRAVEL		COBBLES	M.I.T.
										U.S. BUREAU



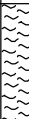





































SILT & CLAY				FINE		MEDIUM		COARSE		GRAVEL			COB BLES	UNIFIED		
				SAND												
CLAY	FINE		MEDIUM		COARSE		FINE		MEDIUM		COARSE		GRAVEL	COBBLES	M.I.T.	
	SILT															
CLAY		SILT			V. FINE		FINE		MED.		COARSE		GRAVEL			U.S. BUREAU
					SAND											

RECORD OF BOREHOLE No C3-1

1 of 2

METRIC

G.W.P. 5379-02-00 LOCATION Hwy 69(New), Sta. 13+274, o/s 58.7m Lt. of CL Med ORIGINATED BY M.R.
DIST 54 HWY 69 BOREHOLE TYPE C.F.H.S.A & NXL Rock Coring COMPILED BY G.D.
DATUM Geodetic DATE March 12&13, 2007 CHECKED BY G.D.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES		SHEAR STRENGTH kPa									
							○ UNCONFINED + FIELD VANE									
							● QUICK TRIAXIAL × LAB VANE									
							WATER CONTENT (%)									
201.9	Ground Surface						20	40	60	80	100	20	40	60		
0.0	Peat					▽*▽*										
200.7							201									
1.2	Clayey silt to silty clay some sand, trace gravel															
	Soft Blueish Wet grey		1	SS	4		200									1 12 51 36
																
			2	SS	2											
							199									
			3	SS	1											
				FV			198									
																
197.3																
4.6	Boulder		4	RC			197									
197.0																
4.9	Sand trace to some silt trace gravel, occ. cobbles occ. layers of silty sand															
	Compact Brown Wet						196									
			5	SS	12		195									
																
			6	SS	13		194									6 81 (13)
							193									
			7	SS	18		192									
							191									
			8	SS	19		190									
							189									
			9	SS	20		188									
																
			10	SS	21		187									
																
																
																
																
																
																
																
																
																
																
																
																
																
																
																

Cont'd

1 of 1

METRIC

Foundation Design

SOIL PROFILE						SAMPLES					
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT	PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
203.0 0.0	Ground Surface Peat, coarse, rootlets							SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL x LAB VANE	W _P W W _L	kN/m³	GR SA SI CL
202.2 0.8	Sand some silt, some gravel cobbles and boulders Moist to wet					*	202 201 200 199 198 197 196				
195.4 7.6	End of borehole Refusal on probable bedrock										
<div>* 2007 03 21</div> <div> Water level measured after drilling</div>											

RECORD OF BOREHOLE No C3-3

1 of 1

METRIC

G.W.P.	5379-02-00	LOCATION	Hwy 69(New), Sta. 13+274, o/s 18.8m Lt. of CL Med	ORIGINATED BY	N.L.B.
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DIST 54 HWY 69 BOREHOLE TYPE Continuous Flight Solid Stem Augers COMPILED BY G.D.

DATUM Geodetic DATE March 21, 2007 CHECKED BY G.D.





[illegible]

RECORD OF BOREHOLE No C3-4

1 of 1

METRIC

G.W.P. 5379-02-00 LOCATION Hwy 69(New), Sta. 13+274 CL Med ORIGINATED BY M.R.
DIST 54 HWY 69 BOREHOLE TYPE C.F.S.S.A & NXL Rock Coring COMPILED BY G.D.
DATUM Geodetic DATE March 14&19, 2007 CHECKED BY G.D.


SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										
								○ UNCONFINED		+ FIELD VANE								
								● QUICK TRIAXIAL		× LAB VANE		WATER CONTENT (%)						
206.8	Ground Surface					20	40	60	80	100	20	40	60			GR SA SI CL		
0.0	Boulders																	
0.3	Sand with silt, trace gravel cobbles Compact Brown Moist															1 81 (18)		
			1	SS	11	206												
			2	SS	22	205												
			3	SS	28	204							○					
			4	SS	19							○						
						203						○						
			6	SS	20	202												
						201												
200.3	Bedrock																	
6.5	Gabbro: medium to high strength good quality		7	RC NQ	REC 100%	200										RQD 88%		
						199												
			8	RC NQ	REC 100%	198									RQD 87%			
197.5	End of borehole																	
9.3																		

RECORD OF BOREHOLE No C3-5

1 of 1

METRIC

G.W.P. 5379-02-00 LOCATION Hwy 69(New), Sta. 13+274, o/s 18.8m Lt. of CL Med ORIGINATED BY N.L.B.
 DIST 54 HWY 69 BOREHOLE TYPE Continuous Flight Solid Stem Augers COMPILED BY G.D.
 DATUM Geodetic DATE March 21, 2007 CHECKED BY G.D.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
208.0	Ground Surface					207														
0.0	Topsoil																			
0.2	Sand with silt, with gravel num. cobbles and boulders																			
	Brown Moist																			
	Grey Wet																			
206.5																				
1.5	End of borehole																			
	Refusal on probable boulder																			
	* Borehole dry																			

RECORD OF BOREHOLE No C3-6

1 of 1

METRIC

G.W.P. 5379-02-00 LOCATION Hwy 69(New), Sta. 13+274, o/s 55.3m Rt. of CL Med ORIGINATED BY M.R.
DIST 54 HWY 69 BOREHOLE TYPE C.F.S.S.A & NXL Rock Coring COMPILED BY G.D.
DATUM Geodetic DATE March 20, 2007 CHECKED BY G.D.

SOIL PROFILE			SAMPLES			GROUND WATER	CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES				SHEAR STRENGTH kPa										WATER CONTENT (%)		
									○ UNCONFINED		+ FIELD VANE		● QUICK TRIAXIAL						× LAB VANE		-----
209.2	Ground Surface							20	40	60	80	100									
0.0	Boulders						209														
208.8																					
0.4	Sand with silt, with gravel																				
	Compact Brown/ Moist grey		1	SS	22		208														
			2	SS	28																
							207														
206.8																					
2.4	Bedrock		3	RC NQ	REC 100%		206										RQD 81%				
	Gabbro: medium to high strength good to excellent quality		4	RC NQ	REC 100%		205										RQD 100%				
			5	RC NQ	REC 100%		204										RQD 91%				
203.6																					
5.6	Migmatite: high strength excellent quality																				
	End of borehole																				
* 2007 03 20																					
▽ Water level observed during drilling																					
C.F.S.S.A- Denotes Continuous Flight Solid Stem Augers																					

METRIC

DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES UNLESS
OTHERWISE SHOWN. STATIONS
IN KILOMETRES + METRES

CONT No

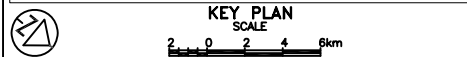
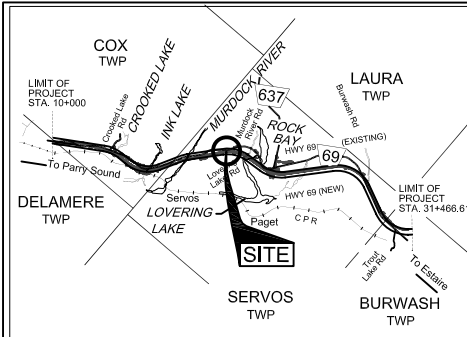
GWP No 5748-04-00

CULVERT AT STA. 13+274
HIGHWAY 69
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



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 Mar 2007
- Head
- ARTESIAN WATER Encountered
- PIEZOMETER

BH No	ELEVATION	STATION	OFFSET CL MEDIAN
C3-1	201.9	13+274	58.7m Lt.
C3-2	203.0	13+274	36.0m Lt.
C3-3	205.0	13+274	18.8m Lt.
C3-4	206.8	13+274	CL
C3-5	208.0	13+274	18.8m Rt.
C3-6	209.2	13+274	55.3m Rt.

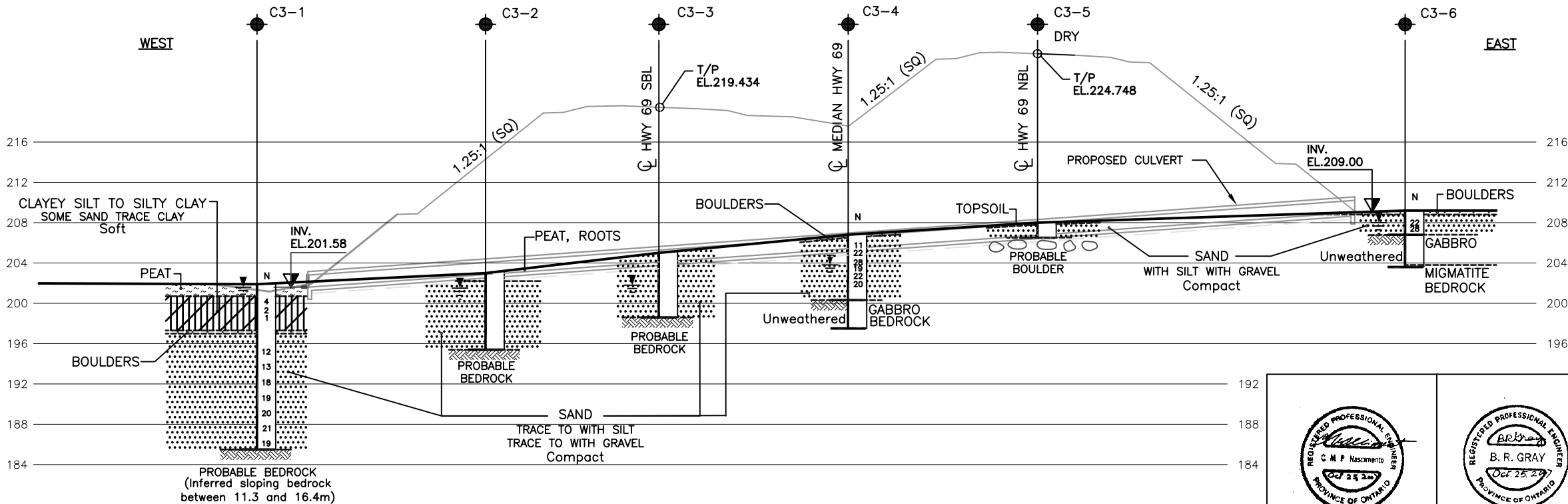
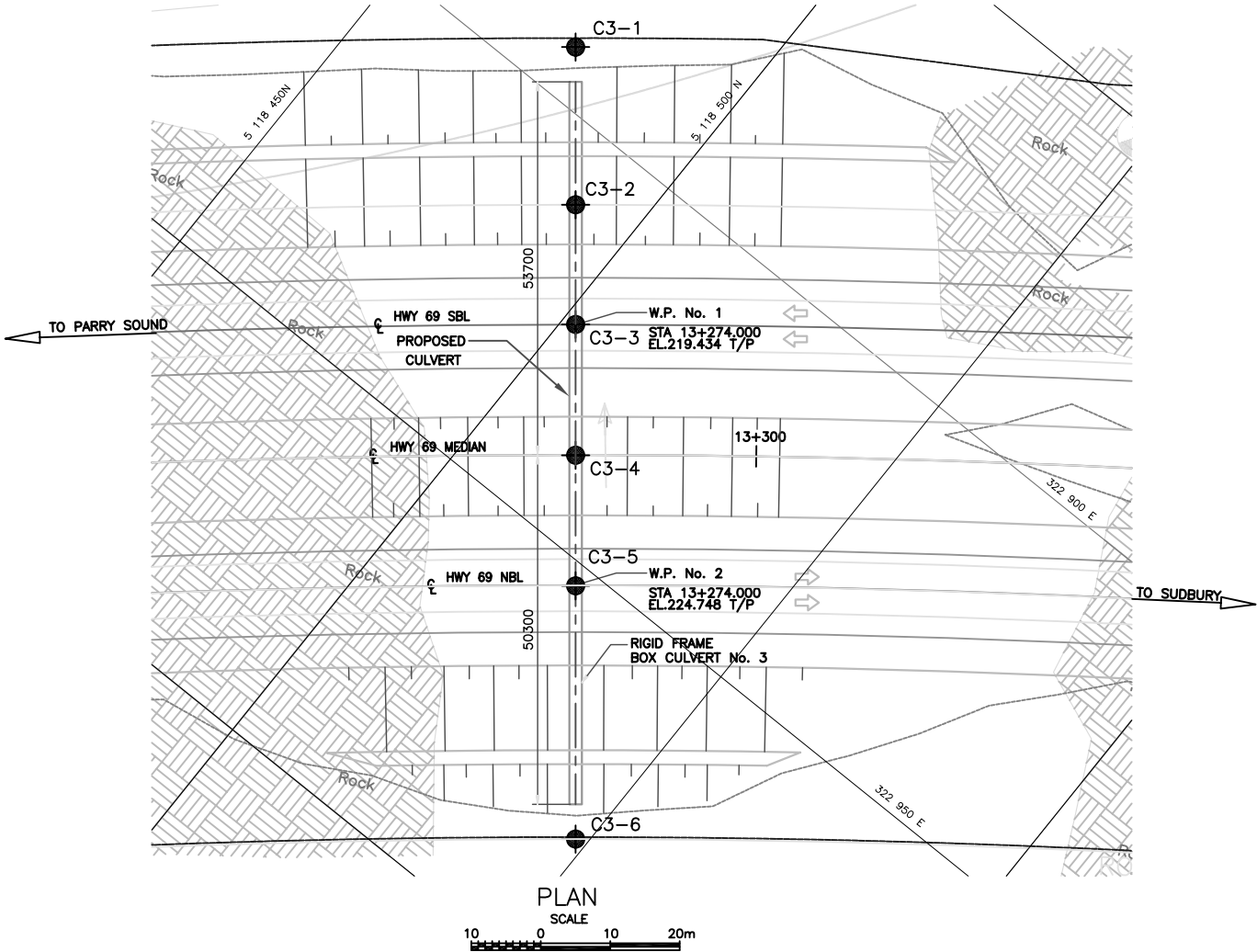
- NOTE -

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. 411-218

HWY No 69	SUBM'D FP	CHECKED GD	DATE OCT 25, 2007	SITE --
DRAWN NA	CHECKED CN	APPROVED BRG	DWG C3-1	



NOTE:

1. THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.



REF No.: TSH DRAWING: HWY 69 CULV3.dwg dated: June 2007,
received via email dated June 19, 2007