

METRIC

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

CONT No 2007-3043

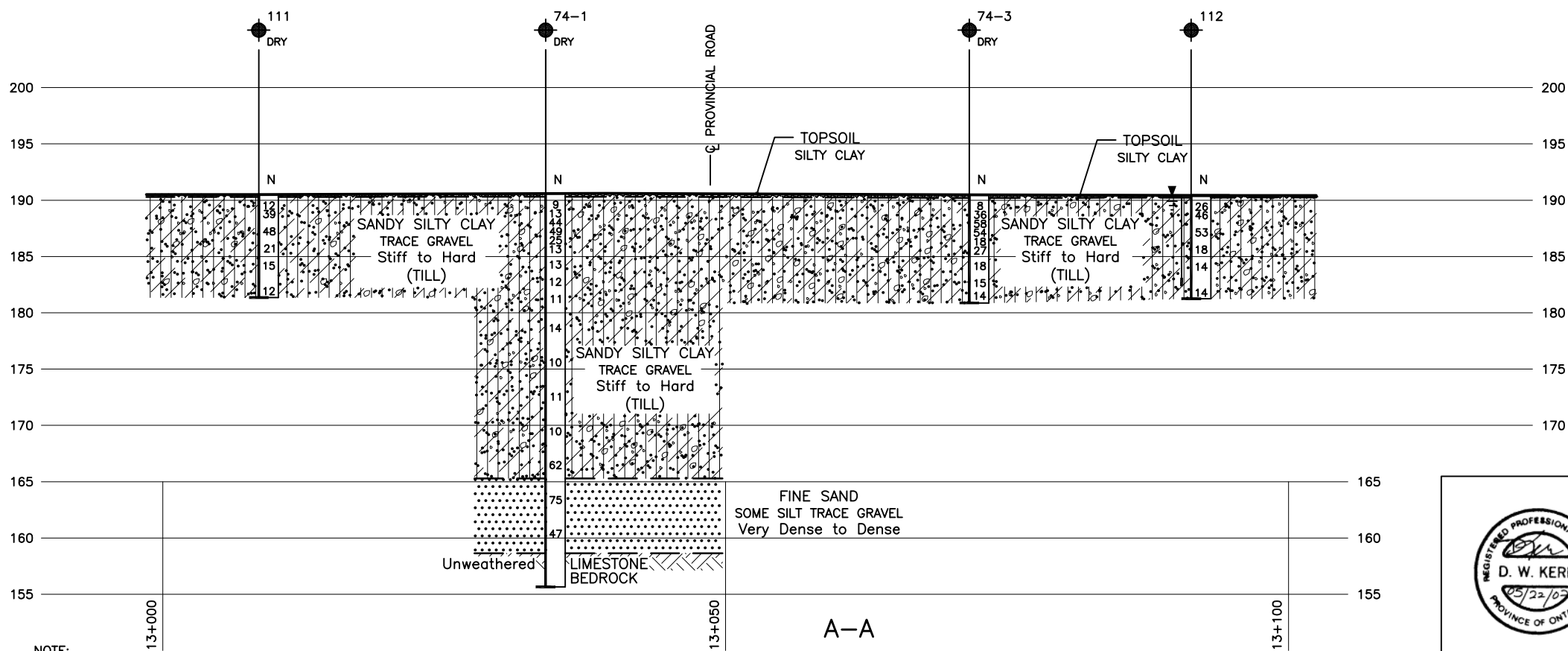
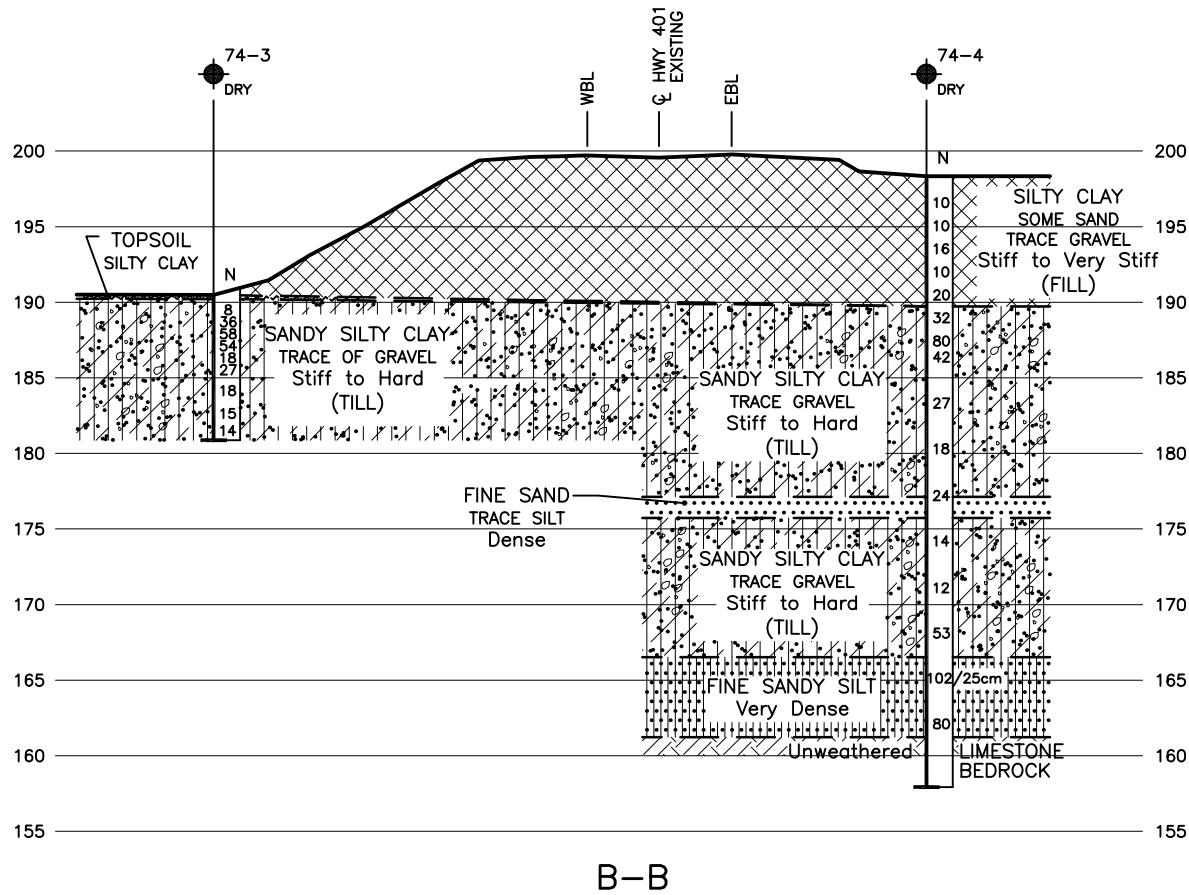
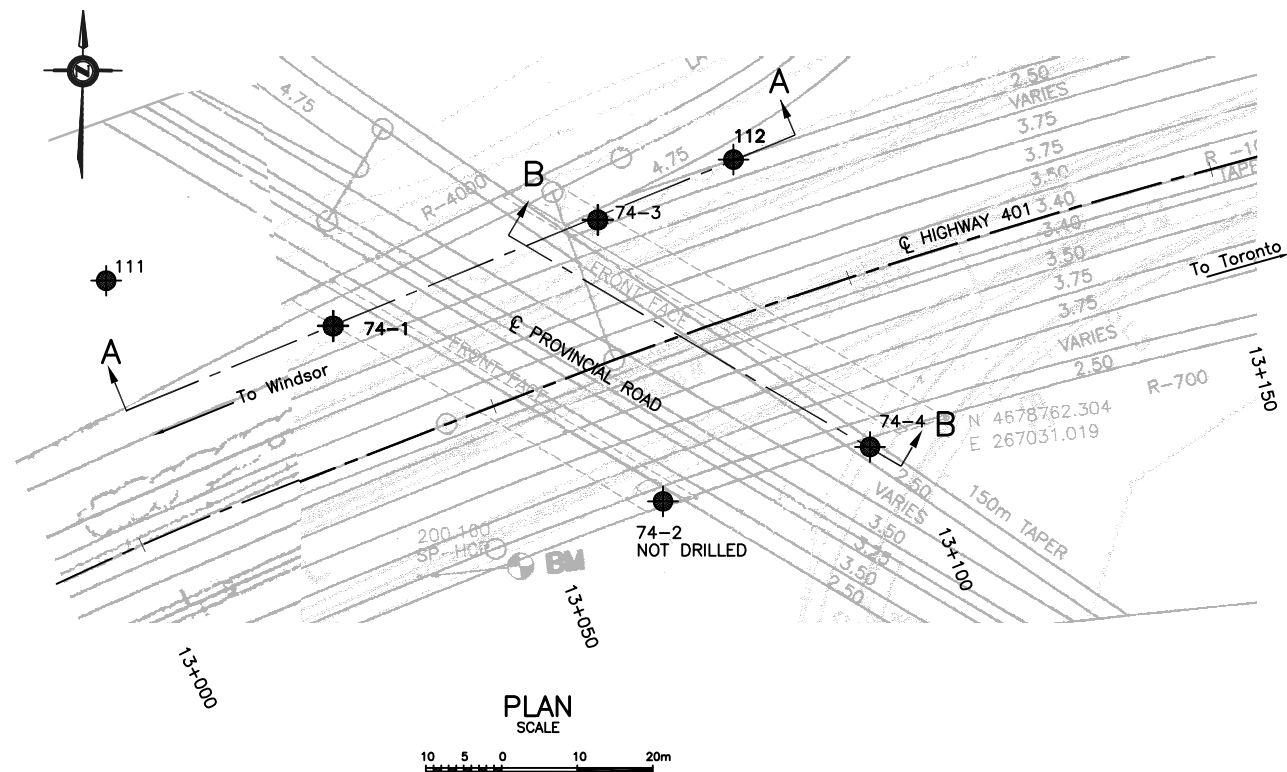
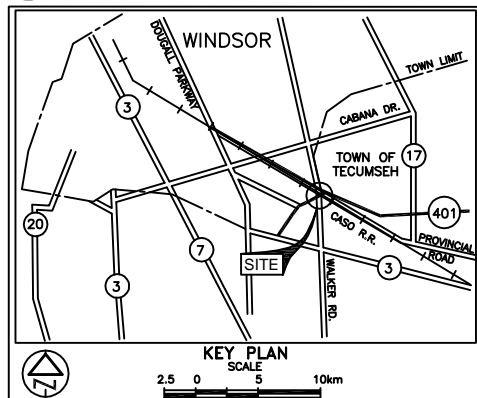
WP No 64-00-05

HIGHWAY 401
PROVINCIAL ROAD OVERPASS
BOREHOLE LOCATIONS & SOIL STRATA



SHEET
530

PML Peto MacCallum Ltd.
CONSULTING ENGINEER



NOTE:

SECTIONS ARE PROVIDED SOLELY FOR ILLUSTRATIVE PURPOSES.
REFER TO RECORD OF BOREHOLES FOR DETAILED DESCRIPTION
OF SUBSURFACE CONDITIONS, IN-SITU TEST DATA AND
LABORATORY TEST RESULTS.

SECTIONS

SCALE
5 2.5 0 5 10m



REF No Survey Plan 2001 Site # 6-74, entitled
Proposed Bridge Site at County Road 46 and
Highway 401, Prepared by Planning and
Design Section, MTO.

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 Feb 2002		
	Head		
	ARTESIAN WATER		
	Encountered		
	PIEZOMETER		

BH No	ELEVATION	HWY 401 STA.	o/s CL MED
74-1	190.60	13+034	17.6m Lt.
74-2	(NOT DRILLED)	-	-
74-3	190.48	13+071	18.1m Lt.
74-4	198.33	13+096	22.1m Rt.
111	190.51	13+009	34.0m Lt.
112	190.41	13+091	19.7m Lt.

— 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
MAY22/07	CN	CHANGED FOR CONTRACT DOCUMENTS AS PER EMAIL DATED APRIL 27, 2007, FROM DILLON CONSULTING LIMITED	

Geocres No. 40J2-44

HWY No	401	DIST	31
SUBM'D	GD	CHECKED	MRA
DATE	SEP 18, 2002	SITE	6-74
DRAWN	MM	CHECKED	DWK
APPROVED	BRG	DWG	2

RECORD OF BOREHOLE No 74-1

1 of 3

METRIC

W.P. 64-00-05 LOCATION Hwy 401 Sta. 13+034, o/s 17.6m Lt. of CL median ORIGINATED BY MR
DIST 31 HWY 401 BOREHOLE TYPE C.F.H.S.A., Mud Rotary and NQ Rock Coring COMPILED BY GD
DATUM Geodetic DATE February 13 and 14, 2002 CHECKED BY MRA

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	● QUICK TRIAXIAL	+ FIELD VANE	× LAB VANE						
190.60	Ground Level							20	40	60	80	100		20	40	60	
0.00	Silty clay																
0.28	Dark Brown Topsoil																
	Sandy silty clay, trace of gravel		1	SS	9		190							○			
	Stiff																
	Brown (Till)		2	SS	13		189							○			
	Hard																
			3	SS	44		188							○			
			4	SS	49		187							○			
	Very Stiff		5	SS	25		186							○			
	Stiff		6	SS	13		186							○			
							185										
			7	SS	13		184							○			
			8	SS	12		183							○			
							182										
			9	SS	11		181							○			
			10	TW	PH		180							○			
							179										
			11	SS	14*		178										
							177										
							176										
175.60	Cont'd																

RECORD OF BOREHOLE No 74-1

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METRIC

W.P. 64-00-05 LOCATION Hwy 401 Sta. 13+034, o/s 17.6m Lt. of CL median ORIGINATED BY MR
DIST 31 HWY 401 BOREHOLE TYPE C.F.H.S.A., Mud Rotary and NQ Rock Coring COMPILED BY GD
DATUM Geodetic DATE February 13 and 14, 2002 CHECKED BY MRA

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											
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE											
175.6							20	40	60	80	100								
15.00	Sandy silty clay, trace of gravel (Till)		12	SS	10														
	occ. thin reddish brown layers		13	SS	11														

RECORD OF BOREHOLE No 74-1

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METRIC

W.P. 64-00-05 LOCATION Hwy 401 Sta. 13+034, o/s 17.6m Lt. of CL median ORIGINATED BY MR
 DIST 31 HWY 401 BOREHOLE TYPE C.F.H.S.A., Mud Rotary and NQ Rock Coring COMPILED BY GD
 DATUM Geodetic DATE February 13 and 14, 2002 CHECKED BY MRA

SOIL PROFILE			SAMPLES			GROUND WATER * CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT						PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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RECORD OF BOREHOLE No 74-3

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METRIC

W.P. 64-00-05 LOCATION Hwy 401 Sta. 13+071, o/s 18.1m Lt. of CL median ORIGINATED BY MR
 DIST 31 HWY 401 BOREHOLE TYPE Continuous Flight Solid Stem Augers COMPILED BY GD
 DATUM Geodetic DATE February 13, 2002 CHECKED BY MRA

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa					w _p	w	w _L			
								○ UNCONFINED	● QUICK TRIAXIAL	+ FIELD VANE	× LAB VANE	WATER CONTENT (%)						
190.48	Ground Level							20	40	60	80	100		20	40	60		GR SA SI CL
0.00	Silty clay																	
0.28	Dark Brown Topsoil						190											
	Sandy Silty clay, trace of gravel		1	SS	8													
	Stiff																	
	Brown (Till)																	
	Hard		2	SS	36													
			3	SS	58													
			4	SS	54													
	Very Stiff																	
	Grey		5	SS	18													
			6	SS	27													
			7	SS	18													
			8	SS	15													
	Stiff																	
180.88			9	SS	14													
9.60	End of Borehole																	
	Borehole dry on completion of drilling																	
	■ Penetrometer Test																	

METRIC

20
15 — 5 (%) STRAIN AT FAILURE
10

RECORD OF BOREHOLE No 74-4

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METRIC

W.P. 64-00-05 LOCATION Hwy 401 Sta. 13+096, o/s 22.1m Rt. of CL median ORIGINATED BY MR
DIST 31 HWY 401 BOREHOLE TYPE C.F.H.S.A., Mud Rotary and NQ Rock Coring COMPILED BY GD
DATUM Geodetic DATE February 28, 2002 CHECKED BY MRA

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												
								20 40 60 80 100												
183.3																				
15.00	Sandy silty clay, trace of gravel		9	SS	27															
	Very Stiff Grey (Till)																			
	Stiff																			
177.13			10	SS	18															

RECORD OF BOREHOLE No 74-4

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METRIC

W.P. 64-00-05 LOCATION Hwy 401 Sta. 13+096, o/s 22.1m Rt. of CL median ORIGINATED BY MR
DIST 31 HWY 401 BOREHOLE TYPE C.F.H.S.A., Mud Rotary and NQ Rock Coring COMPILED BY GD
DATUM Geodetic DATE February 28, 2002 CHECKED BY MRA

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									WATER CONTENT (%)			GR	SA
168.33			14	SS	53		168										3	35	48	14	
							167														
166.53							166														
31.80	Fine sandy silt Very Dense Grey Saturated		15	SS	102/25cm		165														
							164														
							163														
			16	SS	80		162														
							161														
161.03							160														
37.30	Bedrock Unweathered, strong limestone Light Grey		17	RC	REC 100%		159													RQD = 84%	
							158														
157.93																					
40.40	End of Borehole Borehole dry on completion of drilling ■ Penetrometer Test																				

RECORD OF BOREHOLE No 111

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METRIC

W.P. 64-00-03 LOCATION Hwy 401 Sta. 13+009, o/s 34.0m Lt. of CL median ORIGINATED BY MR
 DIST 31 HWY 401 BOREHOLE TYPE Continuous Flight Solid Stem Augers COMPILED BY GD
 DATUM Geodetic DATE February 13, 2002 CHECKED BY MRA

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									
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE									
190.51	Ground Level						20	40	60	80	100						
0.00	Topsoil						20	40	60	80	100						
0.22	Sandy silty clay, trace of gravel																
	Stiff		1	SS	12												
	Brown (Till)																
	Hard		2	SS	39												
			3	SS	48												
	Very Stiff		4	SS	21												
	Grey																
			5	SS	15												
	Stiff																
																</	

METRIC

+⁷, ×⁵: Numbers refer to Sensitivity