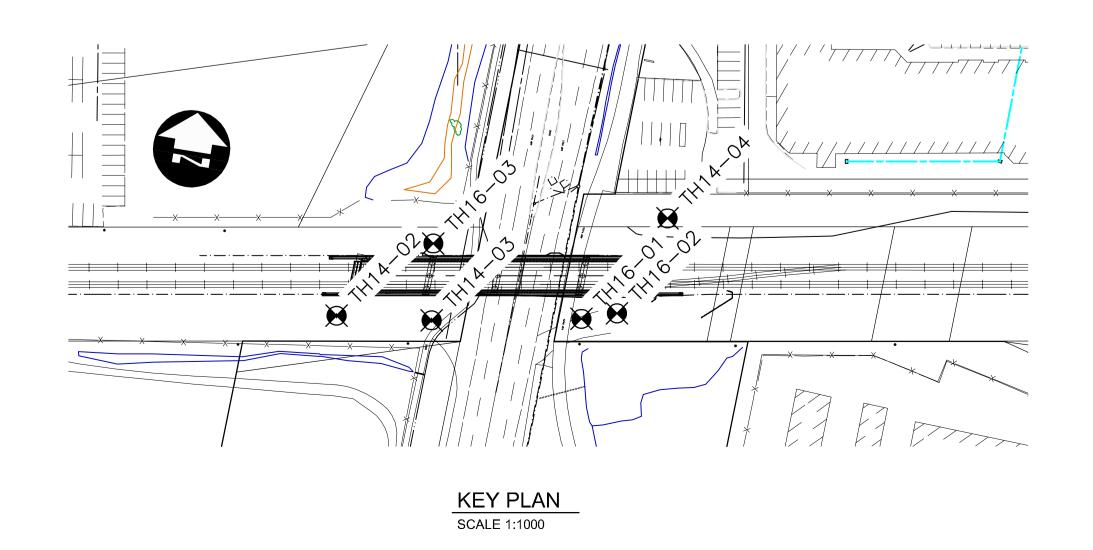


PROJECT: Waverley Underpass					C	CLIENT: City of Winnipeg								TESTHOLE NO: TH14-02		
LOCATION: UTM: 14U, 5523559 m N, 630870 m E					100	Name								PROJECT NO.: 60321148		
CONTRACTOR: Maple Leaf Drilling Ltd.						METHOD: 125 mm SSA/ HQ Coring								ELEVATION (m): 233.40		
SAMPLE TYPE GRAB SHELBY TUBE BACKFILL TYPE BENTONITE GRAVEL				SPLIT SPOON BULK NO RE												
BACK	FILL	TYPE	BENTONITE	GRAVEL	ТШ	SLO	UGH	- PE				CUTTIN		SAND		
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION		SAMPLE TYPE	SAMPLE#	SPT (N)	PENETRATION TESTS		□ Lab Vane □ □ △ Pocket Pen. △ ❤ Field Vane ❤ 1 (kPa)			COMMENTS				
10			- silt inclusion (<30 mm in dia.) below 10.3 m		G23									223 -	
-11			- some silt from 11.2 to 11.5 n			T24 G25 G26									222 -	
-13	//		SILT -some gravel - light grey, very dense, moist - low plasticity	to wet											221 –	
	000000		Glacial Till (SILT)- some sand clay - light grey, compact, moist to - low plasticity		X	G27	67	•		*				SPT Blows: (32, 43, 24) 61 % Recovery	220 -	
14	05050505		- ligth brown, some gravel bel	ow 14.4 m	X	S29	50/ 102mm	•		>>4				SPT Blows: (35, 50/102) 89 % Recovery	219	
15			- some gravel, some cobbles	below 15.5 m	X	S30	50/ 51mm	•		***	•			SPT Blows: (50/51) 100 % Recovery	218 -	
-16						C1								C1 RQD: 0% C1 Recovery: 28 %	217 –	
-17	90000		- sandy below 16.7 m			C2								C2 RQD: 0% C2 Recovery: 100%	040	
-18	200		LIMESTONE - fine grained, r	o foliation		СЗА								C3A RQD: 0% C3A Recovery: 67%	216 -	
			- creamish white - R3 - medium strong - close to moderately closed s planar fractures, - no evidence of water flow (cl			СЗВ								C3B RQD: 65% C3B Recovery: 100%	215	
19			- fossiliferous - vuggy			C4								C4 RQD: 25% C4 Recovery: 90%	214 –	
20								1,000	ZED DV	Caha Il	ahim	100	MAIDI	ETION DEDTU- 04 00		
			A=CON	l				REVI	EWED B	Saba Ibra Y: Zeyad		CO		ETION DEPTH: 24.38 m ETION DATE: 7/11/14	2 of 3	

PROJECT: Waverley Underpass					C	LIEN	NT: C	ity of Winn	7000000	TESTHOLE NO: TH14-02			
10.00 CO 100 VIO	OCATION: UTM: 14U, 5523559 m N, 630870 m E					Julian Control		54 057 to!		PROJECT NO.: 60321148			
CONTRACTOR: Maple Leaf Drilling Ltd.						METHOD: 125 mm SSA/ HQ Coring SPLIT SPOON ■BULK						/ATION (m): 233.4	0
SAMPLE TYPE GRAB SHELBY TUBE				<u> </u>	_			BULK	NO RE	2013/05/2010/05/2010			
BACK	FILL	TYPE	BENTONITE	GRAVEL	Ш	SLO	UGH		GROUT	CUTTI		SAND	
DEPTH (m)	SOIL SYMBOL	SLOTTED PIEZOMETER	SOIL DESCRIPTION		SAMPLE TYPE	SAMPLE#	SPT (N)	PENETRATION TESTS		□ Lab Vane □ △ Pocket Pen. △ Field Vane ❤ (kPa)		COMMENTS	ELEVATION
20			- altered yellow and red below 2	0 m	-				00 80 10	1 1	200		
-21			- extremely close to moderately planar fractures - evidence of water flow (class 3 - laminated below 21.2 m - close spaced to moderately cloplanner fractures,	closed spaced, smooth	-	C5						5 RQD: 43% 5 Recovery: 98%	213
-22			- no evidence of water flow (class	is 2)		C6	6					6 RQD: 29% 6 Recovery: 75 %	211
-23													210
-24			- R5- very strong			C7	77				C	C7 RQD: 93% C7 Recovery: 100 %, qu = 194.4 MPa	
-25			END OF TEST HOLE AT 24.4 m IN BEDROCK Notes: 1. Power Auger Refusal at 15.4 m in Glacial TILL. 2. HQ coring below 15.4 m. 3. Seepage observed at 3.0 m upon drilling completion. 4. Installed 25 mm diameter standpipe piezometer (SP14-02) to 23.5 m below ground surface with 0.3 m casagrande tip and flush mount at ground surface. 5. Test hole backfilled with siica sand up to 22 m below ground surface, bentonite up to 1.5 m and plugged with auger cutting to ground surface. 6. Prominent sub-vertical fracture (180 degrees to core axis), closed to gapped, smooth undulating, evidence of water flow (class 3) between 17.9 to 18.4 m. 7. Groundwater monitoring: - Aug. 12, 2014 at Elv. 225.29 m. - Sep. 03, 2014 at Elv. 225.5 m. - Oct. 17, 2014 at Elv. 225.8 m.										209
-26													208
-27													206
-28			 Nov. 06, 2014 at Elv. 225.7 m Nov. 20, 2014 at Elv. 225.6 m Dec. 06, 2014 at Elv. 225.4 m Dec. 18, 2014 at Elv. 225.4 m 										205
-29													204
													204
30									nu			1011 0	
			A=COM						BY: Saba lbr			ION DEPTH: 24.38 m	1
			A=COM						D BY: Zeyad ENGINEER:	Contract Con	OWPLET	ION DATE: 7/11/14	3 of



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					-		LLON	
					DESIGNED BY	RE	CHECKED BY	SSR
APEGIN					DRAWN BY	CGC	APPROVED BY	DBW
Certificate of Authorization Pillon Consulting Limited (MB)					HOR. SCALE	AS SHOWN	RELEASED FOR CONSTRUCTION	
o. 1789 Date: 2017/01/09	0	ISSUED FOR TENDER	17/01/09	RE	VERTICAL	AS SHOWN		
	NO.	REVISIONS	DATE	BY	DATE		DATE	

PRELIMINARY DESIGN GEOTECHNICAL REPORT PREPARED BY AECOM CANADA LTD, DATED JANUARY 2015 AND THE MEMORANDUM TITLED SUMMARY OF BEDROCK INVESTIGATION IN THE VICINITY OF THE PROPOSED CN BRIDGE- WAVERLEY STREET UNDERPASS PROJECT, PREPARED BY AECOM CANADA LTD, DATED NOVEMBER 23, 2016. IN THE EVENT OF A DISCREPANCY BETWEEN THESE GEOTECHNICAL REPORTS AND THE INFORMATION PROVIDED ON THIS DRAWING, THE ORIGINAL GEOTECHNICAL REPORTS SHALL GOVERN. THE CONTRACTOR IS STRONGLY URGED TO REVIEW ALL AVAILABLE GEOTECHNICAL DATA.

ENGINEER'S SEAL R.B.	Winnipe
REGIS Member	WAVERLEY STR

CONSULTANT PROJECT NUMBER

16-3353

THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT

THE INFORMATION ON THIS DRAWING HAS BEEN EXTRACTED FROM THE

1 0				
VAVERLEY STREET UNDERPASS AT CN MILE 3.89 RIVERS SUB CONTRACT 2: UNDERPASS STRUCTURE, RAILWORKS,	CITY DRAWING NUMBER U-239-2016-C2-CS-008			
ROADWORKS, LAND DRAINAGE SEWER, PUMPING STATION AND LANDSCAPING WORKS	SHEET 008	of 085		
	CONSULTANT D	RAWING NUMBER		
BORING LOGS - SHEET 2	C2-CS	-008		