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APPENDIX 'A' GEOTECHNICAL REPORT

City of Winnipeg Inkster Boulevard Widening West of Brookside Boulevard Subsurface Investigation

Prepared by:

AECOM Canada Ltd.

99 Commerce Drive, Winnipeg, MB, Canada R3P 0Y7 T 204.477.5381 F 204.284.2040 www.aecom.com

Project Number:

0265 411 01 (4)

Date:

April, 2009

Inkster Boulevard Widening Brookside Boulevard to Keewatin Street Subsurface Investigation



Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("Consultant") for the benefit of the City of Winnipeg ("Client") in accordance with the agreement between Consultant and Client (the "Agreement") for the services described therein, and is subject to the budgetary, time and other constraints and limitations set forth therein.

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This Disclaimer is attached to and forms part of the Report.

AECOM

99 Commerce Drive, Winnipeg, MB, Canada R3P 0Y7 T 204.477.5381 F 204.284.2040 www.aecom.com

April 27, 2009

Project Number: 0265 411 01 (4)

Mr. Ron Bruce, P.Eng. AECOM Canada Ltd. 2 – 1600 Ness Avenue Madison Square Winnipeg, Manitoba R3J 3W7

Dear Sir:

Re: Inkster Boulevard Widening West of Brookside Boulevard Field and Laboratory Investigation

AECOM Canada Ltd. is pleased to present our report on the above referenced project. If you have

any questions, please do not hesitate to contact Nelson Ferreira at our office.

Sincerely,

AECOM Canada Ltd.

Ron Typliski, P.Eng.

Vice-President, Manitoba District

R. Vetsplitti

Canada West Region

/dh



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Revision Log

Revision #	Revised By	Date	Issue / Revision Description
1	N. Ferreira	April 27/09	Final



Signature Page

Report Prepared By:

Report Reviewed By:

Ryan Belbas, B.Sc., EIT

Nelson Ferreira, M.Sc., P.Eng.





Certificate of Authorization

AECOM Canada Ltd. (MB)

No. 4671

Date: 09/04/27



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1. Summary

This report summarizes the results of the subsurface investigation completed for the proposed Inkster Boulevard Widening west of Brookside Boulevard. It is our understanding that the four lane roadway proposed between Brookside Boulevard and Keewatin Street is to be extended 1.1 km to the west of Brookside Boulevard. Information regarding the subsurface conditions along the proposed extension is provided for design and construction.

2. Field Investigation and Laboratory Program

A total of 21 test holes were drilled for the proposed Inkster Boulevard widening extension at the locations shown on Figures 1 to 3. Seventeen of the test holes were drilled within the existing Inkster Boulevard shoulder and road embankment along the proposed alignment. The remaining four test holes were drilled within the shoulder and road embankment along Oakpoint Highway and Roy Roche Drive within 200 m of the intersection with Inkster Boulevard. Test hole logs have been prepared for each test hole and are included in Appendix A.

The field investigation was conducted on March 13, 17 and 21, 2009. Depending on the depth to power auger refusal, the test holes were drilled to depths of 1.5 m to the maximum depth drilled of 3.1 m below ground surface. Drilling was completed by Paddock Drilling Ltd. using a Brat 22 truck mounted drill rig equipped with 125 mm diameter solid stem augers. The sub-surface investigation was supervised and documented by Geoff Nolette of AECOM. Guardian Traffic Services provided traffic protection during drilling.

The pavement structure (asphalt and/or concrete) was cored at 9 locations within 2.2 m of an adjacent test hole. The core hole locations are shown on Figures 1 to 3. The coring was conducted by Quality Coring using a portable coring machine equipped with a hollow 150 mm diameter diamond core drill bit and supervised and documented by Geoff Nolette of AECOM. Photographs of the core samples are included in Appendix B (the core sample from TH-09-66 was not photographed). No tests were conducted on the core samples.

Other pertinent information such as groundwater and drilling conditions were also recorded during the field investigations. Disturbed (auger cuttings) samples retrieved during the field investigation were transported to AECOM's material testing laboratory for further testing.

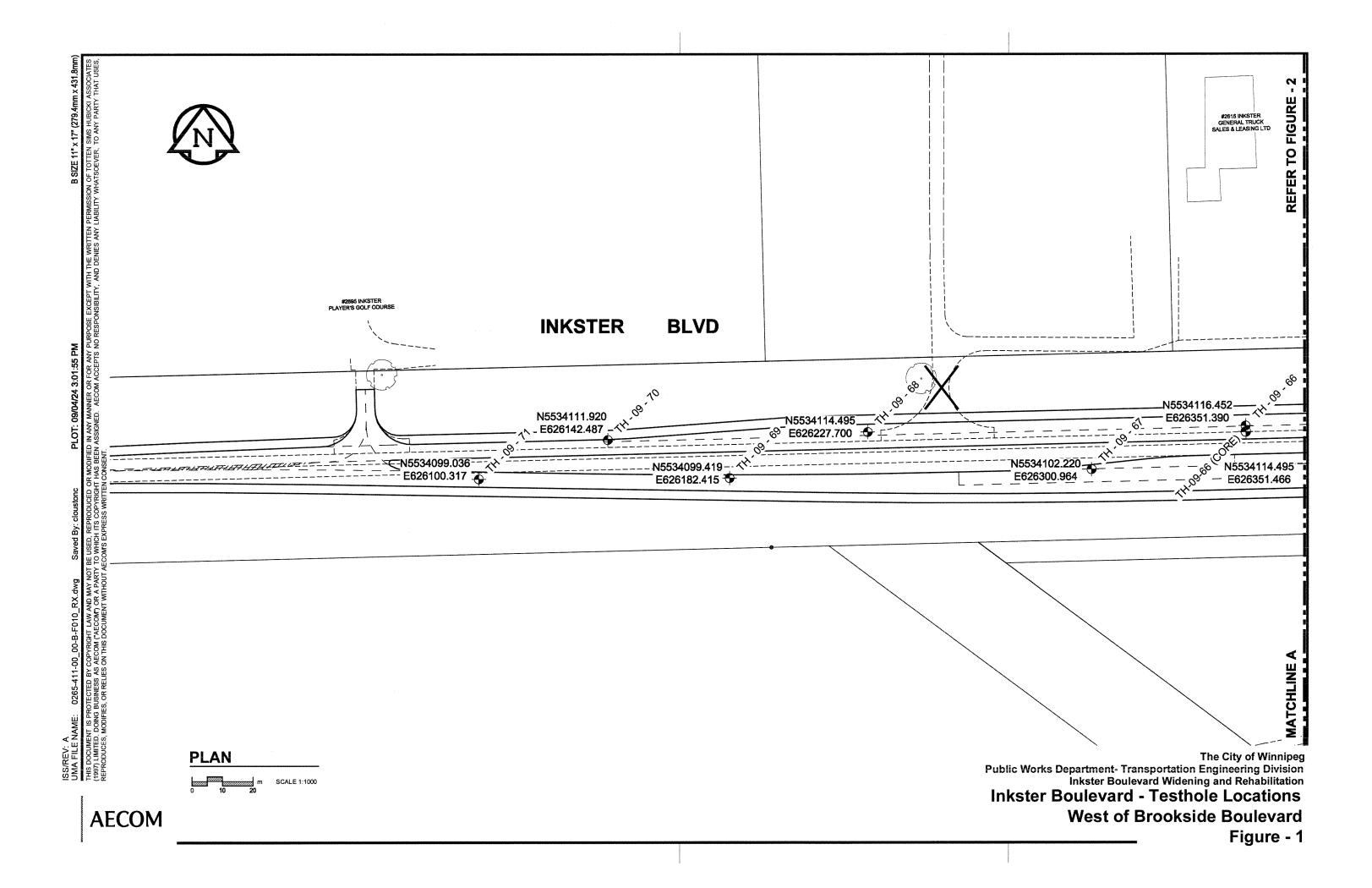
The laboratory testing program consisted of moisture content determination, Atterberg limits and hydrometer tests. The laboratory information has been included on the test hole logs and a summary table of the laboratory test results has been included in Appendix A.

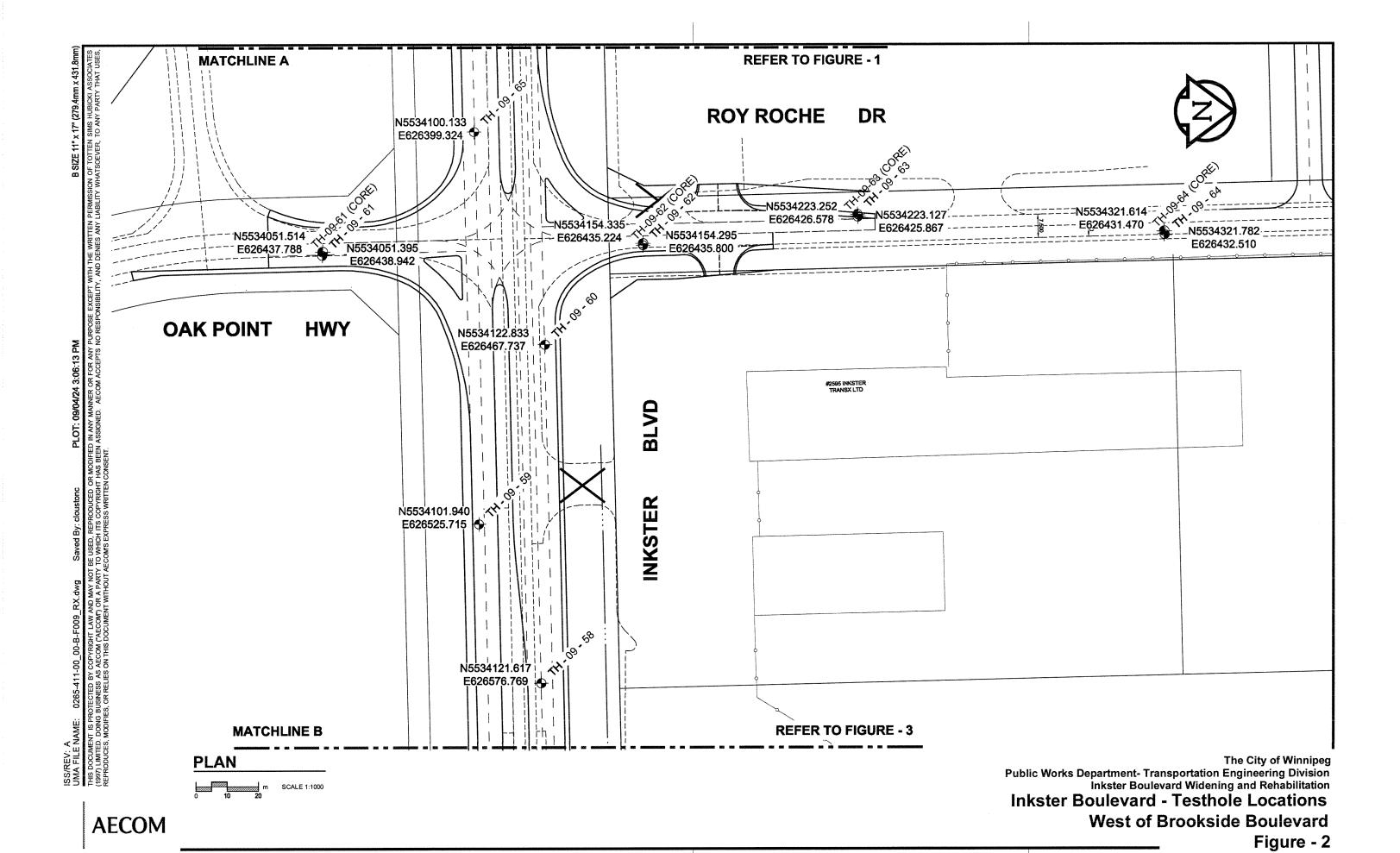
Test hole locations were surveyed and the UTM coordinates are provided on the test hole logs and Figure 1 to 3.

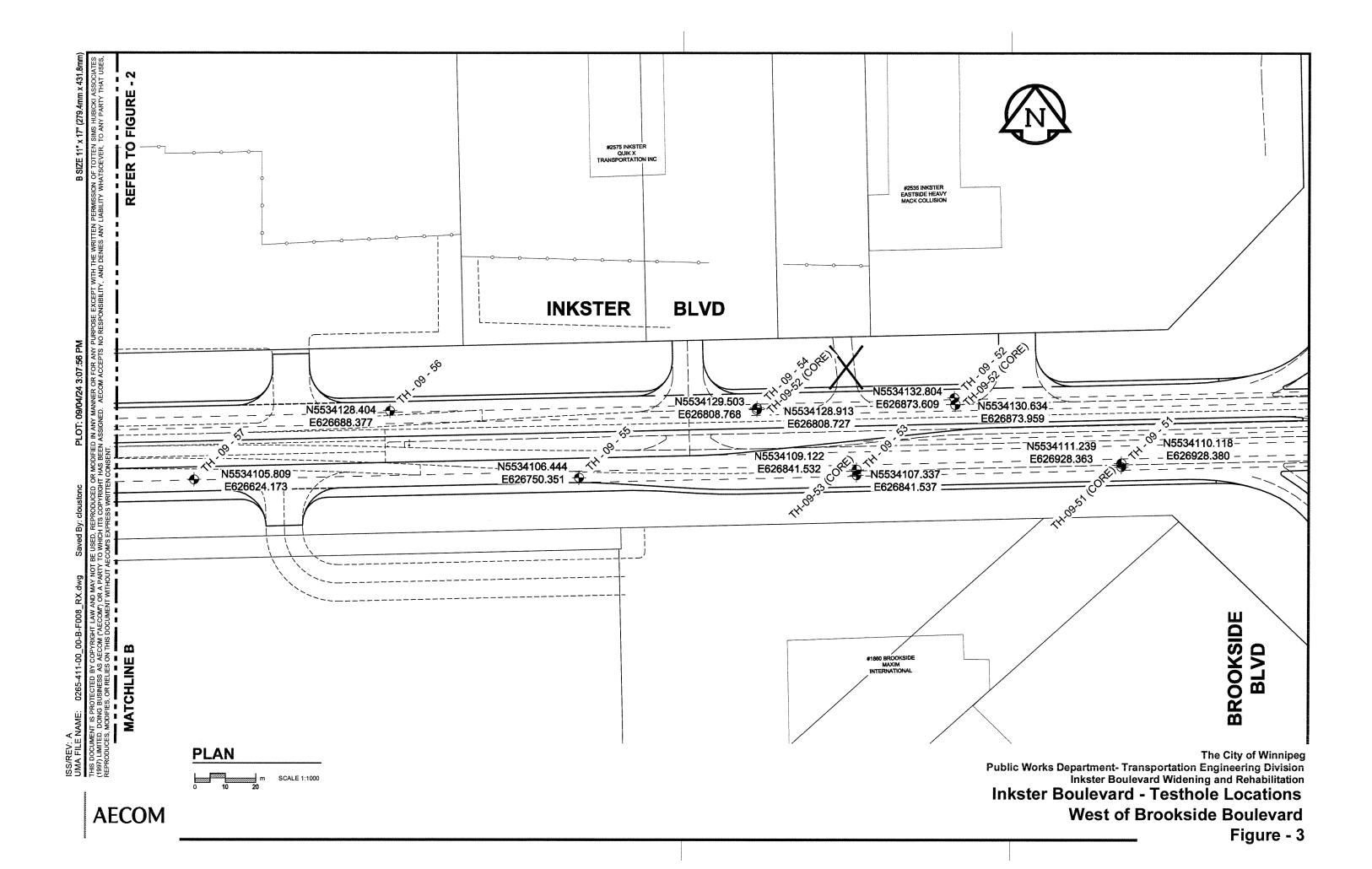
Inkster Boulevard Widening Brookside Boulevard to Keewatin Street Subsurface Investigation











AECOM

Inkster Boulevard Widening Brookside Boulevard to Keewatin Street Subsurface Investigation

Appendix A Test Hole Logs

AECOM Canada Ltd.

GENERAL STATEMENT

NORMAL VARIABILITY OF SUBSURFACE CONDITIONS

The scope of the investigation presented herein is limited to an investigation of the subsurface conditions as to suitability for the proposed project. This report has been prepared to aid in the evaluation of the site and to assist the engineer in the design of the facilities. Our description of the project represents our understanding of the significant aspects of the project relevant to the design and construction of earth work, foundations and similar. In the event of any changes in the basic design or location of the structures as outlined in this report or plan, we should be given the opportunity to review the changes and to modify or reaffirm in writing the conclusions and recommendations of this report.

The analysis and recommendations presented in this report are based on the data obtained from the borings and test pit excavations made at the locations indicated on the site plans and from other information discussed herein. This report is based on the assumption that the subsurface conditions everywhere are not significantly different from those disclosed by the borings and excavations. However, variations in soil conditions may exist between the excavations and, also, general groundwater levels and conditions may fluctuate from time to time. The nature and extent of the variations may not become evident until construction. If subsurface conditions differ from those encountered in the exploratory borings and excavations, are observed or encountered during construction, or appear to be present beneath or beyond excavations, we should be advised at once so that we can observe and review these conditions and reconsider our recommendations where necessary.

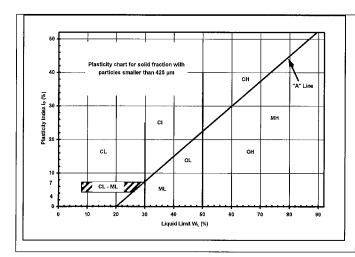
Since it is possible for conditions to vary from those assumed in the analysis and upon which our conclusions and recommendations are based, a contingency fund should be included in the construction budget to allow for the possibility of variations which may result in modification of the design and construction procedures.

In order to observe compliance with the design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated, we recommend that all construction operations dealing with earth work and the foundations be observed by an experienced soils engineer. We can be retained to provide these services for you during construction. In addition, we can be retained to review the plans and specifications that have been prepared to check for substantial conformance with the conclusions and recommendations contained in our report.

EXPLANATION OF FIELD & LABORATORY TEST DATA

					UMA	USCS		Laborator	y Classification Crit	eria		
İ		Descripti	ion		Log Symbols	Classification	Fines (%)	Grading	Plasticity	Notes		
		CLEAN GRAVELS	Well graded sandy gravel or no f	s, with little	2721	GW	0-5	C _U > 4 1 < C _C < 3				
	GRAVELS (More than 50% of coarse	(Little or no fines)	Poorly grade sandy gravel or no f	s, with little		GP	0-5	Not satisfying GW requirements		Dual symbols if 5-		
SIIC	fraction of gravel size)	DIRTY GRAVELS	Silty gravels, grave			GM	> 12		Atterberg limits below "A" line or W _P <4	12% fines. Dual symbols if above "A" line and		
COARSE GRAINED SOILS		(With some fines)	Clayey grave sandy g			GC	> 12		Atterberg limits above "A" line or W _P <7	4 <w<sub>P<7</w<sub>		
ARSE GR	i	CLEAN SANDS	Well grade gravelly sand or no f	s, with little		sw	0-5	C _U > 6 1 < C _C < 3		$C_U = \frac{D_{60}}{D_{10}}$		
00	SANDS (More than 50% of	(Little or no fines)	Poorly grad- gravelly sand or no f	s, with little	5000 0000	SP	0-5	Not satisfying SW requirements		$C_U = \frac{D_{60}}{D_{10}}$ $C_C = \frac{(D_{30})^2}{D_{10} x D_{60}}$		
	coarse fraction of sand size)	DIRTY SANDS	Silty sa sand-silt n			SM	> 12		Atterberg limits below "A" line or W _P <4			
		(With some fines)	Clayey s sand-clay			sc	> 12	!	Atterberg limits above "A" line or W _P <7			
	SILTS (Below 'A' line	W _L <50	Inorganic sil clayey fine s slight pla	ands, with		ML						
	negligible organic content)	W _L >50	Inorganic silts of high plasticity					МН				
SOILS	CLAYS			y clays of		CL						
FINE GRAINED	(Above 'A' line negligible organic	30 <w<sub>L<50</w<sub>	Inorganic clay clays of n plastic	nedium		CI			Classification is Based upon Plasticity Chart			
FINE (content)	W _L >50	Inorganic cla plasticity, f			СН						
	ORGANIC SILTS & CLAYS	W _L <50	Organic s organic silty o plastic	lays of low		OL						
	(Below 'A' line)	W _L >50	Organic clay plastic			ОН						
Н	IGHLY ORGAI	NIC SOILS	Peat and otl organic			Pt		on Post fication Limit		r odour, and often s texture		
		Asphalt			Till				l			
		Concrete			edrock ferentiated)				AE	COM		
8		Fill			edrock nestone)							

When the above classification terms are used in this report or test hole logs, the designated fractions may be visually estimated and not measured.



FRAC	CTION	SEIVE	SIZE (mm)	DEFINING RANGES OF PERCENTAGE BY WEIGHT OF MINOR COMPONENTS						
			Passing Retained Percent		Identifier					
Gravel	Cravel Coarse		19	35-50	and					
Giavei	Fine	19	4.75	33-30	anu					
	Coarse	4.75	2.00	20-35	"v" or "ev" *					
Sand	Medium	2.00	0.425	20-33	y Or ey					
	Fine	0.425	0.075	10-20	nomo					
0:14 /				10-20	some					
	Silt (non-plastic) or Clay (plastic))75 mm	1-10	trace					

^{*} for example: gravelly, sandy clayey, silty

Definition of Oversize Material

COBBLES: 76mm to 300mm diameter BOULDERS: >300mm diameter

LEGEND OF SYMBOLS

Laboratory and field tests are identified as follows:

qu - undrained shear strength (kPa) derived from unconfined compression testing.

 T_{ν} - undrained shear strength (kPa) measured using a torvane

pp - undrained shear strength (kPa) measured using a pocket penetrometer.

L_v - undrained shear strength (kPa) measured using a lab vane.

F_v - undrained shear strength (kPa) measured using a field vane.

 γ - bulk unit weight (kN/m³).

SPT - Standard Penetration Test. Recorded as number of blows (N) from a 63.5 kg hammer dropped 0.76 m (free fall) which is required to drive a 51 mm O.D. Raymond type sampler 0.30 m into the soil.

DPPT - Drive Point Pentrometer Test. Recorded as number of blows from a 63.5 kg hammer dropped 0.76 m (free fall) which is required to drive a 50 mm drive point 0.30 m into the soil.

w - moisture content (W_L, W_P)

The undrained shear strength (Su) of a cohesive soil can be related to its consistency as follows:

Su (kPa)	CONSISTENCY
<12	very soft
12 – 25	soft
25 – 50	medium or firm
50 – 100	stiff
100 – 200	very stiff
200	hard

The resistance (N) of a non-cohesive soil can be related to compactness condition as follows

N - BLOWS/0.30 m	COMPACTNESS
0 - 4	very loose
4 - 10	loose
10 - 30	compact
30 - 50	dense
50	very dense

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Test Hole		Paveme	nt Surface	Pavement Structure Ma	aterial		Sample L	cation (m)	Moisture		Hydromet	er Analysis		A:	tterberg Lim	its
No.	Test Hole Location	Туре	Thickness	Type	Thickness	Subgrade Description	1		Content	Gravel	Sand	Silt	Clay	Plastic	Liquid	Plasticity
			(mm)		(mm)		Start	End	(%)	(%)	(%)	(%)	(%)	Limit	Limit	Index
-	N - 5534110.118, E - 626928.380	Concrete	205			Sand and Gravel (Fill)	0.2	0.3	7.9							_
-	N - 5534111.239, E - 626928.363 (Core)		-				0.5	0.6	7.2							
-			-		-		0.8	0.9	7.5							
TH-09-51			-			Clay (Fill)	1.1	1.2	12.5							
-					-		1.4	1.5	20.1							
-					-	Clay	1.7	1.8	31.5							_
					-		2.0	2.1	26.4		_					
	N - 5534132.804, E - 626873.609	Asphalt	150			0 1 10 150	0.2	2.7	26.2 6.7							_
	N - 5534130.634, E - 626873.959 (Core)	Аѕрпал	150		 	Sand and Gravel (Fill)	0.5	0.3	6.0					_		
	N - 3534 130.634, E - 626673.939 (COIR)				 	Clay (Fill)	0.8	0.9	22.8	0.0	10.4	20.0	66.6	24.0	70.0	
		-			 	Clay (FIII)	1.1	1.2	31.4	0.0	10.4	23.0	00.00	24.6	79.8	55.2
TH-09-52						Clay	1.4	1.5	32.1					-		
						Ciay	1.7	1.8	28.8							_
							2.0	2.1	34.4							
							2.6	2.7	39.7							
	N - 5534109.122, E - 626841.532	Concrete	205			Sand and Gravel (Fill)	0.2	0.3	7.2							
	N - 5534109.122m, E - 626841.532 (Core)	Jonarde	200			Gallu allu Gravet (FIII)	0.5	0.6	6.8							
						Clay (Fill)	0.8	0.9	14.4							
						Oldy (1 III)	1.1	1.2	19.7							
TH-09-53							1.4	1.5	35.9	0.0	3.6	19.6	76.8	25.0	77.8	52.8
							1.7	1.8	35.9	0.0	0.0	10.0	70.0	25.0	77.0	32.0
						Clay	2.0	2.1	35.8							
						O.L.)	2.6	2.7	39.1							
	N - 5534129.503, E - 626808.768	Asphalt	125			Sand (Fill)	0.2	0.3	5.8							
	N - 5534128.913, E - 626808.727 (Core)	, replicate				Some (Fin)	0.5	0.6	6.5							
	11-000-120:010, E-02000:727 (0010)						0.8	0.9	12.4							
TH-09-54						Clay (Fill)	1.1	1.2	32.0							
IH-U9-54						Clay	1.4	1.5	43.0							
						- Olay	1.7	1.8	38.1							
							2.0	2.1	34.2							
							2.6	2.7	37.4							
	N - 5534106.444, E - 626750.351					Sand (Fill)	0.2	0.3	6.3							
							0.5	0.6	5.6							
i							0.8	0.9	5.0							
TH-09-55						Clay (Fill)	1.1	1.2	18.4							
111-03-00							1.4	1.5	19.2							
							1.7	1.8	23.6							
						Clay	2.0	2.1	14.1							
							2.6	2.7	18.9							
	N - 5534128.404, E - 626688.377					Sand and Gravel (Fill)	0.2	0.3	7.3							
						Clay (Fill)	0.5	0.6	29.1							
							0.8	0.9	26.1	2.0	34.4	38.1	25.6	19.3	38.7	19.4
TH-09-56							1.1	1.2	19.9							
							1.4	1.5	37.4							
							1.7	1.8	33.3							
						Clay	2.0	2.1	25.5							
							2.6	2.7	34.7							
	N - 5534105.809, E - 626624.173					Sand and Gravel (Fill)	0.2	0.3	23.6							
							0.5	0.6	16.9							
						Clay (Fill)	0.8	0.9	20.1							
TH-09-57							1.1	1.2	24.6							
						Clay	1.4	1.5	36.4							
							1.7	1.8	25.7							
						Silt	2.0	2.1	9.6							
						Silt (Till)	2.6	2.7	10.3						1	

City of Winnipeg Inkster Widening - Brookside Boulevard to Keewatin Street - West of Brookside Blvd. Subsurface Investigation

Test Hole		Paveme	nt Surface	Pavement Structure Ma	iterial		Sample L	ocation (m)	Moisture		Hydromet	er Analysis		Atterberg Limits		
No.	Test Hole Location	Type	Thickness	Туре	Thickness	Subgrade Description			Content	Gravel	Sand	Silt	Clay	Plastic	Liquid	Plasticit
		_	(mm)		(mm)		Start	End	(%)	(%)	(%)	(%)	(%)	Limit	Limit	Index
	N - 5534121.617, E - 626576.769					Sand and Gravel (Fill)	0.2	0.3	5.2							
						Clay (Fill)	0.5	0.6	20.5							_
							8.0	0.9	21.0							-
TH-09-58							1.1	1.2	38.0							
							1.4	1.5	46.3							_
						Clay	1.7	1.8	19.1							
						Silt	2.0	2.1	14.2							
						Silt (Till)	2.6	2.7	11.4							
	N - 5534101.940, E - 626525.715					Clay	0.2	0.3	31.9							
							0.5	0.6	27.4							
							0.8	0.9	29.0							
TH-09-59							1.1	1.2	26.8							
							1.4	1.5	21.8	1.2	27.9	40.3	30.6	17.4	40.1	22.7
						Silt (Till)	1.7	1.8	22.3							
							2.0	2.1	10.4							
							2.6	2.7	10.1							
	N - 5534122.833, E - 626467.737			Crushed Limestone (Fill)	50	Sand and Gravel (Fill)	0.2	0.3	6.9							
						Clay	0.5	0.6	28.3							
TH-09-60							0.8	0.9	28.4							
							1.1	1.2	45.7							
							1.4	1.5	25.2							
						Sand and Gravel (Till)	1.7	1.8	10.0							
	N - 5534051.395, E - 626438.942	Asphalt	75	Crushed Limestone (Fill)	530	Crushed Limestone (Fill)	0.2	0.3	4.2							
	N - 5534051.514, E - 626437.788 (Core)						0.5	0.6	4.0							
TH-09-61						Silt (Till)	0.8	0.9	11.0							
							1.1	1.2	10.7							
						Sand (Till)	1.4	1.5	9.1							
	N - 5534154.295, E - 626435.800	Asphalt	100			Sand and Gravel (Fill)	0.2	0.3	7.2							
	N - 5534154.335, E - 626435.224 (Core)					Clay (Fill)	0.5	0.6	19.6							
							0.8	0.9	20.3							
TH-09-62							1.1	1.2	25.3							
111-09-02						Clay	1.4	1.5	31.9							
i						Silt (Till)	1.7	1.8	13.1							
							2.0	2.1	13.2							
						Sand (Till)	2.3	2.4	7.2							
	N - 5534223.127, E - 626425.867	Asphalt	100			Sand and Gravel (Fill)	0.2	0.3	6.7							
1	N - 5534223.252, E - 626426.578 (Core)					Clay (Fill)	0.5	0.6	27.5							
i						Silt (Till)	0.8	0.9	33.5							
TH-09-63						<u> </u>	1.1	1.2	31.0							
114-02-03							1.4	1.5	37.7							
							1.7	1.8	46.5							
							2.0	2.1	92.4							
						Sand (Till)	2.3	2.4	9.9							
	N - 5534321.782, E - 626432.510	Asphalt	100			Sand (Fill)	0.2	0.3	6.0							
	N - 5534321.614, E - 626431.470 (Core)					2 3	0.5	0.6	10.0							
						Clay (Fill)	0.8	0.9	23.6							
TIL 00 0.							1.1	1.2	19.3							
TH-09-64						Clay	1.4	1.5	45.1							
						Silt (Till)	1.7	1.8	11.7							
						On (1m)	2.0	2.1	10.1							
		-	_				2.3	2.4	7.7				_	1		+

City of Winnipeg Inkster Widening - Brookside Boulevard to Keewatin Street - West of Brookside Blvd. Subsurface Investigation

Test Hole		Paveme	nt Surface	Pavement Structur	re Material		Sample I	ocation (m)	Moisture		Hydromet	er Analysis		A	tterberg Lin	nits
No.	Test Hole Location	Type	Thickness	Type	Thickness	Subgrade Description			Content	Gravel	Sand	Silt	Clay	Plastic	Liquid	Plasticity
			(mm)		(mm)		Start	End	(%)	(%)	(%)	(%)	(%)	Limit	Limit	Index
-	N - 5534100.133, E - 626399.324				_	Clay (Fill)	0.2	0.3	17.3							
-					_		0.5	0.6	27.0							
							0.8	0.9	19.8			_		_		_
TH-09-65			 			Cita	1.1	1.2	27.2	4.0	44.0	05.7	24.5			
		 	 			Silt Clay	1.4	1.5	19.0 24.3	1.2	41.6	35.7	21.5	14.1	33.7	19.6
ŀ						Silt (Till)	2.0	2.1	13.4					_		
1						Oil (Till)	2.6	2.7	11.0							
	N - 5534116.452, E - 626351.39	Asphalt	125			Sand and Gravel (Fill)	0.2	0.3	5.8		<u> </u>					
	N - 5534114.495, E - 626351.466 (Core)		1.20				0.5	0.6	17.0							
1							0.8	0.9	17.7							
TH-09-66						Clay	1.1	1.2	26.1							
11170500							1.4	1.5	21.7							
						Silt (Till)	1.7	1.8	17.0							
							2.0	2.1	12.4							
						Sand (Till)	2.6	2.7	6.9							
	N - 5534102.220, E - 626300.964					Clay (Fill)	0.2	0.3	7.1							
							0.5	0.6	15.5							
							8.0	0.9	19.3							
TH-09-67							1.1	1.2	27.2							
							1.4	1.5	41.4							
-						Clay	1.7	1.8	24.5							
-							2.0	2.1	34.8							
			-		_		2.6	2.7	38.5							
-	N - 5534114.495, E - 626227.700					Sand and Gravel (Fill)	0.2	0.3	5.0							
-			 				0.5	0.6	11.7							
-			-			Clay	0.8	0.9	22.3						40.0	
TH-09-68		-	-				1.1	1.2	30.5	1.6	28.1	41.4	28.9	26.4	46.9	20.5
-							1.4	1.5	32.7 22.3					_		
		-	 		_		2.0	2.1	22.8							
ŀ			 			Silt (Till)	2.7	2.8	11.5				-			
	N - 5534099.419, E - 626182.415					Clay (Fill)	0.2	0.3	26.0					_		
T I	14 - 0004003.415, E - 020102.415					Sand (Fill)	0.5	0.6	12.2	10.6	46.9	29.3	13.2	14.8	19.8	5.0
1						Conta (1 m)	0.8	0.9	7.0	10.0	70.0	20.0	10.2	14.0	10.0	0.0
						Clay (Fill)	1.1	1.2	25.2							
TH-09-69			 				1.4	1.5	23.1							
İ						Clay	1.7	1.8	32.4							
							2.0	2.1	28.5							
[2.6	2.7	25.9							
	N - 5534111.920, E - 626142.487					Sand and Gravel (Fill)	0.2	0.3	5.0							
							0.5	0.6	20.2							
[0.8	0.9	22.6							
TH-09-70						Clay (Fill)	1.1	1.2	21.6							
							1.4	1.5	33.3							
		-	<u> </u>			Clay	1.7	1.8	45.0							
1		-					2.0	2.1	34.9		-					
	N 550 1000 005 T 1000 0	-				0.1.15	2.6	2.7	26.2		-					-
}	N - 5534099.036, E - 626100.317	-				Sand and Gravel (Fill)	0.2	0.3	6.2							
-		-	 			Clay (Fill)	0.5	0.6	23.5		-			-		-
-			 		_		0.8	0.9	17.9		-	-	-	-		_
TH-09-71		-					1.1	1.2	34.3		-	-		-		-
-		-				Clave	1.4	1.5	33.2			-				_
-		-	 			Clay	2.0	1.8	29.9 29.6							_

PROJ	ECT:	Inkster Boulevard Widening - West of Brookside Blvd.			TESTHOLE NO: TH-09-51
LOCA	TION:	UTM - N 5534110.118 E 626928.380			PROJECT NO.: 0265-411-01
		TOR: Paddock Drilling Ltd. METHOD: Bratt 22, 125 mm SSA	,		ELEVATION (m): 236.56
SAMP	LE TY	PE GRAB ∭SHELBY TUBE ∑SPLIT SPOON ⊟BULK		IO RE	ECOVERY CORE
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE #	PENETRATION TESTS
0		CONCRETE (205 mm) SAND AND GRAVEL (Fill) - silty - light brown - compact to dense, dry to moist		G09	•
		- compact to dense, dry to most - fine grained sand to coarse grained gravel - poorly graded - sub-angular and sub-rounded gravel		G10 G11	236 -
-1 -1 -		CLAY (Fill) - silty, trace sand, trace gravel (< 5 mm dia.) - dark brown - firm, moist - high plasticity - sub-angular gravel		G11	
-		CLAY - silty, trace sand - dark brown - stiff, moist - high plasticity		G13 G14	235 -
-		- trace sulphide inclusions (< 10 mm dia.) below 2.4 m - silt lenses (< 2 mm dia.) below 2.7 m		G15	234 -
LOG OF LEST HOLE INVS.IEK WEST IN LOGS. GPJ UMA WINN. GDJ 4/24/09		END OF TEST HOLE AT 3.1 m IN CLAY Notes: 1. No seepage or sloughing observed. 2. Test hole backfilled with auger cuttings. 3. Pavement structure cored with 150 mm hollow diameter diamond core drill bit in supplemental test hole, TH-09-51 (CORE). Cored test hole located 1.1 m north (UTM N - 5534111.239, E - 626928.363).			233 -
HOLE INKSIEK		LOGGED BY: Geoffrey No			COMPLETION DEPTH: 3.05 m
5		AECOM REVIEWED BY: Nelson Fe	·····		COMPLETION DATE: 3/17/09
3		PROJECT ENGINEER: Ne	ison Ferreir	a	Page 1 of 1

		Inkster Boulevard Widening - West of Brookside Blvd.	CLIENT: C	ity of Winnipeg			ESTHOLE NO: TH-09-52
		UTM - N 5534132.804 E 626873.609					ROJECT NO.: 0265-411-01
SAMPLE		OR: Paddock Drilling Ltd. 'PE GRAB SHELBY TUBE	METHOD:	Bratt 22, 125 mm SS ON BULK		RECO\	_EVATION (m): 236.69 /ERY
	SOIL SYMBOL	SOIL DESCR		ON BOLK	SAMPLE TYPE		PENETRATION TESTS
0		ASPHALT (150 mm)	***************************************				
- - -		SAND AND GRAVEL (Fill) - silty - light brown - compact to dense, dry to moist - fine grained sand to coarse grained gravel - poorly graded - sub-angular and sub-rounded gravel			G	19	•
-		CLAY (Fill) - silty, some sand			G		236
- 1 -		- firm, moist - high plasticity - sub-angular gravel			G	2	
		CLAY - silty, trace sand, trace sulphide inclusions (< 10 mm dia.) - dark brown - stiff, moist - high plasticity			G	3	•
-2					Gŧ	4	23:
					Ge	5	
		- stiff below 2.4 m			G5	6	234
-3		END OF TEST HOLE AT 3.1 m IN CLAY Notes:					
		 No seepage or sloughing observed. Test hole backfilled with auger cuttings. Pavement structure cored with 150 mm hollow diameter diamon (CORE). Cored test hole located 2.2 m south (UTM N - 5534130. 	nd core drill bit in su .634, E - 626873.95	pplemental test hole, TH- 9).	09-52		
4							233
		AECOM		LOGGED BY: Geoffre			LETION DEPTH: 3.05 m
		AECOM		PROJECT ENGINEER		COMP	LETION DATE: 3/17/09 Page 1 of

PROJECT:	Inkster Boulevard Widening - West of Brookside Blvd.	City of Winnipeg		TESTHOLE NO: TH-09-53
LOCATION	: UTM - N 5534109.122 E 626841.532			PROJECT NO.: 0265-411-01
CONTRAC		Bratt 22, 125 mm SSA		ELEVATION (m): 237.07
SAMPLE T	YPE GRAB ∭SHELBY TUBE ⊠SPLIT SP	OON BULK	☑ NO R	RECOVERY CORE
DEPTH (m) SOIL SYMBOL	SOIL DESCRIPTION		SAMPLE TYPE SAMPLE #	PENETRATION TESTS
0	CONCRETE (205 mm)			237 -
-1	SAND AND GRAVEL (Fill) - silty - light brown - compact to dense, dry to moist - fine grained sand to coarse grained gravel, poorly graded - sub-angular gravel - trace clay, trace silt and brown below 0.3 m CLAY (Fill) - some silt, trace sand, trace gravel (< 10 mm dia.), trace organics - dark brown - firm, moist - high plasticity - sub-angular gravel		G01 G02 G03 G04 G05	236 -
	CLAY - silty, trace sand - brown - very stiff, moist - high plasticity		G07	
LOG OF TEST HOLE INKS TER WEST TH LOGS GPJ UMA WINN GDT 4/24/09	- some sulphide inclusions (< 25 mm dia,) and stiff below 2.7 m END OF TEST HOLE AT 3.1 m IN CLAY Notes: 1. No seepage or sloughing observed. 2. Test hole backfilled with auger cuttings. 3. Pavement structure cored with 150 mm hollow diameter diamond core drill bit in (CORE). Cored test hole located 1.8 m north (UTM N - 5534109.122, E - 626841.5	32).	G08	234 -
.06 OF TE	AECOM	LOGGED BY: Geoffrey Nolette REVIEWED BY: Nelson Ferreira PROJECT ENGINEER: Nelson F		COMPLETION DEPTH: 3.05 m COMPLETION DATE: 3/17/09 Page 1 of 1

PROJECT: Inkster Boulev	vard Widening - West of Brookside Blvd.	CLIENT: City of Winnipeg		TESTHOLE NO: TH-09-54
LOCATION: UTM - N 553	34129.503 E 626808.768		f	PROJECT NO.: 0265-411-01
CONTRACTOR: Paddock		METHOD: Bratt 22, 125 mm SSA		ELEVATION (m): 237.33
SAMPLE TYPE	GRAB SHELBY TUBE	SPLIT SPOON BULK	☑NO REC	OVERY CORE
DEPTH (m) SOIL SYMBOL	SOIL DESCRI	PTION	SAMPLE TYPE SAMPLE #	PENETRATION TESTS
- fine grain	ty, some gravel wn t to dense, dry ned sand to coarse grained gravel		G57 G58	237
- brown - soft to fir high plas - sub-angu		ace organics, trace rootlets	G59 G60	236
- dark brown bel - soft to fir - high plas - firm below 1.7 - dark brown bel - very stiff below	rm, moist sticity m low 1.8 m		G62	
				235
END OF TEST F Notes: 1. No seepage o 2. Test hole back 3. Pavement stru	mm thick) below 2.9 m HOLE AT 3.1 m IN CLAY or sloughing observed. kfilled with auger cuttings. ucture cored with 150 mm hollow diameter diamond of test hole located 0.6 m south (UTM N - 5534128.913)	core drill bit in supplemental test hole, TH-0 3, E - 626808.727).	9-54	234 -
	AECOM	LOGGED BY: Geoffrey REVIEWED BY: Nelso PROJECT ENGINEER:	n Ferreira COM	MPLETION DEPTH: 3.05 m MPLETION DATE: 3/17/09 Page 1 of 1

PROJE	ECT:	Inkster Bouleva	ard Widening - We	st of Brookside Blvd.	CLIENT: City	of Winnipeg			TES	STHOLE NO: TH	1-09-55	
LOCA	TION	: UTM - N 5534	106.444 E 626750	0.351	· 					DJECT NO.: 02	***************************************	-01
		TOR: Paddock				att 22, 125 mm SSA				VATION (m): 2		
SAMP	LE T	YPE E	GRAB	SHELBY TUBE	SPLIT SPOOM	BULK		NO RE	COVE		————	
DEPTH (m)	SOIL SYMBOL			SOIL DESCRI	PTION		SAMPLE TYPE	SAMPLE #	SPT (N)		(ELEVATION
0		- fine graine - poorly gra - sub-angul CLAY (Fill) - silty, - dark brow	n o dense, dry to moist ad sand to coarse grain ded ar and sub-rounded grain ar and sub-rounded grain trace sand, trace grain to black		anics			G162 G163 G164				237 —
-		- stiff, moist - high plast - sub-angul CLAY - silty, trace - greyish br	icity ar gravel	······································				G165 G166		•		- 236 — - -
-2		- very stiff, - high plast - sub-angul - trace silt inclusio	moist icity ar gravel	ce sulphide inclusions (< 10) mm dia.) and stiff b	elow 2.1 m		G167				235 —
- 4		Notes: 1. No seepage or	sloughing observed. filled with auger cutting			OGGED BY: Geoffrey No				ETION DEPTH: (234 —
		enal-human-homous	AECOM		ļ	EVIEWED BY: Nelson Fe			OMPL	ETION DATE: 3/		1 of 1

LOG OF TEST HOLE INKSTER WEST TH LOGS.GPJ UMA WINN.GDT 4/24/09

		Inkster Boulevard Widening - West of Brookside	Blvd. CLIENT: C	city of Winnipeg			1	STHOLE NO: TH-09-56	
		: UTM - N 5534128.404 E 626688.377						OJECT NO.: 0265-411	-01
		FOR: Paddock Drilling Ltd.		Bratt 22, 125 mm SSA	<u></u>	NO -		EVATION (m): 238.04	
SAMP	LE T	PE GRAB ∭SHELBY TU	IBE SPLIT SPO	DON BULK	$ \!$	NO R	ECOVE	1	ı
DEPTH (m)	SOIL SYMBOL	SOIL DE	SCRIPTION		SAMPLE TYPE	SAMPLE #	SPT (N)	PENETRATION TESTS	<u> </u>
0		SAND AND GRAVEL (Fill) - silty - brown, compact to dense, dry to moist - fine grained sand to coarse grained gravel, poorly	graded, sub-angular grave	el		G81			23
		CLAY (Fill) - silty, sandy, trace gravel (< 10 mm dia.), trace - dark brown - firm, moist				GOT			
		- intermediate plasticity - sub-angular gravel				G82			
						G83		.	
1						G84	Accounts a constraint printing		2
						G84	Anna de Marie de Marie de Carlos de		
						G85	are to the second second second second second second second second second second second second second second s	•	
						G86	er i ferrenser en fermener et en f. f. f. f. f. f.	•	
2		CLAY - silty, trace sand - brown grey - stiff, moist - high plasticity				G87	and desirable event and desirable events.		:
		SILT - trace gravel (< 15 mm dia.) - light brown, soft, moist, low plasticity, sub-angular CLAY - silty, trace sand, trace sulphide inclusions (< 10 m					bedele de general de l'action		
		- brown - stiff, moist - high plasticity	m wa.j						
						G88		•	
3									
		END OF TEST HOLE AT 3.1 m IN CLAY Notes: 1. No seepage or sloughing observed. 2. Test hole backfilled with auger cuttings.							
		- •							
									-
4									
		larco: t		LOGGED BY: Geoffrey Nolett				LETION DEPTH: 3.05 m	
		AECOM		REVIEWED BY: Nelson Ferre PROJECT ENGINEER: Nelso			NMP	LETION DATE: 3/21/09 Page	

PROJ	ECT: I	nkster Bou	ılevard Widening -	West of Brookside Blvd.	CLIENT: Ci	ty of Win	nipeg			TES	THOLE	NO: TH-	09-57	'
LOCA	TION:	UTM - N	5534105.809 E 62	6624.173						PRO	DJECT N	O.: 0265	-411-	-01
CONT	RACTO	OR: Padd	ock Drilling Ltd.				125 mm SSA				VATION		3.60	
SAMP	LE TY	PE	GRAB	SHELBY TUBE	SPLIT SPO	ON	BULK		NO RE	COVE	RY [CORE		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
DEPTH (m)	SOIL SYMBOL			SOIL DESCR	IPTION			SAMPLE TYPE	SAMPLE #	SPT (N		MC Liqu	> est) � 80 100	冒
0		-dark - comj - fine ! - poor - sub-	GRAVEL (Fill) - silty, t brown pact to dense, dry to m grained sand to coarse ly graded angular and sub-round	oist grained gravel ed gravel					G73		•			238 -
- - - 1		- dark - stiff, - high	brown to black	e gravel (< 10 mm dia.), trace or	ganics				G75					
		- dark - firm	trace to some sand, t brown to stiff, moist plasticity	race sulphide inclusions (< 10 m	nm dia.)				G77		•			237 -
-2		SILT - light - soft, - low							G79		•			
LOG OF TEST HOLE INKSTER WEST TH LOGS. GPJ UMA WINN. GDT 4/24/09	2012	- light END OF TE Notes: 1. Power au 2. No seepa	trace clay, trace sand, brown, firm, moist, low ST HOLE AT 2.7 m IN ger refusal at 2.7 m ge or soughing observ backfilled with auger of	ed.	p-rounded gravel				G80		•			236 -
F TEST HOLE INKSTER WEST			45001				D BY: Geoffrey N				ETION D			235 -
0			AECOM				/ED BY: Nelson CT ENGINEER: I			,UMPL	ETION D			1 of 1
اَدُ			1			PROJEC	JI ENGINEEK: I	veison Ferrei	ıra				raye	1 () 1

PROJECT: Inkster Boulevard Widening - West of B	rookside Blvd. CLIENT: Cit	ty of Winnipeg		TESTHOLE NO: TH-09-58
LOCATION: UTM - N 5534121.617 E 626576.769				PROJECT NO.: 0265-411-01
CONTRACTOR: Paddock Drilling Ltd.	METHOD: E	Bratt 22, 125 mm SSA		ELEVATION (m): 239.27
SAMPLE TYPE GRAB S	HELBY TUBE SPLIT SPO	ON BULK	☑ NO R	ECOVERY CORE
SOIL SYMBOL	IL DESCRIPTION		SAMPLE TYPE SAMPLE #	PENETRATION TESTS
0 SAND AND GRAVEL (Fill) - silty - brown, compact to dense, dry to moist - fine grained sand to coarse grained grav - sub-angular gravel CLAY (Fill) - silty, trace sand, trace gravel (< 5			G89	239 -
- firm, moist - intermediate plasticity - sub-angular gravel			G90 G91	
-1 - - -			G92	238 -
CLAY - silty, trace to some sand - brown, firm to stiff, moist - high plasticity - sub-angular gravel SILT			G94	•
- light brown - soft, moist - low plasticity			G95	237 -
- some gravel below 2.4 m - some gravel below 2.4 m - SILT (Till) - trace clay, trace sand, trace gravel - light brown - stiff, moist - low plasticity - sub-angular and sub-rounded gravel	(< 25 mm dia.)		G96	
SILT (Till) - trace clay, trace sand, trace gravel - light brown - stiff, moist - low plasticity - sub-angular and sub-rounded gravel END OF TEST HOLE AT 3.1 m IN SILT TILL Notes: 1. No seepage or sloughing observed. 2. Test hole backfilled with auger cuttings.				236 -
THOLE INVESTIGATION OF THE PROPERTY OF THE PRO				
AECOM		LOGGED BY: Geoffrey Nolette REVIEWED BY: Nelson Ferreira PROJECT ENGINEER: Nelson Fe	(COMPLETION DEPTH: 3.05 m COMPLETION DATE: 3/21/09 Page 1 of 1

				West of Brookside Blvd.	CLIENT: City o	Winnipeg		TI	ESTHOLE NO: TH-09-5	9
			5534101.940 E 62	6525.715					ROJECT NO.: 0265-411	l-01
			dock Drilling Ltd.			22, 125 mm SSA	[mmg]		LEVATION (m): 239.54	
SAMF	PLE T	YPE	GRAB	SHELBY TUBE	SPLIT SPOON	BULK	∠ NO	RECO		T
DEPTH (m)	SOIL SYMBOL			SOIL DESCF	RIPTION		SAMPLE TYPE	SPT (N)	PENETRATION TESTS	EE
0		- brov - firm - inte	, sandy, trace gravel (<	5 mm dia.)			G	65		239
2		- light - firm - low	trace clay, trace sand, t brown to stiff, moist plasticity angular and sub-rounde	trace gravel (< 25 mm dia.) ed gravel			G	70	•	238 -
-	95050505050 3050505050	Notes: 1. Power au 2. No seepa	ST HOLE AT 2.7 m IN ger refusal at 2.7 m. ge or sloughing observe	ed.			G	72	•	237 -
- - - - - - - - - - - - - -		3. Test hole	backfilled with auger cu	rttings.						236 -
	·		Value			GED BY: Geoffrey N			PLETION DEPTH: 2.74 m	
			AECOM			IEWED BY: Nelson F		COMF	PLETION DATE: 3/17/09	
ĺ			XX		PRO	JECT ENGINEER: N	elson Ferreira	l	Page	1 of 1

PROJECT: Inkster Boulevard Widening -		CLIENT: City of Winnipeg			STHOLE NO:		
CONTRACTOR: Paddock Drilling Ltd	0407.737	METHOD, D# 00 405 004			ROJECT NO.: EVATION (m)		-01
CONTRACTOR: Paddock Drilling Ltd. SAMPLE TYPE GRAB	SHELBY TUBE	METHOD: Bratt 22, 125 mm SSA SPLIT SPOON ■BULK	□ NC	RECOV			
SOIL SYMBOL SOIL SYMBOL	SOIL DESCR		Щ	SPT (N)	PENETRATIO	N TESTS er Cone Pen Test) 0mm) 60 80 100 it Wt 19 20 21 Liquid	ū
SAND AND GRAVEL (Fill) - trace (- dark brown - compact to dense, dry	m grained gravel, poorly graded	1		97	•		23
- sub-angular gravel			G	99	•		
- stiff and high plasticity below 1.4 SAND AND GRAVEL (Till) - silty, to be a silty of the compact to der	race clay			100			23
- fine grained sand to medium - sub-angular gravel END OF TEST HOLE AT 1.8 m IN Notes: 1. Power auger refusal at 1.8 m. 2. No seepage or sloughing observ	m grained gravel, poorly graded SAND AND GRAVEL TILL	1	G-	102	•		
3. Test hole backfilled with auger of the control o	uttings.						23
4							6 1
AECOM		LOGGED BY: Geoffrey Nolet REVIEWED BY: Nelson Ferra PROJECT ENGINEER: Nelson	eira		PLETION DEPTH PLETION DATE:		1 0

PROJECT:	Inkster Boulevard Widening - West of Brookside Blvd. CL	JENT: City of Winnipeg		TE	STHOLE NO: TH-0	9-61
	: UTM - N 5534051.395 E 626438.942				OJECT NO.: 0265-	·
		ETHOD: Bratt 22, 125 mm SSA	7		EVATION (m): 240.	.51
DEPTH (m) SOIL SYMBOL	YPE GRAB ((()) SHELBY TUBE (()) SOIL DESCRIPTI		SAMPLE TYPE SAMPLE # G	SPT (N)	PENETRATION TESTS	st) ♦ (st) • (DI (st)
- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ASPHALT (75 mm) CRUSHED LIMESTONE (530 mm) - light brown - compact to dense, dry to moist - 20 mm down, trace fines SILT (Till) - some sand, trace clay, trace gravel (< 15 mm dia.) - light brown - firm, moist - low to intermediate plasticity		G17 G18			240
- 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- sub-angular gravel SAND (Till) - silty, trace gravel (< 10 mm dia.) - light brown, compact, dry to moist - fine to coarse grained sand, poorly graded - sub-angular gravel END OF TEST HOLE AT 1.5 m IN SAND TILL Notes: 1. Power auger refusal at 1.5 m. 2. No seepage or sloughing observed. 3. Geotextile fabric at 1.2 m. 4. Test hole backfilled with auger cuttings. 5. Pavement structure cored with 150 mm hollow diameter diamond core (CORE). Cored test hole located 1.2 m west (UTM N - 5534051.514, E -	drill bit in supplemental test hole, TH-09-61 626437.788).	G20		•	238
						230
- - - - - - - - - - - - - - - - - - -						23
4	AECOM	LOGGED BY: Geoffrey Nolette REVIEWED BY: Nelson Ferreira PROJECT ENGINEER: Nelson Fe			LETION DEPTH: 1.52 LETION DATE: 3/13/0	

	Boulevard Widening - West of Brookside Blvd.	CLIENT: City of Winnipeg		TESTHOLE NO: TH-09-62
	N 5534154.295 E 626435.800			PROJECT NO.: 0265-411-01
CONTRACTOR: Pa		METHOD: Bratt 22, 125 mm SSA SPLIT SPOON BULK		ELEVATION (m): 240.37 RECOVERY TOORE
SAMPLE TYPE SOIL SYMBOL (m)	GRAB SHELBY TUBE SOIL DESCRI		SAMPLE TYPE SAMPLE #	PENETRATION TESTS
SAND AN - lig - cc - fir - st - CLAY (Fil - de - fir - hi - st - The st - st - cc - fir - hi - st - cc - fir - hi - st - cc - cc - cc - de - fir - hi - st - cc - cc - cc - cc - cc - cc - cc - c	II) - silty, trace clay inclusions (< 10 mm dia.), trace gravel th brown, compact to dense, dry to moist the grained sand to medium grained gravel, poorly graded, step the structure of the structure of the structure of the structure cored with 150 mm hollow diameter diamond.	sub-angular gravel	G25 G26 G27 G29 G30 G31 G32	240
-3 	Cored test hole located 0.6 m west (UTM N - 5534154.335	5, E - 626435.224).		233
4	AECOM	LOGGED BY: Geoffrey Note: REVIEWED BY: Nelson Ferr PROJECT ENGINEER: Nels	eira	COMPLETION DEPTH: 2.44 m COMPLETION DATE: 3/13/09 Page 1 of

		Inkster Boulevard Widening - West of Brookside Blvd. CLIENT: City of Will UTM - N 5534223.127 E 626425.867	nnipeg			+	STHOLE N			
		OR: Paddock Drilling Ltd. METHOD: Bratt 22	125 mm SSA			1	EVATION (
SAMPLE			BULK	Z	NO R	ECOVI		CORE		
DEPTH (m)	SYMBOL	SOIL DESCRIPTION		SAMPLE TYPE	SAMPLE #	SPT (N)		s/300mm) 60 I Unit Wt IV/m³) 19 2 MC Liqu	> est) � 80 100	ī
0		ASPHALT (100 mm)						:		
		SAND AND GRAVEL (Fill) - silty - light brown, compact to dense, dry to moist - fine grained sand to coarse grained gravel, poorly graded, sub-angular gravel CLAY (Fill) - silty, trace sand, trace gravel (< 5 mm dia.) - dark brown - firm to stiff, moist - high plasticity - sub-angular and sub-rounded gravel			G33 G34					2
1		SILT (Till) - sandy, trace gravel (max. size 5 mm) - light brown - soft, moist - low plasticity - sub-angular gravel			G35 G36		•			
030303030303					G37 G38		•	•		
39399933		SAND (Till) - silty, some gravel (max. size 15 mm) - light brown, compact to dense, dry to moist - fine to coarse grained sand, poorly graded, sub-rounded gravel END OF TEST HOLE AT 2.4 m IN SAND TILL Notes: 1. Power auger refusal at 2.4 m. 2. No seepage or sloughing observed. 3. Tost hole backfilled with auger cuttings			G39		•			
3		 Test hole backfilled with auger cuttings. Pavement structure cored with 150 mm hollow diameter diamond core drill bit in supplement (CORE). Cored test hole located 0.7 m east (UTM N - 5534223.252, E - 626426.578). 	al test hole, TH-09-63							
4		AECOM	D BY: Geoffrey Nolette VED BY: Nelson Ferreira CT ENGINEER: Nelson Fe	Vero!	C		LETION DE LETION DA	TE: 3/17		1

	ter Boulevard Widening - W		CLIENT: Ci	y of Winnip	eg			 	STHOLE NO: TH-09-64	
	M - N 5534321.782 E 6264	32.510	T					 	OJECT NO.: 0265-411	-01
SAMPLE TYPE	Paddock Drilling Ltd.	SHELBY TUBE	METHOD: 8	3ratt 22, 125	S mm SSA BULK		NO PI	ECOVE	EVATION (m): 240.27	
SOIL SYMBOL	GIVE	SOIL DESCR	Example		poer	SAMPLE TYPE	SAMPLE#	SPT (N)	PENETRATION TESTS	
SAN	HALT (100 mm) ID (Fill) - silty, some gravel - light brown - compact to dense, dry - fine grained sand to coarse gra - sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-rounded in the sub-angular and sub-angular angular an	nined gravel, poorly graded gravel					G41 G42		•	240
CLA'	Y (Fill)- silty, trace sand, trace gra - dark brown - firm, moist - high plasticity	vel (< 10 mm dia.), trace su	llphide inclusions (<	5 mm dia.), tra	ace organics		G43 G44			
CLA	D AND GRAVEL (Fill) - silty - light brown, compact, moist, fir - poorly graded, sub-angular and Y - silty, trace sand - dark brown - firm, moist, high plasticity (Till) - trace clay, sandy, trace grilight brown	d sub-rounded gravel	rained gravel				G45 G46		•	239
	- firm, moist - low plasticity - sub-angular and sub-rounded (gravel					G47 G48		•	238
Note - 1. Pc 2. Nc 3. Te 4. Pe (COF - 3	OF TEST HOLE AT 2.4 m IN SIL is: ower auger refusal at 2.4 m. o seepage or sloughing observed. ost hole backfilled with auger cutting averant structure cored with 150 RE). Cored test hole located 1.1 r	ngs. mm hollow diameter diamon	nd core drill bit in su 14, E - 626431.470	pplemental tes	it hole, TH-09-64					237
4	AECOM			REVIEWED	f: Geoffrey Nolette BY: Nelson Ferreira NGINEER: Nelson I		C		ETION DEPTH: 2.44 m LETION DATE: 3/17/09 Page	1 nf

PROJEC	PROJECT: Inkster Boulevard Widening - West of Brookside Blvd. CLIENT: City of Winnipeg							TESTHOLE NO: TH-09-65						
	LOCATION: UTM - N 5534100.133 E 626399.324							PROJECT NO.: 0265-411-01						
CONTRACTOR: Paddock Drilling Ltd. METHOD: Bratt 22, 125 mm SSA						· · · · · ·	ELEVATION (m): 240.77 NO RECOVERY CORE							
SAMPLE TYPE GRAB SHELBY TUBE SPLIT SPOON						N	BULK	$ \angle$	JNO F	RECOV	T		T	
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION				SAMPLE #	SPT (N)	■ Total Ui (kN/r	ter ※ : Cone ◇ d Pen Test) ◆ 00mm) 60 80 10i nit Wt ■ n³) 19 20 2: Liquid	ELEVATI				
0		- brown - firm, moi - intermed - sub-angu	st iate plasticity ular and sub-round wn (oxidized)), trace sulphide	inclusions (< 30 m	m dia.)			G153				240 -
		CLAY - silty, trac - brown - firm to st	ce sand							G158		•		239 -
LOG OF TEST HOLE INKSTER WEST TH LOGS.GPJ UMA WINN GDT 4/24/09 A CONTRACT OF THE CONTRACT OF		- light brov - soft, moi - low plast - sub-angu - some gravel ar END OF TEST I Notes: 1. Power auger I 2. No seepage of	dy, trace clay, trace wn st icity ular and sub-round and very stiff below HOLE AT 2.7 m IN	ed gravel 2.4 m SILT TILL	m dia.)					G159				238 -
00 06 0F TEST +	AECOM					REVIEW	D BY: Geoffrey Nolet ED BY: Nelson Ferro CT ENGINEER: Nelson	eira			LETION DEPT LETION DATE	: 3/21/09	1 of 1	

PROJ		TESTHOLE NO: TH-09-66				
		UTM - N 5534116.452 E 626351.390	PROJECT NO.: 0265-411-01			
SAMP		OR: Paddock Drilling Ltd. METHOD: Bratt 22, 125 mm S PE GRAB SHELBY TUBE SPLIT SPOON ■BULK	ELEVATION (m): 241.19			
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION	PENETRATION TESTS			
0		ASPHALT (125 mm)				
-		SAND AND GRAVEL (Fill) -silty, trace clay, some oxidations - grey - compact to dense, moist - fine grained sand to medium grained gravel - poorly graded - sub-angular gravel	G105	24		
- - -		- Sub-angular graver	G106			
1 1		CLAY - silty, trace sand, trace gravel (< 15 mm dia.), trace organics - dark brown to black - firm, moist - intermediate to high plasticity - sub-rounded gravel	G108			
• • •		- dark brown and very stiff below 1.4 m	G109	•		
- - -	030303	SILT (Till) - trace clay, trace sand, trace gravel (< 45 mm dia.) - light brown - firm, moist - low plasticity - sub-angular gravel	G110	•		
-2 - - -	0.30.30.30.30.30.30.30.30.30.30.30.30.30	- soft below 2.0 m	G111	23		
- - - -3		SAND (Till) - silty, some gravel, trace clay - light brown, compact dense, dry to moist - fine grained sand to coarse grained gravel, poorly graded, sub-rounded gravel END OF TEST HOLE AT 2.7 m IN SAND TILL Notes: 1. Power auger refusal at 2.7 m. 2. No seepage or sloughing observed. 3. Test hole backfilled with auger cuttings.	G112	•		
		Pavement structure cored with 150 mm hollow diameter diamond core drill bit in supplemental test hole, 7 (CORE). Cored test hole located 2.0 m south (UTM N - 5534114.495, E - 626351.466).	H-09-65	23		
4						
		AFCOM REVIEWED BY: No		COMPLETION DEPTH: 2.74 m COMPLETION DATE: 3/21/09		
			ER: Nelson Ferreira	Page 1 of		

	PROJECT: Inkster Boulevard Widening - West of Brookside Blvd. CLIENT: City of Winnipeg							
	LOCATION: UTM - N 5534102.220 E 626300.964 CONTRACTOR: Paddock Drilling Ltd. METHOD: Bratt 22, 125 mm SSA							
	CONTRACTOR: Paddock Drilling Ltd. SAMPLE TYPE GRAB METHOD: Bratt 22, 125 mm SSA NO RE NO RE							
SAMPLE TYPE	GRAB SHELBY 1	JNOK	T					
DEPTH (m) SOIL SYMBOL	SOIL DE	PENETRATION TESTS						
0 SAN	ID AND GRAVEL (Fill) - silty - light brown, compact to dense, dry to moist, fine sub-angular and sub-rounded gravel	grained sand to coarse grained, gra	avel, poorly graded,		241-			
CLA	Y (Fill) - silty, trace sand, trace gravel (< 10 mm dia - dark brown to black - firm to stiff, moist - intermediate to high plasticity - sub-angular gravel), trace organics		G145 G146 G147 G148				
CLA	Y - silty, trace to some sand - brown - firm to stiff, moist - high plasticity - sub-angular gravel			G149				
	ce sulphide inclusions (< 10 mm dia.) and brown bel	ow 1.8 m		G151	239			
Note 1. No	OF TEST HOLE AT 3.1 m IN CLAY ss: o seepage or sloughing observed. est hole backfilled with auger cuttings.			G152	238 -			
1000	AECOM	REV	GED BY: Geoffrey Nolette EWED BY: Nelson Ferreira JECT ENGINEER: Nelson Ferr		COMPLETION DEPTH: 3.05 m COMPLETION DATE: 3/21/09 Page 1 of 1			

PROJ	ECT:	Inkster Boulev	vard Widening - V	Vest of Brookside Blvd.	CLIENT: City	of Winni	ipeg			TESTHOLE NO: TH-09-68
LOCA	TION	: UTM - N 553	34114.495 E 6262	227.700						PROJECT NO.: 0265-411-01
CONT	RAC ⁻	TOR: Paddocl	c Drilling Ltd.		METHOD: Br					ELEVATION (m): 241.14
SAMP	LE T	YPE	GRAB	SHELBY TUBE	SPLIT SPOO	N E	BULK	N	O REC	OVERY CORE
DEPTH (m)	SOIL SYMBOL			SOIL DESCR	RIPTION			SAMPLE TYPE	SAMPLE #	PENETRATION TESTS
-		- light bro - compact - fine grai - poorly g	to dense, moist ned sand to medium					G	113	2
-		- brown - firm, mo - intermed	ndy, trace gravel (< 2 ist diate plasticity ular gravel	0 mm dia.)					114	
- - - - -									116	2
-2		- trace sulphide 2.0 m	inclusions (< 10 mm	dia.) and very stiff below					118	
124/09										2
OGS.GPJ UMA WINN.GDT 4	90303	- light brot - firm, mo - sub-ang END OF TEST Notes: 1. No seepage of		i .				G	120	2:
LOG OF TEST HOLE INKSTER WEST TH LOGS GPJ UMA WINN GDT 4/24/09										
Ĭ.			AFCOLL				BY: Geoffrey No			MPLETION DEPTH: 3.05 m
၁			AECOM				D BY: Nelson Fe			MPLETION DATE: 3/21/09
2			4		F	KUJEU	ENGINEER: Ne	ison Ferreira	1	Page 1 c

PROJECT:	Inkster Boulevard Widening - West of Brookside Blvd.	CLIENT: City of Winnipeg		TESTHOLE NO: TH-09-69
LOCATION	: UTM - N 5534099.419 E 626182.415			PROJECT NO.: 0265-411-01
CONTRAC	TOR: Paddock Drilling Ltd.	METHOD: Bratt 22, 125 mm SSA		ELEVATION (m): 240.87
SAMPLE T	YPE GRAB SHELBY TUBE	SPLIT SPOON BULK	∠NO RI	ECOVERY CORE
DEPTH (m) SOIL SYMBOL	SOIL DESCRI	PTION	SAMPLE TYPE SAMPLE #	PENETRATION TESTS
-1 1 	CLAY (Fill) - silty, trace sand, trace gravel (< 5 mm dia.), trace orga - dark brown - firm, moist, high plasticity - sub-angular gravel SAND (Fill) - silty, some clay, some gravel - brown, compact to dense, dry to moist, low plasticity - fine grained sand to coarse grained gravel - well graded - sub-angular gravel CLAY (FILL) - silty, trace sand, trace gravel (< 15 mm dia.), some o - dark brown to black - firm, moist - high plasticity - sub-angular gravel CLAY - silty, trace sand		G137 G138 G139 G140	240
	- brown - very stiff, moist - high plasticity - sub-angular gravel - trace sulphide inclusions (< 10 mm dia.) and brown below 1.7 m		G142	239 —
-3	- stiff below 1.8 m END OF TEST HOLE AT 3.1 m IN CLAY Notes: 1. No seepage or sloughing observed. 2. Test hole backfilled with auger cuttings		G144	238—
	AECOM	LOGGED BY: Geoffrey Nolette REVIEWED BY: Nelson Ferreira PROJECT ENGINEER: Nelson Fe	С	COMPLETION DEPTH: 3.05 m COMPLETION DATE: 3/21/09 Page 1 of 1

LOG OF TEST HOLE INKSTER WEST TH LOGS.GPJ UMA WINN.GDT 4/24/09

		····	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Vest of Brookside Blvd.	CLIENT: C	ity of Winnipe	eg					NO: TH		
ļ			534111.920 E 626	142.487	T.,							NO.: 026		-01
SAME			ck Drilling Ltd.	SHELBY TUBE	METHOD:	Bratt 22, 125	BULK		IO R	ECOVE		I (m): 24	0.96	
DEPTH (m)	SOIL SYMBOL			SOIL DESCR				SAMPLE TYPE	SAMPLE #	SPT (N)	PENE1	RATION TES Becker ** namic Cone andard Pen 1 ws/300mm) 40 60 total Unit Wt ** (kN/m²) 8 19 MC Liq	♦ Fest) ♦ 80 100	ELE
-23		- brown - compa - fine gr - poorly - sub-ar CLAY (Fill) - s - brown - interm - sub-ar CLAY - silty, tr - dark br - firm to - high pl	act to dense, moist ained sand to coarse g graded agular gravel iitty, some gravel (< 5 r firm to stiff, moist ediate to high plasticity gular and sub-rounded race sand, trace organizown to black stiff, moist asticity	nm dia.), trace sand, trace org	ganics				G121 G122 G123 G124 G125 G126 G127					239
4			***			LOGGED BY	: Geoffrey Nolette		Tc	OMPL	ETION DI	EPTH: 3.0	5 m	
			AECOM			REVIEWED E	3Y: Nelson Ferreira		С			ATE: 3/21	/09	
						PROJECT EN	GINEER: Nelson F	erreira	a l			F	age	1 of

				of Brookside Blvd.	CLIENT: Ci	ty of Win	nipeg			TE	STHC	LE NO	: TH-0	09-7	<u> </u>
		UTM - N 5534099		317						PR	OJEC	T NO.:	0265	-411	-01
		OR: Paddock Drilli					125 mm SSA		71			ION (m	***************************************	.69	
SAMPL	E TY	PE GRA	AB (SHELBY TUBE	SPLIT SPO	ON	BULK	-]NO R	ECOVI			ORE		
DEPTH (m)	SOIL SYMBOL			SOIL DESCRI	PTION			SAMPI E TYPE	SAMPLE #	SPT (N)	0 20 16 17	Total Ui (kN/r 18 astic MC	cer ** Cone © d Pen Te 00mm) 60 8 nit Wt n³) 19 20	est)	出
0 - - - - - - - - - -		 fine grained sar sub-angular gra 	at to dense, dry to m nd to coarse grained avel e sand, trace gravel asticity	oist d gravel, poorly graded (< 5 mm dia.), trace orga	nics				G129 G130 G131						240
- - - - - - - - -		CLAY - silty, trace sand - brown - firm, moist - intermediate pla - sub-angular gra - trace sulphide inclusio - very stiff below 1.8 m	asticity avel ons (< 5 mm dia.) a	nd brown below 1.6 m					G133 G134 G135			•			239
- - - - - - - - - - - - - - - - - - -		END OF TEST HOLE A Notes: 1. No seepage or sough 2. Test hole backfilled w	hing observed.						G136			•			238
- 4		AE					D BY: Geoffrey N ED BY: Nelson I					N DEPTI			237
		AC	LCOM		<u>,</u>		TENGINEER: 1	~~~~		OWITL	-1101	· DATE.			1 of '

AECOM

Inkster Boulevard Widening Brookside Boulevard to Keewatin Street Subsurface Investigation

Appendix BPhotos of Core Samples



Photo 1: Core sample from TH-09-51.



Photo 2: Core sample from TH-09-52.



Photo 3: Core sample from TH-09-53



Photo 4: Core sample from TH-09-54



Photo 5: Core sample from TH-09-61.



Photo 6: Core sample from TH-09-62.





Photo 7: Core sample from TH-09-63



Photo 8: Core sample from TH-09-64

City of Winnipeg

Inkster Boulevard Widening Brookside Boulevard to Keewatin Street Subsurface Investigation

Prepared by:

AECOM Canada Ltd.

1479 Buffalo Place, Winnipeg, MB, Canada R3T 1L7 T 204.284.0580 F 204.475.3646 www.aecom.com

Project Number:

0265 411 00 (4.4.2)

Date:

March, 2009



Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("Consultant") for the benefit of the City of Winnipeg ("Client") in accordance with the agreement between Consultant and Client (the "Agreement") for the services described therein, and is subject to the budgetary, time and other constraints and limitations set forth therein.

The information and data contained in the Report, including without limitation the results of any inspections, sampling, testing and analyses and any conclusions or recommendations of Consultant (the "Information"), represent Consultant's professional judgement in light of the knowledge and information available to it at the time of preparation of the Report. Consultant has not updated the Report since the date that the Report was prepared. Further, Consultant has relied upon the accuracy of the information provided to it by Client in order to prepare the Report and Consultant has not independently verified the accuracy of such information, nor was it required to do so. Thus, Consultant shall not be responsible for any events or circumstances that may have occurred since the date on which the Report was prepared which may affect the information contained therein, or for any inaccuracies contained in information that was provided to Consultant by Client.

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This Disclaimer is attached to and forms part of the Report.

AECOM

1479 Buffalo Place, Winnipeg, Manitoba R3T 1L7 T 204.284.0580 F 204.475.3646 www.aecom.com

March 9, 2009

Project Number: 0265 411 00 (4.4.2)

Mr. Ron Bruce, P.Eng. AECOM Canada Ltd. 2 – 1600 Ness Avenue Madison Square Winnipeg, Manitoba R3J 3W7

Dear Sir:

Re: Inkster Boulevard Widening Field and Laboratory Investigation

AECOM Canada Ltd. is pleased to present our report on the above referenced project. If you have any questions, please do not hesitate to contact Nelson Ferreira or Jared Baldwin of our office.

Sincerely,

AECOM Canada Ltd.

Ron Typliski, P.Eng.

Vice-President, Manitoba District

R. V. Frytoti

Canada West Region

/dh

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Revision Log

Revised By	Date	Issue / Revision Description
N. Ferreira	March 9/09	Final

Signature Page

Report Prepared By:

Jared Baldwin, M.Sc., EIT

Report Reviewed By:



Jeff Tallin, P.Eng.



Certificate of Authorization

AECOM Canada Ltd. (MB)

No. 4671

Date: 69/03/09

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Figures Test Hole Plan Appendix A Test Hole Logs Appendix B Photos of Core Samples



1. Summary

This report summarizes the results of the subsurface investigation completed for the proposed Inkster Boulevard Widening between Brookside Boulevard and Keewatin Street. The project consists of construction of a four lane roadway between Brookside Boulevard and King Edward Street and King Edward Street and Keewatin Street, and updates to the intersections at Inkster Boulevard and Brookside Boulevard, King Edward Street, and Keewatin Street. Information regarding the subsurface conditions along the multi-use path is provided for design and construction.

2. Field Investigation and Laboratory Program

A total of 50 test holes were drilled along the proposed Inkster Boulevard alignment widening between Brookside Boulevard and Keewatin Street at the locations shown on Figures 1 to 7.

The field investigation was split in two phases. The first phase was conducted on January 22 and 23, 2009 and comprised drilling the test holes along the proposed east bound alignment and multi-use path. These test holes were drilled to a depth of 3.1 m below ground surface by Paddock Drilling Ltd. using an Acker SS2 Maruca track drill equipped with 125 mm diameter solid stem augers. The first phase of the investigation was supervised by Jared Baldwin, EIT of AECOM.

The second phase was conducted on January 27, 28 and 31, 2009 and comprised drilling the test holes along the existing alignment of Inkster Boulevard and intersecting streets. These test holes were drilled to a depth of 3.1 m below ground surface by Paddock Drilling Ltd. using a Brat 22 (January 27 and 28) and Canterra CT250 (January 31) truck mounted drills equipped with 125 mm diameter solid stem augers. The pavement structure (asphalt and/or concrete) was cored by Quality Coring using a portable coring machine equipped with a hollow 150 mm diameter diamond core drill bit. TH-09-38 was cored but was not drilled due to the proximity to overhead and buried services. During this phase traffic protection was provided by Guardian Traffic Services. Two test holes, TH-09-08 and TH-09-35, were drilled on the shoulder adjacent to the locations cored in the pavement core due to proximity to moving traffic. The second phase of the investigation was supervised by Geoff Nolette of AECOM.

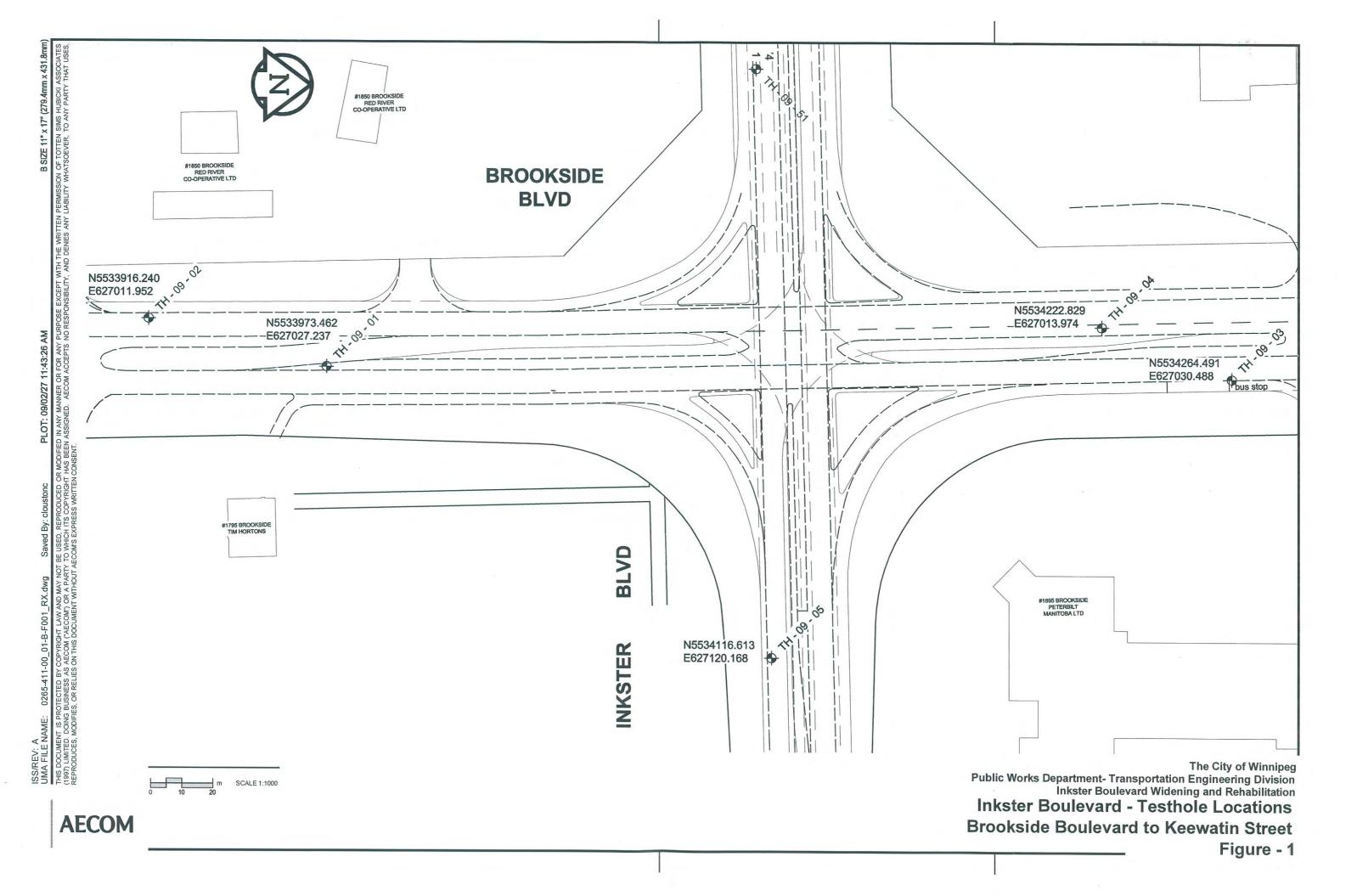
Other pertinent information such as groundwater and drilling conditions were also recorded during the field investigations. Disturbed (auger cuttings) samples retrieved during the field investigation were transported to AECOM's material testing laboratory for further testing.

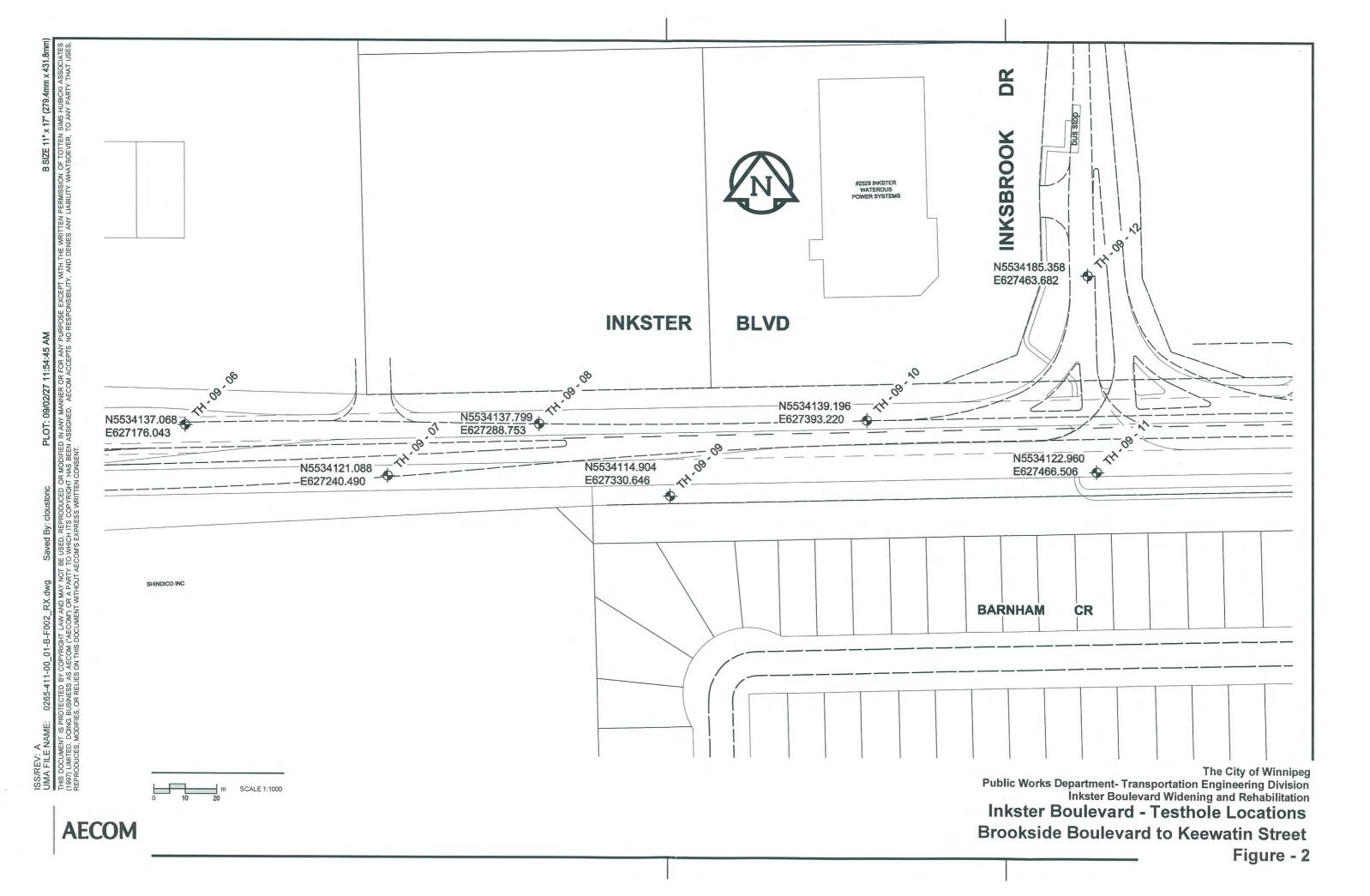
The laboratory testing program consisted of moisture content determination, Atterberg limits and hydrometer tests. The laboratory information has been included on the test hole logs and a summary table of the laboratory test results has been included in Appendix A.

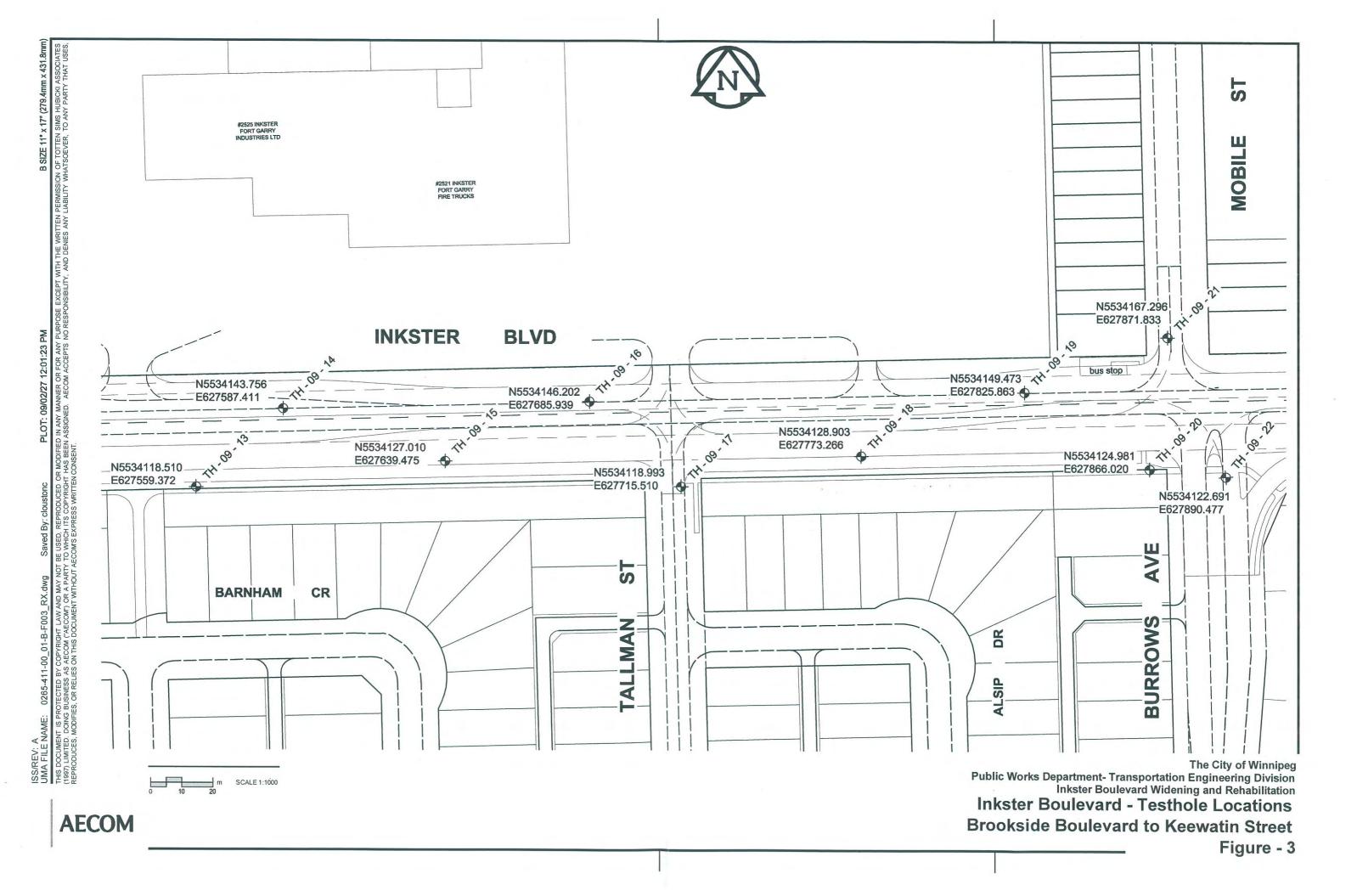
Test hole locations were surveyed and marked and any changes to their location as a result of buried and overhead services were recorded, marked and surveyed. UTM coordinates are provided on the test hole logs.

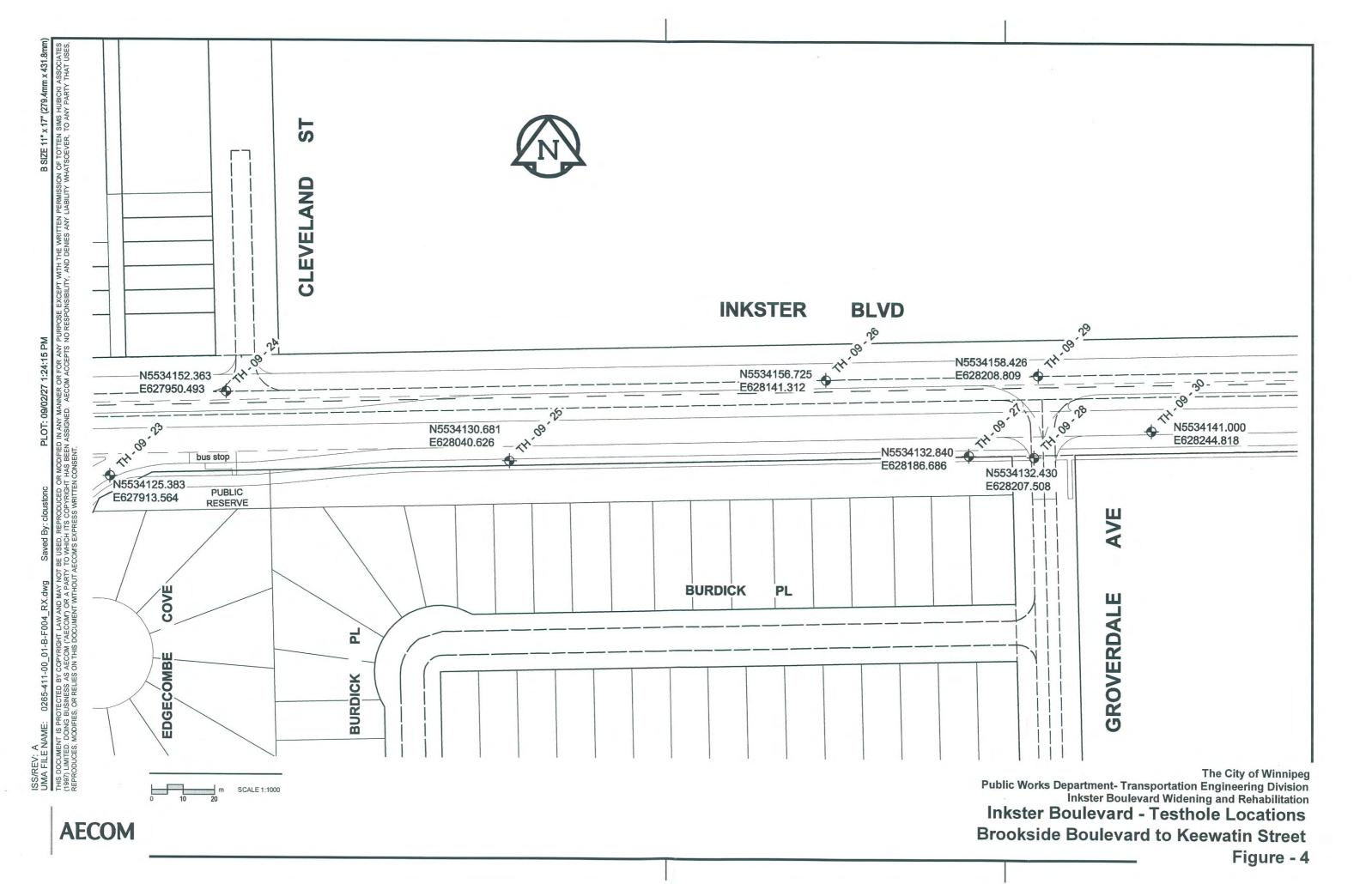
Photographs of the core samples of the existing pavement are included in Appendix B. No tests were conducted on the core samples.

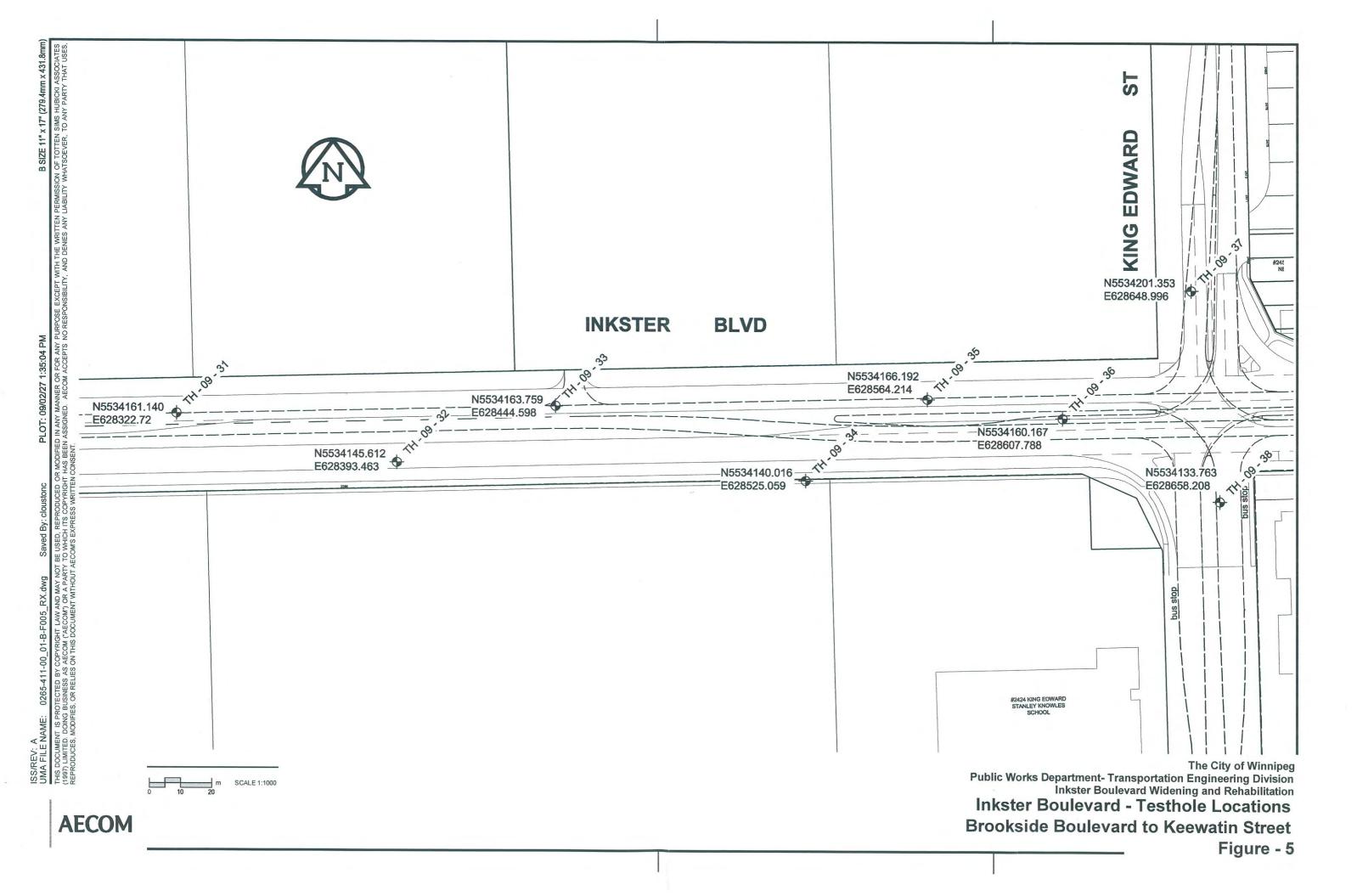
Figures Test Hole Plan

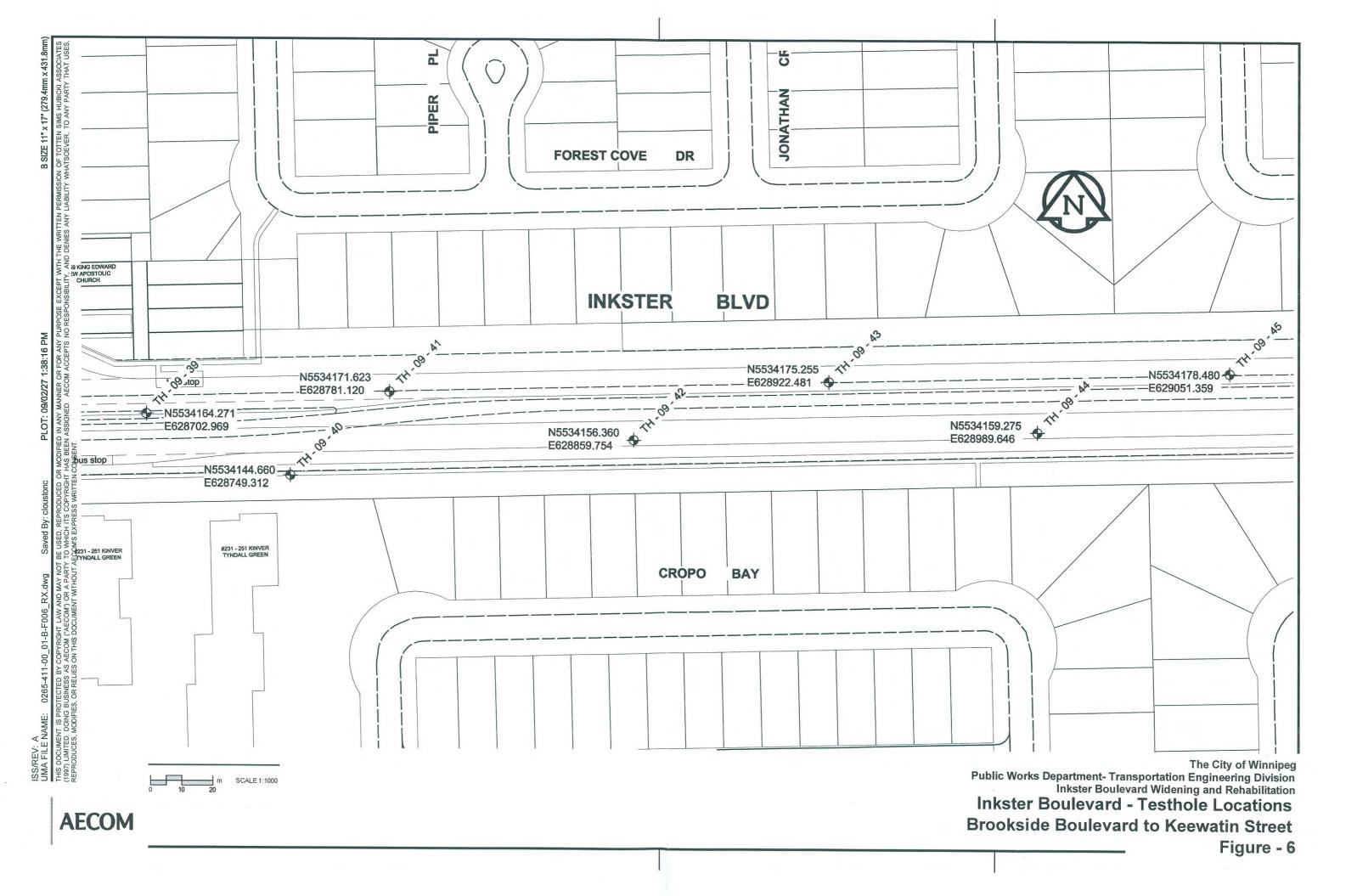


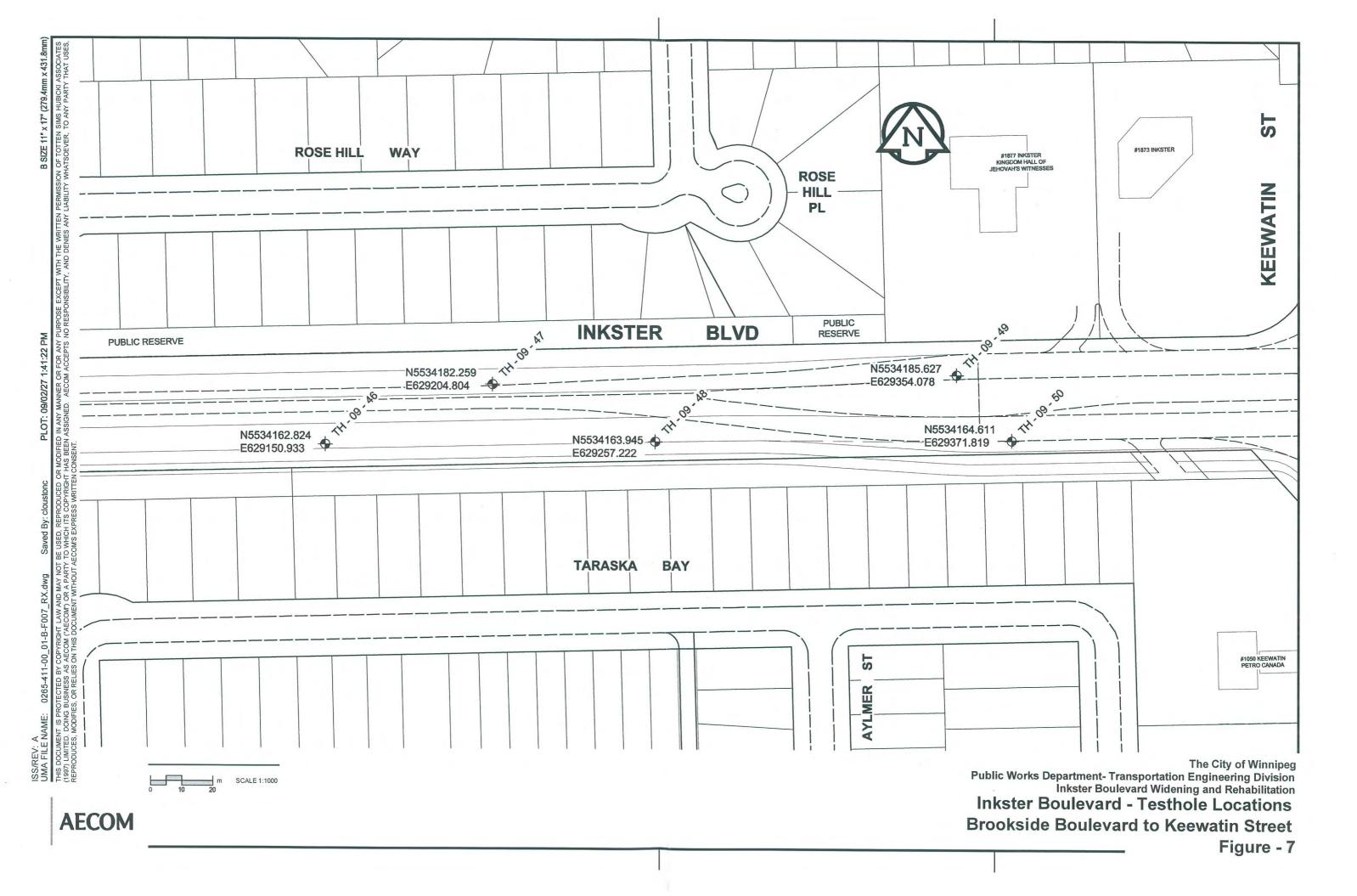












Appendix A Test Hole Logs

AECOM Canada Ltd.

GENERAL STATEMENT

NORMAL VARIABILITY OF SUBSURFACE CONDITIONS

The scope of the investigation presented herein is limited to an investigation of the subsurface conditions as to suitability for the proposed project. This report has been prepared to aid in the evaluation of the site and to assist the engineer in the design of the facilities. Our description of the project represents our understanding of the significant aspects of the project relevant to the design and construction of earth work, foundations and similar. In the event of any changes in the basic design or location of the structures as outlined in this report or plan, we should be given the opportunity to review the changes and to modify or reaffirm in writing the conclusions and recommendations of this report.

The analysis and recommendations presented in this report are based on the data obtained from the borings and test pit excavations made at the locations indicated on the site plans and from other information discussed herein. This report is based on the assumption that the subsurface conditions everywhere are not significantly different from those disclosed by the borings and excavations. However, variations in soil conditions may exist between the excavations and, also, general groundwater levels and conditions may fluctuate from time to time. The nature and extent of the variations may not become evident until construction. If subsurface conditions differ from those encountered in the exploratory borings and excavations, are observed or encountered during construction, or appear to be present beneath or beyond excavations, we should be advised at once so that we can observe and review these conditions and reconsider our recommendations where necessary.

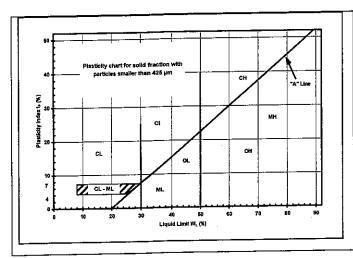
Since it is possible for conditions to vary from those assumed in the analysis and upon which our conclusions and recommendations are based, a contingency fund should be included in the construction budget to allow for the possibility of variations which may result in modification of the design and construction procedures.

In order to observe compliance with the design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated, we recommend that all construction operations dealing with earth work and the foundations be observed by an experienced soils engineer. We can be retained to provide these services for you during construction. In addition, we can be retained to review the plans and specifications that have been prepared to check for substantial conformance with the conclusions and recommendations contained in our report.

EXPLANATION OF FIELD & LABORATORY TEST DATA

					UMA	uscs		Laboratory	/ Classification Crite	ria
		Descripti	on	S	Log Symbols	Classification	Fines (%)	Grading	Plasticity	Notes
		CLEAN GRAVELS	Well graded gra sandy gravels, wi or no fines	avels, ith little	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	GW	0-5	C _U > 4 1 < C _C < 3		
	GRAVELS (More than 50% of	(Little or no fines)	Poorly graded gravels, sandy gravels, with little or no fines			GP	0-5	Not satisfying GW requirements	. <u>. </u>	Dual symbols if 5- 12% fines.
ILS	coarse fraction of gravel size)	DIRTY GRAVELS	Silty gravels, silty gravels	sandy		GM	> 12		Atterberg limits below "A" line or W _P <4	Dual symbols if above "A" line and
INED SO	J. 2 3)	(With some fines)	Clayey gravels, sandy grave			GC	> 12		Atterberg limits above "A" line or W _P <7	4 <w<sub>P<7</w<sub>
COARSE GRAINED SOILS		CLEAN SANDS	Well graded sa gravelly sands, w or no fines	ith little	00 O	sw	0-5	C _U > 6 1 < C _c < 3		$C_U = \frac{D_{60}}{D_{10}}$ $C_C = \frac{(D_{30})^2}{D_{10} x D_{60}}$
COAF	SANDS (More than 50% of	(Little or no fines)	Poorly graded s gravelly sands, w or no fines	ith little	000	SP	0-5	Not satisfying SW requirements		$C_C = \frac{\left(D_{30}\right)^2}{D_{10} x D_{60}}$
	coarse fraction of sand size)	DIRTY SANDS	Silty sands sand-silt mixtu			SM	> 12		Atterberg limits below "A" line or W _P <4	
		(With some fines)	Clayey sands, sand-clay mixtures			sc	> 12		Atterberg limits above "A" line or W _P <7	
	SILTS (Below 'A' line	W _L <50	Inorganic silts, silty or clayey fine sands, with slight plasticity			ML				<u> </u>
	negligible organic content)	W _L >50	Inorganic silts of high plasticity			мн				
SOILS	CLAYS	W _L <30	Inorganic clays, silty clays, sandy clays of low plasticity, lean clays			CL				
FINE GRAINED SOILS	(Above 'A' line negligible organic	30 <w<sub>L<50</w<sub>	Inorganic clays a clays of medi plasticity			CI			Classification is Based upon Plasticity Chart	
FINE GI	content)	W _L >50	Inorganic clays of plasticity, fat c			сн				
	ORGANIC SILTS &	W _L <50	Organic silts organic silty clays plasticity	s of low		OL				
	CLAYS (Below 'A' line)	W _L >50	Organic clays of plasticity			он		<u> </u>		
	HIGHLY ORGA	INIC SOILS	Peat and other organic soi			Pt		/on Post ification Limit		or odour, and often s texture
		Asphalt		7	rill				, remarks	
[.		Concrete			irock rentiated)		<u> </u>		Al	ECOM
	₩	Fill		(Lime	drock estone)		· ·		signated fracti	

When the above classification terms are used in this report or test hole logs, the designated fractions may be visually estimated and not measured.



FRAC	CTION	SEIVE S	SIZE (mm)	DEFINING RANGES OF PERCENTAGE BY WEIGH OF MINOR COMPONENTS					
		Passing Retained		Percent	identifier				
- 1	Coarse	76	19	35-50	and				
Gravel	Fine	19 4.75		00-00	Quite.				
	Coarse	4.75	2.00	20-35	"y" or "ey" *				
Sand	Medium	2.00	0.425	20.00	, J. J. J				
	Fine	0.425	0.075	10-20	some				
				10 20					
Silt (non-plastic) or Clay (plastic)		< 0.0)75 mm	1-10	trace				

^{*} for example: gravelly, sandy clayey, silty

Definition of Oversize Material

COBBLES: 76mm to 300mm diameter BOULDERS: >300mm diameter

LEGEND OF SYMBOLS

Laboratory and field tests are identified as follows:

q_α - undrained shear strength (kPa) derived from unconfined compression testing.

T_v - undrained shear strength (kPa) measured using a torvane

pp - undrained shear strength (kPa) measured using a pocket penetrometer.

L_v - undrained shear strength (kPa) measured using a lab vane.

F_v - undrained shear strength (kPa) measured using a field vane.

γ - bulk unit weight (kN/m³).

SPT - Standard Penetration Test. Recorded as number of blows (N) from a 63.5 kg hammer dropped 0.76 m (free fall) which is required to drive a 51 mm O.D. Raymond type sampler 0.30 m into the soil.

DPPT - Drive Point Pentrometer Test. Recorded as number of blows from a 63.5 kg hammer dropped 0.76 m (free fall) which is required to drive a 50 mm drive point 0.30 m into the soil.

w - moisture content (W_L, W_P)

The undrained shear strength (Su) of a cohesive soil can be related to its consistency as follows:

Su (kPa)	CONSISTENCY
<12	very soft
12 – 25	soft
25 – 50	medium or firm
50 – 100	stiff
100 – 200	very stiff
200	hard

The resistance (N) of a non-cohesive soil can be related to compactness condition as follows

N - BLOWS/0.30 m	COMPACTNESS
0 - 4	very loose
4 - 10	loose
10 - 30	compact
30 - 50	dense
50	very dense

т.		Paveme	nt Surface	Pavement Structure	e Material				Moisture		Hydromet	er Analysis		Atterberg Limits			
Test Hole No.	Test Hole Location	Type	Thickness	Туре	Thickness	Subgrade Description	Sample Lo		Content	Gravel	Sand	Silt	Clay	Plastic	Liquid	Plasticity	
110.			(mm)		(mm)		Start	End	(%)	(%)	(%)	(%)	(%)	Limit	Limit	Index	
	N - 5533973,462, E - 627027.237	Asphalt	152	Concrete	355	Gravel (Fill)	0.4	0.5	7.1	_						ŀ	
<u> </u>		<u> </u>	\vdash			Sand and Clay (Fill)	0.5	0.6	11.0		-					-	
-			-			Sand and Clay (Fill)	0.8	0.9	10.9	12.0	39.9	29.0	19.0	13.1	32,5	19.4	
TH-09-01						Clay	1.1	1.2	36.7	.1=70							
		+	 			Clay	1.4	1.5	37.1								
-			· ·			Clay	1.7	1.8	43.7								
-						Clay	2.0	2.1	35.8								
<u>-</u>		+				Clay	2.6	2.7	38.0								
	N - 5533916.240, E - 627011.952	Asphalt	101	Concrete	203			<u> </u>				<u> </u>			ļ <u> —</u>		
						Sand (Pit Run)	0.3	0.5	9.6	 		ļ	!		 	-	
						Sand (Pit Run)	0,5	0.6 0.9	9.3 21.4	ļ <u>. </u>						+	
L						Clay Clay	0.8	1.2	22.4	 		 		ļ		1	
TH-09-02						Clay	1.4	1.5	23.7		-	 					
-		 	∤			Clay	1.7	1.8	23.2								
-		+				Clay	2.0	2.1	27.3								
-			 			Clay	2.6	2.1	37.4	1							
	N - 5534264.491, E - 627030.488	_		Concrete	254	· · · · · · · · · · · · · · · · · · ·						1					
-	14 - 300-120-1-101 ₁ La - 021 430-1-130		1			Sand (Limestone)	0.3	0.4	24.4							ļ	
-						Clay	0.5	0.6	39.6				ļ	<u> </u>		<u> </u>	
<u> </u>		1				Clay	0.8	0.9	37.9			ļ			<u> </u>		
TH-09-03						Clay	1.1	1.2	37.2	<u> </u>		<u> </u>	 				
. F						Clay	1.4	1.5	49.6							+	
						Clay	1.7	1.8 2.1	41.6 40.4	 		 	-	 		_	
			<u> </u>			Clay Clay	2.0	2.7	45.4			 	 	 		_	
		45.00.00	404	Canasain	254	Clay	2,0	2.7	70.7	†	 	<u> </u>	_		1	 	
L	N - 5534222.829, E - 627103.974	Asphalt	101	Concrete	254	Sand and Clay (Fill)	0.3	0.4	23.3	1						1	
-			 		-	Clay	0.5	0.6	38.3	 	···						
		-				Clay	0.8	0.9	36.3	1	1	1					
TH-09-04		-	+			Clay	1.1	1.2	36.9								
111000-		-	+			Clay	1.4	1.5	42.2								
- F		-				Clay	1.7	1.8	44.5		<u> </u>				!		
F			1			Clay	2.0	2.1	48.3						ļ	+	
ļ-		1				Clay	2.6	2.7	39.3					_	_	 	
	N - 5534116.613, E - 627120.168	Asphalt	101						44.0			 			<u> </u>	+	
						Sand and Clay (Fill)	0.2	0.3	14.9 8.0	 	-		+	 	_	+-	
L			4		—	Sand (Pit Run)	0.5 0.8	0.6	14.3	+	+	 	+	 	 	+	
			ļ			Clay (Fill) Clay (Fill) and Clay	1.1	1.2	27.9	3.0	19.7	23.7	53.6	14.4	55.9	41.5	
TH-09-05			+ +			Clay (Fill) and Clay	1.4	1.5	37.5	0.0	10.1	20	1 00.0	 	1		
⊢		-	1			Clay	1.7	1.8	30.4	+			1				
F		+	+			Clay	2.0	2.1	36.6	1							
		-				Clay	2.6	2.7	41.9								
	N - 5534137.068, E - 627176.043	Asphalt	152										<u> </u>				
 	055	1	1			Sand (Pit Run)	0.2	0.3	7.3	1			 	1	 	+	
F						Sand (Pit Run)	0.5	0.6	8.7	100	 	47.5	70.1	24.7	75.0	50.5	
İ						Clay	0.8	0.9	30.2	0.0	9.4	17.5	73.1	24.7	75.2	30.5	
TH-09-06						Clay	1.1	1.2	33.0	+	 	+	+	+		+	
[Clay	1.4	1.5 1.8	36.9 39.7	+	+-	+	+-	+	+	+	
	- ·					Clay	2.0	2.1	41.2	+	+	+	+	1	 	+	
Į.			+ - 1			Clay Clay	2.6	2.7	46.3		 	1	 	1	1	1	
	N 5524404 000 E 607240 400	Annhalt	101			0103	 _		1	 	+	 	ì	Ť			
ŀ	N - 5534121.088, E - 627240.490	Asphalt	101			Sand (Fill)	0.2	0.3	5.9	 			1				
ŀ			1			Clay	0.5	0.6	5.6	1							
1			+ +			Clay	0.8	0.9	14.0	1		1					
TH-09-07			+ +		<u> </u>	Clay	1.1	1.2	16.1		1			1		1	
05-01	1		+ +			Clay	1.4	1.5	13.2						1	1	
ŀ			1 1			Clay	1.7	1.8	34.9				1		ļ	+	
	.	-	1			Clay	2.0	2.1	22.8				-			+	
						Clay		2.7	44.0	1							

		Paveme	ent Surface	Pavement Structure	Material		Comple Lo	notion /m\	Moisture		Hydromete	er Analysis		, At	terberg Lim	its
Test Hole No.	Test Hole Location	Type	Thickness	Туре	Thickness	Subgrade Description	Sample Lo		Content	Gravel	Sand	Silt	Clay	Plastic	Liquid	Plasticity
		.,,,,,	(mm)	-76-	_(mm)		Start	End	(%)	(%)	(%)	(%)	(%)	Limit	Limit	Index
	N - 5534137.799, E - 627288.753	Asphalt	174													-
	on shoulder					Sand (Pit Run)	0.2	0.3	10.1 7.6							1
						Sand (Pit Run)	0.5 0.8	0.6 0.9	13.6							
			ļ			Clay	1.1	1.2	30.0					<u> </u>		
TH-09-08		4	 	,		Clay	1.4	1.5	32.8		 -					
-			1			Clay	1.7	1.8	32.7							†
⊢		+	 			Clay	2.0	2.1	35.4							
		i e	 			Clay	2.6	2.7	42.2							<u> </u>
	N - 5534114.904, E - 627330.646			·-			0.2	0.3	28.8							
						Clay	0.5	0.6	23.2	30.8	17.5	16.9	34.8	21.8	59.1	37.3
						Ciay	0.8	0.9	25.4							
TH-09-09						Clay	1.1	1.2	30.3							 -
03-03		1	<u> </u>			Clay	1,4	1.5	40.0	<u> </u>	<u> </u>			 	-	<u> </u>
						Clay Clay	1.7 2.0	1.8	45.8 53.3		 			-	-	
<u> </u>			ļ			Clay	2.6	2.1	53.6		-			-		
						Ciay	2.0	2.1	00.0	1			 			
	N - 5534139.196, E - 627393.220	Asphalt	178			Cond (Dit Dum)	0.2	0.3	4.8		-			 		+
ļ			-			Sand (Pit Run)	0.2	0.6	5.3		-			 		1
<u> </u>			 			Clay	0.8	0.6	29.7	 	1			†	 	1
,,, }			 			Clay			36.6		 			+		
TH-09-10						Clay	1.1	1.2 1.5	34.1							†
<u> </u>		·				Clay	1.7	1.8	27.3	-	-			 		+
· L			ļ.——ļ			Clay			32.7	 	-	<u> </u>		 		1
			<u> </u>			Clay	2.0	2,1	42.6			 		 		 -
			 			Clay	2.6	2.7			ļ			 		
	N - 5534122.960, E - 627466.506					Clay	0,2	0.3	37.6	 	}					
-			1			Clay	0.5	0.6	37.8	 	ļ <u> —</u>			├		
L		.1				Clay	8.0	0.9	30.2		<u> </u>		-			+
TH-09-11			ļ			Clay	1.1	1.2	31.8	ļ	!		 			+
ss L						Clay	1.4	1.5	38.2		ļ	1			-	
			1			Clay	1.7	1.8	43.1		ļ					+
						Clay	2.0	2.1	47.9	ļ <u> </u>	1			1	 	
			1			Clay	2.6	2.7	37.2					<u> </u>	 	1
	N - 5534185.358, E - 627463.682		<u>i</u>	Concrete	241		<u> </u>								l	+
						Sand (Limestone) and Clay	0.2	0.4	19.9	<u> </u>					F0.0	
						Clay	0.5	0.6	25.6	0.0	35.2	22.6	42.2	20.3	58.9	38.6
Г						Clay	0.8	0.9	30.1					 		+
TH-09-12						Clay	1,1	1.2	36.8					\		ļ
	·					Clay	1.4	1.5	34.6		 _			 	ļ	ļ
		<u> </u>	<u>.j</u>			Clay	1.7	1.8	34.8	↓	ļ	ļ	ļ.——	-	 	+
						Clay	2.0	2.1	43.1	1	ļ.—	-	-		_	
						Clay	2.6	2.7	55.0				<u> </u>			+
	N - 5534118.510, E - 627559.372					Clay	0.2	0.3	19.1		 	ļ	 	 -	ļ	+
Г						Clay	0.5	0.6	33.6	 	↓	<u> </u>	 	-	₩-	
Г						Clay	0.8	0.9	21.5	1		├		+	-	
TH-09-13						Clay	1.1	1.2	24.1	 	+	├	<u> </u>	+	 	+
						Silt	1.4	1.5	22.3	 	 	<u> </u>	 	-	1	
						Silt	1.7	1.8	37.4	1		 	-		+	+
						Clay	2.0	2.1	43,0	↓	+		+	+-		+
						Clay	2.6	2.7	60.7	 	 			↓	+	+
	N - 5534143.756, E - 627587.411	Asphalt	178					<u> </u>		 	 			+	+	
Г						Sand (Limestone)	0.2	0.3	7.3	4	-				 	1
						Sand (Limestone)	0.5	0.6	6.0	<u> </u>			ļ		-	
T						Clay	0.8	0.9	28.5	<u> </u>			1	+	1	 -
TH-09-14						Clay	1.1	1.2	24.8	1.6	47.0	25.8	25.6	15.7	33.8	18.1
T						Silt	1.4	1.5	15.8	_		1	 		-	
r						Clay	1.7	1.8	28.3		 			 		
						Clay	2.0	2.1	38.1		1	<u> </u>	ــــــ	1	 	1
							2.6	2.7	46.1							

T		Paveme	ent Surface	Pavement Structure	e Material		Sample Lo	cetion (m)	Moisture			er Analysis			tterberg Lin	
Test Hole No.	Test Hole Location	Туре	Thickness	Туре	Thickness	Subgrade Description			Content	Gravel	Sand	Silt	Clay	Plastic	Liquid Limit	Plasticit Index
110.		.,,,,	(mm)	.,,,	(mm)		Start	End	(%)	(%)	(%)	(%)	(%)	Limit	Ljmit	Index
Ĺ	N - 5534127.010, E - 627639.475					Silt	0.2	0.3	27.2					 	 	
			ļ			Silt	0.5	0.6	23.4 35.4			 	-		i e	
			<u> </u>			Clay	0.8	1.2	40.3	 		_	 			
TH-09-15		<u> </u>	 			Clay	1.4	1.5	45.4			1				
_		1				Clay Clay	1.7	1.8	49.7						1	
i –			1			Clay	2.0	2.1	56.6	 	 			<u> </u>		1
⊢						Clay	2.6	2.7	55.3				-			· · · · · · · · · · · · · · · · · · ·
	N 5504440 000 E 607605 000	Asphalt	178		 -	Cital			7.7.7							
-	N - 5534146.202, E - 627685.939	Asprijalit	170			Sand (Fill)	0.2	0.3	6.5			1				l
<u> </u>		_	 		-	Sand (Fill)	0.5	0.6	6.8							
H		+				Clay	8.0	0.9	26.5							ļ
TH-09-16		1				Clay	1.1	1.2	28.1							<u> </u>
····			1 7			Silt	1.4	1.5	26.2		ļ		_			<u> </u>
		T				Clay and Silt	1.7	1.8	19.5	ļ	ļ	. —			-	
, T						Clay	2.0	2.1	36.9	<u> </u>	<u> </u>	-		 		+
T						Clay	2.6	2.7	40.2	ļ			-	+	 	+-
	N - 5534118,993, E - 627715.510	Asphalt	63	Concrete	165		 		1	 	 		 	 	+	
						Sand (Limestone)	0.2	0.4	10.9	 	-	+	 	+	 	1
						Sand (Limestone)	0.5	0.6	32.4			┼──	 	+	 	
		ļ	!			Clay Clay and Silt	0.8	1.2	19.7	 	 	 	1	1	+	1
TH-09-17			1			Clay and Silt	1.4	1.5	23.6	 	1	1	+	 		ì
.		_				Clay	1.7	1.8	28.7	1	 					
			-			Clay	2.0	2.1	39.6	1		1		1		
		+	 		 	Clay	2.6	2.7	58.5				1 -			
	N 5524400 000 E 607770 066	+				Clay	0.2	0.3	31.2							
<u> </u>	N - 5534128.903, E - 627773.266	+				Clay	0.5	0.6	27.7			T	1		1	
						Clay	0.8	0.9	29.5	0.0	14.8	41.3	43.9	21.8	47.3	25.5
		_				Clay	1.1	1.2	25.7			ļ				-
TH-09-18						Clay	1.4	1.5	24.3	ļ	ļ			ļ		
						Clay	1.7	1.8	30.2		<u> </u>				 	
T		J				Clay	2.0	2.1	42.3				 		+-	
ſ				, _		Clay	2.6	2.7	50.3	-	 	+	 	+		+
	N - 5534149.473, E - 627825.863	Asphalt	203						40.0	+	+	+		+	⊹ —	+
						Sand (Fill)	0.2	0.4	13,2	_	 	+		+	 -	+
L			· .			Sand (Fill)	0.5	0.6	13.4 18.6		 	+	+-	1	+	
						Clay Clay	1.1	1.2	39.7	+	+	+	+	 	+	+
TH-09-19						Clay and Silt	1.4	1.5	32.1	† 		1	 	1		
				, .		Silt	1.7	1.8	22.4	1	-		_			
ŀ					_	Clay	2.0	2.1	31.0		1					
F			-			Clay	2.6	2.7	36.1		1			T		
	N - 5534124.981, E - 627866.020					Clay	0.2	0.3	19.3	T			1			
}	N * 3034124.301, E * 027000.020		1	·		Clay	0.5	0.6	18.5							_
ŀ						Clay	0.8	0.9	25.0			1			<u> </u>	
T						Clay and Silt	1.1	1.2	20.9	ļ	 -	-	+			+
TH-09-20						Clay and Silt	1.4	1.5	26.6			_				
TH-09-20						Clay and Silt	1.7	1.8	27.3		ļ—			 -		+
İ						Clay and Silt	2.0	2.1	24.3	+	+	+	+	+	+	+
						Clay and Silt	2.6	2.7	23.3	+	+	+	+	+	+	+
	N - 5534167.296, E - 627871.833	Asphal	t 76			0.1.1.10				+	+	+		+		+
[ļ		Sand and Gravel (Fill)	0.2	0.3	2.6 28.1	+	+		+	+	+	+
[Clay	0.5	0.6	28.1	+	+	+		 	1	+-
						Clay	0.8	0.9	29.5 41.0	+		+		+		+
L		- 1		l		Clay	1.1	1.5_	37.9		+	+	+	+	+	+
TH-09-21																
TH-09-21			_			Clay and Silt	1.4									_[
TH-09-21						Clay Clay and Silt Silt	1.7	1.8	24.2				-			-

	***	Paveme	nt Surface	Pavement Structure	Material		1		Moisture		Hydromet	er Analysis		At	terberg Lim	its
Test Hole	Test Hole Location		Thickness		Thickness	Subgrade Description	Sample Lo	cation (m)	Content	Gravel	Sand	Silt	Clay	Plastic	Liquid	Plasticity
No.		Туре	(mm)	Туре	(mm)		Start	End	(%)	(%)	(%)	(%)	(%)	Limit	Limît	Index
	N - 5534122.691, E - 627890.477	Asphalt	168													
	11 (00.1122.001, 2 00.000.11					Sand and Clay (Fill)	0.2	0.3	15.4							
						Sand and Clay (Fill)	0.5	0.6	19.1	<u> </u>						\vdash
T11 00 00		<u> </u>				Clay Clay and Silt	0.8 1.1	0.9	28.9 21.6		l					$\overline{}$
TH-09-22		+				Clay and Sit	1.4	1.5	26.2							
-			 			Clay and Silt	1.7	1.8	23.1							
-						Clay and Silt	2.0	2.1	23.5							
						Clay	2.6	2.7	39.0							
 -	N - 5534125.383, E - 627913.564					Clay Clay	0.2	0.3	20.5 28.5							
-		-				Clay and Silt	0.8	0.9	25.5	<u> </u>						
-			 		_	Clay and Silt	1.1	1.2	29.9							
TH-09-23			†			Clay and Silt	1.4	1.5	26.4					ļ		ļ
· •						Silt	1.7	1.8	29.3						ļ	
						Silt	2,0	2.1	27.0 26.8							
					_	Silt	2.6	2.7	20.0	\		 	-	 		
	N - 5534152.363, E - 627950.493	Asphalt	229		1	Sand (Pit Run)	0.2	0.4	7.5	1	 	1	 	l		†
			 			Sand (Pit Run)	0.5	0.6	9.9							
		<u> </u>				Clay	0.8	0.9	28.9					ļ <u> </u>		
TH-09-24	···					Clay	1,1	1.2	26.1						-	
. [Clay	1.4	1.5	23.5	 			<u> </u>			
L			-			Clay Clay	2.0	1.8	28,2 27.3	 		 		 		
			 			Silt	2.6	2.7	23.9	 	<u> </u>	 		 		$\overline{}$
	N - 5534130,681, E - 628040.626		-			Clay	0.2	0.3	24.0					<u> </u>	1	
<u> </u>	N - 5534130,001, E - 626040.020					Clay	0.5	0.6	27.2							
l h			1			Clay	0.8	0.9	24.3						ļ	
TH-09-25					-	Clay and Silt	1.1	1.2	27.7	1		-	-	├		
1110323			1			Silt_	1.4	1.5 1.8	25.2 24.0		1	 		 	 	+
						Silt	2.0	2.1	22.7		 		 			1
		+	 		-+	Silt	2.6	2.7	28.0					T	1	T
1	N - 5534156.725, E - 628141.312	Asphalt	178					Ĺ .								
1 1	14 0001100.720, 2 0201111012	ricgriunc				Sand (Pit Run)	0.2	0.3	7.6		<u> </u>	<u> </u>		ļ		
						Sand (Pit Run)	0.5	0.6	6.8		440	140	44.0	 	<u> </u>	├
l [1			Clay	0.8	0.9 1.2	26.5 26.1	0.0	14.3	44.0	41.8	\	 	+
TH-09-26		-	 	······································	-	Clay Clay	1.4	1.5	27.6	 	1	 	<u> </u>	 	1	+
			+ +			Silt	1.7	1.8	20.4	t						1
!						Silt	2.0	2.1	22.6			1				<u> </u>
l i						Clay	2.6	2.7	37.4		<u> </u>	<u> </u>				
	N - 5534132.840, E - 628186.686					Clay	0.2	0.3	27.4	0.0	20.0	35.3	44.1	16.6	55.6	39.0
1 1						Clay Silt	0.5	0.6	34.2 17.4	0.0	20.6	35.3	44.1	10.0	33.0	39.0
l						Silt	1.1	1.2	19.7	 		 	1		† · · · · ·	1
TH-09-27			- 			Silt	1.4	1.5	31.1							
1 1						Clay	1.7	1.8	32.5			T		<u> </u>		1
1						Clay	2.0	2.1	43.3	<u> </u>	1	-	ļ	-	 	+
						clay	2.6	2.7	53.5		+		_	 	-	+
	N - 5534132.430, E - 628207.508	Asphalt	114			Cond/Dit Duc	0.2	0.3	8.8	+	+	 	+		1	+
		+	+ +			Sand (Pit Run) Clay	0.5	0.6	27.4	┪		—	1	 	†	
		-	 			Clay	0.8	0.9	29.1					<u> </u>		
TH-09-28		+	 		i	Clay	1.1	1.2	38.8							 _
] [Clay	1.4	1.5	33.2		1	 -		 	-	+
						Clay	1.7	1.8	36.9 47.2			+-		+-	1	+
]			 			Clay	2.0	2.1	40.8	+	+	+	+	+	 	+
			<u> </u>			Clay	1 2.0		40.0							

	· · · · · · · ·	Paveme	ent Surface	Pavement Structur	e Material		Sample Lo	restion (m)	Moisture		Hydromet	er Analysis		A	terberg Lin	
Test Hole No.	Test Hole Location	Туре	Thickness	Туре	Thickness	Subgrade Description			Content	Gravel	Sand	Silt (%)	Clay (%)	Plastic Limit	Liquid Limit	Plasticity Index
			(mm)		(mm)		Start	End	(%)	(%)	(%)	(70)	(70)	Lillin	LIIIII	IIIdex
-	N - 5534158,426, E - 628208.809	Asphalt	178			Sand (Fili)	0.2	0.3	8.3		 			 	<u> </u>	
		+				Sand (Fill)	0.5	0.6	6.4						·	
						Clay	0.8	0.9	28.9							1
TH-09-29				-	- 1	Clay	1.1	1,2	26.7				l			
						Clay	1.4	1.5	38.8							
ı						Silt	1.7	1.8	22.5					ļ		
Ī						Silt	2.0	2,1	19.7			<u> </u>	ļ. —	1		↓
						Clay	2.6	2.7	36.2							├
	N - 5534141.000, E - 628244.818					Clay	0.2	0.3	27.5	ļ <u>-</u> -			 	ļ		+
L						Clay	0.5	0.6	24.5 30.1		 	 	 	 		
						Clay	1.1	0.9	29.8			 			 	+
TH-09-30		-		-		Clay Silt	1.4	1.5	28.7	 	 	 	 	 		+
ļ					<u> </u>	Silt	1.7	1.8	29.1		1	 			 	
ŀ			+			Silt	2.0	2.1	24.7			 	<u> </u>	1		
ŀ		+	+		-	Silt	2.6	2.7	24.0					T		
	N - 5534161.140, E - 628322.72	Asphalt	178					<u> </u>								
ŀ	Storio I. Fig. C. SEGZETE	7.000.001	1			Sand (Fill)	0.2	0.3	12.8							
ŀ			T			Sand and Clay (Fill)	0.5	0.6	15.7		L					
ľ					- '''	Clay	0.8	0.9	27.8				ļ			<u> </u>
TH-09-31						Clay	1.1	1.2	35.7	ļ <u>.</u>				↓		
			1			Clay and Silt	1.4	1.5	30.0	<u> </u>	ļ			ļ		+
						Clay and Silt	1.7	1.8	31.4			ļ	-			
						Silt	2.0	2.1	21,6	 	<u> </u>		 	<u> </u>	-	
						Clay	2.6	2.7	34.2	-		 	-	-		+
-	N - 5534145.612, E - 628393.463					Clay	0.2	0.3	46.0		├─				 	+
ļ	· ·		_			Clay	0.5	0.6	38.6	-	1	+	 	 		+
			ļ			Silt Silt	1,1	1.2	23.6 26.4		-	 	 	-	 	+
TH-09-32		_	1			Clay	1.4	1.5	34.3			_		 	 	+-
1			- 			Clay	1.7	1.8	43.9			 	+		 	
			 			Clay	2.0	2,1	44.6	 		1	1	 		
						Clay	2.6	2.7	48.6	1	<u> </u>	1				*
	N - 5534163.759, E - 628444.598	Asphalt	152	····					1	<u> </u>	1					
	11 00041001100, E 020111.000	Tiepriak	10-		·	Sand and Clay (Fill)	0.2	0.3	12.2		1					
						Sand and Clay (Fill)	0.5	0.6	14.4							
						Clay	0.8	0.9	51.5			<u> </u>			1	<u> </u>
TH-09-33		-				Clay	1.1	1.2	47.8	ļ						
						Clay	1.4	1.5	31.2	1		ļ <u> </u>	1			
						Clay	1.7	1.8	31.9			-		+	_	+-
						Clay	2.0	2.1	33.5	-			_	 	· 	+
						Clay and Silt	2.6	2.7	24.6	+	 	+	+	+	+	+-
	N - 5534140.016, E - 628525.059					Clay	0.2	0.3	29.3 40.3	1	1	+	+	+	+	
		-	+			Clay Clay and Silt	0.8	0.0	19.4	0.0	12.9	43.5	34.1	12.9	38.4	25.5
			 	 	-	Clay and Slit	1.1	1.2	34.1	0.0	12.3	75.0	37.1	12.0	30.7	1 200
TH-09-34		+	+			Clay and Silt	1.4	1.5	31.7	1	1		+	+		+
TH-09-34		+	+			Clay and Silt	1.7	1.8	24.5	1	T	1			T	
			1	· · ·		Clay	2.0	2.1	31.7			1				
	_,,			<u> </u>		Clay	2.6	2.7	37.2							
	N - 5534166.192, E - 628564.214	Asphalt	254	<u>"</u>												
	on shoulder		1			Sand and Gravel (Fill)	0.3	0.4	5.3					1	1	
	A resignation and a second		1	1		Sand and Clay (Fill)	0.5	0.6	9.9			<u> </u>				
						Clay	8.0	0.9	24.1				1			
TH-09-35						Clay and Silt	1.1	1.2	27.7		ļ <u> </u>	1			+	+
						Clay and Silt	1.4	1.5	26.5	0.0	23.1	41.1	35.7	21.7	50.9	29.2
						Silt	1.7	1.8	24.1		-	+			-	
						Silt	2.0	2.1	21.3	1	1	-		-		-
		1				Clay	2.6	2.7	29.1	1	1	1	1	1		_1

TH-09-36	Test Hole Location N - 5534160.167, E - 628607.788	Type Asphalt	nt Surface Thickness (mm) 254	Туре	Thickness (mm)	Subgrade Description		ocation (m)	Content	Gravel	Sand	Silt	Clay	Plastic	Líquid	Plasticity
TH-09-36	N - 5534160.167, E - 628607.788			Туре	(mm)	Subgrade Description										
	N - 5534160.167, E - 628607.788	Asphalt	254		(min)		Start	End	(%)	(%)	(%)	(%)	(%)	Limit	Limit	index
							L									
					1	Sand (Pit Run)	0.3	0.4	5.4 19.8							
					+	Sand (Pit Run) and Clay Clay	0.8	0.6	50.2							
		1	-			Clay	1.1	1.2	37.9							
TH 00 27		Ì				Clay	1.4	1.5	22.0							
TH 00 27						Silt	1.7	1.8	22.6							L
TH 00 27						Silt	2.0	2.1	22.1							<u> </u>
TH 00 27						Clay	2.6	2.7	37.8	0.0	2.1	18.9	79.0	28.8	90.0	61.2
TH 00 27	N - 5534201.353, E - 628648.996	Asphalt	101			2 1/5										
TH 00 27					+	Sand (Fill) Sand (Fill)	0.2 0.5	0.3	9.3 11.6							_
TH 100 27 -		 	l		_	Clay	0.8	0.0	23.2							
			<u> </u>			Clay	1.1	1.2	30.2							
			†			Clay	1.4	1.5	42.7							
						Clay	1.7	1.8	47.9						-	
						Clay	2.0	2.1	39.5			<u> </u>				
						Clay	2.6	2.7	54.6				ļ <u> </u>			——
TH-09-38	N - 5534133.763, E - 628658.208	Asphalt	114		_		<u> </u>			<u> </u>						
\vdash	N - 5534164.271, E - 628702.969	Asphalt	127			C4 (E31)	-0.4	0.5	7.1						-	
⊢		+			+	Sand (Fill) Sand (Fill)	0.4	0.5 0.6	7.1 11.0		\vdash		 			
⊢			+		+	Clay	0.8	0.9	10.9				 			
тн-09-39			 			Clay	1,1	1.2	36.7	-		1				
						Clay and Silt	1.4	1.5	37.1			1				
						Silt	1.7	1.8	43.7							
		1				Silt	2.0	2.1	35.8							<u> </u>
						Clay	2.6	2.7	38.0				ļ			
	N - 5534144.660, E - 628749.312					Clay	0.2	0.3	21.4		<u> </u>	ļ <u>.</u>				↓
<u> </u>	·				1	Clay	0.5	0.6	18.1	<u> </u>						
⊢						Clay	0.8	0.9 1.2	26.3 27.8			-	 			+
TH-09-40		-	1			Clay Clay and Silt	1.4	1.5	25.2							+
		 		i	+	Silt	1.7	1.8	23.0				 			\vdash
<u> </u>		1				Silt	2.0	2.1	22.7							
		·	1			Silt	2.6	2.7	23.7							ĺ .
	N - 5534171.623, E - 628781.120	Asphalt	254		i						ļ					↓
						Sand (Fill)	0.3	0.4	13.3	<u> </u>	<u> </u>	ļ	<u> </u>			₩
			1		_	Clay and Silt	0.5	0.6	11.0	-	ļ	 	 			├─
TU 00 44 -				ļ		Clay and Silt Clay	0.8	0.9 1.2	17.2 33.0	 		1	 			+
TH-09-41			+			Clay	1.4	1.5	36.8		 					+
⊢			1		+	Silt	1.7	1.8	23.0			 	-			1
├		+	· · · · · · · · · · · · · · · · · · ·		1	Silt	2.0	2.1	22.7	1						
		1				Clay	2.6	2.7	30.6							
	N - 5534156.360, E - 628859.754					Clay	0.2	0.3	33.2							 _
						Clay	0.5	0.6	28.3	ļ	L	1 51 5	1005	L		+
						Clay	0.8	0.9	32.5	2.1	37.8	31.5	28.6	14.7	30.6	15.9
TH-09-42					+	Clay	1.1	1.2	31.5	+	-	+	 	1		+
· · ·		+	 	ļ		Clay Clay	1.4	1.5	38.1 39.3	 	1	 	 	<u> </u>		+
<u> </u>		+	+			Clay	2.0	2.1	45.5	 	t -		 	l		†
├ -		+	+		1	Clay	2.6	2.7	54.2	1		1				
	N - 5534175.255, E - 628922.481	Asphalt	203		 	1	 	1			T					
⊢	5551110,5500115 02.55512.701	- I Sprauk	 	1		Sand (Pit Run)	0.2	0.4	5.2							
						Sand (Pit Run)	0.5	0.6	9.0					ļ		
						Clay	0.8	0.9	29.4		ļ	ļ <u>.</u>		1		
TH-09-43						Clay	1.1	1.2	47.7	 	 	├	 	 		+
┌			ļ		-	Clay	1.4	1.5	34.2	1	+	-		-		+
⊣		+				Clay and Silt	2.0	1.8 2.1	26.0 25.5	1	+	 	1	 	 	+
. ⊢		+	+	<u> </u>		Silt	2.6	2.7	22.8	1	+	 	+		-	+

		Paveme	nt Surface	Pavement Structure	Material		T		Moisture		Hydromete	er Analysis		At	terberg Lim	its
Test Hole	Test Hole Location		Thickness		Thickness	Subgrade Description	Sample Lo	cation (m)	Content	Gravel	Sand	Silt	Clay	P!astic	Liquid	Plasticity
No.		Type	(mm)	Type	(mm)		Start	End	(%)	(%)	(%)	(%)	(%)	Limit	Limit	Index
	N - 5534159.275, E - 628989.646	-	(Clay	0.2	0.3	34.3							
F	N - 0004135.213, E - 020303.040	†				Clay	0.5	0.6	43.6							'
						Clay	0.8	0.9	31.1							\vdash
TH-09-44		Ϊ				Silt	1.1	1.2	25.6					-		
111103-44						Silt	1.4	1.5 1.8	26.1 22.7							
L						Silt	2.0	2.1	35.6			-				
						Clay Clay	2.6	2.7	42.8			l				
	N 5504470 400 E 600054 350	Asphalt	177			Olay	2,.0		1							
l	N - 5534178.480, E - 629051.359	Aspliant	177			Sand (Fill)	0.2	0.3	8.0							·
l			-			Sand (Fill)	0.5	0.6	8.6							
l f			1			Clay	0.8	0.9	56.8							<u> </u>
TH-09-45						Silt	1.1	1.2	30.8							
. [Silt	1.4	1.5	25.4 22.2		-			-		
		<u> </u>	<u> </u>		_	Clay and Silt	1.7 2.0	1.8 2.1	23.2					 	 	
						Clay and Silt Clay	2.6	2.7	30.8							
	N E534463 034 E 500450 000		+			Clay	0.2	0.3	18.9	 			i –	l "		
	N - 5534162.824, E - 629150.933	+	 	. **		Clay	0.5	0.6	25.5	0.0	15.2	39.1	45.7	15.6	53.4	37.8
	_ · ···	 	†			Clay	8.0	0.9	39.3		L					<u> </u>
		<u> </u>				Clay	1.1	1.2	37.0			<u> </u>		<u> </u>	<u> </u>	
TH-09-46						Clay	1.4	1,5	33.6			<u> </u>				
l . 1						Clay	1.7	1.8	41.2			 		 		-
l [Clay	2.0	2.1	41.0			 		-	 	
		<u> </u>				Clay	2.6	2.7	44.2			<u> </u>		1		
1	N - 5534182.259, E - 629204.804	Asphalt	127			Sand (Fill)	0.2	0.3	6.2			<u> </u>		 	-	†
		_				Sand (Fill)	0.5	0.6	8.3				<u> </u>			1
1	····		+	· · · · · · · · · · · · · · · · · · ·		Clay	0.8	0.9	28.0			i				1
TH-09-47			1			Clay	1.1	1.2	46.5							
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		1	-t			Clay	1.4	1.5	39.8			<u> </u>				↓
i i						Clay and Silt	1.7	1.8	24.9	ļ			ļ <u> </u>	 -	 	─
						Clay	2.0	2.1	29.0	↓		 				┼
						Clay	2.6	2.7	37.9 30.7		 	}	├ ┈─	+	 	+
	N - 5534163.945, E - 629257.222		ļ			Clay	0.2 0.5	0.3	36.4	 -	 		-	 	+	+
			1			Clay Clay	0.8	0.6	27.7	 	+	 			 	†
l I		-				Clay	1.1	1.2	27.5	<u> </u>						1
TH-09-48			+		1	Clay	1.4	1.5	34.0		1				Τ	
		-	·			Clay	1.7	1.8	37.1			1			<u> </u>	
			T			Clay	2.0	2.1	45.2		1				1	
						Clay	2.6	2.7	46.5		1	 	1	4	1	+
	N - 5534185.627, E - 629354.078	Asphalt	101			0.161	1 00	100		-	 	+	 	+	+	+
1						Sand (Limestone)	0.2	0.3	6.4 4.9	+	+	 	+	1	1	
			+	<u> </u>	_	Sand (Limestone) Sand (Limestone)	0.8	0.9	5.2	 	1	1	 	 	1	1
TH-09-49		+				Sand (Limestone) and Clay	1.1	1.2	13.4	0.0	28.4	56.4	12.5	14.8	19.4	4.6
111-05-49			1			Clay	1.4	1.5	32.6							
ł		_				Clay	1.7	1.8	47.0						<u> </u>	
i			1			Clay	2.0	2.1	34.6	ļ			-			
1						Clay	2.6	2.7	55.2	4	+	 	+	+	+	+
	N - 5534164.611, E - 629371.819			Concrete	254	<u> </u>			 	+	+	+	 	+	+	+
		_	4			Gravel (Limestone)	0.3	0.4	7.5 6.2	 	+	 	+	+	+	+
				-		Gravel (Limestone)	0.8	0.6	13.1	+	+	+	1	 	1	
TH-09-50		+				Gravel (Limestone) Clay	1.1	1.2	34.0	† —	T	1	1		1	
10-03-00			+			Clay	1.4	1.5	43.0							
1			+	-		Clay	1.7	1.8	45.0							
1			 	·		Clay	2.0	2.1	45.6					1	}	
								2.7	51.1							

PROJ	IECT:	Inkster Boulevard Widening CLIENT: City of Winnipeg					NO: TH-09-01	
		: N - 5533973.462, E - 627027.237					NO.: 0265-411-00	
CONT	TRAC	TOR: Paddock Drilling Ltd. METHOD: Bratt 22, 125 mm SSA					N (m): 236.199 RY	
SAMP	LE TY	PE ■ GRAB SHELBY TUBE SPLIT SPOON	BULK	 	✓INOI	RECOVE	I JOOKE	
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPI F TYPE	SAMPLE #			COMMENTS	ELEVATION (m)
0		ASPHALT (152 mm)						
-		CONCRETE (355 mm)						236 -
-		The second secon		0400				[
}		GRAVEL (Fill) - sandy, grey, dry, well graded, subangular SAND and CLAY (Fill) - silty, trace gravel (<6 mm dia.)		G193			1	
		dark brown		G194	ļ <u>.</u>			
[- frozen, moist and firm when thawed - intermediate to high plasticity - intermediate to high plasticity		J			Gradation:	
-				G195			Gravel = 12.0%, Sand = 39.9%, Silt = 29.0%,	[
-							39.9%, Sitt = 29.0%, Clay = 19.0%	
-1		CLAY - silty, some sand, trace gravel (<6 mm dia.)			ļ <u>.</u>			
†		- brown - frozen to 1.5 m, frozen and soft when thawed		G196				235 -
[- high plasticity				:	ļ	
-			i i	G197]	1
-		- some silt inclusions (<3 mm dia.), firm below 1.5 m		1			j	1
}		- Soule Sit indusions (-5 time dat), time polone 1.5 in			ļļ		1.	
 				G198				1
		·		7				
[_,				G199			-	
-				७।५५]		-	00.5
-							1	234 -
}		·				:		
t							1	
						<u>.</u>		
1				G200	Y			
}								
- 3		End of test hole at 3.1 m in CLAY			ļ		· .	
		Notes:			ļ			233
		1) No sloughing. 2) No seepage.					and the second	
		3) Backfilled test hole with auger cuttings.						
-						·····		-
ŀ								
<u> </u>			1					
4	<u></u>	LOGGED	<u> </u> BY: G	eoffrev	Nolette		:: LETION DEPTH: 3.05 m	<u> </u>
1		AFCOM REVIEWEI	D BY:	Nelsor	n Ferreira		LETION DATE: 1/28/09	
:		PROJECT	ENGI	VEER:	Nelson Ferreira	1	Page	1 of 1

	IFOT	Interna Pouloverd Midening	CLIENT: City of Winnip	oea		TE	STHOLE NO	D: TH-09-02	
		: Inkster Boulevard Widening N: N - 5533916.240, E - 627011.952	OCIENT. Oily of Whiting	,cg				.: 0265-411-00	
_			METHOD: Bratt 22, 12	5 mm SSA		EI	EVATION (n	n): 236.286	
	LE TY	TOR: Paddock Drilling Ltd. YPE GRAB SHELB			JLK		RECOVERY	CORE	
(11)	SOIL SYMBOL	SOIL DESC	<u>.</u>		SAMPLE TYPE SAMPLE#			COMMENTS	ELEVATION (m)
		ASPHALT (101 mm) CONCRETE (203 mm)							236
٠		SAND (Pit Run) - some silt, trace gravel (<6 mm dia. - brown - frozen, moist when thawed - well graded	1		G137				,
		CLAY - sandy, silty, trace gravel (<6 mm dia.) - brown - frozen, moist and soft to firm when thawed - low to intermediate plasticity			G139				
					G140				235
		CLAY - silty, some sand, trace silt inclusions (<5 mm - brown - moist, firm - high plasticity	dia.)		G141				
		- trace gravel (<6 mm dia.), firm to stiff below 1.8 m			G143	3	÷		
									234
					G144	1			
		End of test hole at 2.7 m in CLAY Notes:			-			·	
		1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.							233
						<u> </u>			
_	<u>, </u>	AECOM	1	LOGGED BY: REVIEWED BY PROJECT EN	: Nelso	n Ferreira	COMPLETI	ON DEPTH: 3.05 m ON DATE: 1/27/09	e 1 of

PRO.	JECT:	: Inkster Boule	vard Widening		CLIENT:	City of Winn	nipeg				TES	STHOL	E NO: TH-09-	03	
LOC	ATION	N: N - 5534264	.491, E - 6270	30.488						 	+		NO.: 0265-41		
CON	TRAC	TOR: Paddoc	k Drilling Ltd.		METHOD): Bratt 22, 1	125 mm SSA			 	<u> </u>	_	N (m): 236.17		•
SAMF	PLE T	YPE	GRAB	∭SHELBY	TUBE	SPLIT SP	00N =	BULK		\overline{Z}	NOF	RECOVE	RY TCO	RE	.
DEPTH (m)	SOIL SYMBOL	·	Ş	SOIL DESC	RIPTIO	N		SAMPLE TYPE	SAMPLE#				СОММЕ	NTS	ELEVATION (m)
0		CONCRETE (25	4 mm)		<u> </u>										000
- - - -	\bigotimes	graded \- geotextile at 1. CLAY - silt, som	3 m e sand, trace orga	<6 mm dia.), some s	silt, brown, fro	zen, moist whe	n thawed, well	<i>_</i>	G177 G178						236 -
1 - -		- dark brow - frozen to - intermed	vn 1.8 m, moist and t iate to high plastici	firm when thawed ity					G176	 				٠	
<u> </u> -									G179						
-1 -									G180	 					235 -
-		- brown, stiff, hig	h plasticity below	1.2 m					G181	 				,	
										 			,		
-		- trace silt inclusi	ons (<5 mm dia.) b	pelow 1.8 m					G182	 					
- 2		- firm below 2.1 r	n .						G183	 					234 -
-										 					
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									G184	 					
3										 					
		End of test hole a Notes: 1) No sloughing.	t 3.1 m in CLAY							\$ 					233 —
		No seepage. Backfilled test	hole with auger cui	ttings.											
-							•								,
- - 4		<u>.</u>	±							 					· -
			A E COL				LOGGED BY:						ETION DEPTH: ETION DATE: 1		
			AECOM			•	REVIEWED B				-	CONFL	LITON DATE: 1		1 of 1
ı			•							 					

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PROJECT:	Inkster Boulevard Widening CLIENT: City of Winni		
LOCATION	l: N - 5534222.829, E - 627103.974	PROJECT NO.: 0265-411-00	<u> </u>
CONTRAC	TOR: Paddock Drilling Ltd. METHOD: Bratt 22, 1		·
SAMPLE T	PE GRAB ∭SHELBY TUBE ⊠SPLIT SPC	NO RECOVERY TO CORE	Ι
DEPTH (m) SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE SAMPLE TYPE COWNENTS	ELEVATION (m)
0	ASPHALT (101 mm)		-
	CONCRETE (254 mm) SAND and CLAY (Fill) - silty, trace gravel (<6 mm dia.), brown and dark grey, frozen to firm when thawed, intermediate to high plasticity CLAY - silty, some sand, trace organics	moist and soft G185	236 —
	 dark grey frozen to 1.8 m, moist and firm when thawed high plasticity 	G186	-
-1	- dark brown, firm below 0.9 m	G187	
	- trace silt inclusions (<5 mm dia.), brown, stiff below 1.2 m	G188 G189	235 -
		G190	
-2		G191	
	- firm below 2.1 m		234 -
		G192	
-3	End of test hole at 3.1 m in CLAY		
3	Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.		233 -
4		LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 3.05 m	
	AECOM	REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/27/09	1 of '

: 1

PR	OJEC	T:	Inkster Bou	lev	arc	١V	Vide	nin	ıg			_		C	LIEN	IT: C	ity of	i Win	nipeg								+						H-09			_
			N - 55341	_		_).16	8																		_					11-00		_
			OR: Paddo	ock				<u>_td.</u>						_			_		125 m	ım S						_		LEV O RE	_				235.6 T C			_
SAI	MPLE	TYI	PE		GF	₹A.	<u>}</u>				Ш	SHE	LBY	TUE	3E	_ 2	SPL	III SP	OON		■В	ULK	_	_		_	_]NI	URE)VE	K T			JRE	1	_
DEPTH (m)	SOIL SYMBOL	OCIE OTIMOCE							SI	OIL	. D	Έ	3CI	RII	PTI	ON						SAMPLE TYPE	SAMPLE#									co	MME	ENTS	ELEVATION (m)	
0			ASPHALT (10	11 n	ım)	_																			:	:		:	:					-		
<u> -</u>			SAND and CL - dark b - frozen - interm SAND (Pit Ru	row , mo edia	n oist ite l	and to h	d firr iigh	n wh plasi	nen t	hawe	eď				silt								G20	1												
-			- brown - frozen - well gr	, mo	oist ed	wh	en ti	nawe	ed									<u>.</u>			<u></u>		G20	2										÷	235	; –
-			CLAY (Fill) - s - dark b - frozen - interm	row: , mo	n oist	and	d fire	n wh	ien t	hawe		12 m	ım di	a.)									G20	3												
-1 - 			CLAY - silty, s - brown - frozen														<u></u>	···					G20	4	. <u> </u>			: : : :			Gra 19.	7%, 9	3.0%	, Sand = 3.7%,		
-			- trozen - high pl	asti	city	11, 1	HOIS	Lan	u 50	IL LO	11111 A	WIJE	i ulai	weu									G20:	5			••••	<u> </u>							234	
<u> </u> -			- firm below 1.	8 m																			G204	6		!									234	. –
-2 -2								_11_	\ 1-				(**	.2	- dia '	\ b-=1	2 4	_					G201	7		!	• • • • •	 								
-			- trace silt incl	usio	ns (, <o< td=""><td>mm</td><td>aia.</td><td>), Ui</td><td>ice b</td><td>iecip</td><td>mate</td><td>35 (~·</td><td>3 Hill</td><td>ii ula.</td><td>) Deloi</td><td>W 2.11</td><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></o<>	mm	aia.), Ui	ice b	iecip	mate	35 (~·	3 Hill	ii ula.) Deloi	W 2.11	11																		
SOME IOS			•																				G208	3			••••	: : : : : :							233	, –
AST.GPJ UMA.GD		1	End of test hol		3.1	m	in C	LAY	,				<u></u>			-																				•
WIDEINING - E		2	No sloughin No seepage Backfilled te	١.	ole	witi	h au	ger (cutti	ngs.															:			: : : :								
VIZILO) INVOICE																									:										232	
<u> </u>																						<u>_</u>	**	<u> </u>	.;			; 1 =	· ;							
\$]		-		<u> </u>	,												BY: ED BY													1: 3.05 m 1/28/09		
<u> </u>					P	۱Ė	C	۸C	4												TEN(reira		Ψ17	15 LE	_ 110	/IT U	/\IL.		1 of	1

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	ECT: Inkster Boulevard Widening TION: N - 5534137.068, E - 627176.043	CLIENT: City of Winni					PR	OJE	CT I	NO: TH-09-06 NO.: 0265-411-00	
	RACTOR: Paddock Drilling Ltd.	METHOD: Bratt 22, 12	25 mm SSA			<u>-</u>				N (m): 235.545	
AMPL	LE TYPE GRAB [[]]SHEI	BY TUBE SPLIT SPO	ON BU	LK			NO	REC	OVER	RY [I]CORE	
DEPTH (m)	SOIL DES	CRIPTION		SAMPLE TYPE	SAMPLE#					COMMENTS	FI FVATION (m)
0	ASPHALT (152 mm)										
	SAND (Pit Run) - trace to some gravel (<6 mm dia.)			3169			•••••	••••		Í
8	- brown - frozen, moist when thawed				-				•		
8	- well graded		*.		-						
8					3170						23
X										Gradation:	
	CLAY - some silt, trace sand, trace gravel (<6 mm - dark brown	dia.)		c	3171					Sand = 9.4%, Silt = 17.5%, Clay = 73.1%	
	frozen to 1.5 m, moist and stiff when thawer high plasticity	i								,	
	Ingli plasticity		•		3172	<u>i</u>					
						<u>:</u>					
					3173						
	- brown, high plasticity below 1.5 m			П	ľ						23
		•			3174		- [
	- trace silt inclusions (<10 mm dia.), stiff, trace pred	ipitates below 1.8 m							 !		
		•							: : :		
					3175						
						····			: :		2
									 !		-
					3176				ļ		
	- firm below 2.7 m					· · · · · · · · · · · · · · · · · · ·	.		ļ		
f	End of test hole at 3.1 m in CLAY				1						
	Notes: 1) No sloghing.								:	•	
	No seepage. Backfilled test hole with auger cuttings.										
											2
									<u>.</u>	_	'
	·		1.							1	
			LOGGED BY:				·· <u>·····</u>	1		ETION DEPTH: 3.05 m	1_
E											

PROJ	JECT:	Inkster Boulevard Widenin	ng CLIE	NT: City of Winni	peg							NO: TH-09-07	
		: N - 5534121.088, E - 62	7240.490									NO.: 0265-411-00	
CONT	TRAC	TOR: Paddock Drilling Ltd		IOD: Canterra C			A					N (m): 235.85	· · · · · ·
SAMP	LE T	PE GRAB	SHELBY TUBE	SPLIT SPO	ON BU	LK	,			NO RE	COVE	RY CORE	
DEPTH (m)	SOIL SYMBOL		SOIL DESCRIPT	ION	. ;	SAMPLE TYPE	SAMPLE #			- 		COMMENTS	ELEVATION (m)
0		ASPHALT (101 mm)			-			:	:	:	:		
- - - -		SAND (Fill) - trace gravel (<12 of the control of t					G249 G250						
-		·					GESS						
		CLAY - silty, sandy, some grave - brown - frozen, dy to moist and s - intermediate to high place	oft when thawed		j		G251						235 -
- -							G252						
 -					. <u> </u>		G253						
-		CLAY - silty, some sand - brown - frozen to 2.1 m, moist ar - high plasticity	d firm when thawed	·			G254						
-2		- intermittent clay and silt pocket	ts (<0.08 m thick) between 1.8 a	nd 2.1 m			G255						234
-					· · · · ·		SEGG						
-													
-							G256						233
-3		End of test hole at 3.1 m in CLA	γ	·									
- -		Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger											
3													
-													232
4					LOCOTO DV. (2 - 1	franci	Inlatt-	···· <u>i</u> ···	<u>;</u>	OMPL	ETION DEPTH: 3.05 m	<u>. </u>
		AECO	M		LOGGED BY: (REVIEWED BY:							ETION DEPTH: 3.05 III	<u> </u>
		AECOI	¥I		PROJECT ENG								e 1 of 1

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PRO.	JECT:	: Inkster Boulevard Widening CLIENT: City of Wi		
		N: N - 5534137.799, E - 627288.753 - on shoulder	PROJECT NO.: 0265-411-00	
		CTOR: Paddock Drilling Ltd. METHOD: Cantern	CT 250, 125 mm SSA	4
SAMF	LE T	YPE GRAB SHELBY TUBE SPLIT S	POON BULK NO RECOVERY CORE	_
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE SAMPLE TYPE COMMENTS	ELEVATION (III)
0		ASPHALT (174 mm)	23	6-
-		SAND (Pit Run) - gravelly (<19 mm dia.), some silt - brown - frozen, moist when thawed - well graded	G385 G386	-
-		- wet when thawed below 0.8 m CLAY - silty, some sand	G387	1
-1 - -		- dark some sand - dark some - frozen to 1.7 m, moist and firm when thawed - high plasticity	G388 23	i5 — - -
-			G389	
- - -			G390	- - -
-2 - - -		- trace silt inclusions (<5 mm dia.), stiff below 2.1 m	G391 23	34 — - -
			G392	-
3		End of test hole at 3.1 m in CLAY	23	13 —
		Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.		
				- -
4		:	LOCATE TO DESTRUCT OF THE STATE	
		AECOM	LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09 PROJECT ENGINEER: Nelson Ferreira Page 1 of	f 1

CLAY - silty, some sand, some organics - dark grey - frozen to 0.5 m, moist and stiff when thawed - intermediate to high plasticity - 0.08 m silt lense, light brown, moist, firm at 0.9 m CLAY - silty, trace sand - brown - moist, stiff - high plasticity G5 - trace silt inclusions (<5 mm dia.) below 1.8 m - mottled brown and grey, firm below 2.1 m	PROJ	ECT:	Inkster Boulevard Widening CLIENT: City of Winnipeg					NO: TH-09-09	
SAMPLETYPE GRAB SHELDY TUBE SPLIT SPOON BULK NO RECOVERY COMMENTS SOIL DESCRIPTION SOIL DESCRIPTION CLAY - growing - (10 mm da), some sand, some sit ment of several comment of sever	LOCA	TION	I: N - 5534114.904, E - 627330.646						
SOIL DESCRIPTION SOIL DESCRIPTION CANAMENTS COMMENTS	CONT	RAC			SSA				•
OLAY - sgravely (-10 mm da), some send, some still - troop, moist and soft to firm when thesed - light plassisty OLAY - sgravely (-10 mm da), some send, some still - troop, moist and soft to firm when thesed - light plassisty OLAY - slity, some sand, some organics - dust gray - firm maintain to high plassisty OLAY - slity, store sand - neces to 0.5 m, moist and still when thered - intermediate to high plassisty OLAY - slity, store sand - locen - moist sent - locen - moist sent - locen - moist sent - locen - locen - moist sent - locen - locen - moist sent - locen -	SAMP	LE T	YPE ■ GRAB SHELBY TUBE SPLIT SPOON BU	LK	Γ	∠ N	O RECOVE	RY LICORE	
CLAY - remarks (-10 mm da), some sand, some organics - mouted brown and grey - mouts and soft to firm when thoseed - high plasticity - clay - sily, some sand, some organics - during wife and, some o	DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE#			COMMENTS	ELEVATION (π)
- frozer, most and soft to farm when thewed - high plasticity - high plasticity CLAY - sity, some sand, some organics - dust grey - frozer to 10 m, moist and self when thewed - memodate to high plasticity - 0.08 m salt items, light brown, moist, firm at 0.9 m CLAY - sity, sace sand - brown - moist, firm at 0.9 m CLAY - sity, sace sand - brown - moist, firm at 0.9 m - inside self inclusions (<5 mm dia.) below 1.8 m - race till inclusions (<5 mm dia.) below 2.1 m - contitled brown and grey, firm below 2.1 m	0	3333	ORGANICS - topsoil				: :		
CLAY - sity, some saind, some organics - dark grey - frozen to 19 sm, moist and stiff when threwed - intermediate to high plasticity 0.08 m still tresse, light brown, moist, firm at 0.9 m - CLAY - sity, trose sand - brown - moist stiff - high plasticity moist stiff - high plasticity - moist stiff - high plasticity - stiff - high plasticity - stiff - high plasticity - gray - moitted brown and grey, firm below 2.1 m - moitted brown and grey, firm below 2.1 m - moitted brown and grey, firm below 2.1 m - moitted brown and grey, firm below 2.1 m - moitted brown and grey, firm below 2.1 m - moitted brown and grey, firm below 3.1 m in CLAY - moitted brown and grey firm brown and grey firm brown and grey firm b	-		CLAY - gravelly (<10 mm dia.), some sand, some silt - mottled brown and grey - frozen, moist and soft to firm when thawed		:				235 -
- desk grey - intermediate to high plasticity - 0.08 m all kinese, light brown, moist, firm at 0.9 m CLAY - eity, rince and - brown - intermediate to high plasticity - 0.08 m all kinese, light brown, moist, firm at 0.9 m CLAY - eity, rince and - brown - intermediate to high plasticity - high plasticity CS CS CS - trace slit inclusions (<5 mm dia.) below 1.8 m - modtled brown and grey, firm below 2.1 m CS - modtled brown and grey, firm below 2.1 m CS - sample at 3.1 m in CLAY - whotes - trace slit inclusions (<5 mm dia.) below 1.8 m - cs -					G2			17.5%, Silt = 16.9%,	
CLAY - silty, trace sand - frown - most selff - high plasticity	-		- dark grey - frozen to 0.9 m, moist and stiff when thawed - intermediate to high plasticity		G3			Clay = 34.8%	
- trace silt inclusions (<5 mm dia.) below 1.8 m -2 - mottled brown and grey, firm below 2.1 m -3 End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.	- 1		CLAY - silty, trace sand - brown - moist, stiff		G4				
- trace slit inclusions (<5 mm dia.) below 1.8 m - mottled brown and grey, firm below 2.1 m End of test hole at 3.1 m in CLAY Notes: 1) No stoughing. 2) No seepage. 3) Backfilled test hole with auger cuttings. LOGGED BY: Jared Baldwin COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/22/08	-								234 -
End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No sepage. 3) Backfilled test hole with auger cuttings. LOGGED BY: Jared Baldwin COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/22/08	-2		- trace silt inclusions (<5 mm dia.) below 1.8 m						
End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings. LOGGED BY: Jared Baldwin COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/22/08	-		mottled brown and grey, firm below 2.1 m						233 -
Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings. 232 - LOGGED BY: Jared Baldwin COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/22/08					G8				
LOGGED BY: Jared Baldwin COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/22/08	3		Notes: 1) No sloughing.						
AFCOM REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/22/08			O) DUMINION TOUR TIME SUGGES SOURCES.						232 -
AFCOM REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/22/08	4								
									1 of 1

PROJECT:	Inkster Boulevard Widening CLIENT: City of Winn	ipeg	TESTHOLE NO: TH-09-10
LOCATION	I: N - 5534139.196, E - 627393.220		PROJECT NO.: 0265-411-00
CONTRAC	TOR: Paddock Drilling Ltd. METHOD: Canterra		ELEVATION (m): 236.035
SAMPLE T	YPE GRAB SHELBY TUBE SPLIT SP	OON BULK	NO RECOVERY CORE
DEPTH (m) SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE SAMPLE #	COMMENTS (m)
0	ASPHALT (178 mm)		236 -
- - -	SAND (Pit Run) - gravelly (<19 mm dia.) - brown - frozen, moist when thawed - well graded	G377	
- ************************************	CLAY - silty, sandy, some organics - black - frozen to 1.5 m, moist and soft when thawed - intermediate to high plasticity	G379	
-1 - -	- some sand below 1.2 m	G380	235-
	- soft to firm below 1.5 m	G381 G382	
- 2	CLAY - sitty, some sand - brown - moist, firm - high plasticity - trace silt inclusions (<5 mm dia.), stiff, trace precipitates (<3 mm dia.) below 2.1 m	G383	234
		G384	
-3	For a file who leads 2.4 m in CLAV		233
	End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.		
4			
<u> </u>	AECOM	LOGGED BY: Geoffrey Nolette REVIEWED BY: Nelson Ferreira PROJECT ENGINEER: Nelson Fe	COMPLETION DEPTH: 3.05 m COMPLETION DATE: 1/31/09 meira Page 1 of

PROJEC:	T: Inks	ster Boulevard	Widening		CLIENT:	City of Wil	nnipeg	<u> </u>	-			TE	ESTH(OLE	NO: T	H-09-11		
			O, E - 627466.	506								PF	ROJE	CT N	10.: 02	65-411-0	0	
		: Paddock Dr			METHOD	: Acker S	S2 Maruca	, 125 mr	n S	SA						235.169		
SAMPLE			RAB	SHELBY 1	TUBE	SPLIT S	POON	⊟BUL	.K			ZNC	REC	OVER	Υ [CORE		
DEPTH (m)			SO	IL DESCF	RIPTIOI	V			SAMPLE TYPE	SAMPLE#		_			CO	MMENTS	3	ELEVATION (m)
0 333	ORC	GANICS - topsoil							7		-	:		1				
	CLA	Y - silty, trace sa - brown - frozen, moist - high plasticity	and soft when the							G9								235 -
	CLA	 black frozen, moist 	and, some organic and soft when tha to high plasticity							G10								;
				-0 di- \						G11								
-1	CLA	- brown	nd, trace gravel (thawed					G12								234 -
			(<3 mm dia.) belo			·				G13								
_2	- tra	ce gravel (<19 mi	m dia.) below 1.7	m						G14 G15								
	- sor	ne silt inclusions	(<10 mm dia.), fir	m to stiff below 2.	1 m	÷			,	- 1								233 -
anger in		÷								G16							,	
-3	Note	of test hole at 3.1 ss: o sloughing.	I m in CLAY				·											232 -
	2) No 3) Ba	o seepage. ackfilled test hole	with auger cutting	gs.														-
4		·	- <u>-</u> -			·	Locos	D BY: Ja	are d	Rein	win		I CON	ADI F	ים ואסוד:	EPTH: 3.0)5 m	
		1	AECOM					VED BY:								ATE: 1/22		
		F	LLCUIVI			•		CT ENGI				erreira						1 of 1

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PROJECT:	inkster Boulevard Widening CLIENT: City of Winni		
	: N - 5534185.358, E - 627463.682	PROJECT NO.: 0265-411-00	
	TOR: Paddock Drilling Ltd. METHOD: Bratt 22, 12		
SAMPLE T	PE GRAB ∭SHELBY TUBE ∑SPLIT SPO	ON ■BULK NO RECOVERY TCORE	
DEPTH (m) SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE SAMPLE#	ELEVATION (m)
0	CONCRETE (241 mm)		
	SAND (Limestone) - some gravel (<12 mm dia.), trace silt, light brown, frozen, moist well graded CLAY - silty, sandy, some organics - black - frozen, moist and firm when thawed	G145 G145 Gradation: Sand = 35.2%, Silt = 22.6%, Clay = 42.2%	
	- high plasticity	G147	235 -
	CLAY - silty, some sand	G148	
	- frozen to 1.7 m, moist and firm to stiff when thawed - high plasticity	G149 G150	024
-2	- trace silt inclusions (<5 mm dia.), stiff below 1.8 π	G151	234
	- trace sand inclusions (<5 mm dia.) below 2.1 m		
	- mottled brown and grey, firm below 2.7 m	G152	233
-3 // 	End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.		
-			232
T ₄			
	AECOM	LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/27/09 PROJECT ENGINEER: Nelson Ferreira Page	1 of 1

CLIENT: City of Winnipeg TESTHOLE NO: TH-09-13 PROJECT: Inkster Boulevard Widening PROJECT NO.: 0265-411-00 LOCATION: N - 5534118.510, E - 627559.372 METHOD: Acker SS2 Maruca, 125 mm SSA ELEVATION (m): 236.021 CONTRACTOR: Paddock Drilling Ltd. NO RECOVERY CORE SPLIT SPOON ⊞BULK SHELBY TUBE **GRAB** SAMPLE TYPE ELEVATION (m) SAMPLE TYPE SOIL SYMBOL DEPTH (m) SOIL DESCRIPTION COMMENTS ORGANICS - topsoil CLAY - silty, some sand, some organics, trace gravel (<10 mm dia.), brown and black, frozen, moist and soft when thawed, high plasticity G17 CLAY - silty, some sand, some organics - black - frozen, moist and soft when thawed G18 - intermediate to high plasticity CLAY - siity, trace sand - brown - frozen, moist and stiff when thawed - high plasticity G19 235 G20 SILT - some clay, some sand - light brown - moist, soft to firm - intermediate plasticity G21 G22 CLAY - silty, trace sand - brown - moist, firm to stiff 234 - high plasticity G23 trace silt inclusions (<10 mm dia.) below 2.1 m G24 - mottled brown and grey, soft to firm below 2.7 m 233 End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage.3) Backfilled test hole with auger cuttings. COMPLETION DEPTH: 3.05 m LOGGED BY: Jared Baldwin COMPLETION DATE: 1/22/08 **AECOM** REVIEWED BY: Nelson Ferreira PROJECT ENGINEER: Nelson Ferreira Page 1 of 1

PROJECT: Inkster I		nipeg	TESTHOLE NO: TH-09-14
	4143.756, E - 627587.411	07.050.405	PROJECT NO.: 0265-411-00
CONTRACTOR: Pa	9	CT 250, 125 mm SSA OON ⊟BULK ✓	ELEVATION (m): 236.094 NO RECOVERY CORE
SAMPLE TYPE	GRAB SPLIT SE	OOM BOFY 5	INO RECOVER I
SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE SAMPLE #	COMMENTS LANGE
) ASPHALT	(178 mm)		23
- lig	nestone) - some gravel (<12 mm dia.), trace silt nt brown zen, moist when thawed Il graded	G369	
CIAV_si	by, some some, trace to some organics	G370	
- da - fro	zen, moist and soft when thawed ermediate to high plasticity	G371	
- sandy be	low 1.2 m	G372	Gradation: Gravel = 1.6%, Sand = 47.0%, Silt = 25.8%, Clay = 25.6%
- light - fro - low	ne clay to clayey, some sand It brown zen, moist and soft to firm when thawed to intermediate plasticity y, some sand	G373	
- bro		G374	
- trace silt	inclusions (<5 mm dia.), trace precipitates (<3 mm dia.) below 2.1 m	G375	23
- trace san	d below 2.7 m	G376	
Notes: 1) No sloug 2) No seed			23
3) Backlille	u tost noic min augur outungs.		
	AECOM	LOGGED BY: Geoffrey Nolette REVIEWED BY: Nelson Ferreira PROJECT ENGINEER: Nelson Ferre	COMPLETION DEPTH: 3.05 m COMPLETION DATE: 1/31/09 page 1 oi

CLIENT: City of Winnipeg TESTHOLE NO: TH-09-15 PROJECT: Inkster Boulevard Widening PROJECT NO.: 0265-411-00 LOCATION: N - 5534127.010, E - 627639.475 METHOD: Acker SS2 Maruca, 125 mm SSA ELEVATION (m): 235.183 CONTRACTOR: Paddock Drilling Ltd. SPLIT SPOON BULK NO RECOVERY CORE SHELBY TUBE SAMPLE TYPE GRAB ELEVATION (m) SAMPLE TYPE SOIL SYMBOL SAMPLE# DEPTH (m) SOIL DESCRIPTION COMMENTS ORGANICS - topsoil SILT - some clay to clayey, some sand, brown, frozen, moist and soft to firm when thawed, low to intermediate plasticity 235 G25 - light brown below 0.3 m G26 CLAY - silty, trace sand - brown - frozen to 0.9 m, moist and stiff to very stiff when thawed - high plasticity G27 G28 234 G29 - 0.03 m silt pocket at 1.5 m G30 - trace silt inclusions (<3 mm dia.), firm to stiff below 1.8 m G31 233 grey below 2.4 m G32 - trace gravel (<20 mm dia.), soft to firm below 2.7 m End of test hole at 3.1 m in CLAY Notes: 232 1) No sloughing. No seepage.
 Backfilled test hole with auger cuttings. COMPLETION DEPTH: 3.05 m LOGGED BY: Jared Baldwin **AECOM** COMPLETION DATE: 1/22/08 REVIEWED BY: Nelson Ferreira PROJECT ENGINEER: Nelson Ferreira Page 1 of 1

PROJ	ECT:	Inkster Boulevard Widening	CLIENT: City of Winnipeg	9					NO: TH-09-16	
LOCA	TION	I: N - 5534146.202, E - 627685.939							NO.: 0265-411-00	
		TOR: Paddock Drilling Ltd.	METHOD: Canterra CT 2			SA		L	N (m): 235.92	
SAMP	LE T	YPE GRAB IIII	SHELBY TUBE SPLIT SPOON	BI	JLK		<u> </u>	NO RECOVE	RY TCORE	1
DEPTH (m)	SOIL SYMBOL	SOIL D	ESCRIPTION		SAMPLE TYPE	SAMPLE#			COMMENTS	ELEVATION (m)
0		ASPHALT (178 mm)								
		SAND (Fill) - gravelly (<19 mm dia.), some silt - light brown - frozen, moist when thawed - well graded				G361				
		CLAY - silty, some sand, some organics		<u> </u>		G362				
		- black - frozen, moist and soft to firm when that - intermediate to high plasticity	wed	• •		G363				23
-1						G364			·	
		SILT - some clay to clayey - light brown - frozen to 1.5 m, moist to wet and soft w - low to intermediate plasticity	rhen thawed			G365			·	
		CLAY and SILT - some sand - light brown - moist, soft to firm - intermediate to high plasticity				G366				23
2		CLAY - silty, some sand - light brown - dry to moist, stiff - high plasticity				G367				
		- trace silt inclusions (<5 mm dia.) below 2.7 m				G368				23
3		End of test hole at 3.1 m in CLAY Notes: 1) No sloughing.								
		2) No seepage. 3) Backfilled test hole with auger cuttings.								
4			ILO	GGED BY:	Geof	frey N	lolette	COMPL	ETION DEPTH: 3.05 m	23
		AECOM		VIEWED BY					ETION DATE: 1/31/09	
		/ LCO!		ROJECT ENG				eira	Page	1 0

PRO	JECT	: Inkster Boulevard Widening CLIENT: City of Winnipeg						E NO: TH-09-17	
LOC	ATION	V: N - 5534118.993, E - 627715.510						NO.: 0265-411-00	
		TOR: Paddock Drilling Ltd. METHOD: Bratt 22, 125 mm SSA						N (m): 235.61	
SAME	PLE T	YPE GRAB ∭SHELBY TUBE ∑SPŁIT SPOON ⊟BU	LK		<u> </u>	NO RE	COVE	RY TCORE	1
DEPTH (m)	SOILSYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE #				COMMENTS	ELEVATION (m)
0		ASPHALT (63 mm)					i		
- - -	***	CONCRETE (165 mm) SAND (Limestone) - silty, gravelly (<19 mm dia.) - light brown - frozen, moist when thawed		G153					
-		- well graded CLAY - silty, some sand, some organics		G154					235
- -		- black - frozen, moist, soft to firm when thawed - intermediate to high plasticity		G155					
—1 - -		CLAY and SILT - trace to some sand - light brown and light grey - frozen to 1.5 m, moist and soft to firm when thawed		G156					
		- intermediate plasticity		G157					234
-		CLAY - silty, some sand - brown - moist, stiff - high plasticity		G158					234
- 2 -2		- trace silt inclusions (<5 mm dia.) below 2.1 m		G159					
		- firm below 2.7 m		G160					233
- 3 -		End of test hole at 3.1 m in CLAY Notes: 1) No sloughing.							:
		2) No seepage. 3) Backfilled test hole with auger cuttings.							
						:			232
4		LOGGED BY: G	enf	frev N	lolette	cr)MPL	ETION DEPTH: 3.05 m	1
		AECOM REVIEWED BY:						ETION DATE: 1/27/09	
		PROJECT ENG				_		Page	1 of

PRO.	IECT:	Inkster Boulevard Widening CLIENT: City of Winnip		
		: N - 5534128.903, E - 627773.266	PROJECT NO.: 0265-411-00	
		TOR: Paddock Drilling Ltd. METHOD: Acker SS2 N		
SAMP			BULK NO RECOVERY ☐CORE	_
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE SAMPLE TYPE COMMENTS	ELEVATION (m)
0		ORGANICS - topsoil CLAY - silty, trace sand - brown - frozen, moist and soft when thawed	G33	235 —
		- high plasticity CLAY - silty, some sand - brown - frozen to 0.6 m, moist and soft when thawed	G34	-
- - -		- intermediate to high plasticity	G35 Gradation: Sand = 14.8%, Silt = 41.3%, Clay = 43.9%	-
1 - -			G36	234 -
- - -			G37	
- - -			G38	
-2 -		CLAY - silty, trace sand, brown, moist, firm to stiff, high plasticity - trace silt inclusions (<5 mm dia.) below 2.1 m	G39	233 -
-		- 0.03 m silt pocket at 2.4 m	G40	
The season of th				
ENVIRO (VAPOUNITATE) INV. IER VIDENING - EAST-GRAD UNIV. OF 1		End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.		232 -
INTO IER WIDE	-			
4 4			OGGED BY: Jared Baldwin COMPLETION DEPTH: 3.05	
NAIMA (A		AECOM	REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/22/0	8 ige 1 of

PRO	JECT:	Inkster Boulev	ard Widening		CLIENT: C	ity of Winnipeg				<u> </u>			O: TH-09-19	
			473, E - 627825.8	63									D.: 0265-411-00)
		TOR: Paddock			METHOD:	Canterra CT 250), 125 mm	SS	Α		ELEVA1	TION ((m): 235.638	
	LE T		GRAB	SHELBY	TUBE 🔀	SPLIT SPOON	⊟BU	LK			NO RECO	VERY	CORE	
DEPTH (m)	SOIL SYMBOL		SOI	L DESC	RIPTION		,	SAMPLE TYPE	SAMPLE#				COMMENTS	ELEVATION (m)
0		ASPHALT (203 m	nm)							: :	: :			
-														
- - - -		- light brown	oist to wet when thawe)				G353 G354					
†		CLAY - silty, som	e sand, trace to some	organics										235 -
<u>-</u>		- frozen, mo	n and black cist and soft when thav ate to high plasticity	ved			:		G355				·	
-				· 					G356					
<u>-</u>		- light brown - frozen, mo - intermedia	oist and soft when thav ate plasticity	ved					G357					234 -
- - -		- light brown - wet, firm - tow to inte	ermediate plasticity						G358					
-2 - -		CLAY - silty, som - brown - moist, stiff - high plasti	f						G359					
3/9/09		tenno silt inclusin	ons (<5 mm dia.) below	27 m					G360					233 -
GPJ UMA.GDT		End of test hole at												
EK WIDENING - EAST.		Notes: 1) No sloughing. 2) No seepage.	hole with auger cutting	5.		·								
WEZFS) INKSTER V														232 -
ē 4														
≶							GED BY: (TON DEPTH: 3.0	
N N			AECOM				IEWED BY			-erreira Velson Ferr		/ITLE	ION DATE: 1/31/	Page 1 of 1
Z			1			[PKU	VECT CING	HAC	rs. I	TOISUIT FUIT	ciia			age i ui i

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	: Inkster Boulevard Widening CLIENT: City of Winn	·r-3	TESTHOLE NO: TH-09-20
	N: N - 5534124.981, E - 627866.020		PROJECT NO.: 0265-411-00
			ELEVATION (m): 235.102
SAMPLE T	YPE ■ GRAB SHELBY TUBE SPLIT SP	DON BULK	NO RECOVERY CORE
DEPTH (m) SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE SAMPLE #	COMMENTS STREMANDO
0 3333	ORGANICS - topsoil CLAY - silty, some sand, trace gravel (<20 mm dia.) - brown	G41	235 -
	- frozen, moist and firm when thawed - high plasticity	G41	
	- 0.08 m silt lense at 0.5 m	G42	
	CLAY - silty, some sand, some organics, black, frozen, moist and stiff when thawed high plasticity	intermediate to G43	
1	CLAY and SILT - some sand - light brown - moist, soft to firm	G44	234
	- most, soit to littli - intermediate plasticity	G45	
		G46	
,			
2		G47	233
	- some gravel (<20 mm dia.) below 2.6 m CLAY - silty, trace sand	G48	
3	- brown - moist, firm - high plasticity		
	End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage.		232
	3) Backfilled test hole with auger cuttings.		
4		LOGGED BY: Jared Baldwin	COMPLETION DEPTH: 3.05 m
	AECOM	REVIEWED BY: Nelson Ferreira PROJECT ENGINEER: Nelson Ferreir	COMPLETION DATE: 1/22/08 a Page 1 of

Jan

PROJ	ECT:	Inkster Boulev	ard Widening	CLIEN	T: City of Winnipe	1								NO: TH-09-21	
			.296, E - 62787											O.: 0265-411-00	
		FOR: Paddock		METH	OD: Bratt 22, 125 r								_	(m): 235.137	
SAMP	LE T	PE B	GRAB	SHELBY TUBE	SPLIT SPOON	⊟BU	JLK				NOR	RECOV	/ER\	Y CORE	
DEPTH (m)	SOIL SYMBOL		S	SOIL DESCRIPTION	ON		SAMPLE TYPE	SAMPLE#						COMMENTS	ELEVATION (m)
0		ASPHALT (76 m	n)	91					,	:	-	:	T		
<u> </u>	\bigotimes	- dry	/EL (Fill) - some si	ent, grey				G345							235
	\bowtie	- well grade						G345							
ļ.,		- black	dy, some organics												
-		- frozen, m	oist and soft when ate to high plastici	thawed ty				G346]
-		monnedi	A - E-manus	•						····!					
}										·					
}								G347							
											•••••				-
 								ا ا							001
[•						G348							234
[
	4	CLAY - silty som	e sand, trace silt in	nclusions (<5 mm dia.)	<u> </u>			G349			···· †				
ļ		- brown	1.5 m, moist and fi					3349							
-		- frozen to - high plast	icity	mion diamou							:	:			
}		CLAY and SILT -	some sand					G350		: !		!			
}		- light brow - moist, sof	n It												
}		- intermedi	ate plasticity				igsqcut			ţi					
-2	1111	SILT - some clay - light brow	to clayey, some sa	and				G351							1
		- moist to w	vet, firm								····				233
		- low to inte	ermediate plasticity	у											
			4												
											:				-
<u> </u>	ЩЩ	CLAY - silty, som	e sand												
		- brown			•			G352		ļļ					
-		- moist, stif - high plast	icity												
}		→ 1							•••••		•••••				
<u>_</u> 3			104-1-01411							; <u> </u>					
<u> </u>		End of test hole a Notes:	π σ.1 m in CLAY		•										232
		No sloughing. No seepage.													
†		3) Backfilled test	hole with auger cu	ittings.				}							
			-								<u>i</u> .				
[:	:			•	1
<u>[</u>										; · · · i	••••				
<u> </u>															Ì
- -3 - - - - - - - - - - -															
4		<u> </u>	1 .		110	OGGED BY:	Geo	ffrev 1	Voleti	e	T	СОМ	PLE	TION DEPTH: 3.05 m	<u>n</u> .
1		•	AECOM		RI	EVIEWED BY	r: Ne	elson	Ferre	еіга				TION DATE: 1/28/09	
			1,1200,11		PF	ROJECT ENG	INF	ER: I	Nelsc	n Fer	reira	_	_	Pao	e 1 of 1

PROJECT	: Inkster Boulevard Widening	CLIENT: City of Winn	ipeg				NO: TH-09-22	
	N: N - 5534122.691, E - 627890.477					PROJECT I	NO.: 0265-411-00)
	CTOR: Paddock Drilling Ltd.	METHOD: Bratt 22, 1	25 mm SSA	-		ELEVATIO	N (m): 234.97	
SAMPLE T		TUBE SPLIT SPC	OON BUL	K		NO RECOVER	RY TORE	
DEPTH (m) SOIL SYMBOL	SOIL DESCI	RIPTION		SAMPLE TYPE SAMPLE #			COMMENTS	ELEVATION (m)
0	ASPHALT (168 mm)							
	SAND and CLAY (Fill) - silty, some gravel (<25 mm dia - dark brown - frozen, dry to moist and firm when thawed - intermediate to high plasticity)		G161				
	CLAY - silty, some sand, some organics - black - frozen, moist and soft to firm when thawed - intermediate to high plasticity			G163				234
	CLAY and SILT - some sand - light brown - frozen, moist and firm when thawed - intermediate plasticity CLAY - silty, some sand		<u> </u>	G164 G165				
	- brown - frozen to 1.5 m, moist and firm when thawed - high plasticity CLAY and SILT - some sand - light brown - moist, soft to firm - intermediate to high plasticity			G166				233
				G167				
	CLAY - sity, some sand, trace silt inclusions (<5 mm dia - brown - moist, stiff - high plasticity	a.)		G168				232
	End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.							
								231
	1.50014		LOGGED BY: G				ETION DEPTH: 3.0 ETION DATE: 1/27	
	AECOM							Page 1 of
	· •		PROJECT ENGI	NEEK:	iveison Ferre	114		age i U

PROJECT	T: 1	Inkster Boulev	ard Widening		CLIENT	: City of Wini	nipeg						NO: TH-09-23	
			383, E - 627913	.564									NO.: 0265-411-00	
		OR: Paddock			METHO	D: Acker SS					1		N (m): 234.674	
SAMPLE T	_		GRAB	SHELBY :	TUBE	SPLIT SP	OON E	BULK			NO REC	OVEF	RY CORE	-
DEPTH (m)				OIL DESC	RIPTIC	DN		SAMPLE TYPE	SAMPLE #				COMMENTS	ELEVATION (m)
0 \$33	3	ORGANICS - tops	soil					寸		: :	: :	,		-
		CLAY - silty, trace - brown - frozen, mo - high plasti	e sand pist and firm when t						G49			••••		-
		 black frozen, mo intermedia 	pist and firm when the test of the state to hight plasticity	nawed					G50					234 -
- -		CLAY and SILT - - light brown - moist, soft - intermedia	n						G51					-
		- brown below 1.1	m						G52					
									G53					233 -
		- moist ven	own and light brown						G54					
-2 - -		- some sand inclu	sions (<10 mm dia.)	, trace oxidation b	elow 2.1 m				G55					
								;						
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									G56					232 -
		End of test hole at Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test h	t 3.1 m in SILT	ngs.										
														231 -
4							1,000	24.				MO	ETION DEDTH: 205	
5			AFCOM				LOGGED E						ETION DEPTH: 3.05 m ETION DATE: 1/22/08	
			AECOM				3			Nelson Fen				1 of 1

-7 1-7

ROJECT:	Inkster Boulevard Widening	CLIENT:	City of Winnipeg					NO: TH-09-24	
	: N - 5534152.363, E - 627950).493	· · · · · · · · · · · · · · · · · · ·					NO.: 0265-411-00	
	FOR: Paddock Drilling Ltd.): Canterra CT 250					N (m): 235.289 RY TORE	
MPLE TY	PE GRAB	SHELBY TUBE	SPLIT SPOON	BUL	<u>-K</u>	<u> </u>	NO RECOVE	RY LIJCORE	
SOIL SYMBOL	SO	OIL DESCRIPTIO	N		SAMPLE TYPE SAMPLE#			COMMENTS	ELEVATION (m)
	ASPHALT (229 mm)		<u> </u>		<u> </u>				
XXX	SAND (Pit Run) - some gravel (<12 t	mm dia.), some silt			G33	,			235
	 brown frozen, moist when thawed 								'
	- well graded			į	000				1
			<u> </u>		G33	'			
	CLAY - silty, some sand, some orgai	ncs							
	 frozen, moist and soft to firm 	when thawed			G33				
	 intermediate to high plasticity 	!			553	' <u>.</u>			
					G34	,		1	
					004	´		. •	
	- trace organics, dark grey and black	below 1.2 m							234
					G34				
					U.S.	·			
	CLAY - silty, some sand - brown								
	 frozen to 2.0 m, moist and sti 	ff when thawed			G34	2			
	- high plasticity			ŀ					
	•			İ		l			
					G34	3		1	
				1				-	
									233
	SILT - some clay to clayey, trace san - light brown	ıd							
	- wet soft to firm				1	ļ .	.,	•	
	- low to intermediate plasticity								
					G34	4			
				ľ				1	
						ļ			
		÷							
						ļ			
]	23
	End of test hole at 3.4 m in SILT								-
- i . l	Notes: 1) No sloughing.		•			····			-
	Trace seepage in silt layer. Backfilled test hole with auger cutt	inae							
	3) Backfilled test note with auger cutt	mya.							
						<u>-</u>		•	
	<u> </u>		LOG	GED BY: 0	Seoffrey	Nolette		ETION DEPTH: 3.35	
	AECOM		REVI	EWED BY:	Neiso	n Ferreira		ETION DATE: 1/31/09	
	ALCOM		PRO	JECT ENG	INEER:	Nelson Fe	rreira	Pa	ge 1 of

PRO	JEC1	f; Inkst	er Boulev	ard Widenir	ng	·	CLIEN	T: City of	f Winnip	eg										TH-09-		
LOC	ATIO	N: N -	5534130.6	81, E - 628	3040.626					····						—				265-41		
				Drilling Ltd.						Maruca, 1			4							234.69		<u></u>
SAMF	LE]	YPE.		GRAB	Ц	SHELBY	TUBE	∑ SPI	LIT SPOC	DN E	BULK	1	- 1-		Z	JNO	KEC	OVEF	(1	∭ co	IKE	
DEPTH (m)	SOIL SYMBOL				SOIL I	DESC	RIPTI	ON			SAMPI F TYPE	SAMPI F#	# 44 IIIIICO						C	OMME	NTS	ELEVATION (m)
0	333		ANICS - tops														:					<u> </u>
			- silty, trace - brown - frozen, mo - high plastic	ist and soft wi	nen thawed							G5	57								-	
- - -												G5	8 .			\$				•		234 —
<u> </u> 1			 black frozen, mo intermedia 	sand, some o ist and firm wh te to high plas	nen thawed ticity							G5										
			- moist, firm	te plasticity (<1 mm thick)								G6										- -
_			 light brown moist, very 		city							G6									,	233 –
-2												G6										-
•												G6										
		CLAY	- silty, trace	sand			. .					G6	4									232
-3			- brown - moist, firm - high plastic	ity 3.1 m in CLAY	,				· ·													- -
		Notes:	: sloughing. seenage	ole with auger																	:	- -
-								,														231 — -
 																<u></u> .	<u>į</u>					
		<u> </u>	I	· · · · ·						LOGGED E								_			3.05 m	
				AECON	V					REVIEWED						$\overline{}$	COI	MPLE	TION I	JATE:	1/22/08 Page	1 of 1
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PROJ	ECT:	Inkster Boulevard Widening	CLIENT: City of	Winnipeg						NO: TH-09-26		
		: N - 5534156.725, E - 628141.312			_					NO.: 0265-411-	00	
		TOR: Paddock Drilling Ltd.		erra CT 250, 125 mr		<u> </u>				N (m): 234.884	<u>-</u>	
SAMPI			SHELBY TUBE SPLI	T SPOON B	ULK			NO RE	COVE	RY TCORE		
DEPTH (m)	SOIL SYMBOL	SOIL [DESCRIPTION		SAMPLE TYPE	SAMPLE#			· · · · · ·	COMMENT	S	ELEVATION (m)
0		ASPHALT (178 mm)										
		SAND (Pit Run) - some gravel (<12 mm dia. - light brown - frozen, moist when thawed - well graded), some silt			3321 3322						
		CLAY - silty, some sand, some organics - black - frozen to 1.5 m, moist and soft to firm - intermediate to high plasticity	when thawed			G323				Gradation: Sand = 14.3%, Silt 44.0%, Clay = 41.8	= %	234 -
I		- trace silt inclusions (<3 mm dia.) below 1.2	m ·			G324 G325						
		SILT - some clay, trace sand - light brown				G326						000
		moist to wet, soft to firm low to intermediate plasticity				G327						233
		CLAY - silty, some sand - brown - moist, firm to stiff - high plasticity				G328						
		· ·				-J-20						232
		End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.								i		
			·									231
				LOGGED BY:	Gent	frev	Nolette	(COMPI	ETION DEPTH: 3	3.05 m	
		AFCOM	•	REVIEWED B						ETION DATE: 1/3		
		AECOM		PROJECT EN	CINE	ED	Noleon Fo				Page	1 of

	PRO.	IECT:	Inkster Boule	vard Widening		CLIENT: City of	of Winnipeg			 TE	STHOLE	NO: TH-09-27	
				.840, E - 62818	36.686					 PF	ROJECT	NO.: 0265-411-00	
ı	CON	TRAC	TOR: Paddoc	k Drilling Ltd.		METHOD: Ack	er SS2 Maruca,			 		N (m): 233.992	
1	SAMP			GRAB	SHELBY	TUBE SP	PLIT SPOON	BULK		 NC	RECOVE	RY TORE	
	DEPTH (m)	SOIL SYMBOL		S	SOIL DESCR	RIPTION		SAMPLE TYPE	SAMPLE#			COMMENTS	ELEVATION (m)
			- high plas CLAY - silty, san	ce sand noist and firm when ticity dy, some organics noist and firm when	<u></u>				G65 G66			Gradation: Sand = 20.6%, Silt = 35.3%, Clay = 44.1%	
	- - 1			to clayey, some s	and, light grey, moist	, firm, low to interme	diate plasticity		G67	 		·	233 -
	- - -	179	- brownish-organ	nge below 1.2 m					G68 G69				
-	•		CLAY - silty, trac - brown - moist, ve - high plas	ry stiff					G70				
	-2 -		- trace silt inclusi	ions (<3 mm dia.), s	stiff below 2.1 m				G71				232 -
MA.GDT 3/9/09			- 0.15 m silt lense						G72				
INKSTER WIDENING - EAST.GPJ U	-3		End of test hole a Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test	at 3.1 m in CLAY hole with auger cut	tings.							·	231 -
APOURIFZIF3) INKS IE	4						Loos		D-1		COMP	ETION DEDTU. 205	
Š				AECOM				BY: Jare ED BY: No		 - "		ETION DEPTH: 3.05 m ETION DATE: 1/22/08	<u> </u>
Ž K				AECOM		•		T ENGINE		епеіга			e 1 of 1
ii l				·									

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		: Inkster Boulevard Widening CLIENT: City of Winni	peg				TESTHO			
		N: N - 5534132.430, E - 628207.508	25 204						265-411-00	
		TOR: Paddock Drilling Ltd. METHOD: Bratt 22, 13					ELEVATI		234.474 CORE	
SAMP	LE T	YPE GRAB SHELBY TUBE SPLIT SPO	ON BUI	LK T		<u> </u>	NO RECO	VERY	LICORE	1
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION	9 9 9	SAMPLE TYPE	SAMPLE #			CC	DMMENTS	(=/ NO!+4/\D !T
0		ASPHALT (114 mm)		7						
	\bowtie	SAND (Pit Run) - some gravel (<12 mm dia.), brown, frozen, moist when thawed, we	l graded		G 20 9			•••		
		CLAY - silty, sandy, trace gravel (<6 mm dia.)	,					•		
		- brown - frozen to 1.5 m, moist and soft to firm when thawed - high plasticity			G210					2
		- ngi pacuoty								
ļ										
				9	G211					
			İ							
					3212					
		- firm when thawed below 1.2 π		■`	212				•	
		- nm when thawed delow 1.2 iii								
					3213					2
					-					"
ļ		l			٠					
ł				C	S214					
		- trace silt inclusions (<5 mm dia.), trace sand inclusions (<5 mm dia.), stiff below 1.8	m							
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				9	3215					
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										2
					İ					_
					9216					
						<u>.</u>				
		•								
				-						
ľ		End of test hole at 3.1 m in CLAY			ľ			"		
		Notes: 1) No sloughing.			l					
		2) No seepage. 3) Backfilled test hole with auger cuttings.								
		of province real line with reason continue.								
		· ·								23
			·].					
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			LOGGED BY: G						EPTH: 3.05 m	
	-		REVIEWED BY: PROJECT ENGIR					LETION D	ATE: 1/28/09 Page	

PROJ	ECT:	Inkster Boulevard Widening CLIENT: City of Wir	nipeg				NO: TH-09-29	
		: N - 5534158.426, E - 628208.809					NO.: 0265-411-00	
		TOR: Paddock Drilling Ltd. METHOD: Canterra					N (m): 234.815	•
SAMP	LE TY	PE GRAB ∭SHELBY TUBE SPLIT S	POON BULL	<u> </u>		O RECOVE	RY TCORE	
DEРТН (m)	SOIL SYMBOL	SOIL DESCRIPTION	CAMPI F TYOF	SAMPLE LIFE			COMMENTS	ELEVATION (m)
0		ASPHALT (178 mm)						
- - - -		SAND (Fill) - trace gravel (<6 mm dia.), trace silt - light brown - frozen, moist when thawed - well graded		G32				- - -
-		CLAY - silty, some sand, some organics - black		G33	31			234
_1 1		- frozen, moist and soft when thawed - intermediate to high plasticity		G33	32			
- - -				G33	33			
- - - -2		SILT - some sand, trace to some clay - light brown - frozen to 1.8 m, mist and soft to firm when thawed - low to intermediate plasticity		G33				233 -
- -								
		CLAY - sifty, some sand, trace silt inclusions (<3 mm dia.) - brown - moist, stiff - high plasticity		G33	36			232 -
3		End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.						
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								231 –
\$t ,					<u> </u>	<u> </u>		
			LOGGED BY: Ge				ETION DEPTH: 3.05 m	
		AECOM	REVIEWED BY: PROJECT ENGIN				ETION DATE: 1/31/09	1 of 1

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PROJECT	: Inkster Boulevard Widening CLIENT: City of Winn	ipeg	TESTHOLE NO: TH	
	N: N - 5534141.000, E - 628244.818		PROJECT NO.: 026	
CONTRAC	J. O. C. C. C. C. C. C. C. C. C. C. C. C. C.	2 Maruca, 125 mm SSA	ELEVATION (m): 23	
SAMPLE T	YPE GRAB SHELBY TUBE SPLIT SPC	DON BULK	NO RECOVERY	CORE
DEPTH (m) SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE SAMPLE#	COM	STANDIN (m)
0 333	ORGANICS - topsoil CLAY - silty, some sand, some organics, black - frozen, moist and soft when thawed - intermediate to high plasticity CLAY - silty, trace sand	G73		
	CLAY - strty, trace sand - light brown and brown - frozen, moist and soft to firm when thawed - high plasticity	G74		-
_1	- trace silt inclusions (<5 mm dia.) below 0.9 m	G75		233 -
	SILT - some clay, trace sand - light brown	G76 G77		
- - -	- frozen to 1.5 m, moist and very soft when thawed - low to intermediate plasticity	G78		
- -2 -	- 0.08 clay lense at 2.0 m	G79		232 -
- -				
	- 0.08 m clay lense at 2.6 m	G80		231
	End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.			
-				
4			CONDUCTION	EDTU- 2 OF m
	AECOM	LOGGED BY: Jared Baldwin REVIEWED BY: Nelson Ferrein PROJECT ENGINEER: Nelson		

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PRO.	JECT	Inkster Boulevard Widening CLIENT: City of Wi	nnipeg			TE	STHOLE	NO: TH-09-31	
		N: N - 5534161.140, E - 628322.72				PR	OJECT	NO.: 0265-411-00	
CON	TRAC	TOR: Paddock Drilling Ltd. METHOD: Canterra	a CT 250, 125 mm S	SA				N (m): 234.731	
SAME			POON BULK		[ZΝO	RECOVE	RY CORE	
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPI FIYPE	SAMPLE #				COMMENTS	ELEVATION (m)
0		ASPHALT (178 mm)			:		:		
-						ļ <u>.</u>			
-	\bigotimes	SAND (Fill) - some clay, some silt, some gravel (<12 mm dia.), light brown and br to wet when thawed, well graded	own, frozen, moist	G313		<u> </u>	,		
Ī	\bowtie	SAND and CLAY (Fill) - silty, some gravel (<12 mm dia.)					į		
	\bowtie	- brown - frozen, moist and firm when thawed		G314					
L	\bigotimes	- intermediate to high plasticity		G314					
-		CLAY - silty, some sand, some organics - black							234
-		frozen, moist and firm when thawed intermediate to high plasticity		G315			····		
ŀ		intermodulate to Algoriphicatory		•					
-1									
ŀ				G316				-	
ŀ									
ļ			<u> </u>						
		CLAY and SILT - some sand		G317					
[- light brown - frozen, moist and firm when thawed]					
-		- intermediate plasticity		0740			····i		233
				G318					
_	777	SILT - some clay to clayey						·	1
-2		- light brown - moist to wet, soft		G319					
_		- moist to wet, soit - low to intermediate plasticity		•					-
-									
-									
		CLAY - silty, some sand, trace silt inclusions (<5 mm dia.)							
		- brown - moist, stiff							
 -		- high plasticity		G320					232
-									202
-						•••••			
– 3									,
- :		End of test hole at 3.1 m in CLAY Notes:							
-		1) No sloughing. 2) No seepage.							
-		Backfilled test hole with auger cuttings.							
_						···÷			231
_									1
-]					
4		1	LOGGED BY: Geo	ffrey N	lolette	1	COMPLE	TION DEPTH: 3.05 m	-1
		AECOM	REVIEWED BY: N	elson	Ferreira			TION DATE: 1/31/09	
			PROJECT ENGINE	ER: 1	lelson Fe	теіга		Page	e 1 of 1

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	Inkster Boulevard Widening		IT: City of Winnipeg					NO: TH-09-32	
	N - 5534145.612, E - 62839		00. 4.1000.16	405	- 004			NO.: 0265-411-00 N (m): 233.773	<u>.</u>
CONTRACT	OR: Paddock Drilling Ltd. PE GRAB	ME1H SHELBY TUBE	OD: Acker SS2 Maru	a, 125 min ⊟BUL			NO RECOVE		
DEPTH (m) SOIL SYMBOL		OIL DESCRIPTI			SAMPLE 17PE			COMMENTS	ELEVATION (m)
8333	ORGANICS - topsoil CLAY - silty, some sand, some orga - dark grey - frozen, moist and soft to firm - intermediate to high plasticit	when thawed			G81				
	SILT - some clay to clayey, some sa - light brown - frozen to 0.9 m, moist and vo - low to intermediate plasticity	ery soft when thawed			G82 G83				233
	CLAY - silty, trace sand - brown - moist, firm to stiff - high plasticity				G84 G85				
					G86				23
	- trace silt inclusions (<3 mm dia.) be - 0.03 m silt lense at 2.4 m	alow 2.1 m			G88				
	End of test hole at 3.1 m in CLAY Notes:								231
	1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cut	ings.							-
			line	ED BY: Jai	red Ral	lw in	COMPLE	TION DEPTH: 3.05 m	230
	AECOM	·	REVIE	WED BY: I	Velson		COMPLE	TION DATE: 1/23/08	1 of

	T: Inkster Boulevard			CLIENT:	City of Winn	ipeg					-			TH-09-33	
	ON: N - 5534163.75		98	I										0265-411-00	
	ACTOR: Paddock D		· CTT		: Canterra C									: 234.661	
SAMPLE	TYPE G	RAB	SHELBY	TUBE	SPLIT SPC	ON	BULK	<u> </u>			JNO	RECOV	ERY	CORE	-
DEPTH (m)		SO	IL DESCF	RIPTION	N		SAMPI F TYPE	SAMPLE#						COMMENTS	
0	ASPHALT (152 mm)									:	:	:			
. 🗙	SAND and CLAY (Fil	l) - silty, trace grav	el (<12 mm dia.)	<u> </u>				G305		•••••		····			
. 🔉	⊠ - brown	and firm when that						6305							
. 🛞	- intermediate	to high plasticity								:					
. 🛞	ੑ							G306		!					
. 💥	CLAY - silty, some sa	and some organics		· · · · ·				.							
	- black														
		and soft when that to high plasticity	vea					G307							
		·								••••••		•••••	•		
-1															1
			•					G308				:			
							-	,	:		:	:	1		
	CLAY - silty, some sa	and .			·										
	- brown							G309							İ
	- frozen to 1.8 r - high plasticity	n, moist and stiff w	nen tnawed]			:		i			
								0040		••••		·	•		1 2
		com to Albaha	. à o				į.	G310							
	- trace silt inclusions (<5 mm dia.) below	71.8 M												
-2	1							G311					"]		
	1									:	i	į	1		
	CLAY and SILT - som	e sand							••••		···÷		•		
	- mottled brown - moist, soft to f	and light brown irm													
	- intermediate p				-			G312							
]							
]		
-3											. .				
	End of test hole at 4.0 Notes:	m in CLAY and SI	LT												
	1) No sloughing.								••••		····\$·· :		•		1
	No seepage. Backfilled test hole	with auger cuttings	i.												
									i						
.				,							:			•	
									····÷	••••		••••			1 2
		•													
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4						100055	DV: C	- I			1	COLUE	FTICH	DEDTU: 0.05	
		ECOM					BY: Geo							DEPTH: 3.05 m DATE: 1/31/09	
	I A	LCUM					T ENGINE								e 1

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BUCK CLAUCE CO. C.

		Inkster Boulevard Widening		City of Winnipeg						: TH-09-34	
		I: N - 5534140.016, E - 628525		N. AI 00011	- 400	004				0265-411-00	-
		TOR: Paddock Drilling Ltd.		Caput Space				NO REC		i): 234.33	
SAMF	LE TY	/PE GRAB	SHELBY TUBE	SPLIT SPOON	BULK	T	<u> </u>	NOREC	OVERT	LLCORE	Γ
DEPTH (m)	SOIL SYMBOL	SC	DIL DESCRIPTIO	N	SAMPLE TYPE	SAMPLE#				COMMENTS	ELEVATION (m)
0	133	ORGANICS - topsoil CLAY - silty, trace sand, trace silt incl	usions (<5 mm dia)								
		brown frozen, moist and soft to firm this high plasticity				G89			••••		234
						G90					
		CLAY and SILT - some sand				G91			San	dation: d = 12.5%, Silt =	
1		light brown frozen, moist and firm when the intermediate plasticity							43.5	%, Clay = 34.1%	
		CLAY - sifty, some sand, some organ - black - frozen, moist and firm when th - intermediate to hight plasticity	awed			G92					233
		CLAY and SILT - some sand - light brown - frozen to 1.8 m, moist and soft - intermediate plasticity	t to firm when thawed			G93					
		- littermodate plasticity				G94					
2		CLAY - silty, some sand, trace silt incl - brown	usions (<3 mm dia.)			G95					
		- moist, firm to stiff - high plasticity									23
						G96					
3		End of test hole at 3.1 m in CLAY	· · · · · · · · · · · · · · · · · · ·								
		Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cutting.	ngs.								23
									••••		
							<u></u>				
					D BY: Jare					N DEPTH: 3.05 m	
		AECOM		REVIE	WED BY: N	elson	Ferreira	I CON	/IPLETIO	N DATE: 1/23/08	

PRO.	JECT:	: Inkster Boulevard Widening CLIENT: City of Winnipeg					E NO: TH-09-35	
LOCA	ATION	N: N - 5534166.192, E - 628564.214 - on shoulder					NO.: 0265-411-00	
CON	TRAC	CTOR: Paddock Drilling Ltd. METHOD: Canterra CT 250, 125 m					N (m): 234.566	
SAMF	LE T	YPE ■ GRAB SHELBY TUBE SPLIT SPOON B	ULK	1	<u>, </u>	NO RECOVE	RY CORE	
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE#			COMMENTS	ELEVATION (m)
0		ASPHALT (254 mm)						
- - - - -		SAND and GRAVEL (Fill) - some silt, light brown, frozen, moist when thawed, well graded SAND and CLAY (Fill) - silty, trace gravel (<6 mm dia.), dark grey and brown, frozen, dry to moist and firm when thawed,- intermediate to high plasticity		G297 G298				234 -
f	***	CLAY - silty, some sand, some organics					,	
-		black frozen, moist and firm when thawed intermediate to high plasticity		G299)			
-1		CLAY and SILT - sandy - grey - frozen, moist and soft when thawed - intermediate to high plasticity		G300	,			
7				G301			Gradation: Sand = 23.1%, Silt = 41.1%, Clay = 35.7%	233 -
- -2		SILT - some clay to clayey - light brown - frozen to 1.8 m, moist to wet and soft when thawed - low to intermediate plasticity		G302				
-		CLAY - silty, some sand		0204				232 –
3		- brown - moist, stiff - high plasticity		G304				-
-		End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.						- - -
								231 —
4		LOGGED BY:	Geo	ffrev	Nolette	COMPL	ETION DEPTH: 3.05 m	
1		AECOM REVIEWED BY					ETION DATE: 1/31/09	
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ROJECT:	Inkster Boulevard Widening CLIENT: City of Wir	peg TESTHOLE NO: TH-09-36	_
OCATION:	N - 5534160.167, E - 628607.788	PROJECT NO.: 0265-411-00	· _
	OR: Paddock Drilling Ltd. METHOD: Bratt 22,	 	
MPLE TY	PE GRAB SHELBY TUBE SPLIT S	OON BULK NO RECOVERY CORE	
SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE SAMPLE TYPE SAMPLE TYPE	ELEVATION (m)
	ASPHALT (254 mm)		
	SAND (Pit Run) - gravelly (<19 mm dia.) - brown - frozen, moist when thawed - well graded	G241	234
	CLAY - silty, some sand, some orgaincs, trace gravel (<6 mm dia.) - dark grey and black - frozen, moist and firm when thawed - intermediate to high plasticity	G242	
	- Mameriale to man hearort	G243	
		G244	
	SILT - clayey, trace sand	G245	233
	- light brown and light grey - moist, firm - low to intermediate plasticity	G246	
		G247	
		Gradation:	232
	CLAY - some silt, trace sand inclusions (<3 mm dia.) - brown and light brown - moist, stiff - high plasticity	G248 Sand = 2.1 %, Silt = 18.9%, Clay = 79.0%	-
	End of test hole at 3.1 m in CLAY		
	Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.		23
		LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 3.05 m	
	AECOM	REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/28/09 PROJECT ENGINEER: Nelson Ferreira Page	1 of

PROJECT:	Inkster Boulevard Wider	eg					NO: TH-09-37			
	I: N - 5534201.353, E - 6	28648.996			_	_			NO.: 0265-411-00	
	TOR: Paddock Drilling Li		IOD: Bratt 22, 12					<u> </u>	N (m): 233.447	
SAMPLE TY		SHELBY TUBE	SPLIT SPO	ON BU	LK			NO RECOVER	RY TORE	
DEPTH (m)		SOIL DESCRIPT	ION		SAMPLE TYPE	SAMPLE #			COMMENTS	ELEVATION (m)
0	ASPHALT (101 mm)				$ \uparrow $	\dashv	: :	: :		1
	SAND (Fill) - some gravel (<1 - light brown - frozen, moist when the - well graded - brown and grey below 0.5 m	awed				5225 5226				233 -
 	CLAY - silty, some sand	·				-				
	_ hrown	and soft to firm when thawed				5227 				
	- trace precipitates (<5 mm di					3229				232 -
	naconi monanto (-e min	,				G230				
	- 0.10 m silt pocket at 2.1 m									231 -
3					<u> </u>	G232				
4	End of test hole at 3.1 m in Cl Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with au									230 -
4			· · · · · · · · · · · · · · · · · · ·	LOCCED TO		rc	iolette	COMP	ETION DEPTH: 3.05 m	1
	AECO)M		LOGGED BY: (REVIEWED BY	': Nel	Ison F	Ferreira	COMPL	ETION DATE: 1/29/09	
	AECC	Z171		PROJECT ENG						e 1 of 1

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LOCATION: N - 5534133.763, E - 628658.208 CONTRACTOR: Paddock Drilling Ltd. METHOD: Canterra CT 250, 125 mm SSA ELEVATION (m): 233.575 SAMPLE TYPE GRAB SOIL DESCRIPTION SOIL DESCRIPTION ASPHALT (114 mm) ASPHALT (114 mm) ASPHALT (114 mm) 233.775 COMMENTS 333.775 COMMENTS 344.44 345.44 3	PROJECT	: Inkster Boulev	ard Widening	CLIENT: City of Winni	peg			 	NO: TH-09-38	
SAMPLETTYPE GRAS III SHELEY TUBE SPUT SPOON BLAK MO RECOVERY III CORE SOIL DESCRIPTION ASPHALT (I'M mm) ASPHALT (I'M mm) 223 AFCOM BACCOMMENTS SPOON BLAK MARKETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DEPTIK 0.12 m REVIEWED BY: Nebtor Fermina COMPLETION DATE: 1/28/05	LOCATIO	N: N - 5534133.	763, E - 628658.208		· · · · · · · · · · · · · · · · · · ·			 		
SOIL DESCRIPTION ASPHALT (114 mm) ASPHALT (114 mm) 233 AFCOM. BLOGGED BY: Goodfey Nobels COMPLETION DEPTH: 0.12 m Reviewed by Nobels COMPLETION DEPTH							SA			
2 233 2 232 2 233 2 234 2 237	SAMPLE T	YPE	GRAB SHELBY	TUBE SPLIT SPO	ON BU	JLK T		NO RECOVER	RY IIICORE	T
233 234 LOGGED BY: Godffley Noticets COMPLETION DEPTH: 0.12 m REVIEWED BY: Notion Ferreira COMPLETION DEPTH: 0.12 m	DEPTH (m) SOIL SYMBOL		SOIL DESCI	RIPTION		SAMPLE TYPE	SAMPLE#		COMMENTS	ELEVATION (m)
232 231 231 232 AFCOM LOOGED BY: Geoffrey Noiota LOOGED BY: Geoffrey Noiota COMPLETION DEPTH: 0.12 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/23009	0	ASPHALT (114 m	im)							-
231. LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 0.12 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/29/09	- - - - - - - - -									233
230- AFCOM LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 0.12 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/29/09	-2 -						-			232 —
AFCOM LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 0.12 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/29/09	-3									231 -
AFCOM REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/29/09	4									230
P(1 \ \) (1)]							
			AECOM							1 of 1

PR	OJECT	: Inkster Boulevard Widening	CLIENT: City of Winn	ipeg		7	ESTHOLE	NO: TH-09-39	
		N: N - 5534164.271, E - 628702.969						NO.: 0265-411-00	
		TOR: Paddock Drilling Ltd.	METHOD: Canterra (N (m): 234.392	•
SAN	IPLE T	YPE GRAB	SHELBY TUBE SPLIT SPO	OON BULK	-1		O RECOVE	RY TCORE	
DEPTH (m)	SOIL SYMBOL	SOIL D	ESCRIPTION	SAMPLE TYPE	SAMPLE#			COMMENTS	ELEVATION (m)
0		ASPHALT (127 mm)					: :		
t	XXX	SAND (Fill) - some gravel (<12 mm dia.), trac	e silt				<u> </u>		
ŀ	\otimes	- brown - frozen, moist when thawed			G217		<u> </u>	1	-
Ī	\otimes	- well graded							234 -
	$\times\!\!\!\times$				0040		÷		
	$\otimes\!\!\!\!\otimes$				G218		<u></u>		
Ļ		CLAY - silty, some sand, some organics - black							
1		- frozen, moist and soft when thawed - intermediate to high plasticity		-	G219				
-		- intermediate to high plashory			OZ 13				
<u> </u> 1									
-					G220				
-		·					<u></u>		•
-									
+		CLAY and SILT - some sand			G221				233 -
ŀ		 light brown frozen, moist and soft when thawed 					<u> </u>	:	
ŀ		- intermediate plasticity]				
-		SILT - some clay, some sand - light brown			G222				
†		- wet, firm					ļ		
†		- low to intermediate plasticity		_			<u>.</u>		
-2					G223				
T									
Ī							<u> </u>		
									232 -
		CLAY - silty, some sand					: :		
		- brown - moist, stiff					: :		,
SD/S/		- high plasticity			G224				
<u></u>									
A A							•	•	
5 -3							<u>.</u>		
<u>5</u> -	-	End of test hole at 3.1 m in CLAY Notes:] .
<u> </u>		1) No sloughing.] '
2 -		No seepage. Backfilled test hole with auger cuttings.		-			<u></u>		201
		•							231 -
- -		•	•	ľ					
2-									
= ?				.					.
7-15									.
4			· · · · · · · · · · · · · · · · · · ·	·		<u></u>			<u>l</u>
2		1,50014		LOGGED BY: Geo REVIEWED BY: N				ETION DEPTH: 3.05 m ETION DATE: 1/28/09	
Y.		AECOM	•	PROJECT ENGINE					1 of 1
34		1		,					

() { ; ;

Comment of the commen

SOIL DESCRIPTION SANICS - topsoil Y - sitty, some sand, some gravel (<10 mm dia.) - brown - frozen, moist and soft to firm when thawed - high plasticity PROJECT NO: 0265-411-00 ELEVATION (m): 234.219 ELEVATION (m): 234.219 NO RECOVERY NO RECOVERY COMMENTS COMMENTS G97 G98 G98	ELEVATION (m)
SOIL DESCRIPTION SOIL DESCRIPTION SANICS - topsoil Y - sifty, some sand, some gravel (<10 mm dia.) - brown - frozen, moist and soft to firm when thawed - high plasticity G98	
SOIL DESCRIPTION SANICS - topsoil Y - sity, some sand, some gravel (<10 mm dia.) - brown - frozen, moist and soft to firm when thawed - high plasticity G98	
G97 G98 G98	
Y - silty, some sand, some gravel (<10 mm dia.) - brown - frozen, moist and soft to firm when thawed - high plasticity G98	23
- brown - frozen, moist and soft to firm when thawed - high plasticity G98	23
and the state of t	
ce gravel (<10 mm dia.), stiff below 0.8 m	
3 m silt pocket at 1.1 m	233
Y and SILT - some sand, trace organics - grey and brown - frozen, moist and soft when thawed - intermediate plasticity	
- some clay, some sand - light brown - moist, very soft to soft - low to intermediate plasticity	
G103	232
yey below 2.3 m	
t to firm below 2.6 m Y - silty, trace sand - brown	
- moist, stiff - high plasticity of test hole at 3.1 m in CLAY	
ss: o sloughing. o seepage. ackfilled test hole with auger cuttings.	23′
LOGGED BY: Jared Baldwin COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/23/08	
	1 of

PRO	JECT:	Inkster Boulevard Widening CLIENT: City of Winnipeg					E NO: TH-09-41	
		: N - 5534171.623, E - 628781.120				1	NO.: 0265-411-00	
CON	TRAC	TOR: Paddock Drilling Ltd. METHOD: Canterra CT 250, 125 m					N (m): 234.188	
SAMP	LE T	PE GRAB ∭SHELBY TUBE ∑SPLIT SPOON ☐B	BULK	_	<u> </u>	NO RECOVE	RY TCORE	T
DEРТН (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE #			COMMENTS	ELEVATION (m)
-		ASPHALT (254 mm)	\dagger					
	***	SAND (Fill) - silty, some gravel (<12 mm dia.), trace clay, light brown, frozen, wet when thawed, poorly graded		G289				234 -
_	翻	CLAY and SILT - sandy, trace gravel (<6 mm dia.)		G290			1	
-		 light brown frozen, moist and soft to firm when thawed intermediate plasticity 					Gradation:	
-				G291			Gravel = 2.1%, 'Sand = 37.8%, Silt = 31.5%,	
<u> </u>			\bot				Clay = 28.6%	
		CLAY - silty, some sand, some organics - black		0000				
		- frozen to 1.7 m, moist and soft when thawed - intermediate to high plasticity - intermediate.		G292		<u> </u>		233 -
_		- agoinodate to high passers,						
-				G293			1	
-								
-								
}		SILT - clayey, trace sand - light brown		G294				
}		- moist, soft						
1		- low to intermediate plasticity						l .
-2				G295				
								232 -
1		CLAY - silty, trace sand, trace silt inclusions (<5 mm dia.)	\dashv				•	•
-		- brown - moist, stiff						}
-		- high plasticity						
3				G296				
							-	
5								
ξ,								
		End of test hole at 3.1 in CLAY	1				1	1
-		Notes: 1) No sloughing.	Ì				1	231 -
-		No seepage. Backfilled test hole with auger cuttings.						
-		Of Deviation Control of the Control						
-			1				1	
-								
4		LOGGED BY:	Ger	l ffrev	Nolette	COMPI	ETION DEPTH: 3.05 m	
<u> </u>		AECOM REVIEWED B					ETION DATE: 1/31/09	
<u></u>		PROJECT EN				теіга	Page	1 of 1

TE TE TE TE TE

ROJECT	: Inkster Boulevard Widening	CLIENT: City of Winnip	eg				NO: TH-09-42		
	N: N - 5534156.360, E - 628859.754					PROJECT NO.: 0265-411-00			
	TOR: Paddock Drilling Ltd.	METHOD: Acker SS2 N	Aaruca, 125 mr	n SSA			V (m): 232.963		
AMPLE T	YPE GRAB SHELBY TU	JBE SPLIT SPOC	N BUL	.K		RECOVER	RY CORI		
DEPTH (m) SOIL SYMBOL	SOIL DESCR	IPTION		SAMPLE TYPE SAMPLE #			COMMEN	SJ ELEVATION (m)	
333	ORGANICS - topsoil								
	CLAY - silty, some sand - brown - frozen, moist and soft when thawed - high plasticity			G105					
	CLAY - silty, some sand, some organics, black, frozen, m	oist and soft when thawed, in	itermediate to	G106					
	high plasticity CLAY - silty - brown and light brown	oist and ook mon diames, in		G107				232	
	- moist, firm - intermediate to high plasticity			G108					
	- trace sand, brown, high plasticity below 1.4 m			G109 G110					
	- trace silt inclusions (<3 mm dia.) below 1.8 m			G111			·	23	
	- firm to stiff below 2.1 m								
	- mottled brown and grey, soft to firm below 2.7 m			G112					
	End of test hole at 3.1 m in CLAY							230	
	Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.								
							·		
			LOGGED BY: J	lared Pol	diazin	СОМРІ	ETION DEPTH:	229 3.05 m	
	AECOM		REVIEWED BY: J PROJECT ENG	Nelson	Ferreira	COMPL	ETION DATE: 1.		

		Inkster Boulevard Widening		ENT: City of Winnipeg					E NO: TH-09-43	
		: N - 5534175.255, E - 628922					 +		NO.: 0265-411-00	
		TOR: Paddock Drilling Ltd.		THOD: Canterra CT 25					ON (m): 233.891	
SAMP	LE TY	PE GRAB	SHELBY TUBE	SPLIT SPOON	BUL	.K		NO RECOV	ERY CORE	
DEPTH (m)	SOIL SYMBOL	SC	DIL DESCRIP	ΓΙΟΝ		SAMPLE TYPE SAMPLE #			COMMENTS	
0		ASPHALT (203 mm)	<u> </u>				1 :	:::		_
-		,					ļ <u>i</u>			
-		SAND (Pit Run) - some gravel (<12 m	m dia.), some silt			G28°				
•	₩	 brown frozen, moist when thawed 			į	020	1			
	₩	- well graded								
-	₩					G282	2			
•		CLAY - silty, some sand, trace to some - black and dark grey	e organics						1	
		 frozen, moist and soft when the 	awed							
		- intermediate to high plasticity	-			G283	3			
_1										
- }		CLAY - silty, some sand		·				· · · · · · ·		
- [grey and brown frozen, moist and firm when the 	haws			G284				
-		- high plasticity			-					
-		- brown below 1.4 m			Í	G285			1	
. [CLAY and SILT - some sand				0203				
. [light brown 								
. [moist, soft intermediate plasticity 				G286			1	
·	1111	SILT - clayey, trace sand		:				. .		ĺ
		- light brown								
-2		 moist to wet, soft to firm low to intermediate plasticity 				G287				1
						ļ				
			•		1	ŀ				
	$\ \ \ $							<u> </u>		١
						G288				
										-
								÷		
-3	Щ	N. A.V. yi						<u></u>		
		CLAY - silty, some sand - brown								
		 moist, firm high plasticity 								
[4	// -	and of test hole at 3.4 m in CLAY					l	<u></u>		
		lotes:								
	1 2) No sloughing.) No seepage.								-
	3) No seepage.) Backfilled test hole with auger cutting:	S.					-		
.										
										1
4					SED DY			j	TION DESCRIPTION	\perp
		AECOM			GED BY: Geo EWED BY: N				ETION DEPTH: 3.35 m ETION DATE: 1/31/09	_
		ALCOM					Velson Ferreira		Page	<u> </u>

PROJECT:	: Inkster Boulevard Widening CLIENT: City of Winn	ipeg	ESTHOLE NO: TH-09-44				
OCATION	N: N - 5534159.275, E - 628989.646			PROJECT NO.: 0265-411-00			
CONTRAC		2 Maruca, 125 mm SSA			(m): 233.138		
AMPLE T	YPE GRAB SHELBY TUBE SPLIT SP	OON BULK		NO RECOVERY	CORE		
DEPTH (m) SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE SAMPLE#			COMMENTS	ELEVATION (m)	
	ORGANICS - topsoil CLAY - sitty, some organics, trace sand - dark grey - frozen, moist and soft to firm when thawed - intermediate to high plasticity - grey below 0.5 m	G113				233	
	- mottled grey and brown below 0.8 m SILT - some clay to clayey, some sand	G115				232	
	- light brown - moist, soft - low to intermediate plasticity	G116 G117 G118				23	
	CLAY - silty, trace sand - brown - moist, firm to stiff - high plasticity - 0.3 m silt lense at 2.3 m - trace silt inclusions (<3 mm dia.), mottled brown and grey below 2.4 m	G119				23	
	End of test hole at 3.1 m in CLAY	G120				23	
	Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.						
	AECOM	LOGGED BY: Jared Bald REVIEWED BY: Nelson I PROJECT ENGINEER:	егтеіга	COMPLE	TION DEPTH: 3.05 m TION DATE: 1/23/08 Page	1 0	

CLIENT: City of Winnipeg TESTHOLE NO: TH-09-45 PROJECT: Inkster Boulevard Widening PROJECT NO.: 0265-411-00 LOCATION: N - 5534178.480, E - 629051.359 METHOD: Canterra CT 250, 125 mm SSA ELEVATION (m): 233.87 CONTRACTOR: Paddock Drilling Ltd. CORE BULK NO RECOVERY SHELBY TUBE SPLIT SPOON GRAB SAMPLE TYPE SAMPLE TYPE ELEVATION (m) SOIL SYMBOL SAMPLE# DEPTH (m) SOIL DESCRIPTION COMMENTS ASPHALT (177 mm) SAND (Fill) - some gravel (<12 mm dia.), trace silt G273 - prown - frozen, moist when thawed - well graded G274 CLAY - silty, some sand, some organics 233 - black - frozen, moist and firm when thawed - intermediate to high plasticity SILT - clayey, trace sand G276 - light grey - moist, soft - low to intermediate plasticity - light brown below 1.4 m G277 CLAY and SILT - some sand G278 - light brown and brown - moist, firm 232 - intermediate plasticity G278 CLAY - silty, some sand, trace silt inclusions (<5 mmd dia.) - brown - moist, firm - high plasticity 231 End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 3) Backfilled test hole with auger cuttings. 230 LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 3.05 m **AECOM** REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09 PROJECT ENGINEER: Nelson Ferreira Page 1 of 1

ROJ	ECT:	Inkster Boulev	ard Widening		CLIENT: City of	of Winnipeg				TES	STHOL	E NO: TH-09-46	
			824, E - 629150	.933								NO.: 0265-411-00	
		TOR: Paddock			METHOD: Ack		a, 125 mn	SSA				ON (m): 232.763	
AMP	LE TY	/PE	GRAB	SHELBY	TUBE SF	PLIT SPOON	BUL	<u> </u>	[NO	RECOV	ERY CORE	
DEPTH (m)	SOIL SYMBOL		SC	DIL DESCI	RIPTION		יייייייייייייייייייייייייייייייייייייי	SAMPLE #				COMMENTS	ELEVATION (m)
1	}	ORGANICS - top	soil					-	:	: :			
		- mottled b	<10 mm dia.), silty, rown and grey oist and soft to firm ticity					G121					
								G122				Gradation: Sand = 15.2%, Silt = 39.1%, Clay = 45.7%	
		- dark grev	ne sand, some organ					G123					23:
		- frozen to - intermedi	0.9 m, moist and stil ate to high plasticity	t when thawed				G124					
		CLAY - silty, trac - grey - moist, stif - high plast	Ť	·				G125					
			d brown below 1.5 m					G126					231
								G120					23
								G127					
		- 0.03 m silt pock	et at 2.4 m										
		- grey, firm to stif	f below 2.7 m					G128					230
		End of test hole a Notes: 1) No sloughing.	nt 3.1 m in CLAY	<u> </u>									
		No seenage.	hole with auger cutti	ngs.									
		: :											229

PROJ	IECT:	Inkster Boulevard Widening	CLIENT: Cit	y of Winnipeg							NO: TH-09-47		
LOCA	TION	I: N - 5534182.259, E - 629204.804					_		PROJECT NO.: 0265-411-00				
CON	TRAC	TOR: Paddock Drilling Ltd.		Canterra CT 250,			<u>A</u>	-			N (m): 233.313		
SAMP	LE T	√PE GRAB Ш	SHELBY TUBE	SPLIT SPOON	BU	LK		<u>_</u>	NO REC	COVE	RY CORE	1	
DEPTH (m)	SOIL SYMBOL	SOIL D	ESCRIPTION			SAMPLE TYPE	SAMPLE #				COMMENTS	ELEVATION (m)	
0		ASPHALT (127 mm)											
Ī	XXX	SAND (Fill) - gravelly (<19 mmd dia.), some s	lt				0005						
Ī	\bowtie	 light brown frozen, moist when thawed 					G265		<u>.</u>	į		233 -	
[.	\bowtie	- well graded							:				
	₩						G266		:				
1	\bowtie						Q200			ļ			
1		CLAY - silty, some sand, some organics - black and dark brown					}					.	
-		 frozen, moist and firm when thawed intermediate to high plasticity 			.]		G267						
-		- Illosificated to high processy											
-1					į			<u>į</u> į.		<u></u>		'	
-							G268					-	
}									· · · · · · · · · ·		1		
†										<u></u>		232 -	
							G269						
<u> </u>		CLAY and SILT - some sand					1		:			١.	
		- light brown - moist, firm			ļ					ļ		-	
		- intermediate plasticity					G270			<u></u>		.	
					ĺ		. 1						
_2		CLAY - silty, some sand								ļ			
1		- brown					G271			<u></u>	-		
-		 moist, soft to firm high plasticity 							:				
		•					1	****	····			231 -	
-												-	
-									:		i		
<u>.</u> -							G272		:			•	
<u> </u>		- trace silt inclusions (<5 mm dia.), stiff below	77 m							ļ		·	
<u>-</u>		- trace six inclusions (~5 min dia.), sun below	2.7 111							ļ			
3									:				
3	//	End of test hole at 3.1 m in CLAY			_								
		Notes:										,	
		1) No sloughing. 2) No seepage.									·	230 –	
		3) Backfilled test hole with auger cuttings.										.	
<u> </u>]						
<u> </u>	.					ĺ							
- 1						1						-	
3										į.,		-	
4		1			D BY: 0						ETION DEPTH: 3.05 m		
		AECOM			WED BY:					MPL	ETION DATE: 1/31/09	A - P - 4	
:		•		PROJE	CT ENG	INE	ER: 1	Velson Ferr	eira		Page	1 of 1	

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PROJECT:	: Inkster Boulevard Widening CLIENT: City of	of Winnipeg				TESTHOLE	NO: TH-09-48			
	N: N - 5534163.945, E - 629257.222				L	PROJECT NO.: 0265-411-00				
	CTOR: Paddock Drilling Ltd. METHOD: Ack	er SS2 Maruca, 1	25 mm S	SSA			I (m): 232.188			
SAMPLE T		PLIT SPOON	BULK	·		NO RECOVER	Y CORE			
DEPTH (m) SOIL SYMBOL	SOIL DESCRIPTION		SAMPLE TYPE	SAMPLE#			COMMENTS	ELEVATION (m)		
<u>0 </u>	ORGANICS - topsoil									
	CLAY - silty, some sand, trace gravel (<10 mm dia.) - brown - frozen, moist and soft when thawed - high plasticity			G129				232		
	·			G130						
	CLAY - silty, some sand, trace organics, dark grey, frozen, moist and soft w to high plasticity CLAY - silty, some sand - brown	hen thawed, intermed		G131						
	- brown - frozen to 1.2 m, moist and firm to stiff when thawed - intermediate to high plasticity			G132				024		
	- trace sand below 1.2 m			G133				23		
	- brown, high plasticity below 1.5 m									
				G134						
	- 0.05 m silt pocket at 2.1 m			G135				23		
	- trace silt inclusions (<3 mm dia.) below 2.6 m			G136						
	End of test hole at 3.1 m in CLAY									
	Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings.							22		
		•								
		LOGGED					TION DEPTH: 3.05 m			
	AECOM	REVIEWE					TION DATE: 1/23/08	4 -*		
	•	I PROJECT	ENGINE	ER:	Nelson Ferre	ıra	Page	10		

DOCATION: N - 5534185.627, E - 629354.078	PROJ	ECT:	Inkster Boulevard Widening CLIENT: City of Winnipe	g					ENO: TH-09-49			
SAMPLET TYPE GRAB GRAB SPILL SPLLY TUBE SPLLY SPOON SULL MARKET SPOON SAMPLET TYPE GRAD SOLL DESCRIPTION SAND (Lineston)— some gravel to gravelty (=19 mm dis.) ASPHALT (101 mm)			N: N - 5534185.627, E - 629354.078									
SOIL DESCRIPTION SAPILAT (101 mm) SAND (Linestonin) - some gravel to gravely (-19 mm dis.) - (git brown - traces, most when theward - well grated - well g	CONT	TRAC				SA						
ASPIALT (101 mm) SANO (Linustano)- some graved to gravely (<15 mm dis.) - light trown - traces mist when browed - wall gradfold CC25 CC26 CC27 C	SAMP	LE TY	YPE GRAB SHELBY TUBE SPLIT SPOOM	I ⊟B(JLK			IO RECOVE	RY CORE			
SAND (Limstory) - some gravet to gravetly (~19 mm dis.) - (gift brown - frozen, motel when thewed - well graded - well graded - common send - brown - shoes in 1.8 m, motel and firm to at/8f when thewed - brown - shoes in 1.8 m, motel and firm to at/8f when thewed - brown - shoes in 1.8 m, motel and firm to at/8f when thewed - high placedity - from below 2.7 m - a End of feet bole at 3.1 m in CLAY Notes: - No seeping. 3 Beckfield test hole with augen cuttings. - AFCOM - REVIEWED BY: Region Ferrains - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - REVIEWED BY: Regions Ferrains - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DEPTH: 3.05 m - COMPLETION DATE: 1/31/109	DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION		SAMPLE TYPE	SAMPLE #			COMMENTS	ELEVATION (m)		
- Information many when thewed - real grands CLAY - Bifly, some send - CLAY - Bifly, some send - CLAY - Bifly, some send - CLAY - Bifly, some send - CLAY - Bifly, some send - CLAY - Bifly, some send - CLAY - Bifly, some send - CLAY - Bifly, some send - CLAY - Bifly, some send - CLAY - Bifly, some send - South, Sint = Sout	0		ASPHALT (101 mm)		T		: :	<u> </u>		1		
CLAY - silty, some sand - brown - frozen to 1.8 m, moist and firm to stiff when thewed - high plassicity - trace silt inclusions (<3 mm dia.) below 1.8 m - C383 -	- - - - -		- light brown - frozen, moist when thawed			G257						
CLAY - sity, some sand brown - forces to 1.8 m, moist and firm to stiff when thewed - high plasticity - trace silt inclusions (<3 mm dia) below 1.8 m - fam below 2.7 m - fam below 2.7 m - Fam below 2.7 m - Send of test hole at 3.1 m in CLAY Notes: 1) No slooping. 2) No seepage. 3) Backfield test hole with auger cuttings.	<u>-</u>					G258						
CLAY - silty, some send - brown - nozen to 1.8 m, moist and firm to stiff when thawed - high plassicity - trace silt inclusions (<3 mm dia.) below 1.8 m - trace silt inclusions (<3 mm dia.) below 1.8 m - a End of test hole at 3.1 m in CLAY Notes: 1) No sloughing: 2) Seadfled test hole with auger cuttings. LOGGED BY: Geoffrey Notette AFCOM REVIEWED BY: Nelson Ferreira COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DEPTH: 3.05 m	 - -					G259				524		
- frozen to 1.8 m, moist and firm to stiff when thawed - high plasticity - trace silt inclusions (<3 mm die.) below 1.8 m - 2 - firm below 2.7 m - firm below 2.7 m - g254 - firm below 2.7 m - g254 - firm below 2.7 m - g264 - firm below 2.7 m - g27 - firm below 2.7 m - g283 - firm below 2.7 m - g283 - firm below 2.7 m - g284 - firm below 2.7 m - g284 - firm below 2.7 m - g284 - firm below 2.7 m - g285 - firm below 2.7 m - g285 - firm below 2.7 m - g285 - firm below 2.7 m - g286 - firm below 2.7 m - g286 - firm below 2.7 m - g287 - firm below 2.7 m - g288 - g288 -	-1 - -		- brown	·		G260			Sand = 28.4%, Silt =	231		
- trace slit inclusions (<3 mm dia.) below 1.8 m - firm below 2.7 m - a End of test hole at 3.1 m in CLAY Notes: 1) No stoughing. 2) No seepage. 3) Backfilled test hole with auger cuttings. LOGGED BY: Geoffrey Notette COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/3/1/09	-		- frozen to 1.8 m, moist and firm to stiff when thawed			G261						
- firm below 2.7 m -3 End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings. LOGGED BY: Geoffrey Notette REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09	-					G262						
- firm below 2.7 m End of lest hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings. LOGGED BY: Geoffrey Notette COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09	_ 2		- trace silt inclusions (<3 mm dia.) below 1.8 m			G263				230		
- firm below 2.7 m End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings. LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09	-											
End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings. LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09	-					G264						
End of test hole at 3.1 m in CLAY Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole with auger cuttings. LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09	-		- firm below 2.7 m							200		
LOGGED BY: Geoffrey Nolette COMPLETION DEPTH: 3.05 m REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09	_3 _		Notes: 1) No sloughing.							779		
AFCOM REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09	-		3) Backfilled test hole with auger cuttings.			:						
AFCOM REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09	-											
AFCOM REVIEWED BY: Nelson Ferreira COMPLETION DATE: 1/31/09	4							·····				
										···-		
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PROJECT: Inkster Boulevard Widening CLIENT: City of Winnipeg						TESTHOLE NO: TH-09-50				
LOCATION: N - 5534164.611, E - 629371.819									NO.: 0265-411-00	
CONTRACTOR: Paddock Drilling Ltd. SAMPLE TYPE GRAB METHOD: Bratt 22, SHELBY TUBE SPLIT SI								ELEVATION (m): 232.03		
SAMPLE T	SPLIT SPOO	N BU	LK		$ \underline{\hspace{1cm}} $	NO RECOVE	RY TORE			
DEPTH (m) SOIL SYMBOL	SOIL DESCRIPTION				SAMPLE TYPE	SAMPLE #			COMMENTS	ELEVATION (m)
0	CONCRETE (254 mm))								232 -
-	GRAVEL (Limestone) - light brown - frozen, moist w - well graded - subangular	when thawed				G233 G234 G235				-
-1	CLAY - silty, some san - brown - frozen to 1.5 m, - high plasticity	ng moist and firm when thawed				G236 G237				231
	- trace silt inclusions (<	<5 mm dia.), stiff, trace precipitates (<5 mn	n dia.) below 1.8 m			G238 G239				230 —
	- firm below 2.7 m					3240				- - - -
-3	End of test hole at 3.1 r Notes: 1) No sloughing. 2) No seepage. 3) Backfilled test hole w									229 —
4	Al	ECOM	<u></u>	OGGED BY: GREVIEWED BY: PROJECT ENGI	Nel	son	erreira	COMPLI	ETION DEPTH: 3.05 m ETION DATE: 1/28/09 Page	1 of 1

Inkster Boulevard Widening Brookside Boulevard to Keewatin Street Subsurface Investigation

Appendix BPhotos of Core Samples



Photo 1: Core sample from TH-09-01



Photo 2: Core sample from TH-09-02



Photo 3: Core sample from TH-09-03



Photo 4: Core sample from TH-09-04

Inkster Boulevard Widening Brookside Boulevard to Keewatin Street Subsurface Investigation



Photo 5: Core sample from TH-09-05



Photo 6: Core sample from TH-09-06



Photo 7: Core sample from TH-09-07



Photo 8: Core sample from TH-09-08



Photo 9: Core sample from TH-09-10



Photo 10: Core sample from TH-09-12



Photo 11: Core sample from TH-09-14



Photo 12: Core sample from TH-09-16



Photo 13: Core sample from TH-09-17



Photo 14: Core sample from TH-09-19



Photo 15: Core sample from TH-09-21



Photo 16: Core sample from TH-09-22

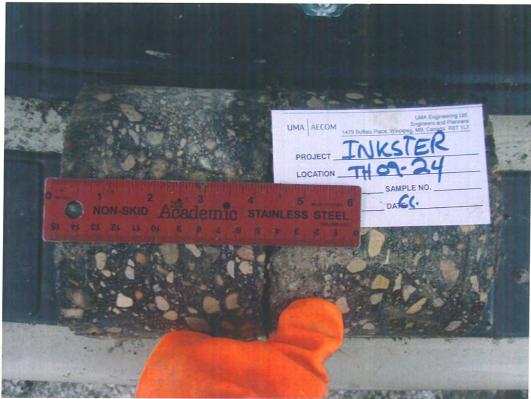


Photo 17: Core sample from TH-09-24

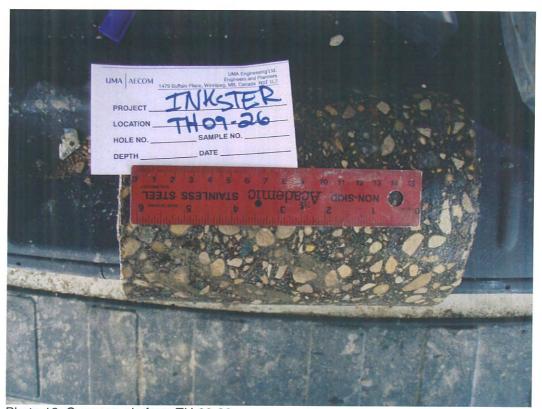


Photo 18: Core sample from TH-09-26



Photo 19: Core sample from TH-09-28

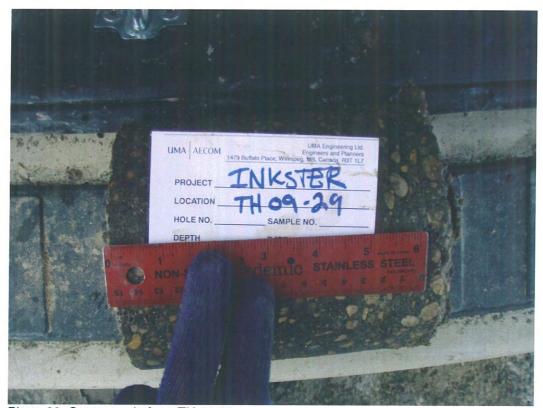


Photo 20: Core sample from TH-09-29



Photo 21: Core sample from TH-09-31



Photo 22: Core sample from TH-09-33



Photo 23: Core sample from TH-09-35 (labeled incorrectly in photo)



Photo 24: Core sample from TH-09-36



Photo 25: Core sample from TH-09-37



Photo 26: Core sample from TH-09-38 (incorrectly labeled in photo)

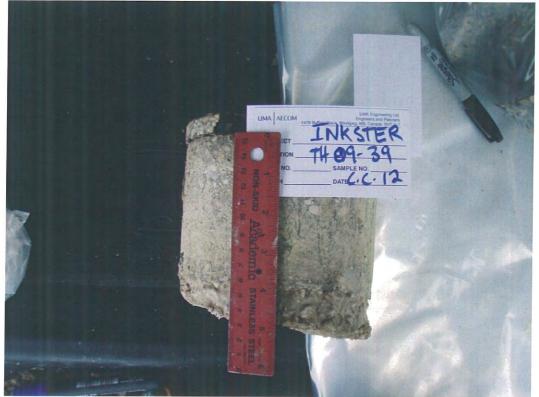


Photo 27: Core sample from TH-09-39



Photo 28: Core sample from TH-09-41



Photo 29: Core sample from TH-09-43



Photo 30: Core sample from TH-09-45



Photo 31: Core sample from TH-09-47



Photo 32: Core sample from TH-09-49

Inkster Boulevard Widening Brookside Boulevard to Keewatin Street Subsurface Investigation



Photo 33: Core sample from TH-09-50