PROJECT: Sask. Avenue at Sturgeon Creek Culvert DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: TH03	PROJECT: Sask. Avenue at Sturgeon Creek Culvert	DRILLED BY: Maple Leaf Drilling Ltd.	BORE HOLE NO: TH04
CLIENT: Tetra Tech WEI Inc. DRILL TYPE: Track Mounted Mobile B54X	PROJECT NO: WX17918	CLIENT: Tetra Tech WEI Inc.	DRILL TYPE: Track Mounted Mobile B54X	PROJECT NO: WX17918
LOCATION: N5528888.6 E622361.8 DRILL METHOD: 125mm Solid Stem Augers	ELEVATION: 234.42 m	LOCATION: N5528821.4 E622357.8	DRILL METHOD: 125mm Solid Stem Augers	ELEVATION: 232.97 m
SAMPLE TYPE Shelby Tube No Recovery SPT (N)	Split-Pen	SAMPLE TYPE Shelby Tube No Rec	covery SPT (N) Grab Sample	Split-Pen Core
BACKFILL TYPE Bentonite Pea Gravel Drill Cuttings Grout	∭Slough \$3.3 Sand	BACKFILL TYPE Bentonite Pea Gr	avel Drill Cuttings Grout	Slough
LOCATION: N5528888.6 E622361.8 DRILL METHOD: 125mm Solid Stem Augers SAMPLE TYPE Shelby Tube No Recovery SPT (N) Grab Sample BACKFILL TYPE Bentonite Pea Gravel Drill Cuttings	ELEVATION: 234.42 m Split-Pen Slough COMMENTS COMMENTS ELANDOR Sand COMMENTS COMMENTS ELANDOR COMMENTS COMMENTS ELANDOR COMMENTS COMMENTS ELANDOR COMMENTS COMMENTS ELANDOR ELANDOR COMMENTS ELANDOR ELANDOR COMMENTS ELANDOR ELANDOR	SAMPLE TYPE Shelby Tube BACKFILL TYPE Bentonite Pea Gr A UNCONFINED COMPRESSION (kPa) A 100 200 300 400 PLASTIC M.C. LIQUID 20 40 60 80 PLASTIC M.C. LIQUID 20 40 60 80 CH Trace ti occasion - soft to - some t SILT (Ti gravelly, light gre - dense - wet, fir 4.63m TEST H NOTES: - Slough duringd - Test h observe - Test h standpip - Water	DRILL METHOD: 125mm Solid Stem Augers Sovery SPT (N) Grab Sample	ELEVATION: 232.97 m Split-Pen Core
= 18	216 ROS			E-215 214 214 213 212
		22		<u> </u>
Amec Foster Wheeler Environment & Infrastructure	COMPLETION DEPTH: 6.6 m	Amec Foster Wheeler Environment	& Infrastructure LOGGED BY: AL	COMPLETION DEPTH: 4.8 m
Winning Manitoha REVIEWED BY: KJ	COMPLETION DATE: 9 May 2016	Winnipeg, Manitob	REVIEWED BY: KJ	COMPLETION DATE: 6 May 2016
Figure No.	Page 1 of 1		Figure No.	Page 1 of 1

PROJECT:	Γ: Sask. Avenue at Sturgeon Cree	k Culvert DRILLED BY: Maple Leaf [Orilling Ltd.	BORE HO	LE NO: TH05	PRO	JECT: Sask	x. Avenue at Sturged	on Creek (Culvert DRI	LLED BY: Maple Leaf D	Orilling Ltd.	BORE	HOLE NO: TH06	
CLIENT: T	Tetra Tech WEI Inc.	DRILL TYPE: Track Mount	ed Mobile B54X	PROJECT	NO: WX17918	CLIE	CLIENT: Tetra Tech WEI Inc. DRILL TYPE: Tra		LL TYPE: Track Mounte	k Mounted Mobile B54X		PROJECT NO: WX17918			
LOCATION	N: N5529050.2 E622129.4	DRILL METHOD: 125mm S			DN: 232.89 m			529026.4 E622106.			LL METHOD: 125mm S			ATION: 235.95 m	
SAMPLE T		No Recovery SPT (N)	Grab Sample	Split-Pen	Core		PLE TYPE	Shelby Tub		No Recovery	SPT (N)	Grab Sample	Split-Per		
BACKFILL		Pea Gravel Drill Cuttings	Grout	Slough	Sand	BAC	KFILL TYPE			Pea Gravel	Drill Cuttings	Grout	Slough	Sand	
O Depth (m)	PLASTIC M.C. LIQUID 20 40 60 80	SOIL DESCRIPTION ORGANIC CLAY - silty, high plastic, soft to dark grey, grass covered CLAY - silty, modium to high plastic moiet.	o firm (inferred),	(N) LdS	COMMENTS (E) NOI LEVAL	Depth (m)	100 ■ POCKET 100 PLASTIC	ED COMPRESSION (kPa) \$\rightarrow\$ 200 300 400 PENETROMETER (kPa) \$\rightarrow\$ 200 300 400 M.C. LIQUID 40 60 80	SOIL SYMBOL MUSCS	ORGANIC CLAY (inferred), dark g	SOIL DESCRIPTION 7 - some silt, high plastic, m rey to black, frequent rootle	oist, firm to stiff	SPT (N PNEUM/ PIEZOME	COMMENTS	ELEVATION (m)
1	···!··!··!··/·/·!··!··!··!	- firm, grey below 0.8m - trace sand below 1.5m - trace till inclusions below 2.3m SILT (TILL) - some clay, trace to some sand low to medium plastic, moist, loose, grey - compact, moist to very moist, grey to light - medium to coarse grained wet sand layer 3.4m TEST HOLE TERMINATED AT 3.5m BELC NOTES: - No sloughing; very slight seepage was en drilling at 3.5m Test hole remained open to 3.5m and trac bottom was observed prior to backfilling Test hole was instrumented with a 25mm standpipe, no protective casing Water Level Readings:	d, trace gravel, grey below 3.0m 500mm thick at 0W GRADE. countered during the of water at the	15 * - * * * * * * * * * * * * * * * * *	= 232 = 230 = 225 = 226 = 226 = 227 = 226 = 221 =	SASKATCHEWAN @ STURGEON CREEK.GPJ. 1708/29 08:52 AM (GEOTECHNICAL REVISED WITH UTM INPUTS) FOR THE SASKATCHEWAN @ STURGEON CREEK.GPJ. 1708/29 08:52 AM (GEOTECHNICAL REVISED WITH UTM INPUTS) FOR THE SASKATCHEWAN @ STURGEON CREEK.GPJ. 1708/29 08:52 AM (GEOTECHNICAL REVISED WITH UTM INPUTS) FOR THE SASKATCHEWAN @ STURGEON CREEK.GPJ. 1708/29 08:52 AM (GEOTECHNICAL REVISED WITH UTM INPUTS) FOR THE SASKATCHEWAN @ STURGEON CREEK.GPJ. 1708/29 08:52 AM (GEOTECHNICAL REVISED WITH UTM INPUTS)			CH ML	occasional silt in below 0.8m, oc below 0.8m, oc below 0.8m, firm below 3.8m, firm below 5.3m, trace sill (TILL) - trace low plastic, mois below 6.7m, de at 6.9m, very material to solve the below 6.7m, de at 6.9m, very material to solve the below 6.7m, de at 6.9m, very material to solve the below 6.7m, de at 6.9m, very material to solve the below 6.7m, de at 6.9m, very material to solve the below 6.7m, de at 6.9m, very material to solve the below 6.7m, de at 6.9m, very material to solve the below 0.8m, occ below 0.8m, oc	casional to frequent sulpha casional silt lenses ~5mm to m, grey ce to some till inclusions ce clay, trace to some sand t, tan to grey nse, damp to moist, light brootst sand layer 60mm thick RMINATED AT 7.2m BELO' r seepage was encountered ined open to 7.0m and was Piezometer (S/N VW36845) tip elevation of 231.7m.	te inclusions thick th	2 41	Hydrometer Analysis Results @ "3.0m": Gravel= 0.0% Sand= 2.4% Silt= 30.5% Clay= 67.2%	235 1 234 1 233 1 233 1 231 1 232 2 231 1 222 2 225 1 224 1 225 1 224 1 222 1 221 1
		nvironment & Infrastructure REV	/IEWED BY: KJ Ire No.		DN DATE: 10 May 2016 Page 1 of	1 WX17918		Amec Foster Who		ironment & Infra Manitoba	REV	TEWED BY: KJ		ETION DATE: 10 May 2016	e 1 of 1



	.M. LEV.			TET TET	RA TECH	D. E.S. MITCHELL
				DESIGNED D.M.	CHECKED J.Z.	ORIGINAL SIGNED 17.10.04 33352
				DRAWN BY B.M.	APPROVED E.F.S.	PROFFSS ION PO
				HOR. SCALE:	ACCEPTED BY DATE	
0	ISSUED FOR TENDER	17.10.04	D.M.	AS NOTED VERTICAL:	ORIGINAL DRAWING 17.10.04 SIGNED BY: D. MUHURDAREVIC, P.ENG.	CONSULTANT DRAWING NO.
NO.	REVISIONS	DATE	BY	DATE 17.10.04	D. MUHURDAREVIC, P.ENG. BRIDGE PROJECTS ENGINEER	1600070700-DWG-S0008



THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

Tranpos Engineering Division						
SASKATCHEWAN AVE AT STURGEON CREEK	CITY DRAWING NUMBER					
BRIDGE CONSTRUCTION	B248-17-008					
BRIDGE CONSTRUCTION	SHEET 8 OF 69					
BOREHOLE LOGS	0					
SHEET 2 OF 2						