

GEOTE Syn (m) - \_PaTo 12.0-0-0-0 12.5 13.0 4.0 4.5 15.5 16.0-16.5<del>-</del> 18.0by Logged By: \_

MANITOBA Certificate of Authorization MORRISON HERSHFIELD No. 1736

METRIC

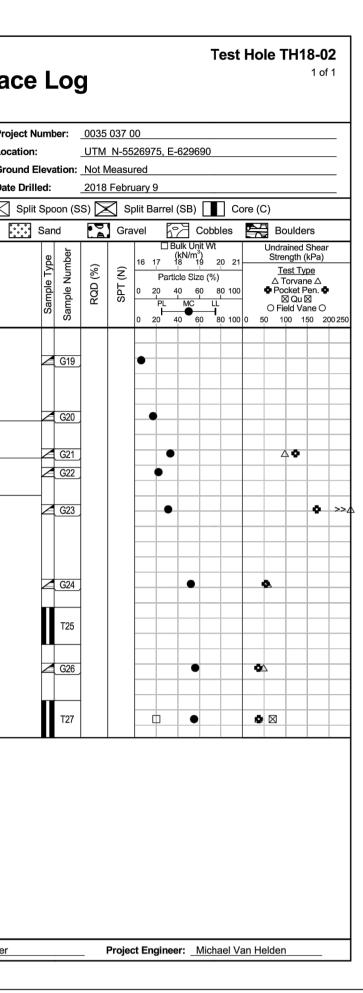
WHOLE NUMBERS INDICATE MILLIMETRES DECIMALIZED NUMBERS INDICATE METRES

REK Sub-Surface	L	.0(	3					Tes	t Ho	ole 1	ſH1	<b>8-01</b> 2 of 2
ECHNICAL				1	[	Bulk	Unit V	Vt		Undra	ained \$	Shear
MATERIAL DESCRIPTION	Sample Type	Sample Number	RQD (%)	SPT (N)	16 17 P 0 20 P 0 20	article 40	60	20 2 %) 80 10 LL H 80 10	00	Stre	ength (l est Typ orvan cket P ⊠ Qu ⊉ eld Va	kPa) <u>⊃e</u> e ∆ en. <b>₽</b> ⊲
some till inclusions below 10.1 m	2	G10			•					-		
ILT (Till) - some sand, trace clay, trace gravel - light brown - moist, compact to dense - low plasticity		G11 S12		29	•							
compact to dense below 11.6 m	X	S34		68 / 229mm								
AND - some silt, some gravel - brown - wet, compact to dense - poorly graded, coarse sand to fine gravel	Ø	G14 S15		50 / (149mm	•							
	М	<u>S35</u>		50 / 88mm	•							
ILT (Till) - some sand, some gravel, trace clay, trace cobbles - light brown - moist, very dense - low plasticity	M	S17 G18		50 / 76mm	•							
power auger refusal at 14.6 m, switch to HQ coring OLOMITIC LIMESTONE - Red River Formation, Upper Fort Garry Member - light brown to cream	, ,	C38	100	-								
<ul> <li>vuggy throughout</li> <li>weakly calcareous, R3-R4</li> <li>weak horizontal layering, very few fractures</li> <li>uniaxial compressive strength of 53.4 MPa at 14.8 m</li> </ul>		C39	78	-								
				-								
		C40	90									
ND OF TEST HOLE AT 18.3 m IN BEDROCK lotes: ) Seepage observed below 12.2 m. ) Sloughing observed below 13.1 m. ) Test hole open to 13.1 m and water level at 7.3 m below surface before witching to HQ coring. ) Test hole backfilled with auger cuttings and bentonite to surface.												
Jenna Roadley Reviewed By: _Kent Bannister				Projec	t Engi	neer:	Mic	:hael \	Van H	leider		

GEOTTECHNICAL         Client:       Morrison Hershfield         Project Name:       Empress Pedestrian Ramp         Contractor:       Maple Leaf Drilling Ltd.         Method:       125 mm Solid Stem Auger / HQ Coring, Acker MP5-T Track Mount         Sample Type:       Crab (G)       Shelby Tube (T)         Particle Size Legend:       Pines       Clay       Sit         9       9       MATERIAL DESCRIPTION         -0.6       SAND (Fill) - silty, trace gravel       - isport y graded, fine sand, trace coarse sand         -0.6       - inport y graded, fine sand, trace coarse sand       - noist, loose to compact         -0.6       - poorty graded fine sand, trace gravel       - blackish grey         -0.7       - moist, soft, low to intermediate plasticity         -0.7       - moist, soft, low to intermediate plasticity         -0.7       - moist, soft, low to intermediate plasticity         -0.7       - moist, stiff to very stiff         -0.7       - moist, stiff to very stiff         -0.7       - high plasticity         -0.7       - high plasticity         -10.7       - high plasticity         -10.7       - moist, stiff to very stiff         -10.7       - high plasticity         -10.7       - high plast			-Surf
Particle Size Legend:       Fines       Clay         Image: Particle Size Legend:       Image: Prince Size Clay       Silt         Image: Particle Size Legend:       Image: Prince Size Clay       Silt         Image: Particle Size Legend:       Image: Prince Size Clay       Image: Prince Size Clay       Silt         Image: Particle Size Legend:       MATERIAL DESCRIPTION       MATERIAL DESCRIPTION         Image: Particle Size Legend:       Image: Particle Size Legend:       MATERIAL DESCRIPTION         Image: Particle Size Legend:       SAND (Fill) - silty, trace gravel       -         Image: Particle Size Legend:       SAND (Fill) - silty, trace sand, trace coarse sand       -         Image: Particle Size Legend:       CLAY (Fill) - silty, trace sand, trace gravel       -         Image: Particle Size Legend:       CLAY (Fill) - silty, trace sand, trace gravel       -         Image: Particle Size Legend:       CLAY (Fill) - silty, trace sand, trace gravel       -         Image: Particle Size Legend:       SILT - some clay       -       -         Image: Particle Size Legend:       SILT - some clay       -       -         Image: Particle Size Legend:       -       -       -       -         Image: Particle Size Legend:       -       -       -       -         Image: Paris Size	Client: Project Nam Contractor:	Morrison Hershfield e: Empress Pedestrian Ramp Maple Leaf Drilling Ltd.	
Image: Sand (Fill) - silty, trace gravel         -	Sampl	e Type: Grab (G) Shelby	Tube (T) [
SAND (Fill) - silty, trace gravel         - light brown         - noist, loose to compact         - poorly graded, fine sand, trace coarse sand         -1.0         -1.5         CLAY (Fill) - silty, trace sand, trace gravel         - blackish grey         - moist, very stiff, high plasticity         -2.0         -1.5         CLAY (Fill) - silty, trace sand, trace gravel         - blackish grey         - moist, very stiff, high plasticity         -2.5         -1.5         -2.5         -2.5         -2.5         -3.0         -2.5         -3.0         -3.5         -4.5         -5.5         -6.0         -6.5         END OF TEST HOLE AT 6.7 m DEPTH IN CLAY Notes:         1) No seepage or sloughing observed.	Particl	e Size Legend: III Fines III Clay	Silt
<ul> <li>light brown</li> <li>moist, loose to compact</li> <li>poorly graded, fine sand, trace coarse sand</li> <li>1.0</li> <li>1.5</li> <li>CLAY (Fill) - silty, trace sand, trace gravel</li> <li>blackish grey</li> <li>moist, very stiff, high plasticity</li> <li>SILT - some clay</li> <li>light brown</li> <li>moist, soft, low to intermediate plasticity</li> <li>CLAY - silty</li> <li>A.0</li> <li></li> <li></li> <li></li> <li>CLAY - silty</li> <li></li> <li< td=""><td>Depth (m) Soil Symbol</td><td>MATERIAL DESCRIPTION</td><td></td></li<></ul>	Depth (m) Soil Symbol	MATERIAL DESCRIPTION	
CLAY (Fill) - silty, trace sand, trace gravel - blackish grey - moist, very stiff, high plasticity - light brown - moist, soft, low to intermediate plasticity - CLAY - silty - mottled brown and grey - moist, stiff to very stiff - high plasticity - to rest to very stiff - high plasticity 		- light brown - moist, loose to compact	
<ul> <li>- moist, soft, low to intermediate plasticity</li> <li>- moist, soft, low to intermediate plasticity</li> <li>- moist, stiff to very stiff</li> <li>- moist, stiff to very stiff</li> <li>- high plasticity</li> <li>- high plasticity</li> <li></li></ul>		- blackish grey - moist, very stiff, high plasticity	
6.0- -6.5- END OF TEST HOLE AT 6.7 m DEPTH IN CLAY Notes: 1) No seepage or sloughing observed.	-3.0-	<ul> <li>moist, soft, low to intermediate plasticity</li> <li>CLAY - silty         <ul> <li>mottled brown and grey</li> <li>moist, stiff to very stiff</li> </ul> </li> </ul>	
END OF TEST HOLE AT 6.7 m DEPTH IN CLAY Notes: 1) No seepage or sloughing observed.	4.5- 		
Notes: 1) No seepage or sloughing observed.	-6.0-		
		Notes: 1) No seepage or sloughing observed.	rilling. to surface.

- SU-4.

LOCATION APPROVED			V							PROFESSIONAL'S SEAL		
	SUPR. U/G STRUCTURES DATE COMMITTEE						MORRISON HERSHFIELD			PROVINCE OF MANINO		
	NOTE: LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST					DESIGNED BY	YM	CHECKED BY	BAP	PHILLPS Member 32723		
	INFORMATION AVAILABLE BUT NO					DRAWN	A 1 1	APPROVED	BE	TRANSLICE SURVEY		
	GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN	D	ISSUED FOR ADDENDUM 1	18/10/05	BAP	BY	AH	BY	DE	PROFESSIONAL		
LOCATIONS ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING	С	ISSUED FOR TENDER	18/09/04 BAP	AS SHOWN	RELEASED FOR CONSTRUCTION		TOPESSTER					
	В	ISSUED FOR 95% DESIGN REVIEW 18/08/07 BAF	BAP	HOR SCALE		N1//		CONSULTANT FILE NAME				
		ISSUED FOR 50% DESIGN REVIEW	18/06/28	BAP	VERT SCALE	AS SHOWN	N/A		W160034 - DD BH			
	WITH CONSTRUCTION.	No.	REVISIONS	YY/MM/DD	BY	DATE		DATE		LOGS.DWG		



## **BOREHOLE LOG NOTES:**

 REFER TO THE GEOTECHNICAL REPORT PREPARED BY TREK GEOTECHNICAL TITLED EMPRESS PEDESTRIAN RAMP GEOTECHNICAL INVESTIGATION FINAL REPORT DATED MARCH 13, 2018.

REFER TO DRAWING No. 117 FOR LOCATIONS OF BOREHOLES TH18-01 TO TH18-03 IN PLAN VIEW.
 • REFER TO APPENDIX A FOR INFORMATION GARNERED FROM PROOF CORING ADJACENT TO SU-1, SU-3, AND

\_\_\_\_\_ BID OPPORTUNITY No. 602-201

