K	GS ROUP		SUMMARY LOG REFERENCE NO.		HOLE NO. TH14-01								SHI	EET	2	of	2
ELEVATION (m)	(m) (ft)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	PIEZ. LOG	DEPTH (m)	SAMPLE TYPE NUMBER	RECOVERY %	DYI (N)		.15 n IC CC /s/ft		Cu 1		VANI 40 M 40 40	60 ИС ●	Pa) 8	0 _L
- 216		4//	SILT TILL - Light grey, moist, compact to dense, some medium to coarse grained sand, trace fine to coarse grained gravel.			S8							Ť	•			
215.4	35		AUGER REFUSAL at 10.67 m		10.7					39							
- 215	11 -		Notes:			X	0	^	14 12				111		1::1:	100	
210	1		Drilled with solid stem auger from 0 to 1.52 m to prevent blockage in hollow stem. Installed two RST flow-through P-100 pneumatic piezometers (PN 035734) at 6.71 m below grade														
- 214	12 — 40		- (PN 035726) at 10.67 m below grade 3. Installed slope inclinometer at 10.67 m below grade with a 0.80 m stick up.												:- :		
			4. Backfilled with bentonite cement grout from 10.67 m to 0.91 m below grade, then bentonite chips from 0.91 m to grade.								1			1.			 ::: :
- 213	13 —		Approximate bentonite-cement slurry mix (ratio by weight) Water = 3.1 - 3.5 parts Cement = 1.2 parts										1		1::1:		
	45		- Bentonite grout = 1 part														
- 212	14 -										i	:: j :: j ::	<u> </u>	:: j :: j ::	i::i:		
	1 1																
	15																
- 211	50								ļ:		 						
	1]																
- 210	16 —										1	::::::					
	55														11:		
- 209	17 -												1		1	1	
	1 =																
- 208	18								1.3.				1		1::1:	1	
- 206	60																
	19																
- 207																	
	65										 		1-1				
- 206	20 —														H		
											1						
- 205	21 —):3:: 		 		1::1				
SAM	IPLE TYPE	<u>-</u>	Auger Grab Split Barrel Split Spoon		_	Ш					<u> </u>	1:::::	1::1	<u>:: ::</u>	<u>i::1:</u>	1	
	TRACTOR		INSPECTOR		Δ	APPRO	VE	D				DAT	E	_	_	_	_

	G ROL	JP		SUMMARY LOG				NO. 1 4-0					SHE	ET 1	of	:
CLI PRO SIT LOC DRI ME	ST. BC FACHE MID/UPF	OF WINNIPEG ONIFACE RIVER TRAIL AVENUE PER BANK ø Hollow Stem Auger, ACKER SS Drill Rig		JOB NO. GROUND ELEV. TOP OF PVC ELEV WATER ELEV. DATE DRILLED UTM (m)							14-0107-003 226.39 /. 3/19/2014 N 5,527,875 E 634,742					
ELEVATION (m)	DE010	Ē	GRAPHICS	DESCRIPTION AND CLASSIFICATION	PIEZ. LOG	DEPTH (m)	rype	% .	0/ 1.	SPT (N) blows/0.1	5 m ▲	СиТ	ORV	ET PEI ANE (k 40 60	(Pa)	a
ELEVA:	(m)		GRAI	SESSIM NOVALID SEASON BATTON	PIEZ	DEP	AMPLE 1	NUMBER RECOVERY %	בר בר בר	DYNAMIC (N) blows	/ft △	'	Ē	MC %		•
- 226	-	-		CLAY FILL - Brown and black, damp to moist, intermediate plasticity, stiff, trace organics, trace fine grained gravel			S	Ζ α	-	20 40	60	2	20 4	40 60	0 8	0
005	1—	-		- Trace roots (10 - 15 mm diameter) at 1.22 m.												
- 225 224.6	2	— 5 -		CLAYEY SAND WITH GRAVEL (SC) - Black, moist to wet, loose, coarse grained sand, fine to coarse grained gravel, slight odour.		1.8										: : : :
- 224		-		gand gara, ang a court												
- 223	3 —	—10 - -		- Coarse grained gravel at 3.35 m.												1:
- 222	4-	-	//											1::1::1		1:
221.7	5—	— 15 - -		- Grain Size Distribution: Gravel (16.7%), Sand (51.9%), Silt (18.1%) & Clay (13.3%) at 4.42 m. SILTY CLAY (CH) - Grey and black, moist, firm, high plasticity, trace organics, slight odour.		4.6		S1								11:11:
220.4	6—	-		CLAYEY SILT (CL-CI) - Tan and grey, moist, low to intermediate plasticity, slight odour. LACUSTRINE SILTY CLAY (CH) - Brown, moist, high plasticity, firm,	-		ш	S2 S3					•			1:
- 220		—20 - -		race silt nodules. - Grey below 6.10 m.												
– 219	7-	-					Ι	S4								1:1:
	8	- 25 - -						S5								
- 218	9	-		- Some to with silt below 8.69 m.		9.1		S6								
220.4		—30 - -		CLAY TILL - Grey, moist to wet, firm, some fine grained gravel and	-		1	S7								
SAN	IPLE T	ГҮРЕ		Split Barrel Split Spoon	-	_	-		_		<u>. 1 ! </u>					_

K	GS ROUP	SUMMARY LOG REFERENCE NO. HOLE NO. TH14-02									SHEET 2 of 2						
ELEVATION (m)	DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	PIEZ. LOG	DEPTH (m)	TYPE	۲۲ %	ы		s/Ó.1	5 m ▲	Cu ·		CKET RVAN		Pa)	
ELEVA		GRA		PIEZ	DEP	SAMPLE TYPE	RECOVERY		YNA) blo		CONE /ft △	F	PL 		MC •	L	
	(m) (ft)	4/	coarse grained sand.		+	/S Z	2		20	40	60	-	20	40 ◆		8	
- 216 215.7						SE	3				444						
210.7	11 - 35		SILT TILL - Tan, moist, dense to very dense, some to wih fine grained gravel and coarse grained sand			SS	9					•			1:1:		
215.1 - 215			AUGER REFUSAL at 11.28 m		11.3	S1	0 22			•	43 ▲ 50			1::1::			
			Notes:								* Refus	al wit	h 3	" left	in 2r	nd se	
	12 — 40		Installed two RST flow-through P-100 pneumatic piezometers - (PN 035739) at 4.57 m below grade (PN 035723) at 9.14 m below grade														
- 214	1 1		Installed slope inclinometer at 11.28 m below grade with a 0.83 m stick up.														
	13		Backfilled with bentonite cement grout from 11.28 m to 1.80 m below grade, then bentonite chips from 1.80 m to grade. Approximate bentonite-cement slurry mix (ratio by weight)									-			1::1:		
- 213]		- Water = 3.1 - 3.5 parts - Cement = 1.2 parts														
	14 —		- Bentonite grout = 1 part 5. No sample was obtained from 0 m to 4.57 m and stratigraphy is					;									
- 212			projected from TH14-02A located 0.75 m North East.											:: ::			
	15 — 50														1		
- 211	1 -												13			7:	
	16							;					#	1::1::	1		
- 210	1 =							;	::t::			-		1-1-	1:1:		
	17 —																
- 209]																
	1 1													1::1::	1		
- 208	18															1	
200	=																
	19											Hi		1::1::			
- 207	1 1																
	20 — 65													1::1::	1:1		
- 206	1																
	21 —																
- 205	70													1::1::	1		
	-							;									
	IPLE TYPE		Split Barrel Split Spoon			DDDC	1					DAT					
CON	NTRACTOR		INSPECTOR Ling Ltd. S.REPA			APPRO S.P.AR						7/11.					

BOREHOLE LOG NOTES:

- REFER TO THE GEOTECHNICAL REPORT PREPARED BY TREK GEOTECHNICAL TITLED RFP No. 180-017 -PROMENADE TACHE GEOTECHNICAL RRECOMENDATIONS FOR SHEET PILE WALL AND LOOKOUT STRUCTURE FOUNDATIONS DATED AUGUST 31, 2017.
- REFER TO DRAWING No. 02 FOR LOCATIONS OF BOREHOLES TH14-01 & TH14-02 IN PLAN VIEW. ADDITIONAL HISTORIC BOREHOLE LOGS PROXIMATE TO THE BRIDGE SITE ARE DOCUMENTED IN THE GEOTECHNICAL REPORT.

ENGINEERS GEOSCIENTISTS MANITOBA Certificate of Authorization MORRISON HERSHFIELD No. 1736

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

UNDERGROUND STRUCTURES	ELE/	/				
SUPR. U/G STRUCTURES DATE COMMITTEE						
NOTE:						
LOCATION OF UNDERGROUND STRUCTURES						
AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO						
GUARANTEE IS GIVEN THAT ALL EXISTING						
UTILITIES 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	0	ISSUED FOR TEND				
WITH CONSTRUCTION.	No.	REVISIONS				

	I														
LOCATION APPROVED UNDERGROUND STRUCTURES	ELE\	v T			m	MORRIS	SON HEE	SHFIELD	PROFESSIONAL'S SEAL						
SUPR. U/G STRUCTURES DATE COMMITTEE						MORRI		D.A.							
NOTE: OCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST					DESIGNED BY	TN	CHECKED BY	DAN	RE NEILSON Member 37248						
NFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING JTILITIES ARE SHOWN OR THAT THE GIVEN					DRAWN BY	АН	APPROVED BY	BE	37248 SO PROFESSION PR						
OCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE		ISSUED FOR TENDER	17/10/13	DAN	HOR SCALE	AS SHOWN AS SHOWN	RELEASED FOR C	CONSTRUCTION	CONSULTANT FILE NAME						
NDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.	No.	REVISIONS	YY/MM/DD	BY	DATE	17/10/13	DATE	-	5170563 - DD04 - BH Logs.dwg						

Winnipeg

BID OPPORTUNITY No. 754-2017 THE CITY OF WINNIPEG

ENGINEERING DIVISION TACHE PROMENADE

TREETOP LOOKOUT BOREHOLE LOGS

B250-17-30 30 70 DRAWING No.

CITY DRAWING NUMBER

PUBLIC WORKS DEPARTMENT