ISO A1 - 594mm x 841mm

Sub-Surface Log

Test Hole TH22-01
1 of 1

Client: Morrison Hershfield Ltd.
Project Name: Route 90 Culvert Rehabilitation over Omand's Creek
Contractor: Paddock Drilling Ltd.
Method: 125 mm Solid Stem Auger, Acker MP5-T Track Mount
Project Number: 0035 104 00
Location: UTM 14N - 5530364 N, 628823E
Ground Elevation: 234.50 m
Date Drilled: January 10, 2022

Sample Type: Grab (G) | Shelby Tube (T) | Split Spoon (SS) / SPT | Split Barrel (SB) / LPT | Core (C)
Particle Size Legend: Fines | Clay | Silt | Sand | Gravel | Cobbles | Boulders

Elevation (m)	Depth (m)	Soil Symbol	MATERIAL DESCRIPTION	Sample Type	Sample Number	SPT (N)
234.44			ASPHALT - 75 mm thick			
234.11			CONCRETE - 325 mm thick			
233.9			GRAVEL AND SAND (FILL) - trace silt, trace clay, light brown, frozen - dry to moist and compact when thawed, well graded, sub-rounded to angular			
	1		CLAY - silty, trace silt inclusions (<5 mm diam.) - mottled brown and grey - frozen to 1.2 m, moist and very stiff when thawed - high plasticity	Grab	G01	
	2			Grab	G02	
	3		- grey below 3.0 m	Shelby Tube	T03	
	4		- firm below 4.3 m	Grab	G04	
	5					
	6			Shelby Tube	T05	
227.9			SILT (TILL) - some sand, trace clay, trace gravel (<25 mm diam.) - light brown - dry to moist, compact - low plasticity			
	7			Grab	G06	
	8			Split Spoon	S07	26
	9		- very dense below 9.2 m	Split Spoon	S08	51
	10					
223.4	11			Split Spoon	S09	80 / 244mm

Bulk Unit Wt (kN/m³): 16 17 18 19 20 21
Particle Size (%): 0 20 40 60 80 100 — PL MC LL — 0 20 40 60 80 100
Undrained Shear Strength (kPa): 0 50 100 150 200 250
Test Type: △ Torvane △ ◆ Pocket Pen. ◆ ⊠ Qu ⊠ ○ Field Vane ○

END OF TEST HOLE AT 11.0 m IN SILT (TILL)
Notes:
1. Seepage and sloughing were not observed.
2. Test Hole open to 11.0 m and dry after drilling.
3. Test Hole backfilled with auger cuttings, bentonite, and cold patch asphalt to ground surface.
4. Test Hole location was recorded using a handheld GPS and measuring offsets from existing infrastructure. Test Hole elevation was estimated based on topographic survey points nearest to the test hole.

Logged By: Matt Klymochko **Reviewed By:** Michael Van Helden **Project Engineer:** Beta Taryana

SUB-SURFACE LOG LOGS 2021-03-10 ROUTE 90 OVER OMANDS FINAL 0035-104-00.GPJ TREK.GDT 3/10/22

Sub-Surface Log

Test Hole TH22-02
1 of 1

Client: Morrison Hershfield Ltd.
Project Name: Route 90 Culvert Rehabilitation over Omand's Creek
Contractor: Paddock Drilling Ltd.
Method: 125 mm Solid Stem Auger, Acker MP5-T Track Mount
Project Number: 0035 104 00
Location: UTM 14N - 5530388 N, 628766 E
Ground Elevation: 233.50 m
Date Drilled: January 10, 2022

Sample Type: Grab (G) | Shelby Tube (T) | Split Spoon (SS) / SPT | Split Barrel (SB) / LPT | Core (C)
Particle Size Legend: Fines | Clay | Silt | Sand | Gravel | Cobbles | Boulders
Backfill Legend: Bentonite | Cement | Drill Cuttings | Filter Pack Sand | Grout | Slough

Elevation (m)	Depth (m)	Soil Symbol	Standpipe	MATERIAL DESCRIPTION	Sample Type	Sample Number	SPT (N)
233.2				ORGANIC CLAY (TOPSOIL) - silty, trace fine sand, trace organics - dark brown, frozen, moist and firm when thawed, high plasticity	Grab	G10	
	1			SILT - trace clay, trace sand, trace gravel (<10 mm diam.) - light brown, frozen to 0.9 m, moist and firm when thawed - low plasticity	Grab	G11	
232.0							
	2			CLAY - silty, trace silt inclusions (<5 mm diam.), trace gravel (<10 mm diam.) - mottled brown and grey - moist, stiff - high plasticity	Grab	G12	
	3			- grey, firm below 2.4 m	Shelby Tube	T13	
	4						
	5			- trace till inclusions (<5 mm diam.) below 4.6 m	Shelby Tube	T14	
227.7							
	6			SILT (TILL) - some sand, trace clay, trace gravel (<25 mm diam.) - light brown - moist, compact - low plasticity	Grab	G15	
	7						
	8			- dry to moist, very dense below 8.2 m	Split Spoon	S16	28
	9				Split Spoon	S17	54
	10						
222.6					Split Spoon	S18	50 / 91mm

Bulk Unit Wt (kN/m³): 16 17 18 19 20 21
Particle Size (%): 0 20 40 60 80 100 — PL MC LL — 0 20 40 60 80 100
Undrained Shear Strength (kPa): 0 50 100 150 200 250
Test Type: △ Torvane △ ◆ Pocket Pen. ◆ ⊠ Qu ⊠ ○ Field Vane ○

END OF TEST HOLE AT 10.9 m IN SILT (TILL)
Notes:
1. Seepage and sloughing observed below 6.7 m depth.
2. Test hole open to 10.7 m depth immediately after drilling.
3. Water level measured at 10.7 m depth after drilling.
4. Standpipe installed to 10.7 m depth.
5. Test hole backfilled with filter pack sand, auger cuttings, and bentonite to ground surface.
6. Test Hole location was recorded using a handheld GPS and measuring offsets from existing infrastructure. Test Hole elevation was estimated based on topographic survey points nearest to the test hole.
7. Water level measured 5.75 m below ground surface on January 27, 2022.

Logged By: Matt Klymochko **Reviewed By:** Michael Van Helden **Project Engineer:** Beta Taryana

SUB-SURFACE LOG LOGS 2021-03-10 ROUTE 90 OVER OMANDS FINAL 0035-104-00.GPJ TREK.GDT 3/10/22

TEST HOLE LOCATIONS SHOWN ON SHEET 04

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
MORRISON HERSHFIELD
No. 1736

TENDER No. 233-2022

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

LOCATION APPROVED
UNDERGROUND STRUCTURES
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 WITH CONSTRUCTION.

BM 23-018
ELEV 235.300 m
S.E. Cor. Notre Dame Ave. & Sherwin Rd., Tblt. in W. Conc. foundation No. 2070 Notre Dame Ave., 0.8 m S. & 0.7 m below Conc. block of N.W. Cor. of bldg.

No.	REVISIONS	YY/MM/DD	BY
C	ISSUED FOR TENDER	22/05/10	BE
B	ISSUED FOR 95% REVIEW	22/04/06	BE
A	ISSUED FOR 50% REVIEW	22/03/14	BE

MORRISON HERSHFIELD

DESIGNED BY	AGG	CHECKED BY	TH
DRAWN BY	AH	APPROVED BY	BE
HOR SCALE / VERT SCALE	AS SHOWN	RELEASED FOR CONSTRUCTION BY: VAIBHAV BANTHIA, P.ENG.	
DATE	22/03/14	DATE	22/05/10

PROFESSIONAL'S SEAL
PROVINCE OF MANITOBA — A.D.G. GILARSKI — Member — 32144 — 2022-05-10 — REGISTERED PROFESSIONAL ENGINEER

CONSULTANT FILE NAME
220042500-Rte 90-BH.dwg

Winnipeg
THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

REHABILITATION OF ROUTE 90 CULVERT OVER OMAND'S CREEK

BORE HOLE LOGS

CITY DRAWING NUMBER: C315-21-03
SHEET 03 OF 27
DRAWING NUMBER: 03

x:\Proj\2022\220042500-cdw rte 90 culvert over omands cre\09. cad\07 sheets\220042500-Rte 90-BH.dwg Last Saved: 5/2/2022 10:54 AM by KBerard Plotted: 5/10/2022 7:23 AM by Alex Heppner