The City of Winnipeg

Appendix 'A'
Tender No. 1-2025

Template Version: 2025 01 01- Const Road Works

APPENDIX 'A' - GEOTECHNICAL REPORT

GEOTECHNICAL REPORTS FOR:

Riverton Avenue from Stadacona Street to Allan Street – Asphalt Pavement Reconstruction Simpson Avenue from London Street to Louelda Street – Asphalt Pavement Reconstruction

PAVEMENT CORES FOR:

Allan Street from Thames Avenue to Nairn Avenue – Concrete Pavement Rehabilitation Dunrobin Avenue from Henderson Highway to Roch Street – Concrete Pavement Rehabilitation Hershey Street from Kimberly Avenue to End– Concrete Pavement Rehabilitation

The geotechnical report is provided to aid in the Contractor's evaluation of the existing pavement structure and/or soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in pavement structure and/or soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities. The nature and extent of variations may not become evident until construction commences.



February 25, 2025

Project/File: 123317463-4

Geoff Kerr City of Winnipeg 1155 Pacific Avenue Winnipeg, Manitoba R3E 3P1

Good day Geoff,

Reference: 2025 Local Street Renewal Program (Contract 4) - Geotechnical Investigation

Stantec Consulting Ltd. (Stantec) was retained to undertake a factual geotechnical investigation for the 2025 Local Street Renewal Program (Contract 4) in Winnipeg, Manitoba. Use of this report is subject to the Statement of General Conditions provided in Appendix A.

The coring and drilling program was conducted from January 7 to January 29, 2025. A total of 18 locations were investigated with pavement coring and/or subsurface geotechnical drilling. Pavement coring was performed by Stantec's geotechnical field technologist, and drilling services were provided by Maple Leaf Drilling Ltd. under the supervision of Stantec's technologist. A Borehole Location Plan is provided in Appendix B.

1. Pavement Coring

A total of 18 pavement core samples were recovered to determine the in-place pavement thickness. In addition, 9 concrete core samples were tested to assess the in-place compressive strength of the concrete. One (1) concrete compressive strength test was cancelled due to the core sample being inadequate for testing (crumbly/fractured condition). The existing pavement thicknesses are summarized in Table 1 below, and the core photographs are provided in Appendix C.

2. Geotechnical Drilling

A total of 8 boreholes were investigated by geotechnical drilling. The boreholes were terminated at a depth of 2.0 m below the pavement, which resulted in borehole depths ranging from 2.0 to 2.2 m. Soil samples were obtained directly from the auger flights at depths of 0.6 m, 0.9 m, 1.2 m, 1.6 m, and 2.0 m from the bottom of the existing pavement. The testholes were examined for evidence of sloughing and groundwater seepage upon completion of drilling.

Reference: 2025 Local Street Renewal Program (Contract 4) - Geotechnical Investigation

The borehole records are provided in Appendix D. The soil classification used in the borehole records is as per ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

3. Existing Pavement Thicknesses

The existing pavement thicknesses are provided in the following table:

Table 1 - Existing Pavement Thicknesses

Borehole No.	Street	Asphalt Thickness (mm)	Concrete Thickness (mm)	Total Pavement Thickness (mm)
234	Riverton Ave	30	0	30
235	Riverton Ave	85	0	85
236	Riverton Ave	30	0	30
237	Simpson Ave	30	200	230
238	Simpson Ave	30	145	175
239	Simpson Ave	30	140	170
240	Simpson Ave	25	135	160
241	Simpson Ave	30	170	200
242	Allan St	0	190	190
243	Allan St	0	150	150
244	Allan St	0	225	225
245	Allan St	0	150	150
246	Dunrobin Ave	0	160	160
247	Dunrobin Ave	0	150	150
248	Dunrobin Ave	0	165	165
249	Dunrobin Ave	0	150	150
250	Hershey St	0	135	135
251	Hershey St	0	150	150

4. Laboratory Testing

Laboratory determination of moisture content (ASTM D2216) was conducted on all soil samples. The results are provided on the attached borehole records.

In addition, the following laboratory tests were conducted on select samples:

February 25, 2025 Geoff Kerr Page 3 of 3

Reference: 2025 Local Street Renewal Program (Contract 4) - Geotechnical Investigation

- ASTM D4318 Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D7928 Particle-Size Distribution of Fine-Grained Soils Using The Sedimentation Analysis
- ASTM D698 Laboratory Compaction Characteristics of Soil Using Standard Effort
- ASTM D1883 California Bearing Ratio (CBR) of Laboratory-Compacted Soils
- CSA A23.2-14C Obtaining and testing drilled cores for compressive strength testing

The CBR tests were performed on test specimens compacted to 95% of the maximum dry density under soaked conditions.

Prior to compressive strength testing, the concrete core samples were conditioned in water at room temperature for 48 hours.

The laboratory test reports are provided in Appendix E.

5. Closure

Please contact the undersigned if you have any questions regarding this report.

Regards,

Stantec Consulting Ltd.

Guillaume Beauce P.Eng.

Senior Associate

Geotechnical Engineer, Materials Testing Services

Phone: 204-928-7618 Mobile: 204-898-8290

guillaume.beauce@stantec.com

Jason Thompson C.E.T.

Principal – Manager, Materials Testing Services Manitoba & Northwestern Ontario Operations

Phone: 204-928-4004 Mobile: 204-898-8290 jason.thompson@stantec.com

Attachment: Appendix A – Statement of General Conditions

Appendix B – Borehole Location Plan Appendix C – Core Photographs Appendix D – Borehole Records Appendix E – Laboratory Test Reports

- Atterberg Limits Test Reports
- Particle-Size Analysis Reports
- Standard Proctor Test Reports
- CBR Test Reports
- Concrete Compressive Strength Test Results



Appendix A

Statement of General Conditions

STATEMENT OF GENERAL CONDITIONS

USE OF THIS REPORT: This report has been prepared for the sole benefit of the Client or its agent and may not be used by any third party without the express written consent of Stantec and the Client. Any use which a third party makes of this report is the responsibility of such third party.

BASIS OF THE REPORT: The information, opinions, and/or recommendations made in this report are in accordance with Stantec's present understanding of the site-specific project as described by the Client. The applicability of these is restricted to the site conditions encountered at the time of the investigation or study. If the proposed site-specific project differs or is modified from what is described in this report or if the site conditions are altered, this report is no longer valid unless Stantec is requested by the Client to review and revise the report to reflect the differing or modified project specifics and/or the altered site conditions.

STANDARD OF CARE: Preparation of this report, and all associated work, was carried out in accordance with the normally accepted standard of care in the state or province of execution for the specific professional service provided to the Client. No other warranty is made.

INTERPRETATION OF SITE CONDITIONS: Soil, rock, or other material descriptions, and statements regarding their condition, made in this report are based on site conditions encountered by Stantec at the time of the work and at the specific testing and/or sampling locations. Classifications and statements of condition have been made in accordance with normally accepted practices which are judgmental in nature; no specific description should be considered exact, but rather reflective of the anticipated material behavior. Extrapolation of in situ conditions can only be made to some limited extent beyond the sampling or test points. The extent depends on variability of the soil, rock, and groundwater conditions as influenced by geological processes, construction activity, and site use.

VARYING OR UNEXPECTED CONDITIONS: Should any site or subsurface conditions be encountered that are different from those described in this report or encountered at the test locations, Stantec must be notified immediately to assess if the varying or unexpected conditions are substantial and if reassessments of the report conclusions or recommendations are required. Stantec will not be responsible to any party for damages incurred as a result of failing to notify Stantec that differing site or sub-surface conditions are present upon becoming aware of such conditions.

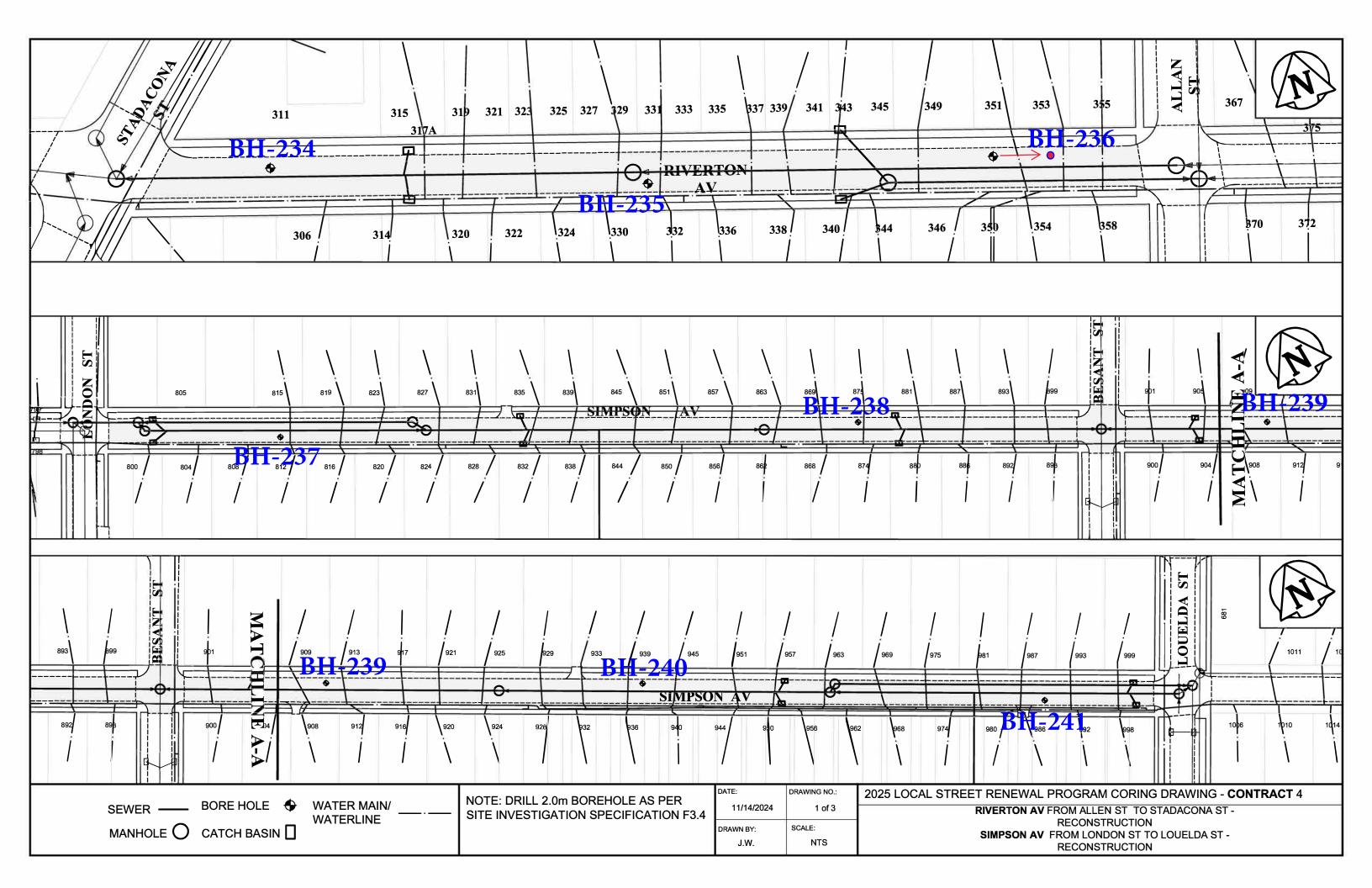
PLANNING, DESIGN, OR CONSTRUCTION: Development or design plans and specifications should be reviewed by Stantec, sufficiently ahead of initiating the next project stage (property acquisition, tender, construction, etc.), to confirm that this report completely addresses the elaborated project specifics and that the contents of this report have been properly interpreted. Specialty quality assurance services (field observations and testing) during construction are a necessary part of the evaluation of sub-subsurface conditions and site preparation works. Site work relating to the recommendations included in this report should only be carried out in the presence of a qualified geotechnical engineer; Stantec cannot be responsible for site work carried out without being present.

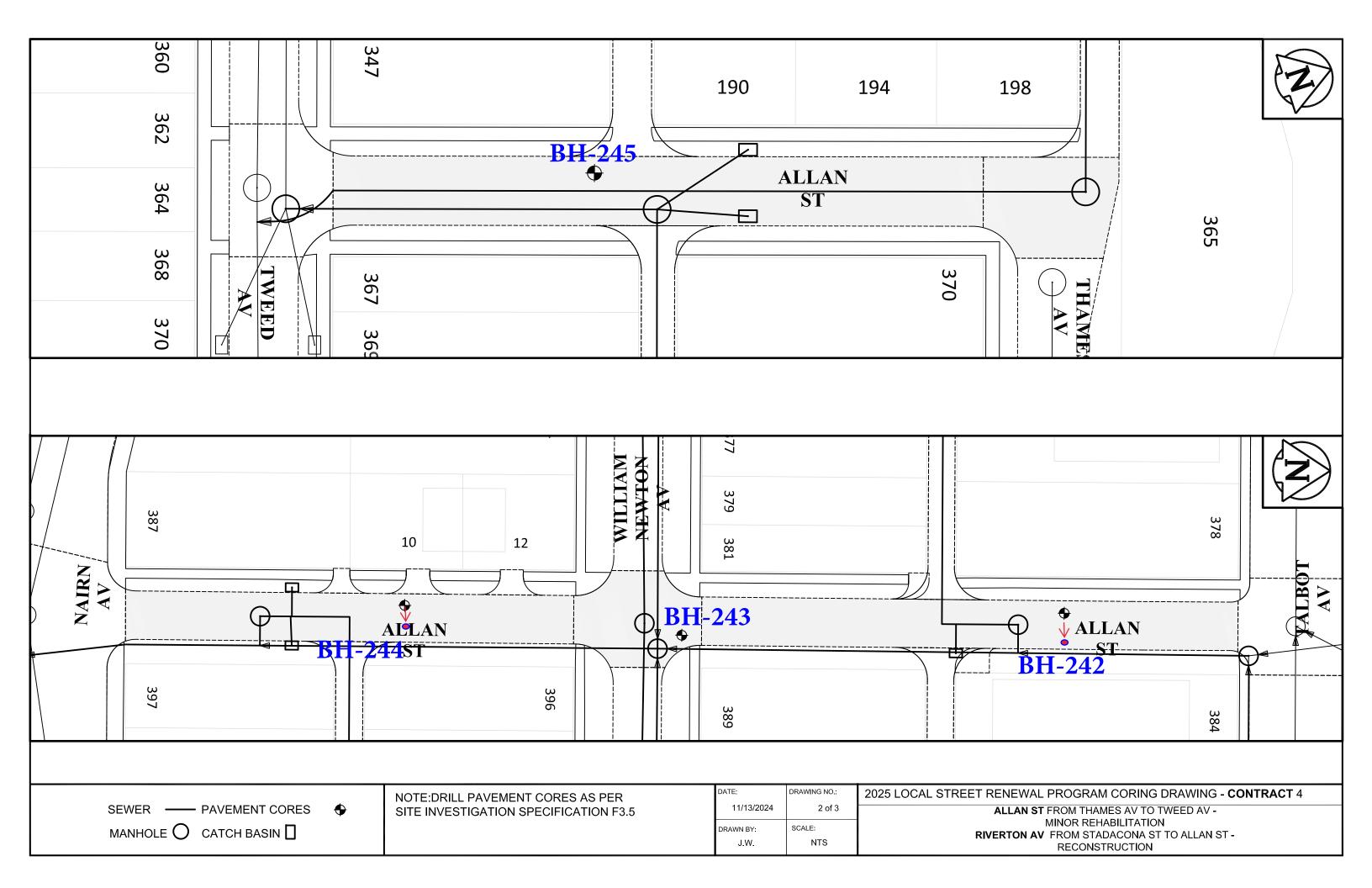


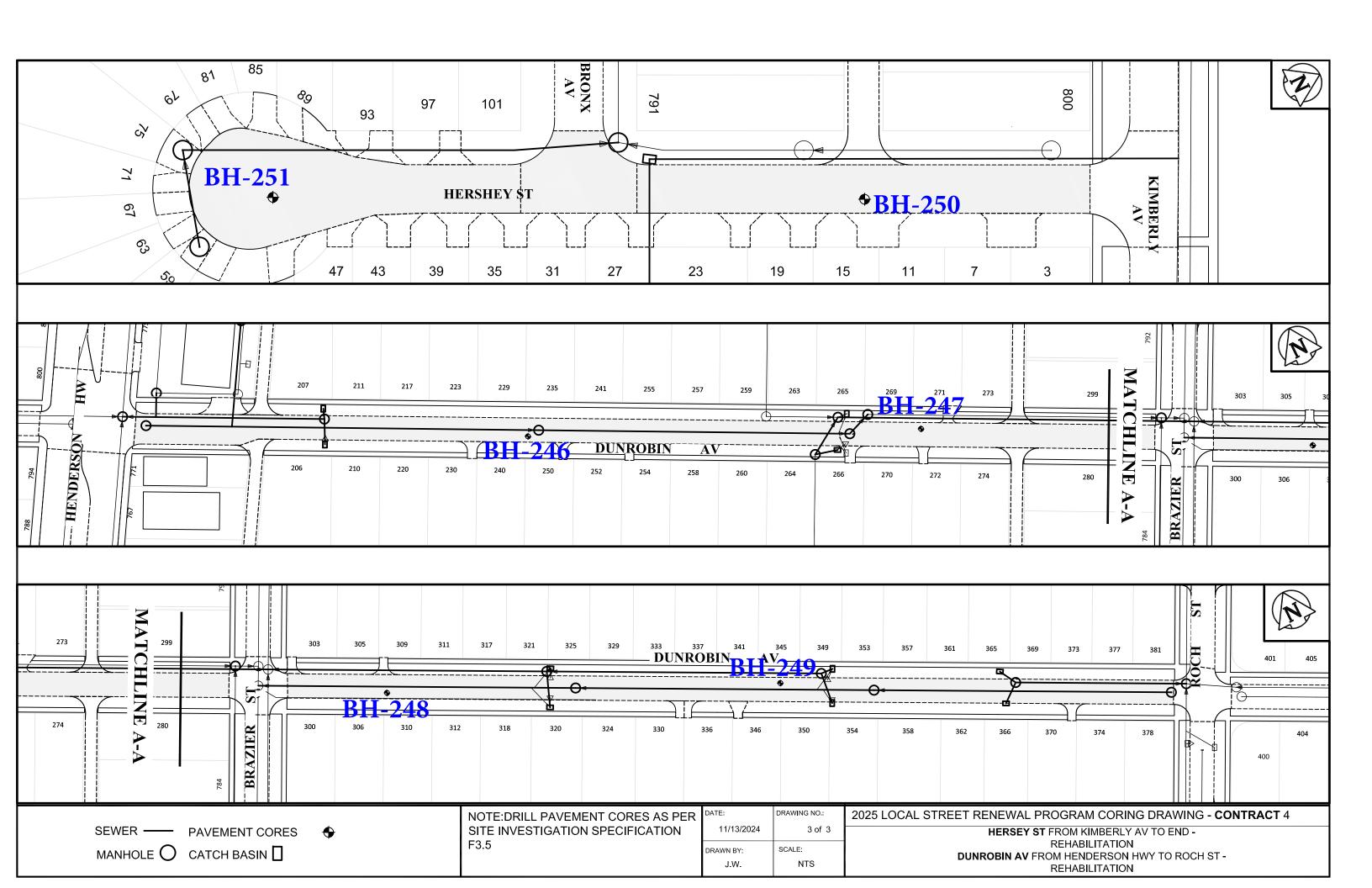


Appendix B

Borehole Location Plan









Appendix C

Core Photographs

Stantec



Figure 1 – Core Sample No. 234 – Riverton Ave



Figure 3 – Core Sample No. 236 - Riverton Ave



Figure 2 – Core Sample No. 235 – Riverton Ave



Figure 4 – Core Sample No. 237 – Simpson Ave





Figure 5 – Core Sample No. 238 – Simpson Ave



Figure 7 – Core Sample No. 240 – Simpson Ave



Figure 6 – Core Sample No. 239 – Simpson Ave



Figure 8 – Core Sample No. 241 – Simpson Ave





Figure 9 – Core Sample No. 242 – Allan St



Figure 11 – Core Sample No. 244 – Allan St



Figure 10 – Core Sample No. 243 – Allan St

Core Photograph Not Available

Figure 12 - Core Sample No. 245 - Allan St





Figure 43 – Core Sample No. 246 – Dunrobin Ave



Figure 15 – Core Sample No. 248 – Dunrobin Ave



Figure 14 – Core Sample No. 247 – Dunrobin Ave



Figure 16 - Core Sample No. 249 - Dunrobin Ave

Stantec



Figure 17 – Core Sample No. 250 – Hershey St



Figure 18 – Core Sample No. 251 – Hershey St



Appendix D

Borehole Records

DATE BORE (W) O Firm - sor - bla - 1 - Soft	SOIL DESCRIPTION (USCS) In black FAT CLAY (CH) me silt ack to brown and some silt below 0.5 m	STRATA PLOT	BS AS AS	NUMBER	RECOVERY (mm) Fig. or TCR % 0		OTHER TESTS / REMARKS Sieve/Hydro at 0.6 m 3	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	JNDR LAE POO	ER CC	D SH TOR PEN kPa 	HEAF LY TE NETF	R ST ROM 100 & AT	RENGETER	GTH,	, Cu (FIEL POO 150 G LIM	(kPa) LD V/ CKET kPa H	ANE	TES EAR 200	T VANE kPa W _L	BACKFILL
0 - Firm - sor - bla - 1 - Soft	(USCS) In black FAT CLAY (CH) Ime silt ack to brown and some silt below 0.5 m		BS				REMARKS	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	LAE POG WATE	SORA CKET 50 I ER CC	TOR PEN kPa ONTE	Y TE NETF ENT BLOV	ST ROM 100 & AT	ETEF) kPa H TTER 3m	♦ R □	FIEL POC 150 G LIM	D V/CKET kPa	ANE SH W _F	EAR 200 W	VANE kPa 	BACKFILL
Firm - sor	me silt ack to brown and some silt below 0.5 m t tan SILT (ML)	m	AS		12.		Sieve/Hydro at 0.6 m 3 S M C 3% 2% 17% 82%		10	2	0	30	Z Z	tent (%) :	50	v Count 6	0	70	8	0	
		-//1											φ 							-	
	me sand, trace clay		AS								o	φ. /									
- Bo • No	d of Borehole orehole terminated at a depth of 2.0 m. orgroundwater seepage or soil sloughin orehole backfilled in accordance with th	ing was	इ। s obse y of Wi	rved c	uuring g Stre	or uppeet Cu	n completion of dri s Manual.	illing	<u> 1</u>			:1:	***		:1:			:1:			

DATE BORED: January 09 2025 SAMPLES SOIL DESCRIPTION (USCS) ASPHALT Firm brown FAT CLAY (CH) Soft tan SILT (ML) -some sand Some FAT CLAY (CH) Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) -some sand WATER LEVEL: N/A NAMPLES SAMPLES SAMPLES SAMPLES SOLUTION ASPHALT A B SILT (ML) -some sand WATER CONTENT AT CLAY (CH) Soft tan SILT (ML) -some sand WATER CONTENT AT CLAY (CH) Soft tan SILT (ML) -some sand	SOIL DESCRIPTION (USCS) SOIL DESCRIPTION (USCS) SAMPLES SOIL DESCRIPTION (USCS) A SPHALT Firm brown FAT CLAY (CH) Soft tan FAT CLAY (CH) Soft son Sand Soft tan SILT (ML) Some sand WATER CEVEL: N/A SAMPLES SOR SAMPLES SOR SAMPLES A SAMPLES SOR SAMPLES SOR SAMPLES A SAMPLES SOR SAMPLES SOR SAMPLES A SAMPLES SOR SAMPLES SOR SOR SOR SOR SILE STRENGTH, CU (RPa) FIRM BROWS A SAMPLES POCKET PENETROMETER DPOCKET SHEAR VANE SOR			CT: 2025 Local Street Renew ON: Riverton Ave	al Pro	gram	ı (Co	ntra	ct 4)		_										N/A
SOIL DESCRIPTION (USCS) THE TESTS / REMARKS OTHER TESTS / REMARKS TREMARKS TREMARKS THE DESCRIPTION (USCS) THE TESTS / REMARKS TREMARKS THE DESCRIPTION (USCS) TO THE TESTS / REMARKS THE DESCRIPTION (USCS) 10 Page 100 LPg 150 Page 200 Page 100 LPg 150 Page 200 Page 100 LPg 150 Page 200 Page 100 Page 200 Pag	ALABORATORY TEST PRICE PROPERTY AND TO PROVIDE THE ALTON AND TO THER TESTS IN THE ALTON AND TO PROVIDE THE ALTON AND TO P										_ WA	ATER	LEVE	EL: _	N/A						
ASPHALT Firm brown FAT CLAY (CH) Soft tan SILT (ML) - some sand ASPHALT Firm brown FAT CLAY (CH) Soft tan FAT CLAY (CH) AS Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) - some sitt, trace sand	ASPHALT Firm brown FAT CLAY (CH) Soft tan FAT CLAY (CH) Soft tan SILT (ML) - some sand Firm brown FAT CLAY (CH) AS Firm brown FAT CLAY (CH) - some silt, trace sand End of Barehole - Sociabolic terminated at a depth of 2.1 m. No suppose the section of drilling and proportion of drilling and the section of drilling and the secti	DEРТН (m)	ELEVATION (m)		STRATA PLOT			1	N-VALUE or RQD %		★ Po	ABORA OCKET 50 TER C	TORY PENE kPa H ONTE	TEST ETROI 10	METEF 00 kPa 	♦ FI	IELD OCKI 50 kP	VAN ET S Pa	HEAF 200	R VANI) kPa 	CKFIL
Soft tan SILT (ML) - some sand AS Firm brown FAT CLAY (CH) - some silt, trace sand	Soft tan SILT (ML) - some sand AS Firm brown FAT CLAY (CH) - some silt, trace sand End of Borehole • Borehole terminated at a depth of 2.1 m. • No groundwater sepage or soil sloughing was observed during or upon completion of drilling.	0		Firm brown FAT CLAY (CH)		A BS		~		Sieve/Hydro at 0.7 m S M C 396 1% 35% 63%	1	0 2	20	Water C	ontent (%) :	ind Blow Cc 50	60	7	0	80	
Firm brown FAT CLAY (CH) - some silt, trace sand	Firm brown FAT CLAY (CH) - some silt, trace sand End of Borehole Borehole terminated at a depth of 2.1 m. No groundwater seepage or soil sloughing was observed during or upon completion of drilling	- 1 - - -				V AS									0						
End of Borehole	1 • No groundwater seepage or soil sloughing was observed during or upon completion of drilling	2 -		- some silt, trace sand End of Borehole	n	V								0							

SOIL DESCRIPTION (USCS) SOIL DESCRIPTION (USC	LO	CATI	ON: Riverton Ave	ai Pio	yran	1 (00	illia	CL 4)		- -				_									N/A
SOIL DESCRIPTION (USCS) WATER CONTENT & ATTERBERG LIMITS We will X SPIT (Nevalue) SECONSO.3m X SP	DA	TE B	ORED: <u>January 09 2025</u>	$\overline{\top}$		SAMI	DI ES			_							H, Cı	ı (kF	Pa)				
ASPHALT FILL: granular base Firm black to grey FAT CLAY (CH) BS BS Sievelhydro at 0.6 m ON 25 Soft tan SiLT (ML) - some sand AS Soft tan SiLT (ML) - some sand AS End of Borehole - Borehole - Borehole - Borehole - Sognundwater seepage or soil sloughing was observed during or upon completion of drilling.	DЕРТН (m)	ELEVATION (m)		STRATA PLOT	TYPE			N-VALUE or RQD %	OTHER TESTS / REMARKS	★ P	TER	ET F 50 kf	PENE Pa NTEN e) BL	TROM 100 IT & A	NETE O kPa H TTEF .3m	R a RBE	15 RG I	OCKI 0 kP 	ET S 'a rs \	HEA 20 V _P \	R VA 00 kP W V	Pa .	BACKFILL
Firm black to grey FAT CLAY (CH) BS Soft tan SILT (ML) - some sand AS End of Borehole - Borehole - Borehole - Borehole - Borehole - Borehole - Sorehole terminates epage of soil sloughing was observed during or upon completion of drilling.	o ‡		ASPHALT	_/ 💥							10	20	3	80 4	40	50)	60	7	0	80	3	
Soft tan SILT (ML) - some sand End of Borehole - Borehole - Borehole eminated at a depth of 2.0 m No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	-		FILL: granular base	$\overline{\ \ }$																			
Soft tan SILT (ML) - some sand AS AS AS AS AS AS AS AS AS A	-		Firm black to grey FAT CLAY (CH)																				
Soft tan SILT (ML) - some sand AS AS AS AS AS AS AS AS AS A					Вѕ				Sieve/Hydro at 0.6 m G S M C 0% 2% 35% 63%					I						-			
Soft tan SiLT (ML) - some sand AS End of Borehole - Borehole terminated at a depth of 2.0 m No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	1				AS				2.0 00.0 00.0				G										
Soft tan SiLT (ML) - some sand AS End of Borehole - Borehole terminated at a depth of 2.0 m No groundwater seepage or soil sloughing was observed during or upon completion of drilling.														$\mathbf{\Lambda}$									
Soft tan SILT (ML) - some sand AS End of Borehole - Borehole terminated at a depth of 2.0 m No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	1				AS									}									
- some sand AS AS AS End of Borehole Borehole terminated at a depth of 2.0 m. No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	1 -				V						1			/	::					: : :			
2 End of Borehole • Borehole terminated at a depth of 2.0 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	-				AS							ø											
End of Borehole Borehole terminated at a depth of 2.0 m. No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	-				X AS																		
End of Borehole Borehole terminated at a depth of 2.0 m. No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	-												\										
End of Borehole Borehole terminated at a depth of 2.0 m. No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	1				AS								Į	: : : :									
, i i	-		 Borehole terminated at a depth of 2.0 n No groundwater seepage or soil slough 	ing wa	s obse	erved (during g Stre	or upo	on completion of dri s Manual.	ling.													

	mpson Ave							_									ELE\ UM:				
E BORED:	<u>January 09 2025</u>							_	/ATE												1
ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	TYPE	NUMBER	1	N-VALUE or RQD %	OTHER TESTS / REMARKS	▲ I	LABO POCI	ORAT	TOR PEN (Pa	Y TE NETF	ST ROM 100	kPa TERE	◆ F	FIELD POCH 50 k	VAI KET S	SHEA 2	AR \ !00 k	/ANE kPa	BACKFILL
AODUALT					~				10	20	0	30°	iter Con	ent (%) a	nd Blow C	60	7	0	80)	N
\		/ 																::			33
																					200
																		::			
Firm brown	FAT CLAY (CH)																				
																		::			
																		::			
			V				Sieve/Hydro at 0.8 m														
			<u>VI</u>				G Ś M C 0% 0% 27% 73%					1							1		
			AS								: : :	1	<u> </u>					1 1 1		<u> </u>	
												/									
			AS								9	6 1									
											/										
Soft tan LE	AN CLAY (CL)										/:::							::			
			AS							φ											
			¥							1											
											: : :		$\vdots \vdots \vdots \\$::			
											1										
			V 10																		
Firm brown	FAT CLAY (CH)		V AS								4										
											: : :	1	\					: :			
													1								
			Å AS					Liii			: : :			\odol							
	ASPHALT FILL: grant CONCRET FILL: grant Firm brown Firm brown - some silt,		ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) Firm brown FAT CLAY (CH) - some silt, trace sand	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS Firm brown FAT CLAY (CH) - some silt, trace sand	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS Firm brown FAT CLAY (CH) - some silt, trace sand	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) AS AS AS AS	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) AS AS AS AS AS AS AS AS AS A	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Severity dro at 0.8 m G S M C ONS ON 27% 73% AS AS Soft tan LEAN CLAY (CL) AS AS Firm brown FAT CLAY (CH) - some silt, trace sand	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) AS Firm brown FAT CLAY (CH) - some slit, trace sand	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) AS Firm brown FAT CLAY (CH) - some silt, trace sand	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS Firm brown FAT CLAY (CH) - some silt, trace sand	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) AS Firm brown FAT CLAY (CH) AS Firm brown FAT CLAY (CH) - some slit, trace sand	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) AS Severity-dro at 0.8 m S N C C N 27% 73% AS AS Firm brown FAT CLAY (CH) AS Firm brown FAT CLAY (CH) AS Firm brown FAT CLAY (CH) AS	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS AS Firm brown FAT CLAY (CH) AS AS Firm brown FAT CLAY (CH) AS AS Firm brown FAT CLAY (CH) AS Firm brown FAT CLAY (CH) AS AS Firm brown FAT CLAY (CH) AS AS Firm brown FAT CLAY (CH) - some slit, trace sand	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS AS AS Firm brown FAT CLAY (CH) AS AS AS AS AS AS AS AS AS A	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS AS AS Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) AS AS AS AS AS AS AS AS AS A	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS AS Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) AS Firm brown FAT CLAY (CH) AS AS Firm brown FAT CLAY (CH) AS AS Firm brown FAT CLAY (CH) AS AS AS AS AS AS AS Firm brown FAT CLAY (CH) AS AS AS AS AS AS AS AS AS A	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS AS Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) AS Firm brown FAT CLAY (CH) AS AS Firm brown FAT CLAY (CH) AS AS AS Firm brown FAT CLAY (CH) AS AS AS AS AS AS AS AS AS Firm brown FAT CLAY (CH) Firm brown FAT CLAY (CH) AS AS AS AS AS AS AS AS AS A	ASPHALT FILL: granular base CONCRETE PLL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS AS AS AS AS AS AS AS A	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS AS AS AS AS AS AS AS A	ASPHALT FILL: granular base CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) AS AS Firm brown FAT CLAY (CH) AS AS AS AS Firm brown FAT CLAY (CH) AS AS Firm brown FAT CLAY (CH) AS AS Firm brown FAT CLAY (CH) AS AS AS Firm brown FAT CLAY (CH) AS AS AS AS AS AS AS AS AS A

	SOIL DESCRIPTION (USCS) ASPHALT CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) - trace silt Soft tan LEAN CLAY (CL)	STRATA PLOT	TYPE	NUMBER	RECOVERY (mm)	N-VALUE or RQD %	OTHER TESTS / REMARKS	UNE ▲ L ★ P	TER CO	TORY PENE kPa ONTEN	AR ST TEST TROM 100 IT & AT OWS/0.	RENG BETER kPa H	TH, Cu FIE PO 150 ERG L	(kPa) ELD VA CKET CKET KPa	ANE T	TEST AR V 200 k	· /ANE (Pa W _L	BACKFILL
	ASPHALT CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) - trace silt	/ M			l	N-VALUE or RQD %	OTHER TESTS / REMARKS	▲ L ★ P WA	ABORA OCKET 50 TER CO PT (N-va	ATORY PENE kPa ONTEN	TEST TROM 100 IT & AT	IETER) kPa	◆ FIE □ PO 150 ERG L	CKET CKET KPa	W _P	AR V 200 k 	/ANE «Pa W _L	BACKFILL
	FILL: granular base, 19 mm Firm brown FAT CLAY (CH) - trace silt	// /			 32 32				10 2	20 3	Water Con	10 (%) and	d Blow Cour	60	70	80)	
	FILL: granular base, 19 mm Firm brown FAT CLAY (CH) - trace silt	// /																
	Firm brown FAT CLAY (CH) - trace silt									1	1	::::		4		2 1 T 1 2		
-	Soft tan LEAN CLAY (CL)																	
			BS AS				Sieve/Hydro at 0.8 m G S M C 0% 2% 69% 30%		F	6								
1 -			V V															-
	Firm brown FAT CLAY (CH) - some silt, trace sand		AS							Φ: : : :								
			AS						φ	,								
1			AS						Q									
- ! -			V															-
			AS									0						
	Borehole terminated at a depth of 2.3 No groundwater seepage or soil slou Borehole backfilled in accordance wi	ighing was	s obse	erved d innipe	during eg Stre	j or up	on completion of dri ts Manual.	lling.										
3	L SYMBOL ASPHALT		OUT			NCRE	Drilling Con					-illing	Ltd.		—			I By: R

		: City of Winnipeg CT: 2025 Local Street Renev	val Pro	gram	ı (Co	ntra	ct 4)		_						ROJE H ELI				2331746 N/A
		ON: Simpson Ave							_					D	ATUN	Λ: _	N/A	\	
DA	ATE B	ORED: <u>January 09 2025</u>								ATER RAINE				TLL C	ı /kDc	-/-			
DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	TYPE	NUMBER	RECOVERY (mm) TO SO TICE SO TI	N-VALUE or RQD %	OTHER TESTS / REMARKS	▲ L/ ★ P(ABORA OCKET	TORY PENE kPa ONTEN	TEST TROM 100	IETER) kPa TERE	◆ FII	ELD V OCKE 0 kPa	/ANE T SH	EAR 200	VANI kPa	CKFIL
0 -						~			1	0 2	0 3	Water Co	ntent (%) ar	d Blow Cou	^{nt} 60	70	8	30	
-		ASPHALT CONCRETE FILL: granular base, 19 mm																	
-		Soft tan LEAN CLAY (CL)																	
-																			
-				BS AS				Sieve/Hydro at 0.8 m G S M C 0% 6% 79% 16%		F									
1 -		Firm brown FAT CLAY (CH) - trace silt		AS								9							
-				AS									P						
-				V															
2 -				AS															
-				AS										b					
-		Borehole Borehole terminated at a depth of 2.2 No groundwater seepage or soil slou Borehole backfilled in accordance with	ghing was	s obse	erved d	during g Stre	j or up	on completion of dri ts Manual.	lling.										
3 –								Drilling Con	tracto	r: Ma	ple Le	eaf D	rilling	Ltd.			Lo	ogge	d By: R
2 ^ C	KEILI	. SYMBOL ASPHALT	GR	OUT	[·_	lcor	NCRE	TE Drilling Met	hod:	125 m	m SS	Α					R	evie	wed By:

ASPHALT CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH) come silt, trace sand Soft tan LEAN CLAY (CL) AS AS Firm black to grey FAT CLAY (CH) trace silt AS Firm black to grey FAT CLAY (CH) trace silt			CT: 2025 Local Street Renew ION: Simpson Ave	al Pro	gram	1 (Co	ntra	ct 4)		_													N/A
SOIL DESCRIPTION (USCS) WASTER CONTENTS A THEREBERG LIMITS Wo W W SIST (Noviduo) BLOWNOS Jam WASTER CONTENTS A THEREBERG LIMITS WO W W SIST (Noviduo) BLOWNOS Jam SOIL DESCRIPTION SOIL DESCRIPTION (USCS) AS SOIL DESCRIPTION (USCS) SOIL DESCRIPTION (USCS) WASTER CONTENTS A THEREBERG LIMITS WO W W SIST (Noviduo) BLOWNOS Jam WASTER CONTENTS A THEREBERG LIMITS WO W W SIST (Noviduo) BLOWNOS Jam WASTER CONTENTS A THEREBERG LIMITS WO W W SIST (Noviduo) BLOWNOS Jam WASTER CONTENTS A THEREBERG LIMITS WO W W SIST (Noviduo) BLOWNOS Jam WASTER CONTENTS A THEREBERG LIMITS WO W W SIST (Noviduo) BLOWNOS JAM SOIL DESCRIPTION AS SOIL DESCRIPTION A SIST JAM SIST JA	DA	TE B	BORED: January 09 2025							_							`TU	Cu	(kDo	`			1
ASPHALT CONCRETE FILL: granular base, 19 mm Firm brown FAT CLAY (CH)	DEPTH (m)	ELEVATION (m)		STRATA PLOT	ТУРЕ		Ι	N-VALUE or RQD %		*	LAE PO	SORA CKET 50 ER CO	TOF PEI kPa H	RY T NET	EST ROM 100	IETER) kPa TTERI	•	FIEL POC 150	_D V/ CKET kPa	ANE SH	EAR 200	VANI kPa	CKFIL
FILL: granular base, 19 mm Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) BS BS Several and 10 8 m Soft tan LEAN CLAY (CL) AS AS Firm black to grey FAT CLAY (CH) - trace silt End of Borehole	o						~			ļ	10	2	20	30	/ater Cor	10 (%) a	50	Count 6	0	70		80	
Firm brown FAT CLAY (CH) Soft tan LEAN CLAY (CL) BS Sevestydro at 0.8 m Sevestydro a																							
Firm black to grey FAT CLAY (CH) - trace silt End of Borehole - Borehole terminated at a depth of 2.2 m No groundwater seepage or soil sloughing was observed during or upon completion of drilling.			Firm brown FAT CLAY (CH) some silt, trace sand																				
Firm black to grey FAT CLAY (CH) - trace silt End of Borehole - Borehole terminated at a depth of 2.2 m No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	-																						
Firm black to grey FAT CLAY (CH) - trace silt End of Borehole • Borehole terminated at a depth of 2.2 m. • No groundward seepage or soil sloughing was observed during or upon completion of drilling.	-				BS				Sieve/Hydro at 0.8 m G S M C 0% 4% 59% 37%														
Firm black to grey FAT CLAY (CH) - trace silt End of Borehole • Borehole terminated at a depth of 2.2 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	1 -				V								Φ: : ::::::::::::::::::::::::::::::::::										
Firm black to grey FAT CLAY (CH) - trace silt End of Borehole - Borehole terminated at a depth of 2.2 m No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	-				AS								0::										
Firm black to grey FAT CLAY (CH) - trace silt End of Borehole - Borehole terminated at a depth of 2.2 m No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	-				AS								Φ:										
Firm black to grey FAT CLAY (CH) - trace silt End of Borehole • Borehole terminated at a depth of 2.2 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	-				V																		
End of Borehole • Borehole terminated at a depth of 2.2 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	2 -				AS							Q											
Borehole terminated at a depth of 2.2 m. No groundwater seepage or soil sloughing was observed during or upon completion of drilling.	-		Ford of Double 15		AS											0							
	-		 Borehole terminated at a depth of 2.2 No groundwater seepage or soil sloug 	hing was	s obse	erved (innipe	during eg Stre	j or up eet Cu	on completion of dri is Manual.	lling.													
3 Drilling Contractor: Maple Leaf Drilling Ltd. Logg	₃								Drillina Con	ntrac	tor:	Ma	ple	Lea	af Di	illina	Ltd				L	ogae	d By: R
	ACE	(FII I	SYMBOI ASPHALT	GR	OUT	· .	lcor	NCRF								ıllıng	Ltd						d By: F

		CT: 2025 Local Street Renev	val Pro	gram	ı (Co	ntra	ct 4)		_												l:	
		ON: Simpson Ave ORED: January 09 2025							– W.	ATER	LE	VEL	: N	N/A		DA.	ıUN	VI: _	_N	<u>/Α</u>		
DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	ТУРЕ	NUMBER	RECOVERY (mm) H or TCR %	Τ	OTHER TESTS / REMARKS	UNE	ORAINI ABORA OCKE	ED S ATO T PE) kPa	HEA RY T NET	R ST EST ROM 100	RENO ETER) kPa	♦ □	FIEL POO 150	LD V CKE kPa	VAN ET SI	HEA 20	AR V 00 k	/ANE (Pa	BACKFILL
			o		Z	RECO	Żb		X S	PT (N-v	alue)	BLO'	NS/0.	3m								
0 -		ASPHALT CONCRETE FILL: granular base, 19 mm Firm grey FAT CLAY (CH)								10 :	20	30		10 (%) a	50	6	00	70	<u>J</u>	80		
-		- some silt																				
1 -				BS AS				Sieve/Hydro at 0.8 m G S M C 0% 1% 18% 81%				<u> </u>										
·		C-francis AV(CL)		AS								<i>,</i>										
_		Soft tan LEAN CLAY (CL)		AS							6											
-				AS							0											
2 -		Firm grey FAT CLAY (CH) - trace silt End of Borehole		AS									b :									
		Borehole terminated at a depth of 2.2 No groundwater seepage or soil sloug Borehole backfilled in accordance wit	ahina was	s obse	erved (innipe	during g Stre	g or up eet Cu	on completion of dri ts Manual.	lling.													
₃								Drilling Con	tracto	or: M	aple	Le	af Dr	illing	Ltd				$\overline{\top}$	Log		d By: R



Appendix E

Laboratory Testing Reports

- Atterberg LimitsParticle-Size Analysis
- o Standard Proctor
- California Bearing RatioConcrete Compressive Strength



TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

104 - 1155 Pacific Avenue Winnipeg, Manitoba

PROJECT NO. 123317463-4

R3E 2P1

Geoff Kerr ATTN

REPORT NO.

DATE SAMPLED: 2025.Jan.09

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2025.Feb.03

SAMPLED BY:

Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID

BH-234, 0.6 m, Riverton Ave.

STANTEC SAMPLE NO. 5625

LIQUID LIMIT

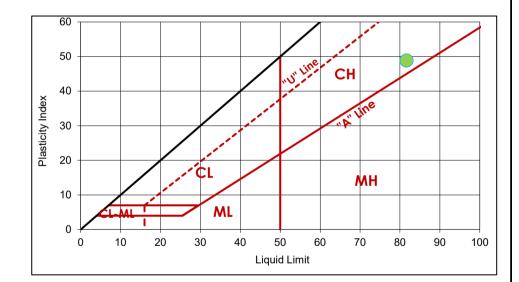
TRIAL BLOWS MC (%)

1	2
26	25
81	82

PLASTIC LIMIT **TRIAL** 2 MC (%)

LIQUID LIMIT, LL PLASTIC LIMIT, PL PLASTICITY INDEX, PI AS REC'D MC (%)

33 49 38.7



COMMENTS No comments.

REPORT DATE 2025.Feb.06 **REVIEWED BY**

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

104 - 1155 Pacific Avenue Winnipeg, Manitoba

R3E 2P1 PRO

ATTN Geoff Kerr

PROJECT NO. 123317463-4

REPORT NO. 2

DATE SAMPLED: 2025.Jan.09
SAMPLED BY: Stantec Consulting Ltd.

DATE RECEIVED: 2025.Jan.09
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Feb.03

TESTED BY: Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-235, 0.7 m, Riverton Ave.

STANTEC SAMPLE NO. 5626

LIQUID LIMIT

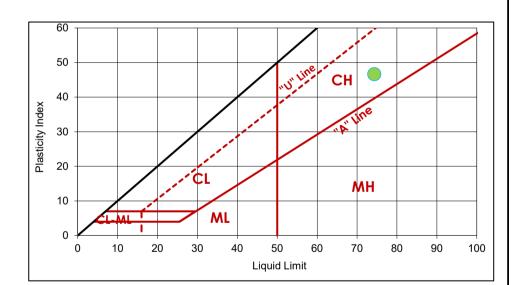
TRIAL BLOWS MC (%)

1	2
28	29
73	73

_	PLASTI	C LIMIT
TRIAL	1	2
MC (%)	28	28

LIQUID LIMIT, LL PLASTIC LIMIT, PL PLASTICITY INDEX, PI AS REC'D MC (%)

74
28
47
38.8



COMMENTS
No comments.

REPORT DATE 2025.Feb.06

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

104 - 1155 Pacific Avenue Winnipeg, Manitoba

Geoff Kerr

PROJECT NO. 123317463-4

R3E 2P1

REPORT NO.

DATE SAMPLED: 2025.Jan.09

ATTN

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2025.Feb.04

SAMPLED BY:

Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID

BH-236, 0.6 m, Riverton Ave.

STANTEC SAMPLE NO. 5627

LIQUID LIMIT

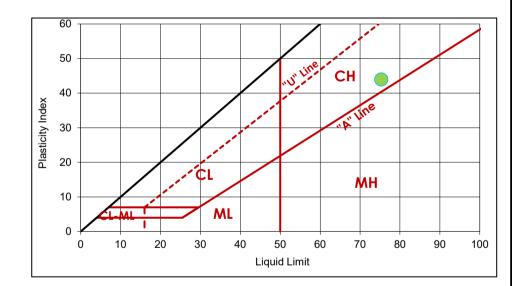
TRIAL BLOWS MC (%)

2
24
76

	PLASTIC LIMIT		
TRIAL	1	2	
MC (%)	32	31	

LIQUID LIMIT, LL PLASTIC LIMIT, PL PLASTICITY INDEX, PI AS REC'D MC (%)

75
31
44
29.1



COMMENTS No comments.

REPORT DATE 2025.Feb.06 **REVIEWED BY**

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

104 - 1155 Pacific Avenue Winnipeg, Manitoba

PROJECT NO. 123317463-4

R3E 2P1

Geoff Kerr ATTN

REPORT NO.

DATE SAMPLED: 2025.Jan.09

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2025.Feb.04

SAMPLED BY:

Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY:

Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID

BH-237, 0.8 m, Simpson Ave.

STANTEC SAMPLE NO. 5628

LIQUID LIMIT

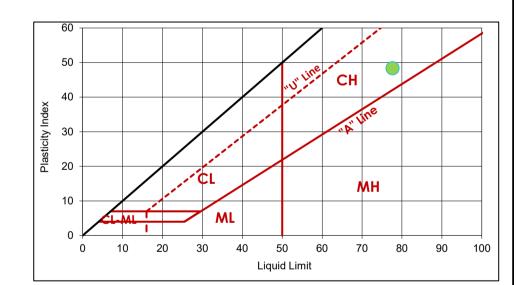
TRIAL BLOWS MC (%)

1	2
28	26
77	77

	PLASTIC LIMIT		
TRIAL	1	2	
MC (%)	29	29	

LIQUID LIMIT, LL PLASTIC LIMIT, PL PLASTICITY INDEX, PI AS REC'D MC (%)

78	
29	
48	
30.5	



COMMENTS No comments.

REPORT DATE 2025.Feb.06 **REVIEWED BY**

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

104 - 1155 Pacific Avenue Winnipeg, Manitoba

R3E 2P1 PROJECT NO

ATTN Geoff Kerr

PROJECT NO. 123317463-4

REPORT NO. 5

DATE SAMPLED: 2025.Jan.09 DATE RECEIVED: 2025.Jan.09 DATE TESTED: 2025.Feb.05

SAMPLED BY: Stantec Consulting Ltd. SUBMITTED BY: Stantec Consulting Ltd. TESTED BY: Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-238, 0.8 m, Simpson Ave.

STANTEC SAMPLE NO. 5629

LIQUID LIMIT

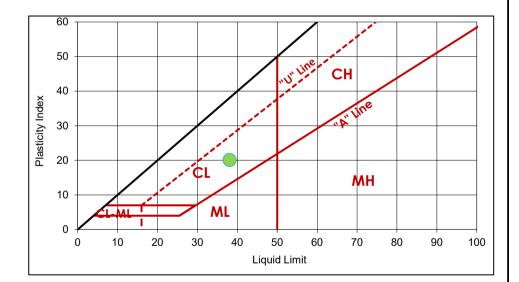
TRIAL BLOWS MC (%)

1	2
24	25
38	38

_	PLASTIC LIMIT		
TRIAL	1	2	
MC (%)	18	18	

LIQUID LIMIT, LL PLASTIC LIMIT, PL PLASTICITY INDEX, PI AS REC'D MC (%)

38	1
18	l
20	1
21.8	1



COMMENTS
No comments.

REPORT DATE 2025.Feb.06

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

104 - 1155 Pacific Avenue Winnipeg, Manitoba

Geoff Kerr

PROJECT NO. 123317463-4

R3E 2P1

REPORT NO.

DATE SAMPLED: 2025.Jan.09

ATTN

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2025.Feb.05

SAMPLED BY:

Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY:

Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-239, 0.8 m, Simpson Ave. STANTEC SAMPLE NO. 5630

LIQUID LIMIT

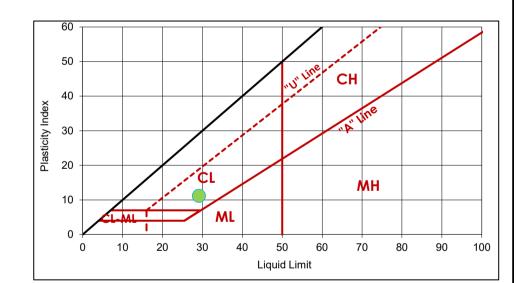
TRIAL BLOWS MC (%)

1	2
22	23
30	29

	PLASTIC LIMIT		
TRIAL	1	2	
MC (%)	18	18	

LIQUID LIMIT, LL PLASTIC LIMIT, PL PLASTICITY INDEX, PI AS REC'D MC (%)

29	
18	
11	
20.2	



COMMENTS No comments.

REPORT DATE 2025.Feb.06 **REVIEWED BY**

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

104 - 1155 Pacific Avenue Winnipeg, Manitoba

Geoff Kerr ATTN

PROJECT NO. 123317463-4

7 REPORT NO.

DATE SAMPLED: 2025.Jan.09 SAMPLED BY:

R3E 2P1

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2025.Feb.04

Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

CLIENT FIELD ID

BH-240, 0.8 m, Simpson Ave. STANTEC SAMPLE NO. 5631

LIQUID LIMIT

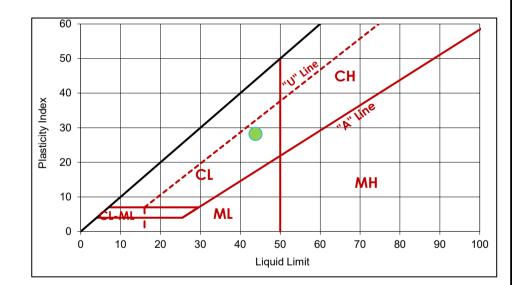
TRIAL BLOWS MC (%)

LIQUID LIMIT				
1	2			
27	26			
44	43			

PLASTIC LIMIT TRIAL 2 MC (%)

LIQUID LIMIT, LL PLASTIC LIMIT, PL PLASTICITY INDEX, PI AS REC'D MC (%)

44	
16	
28	
21.0	



COMMENTS No comments.

REPORT DATE 2025.Feb.06 **REVIEWED BY**

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

Winnipeg, Manitoba

104 - 1155 Pacific Avenue

R3E 2P1

PROJECT NO. 123317463-4

Geoff Kerr ATTN

REPORT NO.

DATE SAMPLED: 2025.Jan.09 SAMPLED BY:

Stantec Consulting Ltd.

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2025.Feb.04

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Kailash Vaghjiyani

MATERIAL IDENTIFICATION

CLIENT FIELD ID

BH-241, 0.8 m, Simpson Ave.

STANTEC SAMPLE NO. 5632

LIQUID LIMIT

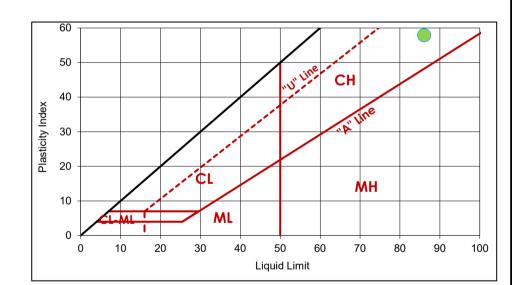
TRIAL BLOWS MC (%)

1	2
26	25
86	86

	PLASTIC LIMIT			
TRIAL	1	2		
MC (%)	28	28		

LIQUID LIMIT, LL PLASTIC LIMIT, PL PLASTICITY INDEX, PI AS REC'D MC (%)

86	
28	
58	
29.7	



COMMENTS No comments.

REPORT DATE 2025.Feb.06 **REVIEWED BY**

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

104 - 1155 Pacific Avenue

Winnipeg, Manitoba

PROJECT NO. 123317463-4

ATTN Geoff Kerr

REPORT NO. 1

R3E 2P1

DATE SAMPLED: 2025.Jan.09

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2025.Jan.27

SAMPLED BY:

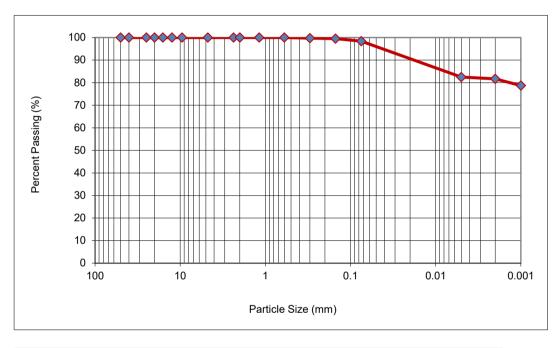
Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-234. 0.6 m, Riverton Ave. STANTEC SAMPLE NO. 5625



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	100.0
0.600	100.0
0.300	99.8
0.150	99.5
0.075	98.4
0.005	82.5
0.002	81.7
0.001	78.7

Gravel	Sand			Silt	Clay	Colloids
Glavei	Coarse	Medium	Fine	Sill Clay	Colloius	
0.0	0.0	0.1	1.5	16.7	81.7	78.7

COMMENTS

No comments.

REPORT DATE 2025.Feb.06

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO City of Winnipeg, Public Works Dept.

PROJECT 2025 Local Street Renewal Program

104 - 1155 Pacific Avenue

Contract 4

Winnipeg, Manitoba R3E 2P1

PROJECT NO. 123317463-4

ATTN Geoff Kerr

2 REPORT NO.

DATE SAMPLED: 2025.Jan.09 SAMPLED BY:

Stantec Consulting Ltd.

DATE RECEIVED: 2025.Jan.09

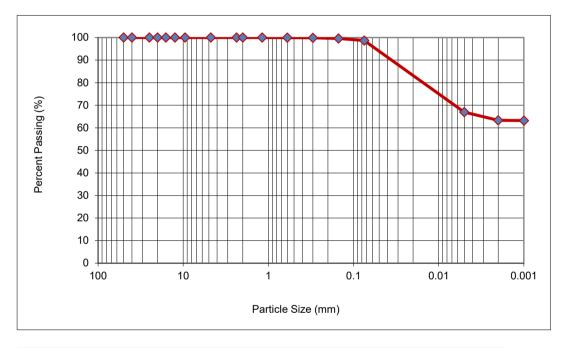
DATE TESTED: 2025.Jan.27

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-235. 0.7 m, Riverton Ave. STANTEC SAMPLE NO. 5626



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	100.0
0.600	100.0
0.300	99.9
0.150	99.6
0.075	98.7
0.005	67.0
0.002	63.3
0.001	63.2

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine	Silt	Sill Clay	Colloids
0.0	0.0	0.1	1.2	35.4	63.3	63.2

COMMENTS

No comments.

REPORT DATE 2025.Feb.06

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO City of Winnipeg, Public Works Dept.

PROJECT 2025 Local Street Renewal Program

104 - 1155 Pacific Avenue

Contract 4

Winnipeg, Manitoba

R3E 2P1

SAMPLED BY:

PROJECT NO. 123317463-4

ATTN Geoff Kerr

REPORT NO. 3

DATE SAMPLED: 2025.Jan.09

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2025.Jan.24

Stantec Consulting Ltd. S

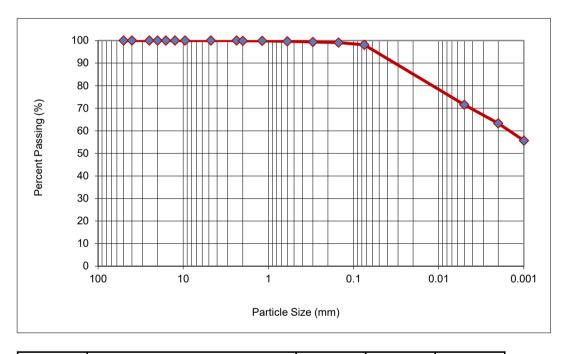
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-236. 0.6 m, Riverton Ave.

STANTEC SAMPLE NO. 5627



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	99.9
1.18	99.9
0.600	99.7
0.300	99.4
0.150	99.1
0.075	98.1
0.005	71.6
0.002	63.3
0.001	55.7

Gravel	Sand		Silt	Clay	Colloids	
Glavei	Coarse	Medium	Fine	SIIL	Clay	Colloids
0.0	0.1	0.4	1.4	34.8	63.3	55.7

COMMENTS

No comments.

REPORT DATE 2025.Feb.06

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO City of Winnipeg, Public Works Dept.

PROJECT 2025 Local Street Renewal Program

104 - 1155 Pacific Avenue

Contract 4

Winnipeg, Manitoba

R3E 2P1

SAMPLED BY:

PROJECT NO. 123317463-4

ATTN Geoff Kerr

REPORT NO. 4

DATE SAMPLED: 2025.Jan.09

DATE RECEIVED: 2025.Jan.09

SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.27

TESTED BY:

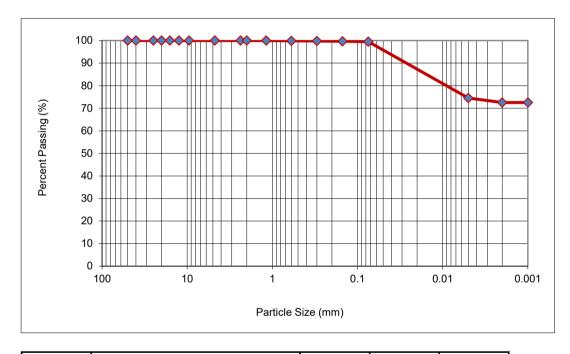
Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-237. 0.8 m, Simpson Ave.

Stantec Consulting Ltd.

STANTEC SAMPLE NO. 5628



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	100.0
0.600	99.9
0.300	99.8
0.150	99.7
0.075	99.6
0.005	74.5
0.002	72.5
0.001	72.5

Gravel	Sand			Silt	Clay	Colloids
Glavei	Coarse	Medium	Fine	SIIL	Clay	Colloids
0.0	0.0	0.2	0.2	27.1	72.5	72.5

COMMENTS

No comments.

REPORT DATE 2025.Feb.06

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

Winnipeg, Manitoba

R3E 2P1

104 - 1155 Pacific Avenue

PROJECT NO. 123317463-4

ATTN Geoff Kerr

REPORT NO. 5

DATE SAMPLED: 2025.Jan.09 SAMPLED BY:

Stantec Consulting Ltd.

DATE RECEIVED: 2025.Jan.09

SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Jan.27

TESTED BY:

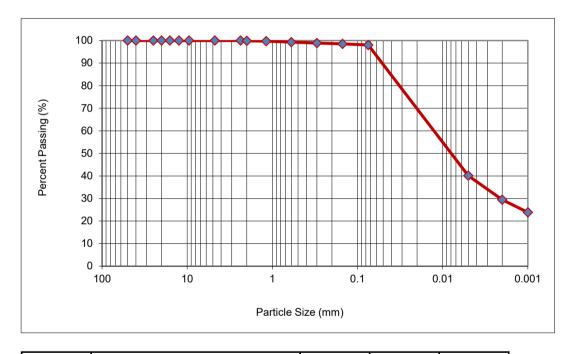
Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID

BH-238. 0.8 m, Simpson Ave.

STANTEC SAMPLE NO. 5629



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	99.9
1.18	99.7
0.600	99.3
0.300	98.9
0.150	98.6
0.075	98.0
0.005	40.1
0.002	29.5
0.001	23.9

Gravel	Sand			Silt	Clay	Colloids
Glavei	Coarse	Medium	Fine	SIIL	Clay	Colloids
0.0	0.1	0.8	1.1	68.5	29.5	23.9

COMMENTS

No comments.

REPORT DATE 2025.Feb.06

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

104 - 1155 Pacific Avenue Winnipeg, Manitoba

R3E 2P1

PROJECT NO. 123317463-4

ATTN Geoff Kerr

REPORT NO.

DATE SAMPLED: 2025.Jan.09

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2025.Jan.24

SAMPLED BY:

Stantec Consulting Ltd.

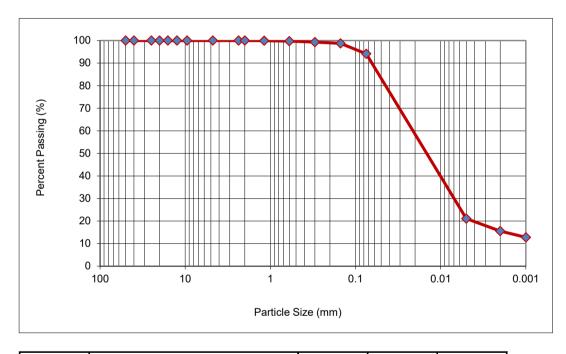
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY:

Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-239. 0.8 m, Simpson Ave. STANTEC SAMPLE NO. 5630



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	99.9
0.600	99.7
0.300	99.3
0.150	98.7
0.075	94.1
0.005	21.1
0.002	15.6
0.001	12.8

Gravel	Sand			Silt	Clay	Colloids
Glavei	Coarse	Medium	Fine	SIIL	Clay	Colloius
0.0	0.0	0.5	5.4	78.5	15.6	12.8

COMMENTS

No comments.

REPORT DATE 2025.Feb.06

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO City of Winnipeg, Public Works Dept.

PROJECT

2025 Local Street Renewal Program

Contract 4

104 - 1155 Pacific Avenue Winnipeg, Manitoba

R3E 2P1

PROJECT NO. 123317463-4

ATTN Geoff Kerr

REPORT NO. 7

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2025.Jan.27

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Rimanshi Gorasiya

MATERIAL IDENTIFICATION

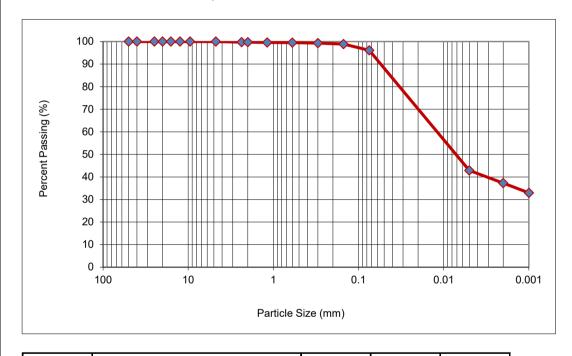
DATE SAMPLED: 2025.Jan.09

SAMPLED BY:

CLIENT FIELD ID BH-240. 0.8 m, Simpson Ave.

Stantec Consulting Ltd.

STANTEC SAMPLE NO. 5631



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	99.8
2.00	99.7
1.18	99.6
0.600	99.5
0.300	99.3
0.150	98.9
0.075	96.1
0.005	42.9
0.002	37.3
0.001	33.0

Gravel	Sand			Silt	Clay	Colloids
Glavei	Coarse	Medium	Fine	Sill	Clay	Colloids
0.0	0.3	0.3	3.3	58.8	37.3	33.0

COMMENTS

No comments.

REPORT DATE 2025.Feb.06

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



ASTM D7928 - PARTICLE-SIZE DISTRIBUTION OF FINE-GRAINED SOILS USING THE SEDIMENTATION ANALYSIS

TO City of Winnipeg, Public Works Dept. PROJECT

2025 Local Street Renewal Program

Contract 4

Winnipeg, Manitoba

104 - 1155 Pacific Avenue

R3E 2P1 PROJECT NO. 123317463-4

ATTN Geoff Kerr REPORT NO. 8

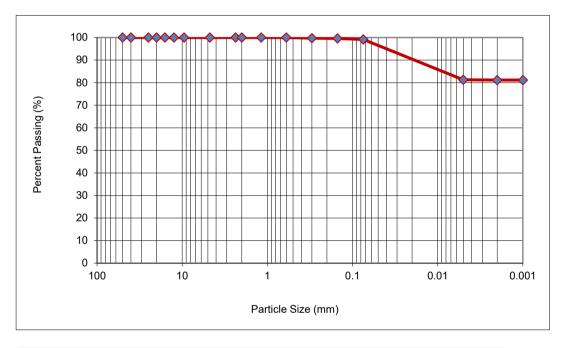
DATE SAMPLED: 2025.Jan.09 DATE RECEIVED: 2025.Jan.09 DATE TESTED: 2025.Jan.27

SAMPLED BY: Stantec Consulting Ltd. SUBMITTED BY: Stantec Consulting Ltd. TESTED BY: Rimanshi Gorasiya

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-241. 0.8 m, Simpson Ave.

STANTEC SAMPLE NO. 5632



Sieve Size (mm)	% Passing
50.0	100.0
40.0	100.0
25.0	100.0
20.0	100.0
16.0	100.0
12.5	100.0
9.5	100.0
4.75	100.0
2.36	100.0
2.00	100.0
1.18	100.0
0.600	100.0
0.300	99.8
0.150	99.6
0.075	99.2
0.005	81.3
0.002	81.2
0.001	81.2

Gravel	Sand			Silt	Clay	Colloids
Glavei	Coarse	Medium	Fine	SIIL	Clay	Colloids
0.0	0.0	0.1	0.7	18.0	81.2	81.2

COMMENTS

No comments.

REPORT DATE 2025.Feb.06

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services





PROCTOR TEST REPORT

City of Winnipeg 104 - 1155 Pacific Ave. Winnipeg, MB R3E 2P1

CLIENT City of Winnipeg

ATTN: Geoff Kerr PROJECT 2025 Local Street Renewal Program

PROJECT NO. 123317463-4 - Contract 4

PROCTOR NO. DATE SAMPLED DATE RECEIVED 2025.Jan.07 2025.Jan.07 DATE TESTED 2025.Jan.31

INSITU MOISTURE 17.9 % COMPACTION STANDARD Standard Proctor, ASTM

TESTED BY Donald Eliazar

MATERIAL IDENTIFICATION

MAJOR COMPONENT Subgrade

Fat Clay (CH) SIZE **DESCRIPTION**

Existing Materials SUPPLIER

SOURCE BH-234, 0.6 m (Riverton Ave)

COMPACTION PROCEDURE

RAMMER TYPE **PREPARATION**

OVERSIZE CORRECTION METHOD RETAINED 4.75mm SCREEN

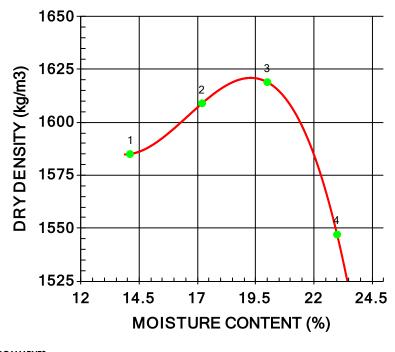
D698

A: 101.6mm Mold,

Passing 4.75mm

Manual Moist

None N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1808	1585	14.1
2	1886	1609	17.2
3	1943	1619	20.0
4	1903	1547	23.0

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1620	19.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5625

Page 1 of 1 2025.Feb.06 Stantec Consulting Ltd.





PROCTOR TEST REPORT

City of Winnipeg 104 - 1155 Pacific Ave. Winnipeg, MB R3E 2P1

CLIENT City of Winnipeg

ATTN: Geoff Kerr PROJECT 2025 Local Street Renewal Program

PROJECT NO. 123317463-4 - Contract 4

PROCTOR NO. DATE SAMPLED DATE RECEIVED 2025.Jan.07 2025.Jan.07 DATE TESTED 2025.Jan.31

INSITU MOISTURE 16.9 % COMPACTION STANDARD Standard Proctor, ASTM

TESTED BY Donald Eliazar

MATERIAL IDENTIFICATION

MAJOR COMPONENT Subgrade

SIZE Fat Clay (CH) **DESCRIPTION**

SUPPLIER Existing Materials

SOURCE BH-235, 0.7 m (Riverton Ave)

COMPACTION PROCEDURE

RAMMER TYPE

PREPARATION OVERSIZE CORRECTION METHOD RETAINED 4.75mm SCREEN

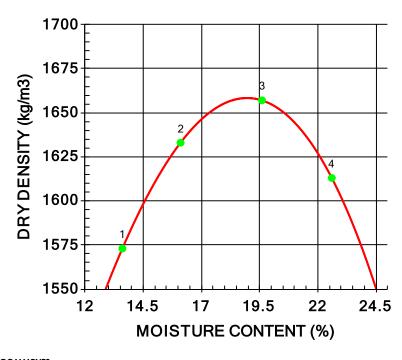
D698

A: 101.6mm Mold,

Passing 4.75mm

Manual Moist None

N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1787	1573	13.6
2	1896	1633	16.1
3	1982	1657	19.6
4	1977	1613	22.6

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1660	19.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5626.

Page 1 of 1 2025.Feb.06 Stantec Consulting Ltd.





PROCTOR TEST REPORT

City of Winnipeg 104 - 1155 Pacific Ave. Winnipeg, MB R3E 2P1

CLIENT City of Winnipeg

ATTN: Geoff Kerr PROJECT 2025 Local Street Renewal Program

PROJECT NO. 123317463-4 - Contract 4

PROCTOR NO. DATE SAMPLED DATE RECEIVED 2025.Jan.07 2025.Jan.07 DATE TESTED 2025.Jan.31

INSITU MOISTURE 15.0 % COMPACTION STANDARD Standard Proctor, ASTM

TESTED BY Donald Eliazar

MATERIAL IDENTIFICATION

MAJOR COMPONENT Subgrade

SIZE Fat Clay (CH) **DESCRIPTION**

SUPPLIER Existing Materials

SOURCE BH-236, 0.6 m (Riverton Ave)

COMPACTION PROCEDURE

RAMMER TYPE **PREPARATION**

OVERSIZE CORRECTION METHOD RETAINED 4.75mm SCREEN

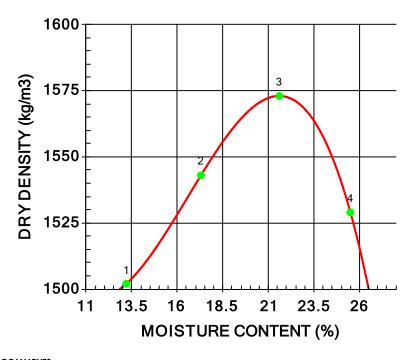
A: 101.6mm Mold,

Passing 4.75mm

Manual Moist

D698

None N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1700	1502	13.2
2	1810	1543	17.3
3	1913	1573	21.6
4	1919	1529	25.5

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1570	21.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5627.

Page 1 of 1 2025.Feb.06 Stantec Consulting Ltd.





PROCTOR TEST REPORT

City of Winnipeg 104 - 1155 Pacific Ave. Winnipeg, MB R3E 2P1

CLIENT City of Winnipeg

ATTN: Geoff Kerr PROJECT 2025 Local Street Renewal Program

PROJECT NO. 123317463-4 - Contract 4

MATERIAL IDENTIFICATION

PROCTOR NO. DATE SAMPLED DATE RECEIVED 2025.Jan.07 2025.Jan.07 DATE TESTED 2025.Jan.31

INSITU MOISTURE 20.5 % COMPACTION STANDARD Standard Proctor, ASTM

TESTED BY Doanld Eliazar

MAJOR COMPONENT Subgrade

SIZE Fat Clay (CH)

DESCRIPTION SUPPLIER Existing Materials

SOURCE BH-237, 0.8 m (Simpson Ave)

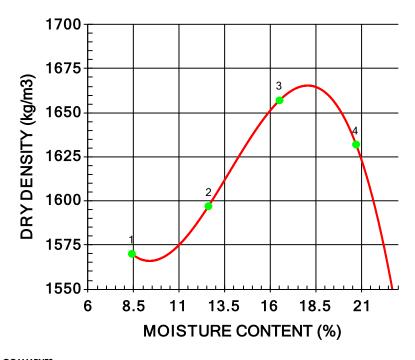
D698

COMPACTION PROCEDURE A: 101.6mm Mold,

Passing 4.75mm

RAMMER TYPE Manual **PREPARATION** Moist OVERSIZE CORRECTION METHOD None

RETAINED 4.75mm SCREEN N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1702	1570	8.4
2	1798	1597	12.6
3	1930	1657	16.5
4	1970	1632	20.7

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1660	18.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5628.

Page 1 of 1 REVIEWED BY: 2025.Feb.06 Stantec Consulting Ltd.





PROCTOR TEST REPORT

City of Winnipeg 104 - 1155 Pacific Ave. Winnipeg, MB R3E 2P1

CLIENT City of Winnipeg

ATTN: Geoff Kerr PROJECT 2025 Local Street Renewal Program

PROJECT NO. 123317463-4 - Contract 4

PROCTOR NO. DATE SAMPLED DATE RECEIVED 2024.Jan.09 2024.Jan.09 DATE TESTED 2024.Feb.05

INSITU MOISTURE 23.7 % COMPACTION STANDARD Standard Proctor, ASTM

TESTED BY Donald Eliazar

MATERIAL IDENTIFICATION

MAJOR COMPONENT Subgrade

Lean Clay (CL) SIZE **DESCRIPTION**

SUPPLIER Existing Materials

SOURCE BH-238, 0.8 m (Simpson Ave)

COMPACTION PROCEDURE

RAMMER TYPE **PREPARATION** OVERSIZE CORRECTION METHOD

RETAINED 4.75mm SCREEN

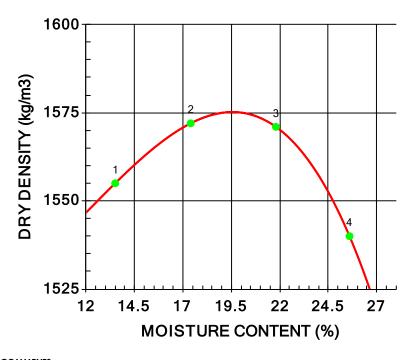
D698

A: 101.6mm Mold,

Passing 4.75mm

Manual Moist None

N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1765	1555	13.5
2	1845	1572	17.4
3	1913	1571	21.8
4	1934	1540	25.6

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1580	19.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5629.

Page 1 of 1 2025.Feb.06

Stantec Consulting Ltd.





PROCTOR TEST REPORT

City of Winnipeg 104 - 1155 Pacific Ave. Winnipeg, MB R3E 2P1 CLIENT City of Winnipeg C.C.

ATTN: Geoff Kerr PROJECT 2025 Local Street Renewal Program

PROJECT NO. 123317463-4 - Contract 4

PROCTOR NO. 6 DATE SAMPLED 2025.Jan.09 DATE RECEIVED 2025.Jan.09 DATE TESTED 2025.Feb.05

INSITU MOISTURE 20.4 % COMPACTION STANDARD Standard Proctor, ASTM

TESTED BY Donald Eliazar

MATERIAL IDENTIFICATION

MAJOR COMPONENT Subgrade

SIZE Lean Clay (CL)

DESCRIPTION Lean Clay (

SUPPLIER Existing Materials

SOURCE BH-239, 0.8 m (Simpson Ave)

COMPACTION PROCEDURE

LOMPACTION PROCEDURE

RAMMER TYPE
PREPARATION

OVERSIZE CORRECTION METHOD RETAINED 4.75mm SCREEN

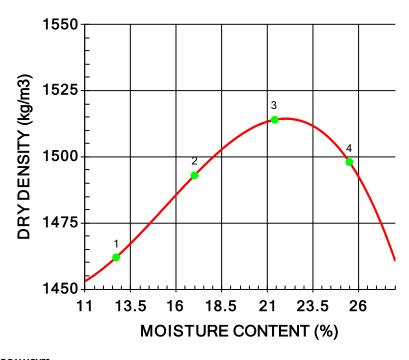
Standard Proctor, AS D698

A: 101.6mm Mold,

Passing 4.75mm

Manual Moist

None N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	moisture Content (%)
1	1648	1462	12.7
2	1747	1493	17.0
3	1838	1514	21.4
4	1880	1498	25.5

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1510	22.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5630.

Page 1 of 1

2025.Feb.06

Stantec Consulting Ltd.

REVIEWED BY:

Jason Thompson, C.E.T.





PROCTOR TEST REPORT

City of Winnipeg 104 - 1155 Pacific Ave. Winnipeg, MB R3E 2P1

CLIENT City of Winnipeg

ATTN: Geoff Kerr PROJECT 2025 Local Street Renewal Program

PROJECT NO. 123317463-4 - Contract 4

PROCTOR NO. DATE SAMPLED DATE RECEIVED 2025.Jan.09 2025.Jan.09 DATE TESTED 2025.Feb.05

INSITU MOISTURE 18.6 % COMPACTION STANDARD Standard Proctor, ASTM

TESTED BY Donald Eliazar

MATERIAL IDENTIFICATION

MAJOR COMPONENT Subgrade

Lean Clay (CL) SIZE **DESCRIPTION**

SUPPLIER Existing Materials

SOURCE BH-240, 0.8 m (Simpson Ave)

COMPACTION PROCEDURE

RETAINED 4.75mm SCREEN

RAMMER TYPE **PREPARATION** OVERSIZE CORRECTION METHOD

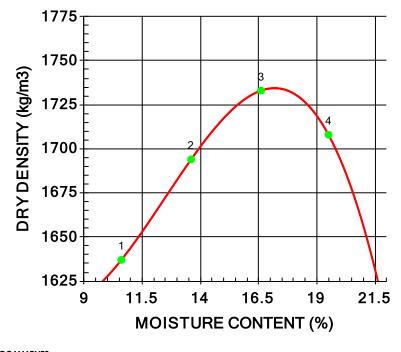
A: 101.6mm Mold,

Passing 4.75mm

Manual Moist

D698

None N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)		
1	1810	1637	10.6		
2	1924	1694	13.6		
3	2021	1733	16.6		
4	2041	1708	19.5		

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1730	17.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5631.

Page 1 of 1 2025.Feb.06

Stantec Consulting Ltd.





PROCTOR TEST REPORT

City of Winnipeg 104 - 1155 Pacific Ave. Winnipeg, MB R3E 2P1

CLIENT City of Winnipeg

ATTN: Geoff Kerr PROJECT 2025 Local Street Renewal Program

PROJECT NO. 123317463-4 - Contract 4

PROCTOR NO. DATE SAMPLED DATE RECEIVED 2025.Jan.09 2025.Jan.09 DATE TESTED 2025.Feb.07

INSITU MOISTURE 14.7 % COMPACTION STANDARD Standard Proctor, ASTM

TESTED BY Donald Eliazar

MATERIAL IDENTIFICATION

MAJOR COMPONENT Subgrade

SIZE Fat Clay (CH)

DESCRIPTION SUPPLIER Existing Materials

SOURCE BH-241, 0.8 m (Simpson Ave)

COMPACTION PROCEDURE

RAMMER TYPE **PREPARATION** OVERSIZE CORRECTION METHOD RETAINED 4.75mm SCREEN

D698

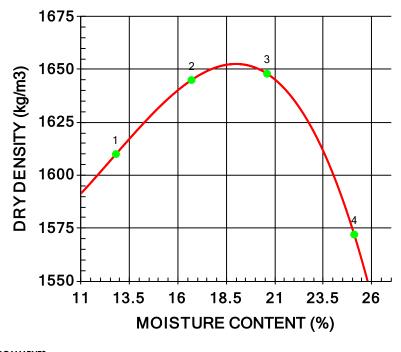
A: 101.6mm Mold,

Passing 4.75mm

Manual Moist

None

N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)	
1	1816	1610	12.8	
2	1920	1645	16.7	
3	1988	1648	20.6	
4	1967	1572	25.1	

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1650	19.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 5632.

Page 1 of 1

2025.Feb.07

Stantec Consulting Ltd.

REVIEWED BY:

Jason Thompson, C.E.T.



TO City of Winnipeg, Public Works Dept. PROJECT 2025 Local Street Renewals Program

104 - 1155 Pacific Avenue Contract 4

Winnipeg, Manitoba

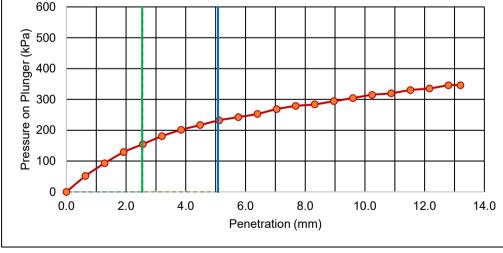
R3E 3P1 PROJECT NO. 123317463-4

ATTN Geoff Kerr REPORT NO. 1

DATE SAMPLED: 2025.Jan.09 DATE RECEIVED: 2025.Jan.09 DATE TESTED: 2025.Feb.04

SAMPLED BY: Larry Presado TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION	١									
MATERIAL USE	Subgrade			SUPPL	IER			Exist	ing Mater	rial
MAX. NOMINAL SIZE	< 4.75 mm			SOURC	Œ			In Sit	u	
MATERIAL TYPE	Fat Clay (CH)			SAMPL	E LOC	ATION		BH-2	n - Riverton Ave.	
SPECIFICATION ID	Not Applicable			STANT	EC SA	MPLE	NO.	5625		
IMMERSION PERIOD	96 ± 2 hr			TARGE	T MAX	(. DRY	DENS	SITY		1620 kg/m ³
CONDITION OF SAMPLE	Soaked			TARGET OPTIMUM MOISTURE				19.5 %		
SURCHARGE MASS	4.54 kg									
+19 mm OVERSIZE		0 %		AS-CO	MPAC	TED DF	RY DE	NSIT	Y	1541 kg/m ³
SWELL OF SAMPLE		3.87 %		AS-CO	MPAC	TED M	OISTU	JRE		19.4 %
POST-TEST MOISTURE		28.9 %		AS-CO	MPAC	TED %	COM	PACT	ION	95 %
600										
000										CBR VALUE AT 2.54 mm
(e) 500			$\sqcup \bot$							PENETRATION
			1							2.2



CBR VALUE AT 5.08 mm PENETRATION 2.3

COMMENTS

Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698. As per ASTM D1883 10.2, the sample should be re-run to confirm the higher CBR value at 5.08 mm.

REPORT DATE 2025.Feb.10

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept. PROJECT 2025 Local Street Renewals Program

104 - 1155 Pacific Avenue Contract 4

Winnipeg, Manitoba

R3E 3P1 PROJECT NO. 123317463-4

ATTN Geoff Kerr REPORT NO. 2

DATE SAMPLED: 2025.Jan.09 DATE RECEIVED: 2025.Jan.09 DATE TESTED: 2025.Feb.04

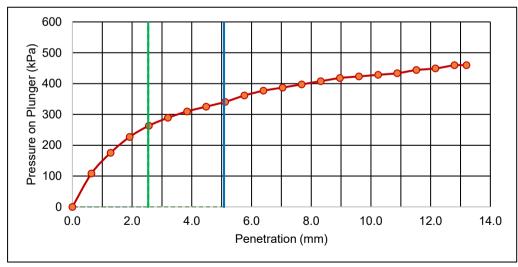
SAMPLED BY: Larry Presado TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION	ON		
MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	In Situ
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-235, 0.7 m - Riverton Ave.
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5626
IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DEN	NSITY 1660 kg/m ³

IMMERSION PERIOD 96 ± 2 hr TARGET MAX. DRY DENSITY 1660 kg/r
CONDITION OF SAMPLE Soaked TARGET OPTIMUM MOISTURE 19.0 %

SURCHARGE MASS 4.54 kg

+19 mm OVERSIZE 0 % AS-COMPACTED DRY DENSITY 1577 kg/m 3 SWELL OF SAMPLE 2.86 % AS-COMPACTED MOISTURE 19.0 % POST-TEST MOISTURE 24.1 % AS-COMPACTED % COMPACTION 95 %



CBR VALUE AT 2.54 mm PENETRATION 3.8

CBR VALUE AT 5.08 mm PENETRATION 3.4

COMMENTS

Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Feb.10 REVIEWED BY Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept. **PROJECT** 2025 Local Street Renewals Program

104 - 1155 Pacific Avenue Contract 4

Winnipeg, Manitoba

R3E 3P1 PROJECT NO. 123317463-4

ATTN Geoff Kerr REPORT NO. 3

DATE SAMPLED: 2025.Jan.09 DATE RECEIVED: 2025.Jan.09 DATE TESTED: 2025.Feb.04

SAMPLED BY: Larry Presado SUBMITTED BY: Larry Presado **TESTED BY:** Donald Eliazar MATERIAL IDENTIFICATION

Subgrade **Existing Material** MATERIAL USE **SUPPLIER**

MAX. NOMINAL SIZE < 4.75 mm SOURCE In Situ

Fat Clay (CH) BH-236, 0.6 m - Riverton Ave. MATERIAL TYPE SAMPLE LOCATION

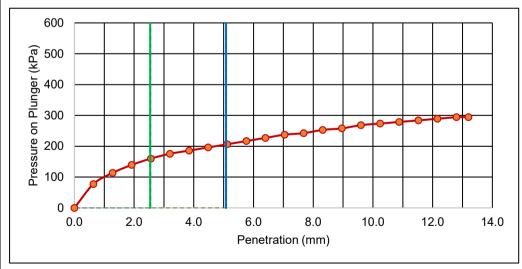
Not Applicable SPECIFICATION ID STANTEC SAMPLE NO. 5627

96 ± 2 hr IMMERSION PERIOD TARGET MAX. DRY DENSITY 1570 kg/m³

21.5 % CONDITION OF SAMPLE Soaked TARGET OPTIMUM MOISTURE

4.54 kg SURCHARGE MASS

+19 mm OVERSIZE 0 % AS-COMPACTED DRY DENSITY 1490 kg/m³ 4.40 % 21.6 % SWELL OF SAMPLE AS-COMPACTED MOISTURE POST-TEST MOISTURE 30.8 % AS-COMPACTED % COMPACTION 95 %



CBR VALUE AT 2.54 mm **PENETRATION** 2.3

CBR VALUE AT 5.08 mm **PENETRATION** 2.1

COMMENTS

Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Feb.10 **REVIEWED BY** Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept. **PROJECT** 2025 Local Street Renewals Program

104 - 1155 Pacific Avenue Contract 4

Winnipeg, Manitoba

R3E 3P1 PROJECT NO. 123317463-4

ATTN Geoff Kerr REPORT NO.

DATE SAMPLED: 2025.Jan.09 DATE RECEIVED: 2025.Jan.09 DATE TESTED: 2025.Feb.11

SAMPLED BY: Larry Presado SUBMITTED BY: Larry Presado **TESTED BY:** Donald Eliazar

MATERIAL IDENTIFICATION

Subgrade **Existing Material** MATERIAL USE **SUPPLIER**

MAX. NOMINAL SIZE < 4.75 mm SOURCE In Situ

Fat Clay (CH) BH-237, 0.8 m - Simpson Ave. MATERIAL TYPE SAMPLE LOCATION

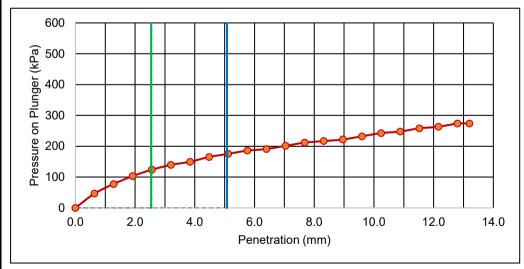
Not Applicable SPECIFICATION ID STANTEC SAMPLE NO. 5628

96 ± 2 hr IMMERSION PERIOD TARGET MAX. DRY DENSITY 1660 kg/m³

CONDITION OF SAMPLE Soaked TARGET OPTIMUM MOISTURE 18.0 %

4.54 kg SURCHARGE MASS

+19 mm OVERSIZE 0 % AS-COMPACTED DRY DENSITY 1575 kg/m³ 3.83 % 18.1 % SWELL OF SAMPLE AS-COMPACTED MOISTURE POST-TEST MOISTURE 25.1 % AS-COMPACTED % COMPACTION 95 %



CBR VALUE AT 2.54 mm **PENETRATION** 1.8

CBR VALUE AT 5.08 mm **PENETRATION** 1.7

COMMENTS

Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Feb.18 **REVIEWED BY**

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept. PROJECT 2025 Local Street Renewals Program

104 - 1155 Pacific Avenue Contract 4

Winnipeg, Manitoba

R3E 3P1 PROJECT NO. 123317463-4

ATTN Geoff Kerr REPORT NO. 5

DATE SAMPLED: 2025.Jan.09 DATE RECEIVED: 2025.Jan.09 DATE TESTED: 2025.Feb.11

SAMPLED BY: Larry Presado SUBMITTED BY: Larry Presado TESTED BY: Donald Eliaza

AMPLED BY: Larry Presado SUBMITTED BY: Larry Presado TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE Subgrade SUPPLIER Existing Material

MAX. NOMINAL SIZE < 4.75 mm SOURCE In Situ

MATERIAL TYPE Lean Clay (CL) SAMPLE LOCATION BH-238, 0.8 m - Simpson Ave.

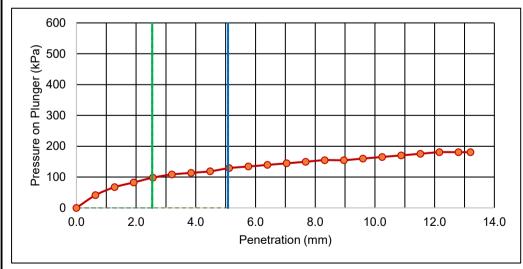
SPECIFICATION ID Not Applicable STANTEC SAMPLE NO. 5629

IMMERSION PERIOD 96 \pm 2 hr TARGET MAX. DRY DENSITY 1580 kg/m³

CONDITION OF SAMPLE Soaked TARGET OPTIMUM MOISTURE 19.5 %

SURCHARGE MASS 4.54 kg

+19 mm OVERSIZE 0 % AS-COMPACTED DRY DENSITY 1502 kg/m 3 SWELL OF SAMPLE 7.09 % AS-COMPACTED MOISTURE 19.4 % POST-TEST MOISTURE 34.4 % AS-COMPACTED % COMPACTION 95 %



CBR VALUE AT 2.54 mm PENETRATION 1.4

CBR VALUE AT 5.08 mm PENETRATION

1.3

COMMENTS

Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Feb.18

REVIEWED BY Guillaun

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept. PROJECT 2025 Local Street Renewals Program

104 - 1155 Pacific Avenue Contract 4

Winnipeg, Manitoba

R3E 3P1 PROJECT NO. 123317463-4

ATTN Geoff Kerr REPORT NO. 6

DATE SAMPLED: 2025.Jan.09 DATE RECEIVED: 2025.Jan.09 DATE TESTED: 2025.Feb.11

SAMPLED BY: Larry Presado SUBMITTED BY: Larry Presado TESTED BY: Donald Eliazar

SAMPLED BY: Larry Presado SUBMITTED BY: Larry Presado TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE Subgrade SUPPLIER Existing Material

MAX. NOMINAL SIZE < 4.75 mm SOURCE In Situ

MATERIAL TYPE Lean Clay (CL) SAMPLE LOCATION BH-239, 0.8 m - Simpson Ave.

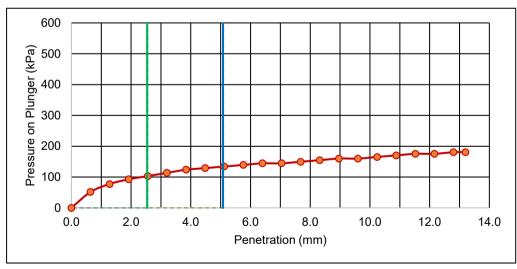
SPECIFICATION ID Not Applicable STANTEC SAMPLE NO. 5630

IMMERSION PERIOD 96 \pm 2 hr TARGET MAX. DRY DENSITY 1510 kg/m³

CONDITION OF SAMPLE Soaked TARGET OPTIMUM MOISTURE 22.0 %

SURCHARGE MASS 4.54 kg

+19 mm OVERSIZE 0 % AS-COMPACTED DRY DENSITY 1434 kg/m 3 SWELL OF SAMPLE 6.40 % AS-COMPACTED MOISTURE 22.1 % POST-TEST MOISTURE 37.2 % AS-COMPACTED % COMPACTION 95 %



CBR VALUE AT 2.54 mm PENETRATION 1.5

CBR VALUE AT 5.08 mm PENETRATION 1.3

COMMENTS

Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Feb.18

REVIEWED BY

Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept. PROJECT 2025 Local Street Renewals Program

104 - 1155 Pacific Avenue Contract 4

Winnipeg, Manitoba

R3E 3P1 PROJECT NO. 123317463-4

ATTN Geoff Kerr REPORT NO. 7

DATE SAMPLED: 2025.Jan.09 DATE RECEIVED: 2025.Jan.09 DATE TESTED: 2025.Feb.11

SAMPLED BY: Larry Presado TESTED BY: Donald Eliazar

SAMPLED BY: Larry Presado SUBMITTED BY: Larry Presado TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

AMATERIAL LIGHT Subgrado Subgrado Subgrado SUBBLIER Subgrado Subgrad

MATERIAL USE Subgrade SUPPLIER Existing Material

MAX. NOMINAL SIZE < 4.75 mm SOURCE In Situ

MATERIAL TYPE Lean Clay (CL) SAMPLE LOCATION BH-240, 0.8 m - Simpson Ave.

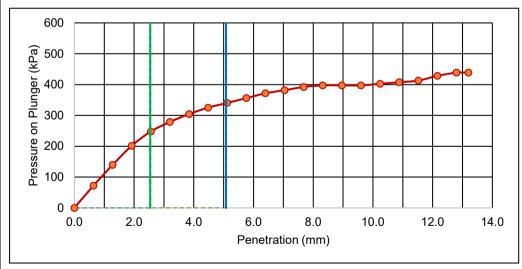
SPECIFICATION ID Not Applicable STANTEC SAMPLE NO. 5631

IMMERSION PERIOD 96 \pm 2 hr TARGET MAX. DRY DENSITY 1730 kg/m³

CONDITION OF SAMPLE Soaked TARGET OPTIMUM MOISTURE 17.0 %

SURCHARGE MASS 4.54 kg

+19 mm OVERSIZE 0 % AS-COMPACTED DRY DENSITY 1645 kg/m 3 SWELL OF SAMPLE 2.32 % AS-COMPACTED MOISTURE 16.9 % POST-TEST MOISTURE 23.4 % AS-COMPACTED % COMPACTION 95 %



CBR VALUE AT 2.54 mm PENETRATION 3.6

CBR VALUE AT 5.08 mm PENETRATION 3.4

COMMENTS

Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Feb.18 REVIEWED BY Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



TO City of Winnipeg, Public Works Dept. PROJECT 2025 Local Street Renewals Program

104 - 1155 Pacific Avenue Contract 4

Winnipeg, Manitoba

R3E 3P1 PROJECT NO. 123317463-4

ATTN Geoff Kerr REPORT NO. 8

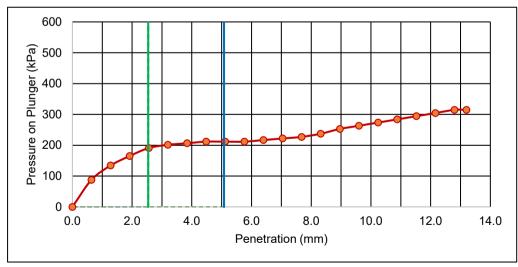
DATE SAMPLED: 2025.Jan.09 DATE RECEIVED: 2025.Jan.09 DATE TESTED: 2025.Feb.11
SAMPLED BY: Larry Presado TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION	ON		
MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	In Situ
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-241, 0.8 m - Simpson Ave.
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	5632

IMMERSION PERIOD96 ± 2 hrTARGET MAX. DRY DENSITY1650 kg/m³CONDITION OF SAMPLESoakedTARGET OPTIMUM MOISTURE19.0 %

SURCHARGE MASS 4.54 kg

+19 mm OVERSIZE 0 % AS-COMPACTED DRY DENSITY 1565 kg/m 3 SWELL OF SAMPLE 1.31 % AS-COMPACTED MOISTURE 19.2 % POST-TEST MOISTURE 25.2 % AS-COMPACTED % COMPACTION 95 %



CBR VALUE AT 2.54 mm PENETRATION 2.8

CBR VALUE AT 5.08 mm PENETRATION 2.1

COMMENTS

Sample prepared to 95% of the maximum dry density at the optimum moisture content as determined from ASTM D698.

REPORT DATE 2025.Feb.18 REVIEWED BY Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services



Core No.	Street	Diameter	Length	L/D Ratio	Correction Factor	Peak Load	Compressive Strength (MPa)		
NO.		(mm)	(mm)	Ratio	ractor	(kN)	Measured	Corrected	
242	Allan St	75.75	175.34	2.315	1.0000	150.56	33.41	33.41	
243	Allan St	75.76	117.76	1.554	0.9643	287.47	63.77	61.49	
244	Allan St	75.75	174.83	2.308	1.0000	204.03	45.27	45.27	
245	Allan St	75.80	150.48	1.985	0.9988	222.13	49.22	49.17	
246	Dunrobin Ave	75.75	151.97	2.006	1.0000	238.37	52.89	52.89	
247	Dunrobin Ave	75.73	146.12	1.929 0.9943 146.38		146.38	32.50	32.31	
248	Dunrobin Ave	Crumbly/fractured core; test cancelled							
249	Dunrobin Ave	75.73	148.47	1.961	0.9969	183.26	40.69	40.56	
250	Hershey St	75.71	131.83	1.741	0.9793	266.97	59.30	58.07	
251	Hershey St	75.77	89.11	1.176	0.9122	219.95	48.78	44.50	