

APPENDIX 'A' - GEOTECHNICAL REPORT

GEOTECHNICAL REPORTS FOR:

Dufferin Avenue from McGregor Street to Powers Street - Concrete Pavement Reconstruction
McGregor Street from Dufferin Avenue to Selkirk Avenue - Concrete Pavement Reconstruction

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.



Stantec Consulting Ltd.
199 Henlow Bay
Winnipeg MB R3Y 1G4

January 28, 2026

Project/File: 123317987

Erik Hansen
City of Winnipeg
1155 Pacific Avenue
Winnipeg, MB R3E 3P1

Good day Erik,

Reference: 2026 Local Street Renewal Program (Contract 5) - Geotechnical Investigation

Stantec Consulting Ltd. (Stantec) was retained to undertake a factual geotechnical investigation for the 2026 Local Street Renewal Program (Contract 5) in Winnipeg, Manitoba. Use of this report is subject to the Statement of General Conditions provided in **Appendix A**.

A coring and drilling program was conducted from December 1, 2026, to January 9, 2026. A total of 11 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 Paddock Drilling Ltd. under the supervision of Stantec's technologist. A Borehole Location Plan is provided in **Appendix B**.

1. Pavement Coring

A total of 11 pavement core samples were recovered to determine the in-place pavement thickness. The existing pavement thicknesses are summarized in **Table 1** below, and core photographs are provided in **Appendix C**.

2. Geotechnical Drilling

A total of 11 boreholes were investigated by geotechnical drilling. The boreholes were terminated at a depth of 2.5 m below the pavement, which resulted in borehole depths of ranging from 2.7 to 3.0 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, 2.0 m, and 2.5 m from the bottom of the existing pavement. The testholes were examined for evidence of sloughing and groundwater seepage upon completion of drilling.

Reference: 2026 Local Street Renewal Program (Contract 5) - 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. Pavement Thicknesses

The existing pavement thicknesses are provided in the following table:

Table 1 – Pavement Thicknesses

Borehole No.	Street	Asphalt (mm)	Concrete (mm)	Total (mm)
135	Dufferin Ave	150	100	250
136		125	115	240
137		180	200	380
138		180	270	450
139		170	180	350
140		180	220	400
141	McGregor St	130	170	300
142		200	160	360
143		200	210	410
144		150	210	360
145		110	180	290

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:

- 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.

Reference: 2026 Local Street Renewal Program (Contract 5) - Geotechnical Investigation

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
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Mobile: 204-898-8290
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Manitoba & Northwestern Ontario Operations
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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

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.

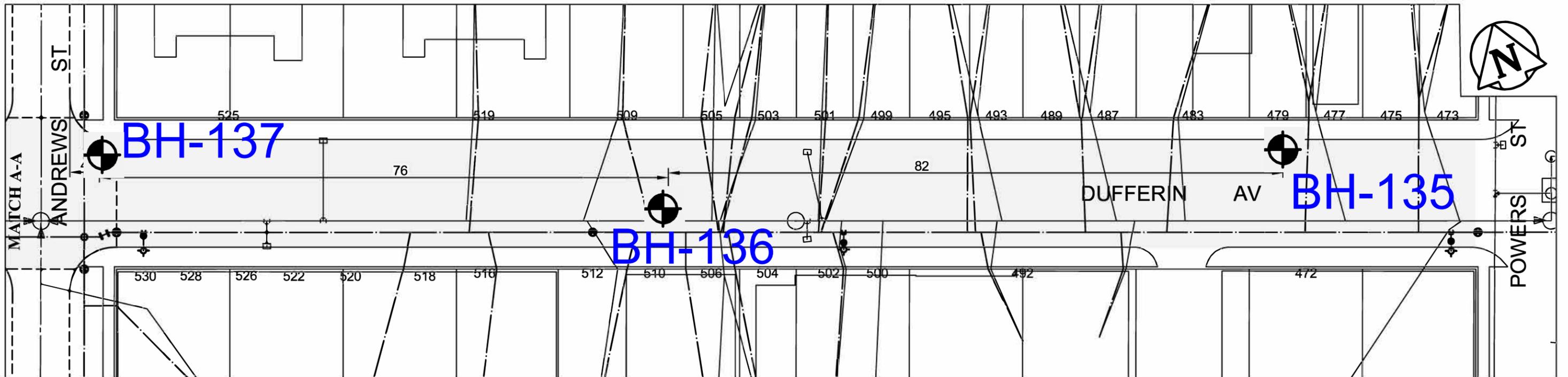
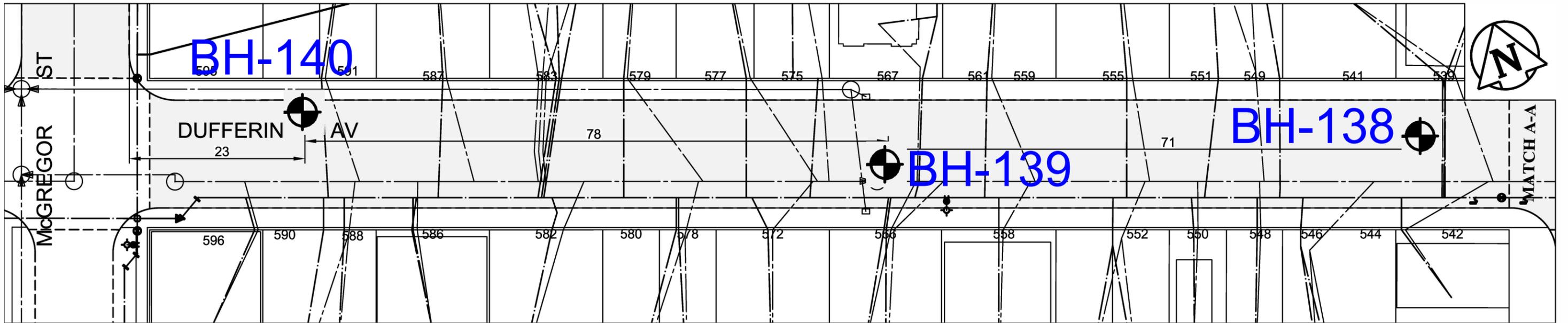
VARYING OR UNEXPECTED CONDITIONS: Should any site or subsurface conditions be encountered that are different from those described in this report or encountered at the test locations, Stantec must be notified immediately to assess if the varying or unexpected conditions are substantial and if reassessments 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.



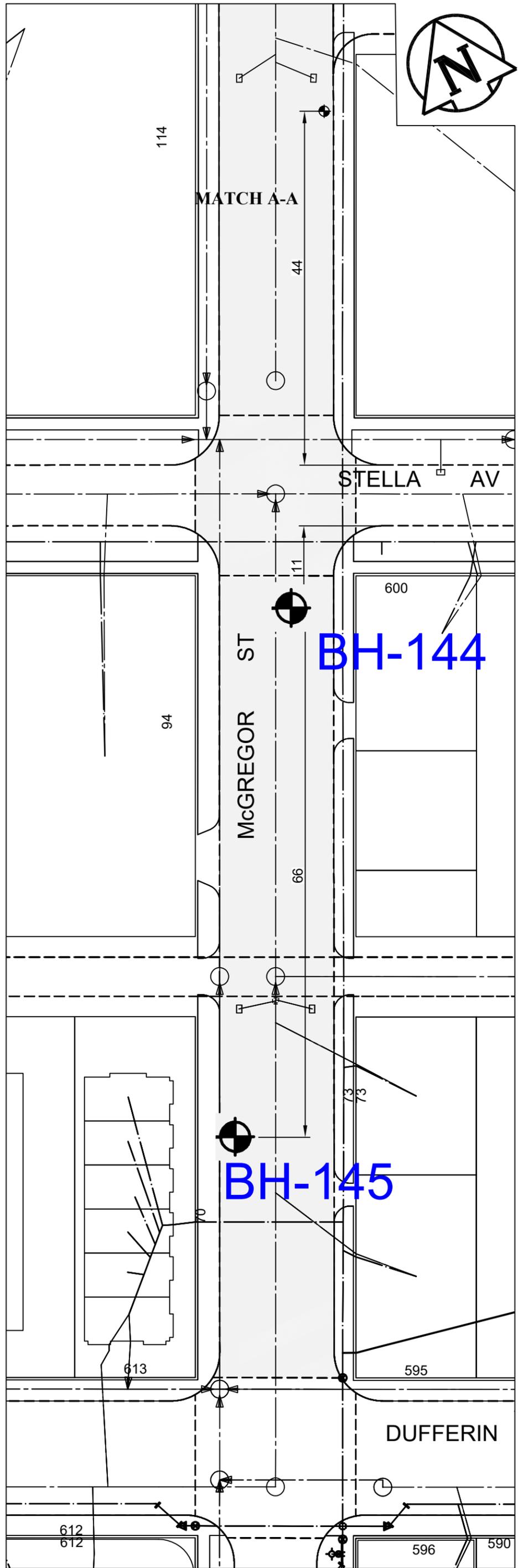
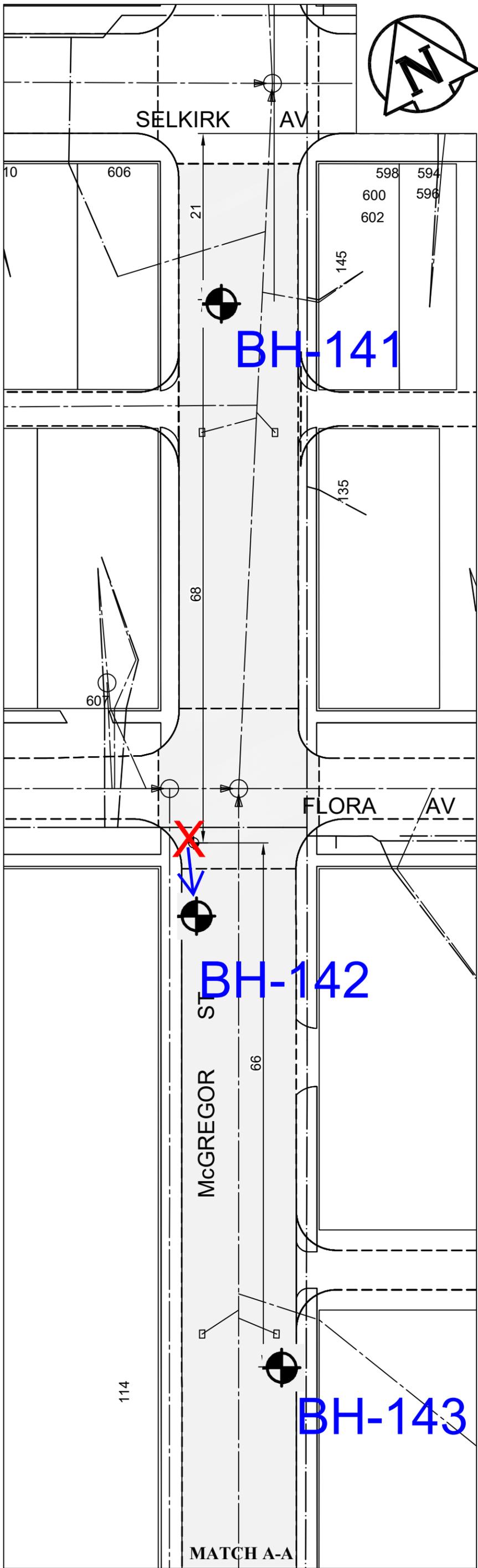
Appendix B

Borehole Location Plan



	LDS/WWS
	WATERMAIN
	TESTHOLE

NOTE- - DUFFERIN AVE - ALL FULL DEPTH GEOTECHNICAL CORES- DEPTH 2.5m - FOLLOW TABLE 2- BOREHOLES TESTING FREQUENCY	EXACT LOCATIONS OF TEST HOLES TO BE MARKED IN FIELD BY CONTRACT ADMINISTRATOR.	DATE: 10/07/2025	DRAWING NO.: 1 of 1	2026 LOCAL STREET RENEWAL PROGRAM CORING DRAWING - CONTRACT 5 DUFFERIN AV FROM MCGREGOR ST TO POWERS ST - RECONSTRUCTION
		DRAWN BY: K.D	SCALE: NTS	



	LDS/WWS	NOTE- - McGREGOR ST- ALL FULL DEPTH GEOTECHNICAL CORES- DEPTH 2.5m - FOLLOW TABLE 2- BOREHOLES TESTING FREQUENCY EXACT LOCATIONS OF TEST HOLES TO BE MARKED IN FIELD BY CONTRACT ADMINISTRATOR.	DATE: 10/07/2025	DRAWING NO.: 1 of 1	2026 LOCAL STREET RENEWAL PROGRAM CORING DRAWING - CONTRACT 5 McGREGOR ST FROM DUFFERIN ST TO SELKIRK AV - RECONSTRUCTION
	WATERMAIN		DRAWN BY: K.D	SCALE: NTS	
TESTHOLE					

Appendix C

Core Photographs



Figure 1 – BH-135 – Dufferin Ave



Figure 2 – BH-136 – Dufferin Ave



Figure 3 – BH-137 – Dufferin Ave



Figure 4 – BH-138 – Dufferin Ave

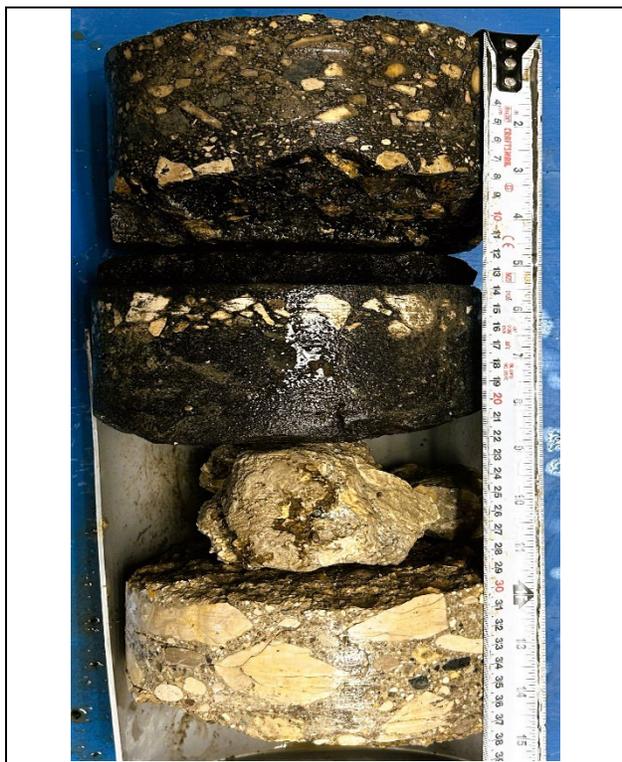


Figure 5– BH-139 – Dufferin Ave



Figure 6 – BH-140 – Dufferin Ave



Figure 7 – BH-141 – McGregor St



Figure 8 – BH-142 – McGregor St



Figure 9 – BH-143 – McGregor St



Figure 10 – BH-144 – McGregor St



Figure 11 – BH-145 – McGregor St

Appendix D

Borehole Records

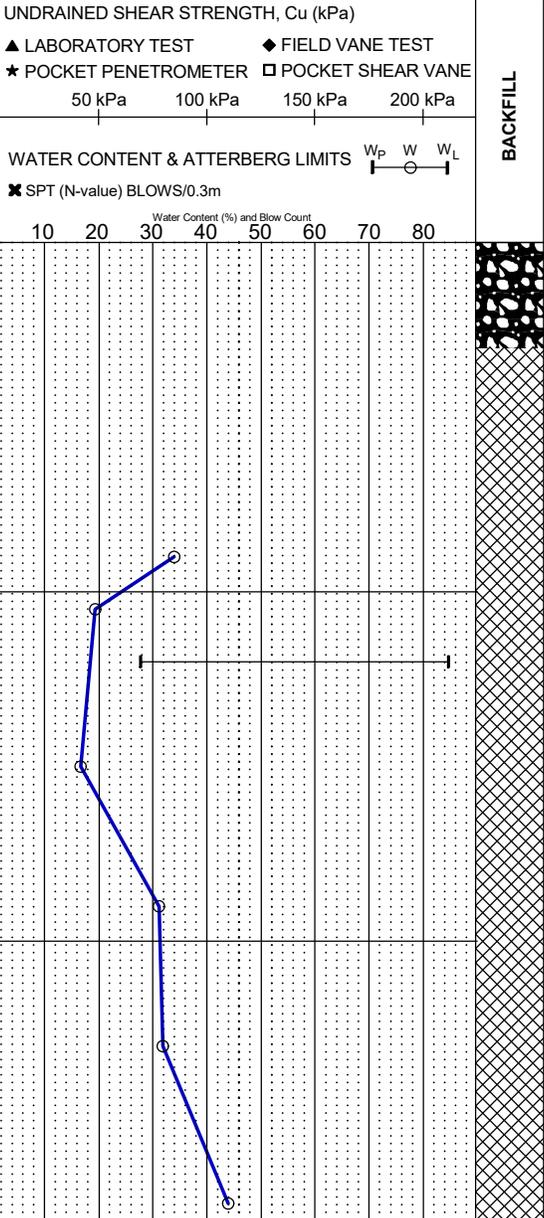
CLIENT: City of Winnipeg
 PROJECT: 2026 Local Street Renewal Program – Contract 5
 LOCATION: Dufferin Ave
 DATE BORED: January 09 2026

PROJECT NO.: 123317987
 BH ELEVATION: N/A
 DATUM: N/A

WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		50 kPa	100 kPa	150 kPa	200 kPa		
0		ASPHALT												
		CONCRETE												
		FILL: fine gravel, fine sand, granular materials, max aggregate size 19 mm - trace clay												
		Brown fat CLAY (CH) - silty, trace sand												
				AS	1									
				AS	2									
				BS	3									
		Tan SILT (ML) - some clay, trace sand												
				AS	4									
		Brown lean CLAY (CL) - some silt, trace sand												
				AS	5									
				AS	6									
		Grey fat CLAY (CH) - some silt												
				AS	7									
3		End of Borehole <ul style="list-style-type: none"> Borehole terminated at a depth of 2.8 m. No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual. 												

Sieve/Hydro at 1.1 m
 G S M C
 0% 1% 22% 78%



Printed Jan 26 2026 09:38:32 SOIL 123317987.GPJ 1/26/26

CLIENT: City of Winnipeg

PROJECT NO.: 123317987

PROJECT: 2026 Local Street Renewal Program – Contract 5

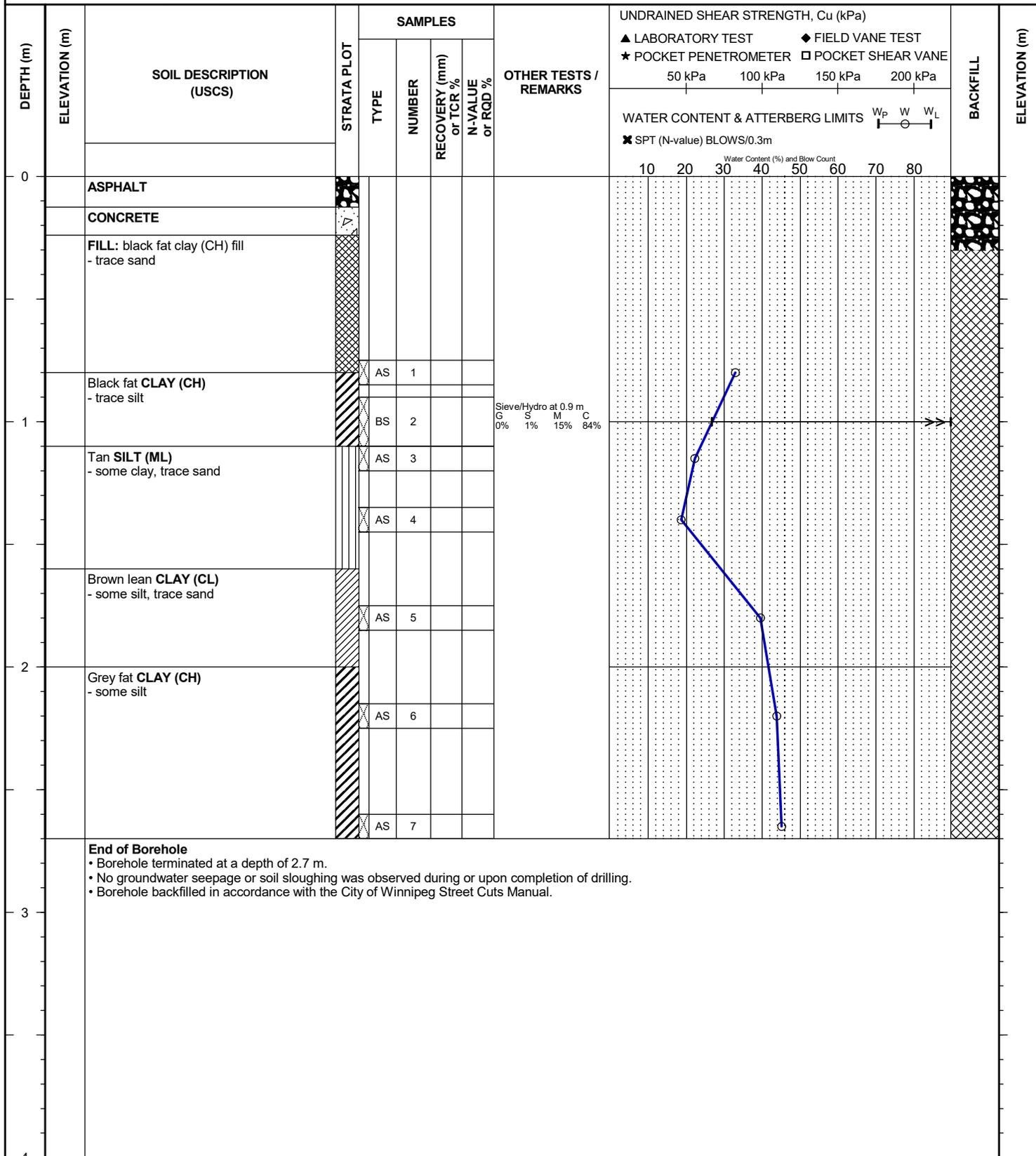
BH ELEVATION: N/A

LOCATION: Dufferin Ave

DATUM: N/A

DATE BORED: January 09 2026

WATER LEVEL: N/A



Sieve/Hydro at 0.9 m
 G S M C
 0% 1% 15% 84%

BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Paddock Drilling Ltd. Logged By: BM
 Drilling Method: 125 mm SSA Reviewed By: GB
 Completion Depth: 2.7 m Page 1 of 1

CLIENT: City of Winnipeg
 PROJECT: 2026 Local Street Renewal Program – Contract 5
 LOCATION: Dufferin Ave
 DATE BORED: January 09 2026

PROJECT NO.: 123317987
 BH ELEVATION: N/A
 DATUM: N/A

WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)								BACKFILL	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		50 kPa	100 kPa	150 kPa	200 kPa	WATER CONTENT & ATTERBERG LIMITS					
0		ASPHALT							▲ LABORATORY TEST ◆ FIELD VANE TEST ★ POCKET PENETROMETER □ POCKET SHEAR VANE ✖ SPT (N-value) BLOWS/0.3m Water Content (%) and Blow Count 									
		CONCRETE																
		FILL: fine gravel, fine sand, granular materials, max aggregate size 19 mm																
		FILL: black fat clay (CH) fill - trace sand																
1		Black SILT (ML) - some clay, trace sand		AS	1													
				AS	2													
				BS	3			Sieve/Hydro at 1.3 m G 0% S 1% M 89% C 11%										
				AS	4													
2		Brown lean CLAY (CL) - some clay, trace sand		AS	5													
				AS	6													
				AS	7													
3		End of Borehole • Borehole terminated at a depth of 2.9 m. • No groundwater seepage or soil sloughing was observed during or upon completion of drilling. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.																

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BACKFILL SYMBOL	ASPHALT	GROUT	CONCRETE
BENTONITE	DRILL CUTTINGS	SAND	SLOUGH

Drilling Contractor: Paddock Drilling Ltd.	Logged By: BM
Drilling Method: 125 mm SSA	Reviewed By: GB
Completion Depth: 2.9 m	Page 1 of 1

CLIENT: City of Winnipeg
 PROJECT: 2026 Local Street Renewal Program – Contract 5
 LOCATION: Dufferin Ave
 DATE BORED: January 09 2026

PROJECT NO.: 123317987
 BH ELEVATION: N/A
 DATUM: N/A

WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)				BACKFILL	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		50 kPa	100 kPa	150 kPa	200 kPa		
0		ASPHALT												
		CONCRETE												
		FILL: fine gravel, fine sand, granular materials, max aggregate size 19 mm												
		FILL: black fat clay (CH) fill - some silt, trace sand		AS	1									
		Brown lean CLAY (CL) - some silt		BS	2									
				AS	3									
		AS		AS	4									
				AS	5									
		Grey fat CLAY (CH) - some silt		AS	6									
				AS	7									
3		<p>End of Borehole</p> <ul style="list-style-type: none"> Borehole terminated at a depth of 3.0 m. No groundwater seepage or soil sloughing was observed during or upon completion of drilling. Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual. 												

Sieve/Hydro at 1.2 m
 G 0% S 1% M 16% C 84%

UNDRAINED SHEAR STRENGTH, Cu (kPa)
 ▲ LABORATORY TEST ◆ FIELD VANE TEST
 ★ POCKET PENETROMETER □ POCKET SHEAR VANE
 WATER CONTENT & ATTERBERG LIMITS W_P W W_L
 ✕ SPT (N-value) BLOWS/0.3m



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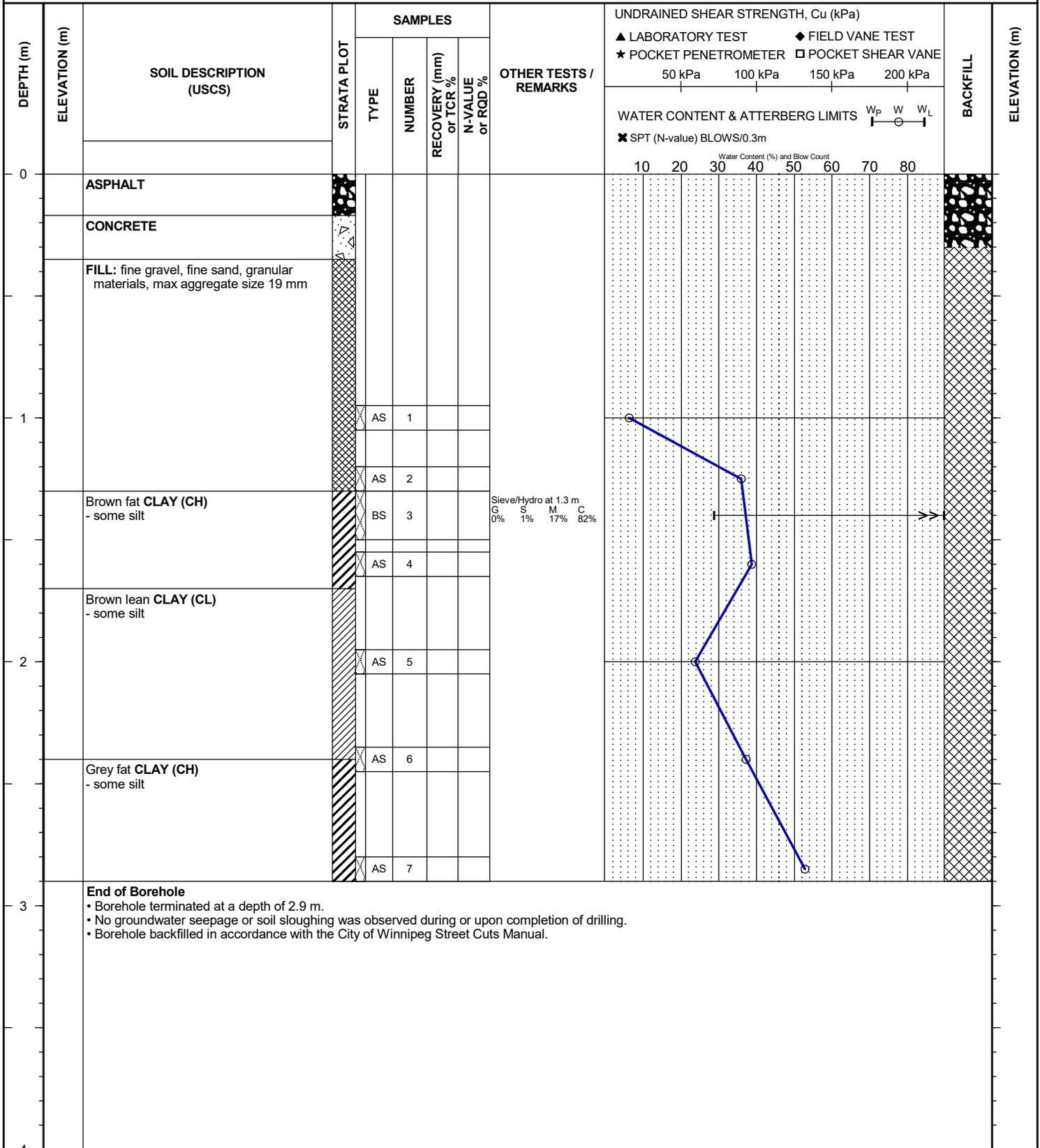
BACKFILL SYMBOL ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Paddock Drilling Ltd. Logged By: BM
 Drilling Method: 125 mm SSA Reviewed By: GB
 Completion Depth: 3 m Page 1 of 1

CLIENT: City of Winnipeg
 PROJECT: 2026 Local Street Renewal Program – Contract 5
 LOCATION: Dufferin Ave
 DATE BORED: December 17 2025

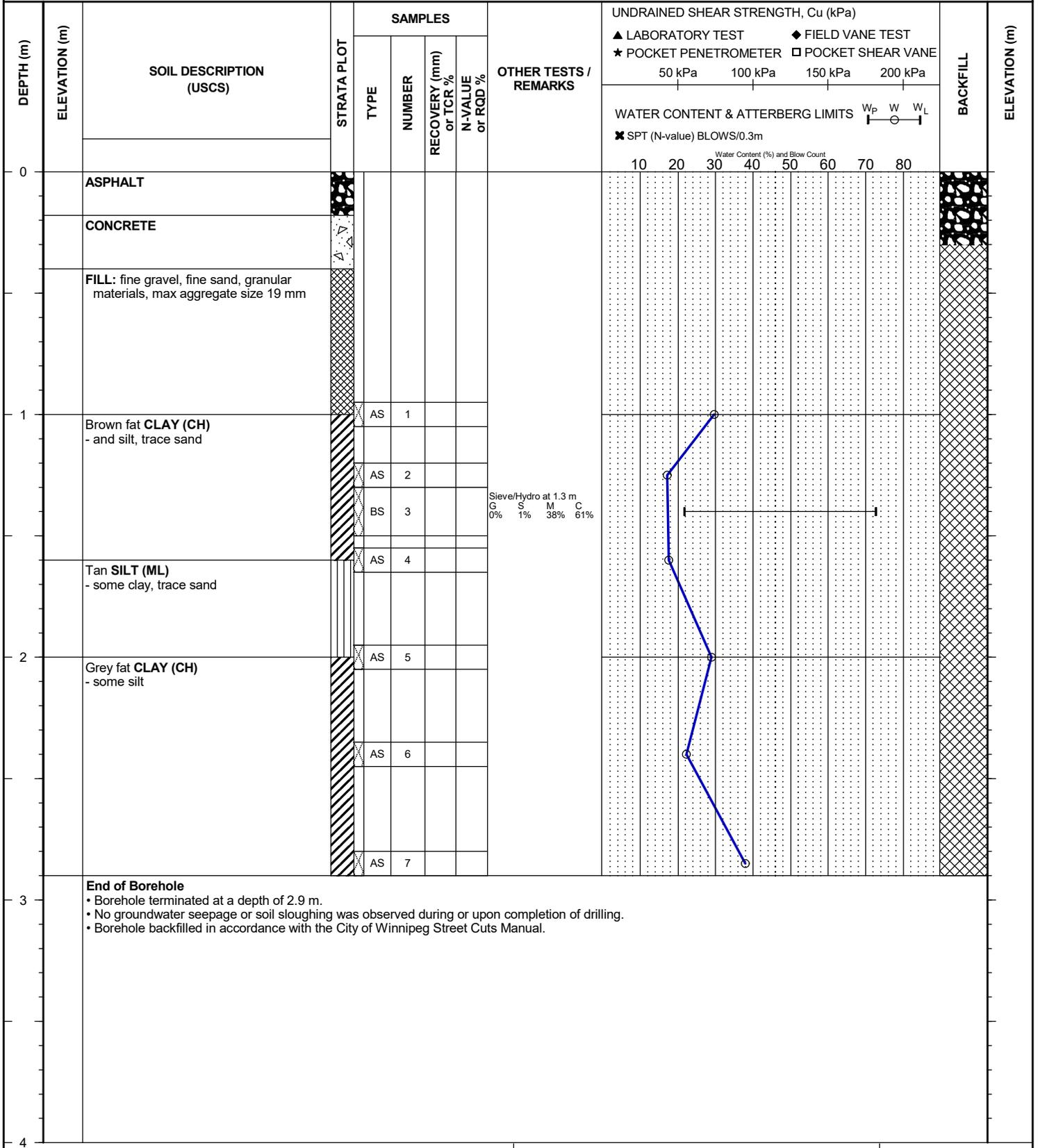
PROJECT NO.: 123317987
 BH ELEVATION: N/A
 DATUM: N/A

WATER LEVEL: N/A



CLIENT: City of Winnipeg
 PROJECT: 2026 Local Street Renewal Program – Contract 5
 LOCATION: Dufferin Ave
 DATE BORED: January 09 2026

PROJECT NO.: 123317987
 BH ELEVATION: N/A
 DATUM: N/A
 WATER LEVEL: N/A



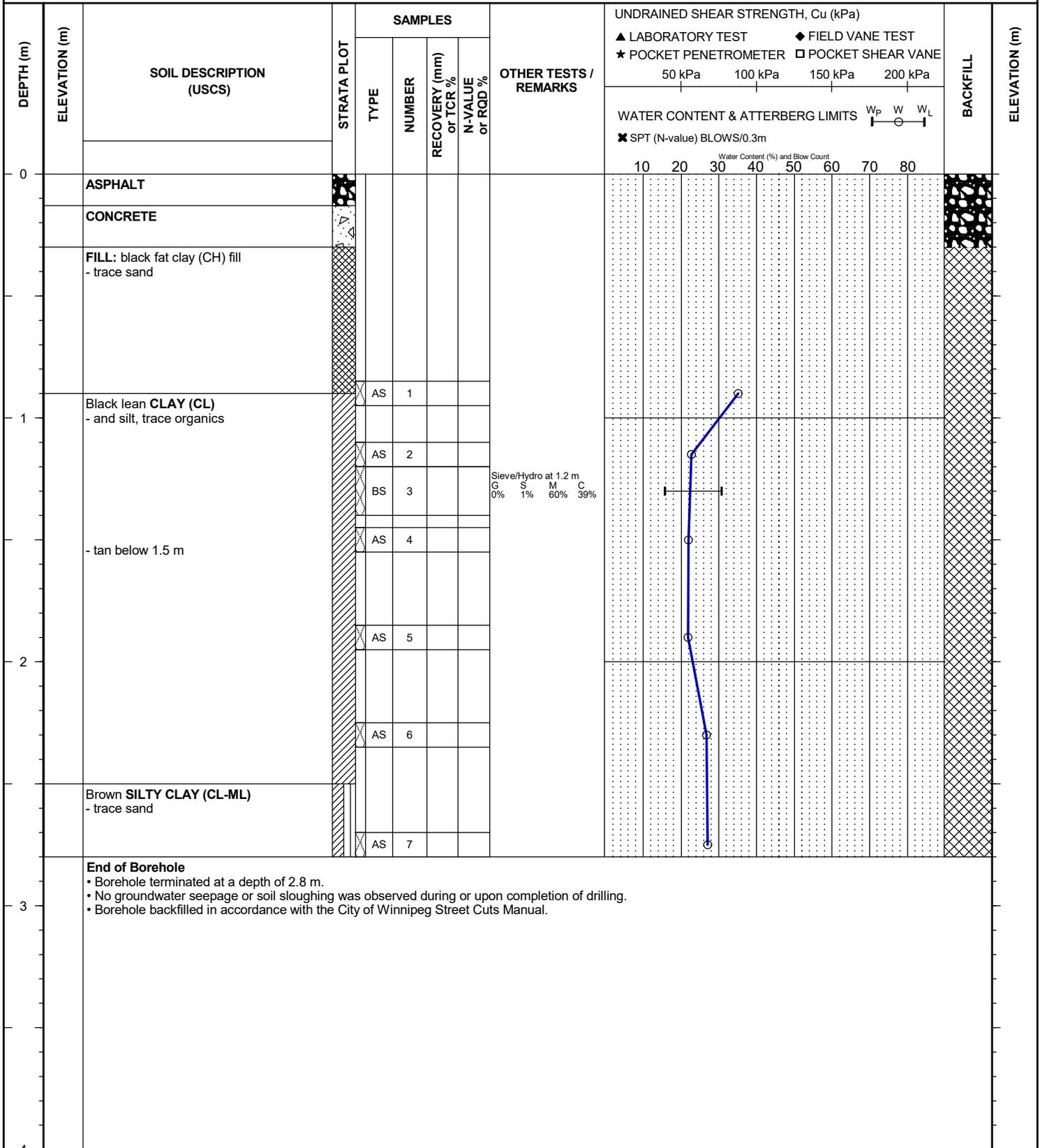
BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Paddock Drilling Ltd. Logged By: BM
 Drilling Method: 125 mm SSA Reviewed By: GB
 Completion Depth: 2.9 m Page 1 of 1

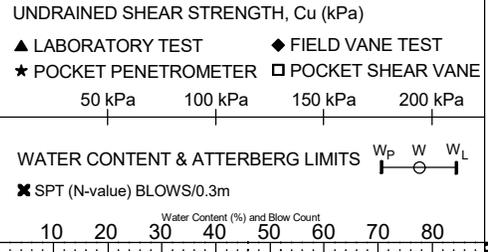
CLIENT: City of Winnipeg
 PROJECT: 2026 Local Street Renewal Program – Contract 5
 LOCATION: McGregor St
 DATE BORED: December 15 2025

PROJECT NO.: 123317987
 BH ELEVATION: N/A
 DATUM: N/A

WATER LEVEL: N/A



Sieve/Hydro at 1.2 m
 G 0% S 1% M 60% C 39%



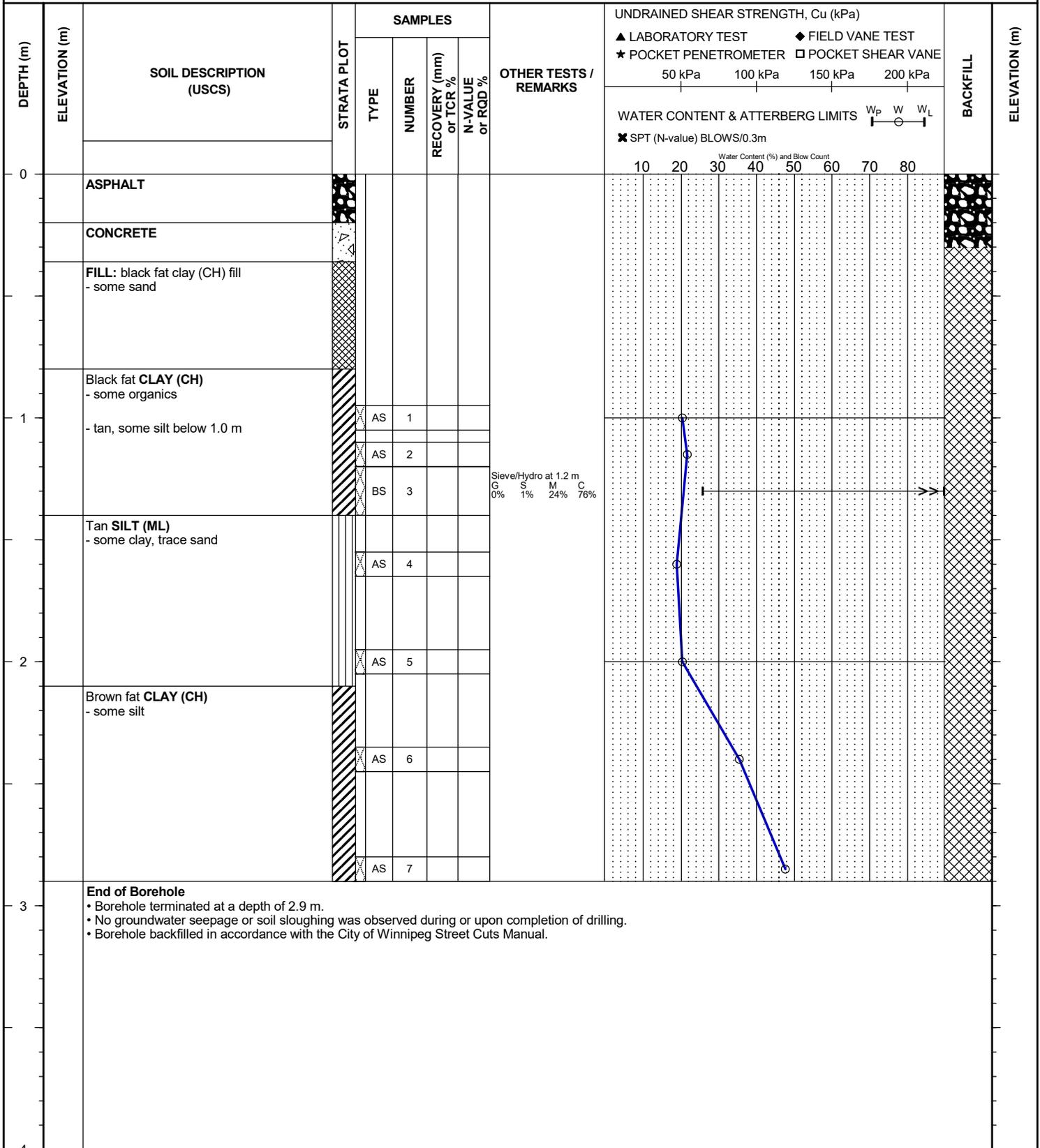
BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Paddock Drilling Ltd. Logged By: BM
 Drilling Method: 125 mm SSA Reviewed By: GB
 Completion Depth: 2.8 m Page 1 of 1

CLIENT: City of Winnipeg
 PROJECT: 2026 Local Street Renewal Program – Contract 5
 LOCATION: McGregor St
 DATE BORED: December 15 2025

PROJECT NO.: 123317987
 BH ELEVATION: N/A
 DATUM: N/A

WATER LEVEL: N/A

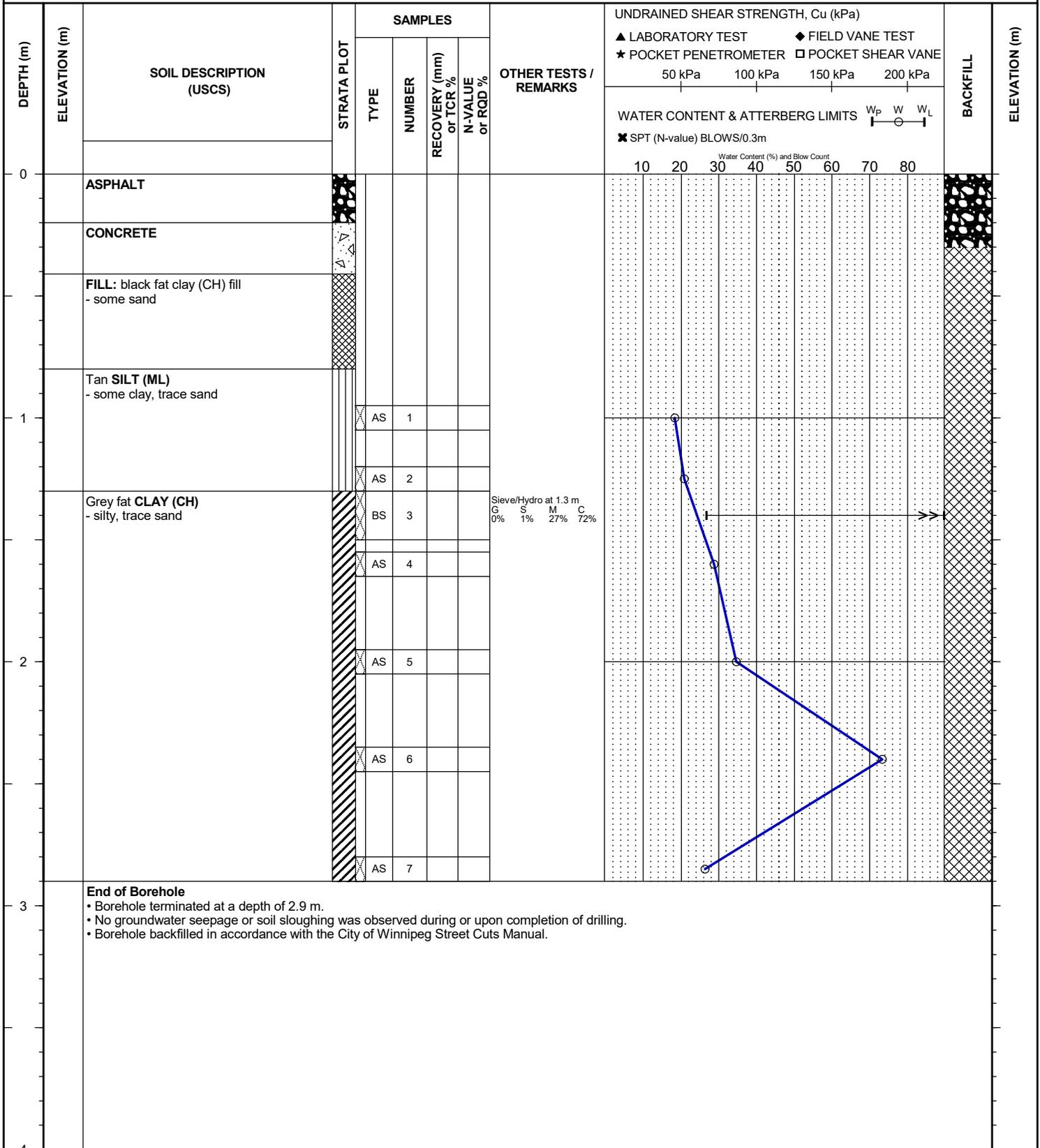


BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Paddock Drilling Ltd. Logged By: BM
 Drilling Method: 125 mm SSA Reviewed By: GB
 Completion Depth: 2.9 m Page 1 of 1

CLIENT: City of Winnipeg
 PROJECT: 2026 Local Street Renewal Program – Contract 5
 LOCATION: McGregor St
 DATE BORED: December 15 2025

PROJECT NO.: 123317987
 BH ELEVATION: N/A
 DATUM: N/A
 WATER LEVEL: N/A



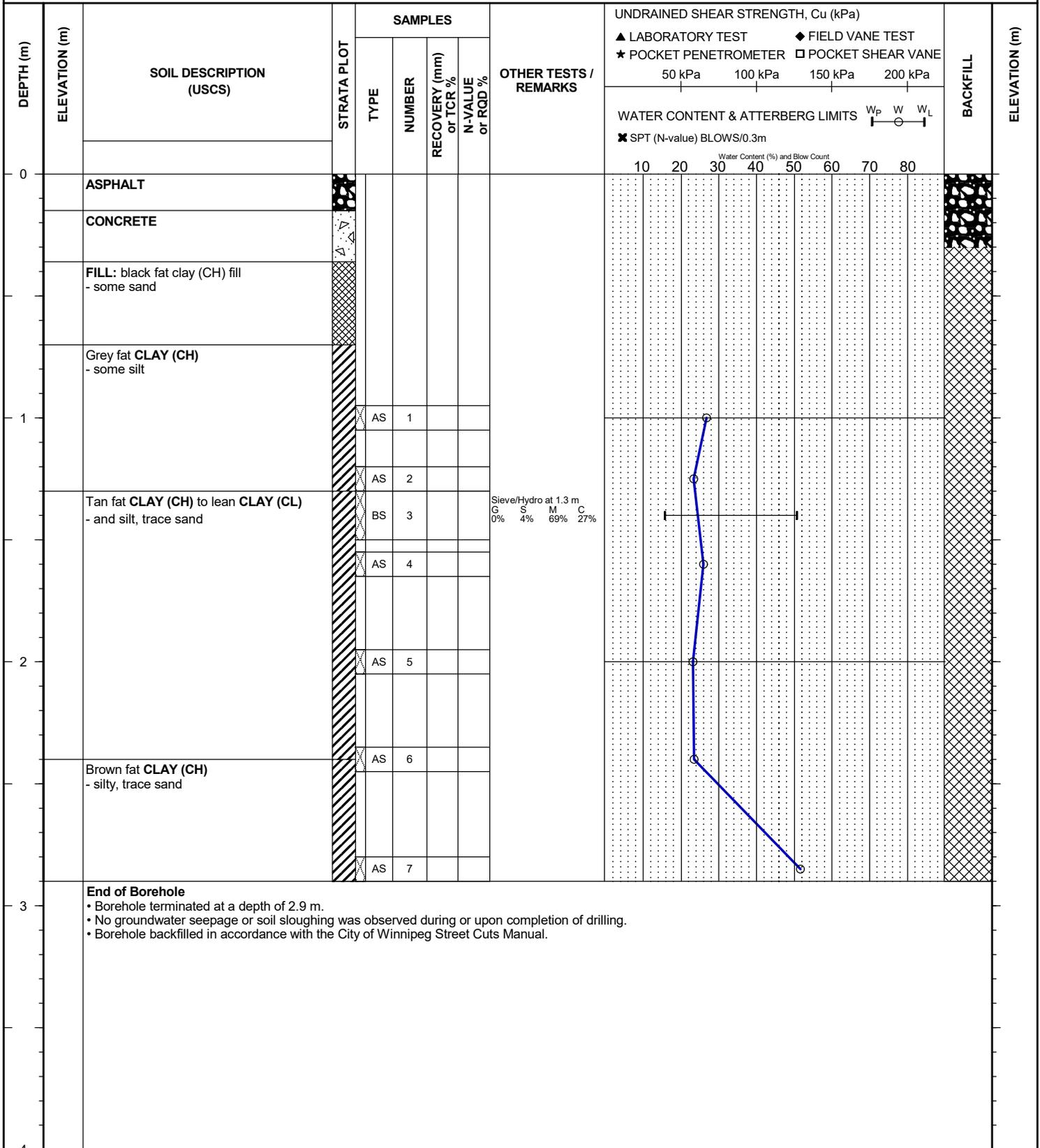
BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

Drilling Contractor: Paddock Drilling Ltd. Logged By: BM
 Drilling Method: 125 mm SSA Reviewed By: GB
 Completion Depth: 2.9 m Page 1 of 1

CLIENT: City of Winnipeg
 PROJECT: 2026 Local Street Renewal Program – Contract 5
 LOCATION: McGregor St
 DATE BORED: December 15 2025

PROJECT NO.: 123317987
 BH ELEVATION: N/A
 DATUM: N/A

WATER LEVEL: N/A



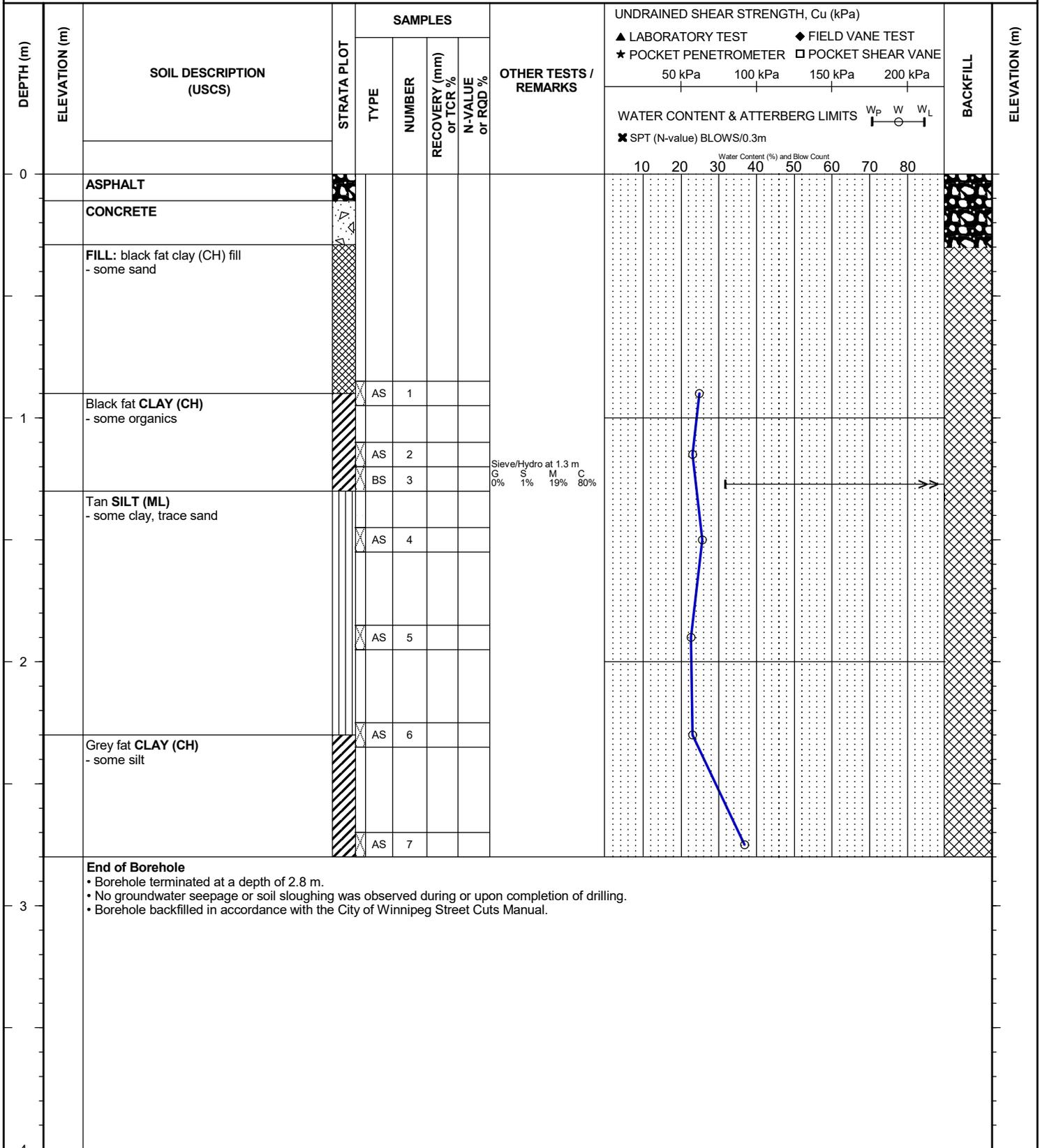
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BACKFILL SYMBOL: ASPHALT GROUT CONCRETE
 BENTONITE DRILL CUTTINGS SAND SLOUGH

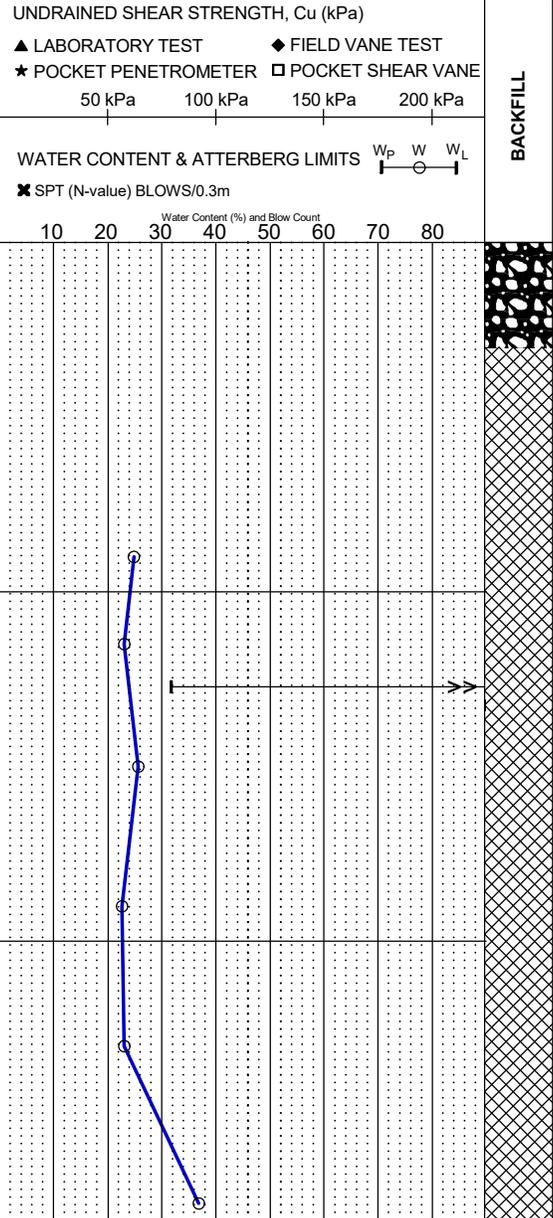
Drilling Contractor: Paddock Drilling Ltd.	Logged By: BM
Drilling Method: 125 mm SSA	Reviewed By: GB
Completion Depth: 2.9 m	Page 1 of 1

CLIENT: City of Winnipeg
 PROJECT: 2026 Local Street Renewal Program – Contract 5
 LOCATION: McGregor St
 DATE BORED: December 15 2025

PROJECT NO.: 123317987
 BH ELEVATION: N/A
 DATUM: N/A
 WATER LEVEL: N/A



Sieve/Hydro at 1.3 m
 G S M C
 0% 1% 19% 80%



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Appendix E

Laboratory Test Reports

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 1

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.15

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Madison Murphy

MATERIAL IDENTIFICATION

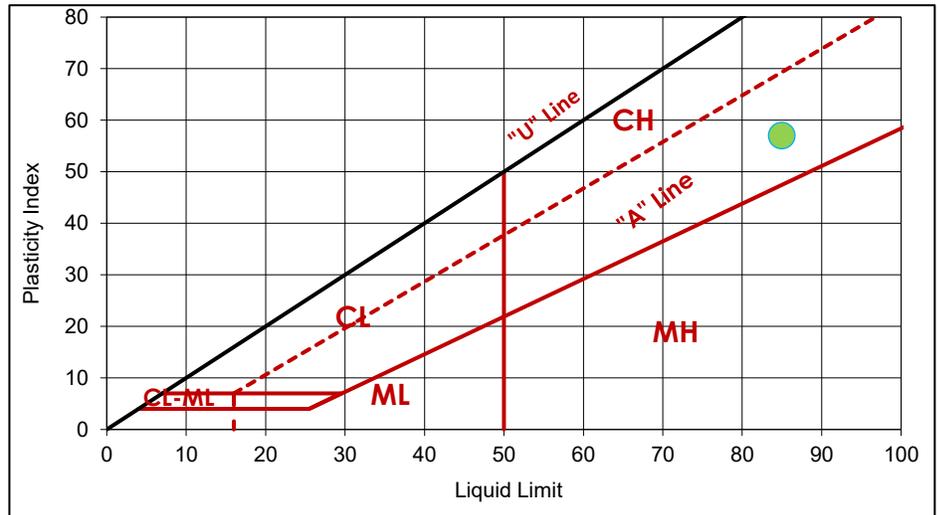
CLIENT FIELD ID BH-135, 1.2 m

STANTEC SAMPLE NO. 2709

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	22	22
MC (%)	87	87

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	28	28

LIQUID LIMIT, LL	85
PLASTIC LIMIT, PL	28
PLASTICITY INDEX, PI	57
AS REC'D MC (%)	19.9



COMMENTS

No comments.

REPORT DATE 2026.Jan.16


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 2

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.15

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

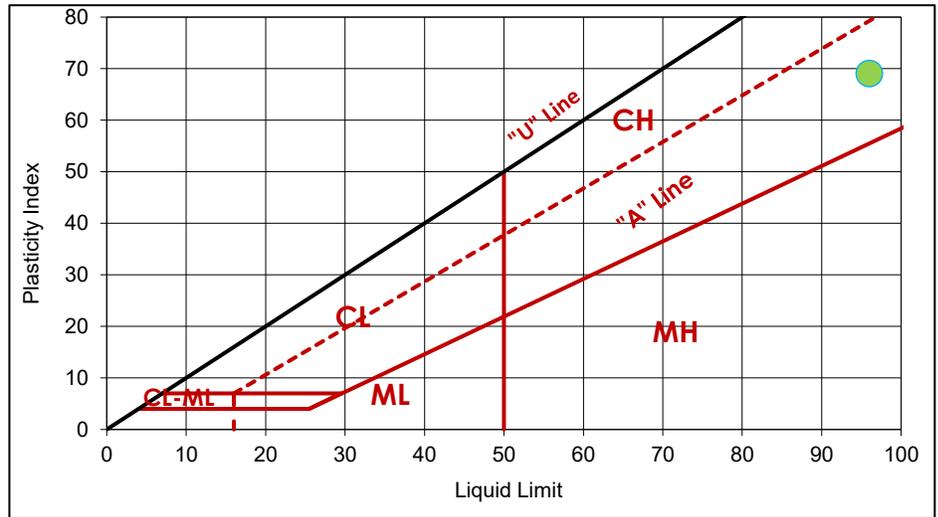
CLIENT FIELD ID BH-136, 1.1 m

STANTEC SAMPLE NO. 2710

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	23	23
MC (%)	97	97

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	27	27

LIQUID LIMIT, LL	96
PLASTIC LIMIT, PL	27
PLASTICITY INDEX, PI	69
AS REC'D MC (%)	22.8



COMMENTS
 No comments.

REPORT DATE 2026.Jan.16


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 3

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.15

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

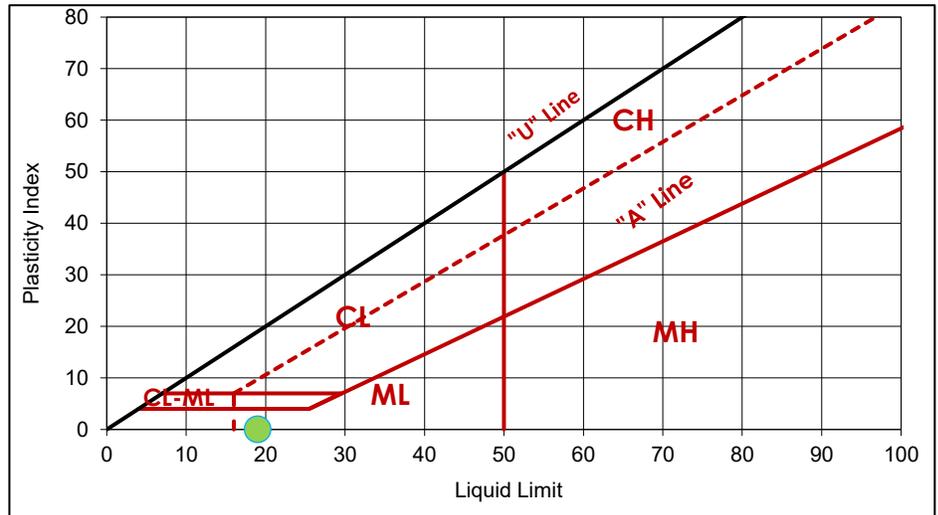
CLIENT FIELD ID BH-137, 1.3 m

STANTEC SAMPLE NO. 2711

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	22	22
MC (%)	19	19

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	19	19

LIQUID LIMIT, LL	19
PLASTIC LIMIT, PL	19
PLASTICITY INDEX, PI	0
AS REC'D MC (%)	29.3



COMMENTS

No comments.

REPORT DATE 2026.Jan.19


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 4

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.15

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

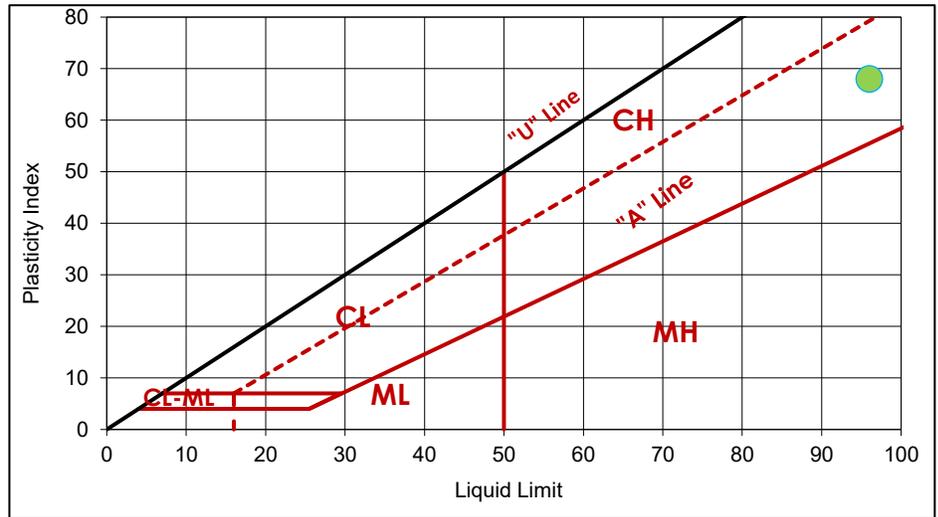
CLIENT FIELD ID BH-138, 1.4 m

STANTEC SAMPLE NO. 2712

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	23	23
MC (%)	97	97

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	28	28

LIQUID LIMIT, LL	96
PLASTIC LIMIT, PL	28
PLASTICITY INDEX, PI	68
AS REC'D MC (%)	30.0



COMMENTS
 No comments.

REPORT DATE 2026.Jan.16


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 5

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.09

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Ankit Kerai

MATERIAL IDENTIFICATION

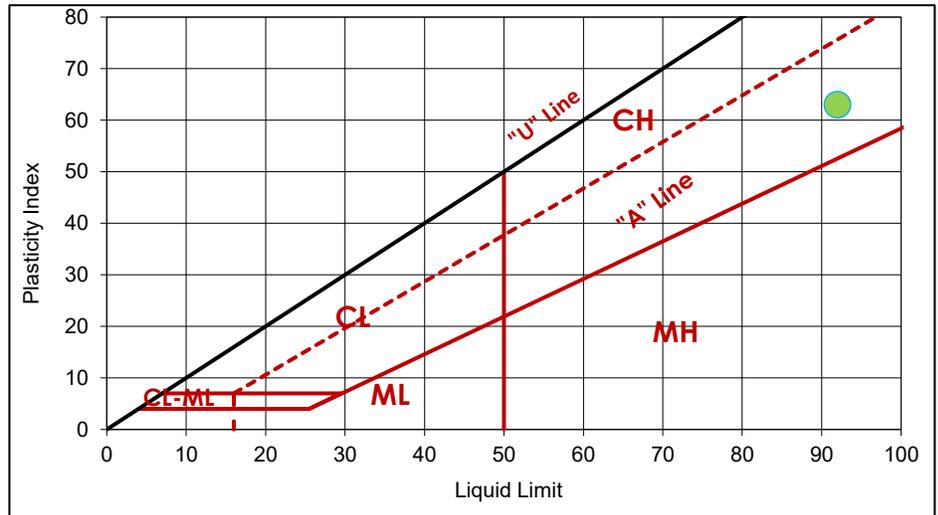
CLIENT FIELD ID BH-139, 1.3 m

STANTEC SAMPLE NO. 2713

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	24	24
MC (%)	93	93

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	29	29

LIQUID LIMIT, LL	92
PLASTIC LIMIT, PL	29
PLASTICITY INDEX, PI	63
AS REC'D MC (%)	36.5



COMMENTS

No comments.

REPORT DATE 2026.Jan.16


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 6

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.15

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

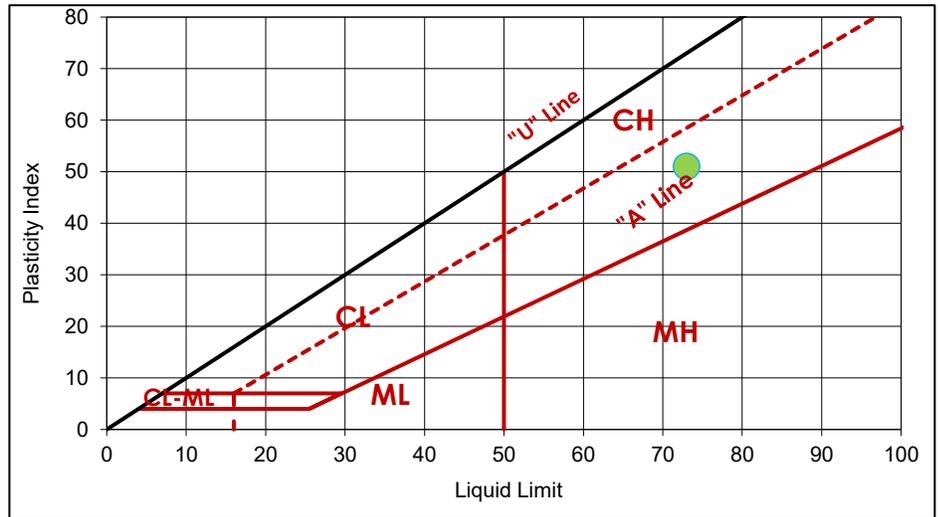
CLIENT FIELD ID BH-140, 1.3 m

STANTEC SAMPLE NO. 2714

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	24	24
MC (%)	74	74

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	22	22

LIQUID LIMIT, LL	73
PLASTIC LIMIT, PL	22
PLASTICITY INDEX, PI	51
AS REC'D MC (%)	17.7



COMMENTS
 No comments.

REPORT DATE 2026.Jan.16


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 7

DATE SAMPLED: 2025.Jan.09

DATE RECEIVED: 2025.Jan.09

DATE TESTED: 2026.Jan.09

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Madison Murphy

MATERIAL IDENTIFICATION

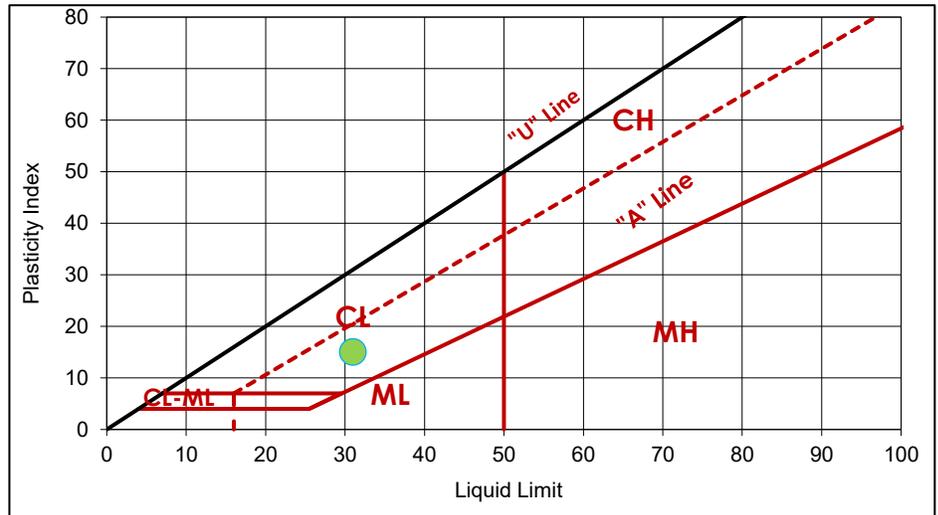
CLIENT FIELD ID BH-141, 1.2 m

STANTEC SAMPLE NO. 2701

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	21	21
MC (%)	31	31

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	16	16

LIQUID LIMIT, LL	31
PLASTIC LIMIT, PL	16
PLASTICITY INDEX, PI	15
AS REC'D MC (%)	23.3



COMMENTS

No comments.

REPORT DATE 2026.Jan.15


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 8

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.14

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Madison Murphy

MATERIAL IDENTIFICATION

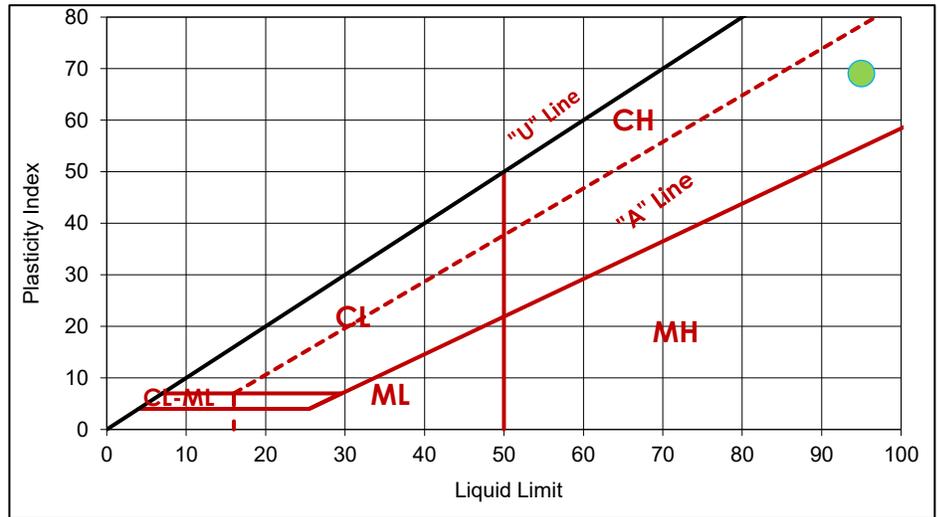
CLIENT FIELD ID BH-142, 1.3 m

STANTEC SAMPLE NO. 2702

TRIAL	LIQUID LIMIT	
	1	2
BLOWS	22	22
MC (%)	96	96

TRIAL	PLASTIC LIMIT	
	1	2
MC (%)	26	26

LIQUID LIMIT, LL	95
PLASTIC LIMIT, PL	26
PLASTICITY INDEX, PI	69
AS REC'D MC (%)	22.2



COMMENTS
 No comments.

REPORT DATE 2026.Jan.16


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 9

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.14

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Madison Murphy

MATERIAL IDENTIFICATION

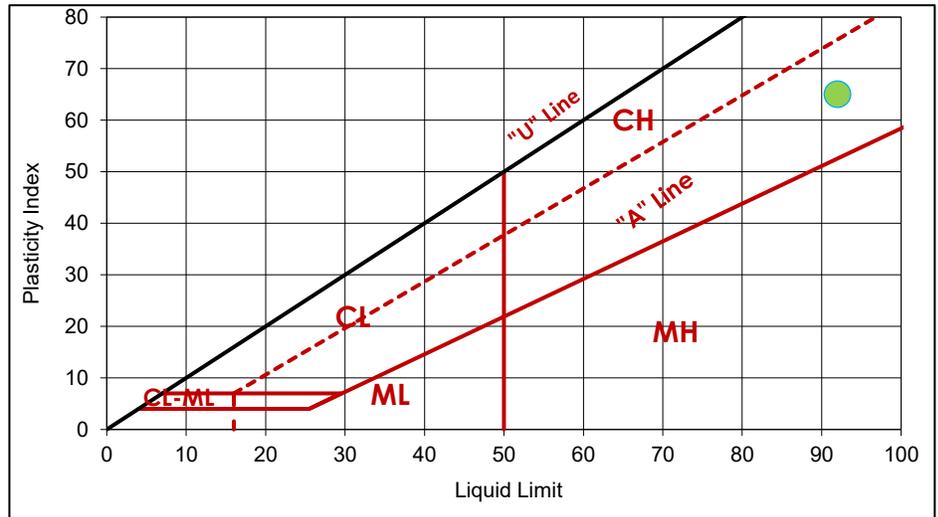
CLIENT FIELD ID BH-143, 1.3 m

STANTEC SAMPLE NO. 2703

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	27	27
MC (%)	91	91

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	27	27

LIQUID LIMIT, LL	92
PLASTIC LIMIT, PL	27
PLASTICITY INDEX, PI	65
AS REC'D MC (%)	21.4



COMMENTS
 No comments.

REPORT DATE 2026.Jan.16

REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 10

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.14

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Madison Murphy

MATERIAL IDENTIFICATION

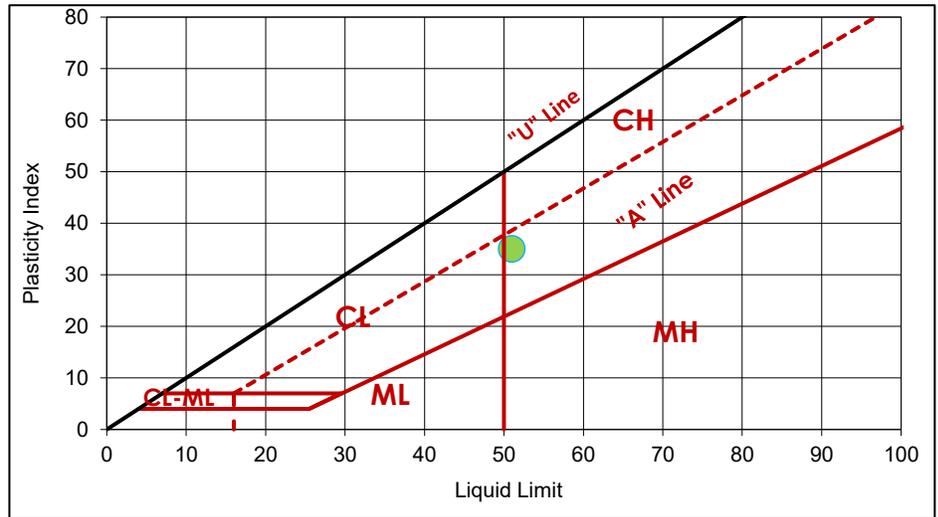
CLIENT FIELD ID BH-144, 1.3 m

STANTEC SAMPLE NO. 2704

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	26	26
MC (%)	51	51

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	16	16

LIQUID LIMIT, LL	51
PLASTIC LIMIT, PL	16
PLASTICITY INDEX, PI	35
AS REC'D MC (%)	23.9



COMMENTS

No comments.

REPORT DATE 2026.Jan.16

REVIEWED BY



Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD B - ONE-POINT)

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 11

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.14

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Madison Murphy

MATERIAL IDENTIFICATION

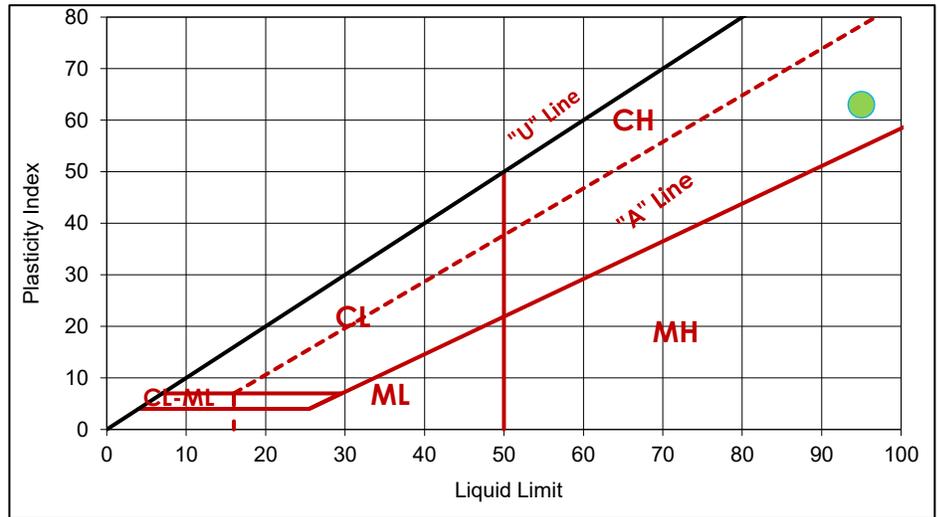
CLIENT FIELD ID BH-145, 1.2 m

STANTEC SAMPLE NO. 2705

	LIQUID LIMIT	
TRIAL	1	2
BLOWS	27	27
MC (%)	94	94

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	32	32

LIQUID LIMIT, LL	95
PLASTIC LIMIT, PL	32
PLASTICITY INDEX, PI	63
AS REC'D MC (%)	23.6



COMMENTS
 No comments.

REPORT DATE 2026.Jan.16

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.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program
 Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 2

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.13

SAMPLED BY: Stantec Consulting Ltd.

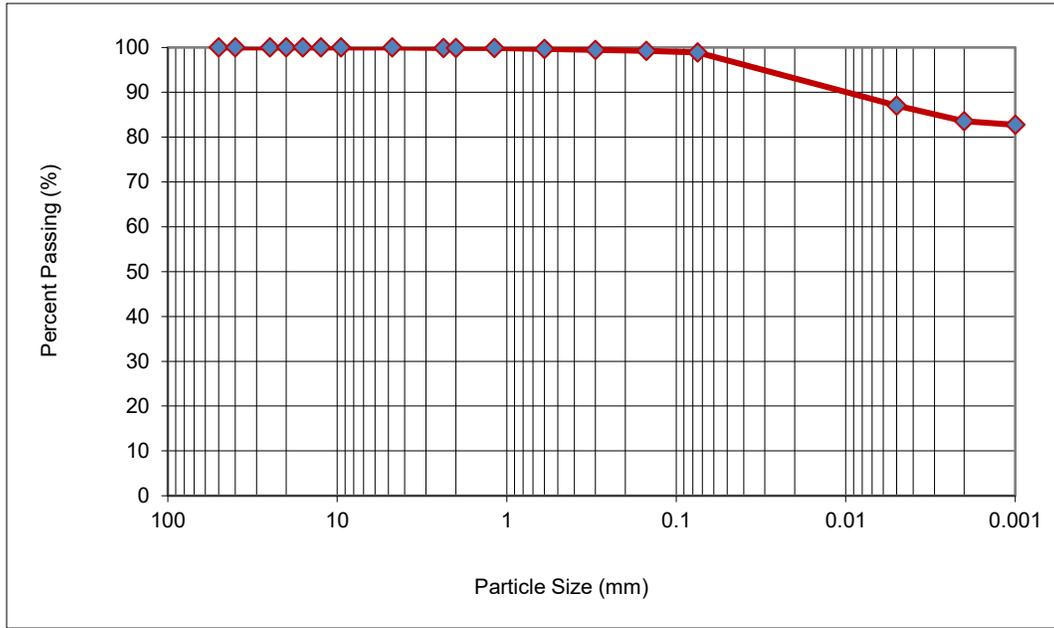
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Madison Murphy

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-136, 1.1 m

STANTEC SAMPLE NO. 2710



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	99.9
2.00	99.9
1.18	99.9
0.600	99.7
0.300	99.5
0.150	99.3
0.075	98.9
0.005	87.1
0.002	83.5
0.001	82.7

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.1	0.4	0.6	15.4	83.5	82.7

COMMENTS

No comments.

REPORT DATE 2026.Jan.16


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of the test results is provided on written request. The data presented is for sole use of client stipulated above. Stantec is not responsible, nor can be held liable, for the use of this report by any other party, with or without the knowledge of Stantec.

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

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program
 Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 4

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.13

SAMPLED BY: Stantec Consulting Ltd.

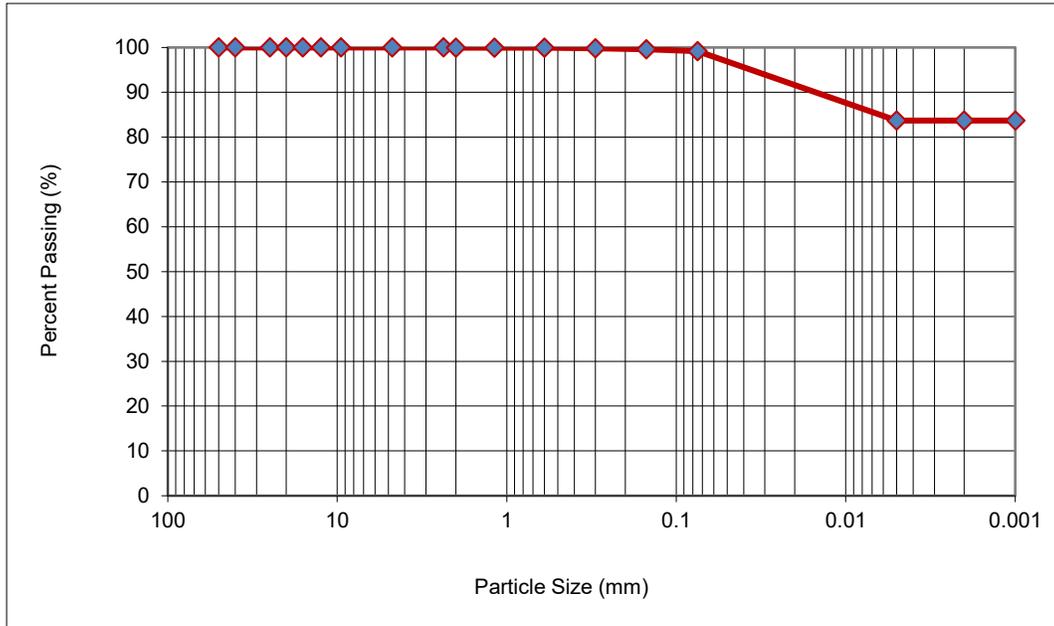
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Madison Murphy

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-138, 1.4 m

STANTEC SAMPLE NO. 2712



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	99.6
0.075	99.2
0.005	83.7
0.002	83.7
0.001	83.7

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.1	0.7	15.5	83.7	83.7

COMMENTS

No comments.

REPORT DATE 2026.Jan.16


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of the test results is provided on written request. The data presented is for sole use of client stipulated above. Stantec is not responsible, nor can be held liable, for the use of this report by any other party, with or without the knowledge of Stantec.

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

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program
 Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 5

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.13

SAMPLED BY: Stantec Consulting Ltd.

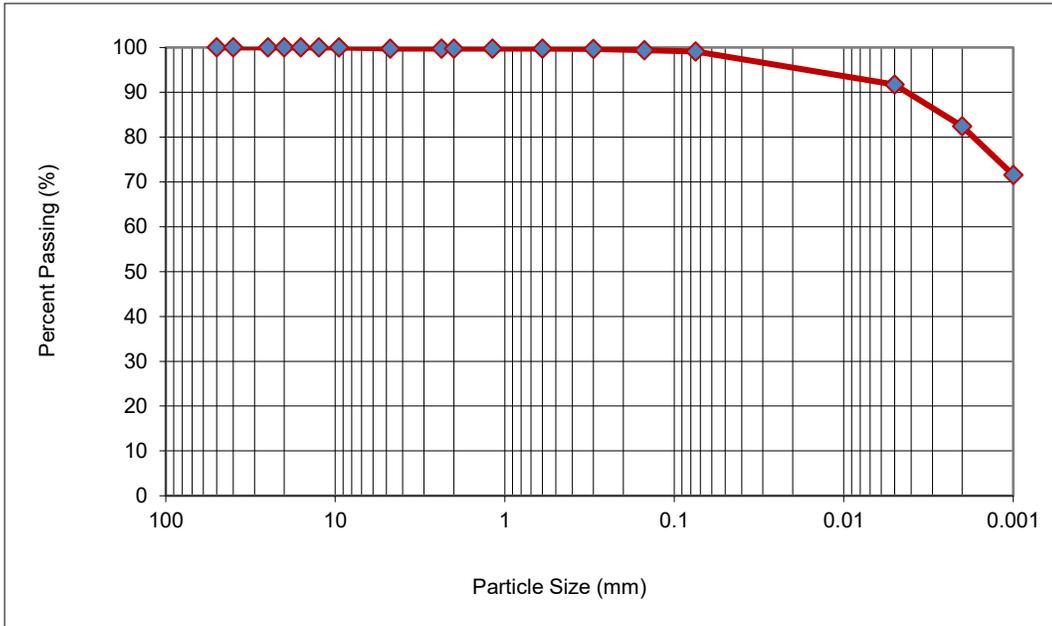
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Madison Murphy

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-139, 1.3 m

STANTEC SAMPLE NO. 2713



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	99.7
2.36	99.7
2.00	99.7
1.18	99.7
0.600	99.7
0.300	99.7
0.150	99.4
0.075	99.1
0.005	91.7
0.002	82.4
0.001	71.5

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.3	0.0	0.0	0.6	16.7	82.4	71.5

COMMENTS

No comments.

REPORT DATE 2026.Jan.16


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

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

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program
 Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 6

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.13

SAMPLED BY: Stantec Consulting Ltd.

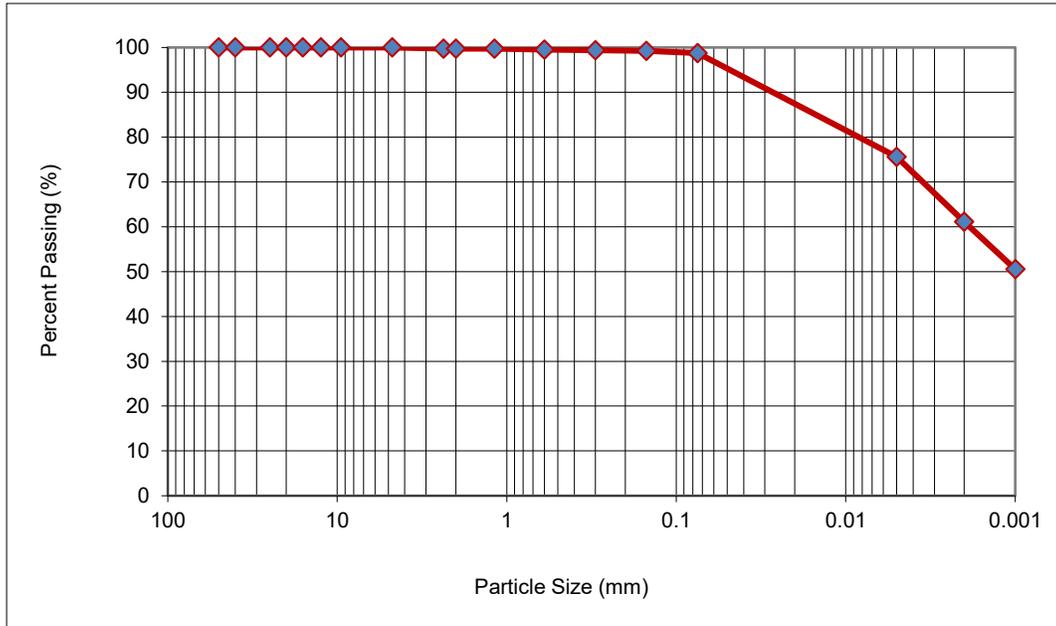
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Madison Murphy

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-140, 1.3 m

STANTEC SAMPLE NO. 2714



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	99.7
0.600	99.5
0.300	99.4
0.150	99.3
0.075	98.8
0.005	75.6
0.002	61.2
0.001	50.5

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.3	0.2	0.7	37.6	61.2	50.5

COMMENTS
 No comments.

REPORT DATE 2026.Jan.16


 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.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program
 Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 7

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.09

SAMPLED BY: Stantec Consulting Ltd.

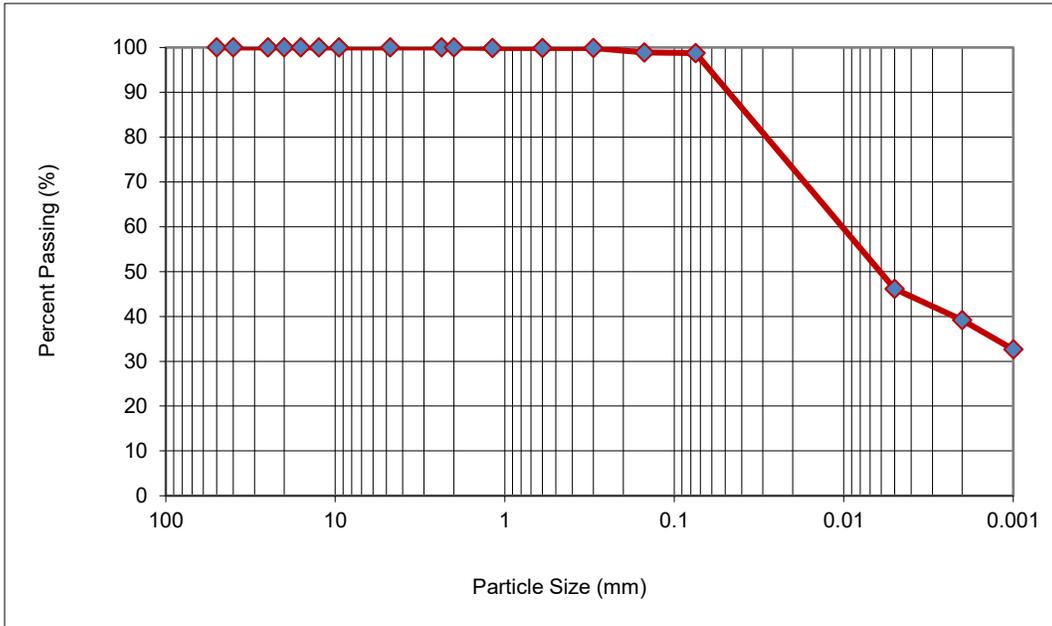
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-141, 1.2 m

STANTEC SAMPLE NO. 2701



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	99.9
0.300	99.9
0.150	98.9
0.075	98.7
0.005	46.2
0.002	39.2
0.001	32.6

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.1	1.2	59.5	39.2	32.6

COMMENTS
 No comments.

REPORT DATE 2026.Jan.16

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.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program
 Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 8

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.09

SAMPLED BY: Stantec Consulting Ltd.

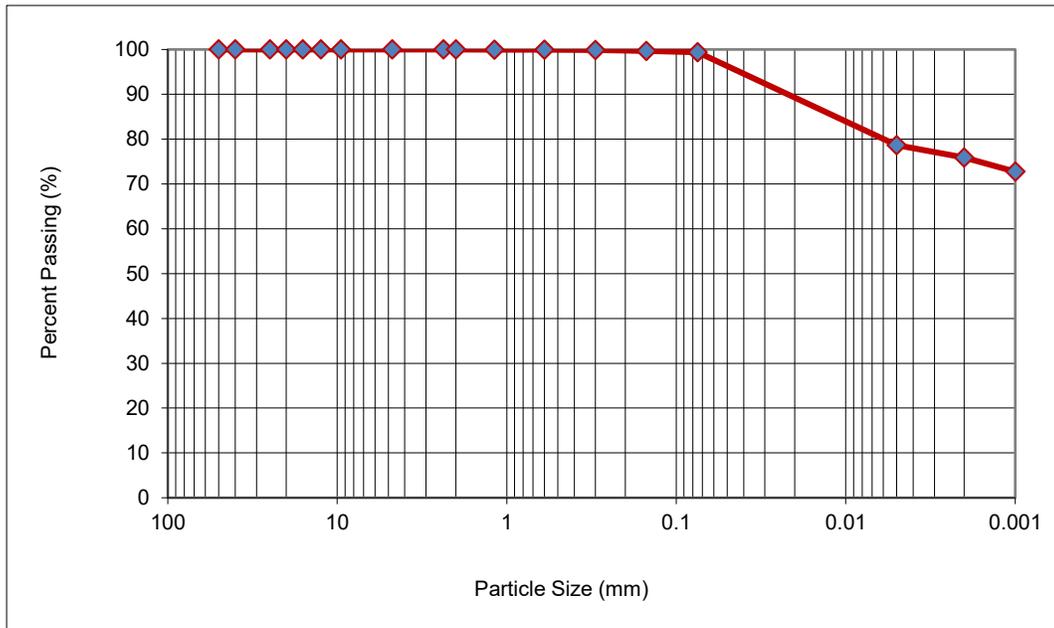
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-142, 1.3 m

STANTEC SAMPLE NO. 2702



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	99.9
0.150	99.7
0.075	99.4
0.005	78.7
0.002	75.9
0.001	72.7

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.1	0.5	23.5	75.9	72.7

COMMENTS

No comments.

REPORT DATE 2026.Jan.16


 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.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program
 Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 9

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.09

SAMPLED BY: Stantec Consulting Ltd.

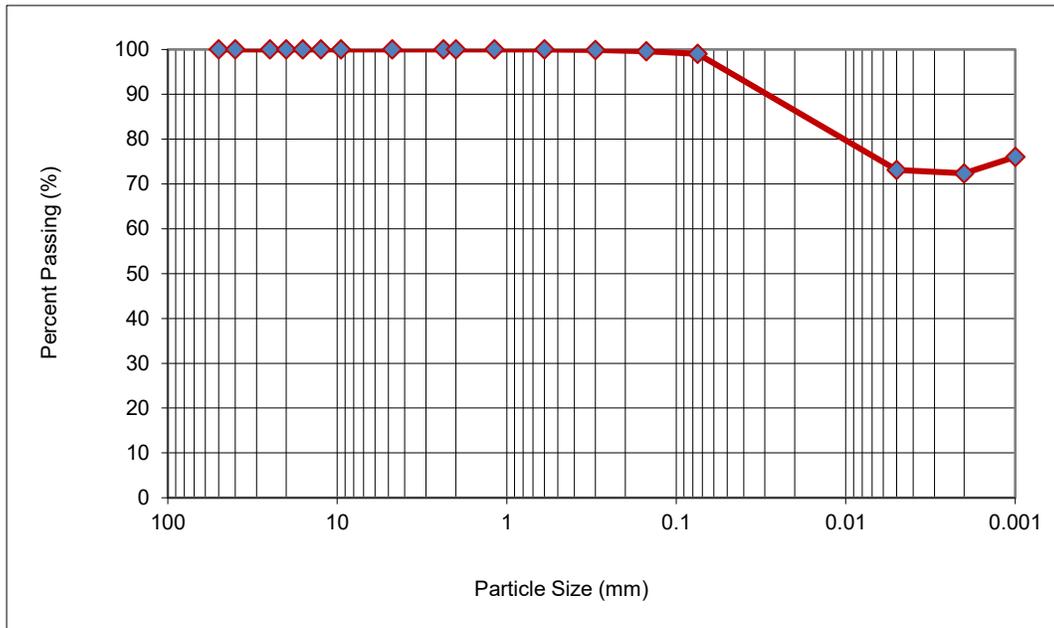
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-143, 1.3 m

STANTEC SAMPLE NO. 2703



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	99.0
0.005	73.1
0.002	72.4
0.001	76.0

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.1	0.9	26.6	72.4	76.0

COMMENTS
 No comments.

REPORT DATE 2026.Jan.16

REVIEWED BY 
 Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of the test results is provided on written request. The data presented is for sole use of client stipulated above. Stantec is not responsible, nor can be held liable, for the use of this report by any other party, with or without the knowledge of Stantec.

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

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program
 Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 10

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.09

SAMPLED BY: Stantec Consulting Ltd.

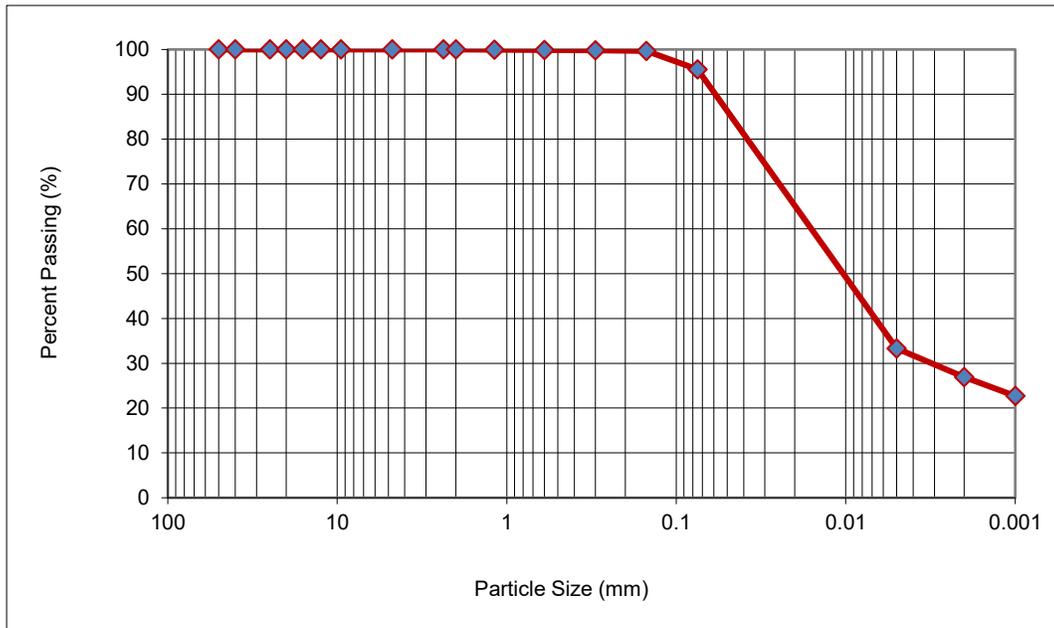
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-144, 1.3 m

STANTEC SAMPLE NO. 2704



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	99.6
0.075	95.6
0.005	33.3
0.002	26.9
0.001	22.7

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.1	4.3	68.7	26.9	22.7

COMMENTS

No comments.

REPORT DATE 2026.Jan.16


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of the test results is provided on written request. The data presented is for sole use of client stipulated above. Stantec is not responsible, nor can be held liable, for the use of this report by any other party, with or without the knowledge of Stantec.

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

TO City of Winnipeg, Public Works Dept.
 104 - 1155 Pacific Ave.
 Winnipeg, Manitoba
 R3E 3P1

PROJECT 2026 Local Street Renewal Program
 Contract 5

PROJECT NO. 123317987

ATTN Erik Hansen

REPORT NO. 11

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.09

SAMPLED BY: Stantec Consulting Ltd.

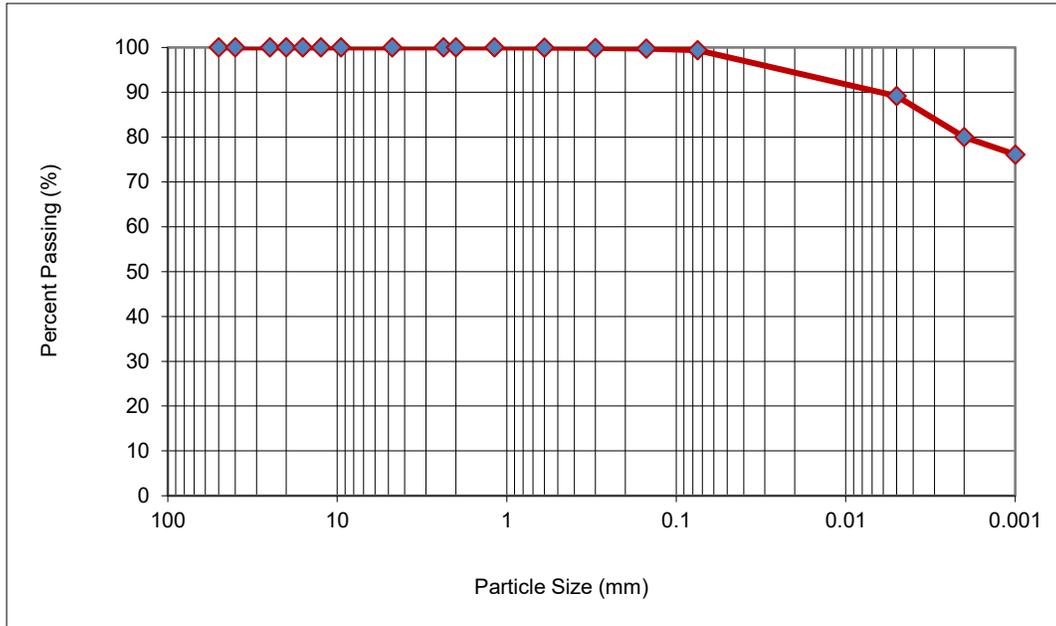
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-145, 1.2 m

STANTEC SAMPLE NO. 2705



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	99.7
0.075	99.4
0.005	89.2
0.002	80.0
0.001	76.1

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.1	0.5	19.4	80.0	76.1

COMMENTS
 No comments.

REPORT DATE 2026.Jan.16

REVIEWED BY 
 Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of the test results is provided on written request. The data presented is for sole use of client stipulated above. Stantec is not responsible, nor can be held liable, for the use of this report by any other party, with or without the knowledge of Stantec.

PROCTOR TEST REPORT

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

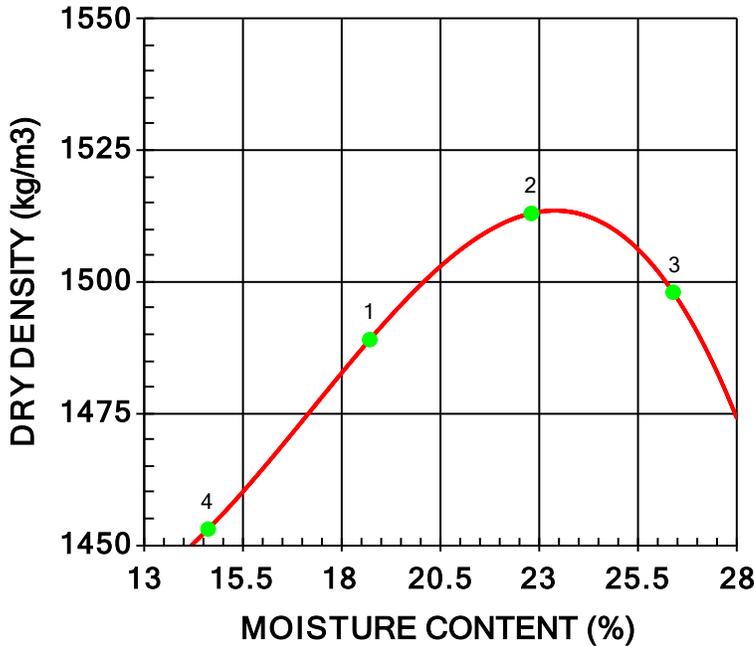
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 1 DATE SAMPLED 2026.Jan.09 DATE RECEIVED 2026.Jan.09 DATE TESTED 2026.Jan.15

INSITU MOISTURE	37.5 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade	RAMMER TYPE	Manual
SIZE	Fat Clay (CH)	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-135, 1.2 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1768	1489	18.7
2	1858	1513	22.8
3	1894	1498	26.4
4	1665	1453	14.6

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1510	23.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2709.

PROCTOR TEST REPORT

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

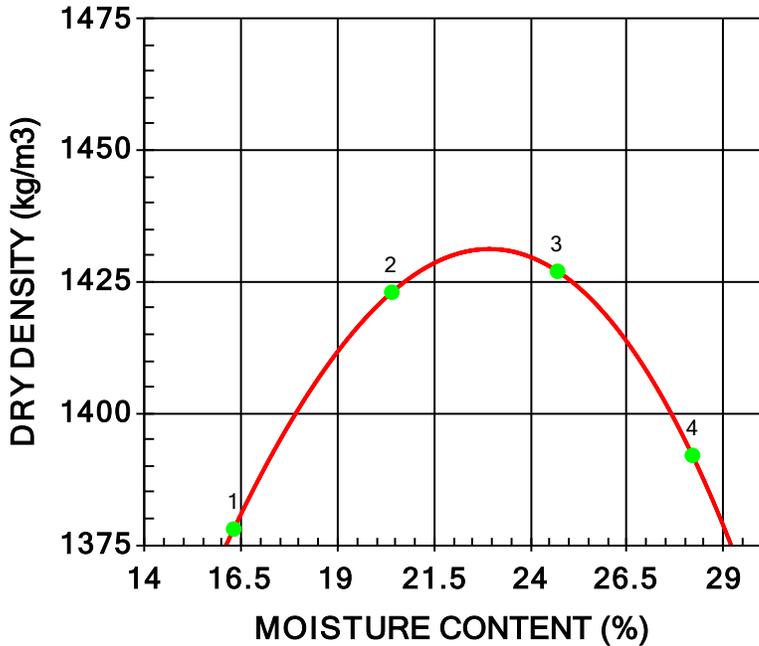
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 2 DATE SAMPLED 2026.Jan.09 DATE RECEIVED 2026.Jan.09 DATE TESTED 2026.Jan.15

INSITU MOISTURE	33.0 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade	RAMMER TYPE	Manual
SIZE	Fat Clay (CH)	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-136, 1.1 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1603	1378	16.3
2	1713	1423	20.4
3	1780	1427	24.7
4	1785	1392	28.2

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1430	23.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2710.

PROCTOR TEST REPORT

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

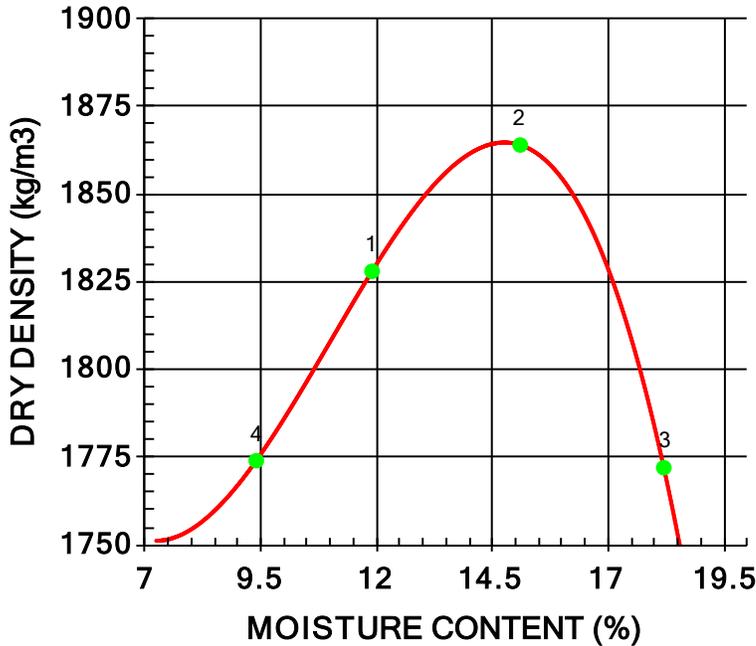
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 3 DATE SAMPLED 2026.Jan.09 DATE RECEIVED 2026.Jan.09 DATE TESTED 2026.Jan.15

INSITU MOISTURE	24.2 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar	COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MATERIAL IDENTIFICATION		RAMMER TYPE	Manual
MAJOR COMPONENT	Subgrade	PREPARATION	Moist
SIZE	Silt (ML)	OVERSIZE CORRECTION METHOD	None
DESCRIPTION		RETAINED 4.75mm SCREEN	N/A %
SUPPLIER	Existing Materials		
SOURCE	BH-137, 1.3 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	2045	1828	11.9
2	2145	1864	15.1
3	2094	1772	18.2
4	1941	1774	9.4

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1860	15.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2711.

PROCTOR TEST REPORT

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

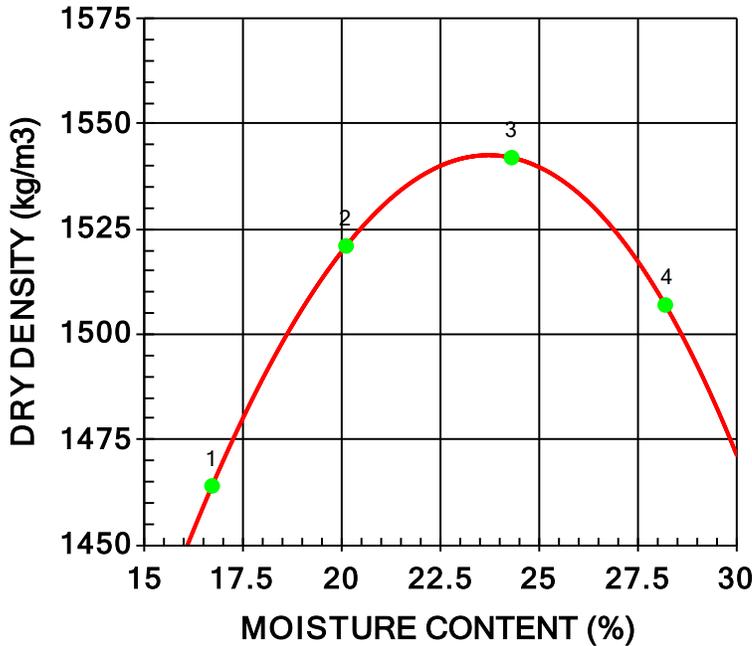
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 4 DATE SAMPLED 2026.Jan.09 DATE RECEIVED 2026.Jan.09 DATE TESTED 2026.Jan.15

INSITU MOISTURE	39.2 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade	RAMMER TYPE	Manual
SIZE	Fat Clay (CH)	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-138, 1.4 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1708	1464	16.7
2	1827	1521	20.1
3	1917	1542	24.3
4	1932	1507	28.2

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1540	23.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2712.

PROCTOR TEST REPORT

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

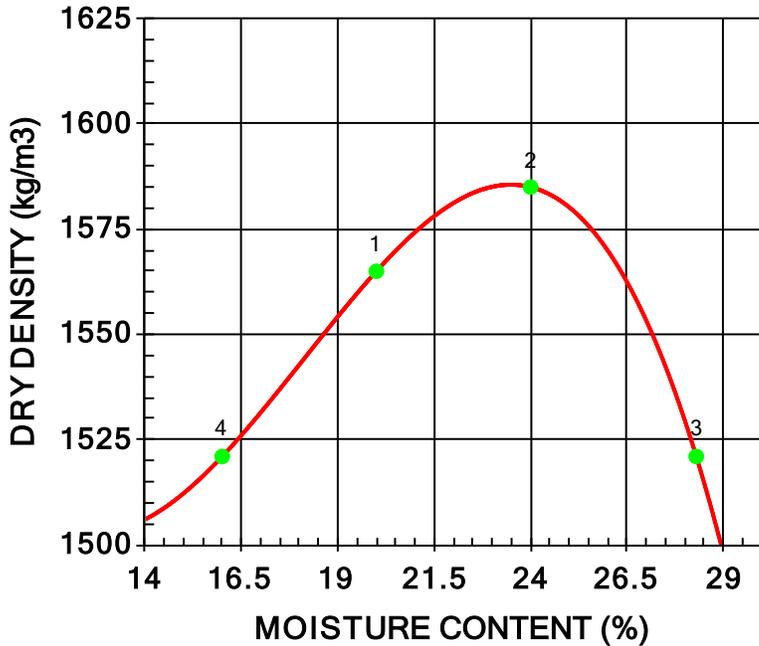
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 5 DATE SAMPLED 2026.Jan.09 DATE RECEIVED 2026.Jan.09 DATE TESTED 2026.Jan.15

INSITU MOISTURE	31.5 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade	RAMMER TYPE	Manual
SIZE	Fat Clay (CH)	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-139, 1.3 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1878	1565	20.0
2	1965	1585	24.0
3	1952	1521	28.3
4	1764	1521	16.0

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1590	23.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2713.



Jason Thompson, C.E.T.

PROCTOR TEST REPORT

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

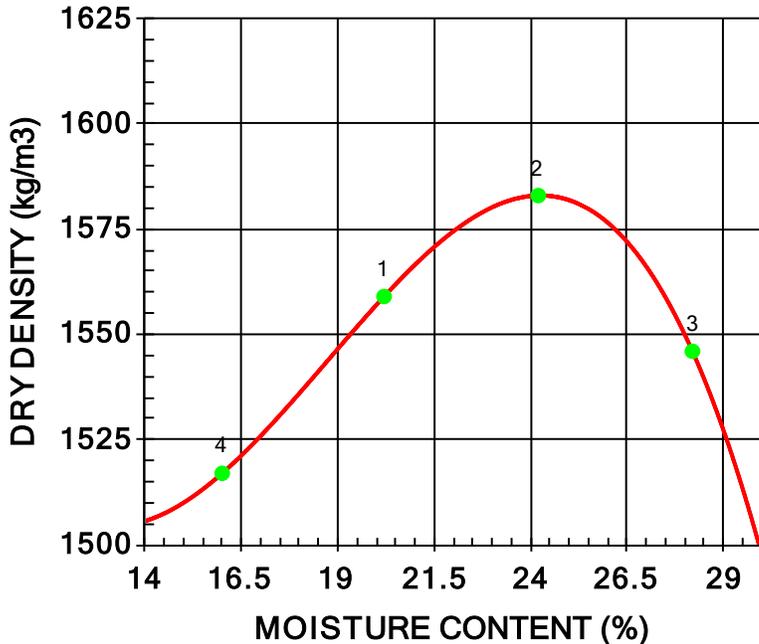
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 6 DATE SAMPLED 2026.Jan.09 DATE RECEIVED 2026.Jan.09 DATE TESTED 2026.Jan.15

INSITU MOISTURE	42.6 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade	RAMMER TYPE	Manual
SIZE	Fat Clay (CH)	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-140, 1.3 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1874	1559	20.2
2	1966	1583	24.2
3	1982	1546	28.2
4	1760	1517	16.0

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1580	24.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2714.



Jason Thompson, C.E.T.

PROCTOR TEST REPORT

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

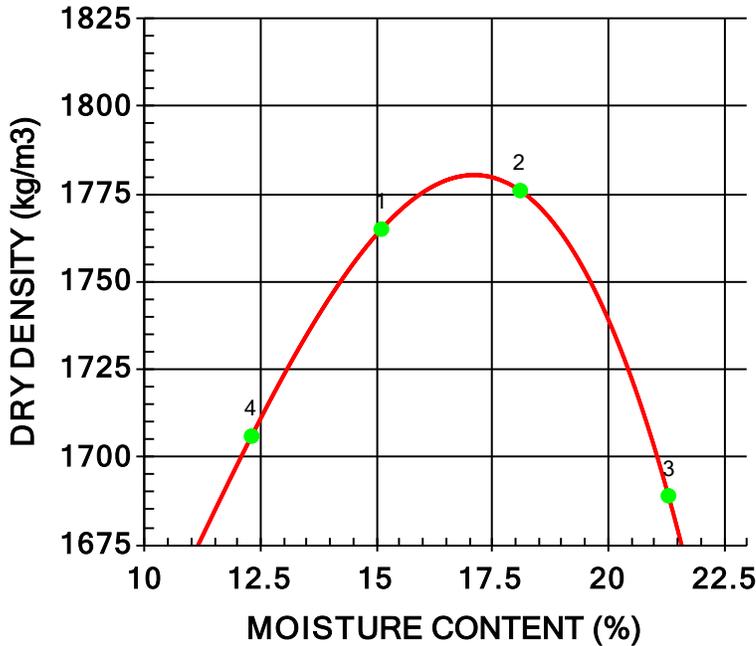
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 7 DATE SAMPLED 2025.Dec.15 DATE RECEIVED 2025.Dec.15 DATE TESTED 2026.Jan.07

INSITU MOISTURE	21.3 %	COMPACTION STANDARD	Standard Proctor, ASTM D698
TESTED BY	Donald Eliazar	COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MATERIAL IDENTIFICATION		RAMMER TYPE	Manual
MAJOR COMPONENT	Subgrade	PREPARATION	Moist
SIZE	Lean Clay (CL)	OVERSIZE CORRECTION METHOD	None
DESCRIPTION		RETAINED 4.75mm SCREEN	N/A %
SUPPLIER	Existing Materials		
SOURCE	BH-141, 1.2 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	2031	1765	15.1
2	2097	1776	18.1
3	2049	1689	21.3
4	1916	1706	12.3

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1780	17.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2701.

PROCTOR TEST REPORT

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

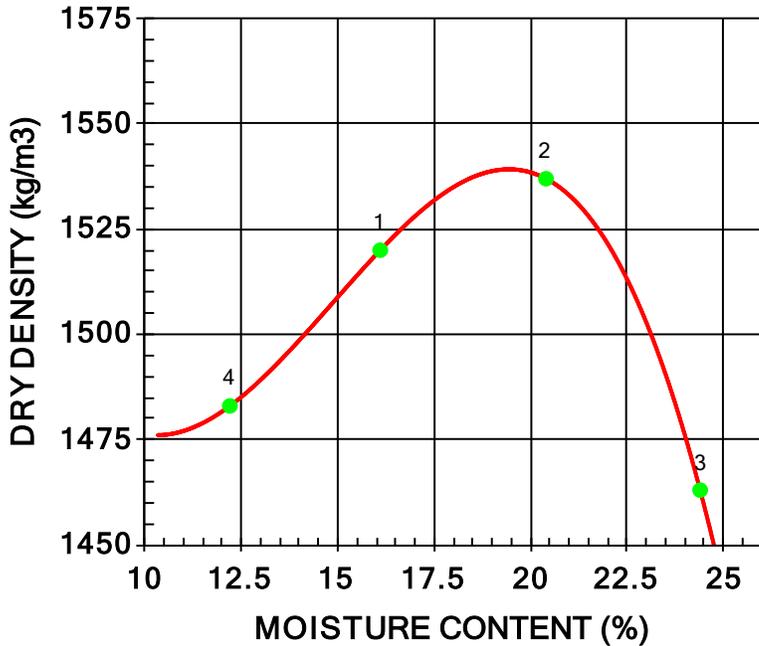
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 8 DATE SAMPLED 2025.Dec.15 DATE RECEIVED 2025.Dec.15 DATE TESTED 2026.Jan.07

INSITU MOISTURE	42.7 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade	RAMMER TYPE	Manual
SIZE	Fat Clay (CH)	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-142, 1.3 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1765	1520	16.1
2	1851	1537	20.4
3	1820	1463	24.4
4	1664	1483	12.2

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1540	19.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2702.

PROCTOR TEST REPORT

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

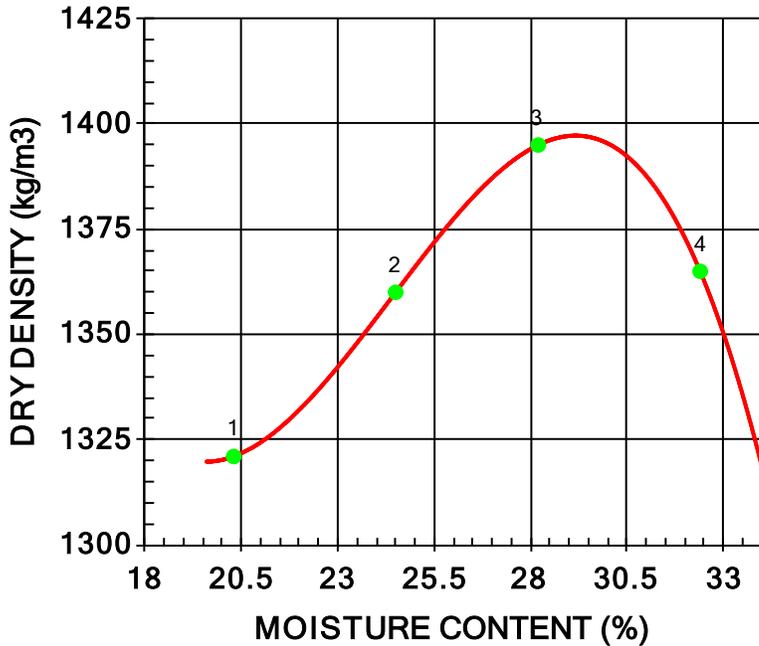
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 9 DATE SAMPLED 2025.Dec.15 DATE RECEIVED 2025.Dec.15 DATE TESTED 2026.Jan.07

INSITU MOISTURE	44.8 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade	RAMMER TYPE	Manual
SIZE	Fat Clay (CH)	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-143, 1.3 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1589	1321	20.3
2	1693	1360	24.5
3	1789	1395	28.2
4	1807	1365	32.4

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1400	29.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2703.

PROCTOR TEST REPORT

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

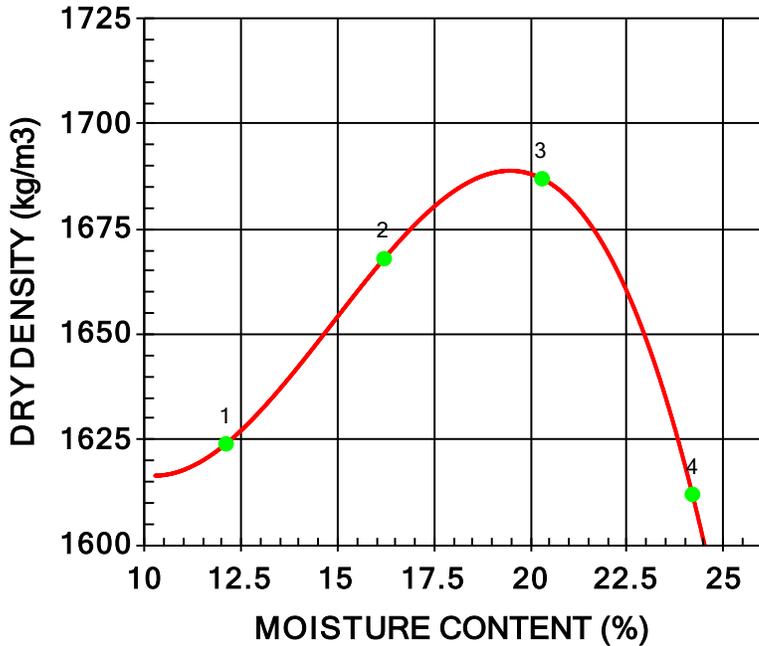
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 10 DATE SAMPLED 2025.Dec.15 DATE RECEIVED 2025.Dec.15 DATE TESTED 2026.Jan.07

INSITU MOISTURE	45.1 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade	RAMMER TYPE	Manual
SIZE	Fat Clay (CH)	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-144, 1.3 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1820	1624	12.1
2	1938	1668	16.2
3	2029	1687	20.3
4	2002	1612	24.2

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1690	19.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2704.

PROCTOR TEST REPORT

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

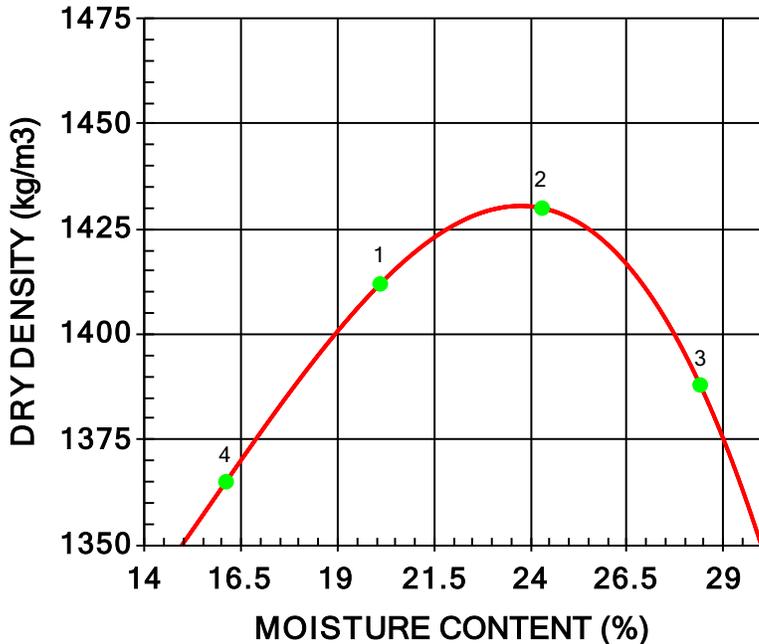
CLIENT City of Winnipeg
 C.C.

ATTN: Erik Hansen

PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5 - Contract 5
 PROCTOR NO. 11 DATE SAMPLED 2025.Dec.15 DATE RECEIVED 2025.Dec.15 DATE TESTED 2026.Jan.08

INSITU MOISTURE	41.8 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade	RAMMER TYPE	Manual
SIZE	Fat Clay (CH)	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-145, 1.2 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1696	1412	20.1
2	1778	1430	24.3
3	1782	1388	28.4
4	1585	1365	16.1

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1430	24.0
OVERSIZE CORRECTED		

COMMENTS
 Stantec Sample No. 2705.

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO City of Winnipeg
 104 - 1155 Pacific Avenue
 Winnipeg, Manitoba
 R3E 2P1

PROJECT 2026 Local Street Renewal Program -
 Contract 5

PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 1

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.19

SAMPLED BY: Stantec Consulting Ltd.

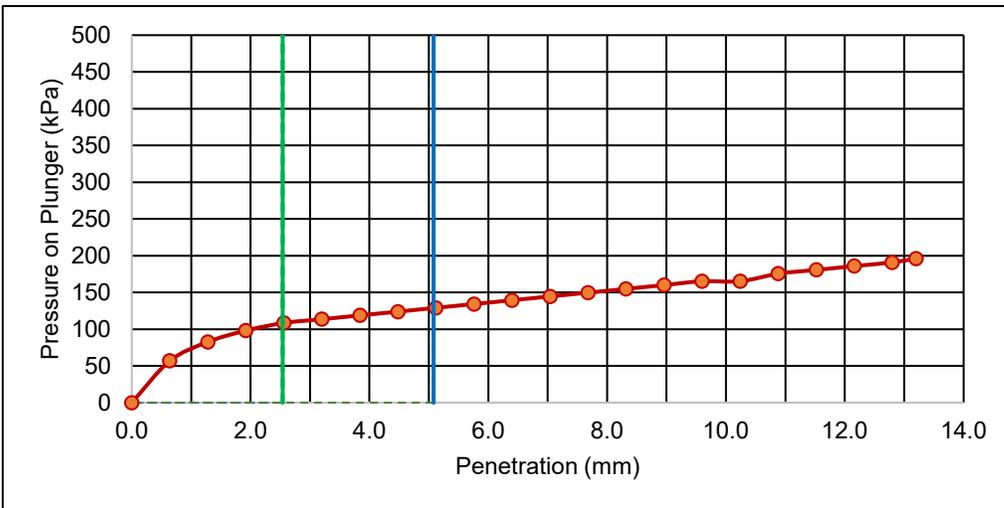
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-135, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2709

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1510 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	23.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1434 kg/m ³
SWELL OF SAMPLE	6.20 %	AS-COMPACTED MOISTURE	23.5 %
POST-TEST MOISTURE	41.6 %	AS-COMPACTED % COMPACTION	95 %



**CBR VALUE AT 2.54 mm
PENETRATION**
1.6

**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 2026.Jan.26


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO City of Winnipeg
 104 - 1155 Pacific Avenue
 Winnipeg, Manitoba
 R3E 2P1

PROJECT 2026 Local Street Renewal Program -
 Contract 5

PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 2

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.19

SAMPLED BY: Stantec Consulting Ltd.

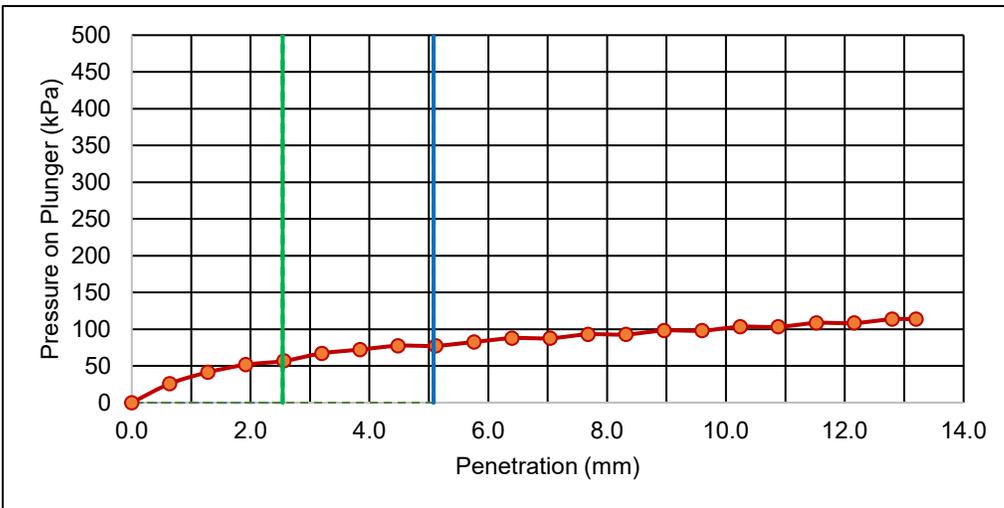
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-136, 1.1 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2710

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1430 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	23.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1353 kg/m ³
SWELL OF SAMPLE	12.88 %	AS-COMPACTED MOISTURE	23.5 %
POST-TEST MOISTURE	50.7 %	AS-COMPACTED % COMPACTION	95 %



**CBR VALUE AT 2.54 mm
PENETRATION**
0.8

**CBR VALUE AT 5.08 mm
PENETRATION**
0.8

COMMENTS

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

REPORT DATE 2026.Jan.26


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO City of Winnipeg
 104 - 1155 Pacific Avenue
 Winnipeg, Manitoba
 R3E 2P1

PROJECT 2026 Local Street Renewal Program -
 Contract 5

PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 3

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.19

SAMPLED BY: Stantec Consulting Ltd.

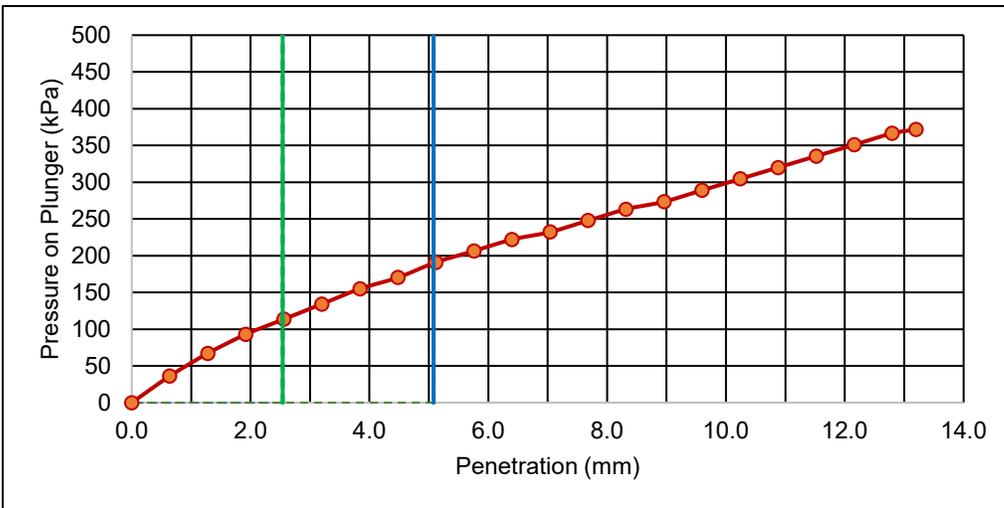
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Silt (ML)	SAMPLE LOCATION	BH-137, 1.3 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2711

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1860 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	15.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1763 kg/m ³
SWELL OF SAMPLE	0.63 %	AS-COMPACTED MOISTURE	15.2 %
POST-TEST MOISTURE	17.3 %	AS-COMPACTED % COMPACTION	95 %



**CBR VALUE AT 2.54 mm
PENETRATION**
1.6

**CBR VALUE AT 5.08 mm
PENETRATION**
1.9

COMMENTS

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

REPORT DATE 2026.Jan.26


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO City of Winnipeg
 104 - 1155 Pacific Avenue
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PROJECT 2026 Local Street Renewal Program -
 Contract 5

PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 4

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.19

SAMPLED BY: Stantec Consulting Ltd.

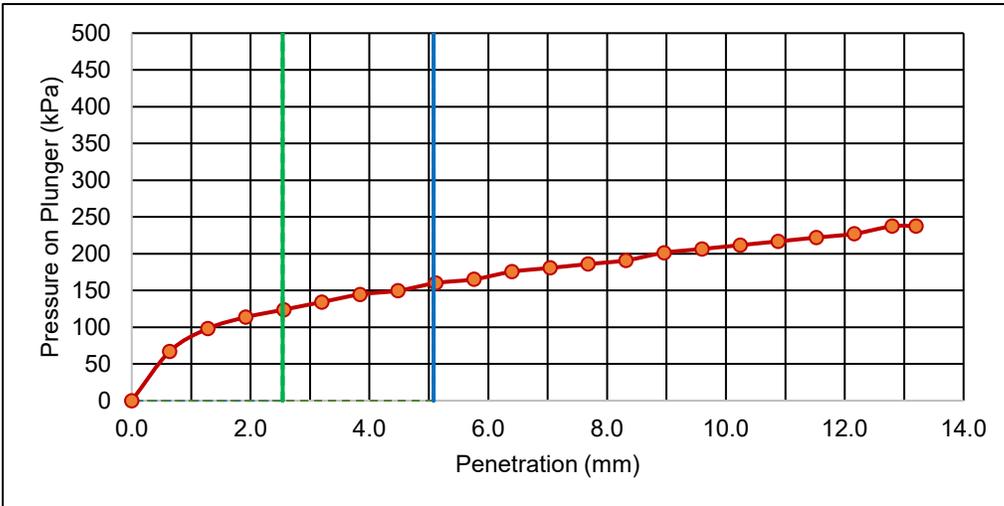
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-138, 1.4 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2712

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1540 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	23.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1464 kg/m ³
SWELL OF SAMPLE	4.96 %	AS-COMPACTED MOISTURE	23.4 %
POST-TEST MOISTURE	37.4 %	AS-COMPACTED % COMPACTION	95 %



**CBR VALUE AT 2.54 mm
PENETRATION**
1.8

**CBR VALUE AT 5.08 mm
PENETRATION**
1.6

COMMENTS

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

REPORT DATE 2026.Jan.26


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO City of Winnipeg
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PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 5

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.19

SAMPLED BY: Stantec Consulting Ltd.

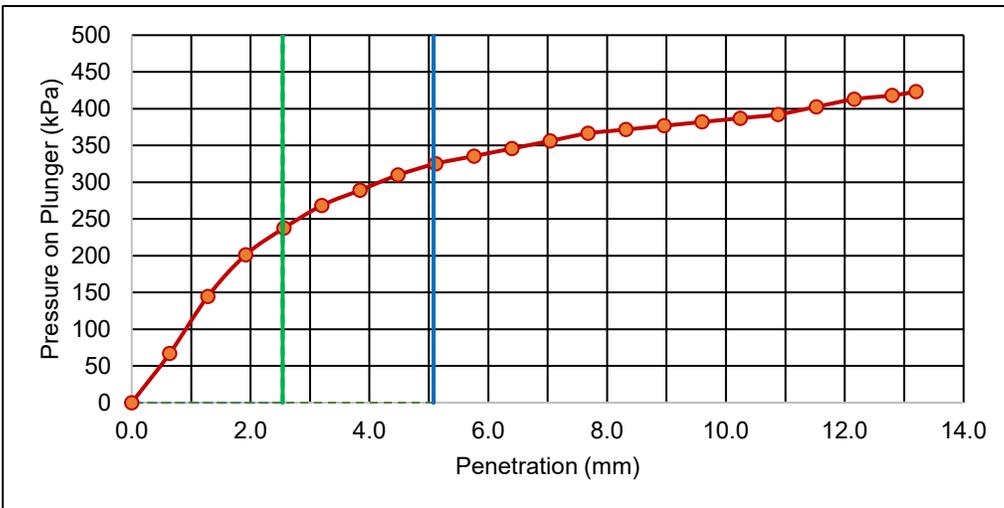
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-139, 1.3 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2713

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1590 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	23.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1511 kg/m ³
SWELL OF SAMPLE	2.14 %	AS-COMPACTED MOISTURE	23.4 %
POST-TEST MOISTURE	32.0 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
3.4

CBR VALUE AT 5.08 mm PENETRATION
3.2

COMMENTS

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

REPORT DATE 2026.Jan.26


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO City of Winnipeg
 104 - 1155 Pacific Avenue
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PROJECT 2026 Local Street Renewal Program -
 Contract 5

PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 6

DATE SAMPLED: 2026.Jan.09

DATE RECEIVED: 2026.Jan.09

DATE TESTED: 2026.Jan.19

SAMPLED BY: Stantec Consulting Ltd.

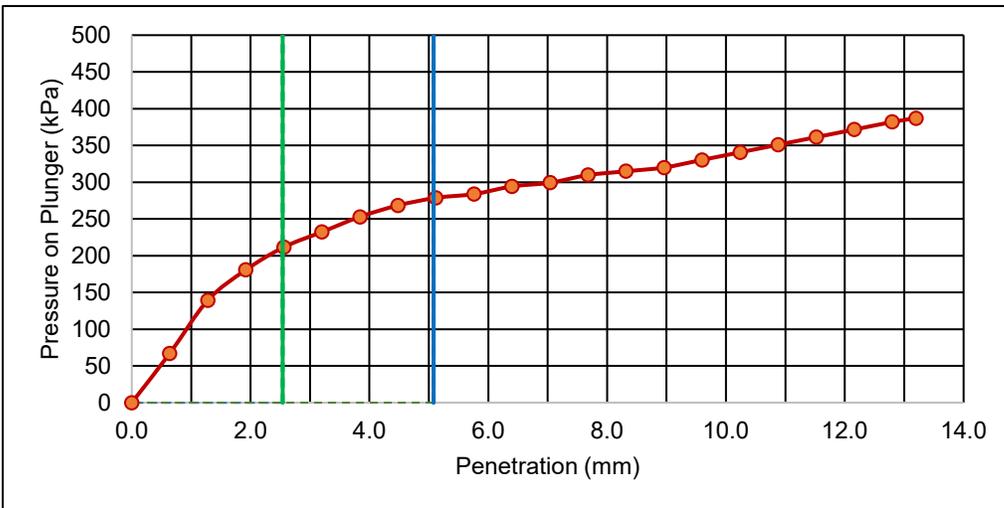
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-140, 1.3 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2714

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1580 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	24.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1500 kg/m ³
SWELL OF SAMPLE	1.86 %	AS-COMPACTED MOISTURE	24.6 %
POST-TEST MOISTURE	32.3 %	AS-COMPACTED % COMPACTION	95 %



**CBR VALUE AT 2.54 mm
PENETRATION**
3.1

**CBR VALUE AT 5.08 mm
PENETRATION**
2.8

COMMENTS

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

REPORT DATE 2026.Jan.26


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO City of Winnipeg
 104 - 1155 Pacific Avenue
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 R3E 2P1

PROJECT 2026 Local Street Renewal Program -
 Contract 5

PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 7

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.10

SAMPLED BY: Stantec Consulting Ltd.

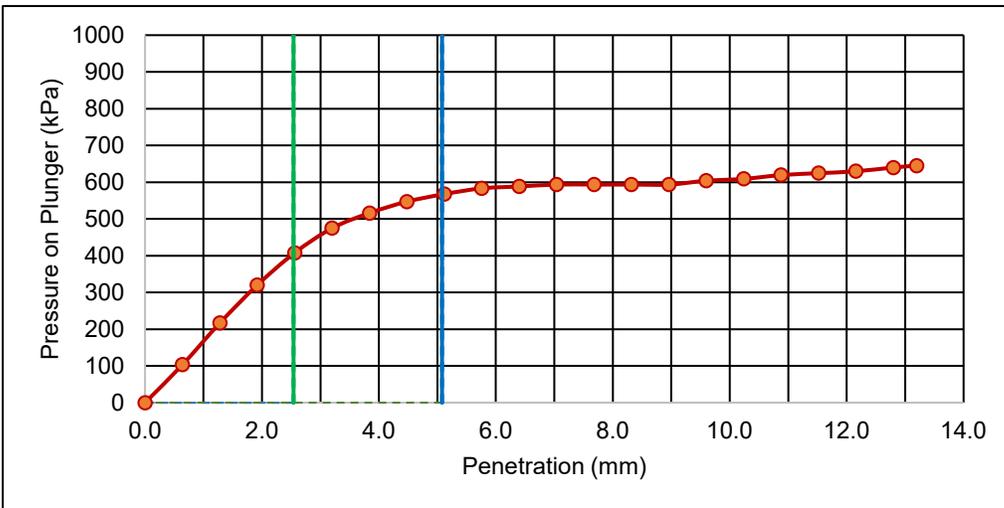
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Lean Clay (CL)	SAMPLE LOCATION	BH-141, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2701

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1780 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	17.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1693 kg/m ³
SWELL OF SAMPLE	1.46 %	AS-COMPACTED MOISTURE	16.9 %
POST-TEST MOISTURE	22.5 %	AS-COMPACTED % COMPACTION	95 %



**CBR VALUE AT 2.54 mm
PENETRATION**
5.9

**CBR VALUE AT 5.08 mm
PENETRATION**
5.7

COMMENTS

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

REPORT DATE 2026.Jan.15


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO City of Winnipeg
104 - 1155 Pacific Avenue
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R3E 2P1

PROJECT 2026 Local Street Renewal Program -
Contract 5

PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 8

DATE SAMPLED: 2025.Dec.15
SAMPLED BY: Stantec Consulting Ltd.

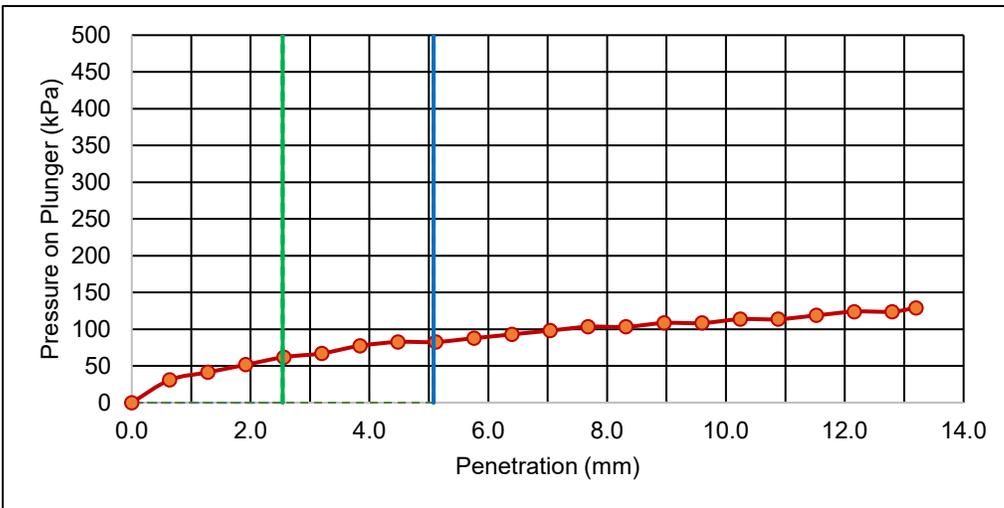
DATE RECEIVED: 2025.Dec.15
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2026.Jan.10
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-142, 1.3 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2702

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1540 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	19.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1465 kg/m ³
SWELL OF SAMPLE	10.52 %	AS-COMPACTED MOISTURE	19.4 %
POST-TEST MOISTURE	47.0 %	AS-COMPACTED % COMPACTION	95 %



**CBR VALUE AT 2.54 mm
PENETRATION**
0.9

**CBR VALUE AT 5.08 mm
PENETRATION**
0.8

COMMENTS

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

REPORT DATE 2026.Jan.15


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO City of Winnipeg
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PROJECT 2026 Local Street Renewal Program - Contract 5

PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 9

DATE SAMPLED: 2025.Dec.15
 SAMPLED BY: Stantec Consulting Ltd.

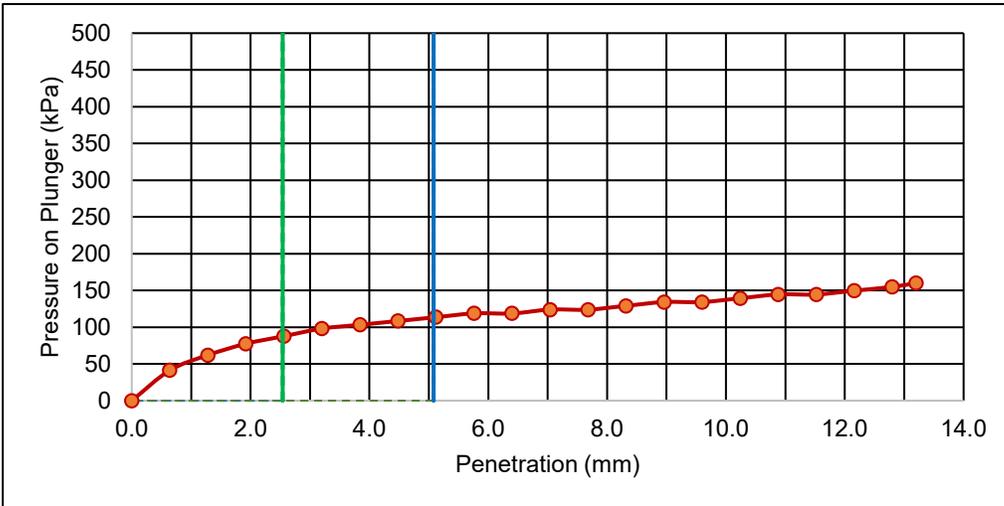
DATE RECEIVED: 2025.Dec.15
 SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2026.Jan.10
 TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-143, 1.3 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2703

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1400 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	29.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1331 kg/m ³
SWELL OF SAMPLE	7.72 %	AS-COMPACTED MOISTURE	28.9 %
POST-TEST MOISTURE	52.8 %	AS-COMPACTED % COMPACTION	95 %



CBR VALUE AT 2.54 mm PENETRATION
1.3

CBR VALUE AT 5.08 mm PENETRATION
1.1

COMMENTS

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

REPORT DATE 2026.Jan.15


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

TO City of Winnipeg
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PROJECT 2026 Local Street Renewal Program -
 Contract 5

PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 10

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.10

SAMPLED BY: Stantec Consulting Ltd.

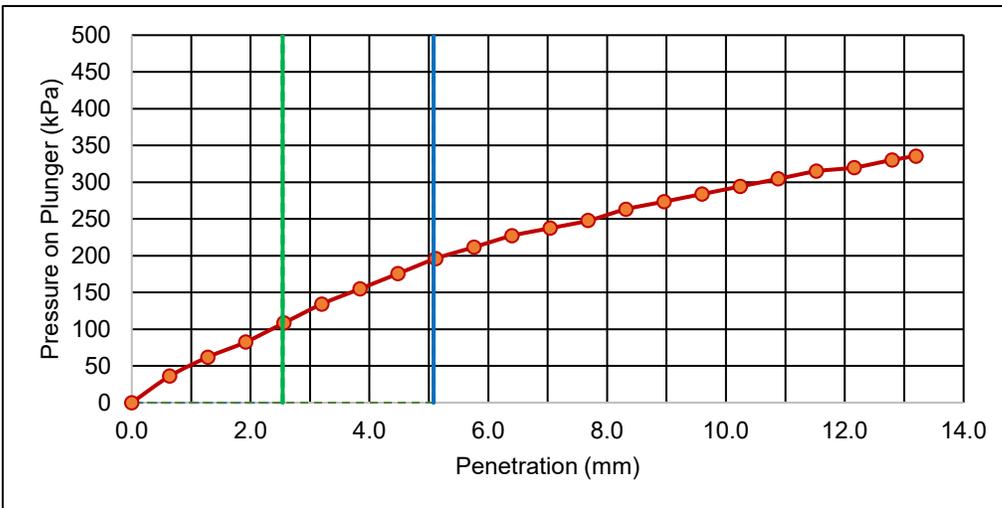
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-144, 1.3 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2704

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1690 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	19.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1607 kg/m ³
SWELL OF SAMPLE	4.07 %	AS-COMPACTED MOISTURE	19.4 %
POST-TEST MOISTURE	30.7 %	AS-COMPACTED % COMPACTION	95 %



**CBR VALUE AT 2.54 mm
PENETRATION**
1.6

**CBR VALUE AT 5.08 mm
PENETRATION**
1.9

COMMENTS

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

REPORT DATE 2026.Jan.15


 REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services

ASTM D1883 - CALIFORNIA BEARING RATIO (CBR) OF LABORATORY-COMPACTED SOILS

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PROJECT NO. 123317987-5

ATTN Erik Hansen

REPORT NO. 11

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.10

SAMPLED BY: Stantec Consulting Ltd.

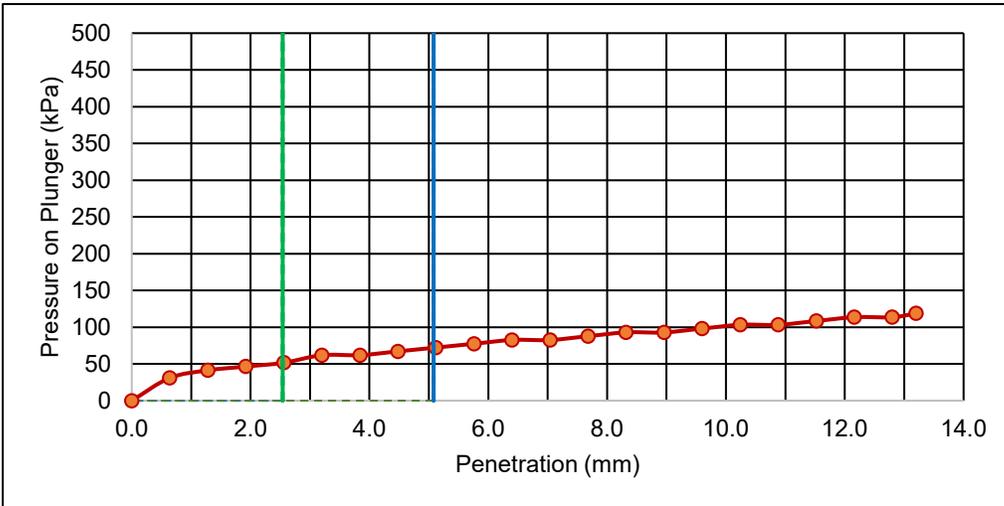
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore hole
MATERIAL TYPE	Fat Clay (CH)	SAMPLE LOCATION	BH-145, 1.2 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2705

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1430 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	24.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1358 kg/m ³
SWELL OF SAMPLE	9.07 %	AS-COMPACTED MOISTURE	24.0 %
POST-TEST MOISTURE	50.7 %	AS-COMPACTED % COMPACTION	95 %



**CBR VALUE AT 2.54 mm
PENETRATION**
0.7

**CBR VALUE AT 5.08 mm
PENETRATION**
0.7

COMMENTS

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



REPORT DATE 2026.Jan.15

REVIEWED BY Guillaume Beauce, P.Eng.
 Geotechnical Engineer - Materials Testing Services