

APPENDIX 'A'

GEOTECHNICAL INVESTIGATION REPORT

January 13, 2026

Project/File: 123317994

Aaron Fleming
Dillon Consulting Ltd.
300-100 Innovation Drive
Winnipeg, Manitoba R3T 6G2

Good day Aaron,

Reference: 2026 Local Street Renewal Program (26-R-08) - Geotechnical Investigation

Stantec Consulting Ltd. (Stantec) was retained to undertake a factual geotechnical investigation for the 2026 Local Street Renewal Program (26-R-08) 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 9 to December 15, 2025. A total of 20 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 20 pavement core samples were recovered to determine the in-place pavement thickness. In addition, 8 concrete core samples were tested to assess the in-place compressive strength of the concrete. The existing pavement thicknesses are summarized in **Table 1** below, and core photographs are provided in **Appendix C**.

2. Geotechnical Drilling

A total of 7 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 2.1 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: 2026 Local Street Renewal Program (26-R-08) - 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)
147	Yale Ave W	0	135	135
148		0	160	160
149		0	115	115
150		0	150	150
151	Alley (Plessis/Rosseau/ Ravelston/Brewster)	0	170	170
152		0	160	160
153		20	140	160
154	Day St	45	185	230
155		85	190	275
156		140	190	330
157		110	195	305
158		95	225	320
159		80	230	310
160		40	235	275
161		35	200	235
162	Alley (Day/Regent/Melrose/Kanata)	0	160	160
163		0	165	165
164	Alley (Sanford Fleming/Devonshire/ Whiteway/Clouston)	0	155	155
165		0	150	150
166		0	150	150

Reference: 2026 Local Street Renewal Program (26-R-08) - Geotechnical Investigation

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.

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.



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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.

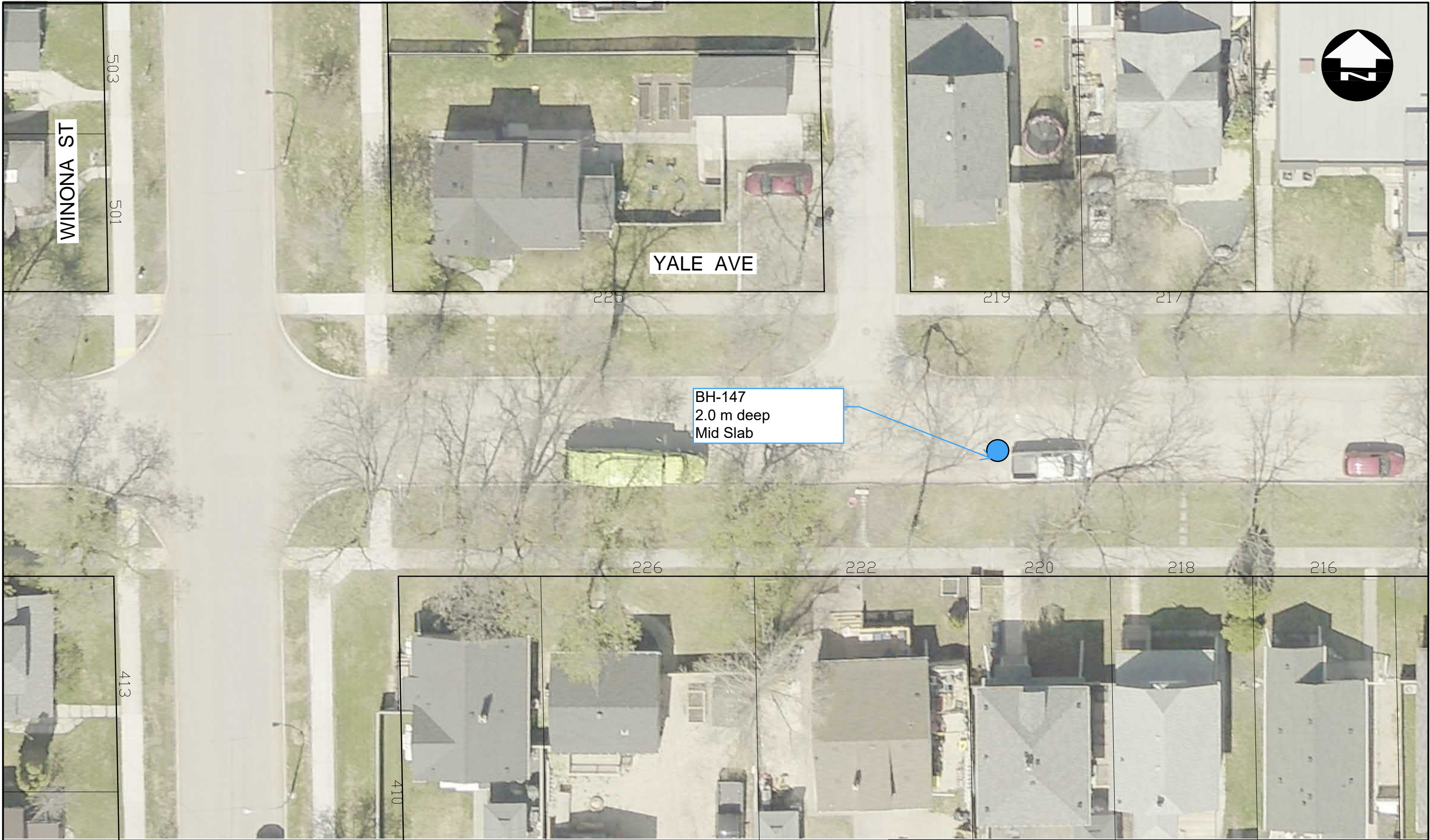
VARYING OR UNEXPECTED CONDITIONS: Should any site or subsurface conditions be encountered that are different from those described in this report or encountered at the test locations, Stantec must be notified immediately to assess if the varying or unexpected conditions are substantial and if reassessments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

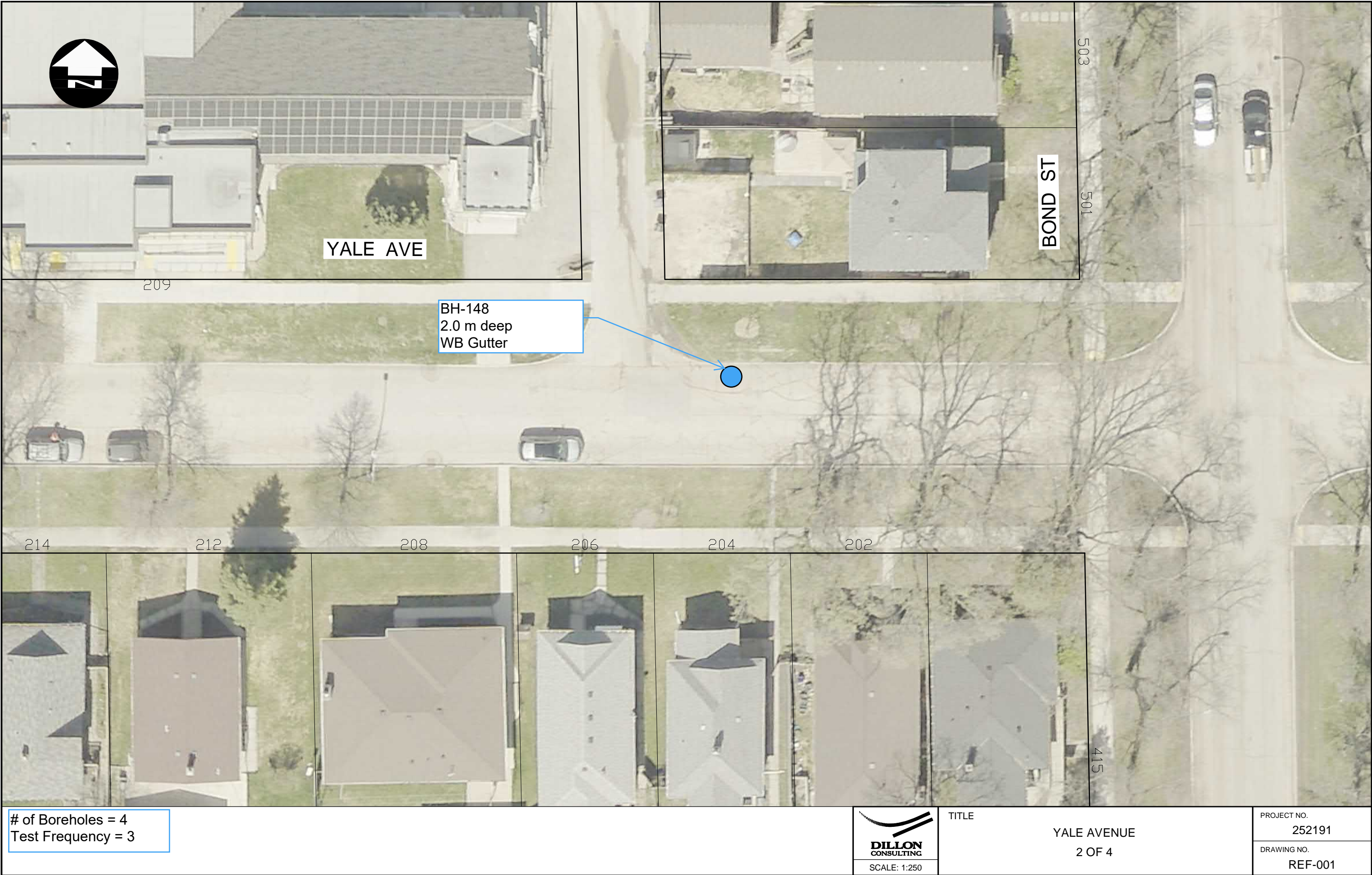


Appendix B

Borehole Location Plan

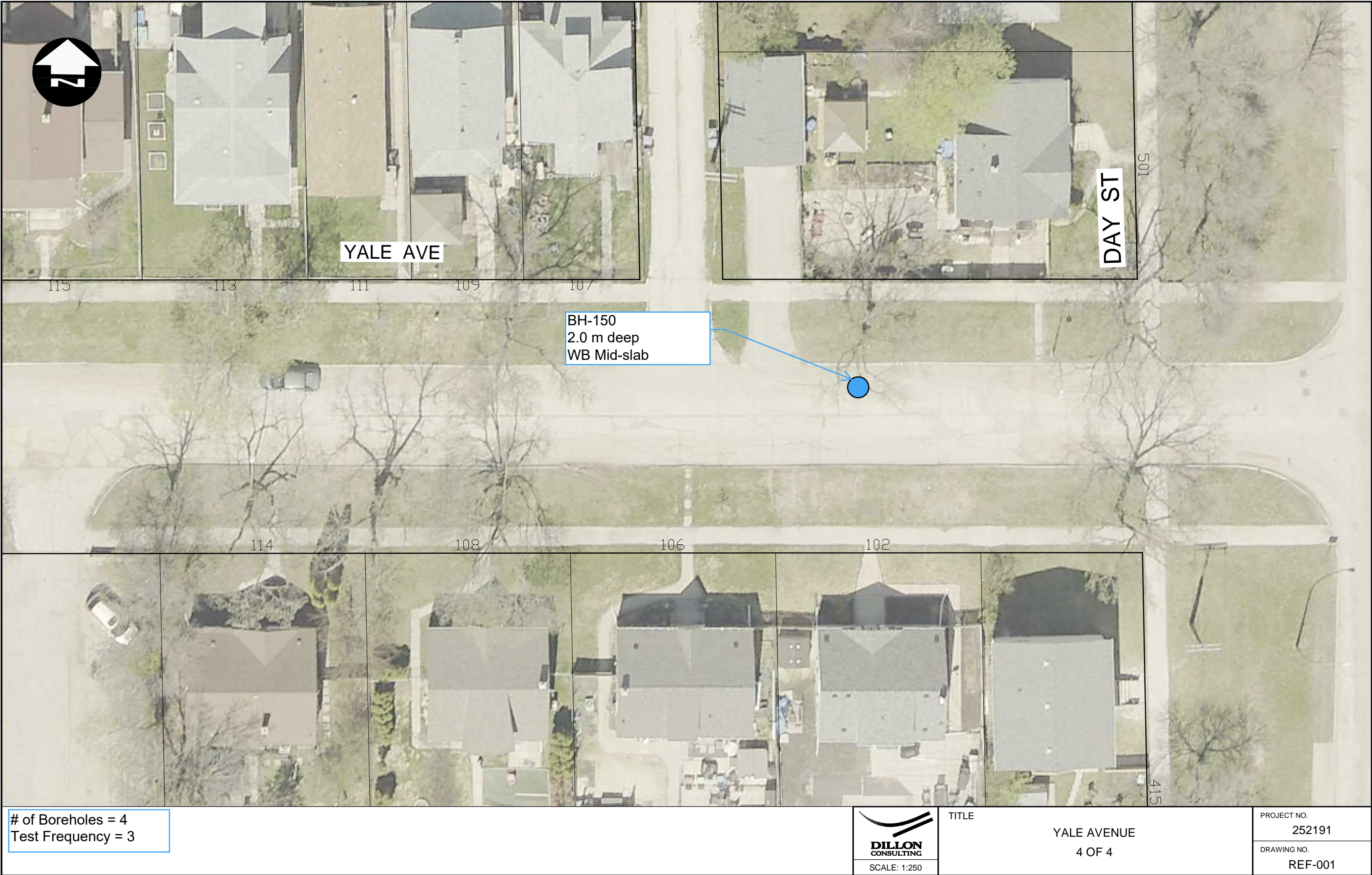


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			DRAWING NO. REF-001





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			DRAWING NO. REF-001

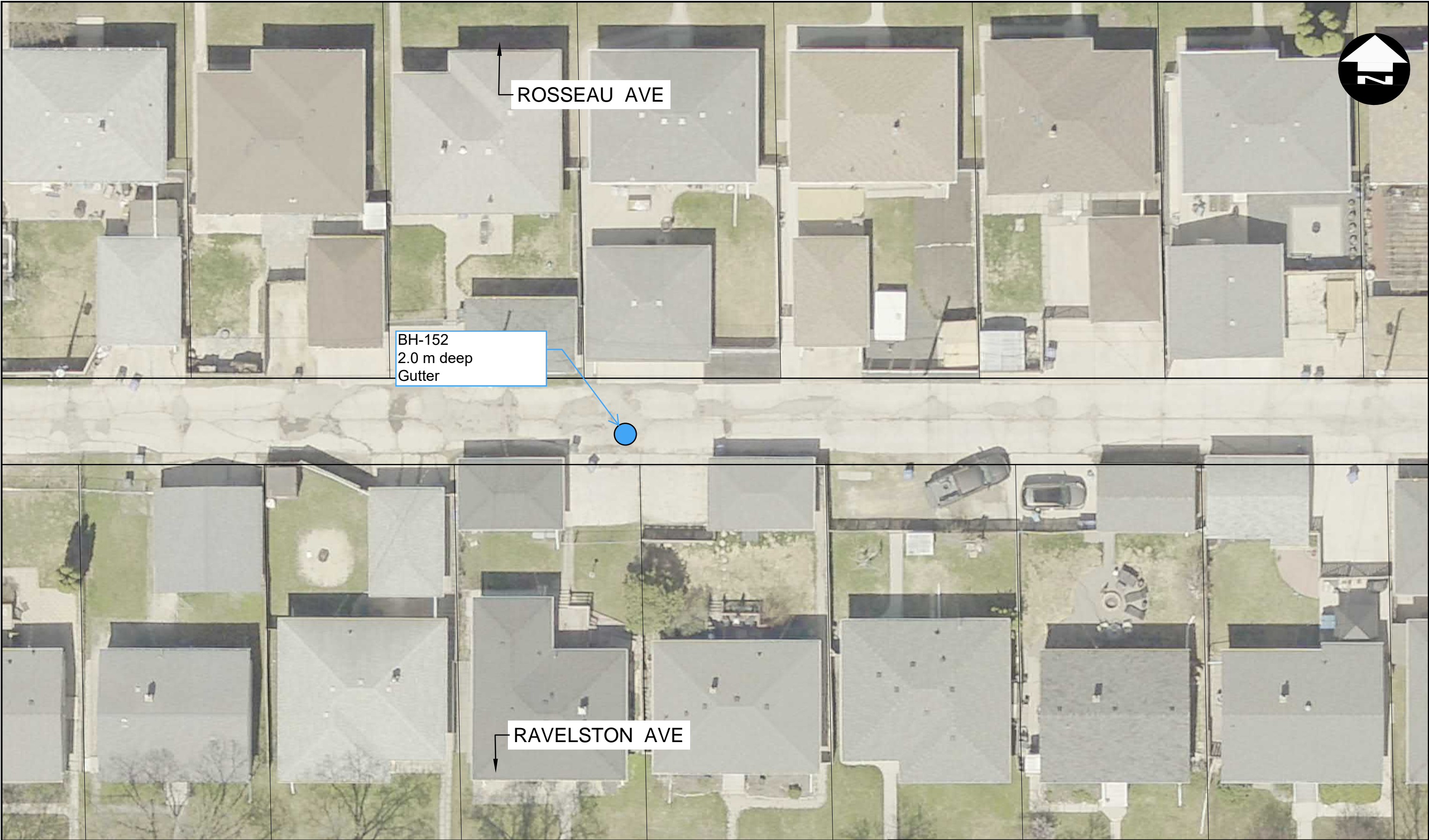




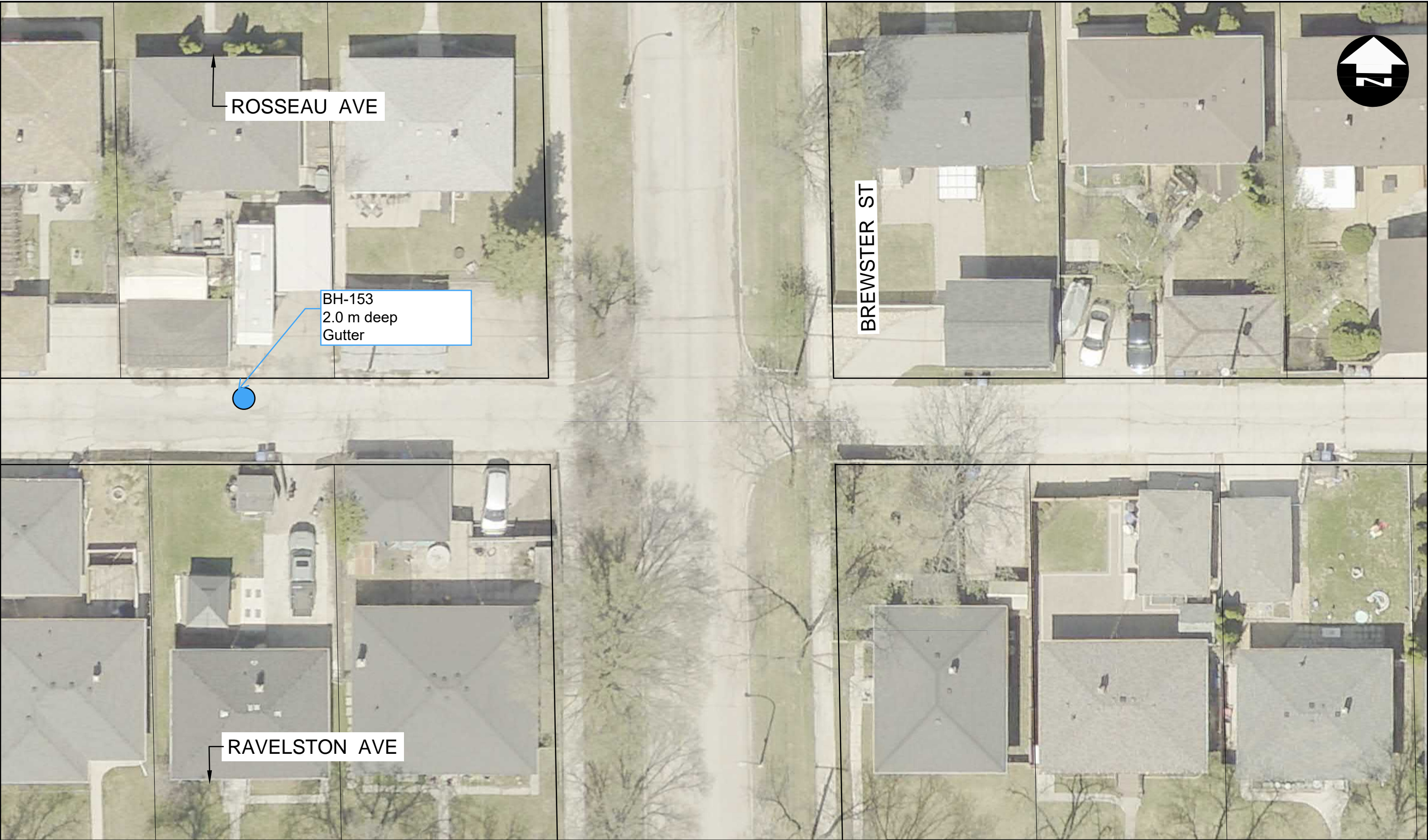
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			DRAWING NO. REF-001



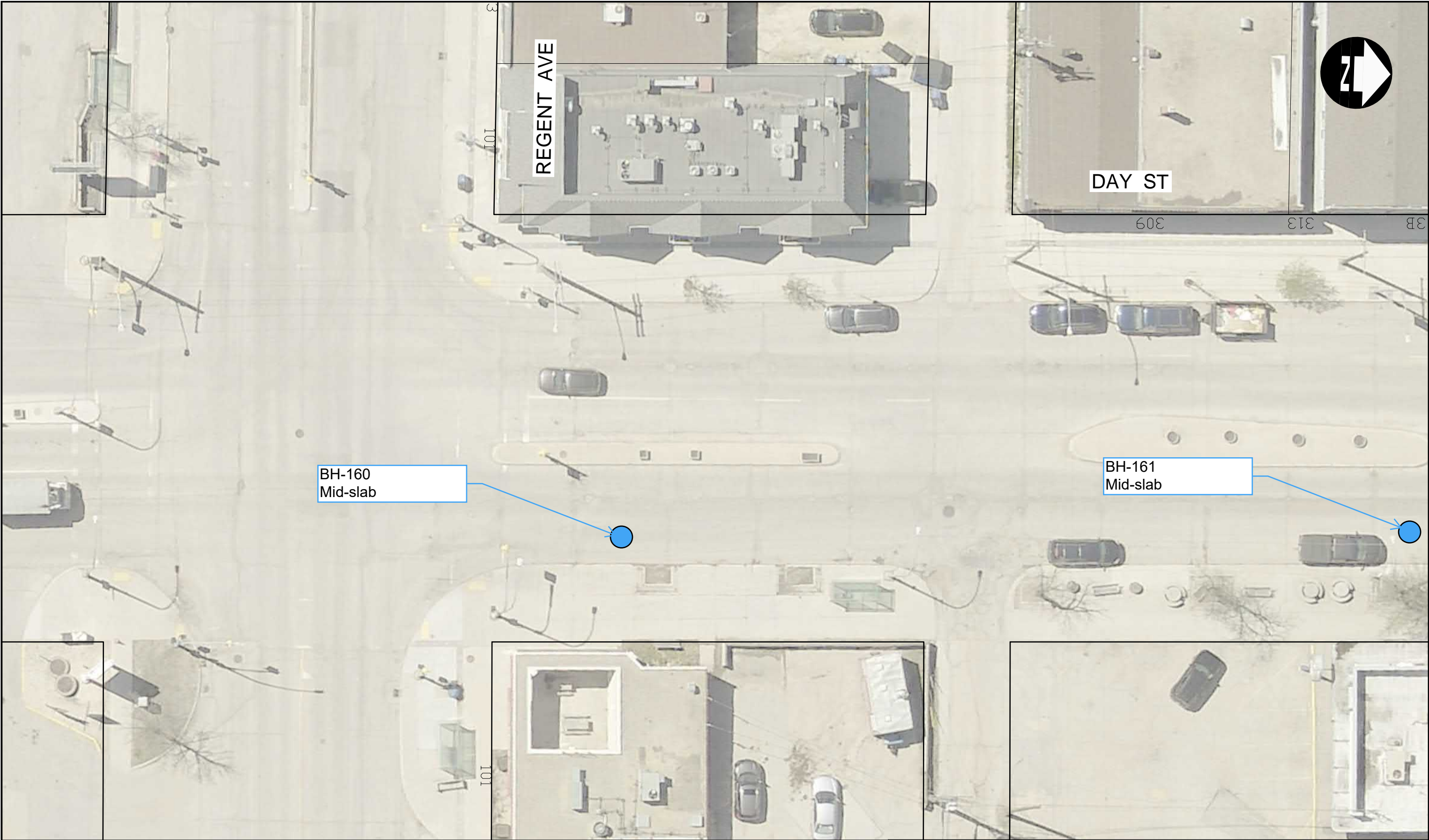
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			DRAWING NO. REF-001



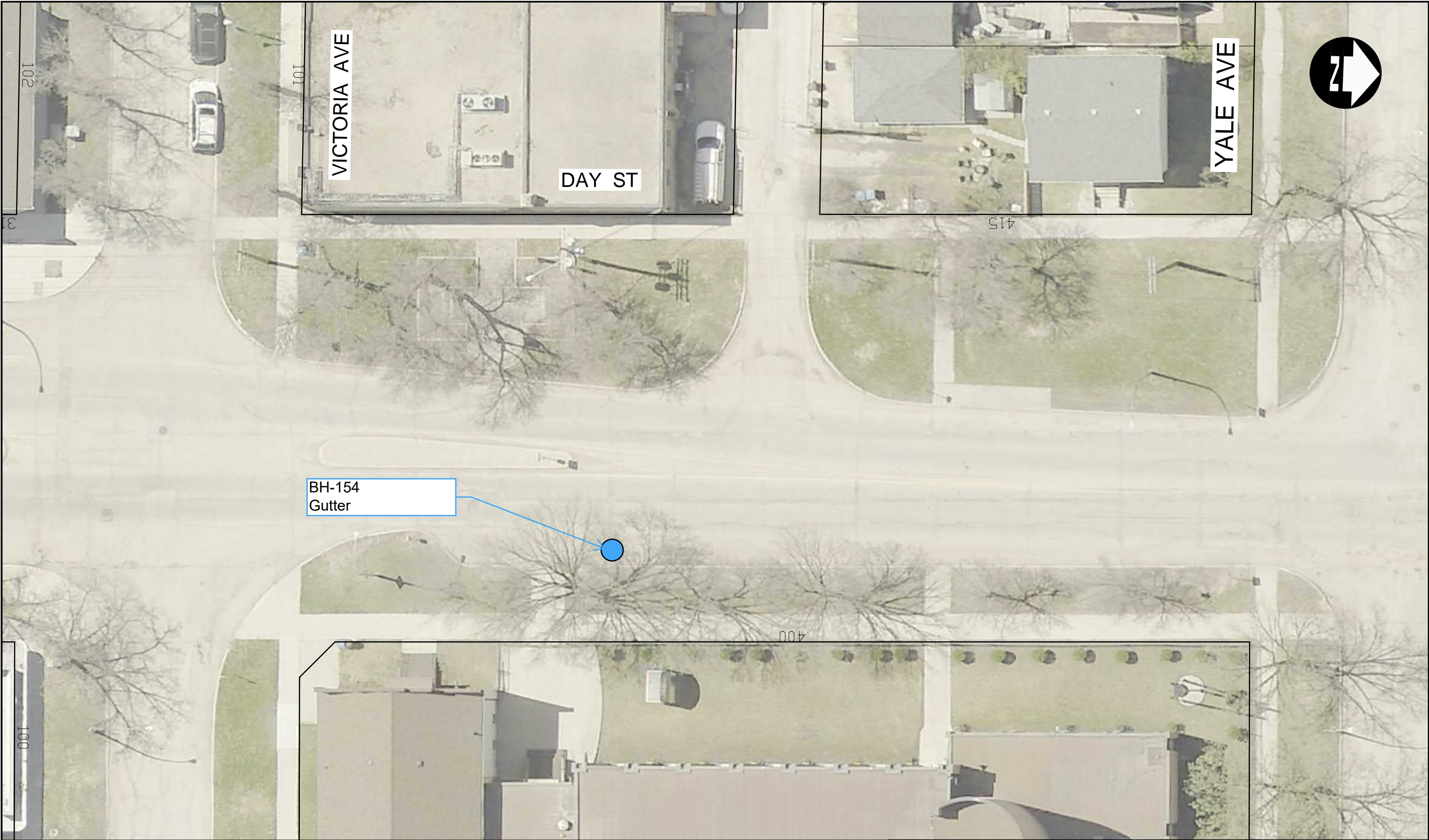
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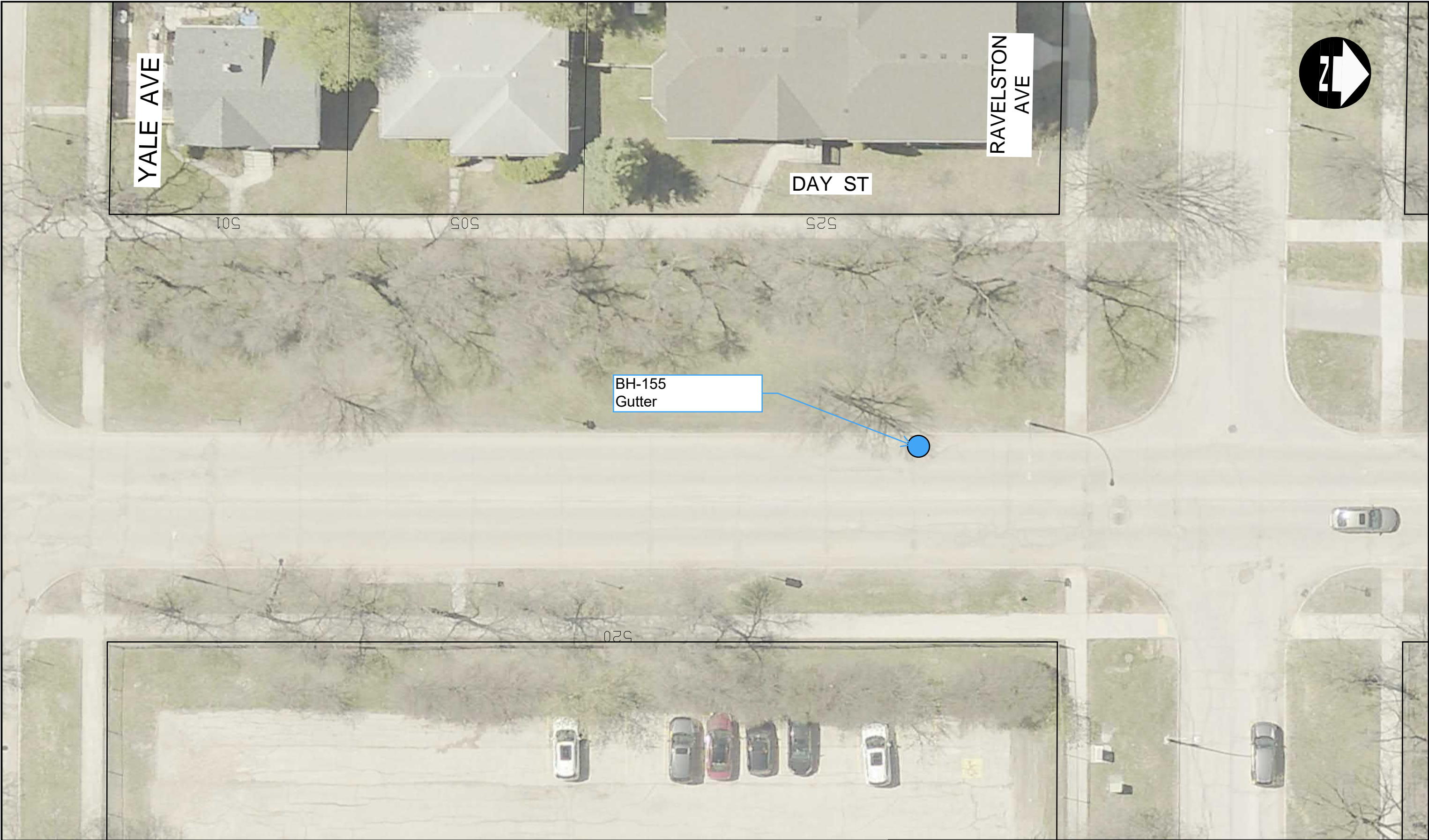
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			DRAWING NO. REF-001



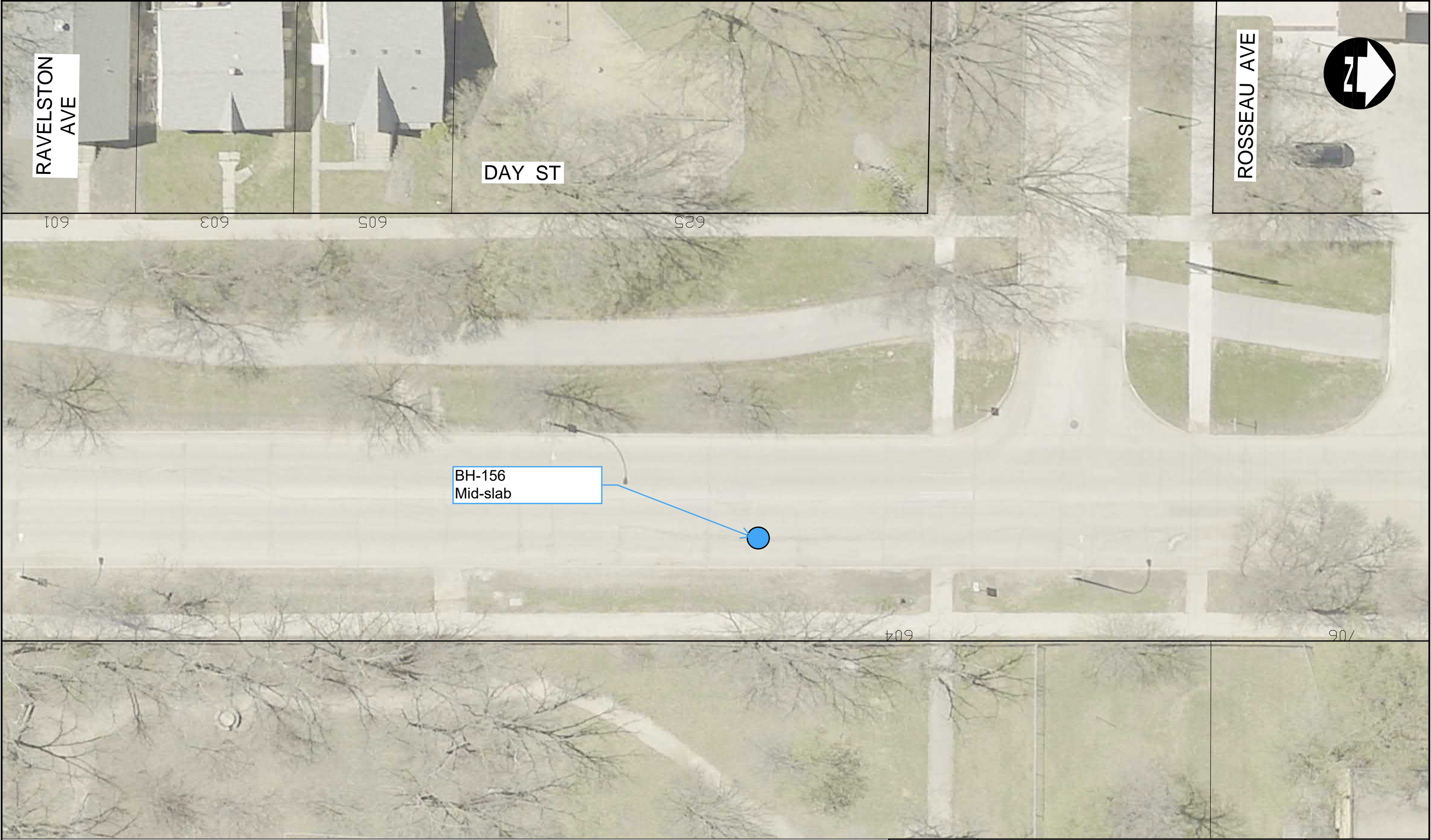
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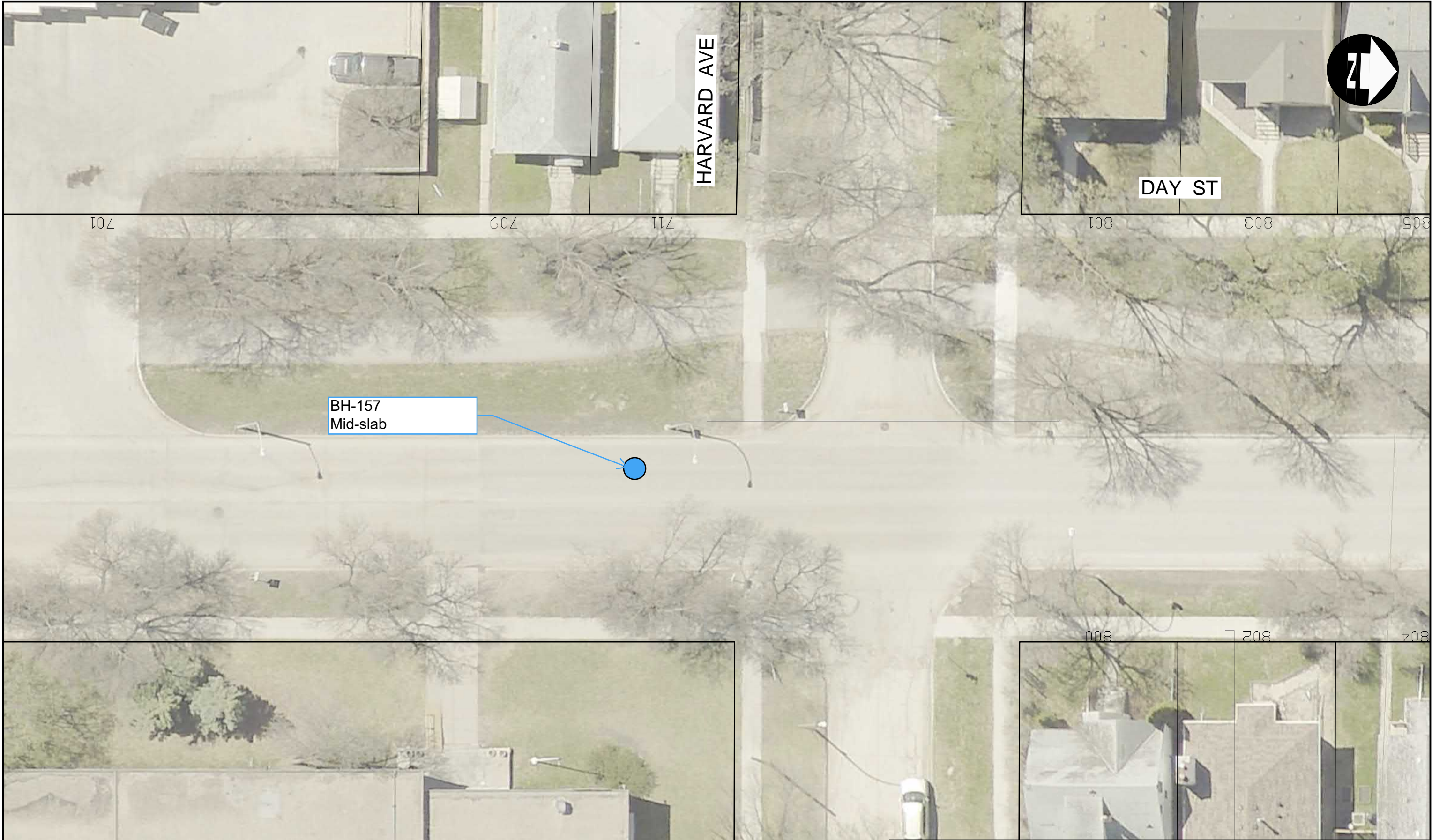
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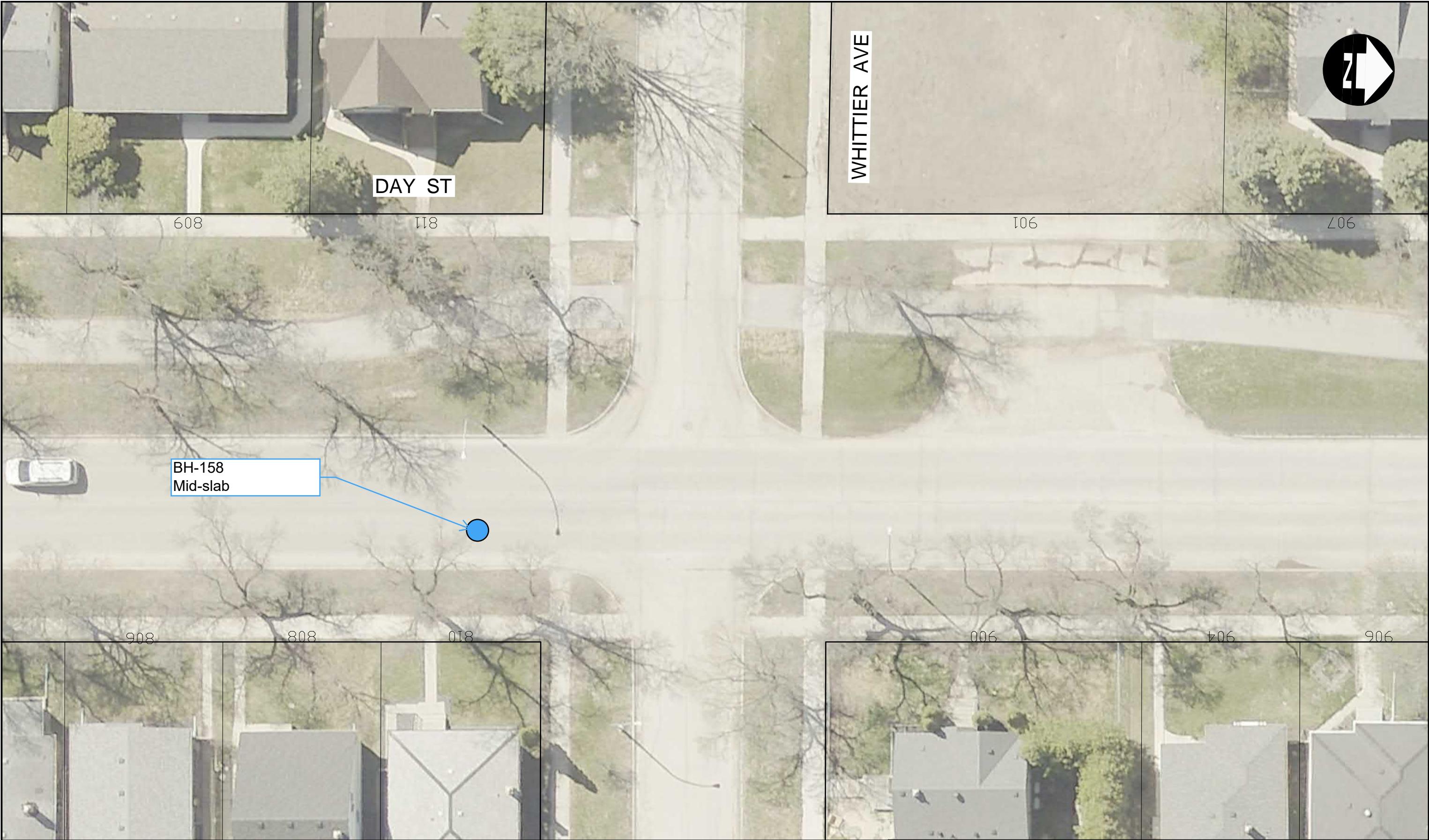
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			DRAWING NO. REF-001



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			DRAWING NO. REF-001



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			DRAWING NO. REF-001



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			DRAWING NO. REF-001



# of Cores = 2 Test Frequency = N/A	 SCALE: 1:250	TITLE ALLEY - MELROSE/DAY/REGENT/KANATA 1 OF 2	PROJECT NO. 252191
			DRAWING NO. REF-001



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			DRAWING NO. REF-001

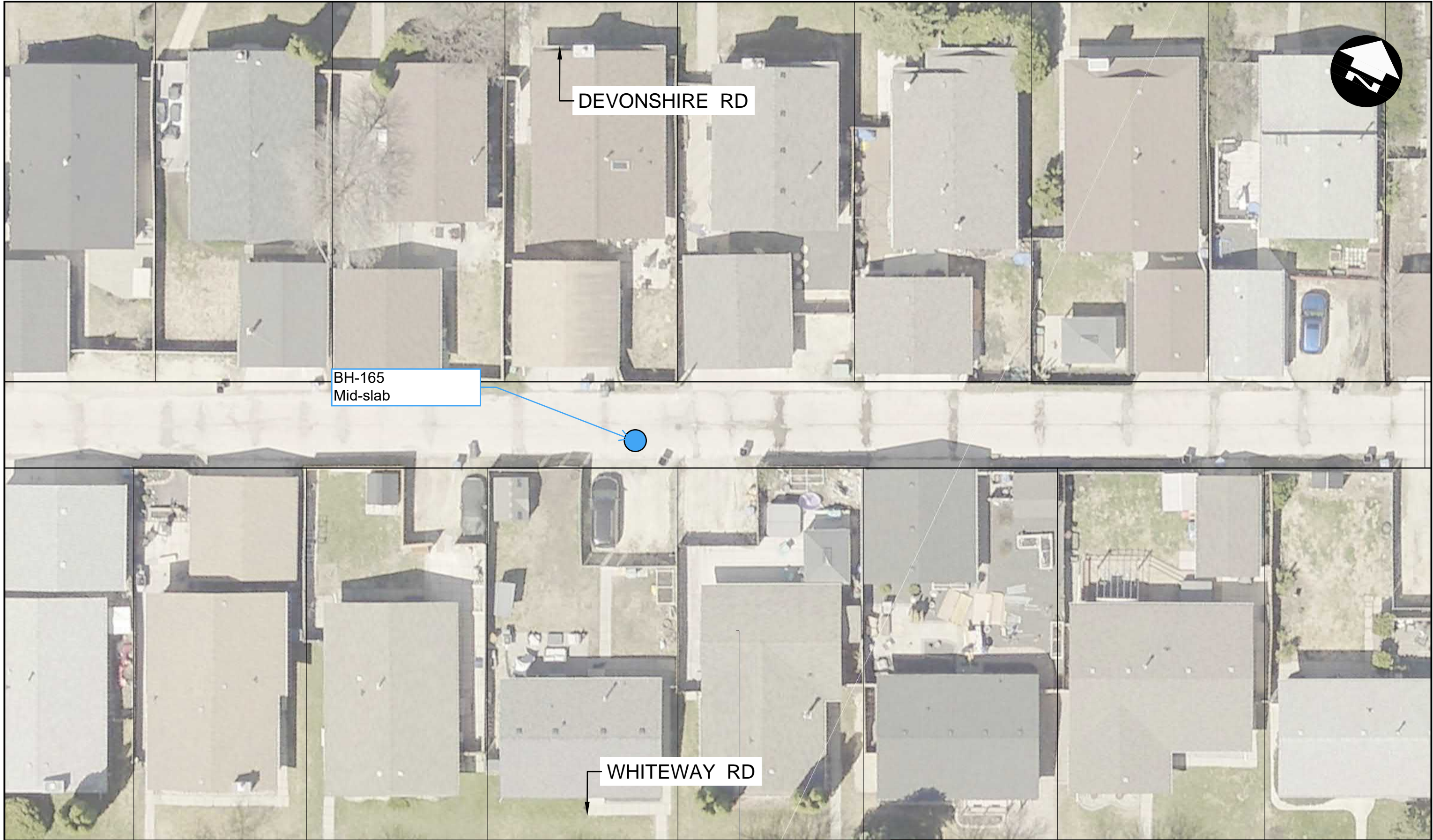


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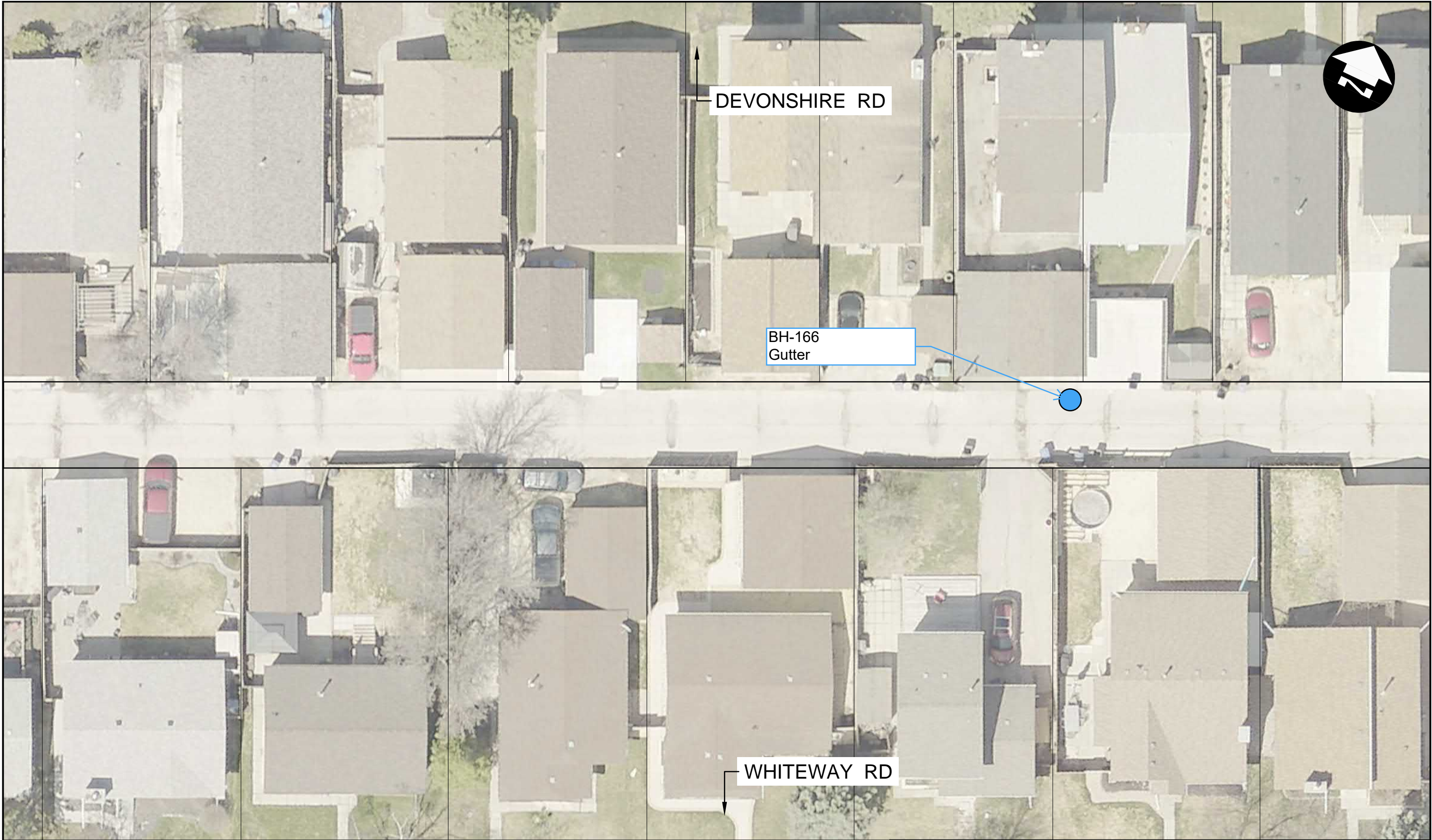


TITLE
ALLEY - WHITEWAY/SANFORD FLEMING/
DEVONSHIRE/CLOUSTON - 1 OF 4

PROJECT NO.
252191
DRAWING NO.
REF-001



# of Cores = 3 Test Frequency = N/A	 SCALE: 1:250	TITLE ALLEY - WHITEWAY/SANFORD FLEMING/ DEVONSHIRE/CLOUSTON - 2 OF 4	PROJECT NO. 252191
			DRAWING NO. REF-001



# of Cores = 3 Test Frequency = N/A	 SCALE: 1:250	TITLE ALLEY - WHITEWAY/SANFORD FLEMING/ DEVONSHIRE/CLOUSTON - 3 OF 4	PROJECT NO. 252191
			DRAWING NO. REF-001



# of Cores = 3 Test Frequency = N/A	 SCALE: 1:250	TITLE ALLEY - WHITEWAY/SANFORD FLEMING/ DEVONSHIRE/CLOUSTON - 4 OF 4	PROJECT NO. 252191
			DRAWING NO. REF-001

Appendix C

Core Photographs



Figure 1 – BH-147 – Yale Ave W



Figure 2 – BH-148 – Yale Ave W



Figure 3 – BH-149 – Yale Ave W



Figure 4 – BH-150 – Yale Ave W



Figure 5 – BH-151 – Alley
(Plessis/Rosseau/Ravelston/Brewster)



Figure 6 – BH-152 – Alley
(Plessis/Rosseau/Ravelston/Brewster)



Figure 7 – BH-153 – Alley
(Plessis/Rosseau/Ravelston/Brewster)



Figure 8 – BH-154 – Day St



Figure 9 – BH-155 – Day St



Figure 10 –BH-156 – Day St



Figure 11 – BH-157 – Day St



Figure 12 – BH-158 – Day St



Figure 13 – BH-159 – Day St



Figure 14 – BH-160 – Day St



Figure 15 – BH-161 – Day St



Figure 16 – BH-162 – Alley
(Day/Regent/Melrose/Kanata)



Figure 17 – BH-163 – Alley
(Day/Regent/Melrose/Kanata)



Figure 18 – BH-164 – Alley
(Sanford Fleming/Devonshire/Whiteway/Clouston)



Figure 19 – BH-165 – Alley
(Sanford Fleming/Devonshire/Whiteway/Clouston)



Figure 20 – BH-166 – Alley
(Sanford Fleming/Devonshire/Whiteway/Clouston)

Appendix D

Borehole Records

SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

SOIL DESCRIPTION

Terminology describing common soil genesis

<i>Rootmat</i>	vegetation, roots and moss with organic matter and topsoil typically forming a mattress at the ground surface
<i>Topsoil</i>	mixture of soil and humus capable of supporting vegetative growth
<i>Peat</i>	mixture of visible and invisible fragments of decayed organic matter
<i>Till</i>	unstratified glacial deposit which may range from clay to boulders
<i>Fill</i>	material below the surface identified as placed by humans (excluding buried services)

Terminology describing soil structure

<i>Desiccated</i>	having visible signs of weathering by oxidization of clay minerals, shrinkage cracks, etc.
<i>Fissured</i>	having cracks, and hence a blocky structure
<i>Varved</i>	composed of regular alternating layers of silt and clay
<i>Stratified</i>	composed of alternating successions of different soil types, e.g. silt and sand
<i>Layer</i>	> 75 mm in thickness
<i>Seam</i>	2 mm to 75 mm in thickness
<i>Parting</i>	< 2 mm in thickness

Terminology describing soil types

The classification of soil types are made on the basis of grain size and plasticity in accordance with the Unified Soil Classification System (USCS) (ASTM D 2487 or D 2488) which excludes particles larger than 75 mm. For particles larger than 75 mm, and for defining percent clay fraction in hydrometer results, definitions proposed by Canadian Foundation Engineering Manual, 4th Edition are used. The USCS provides a group symbol (e.g. SM) and group name (e.g. silty sand) for identification.

Terminology describing cobbles, boulders, and non-matrix materials (organic matter or debris)

Terminology describing materials outside the USCS, (e.g. particles larger than 75 mm, visible organic matter, and construction debris) is based upon the proportion of these materials present:

<i>Trace, or occasional</i>	Less than 10%
<i>Some</i>	10-20%
<i>Frequent</i>	> 20%

Terminology describing compactness of cohesionless soils

The standard terminology to describe cohesionless soils includes compactness (formerly "relative density"), as determined by the Standard Penetration Test (SPT) N-Value - also known as N-Index. The SPT N-Value is described further on Page 2. A relationship between compactness condition and N-Value is shown in the following table.

Compactness Condition	SPT N-Value
<i>Very Loose</i>	<4
<i>Loose</i>	4-10
<i>Compact</i>	10-30
<i>Dense</i>	30-50
<i>Very Dense</i>	>50

Terminology describing consistency of cohesive soils

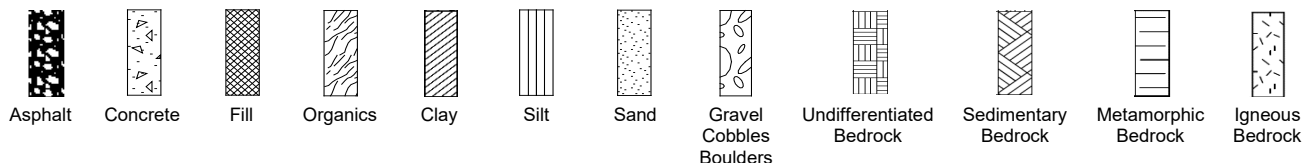
The standard terminology to describe cohesive soils includes the consistency, which is based on undrained shear strength as measured by *in situ* vane tests, penetrometer tests, or unconfined compression tests. Consistency may be crudely estimated from SPT N-Value based on the correlation shown in the following table (Terzaghi and Peck, 1967). The correlation to SPT N-Value is used with caution as it is only very approximate.

Consistency	Undrained Shear Strength		Approximate SPT N-Value
	kips/sq.ft	kPa	
<i>Very Soft</i>	<0.25	<12.5	<2
<i>Soft</i>	0.25 - 0.5	12.5 - 25	2-4
<i>Firm</i>	0.5 - 1.0	25 - 50	4-8
<i>Stiff</i>	1.0 - 2.0	50 - 100	8-15
<i>Very Stiff</i>	2.0 - 4.0	100 - 200	15-30
<i>Hard</i>	>4.0	>200	>30



STRATA PLOT

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols. The dimensions within the strata symbols are not indicative of the particle size, layer thickness, etc. Not all bedrock strata plots are shown.



SAMPLE TYPE

AS, BS, GS		Auger sample; bulk sample; grab sample
DP		Direct-Push sample (small diameter tube sampler hydraulically advanced)
PS		Piston sample
SO		Sonic tube
SS		Split spoon sample (obtained by performing the Standard Penetration Test)
ST		Shelby Tube or thin wall tube
SV		Shear vane
RC HQ, NQ, BQ, etc.		Rock Core; samples obtained with the use of standard size diamond coring bits.

WATER LEVEL



Measured:
in standpipe, piezometer, or well



Inferred:
seepage noted or water level measured during or at completion of drilling

RECOVERY FOR SOIL SAMPLES

The recovery is recorded as the length of the soil sample recovered in the direct push, split spoon sampler, Shelby Tube, or sonic tube.

N-VALUE

Numbers in this column are the field results of the Standard Penetration Test (SPT): the number of blows of a 140-pound (63.5 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (50.8 mm) O.D. split spoon sampler one foot (300 mm) into the soil. In accordance with ASTM D1586, the N-Value equals the sum of the number of blows (N) required to drive the sampler over the interval of 6 to 18 in. (150 to 450 mm). However, when a 24 in. (610 mm) sampler is used, the number of blows (N) required to drive the sampler over the interval of 12 to 24 in. (300 to 610 mm) may be reported if this value is lower. For split spoon samples where insufficient penetration was achieved and N-Values cannot be presented, the number of blows are reported over sampler penetration in millimetres (e.g. 50 for 75 mm or 50/75 mm). Some design methods make use of N-values corrected for various factors such as overburden pressure, energy ratio, borehole diameter, etc. No corrections have been applied to the N-values presented on the log.

DYNAMIC CONE PENETRATION TEST (DCPT)

Dynamic cone penetration tests are performed using a standard 60-degree apex cone connected to 'A' size drill rods with the same standard fall height and weight as the Standard Penetration Test. The DCPT value is the number of blows of the hammer required to drive the cone one foot (300 mm) into the soil. The DCPT is used as a probe to assess soil variability.

OTHER TESTS

S	Sieve analysis
H	Hydrometer analysis
k	Laboratory permeability
γ	Unit weight
G_s	Specific gravity of soil particles
CD	Consolidated drained triaxial
CU	Consolidated undrained triaxial with pore pressure measurements
UU	Unconsolidated undrained triaxial
DS	Direct Shear
C	Consolidation
Q_u	Unconfined compression
I_p	Point Load Index (I_p on Borehole Record equals $I_p(50)$ in which the index is corrected to a reference diameter of 50 mm)

	Single packer permeability test; test interval from depth shown to bottom of borehole
	Double packer permeability test; test interval as indicated
	Falling head permeability test using casing
	Falling head permeability test using well point or piezometer

ROCK DESCRIPTION

Except where specified below, terminology for describing rock is as defined by the International Society for Rock Mechanics (ISRM) 2007 publication "The Complete ISRM Suggested Methods for Rock Characterization, Testing and Monitoring: 1974-2006"

Total Core Recovery (TCR) denotes the sum of all measurable rock core recovered in one drill run. The value is noted as a percentage of recovered rock core based on the total length of the drill run.

Solid Core Recovery (SCR) is defined as total length of solid core divided by the total drilled length, presented as a percentage. Solid core is defined as core with one full diameter.

Rock Quality Designation (RQD) is a modified core recovery that incorporates only pieces of solid core that are equal to or greater than 10 cm (4") along the core axis. It is calculated as the total cumulative length of solid core (> 10 cm) as measured along the centerline of the core divided by the total length of borehole drilled for each drill run or geotechnical interval, presented as a percentage. RQD is determined in accordance with ASTM D6032.

Fracture Index (FI) is defined as the number of naturally occurring fractures within a given length of core. The Fracture Index is reported as a simple count of natural occurring fractures.

Terminology describing rock quality

Rock Mass Quality	Rock Quality Designation Number (RQD)	Alternate (Colloquial) Rock Mass Quality	
<i>Very Poor Quality</i>	0-25	<i>Very Severely Fractured</i>	<i>Crushed</i>
<i>Poor Quality</i>	25-50	<i>Severely Fractured</i>	<i>Shattered or Very Blocky</i>
<i>Fair Quality</i>	50-75	<i>Fractured</i>	<i>Blocky</i>
<i>Good Quality</i>	75-90	<i>Moderately Jointed</i>	<i>Sound</i>
<i>Excellent Quality</i>	90-100	<i>Intact</i>	<i>Very Sound</i>

Terminology describing rock strength

Strength Classification	Grade	Field Estimates of Uniaxial Compressive Strength	Unconfined Compressive Strength (MPa)
<i>Extremely Weak</i>	R0	Indented by thumbnail	<1
<i>Very Weak</i>	R1	Crumbles under firm blows of geological hammer, can be peeled with a pocketknife	1 – 5
<i>Weak</i>	R2	Peeled by pocketknife with difficulty, shallow indentations made by firm blow with point of geological hammer	5 – 25
<i>Medium Strong</i>	R3	Cannot be scraped or peeled with a pocketknife, can be fractured with single firm blow of geological hammer	25 – 50
<i>Strong</i>	R4	More than one blow with geological hammer to fracture	50 – 100
<i>Very Strong</i>	R5	Many blows with geological hammer to fracture	100 – 250
<i>Extremely Strong</i>	R6	Can only be chipped with geological hammer	>250

Terminology describing rock weathering

Term	Symbol	Description
<i>Fresh</i>	W1	No visible signs of rock weathering. Slight discoloration along major discontinuities
<i>Slightly</i>	W2	Discoloration indicates weathering of rock on discontinuity surfaces. All the rock material may be discolored.
<i>Moderately</i>	W3	Less than half the rock is decomposed and/or disintegrated into soil.
<i>Highly</i>	W4	More than half the rock is decomposed and/or disintegrated into soil.
<i>Completely</i>	W5	All the rock material is decomposed and/or disintegrated into soil. The original mass structure is still largely intact.
<i>Residual Soil</i>	W6	All the rock converted to soil. Structure and fabric destroyed.

Terminology describing rock with respect to discontinuity and bedding spacing

Spacing (mm)	Discontinuities Spacing	Bedding
>6000	<i>Extremely Wide</i>	-
2000-6000	<i>Very Wide</i>	<i>Very Thick</i>
600-2000	<i>Wide</i>	<i>Thick</i>
200-600	<i>Moderate</i>	<i>Medium</i>
60-200	<i>Close</i>	<i>Thin</i>
20-60	<i>Very Close</i>	<i>Very Thin</i>
<20	<i>Extremely Close</i>	<i>Laminated</i>
<6	-	<i>Thinly Laminated</i>



CLIENT: **Dillon Consulting Ltd.**

PROJECT NO.: **123317994**

PROJECT: **2026 Local Street Renewal Program – 26-R-08**

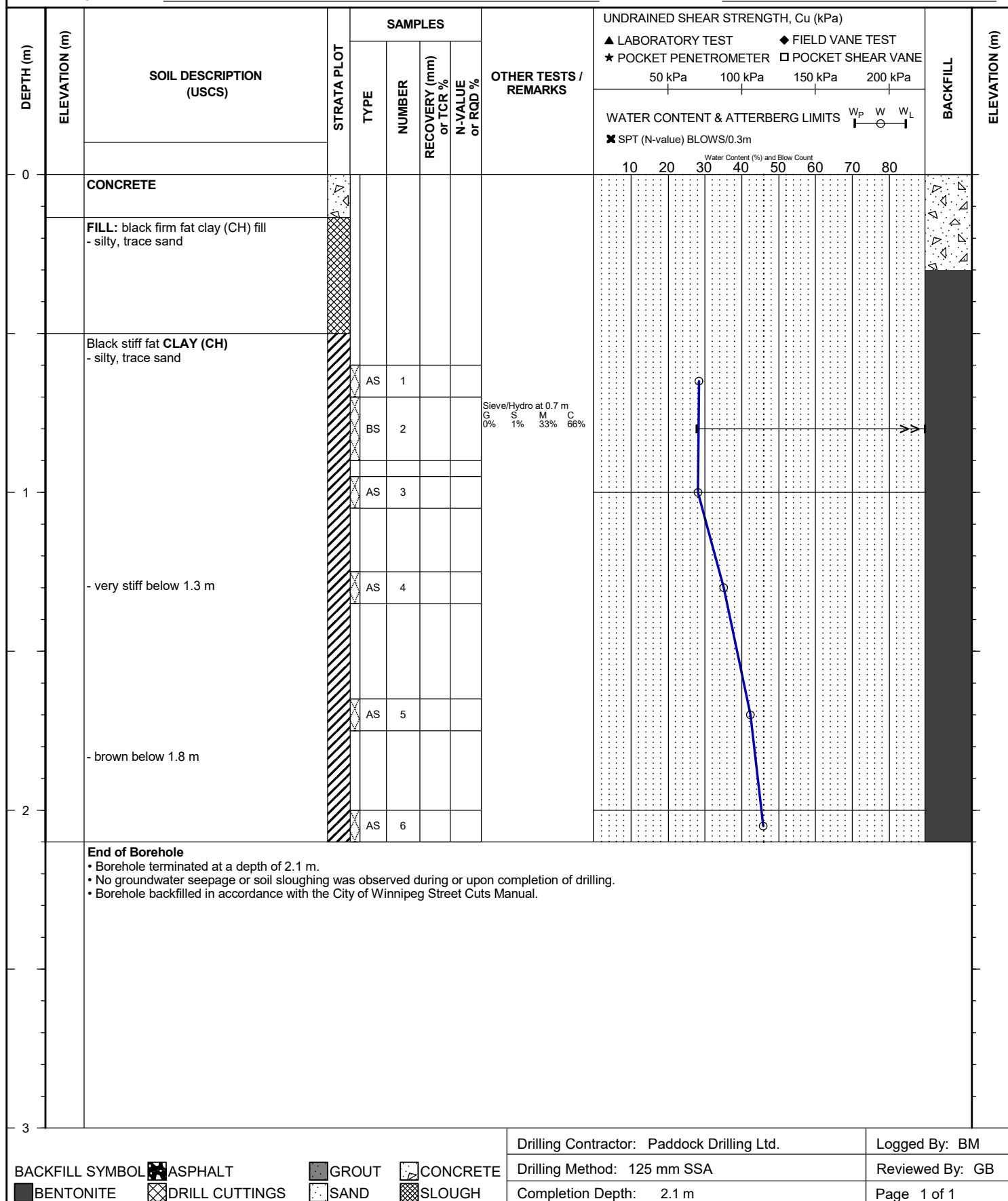
BH ELEVATION: N/A

LOCATION: Yale Ave W

DATUM: N/A

DATE BORED: **December 15 2025**

WATER LEVEL: **N/A**





Stantec

BOREHOLE RECORD

BH-148

CLIENT: Dillon Consulting Ltd.

PROJECT NO.: 123317994

PROJECT: 2026 Local Street Renewal Program – 26-R-08

BH ELEVATION: N/A

LOCATION: Yale Ave W

DATUM: N/A

DATE BORED: December 12 2025

WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)		WATER CONTENT & ATTERBERG LIMITS	BACKFILL	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		50 kPa	100 kPa			
0		CONCRETE											
		FILL: black firm fat clay (CH) fill - silty, trace sand											
		Grey soft fat CLAY (CH) - silty, trace silt		AS	1								
1		- stiff below 1.1 m		BS	2			Sieve/Hydro at 0.8 m G 0% S 1% M 21% C 78%					
				AS	3								
				AS	4								
				AS	5								
2				AS	6								
		End of Borehole <ul style="list-style-type: none">Borehole terminated at a depth of 2.2 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.											
3													

BACKFILL SYMBOL

ASPHALT

BENTONITE

DRILL CUTTINGS

SAND

GROUT

CONCRETE

SLOUGH

Drilling Contractor: Paddock Drilling Ltd.

Drilling Method: 125 mm SSA

Completion Depth: 2.2 m

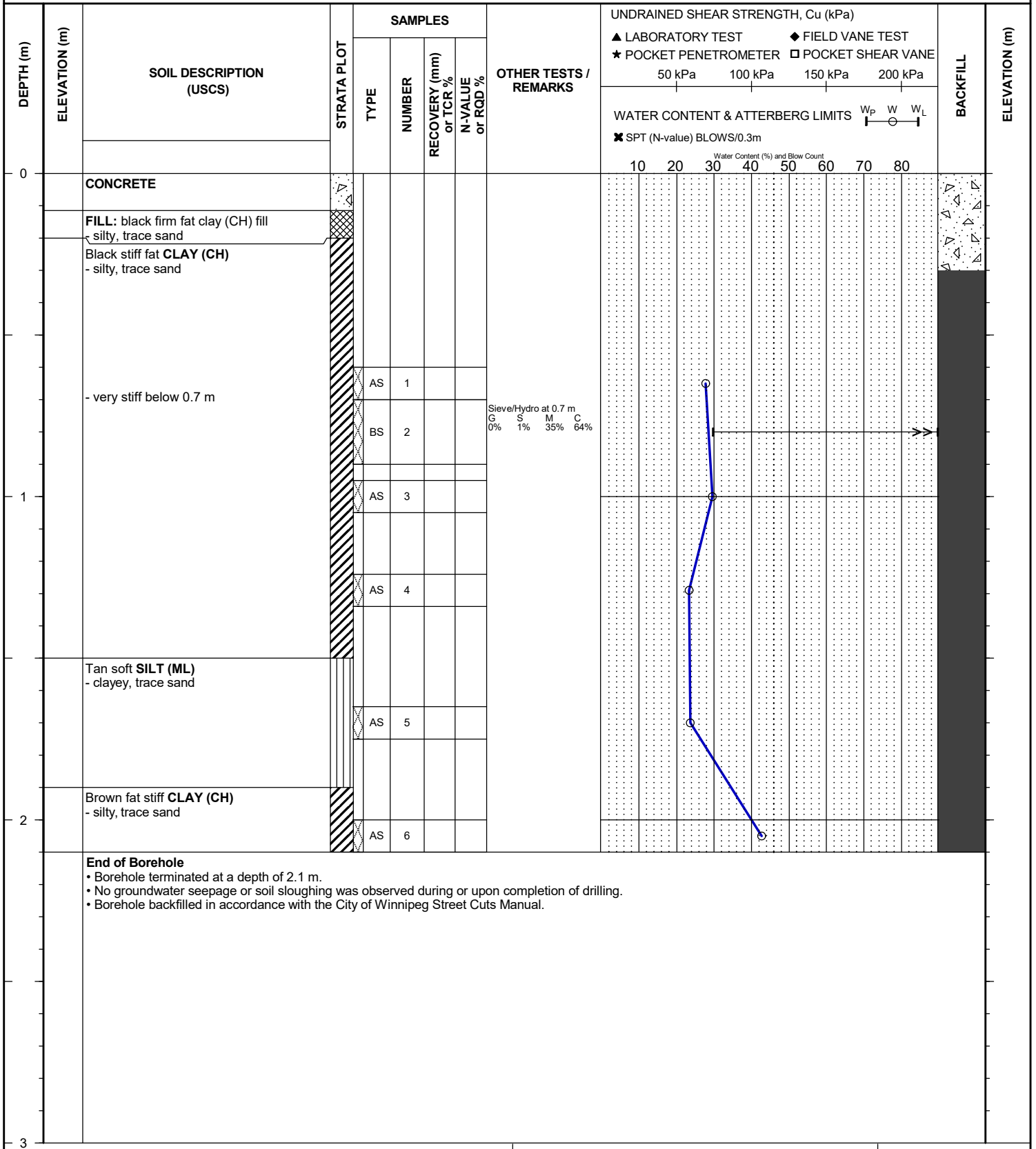
Logged By: BM

Reviewed By: GB

Page 1 of 1

CLIENT: Dillon Consulting Ltd.
 PROJECT: 2026 Local Street Renewal Program – 26-R-08
 LOCATION: Yale Ave W
 DATE BORED: December 15 2025

PROJECT NO.: 123317994
 BH ELEVATION: N/A
 DATUM: N/A
 WATER LEVEL: N/A





Stantec

BOREHOLE RECORD

BH-150

CLIENT: Dillon Consulting Ltd.

PROJECT NO.: 123317994

PROJECT: 2026 Local Street Renewal Program – 26-R-08

BH ELEVATION: N/A

LOCATION: Yale Ave W

DATUM: N/A

DATE BORED: December 12 2025

WATER LEVEL: N/A

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION (USCS)	STRATA PLOT	SAMPLES				OTHER TESTS / REMARKS	UNDRAINED SHEAR STRENGTH, Cu (kPa)		WATER CONTENT & ATTERBERG LIMITS	BACKFILL	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		50 kPa	100 kPa			
0		CONCRETE											
		FILL: black firm fat clay (CH) fill - some silt											
1		Grey fat firm CLAY (CH) - some silt		AS	1								
				BS	2								
				AS	3								
				AS	4								
				AS	5								
2				AS	6								
3		End of Borehole <ul style="list-style-type: none">Borehole terminated at a depth of 2.2 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.											

BACKFILL SYMBOL

ASPHALT

GROUT

CONCRETE

BENTONITE

DRILL CUTTINGS

SAND

SLOUGH

Drilling Contractor: Paddock Drilling Ltd.

Drilling Method: 125 mm SSA

Completion Depth: 2.2 m

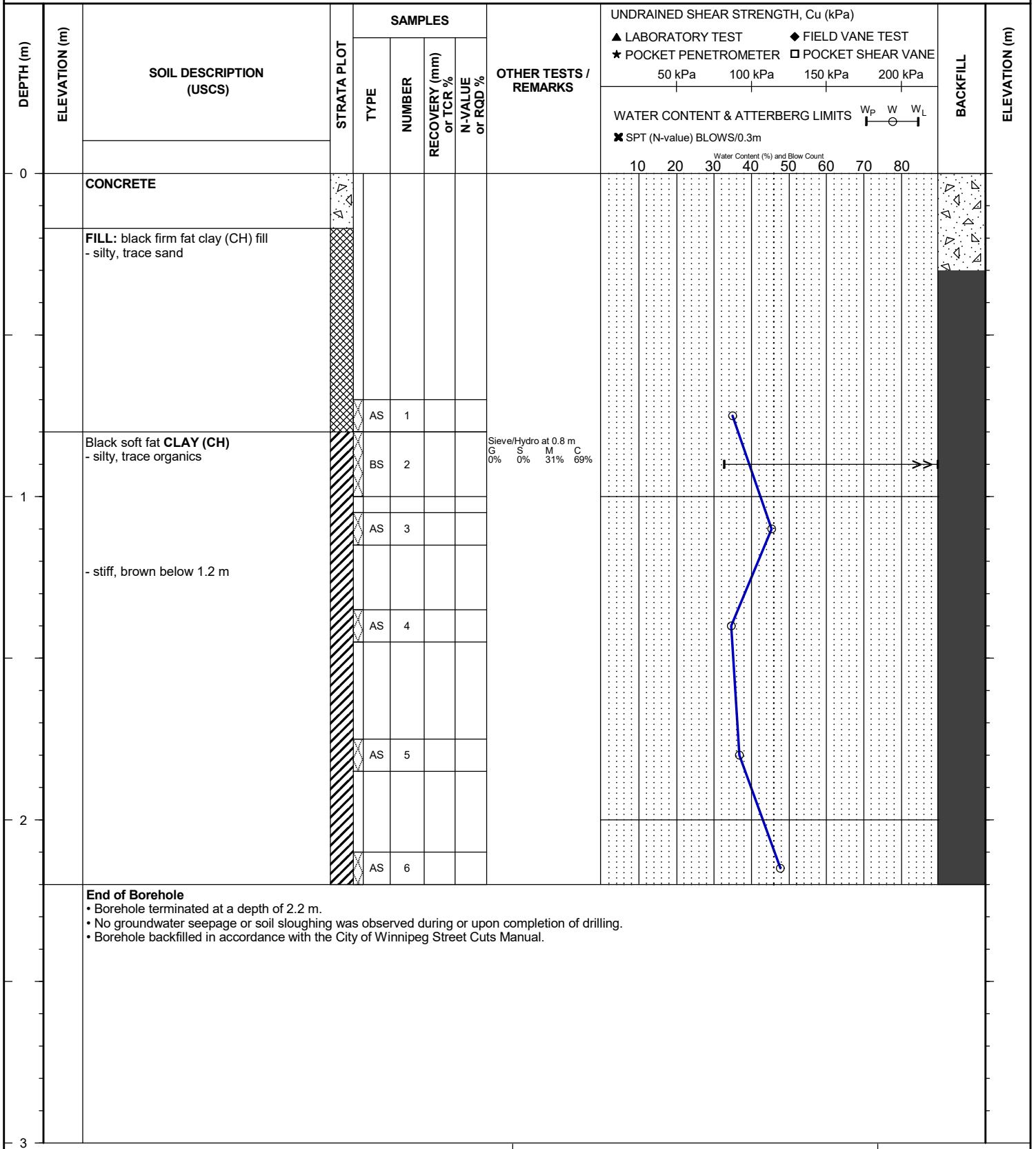
Logged By: BM

Reviewed By: GB

Page 1 of 1

CLIENT: Dillon Consulting Ltd.
 PROJECT: 2026 Local Street Renewal Program – 26-R-08
 LOCATION: Alley (Plessis/Rosseau/Ravelston/Brewster)
 DATE BORED: December 12 2025

PROJECT NO.: 123317994
 BH ELEVATION: N/A
 DATUM: N/A
 WATER LEVEL: N/A



CLIENT: Dillon Consulting Ltd.
 PROJECT: 2026 Local Street Renewal Program – 26-R-08
 LOCATION: Alley (Plessis/Rosseau/Ravelston/Brewster)
 DATE BORED: December 12 2025

PROJECT NO.: 123317994
 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)		WATER CONTENT & ATTERBERG LIMITS	BACKFILL	ELEVATION (m)
				TYPE	NUMBER	RECOVERY (mm) or TCR %	N-VALUE or RQD %		50 kPa	100 kPa			
0		CONCRETE											
		FILL: black firm fat clay (CH) fill - silty, trace sand											
		Grey stiff fat CLAY (CH) - silty											
				AS	1								
				BS	2			Sieve/Hydro at 0.8 m G 0% S 0% M 25% C 74%					
				AS	3								
				AS	4								
		- brown below 1.5 m		AS	5								
				AS	6								
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. • Borehole backfilled in accordance with the City of Winnipeg Street Cuts Manual.													

BACKFILL SYMBOL

ASPHALT
 GROUT
 CONCRETE
 BENTONITE
 DRILL CUTTINGS
 SAND
 SLOUGH

Drilling Contractor: Paddock Drilling Ltd.

Drilling Method: 125 mm SSA

Completion Depth: 2.2 m

Logged By: BM

Reviewed By: GB

Page 1 of 1

Appendix E

Laboratory Test Reports

Table 2 – Core Compressive Strength Test Results

Core No.	Street	Diameter (mm)	Length (mm)	L/D Ratio	Correction Factor	Peak Load (kN)	Compressive Strength (MPa)	
							Measured	Corrected
155	Day St	75.22	110.76	1.472	0.9566	302.38	68.05	65.09
158	Day St	75.68	189.50	2.504	1.0000	207.28	46.08	46.08
160	Day St	75.66	127.70	1.688	0.9750	175.07	38.94	37.97
161	Day St	75.47	170.40	2.258	1.0000	185.39	41.44	41.44
162	Alley (Day/Regent/ Melrose/Kanata)	75.44	111.13	1.473	0.9568	232.85	52.09	49.84
163	Alley (Day/Regent/ Melrose/Kanata)	75.58	158.95	2.103	1.0000	208.57	46.49	46.49
164	Alley (Sanford Fleming/Devonshire/ Whiteway/Clouston)	75.08	152.97	2.037	1.0000	211.90	47.86	47.86
166	Alley (Sanford Fleming/Devonshire/ Whiteway/Clouston)	75.24	150.67	2.003	1.0000	204.65	46.03	46.03

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD A - MULTIPOINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 1

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2025.Dec.30

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Brent McAughey

MATERIAL IDENTIFICATION

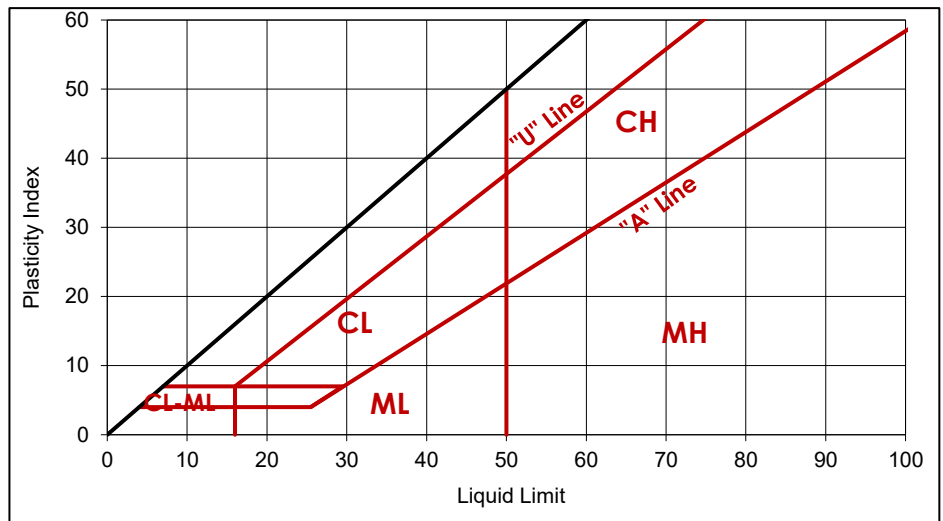
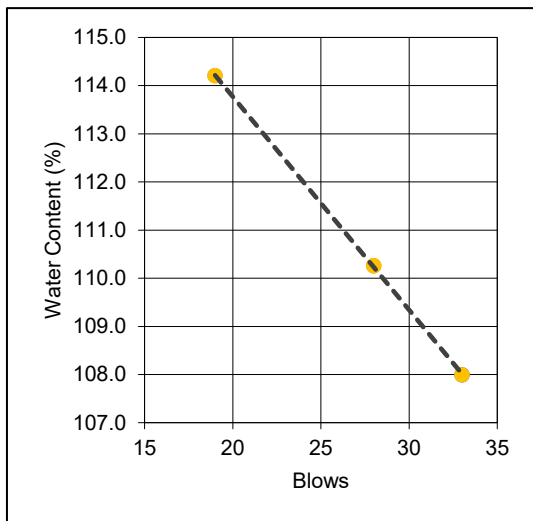
CLIENT FIELD ID BH-147, 0.7 m

STANTEC SAMPLE NO. 2694

	LIQUID LIMIT		
TRIAL	1	2	3
BLOWS	33	28	19
MC (%)	108	110	114

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	28	28

LIQUID LIMIT, LL	112
PLASTIC LIMIT, PL	28
PLASTICITY INDEX, PI	84
AS REC'D MC (%)	46.4



COMMENTS

No Comments

REPORT DATE 2026.Jan.03

REVIEWED BY



Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD A - MULTIPOINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 2

DATE SAMPLED: 2025.Dec.12

DATE RECEIVED: 2025.Dec.12

DATE TESTED: 2026.Dec.31

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

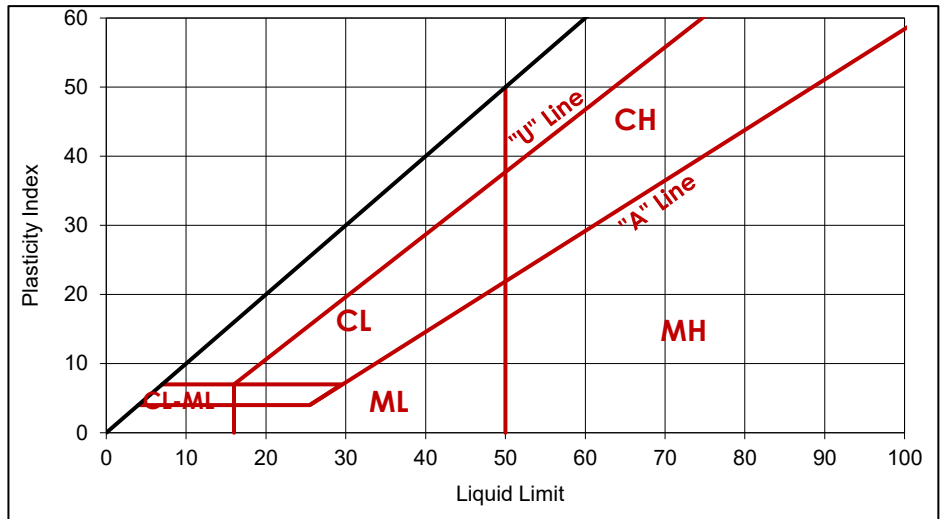
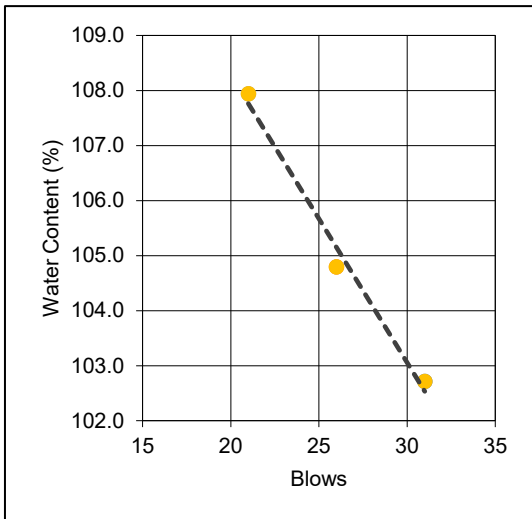
CLIENT FIELD ID BH-148, 0.8 m

STANTEC SAMPLE NO. 2695

	LIQUID LIMIT		
TRIAL	1	2	3
BLOWS	31	26	21
MC (%)	103	105	108

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	29	29


LIQUID LIMIT, LL	106
PLASTIC LIMIT, PL	29
PLASTICITY INDEX, PI	77
AS REC'D MC (%)	50.4



COMMENTS

No Comments

REPORT DATE 2026.Jan.03

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

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD A - MULTIPOINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 3

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Dec.31

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Brent McAughey

MATERIAL IDENTIFICATION

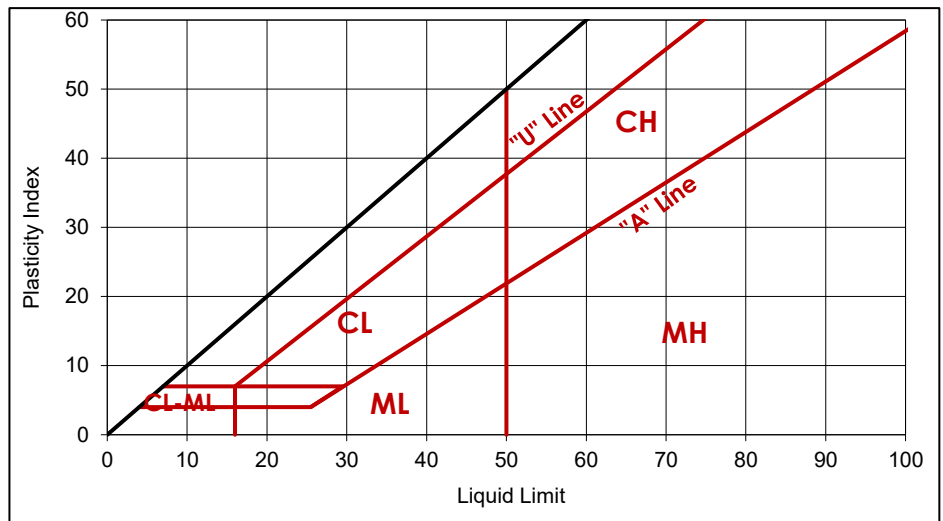
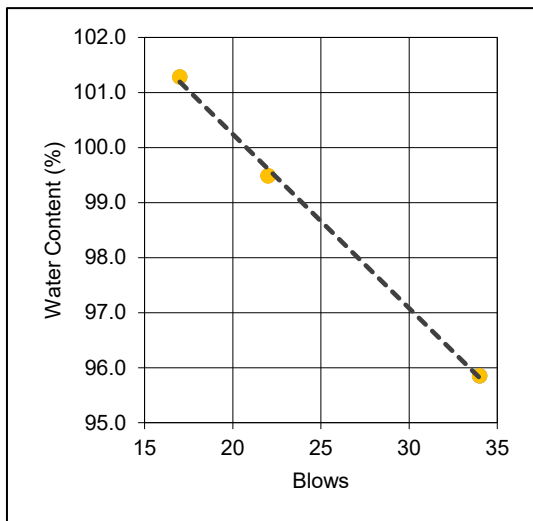
CLIENT FIELD ID BH-149, 0.7 m

STANTEC SAMPLE NO. 2696

	LIQUID LIMIT		
TRIAL	1	2	3
BLOWS	34	22	17
MC (%)	96	99	101

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	30	30

LIQUID LIMIT, LL	99
PLASTIC LIMIT, PL	30
PLASTICITY INDEX, PI	69
AS REC'D MC (%)	43.3



COMMENTS

No Comments

REPORT DATE 2026.Jan.03

REVIEWED BY



Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD A - MULTIPOINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 4

DATE SAMPLED: 2025.Dec.12

DATE RECEIVED: 2025.Dec.12

DATE TESTED: 2026.Dec.31

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Brent McAughey

MATERIAL IDENTIFICATION

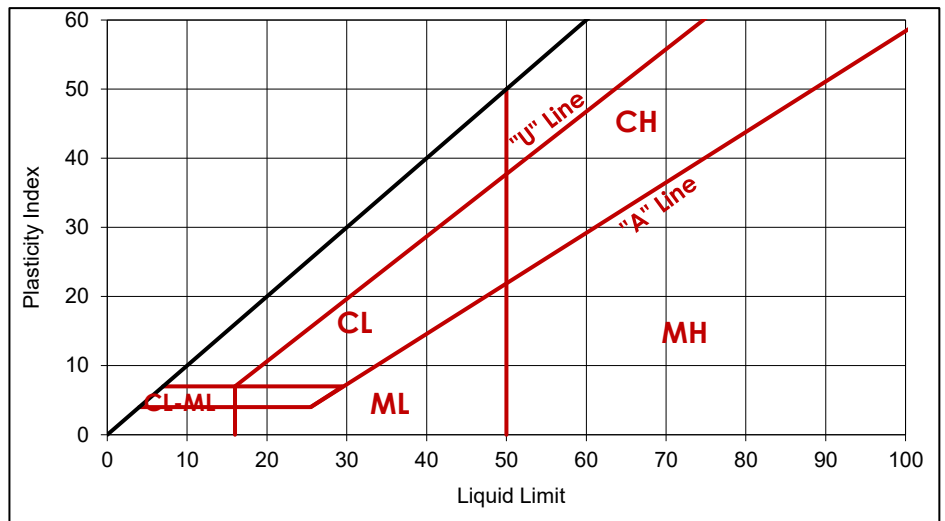
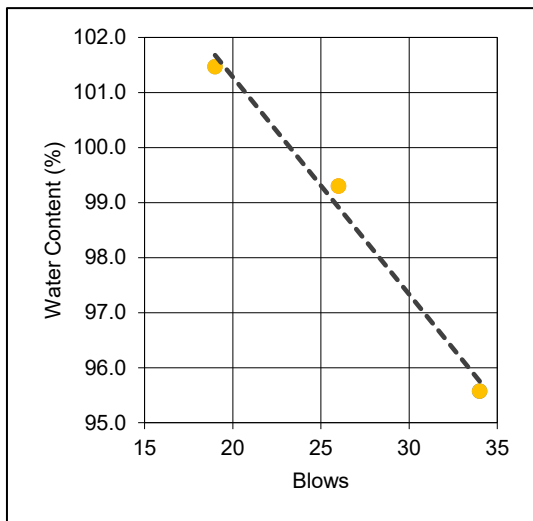
CLIENT FIELD ID BH-150, 0.8 m

STANTEC SAMPLE NO. 2697

	LIQUID LIMIT		
TRIAL	1	2	3
BLOWS	34	26	19
MC (%)	96	99	101

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	30	30

LIQUID LIMIT, LL	99
PLASTIC LIMIT, PL	30
PLASTICITY INDEX, PI	69
AS REC'D MC (%)	44.8



COMMENTS

No Comments

REPORT DATE 2026.Jan.03

REVIEWED BY



Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD A - MULTIPOINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 5

DATE SAMPLED: 2025.Dec.12

DATE RECEIVED: 2025.Dec.12

DATE TESTED: 2026.Dec.31

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

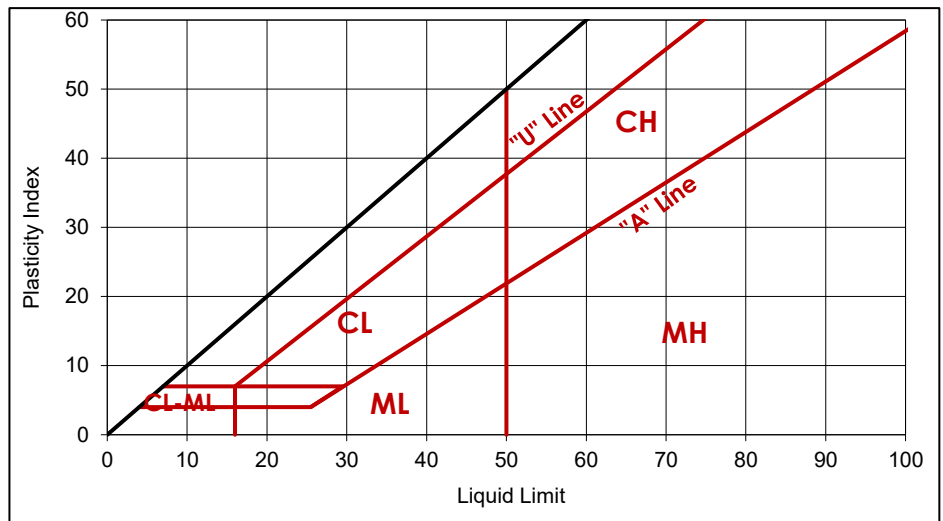
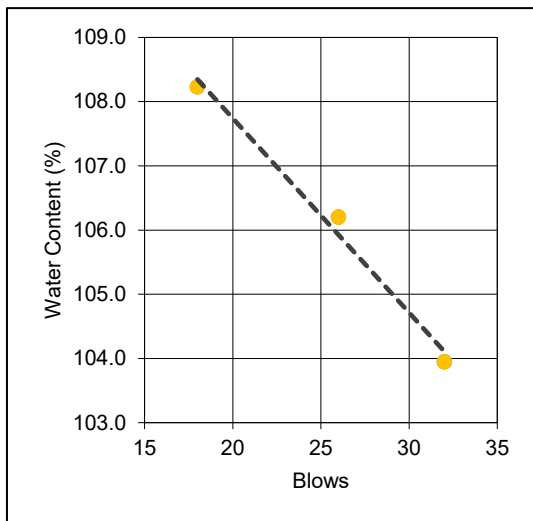
CLIENT FIELD ID BH-151, 0.8 m

STANTEC SAMPLE NO. 2698

	LIQUID LIMIT		
TRIAL	1	2	3
BLOWS	32	26	18
MC (%)	104	106	108

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	33	33

LIQUID LIMIT, LL	106
PLASTIC LIMIT, PL	33
PLASTICITY INDEX, PI	73
AS REC'D MC (%)	48.3



COMMENTS

No Comments

REPORT DATE 2026.Jan.03

REVIEWED BY



Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD A - MULTIPOINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 6

DATE SAMPLED: 2025.Dec.12

DATE RECEIVED: 2025.Dec.12

DATE TESTED: 2026.Dec.31

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Brent McAughey

MATERIAL IDENTIFICATION

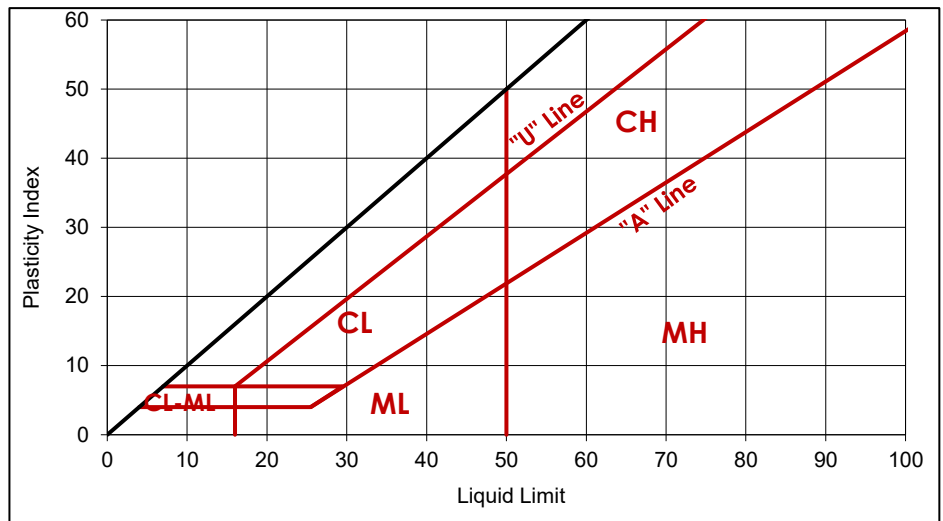
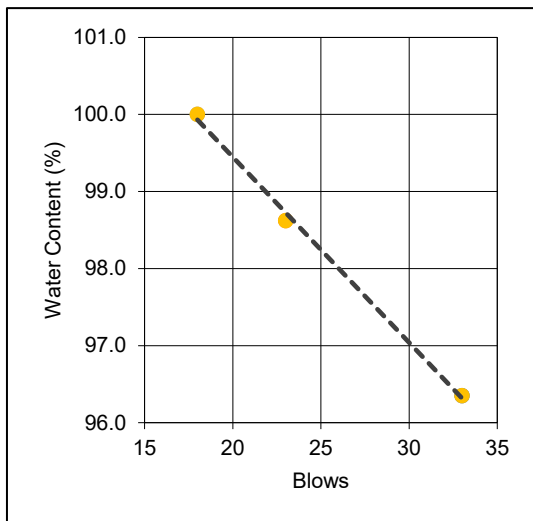
CLIENT FIELD ID BH-152, 0.8 m

STANTEC SAMPLE NO. 2699

	LIQUID LIMIT		
TRIAL	1	2	3
BLOWS	33	23	18
MC (%)	96	99	100

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	32	32

LIQUID LIMIT, LL	98
PLASTIC LIMIT, PL	32
PLASTICITY INDEX, PI	66
AS REC'D MC (%)	33.6



COMMENTS

No Comments

REPORT DATE 2026.Jan.03

REVIEWED BY



Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services

ASTM D4318 - LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS (LL METHOD A - MULTIPOINT)

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 7

DATE SAMPLED: 2025.Dec.12

DATE RECEIVED: 2025.Dec.12

DATE TESTED: 2025.Dec.30

SAMPLED BY: Stantec Consulting Ltd.

SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Larry Presado

MATERIAL IDENTIFICATION

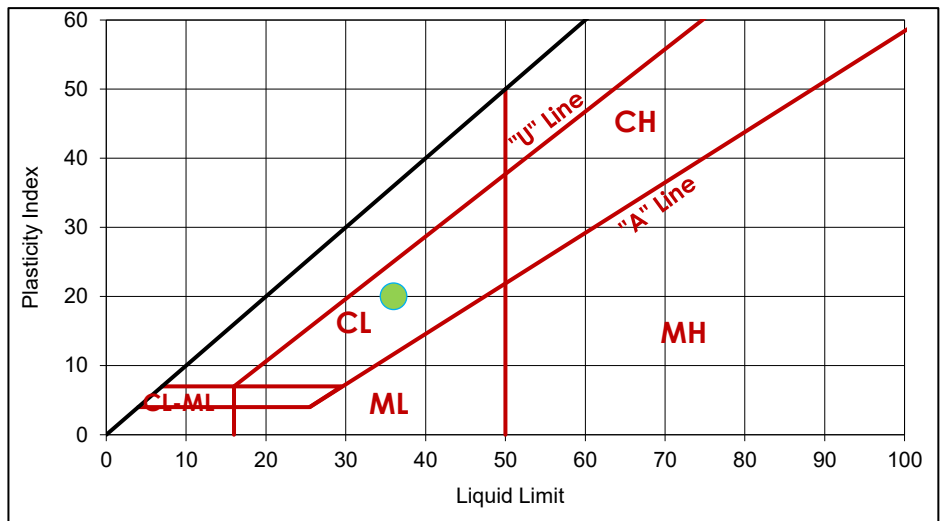
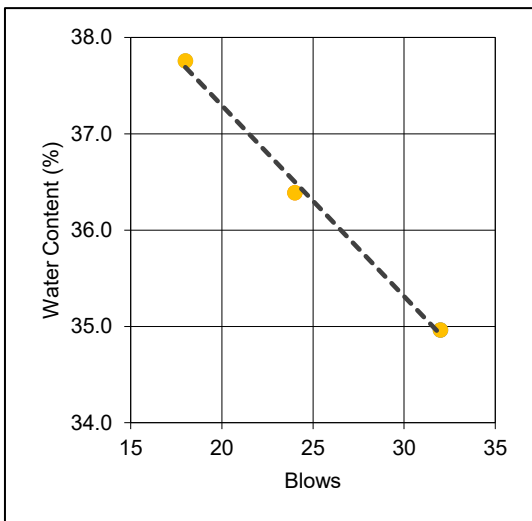
CLIENT FIELD ID BH-153, 0.8 m

STANTEC SAMPLE NO. 2700

	LIQUID LIMIT		
TRIAL	1	2	3
BLOWS	32	24	18
MC (%)	35	36	38

	PLASTIC LIMIT	
TRIAL	1	2
MC (%)	16	16


LIQUID LIMIT, LL	36
PLASTIC LIMIT, PL	16
PLASTICITY INDEX, PI	20
AS REC'D MC (%)	23.8



COMMENTS

No Comments

REPORT DATE 2026.Jan.03

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 Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, MB R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 1

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2025.Dec.30

SAMPLED BY: Stantec Consulting Ltd.

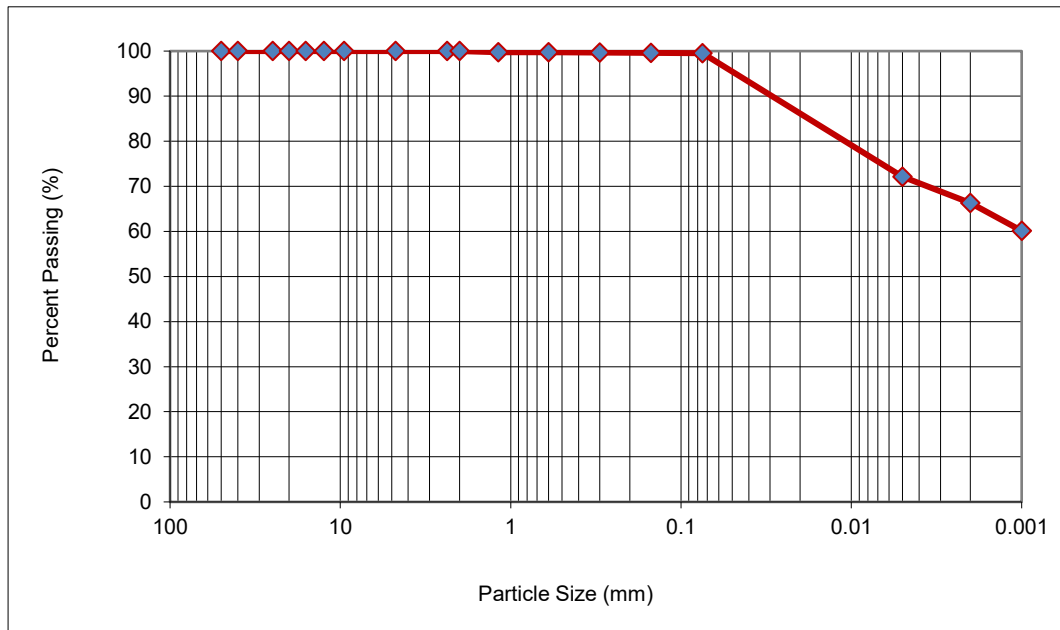
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Brent McAughey

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-147, 0.7 m

STANTEC SAMPLE NO. 2694



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	99.7
0.600	99.7
0.300	99.7
0.150	99.6
0.075	99.5
0.005	72.1
0.002	66.3
0.001	60.1

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.3	0.2	33.2	66.3	60.1

COMMENTS

No Comments

REPORT DATE 2026.Jan.03

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 Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, MB R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 2

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2025.Dec.30

SAMPLED BY: Stantec Consulting Ltd.

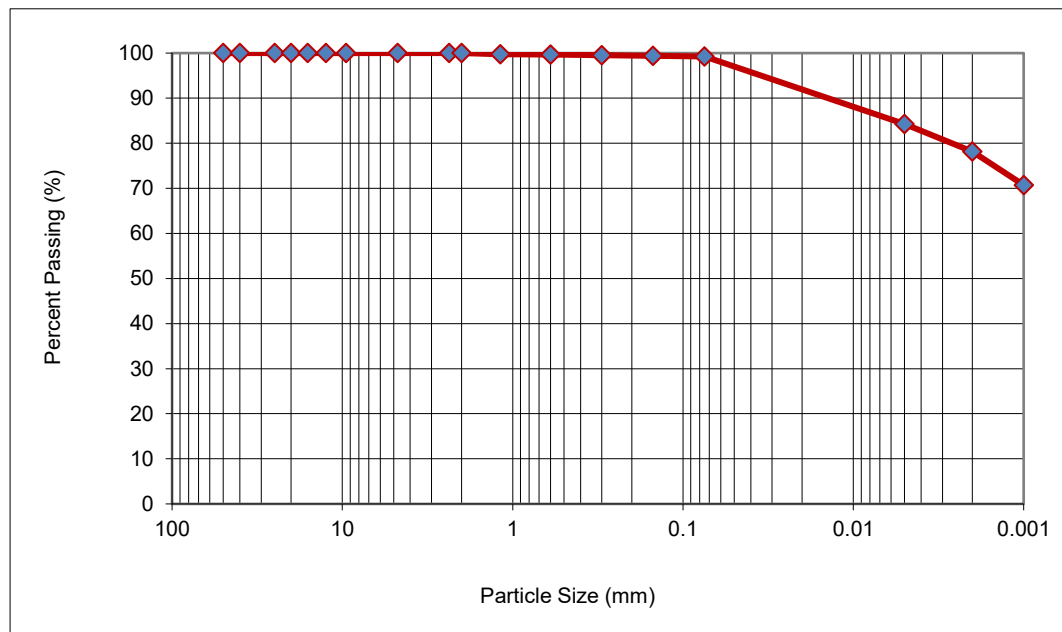
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Brent McAughey

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-148, 0.8 m

STANTEC SAMPLE NO. 2695



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	99.8
0.600	99.7
0.300	99.5
0.150	99.4
0.075	99.2
0.005	84.3
0.002	78.2
0.001	70.7

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.4	0.4	21.0	78.2	70.7

COMMENTS

No Comments

REPORT DATE 2026.Jan.03

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 Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, MB R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 3

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2025.Dec.30

SAMPLED BY: Stantec Consulting Ltd.

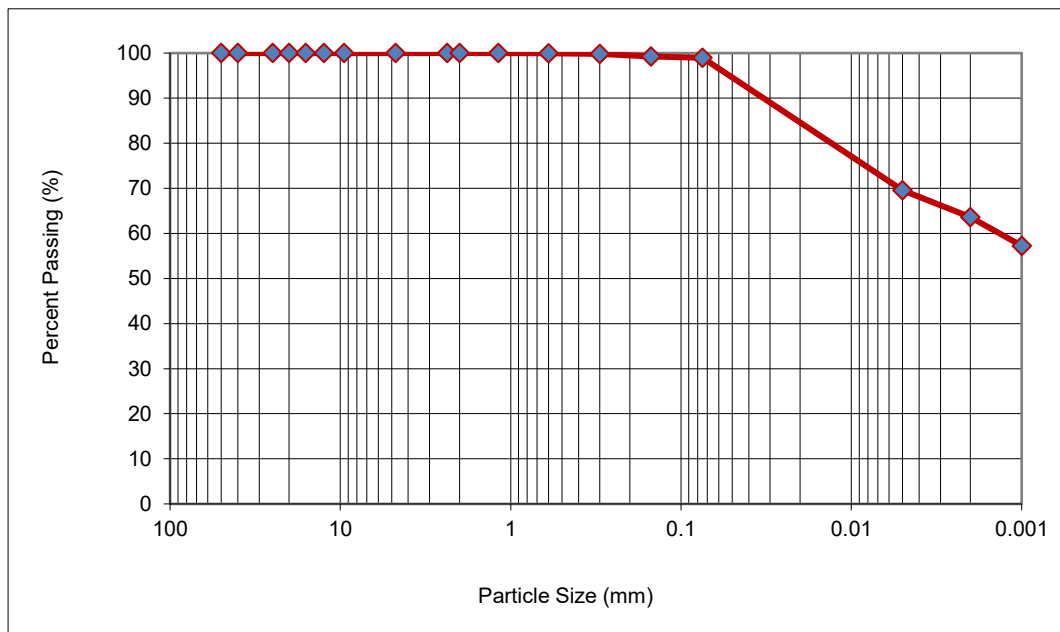
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Brent McAughey

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-149, 0.7 m

STANTEC SAMPLE NO. 2696



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	99.3
0.075	98.9
0.005	69.6
0.002	63.6
0.001	57.3

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.1	1.0	35.3	63.6	57.3

COMMENTS

No Comments

REPORT DATE 2026.Jan.03

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 Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, MB R3T 6G2

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 4

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2025.Dec.30

SAMPLED BY: Stantec Consulting Ltd.

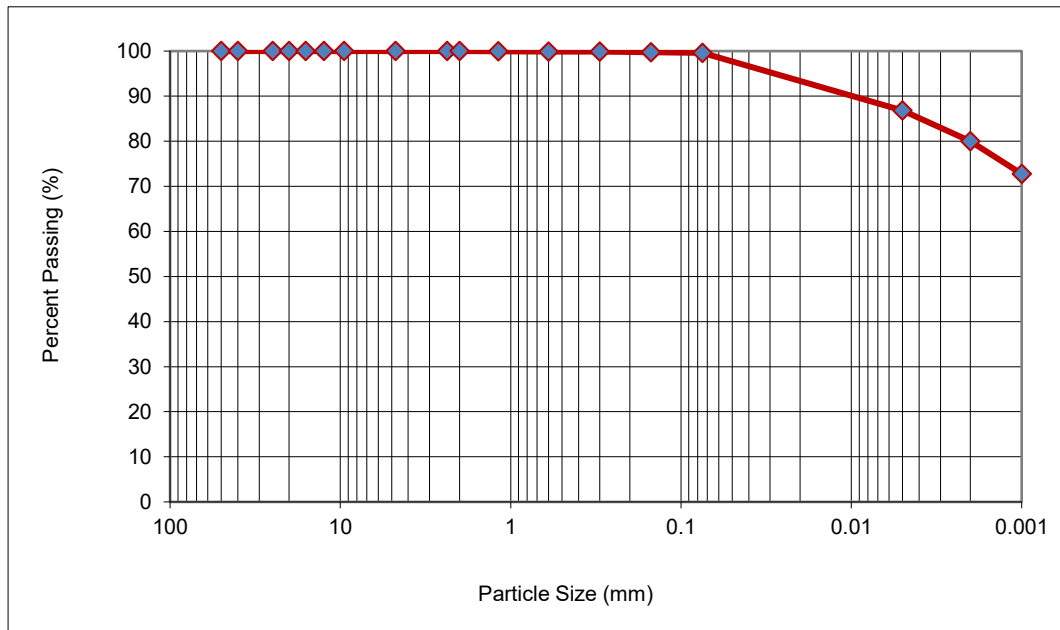
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Brent McAughey

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-150, 0.8 m

STANTEC SAMPLE NO. 2697



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	99.8
0.075	99.6
0.005	86.8
0.002	80.0
0.001	72.8

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.1	0.3	19.6	80.0	72.8

COMMENTS

No Comments

REPORT DATE 2026.Jan.03

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 Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, MB R3T 6G2

ATTN Aaron Fleming

PROJECT 2026 Local Street Renewal Program - 26-R-08

PROJECT NO. 123317994

REPORT NO. 5

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

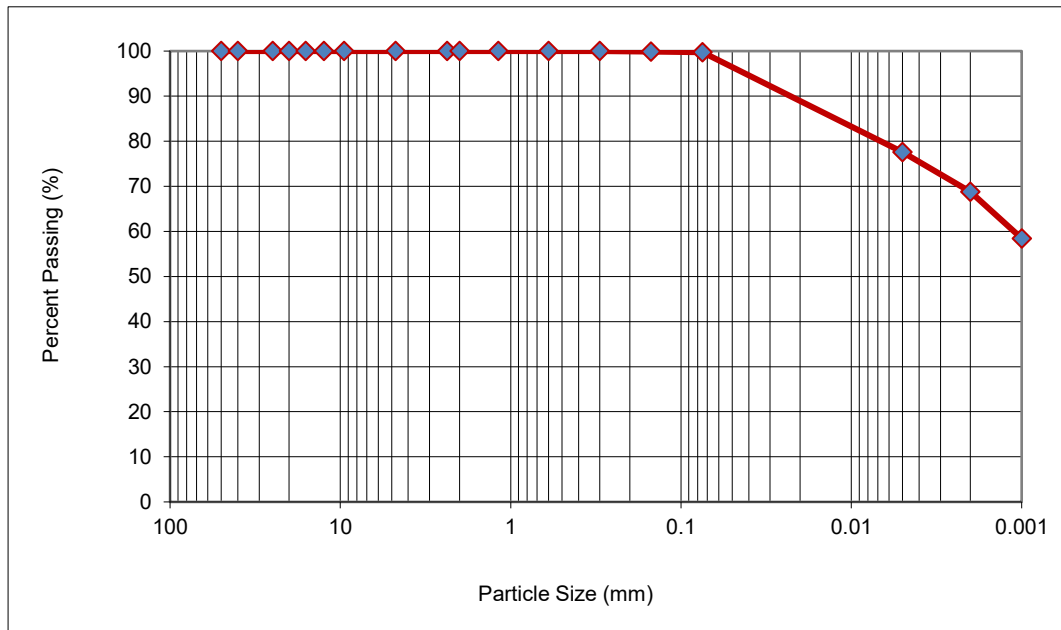
DATE RECEIVED: 2025.Dec.15
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2025.Dec.30
TESTED BY: Brent McAughey

MATERIAL IDENTIFICATION

CLIENT FIELD ID BH-151, 0.8 m

STANTEC SAMPLE NO. 2698




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	100.0
0.150	99.9
0.075	99.8
0.005	77.6
0.002	68.8
0.001	58.5

Gravel	Sand			Silt	Clay	Colloids
	Coarse	Medium	Fine			
0.0	0.0	0.0	0.2	31.0	68.8	58.5

COMMENTS
No Comments

REPORT DATE 2026.Jan.03

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

PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, MB
R3T 6A8

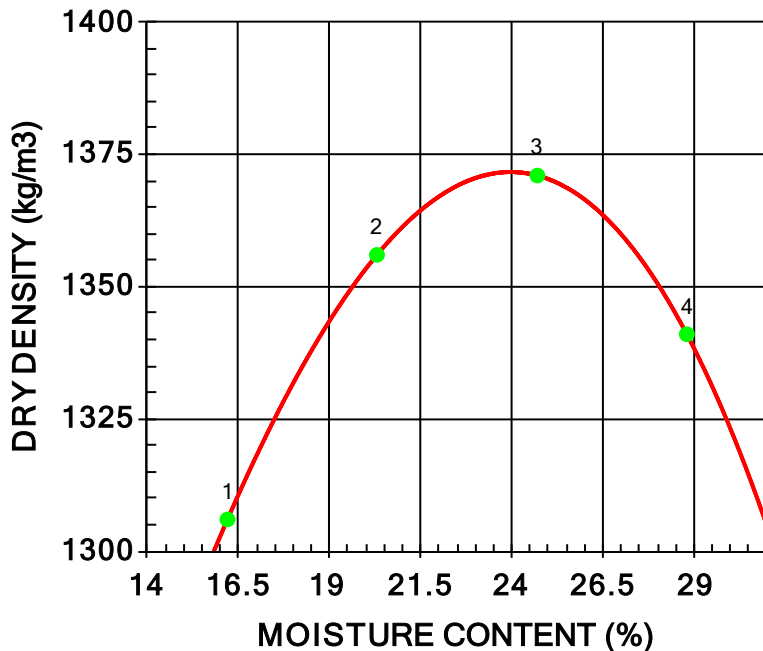
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Aaron Fleming

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994
PROCTOR NO. 1 DATE SAMPLED 2025.Dec.15 DATE RECEIVED 2025.Dec.15 DATE TESTED 2025.Dec.26

INSITU MOISTURE	49.1 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Clay	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-147, 0.7 m below grade	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1518	1306	16.2
2	1631	1356	20.3
3	1710	1371	24.7
4	1727	1341	28.8

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1370	24.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2694.

PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, MB
R3T 6A8

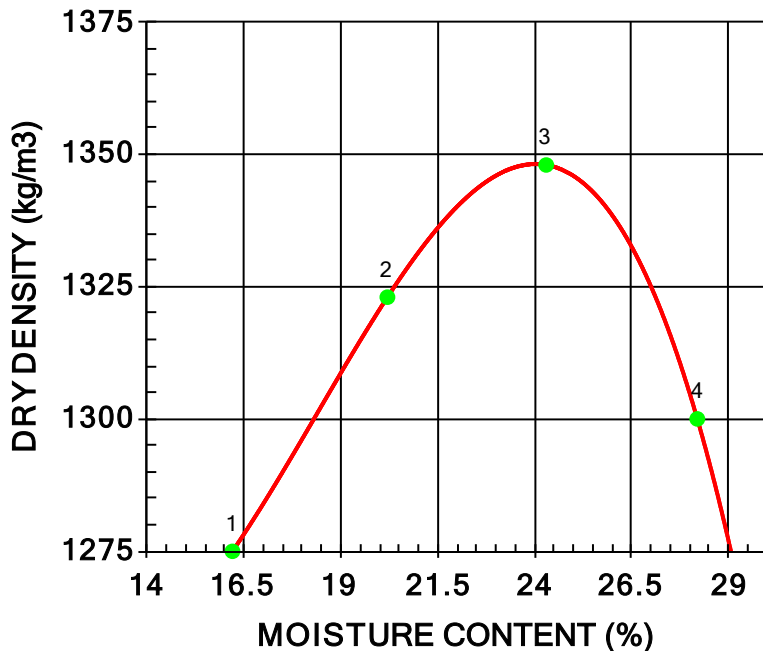
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Aaron Fleming

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994
PROCTOR NO. 2 DATE SAMPLED 2025.Dec.12 DATE RECEIVED 2025.Dec.12 DATE TESTED 2025.Dec.26

INSITU MOISTURE	45.2 %	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	Clay	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-148, 0.8 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1481	1275	16.2
2	1590	1323	20.2
3	1676	1348	24.3
4	1667	1300	28.2

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1350	24.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2695.

PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, MB
R3T 6A8

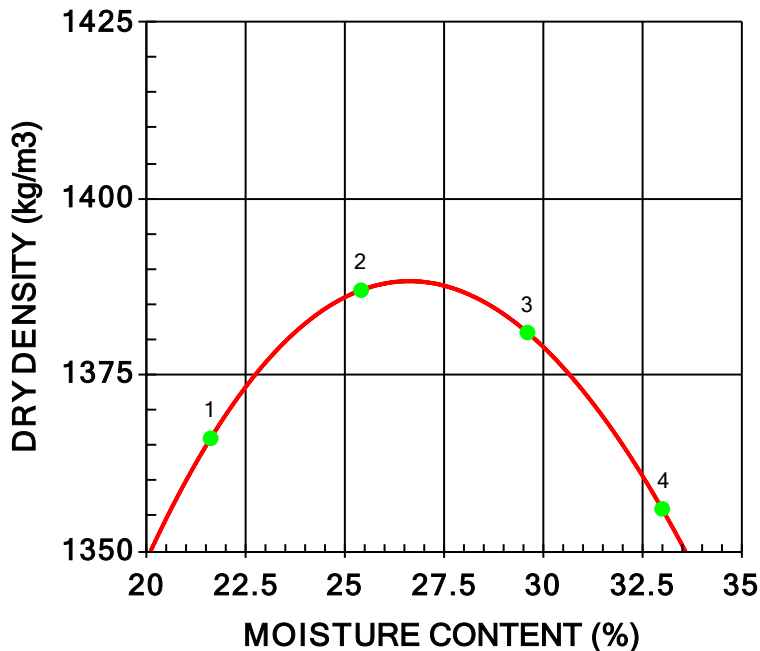
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Aaron Fleming

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994
PROCTOR NO. 3 DATE SAMPLED 2025.Dec.15 DATE RECEIVED 2025.Dec.15 DATE TESTED 2025.Dec.26

INSITU MOISTURE	45.8 %	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	Clay	PREPARATION	Moist
DESCRIPTION		OVERSIZE CORRECTION METHOD	None
SUPPLIER	Existing Materials	RETAINED 4.75mm SCREEN	N/A %
SOURCE	BH-149, 0.7 m below grade		



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1661	1366	21.6
2	1739	1387	25.4
3	1790	1381	29.6
4	1803	1356	33.0

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1390	26.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2696.

PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, MB
R3T 6A8

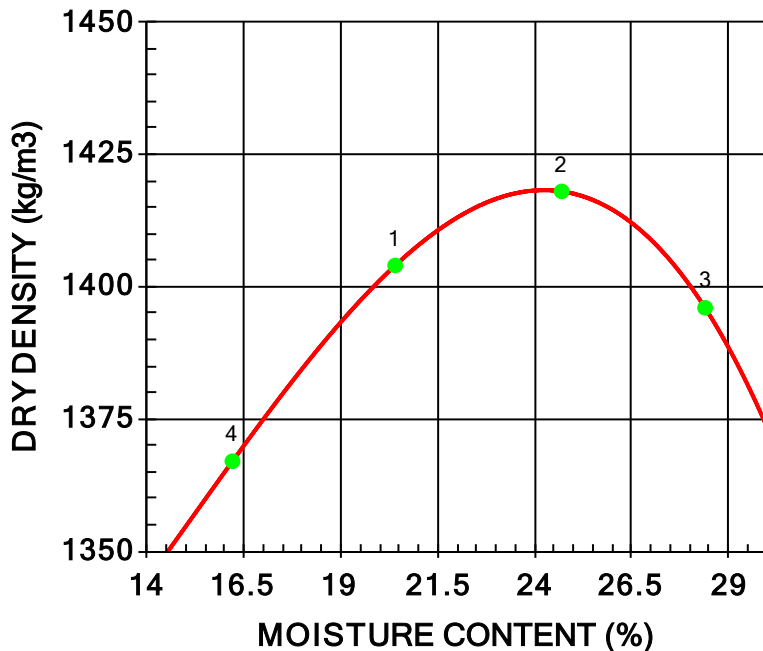
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Aaron Fleming

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994
PROCTOR NO. 4 DATE SAMPLED 2025.Dec.12 DATE RECEIVED 2025.Dec.12 DATE TESTED 2025.Dec.28

INSITU MOISTURE	36.8 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Clay	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-150, 0.8 m below grade	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1690	1404	20.4
2	1768	1418	24.7
3	1793	1396	28.4
4	1588	1367	16.2

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1420	24.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2697.

PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, MB
R3T 6A8

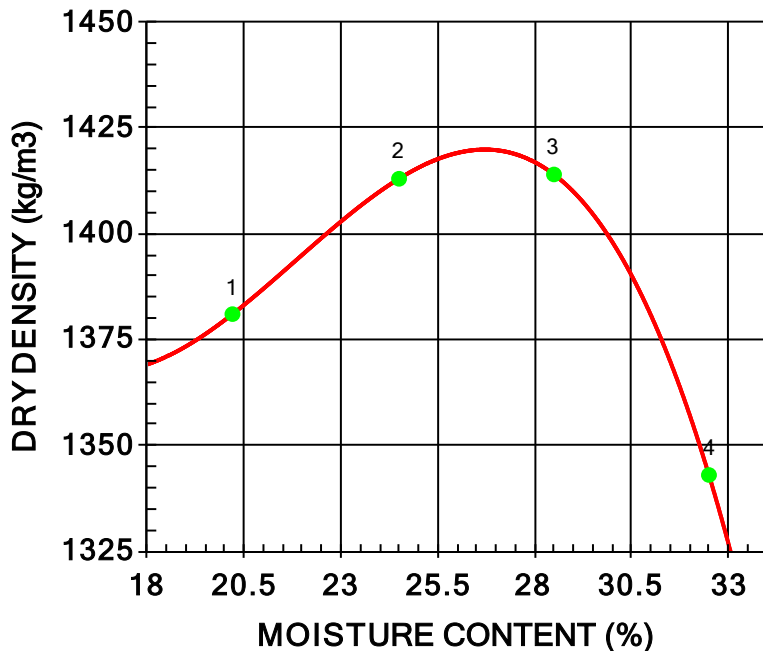
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Aaron Fleming

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994
PROCTOR NO. 5 DATE SAMPLED 2025.Dec.12 DATE RECEIVED 2025.Dec.12 DATE TESTED 2025.Dec.28

INSITU MOISTURE	32.6 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Clay	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-151, 0.8 m below grade	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1660	1381	20.2
2	1759	1413	24.5
3	1817	1414	28.5
4	1779	1343	32.5

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1420	26.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2698.

PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, MB
R3T 6A8

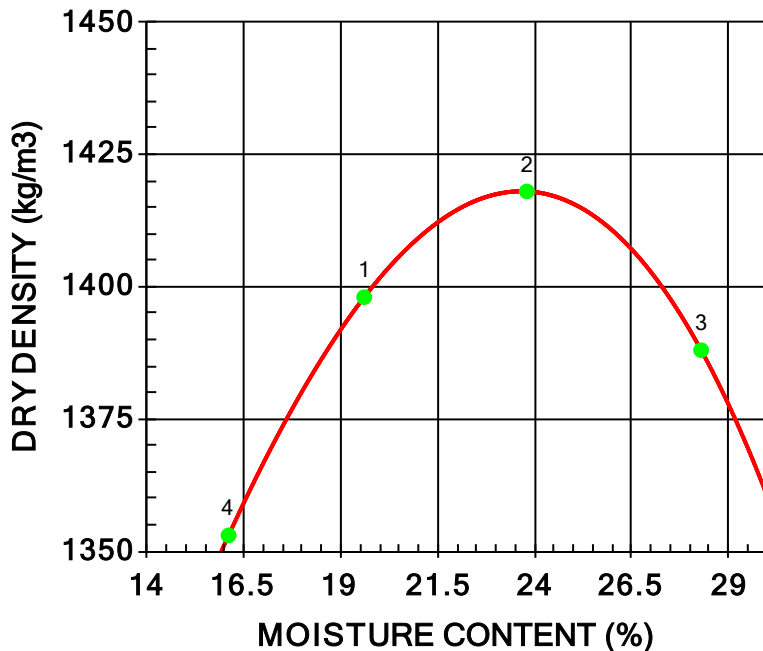
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Aaron Fleming

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994
PROCTOR NO. 6 DATE SAMPLED 2025.Dec.12 DATE RECEIVED 2025.Dec.12 DATE TESTED 2025.Dec.28

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		
SIZE	Clay	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-152, 0.8 m below grade	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1672	1398	19.6
2	1755	1418	23.8
3	1781	1388	28.3
4	1571	1353	16.1

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1420	23.5
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2699.

PROCTOR TEST REPORT

TO Dillon Consulting Ltd.
300 - 100 Innovation Dr.
Winnipeg, MB
R3T 6A8

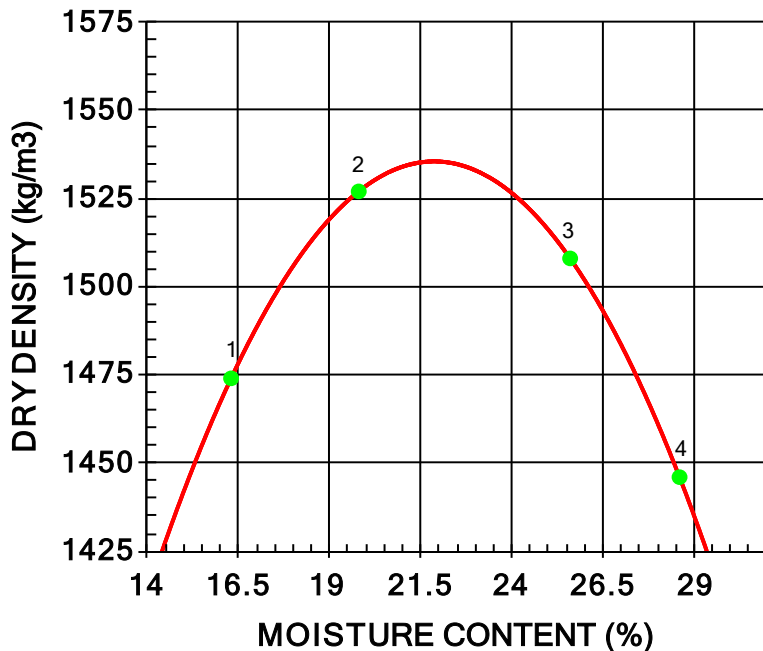
CLIENT Dillon Consulting Ltd.
C.C.

ATTN: Aaron Fleming

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994
PROCTOR NO. 7 DATE SAMPLED 2025.Dec.12 DATE RECEIVED 2025.Dec.12 DATE TESTED 2025.Dec.28

INSITU MOISTURE	23.3 %	COMPACTION STANDARD	Standard Proctor, ASTM
TESTED BY	Donald Eliazar		D698
MATERIAL IDENTIFICATION		COMPACTION PROCEDURE	A: 101.6mm Mold, Passing 4.75mm
MAJOR COMPONENT	Subgrade		
SIZE	Clay	RAMMER TYPE	Manual
DESCRIPTION		PREPARATION	Moist
SUPPLIER	Existing Materials	OVERSIZE CORRECTION METHOD	None
SOURCE	BH-153, 0.8 m below grade	RETAINED 4.75mm SCREEN	N/A %



TRIAL NUMBER	WET DENSITY (kg/m³)	DRY DENSITY (kg/m³)	MOISTURE CONTENT (%)
1	1714	1474	16.3
2	1829	1527	19.8
3	1894	1508	25.6
4	1860	1446	28.6

	MAXIMUM DRY DENSITY (kg/m³)	OPTIMUM MOISTURE CONTENT (%)
CALCULATED	1540	22.0
OVERSIZE CORRECTED		

COMMENTS

Stantec Sample No. 2700.

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

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 1

DATE SAMPLED: 2025.Dec.15

DATE RECEIVED: 2025.Dec.15

DATE TESTED: 2026.Jan.06

SAMPLED BY: Stantec Consulting Ltd.

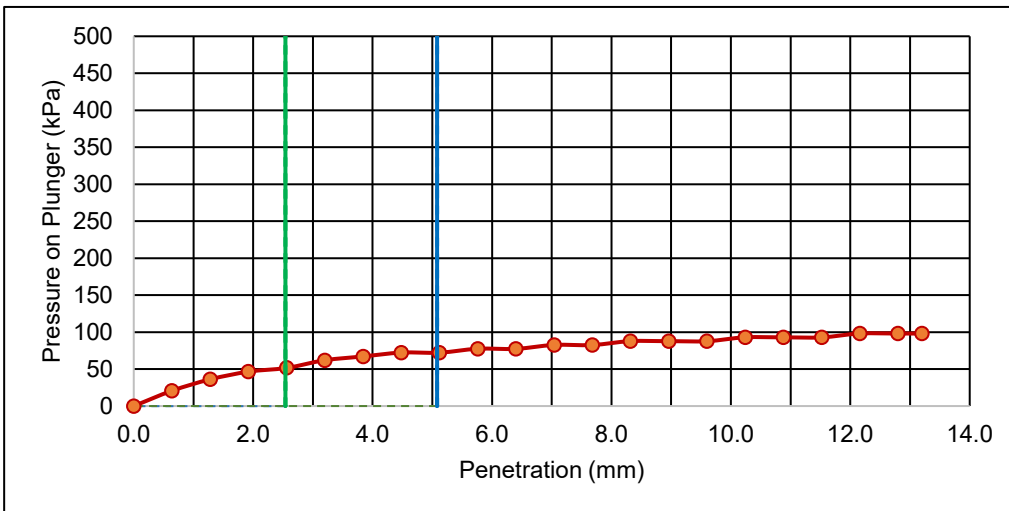
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore Hole
MATERIAL TYPE	Clay	SAMPLE LOCATION	BH-147, 0.7 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2964

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1370 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	1303 kg/m ³
SWELL OF SAMPLE	12.37 %	AS-COMPACTED MOISTURE	23.8 %
POST-TEST MOISTURE	61.3 %	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.12

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

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

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 2

DATE SAMPLED: 2025.Dec.12

DATE RECEIVED: 2025.Dec.12

DATE TESTED: 2026.Jan.06

SAMPLED BY: Stantec Consulting Ltd.

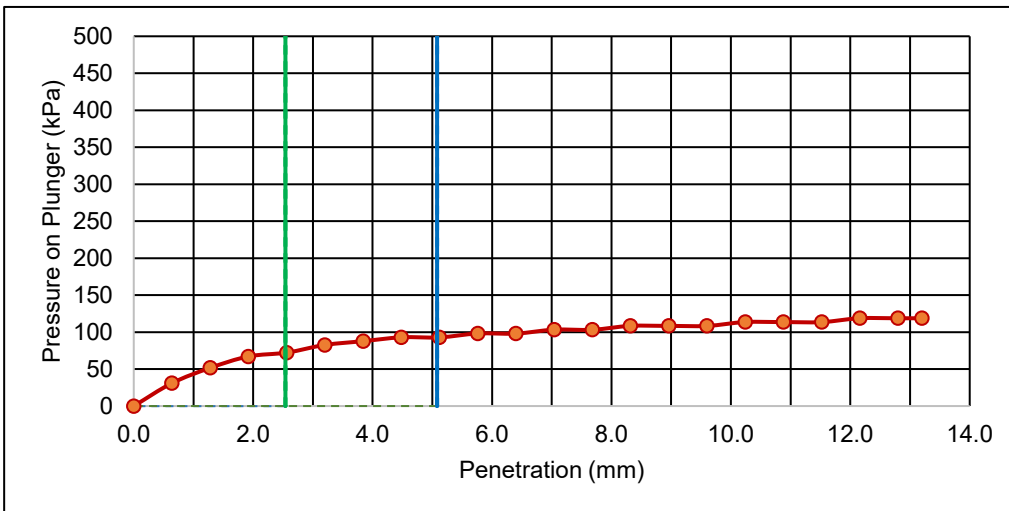
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore Hole
MATERIAL TYPE	Clay	SAMPLE LOCATION	BH-148, 0.8 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2965

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1350 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	1281 kg/m ³
SWELL OF SAMPLE	9.25 %	AS-COMPACTED MOISTURE	24.1 %
POST-TEST MOISTURE	55.1 %	AS-COMPACTED % COMPACTION	95 %




**CBR VALUE AT 2.54 mm
PENETRATION**
1.0

**CBR VALUE AT 5.08 mm
PENETRATION**
0.9

COMMENTS

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

REPORT DATE 2026.Jan.12

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

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

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 3

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

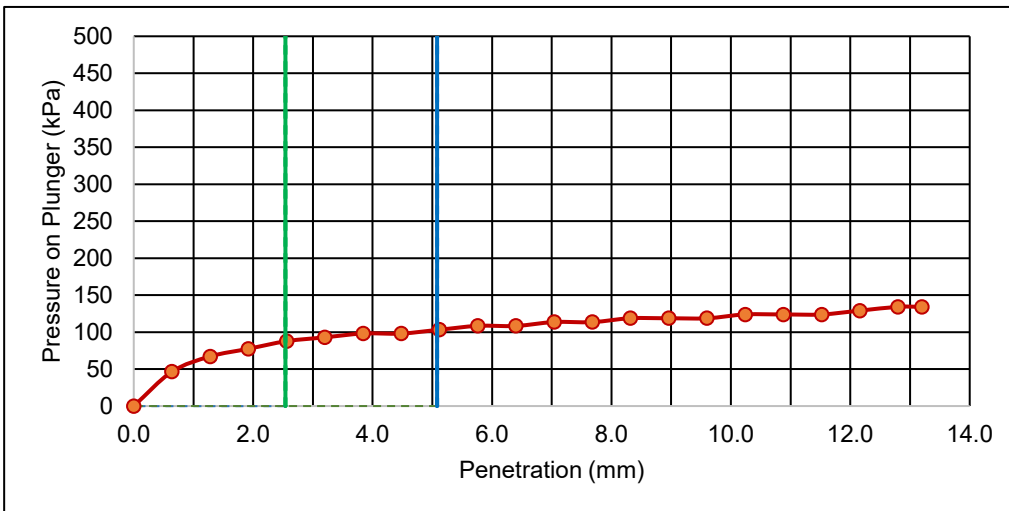
DATE RECEIVED: 2025.Dec.15
SUBMITTED BY: Stantec Consulting Ltd.

DATE TESTED: 2026.Jan.06
TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore Hole
MATERIAL TYPE	Clay	SAMPLE LOCATION	BH-149, 0.7 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2696

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1390 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	26.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1320 kg/m ³
SWELL OF SAMPLE	7.54 %	AS-COMPACTED MOISTURE	26.6 %
POST-TEST MOISTURE	52.3 %	AS-COMPACTED % COMPACTION	95 %




**CBR VALUE AT 2.54 mm
PENETRATION**
1.3

**CBR VALUE AT 5.08 mm
PENETRATION**
1.0

COMMENTS

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

REPORT DATE 2026.Jan.12

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

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

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 4

DATE SAMPLED: 2025.Dec.12

DATE RECEIVED: 2025.Dec.12

DATE TESTED: 2026.Jan.06

SAMPLED BY: Stantec Consulting Ltd.

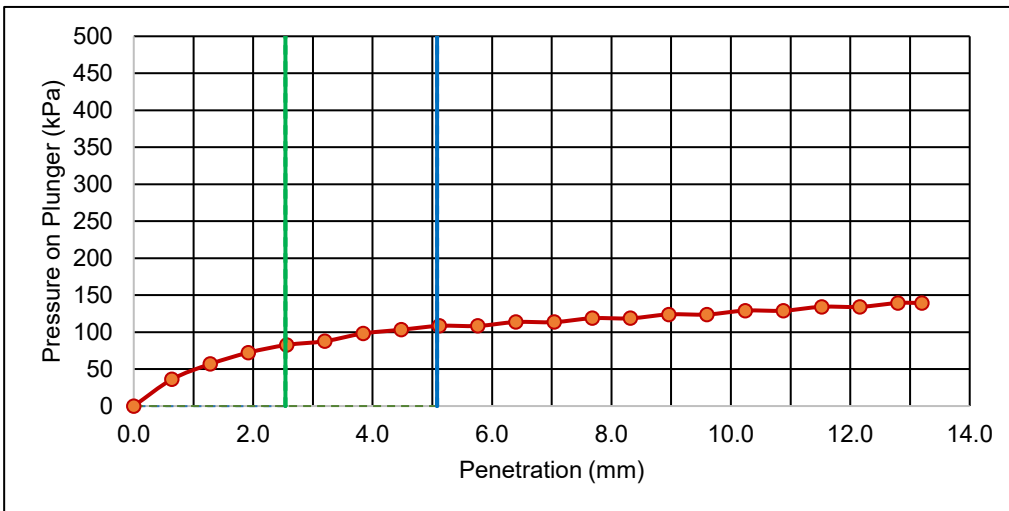
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore Hole
MATERIAL TYPE	Clay	SAMPLE LOCATION	BH-150, 0.8 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2697

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1420 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	1348 kg/m ³
SWELL OF SAMPLE	7.42 %	AS-COMPACTED MOISTURE	24.6 %
POST-TEST MOISTURE	50.2 %	AS-COMPACTED % COMPACTION	95 %




**CBR VALUE AT 2.54 mm
PENETRATION**
1.2

**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.12

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

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

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 5

DATE SAMPLED: 2025.Dec.12

DATE RECEIVED: 2025.Dec.12

DATE TESTED: 2026.Jan.06

SAMPLED BY: Stantec Consulting Ltd.

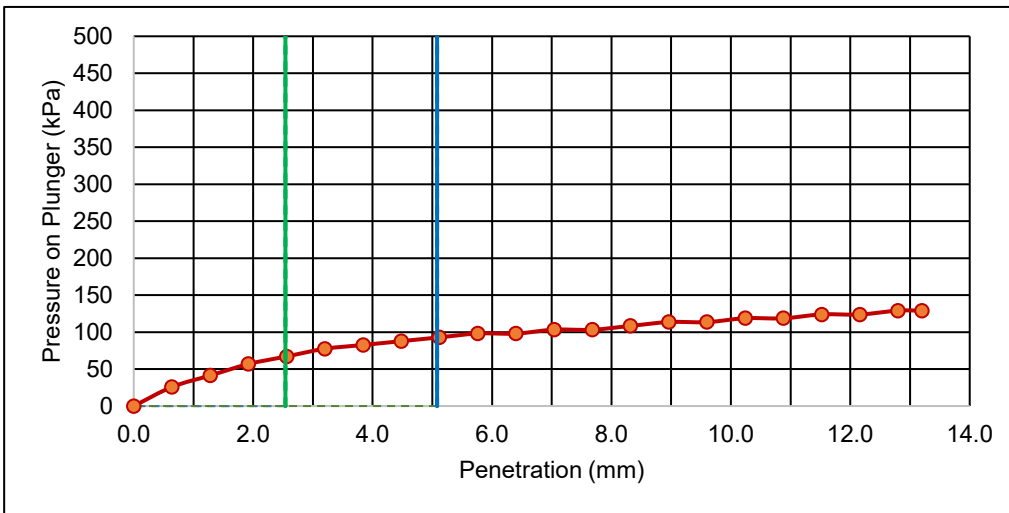
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore Hole
MATERIAL TYPE	Clay	SAMPLE LOCATION	BH-151, 0.8 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2698

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1420 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	26.5 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1347 kg/m ³
SWELL OF SAMPLE	6.05 %	AS-COMPACTED MOISTURE	26.6 %
POST-TEST MOISTURE	49.2 %	AS-COMPACTED % COMPACTION	95 %



**CBR VALUE AT 2.54 mm
PENETRATION**
1.0

**CBR VALUE AT 5.08 mm
PENETRATION**
0.9

COMMENTS

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

REPORT DATE 2026.Jan.12

REVIEWED BY



Guillaume Beauce, P.Eng.

Geotechnical Engineer - Materials Testing Services

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

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 6

DATE SAMPLED: 2025.Dec.12

DATE RECEIVED: 2025.Dec.12

DATE TESTED: 2026.Jan.06

SAMPLED BY: Stantec Consulting Ltd.

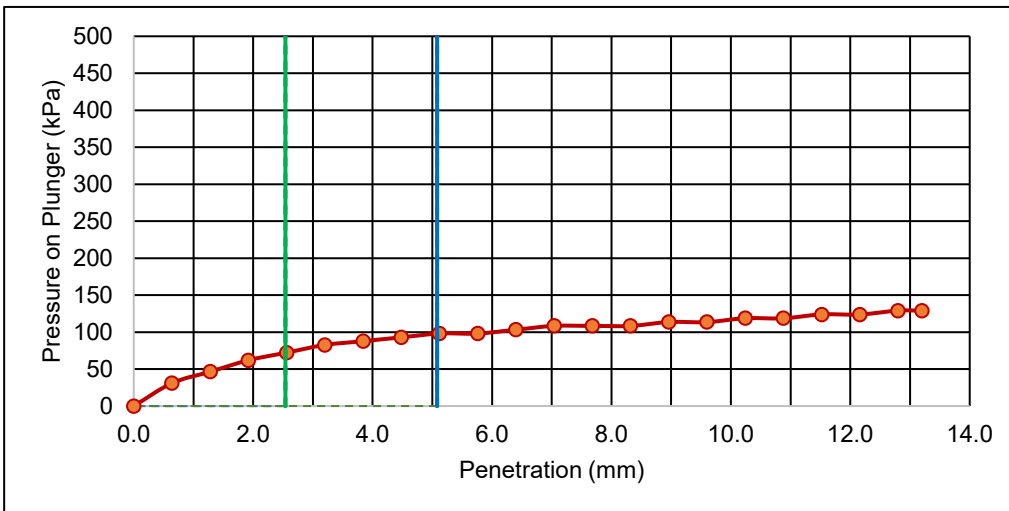
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore Hole
MATERIAL TYPE	Clay	SAMPLE LOCATION	BH-152, 0.8 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2699

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1420 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	1348 kg/m ³
SWELL OF SAMPLE	7.62 %	AS-COMPACTED MOISTURE	23.6 %
POST-TEST MOISTURE	52.0 %	AS-COMPACTED % COMPACTION	95 %




**CBR VALUE AT 2.54 mm
PENETRATION**
1.0

**CBR VALUE AT 5.08 mm
PENETRATION**
1.0

COMMENTS

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

REPORT DATE 2026.Jan.12

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

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

TO Dillon Consulting Ltd.
300 - 100 Innovation Drive
Winnipeg, Manitoba
R3T 6A8

PROJECT 2026 Local Street Renewal - 26-R-08

PROJECT NO. 123317994

ATTN Aaron Fleming

REPORT NO. 7

DATE SAMPLED: 2025.Dec.12

DATE RECEIVED: 2025.Dec.12

DATE TESTED: 2026.Jan.06

SAMPLED BY: Stantec Consulting Ltd.

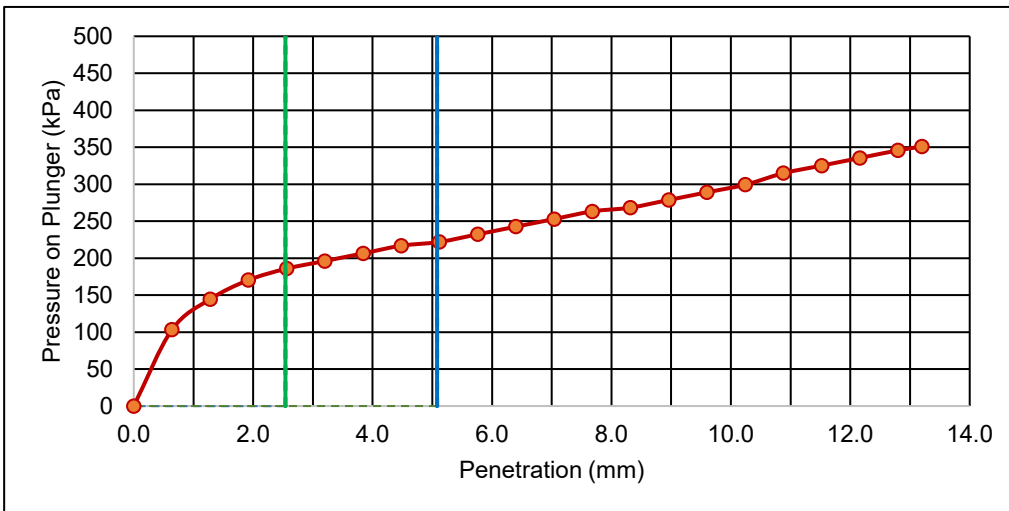
SUBMITTED BY: Stantec Consulting Ltd.

TESTED BY: Donald Eliazar

MATERIAL IDENTIFICATION

MATERIAL USE	Subgrade	SUPPLIER	Existing Material
MAX. NOMINAL SIZE	< 4.75 mm	SOURCE	Bore Hole
MATERIAL TYPE	Clay	SAMPLE LOCATION	BH-153, 0.8 m
SPECIFICATION ID	Not Applicable	STANTEC SAMPLE NO.	2700

IMMERSION PERIOD	96 ± 2 hr	TARGET MAX. DRY DENSITY	1540 kg/m ³
CONDITION OF SAMPLE	Soaked	TARGET OPTIMUM MOISTURE	22.0 %
SURCHARGE MASS	4.54 kg		
+19 mm OVERSIZE	0 %	AS-COMPACTED DRY DENSITY	1462 kg/m ³
SWELL OF SAMPLE	2.94 %	AS-COMPACTED MOISTURE	22.1 %
POST-TEST MOISTURE	35.2 %	AS-COMPACTED % COMPACTION	95 %




**CBR VALUE AT 2.54 mm
PENETRATION**
2.7

**CBR VALUE AT 5.08 mm
PENETRATION**
2.2

COMMENTS

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

REPORT DATE 2026.Jan.12

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