APPENDIX 'A' – GEOTECHNICAL REPORT

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

February 20, 2025

Project/File: 123317463-1

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

Good day Geoff,

Reference: 2025 Local Street Renewal Program (Contract 1) - Geotechnical Investigation

Stantec Consulting Ltd. (Stantec) was retained to undertake a factual geotechnical investigation for the 2025 Local Street Renewal Program (Contract 1) in Winnipeg, Manitoba. Use of this report is subject to the Statement of General Conditions provided in Appendix A.

The coring program was conducted from January 16 to January 26, 2025. A total of 28 locations were investigated with pavement coring. Pavement coring was performed by Stantec's geotechnical field technologist. No subsurface drilling was conducted as part of this geotechnical investigation. A Borehole Location Plan is provided in Appendix B.

1. Pavement Coring

A total of 28 pavement core samples were recovered to determine the in-place pavement thickness. In addition, 26 concrete core samples were tested to assess the in-place compressive strength of the concrete. Two (2) concrete compressive strength tests were cancelled due to the core samples being inadequate for testing (crumbly/fractured condition). The existing pavement thicknesses are summarized in Table 1 below, and the core photographs are provided in Appendix C.

2. Existing Pavement Thicknesses

The existing pavement thicknesses are provided in the following table:

Reference: 2025 Local Street Renewal Program (Contract 1) - Geotechnical Investigation

Table 1 – Existing Pavement Thicknesses

Borehole No.	Street	Asphalt Thickness (mm)	Concrete Thickness (mm)	Total Pavement Thickness (mm)
164	St Anthony Ave	0	130	130
165	St Anthony Ave	0	155	155
166	St Anthony Ave	0	170	170
167	St Anthony Ave	0	130	130
168	Perth Ave	0	150	150
169	Perth Ave	0	165	165
170	Perth Ave	0	175	175
171	McKenzie St	0	165	165
172	McKenzie St	0	190	190
173	McKenzie St	0	180	180
174	Beeston Dr	0	130	130
175	Beeston Dr	0	140	140
176	Beeston Dr	0	145	145
177	Seaforth Ave	0	150	150
178	Seaforth Ave	0	155	155
179	Seaforth Ave	15	215	230
180	Ambergate Dr	0	160	160
181	Ambergate Dr	0	165	165
182	Ambergate Dr	0	170	170
183	Ambergate Dr	0	165	165
184	Ambergate Dr	0	170	170
185	Blechner Dr	0	165	165
186	Blechner Dr	0	135	135
187	Blechner Dr	0	160	160
188	Blechner Dr	0	190	190
189	Blechner Dr	0	140	140
190	Marnie Pl	0	165	165
191	Marnie Pl	0	160	160

3. Laboratory Testing

The concrete core samples were tested for compressive strength in accordance with *CSA A23.2-14C – Obtaining and testing drilled cores for compressive strength testing.* 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 D.

4. Closure

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

Regards,

Stantec Consulting Ltd.

Guillaume Beauce P.Eng.
Senior Associate
Geotechnical Engineer, Materials Testing Services
Phone: 204-928-7618
Mobile: 204-898-8290
guillaume.beauce@stantec.com

Jason Thompson C.E.T.
Principal – Manager, Materials Testing Services
Manitoba & Northwestern Ontario Operations
Phone: 204-928-4004
Mobile: 204-898-8290
jason.thompson@stantec.com

Attachment: Appendix A – Statement of General Conditions
Appendix B – Borehole Location Plan
Appendix C – Core Photographs
Appendix D – Laboratory Test Reports
- Concrete Compressive Strength Test Results

Stantec

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.

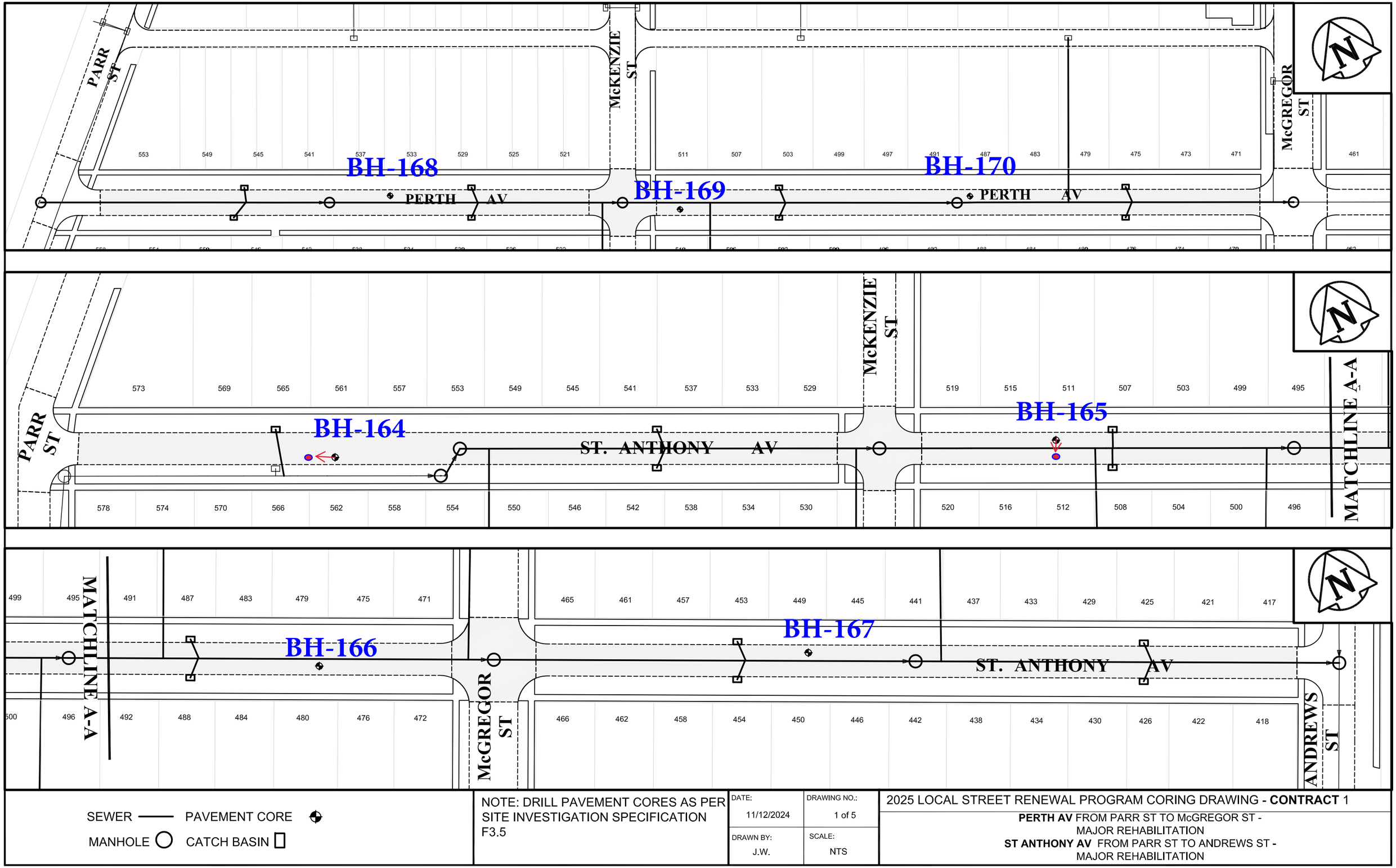
INTERPRETATION OF SITE CONDITIONS: Soil, rock, or other material descriptions, and statements regarding their condition, made in this report are based on site conditions encountered by Stantec at the time of the work and at the specific testing and/or sampling locations. Classifications and statements 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



SEWER —— PAVEMENT CORE ⊕

MANHOLE ○ CATCH BASIN □

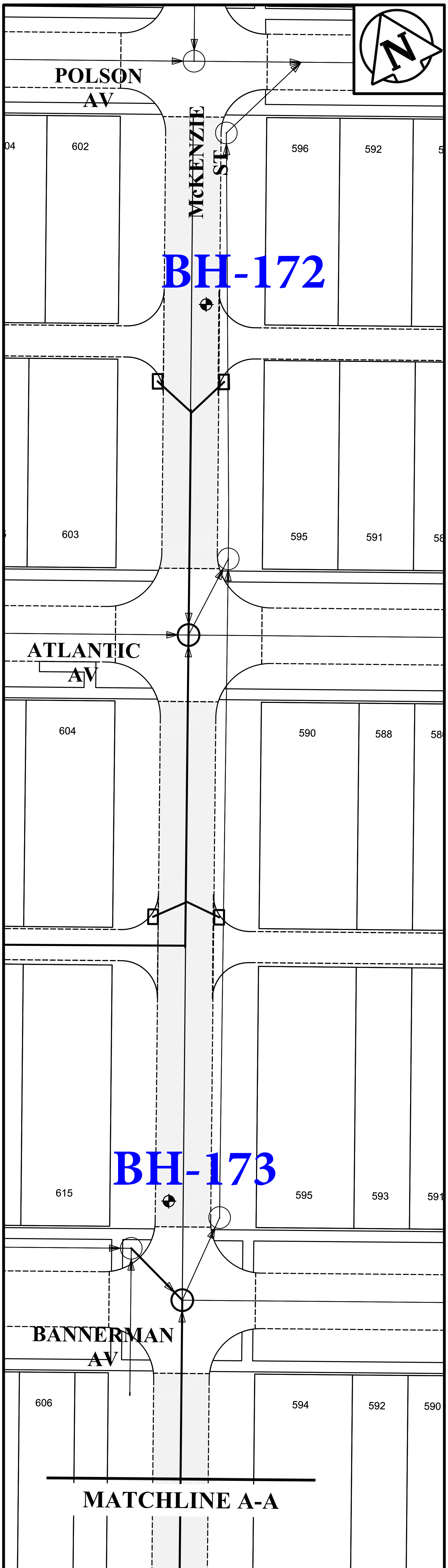
NOTE: DRILL PAVEMENT CORES AS PER SITE INVESTIGATION SPECIFICATION F3.5

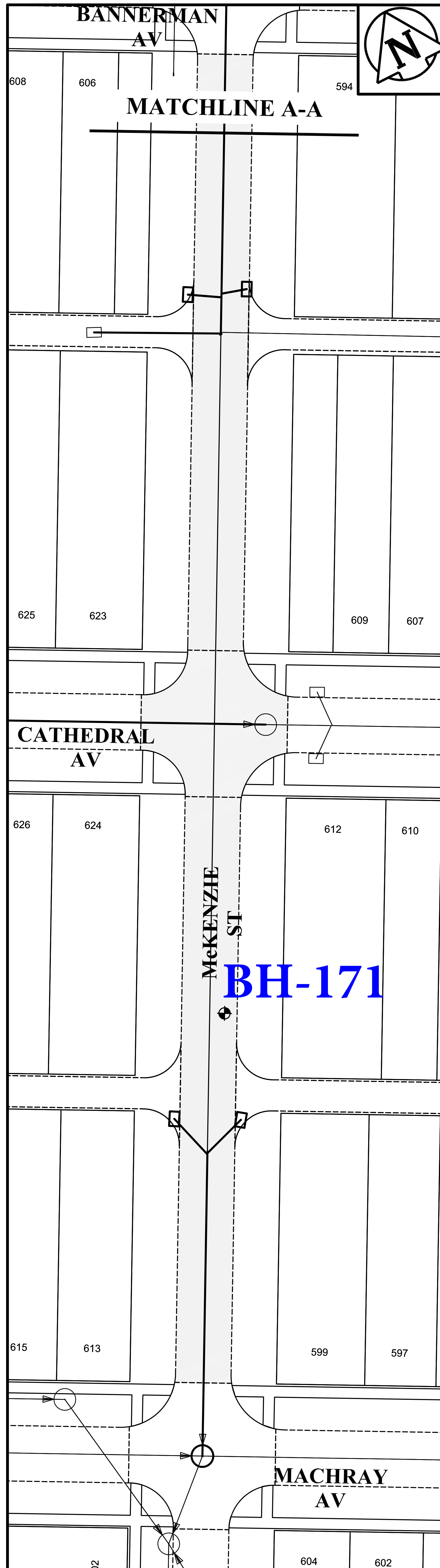
DATE:	DRAWING NO.:
11/12/2024	1 of 5
DRAWN BY:	SCALE:
J.W.	NTS

2025 LOCAL STREET RENEWAL PROGRAM CORING DRAWING - **CONTRACT** 1

PERTH AV FROM PARR ST TO McGREGOR ST - MAJOR REHABILITATION

ST ANTHONY AV FROM PARR ST TO ANDREWS ST - MAJOR REHABILITATION





SEWER
MANHOLE
PAVEMENT CORES
CATCH BASIN

DATE: 11/12/2024

DRAWING NO. 2 of 5

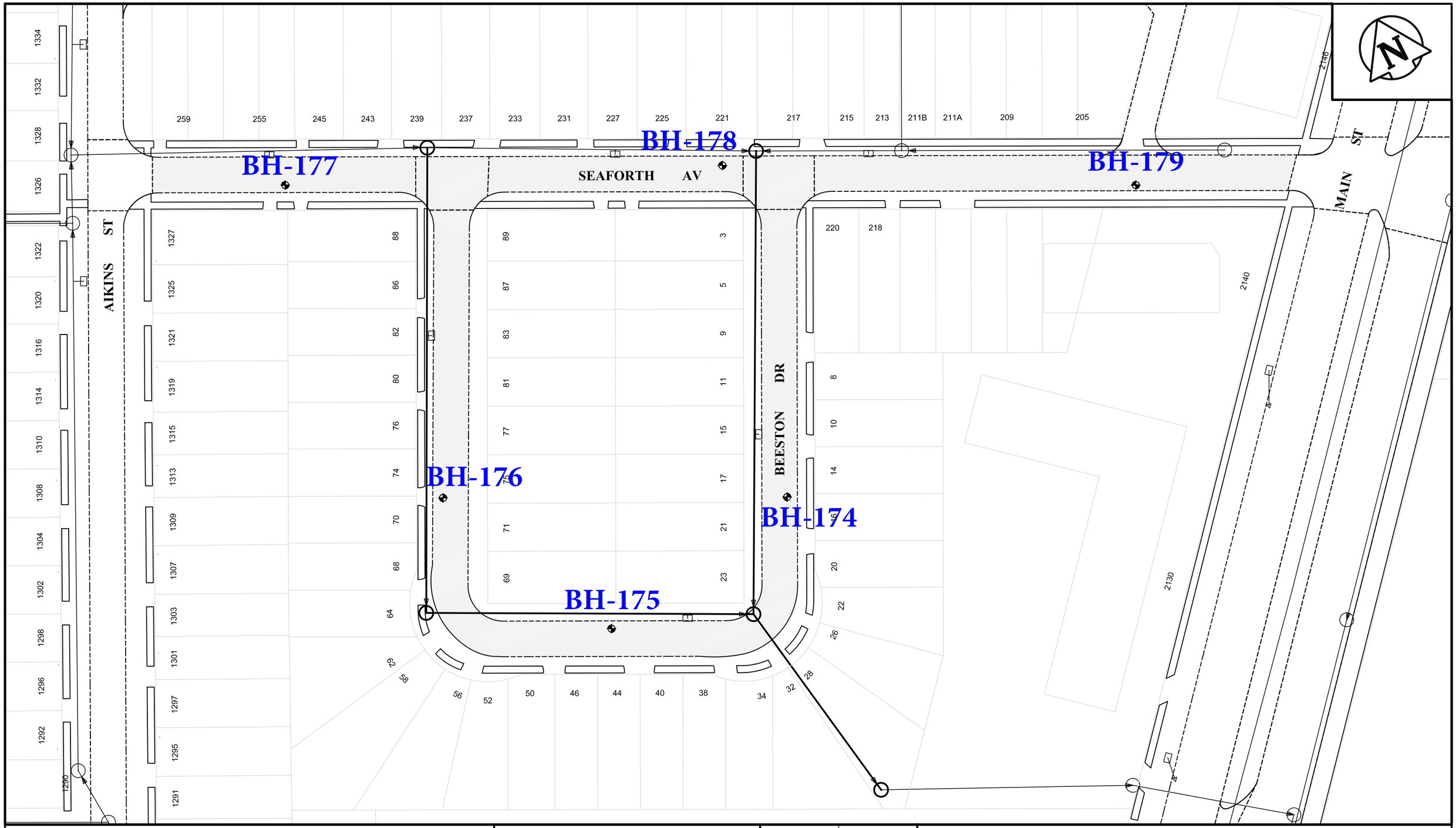
DRAWN BY: J.W.

SCALE: 1:550

NOTE: DRILL PAVEMENT CORES AS PER SITE INVESTIGATION SPECIFICATION F 3.5

2025 LOCAL STREET RENEWAL PROGRAM
CORING DRAWING - **CONTRACT** 1

McKENZIE ST FROM POLSON AV TO MACHRAY AV - REHABILITATION



SEWER —— PAVEMENT CORES ◆

MANHOLE ○ CATCH BASIN □

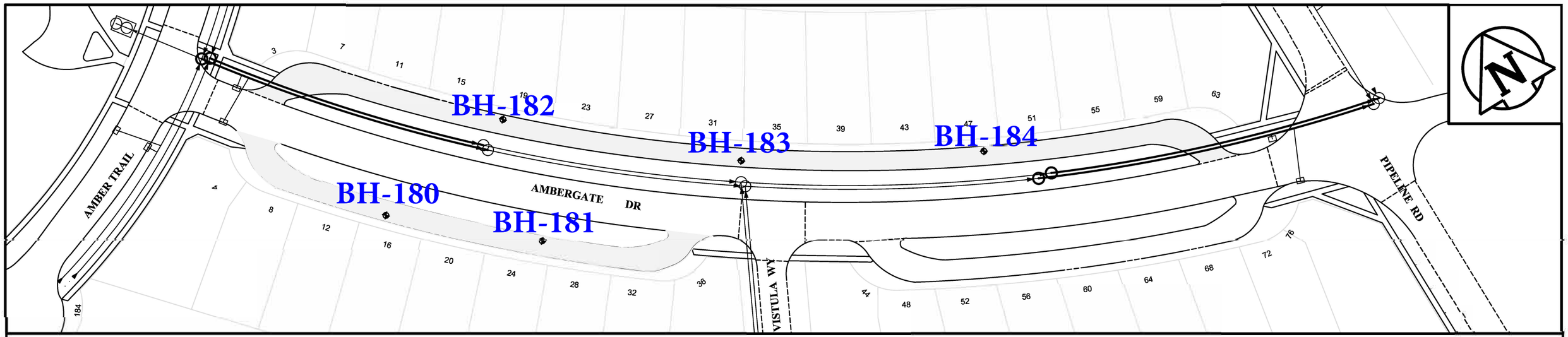
NOTE: DRILL PAVEMENT CORES AS PER SITE INVESTIGATION SPECIFICATION F 3.5

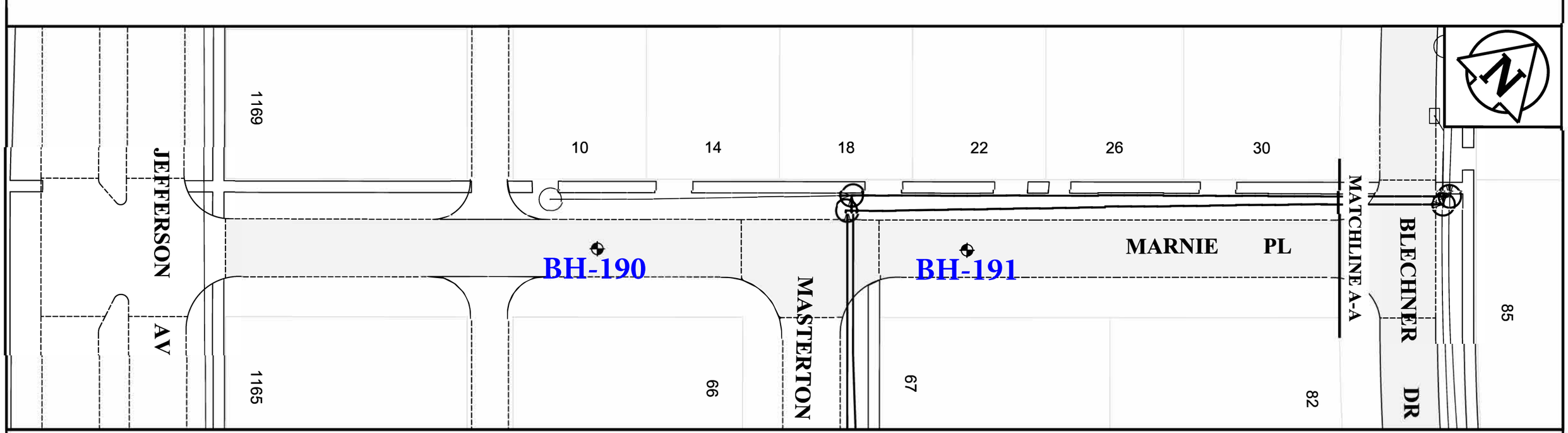
DATE:	DRAWING NO.:
11/12/2024	3 of 5
DRAWN BY:	SCALE:
J.W.	1:750

2025 LOCAL STREET RENEWAL PROGRAM CORING DRAWING - **CONTRACT 1**

SEAFORTH AV FROM AIKINS ST TO MAIN ST - MAJOR REHABILITATION

BEESTON DR FROM SEAFORTH AV TO SEAFORTH AV - MAJOR REHABILITATION





SEWER —— PAVEMENT CORE ⌖

MANHOLE ○ CATCH BASIN □

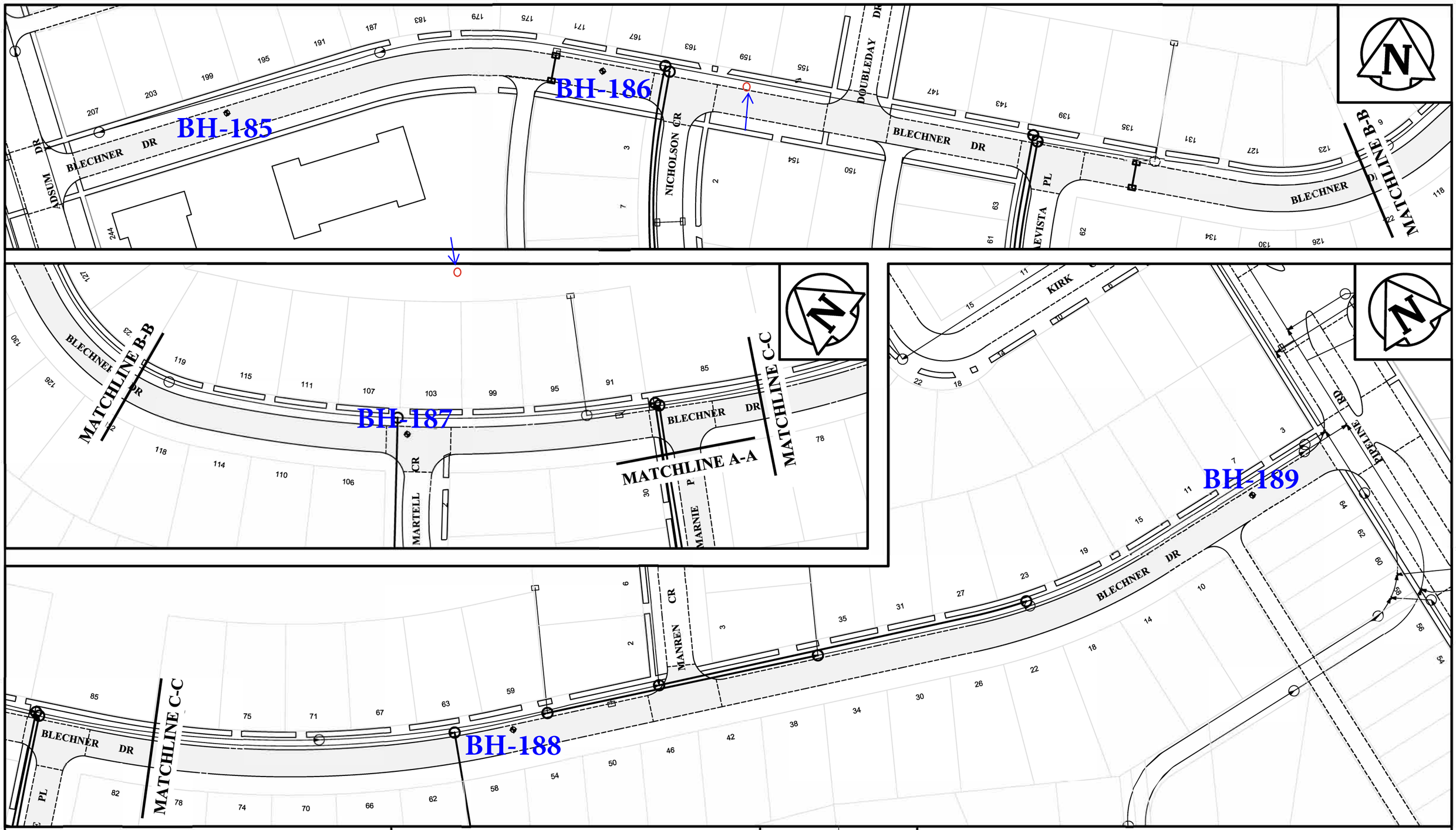
NOTE: DRILL PAVEMENT CORES AS PER SITE INVESTIGATION SPECIFICATION F3.5

DATE:	DRAWING NO.:
11/12/2024	4 of 5
DRAWN BY:	SCALE:
J.W.	NTS

2025 LOCAL STREET RENEWAL PROGRAM CORING DRAWING - **CONTRACT 1**

AMBERGATE DR FROM #3 - #63 AND #4 - #36 - MAJOR REHABILITATION

MARNIE PL FROM JEFFERSON AV TO BLECHNER DR - MINOR REHABILITATION



SEWER —— PAVEMENT CORE ⊕

MANHOLE ○ CATCH BASIN □

NOTE: DRILL PAVEMENT CORES AS PER SITE INVESTIGATION SPECIFICATION F3.5

DATE:	DRAWING NO.:
11/12/2024	5 of 5
DRAWN BY:	SCALE:
J.W.	1:1000

2025 LOCAL STREET RENEWAL PROGRAM CORING DRAWING - **CONTRACT 1**

BLECHNER DR FROM ADSUM DR TO PIPELINE RD - MAJOR REHABILITATION

Appendix C

Core Photographs

Figure 1 – Core Sample No. 164 - St. Anthony Ave

Figure 2 – Core Sample No. 165 - St. Anthony Ave

Figure 3 – Core Sample No. 166 - St. Anthony Ave

Figure 4 – Core Sample No. 167 – St. Anthony Ave

Figure 5 – Core Sample No. 168 – Perth Ave

Figure 6 – Core Sample No. 169 – Perth Ave

Figure 7 – Core Sample No. 170 – Perth Ave

Figure 8 – Core Sample No. 171 – McKenzie St

Figure 9 – Core Sample No. 172 – McKenzie St

Figure 10 – Core Sample No. 173 – McKenzie St

Figure 11 – Core Sample No. 174 – Beeston Dr

Core Photograph Not Available

Figure 12 – Core Sample No. 175 – Beeston Dr

Figure 43 – Core Sample No. 176 – Beeston Dr

Figure 14 – Core Sample No. 177 – Seaforth Ave

Figure 15 – Core Sample No. 178 – Seaforth Ave

Figure 16 – Core Sample No. 179 – Seaforth Ave

Figure 17 – Core Sample No. 180 – Ambergate Dr

Figure 18 – Core Sample No. 181 – Ambergate Dr

Figure 19 – Core Sample No. 182 – Ambergate Dr

Figure 20 – Core Sample No. 183 – Ambergate Dr

Figure 21 – Core Sample No. 184 – Ambergate Dr

Figure 22 – Core Sample No. 185 – Blechner Dr

Figure 23 – Core Sample No. 186 – Blechner Dr

Figure 24 – Core Sample No. 187 – Blechner Dr

Figure 25 – Core Sample No. 188 – Blechner Dr

Figure 26 – Core Sample No. 189 – Blechner Dr

Figure 27 – Core Sample No. 190 – Marnie Pl

Figure 28 – Core Sample No. 191 – Marnie Pl

Stantec

Appendix D

Laboratory Testing Reports

- Concrete Compressive Strength

Stantec

Core No.	Street	Diameter (mm)	Length (mm)	L/D Ratio	Correction Factor	Peak Load (kN)	Compressive Strength (MPa)	
							Measured	Corrected
164	St Anthony Ave	88.70	120.18	1.355	0.9426	329.64	53.35	50.28
165	St Anthony Ave	88.81	139.88	1.575	0.9660	277.33	44.77	43.25
166	St Anthony Ave	88.79	146.59	1.651	0.9721	252.69	40.81	39.67
167	St Anthony Ave	88.84	135.12	1.521	0.9617	277.82	44.82	43.10
168	Perth Ave	88.87	137.15	1.543	0.9634	275.95	44.49	42.86
169	Perth Ave	88.80	163.02	1.836	0.9869	208.61	33.68	33.24
170	Perth Ave	88.60	171.40	1.935	0.9948	222.67	36.12	35.93
171	McKenzie St	88.57	171.45	1.936	0.9949	300.28	48.74	48.49
172	McKenzie St	88.60	196.79	2.221	1.0000	380.97	61.79	61.79
173	McKenzie St	88.64	187.23	2.112	1.0000	334.93	54.28	54.28
174	Beeston Dr	75.31	125.85	1.671	0.9737	220.13	49.42	48.12
175	Beeston Dr	75.63	141.75	1.874	0.9899	219.02	48.75	48.26
176	Beeston Dr	75.65	134.12	1.773	0.9818	249.09	55.42	54.41
177	Seaforth Ave	75.82	140.05	1.847	0.9878	222.67	49.32	48.72
178	Seaforth Ave	75.76	155.09	2.047	1.0000	195.40	43.35	43.35
179	Seaforth Ave	75.75	146.95	1.940	0.9952	167.38	37.14	36.96
180	Ambergate Dr	75.66	82.65	1.092	0.8921	251.80	56.01	49.96
181	Ambergate Dr	75.60	149.18	1.973	0.9978	328.13	73.10	72.94
182	Ambergate Dr	*Crumbly/fractured core; test cancelled*						
183	Ambergate Dr	75.63	163.83	2.165	1.0000	272.48	60.57	60.57
184	Ambergate Dr	*Crumbly/fractured core; test cancelled*						
185	Blechner Dr	75.63	166.26	2.198	1.0000	280.54	62.45	62.45
186	Blechner Dr	75.62	99.05	1.310	0.9372	308.07	68.59	64.29
187	Blechner Dr	75.63	147.15	1.946	0.9957	241.17	53.68	53.45
188	Blechner Dr	75.66	162.93	2.153	1.0000	286.10	63.63	63.63
189	Blechner Dr	75.77	147.11	1.942	0.9954	275.15	61.02	60.74
190	Marnie Pl	75.64	161.80	2.139	1.0000	247.71	55.13	55.13
191	Marnie Pl	75.64	159.05	2.103	1.0000	311.32	69.28	69.28