Palmer™

74 Berkeley Street, Toronto, ON M5A 2W7
Tel: 647-795-8153 | www.pecg.ca

Hydrogeological Investigation

100 Mapleview Drive (Park Place), City of Barrie, Ontario

Palmer Project #
[illegible]

Prepared For
[illegible]

[illegible], [illegible]

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[illegible]

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Re: [illegible]

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[illegible]

[illegible]
[illegible]

J. Cole

[illegible]
[illegible]
[illegible]

[illegible]

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[illegible]

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1. Introduction

[illegible] Ontario (the “project” or the “site”) (**Figure** [illegible]) [illegible] It is Palmer’s understanding [illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

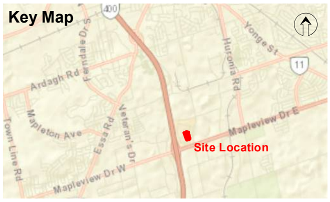
1.1 Scope of Work

[illegible] Palmer’s [illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

LEGEND

● Borehole (Pinchin, 2022)
● Monitoring Well (Pinchin, 2022)
▭ Subject Site
→ Groundwater Flow Direction



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Universal Transverse Mercator Projection Zone 17

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North American Development Group

PROJECT
Park Place

TITLE
Site Location

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REF. NO. 2005202-MR-101-A

Figure 1

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2. Hydrogeological Conditions

2.1 Regional Conditions

2.1.1 Physiography and Geology

[illegible]

[illegible]

[illegible]

2.1.2 Hydrogeology

[illegible]

[illegible]

[illegible]

[illegible] *et al.*, [illegible]

2.1.3 Environmental Features and Drainage

[illegible]

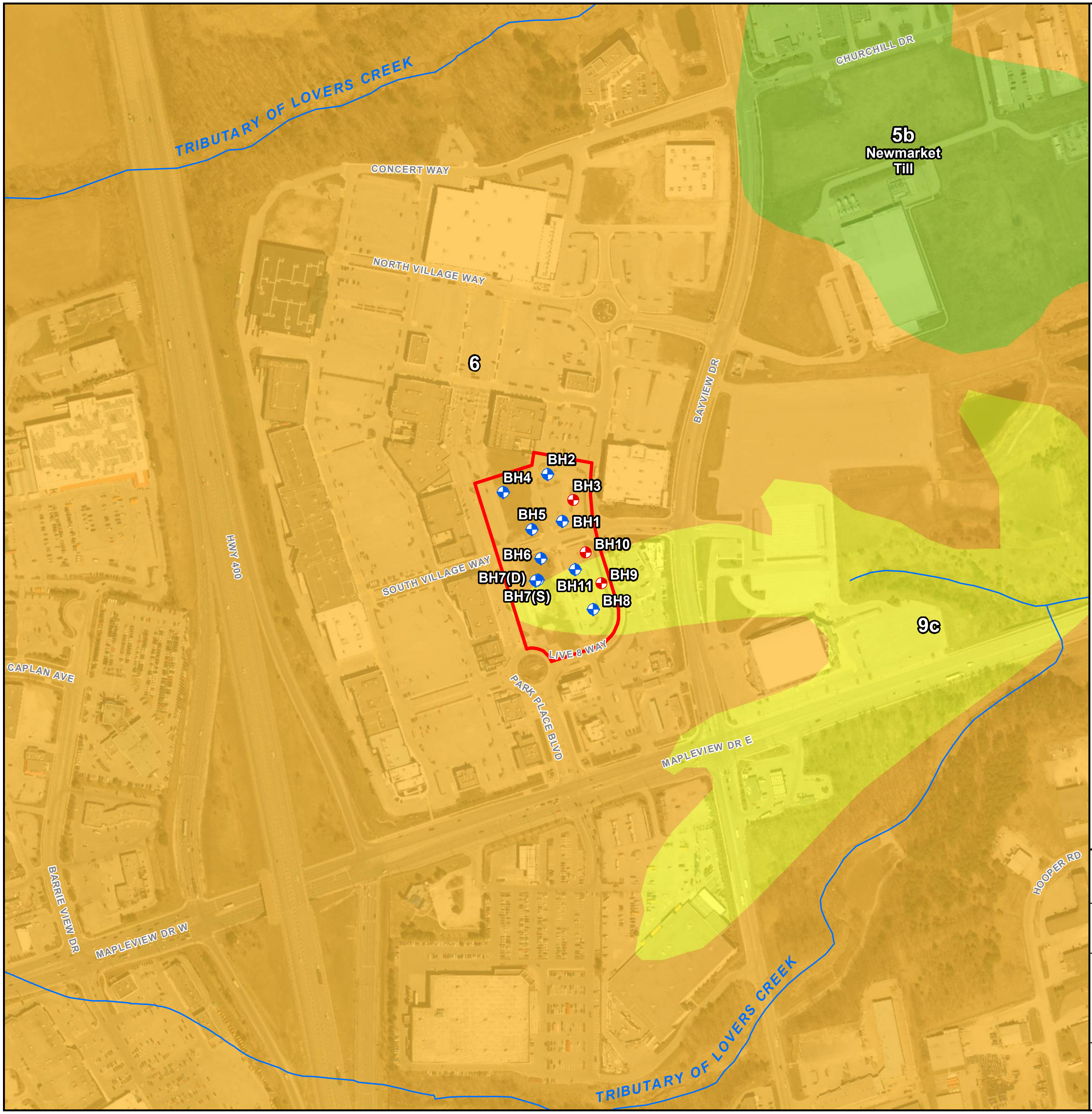
[illegible]

2.1.4 Source Water Protection

[illegible] *Clean Water Act (2006)* [illegible]

[illegible]

[illegible] **Figure** [illegible]



LEGEND

- ● Borehole (Pinchin, 2022)
- ● Monitoring Well (Pinchin, 2022)
- ～ Watercourse[1]
- ☐ Subject Site

Surficial Geology[2]

9	**Coarse-textured glaciolacustrine deposits:** 9c Foreshore and basinal deposits
6	**Ice-contact stratified deposits:** sand and gravel, minor silt, clay and till
5b	**Till:** 5b Stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain

1. LIO/MNRF
2. Ontario Geological Survey 2010 (Mapped at 1:50,000). Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release- Data 128 - Revised

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METRE SCALE

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Park Place

TITLE

Surficial Geology

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REF. NO. 2005202-MR-102-A

Figure 2

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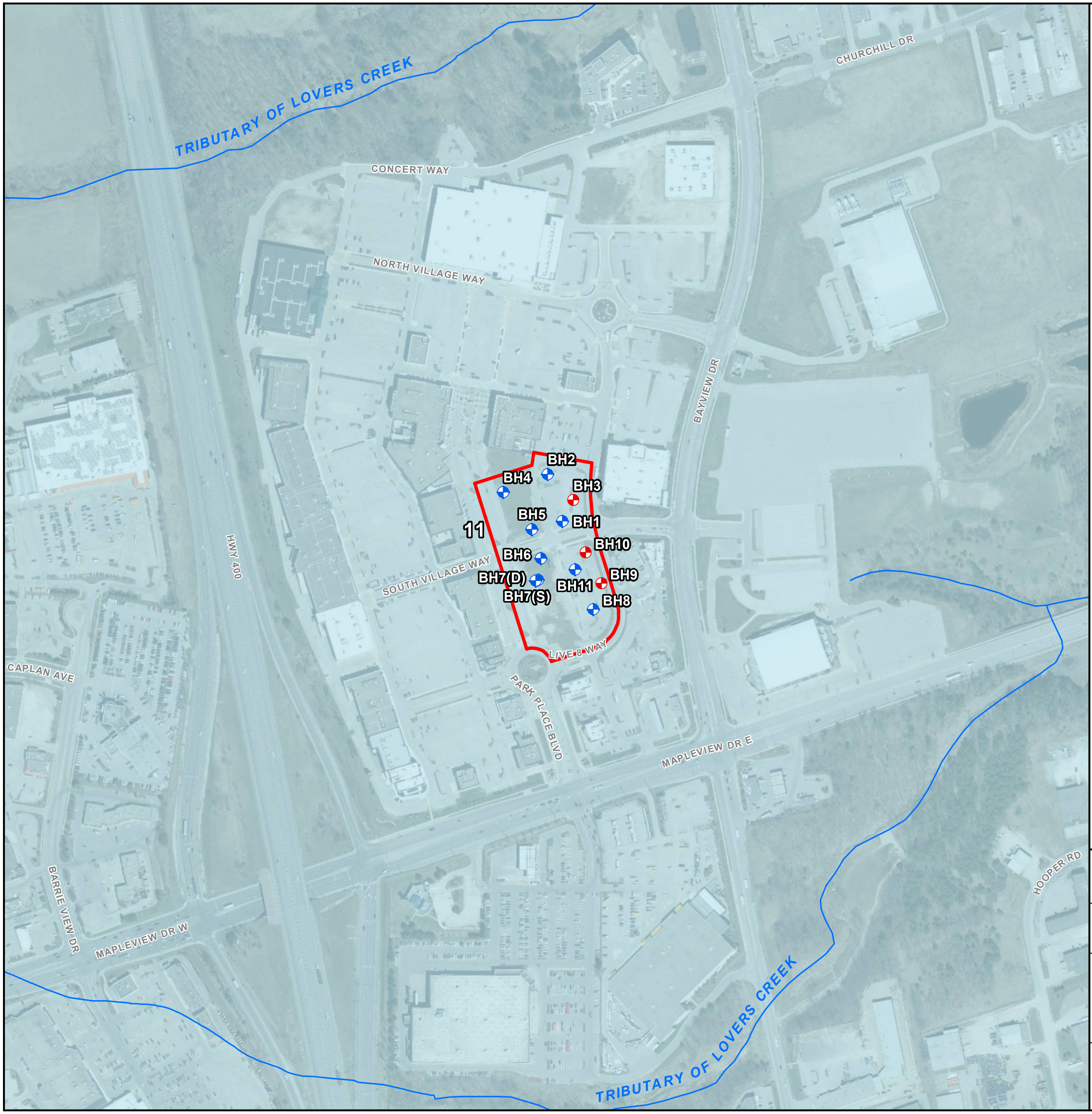

LEGEND

- ● Borehole (Pinchin, 2022)
- ● Monitoring Well (Pinchin, 2022)
- ∼ Watercourse[1]
- ▭ Subject Site

Paleozoic Bedrock Geology[2]

11	Lindsay Formation: *limestone; nodular to black laminated*

1. LIO/MNRF
2. Armstrong, D.K. and Dodge, J.E.P. Paleozoic Geology Map of Southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data 219

100 50 0 100
METRE SCALE

North American Datum 1983
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TITLE
Bedrock Geology

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Figure 3

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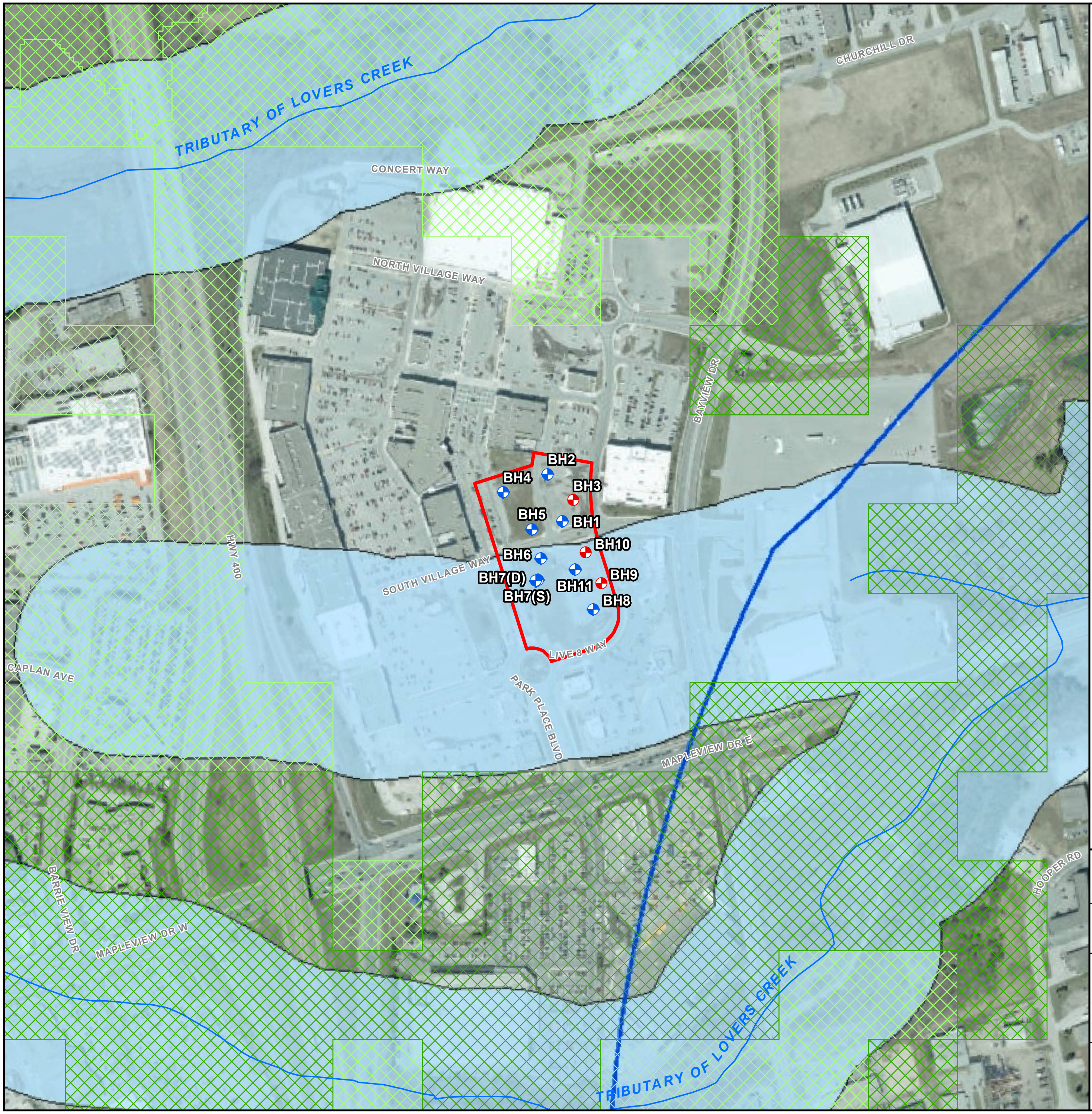

LEGEND

- ● Borehole (Pinchin, 2022)
- ● Monitoring Well (Pinchin, 2022)
- ∼ Watercourse[1]
- ▭ Subject Site

Source Water Protection[2]

- Wellhead Protection Area Q2
- 🟦 Intake Protection Zone 3

Significant Groundwater Recharge Area

- ▨ Score 2
- ▨ Score 4

1. LIO/MNRF
2. Source Protection Information Atlas, MECP © Queen's Printer for Ontario

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METRE SCALE

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Source Water Protection

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Figure 4

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2.2 Site Specific Conditions

2.2.1 Borehole Drilling and Monitoring Well Installation

[illegible]

Table 1. Borehole and Monitoring Well Installation Details

[illegible] ID	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	–	–
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	–	–
[illegible]	[illegible]	[illegible]	–	–
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

2.2.2 Geology and Soil Profile

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

> [illegible]

2.2.3 Groundwater Levels and Flow

[illegible]

[illegible]

[illegible] **Figure** [illegible]

[illegible]

Table 2. Measured Groundwater Levels

M[illegible]i[illegible]ri[illegible]g [illegible]e[illegible]ID	[illegible]i[illegible]	Gr[illegible]u[illegible]d[illegible]er [illegible]e[illegible]e[illegible]		
		[illegible]u[illegible]r[illegible] [illegible]	M[illegible]r[illegible] [illegible]	[illegible]ri[illegible] [illegible]
[illegible]	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
[illegible]	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
[illegible]	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
[illegible]	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
[illegible]	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
[illegible] D[illegible]	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
[illegible]	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
[illegible]	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
[illegible]	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]
	[illegible]	Dr[illegible]	Dr[illegible]	Dr[illegible]

Note: Water level units are in meters below ground surface (mbgs) or meters above sea level (mASL)

2.2.4 MECP Water Well Records

[illegible] **Figure** [illegible]

[illegible]

LEGEND

●	MECP Well Record within 500m[1]
⊕	Borehole (Pinchin, 2022)
⊕	Monitoring Well (Pinchin, 2022)
∼	Watercourse[2]
☐	Subject Site
⬚	500m Site Buffer

1. MECP
2. LIO/MNRF

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METRE SCALE

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MECP Well Records within 500m of Site

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Figure 5

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2.2.5 Hydraulic Conductivity

2.2.5.1 Empirical Analysis

[illegible]

[illegible]

$$K\ (Sauerbrei, 1932) = \frac{\rho g}{\mu}\left[(3.75 \times 10^{-5}) \times \tau\right]\left[\frac{n^3}{(1-n)^2}\right] d_{17}^2\ \frac{cm}{s}$$

[illegible] K = [illegible]
ρ = [illegible]
[illegible] = [illegible]
[illegible] = [illegible]
τ = [illegible]
[illegible] = [illegible]
[illegible] = [illegible]

[illegible]

Table 3. Estimated Empirical Hydraulic Conductivity

[illegible]re[illegible]e ID	[illegible]e	Ge[illegible]g[illegible]	Me[illegible]d [illegible]	[illegible]	Ge[illegible]e[illegible]ri[illegible] Me[illegible] [illegible]	[illegible]er[illegible]e[illegible]i[illegible]e [illegible]
[illegible]	[illegible]	[illegible]d	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]d	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]d	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	–

2.2.5.2 In-Situ Infiltration Testing

<u>*Guelph Permeameter*</u>

[illegible] **Figure 6** [illegible]

[illegible] values using the relationship provided by the “Low [illegible] endix C (Figure C1)” [illegible]

Table 4. Infiltration Testing Summary

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]				[illegible]	6[illegible]	[illegible]

LEGEND

- ⊞ Infiltration Testing Location
- ◉ Dry Borehole Infiltration Testing Location
- ◐ Borehole (Pinchin, 2022)
- ◐ Monitoring Well (Pinchin, 2022)
- ▭ Subject Site

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Guelph Permeameter and Dry Borehole Infiltration Testing Locations

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Figure 6

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Dry Borehole Infiltration Testing

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Table 5. Summary of In-Well Injection Testing Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]

Figure 7. BH8 In-Well Infiltration Response Curve

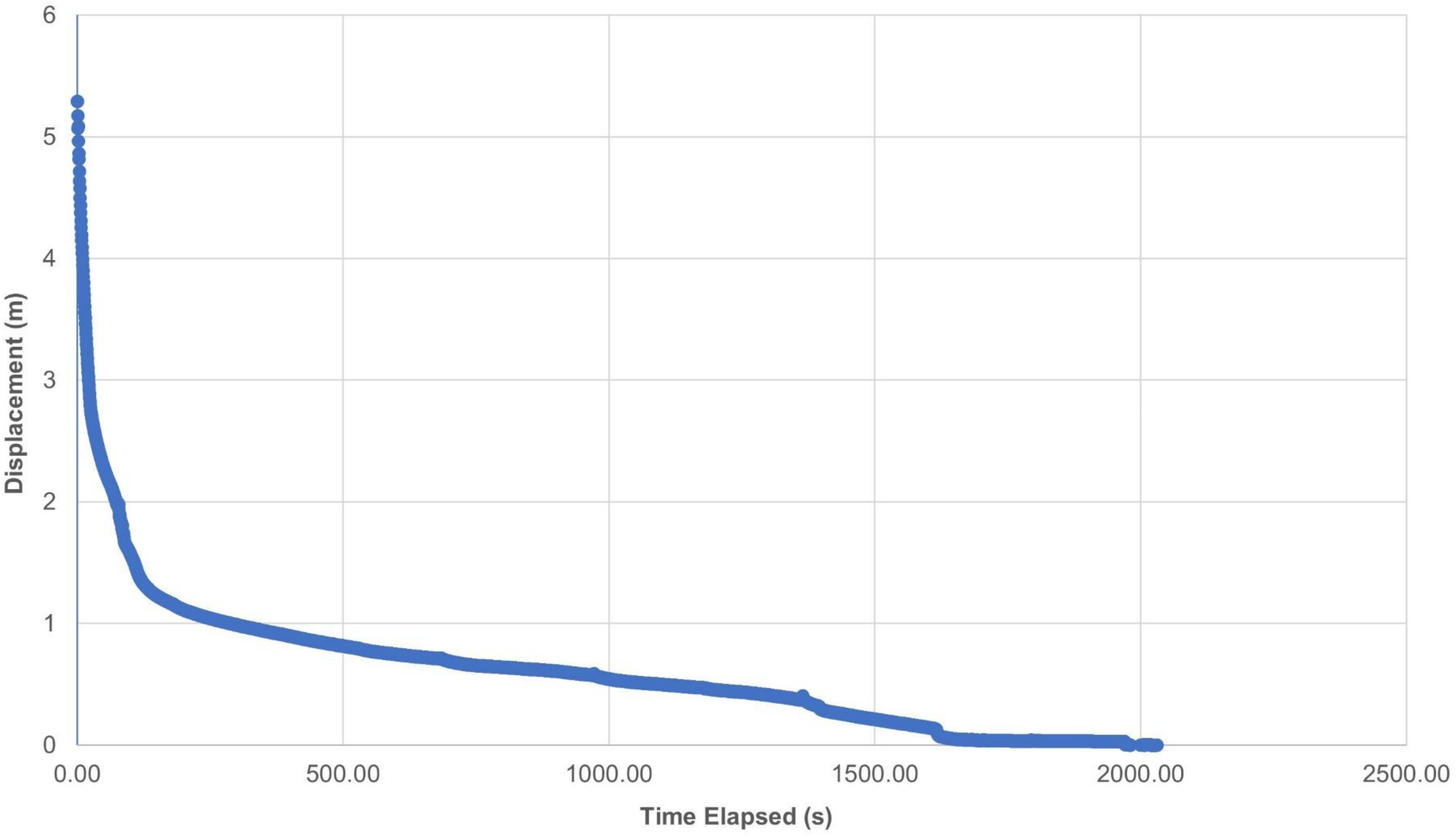
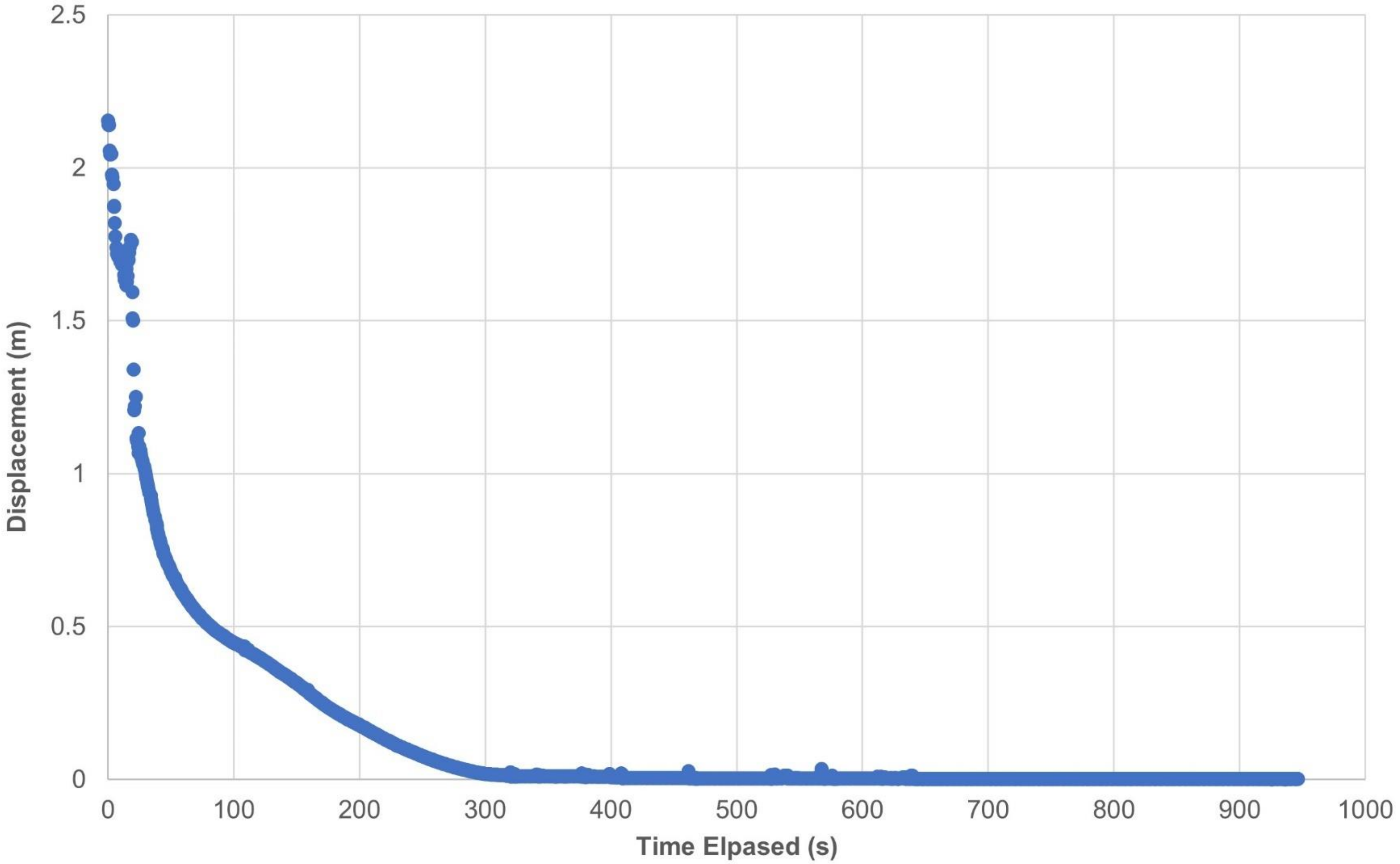


Figure 8. BH2 In-Well Infiltration Response Curve



Summary of Infiltration Results

[illegible]

[illegible]

Table 6. Summary of Infiltration Results

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Geometric Mean		[illegible]	[illegible]	[illegible]

3. Hydrogeological Conceptual Model

[illegible]

4. Preliminary Water Balance Assessment

4.1 Site Wide Water Balance

4.1.1 Pre-Development Water Balance

[illegible]

[illegible]

[illegible]

Table 7. Sitewide Water Balance: Summary of Annual Water Surplus

[illegible]	[illegible]	[illegible]	Fe[illegible]	M[illegible]r	[illegible]r	M[illegible]	[illegible]u[illegible]	[illegible]u[illegible]	[illegible]ug	[illegible]e[illegible]	[illegible]	[illegible]	De[illegible]	[illegible]e[illegible]r
[illegible] Gree[illegible]e	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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	[illegible]ur[illegible]u[illegible]	[illegible]	6[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

Table 8. MOEE (1995) Infiltration Factors

[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]
[illegible]	
[illegible]	[illegible]
[illegible]	
[illegible]	
[illegible]	[illegible]
[illegible]	[illegible]

Note: Reproduced from MOEE (1995), Technical Guidelines for the Preparation of Hydrogeological Studies for Land Development Applications.

Table 9. Infiltration and Runoff Factors

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

Table 10: Pre-Development Water Budget

Water Budget [illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
Impervious Fraction	[illegible]	[illegible]	[illegible]
Impervious Area (ha)	[illegible]	[illegible]	[illegible]
Water Surplus on Impervious Surfaces (m³/year)	[illegible]	[illegible]	[illegible]
[illegible] Impervious Area (m³/year)	[illegible]	[illegible]	[illegible]
[illegible] Pervious Area (ha)	[illegible]	[illegible]	[illegible]
Water Surplus on Vegetated Pervious Areas (m³/year)	[illegible]	[illegible]	[illegible]
Runoff Coefficient	[illegible]	[illegible]	[illegible]
Runoff Volume From Pervious Area (m³/year)	[illegible]	[illegible]	[illegible]
Infiltration Coefficient	[illegible]	[illegible]	[illegible]
Infiltration Volume from Pervious Area (m³/year)	[illegible]	[illegible]	[illegible]
Total Runoff Volume (m³/year)	[illegible]	[illegible]	[illegible]
Total Infiltration Volume (m³/year)	[illegible]	[illegible]	[illegible]

4.2 Low Impact Development

[illegible]

[illegible]

[illegible]

5. Preliminary Dewatering Assessment

[illegible]

[illegible]

[illegible]

[illegible]

6. Impact Assessment and Hydrogeological Design Considerations

6.1 Assessment of Impacts

6.1.1 Aquifers and Natural Environmental Features

[illegible]

[illegible]

[illegible]

[illegible]

6.1.2 Source Water Protection

[illegible] South Georgian Bay Lake Simcoe Region's Source Protection Plan [illegible] *Clean Water Act, 2006*, [illegible]

- [illegible]
- [illegible]
  - [illegible]
  - [illegible]

[illegible]

6.1.3 Private Water Wells

[illegible]

7. Conclusions and Recommendations

[illegible]

- [illegible]

- [illegible]

- [illegible]

- [illegible]

- [illegible]

- [illegible]

- [illegible]

- [illegible]

- [illegible]

- [illegible]

8. Signatures

[illegible] prepared and reviewed [illegible] undersigned.

Prepared by:

K Ty

[illegible] [illegible]r, M[illegible]
[illegible]

Supriya Singh

[illegible] [illegible], M[illegible], [illegible]
[illegible]

Reviewed by:

J. Cole

[illegible] [illegible], M[illegible], [illegible]
[illegible], [illegible]

Limitations of Report

[illegible]

[illegible]
recipient. The material in it reflects Palmer's best judgement in light of the information available to it at the
[illegible]

[illegible]
the then current fee for such letters. All third parties relying on Palmer's report, by such reliance agree to
be bound by our proposal and Palmer's standard reliance letter. Palmer's standard reliance letter
[illegible]
party reliance on Palmer's report. No reliance by any party is permitted without such agreement. This
[illegible]

[illegible] out of Palmer's control and its integrity can no
[illegible]

References

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Appendix A

[illegible]

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PROPOSED MULTI UNIT RESIDENTIAL INTENSIFICATION DEVELOPMENT PARK PLACE, BARRIE

NORTH AMERICAN DEVELOPMENT GROUP

CONSULTANTS LIST

PLANNING CONSULTANTS
R.G. RICHARDS & ASSOCIATES
6163 PEBBLEWOODS DR.
GREELY, ONTARIO K4P 0A1
TEL: 416-219-5122

PLANNING CONSULTANTS
IPS CONSULTING INC.
647 WELHAM RD., SUITE 9,
BARRIE, ONTARIO L4N 0B7
TEL: 705-812-3281

SITE SERVICES & GRADING ENGINEERS
SABOURIN KIMBLE & ASSOCIATES LTD.
110 OLD KINGSTON RD.
AJAX, ONTARIO L1T 2Z9
TEL: 905-426-9451

ELECTRICAL ENGINEER
HAMMERSCHLAG & JOFFE INC.
43 LESMILL ROAD
NORTH YORK, ONTARIO M3B 2T8
TEL: 416-444-9263

ARCHITECT
PETROFF PARTNERSHIP ARCHITECTS
260 TOWN CENTRE BLVD. SUITE 300
MARKHAM, ONTARIO L3R-8H8
TEL: 905-470-7000

LANDSCAPE ARCHITECTS
STUDIO TLA
20 CHAMPLAIN BLVD., SUITE 102
TORONTO, ONTARIO M3H 2Z1
TEL: 416-638-4911

TRANSPORTATION ENGINEER
BA CONSULTING GROUP
45 ST.CLAIR AVE. WEST, SUITE 300
TORONTO, ONTARIO M4V 1K9
TEL: 416-961-7110

ARCHITECTURAL DRAWING LIST

A000	COVER SHEET
A001	DEVELOPMENT STATISTICS
A101	CONTEXT PLAN
A102	BLOCK PLAN
A103	SITE PLAN
A301	ELEVATIONS - PHASE 1A & 1B
A302	ELEVATIONS - PHASE 1A & 1B
A303	ELEVATIONS - PHASE 2
A401	BUILDING SECTIONS - PHASE 1A & 1B
A402	BUILDING SECTIONS - PHASE 2

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COVER SHEET

SCALE: AS NOTED

PROPOSED MULTI-UNIT
RESIDENTIAL DEVELOPMENT
PARK PLACE BARRIE
100 MAPLEVIEW DRIVE EAST, BARRIE, ON
FOR: NORTH AMERICAN DEVELOPMENT GROUP

PETROFF
PETROFF PARTNERSHIP ARCHITECTS
260 TOWN CENTRE BLVD, SUITE 300
MARKHAM, ON L3R H8H
PH: 905-470-7000 www.petroff.com

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ZONING BY-LAW STATS.

	PHASE 1A (BLDG. A)	PHASE 1B (BLDG. B)	PHASE 2 (BLDG. C)	**TOTALS**
BUILDING AREA	2,165m2	1,650m2	2,385m2	**6,200m2**
NON-RESIDENTIAL GFA [1]	1,160m2	175m2	975m2	**2,310m2**
RESIDENTIAL GFA [1]	6,990m2	13,395m2	12,815m2	**33,200m2**
BUILDING HEIGHT	6-STOREYS Proposed 24.0m	16-STOREYS Proposed 60.0m	6 & 12-STOREYS Proposed 47.0m	16-STOREYS (max.) Proposed 60.0m (max.)
LANDSCAPE OPEN SPACE AREA [2]	1,375m2	1,630m2	2,530m2	**5,535m2**
COMMON AMENITY AREA [3]	200m2	1,000m2	650m2	**1,850m2**
BICYCLE PARKING	50	100	90	**240**

1. ***Gross Floor Area (GFA)*** *City of Barrie Zoning By-Law 2009-141 definition: shall mean the total area of all floors in a building, excepting a basement in a residential building, measured from the outside face of the exterior walls, but exclusive of any part of a building which is used for the storage or parking of motor vehicles other than for the automotive purposes defined in Section 3.0 in this By-law, for storage, stairwells, or for mechanical or electrical equipment providing services for the entire building. In addition to the exceptions, in calculating the gross floor area for "dwelling, apartment", the part of the gross corridor areas which are in excess of the minimum corridor areas required under the provisions of the Ontario Building Code and the area occupied by a recreational amenity shall not be included.*
2. ***Landscaped Open Space (note: as related to residential intensification blocks, calculation includes outdoor roof amenity)***
shall mean open space comprised of lawn and ornamental shrubs, flowers and trees and may include incidental landscaping accessories such as retaining walls, boulders, sculptures, fountains and ponds, paths, walkways, patios and hard-surfaced play areas, but shall not include parking areas or driveways.
3. ***Amenity Area - General***
shall mean any indoor amenity areas such as pools, gym, meeting or assembly room within a building which may be a common area available to occupants of the building, in addition to any outdoor amenity area. (By-law 2017-041)
Amenity Area - Outdoor
shall mean an area of land; balcony; deck; terrace; the roof of a private garage or the roof of a parking structure, which includes landscape area and may include areas of decorative paving or other similar surface, provided such surface is not used for vehicular use. (2017- 041)

SITE B1/ DEVELOPMENT STATS.

UNIT COUNT & PARKING	**PHASE 1A**	
	TOTAL NUMBER OF RESIDENTIAL UNITS	**99 units**
	PARKING PROPOSED FOR RESIDENTIAL	**109 spaces** *(1.1 spaces/ unit)* [3]
	PARKING PROPOSED FOR RETAIL	**52 spaces** *(4.5 spaces/ 1000 sq.ft.)*
AREA TOTALS	TOTAL GFA (no exclusions) [1]	**±16,488m2 (177,475 SF)**
	TOTAL COMBINED GLA (Res and Retail) [2]	**±7,405m2 (79,710 SF)**
	RESIDENTIAL GLA [2]	*±6,294m2 (67,750 SF)*
	RETAIL GLA	*±1,111m2 (11,960 SF)*

UNIT COUNT & PARKING	**PHASE 1B**	
	TOTAL NUMBER OF RESIDENTIAL UNITS	**197 units**
	PARKING PROPOSED FOR RESIDENTIAL	**217 spaces** *(1.1 spaces/ unit)* [3]
	PARKING PROPOSED FOR RETAIL	**10 spaces** *(4.5 spaces/ 1000 sq.ft.)*
AREA TOTALS	TOTAL GFA (no exclusions) [1]	**±27,067m2 (291,347 SF)**
	TOTAL COMBINED GLA (Res and Retail) [2]	**±12,660m2 (136,272 SF)**
	RESIDENTIAL GLA [2]	*±12,465m2 (134,172 SF)*
	RETAIL GLA	*±195m2 (2,100 SF)*

SITE B2/ DEVELOPMENT STATS.

UNIT COUNT & PARKING	**PHASE 2**	
	TOTAL NUMBER OF RESIDENTIAL UNITS	**179 units**
	PARKING PROPOSED FOR RESIDENTIAL	**197 spaces** *(1.1 spaces/ unit)* [3]
	PARKING PROPOSED FOR RETAIL	**54 spaces** *(4.5 spaces/ 1000 sq.ft.)*
AREA TOTALS	TOTAL GFA (no exclusions) [1]	**±29,372m2 (316,158 SF)**
	TOTAL COMBINED GLA (Res and Retail) [2]	**±12,756m2 (137,304 SF)**
	RESIDENTIAL GLA [2]	*±11,716m2 (126,110 SF)*
	RETAIL GLA	*±1,040m2 (11,194 SF)*

SITE B1 & B2

UNIT COUNT & PARKING	**COMBINED TOTALS FOR ALL PHASES**	
	TOTAL NUMBER OF RESIDENTIAL UNITS	**475 units**
	PARKING PROPOSED FOR RESIDENTIAL	**523 spaces** *(1.1 spaces/ unit)* [3]
	PARKING PROPOSED FOR RETAIL	**116 spaces** *(4.5 spaces/ 1000 sq.ft.)*
AREA TOTALS	TOTAL GFA (no exclusions) [1]	**±72,927m2 (784,980 SF)**
	TOTAL COMBINED GLA (Res and Retail) [2]	**±32,821m2 (353,286 SF)**
	RESIDENTIAL GLA [2]	*±30,475m2 (328,032 SF)*
	RETAIL GLA	*±2,346m2 (25,254 SF)*

1. ***Gross Floor Area (GFA)*** *is the aggregate of the area of each floor measured from exterior surface of exterior walls and excludes balconies and terraces. Parking, loading, services, all shafts and stairs on each floor are included in GFA.*
2. ***Residential Gross Leasable Area (GLA)*** *is the aggregate of the area of all floors in a residential building, whether at, above or below grade, measured from the exterior faces of the exterior walls, centerline of suite-to-suite demising wall and the outer surface of the suite-to-corridor wall. Residential GLA excludes parking, loading, balconies, corridors, stairs, elevators, shafts, service closets.*
3. ***Barrier-Free Parking***
76 to 100: 2 Type 'A' (3.4m wide) and 2 Type 'B' (3.1m wide)
100+ : 1 Type 'A' space plus 3% of overall parking count

PHASE 1A - RESIDENTIAL STATS. (AT-GRADE RETAIL EXCLUDED)**

FLOOR LEVEL	**UNIT COUNT**	**GFA (m2/ sq.ft.)**	**GLA (m2/ sq.ft.)**	**EFFICIENCY (%)**
P2 - PARKING LEVEL	-	3,525 (37,945)	-	-
P1 - PARKING LEVEL	-	3,525 (37,945)	-	-
GROUND FLOOR	-	520 (5,600)(1)	-	-
2ND FLOOR	20	1,470 (15,825)	1,276 (13,735)	87%
3RD FLOOR	20	1,470 (15,825)	1,276 (13,735)	87%
4TH FLOOR	20	1,470 (15,825)	1,276 (13,735)	87%
5TH FLOOR	20	1,470 (15,825)	1,276 (13,735)	87%
6TH FLOOR	19	1,460 (15,715)	1,190 (12,810)	82%
TOTALS	**99**	**14,910 (160,490)**	**6,294 (67,750)**	-

1. *Area excludes: retail, parking ramp and loading*

PHASE 1B - RESIDENTIAL STATS. (AT-GRADE RETAIL EXCLUDED)**

	FLOOR LEVEL	**UNIT COUNT**	**GFA (m2/ sq.ft.)**	**GLA (m2/ sq.ft.)**	**EFFICIENCY (%)**
	P3 - PARKING LEVEL		3,925 (42,250)		
	P2 - PARKING LEVEL	-	3,945 (42,465)	-	-
	P1 - PARKING LEVEL	-	3,945 (42,465)	-	-
PODIUM	GROUND FLOOR	-	500 (5,380)(1)	-	-
	2ND FLOOR	19	1,346 (14,488)	1,197 (12,884)	89%
	3RD FLOOR	19	1,346 (14,488)	1,197 (12,884)	89%
	4TH FLOOR	19	1,346 (14,488)	1,197 (12,884)	89%
	5TH FLOOR	19	1,346 (14,488)	1,197 (12,884)	89%
TOWER	6TH FLOOR	11	790 (8,500)	688 (7,405)	87%
	7TH FLOOR	11	790 (8,500)	698 (7,513)	88%
	8TH FLOOR	11	790 (8,500)	698 (7,513)	88%
	9TH FLOOR	11	790 (8,500)	698 (7,513)	88%
	10TH FLOOR	11	790 (8,500)	698 (7,513)	88%
	11TH FLOOR	11	790 (8,500)	698 (7,513)	88%
	12TH FLOOR	11	790 (8,500)	698 (7,513)	88%
	13TH FLOOR	11	790 (8,500)	698 (7,513)	88%
	14TH FLOOR	11	790 (8,500)	698 (7,513)	88%
	15TH FLOOR	11	790 (8,500)	698 (7,513)	88%
	16TH FLOOR	11	790 (8,500)	698 (7,513)	88%
	TOTALS	**197**	**26,390 (284,050)**	**12,465 (134,172)**	-

1. *Area excludes: retail, parking ramp and loading*

PHASE 2 - RESIDENTIAL STATS. (AT-GRADE RETAIL EXCLUDED)**

	FLOOR LEVEL	**UNIT COUNT**	**GFA (m2/ sq.ft.)**	**GLA (m2/ sq.ft.)**	**EFFICIENCY (%)**
	P3 - PARKING LEVEL	-	4,685 (50,430)		
	P2 - PARKING LEVEL	-	4,685 (50,430)	-	-
	P1 - PARKING LEVEL	-	4,685 (50,430)	-	-
PODIUM	GROUND FLOOR	-	455 (4,895)(1)	-	-
	2ND FLOOR	25	1,875 (20,182)	1,658 (17,846)	88%
	3RD FLOOR	25	1,875 (20,182)	1,658 (17,846)	88%
	4TH FLOOR	25	1,875 (20,182)	1,658 (17,846)	88%
	5TH FLOOR	25	1,875 (20,182)	1,658 (17,846)	88%
TOWER	6TH FLOOR	19	1,468 (15,800)	1,256 (13,520)	85%
	7TH FLOOR	10	750 (8,700)	638 (6,865)	85%
	8TH FLOOR	10	750 (8,700)	638 (6,865)	85%
	9TH FLOOR	10	750 (8,700)	638 (6,865)	85%
	10TH FLOOR	10	750 (8,700)	638 (6,865)	85%
	11TH FLOOR	10	750 (8,700)	638 (6,865)	85%
	12TH FLOOR	10	750 (8,700)	638 (6,865)	85%
	TOTALS	**179**	**27,978 (301,152)**	11,716 (126,110)	-

1. *Area excludes: retail, parking ramp and loading*

UNIT MIX BREAKDOWN SUMMARY

PHASE 1A		
UNIT TYPE	**COUNT**	**%**
STUDIO	10	10
1-BEDROOM	56	56
1-BED+DEN	17	17
2-BEDROOM	11	11
2-BED+DEN	5	5
TOTALS	99	

PHASE 1B		
UNIT TYPE	**COUNT**	**%**
STUDIO	1	0.5
1-BEDROOM	124	63
1-BED+DEN	8	4
2-BEDROOM	64	32.5
2-BED+DEN	0	0
TOTALS	197	

PHASE 2		
UNIT TYPE	**COUNT**	**%**
STUDIO	5	3
1-BEDROOM	78	44
1-BED+DEN	42	23
2-BEDROOM	54	30
2-BED+DEN	0	0
TOTALS	179	

COMBINED		
UNIT TYPE	**COUNT**	**%**
STUDIO	16	3
1-BEDROOM	258	54
1-BED+DEN	67	14
2-BEDROOM	129	27
2-BED+DEN	5	1
TOTALS	475	

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STATISTICS

SCALE: AS NOTED

PROPOSED MULTI-UNIT
RESIDENTIAL DEVELOPMENT
PARK PLACE BARRIE
100 MAPLEVIEW DRIVE EAST, BARRIE, ON
FOR: NORTH AMERICAN DEVELOPMENT GROUP

PETROFF
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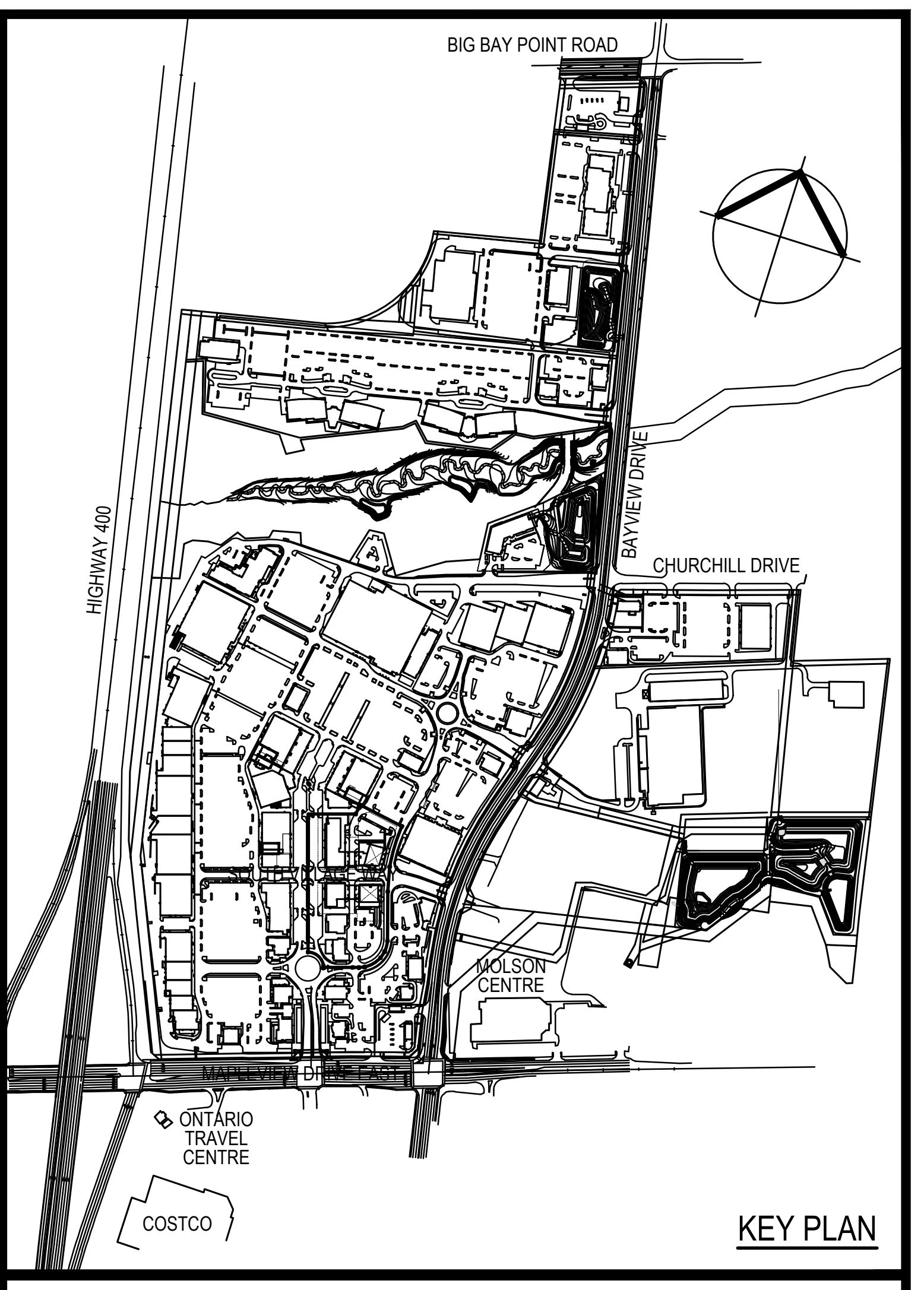
1 CONTEXT PLAN
A101 SCALE: 1:1000



KEY PLAN

LEGAL DESCRIPTION

LOTS 7, 8 AND 9, CONCESSION 12, (GEOGRAPHIC TOWNSHIP OF INNISFIL), CITY OF BARRIE, COUNTY OF SIMCOE

LEGEND

▨ EXTENT OF DEVELOPMENT

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CONTEXT PLAN

SCALE: AS NOTED

PROPOSED MULTI-UNIT
RESIDENTIAL DEVELOPMENT
PARK PLACE BARRIE
100 MAPLEVIEW DRIVE EAST, BARRIE, ON
FOR: NORTH AMERICAN DEVELOPMENT GROUP

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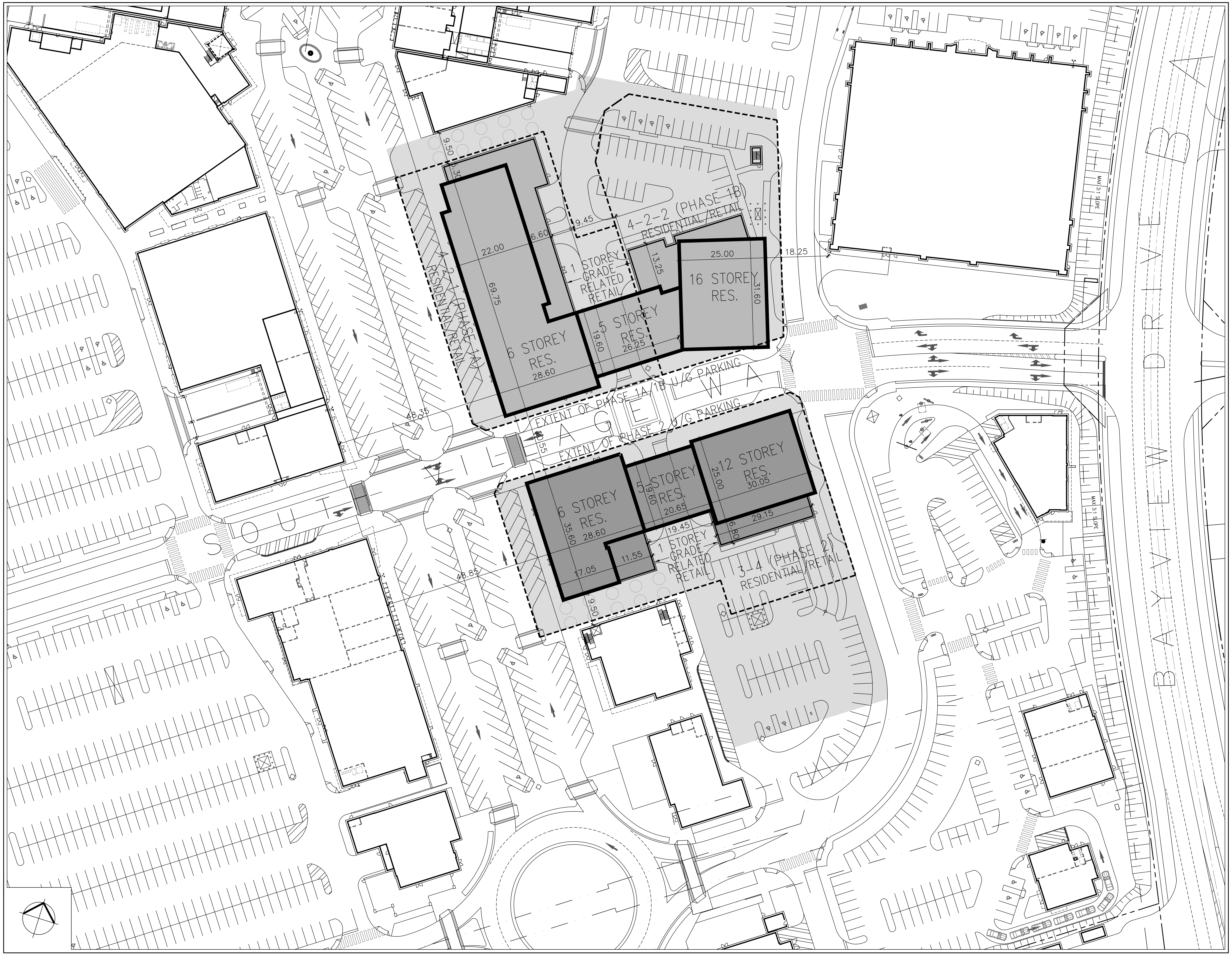
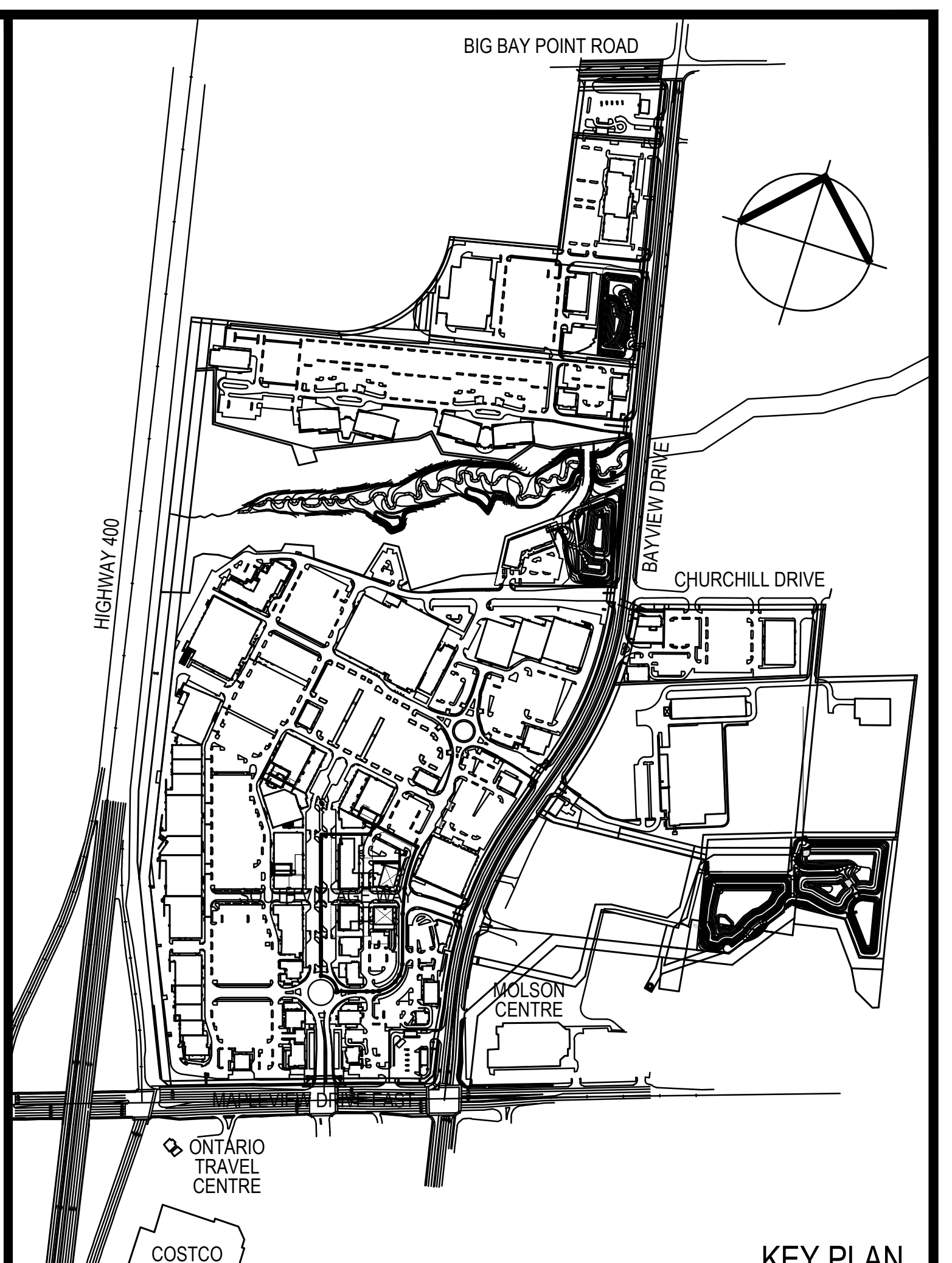


1 BLOCK PLAN
A102 SCALE: 1:500



KEY PLAN

LEGAL DESCRIPTION

LOTS 7, 8 AND 9, CONCESSION 12, (GEOGRAPHIC TOWNSHIP OF INNISFIL), CITY OF BARRIE, COUNTY OF SIMCOE

LEGEND

▨	EXTENT OF DEVELOPMENT
▨	PHASE 1A & 1B SUBJECT BUILDINGS
▨	PHASE 2 SUBJECT BUILDINGS
- - - - - -	EXTENT OF UNDERGROUND PARKING

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BLOCK PLAN

SCALE: AS NOTED 1:500

PROPOSED MULTI-UNIT RESIDENTIAL DEVELOPMENT PARK PLACE BARRIE

100 MAPLEVIEW DRIVE EAST, BARRIE, ON
FOR: NORTH AMERICAN DEVELOPMENT GROUP

PETROFF
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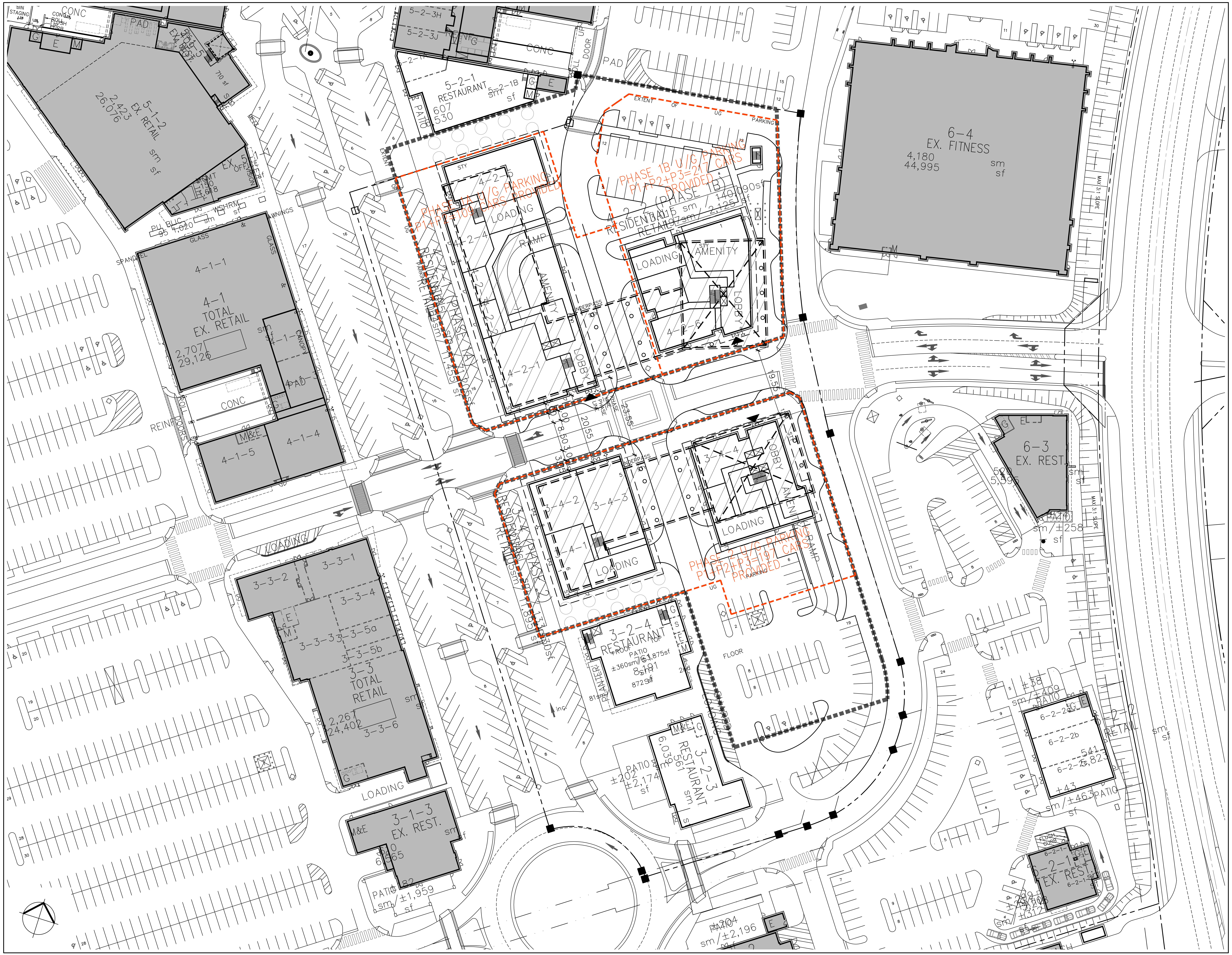
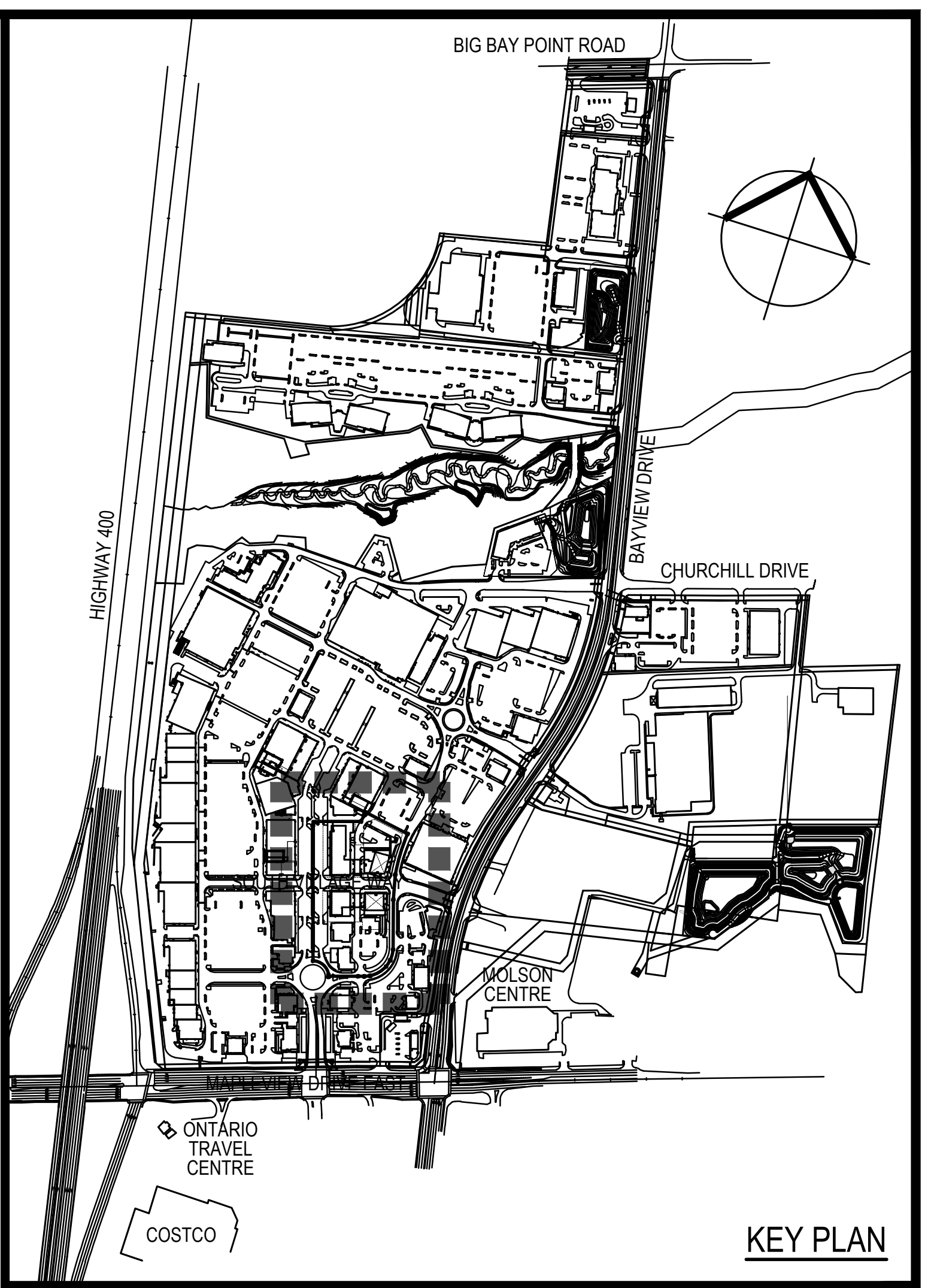


1 SITE PLAN
A103 SCALE: 1:500



KEY PLAN

LEGAL DESCRIPTION

LOTS 7, 8 AND 9, CONCESSION 12, (GEOGRAPHIC TOWNSHIP OF INNISFIL), CITY OF BARRIE, COUNTY OF SIMCOE

LEGEND

▨	EXISTING BUILDINGS
■■■■	EXTENT OF DEVELOPMENT
▲	PRIMARY RESIDENTIAL ENTRANCE

NOTES

1. LEGAL DESCRIPTION, SURVEY LAYOUT HAVE BEEN TAKEN FROM FILE No. 14909 PREPARED BY RUDY MAK SURVEYING LTD. DATED AUGUST 18, 2021
2. SPECIFIC BLOCK DESIGN & DEMISING WALL LOCATIONS/AREAS WITHIN PROPOSED BUILDINGS TO BE DETERMINED BY FUTURE TENANT LEASING
3. FOR LANDSCAPING INFORMATION, REFER TO DRAWINGS PREPARED BY STUDIO TLA
4. FOR GRADING & SERVICING INFORMATION, REFER TO DRAWINGS PREPARED BY SABOURIN KIMBLE
5. FOR ELECTRICAL INFORMATION, REFER TO DRAWINGS PREPARED BY HAMMERSCHLAG & JOFFE
6. ALL DIMENSIONS TO BE READ AS ±

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SITE PLAN

SCALE: AS NOTED 1:500

PROPOSED MULTI-UNIT RESIDENTIAL DEVELOPMENT PARK PLACE BARRIE

100 MAPLEVIEW DRIVE EAST, BARRIE, ON
FOR: NORTH AMERICAN DEVELOPMENT GROUP

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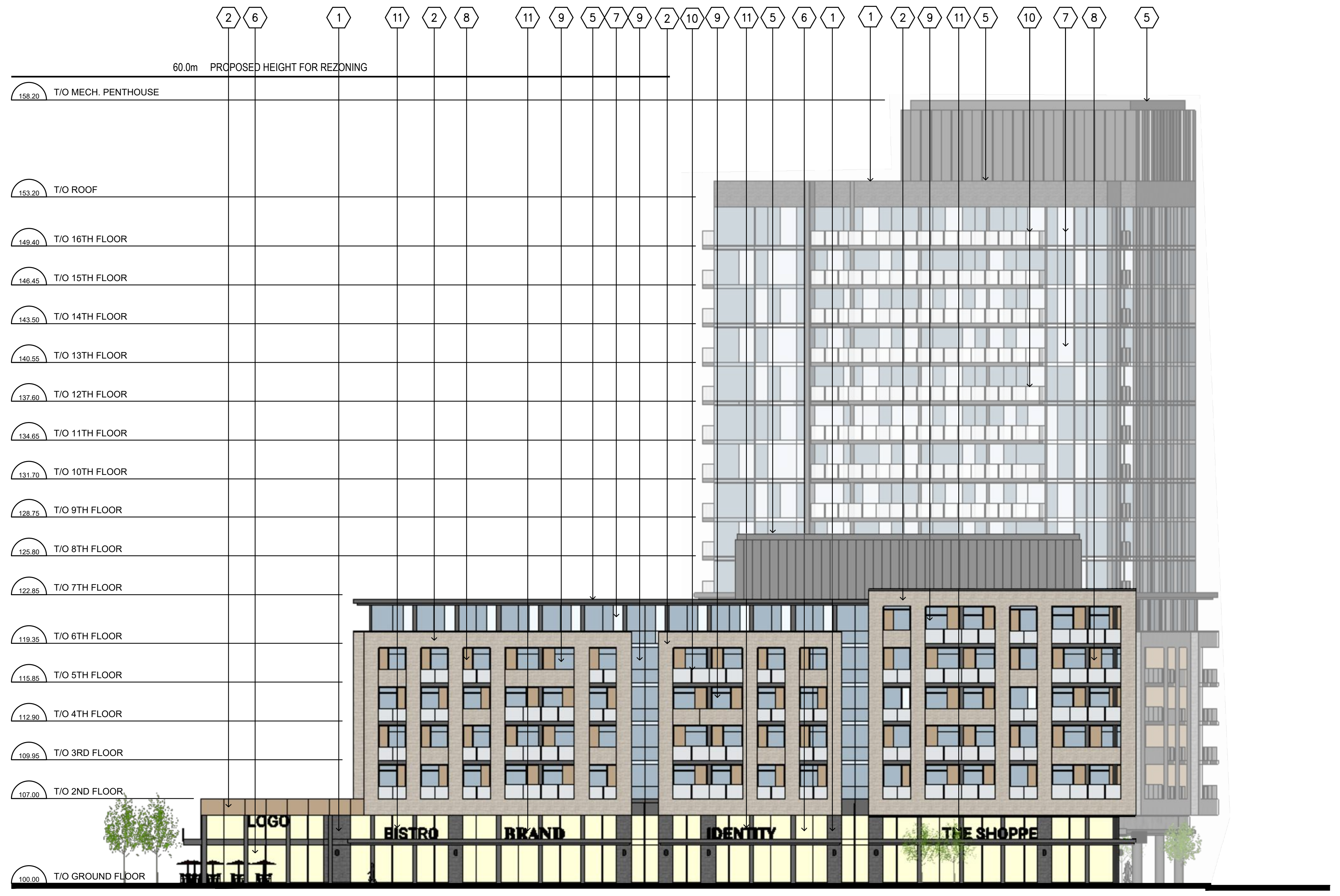
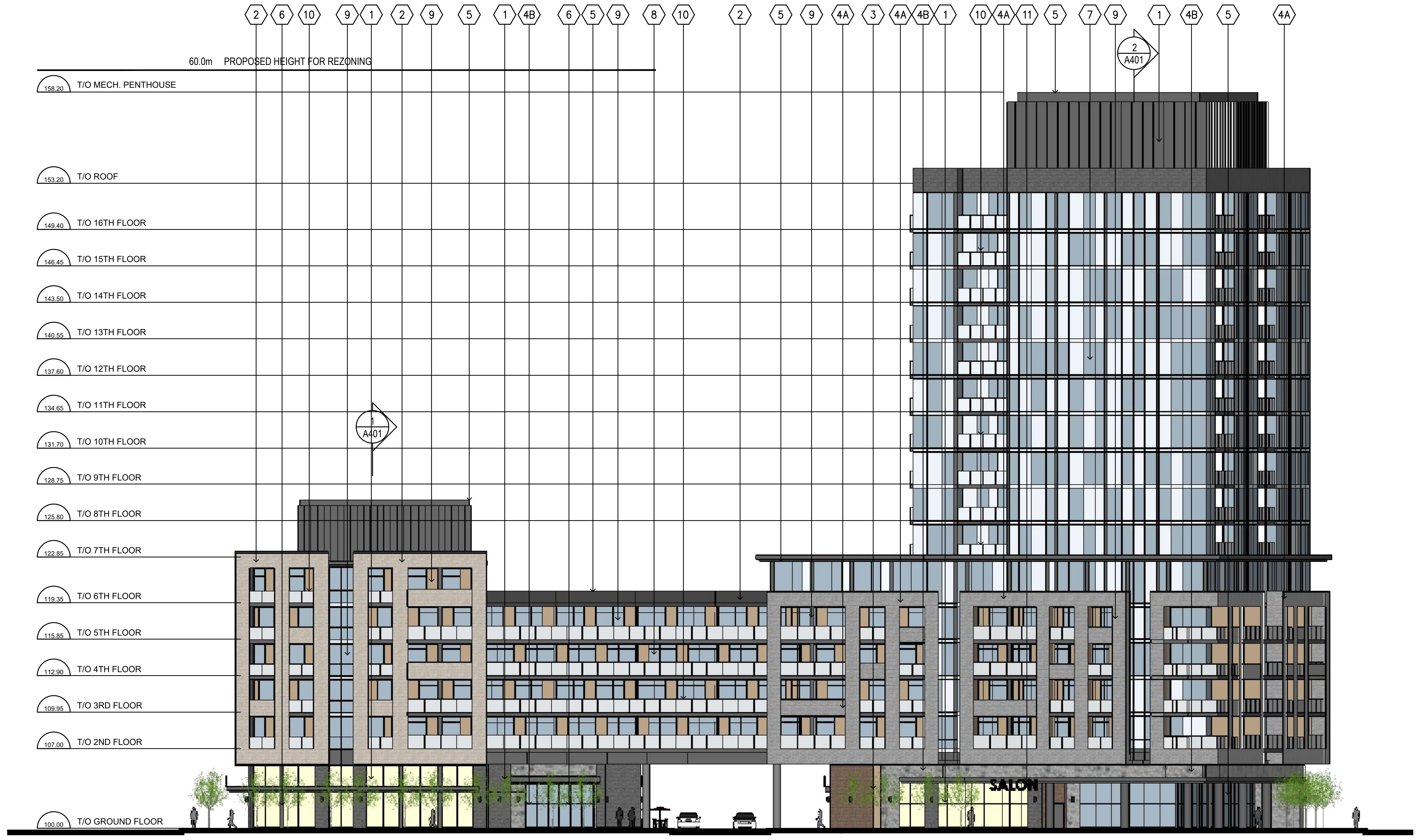


1 BUILDING A WEST ELEVATION
A301 SCALE: 1:300



2 BUILDING A SOUTH ELEVATION
A301 SCALE: 1:300

MATERIAL LEGEND

1	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: CHARCOAL FINISH, DARK GREY MORTAR
2	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: LIGHT BROWN/TAN FINISH, BEIGE MORTAR
3	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: MEDIUM BROWN FINISH, BEIGE/TAN MORTOR
4A	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: WHITE/LIGHT GREY, LIGHT GREY MORTOR
4B	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: WHITE/LIGHT MOTTLED GREY, LIGHT GREY MORTOR
5	PRE-FINISHED PANEL SIDING OR ACM PANEL COLOUR: CHARCOAL FINISH
6	LOW-E CLEAR STOREFRONT GLAZING IN PRE-FINISHED ALUMINUM STOREFRONT FRAMES COLOUR: DARK GREY
7	INSULATED BACK PAINTED WHITE SPANDRAL GLAZING IN THERMALLY BROKEN PRE-FINISHED ALUMINUM WINDOW WALL SYSTEM COLOUR: DARK GREY
8	INSULATED METAL SPANDREL PANEL (WOOD GRAIN FINISH) IN THERMALLY BROKEN PRE-FINISHED ALUMINUM WINDOW WALL SYSTEM COLOUR: DARK GREY
9	LOW-E CLEAR GLAZING IN THERMALLY BROKEN PRE-FINISHED ALUMINUM WINDOW WALL SYSTEM COLOUR: DARK GREY
10	CLEAR TEMPERED GLASS BALCONY GUARDRAIL IN PRE-FINISHED ALUMINUM RAILING SYSTEM
11	TENANT SIGNAGE - INDIVIDUAL LETTER SIGN OR LOGO

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BUILDING 'A' (PHASE 1A & 1B)
WEST & SOUTH ELEVATIONS

SCALE: AS NOTED

PROPOSED MULTI-UNIT
RESIDENTIAL DEVELOPMENT
PARK PLACE BARRIE
100 MAPLEVIEW DRIVE EAST, BARRIE, ON
FOR: NORTH AMERICAN DEVELOPMENT GROUP

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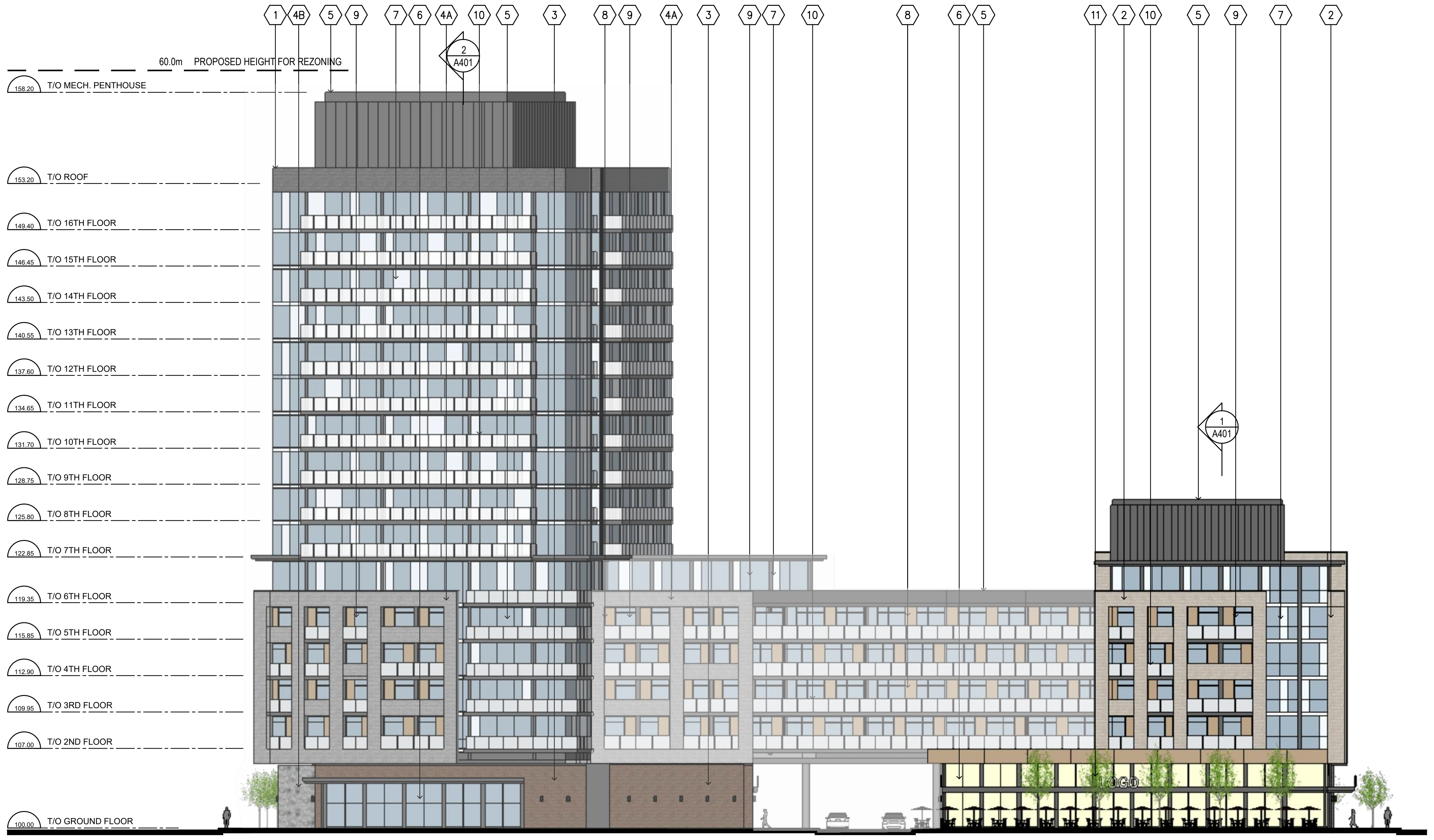
1 BUILDING A EAST ELEVATION
A302 SCALE: 1:300



2 BUILDING A NORTH ELEVATION
A302 SCALE: 1:300

MATERIAL LEGEND

1	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: CHARCOAL FINISH, DARK GREY MORTAR
2	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: LIGHT BROWN/TAN FINISH, BEIGE MORTAR
3	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: MEDIUM BROWN FINISH, BEIGE/TAN MORTOR
4A	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: WHITE/LIGHT GREY, LIGHT GREY MORTOR
4B	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: WHITE/LIGHT MOTTLED GREY, LIGHT GREY MORTOR
5	PRE-FINISHED PANEL SIDING OR ACM PANEL COLOUR: CHARCOAL FINISH
6	LOW-E CLEAR STOREFRONT GLAZING IN PRE-FINISHED ALUMINUM STOREFRONT FRAMES COLOUR: DARK GREY
7	INSULATED BACK PAINTED WHITE SPANDRAL GLAZING IN THERMALLY BROKEN PRE-FINISHED ALUMINUM WINDOW WALL SYSTEM COLOUR: DARK GREY
8	INSULATED METAL SPANDREL PANEL (WOOD GRAIN FINISH) IN THERMALLY BROKEN PRE-FINISHED ALUMINUM WINDOW WALL SYSTEM COLOUR: DARK GREY
9	LOW-E CLEAR GLAZING IN THERMALLY BROKEN PRE-FINISHED ALUMINUM WINDOW WALL SYSTEM COLOUR: DARK GREY
10	CLEAR TEMPERED GLASS BALCONY GUARDRAIL IN PRE-FINISHED ALUMINUM RAILING SYSTEM
11	TENANT SIGNAGE - INDIVIDUAL LETTER SIGN OR LOGO

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1	ISSUED FOR COORDINATION	FEB.11.2022	OH

Contractor must check and verify all dimensions on the job and report any discrepancies to the Architect before proceeding with the work.

Do not scale the drawing.

This drawing was developed for a specific purpose; use for any other purpose is not permitted.

This drawing must be read in the context of all the other drawings which constitute the document.

BUILDING 'A' (PHASE 1A & 1B)
EAST & NORTH ELEVATIONS

SCALE: AS NOTED

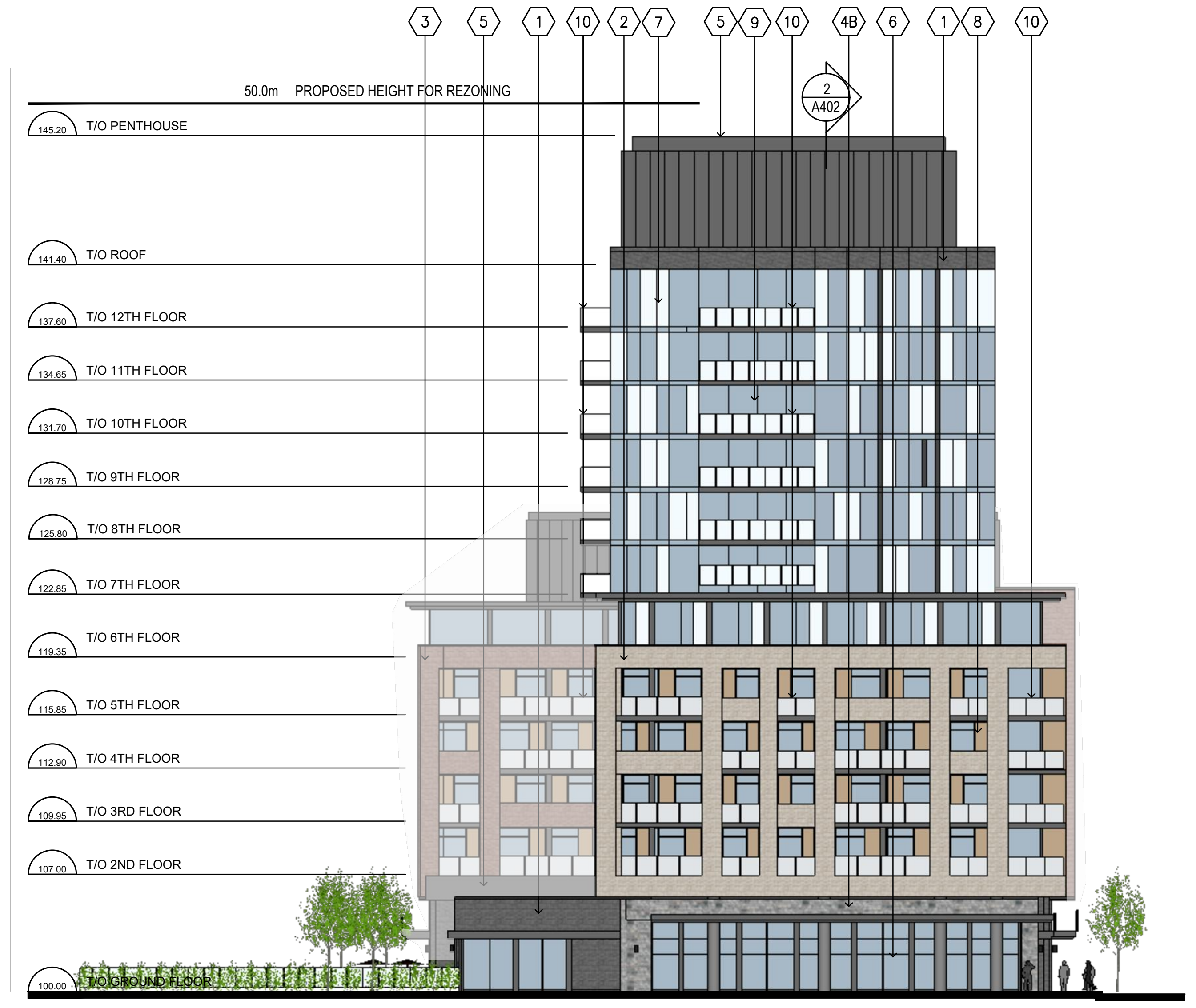
PROPOSED MULTI-UNIT
RESIDENTIAL DEVELOPMENT
PARK PLACE BARRIE
100 MAPLEVIEW DRIVE EAST, BARRIE, ON
FOR: NORTH AMERICAN DEVELOPMENT GROUP

PETROFF
PETROFF PARTNERSHIP ARCHITECTS
260 TOWN CENTRE BLVD, SUITE 300
MARKHAM, ON L3R H8H
PH: 905-470-7000 www.petroff.com

DRAWN BY	PETROFF	PROJECT NO.	02138
CHECKED BY	AH		
DATE		DWG. NO.	A302
ISSUED			

1
A303
BUILDING B WEST ELEVATION
SCALE: 1:300

2
A303
BUILDING B SOUTH ELEVATION
SCALE: 1:300



3
A303
BUILDING B EAST ELEVATION
SCALE: 1:300

4
A303
BUILDING B NORTH ELEVATION
SCALE: 1:300

MATERIAL LEGEND

1	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: CHARCOAL FINISH, DARK GREY MORTAR
2	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: LIGHT BROWN/TAN FINISH, BEIGE MORTAR
3	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: MEDIUM BROWN FINISH, BEIGE/TAN MORTOR
4A	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: WHITE/LIGHT GREY, LIGHT GREY MORTOR
4B	FULL BED MASONRY BRICK VENEER AND/OR ARCHITECTURAL PRECAST CONCRETE COLOUR: WHITE/LIGHT MOTTLED GREY, LIGHT GREY MORTOR
5	PRE-FINISHED PANEL SIDING OR ACM PANEL COLOUR: CHARCOAL FINISH
6	LOW-E CLEAR STOREFRONT GLAZING IN PRE-FINISHED ALUMINUM STOREFRONT FRAMES COLOUR: DARK GREY
7	INSULATED BACK PAINTED WHITE SPANDRAL GLAZING IN THERMALLY BROKEN PRE-FINISHED ALUMINUM WINDOW WALL SYSTEM COLOUR: DARK GREY
8	INSULATED METAL SPANDREL PANEL (WOOD GRAIN FINISH) IN THERMALLY BROKEN PRE-FINISHED ALUMINUM WINDOW WALL SYSTEM COLOUR: DARK GREY
9	LOW-E CLEAR GLAZING IN THERMALLY BROKEN PRE-FINISHED ALUMINUM WINDOW WALL SYSTEM COLOUR: DARK GREY
10	CLEAR TEMPERED GLASS BALCONY GUARDRAIL IN PRE-FINISHED ALUMINUM RAILING SYSTEM
11	TENANT SIGNAGE - INDIVIDUAL LETTER SIGN OR LOGO

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BUILDING 'B' (PHASE 2)
ELEVATIONS

SCALE: AS NOTED

PROPOSED MULTI-UNIT
RESIDENTIAL DEVELOPMENT
PARK PLACE BARRIE
100 MAPLEVIEW DRIVE EAST, BARRIE, ON
FOR: NORTH AMERICAN DEVELOPMENT GROUP

PETROFF
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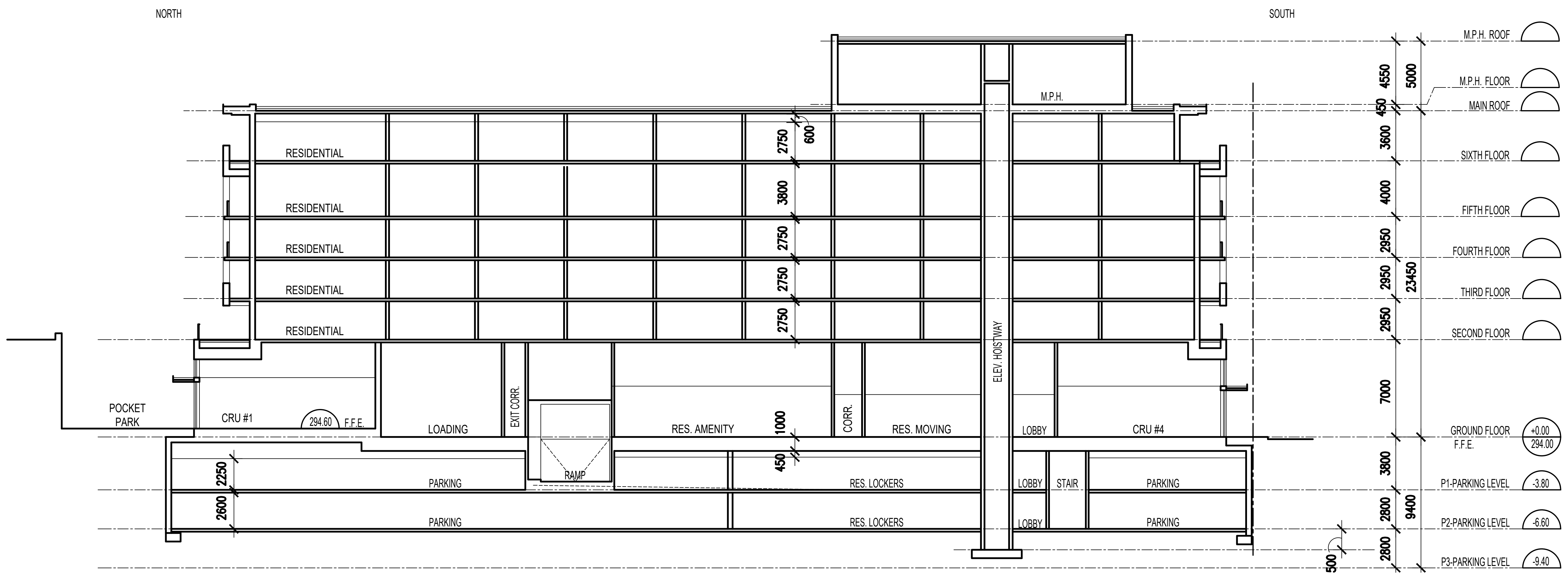
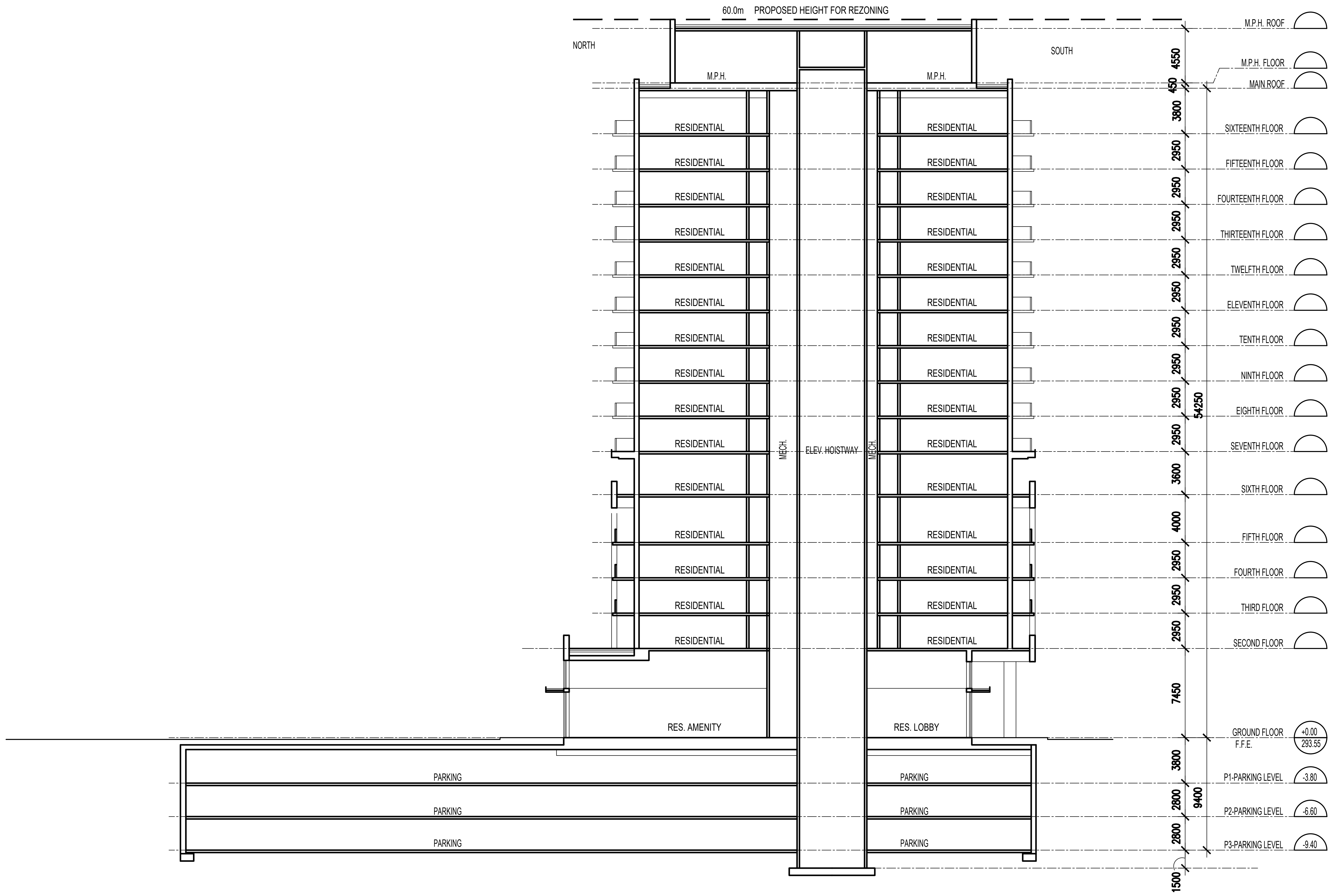
DATE			
ISSUED			



1 A401 PHASE 1A – NORTH – SOUTH SECTION
SCALE: 1:250



2 A401 PHASE 1B – NORTH – SOUTH SECTION
SCALE: 1:250

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BUILDING SECTIONS
PHASE 1A & 1B

SCALE: AS NOTED

PROPOSED MULTI-UNIT
RESIDENTIAL DEVELOPMENT
PARK PLACE BARRIE
100 MAPLEVIEW DRIVE EAST, BARRIE, ON
FOR: NORTH AMERICAN DEVELOPMENT GROUP

PETROFF
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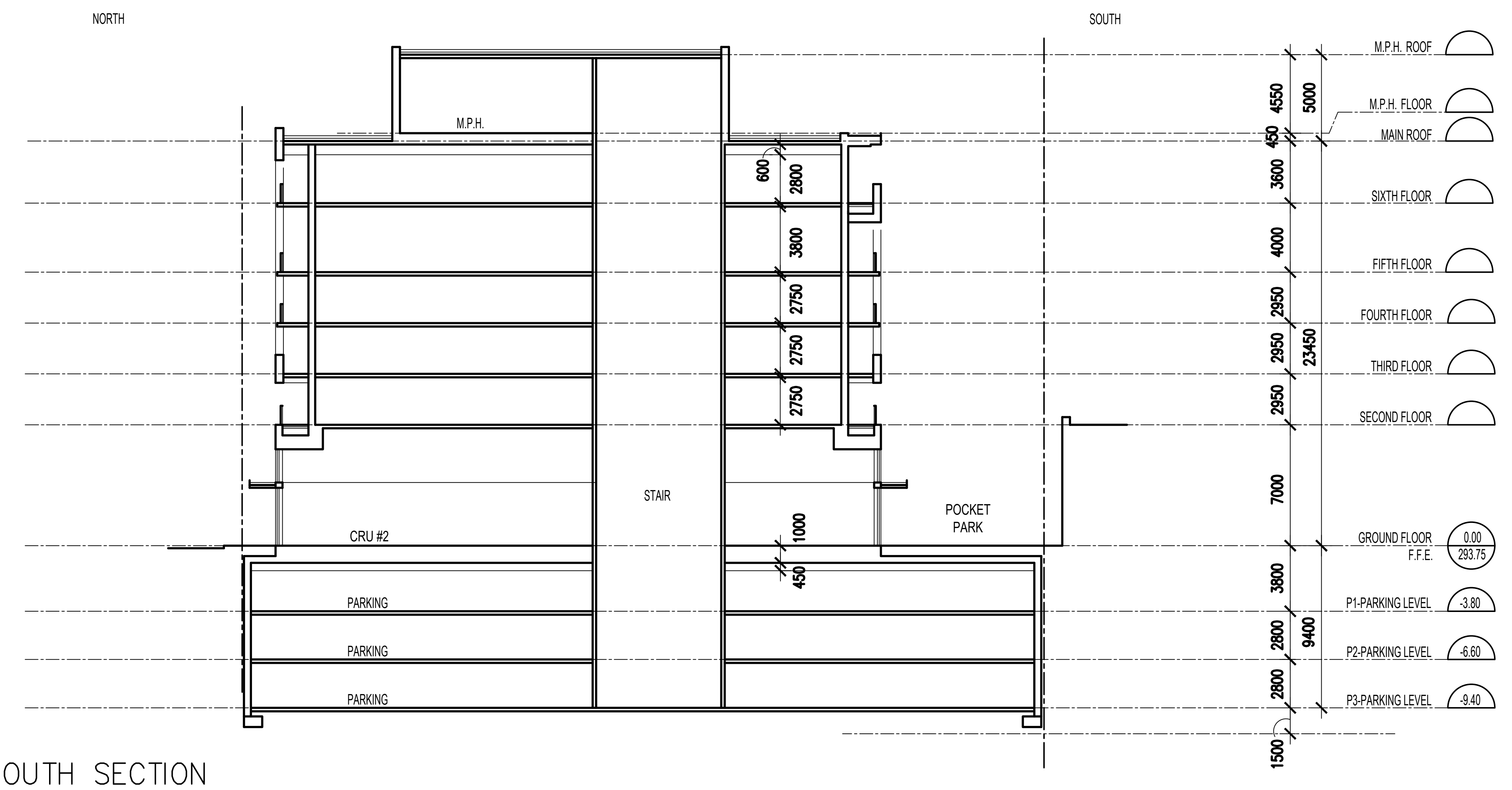
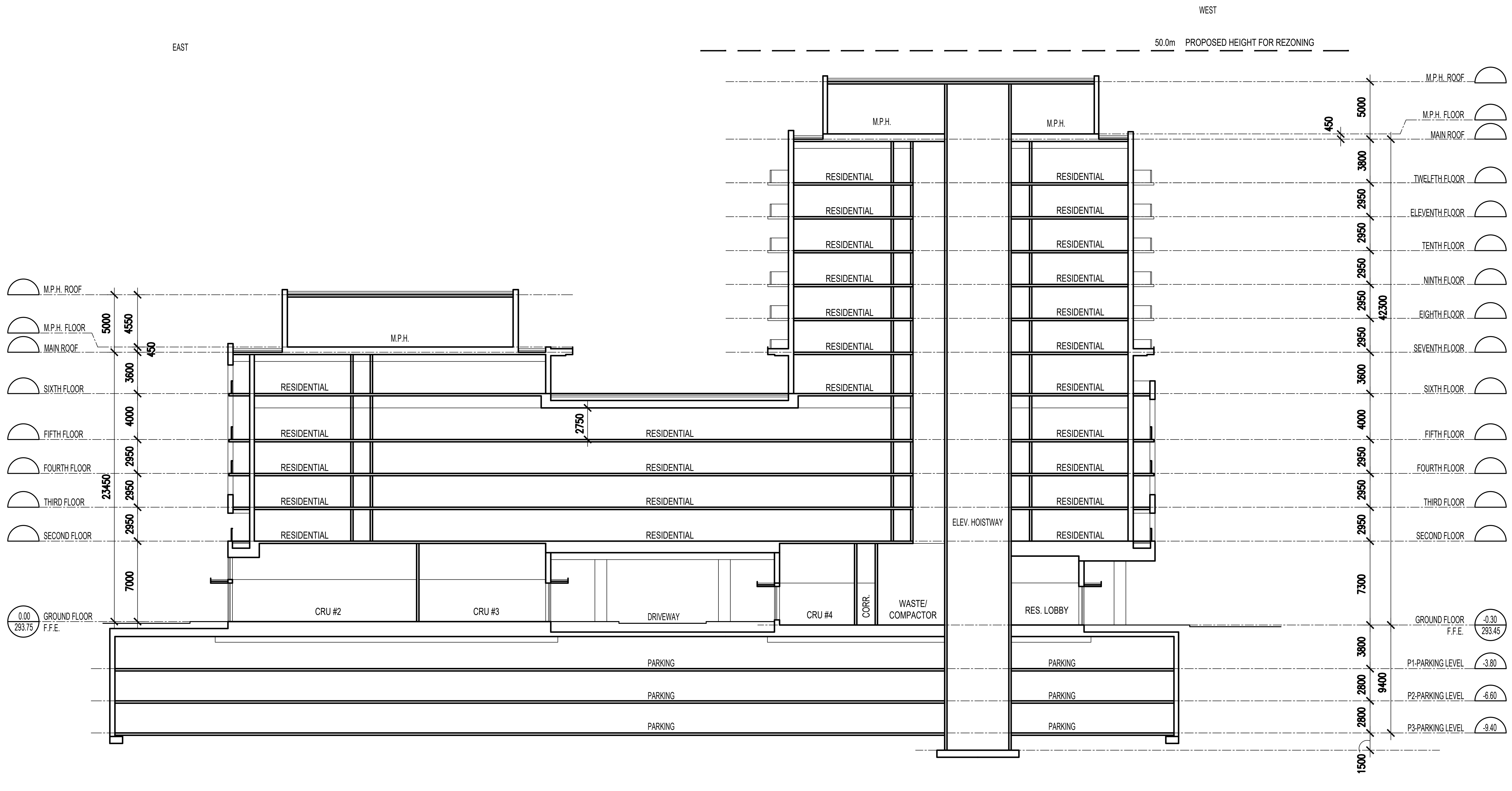
DRAWN BY	PETROFF	PROJECT NO.	02138
CHECKED BY	AH		
DATE		DWG. NO.	A401
ISSUED			



1 A402 PHASE 2 – NORTH – SOUTH SECTION
SCALE: 1:250



2 A402 PHASE 2 – EAST – WEST SECTION
SCALE: 1:250

NO.	REVISIONS MARK VOID ALL COPIES PREVIOUS FINAL DATE	DATE	BY
1	ISSUED FOR COORDINATION	FEB.11.2022	OH

BUILDING SECTIONS
PHASE 2

SCALE: AS NOTED

PROPOSED MULTI-UNIT RESIDENTIAL DEVELOPMENT
PARK PLACE BARRIE

100 MAPLEVIEW DRIVE EAST, BARRIE, ON
FOR: NORTH AMERICAN DEVELOPMENT GROUP

PETROFF
PETROFF PARTNERSHIP ARCHITECTS

260 TOWN CENTRE BLVD, SUITE 300
MARKHAM, ON L3R H8H
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DRAWN BY	PETROFF	PROJECT NO.	02138
CHECKED BY	AH		
DATE		DWG. NO.	A402
ISSUED			

Appendix B

[illegible]

[illegible]

Log of Borehole: MW1

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

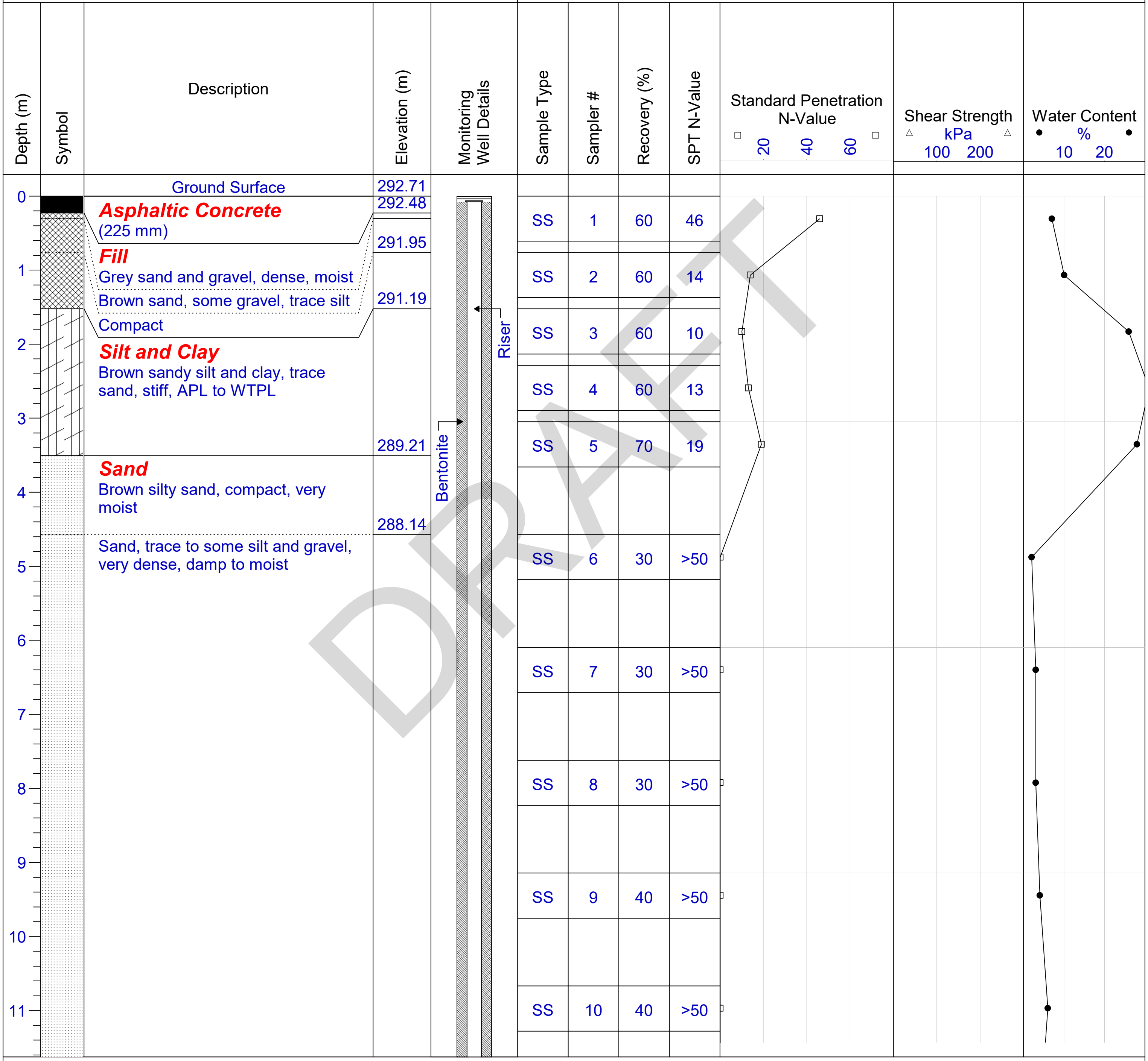
Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 10, 2022 **Project Manager:** KRD

SUBSURFACE PROFILE

SAMPLE



Elevation (m)	Description
292.71	Ground Surface
292.48	**Asphaltic Concrete** (225 mm)
291.95	**Fill** Grey sand and gravel, dense, moist
291.19	Brown sand, some gravel, trace silt Compact
289.21	**Silt and Clay** Brown sandy silt and clay, trace sand, stiff, APL to WTPL
288.14	**Sand** Brown silty sand, compact, very moist
	Sand, trace to some silt and gravel, very dense, damp to moist

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	60	46
SS	2	60	14
SS	3	60	10
SS	4	60	13
SS	5	70	19
SS	6	30	>50
SS	7	30	>50
SS	8	30	>50
SS	9	40	>50
SS	10	40	>50

Contractor: Pontil Drilling Ltd. **Grade Elevation:** 292.71 masl

Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** 292.60 masl

Well Casing Size: 51 mm **Sheet:** 1 of 2

Log of Borehole: MW1

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

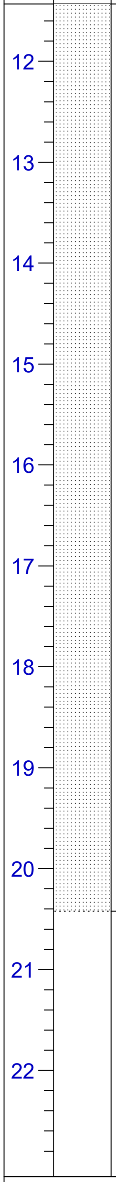
Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

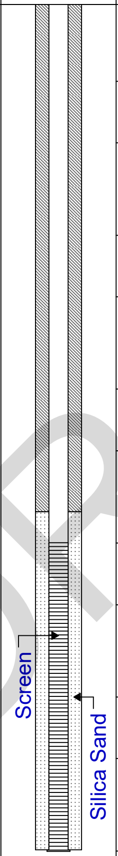
Drill Date: January 10, 2022 **Project Manager:** KRD

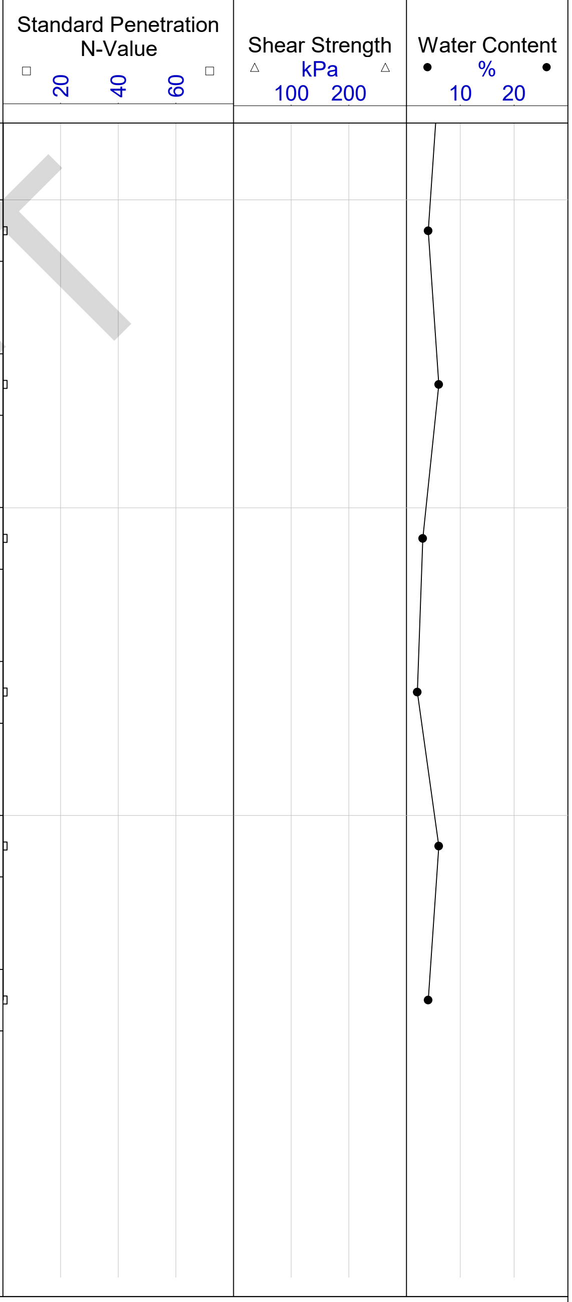
SUBSURFACE PROFILE

SAMPLE



Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value
			SS	11	70	>50
			SS	12	70	>50
			SS	13	70	>50
			SS	14	70	>50
			SS	15	70	>50
	272.29	Water level = dry, as measured on Jan. 27, 2022	SS	16	70	>50
End of Borehole Borehole terminated at 20.4 mbgs.						





Contractor: Pontil Drilling Ltd.

Drilling Method: Split Spoon / Hollow Stem Auger

Well Casing Size: 51 mm

Grade Elevation: 292.71 masl

Top of Casing Elevation: 292.60 masl

Sheet: 2 of 2

Log of Borehole: MW2

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

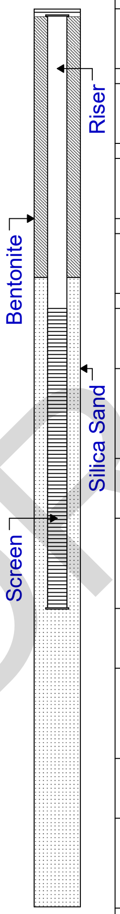
Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 10, 2022 **Project Manager:** KRD

SUBSURFACE PROFILE

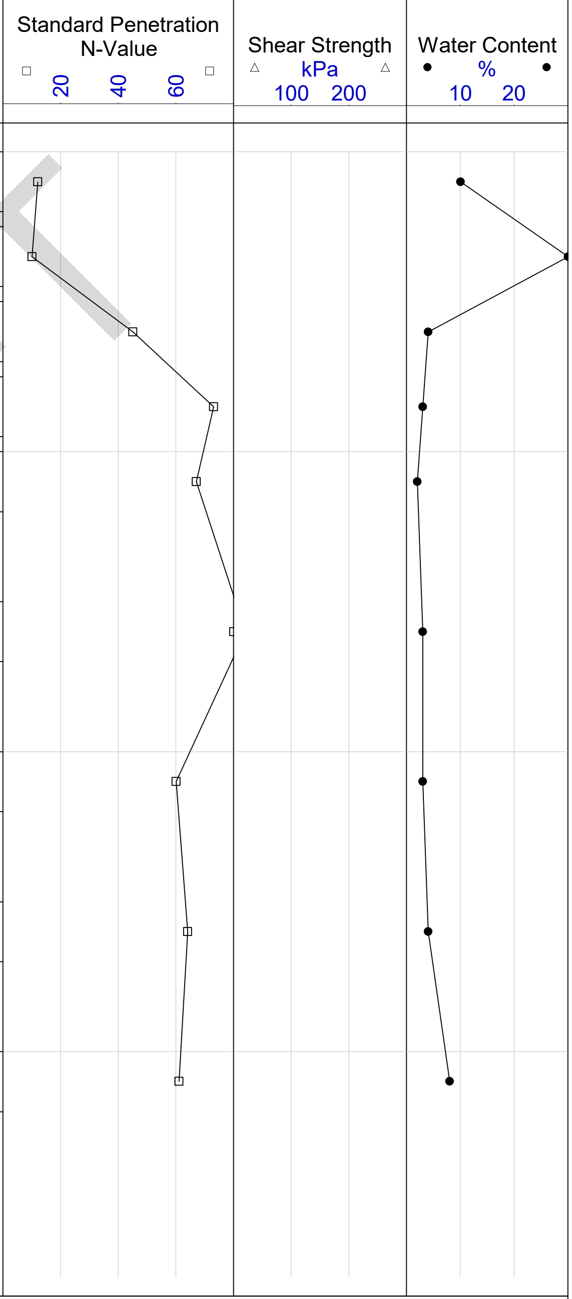
Depth (m)	Description	Elevation (m)
0	Ground Surface	293.24
	Asphaltic Concrete (225 mm)	293.01
	Fill Brown sand, some silt, trace gravel, compact, very moist	292.47
	Wet	291.71
	Silt and Clay Brown silt and clay, stiff, WTPL	
	Sand Brown sand, trace to some silt and gravel, dense, damp	
	Moist	284.09
10	End of Borehole Borehole terminated at 9.8 mbgs.	283.48



Water level = dry, as measured on Jan. 27, 2022

SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	50	12
SS	2	60	10
SS	3	50	45
SS	4	60	73
SS	5	70	67
SS	6	70	84
SS	7	70	60
SS	8	80	64
SS	9	80	61



Contractor: Pontil Drilling Ltd. **Grade Elevation:** 293.24 masl

Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** 293.14 masl

Well Casing Size: 51 mm **Sheet:** 1 of 1

Log of Borehole: BH3

Project #: 296908.005
Logged By: KS
Project: Preliminary Geotechnical Investigation
Client: North American Development Group
Location: 100 Mapleview Drive East, Barrie, Ontario
Drill Date: January 12, 2022
Project Manager: KRD

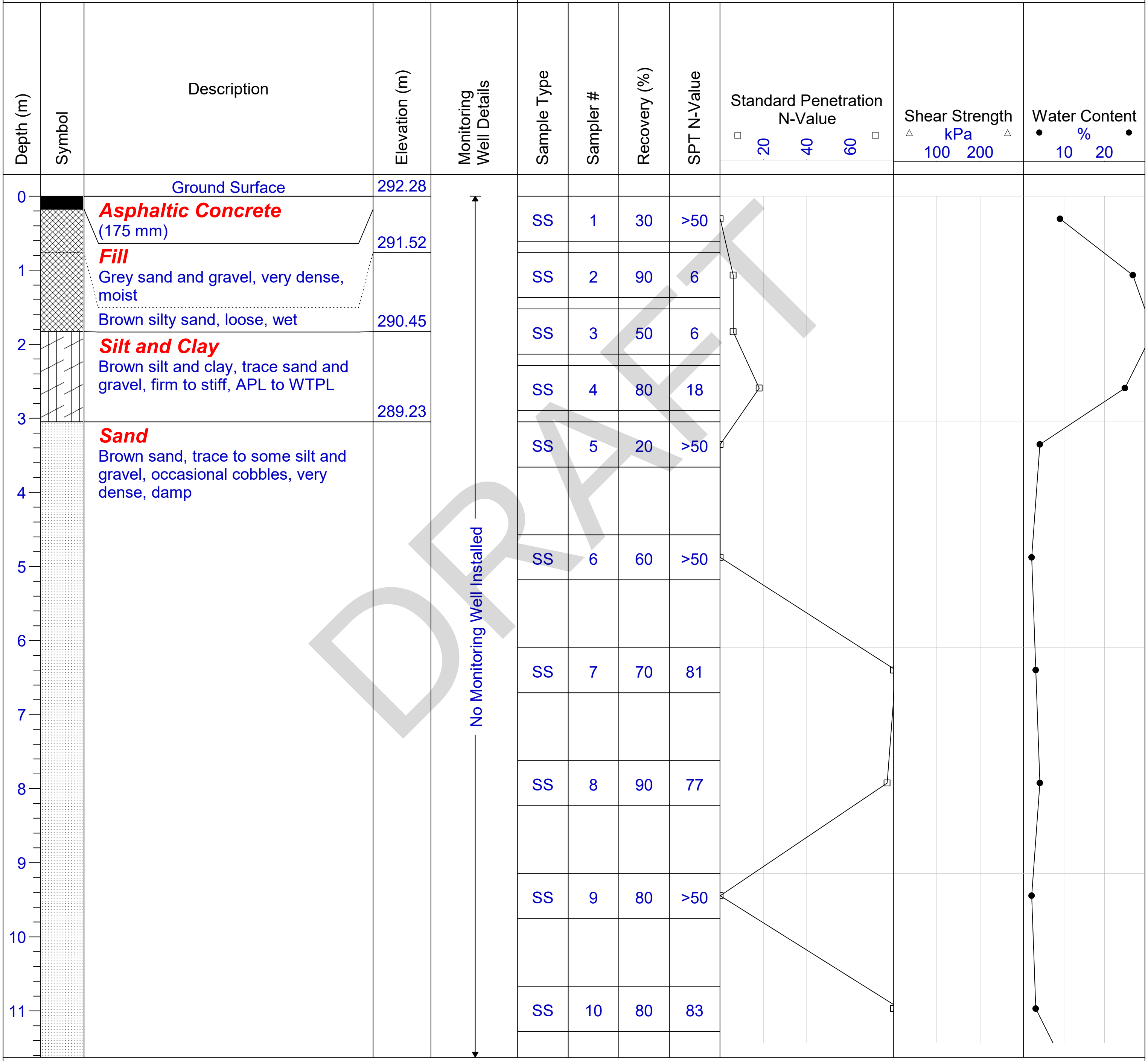
SUBSURFACE PROFILE

Description	Elevation (m)
Ground Surface	292.28
Asphaltic Concrete (175 mm)	
Fill Grey sand and gravel, very dense, moist	
Brown silty sand, loose, wet	291.52
Silt and Clay Brown silt and clay, trace sand and gravel, firm to stiff, APL to WTPL	290.45
Sand Brown sand, trace to some silt and gravel, occasional cobbles, very dense, damp	289.23

Monitoring Well Details: No Monitoring Well Installed

SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	30	>50
SS	2	90	6
SS	3	50	6
SS	4	80	18
SS	5	20	>50
SS	6	60	>50
SS	7	70	81
SS	8	90	77
SS	9	80	>50
SS	10	80	83



Contractor: Pontil Drilling Ltd.
Drilling Method: Split Spoon / Hollow Stem Auger
Well Casing Size: N/A
Grade Elevation: 292.28 masl
Top of Casing Elevation: N/A
Sheet: 1 of 2

Log of Borehole: BH3

Project #: 296908.005 **Logged By:** KS

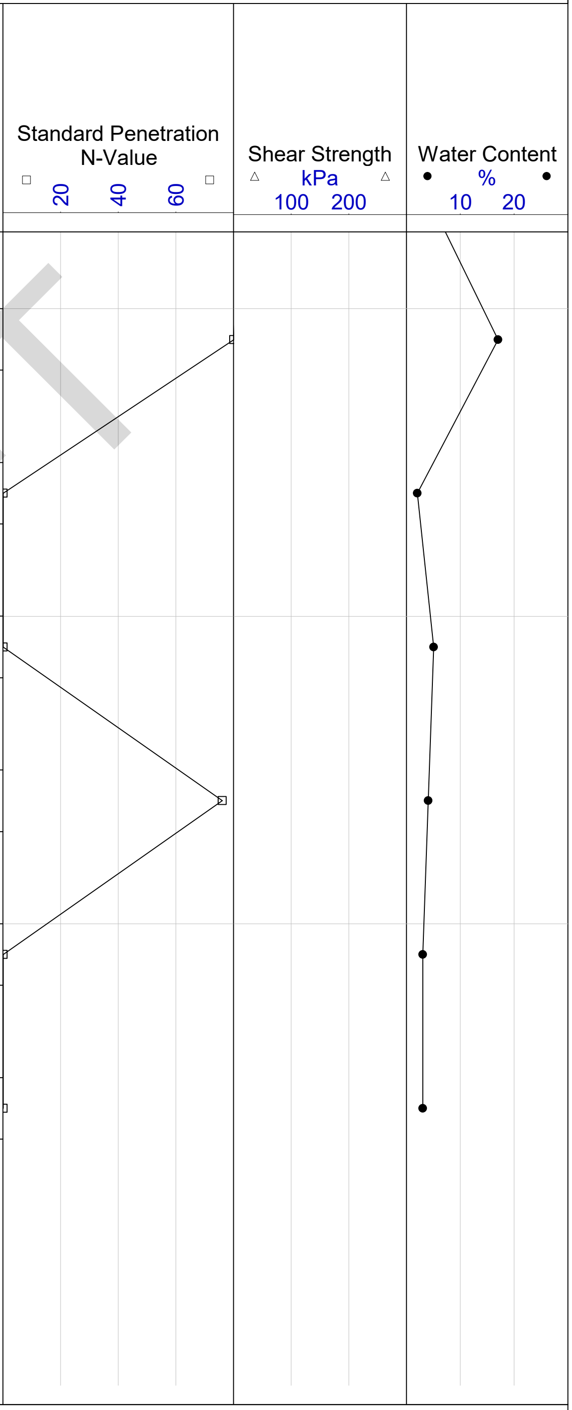
Project: Preliminary Geotechnical Investigation

Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 12, 2022 **Project Manager:** KRD

SUBSURFACE PROFILE					SAMPLE			
Depth (m)	Symbol	Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value
12			280.09					
		Wet			SS	11	80	80
13			278.57					
14		Damp			SS	12	80	>50
15					SS	13	80	>50
16								
17					SS	14	80	76
18								
19					SS	15	50	>50
20			271.86		SS	16	80	>50
21		End of Borehole Borehole terminated at 20.4 mbgs. At drilling completion a dry cave was measured at 19.5 mbgs.						
22								



Contractor: Pontil Drilling Ltd. **Grade Elevation:** 292.28 masl

Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** N/A

Well Casing Size: N/A **Sheet:** 2 of 2

PINCHIN

Log of Borehole: MW4

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 12, 2022 **Project Manager:** KRD

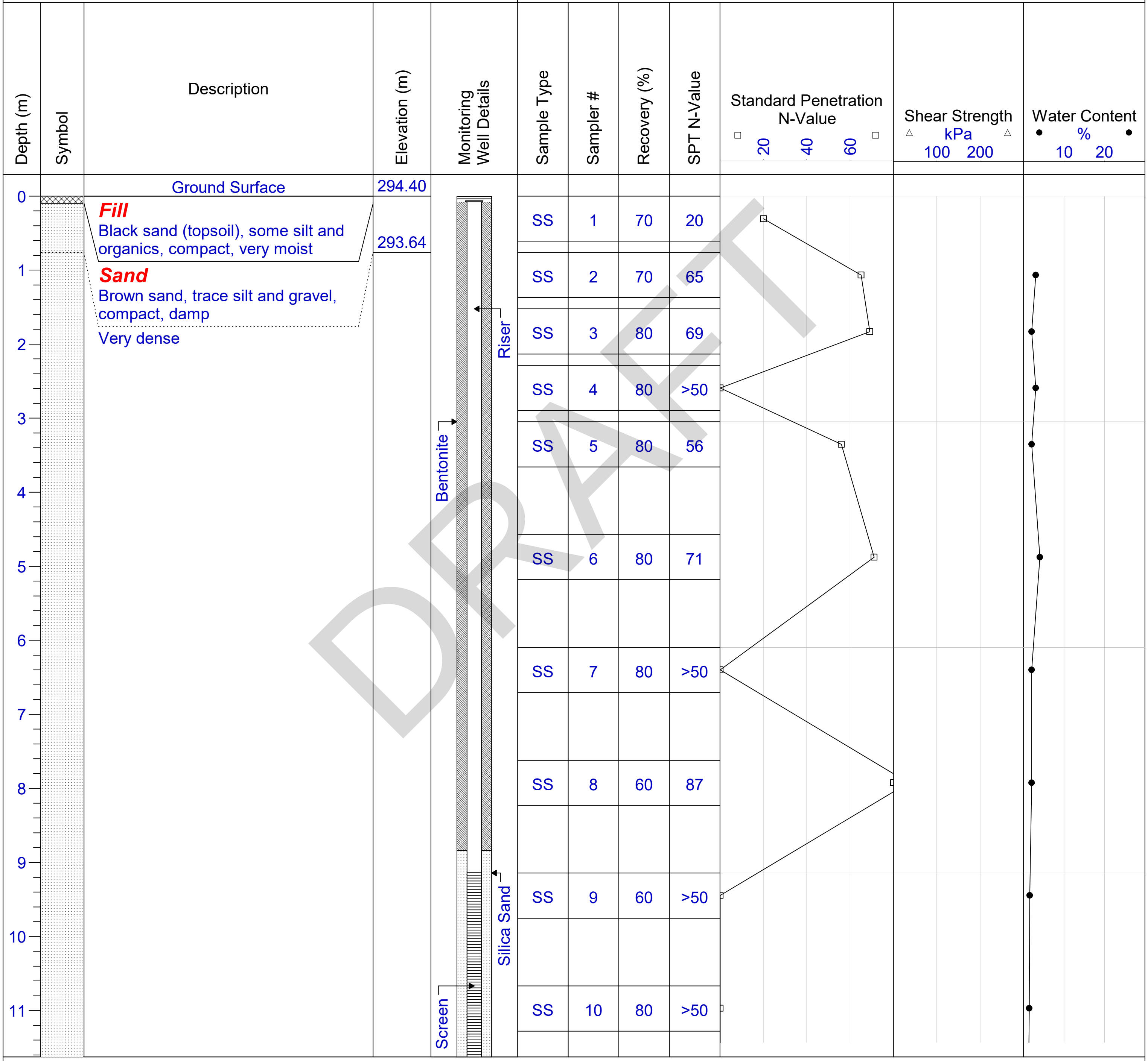
SUBSURFACE PROFILE

Ground Surface — 294.40

Fill
Black sand (topsoil), some silt and organics, compact, very moist — 293.64

Sand
Brown sand, trace silt and gravel, compact, damp

Very dense



SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	70	20
SS	2	70	65
SS	3	80	69
SS	4	80	>50
SS	5	80	56
SS	6	80	71
SS	7	80	>50
SS	8	60	87
SS	9	60	>50
SS	10	80	>50

Contractor: Pontil Drilling Ltd.

Grade Elevation: 294.40 masl

Drilling Method: Split Spoon / Hollow Stem Auger

Top of Casing Elevation: 295.23 masl

Well Casing Size: 51 mm

Sheet: 1 of 2

PINCHIN

Log of Borehole: MW4

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 12, 2022 **Project Manager:** KRD

SUBSURFACE PROFILE					SAMPLE						
Depth (m)	Symbol	Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value	Standard Penetration N-Value □ 20 40 60 □	Shear Strength △ kPa △ 100 200	Water Content ● % ● 10 20
12			281.60	Water level = dry, as measured on Jan. 27, 2022.	SS	11	80	>50			
13		End of Borehole Borehole terminated at 12.8 mbgs.									
14											
15											
16											
17											
18											
19											
20											
21											
22											

Contractor: Pontil Drilling Ltd. **Grade Elevation:** 294.40 masl

Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** 295.23 masl

Well Casing Size: 51 mm **Sheet:** 2 of 2

Log of Borehole: MW5

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

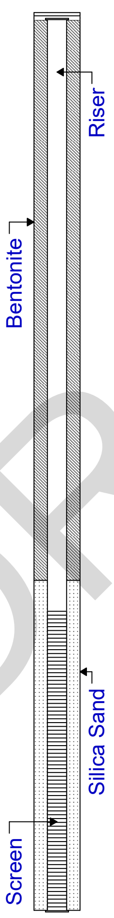
Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 12, 2022 **Project Manager:** KRD

SUBSURFACE PROFILE

Depth (m)	Description	Elevation (m)
0	Ground Surface	293.83
0 – 0.76	**Fill** Brown sand, trace gravel and silt, compact, very moist	293.07
0.76 – 1.52	Sandy silt, dense	292.31
1.52 – 4.57	**Silt and Clay** Brown silt and clay, trace sand and gravel, stiff, APL to WTPL	289.26
4.57 – 9.75	**Sand** Brown sand, trace to some gravel and silt, very dense, damp	284.08
	End of Borehole Borehole terminated at 9.8 mbgs.	

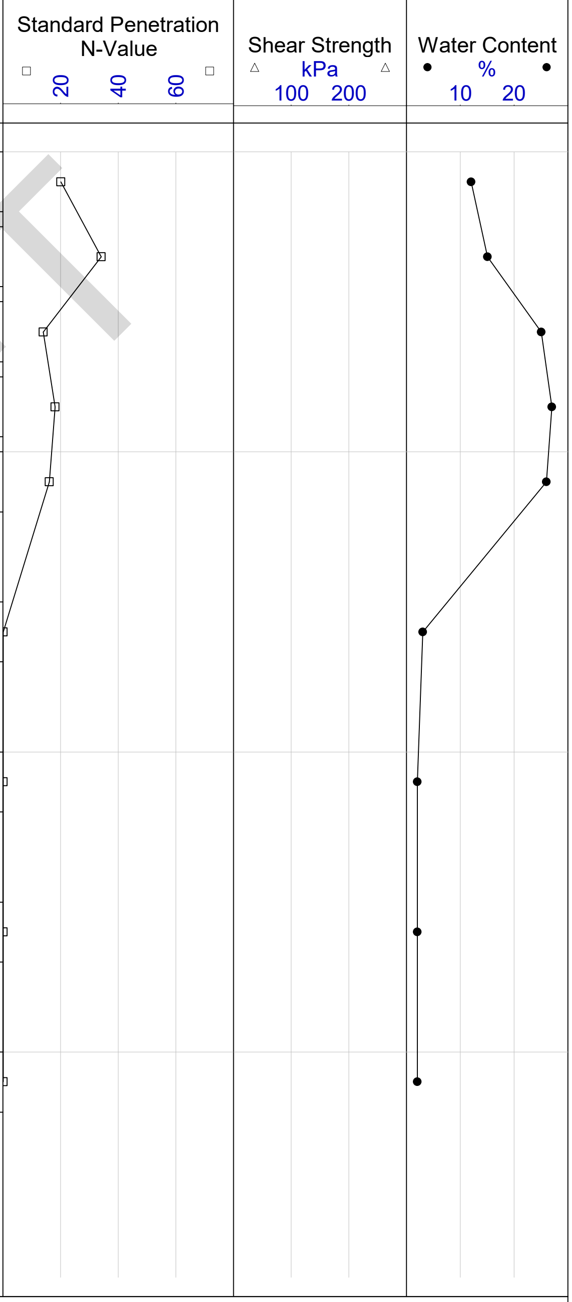
Monitoring Well Details



Water level = dry, as measured on Jan. 27, 2022

SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	80	20
SS	2	50	34
SS	3	50	14
SS	4	60	18
SS	5	40	16
SS	6	40	>50
SS	7	40	>50
SS	8	50	>50
SS	9	60	>50



Contractor: Pontil Drilling Ltd.

Drilling Method: Split Spoon / Hollow Stem Auger

Well Casing Size: 51 mm

Grade Elevation: 293.83 masl

Top of Casing Elevation: 294.63 masl

Sheet: 1 of 1

Log of Borehole: MW6

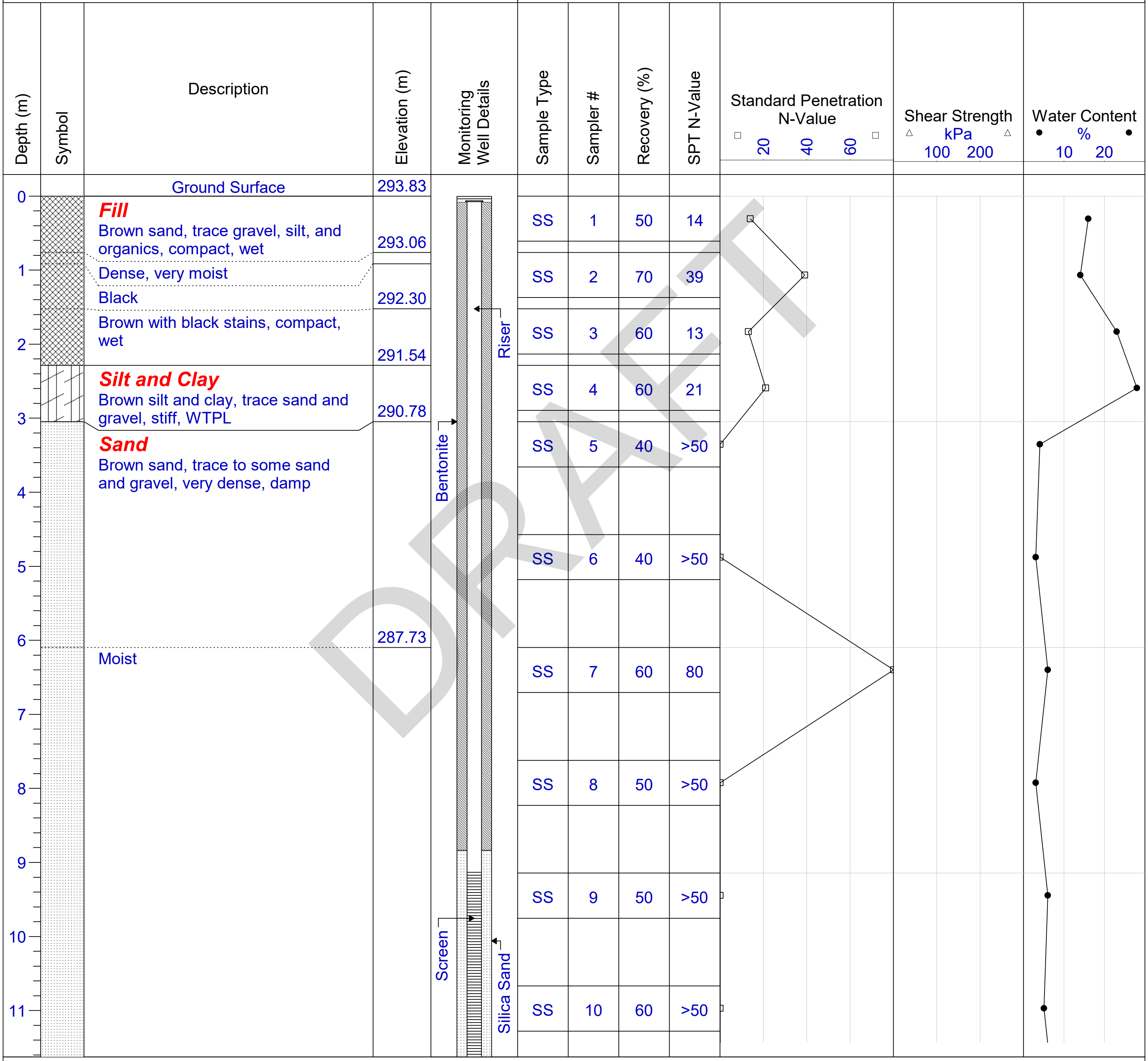
Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 13, 2022 **Project Manager:** KRD



SUBSURFACE PROFILE

Description	Elevation (m)
Ground Surface	293.83
Fill Brown sand, trace gravel, silt, and organics, compact, wet	293.06
Dense, very moist	
Black	292.30
Brown with black stains, compact, wet	291.54
Silt and Clay Brown silt and clay, trace sand and gravel, stiff, WTPL	290.78
Sand Brown sand, trace to some sand and gravel, very dense, damp	287.73
Moist	

SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	50	14
SS	2	70	39
SS	3	60	13
SS	4	60	21
SS	5	40	>50
SS	6	40	>50
SS	7	60	80
SS	8	50	>50
SS	9	50	>50
SS	10	60	>50

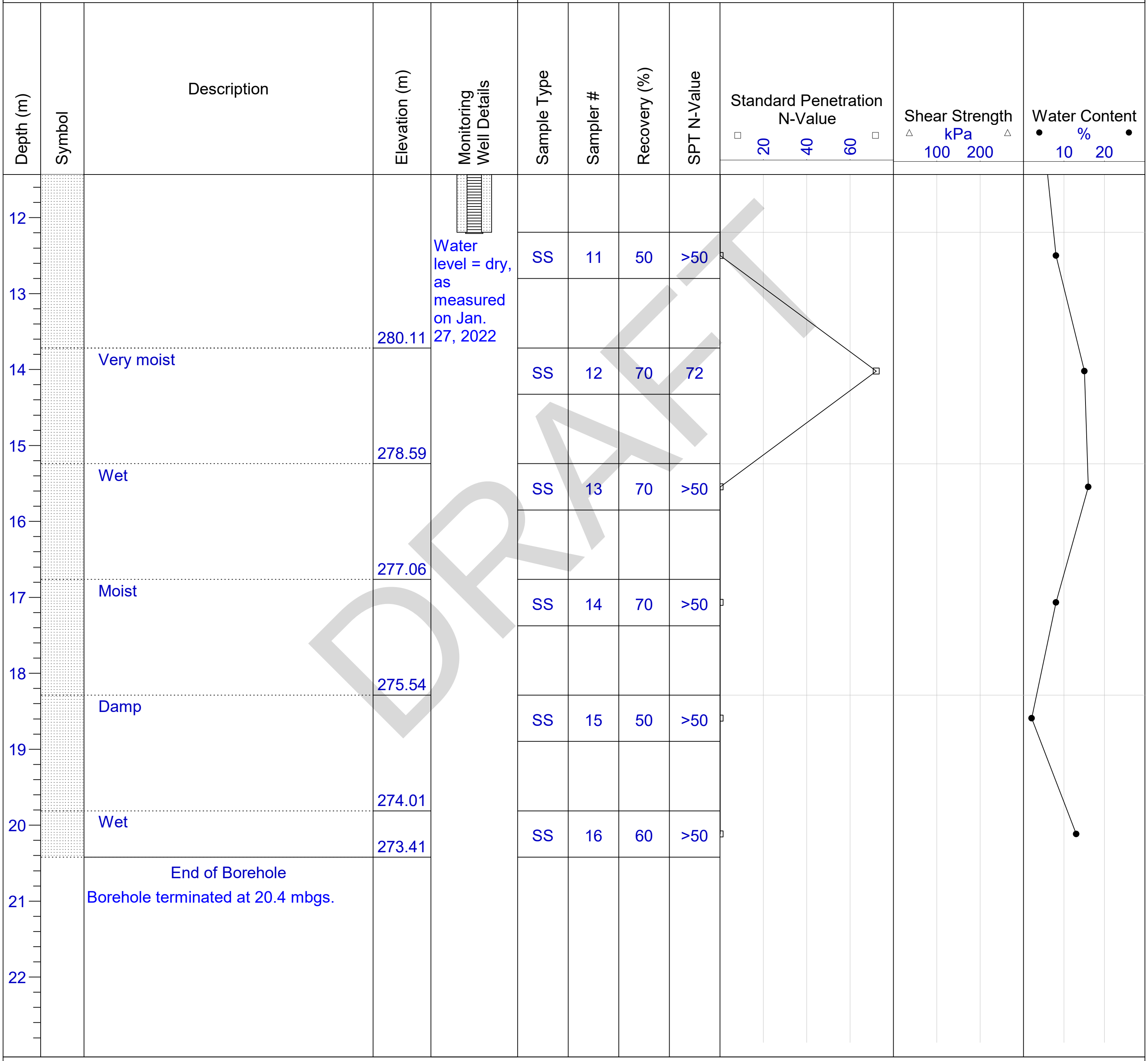
Contractor: Pontil Drilling Ltd. **Grade Elevation:** 293.83 masl

Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** 294.61 masl

Well Casing Size: 51 mm **Sheet:** 1 of 2

Log of Borehole: MW6

Project #: 296908.005 **Logged By:** KS
Project: Preliminary Geotechnical Investigation
Client: North American Development Group
Location: 100 Mapleview Drive East, Barrie, Ontario
Drill Date: January 13, 2022 **Project Manager:** KRD



SUBSURFACE PROFILE			SAMPLE			
Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value
	280.11	Water level = dry, as measured on Jan. 27, 2022	SS	11	50	>50
Very moist	278.59		SS	12	70	72
Wet	277.06		SS	13	70	>50
Moist	275.54		SS	14	70	>50
Damp	274.01		SS	15	50	>50
Wet	273.41		SS	16	60	>50
End of Borehole Borehole terminated at 20.4 mbgs.						

Contractor: Pontil Drilling Ltd. **Grade Elevation:** 293.83 masl

Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** 294.61 masl

Well Casing Size: 51 mm **Sheet:** 2 of 2

Log of Borehole: MW7 (Shallow)

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

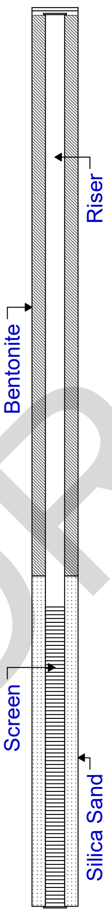
Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 14, 2022 **Project Manager:** KRD

SUBSURFACE PROFILE

Depth (m)	Description	Elevation (m)
0	Ground Surface	293.71
0 – 0.76	**Fill** Brown sand, some gravel, trace silt, compact, wet	292.95
0.76 – 1.52	Grey, very moist	292.19
1.52 – 2.29	Brown silty sand	291.42
2.29 – 2.54	**Silt and Clay** Brown silt and clay, trace sand and gravel, stiff, APL	291.17
2.54 – 9.75	**Sand** Brown sand, trace to some silt and gravel, very dense, damp	283.96
	End of Borehole Borehole terminated at 9.8 mbgs.	

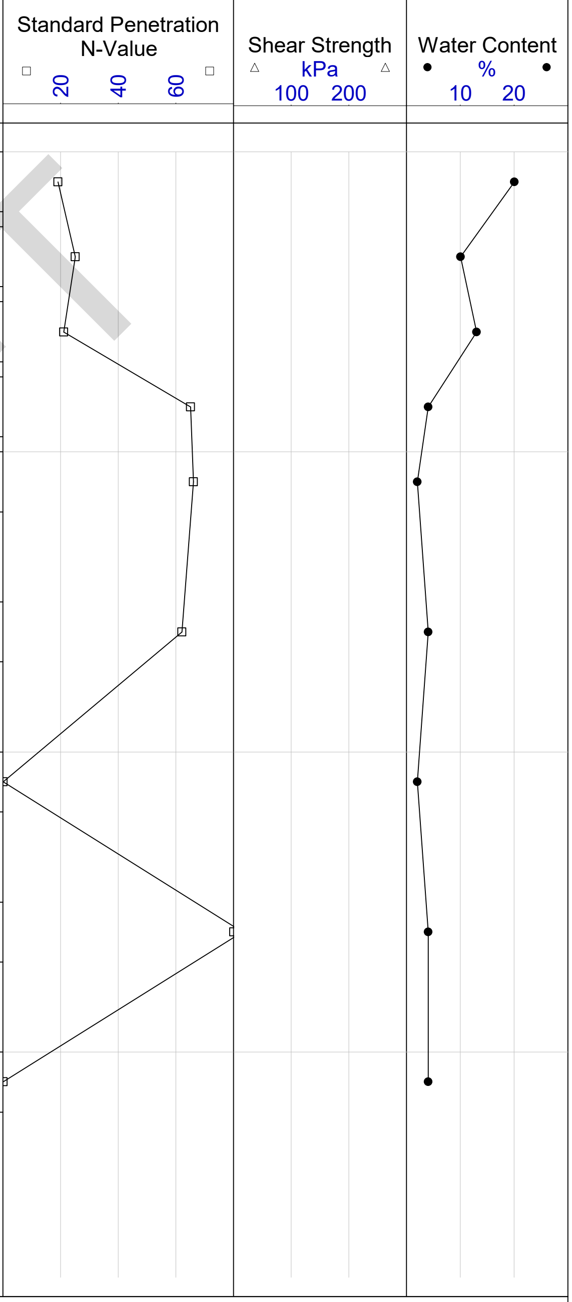
Monitoring Well Details:



Water level = dry, as measured on Jan. 27, 2022

SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	20	19
SS	2	50	25
SS	3	60	21
SS	4	60	65
SS	5	70	66
SS	6	70	62
SS	7	70	>50
SS	8	80	83
SS	9	80	>50



Contractor: Pontil Drilling Ltd. **Grade Elevation:** 293.71 masl

Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** 294.52 masl

Well Casing Size: 51 mm **Sheet:** 1 of 1

Log of Borehole: MW7 (Deep)

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 14, 2022 **Project Manager:** KRD

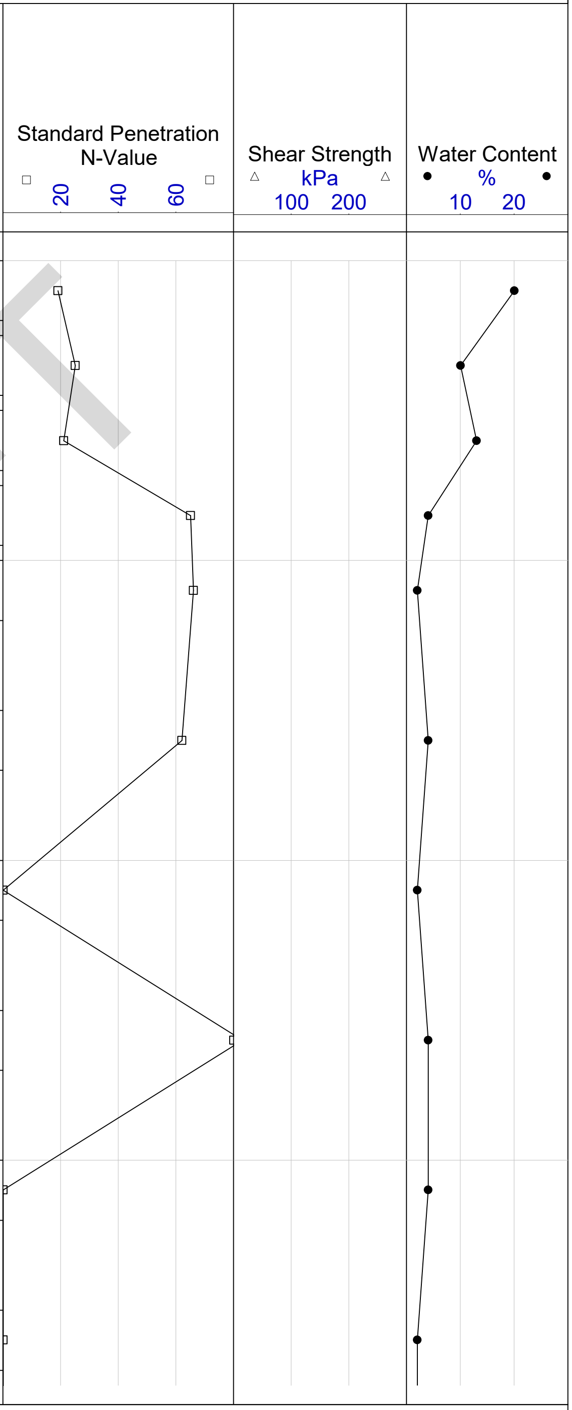
SUBSURFACE PROFILE

Depth (m)	Description	Elevation (m)
0	Ground Surface	293.71
0 – 0.76	**Fill** Brown sand, some gravel, trace silt, compact, wet	292.95
0.76 – 1.52	Grey, very moist	292.19
1.52 – 2.29	Brown silty sand	291.42
2.29 – 2.54	**Silt and Clay** Brown silt and clay, trace sand and gravel, stiff, APL	291.17
2.54 –	**Sand** Brown sand, trace to some silt and gravel, very dense, damp	

Monitoring Well Details: Riser; Bentonite

SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	20	19
SS	2	50	25
SS	3	60	21
SS	4	60	65
SS	5	70	66
SS	6	70	62
SS	7	70	>50
SS	8	80	83
SS	9	80	>50
SS	10	100	>50



Contractor: Pontil Drilling Ltd.

Drilling Method: Split Spoon / Hollow Stem Auger

Well Casing Size: 51 mm

Grade Elevation: 293.71 masl

Top of Casing Elevation: 294.56 masl

Sheet: 1 of 2

Log of Borehole: MW7 (Deep)

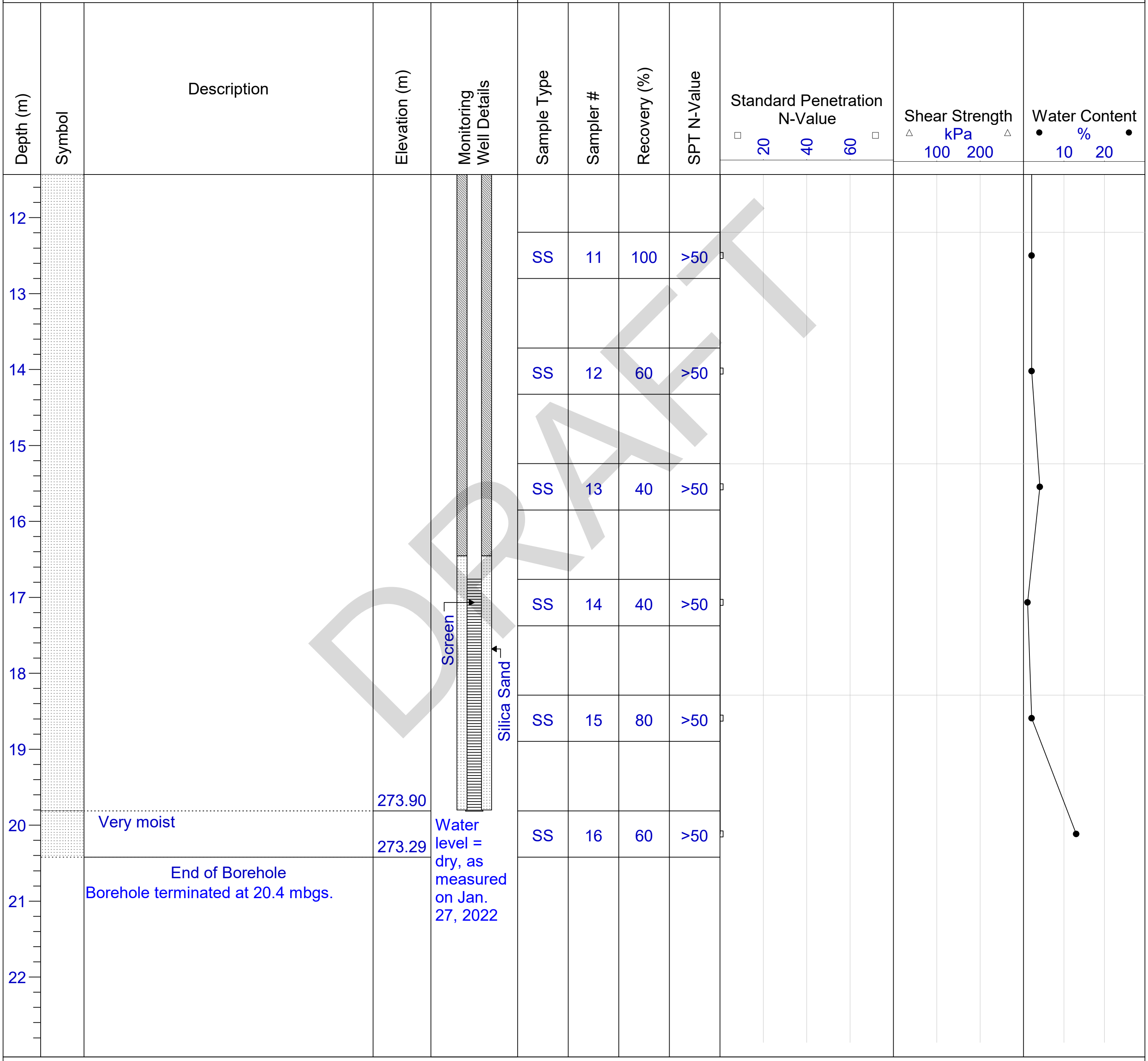
Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 14, 2022 **Project Manager:** KRD



Depth (m)	Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value
12.5				SS	11	100	>50
14				SS	12	60	>50
15.5				SS	13	40	>50
17			Screen	SS	14	40	>50
18.5			Silica Sand	SS	15	80	>50
19.8		273.90					
20	Very moist		Water level = dry, as measured on Jan. 27, 2022	SS	16	60	>50
20.4	End of Borehole Borehole terminated at 20.4 mbgs.	273.29					

Contractor: Pontil Drilling Ltd.

Grade Elevation: 293.71 masl

Drilling Method: Split Spoon / Hollow Stem Auger

Top of Casing Elevation: 294.56 masl

Well Casing Size: 51 mm

Sheet: 2 of 2

PINCHIN

Log of Borehole: MW8

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

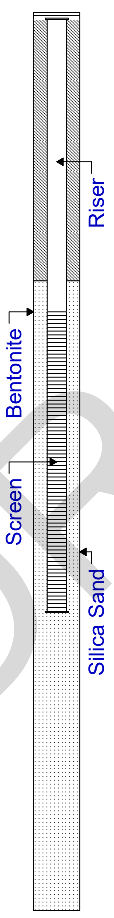
Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 14, 2022 **Project Manager:** KRD

SUBSURFACE PROFILE

Description	Elevation (m)
Ground Surface	292.75
Asphaltic Concrete (150 mm)	291.98
Fill Brown sand, some gravel, very dense, moist	291.43
Dense	
Black	290.46
Compact, wet	
Brown silty sand, some gravel and clay, moist	289.70
Dark brown with black stains, very moist	288.17
Sand Brown sand, some gravel, trace silt, dense, damp	286.65
Very dense	285.13
Sand, trace gravel and silt	282.99
End of Borehole Borehole terminated at 9.8 mbgs.	

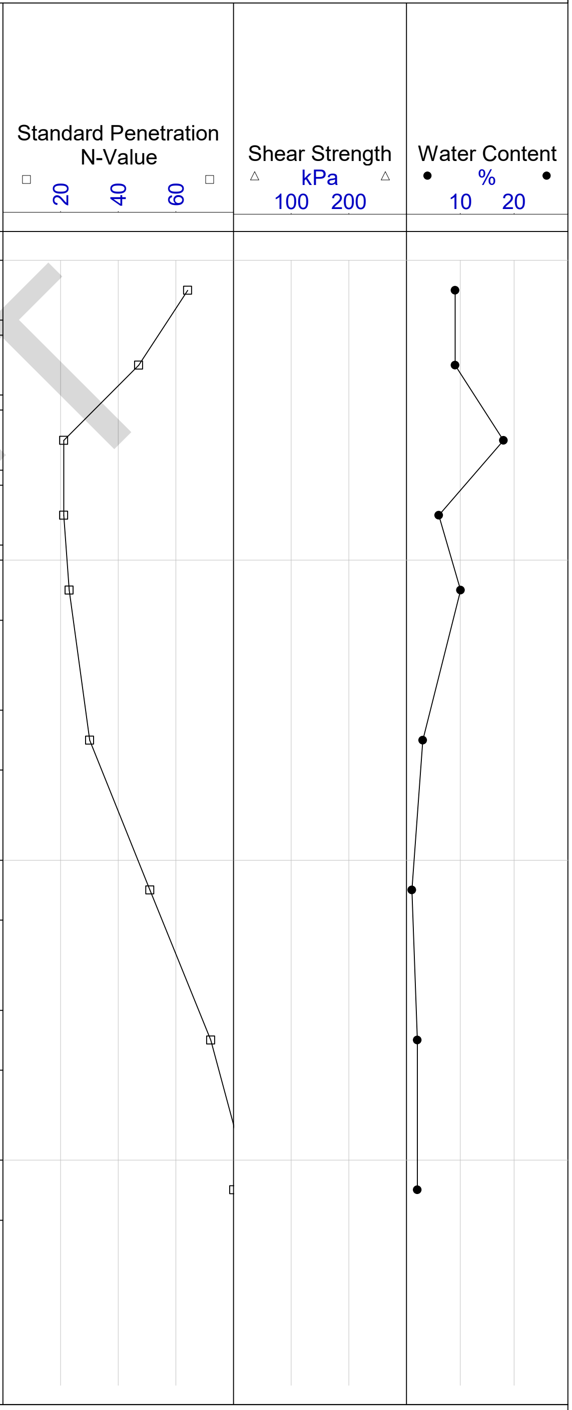
Depth (m): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11



Water level = dry, as measured on Jan. 27, 2022

SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	60	64
SS	2	50	47
SS	3	50	21
SS	4	50	21
SS	5	70	23
SS	6	60	30
SS	7	80	51
SS	8	80	72
SS	9	80	86



Contractor: Pontil Drilling Ltd.

Grade Elevation: 292.75 masl

Drilling Method: Split Spoon / Hollow Stem Auger

Top of Casing Elevation: 292.65 masl

Well Casing Size: 51 mm

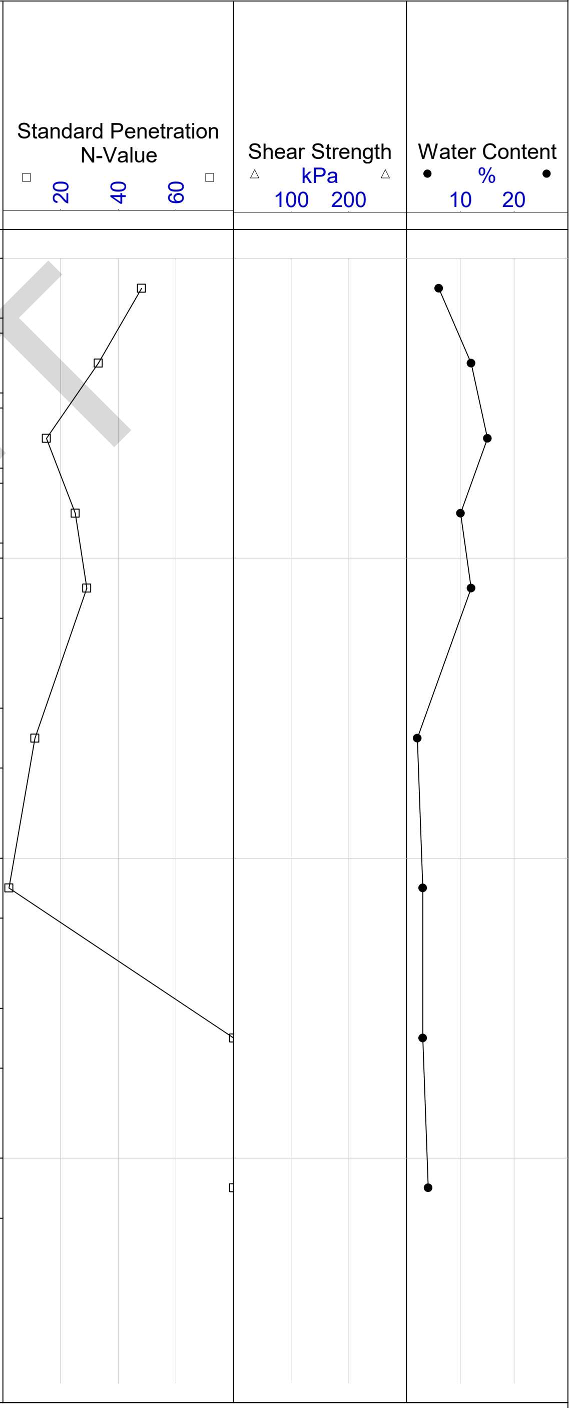
Sheet: 1 of 1

Log of Borehole: BH9

Project #: 296908.005 **Logged By:** KS
Project: Preliminary Geotechnical Investigation
Client: North American Development Group
Location: 100 Mapleview Drive East, Barrie, Ontario
Drill Date: January 14, 2022 **Project Manager:** KRD

SUBSURFACE PROFILE / SAMPLE

Description	Elevation (m)	Monitoring Well Details	Sample Type	Sampler #	Recovery (%)	SPT N-Value
Ground Surface	292.55	No Monitoring Well Installed				
Asphaltic Concrete (175 mm)	291.78		SS	1	60	48
Fill Brown sand, some gravel, trace silt, dense, moist	291.02		SS	2	60	33
Very moist Wet	290.26		SS	3	60	15
Black, very moist	289.50		SS	4	60	25
Brown silty sand, trace gravel and organics	287.97		SS	5	60	29
Sand Brown sand, some gravel, compact, damp	286.45		SS	6	40	11
Sand, trace to some silt and gravel, very loose	284.93		SS	7	80	2
Very dense	282.79		SS	8	70	80
			SS	9	80	87
End of Borehole Borehole terminated at 9.8 mbgs.						



Depth (m): 0 1 2 3 4 5 6 7 8 9 10 11

Contractor: Pontil Drilling Ltd. **Grade Elevation:** 292.55 masl
Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** N/A
Well Casing Size: N/A **Sheet:** 1 of 1

Log of Borehole: BH10

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

Drill Date: January 18, 2022 **Project Manager:** KRD

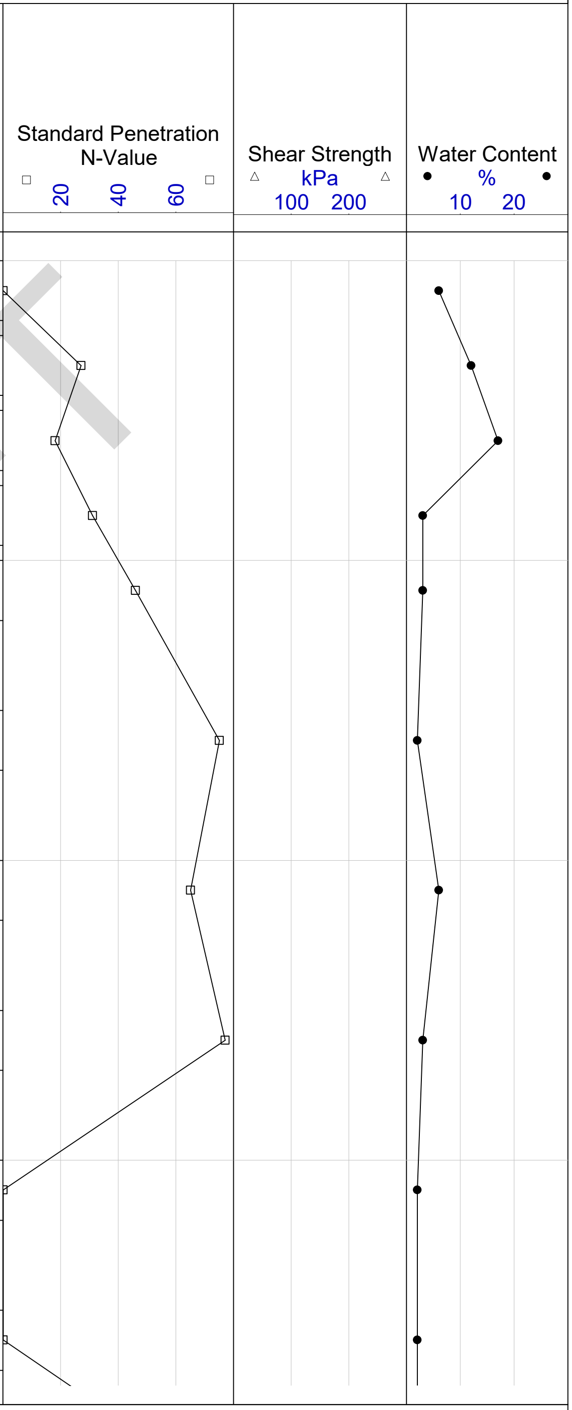
SUBSURFACE PROFILE

Description	Elevation (m)
Ground Surface	292.96
Asphaltic Concrete (125 mm)	292.50
	292.20
Fill Brown sand, some gravel, very dense, moist	291.44
Dark grey/black	
Brown, compact, very moist	
Sand, some gravel and silt, wet	290.52
Sand Brown sand, some gravel, trace silt, dense, damp	289.91
Sand, trace gravel	288.39
Very dense	286.87
Moist	285.34
Damp	

Monitoring Well Details: No Monitoring Well Installed

SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	60	>50
SS	2	80	27
SS	3	80	18
SS	4	60	31
SS	5	70	46
SS	6	70	75
SS	7	70	65
SS	8	60	77
SS	9	70	>50
SS	10	80	>50



Contractor: Pontil Drilling Ltd. **Grade Elevation:** 292.96 masl

Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** N/A

Well Casing Size: N/A **Sheet:** 1 of 2

Log of Borehole: BH10

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

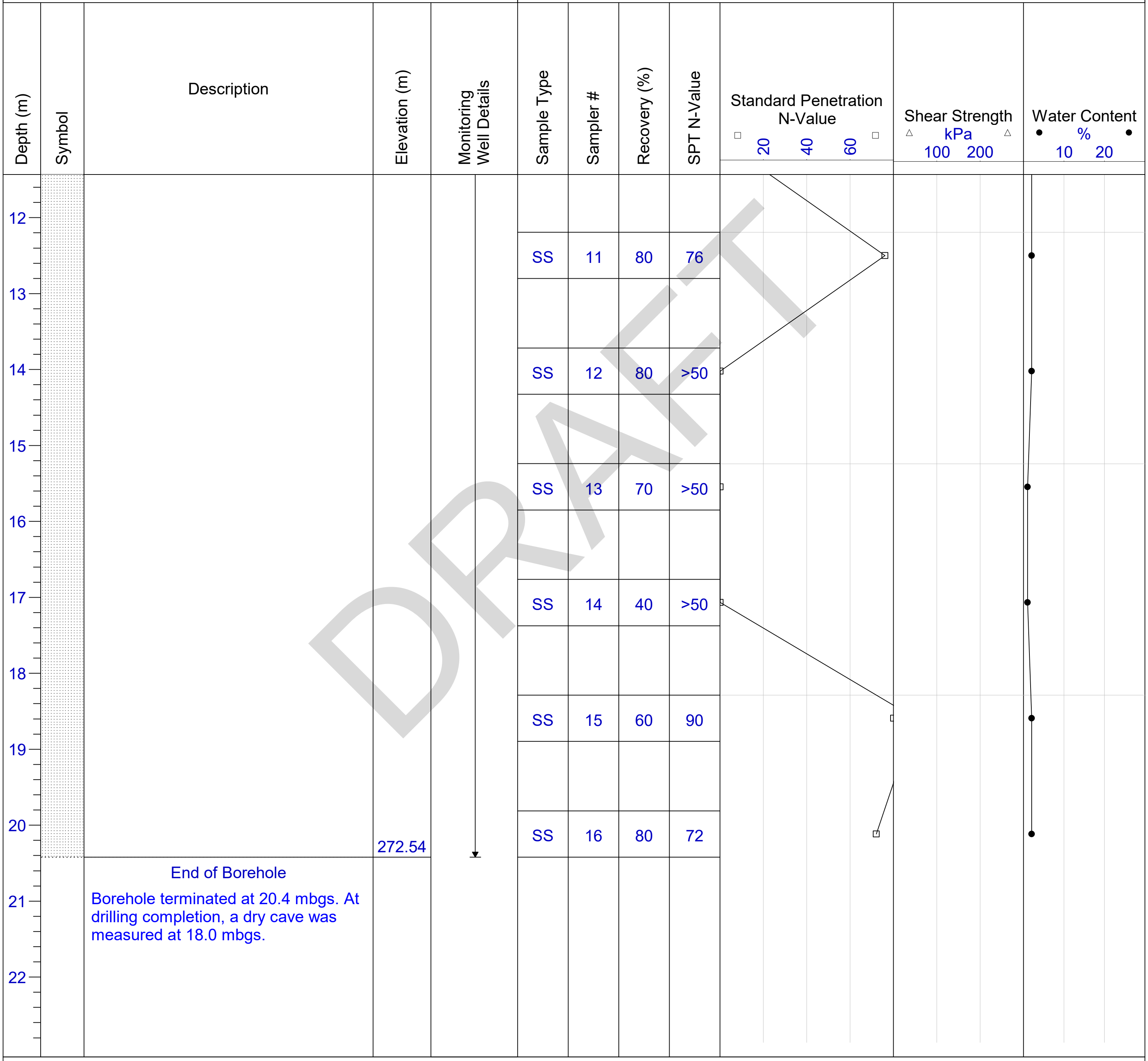
Drill Date: January 18, 2022 **Project Manager:** KRD

SUBSURFACE PROFILE

Depth (m)	Description	Elevation (m)
12–20.4		272.54
20.4	End of Borehole Borehole terminated at 20.4 mbgs. At drilling completion, a dry cave was measured at 18.0 mbgs.	

SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	11	80	76
SS	12	80	>50
SS	13	70	>50
SS	14	40	>50
SS	15	60	90
SS	16	80	72



Contractor: Pontil Drilling Ltd. **Grade Elevation:** 292.96 masl

Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** N/A

Well Casing Size: N/A **Sheet:** 2 of 2

Log of Borehole: MW11

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

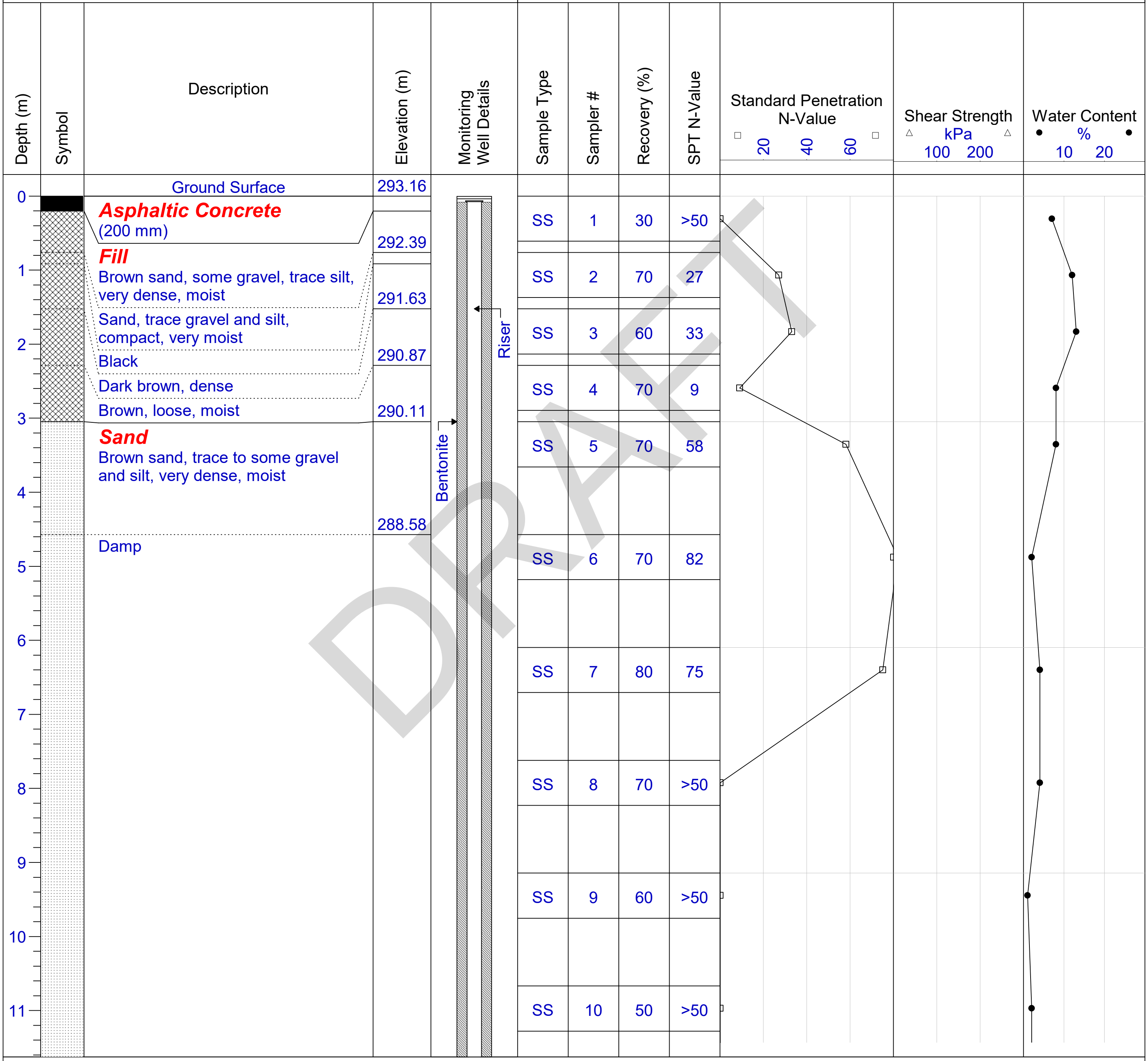
Drill Date: January 18, 2022 **Project Manager:** KRD

SUBSURFACE PROFILE

Description	Elevation (m)
Ground Surface	293.16
Asphaltic Concrete (200 mm)	292.39
Fill Brown sand, some gravel, trace silt, very dense, moist	291.63
Sand, trace gravel and silt, compact, very moist	
Black	290.87
Dark brown, dense	
Brown, loose, moist	290.11
Sand Brown sand, trace to some gravel and silt, very dense, moist	288.58
Damp	

SAMPLE

Sample Type	Sampler #	Recovery (%)	SPT N-Value
SS	1	30	>50
SS	2	70	27
SS	3	60	33
SS	4	70	9
SS	5	70	58
SS	6	70	82
SS	7	80	75
SS	8	70	>50
SS	9	60	>50
SS	10	50	>50



Contractor: Pontil Drilling Ltd. **Grade Elevation:** 293.16 masl

Drilling Method: Split Spoon / Hollow Stem Auger **Top of Casing Elevation:** 293.02 masl

Well Casing Size: 51 mm **Sheet:** 1 of 2

Log of Borehole: MW11

Project #: 296908.005 **Logged By:** KS

Project: Preliminary Geotechnical Investigation

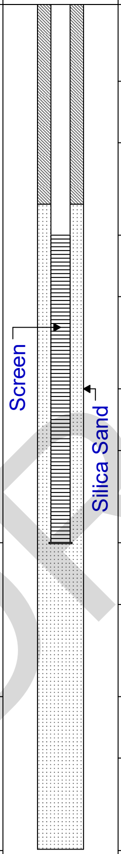
Client: North American Development Group

Location: 100 Mapleview Drive East, Barrie, Ontario

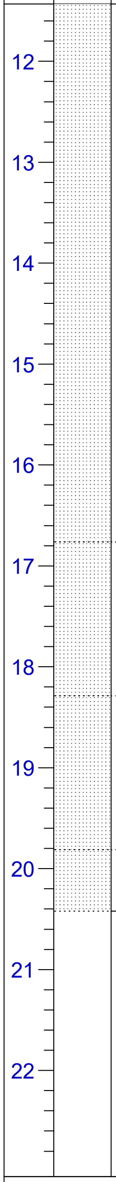
Drill Date: January 18, 2022 **Project Manager:** KRD

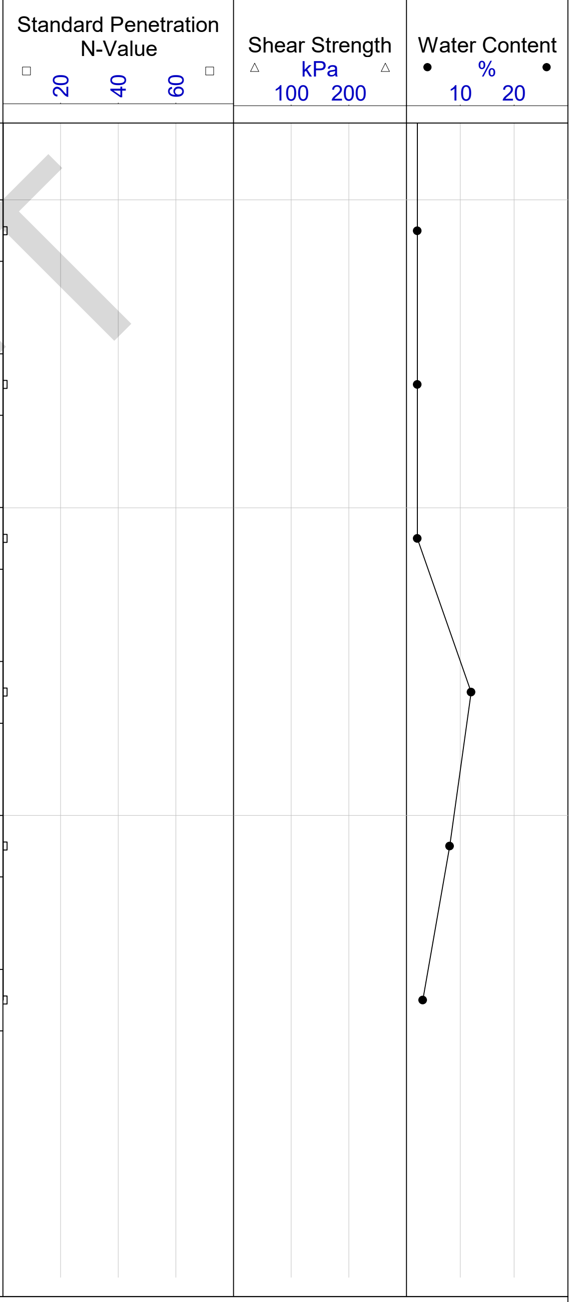
SUBSURFACE PROFILE / SAMPLE

Description	Elevation (m)	Sample Type	Sampler #	Recovery (%)	SPT N-Value
		SS	11	80	>50
		SS	12	60	>50
		SS	13	65	>50
	276.39				
Very moist		SS	14	40	>50
	274.87				
Moist		SS	15	60	>50
	273.34				
Damp	272.74	SS	16	65	>50
End of Borehole Borehole terminated at 20.4 mbgs.					



Water level = dry, as measured on Jan. 27, 2022





Contractor: Pontil Drilling Ltd.

Drilling Method: Split Spoon / Hollow Stem Auger

Well Casing Size: 51 mm

Grade Elevation: 293.16 masl

Top of Casing Elevation: 293.02 masl

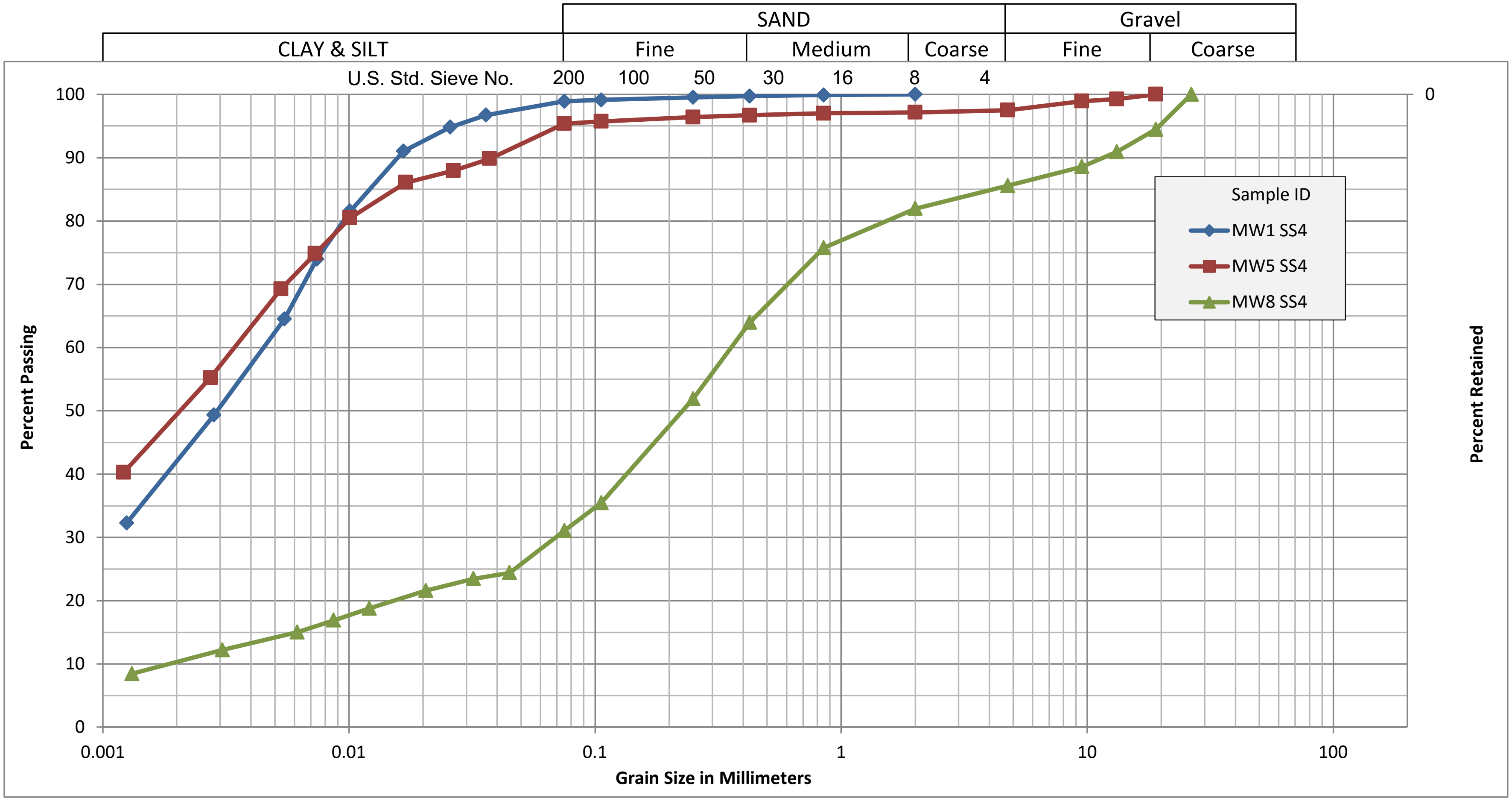
Sheet: 2 of 2

Appendix C

Grain Size Distribution Curves

[illegible]

Unified Soil Classification System



Sample ID	Depth (ft)	% Gravel	% Sand	% Silt	% Clay
MW1 SS4	7.5-9.5	0.0	1.1	58.9	40.0
MW5 SS4	7.5-9.5	3.0	1.6	47.4	48.0
MW8 SS4	7.5-9.5	14.0	55.0	21.0	10.0

PINCHIN

Pinchin Waterloo - 225 Labrador Drive, Unit 1, Waterloo, Ontario N2K 4M8

PARTICLE SIZE DISTRIBUTION ANALYSIS

Preliminary Geotechnical Investigation at 100 Mapleview Drive, Barrie, ON
North American Development Group

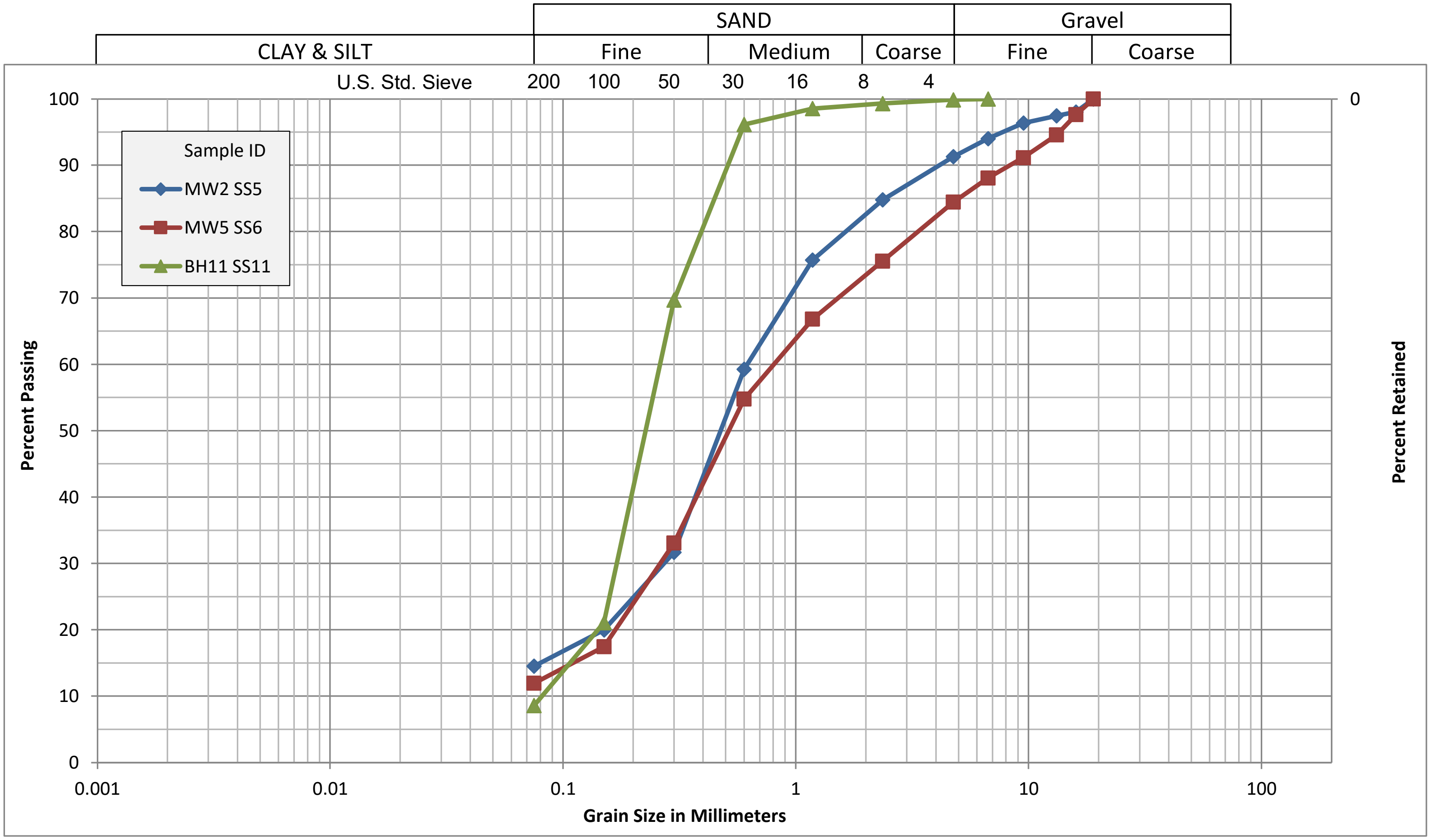
Figure No. 2

296908.005

Reviewed By:

More information available upon request

Unified Soil Classification System



Sample ID	Depth (ft)	% Gravel	% Sand	% Silt and Clay
MW2 SS5	10.0-12.0	8.7	76.8	14.5
MW5 SS6	15.0-17.0	15.6	72.5	11.9
BH11 SS11	40.0-42.0	0.1	91.2	8.6

PINCHIN

Pinchin Waterloo - 225 Labrador Drive,
Unit 1, Waterloo, Ontario N2K 4M8

PARTICLE SIZE DISTRIBUTION ANALYSIS

Preliminary Geotechnical Investigation
100 Mapleview Drive, Barrie, ON
North American Development Group

Figure No. 1

296908.005

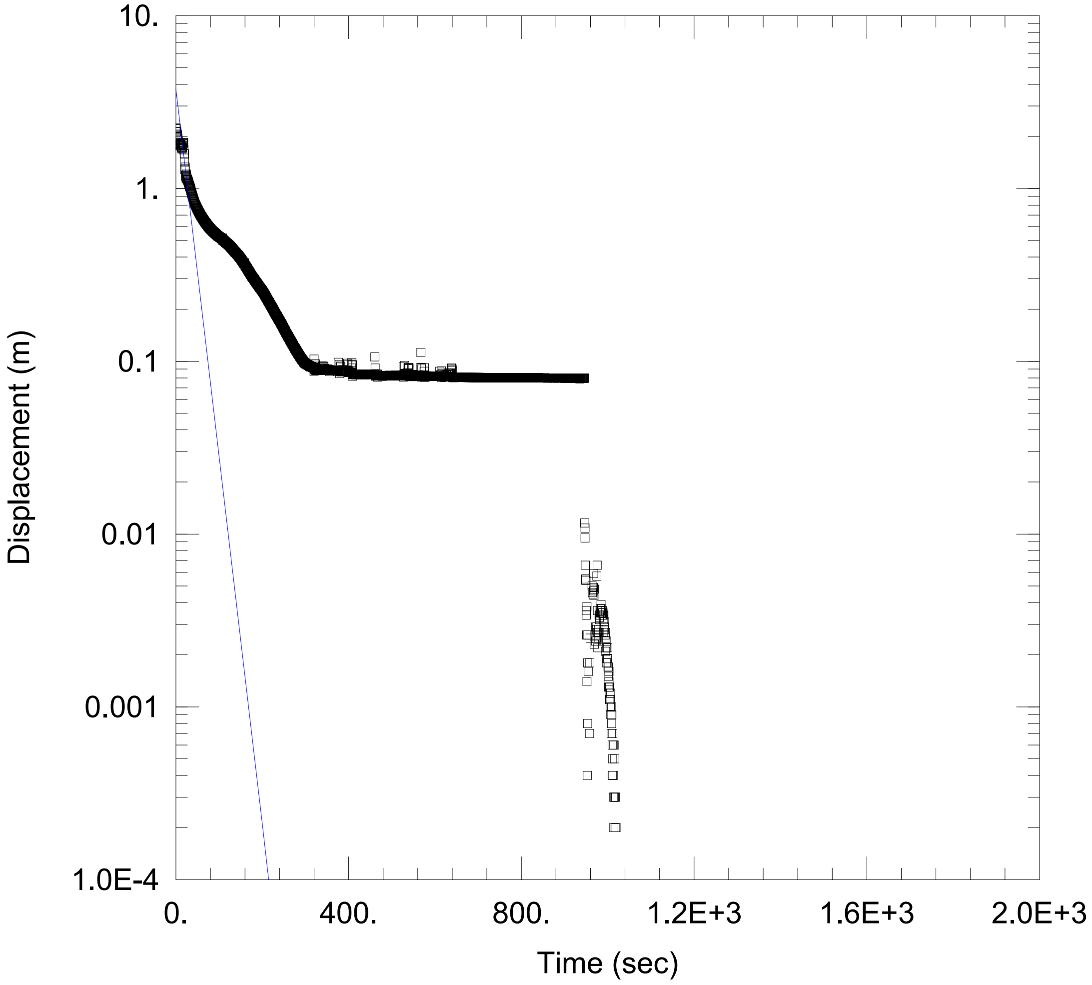
Reviewed By :

More information available upon request

Appendix D

[illegible]

[illegible]



DRY BOREHOLE INFILTRATION TEST

Data Set: G:\...\BH2.aqt
Date: 03/09/22 Time: 16:02:22

PROJECT INFORMATION

Company: Palmer
Client: North American Development Gro
Project: 2005202
Location: Park Place, Barrie, ON
Test Well: BH2
Test Date: 2022-03-01

AQUIFER DATA

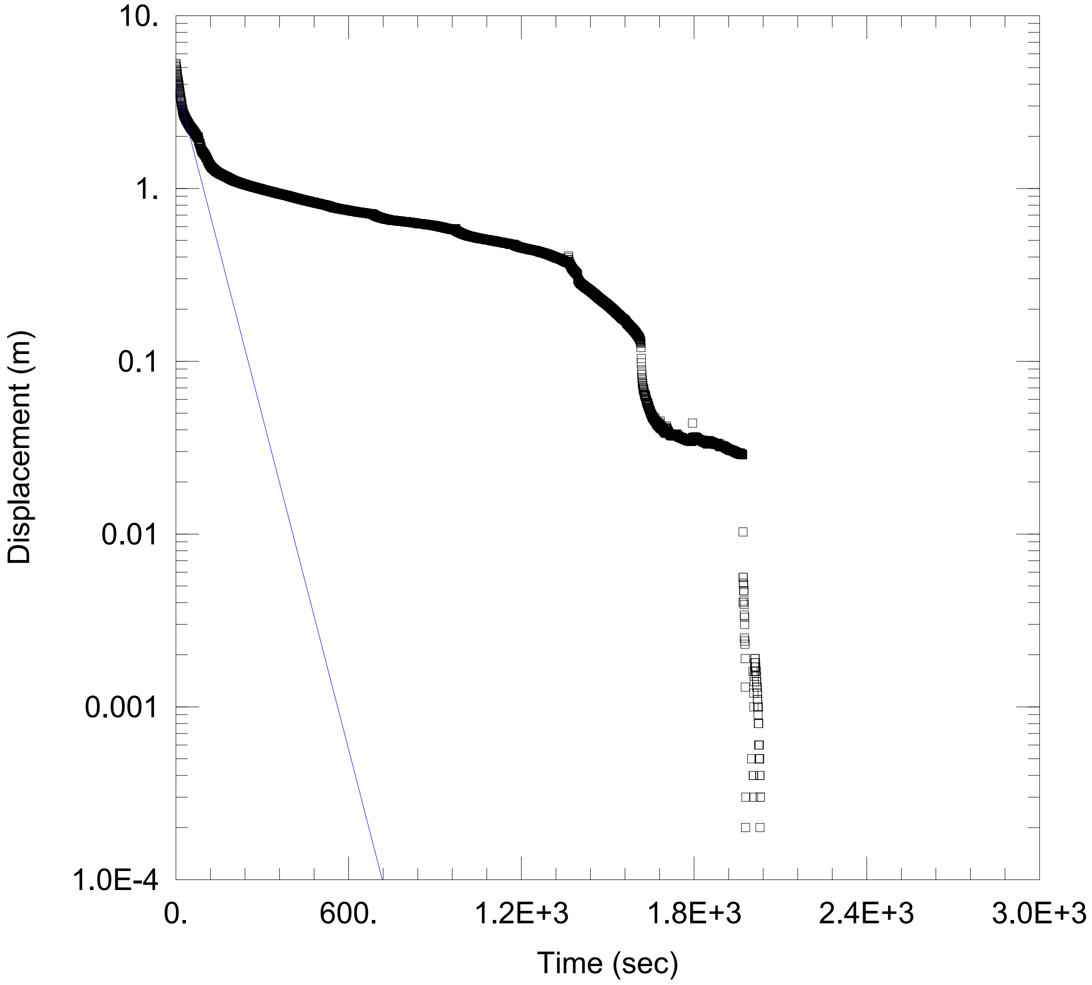
Saturated Thickness: 6. m
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH2)

Initial Displacement: 2.232 m
Total Well Penetration Depth: 3.05 m
Casing Radius: 0.0254 m
Static Water Column Height: 0. m
Screen Length: 3.05 m
Well Radius: 0.0254 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.713E-5 m/sec
y0 = 3.761 m



BOREHOLE INFILTRATION TEST ANALYSIS

Data Set: G:\...\BH8.aqt
Date: 03/09/22 Time: 16:02:36

PROJECT INFORMATION

Company: Palmer
Client: North American Development Gro
Project: 2005202
Location: Park Place, Barrie, ON
Test Well: BH8
Test Date: 2022-03-01

AQUIFER DATA

Saturated Thickness: 6. m
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH8)

Initial Displacement: 5.291 m
Total Well Penetration Depth: 3.05 m
Casing Radius: 0.0254 m
Static Water Column Height: 0. m
Screen Length: 3.05 m
Well Radius: 0.0254 m
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 5.187E-6 m/sec
y0 = 4.111 m