

**Palmer**™

74 Berkeley Street, Toronto, ON M5A 2W7  
Tel: 647-795-8153 | [www.pecg.ca](http://www.pecg.ca)

# **Hydrogeological Investigation – 12148 Albion Vaughan Road, Town of Caledon, Ontario**

*Palmer Project #*  
1604602

*Prepared For*  
12148 Albion Vaughn Inc.

June 10, 2024

June 10, 2024

12148 Albion Vaughan Inc.  
Mike Liburdi  
27 Fenton Way  
Brampton, ON  
L6P 0P4

Dear Mike:

**Re: Hydrogeological Investigation – 12148 Albion Vaughan Road, Town of Caledon,  
Ontario**  
**Project #: 1604602**

---

Palmer is pleased to submit the following report describing the results of our Hydrogeological Investigation for the property at 12148 Albion Vaughan Road, Town of Caledon, Ontario.

It is understood that the proposed development will consist of two mix-use condominium towers with 2-levels of underground parking. Tower A will be 6-storeys, and Tower B will be 7-storeys. This report summarizes the results of the hydrogeological assessment, including a characterization of site geology, hydrostratigraphy, and groundwater conditions (i.e., groundwater levels, hydraulic gradient, and hydraulic conductivity). We have completed an effects assessment based on the site conditions and provided a series of hydrogeological development recommendations and considerations.

Please let us know if you have question or comments on this submission. Thank you for the opportunity to work with your team on this project.

Yours truly,  
Palmer



Jason Cole, M.Sc., P. Geo.  
VP, Principal Hydrogeologist

*June 10, 2024*

# Table of Contents

---

Letter

<b>1.</b>	<b>Introduction .....</b>	<b>1</b>
1.1	Scope of Work .....	1
<b>2.</b>	<b>Regional Conditions .....</b>	<b>3</b>
2.1	Surficial Geology and Physiography.....	3
2.2	Bedrock Geology .....	3
2.3	Drainage and Natural Features .....	3
2.4	MECP Water Wells .....	3
2.5	Source Water Protection .....	9
<b>3.</b>	<b>Site Conditions .....</b>	<b>9</b>
3.1	Drilling and Installation of Monitoring Wells .....	9
3.2	Hydrostratigraphy.....	11
3.3	Groundwater Level and Flow .....	11
3.4	Hydraulic Conductivity .....	12
<b>4.</b>	<b>Development Considerations and Potential Effects .....</b>	<b>13</b>
4.1	Environmental Impacts.....	13
4.2	Source Water Protection .....	13
4.3	Existing Water Users .....	13
4.4	Dewatering.....	14
<b>5.</b>	<b>Conclusions and Recommendations .....</b>	<b>14</b>
<b>6.</b>	<b>Statement of Limitations .....</b>	<b>16</b>
<b>7.</b>	<b>Closure .....</b>	<b>17</b>
<b>8.</b>	<b>References .....</b>	<b>18</b>

## List of Tables

---

Table 1.	Water Well Records .....	8
Table 2.	Borehole and Monitoring Well Installation Details .....	11
Table 3.	Groundwater Levels .....	12
Table 4.	Hydraulic Conductivity Summary .....	13

## List of Figures

---

Figure 1. Site Location .....	2
Figure 2. Surficial Geology .....	4
Figure 3. Physiographic Region .....	5
Figure 4. Bedrock Geology .....	6
Figure 5. MECP Water Wells .....	7
Figure 6. Source Water Protection .....	10

## List of Appendices

---

Appendix A.	Site Plan (Fausto Cortese Architects, 2023)
Appendix B.	Borehole Logs (Palmer, 2020, 2021 & Davroc, 2020)
Appendix C.	Grainsize Analysis (ALS, 2020)

# 1. Introduction

Palmer was retained by 12148 Albion Vaughan Inc. to complete a Hydrogeological Assessment for a proposed mix-use condo development at 12148 Albion-Vaughan Road, Town of Caledon, Ontario. Currently, the site is occupied by an abandoned residential building, a small storage building, driveway, and open space. The proposed development will consist of two condominium towers at 6 and 7-storeys respectively (Towers A and B), with 2-levels of underground parking. The site plan for the development is presented in **Appendix A**, provided by Fausto Cortese Architects (FCA). The site is located approximately 370 m northwest of the intersection between Albion Vaughan Road and Highway 50 (**Figure 1**).

This report provides site information, including a characterization of site geology and hydrostratigraphy, groundwater conditions (i.e. groundwater levels and hydraulic conductivity), nearby water wells and Source Water Protection. Palmer has also completed an effects assessment based on the site conditions and provided a series of hydrogeological development considerations.

For construction dewatering in excess of 50,000 L/day a registration under the MECP Environmental and Sector Registry (EASR) is required. If dewatering exceeds 400,000 L/day a Permit to Take Water (PTTW) is required.

## 1.1 Scope of Work

Palmer's Hydrogeological Investigation was completed and includes the following main tasks:

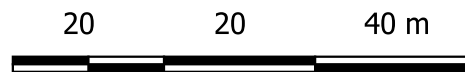
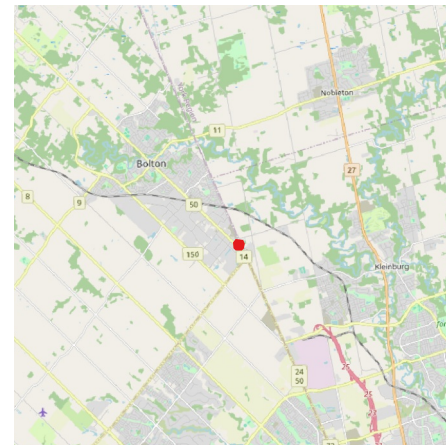
- Obtain and review applicable background information including surficial geology maps, Ministry of the Environment, Conservation and Parks (MECP) water well records, and other applicable hydrogeology reports;
- Review site background data and borehole logs from Davroc Testing Laboratories (Davroc) Geotechnical Investigation in 2020;
- Characterize the hydrogeology of the site based on secondary source data and the results of Palmer's 2020 drilling program;
- Drill three (3) boreholes and install three (3) groundwater monitoring wells;
- As part of updating the report in 2024, four (4) monitoring wells installed as part of Palmer's Phase 2 ESA were identified at the site and were incorporated in the study;
- Collect three (3) rounds of groundwater level measurements;
- Complete single well response testing (i.e., slug tests) to determine the hydraulic conductivity of the geological material;
- Conduct two (2) grainsize analysis to provide a hydraulic conductivity estimate;
- Complete a Section 59 Source Water Protection Screening with York Region to confirm Source Protection requirements if required;
- Assessment groundwater/ surface water interactions for the on-site drainage feature;
- Assess potential impacts from site development and provide a series of hydrogeological development considerations; and
- Produce a Hydrogeological Assessment Report to support a submission to the Town and Conservation Authority as part of site development applications.



LEGEND

 Site Boundary

 Monitoring Well



North American Datum 1983  
 Universal Transverse Mercator Projection Zone 17

Scale: 1:1,000  
 Page Size: Letter (11 x 8.5 inches)

Drawn: FL  
 Checked: NS  
 Date: June 2024

Source Notes:  
 Basemap: Google Satellite Image (2020)



CLIENT  
 Aztec Restoration

PROJECT  
 12148 Albion Vaughan Rd - Res De

TITLE  
 Site Investigation Plan

**Palmer** PART OF SLR

REF. NO: 1604602

Figure 1

## 2. Regional Conditions

### 2.1 Surficial Geology and Physiography

A review of available online surficial geology mapping by the Ontario Geological Survey (OGS) was used to identify the overburden materials of the site (**Figure 2**). Underlying the site is the Halton Till deposit which consists of clay to silt textured till, which is derived from glaciolacustrine deposits or shale. Fine textured glaciolacustrine deposits, consisting of silt and clay, minor sand and gravel, can be found to the east of the site.

The site is situated within the Peel Plain physiographic region as seen in **Figure 3** (Chapman and Putnam, 1984). The general elevation for this region ranges from 150 to 230 meters above sea level (masl) and there is a gradual and fairly uniform slope toward Lake Ontario. The underlying geological material of the Peel Plain consists of dense, limestone and shale imbued till that is often covered by a shallow layer of clay sediment.

### 2.2 Bedrock Geology

The bedrock underlying the study area consists of the Georgian Bay Formation (**Figure 4**) (Armstrong and Dodge, 2007). This formation consists of shale and limestone. According to nearby water well records, bedrock is found at approximately 38 metres below ground surface (mbgs).

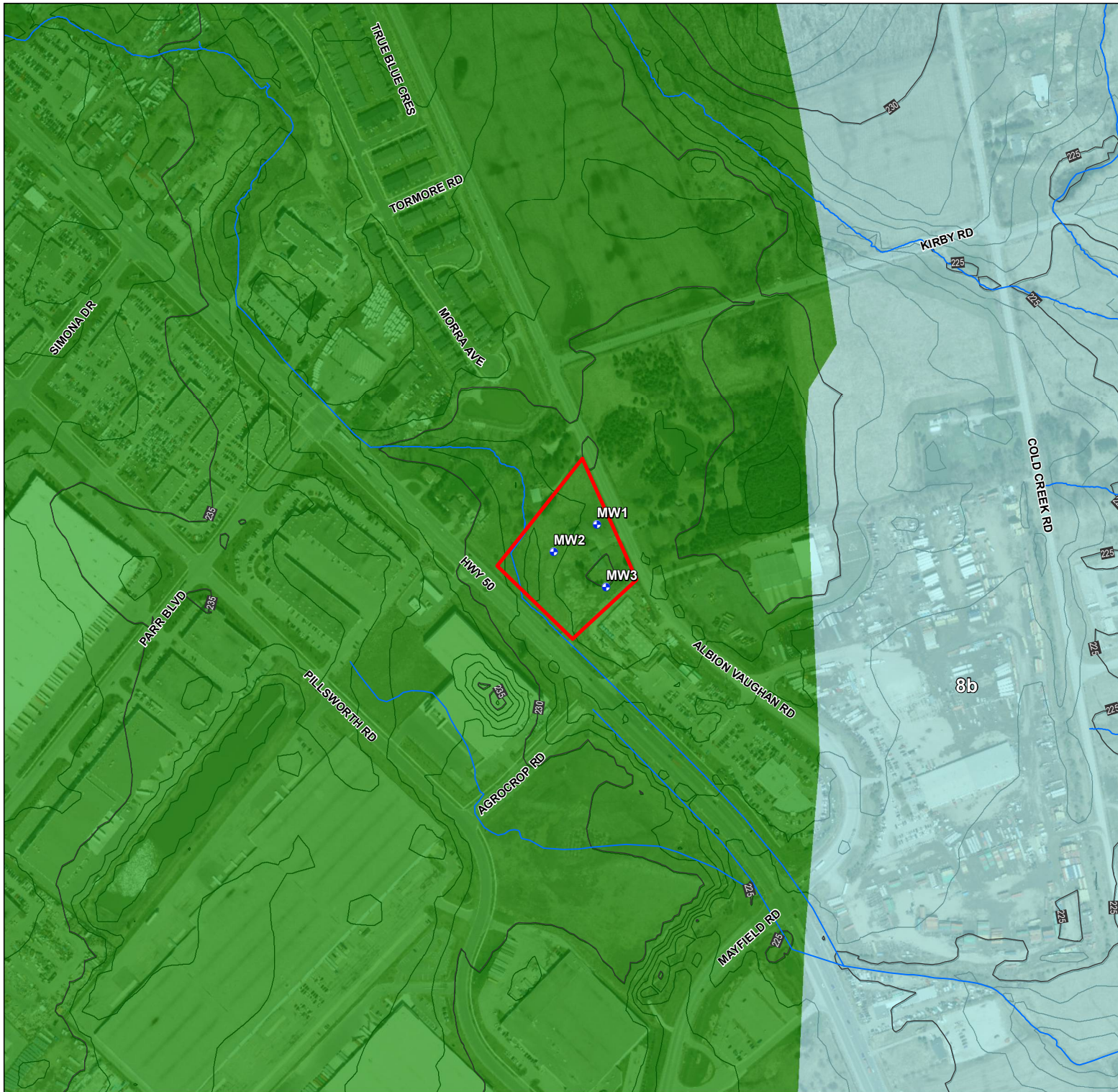
### 2.3 Drainage and Natural Features

The site is situated in the Humber River Subwatershed, which encompasses 911 km<sup>2</sup> and is the largest in the Toronto and Region Conservation Authority's (TRCA) jurisdiction. Water from the Niagara Escarpment and the Oak Ridges Moraine flows down the Humber River into Lake Ontario. The main branch of the river flows 126 km. The site is found near the multiple tributaries where water eventually flows back to the Humber River.

A small tributary intersects the west corner of the property (**Figure 1**). This channel has been historically realigned and appears to be perched on the till deposits.

### 2.4 MECP Water Wells

Based on a review of the MECP water well record database, 42 water wells are situated within a 500 m radius of the project boundary (**Figure 5**). Of the water wells, 16 are for domestic use, 1 is for livestock and domestic, 1 is for industrial and domestic, 10 are for monitoring, 3 are for monitoring or test holes, 5 are not used, 1 is for other, and 5 are unknown. The depth of wells ranged from 4.6 to 62.8 mbgs, with an average depth of 31.3 mbgs. The static water level depth ranged from 2.4 to 33.0 mbgs, with an average of 23.4 mbgs. The well yield ranged from 3.8 to 37.9 L/min, with an average yield of 19.5 L/min. Additional details on each water well can be seen below in **Table 1**.



**LEGEND:**

- Monitoring Well
- Watercourse
- Surface Elevation Contour (1m)
- Subject Property

**Surficial Geology<sup>1</sup>**  
**PHANEROZOIC**

**CENOZOIC**  
 QUATERNARY  
 PLEISTOCENE

**8** Fine-textured glaciolacustrine deposits: silt and clay, minor sand and gravel  
 8b Interbedded silt and clay and gritty, pebbly flow till and rainout deposits

**5d** **Till:** Silty sand to sand-textured till on Precambrian terrain  
 5d Clay to silt-textured till (derived from glaciolacustrine deposits or shale)

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

Imagery (2019) provided by York Region WMS. Contains information licensed under the Open Government Licence – Ontario. Contains public sector information made available under The Regional Municipality of York's Open Data Licence

0 50 100 150 200  
metres

	PROJECT NO.	1604602	REVISION:	1-1
	DATE:	Sep 16, 2020	SCALE:	1:6000
	DRAWN:	CV	DATUM:	NAD 1983
	CHECKED:	AL	PROJECTION:	UTM zone 17

CLIENT: Aztec Restoration

PREPARED BY: **Palmer™**

PROJECT: 12148 Albion Vaughan Rd - Res Dev






TITLE: **Surficial Geology**

**Figure 2**

Document Path: G:\Shared drives\Projects 2016\16046 - Aztec Restoration\1604602 - 12148 Albion Vaughan Rd - Res Dev\Mapping\Figures\5\_ArcGIS\1604602\_2\_1\_Surficial Geology.mxd

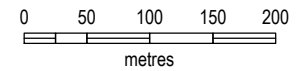




- LEGEND:
-  Monitoring Well
  -  Watercourse
  -  Surface Elevation Contour (1m)
  -  Subject Property
- Physiographic Region<sup>1</sup>**
-  33. Peel Plain

1. Chapman, L.J. and Putnam, D.F. 2007. Physiography of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 228

Imagery (2019) provided by York Region WMS. Contains information licensed under the Open Government Licence – Ontario. Contains public sector information made available under The Regional Municipality of York's Open Data Licence



PROJECT NO.	1604602	REVISION:	1-1
DATE:	Sep 16, 2020	SCALE:	1:6000
DRAWN:	CV	DATUM:	NAD 1983
CHECKED:	AL	PROJECTION:	UTM zone 17

CLIENT:  
**Aztec Restoration**

PREPARED BY:  
**Palmer™**

PROJECT:  
12148 Albion Vaughan Rd - Res Dev

TITLE:  
**Physiographic Region**

**Figure 3**



**LEGEND:**

- Monitoring Well
- Watercourse
- Surface Elevation Contour (1m)
- Subject Property

**Paleozoic Bedrock Geology<sup>1</sup>**

*Upper Ordovician*

**14** Georgian Bay Formation: shale and limestone

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

Imagery (2019) provided by York Region WMS. Contains information licensed under the Open Government Licence – Ontario. Contains public sector information made available under The Regional Municipality of York's Open Data Licence

metres

	PROJECT NO. 1604602	REVISION: 1-1
	DATE: Sep 16, 2020	SCALE: 1:6000
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: AL	PROJECTION: UTM zone 17

CLIENT: <b>Aztec Restoration</b>	PREPARED BY: <b>Palmer™</b>
-------------------------------------	--------------------------------

PROJECT:  
12148 Albion Vaughan Rd - Res Dev

TITLE:  
**Bedrock Geology**

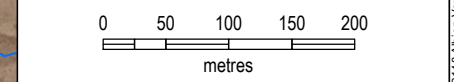
Figure 4

Document Path: G:\Shared drives\Projects 2016\16046 - Aztec Restoration\1604602 - 12148 Albion Vaughan Rd - Res Dev\Mapping\Figures\5\_ArcGIS\1604602\_4\_1\_Bedrock\_Geology.mxd



- LEGEND:
- MECP Water Well within 500m w/ Well ID
  - + Monitoring Well
  - ~ Watercourse
  - Subject Property
  - Subject Property 500m Radius

Imagery (2019) provided by York Region WMS. Contains information licensed under the Open Government Licence – Ontario.



	PROJECT NO. 1604602	REVISION: 1-1
	DATE: Sep 16, 2020	SCALE: 1:6000
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: AL	PROJECTION: UTM zone 17

CLIENT:	PREPARED BY:
Aztec Restoration	<b>Palmer™</b>

PROJECT: 12148 Albion Vaughan Rd - Res Dev

TITLE: **MECP Water Wells within 500m**

**Figure 5**

Document Path: G:\Shared drives\Projects 2016\16046 - Aztec Restoration\1604602 - 12148 Albion Vaughan Rd - Res Dev\Mapping\Figures\5 - ArcGIS\1604602\_5\_1\_MECP Water Wells.mxd

**Table 1. Water Well Records**

<b>Well ID</b>	<b>Date Completed</b>	<b>Depth (mbgs)</b>	<b>Static Water Level (mbgs)</b>	<b>Well Yield (L/min)</b>	<b>Well Use</b>
4900361	1953-11-25	13.7	-	-	-
4900362	1954-08-07	47.9	32.3	15.16	Domestic
4903208	1969-03-28	54.9	-	-	-
4903257	1969-06-13	61.0	24.4	15.16	Domestic
4903323	1969-09-03	51.8	14.3	22.74	Domestic
4903570	1970-09-29	54.3	-	-	Not Used
4903571	1970-10-06	47.5	29.0	7.58	Livestock and Domestic
4903711	1971-08-25	62.8	2.4	3.79	Domestic
4903812	1972-04-25	50.3	28.0	22.74	Domestic
4904179	1973-07-18	51.2	20.7	15.16	Domestic
4904182	1973-02-15	53.6	18.3	7.58	Industrial and Domestic
4904567	1974-10-15	47.9	18.9	37.9	Domestic
4904931	1976-05-13	53.9	29.3	11.37	Domestic
4905070	1977-03-15	55.5	32.0	7.58	Domestic
6907218	1964-07-16	22.9	-	-	-
6907219	1964-08-31	42.1	27.4	37.9	Domestic
6914986	1978-10-10	55.5	32.9	37.9	Domestic
6918791	1987-02-05	55.8	29.0	11.37	Domestic
6921422	1981-03-02	23.2	15.5	37.9	Domestic
7110588	2008-07-31	18.3	-	15.16	Domestic
7110588	2008-07-31	18.3	-	-	Domestic
7110588	2008-07-31	18.3	-	-	Domestic
7132481	2009-09-14	7.5	-	-	Monitoring
7132481	2009-09-14	-	-	-	Monitoring
7132481	2009-09-15	-	-	-	Monitoring
7177345	2011-12-28	-	33	-	Other
7212225	2013-10-18	-	-	-	-
7212292	2013-06-12	7.6	-	-	Monitoring
7212293	2013-06-12	7.6	-	-	Monitoring
7212297	2013-06-12	9.0	-	-	Monitoring
7212298	2013-06-12	6.0	-	-	Monitoring
7231571	2014-10-16	6.1	-	-	Monitoring and Test Hole
7231572	2014-10-16	5.2	-	-	Monitoring and Test Hole
7231573	2014-10-16	6.1	-	-	Monitoring and Test Hole
7235624	2014-11-03	-	30.5	-	Not Used
7235626	2014-11-03	-	-	-	Not Used
7236035	2014-10-14	-	-	-	Not Used
7236037	2014-10-14	-	-	-	Not Used
7245314	2015-07-16	4.6	-	-	Monitoring

Well ID	Date Completed	Depth (mbgs)	Static Water Level (mbgs)	Well Yield (L/min)	Well Use
7245315	2015-07-16	6.1	-	-	Monitoring
7245316	2015-07-16	6.1	-	-	Monitoring
7288339	2014-12-09	-	3.4	-	-

## 2.5 Source Water Protection

The site located in the Credit Valley, Toronto and Region and Central Lake Ontario (CTC) Source Protection Area. The Source Water Protection Plan identifies three main regulatory factors under the *Clean Water Act (2006)* relating to local hydrogeology to consider for site development: Significant Groundwater Recharge Areas (SGRAs), Highly Vulnerable Aquifers (HVAs), and Wellhead Protection Areas (WHPAs). Also, the Region of Peel requires a Section 59 Permit under the Clean Water Act (2006) when a proposed land development or change in activity is within a designated vulnerable area. The Section 59 permit designates whether the development or change in activity is prohibited by the Source Water Protection Plan or whether additional risk management plans are required.

Based on input from Peel Region staff, on November 19, 2020, and available MECP Source Protection information mapping (**Figure 6**), the site is not situated within Source Water Protection regulatory zones (HVA, SGRA, etc.) and will not require a Section 59 Permit. It was also confirmed that the site is not located within a WHPA-Q1/Q2 (recharge management) and is not subject to the recharge management policies under the Source Protection Plan.

## 3. Site Conditions

### 3.1 Drilling and Installation of Monitoring Wells

As part of Palmer’s hydrogeological investigation, three (3) boreholes (BH20-1 to BH20-3) were drilled on August 17, 2020. The boreholes were drilled using hollow stem augers, to depths ranging from 6.4 to 6.7 mbgs. All three (3) boreholes were completed as monitoring wells in accordance with Ontario Regulation 903. The monitoring wells are made of 5.1 cm (2 inch) diameter schedule 40 polyvinyl chloride (PVC) pipe, with a 3.0 m (10 ft) screened interval. Borehole and monitoring well locations are shown on **Figure 1**.

Palmer’s Phase 2 ESA installed four (4) deep monitoring wells in 2021. The study was based on five boreholes, four of them were installed with monitoring wells. These monitoring wells were incorporated into the current study.

Additionally, according to Davroc’s Geotechnical Investigation (2020), six (6) boreholes were drilled between November 24<sup>th</sup> and December 11<sup>th</sup>, 2020 with depths ranging from 9.6 to 15.7 m. No monitoring wells were installed, and boreholes were backfilled upon completion. **Table 2** provides a summary of borehole and monitoring well details and borehole logs are provided in **Appendix B**.



**LEGEND:**

- Monitoring Well
- Watercourse
- Subject Property
- Highly Vulnerable Aquifer

Imagery (2019) provided by York Region WMS. Contains information licensed under the Open Government Licence – Ontario. Contains public sector information made available under The Regional Municipality of York's Open Data Licence

0 50 100 150 200  
metres

	PROJECT NO. 1604602	REVISION: 1-1
	DATE: Sep 16, 2020	SCALE: 1:6000
	DRAWN: CV	DATUM: NAD 1983
	CHECKED: AL	PROJECTION: UTM zone 17

CLIENT: <b>Aztec Restoration</b>	PREPARED BY: <b>Palmer™</b>
-------------------------------------	--------------------------------

PROJECT:  
12148 Albion Vaughan Rd - Res Dev

TITLE:  
**Source Water Protection**

**Figure 6**

Document Path: G:\Shared drives\Projects 2016\16046 - Aztec Restoration\1604602 - 12148 Albion Vaughan Rd - Res Dev\Mapping\Figures\5\_ArcGIS\1604602\_6-1\_SWP.mxd

**Table 2. Borehole and Monitoring Well Installation Details**

Borehole/ Monitoring Well		Depth (mbgs)	Approx. Screened Interval (mbgs)	Geology
Palmer	BH20-1	6.7	3.6 - 6.7	Clayey Silt Till
	BH20-2	6.4	3.3 - 6.4	Clayey Silt Till
	BH20-3	6.7	3.6 - 6.7	Clayey Silt Till
	BH21-1	11.9	8.9-11.9	Sand
	BH21-2	11.5	8.5-11.5	Sand
	BH21-4	11.7	8.7-11.7	Sand
	BH21-5	11.8	8.8-11.8	Sand
Davroc	BH1	15.7	-	-
	BH2	15.7	-	-
	BH3	12.8	-	-
	BH4	9.6	-	-
	BH5	11.1	-	-
	BH6	11.1	-	-

### 3.2 Hydrostratigraphy

Hydrostratigraphic units can be subdivided into two distinct groups based on their ability to allow groundwater movement. An aquifer is classically defined as a layer of soil that is permeable enough to permit a usable supply of water to be extracted. An aquitard is a layer of soil that inhibits groundwater movement due to its low permeability. Shallow groundwater flow at the site is primarily influenced by the Halton Till hydrostratigraphic unit.

The Halton Till at the site consists of a clayey silt till that acts as an aquitard unit restricting groundwater flow. The clayey silt till aquitard can be found underlying the layer of fill in all boreholes (BH20-1 to B20-3) and was terminated in this deposit. In BH20-2, a thick silty clay layer was found at a depth of 4.7 mbgs and is found to be 1.5 m thick. This unit contains some silty sand and sand layers, allowing minimal groundwater to flow through. The hydraulic conductivity is estimated to range from 10<sup>-6</sup> to 10<sup>-9</sup> m/s.

### 3.3 Groundwater Level and Flow

Three (3) 50 mm diameter monitoring wells were installed to monitor stabilized groundwater levels. Stabilized groundwater levels were measured on August 26, 2020 (one week after borehole drilling) and on November 20, 2020. To update the report, another round of groundwater level monitoring was conducted on May 26, 2024 for these three monitoring wells. In addition, four deep wells installed as part of Palmer’s Phase 2 ESA were also monitored during the monitoring event of May 26, 2024. All shallow wells were found to be dry. **Table 3** shows the water levels in each monitoring well.

Table 3. Groundwater Levels

Monitoring Well	Stick Up (m)	Depth (mbgs)	Groundwater Level (mbgs)		
			August 26, 2020	November 20, 2020	May 26, 2024
BH20-1	0.77	6.7	Dry @ 6.7 mbgs	Dry @ 6.7 mbgs	Dry @ 6.7 mbgs
BH20-2	0.81	6.4	Dry @ 6.4 mbgs	Dry @ 6.4 mbgs	Dry @ 6.4 mbgs
BH20-4	0.83	6.7	Dry @ 6.7 mbgs	Dry @ 6.7 mbgs	Dry @ 6.7 mbgs
BH21-1	0.87	11.9	-	-	8.5
BH21-2	0.85	11.5	-	-	9.0
BH21-4	0.94	11.7	-	-	96
BH21-5	0.93	11.8	-	-	9.5

The Davroc Geotechnical Investigation notes some wet seams and some standing water was observed in all boreholes prior to backfilling, however, no groundwater levels were collected.

Most water is not expected to infiltrate into the ground from precipitation or snow melt, but instead become surface runoff due to the low permeability Halton Till aquitard at the surface. The runoff is expected to flow towards either the tributary on the west side of the property or into the drainage ditches surrounding the property. Based on the water level results, it is clear that the groundwater table is well below the depth of the on-site drainage feature. This feature is therefore interpreted to not be hydraulically connected to the water table nor groundwater supported.

### 3.4 Hydraulic Conductivity

As all three (3) monitoring wells were dry during the monitoring events, single well response tests could not be completed. To obtain hydraulic conductivity estimates for the soils, Palmer personnel submitted two (2) soil samples, Sample 7 in BH20-1 and Sample 6B in BH20-2, to Terrapex for grain size analyses (**Appendix C**).

Hydraulic conductivity estimates were calculated using Puckett's Method (Puckett, 1990) on the grain size analyses results. This method is typically used for calculating the hydraulic conductivity of low permeability silt and clay soils from grain size data by utilizing the percentage of clay in the soil.

Based on the Puckett's method, the geometric mean hydraulic conductivity of the Halton Till is approximately  $1.1 \times 10^{-8}$  m/sec and is found to be  $1.2 \times 10^{-7}$  m/s and  $1.0 \times 10^{-9}$  m/s for BH1 and BH2, respectively. The variability of the K values within the site are a result of the heterogeneity of the soils, where sand seams and clay layers can be found. The Halton Till layer is found to have a low hydraulic conductivity and will inhibit the flow of groundwater. **Table 4** provides a summary of the hydraulic conductivity values.



*Table 4. Hydraulic Conductivity Summary*

Borehole	Sample #	Depth (mbgs)	Solution	Hydraulic Conductivity (m/sec)
BH20-1	7	6.1	Puckett	$1.2 \times 10^{-7}$
BH20-2	6B	4.7	Puckett	$1.0 \times 10^{-9}$
Geomean	-	-	-	$1.1 \times 10^{-8}$

## 4. Development Considerations and Potential Effects

### 4.1 Environmental Impacts

Based on the hydrogeological study, construction or site development will not cause an adverse effect to nearby natural features. Based on borehole logs and groundwater level monitoring, no groundwater was found on site to a depth of 6.7 mbgs. Only limited precipitation is expected to infiltrate from precipitation or snow melt, and the water balance is instead dominated by surface runoff due to the low permeability Halton Till aquitard found throughout the site. The runoff is expected to flow towards either the tributary on the west side of the property or into the drainage ditches surrounding the property along the road right of ways.

Based on the water level results, it is clear that the groundwater table is well below the depth of the on-site drainage feature. This feature is therefore interpreted to not be hydraulically connected to the water table nor groundwater supported and will not be affected by construction or site development.

### 4.2 Source Water Protection

Based on input from Peel Region staff and available MECP Source Protection information mapping (**Figure 6**), the site is not situated within any Source Water Protection regulatory zones and therefore, does not require a Section 59 Permit. No significant threat is expected which would require stormwater management and/or water balance restrictions.

It is confirmed that the site is not located within a WHPA-Q1/Q2 (recharge management) only has a limited recharge function. From a hydrogeological perspective, no infiltration-based mitigation is recommended.

### 4.3 Existing Water Users

Based on a review of MECP water well records within 500 m of the site, only 16 wells were determined to be for domestic use. The average depth of these wells is 31.3 mbgs. Based on the minimal estimated dewatering for the site and average depth of nearby domestic wells, no adverse impact to existing water users is anticipated.

## 4.4 Dewatering

The proposed site development consists of two mix-use condominium towers with 2-levels of underground parking, founded at approximately 7.2 mbgs (**Appendix A**). Groundwater level monitoring results (**Table 3**) show the following characteristics of groundwater regime:

- No groundwater was identified in shallow wells, indicating aquitard till that the shallow wells were completed in does not transmit significant amount of groundwater both vertically and horizontally;
- Based on the depths of screens of deep wells installed by Palmer and the boreholes logs of Davroc, all recorded groundwater levels from the deep wells are located under the top of the sand aquifer under the site. Consequently, the groundwater within the sand aquifer is not under pressure, and the sand aquifer is not a confined aquifer;
- The recorded groundwater levels from the deep well range from 8.5 to 9.6 mbgs, which is lower than the underground parking floor slab even after adding one (1) meter of fluctuation.

Based on the above groundwater level characterization, construction dewatering is not required. However, considering the limited density of investigation points, localized groundwater seepage is anticipated. In addition, stormwater accumulation should be considered.

A provision for the removal of stormwater from the excavation should be made. Assuming a 25 mm storm event over the excavation area of approximately 72 m by 114 m, could add 205,200 L requiring removal for a dry excavation. As this volume is completely stormwater, a PTTW or EASR would not be required, however a discharge permit from the Regional of Peel would be required to discharge to the storm or sanitary sewer system.

## 5. Conclusions and Recommendations

The following summarizes the results our Hydrogeological Assessment to support development at the property at 12148 Albion-Vaughan Road, Town of Caledon, Ontario:

- Underlying the site is the Halton Till Aquitard, which consists of clay to silt textured till, which is derived from glaciolacustrine deposits or shale.
- A small tributary to the Humber River intersects the west corner of the property. This channel has been historically realigned and appears to be perched on the till deposits.
- Based on a review of the MECP water well record database, 42 water wells are situated within a 500 m radius of the project boundary. Of the water wells, 16 are for domestic use, 1 is for livestock and domestic, 1 is for industrial and domestic, 10 are for monitoring, 3 are for monitoring or test holes, 5 are not used, 1 is for other, and 5 are unknown.
- Over the entire the site, the water levels in the well were determined to be dry at wells for all shallow monitoring wells. Groundwater levels recorded from the deep wells ranges from 8.5 to 9.6 mbgs.

- Based on the grain size analyses, the geometric mean hydraulic conductivity of the site is approximately  $1.1 \times 10^{-8}$  m/s and is found to be  $1.2 \times 10^{-7}$  m/s and  $1.0 \times 10^{-9}$  m/s for BH1 and BH2, respectively
- The site is not situated within Source Water Protection regulatory zones (HVA, SGRA, etc.) and will not require a Section 59 Permit. It was also confirmed that the site is not located within a WHPA-Q1/Q2 (recharge management) and is not subject to the recharge management policies under the Source Protection Plan.
- No significant threat is expected which would require stormwater management and/or water balance restrictions. It is not expected that construction will cause adverse effect to nearby natural features.
- No significant construction dewatering is anticipated. However, considering limited density of investigation points and coherent complexity of geology, localized perched groundwater is anticipated and local sump pumping is expected to be sufficient to handle the perched groundwater.
- Provisions should also be made to account for direct precipitation over the excavation area. A discharge agreement with Peel Region would be required to discharge stormwater to the roadside ditching.
- Based on a review of MECP water well records, no adverse impact to existing water users is anticipated.
- A Permit To Take Water (PTTW) or a registration on the Environmental and Sector Registry (EASR) from the MECP are not expected to be required for this project.

## 6. Statement of Limitations

The extent of this study was limited to the specific scope of work for which we were retained and that is described in this report. Palmer has assumed that the information provided by the client or any secondary sources of information are factual and accurate. Palmer accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or negligent acts from relied upon data. Judgment has been used by Palmer in the interpretation of the information provided but subsurface physical and chemical characteristics may differ from regional scale geology mapping and vary between or beyond well/borehole locations given the inherent variability in geological conditions.

Palmer is not a guarantor of the geological or groundwater conditions at the subject site, but warrants only that its work was undertaken and its report prepared in a manner consistent with the level of skill and diligence normally exercised by competent geoscience professionals practicing in the Province of Ontario. Our findings, conclusions and recommendations should be evaluated in light of the limited scope of our work.

The information and opinions expressed in the Report are for the sole benefit of the Client. NO OTHER PARTY MAY USE OR RELY UPON THE REPORT OR ANY PORTION THEREOF WITHOUT PALMER'S WRITTEN CONSENT AND SUCH USE SHALL BE ON SUCH TERMS AND CONDITIONS AS PALMER MAY EXPRESSLY APPROVE. Ownership in and copyright for the contents of the Report belongs to Palmer. Any use which a third party makes of the Report is the sole responsibility of such third party. Palmer accepts no responsibility whatsoever for damages suffered by any third party resulting from use of the Report without Palmer's express written permission. Should the project design change following issuance of the Report, Palmer must be provided the opportunity to review and revise the Report in light of such alteration or variation.

## 7. Closure

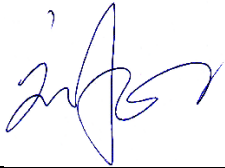
This report was prepared and reviewed by the undersigned:

Prepared By:



Nolan Boyes, M.Sc., P.Geo.  
Hydrogeologist

Updated By:



---

Frank Liu, P.Eng.  
Senior Hydrogeologist

Reviewed By:



Jason Cole, M.Sc., P.Geo.  
VP, Principal Hydrogeologist

## 8. References

- Armstrong, D.K., and Dodge, J.E.P. 2007. Paleozoic Geology Map of Southern Ontario. Ontario Geological Survey, Miscellaneous Release – Data 219.
- Chapman, L.J. and D.F. Putnam. 1984. Physiography of Southern Ontario. Ontario Geological Survey, Special Volume 2: 270 p.
- Chapman, L.J., and Putnam, D.F. 2007. The Physiography of Southern Ontario. Ontario Geological Survey, Miscellaneous Release – Data 228.
- Davroc Testing Laboratories Inc., 2020. Geotechnical Investigation Fausto Cortese Architects (FCA) Proposed Condominium Development, 12148 Albion Vaughan Road, Bolton, Ontario
- Puckett, W. E., Dane, J. H., and Hajek, B. F., Soil Science Society of America Journal, Vol. 49, 1985, pp. 831-836 Groundwater and Vadose Zone Monitoring, ASTM, STP, 1053, 1990
- Ministry of the Environment and Energy (MOEE), 1995. Technical Information Requirements of Land Development Applications.
- Mulligan, R.P. 2013. Quaternary Landform and Sediment Analysis of the Alliston Area (Southern Simcoe County) Ontario, Canada. M.Sc. Thesis. McMaster University.
- The Ontario Geological Survey. 2003. Surficial Geology of Southern Ontario
- Thornthwaite, C.W. and J.R. Mather, 1957:  
Instructions and tables for computing potential evapotranspiration and water balance. Drexel Institute of Technology, Laboratory of Climatology. Publications in Climatology, Volume X. No. 3, 311p.
- TRC/CVC, 2010:  
Low Impact Development Stormwater Management Planning and Design Guide, Version 1.0 – Appendix C.

# **Appendix A**

## **Site Plan (Fausto Cortese Architects, 2023)**

TOWER A + AMENITY		Name of Project: FAUSTO CORTESE ARCHITECT MIX-USED CONDO DEVELOPMENT AT 12148 ALBION VAUGHAN RD. BOLTON - CALEDON												
ITEM		Ontario Building Code Data Matrix - Part 3 & 9										OBC Reference		
1		Project Description: 3 & 6 Storeys Condo Building										Reference: see 10 Division B (article 900) (A) for Division A or (C) for Division C		
2		Major Occupancy(s) Group C										3.1.2.1.(1) 9.10.2		
3		Building Area (m <sup>2</sup> ) NEW: 2400.72 m <sup>2</sup> TOTAL: 2400.72 m <sup>2</sup>										1.4.1.2 [A] 1 1.4.1.2 [A]		
4		Gross Area (m <sup>2</sup> ) NEW: 13010.64 m <sup>2</sup> TOTAL: 13010.64 m <sup>2</sup>										1.4.1.2 [A] 1.4.1.2 [A]		
5		Number of Storeys Above Grade: 6 Below Grade: 2										1.4.1.2 [A] & 3.2.1.1 1.4.1.2 [A] 9.10.4		
6		Number of Streets/Fire Fighter Access: 1										3.2.2.10 & 3.2.5. 9.10.20		
7		Building Classification: 3.2.2.43 GROUP C										3.2.2.43 9.10.2		
8		Sprinkler System Proposed <input checked="" type="checkbox"/> entire building <input type="checkbox"/> in lieu of roof rating										3.2.2.67 9.10.8.2		
9		Standpipe required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										3.2.9. N/A		
10		Fire Alarm required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										3.2.4. 9.10.18		
11		Water Service/Supply is Adequate <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										3.2.5.7. N/A		
12		High Building <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										3.2.6. N/A		
13		Construction Restrictions <input type="checkbox"/> Combustible Permitted <input checked="" type="checkbox"/> Non-combustible Required <input type="checkbox"/> Both										3.2.2.67 9.10.6		
14		Mezzanine Area (m <sup>2</sup> ): N/A										3.2.1.1.(3)-(8) 9.10.4.1		
15		Occupant load based on <input type="checkbox"/> m <sup>2</sup> /person <input checked="" type="checkbox"/> design of building										3.1.17 9.8.1.3		
16		Barrier-free Design <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain):										3.8 9.5.2		
17		Hazardous Substances <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No										3.3.1.2. & 3.3.1.19 9.10.1.3(4)		
18		Required Fire Resistance Rating (FRR)										3.2.2.20-.83 & 3.2.1.4 9.10.8 9.10.9		
19		Spatial Separation - Construction of Exterior Walls - Existing Building										3.2.3 9.10.14		
20		Wall Area of EBF (m <sup>2</sup> )										L.D. L.H. or H.L. Permitted Max. % of Openings Proposed % of Openings FRR (Hours) Listed Design or Description Comb Const Comb. Const. Non-comb Const		
Left		North NO CHANGE										-		
Front		South NO CHANGE										-		
Rear		East NO CHANGE										-		
Right		West NO CHANGE										-		



# Albion Vaughan Road Condos

TOWER B		Name of Project: FAUSTO CORTESE ARCHITECT MIX-USED CONDO DEVELOPMENT AT 12148 ALBION VAUGHAN RD. BOLTON - CALEDON												
ITEM		Ontario Building Code Data Matrix - Part 3 & 9										OBC Reference		
1		Project Description: 7 Storey Condo Building										Reference: see 10 Division B (article 900) (A) for Division A or (C) for Division C		
2		Major Occupancy(s) Group C										3.1.2.1.(1) 9.10.2		
3		Building Area (m <sup>2</sup> ) NEW: 2092.75 m <sup>2</sup> TOTAL: 2092.75 m <sup>2</sup>										1.4.1.2 [A] 1 1.4.1.2 [A]		
4		Gross Area (m <sup>2</sup> ) NEW: 14680.14 m <sup>2</sup> TOTAL: 14680.14 m <sup>2</sup>										1.4.1.2 [A] 1.4.1.2 [A]		
5		Number of Storeys Above Grade: 7 Below Grade: 2										1.4.1.2 [A] & 3.2.1.1 1.4.1.2 [A] 9.10.4		
6		Number of Streets/Fire Fighter Access: 1										3.2.2.10 & 3.2.5. 9.10.20		
7		Building Classification: 3.2.2.42 GROUP C										3.2.2.43 9.10.2		
8		Sprinkler System Proposed <input checked="" type="checkbox"/> entire building <input type="checkbox"/> in lieu of roof rating										3.2.2.67 9.10.8.2		
9		Standpipe required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										3.2.9. N/A		
10		Fire Alarm required <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										3.2.4. 9.10.18		
11		Water Service/Supply is Adequate <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										3.2.5.7. N/A		
12		High Building <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										3.2.6. N/A		
13		Construction Restrictions <input type="checkbox"/> Combustible Permitted <input checked="" type="checkbox"/> Non-combustible Required <input type="checkbox"/> Both										3.2.2.67 9.10.6		
14		Mezzanine Area (m <sup>2</sup> ): N/A										3.2.1.1.(3)-(8) 9.10.4.1		
15		Occupant load based on <input type="checkbox"/> m <sup>2</sup> /person <input checked="" type="checkbox"/> design of building										3.1.17 9.8.1.3		
16		Barrier-free Design <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain):										3.8 9.5.2		
17		Hazardous Substances <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No										3.3.1.2. & 3.3.1.19 9.10.1.3(4)		
18		Required Fire Resistance Rating (FRR)										3.2.2.20-.83 & 3.2.1.4 9.10.8 9.10.9		
19		Spatial Separation - Construction of Exterior Walls - Existing Building										3.2.3 9.10.14		
20		Wall Area of EBF (m <sup>2</sup> )										L.D. L.H. or H.L. Permitted Max. % of Openings Proposed % of Openings FRR (Hours) Listed Design or Description Comb Const Comb. Const. Non-comb Const		
Left		North NO CHANGE										-		
Front		South NO CHANGE										-		
Rear		East NO CHANGE										-		
Right		West NO CHANGE										-		

**PROJECT ARCHITECTURAL DESIGN**  
FCA Architects - FAUSTO CORTESE ARCHITECTS  
3590 Rutherford Road, Unit 7  
Woodbridge, Ontario  
L4H 3T8  
T: 416-806-7000

**PLANNING**  
KLM PLANNING PARTNERS INC.  
PLANNING - DESIGN - DEVELOPMENT  
64 Jardin Drive, Unit 1B  
Concord, Ontario  
L4K 3P3  
T: 905-669-4055

**LANDSCAPE**  
MSLA  
MARTON SMITH LANDSCAPE ARCHITECTS  
170 The Don Way West, Suite 206  
North York, Ontario  
M3C 2G3  
T: 416-492-9966

**ENGINEERING CONSULTANTS**  
TRISTAR ENGINEERING LTD.  
8901 Woodbine Ave., Suite 116  
Markham, Ontario  
L3R 9Y4  
T: 905-604-3801

**ACOUSTIC**  
HGC ENGINEERING - Howe Gastmeier Chapnik Limited  
NOISE - VIBRATION - ACOUSTICS  
2000 Argensia Rd 1, Suite 203  
Mississauga, Ontario  
L5N 1P7  
T: 905-826-4044

**TRANSPORTATION CONSULTANTS**  
PARADIGM TRANSPORTATION SOLUTIONS LIMITED  
150 Pinebush Rd. Suite 5A  
Cambridge, Ontario  
N1R 8J8  
T: 416-479-9684

**LANDSCAPE CONSULTANTS**  
MASONSONG ASSOCIATES ENGINEERING LIMITED  
7800 Kennedy Road, Suite 20  
Markham, Ontario  
L3R 2C7  
T: 905-944-0162

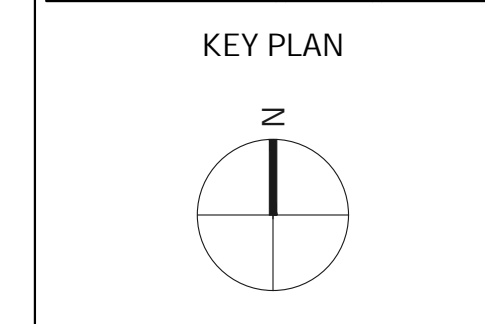
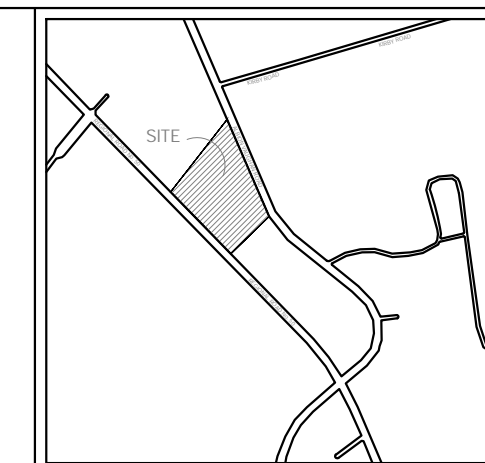
- GENERAL NOTES**
- For landscaping, refer to landscape drawings
  - For proposed grading, refer to landscape drawings and approved grading plan.
  - For detailed lighting plan, refer to lighting drawings.
  - All perimeter existing information indicated taken from survey.
  - All work to be done in conformance with the 2012 Ontario Building Code (O.B.C., as amended)

- LIST OF ARCHITECTURAL DRAWINGS**
- A1.0 COVER PAGE
  - A1.1 SITE PLAN
  - A1.2 SITE PLAN - EXCAVATION AND FORMING PHASES PLANS
  - A2.0 P1 LEVEL (TOWNHOMES, TOWERS A & B)
  - A2.1 P2 LEVEL (TOWNHOMES, TOWERS A & B)
  - A2.2A MAIN FLOOR PLAN TOWER A
  - A2.2B MAIN FLOOR PLAN TOWER B

- LIST OF ARCHITECTURAL DRAWINGS**
- A2.3A 2ND FLOOR PLAN - TOWER A
  - A2.3B 2ND FLOOR PLAN - TOWER B
  - A2.4A 3RD TO 6TH FLOOR PLAN - TOWER A
  - A2.4B 3RD TO 7TH FLOOR PLAN - TOWER B
  - A2.5A PENTHOUSE - TOWER A
  - A2.5B PENTHOUSE - TOWER B
  - A2.6 MAIN AMENITY CORE FLOOR PLANS

- LIST OF ARCHITECTURAL DRAWINGS**
- A3.0 ELEVATIONS
  - A3.1 ELEVATIONS
  - A3.2 ELEVATIONS
  - A3.3 ELEVATIONS
  - A4.0 BUILDING SECTIONS

SITE DEVELOPMENT - TOWN OF CALEDON - ZONING BY-LAW RM ZONE (MULTIPLE RESIDENTIAL AREA)			
<b>A - LOT AREA</b>			
TOTAL LOT AREA	m <sup>2</sup>	SO/FT	
GROSS SITE AREA (BEFORE ROAD WIDENING)	15375.96	165055.46	
DEVELOPABLE SITE AREA (AFTER ROAD WIDENING)	13333.83	143524.15	
NET DEVELOPABLE AREA	10255.99	110394.56	
<b>B - GROSS FLOOR AREA</b>			
<b>B.1 - UNDERGROUND LEVEL</b>			
	QTY.	m <sup>2</sup>	SO/FT
PARKING LEVEL 1 - P1	1	8860.96	95378.58
PARKING LEVEL 2 - P2	1	8860.96	95378.58
TOTAL GFA		17721.92	190757.16
<b>B.2 - TOWER A (RESIDENTIAL CONDO GFA)</b>			
GROUND FLOOR LEVEL	1	1829.26	19689.99
2ND FLOOR LEVEL	1	1870.33	20132.06
3RD FLOOR LEVEL	1	1882.15	20259.29
4TH TO 6TH FLOOR LEVEL	3	5646.45	60777.88
TOTAL GFA		11228.19	120859.23
TOTAL GFA (INCL. BALC./TERRACES)		12993.67	139862.70
<b>B.3 - TOWER B (RESIDENTIAL CONDO GFA)</b>			
GROUND FLOOR LEVEL	1	2019.14	21733.84
2ND FLOOR LEVEL	1	2019.14	21733.84
3RD FLOOR LEVEL	1	2113.65	22751.14
4TH TO 7TH FLOOR LEVEL	4	8454.60	91004.56
TOTAL GFA		14606.53	157223.38
TOTAL GFA (INCL. BALC./TERRACES)		17330.86	186547.82
<b>B.4 - AMENITY SPACE (GFA)</b>			
GROUND FLOOR LEVEL	1	432.68	4657.33
2ND FLOOR LEVEL	1	432.68	4657.33
3RD FLOOR LEVEL (TERRACE)	1	147.97	1592.74
TOWER A (ROOF LEVEL)	1	630.34	6784.92
TOWER B (ROOF LEVEL)	1	575.52	6194.85
TOTAL GFA		2219.19	23887.16
<b>B.5 - SERVICE AREAS (GFA)</b>			
TOWER A - STORAGE		138.78	1493.82
TOWER B - STORAGE		73.61	792.33
TOTAL GFA		212.39	2286.15
<b>B.6 - GRAND TOTAL GFA</b>			
TOTAL GFA (NOT INCLUDING UNDERGROUND PARKING, BALCONIES & TERRACES)		28266.30	304255.92
TOTAL GFA (INCLUDING TERRACES & BALCONIES)		32756.11	352583.83
<b>C - FLOOR SPACE INDEX (FSI)</b>			
FSI - TOTAL GFA / TOTAL GROSS LOT AREA		28266.30 / 13333.83	
TOTAL SITE FSI		2.12 times	
FSI - TOTAL GFA/TOTAL NET DEVELOPABLE AREA		28266.30 / 10255.99	
TOTAL USABLE SITE FSI		2.76 times	
<b>D - SITE STATISTICS</b>			
BUILDING HEIGHT	N/A	25.51 m	83.69 ft
LOT COVERAGE	29% (Max.) - 2051.20 m <sup>2</sup>	5102.80 m <sup>2</sup>	54926.08 sq/ft
LANDSCAPE AREA	45% (Min.) - 4615.20 m <sup>2</sup>	6954.04 m <sup>2</sup>	74852.66 sq/ft
FRONTAGE	30 m (Min.)	106.90 m	350.72 ft
FRONT YARD	9.0 m (Min.)	9.20 m	30.18 ft
REAR YARD	7.50 m (Min.)	6.90 m	22.64 ft
SOUTH SIDE YARD	7.50 m (Min.)	3.97 m	13.02 ft
NORTH SIDE YARD	7.50 m (Min.)	5.65 m	18.54 ft
SNOW STORAGE	2% (Max.) - 205.12 m <sup>2</sup>	281.82 m <sup>2</sup>	3033.49 sq/ft
PLAY FACILITY AREA	4% (Min.) - 410.24 m <sup>2</sup>	136.92 m <sup>2</sup>	1473.79 sq/ft



No.	ISSUED FOR	DESCRIPTION	DATE
1	ISSUED FOR CONSTRUCTION		
	ISSUED FOR BID		
	ISSUED FOR BUILDING PERMIT		
	ISSUED FOR SITE PLAN APPROVAL		
	SUBMITTALS		

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT AND MUST REPORT ANY DISCREPANCIES TO THE DESIGNER BEFORE PROCEEDING WITH CONSTRUCTION.  
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED AND SIGNED BY THE DESIGNER.  
DO NOT SCALE DRAWINGS.

**SURVEYOR'S REAL PROPERTY REPORT**  
PART 1, PLAN OF PART OF LOT 1

CONCESSION 7 (GEOGRAPHIC TOWNSHIP OF ALBION)

TOWN OF CALEDON  
REGIONAL MUNICIPALITY OF PEEL

SCALE AS NOTED IN ORIGINAL SURVEY PLAN  
David B. Searles Surveying Ltd.  
ONTARIO LAND SURVEYORS

**METRIC**  
DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

**BENCH MARK NOTE**  
ELEVATIONS ARE REFERRED TO THE CITY OF BRAMPTON BENCHMARK No. 042010221, BEING A BRASS CAP IN CONCRETE APPROX. 21 m SOUTH OF CENTRELINE OF NASHVILLE ROAD AND 11 m EAST OF CENTRELINE OF REGIONAL ROAD 50, IN FRONT OF GAS STATION/COFFEE SHOP, HAVING AN ELEVATION OF 220.967 m.

**CAUTION**  
LOCATIONS OF ALL UTILITIES ARE APPROXIMATE. ALL UTILITIES SHOULD BE CONTACTED PRIOR TO ANY DIGGING OR CONSTRUCTION.

**NOTE**  
PROPERTY LIMITS ARE NOT FENCED UNLESS OTHERWISE NOTED ON THE FACE OF THE PLAN.

DATE: 25/01/2023 PROJECT No: 2019-22  
SCALE: AS NOTED DRAWING No: A1.0  
DESIGNED BY: L.C. REVIEWED BY: F.C.

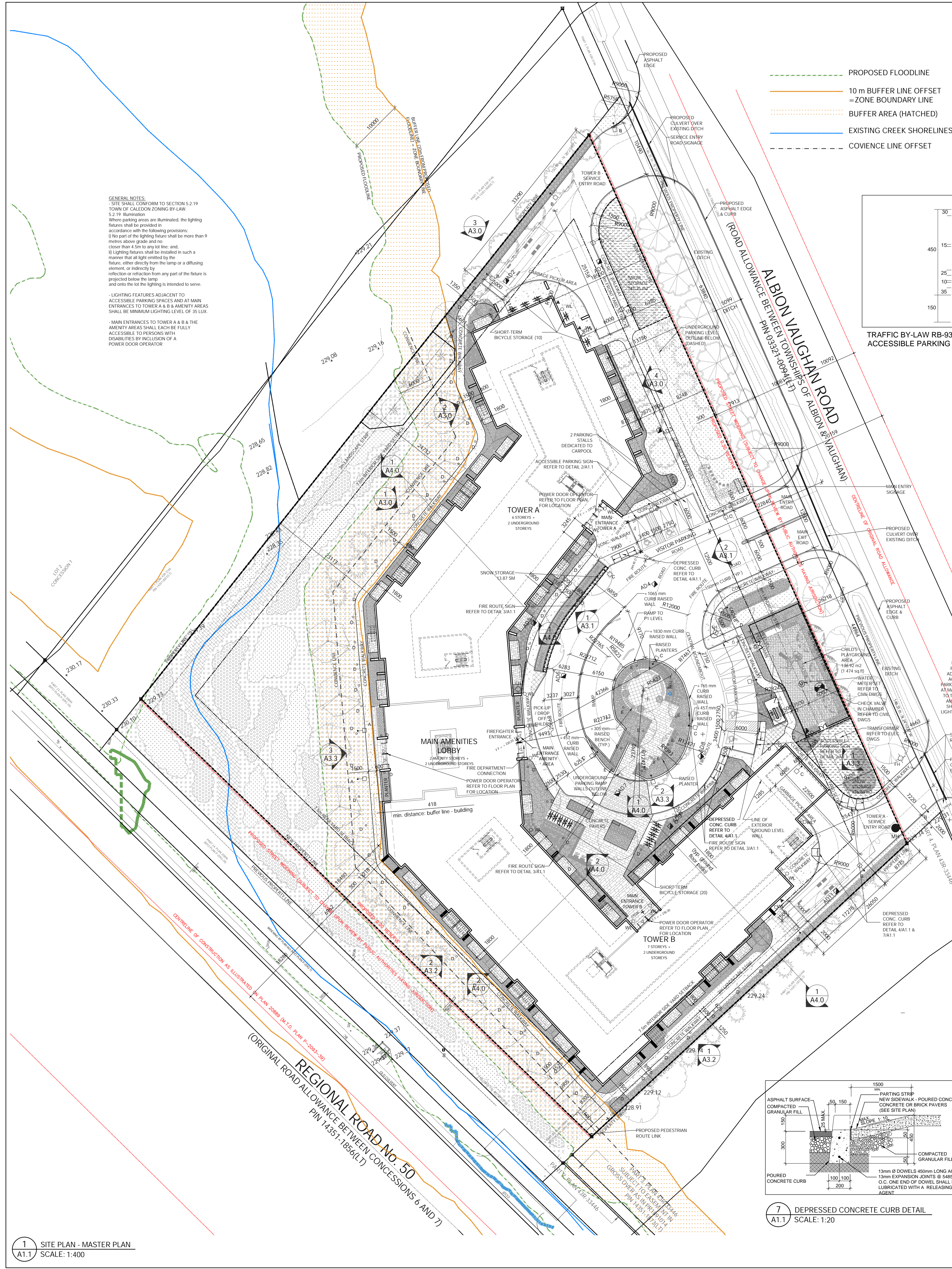
**FCA**  
FAUSTO CORTESE ARCHITECTS  
3590 RUTHERFORD RD. UNIT 7  
VAUGHAN, ONTARIO, L4H 3T8  
416-806-7000  
FCORTESE@FCAARCHITECTS.CA

PROPOSED MIX-USED CONDO DEVELOPMENT  
12148 ALBION VAUGHAN RD.  
BOLTON  
TOWN OF CALEDON

COVER PAGE

DATE: 25/01/2023 PROJECT No: 2019-22  
SCALE: AS NOTED DRAWING No: A1.0  
DESIGNED BY: L.C. REVIEWED BY: F.C.

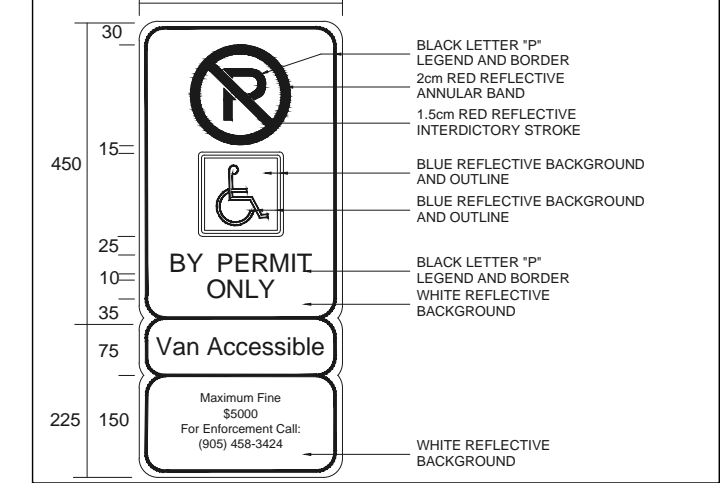
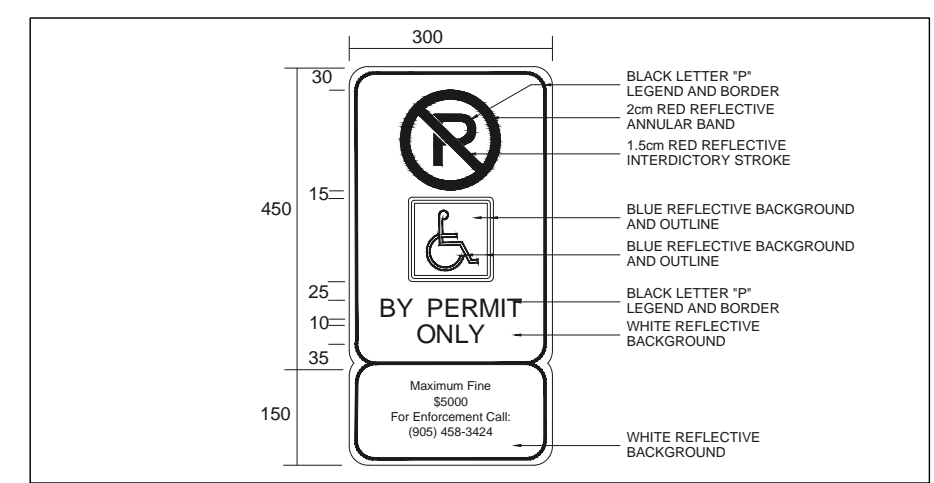
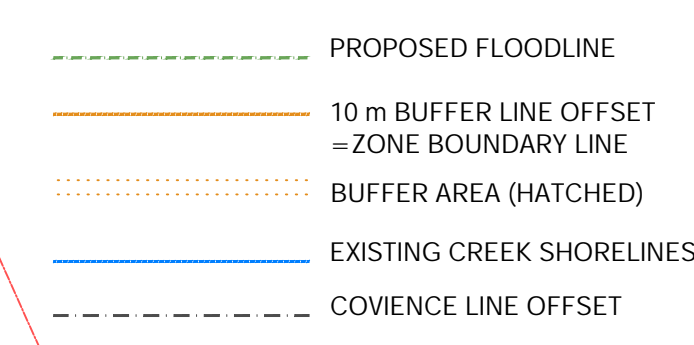
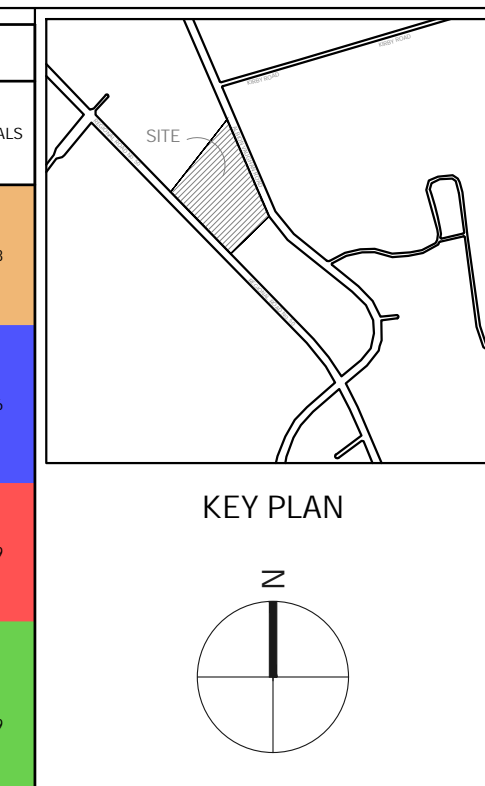




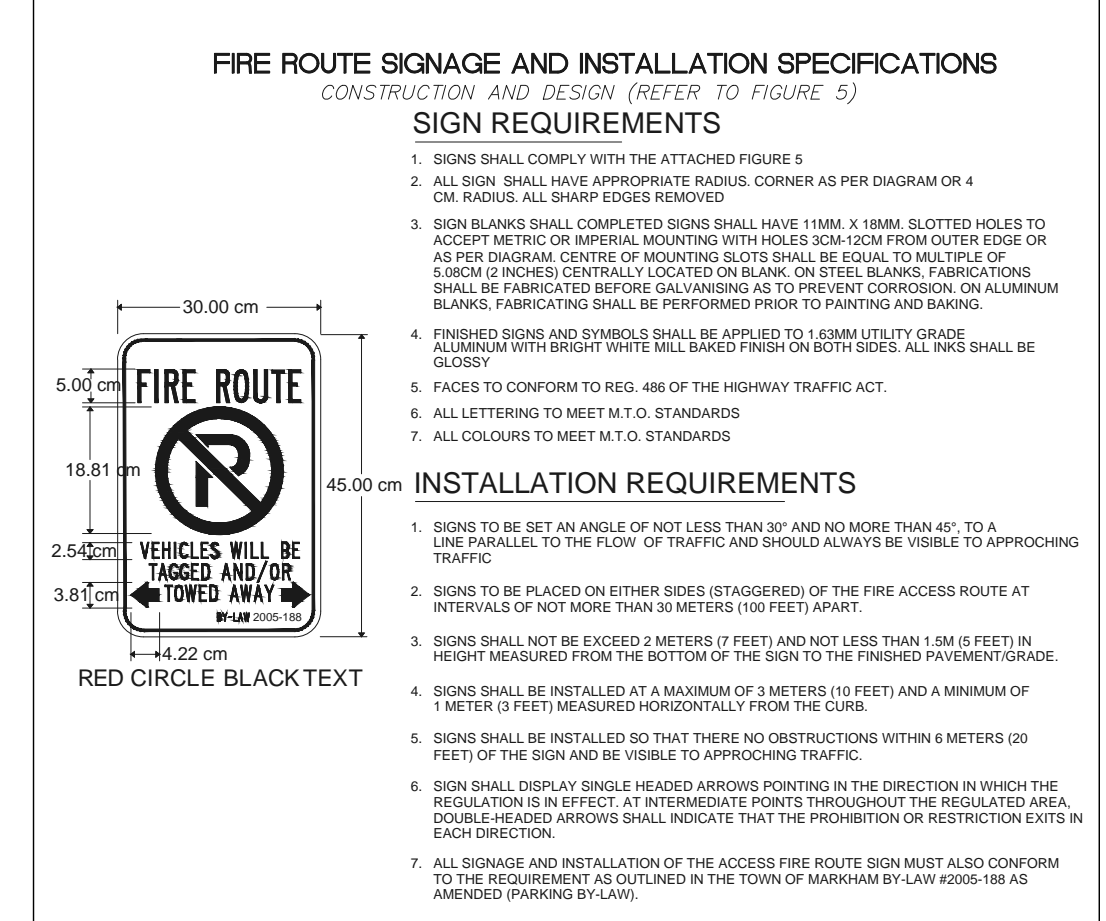
**SITE STATISTICS:**

GROSS SITE AREA (BEFORE ROAD WIDENING)	15,375.96 m <sup>2</sup> (165,505 sq/ft) 1.54 ha
HWY 50 ROAD WIDENING	811.65 m <sup>2</sup> (8,737 sq/ft)
ALBION/VAUGHAN ROAD WIDENING	1,151.89 m <sup>2</sup> (12,399 sq/ft)
0.3m RESERVES	78.59 m <sup>2</sup> (846 sq/ft)
DEVELOPABLE SITE AREA (AFTER ROAD WIDENING & RESERVE DEDUCTIONS)	13,333.83 m <sup>2</sup> (143,524 sq/ft) 1.33 ha
NATURAL HERITAGE/10m BUFFER AREA	3,077.84 m <sup>2</sup> (33,130 sq/ft)
NET DEVELOPABLE AREA	10,255.99 m <sup>2</sup> (110,394 sq/ft) 1.03 ha
NET DENSITY (UNIT/HECTARE)	258.5

STORIES	UNITS TYPE			TOWERS														TOTALS	
	UNIT TYPE	SOFT	HT	TOWER A							TOWER B								
1 BEDROOM	TYPE 1.4	930-033	15-44	6	7	6	6	6	6	5	6	6	6	6	6	6	6	78	
1 BEDROOM + DEN	TYPE 1.5	800-100	14-93	5	5	3	3	3	3	2	2	2	2	2	2	2	2	34	
2 BEDROOM	TYPE 1.13	902-114	16-50	6	5	5	5	5	5	12	11	9	9	9	9	9	9	99	
2 BEDROOM + LARGE BALCONY	TYPE 1.9	1011-124	14-75	0	2	4	4	4	4	0	1	4	4	4	4	4	34		
3 BEDROOM	TYPE 1	106-101	14-147	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	
PARTIAL UNITS PER TOWER				18	20	19	19	19	19	20	21	22	22	22	22	22	22	22	
TOTAL UNITS				114							265							151	



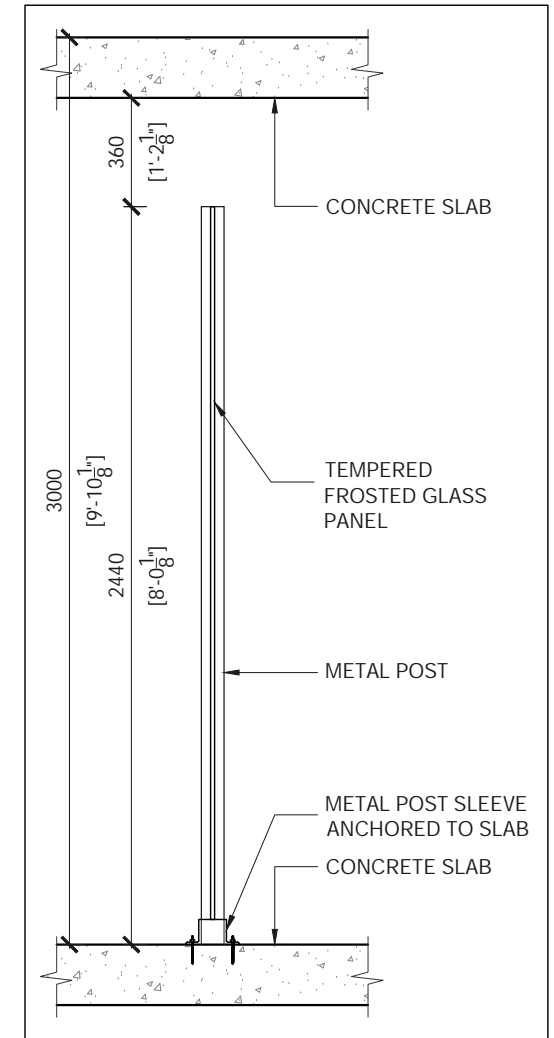
2 BY PERMIT ONLY ACCESSIBLE PARKING SIGN DETAILS SCALE: NTS



3 FIRE ROUTE SIGN DETAIL SCALE: NTS

\* INCLUDES 40 BARRIER-FREE SUITES - (15% OF TOTAL SUITES OBC 3.8.2.1.(5))

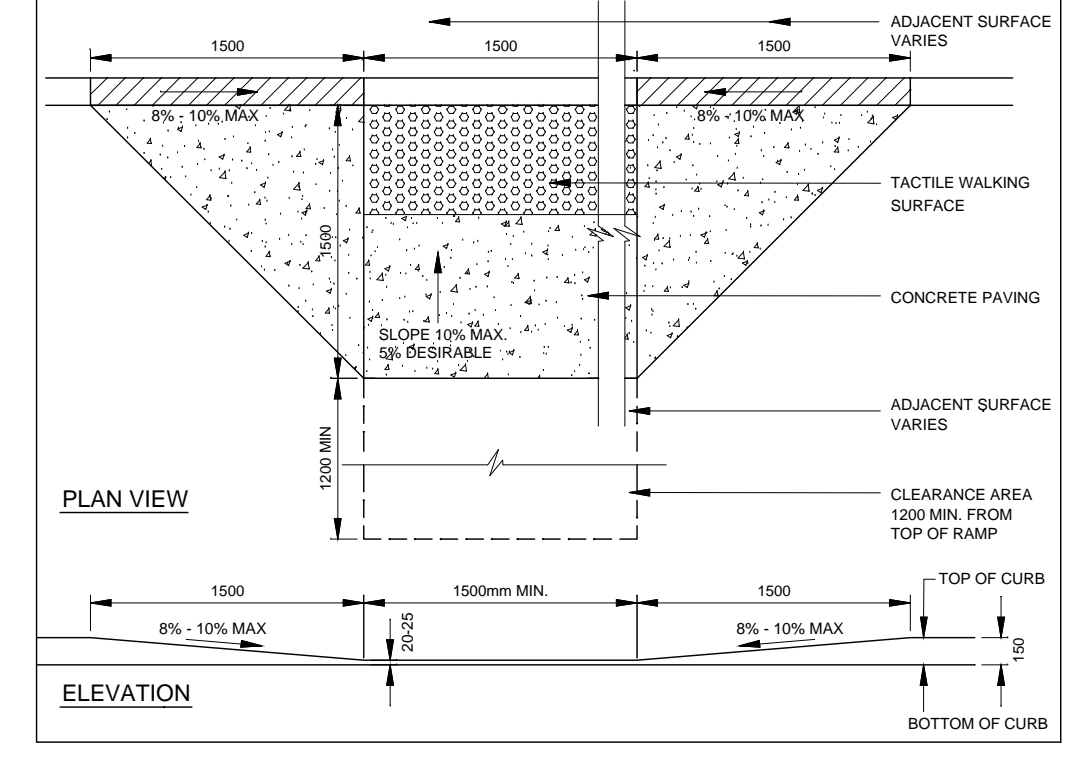
FLOOR	TOWER A	TOWER B	TOTAL
1ST FLOOR	(2) - 1 BEDROOM + (1) 2 BEDROOM	(1) - 1 BEDROOM + (2) 2 BEDROOM	(6) - TOTAL
2ND FLOOR	(2) - 1 BEDROOM + (1) 2 BEDROOM	(1) - 1 BEDROOM + (2) 2 BEDROOM	(6) - TOTAL
3RD FLOOR	(2) - 1 BEDROOM + (1) 2 BEDROOM	(1) - 1 BEDROOM + (2) 2 BEDROOM	(6) - TOTAL
4TH FLOOR	(2) - 1 BEDROOM + (1) 2 BEDROOM	(1) - 1 BEDROOM + (2) 2 BEDROOM	(6) - TOTAL
5TH FLOOR	(2) - 1 BEDROOM + (1) 2 BEDROOM	(1) - 1 BEDROOM + (2) 2 BEDROOM	(6) - TOTAL
6TH FLOOR	(2) - 1 BEDROOM + (1) 2 BEDROOM	(1) - 1 BEDROOM + (2) 2 BEDROOM	(6) - TOTAL
7TH FLOOR	N/A	(1) - 1 BEDROOM + (3) 2 BEDROOM	(4) - TOTAL
<b>TOTAL</b>	<b>(19) 1 BEDROOM + (21) 2 BEDROOM</b>		<b>(40) BARRIER-FREE SUITES</b>



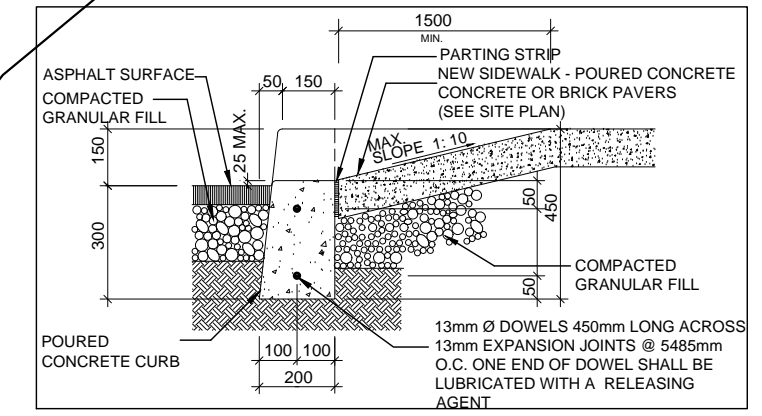
8 PRIVACY PANEL SCREENS SCALE: 1:25

LUMINAIRE SCHEDULE (REFER TO ELEC. DWGS)

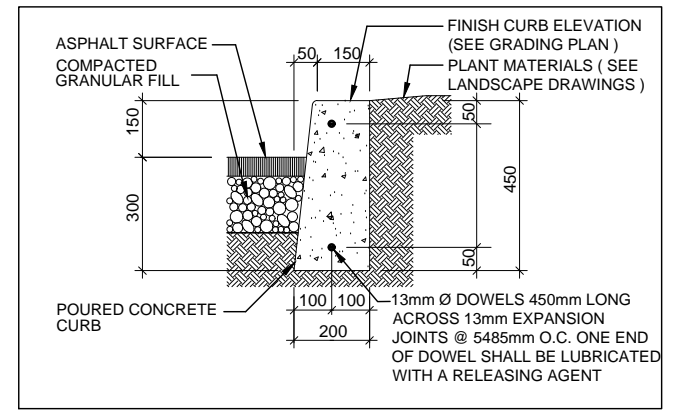
SYMBOL	QTY	LABEL	DESCRIPTION	LUM. WATTS	LLF	LUM. LUMENS
13	2	A	MO13HL-PP-MW-8L40K-DCC-DV	11.47	0.900	963
2	6	B	MRM-LED-07L-SIL-2-30-70CRHL	53	0.880	4167
6	6	B	MRM-LED-07L-SIL-3-30-70CRHL	53	0.880	5050
13	2	C	MRM-LED-07L-SIL-3-30-70CRI	53	0.880	6889
66	2	D	MRB-LED-25L-ACR-A-30	23	0.930	1633
12	2	E	MRB-LED-25L-ACR-S-30	30	0.930	2156



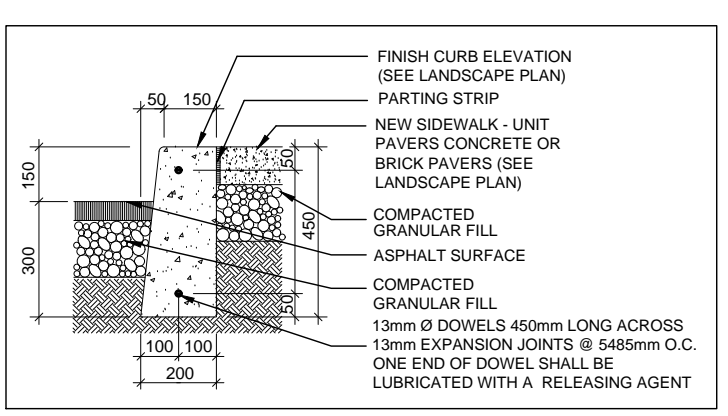
4 DEPRESSED CONC. CURB PLAN VIEW SCALE: NTS



7 DEPRESSED CONCRETE CURB DETAIL SCALE: 1:20



6 CONCRETE CURB DETAIL SCALE: 1:20



5 CONCRETE CURB/SIDEWALK DETAIL SCALE: 1:20

PARKING REQUIRED BY LAW - PARKING REQUIREMENTS

CONDO UNITS	PARKING SPOTS PER DWELLING UNIT	398
VISITOR - CONDO UNIT PARKING SPACE	0.25 PARKING SPACES PER UNIT FOR VISITOR PARKING IN A DESIGNATED VISITOR PARKING AREA	66
ACCESSIBLE PARKING - REQUIRED 2% OF TOTAL = 8		11,240
GRAND TOTAL PARKING REQUIRED		463,750

PARKING PROVIDED

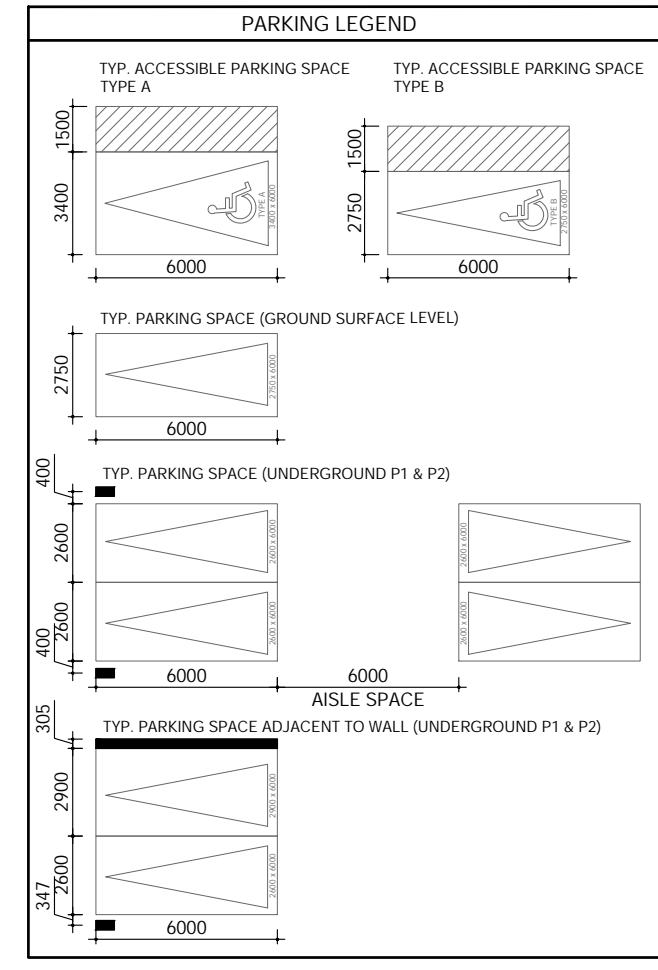
RESIDENT (ACCESSIBLE)	RESIDENT SPOTS	TOTAL
P1 LEVEL	8	213
P2 LEVEL	0	231
GROUND SURFACE LEVEL	4	6
GRAND TOTAL PARKING PROVIDED	12	450

BICYCLE STORAGE

GROUND SURFACE LEVEL	LONG TERM	SHORT TERM	TOTAL
P1 LEVEL	28	14	
P2 LEVEL	56	28	
GRAND TOTAL STORAGE SPOTS	84	72	156

LEGEND

- PROPOSED NEW GRADE
- EXISTING GRADE
- PROPOSED CATCH BASINS
- MAN DOOR ENTRANCES
- DRIVE-IN DOOR LOCATIONS
- FENCING
- SIGNAGE
- GROUND LIGHTING REFER TO LUMINAIRE SCHEDULE
- WALL LIGHTING
- FIRE HYDRANT LOCATION
- SNOW STORAGE AREA
- CHILD'S PLAYGROUND AREA



REVISIONS

No.	DESCRIPTION	DATE
1	ISSUED FOR CONSTRUCTION	2019/09/11

ISSUED FOR CONSTRUCTION  
 ISSUED FOR BID  
 ISSUED FOR BUILDING PERMIT  
 ISSUED FOR SITE PLAN APPROVAL  
 SUBMITTALS

**FCA**  
**FAUSTO CORTESE ARCHITECTS**  
 3590 RUTHERFORD RD. UNIT 7  
 VAUGHAN, ONTARIO, L4H 3T8  
 416-806-7000  
 FCORTESE@FCAARCHITECTS.CA

PROPOSED MIX-USE CONDO DEVELOPMENT  
 12148 ALBION VAUGHAN RD.  
 BOLTON  
 TOWN OF CALEDON

**SITE PLAN - MASTER PLAN**

DATE: 2019/09/11  
 SCALE: AS NOTED  
 DRAWING No: 2019-22  
 PROJECT No: A1.1

1 SITE PLAN - MASTER PLAN SCALE: 1:400

# **Appendix B**

## **Borehole Logs (Palmer, 2020 and 2021)**

### **Davroc (2020)**







## RECORD OF BOREHOLE No BH20-2

METRIC 1 OF 1

W.P. \_\_\_\_\_ LOCATION See Borehole Location Plan (UTM 17T) ORIGINATED BY AL  
 DIST \_\_\_\_\_ HWY \_\_\_\_\_ BOREHOLE TYPE Hollow Stem Auger COMPILED BY AL  
 DATUM Geodetic DATE Aug-17-2020 to Aug-17-2020 CHECKED BY \_\_\_\_\_

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					POCKET PEN. (G <sub>u</sub> ) (kPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa						
						20	40	60	80	100	W <sub>p</sub>	W	W <sub>L</sub>	GR SA SI CL
0.0	Ground Surface <b>TOPSOIL:</b>													
0.2	<b>FILL:</b> brown and grey silty sand, some gravel, contains rootlets		1	SS	5									
1.0			2	SS	5									
1.5	<b>Clayey Silt Till:</b> some sand, trace gravel, occ. cobbles and boulders, contains sand and silt seams  disturbed till		3	SS	6									
2.0			4	SS	26									
3.0			5	SS	38									
4.0	turns from brown to grey													
4.7	<b>Silty Clay:</b> grey, trace silt, moist		6	SS	16									
6.2	<b>Clayey Silt Till:</b> some sand, trace gravel, occ. cobbles and boulders, contains sand and silt seams		7	SS	72/ 0.18 m									
6.4	<b>END OF BOREHOLE</b> Notes: Upon completion of drilling, a 50mm diameter monitoring well was installed in the borehole. The well was completed with a stick up casing.  Well Installation Details: Bentonite: 0.0-2.4 m Sand: 2.7 - 6.7 m Screen: 3.3 - 6.4 m													

GROUNDWATER ELEVATIONS  
 Measurement    

+<sup>3</sup>, ×<sup>3</sup>: Numbers refer to Sensitivity      ○ = 3% Strain at Failure

## RECORD OF BOREHOLE No BH20-3

METRIC 1 OF 1

W.P. \_\_\_\_\_ LOCATION See Borehole Location Plan (UTM 17T) ORIGINATED BY AL  
 DIST \_\_\_\_\_ HWY \_\_\_\_\_ BOREHOLE TYPE Hollow Stem Auger COMPILED BY AL  
 DATUM Geodetic DATE Aug-17-2020 to Aug-17-2020 CHECKED BY \_\_\_\_\_

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					POCKET PEN. (Cu) (kPa)	NATURAL UNIT WT (kN/m <sup>3</sup> )	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	NUMBER	TYPE	"N" VALUES			20	40	60	80	100			
0.0	Ground Surface													
0.1	<b>TOPSOIL:</b> FILL: brown silty sand, some gravel, contains rootlets	1	SS	5										
0.7	<b>Clayey Silt Till:</b> some sand, trace gravel, occ. cobbles and boulders, contains sand and silt seams	2	SS	24										
		3	SS	22										
		4	SS	33										
		5	SS	44										
	turns from brown to grey	6	SS	15										
		7	SS	27										
6.7	<b>END OF BOREHOLE</b> Notes: Upon completion of drilling, a 50mm diameter monitoring well was installed in the borehole. The well was completed with a stick up casing.  Well Installation Details: Bentonite: 0.0-2.4 m Sand: 3.0 - 6.7 m Screen: 3.6 - 6.7 m													

PALMER™, THE SOIL CLUB, CALIFORNIA, CALIFORNIA, CALIFORNIA, CALIFORNIA

**GROUNDWATER ELEVATIONS**  
 Measurement

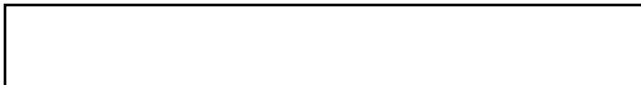
+<sup>3</sup>, ×<sup>3</sup>: Numbers refer to Sensitivity      ○ = 3% Strain at Failure

PROJECT: 1604603 Phase Two ESA	REF. NO.: 1604603
CLIENT: 12148 Albion Vaughan Inc	Method: Direct Push with Split Spoon
PROJECT LOCATION: 12148 Albion Vaughan Road, Caledon, ON	Diameter: 150 mm
DATUM: Geodetic	Date: Mar-04-2021
BH LOCATION: 4856296.391N 604546.994E	COMPILED BY: SS

SOIL PROFILE		SAMPLES		SAMPLE REMARKS	Head Space Combustible Vapor Reading (ppm)	LABORATORY ANALYSIS AND REMARKS	GROUND WATER CONDITIONS	WELL CONSTRUCTION DETAILS
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER					
229.0	Ground Surface							
0.0 228.7	<b>Fill:</b> Brown silty clay fill with organics	*						
0.3	<b>Fill:</b> Clayey silt fill with trace sand, brown, with debris between 0.61 and 0.91	[Hatched Pattern]						
227.0								
2.1	<b>Till:</b> Clayey silt till, grey, with cobbles at 2.59m, 4.70m, and 6.25m, and a sand seam at 3.50m	[Cross-hatched Pattern]						-Bentonite
6.1	BH Augured to 12.80 Sand seam between 8.20 and 9.40 m							-Sand
216.2						Analysis: PHCs, VOCs, Metals		W. L. 220.5 m Mar 04, 2021
12.8	<b>END OF BOREHOLE</b> Notes: 1. Upon completion of drilling, a 50mm diameter monitoring well was installed in the borehole. 2. Augured to 12.53 m							-Screen

GROUNDWATER ELEVATIONS

Measurement



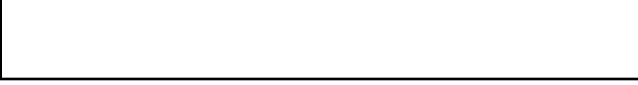
PALMER ENV. AND SITE CLUB PALMER DIVISION FOR PALMER CONSULTING INC. 12148 ALBION VAUGHAN ROAD, CALEDON, ON L7R 4R4

PROJECT: 1604603 Phase Two ESA	REF. NO.: 1604603
CLIENT: 12148 Albion Vaughan Inc	Method: Direct Push with Split Spoon
PROJECT LOCATION: 12148 Albion Vaughan Road, Caledon, ON	Diameter: 150 mm
DATUM: Geodetic	Date: Mar-04-2021
BH LOCATION: 4856318.017N 604569.159E	COMPILED BY: SS

SOIL PROFILE		SAMPLES		SAMPLE REMARKS	Head Space Combustible Vapor Reading (ppm)	LABORATORY ANALYSIS AND REMARKS	GROUND WATER CONDITIONS	WELL CONSTRUCTION DETAILS
(m) ELEV DEPTH	DESCRIPTION	STRATA PLOT	NUMBER TYPE					
230.6	Ground Surface							
0.0 230.3	<b>Fill:</b> Brown silty clay fill with organics		1	SS		Analysis: PHCs, BTEX		
0.3	<b>Fill:</b> Clayey silt fill with trace sand, brown, with debris between 0.61 and 0.91		2	SS				
			3	SS				
228.5	<b>Till:</b> Clayey silt till, grey, with cobbles at 2.59m, 4.70m, and 6.25m, and a sand seam at 3.50m		4	SS				
			5	SS				
			6	SS				
			7	SS				
			8	SS				
224.5								
6.1	BH Augured to 12.53 Sand seam between 8.20 and 9.40 m					Analysis: PHCs, VOCs, Metals		
218.0	<b>END OF BOREHOLE</b> Notes: 1. Upon completion of drilling, a 50mm diameter monitoring well was installed in the borehole.							
12.5								

GROUNDWATER ELEVATIONS

Measurement



PALMER ENV. AND SITE CLUB  
PALMER ENVIRONMENTAL SERVICES - THE PALMER GROUP - 12148 ALBION VAUGHAN ROAD, SP1, E4A4











DAVROC  
 Unit 21, 2051 Williams Parkway  
 Brampton, Ontario, L6Y-3R9  
 Telephone:(905)792-7792

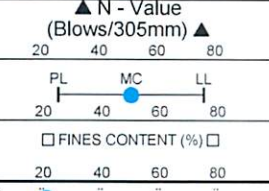
# BOREHOLE NUMBER BH 1

CLIENT Fausto Cortese Architects (FCA)  
 PROJECT NUMBER L20-0711MT  
 DATE STARTED (dd/mm/yy) 27-11-20 COMPLETED \_\_\_\_\_  
 DRILLING CONTRACTOR Tri-Phase Group  
 DRILLING METHOD Hollow stem auger  
 LOGGED BY SR CHECKED BY GW  
 NOTES CME 75 Track

PROJECT NAME Condominium  
 PROJECT LOCATION 12148 Albion Vaughan Rd  
 GROUND ELEVATION 99.45 m HOLE SIZE 0.15  
 GROUND WATER LEVELS:  
 AT TIME OF DRILLING --- Dry, Nov 27, 2020  
 AT END OF DRILLING --- Wet, Nov 27, 2020  
 AFTER DRILLING ---

GEOTECH BH PLOTS L20-0711-12148 ALBION VAUGHAN RD.GPJ GINT STD CANADA.GDT 2-12-20

DEPTH (m)	ELEV DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	N VALUE	POCKET PEN. (kPa)	DRY UNIT WT. (Mg/m <sup>3</sup> )	▲ N - Value (Blows/305mm) ▲		
										20	40	60
99.45												
0.4	99.20		TOPSOIL -Blackish Brown -Organics -Grass -Rootlets -Seams -Trace Sand		SS SS1	54	6			5		
0.8	0.20				SS SS2	93	36			36		
1.2					SS SS3	100	35			35		
1.6												
2.0												
2.4	97.16			FILL -Clayey Silt -Brown to Gray -Rootlets -Seams -Oxidation -Trace Gravel -Layered at Depth		SS SS4	100	42	300		42	
2.8	2.29					SS SS5	100	40			40	
3.2												
3.6												
4.0												
4.4			CLAYEY SILT -Brown to Gray -Oxidation -Some Gravel -Trace Sand -High Clay Content at Depth -Dense to Compact		SS SS6	100	32	450		32		
4.8												
5.2												
5.6												
6.0												
6.4												
6.8												
7.2												
7.6			SILT -Gray -Layered -Some Clay at Depth -Wet at Depth -Very Dense to Dense		SS SS9	100	86			86		
8.0												
8.4												
8.8			CLAY -Gray -Some Silt -Sand and Gravel layer at depth 13.7 to 14.2m -Spoon Refusal at depth 15.5m -Hard		SS SS10	100	45			45		
9.2	90.30											
9.6	9.15											
10.0												
10.4												
10.8												
11.2												
11.6												
12.0	87.25											
12.4	12.20											
12.8												
13.2												
13.6												
14.0												
14.4												
14.8												
15.2												
15.6	83.75											
15.70			Bottom of hole at 15.70 m.		SS SS13	100	50+			50	130mm	





DAVROC  
 Unit 21, 2051 Williams Parkway  
 Brampton, Ontario, L6Y-3R9  
 Telephone: (905) 792-7792

# BOREHOLE NUMBER BH 2

CLIENT Fausto Cortese Architects (FCA) PROJECT NAME Condominium  
 PROJECT NUMBER L20-0711MT PROJECT LOCATION 12148 Albion Vaughan Rd  
 DATE STARTED (dd/mm/yy) 24-11-20 COMPLETED \_\_\_\_\_ GROUND ELEVATION 98.84 m HOLE SIZE 0.15  
 DRILLING CONTRACTOR Tri-Phase Group GROUND WATER LEVELS:  
 DRILLING METHOD Hollow stem auger AT TIME OF DRILLING --- Snow & Dry, Nov 24, 2020  
 LOGGED BY SR CHECKED BY GW AT END OF DRILLING --- Wet, Nov 24, 2020  
 NOTES CME 55TT Truck AFTER DRILLING ---

DEPTH (m)	ELEV DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM	SAMPLE TYPE NUMBER	RECOVERY % (ROD)	N VALUE	POCKET PEN. (kPa)	DRY UNIT WT. (Mg/m <sup>3</sup> )	▲ N - Value (Blows/305mm) ▲		
										20	40	60
98.84												
0.4	98.74		TOPSOIL -Brown -Organics -Seams -Sand and Gravel		SS1	78	10			10▲	14▲	
0.8	98.70											
1.2												
1.6	97.32											
2.0	1.52			FILL -Silty Clay -Brown -Trace Gravel -Oxidation		SS3	100	26	400		26▲	47▲
2.4												
2.8												
3.2												
3.6				CLAYEY SILT -Brown to Gray -Oxidation -Trace Gravel -Spoon refusal at 7.8m -Dense to Compact to Very Dense		SS5	100	48	450		48▲	
4.0												
4.4												
4.8												
5.2												
5.6												
6.0												
6.4												
6.8												
7.2												
7.6												
8.0												
8.4												
8.8												
9.2	89.64		SAND -Gray -Some Clay -Sand at depth 9.2 to 9.6m and 12.2 to 12.7m -Fine Sand at depth 10.7 to 11.1m -Wet at Depth -Very Dense to Compact		SS9	100	65			17▲	18▲	
9.6	9.20											
10.0												
10.4												
10.8												
11.2												
11.6												
12.0												
12.4												
12.8	86.14		CLAYEY SILT -Gray -Trace Sand -Very Dense		SS11	89	14			17▲	130mm▲	
13.2	12.70											
13.6												
14.0												
14.4												
14.8												
15.2												
15.6	83.14											
15.70			Bottom of hole at 15.70 m.		SS13	100	92	400		14▲	81▲	

GEOTECH BH PLOTS L20-0711-12148 ALBION VAUGHAN RD.GPJ GINT STD CANADA.GDT 2-12-20

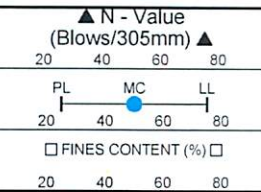


DAVROC  
 Unit 21, 2051 Williams Parkway  
 Brampton, Ontario, L6Y-3R9  
 Telephone: (905) 792-7792

# BOREHOLE NUMBER BH 3

CLIENT Fausto Cortese Architects (FCA) PROJECT NAME Condominium  
 PROJECT NUMBER L20-0711MT PROJECT LOCATION 12148 Albion Vaughan Rd  
 DATE STARTED (dd/mm/yy) 25-11-20 COMPLETED \_\_\_\_\_ GROUND ELEVATION 99.28 m HOLE SIZE 0.15  
 DRILLING CONTRACTOR Tri-Phase Group GROUND WATER LEVELS:  
 DRILLING METHOD Hollow stem auger AT TIME OF DRILLING --- Snow & Dry, Nov 25, 2020  
 LOGGED BY SR CHECKED BY GW AT END OF DRILLING --- Wet, Nov 25, 2020  
 NOTES CME 55TT Truck AFTER DRILLING ---

DEPTH (m)	ELEV DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	N VALUE	POCKET PEN. (kPa)	DRY UNIT WT. (Mg/m <sup>3</sup> )	▲ N - Value (Blows/305mm) ▲		
										20	40	60
99.28	99.28											
0.4	99.00		TOPSOIL		SS SS1	78	13				13▲	
0.8	99.00		-Brown									
1.2	99.00		-Organics									
1.6	97.76		-Sand and Gravel									
2.0	1.52		FILL									
2.4		-Clayey Silt			SS SS3	100	27				27▲	
2.8		-Brown										
3.2		-Some Gravel										
3.6		-Oxidation			SS SS4	100	30				30▲	
4.0		CLAYEY SILT						400				
4.4		-Brown to Gray										
4.8		-Oxidation										
5.2		-Seams										
5.6		-Trace Gravel										
6.0		-High Clay Content at Depth										
6.4		-Compact										
6.8	92.68		SILT & SAND		SS SS7	100	20	300			20▲	
7.2	6.60		-Brown to Gray									
7.6			-Silt at depth 7.6 to 8.1m and 12.2 to 12.7m									
8.0			-Sand at depth 9.2 to 11.1m									
8.4			-Shale Fragments			SS SS8	93	71				71▲
8.8			-Some Clay at Depth									
9.2			-Wet at Depth									
9.6			-Auger refusal at depth 12.8m									
10.0			-Very Dense			SS SS9	100	84				84▲
10.4												
10.8												
11.2					SS SS10	89	85				85▲	
11.6												
12.0												
12.4												
12.8	86.48				SS SS11	100	50+				50+▲ 130mm	



GEOTECH BH PLOTS L20-0711-12148 ALBION VAUGHAN RD.GPJ GINT STD CANADA.GDT 2-12-20

12.80 Bottom of hole at 12.80 m.



DAVROC  
 Unit 21, 2051 Williams Parkway  
 Brampton, Ontario, L6Y-3R9  
 Telephone:(905)792-7792

# BOREHOLE NUMBER BH 4

CLIENT Fausto Cortese Architects (FCA) PROJECT NAME Condominium  
 PROJECT NUMBER L20-0711MT PROJECT LOCATION 12148 Albion Vaughan Rd  
 DATE STARTED (dd/mm/yy) 11-12-20 COMPLETED \_\_\_\_\_ GROUND ELEVATION 100.15 m HOLE SIZE 0.10  
 DRILLING CONTRACTOR Tri-Phase Group GROUND WATER LEVELS:  
 DRILLING METHOD Solid Stem Auger AT TIME OF DRILLING --- Dry, Dec 11, 2020  
 LOGGED BY SR CHECKED BY GW AT END OF DRILLING --- Wet, Dec 11, 2020  
 NOTES CME 55 Truck AFTER DRILLING ---

DEPTH (m)	ELEV DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	N VALUE	POCKET PEN. (kPa)	DRY UNIT WT. (Mg/m <sup>3</sup> )	▲ N - Value (Blows/305mm) ▲	
										20	40
100.15	100.15										
0.4	99.90	[Cross-hatched pattern]	TOPSOIL		SS SS1	61	8			8	
0.8	99.80		-Blackish Brown								
1.2	99.60		-Organics -Grass		SS SS2	89	9			9	
1.6	98.63	[Diagonal hatched pattern]	FILL		SS SS3	100	22	450		22	
2.0	1.52		-Silty Clay		SS SS4	100	44	450		44	
2.4			-Brown								
2.8			-Some Gravel -Some Sand		SS SS5	100	55	450		55	
3.2		[Diagonal hatched pattern]	CLAYEY SILT		SS SS6	100	27	400		27	
3.6			-Brown								
4.0			-Oxidation								
4.4	95.58		-Seams								
4.8	4.57		-Trace Gravel -Compact to Dense to Very Dense		SS SS7	100	44			44	
5.2		[Diagonal hatched pattern]	CLAY		SS SS8	100	50+			50+	130mm
5.6			-Gray								
6.0			-Seams								
6.4	93.55		-Trace Gravel -Very Stiff to Hard		SS SS9	100	51			51	
6.8	6.60	[Dotted pattern]	SAND								
7.2			-Brown								
7.6			-Some Silt								
8.0			-Wet -Very Dense								
8.4											
8.8											
9.2											
9.6	90.55										

9.60 Bottom of hole at 9.60 m.

GEOTECH BH PLOTS: L20-0711-12148 ALBION VAUGHAN RD.GPJ GINT STD CANADA.GDT 18-12-20





DAVROC  
 Unit 21, 2051 Williams Parkway  
 Brampton, Ontario, L6Y-3R9  
 Telephone:(905)792-7792

# BOREHOLE NUMBER BH 6

CLIENT Fausto Cortese Architects (FCA) PROJECT NAME Condominium  
 PROJECT NUMBER L20-0711MT PROJECT LOCATION 12148 Albion Vaughan Rd  
 DATE STARTED (dd/mm/yy) 27-11-20 COMPLETED \_\_\_\_\_ GROUND ELEVATION 100.38 m HOLE SIZE 0.10  
 DRILLING CONTRACTOR Tri-Phase Group GROUND WATER LEVELS:  
 DRILLING METHOD Solid Stem Auger AT TIME OF DRILLING --- Dry, Nov 27, 2020  
 LOGGED BY SR CHECKED BY GW AT END OF DRILLING --- Wet, Nov 27, 2020  
 NOTES CME 75 Track AFTER DRILLING ---

DEPTH (m)	ELEV DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	N VALUE	POCKET PEN. (kPa)	DRY UNIT WT. (Mg/m <sup>3</sup> )	▲ N - Value (Blows/305mm) ▲		
										20	40	60
100.38												
0.4	100.00		TOPSOIL -Blackish Brown		SS SS1	100	18				18	
0.8	0.20		-Organics									
1.2			-Grass		SS SS2	100	14				14	
1.6	98.86		-Rootlets									
2.0	1.52		FILL		SS SS3	100	25	400			25	
2.4			-Clayey Silt									
2.8			-Brown		SS SS4	100	43	450			43	
3.2			-Trace Gravel									
3.6			-Seams		SS SS5	100	52	450			52	
4.0			-Oxidation									
4.4			CLAYEY SILT									
4.8			-Brown to Gray									
5.2	95.35		-Oxidation		SS SS6	100	25	300			25	
5.6	5.03		-Trace Gravel									
6.0			-Seams									
6.4			-High Clay Content at Depth									
6.8			-Compact to Dense to Compact									
7.2			CLAY		SS SS7	100	27				27	
7.6			-Gray									
8.0	92.28		-Trace Sand									
8.4	8.10		-Shale Fragments at Depth 8m		SS SS8	89	90	100			90	
8.8			-Very Stiff to Hard									
9.2			SAND									
9.6			-Brown		SS SS9	100	50+				50	130mm
10.0			-Trace Gravel									
10.4			-Some Clay									
10.8	89.28		-Wet		SS SS10	100	49				49	
			-Very Dense to Dense									

11.10 Bottom of hole at 11.10 m.

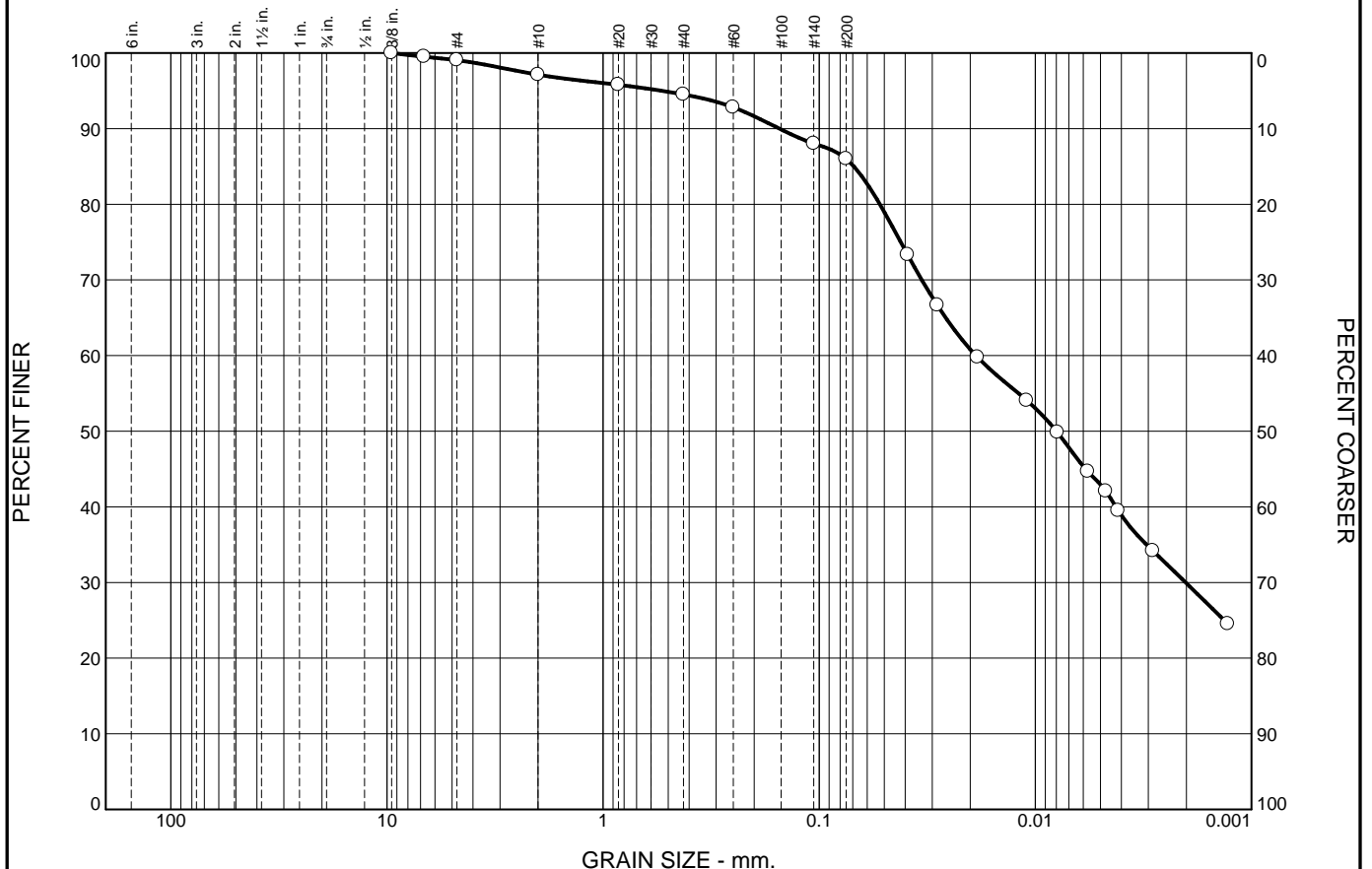
GEOTECH BH PLOTS L20-0711-12148 ALBION VAUGHAN RD.GPJ GINT STD CANADA.GOT 2-12-20



# **Appendix C**

## **Grain Size Analysis (ALS, 2020)**

# Grain Size Distribution Report



%	+3"	Gravel	Sand		Fines	
			Coarse	Fine	Silt	Clay
○	0	3	2	9	56	30

LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○		0.0691	0.0188	0.0080	0.0020				

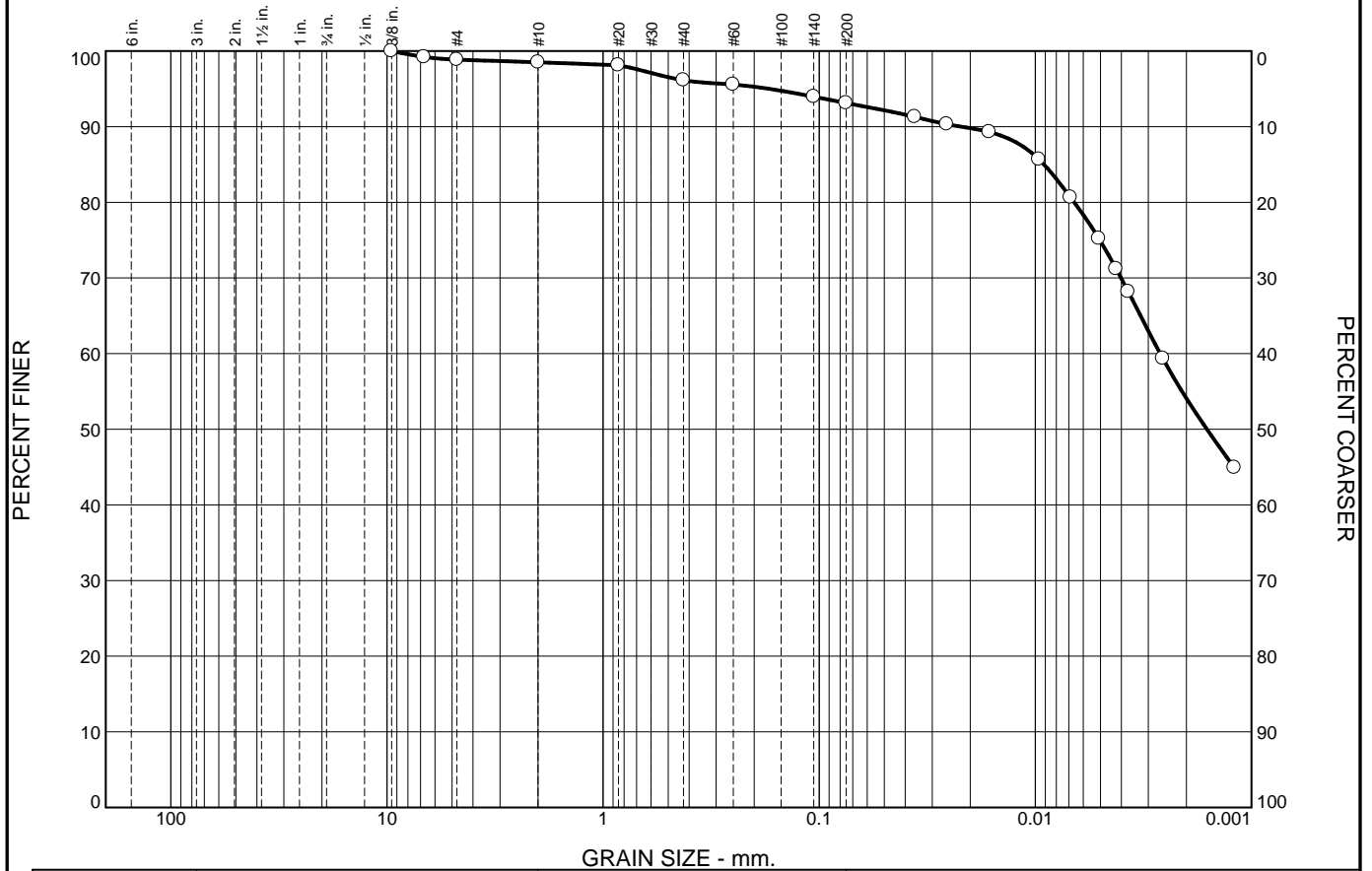
Material Description	USCS	AASHTO
○ CLAYEY SILT some sand trace gravel		

<b>Project No.</b> 19009 <b>Client:</b> PECG <b>Project:</b> Labratory Testing  ○ <b>Location:</b> BH1 <b>Sample Number:</b> 7	<b>Remarks:</b>   
---	-----------------------------

# Terrapex

Tested By: AM

# Grain Size Distribution Report



%	+3"	Gravel	Sand		Fines	
			Coarse	Fine	Silt	Clay
○	0	1	3	3	39	54

LL	PL	D <sub>85</sub>	D <sub>60</sub>	D <sub>50</sub>	D <sub>30</sub>	D <sub>15</sub>	D <sub>10</sub>	C <sub>c</sub>	C <sub>u</sub>
○		0.0091	0.0026	0.0016					

Material Description	USCS	AASHTO
○ CLAY AND SILT trace sand trace gravel		

<b>Project No.</b> 19009 <b>Client:</b> PECG <b>Project:</b> Labratory Testing  ○ <b>Location:</b> BH2 <b>Sample Number:</b> 6B	<b>Remarks:</b>   
--	-----------------------------

# Terrapex

Figure 1

Tested By: AM