

TOWN OF CALEDON
PLANNING
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Hydrogeological Investigation – 12148 Albion Vaughan Road, Town of Caledon, Ontario

Palmer Project #

1604602

Prepared For

12148 Albion Vaughn Inc.

April 21, 2023

April 21, 2023

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

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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-storées 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;
- Collect two (2) 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;
- 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 Preliminary Hydrogeological Assessment Report to support a submission to the Town and Conservation Authority as part of site development applications.

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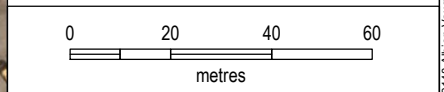
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


LEGEND:

-  Monitoring Well
-  Watercourse
-  Subject Property

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	PROJECT NO:	1604602	REVISION:	1-1
	DATE:	Sep 16, 2020	SCALE:	1:1500
	DRAWN:	CV	DATUM:	NAD 1983
	CHECKED:	AL	PROJECTION:	UTM zone 17

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Aztec Restoration	Palmer™

PROJECT:
12148 Albion Vaughan Rd - Res Dev

TITLE:
Site Location

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).

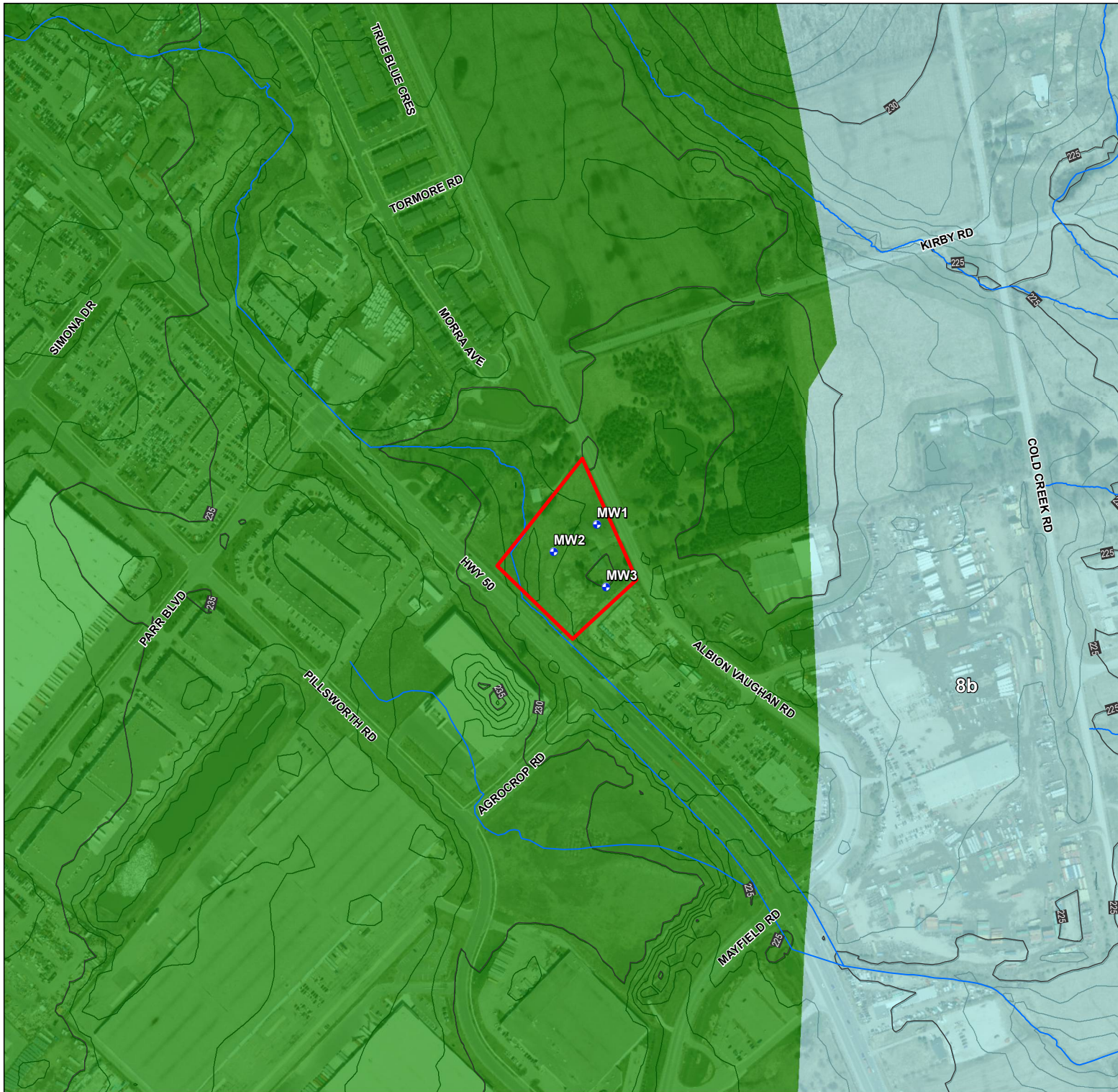
2.3 Drainage and Natural Features

The site is situated in the Humber River Subwatershed, which encompasses 911 km² 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 Geology¹
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

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metres

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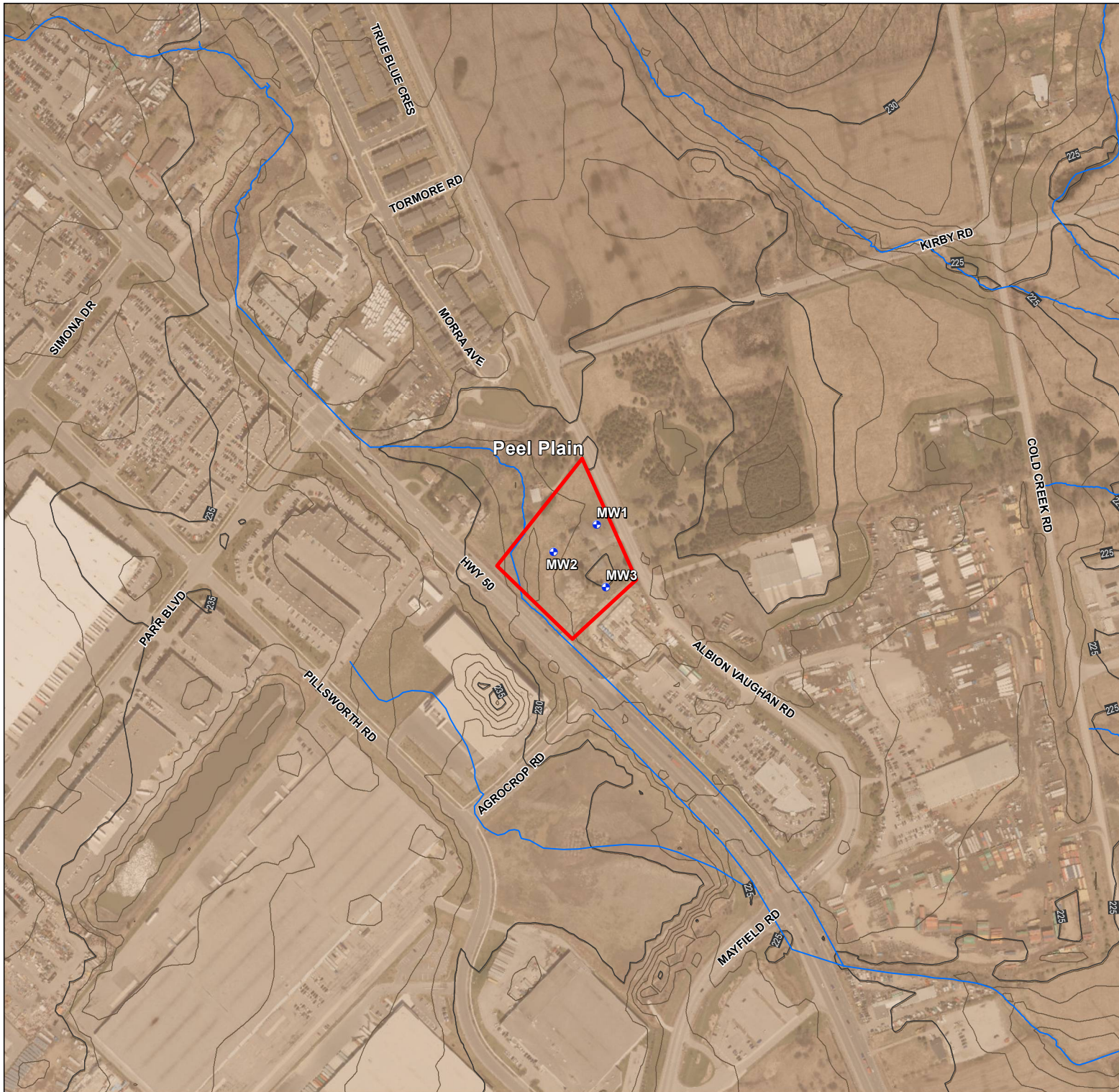
CLIENT: Aztec Restoration	PREPARED BY: Palmer™
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12148 Albion Vaughan Rd - Res Dev

TITLE:
Surficial Geology

Figure 2

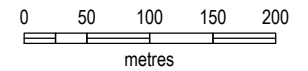
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- LEGEND:
- Monitoring Well
 - Watercourse
 - Surface Elevation Contour (1m)
 - Subject Property
- Physiographic Region¹**
- 33. Peel Plain

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

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TITLE:
Physiographic Region

Figure 3



LEGEND:

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

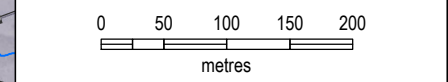
Paleozoic Bedrock Geology¹

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.

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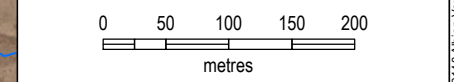
TITLE:
Bedrock Geology

Figure 4



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

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

Figure 5

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Table 1. Water Well Records

Well ID	Date Completed	Depth (mbgs)	Static Water Level (mbgs)	Well Yield (L/min)	Well Use
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.

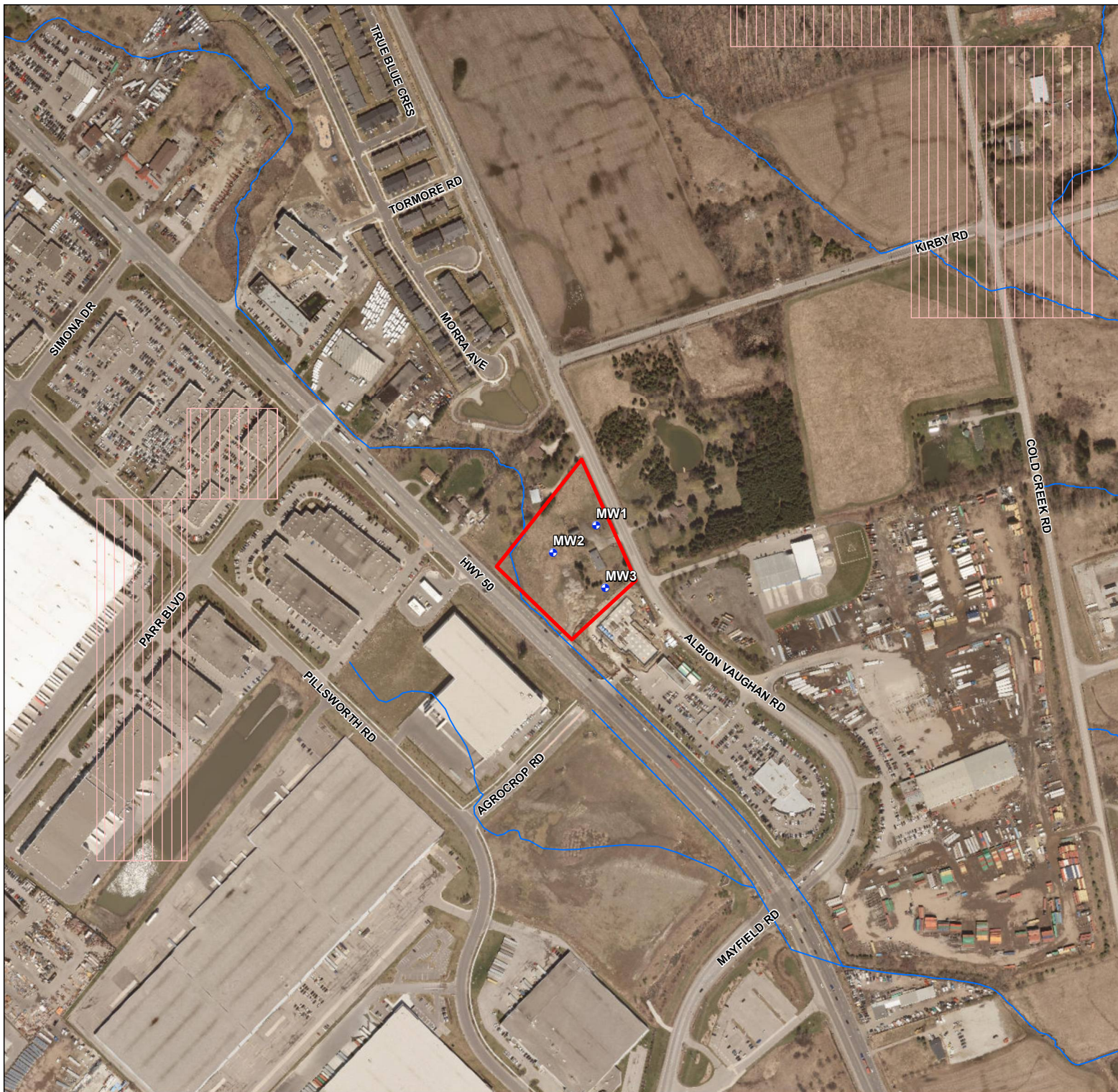
3. Site Conditions

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**. Additionally, according to Davroc’s Geotechnical Investigation (2020), six (6) boreholes were drilled between November 24th and December 11th, 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**.

Table 2. Borehole and Monitoring Well Installation Details

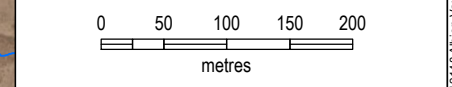
Borehole/ Monitoring Well		Depth (mbgs)	Approx. Screened Interval (mbgs)	Geology
Palmer	BH20-1	6.7	3.6 - 6.7	Clayey Silt Till
	BH20-2	6.4	3.3 - 6.4	Clayey Silt Till
	BH20-3	6.7	3.6 - 6.7	Clayey Silt Till



LEGEND:

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

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Aztec Restoration	

PROJECT:
12148 Albion Vaughan Rd - Res Dev

TITLE:
Source Water Protection

Figure 6

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Borehole/ Monitoring Well	Depth (mbgs)	Approx. Screened Interval (mbgs)	Screened Geology
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^{-6} to 10^{-9} 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. All wells were found to be dry. From the soil samples, it is observed the soil starts to turn grey at approximately 4.2 mbgs, and this can be interpreted as the water level during seasonal highs. **Table 3** shows the water levels in each monitoring well.

Table 3. Groundwater Levels

Borehole/ Monitoring Well	Stick Up (m)	Groundwater Level (mbgs)	
		August 26, 2020	November 20, 2020
BH20-1	0.77	Dry @ 6.7 mbgs	Dry @ 6.7 mbgs
BH20-2	0.81	Dry @ 6.4 mbgs	Dry @ 6.4 mbgs
BH20-4	0.83	Dry @ 6.7 mbgs	Dry @ 6.7 mbgs

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 1.1×10^{-8} m/sec and is found to be 1.2×10^{-7} m/s and 1.0×10^{-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	1.2×10^{-7}
BH20-2	6B	4.7	Puckett	1.0×10^{-9}
Geomean	-	-	-	1.1×10^{-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**). During site monitoring, no groundwater was observed in the wells, and the water table is therefore found to be below the depth of investigation at 6.7 mbgs. However, from the soil samples, it is observed the soil starts to turn grey at approximately 4.2 mbgs, which can be interpreted as the water level during seasonal highs. A dewatering rate estimate was conservatively calculated by using this as the anticipated seasonal high water level from the grey to brown soil transition as no actual groundwater was found on site. Based on the site plan, the construction dimensions for the underground parking structure are approximately 72 m by 114 m. The highest hydraulic conductivity value of 1.2×10^{-7} m/s was used.

Dewatering rate estimates (Q) for the proposed building was calculated using the following equation from Powers et. al (2007) for an unconfined aquifer:

$$Q = \frac{\pi K(H^2 - h^2)}{\ln\left(\frac{R_0}{r_e}\right)} + 2 \left[\frac{xK(H^2 - h^2)}{2L} \right] \quad m^3/s$$

Where K	=	hydraulic conductivity (m/s)
H	=	saturated thickness (m)
h	=	saturated thickness after dewatering (m)
R_0	=	radius of influence estimated using the Sichardt equation: $R_0 = 3000 * (H-h) * \sqrt{K}$ (m)
r_e	=	equivalent radius estimated by: $r_e = \sqrt{\frac{a*x}{\pi}}$ (m) Where a = trench width (m)
x	=	excavation length
L	=	line source distance (m) which is the greater of $R_0/2$ or 10 m

Based on the above equation, it is estimated that up to 6,940 L/day of groundwater will be required to be discharged if groundwater is found 4.2 mbgs and is lowered to approximately 8 mbgs. As a contingency and to account for variability in the soil, an additional 10,000 L/day should be expected as a contingency for a total of 16,940 L/day during construction. Dewatering at these rates is expected to be managed effectively using sump pumps at the base of the excavation and can be discharged in the surrounding drainage ditches on site following mitigation for sediment. No long-term dewatering is expected to be required.

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. As the anticipated dewatering rates are estimated to be less than 50,000 L/day, a PTTW or EASR is not expected to be required for this project.

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 depths of 6.4 to 6.7 mbgs. From the soil samples, it is observed the soil starts to turn grey at approximately 4.2 mbgs, and this can be interpreted as the water level during seasonal highs.
- Based on the grain size analyses, the geometric mean hydraulic conductivity of the site is approximately 1.1×10^{-8} m/s and is found to be 1.2×10^{-7} m/s and 1.0×10^{-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.
- Construction dewatering rate are expected to be very low to negligible for this project. An estimated rate of 16,940 L/day could be expected to account for variability in the soil. Dewatering at this rate will be manageable with the use of sump pumps, which can be discharged in the surrounding drainage ditches on site following mitigation for sediment. No long-term dewatering is expected to be required.
- Provisions should be 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

Reviewed By:



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

8. References

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- 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.
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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.
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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 <input checked="" type="checkbox"/> New <input type="checkbox"/> Part 11 <input type="checkbox"/> Change of Use <input type="checkbox"/> Addition <input type="checkbox"/> Alteration 11.1 to 11.4										Part 3 1.1.2 [A] 1.1.2 9.10.1.3		
2		Major Occupancy(s) Group C										3.1.2.1 (1) 9.10.2		
3		Building Area (m ²) NEW: 2400.72 m ² TOTAL: 2400.72 m ²										1.4.1.2 [A] 1 1.4.1.2 [A]		
4		Gross Area (m ²) NEW: 13010.64 m ² TOTAL: 13010.64 m ²										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 <input type="checkbox"/> selected compartments <input type="checkbox"/> not required <input type="checkbox"/> selected floor areas <input type="checkbox"/> EXISTING NO CHANGE <input type="checkbox"/> basement										3.2.2.67 3.2.1.5 3.2.2.17 INDEX 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 Actual Construction <input type="checkbox"/> Combustible <input checked="" type="checkbox"/> Non-combustible <input type="checkbox"/> Both										3.2.2.67 9.10.6		
14		Mezzanine Area (m ²): N/A										3.2.1.1 (3)-(8) 9.10.4.1		
15		Occupant load based on <input type="checkbox"/> m ² /person <input checked="" type="checkbox"/> design of building Occupancy: 350 Load:										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) Horizontal Assemblies FRR (Hours) Floor: 1 Hours Roof: 0 Hours FRR of Supporting Members Floor: 1 Hours Roof: - Hours Listed Design No. or Description (SB-3) Listed Design No. or Description (SB-3)										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		
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 <input checked="" type="checkbox"/> New <input type="checkbox"/> Part 11 <input type="checkbox"/> Change of Use <input type="checkbox"/> Addition <input type="checkbox"/> Alteration 11.1 to 11.4										Part 3 1.1.2 [A] 1.1.2 9.10.1.3		
2		Major Occupancy(s) Group C										3.1.2.1 (1) 9.10.2		
3		Building Area (m ²) NEW: 2092.75 m ² TOTAL: 2092.75 m ²										1.4.1.2 [A] 1 1.4.1.2 [A]		
4		Gross Area (m ²) NEW: 14680.14 m ² TOTAL: 14680.14 m ²										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 <input type="checkbox"/> selected compartments <input type="checkbox"/> not required <input type="checkbox"/> selected floor areas <input type="checkbox"/> EXISTING NO CHANGE <input type="checkbox"/> basement										3.2.2.67 3.2.1.5 3.2.2.17 INDEX 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 Actual Construction <input type="checkbox"/> Combustible <input checked="" type="checkbox"/> Non-combustible <input type="checkbox"/> Both										3.2.2.67 9.10.6		
14		Mezzanine Area (m ²): N/A										3.2.1.1 (3)-(8) 9.10.4.1		
15		Occupant load based on <input type="checkbox"/> m ² /person <input checked="" type="checkbox"/> design of building Occupancy: 420 Load:										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) Horizontal Assemblies FRR (Hours) Floor: 2 Hours Roof: 0 Hours FRR of Supporting Members Floor: 2 Hours Roof: - Hours Listed Design No. or Description (SB-3) Listed Design No. or Description (SB-3)										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		
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
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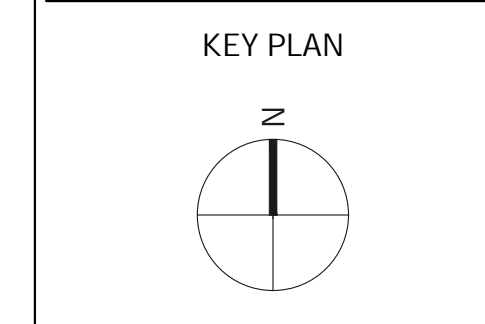
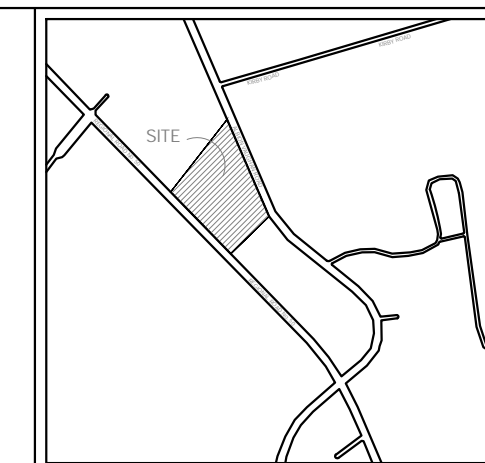
GENERAL NOTES	
1.	For landscaping, refer to landscape drawings
2.	For proposed grading, refer to landscape drawings and approved grading plan.
3.	For detailed lighting plan, refer to lighting drawings.
4.	All perimeter existing information indicated taken from survey.
5.	All work to be done in conformance 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)			
A - LOT AREA			
TOTAL LOT AREA	m ²	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 - GROSS FLOOR AREA			
B.1 - UNDERGROUND LEVEL			
	QTY.	m ²	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.2 - TOWER A (RESIDENTIAL CONDO GFA)			
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.3 - TOWER B (RESIDENTIAL CONDO GFA)			
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.4 - AMENITY SPACE (GFA)			
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.5 - SERVICE AREAS (GFA)			
TOWER A - STORAGE		138.78	1493.82
TOWER B - STORAGE		73.61	792.33
TOTAL GFA		212.39	2286.15
B.6 - GRAND TOTAL GFA			
TOTAL GFA (NOT INCLUDING UNDERGROUND PARKING, BALCONIES & TERRACES)		28266.30	304255.92
TOTAL GFA (INCLUDING TERRACES & BALCONIES)		32756.11	352583.83
C - FLOOR SPACE INDEX (FSI)			
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	
D - SITE STATISTICS			
BUILDING HEIGHT	N/A	25.51 m	83.69 ft
LOT COVERAGE	29% (Min.) - 2051.20 m ²	5102.80 m ²	54926.08 sq/ft
LANDSCAPE AREA	45% (Min.) - 4615.20 m ²	6954.04 m ²	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% (Min.) - 205.12 m ²	281.82 m ²	3033.49 sq/ft
PLAY FACILITY AREA	4% (Min.) - 410.24 m ²	136.92 m ²	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.

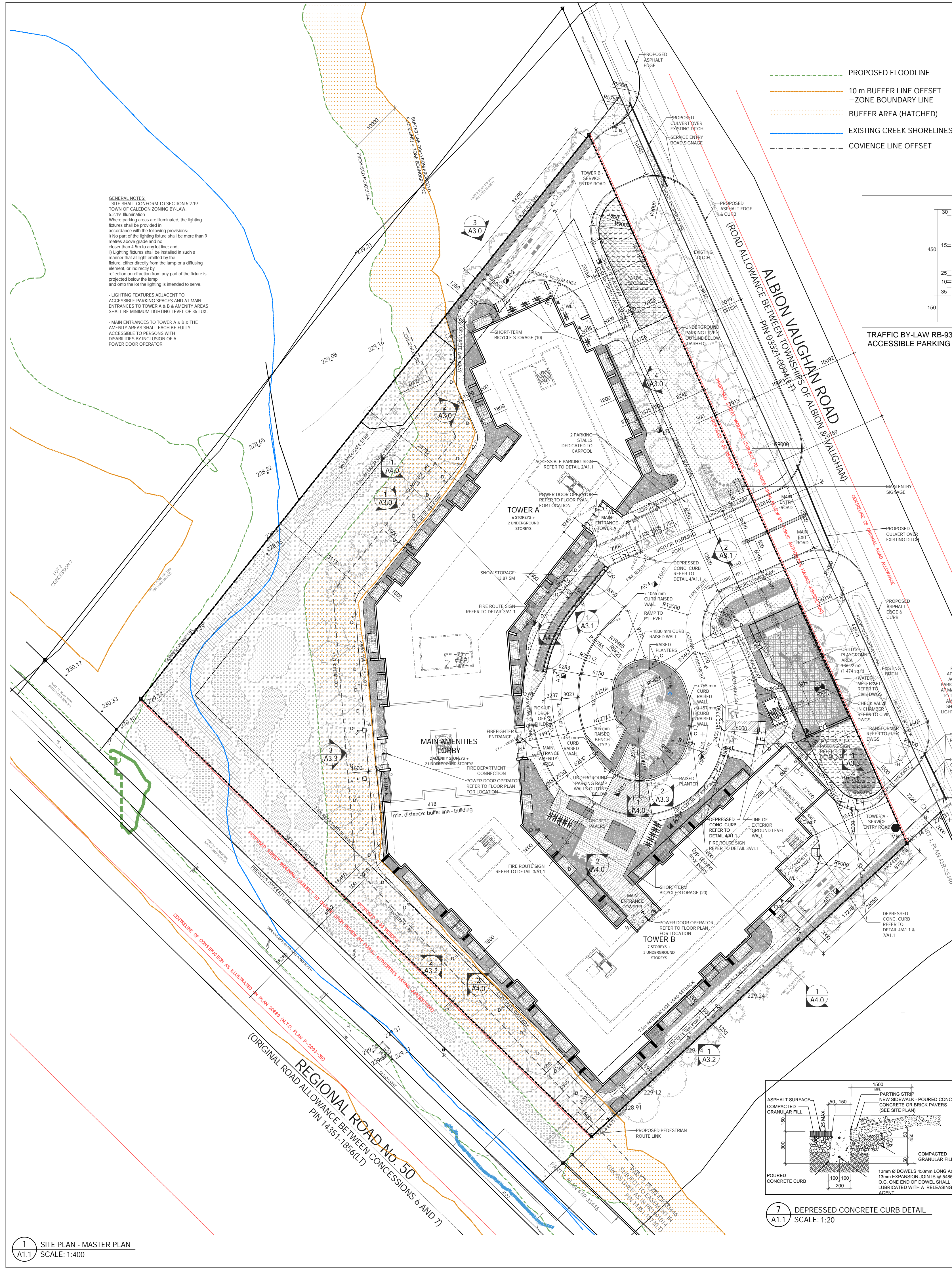
DATE: 25/01/2023 PROJECT No: 2019-22
SCALE: AS NOTED DRAWING No: A1.0
DESIGNED BY: L.C. REVIEWED BY: F.C.

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

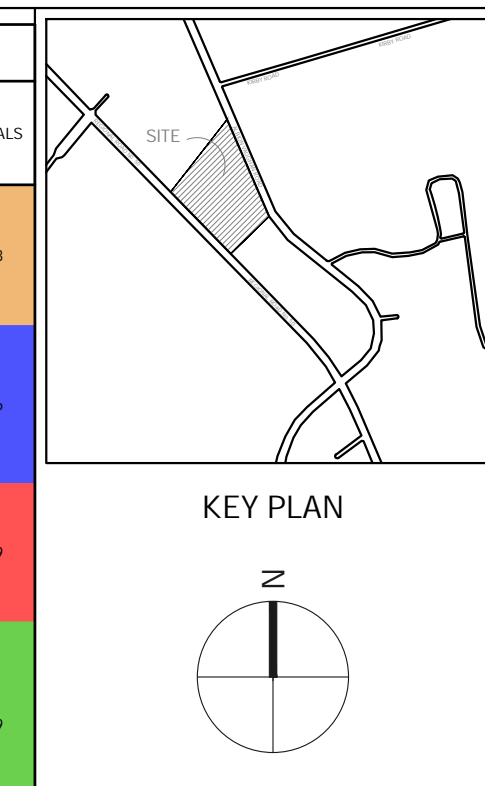
DATE: 25/01/2023 PROJECT No: 2019-22
SCALE: AS NOTED DRAWING No: A1.0
DESIGNED BY: L.C. REVIEWED BY: F.C.



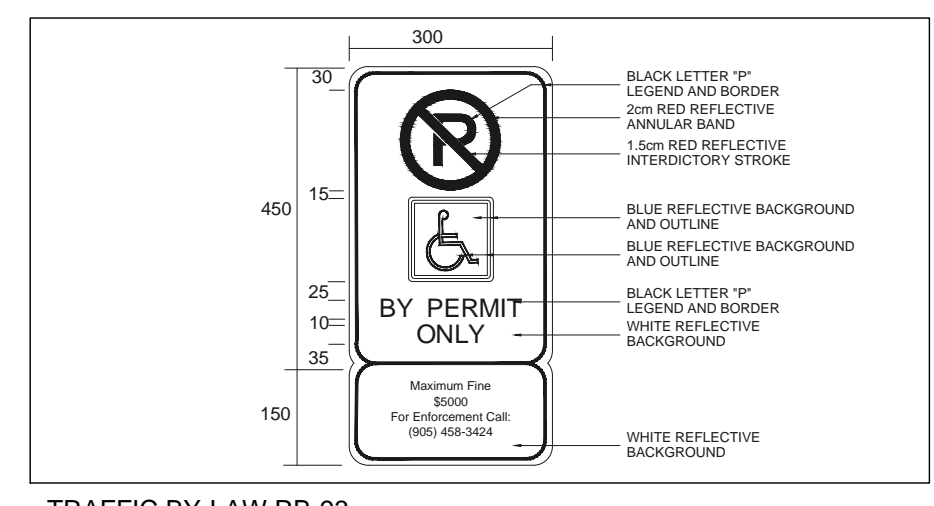
SITE STATISTICS:

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

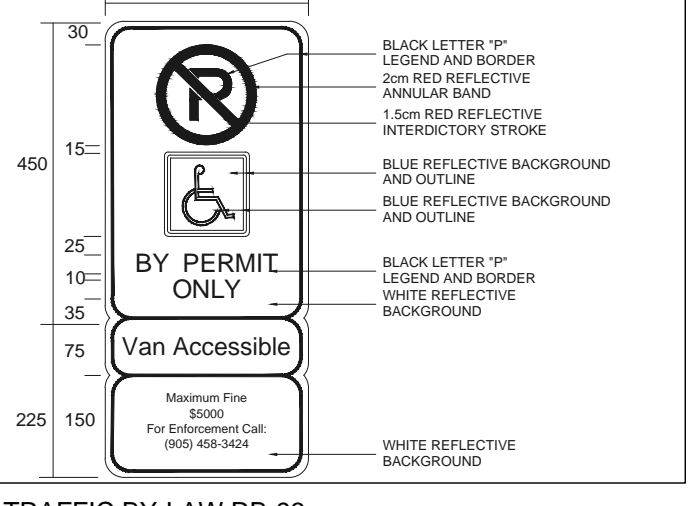
STORIES	UNITS TYPE			TOWERS														TOTALS
	UNIT TYPE	SQFT	M ²	TOWER A							TOWER B							
1 BEDROOM	TYPE 1.4	970.03	16.44	6	7	6	6	6	6	5	6	6	6	6	6	6	78	
1 BEDROOM + DEN	TYPE 1.5	800.10	14.93	5	5	3	3	3	3	2	2	2	2	2	2	2	34	
2 BEDROOM	TYPE 1.13	922.114	16.54	6	5	5	5	5	5	12	11	9	9	9	9	9	99	
2 BEDROOM + LARGE BALCONY	TYPE 1.9	1011.124	18.75	0	2	4	4	4	4	0	1	4	4	4	4	4	39	
3 BEDROOM	TYPE 1	1584.180	17.14	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	
TOTAL UNITS				114							265							



- PROPOSED FLOODLINE
- 10 m BUFFER LINE OFFSET = ZONE BOUNDARY LINE
- BUFFER AREA (HATCHED)
- EXISTING CREEK SHORELINES
- COVICENCE LINE OFFSET

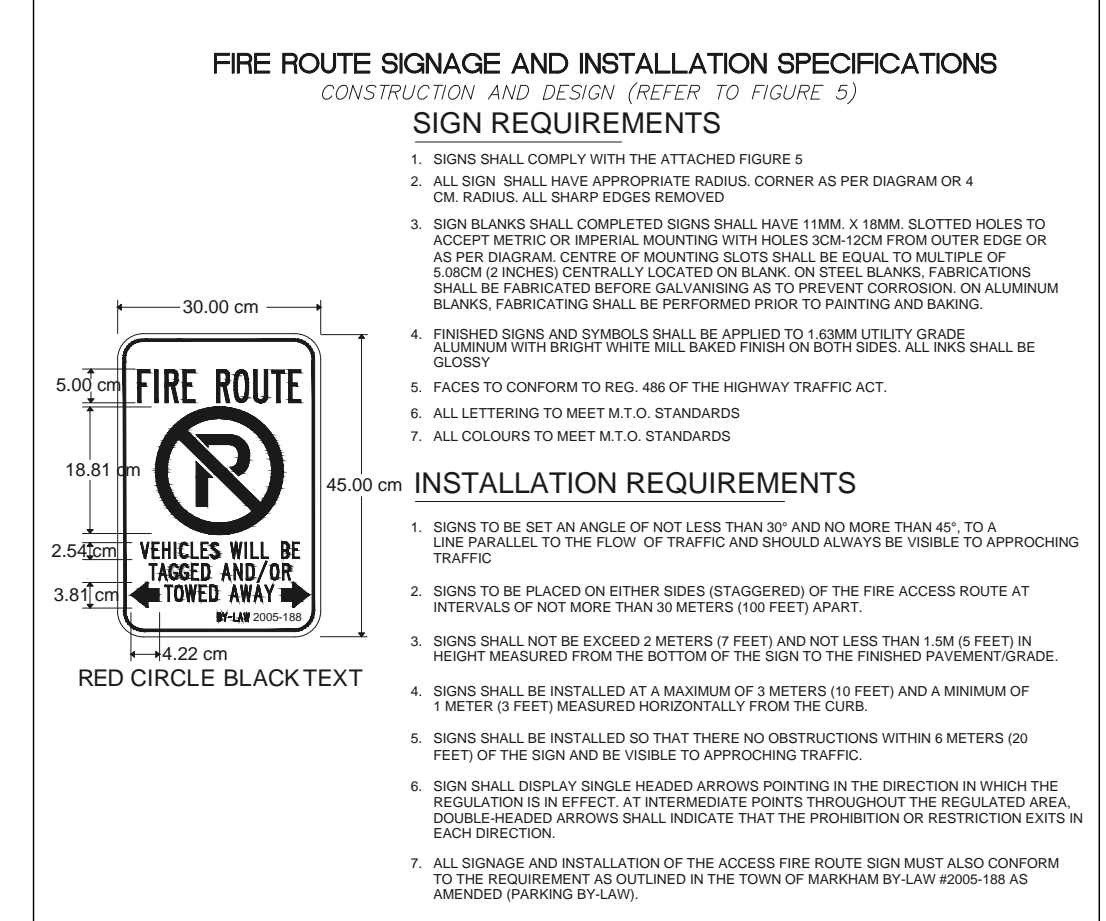


TRAFFIC BY-LAW RB-93 ACCESSIBLE PARKING SIGN TYPE B



TRAFFIC BY-LAW RB-93 ACCESSIBLE PARKING SIGN TYPE A-VAN ACCESSIBLE

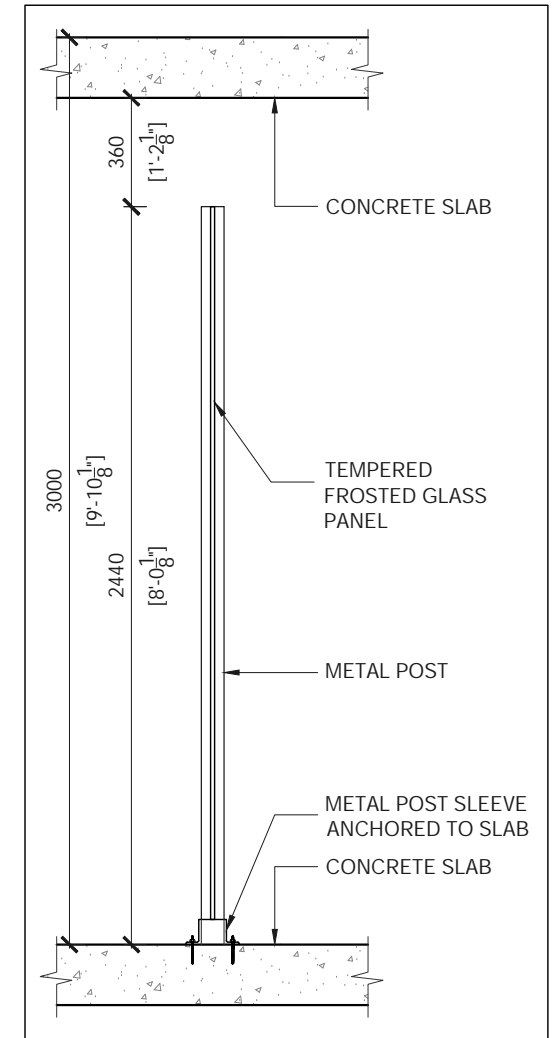
2 'BY PERMIT ONLY' ACCESSIBLE PARKING SIGN DETAILS SCALE: NTS



3 FIRE ROUTE SIGN DETAIL SCALE: NTS

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

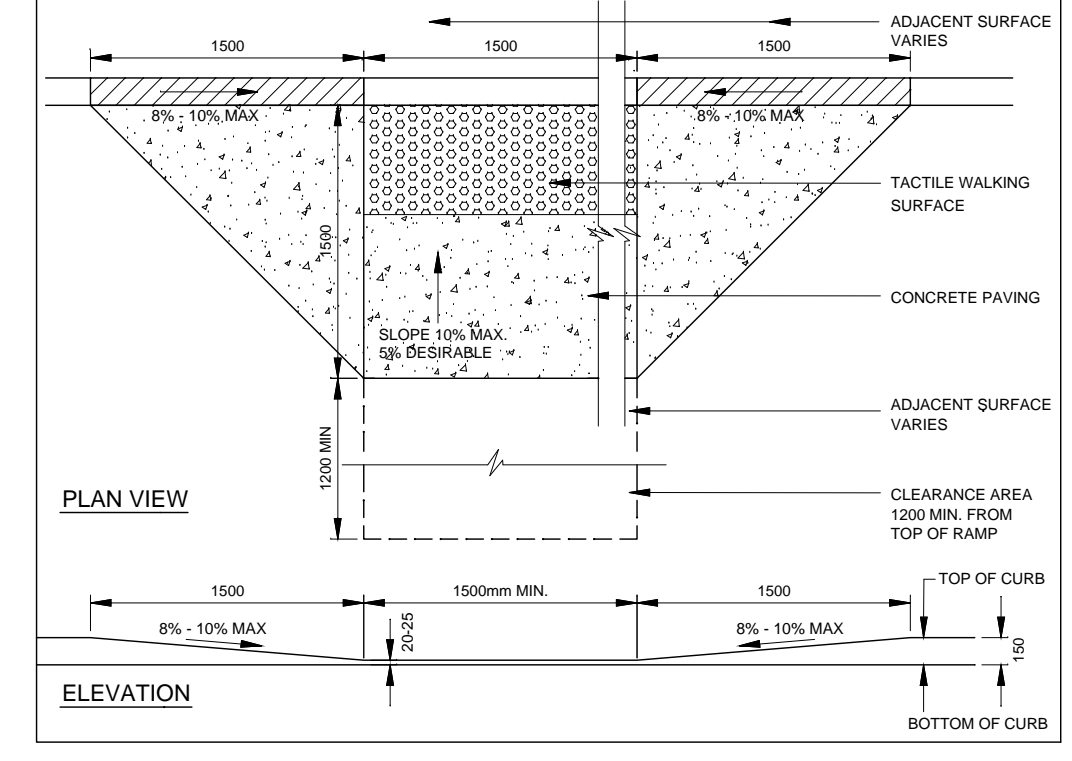
FLOOR	TOWER A	TOWER B	TOTAL
1ST FLOOR	(2) - 1 BEDROOM + (1) 2 BEDROOM	(1) - 1 BEDROOM + (2) 2 BEDROOM	(6) - TOTAL
2ND FLOOR	(2) - 1 BEDROOM + (1) 2 BEDROOM	(1) - 1 BEDROOM + (2) 2 BEDROOM	(6) - TOTAL
3RD FLOOR	(2) - 1 BEDROOM + (1) 2 BEDROOM	(1) - 1 BEDROOM + (2) 2 BEDROOM	(6) - TOTAL
4TH FLOOR	(2) - 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
TOTAL	(19) 1 BEDROOM + (21) 2 BEDROOM		(40) BARRIER-FREE SUITES



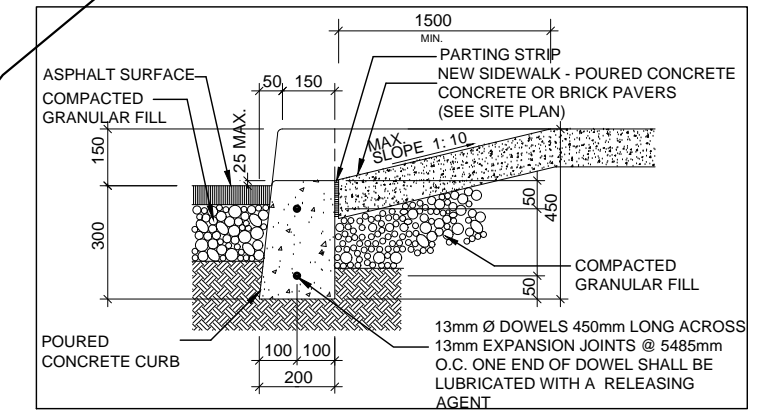
8 PRIVACY PANEL SCREENS SCALE: 1:25

LUMINAIRE SCHEDULE (REFER TO ELEC. DWGS)

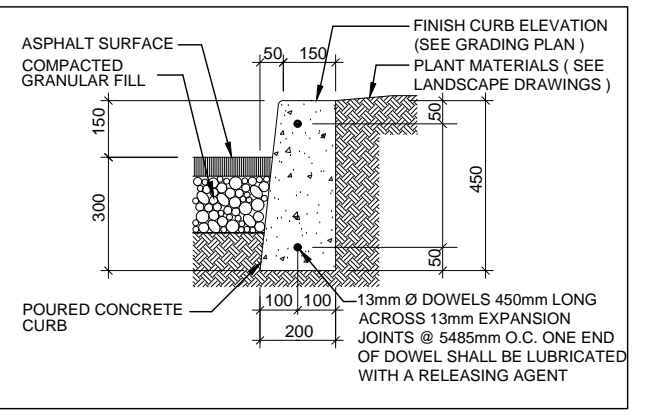
SYMBOL	QTY	LABEL	DESCRIPTION	LUM. WATTS	LLF	LUM. LUMENS
13	13	WL	MO13HL-PP-MW-8L40K-DCC-DV	11.47	0.900	963
2	2	A	MRM-LED-07L-SIL-2-30-70CRHL	53	0.880	4167
6	6	B	MRM-LED-07L-SIL-3-30-70CRHL	53	0.880	5050
13	13	C	MRM-LED-07L-SIL-3-30-70CRI	53	0.880	6889
66	66	D	MRB-LED-25L-ACR-A-30	23	0.930	1633
12	12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



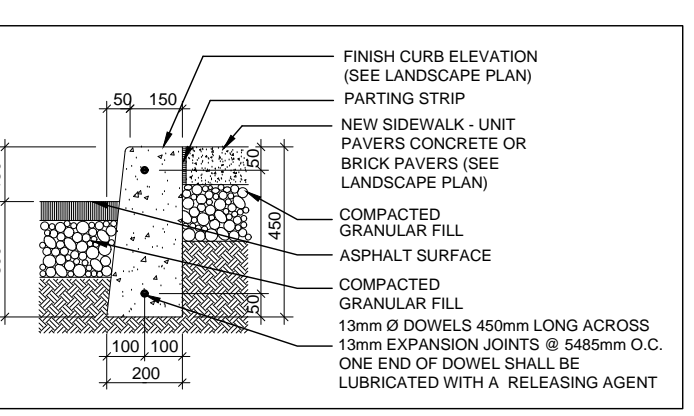
4 DEPRESSED CONC. CURB PLAN VIEW SCALE: NTS



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

CONDO UNITS	1.5 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

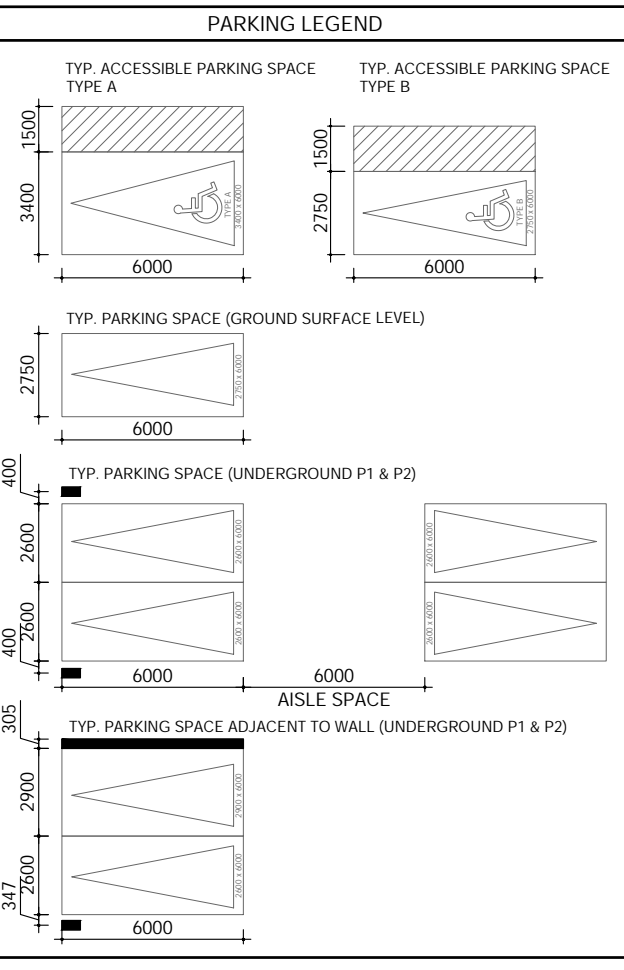
RESIDENT (ACCESSIBLE)	RESIDENT SPOTS	TOTAL
P1 LEVEL	8	213
P2 LEVEL	0	231
GROUND SURFACE LEVEL	4	6
GRAND TOTAL PARKING PROVIDED	12	450

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	2021-09-20

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: 2021/09/20
 SCALE: AS NOTED
 DRAWN BY: L.C.
 PROJECT NO: 2019-22
 DRAWING NO: A1.1

1 SITE PLAN - MASTER PLAN SCALE: 1:400

Appendix B

Borehole Logs (Borehole Logs (Palmer, 2020 & 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					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	POCKET PEN. (G _u) (kPa)	NATURAL UNIT WT (kN/m ³)	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa									
						○ UNCONFINED	+ FIELD VANE	● QUICK TRIAXIAL	× LAB VANE								
0.0	Ground Surface																
	TOPSOIL:																
0.2	FILL: brown and grey silty sand, some gravel, contains rootlets		1	SS	5												
1			2	SS	5												
1.5	Clayey Silt Till: some sand, trace gravel, occ. cobbles and boulders, contains sand and silt seams disturbed till		3	SS	6												
2			4	SS	26												
3			5	SS	38												
4	turns from brown to grey																
4.7	Silty Clay: grey, trace silt, moist		6	SS	16												
6.2	Clayey Silt Till: some sand, trace gravel, occ. cobbles and boulders, contains sand and silt seams		7	SS	72/ 0.18 m												
6.4	END OF BOREHOLE 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																

PALMER™ THE SOIL CLUB
 1000 SHEPPARD AVENUE EAST
 SCARBOROUGH, ONTARIO M1B 4Y7

GROUNDWATER ELEVATIONS
 Measurement

+³, ×³: 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 ³)	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			"N" VALUES	SHEAR STRENGTH kPa							WATER CONTENT (%)
						20	40	60	80	100	W _p	W	W _L	γ	GR SA SI CL
0.0	TOPSOIL:														
0.1	FILL: brown silty sand, some gravel, contains rootlets		1	SS	5										
0.7	Clayey Silt Till: 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	END OF BOREHOLE 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														

GROUNDWATER ELEVATIONS
 Measurement

+³, ×³: Numbers refer to Sensitivity ○ = 3% Strain at Failure



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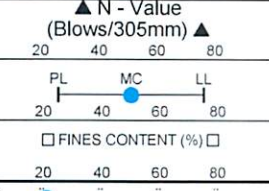
BOREHOLE NUMBER BH 1

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 ³)	▲ 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												
4.8												
5.2												
5.6			CLAYEY SILT -Brown to Gray -Oxidation -Some Gravel -Trace Sand -High Clay Content at Depth -Dense to Compact		SS SS6	100	32	450		32		
6.0												
6.4												
6.8												
7.2												
7.6												
8.0												
8.4												
8.8			SILT -Gray -Layered -Some Clay at Depth -Wet at Depth -Very Dense to Dense		SS SS9	100	86			86		
9.2	90.30											
9.6	9.15											
10.0												
10.4			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		
10.8												
11.2												
11.6												
12.0												
12.4	87.25											
12.8	12.20											
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	





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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 ³)	▲ 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					SS2	100	14			26▲	47▲
1.2						SS3	100	26	400			48▲
1.6	97.32					SS4	100	47	450			17▲
2.0	1.52					SS5	100	48	450			18▲
2.4												50+▲
2.8												130mm▲
3.2												65▲
3.6												89▲
4.0												14▲
4.4												81▲
4.8												92▲
5.2												
5.6												
6.0												
6.4												
6.8												
7.2												
7.6												
8.0												
8.4												
8.8												
9.2	89.64											
9.6	9.20		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					
10.0												
10.4												
10.8												
11.2												
11.6												
12.0												
12.4												
12.8	86.14											
13.2	12.70		CLAYEY SILT -Gray -Trace Sand -Very Dense		SS11	89	14					
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				

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

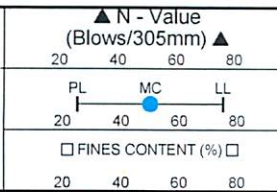


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BOREHOLE NUMBER BH 3

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 ³)	▲ N - Value (Blows/305mm) ▲	
										20	40
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	1.52		-Clayey Silt								
2.8		-Brown									
3.2		-Some Gravel									
3.6		-Oxidation									
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	6.60		-Silt at depth 7.6 to 8.1m and 12.2 to 12.7m								
8.0	6.60		-Sand at depth 9.2 to 11.1m								
8.4	6.60		-Shale Fragments								
8.8	6.60		-Some Clay at Depth								
9.2	6.60		-Wet at Depth								
9.6	6.60		-Auger refusal at depth 12.8m								
10.0	6.60		-Very Dense								
10.4	6.60										
10.8	6.60										
11.2	6.60										
11.6	6.60										
12.0	6.60										
12.4	6.60										
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.



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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 ³)	▲ N - Value (Blows/305mm) ▲	
										20	40
100.15	99.90										
0.4	99.90		TOPSOIL		SS SS1	61	8			8	
0.8	99.90		-Blackish Brown								
1.2	99.90		-Organics								
1.6	98.63		-Grass		SS SS2	89	9			9	
2.0	98.63		FILL								
2.4	1.52		-Silty Clay		SS SS3	100	22	450		22	
2.8	1.52		-Brown								
3.2	1.52		-Some Gravel		SS SS4	100	44	450		44	
3.6	1.52		-Some Sand								
4.0	1.52		CLAYEY SILT		SS SS5	100	55	450		55	
4.4	1.52		-Brown								
4.8	1.52		-Oxidation								
5.2	1.52		-Seams								
5.6	1.52		-Trace Gravel								
6.0	1.52		-Compact to Dense to Very Dense		SS SS6	100	27	400		27	
6.4	1.52		CLAY								
6.8	1.52		-Gray								
7.2	1.52		-Seams								
7.6	1.52		-Trace Gravel								
8.0	1.52		-Very Stiff to Hard		SS SS7	100	44			44	
8.4	1.52		SAND								
8.8	1.52		-Brown								
9.2	1.52		-Some Silt		SS SS8	100	50+			50+	130mm
9.6	1.52		-Wet								
9.6	90.55		-Very Dense		SS SS9	100	51			51	

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



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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 ³)	▲ N - Value (Blows/305mm) ▲	
										20	40
0.4	100.00		TOPSOIL -Blackish Brown -Organics -Grass -Rootlets		SS SS1	100	18			18	
0.8	0.20				SS SS2	100	14			14	
1.2					SS SS3	100	25	400		25	
1.6	98.86				SS SS4	100	43	450		43	
2.0	1.52				SS SS5	100	52	450		52	
2.4											
2.8											
3.2											
3.6											
4.0											
4.4											
4.8											
5.2	95.35				SS SS6	100	25	300		25	
5.6	5.03										
6.0											
6.4											
6.8					SS SS7	100	27			27	
7.2											
7.6											
8.0	92.28				SS SS8	89	90	100		90	
8.4	8.10										
8.8											
9.2											
9.6					SS SS9	100	50+			50	130mm
10.0											
10.4											
10.8	89.28				SS SS10	100	49			49	

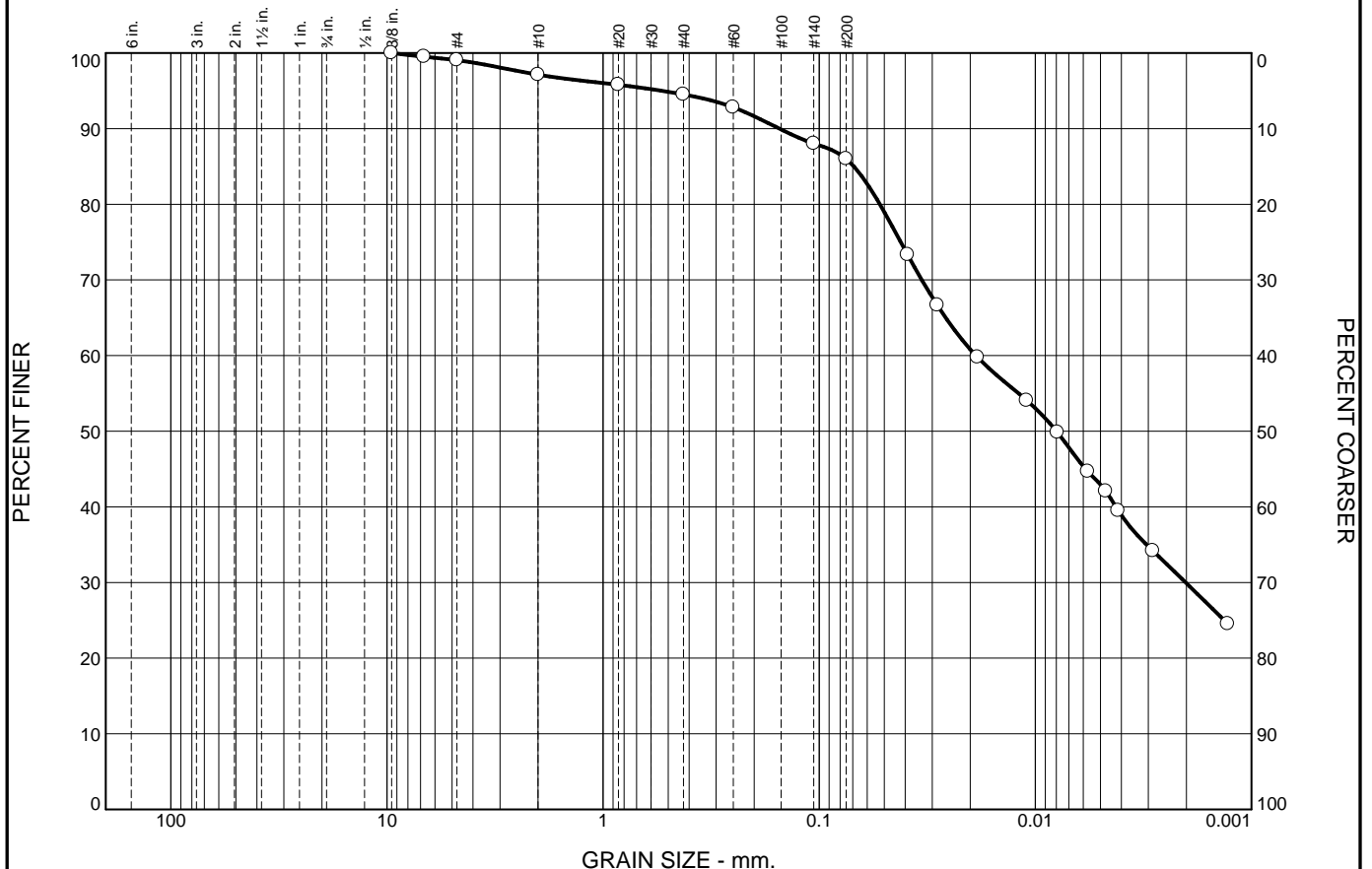
11.10 Bottom of hole at 11.10 m.

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 ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
		0.0691	0.0188	0.0080	0.0020				

Material Description	USCS	AASHTO
○ CLAYEY SILT some sand trace gravel		

Project No. 19009 Client: PECG Project: Labratory Testing ○ Location: BH1 Sample Number: 7	Remarks:
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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 ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○		0.0091	0.0026	0.0016					

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

Project No. 19009 Client: PECG Project: Labratory Testing ○ Location: BH2 Sample Number: 6B	Remarks:
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Terrapex

Figure 1

Tested By: AM