



**5100 Erin Mills Parkway
Erin Mills Town Centre – Phase 1
City of Mississauga**

**Functional Servicing and Stormwater
Management Report**

October 2024

Submitted by:

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Table of Contents

1.0	Introduction	1
1.1	Purpose of the Report	1
1.2	Study Area	1
1.3	Background Servicing Information	2
2.0	Storm Servicing	4
2.1	Existing Storm Sewer System	4
2.2	Proposed Storm Sewer System	4
3.0	Stormwater Management	6
3.1	Stormwater Runoff Control Criteria	6
3.2	Existing Drainage	6
3.3	Allowable Release Rate	6
3.4	Stormwater Best Management Practices Selection	7
3.5	Proposed Storm Drainage	10
3.5.1	Quantity Control	10
3.5.2	Quality Control	11
3.5.3	Erosion Control	11
3.5.4	Water Balance	11
4.0	Sanitary Servicing	12
4.1	Existing Sanitary Sewer System	12
4.2	Proposed Sanitary Sewer System	12
5.0	Water Supply and Distribution	15
5.1	Existing Water Distribution	15
5.2	Proposed Water System	15
6.0	Grading	18
6.1	Existing Grading Conditions	18
6.2	Proposed Grading Concept	18
7.0	Groundwater Discharge	19
8.0	Erosion and Sediment Control During Construction	20
9.0	Summary	21

List of Tables

Table 2.1	Rainfall Intensity Parameters
Table 2.2	Proposed Subphase Storm Sewer Connections
Table 3.1	Stormwater Runoff Control Criteria
Table 3.2	Blocks 110-230 Allowable Release Rate Summary
Table 3.3	Allowable Release Rate Summary
Table 3.4	Recommended Stormwater LID Practices
Table 4.1	Proposed Building Sanitary Sewer Connections
Table 4.2	Sanitary Demands
Table 5.1	Proposed Building Water Connections
Table 5.2	Water Demands
Table 7.1	Dewatering Rates

List of Figures

Figure 1.1	Site Location Plan
Figure 2.1-3	Preliminary Storm Servicing Plan
Figure 3.1	Existing Storm Drainage Plan
Figure 3.2-4	Proposed Storm Drainage Plan

List of Appendices

Appendix A	Site Plan
Appendix B	Record Drawings and Background Information
Appendix C	Stormwater Management Calculations
Appendix D	Sanitary Demand Calculations
Appendix E	Water Demand Calculations
Appendix F	Hydrogeological Information
Appendix G	Drawings

List of Drawings (Appendix G)

Drawing S-1	Servicing Plan
Drawing S-2	Servicing Cross-Sections
Drawing GR-1	Grading Plan
Drawing UP-1-3	Public Utilities & Right-of-Way Plans
Drawing UP-4-7	Public Utilities & Right-of-Way Cross-Sections

Submission History

Submission	Date	In Support Of	Distributed To
1 st	October, 2024	Re-Zoning, OPA	City of Mississauga, Regional Municipality of Peel, Credit Valley Conservation, MECP

1.0 Introduction

SCS Consulting Group Ltd. has been retained by EMTC Holdings Inc. to prepare a Functional Servicing Report for a proposed high-density residential development at 5100 Erin Mills Parkway, the Northwestern Block (Phase 1) of the Erin Mills Town Centre, located at Glen Erin Drive and Erin Centre Boulevard in the City of Mississauga.

1.1 Purpose of the Report

The Functional Servicing and SWM Report has been prepared in support of a Official Plan & Zoning By-Law Amendment (OPA/ZBA) application for the proposed development. The Site Plan is provided in **Appendix A**.

The purpose of this report is to demonstrate that the proposed development can be accommodated by the external storm, sanitary and water infrastructure and to establish servicing and grading expectations for the future site plan application in accordance with the City of Mississauga, Region of Peel, Credit Valley Conservation Authority, the Ontario Building Code, and the Ministry of Environment, Conservation and Parks (MECP) design criteria.

1.2 Study Area

The study area is comprised of a municipal park, private parks, a private urban plaza, eight (8) high rise residential buildings and parking areas located within the City of Mississauga. As shown on **Figure 1.1**, the study area is bound by:

- Erin Centre Boulevard to the northwest;
- Glen Erin Drive to the southwest; and
- Erin Mills Town Centre and its parking access roads to the east.

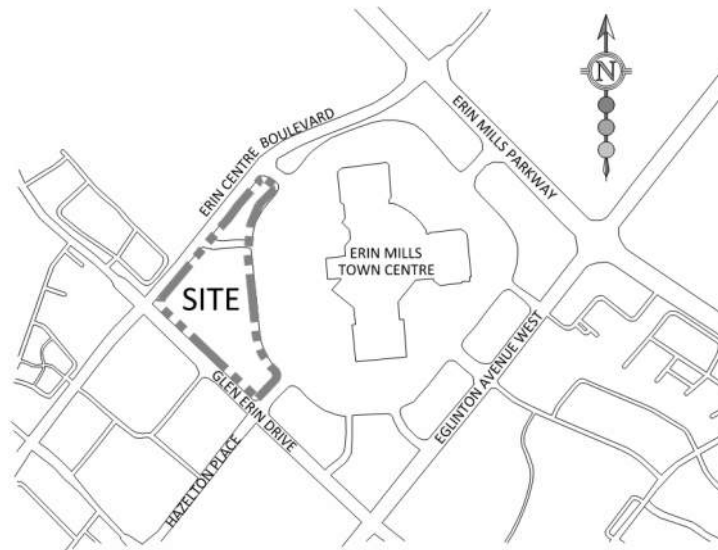


Figure 1.1: Site Location Plan

The proposed development is approximately 4.28 ha in size and consists of eight condominium buildings and a park block (refer to the Site Plan in **Appendix A**). An underground parking garage is proposed to extend under the entire development, except for the parkland block. Access to the proposed development is proposed off of the two existing, signalized private accesses from Glen Erin Drive and Erin Centre Boulevard, as well as the existing, currently privately owned roadway travelling in a ring around the existing Erin Mills Town Centre (herein referred to as “ring road”) adjacent to the proposed development.

The development is considered Phase 1 and is proposed to be split into five (5) subphases. Subphase 1 consists of Building A, subphase 2 consists of Buildings B and G, subphase 3 consists of Buildings C and D, subphase 4 consists of Buildings E and H, and subphase 5 consists of Building F (Tower F1 and F2).

1.3 Background Servicing Information

In preparation of the servicing and SWM strategies, the following design guidelines and standards were used:

- Region of Peel, Public Works Stormwater Design Criteria and Procedural manual, June 2019;
- Region of Peel, Public Works Design, Specifications and Procedures Manual, Watermain Design Criteria, June 2010;
- Region of Peel, Public Works Design, Specifications and Procedures Manual, Sanitary Sewer Design Criteria, March 2017;
- City of Mississauga, Development Requirements Manual, September 2016;

- Credit Valley Conservation Authority Stormwater Management Guideline, July 2022;
- Ministry of Environment, Conservation and Parks (MECP) Stormwater Management Planning and Design Manual (March 2003); and
- Ministry of Transportation (MTO) Drainage Management Manual (1997).

The site servicing and SWM strategies in this report are based on the following reports:

- Topographic Survey of Part of Phase 1 of Registered Plan 43M-823, City of Mississauga prepared by Schaeffer Dzaldov Bennett Ltd (July 2013);
- Erin Mills Town Centre Phase 1 Site Plan prepared by BDP Quadrangle (March 2024);
- Exp Services Inc., Phase II Environmental Site Assessment, March 2024;
- Exp Services Inc., Hydrogeological Investigation, August 2024; and
- Exp Services Inc., Supplementary Geotechnical Investigation, March 2024.

The site servicing and SWM strategies are also based on the following approved Engineering Drawings:

- Glen Erin Drive - Sta. 0+000 to Sta. 0+200 - Plan & Profile As-Constructed Drawings Dwg No A1-84713-P1, prepared by Proctor & Redfern Consulting Engineers, dated June 1987;
- Glen Erin Drive - Sta. 0+200 to Sta. 0+440 - Plan & Profile As-Constructed Drawings Dwg No A1-84713-P2, prepared by Proctor & Redfern Consulting Engineers, dated May 1987;
- Glen Erin Drive - Sta. 0+440 to Sta. 0+602.481 - Plan & Profile As-Constructed Drawings Dwg No A1-84713-P3, prepared by Proctor & Redfern Consulting Engineers, dated June 1987;
- Erin Centre Boulevard - Sta. 0+220 to Sta. 0+480 - Plan & Profile As-Constructed Drawings Dwg No A1-84713-P5, prepared by Proctor & Redfern Consulting Engineers, dated June 1987; and
- Erin Centre Boulevard - Sta. 0+480 to Sta. 0+726.543 - Plan & Profile As-Constructed Drawings Dwg No A1-84713-P6, prepared by Proctor & Redfern Consulting Engineers, dated June 1987.

The above listed drawings have been included in **Appendix B**.

2.0 Storm Servicing

2.1 Existing Storm Sewer System

As indicated in the record drawings (**Appendix B**), the sizes and locations of the existing storm sewers surrounding the site are:

- ➔ A 750-825 mm diameter concrete storm sewer on Erin Centre Boulevard flowing northeast;
- ➔ A 750-900 mm diameter concrete storm sewer on Glen Erin Drive flowing southeast;
- ➔ A 450-900 mm diameter concrete storm sewer on the south private ring road network flowing southwest into the 1050 mm diameter storm sewer on Glen Erin Drive, at the southwest corner of the site; and
- ➔ A 600-750 mm diameter concrete storm sewer on the north private ring road network flowing northeast into the 1050 mm diameter storm sewer on Erin Centre Boulevard, at the northeast corner of the site.

There are also three existing storm service connections from the subject site to the Glen Erin Drive storm network that are 675 mm, 600 mm, and 525 mm in diameter. Similarly, there are two existing storm service connections from the subject site to the Erin Centre Boulevard storm network that are 675 mm and 450 mm in diameter.

2.2 Proposed Storm Sewer System

The storm sewer system (minor system) within the proposed development (**Figures 2.1-2.3**) is designed for the 5-year return storm per the City of Mississauga standards. The storm sewer system was designed in accordance with the City of Mississauga, Ontario Building Code and MECP guidelines, including the following:

- ➔ Minor System Conveyance: 10 Year
- ➔ Major System Conveyance: 100 Year
- ➔ Time of Concentration: 15 minutes
- ➔ Minimum Pipe Size: 300 mm diameter
- ➔ Minimum Velocity: 0.75 m/s
- ➔ Maximum Velocity: 4.0 m/s
- ➔ Minimum Pipe Cover: 1.20 m (frost cover)
- ➔ Runoff coefficient for high density block – 0.90
- ➔ Runoff coefficient for townhouse block – 0.65
- ➔ Runoff coefficient for park – 0.30

The rainfall intensity will be calculated using the A, B, and C values listed in **Table 2.1**:

Table 2.1 – Rainfall Intensity Parameters

Return Period Storm	A	B	C
2 Year	610	4.6	0.78
5 Year	820	4.6	0.78
10 Year	1010	4.6	0.78
25 Year	1160	4.6	0.78
50 Year	1300	4.7	0.78
100 Year	1450	4.9	0.78

Storm drainage for the proposed development will be conveyed to the existing municipal storm sewer systems via a connection for each subphase. These connection points are summarized in **Table 2.2** below:

Table 2.2 – Proposed Subphase Storm Sewer Connections

Subphase	Connection
1 (Building A)	Proposed to reuse the existing 525 mm diameter concrete storm service connection at the west limit of the subphase, which connects to the concrete storm sewer on Glen Erin Drive.
2 (Buildings B&G)	Proposed to reuse the existing 600 mm diameter concrete storm service connection adjacent to Tower B, which connects to the concrete storm sewer on Glen Erin Drive.
3 (Buildings C&D)	Proposed to reuse the existing 675 mm diameter concrete storm service connection adjacent to Tower C, which connects to the concrete storm sewer on Glen Erin Drive.
4 (Buildings E&H)	Proposed to install a 300 mm diameter PVC storm service connection at the north side of Tower E, which connects to the 750 mm diameter concrete storm sewer on Erin Centre Boulevard.
5 (Building F)	Proposed to reuse the existing 450 mm diameter concrete storm service connection at the north limit of the subphase, which connects to the 975 mm diameter concrete storm sewer on Erin Centre Boulevard.
Park Block	The park block is proposed to be serviced via a new connection to the sewer draining south within the private ring road, which connects to the existing 1050 mm diameter concrete storm sewer on Glen Erin Drive.

Drawing S-1 shows the preliminary layout of the proposed storm sewer system for the development. The exact size and location of the proposed storm sewer system for the development will be determined in support of the Site Plan Application. It should be noted that no private utilities on-site are proposed to be relocated. All existing utilities are to be decommissioned & built new as required and shown on the Servicing Plan.

3.0 Stormwater Management

3.1 Stormwater Runoff Control Criteria

The following stormwater runoff control criteria have been established based on the City of Mississauga design criteria (2016), Credit Valley Conservation Authority (CVC) design criteria (2022), and the MECP Stormwater Management Planning and Design Manual (2003). The stormwater runoff criteria are summarized below in **Table 3.1**.

Table 3.1: Stormwater Runoff Control Criteria

Criteria	Control Measure
Quantity Control	Control proposed peak flows to existing peak flows for the 2 through 100-year storm events (CVC). Control proposed peak flows to the designed capacity of the storm sewers in accordance with the City's Tributary Drawings and Design Sheets (City of Mississauga).
Quality Control	Provide MECP Enhanced (Level 1) Protection for 80% TSS Removal (CVC/MECP).
Erosion Control	Retain 5 mm rainfall runoff on-site (CVC).
Water Budget	As the site does not lie within a Wellhead Protection Area (WHPA) or Significant Groundwater Recharge Area (SGRA), the water budget criteria will be achieved via the retention of the equivalent of 5 mm of rainfall over the development area.

3.2 Existing Drainage

The majority of the existing lands (2.85 ha) drain south via overland flow to existing storm sewers flowing southeast on Glen Erin Drive. This area drains to an existing 900 mm diameter storm sewer (Catchment 010 & 020 **Figure 3.1**) and an existing 750 mm diameter storm sewer on Glen Erin Drive (Catchment 030, **Figure 3.1**). The storm sewers on Glen Erin Drive outlet to a tributary in the Sawmill Creek subwatershed.

The remainder of the existing lands (1.43 ha) drain northwest to an existing 750 mm diameter storm sewer flowing northeast on Erin Centre Boulevard (Catchment 040, **Figure 3.1**) and north to an existing 975 mm diameter storm sewer flowing northeast on Erin Centre Boulevard (Catchment 050, **Figure 3.1**). The storm sewers on Erin Centre Boulevard outlet to a tributary in the Mullett Creek subwatershed.

3.3 Allowable Release Rate

In the proposed condition each catchment will outlet to an existing or proposed City of Mississauga owned storm sewer. Per the City of Mississauga Guidelines, storm sewers are sized to convey the 10-year storm event. Design Sheets confirming the design and

capacities of the existing storm sewers are available in **Appendix B** for reference. Therefore, the allowable release rates to the existing storm sewers are determined based on Tributary areas presented in the City of Mississauga's Drainage Area Drawings that informed the existing sewer designs, provided in **Appendix B** and reflected in **Figures 3.1** accordingly. For Catchment 140, it first outlets to the existing 450mm sewer on the ring road before eventually outletting to the existing 1050mm storm sewer on Glen Erin Drive. The allowable release rate to the 450mm storm sewer on the ring road will be confirmed when the requested design information is available from the City of Mississauga for this sewer. The allowable release rate to the 750mm and 975mm storm sewers on Erin Centre Boulevard are determined based on 10-year flow rates from the areas delineated in the aforementioned tributary drawings from the City. For the proposed development catchments, the existing 10-year peak flow rate has been pro-rated based on area. The rational method was used to determine the target release rates based on Intensity-Duration-Frequency (IDF) rainfall curves from the City of Mississauga Design Standards. The allowable release rate calculation for the proposed development is shown in **Appendix D**, and summarized on **Table 3.2** and **Table 3.3**.

Table 3.2: Blocks 110-230 Allowable Release Rate Summary

Outlet ID	Allowable Release Rate to Glen Erin Drive (City of Mississauga Criteria, L/s)	Allowable Release Rate to Erin Centre Boulevard (City of Mississauga Criteria, L/s)
110	98.9	--
120	212.1	--
130	170.7	--
210	75.8	--
220	--	186.0
230	--	130.9
140 (Park)	31.2	--
Total	588.8	316.9

Table 3.3: Allowable Release Rate Summary

Return Period Storm	Glen Erin Drive (L/s)	Erin Centre Boulevard (L/s)
10 Year	588.8	316.9

3.4 Stormwater Best Management Practices Selection

In accordance with the Ministry of Environment Stormwater Management Planning and Design Manual (2003), a review of stormwater management best practices was completed using a treatment train approach, which evaluated lot level, conveyance

system and end-of-pipe alternatives. The potential best management practices were evaluated based on the stormwater management objectives listed in **Table 3.3**.

The following study area characteristics were taken into consideration:

- Developable area of 4.28 ha consisting of consists of eight condominium buildings and a park block;
- The soils consist of low permeability clayey silt till with bedrock and shale deposits encountered at approximately 2.7 m below ground;
- The proposed development is partially covered by a layer of fill and concrete material underlain by native fine texture till layer consisting of clayey silt till/sandy silt;
- The in-situ hydraulic conductivity of the soil ranges from 2.6×10^{-7} to 1.3×10^{-6} , with a geometric mean of 4.6×10^{-7} ;
- The groundwater was measured to be 168.74 masl to 172.30 masl based on monitoring between October 26, 2022 to February 4, 2024; and
- Building foundations are to be watertight to mitigate potential interactions with groundwater.

The following are examples of lot level, conveyance and end-of-pipe controls that were evaluated for use in the proposed development. While evaluating the following controls, cost, feasibility, groundwater and grading constraints were taken into consideration.

Lot Level Controls

Lot-level controls are at-source measures that reduce runoff prior to stormwater entering the conveyance system, such as:

- Increased topsoil depth;
- Roof leaders to grassed areas;
- At-source storage (i.e. rooftop or parking lot storage);
- Pervious pavements;
- Infiltration trenches/soak-away pits.

Conveyance Controls

Conveyance controls provide treatment of stormwater during the transport of runoff from individual lots to the receiving watercourse or end-of-pipe facility. Examples of conveyance controls include:

- Grassed Swales;
- Pervious pipe system.

End-of-Pipe Controls

End-of-pipe stormwater management facilities receive stormwater flows from a conveyance system (i.e., storm sewers or ditches) and provide treatment of stormwater prior to discharging flows to the receiving watercourse. Typical end-of-pipe controls include:

- Wet ponds;
- Wetlands;
- Dry ponds;
- Infiltration basins; and
- Underground storage.

A comprehensive assessment of LID practices will be provided in support of the Site Plan Approval applications. It is noted that the development consists of high density blocks and a municipal park. **Table 3.4** below shows feasibility of LIDs for the public and private blocks. It is noted that as the proposed development consists of watertight building foundations, the opportunity for infiltration-based LIDs in the private blocks is limited. The opportunity for LIDs in the public park block is limited to what the municipality will accept.

Table 3.4: Recommended Stormwater LID Practices

Stormwater Management Practice	Public Block	Private Blocks
	Feasible / Recommended	Feasible / Recommended
Increased Topsoil Depth	Yes	Yes
Passive Landscaping	Yes	Yes
Roof Leader to Grassed Areas	No	No
Roof Runoff to Retention Cisterns	No	Yes
Rooftop and/or Parking Lot Detention Storage	No	Yes
Green Roofs	No	Yes
Infiltration Trenches/Soak-away Pits	Yes	No
Permeable Pavements	Yes	Yes
Grassed Swales	Yes	Yes
Bioretention/Rain Garden Systems	Yes	No
Tree Box LIDs	Yes	No

Stormwater Management Practice	Public Block	Private Blocks
	Feasible / Recommended	Feasible / Recommended
Street Catchbasin Infiltration/Exfiltration Systems	No	No
Grassed Filter Strips	Yes	Yes
Perforated Pipe Systems	No	No
Stormwater Detention Facilities	Yes	Yes
Wet Ponds, Wetlands, Dry Ponds	No	No
Manufactured Treatment Device	Yes	Yes
Catchbasin Insert Treatment Systems	No	No

3.5 Proposed Storm Drainage

The proposed major and minor system flow patterns and drainage areas are shown on **Figures 3.2-3.4**. As illustrated, drainage from the majority of the proposed development will convey runoff to Glen Erin Drive (Catchments 110-130, **Figures 3.2-3.3**). Drainage from the remainder of the proposed development (Catchment 210 and 220, **Figures 3.3-3.4**) will be conveyed to Erin Centre Boulevard. Major and minor system flows from the proposed development will be sent to the existing storm sewer systems on Glen Erin Drive and Erin Centre Boulevard and detained on-site in an underground storage system. Minor system flows from Catchment 140 will drain to the existing Ring Road before entering storm sewers on Glen Erin Drive.

3.5.1 Quantity Control

Quantity control for the proposed development will be required to control proposed runoff to the allowable release rates to the Erin Centre Boulevard storm sewers, the Glen Erin Drive storm sewers, and the Ring Road storm sewer. The allowable release rates for the proposed development, as identified in **Section 3.3**, are to be achieved through on-site storage of stormwater.

The proposed 10-year piped release rate from Catchment 140 will be controlled to the allowable release rate to the existing storm sewer on the Ring Road. The capacity of the ring road sewer will be confirmed when the sewer’s design information is available from the City of Mississauga. Proposed release rates from Catchments 110-130 will be controlled to the allowable release rates to the existing storm sewers on Glen Erin Drive. Catchments 210 and 220 will be controlled to the allowable release rates to the existing storm sewers on Erin Centre Boulevard. Proposed release rates were calculated using the modified rational method and the IDF rainfall curves from the City of Mississauga Engineering Design Standards and are in accordance with the design sheets of these

existing storm sewers. The proposed release rates have been pro-rated so that each private and public block is provided a release rate & on-site storage in relation to the block's size, these pro-rated release rates are listed in Table 3.2 above. Calculations are included in **Appendix C**.

As per the EXP Hydrogeological Report dated August 2024 (**Appendix F**), a permanent groundwater dewatering rate for each phase will be added to the SWM tank. The proposed release rates and required storage volumes were calculated using the modified rational method and the IDF rainfall curves from the City of Mississauga Design Standards, including the groundwater discharge. Detailed calculations are included in **Appendix C**.

3.5.2 Quality Control

Quality control for the proposed high-density subphases will be provided on-site. This could be achieved through a combination of on-site LID's and/or a manufactured treatment device as discussed in section 3.4 above. Details will be provided at the Site Plan application stage.

Quality control for the remainder of the proposed development (park block) could be achieved through a combination of ROW based LID's and/or a manufactured treatment device as discussed in section 3.4 above.

3.5.3 Erosion Control

Retention of the 5 mm storm runoff over the proposed development is required to meet the erosion control target. Each of the private subphases and the public park are to achieve the 5mm retention criteria. A site specific evaluation of feasible LIDs to achieve erosion control will be provided at the Site Plan application stage.

3.5.4 Water Balance

Where feasible, measures to minimize impacts on the water budget will be incorporated into the proposed development design.

As noted in **Section 3.1**, the subject site does not fall within any source protection areas. Therefore, the required retention within the municipal park can be provided via at or below-grade LID's as outlined in **Section 3.4** to achieve the erosion control criteria of 5mm retention, is more than sufficient to address the water balance requirements.

4.0 Sanitary Servicing

4.1 Existing Sanitary Sewer System

As indicated in the record drawings (**Appendix B**), the sizes and locations of the existing sanitary sewers surrounding the site are:

- A 900 mm diameter concrete sanitary sewer on Erin Centre Boulevard flowing northeast;
- A 300-375 mm diameter PVC sanitary sewer on Glen Erin Drive flowing southeast; and
- A 250 mm diameter PVC sanitary sewer on the north private ring road network flowing northeast.

There are also three existing sanitary service connections from the subject site to the Glen Erin Drive sanitary network that are 150 mm, 250 mm, and 300 mm in diameter.

4.2 Proposed Sanitary Sewer System

The sanitary sewer system from the proposed development is proposed to connect to the existing sanitary sewers on Glen Erin Drive and Erin Centre Boulevard via connections for each building, as shown on **Drawing S-1**. The proposed sanitary sewers have roughly 5 m of cover at the proposed service connections, which is sufficient to service the proposed development.

The sanitary sewers within the site will have slopes ranging between 0.7% and 2.0% (typically) and will be provided at an adequate depth to service the site. The sanitary sewer system will be designed in accordance with the Region of Peel and MECP criteria, including but not limited to:

- Residential Sanitary Generation Rate: 290 L/cap/day
- Residential Population Density:
 - 2.7 persons/unit (per Peel standards, as population equivalent is greater than 475 persons/ha)
- Peaking Factor: Harmon's Equation (Max = 4.0, Min = 2.0)
- Infiltration Rate: 0.26 L/s/ha
- Minimum Proposed Pipe Size: 200 mm diameter
- Minimum Design Flowing Velocity: 0.75 m/s
- Maximum Velocity: 3.00 m/s

Sanitary drainage for the proposed development will be conveyed to the existing municipal sanitary sewer systems via a connection for each Building. These connection points are summarized in **Table 4.1** below:

Table 4.1 – Proposed Building Sanitary Sewer Connections

Building	Connection
Building A	Proposed to replace the existing 100 mm diameter PVC sanitary service connection at the west limit of the building with a 200 mm connection, which connects to the 300 mm diameter PVC sanitary sewer on Glen Erin Drive. It should be noted that this connection is labelled as 150 mm or 250 mm in diameter on conflicting drawings; the subsurface investigation found this to be 100mm.
Building B	Proposed to reuse the existing 300 mm diameter PVC sanitary service connection at the west limit of the building, which connects to the 300 mm diameter PVC sanitary sewer on Glen Erin Drive.
Building C	Proposed to reuse the existing 250 mm diameter PVC sanitary service connection adjacent to Building C, which connects to the 300 mm diameter PVC sanitary sewer on Glen Erin Drive.
Building D	Proposed to install a 200 mm diameter PVC sanitary service connection at the property line adjacent to Building D, which connects to the 900 mm diameter concrete sanitary sewer on Erin Centre Boulevard.
Building E	Proposed to install a 200 mm diameter PVC sanitary service connection at the property line adjacent to Building E, which connects to the 900 mm diameter concrete sanitary sewer on Erin Centre Boulevard.
Building F	Proposed to install a 200 mm diameter PVC sanitary service connection at the property line adjacent to Building F, which connects to the 900 mm diameter concrete sanitary sewer on Erin Centre Boulevard.
Building G	Proposed to install a 200 mm diameter PVC sanitary service connection at the property line adjacent to the Building B connection, which connects to the 300 mm diameter PVC sanitary sewer on Glen Erin Drive.
Building H	Proposed to install a 200 mm diameter PVC sanitary service connection at the property line adjacent to the Building E connection, which connects to the 900 mm diameter concrete sanitary sewer on Erin Centre Boulevard.
Park Block	It is recommended that the park block be serviced via a future sanitary sewer in the private ring road network at the time when this is redesigned and a municipal sewer fronting the park is provided.

The sanitary demands for each building have been calculated and provided in **Table 4.2** and **Appendix D**. The Region of Peel is to confirm that there is capacity for the existing sewer system to service the proposed development.

Table 4.2 – Sanitary Demands

Building	Sanitary Demand (L/s)
A	12.67
B	10.52
C	8.35
D	8.35
E	10.49
F	23.26
G	18.37
H	16.47

Drawing S-1 shows the preliminary layout of the proposed sanitary sewer system for the development. The exact size and location of the proposed sanitary sewer system for the development will be determined in support of the Site Plan Application. It should be noted that no private utilities on-site are proposed to be relocated. All existing utilities are to be decommissioned & built new as required and shown on the Servicing Plan.

5.0 Water Supply and Distribution

5.1 Existing Water Distribution

As indicated in the survey (**Appendix B**), the following existing watermains surround the site:

- A 900mm diameter C.P.P. watermain on the southeast side of Erin Centre Boulevard;
- A 400 mm diameter concrete watermain on the northeast side of Glen Erin Drive.

A hydrant flow test will be completed watermain at a later date to help inform the Region's model with the latest boundary conditions of the site.

5.2 Proposed Water System

Water supply for the proposed development will be provided from the existing watermain along Glen Erin Drive. Domestic and fire connections will be provided for each building, as shown on **Drawing S-1**. The proposed water distribution system will be designed in accordance with the Region of Peel and MECP criteria, including but not limited to the following:

- Minimum Pipe Size: 150 mm diameter
- Minimum Pipe Cover: 1.7 m
- Maximum Hydrant Spacing:
 - 150 m in residential areas (detached and semi-detached)
 - 100 m in ICI areas
 - 70 m in townhouse areas

The domestic and fire connections for each building are summarized in **Table 5.1** below:

Table 5.1 – Proposed Building Water Connections

Building	Fire Connection(s)	Domestic Connection
A	Proposed to reuse the existing 300 mm diameter PVC water service connection at the property line adjacent to Building A, which connects to the 400 mm diameter concrete watermain on Glen Erin Drive. An additional PVC firemain is proposed adjacent to the existing service connection, separated by a proposed isolation valve on the municipal main.	Proposed to tee off of the proposed firemain connection to the building.
B	Proposed to reuse the existing 300 mm diameter PVC water service connection at the property line adjacent to Building B, which connects to the 400 mm diameter concrete watermain on Glen Erin Drive.	Proposed to tee off of the proposed firemain connection to the building.
C	Proposed to install PVC fire water connection at the property line adjacent to Building C, which connects to the 400 mm diameter concrete watermain on Glen Erin Drive.	Proposed to tee off of the proposed firemain connection to the building.
D	Proposed to reuse existing 300 mm diameter PVC water connection at the property line at the northwest corner of the site, which connects to the 400 mm diameter concrete watermain on Glen Erin Drive.	Proposed to tee off of the existing firemain connection to the building.
E	Proposed to install PVC fire water connection at the property line adjacent to the Building C&D water connections, which connects to the 400 mm diameter concrete watermain on Glen Erin Drive.	Proposed to tee off of the proposed firemain connection to the building.
F	Proposed to install two (2) PVC fire water connections at the property line adjacent to the Building C&D water connections, which connect to the 400 mm diameter concrete watermain on Glen Erin Drive. The two fire connections are separated by a proposed isolation valve.	Proposed to tee off of one of the proposed firemain connections to the building.
G	Proposed to install two (2) PVC fire water connections at the property line adjacent to the Building B water connections, which connect to the 400 mm diameter concrete watermain on Glen Erin Drive. The two fire connections are separated by a proposed isolation valve.	Proposed to tee off of one of the proposed firemain connections to the building.
H	Proposed to install two (2) PVC fire water connections at the property line adjacent to the Building C&D water connections, which connect to the 400 mm diameter concrete watermain on Glen Erin Drive. The two fire connections are separated by a proposed isolation valve.	Proposed to tee off of one of the proposed firemain connections to the building.
Park	It is recommended that the park block be serviced via a future watermain in the private ring road network at the time when this is redesigned and a public watermain is provided.	

A water demand analysis was completed for the site in accordance with the Region of Peel, Ontario Building Code, and MECP criteria, including:

- ➔ Domestic Water Consumption Rate: 280 L/cap/day
- ➔ Peaking Factors:
 - Maximum Day = 2.0
 - Peak Hour = 3.0
- ➔ Residential Population Density:
 - 2.7 persons/unit (per Peel standards, as population equivalent is greater than 475 persons/ha)

The domestic water demands and Fire Underwriters Survey (FUS) 2020 calculations can be found in **Appendix E**. A summary of the domestic and fire demands is presented below in **Table 5.2**:

Table 5.2 – Water Demands

Building	FUS Fire Flow	Average Day	Max Day	Peak Hour	Max Day + Fire Flow
A	50 L/s	3.19 L/s	6.37 L/s	9.56 L/s	56.37 L/s
B	50 L/s	2.61 L/s	5.22 L/s	7.83 L/s	55.22 L/s
C	33.33 L/s	2.03 L/s	4.05 L/s	6.07 L/s	37.38 L/s
D	50 L/s	2.03 L/s	4.05 L/s	6.07 L/s	54.05 L/s
E	33.33 L/s	2.61 L/s	5.22 L/s	7.83 L/s	38.55 L/s
F	66.66 L/s	6.21 L/s	12.41 L/s	18.62 L/s	79.08 L/s
G	50 L/s	4.78 L/s	9.56 L/s	14.34 L/s	59.56 L/s
H	50 L/s	4.25 L/s	8.49 L/s	12.74 L/s	58.49 L/s

The Region of Peel is to confirm that there is capacity for the existing watermain system to service the proposed development, and provide SCS with proposed watermain sizes for the service connections meet this capacity. It should be noted that no private utilities on-site are proposed to be relocated. All existing utilities are to be decommissioned & built new as required and shown on the Servicing Plan.

6.0 Grading

6.1 Existing Grading Conditions

The existing topography has slopes in the range of 1% to 5%. The ground surface elevations through the study area range from approximately 174.6 m in the north corner to approximately 177.0 m in the east limit of the private ring road.

6.2 Proposed Grading Concept

In general, the proposed development has been graded in a manner which satisfies the following goals:

Satisfy the City of Mississauga lot and road grading criteria and create required depth for sewers, including:

- Minimum Lot Grade: 2%
- Maximum Lot Grade: 5%
- Minimum Driveway Grade: 2%
- Maximum Driveway Grade: 8%
- Minimize the need for retaining walls
- Minimize the volume of earth to be moved and minimize cut/fill differentials
- Achieve the stormwater management objectives required for the proposed development.

A preliminary grading plan is provided on **Figures 6.1-6.3**. Details will be provided at the draft plan and site plan application stages.

At the detailed design stage, the preliminary grading shown on **Figures 6.1-6.3** will be subject to a more in-depth analysis in an attempt to balance the cut and fill volumes and minimize slopes and retaining walls.

7.0 Groundwater Discharge

A preliminary Hydrogeological Investigation was prepared by Exp Services Inc. (**Appendix F**) to address concerns relating to temporary and permanent groundwater discharge for the proposed development. The groundwater discharge rates from this report are summarized in **Table 7.1** below.

Table 7.1 – Dewatering Rates

Subphase	Short Term Dewatering + Precipitation (L/day)	Short Term Dewatering (L/day)	Long Term Dewatering (L/day)	Short Term Dewatering + Precipitation (L/s)	Sanitary Demand (L/s)
1 (A)	380,000	258,000	71,000	4.40	12.67
2 (B&G)	652,000	377,000	58,000	7.55	28.89
3 (C&D)	699,000	396,000	62,000	8.09	16.70
4 (E&H)	518,000	316,000	48,000	6.00	26.96
5 (F)	440,000	310,000	47,000	5.09	23.26

Per Exp’s hydrogeological investigation, as of July 1, 2021, an amendment of O. Reg. 63/16 has come into effect and replaced the former subsection 7 (5) such that the EASR water taking limit of 400,000 L/day would apply to groundwater takings of each dewatered work area only, excluding stormwater. Therefore, as the construction dewatering rates (excluding stormwater) are greater than 50,000 L/day and less than 400,000 L/day, an online registration with the Environmental Activity and Sector Registry (EASR) will be required.

The groundwater discharge from temporary construction dewatering is proposed to be discharged to the sanitary sewers on Glen Erin Road and Erin Centre Boulevard. The Region of Peel is to confirm whether these sewers have capacity to accommodate the sanitary demands of the development. As the dewatering rates are less than the sanitary demands for all phases, the sewers will be deemed to have capacity to accommodate the dewatering upon confirmation from the Region regarding the sanitary capacity.

In the permanent condition, long term dewatering is proposed to be discharged to the storm sewer system (refer to **Section 3** for further details). For water being discharged, the property owner will enter into a Sewer Discharge Agreement with Region of Peel Water (for sanitary discharge) or City of Mississauga Water (for storm discharge).

Per EXP’s hydrogeological report, pretreatment is required in both the short term and long-term dewatering conditions. Refer to the Hydrogeological Investigation in **Appendix F** for further information regarding groundwater quality and pretreatment requirements. Detailed pump rates will be provided at a later date in support of a Site Plan Application.

8.0 Erosion and Sediment Control During Construction

Erosion and sediment control measures will be designed and may include temporary sediment control fencing, a construction access driveway, check dams and temporary sediment control facilities where required. These measures will be designed and constructed as per the “Erosion and Sediment Control Guide for Urban Construction” document (TRCA, 2019). The detailed erosion and sediment control plan will be approved by the Municipality prior to any site alteration being undertaken. The plan will address phasing, inspection and monitoring aspects of erosion and sediment control. All reasonable measures will be taken to ensure sediment loading to the adjacent properties and storm sewers is minimized both during and following construction.

9.0 Summary

This Functional Servicing Report has outlined the means by which:

- ➔ The Subject Lands can be graded and serviced in accordance with the City of Mississauga, CVC, and MECP design criteria and policies.
- ➔ The stormwater management criteria can be achieved; and
- ➔ The proposed development can be graded in a manner which satisfies the City of Mississauga grading criteria and the stormwater management requirements for this development.

This Functional Servicing Report has outlined the means by which the proposed development at Erin Mills Town Centre will meet the objectives of the City of Mississauga and Peel Region Design Guidelines through the following measures:

Quantity Control

- ➔ Runoff from the areas proposed to be modified will be limited to the design flow rate of the existing Erin Centre Boulevard, Glen Erin Drive and the ring road storm systems, on-site quantity control is required on each of the proposed private blocks and the public park to satisfy this criteria.

Quality Control

- ➔ The water quality objective of 80% TSS removal for 90% of the cumulative annual runoff for areas exposed to TSS loading is to be achieved on each private block as well as the public park.

Erosion Control

- ➔ The erosion control criteria of the 5mm retention is to be satisfied in each of the private and public blocks.

Water Balance

- ➔ As noted in Table 3.1 above, the subject site does not fall within any source protection areas. Therefore, the equivalent of the 5 mm rainfall event is required to be retained on-site in accordance with the erosion control criteria, is sufficient to satisfy the water balance requirement.

Sanitary Servicing

- ➔ The sanitary sewer system will be designed in accordance with the City of Mississauga Criteria.

Water Supply

- ➔ The proposed watermains will be designed in accordance with the City of Mississauga Criteria;

Site Grading

- ➔ The proposed development will be graded in accordance with the City of Mississauga criteria;
- ➔ The proposed development grading has been developed to match to the existing surrounding grades and provide conveyance of stormwater runoff; and;
- ➔ Block grading will be subject to further grading design at the architectural design stage prior to building permit applications.

Erosion and Sediment Control during Construction

- ➔ An erosion and sediment control plan will be prepared at the detailed engineering stage, in accordance with the “Erosion and Sediment Control Guide for Urban Construction” document (TRCA, 2019).

Respectfully Submitted

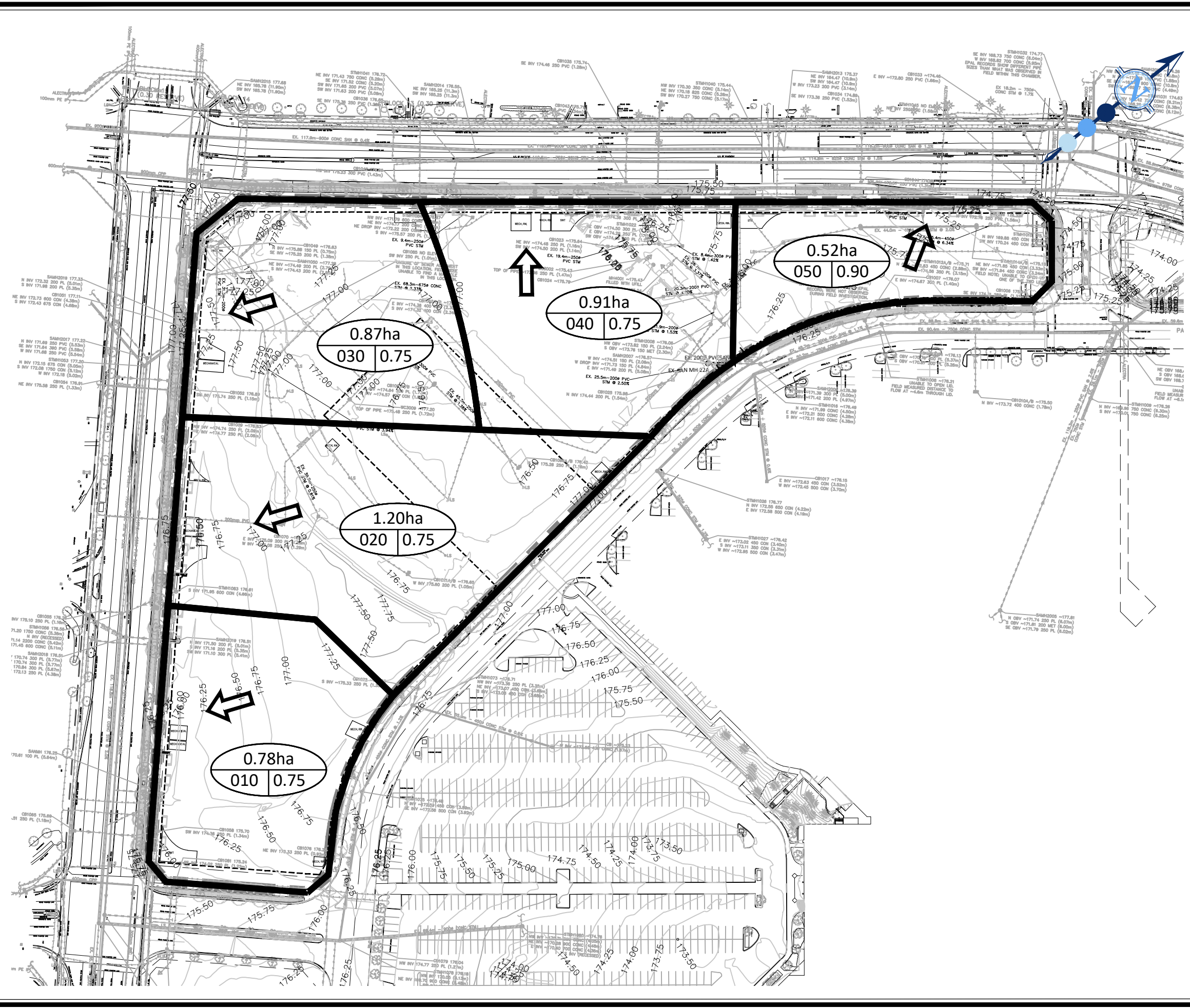
SCS Consulting Group Ltd.








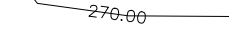
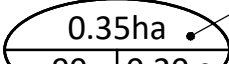
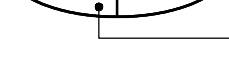
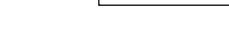
Darin Shore, P.Eng.
dshore@scsconsultinggroup.com



Michael Ventresca, P. Eng
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LEGEND:

-  LIMIT OF DEVELOPMENT
-  LIMIT OF PHASE
-  STORM DRAINAGE BOUNDARY
-  EXTERNAL STORM DRAINAGE BOUNDARY
-  OVERLAND FLOW ARROW
-  EXISTING CONTOUR AND ELEVATION
-  DRAINAGE AREA (HECTARES)
-  RUNOFF COEFFICIENT
-  CATCHMENT ID

*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

SCS consulting group ltd
 30 CENTURIAN DRIVE, SUITE 100
 MARKHAM, ONTARIO L3R 8B8
 TEL: (905) 475-1900
 FAX: (905) 475-8335

EMTC HOLDINGS INC.

**ERIN MILLS TOWN CENTRE
 REDEVELOPMENT - PHASE 1**

**PRELIMINARY EXISTING
 STORM DRAINAGE PLAN 1**

DESIGNED BY: D.S./J.Y.L.	CHECKED BY: P.C.
SCALE: 1:1500	DATE: OCTOBER 2024
PROJECT No: 2228	FIGURE No: 3.1

SEE DWG. 3.2



LEGEND:

- LIMIT OF DEVELOPMENT
- LIMIT OF PHASE
- STORM DRAINAGE BOUNDARY
- EXTERNAL STORM DRAINAGE BOUNDARY
- OVERLAND FLOW ARROW
- EXISTING CONTOUR AND ELEVATION
- DRAINAGE AREA (HECTARES)
- RUNOFF COEFFICIENT
- CATCHMENT ID
- 100 YEAR CAPTURE LOCATION

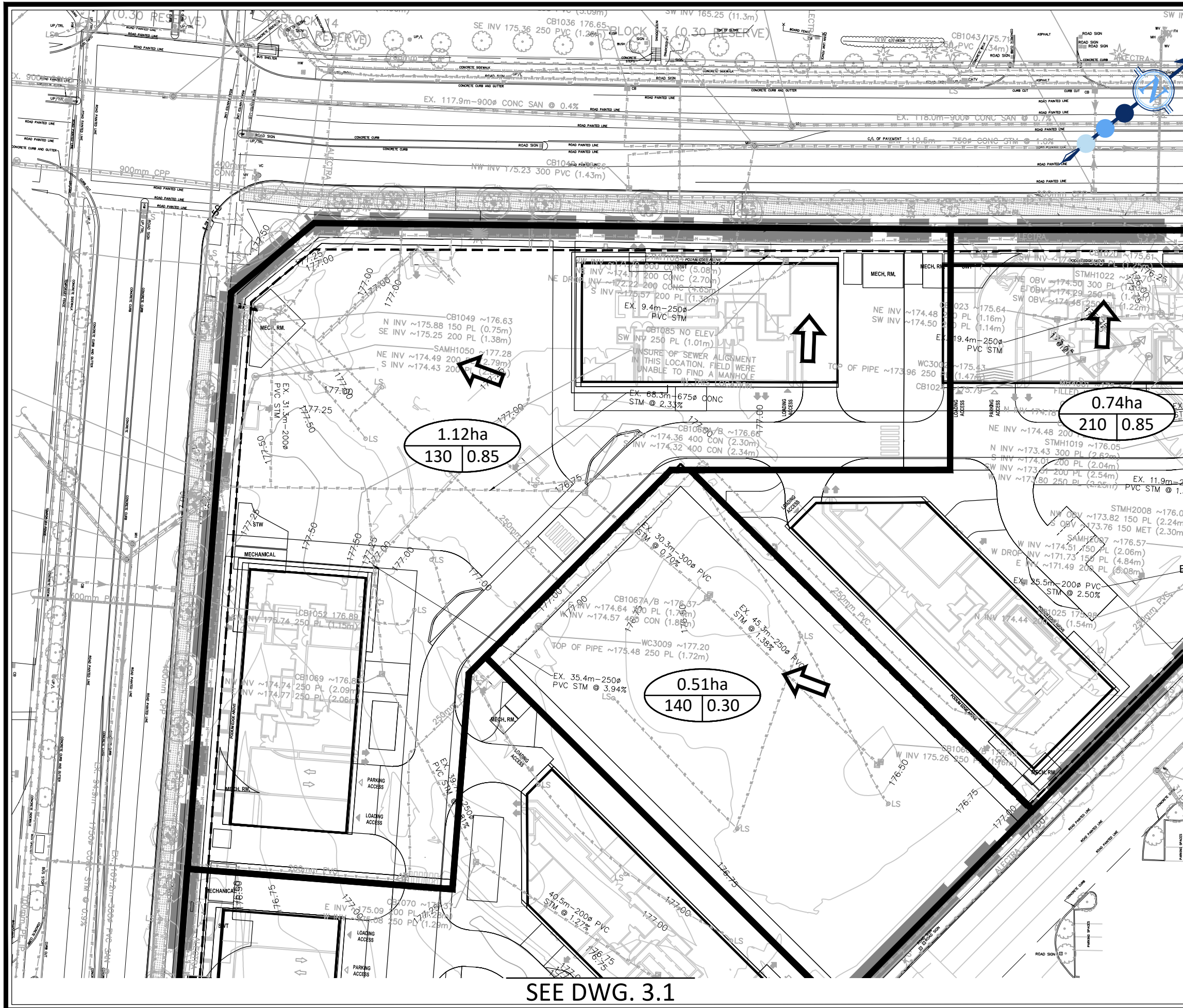
*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

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EMTC HOLDINGS INC.

**ERIN MILLS TOWN CENTRE
REDEVELOPMENT - PHASE 1
PRELIMINARY PROPOSED
STORM DRAINAGE PLAN 1**

DESIGNED BY:	D.S./J.Y.L.	CHECKED BY:	P.C.
SCALE:	1:750	DATE:	OCTOBER 2024
PROJECT No:	2228	FIGURE No:	3.2



LEGEND:

- LIMIT OF DEVELOPMENT
- LIMIT OF PHASE
- STORM DRAINAGE BOUNDARY
- EXTERNAL STORM DRAINAGE BOUNDARY
- OVERLAND FLOW ARROW
- EXISTING CONTOUR AND ELEVATION
- DRAINAGE AREA (HECTARES)
- RUNOFF COEFFICIENT
- CATCHMENT ID
- 100 YEAR CAPTURE LOCATION

SEE DWG. 3.3

*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

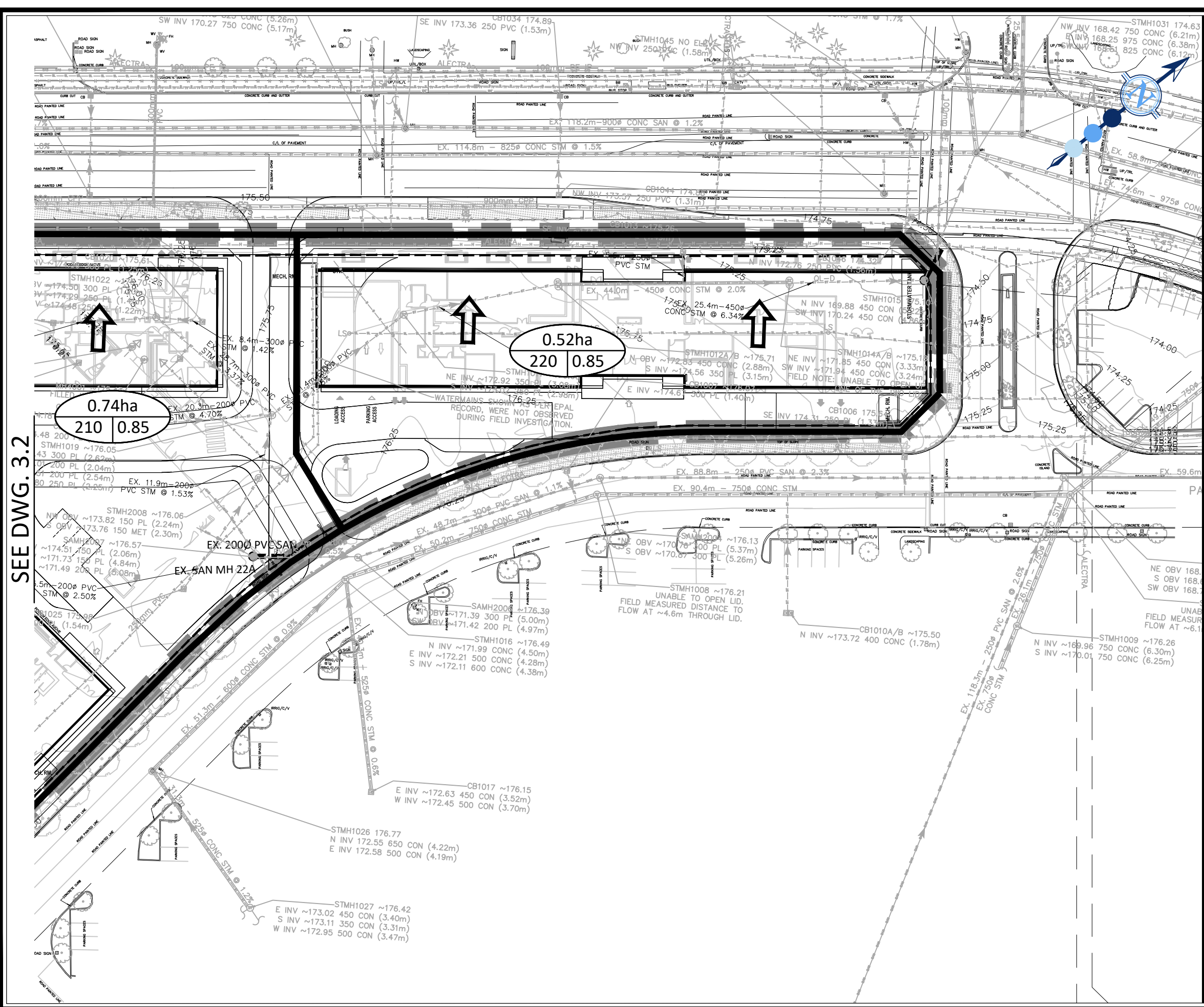
30 CENTURIAN DRIVE, SUITE 100
 MARKHAM, ONTARIO L3R 8B8
 TEL: (905) 475-1900
 FAX: (905) 475-8335

EMTC HOLDINGS INC.

**ERIN MILLS TOWN CENTRE
 REDEVELOPMENT - PHASE 1
 PRELIMINARY PROPOSED
 STORM DRAINAGE PLAN 2**






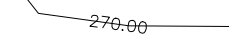
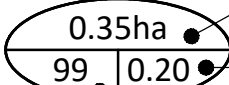
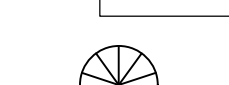


DESIGNED BY: D.S./J.Y.L.	CHECKED BY: P.C.
SCALE: 1:750	DATE: OCTOBER 2024
PROJECT No: 2228	FIGURE No: 3.3

SEE DWG. 3.1



SEE DWG. 3.2

LEGEND:

-  LIMIT OF DEVELOPMENT
-  LIMIT OF PHASE
-  STORM DRAINAGE BOUNDARY
-  EXTERNAL STORM DRAINAGE BOUNDARY
-  OVERLAND FLOW ARROW
-  EXISTING CONTOUR AND ELEVATION
-  DRAINAGE AREA (HECTARES)
99 | 0.20
-  RUNOFF COEFFICIENT
-  CATCHMENT ID
-  100 YEAR CAPTURE LOCATION

*NOTE: LAYOUT IS SCHEMATIC ONLY, DETAILS TO BE PROVIDED AT DETAILED DESIGN STAGE.

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EMTC HOLDINGS INC.

**ERIN MILLS TOWN CENTRE
 REDEVELOPMENT - PHASE 1**

**PRELIMINARY PROPOSED
 STORM DRAINAGE PLAN 3**

DESIGNED BY: D.S./J.Y.L.	CHECKED BY: P.C.
SCALE: 1:750	DATE: OCTOBER 2024
PROJECT No: 2228	FIGURE No: 3.4

APPENDIX A

SITE PLAN



Site Plan Statistics				
	sqm	Acres	Hectares	%
Overall Site Area (Gross)	42,927	10.60	4.29	246%
Existing Public Roads	0	0.00	0.00	0%
Parkland Dedication	4,306	1.06	0.43	10%
Daylight triangle (portion of the triangle to be conveyed)	12.27			0.03%
Developable Site Area (Net)	38,610	9.54	3.86	90%
Buildings Footprint	11,100			29%
Urban Plaza	3,473	0.86	0.35	9%
New Private Roads (including sidewalks)	8,055	1.99	0.81	19%
Pedestrian Pathways (not inclusive to sidewalks)	12,894	3.18	1.29	33%
Landscaped area (softscape, not including planters)	5,752	1.42	0.58	15%
Outdoor Open Spaces	3,192	0.79	0.32	8%
Gross Building Area (Above Grade)	213,177			
FSI (GFA/Overall Site Area)	4.73			
Net FSI (GFA/Net Site Area)	5.26			

PROJECT STATISTICS SUMMARY		
Municipal Address:	5100 Erin Mills Town Centre	
Mississauga Zoning Bylaw 0225-2007:	Zoning Parcel RA5	
Gross Site Area	42,927.40 sm	
Established Grade: (By-Law 0225-2007, average elevation of grade around the building)		
Building A	176.07 m	
Building B	176.50 m	
Building C	177.06 m	
Building D	176.91 m	
Building E	176.37 m	
Building F1+F2	175.35 m	
Building G	176.70 m	
Building H	177.24 m	
Building A (Storeys): (excl. Mech Penthouse)	30 ST	
Building B (Storeys): (excl. Mech Penthouse)	25 ST	
Building C (Storeys): (excl. Mech Penthouse)	20 ST	
Building D (Storeys): (excl. Mech Penthouse)	20 ST	
Building E (Storeys): (excl. Mech Penthouse)	25 ST	
Building F1 (Storeys): (excl. Mech Penthouse)	27 ST	
Building F2 (Storeys): (excl. Mech Penthouse)	30 ST	
Building G (Storeys): (excl. Mech Penthouse)	44 ST	
Building H (Storeys): (excl. Mech Penthouse)	39 ST	
Building A Height (m): (excl. Mech. Penthouse)	95.03 m	
Building B Height (m): (excl. Mech. Penthouse)	79.85 m	
Building C Height (m): (excl. Mech. Penthouse)	64.99 m	
Building D Height (m): (excl. Mech. Penthouse)	64.94 m	
Building E Height (m): (excl. Mech. Penthouse)	79.28 m	
Building F1 Height (m): (excl. Mech. Penthouse)	86.10 m	
Building F2 Height (m): (excl. Mech. Penthouse)	94.95 m	
Building G Height (m): (excl. Mech. Penthouse)	135.00 m	
Building H Height (m): (excl. Mech. Penthouse)	121.71 m	
GFA - Residential Uses	202,920.5 sm	
GFA - Non-Residential Uses	0.0 sm	
Total Combined Gross Floor Area	202,920.5 sm	
Floor Space Index (FSI)	4.73	
Number of Residential Units	3,162	
Indoor Amenity Space Provided	8,390.0 sm	
Outdoor Amenity Space Provided	4,333.0 sm	
Building A	Vehicular Parking Provided: Residential 364 1 space/unit Vehicular Parking Provided: Visitors 55 0.15 space/unit	
Building B	Vehicular Parking Provided: Residential 298 1 space/unit Vehicular Parking Provided: Visitors 45 0.15 space/unit	
Building C	Vehicular Parking Provided: Residential 448 1 space/unit Vehicular Parking Provided: Visitors 52 0.15 space/unit	
Building D	Vehicular Parking Provided: Residential 449 1 space/unit Vehicular Parking Provided: Visitors 52 0.15 space/unit	
Building E	Vehicular Parking Provided: Residential 270 1 space/unit Vehicular Parking Provided: Visitors 46 0.15 space/unit	
Building F1	Vehicular Parking Provided: Residential 144 1 space/unit Vehicular Parking Provided: Visitors 31 0.15 space/unit	
Building F2	Vehicular Parking Provided: Residential 220 1 space/unit Vehicular Parking Provided: Visitors 48 0.15 space/unit	
Building G	Vehicular Parking Provided: Residential 546 1 space/unit Vehicular Parking Provided: Visitors 82 0.15 space/unit	
Building H	Vehicular Parking Provided: Residential 420 1 space/unit Vehicular Parking Provided: Visitors 74 0.15 space/unit	
Building A	Bicycle Parking Total Required 237 Bicycle Parking Total Provided 246	
Building B	Bicycle Parking Total Required 194 Bicycle Parking Total Provided 211	
Building C	Bicycle Parking Total Required 150 Bicycle Parking Total Provided 153	
Building D	Bicycle Parking Total Required 150 Bicycle Parking Total Provided 167	
Building E	Bicycle Parking Total Required 194 Bicycle Parking Total Provided 192	
Building F1	Bicycle Parking Total Required 219 Bicycle Parking Total Provided 312	
Building F2	Bicycle Parking Total Required 242 Bicycle Parking Total Provided 151	
Building G	Bicycle Parking Total Required 355 Bicycle Parking Total Provided 357	
Building H	Bicycle Parking Total Required 315 Bicycle Parking Total Provided 320	
Building A	Total Loading Spaces Provided 1	
Building B	Total Loading Spaces Provided 1	
Building C	Total Loading Spaces Provided 1	
Building D	Total Loading Spaces Provided 1	
Building E	Total Loading Spaces Provided 1	
Building F (F1+F2)	Total Loading Spaces Provided 1	
Building G	Total Loading Spaces Provided 1	
Building H	Total Loading Spaces Provided 1	
Total Loading Spaces Provided	8	

STATISTICS NOTES:
 1. THE STATISTICS ARE BASED ON REQUIREMENTS AS PER THE MISSISSAUGA ZONING BY-LAW 0225-2007
 2. GFA MEANS THE SUM OF THE AREAS OF EACH STOREY OF A BUILDING ABOVE OR BELOW GRADE, EXCLUDING A PARKING STRUCTURE ABOVE OR BELOW GRADE, MEASURED FROM THE EXTERIOR OF THE OUTSIDE WALLS, INCLUDING ALL SHARPS, STAIRS, OPEN TO BELOW AREAS, LOADING AREAS, BELOW GRADE AREAS AND MECHANICAL PENTHOUSE.
 3. GFA APARTMENT: AS PER BY-LAW 0225-2007, GROSS FLOOR AREA (GFA - APARTMENT) EXCLUDES ANY PART OF THE BUILDING USED FOR MECHANICAL FLOOR AREA, STAIRWELLS, ELEVATORS, VEHICLE PARKING, BICYCLE PARKING, STORAGE LOCKERS, BELOW-GRADE STORAGE, ANY ENCLOSED AREA USED FOR COLLECTION/STORAGE OF GARBAGE/RECYCLING, COMMON FACILITIES FOR THE USE OF RESIDENTS IN THE BUILDING, A DAY CARE AND AMENITY AREA.
 4. ALL OPEN TO BELOW AREAS ARE INCLUDED IN GFA UNLESS OTHERWISE INDICATED IN THE NOTES COLUMN ABOVE.
 5. AMENITY AREA MEANS AN INDOOR AND/OR OUTDOOR RECREATIONAL AREA PROVIDED FOR THE COMMUNAL USE OF THE RESIDENTS (THIS INCLUDES RESIDENTIAL BALCONIES).
 6. ACCESSIBLE PARKING SPACES (15-16) REQUIRED VISITOR SPACES + MIN. 4% OF THE TOTAL TO BE ACCESSIBLE SPACES).
 7. LEVEL 2 ELECTRIC VEHICLE CHARGING CRITERIA AS DEFINED BY SAE INTERNATIONAL'S J1772 STANDARD.

1 Context Plan - NTS

A001.S

Phase	Building	No. of Units	Vehicular Parking									
			Required			Provided			Required		Provided	
			Residential (1 space/unit)	Visitors (0.15 space/unit)	Total Required	Residential (1 space/unit)	Visitors (0.15 space/unit)	Total Provided	EV - Resi (20%)	EV - Visitors (10%)	EV - Resi (20%)	EV - Visitors (10%)
1	A	364	364	55	419	364	55	419	73	5	73	5
	B	298	298	45	343	298	45	343	60	4	60	4
2	G	546	546	82	628	546	82	628	109	8	109	8
			844	127	971	844	127	971	169	13	168	13
3	C	231	231	35	266	231	35	266	46	3	46	3
	D	231	231	35	266	231	35	266	46	3	46	3
4	E	298	298	45	343	298	45	343	60	4	60	4
	H	485	485	73	558	420	74	494	97	7	97	7
5	F1	337	337	50	387	144	31	175	67	5	67	5
	F2	373	373	56	428	220	48	268	75	6	75	6
Total			3,162	474	3,636	3,159	485	3,644	632	47	634	49

On-Grade Public Bicycle Racks	Phase	Bicycle Racks Provided		
			1	20
			2	28
3	68			
4	24			
5	36			
Total		176		

Vehicular Parking	Level	Provided		Total (Resi + Visitors)		Provided		
		Residential (1 space/unit)	Visitors (0.15 space/unit)	Required	Provided	EV - Resi (20%)	EV - Visitors (10%)	Accessible Parking
		GF	0	12		9		
P1	252	484		736			10	
P2	727			727			9	
P3	727			727			9	
P4	727			727			9	
P5	727			727			9	
Total		3,160	496	3,636	3,653	727	50	49

LEVEL 2 ELECTRIC VEHICLE CHARGING CRITERIA AS DEFINED BY SAE INTERNATIONAL'S J1772 STANDARD

Phase	Building	No. of Storeys (excl. MPH)	NO. UNITS	GBA - Above Grade (no exclusions)		GFA (By-Law 0225-2007)	
				sm	sf	sm	sf
1	A	30	364	27,078	291,468	25,885	278,621
2	B	25	298	22,610	243,374	21,417	230,527
3	C	20	231	17,729	190,835	16,536	177,988
	D	20	231	18,479	198,908	17,286	186,061
4	E	25	298	21,859	235,290	20,666	222,443
5	F (F1+F2)	27 & 30	709	32,147	346,030	30,245	325,557
2	G	44	546	38,555	415,006	37,362	402,159
4	H	39	485	34,720	373,726	33,527	360,879
Total				213,177	2,294,637	202,921	2,184,236

Total GFA (less required amenity) 202,921 sm **2,184,236** sf
 Floor Space Index (FSI) **4.73**
 Number of Residential Suites **3,162**
 Vehicular Parking Required 1.15 space/unit 3,636 5 U/G Levels

Level	Phase	Lockers		Level	Phase	Lockers		Level	Phase	Lockers	
		Count	Notes			Count	Notes			Count	Notes
P1	Phase 1	0	Lockers	P3	Phase 1	85	Lockers	P5	Phase 1	85	Lockers
	Phase 2	14	Lockers		Phase 2	39	Lockers		Phase 2	105	Lockers
	Phase 3	118	Lockers		Phase 3	203	Lockers		Phase 3	203	Lockers
	Phase 4	16	Lockers		Phase 4	125	Lockers		Phase 4	125	Lockers
	Phase 5	21	Lockers		Phase 5	39	Lockers		Phase 5	99	Lockers
Total		169	Lockers	Total		491	Lockers	Total		617	Lockers
P2	Phase 1	19	Lockers	P4	Phase 1	85	Lockers	Grand Total 2,125 Lockers			
	Phase 2	20	Lockers		Phase 2	105	Lockers				
	Phase 3	137	Lockers		Phase 3	203	Lockers				
	Phase 4	16	Lockers		Phase 4	125	Lockers				
	Phase 5	39	Lockers		Phase 5	99	Lockers				
Total		231	Lockers	Total		617	Lockers				

Building	Unit Count	Required - City Zoning-By-law (sm/unit)	Amenity Area Provided				Total (sm)	Ratio (sm/unit)
			Location	Indoor (sm)	Outdoor (sm)	Balconies (sm)		
Building A	364	5.6	Ground	147				8.33
			Level 2	0		87		
			Level 3-6	0		388		
			Level 7	700	467			
Building B	298	5.6	Ground	131				8.98
			Level 2	0		86		
			Level 3-5	0		288		
			Level 6	700	444			
Building C	231	5.6	Ground	101				9.64
			Level 2	0		81		
			Level 3-4	700	341			
			Level 5	700		194		
Building D	231	5.6	Ground	190				9.95
			Level 2	0		64		
			Level 3-4	700	341			
			Level 5	700		194		
Building E	298	5.6	Ground	115				8.92
			Level 2	0		86		
			Level 3-5	0		288		
			Level 6	700	444			
Building F1	336	5.6	Ground	359				9.49
			Level 2	0		97		
			Level 3-6	700	520			
			Level 7	700		1,080		
Building F2	373	5.6	Ground	581				9.50
			Level 2	0		91		
			Level 3-6	700	520			
			Level 7	700		1,242		
Building G	546	5.6	Ground	233				7.43
			Level 2	0		91		
			Level 3-6	700	628			
			Level 7	700		1,998		
Building H	485	5.6	Ground	233				7.81
			Level 2	0		91		
			Level 3-6	700	628			
			Level 7	700		1,728		
Total	3,162	5.6		8,390	4,333	27,467	8.69	

Date No. Description
 REVISION RECORD

2024-10-01 Rezoning Application
 ISSUE RECORD

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5100 - Erin Mills Town Centre

Mississauga, ON
 for Pemberton Group

23032 1:300 AT MF
 PROJECT SCALE DRAWN REVIEWED

Statistics 1 of 2

A001.S

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Building A

	Floor	GBA Typ. Floor (sm)	No. Typ. Floors	GBA Gross Building Area (no exclusions)		GFA Exclusions * (sm)	Mississauga By-Law 0225-2007				Unit Breakdown						Residential Saleable Area (sf)	Efficiency (%)	
				GFA (Res)			GFA (Non-Res)		1B	1B +Den	1B +Den (2 Bath)	2B	2B +Den	Total Units					
				sm	sf		sm	sf											
BUILDING A	Mechanical Penthouse	485.0	1	485.0	5,220	485.0	0.0												
	Level 8-30	767.0	23	17,841.0	189,896	55.4	17,585.6	189,290				23	69	69	92	23	278		
	Level 7	820.0	1	820.0	8,826	55.4	764.6	8,230									0		
	Level 3-6	1,400.0	4	5,600.0	60,278	55.4	5,544.6	59,682				0	12	20	36	4	72		
	Level 2	1,267.0	1	1,267.0	13,638	55.4	1,211.6	13,042				0	3	5	7	1	16		
Ground	1,265.0	1	1,265.0	13,616	486.9	778.1	8,375	0.0									0		
TOTALS				27,078.0	291,465		25,884.5	278,618	0.0										
					Indoor Amenity Deduction		728.0	7,836.1											
		6,004.0			sm		25,156.5	sm		0.0	sm	23	84	94	135	28	364		
		64,627.1			sf		270,784.6	sf		0.0	sf								
GFA USE Breakdown												6%	23%	26%	37%	8%	100%	% of Unit Type	
												3	21	20	45	100	45	Required Barrier Fee Units (15%)	
												X	X	X	X	X		Average Unit Size by Unit Type	
																			TOTAL Residential GFA 25,156.5 sm

Building B

	Floor	GBA Typ. Floor (sm)	No. Typ. Floors	GBA Gross Building Area (no exclusions)		GFA Exclusions * (sm)	Mississauga By-Law 0225-2007				Unit Breakdown						Residential Saleable Area (sf)	Efficiency (%)	
				GFA (Res)			GFA (Non-Res)		1B	1B +Den	1B +Den (2 Bath)	2B	2B +Den	Total Units					
				sm	sf		sm	sf											
BUILDING B	Mechanical Penthouse	485.0	1	485.0	5,220	485.0	0.0												
	Level 7-25	767.0	19	14,573.0	156,862	55.4	14,517.6	156,266				19	57	57	76	19	228		
	Level 6	820.0	1	820.0	8,826	55.4	764.6	8,230									0		
	Level 3-5	1,400.0	3	4,200.0	45,208	55.4	4,144.6	44,612				3	9	12	27	3	54		
	Level 2	1,267.0	1	1,267.0	13,638	55.4	1,211.6	13,042				1	3	4	7	1	16		
Ground	1,265.0	1	1,265.0	13,616	486.9	778.1	8,375	0.0									0		
TOTALS				22,610.0	243,372		21,416.5	230,525	0.0										
					Indoor Amenity Deduction		596.0	6,415.3											
		6,004.0			sm		20,820.5	sm		0.0	sm	23	69	73	110	23	298		
		64,627.1			sf		224,119.9	sf		0.0	sf								
GFA USE Breakdown												8%	23%	24%	37%	8%	100%	% of Unit Type	
												3	21	20	45	100	45	Required Barrier Fee Units (15%)	
												X	X	X	X	X		Average Unit Size by Unit Type	
																			TOTAL Residential GFA 20,820.5 sm

Building C

	Floor	GBA Typ. Floor (sm)	No. Typ. Floors	GBA Gross Building Area (no exclusions)		GFA Exclusions * (sm)	Mississauga By-Law 0225-2007				Unit Breakdown						Residential Saleable Area (sf)	Efficiency (%)	
				GFA (Res)			GFA (Non-Res)		1B	1B +Den	1B +Den (2 Bath)	2B	2B +Den	Total Units					
				sm	sf		sm	sf											
BUILDING C	Mechanical Penthouse	485.0	1	485.0	5,220	485.0	0.0												
	Level 6-20	767.0	15	11,505.0	123,839	55.4	11,449.6	123,242				15	45	45	60	15	180		
	Level 5	820.0	1	820.0	8,826	55.4	764.6	8,230									0		
	Level 3-4	1,262.0	2	2,524.0	27,168	55.4	2,468.6	26,572				8	8	4	16	0	36		
	Level 2	1,130.0	1	1,130.0	12,163	55.4	1,074.6	11,567				2	3	1	8	1	15		
Ground	1,265.0	1	1,265.0	13,616	486.9	778.1	8,375	0.0									0		
TOTALS				17,729.0	190,833		16,536.5	177,967	0.0										
					Indoor Amenity Deduction		462.0	4,972.9											
		5,729.0			sm		16,073.5	sm		0.0	sm	25	56	50	84	16	231		
		61,667.0			sf		173,012.5	sf		0.0	sf								
GFA USE Breakdown												11%	24%	22%	36%	7%	100%	% of Unit Type	
												4	16	15	35	35	35	Required Barrier Fee Units (15%)	
												X	X	X	X	X		Average Unit Size by Unit Type	
																			TOTAL Residential GFA 16,073.5 sm

Building D

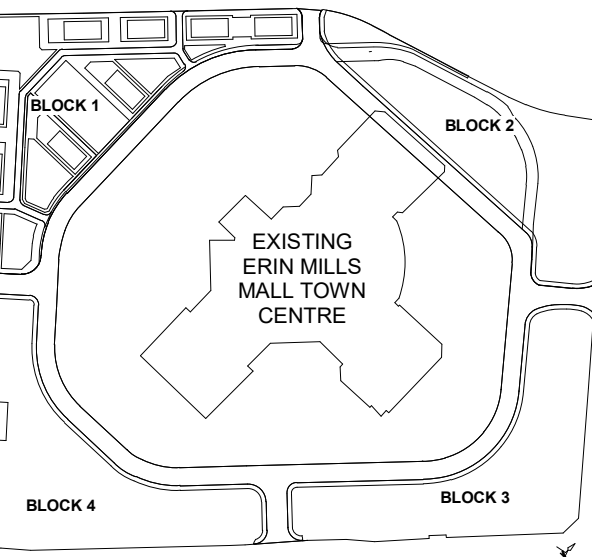
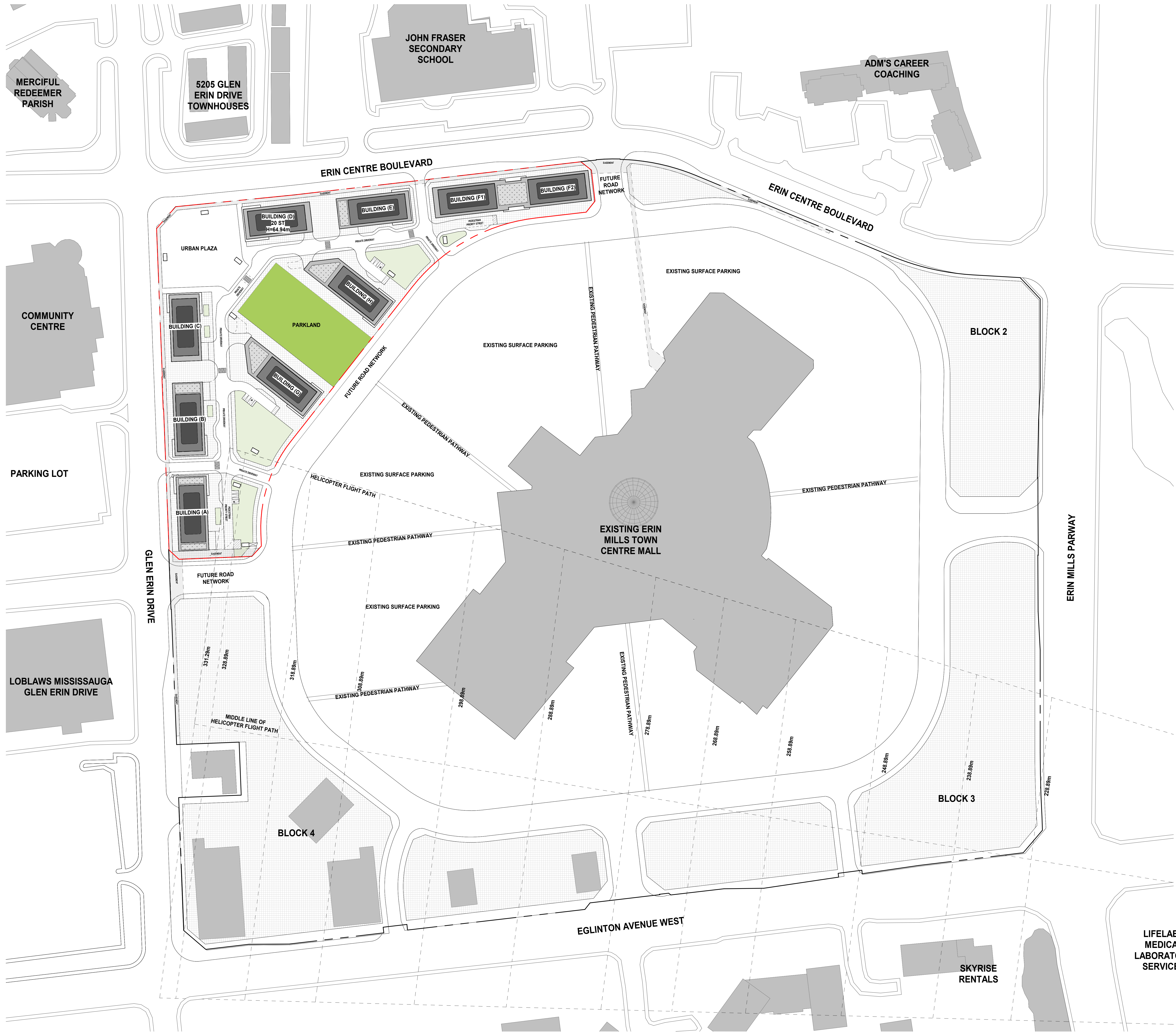
	Floor	GBA Typ. Floor (sm)	No. Typ. Floors	GBA Gross Building Area (no exclusions)		GFA Exclusions * (sm)	Mississauga By-Law 0225-2007				Unit Breakdown						Residential Saleable Area (sf)	Efficiency (%)	
				GFA (Res)			GFA (Non-Res)		1B	1B +Den	1B +Den (2 Bath)	2B	2B +Den	Total Units					
				sm	sf		sm	sf											
BUILDING D	Mechanical Penthouse	485.0	1	485.0	5,220	485.0	0.0												
	Level 6-20	767.0	15	11,505.0	123,839	55.4	11,449.6	123,242				15	45	45	60	15	180		
	Level 5	820.0	1	820.0	8,826	55.4	764.6	8,230									0		
	Level 3-4	1,512.0	2	3,024.0	32,550	55.4	2,968.6	31,954				8	8	4	16	0	36		
	Level 2	1,380.0	1	1,380.0	14,854	55.4	1,324.6	14,258				1	4	2	8	0	15		
Ground	1,265.0	1	1,265.0	13,616	486.9	778.1	8,375	0.0									0		
TOTALS				18,479.0	196,906		17,285.5	186,960	0.0										
					Indoor Amenity Deduction		462.0	4,972.9											
		6,229.0			sm		16,823.5	sm		0.0	sm	24	57	51	84	15	231		
		67,049.0			sf		181,088.2	sf		0.0	sf								
GFA USE Breakdown												10%	25%	22%	36%	6%	100%	% of Unit Type	
												4	16	15	35	35	35	Required Barrier Fee Units (15%)	
												X	X	X	X	X		Average Unit Size by Unit Type	
																			TOTAL Residential GFA 16,823.5 sm

Building E

	Floor	GBA Typ. Floor (sm)	No. Typ. Floors	GBA Gross Building Area (no exclusions)		GFA Exclusions * (sm)	Mississauga By-Law 0225-2007				Unit Breakdown						Residential Saleable Area (sf)	Efficiency (%)	
				GFA (Res)			GFA (Non-Res)		1B	1B +Den	1B +Den (2 Bath)	2B	2B +Den	Total Units					
				sm	sf		sm	sf											
BUILDING E	Mechanical Penthouse	485.0	1	485.0	5,220	485.0	0.0												
	Level 7-25	767.0	19	14,573.0	156,862	55.4	14,517.6	156,266				19	57	57	76	19	228		
	Level 6	820.0	1	820.0	8,826	55.4	764.6	8,230									0		
	Level 3-5	1,212.0	3	3,636.0	39,138	55.4	3,580.6	38,541				3	9	12	27	3	54		
	Level 2	1,080.0	1	1,080.0	11,625	55.4	1,024.6	11,029				1	3	4	7	1	16		
Ground	1,265.0	1	1,265.0	13,616	486.9	778.1	8,375	0.0									0		
TOTALS				21,859.0	235,288		20,665.5	222,442	0.0										
					Indoor Amenity Deduction		596.0	6,415.3											
		5,629.0			sm		20,069.5	sm		0.0	sm	23	69	73	110	23	298		
		60,590.6			sf		216,028.1	sf		0.0	sf								
GFA USE Breakdown												8%	23%	24%	37%	8%	100%	% of Unit Type	
												3	21	20	45	100	45	Required Barrier Fee Units (15%)	
												X	X	X	X	X		Average Unit Size by Unit Type	
																			TOTAL Residential GFA 20,069.5 sm

Building F1+F2

	Floor	GBA Typ. Floor (sm)	No. Typ. Floors	GBA Gross Building Area (no exclusions)		GFA Exclusions * (sm)	Mississauga By-Law 0225-2007				Unit Breakdown						Residential Saleable Area (sf)	Efficiency (%)
				GFA (Res)			GFA (Non-Res)		1B	1B +Den	1B +Den (2 Bath)	2B	2B +Den	Total Units				
				sm	sf		sm	sf										
TOWER R/FZ	Mechanical Penthouse	485.0	1	485.0	5,220	485.0	0.0											
	Level 8-30	767.0	23	17,841.0	189,896	55.4	17,530.2											

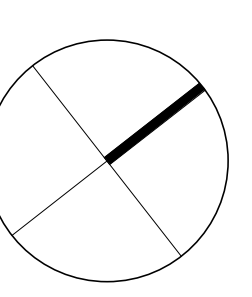


CONTEXT PLAN LEGEND

- ERIN MILLS TOWN CENTRE PROPERTY LINE
- PROPERTY LINE DEVELOPMENT LANDS (BLOCK 1)
- BUILDING ENVELOPE
- EASEMENT
- GREEN ROOF
- LANDSCAPED PAVING

Date	No.	Description
REVISION RECORD		

2024-10-01	Rezoning Application
ISSUE RECORD	



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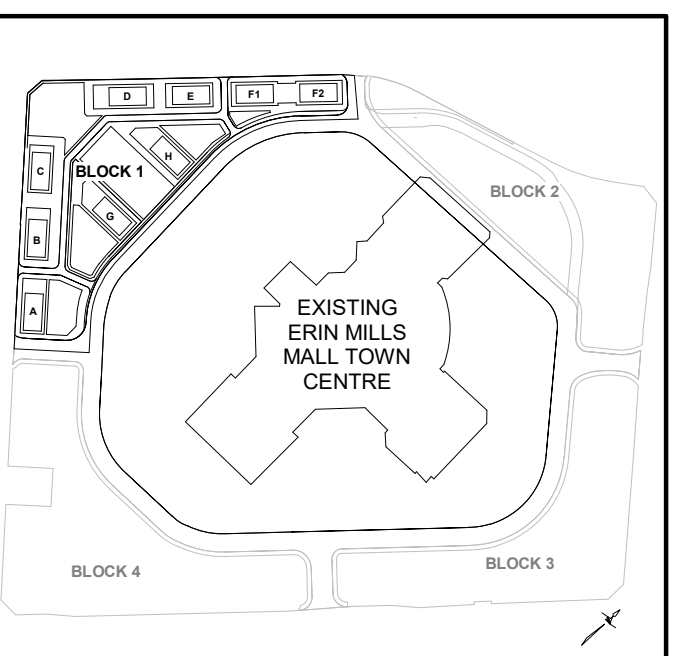
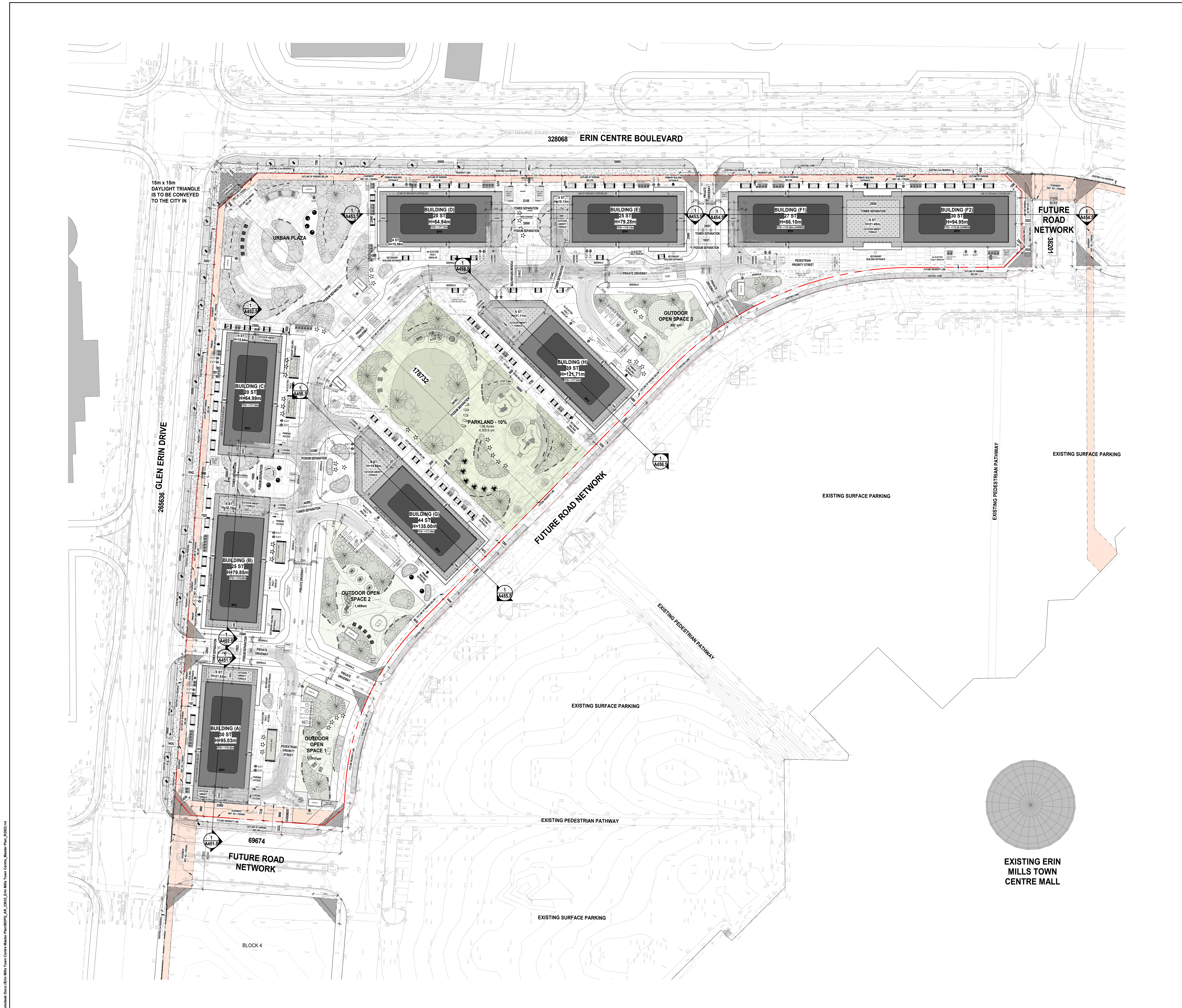
Mississauga, ON
 for Pemberton Group

23032 1:1000 AT MF
 PROJECT SCALE DRAWN REVIEWED

Context Site Plan 01

A102.S

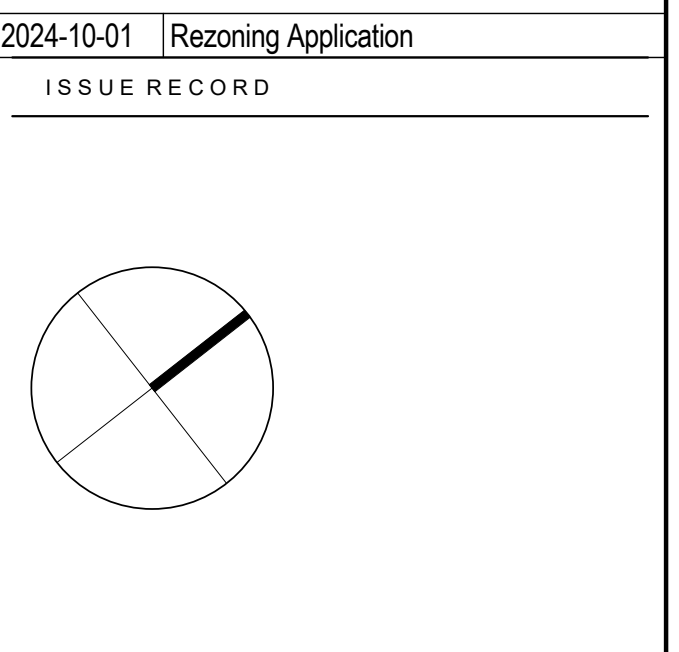
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SITE PLAN LEGEND

- ERIN MILLS TOWN CENTRE PROPERTY LINE
- PROPERTY LINE DEVELOPMENT LANDS (BLOCK 1)
- LINE OF UNDER GROUND GARAGE BELOW
- MAIN BUILDING ENTRANCE
- RETAIL ENTRANCE
- EXIT
- VEHICLE / LOADING ENTRANCE / EXIT
- FIRE HYDRANT
- SEWER CONNECTION
- MANHOLE COVER
- AREA DRAIN
- CATCH BASIN
- FLOOR DRAIN (PARKING SLAB)
- FLOOR DRAIN (INTERIOR)
- EXISTING LIGHT
- TYPICAL PARKING SPACE
- BIKE PARKING (FLOOR MOUNTED)
- FINISH FLOOR ELEVATION
- EXISTING ELEVATION
- PROPOSED ELEVATION
- TOP OF ROOF
- BUILDING ENVELOPE
- DAYLIGHT TRIANGLE
- EASEMENT
- GREEN ROOF
- LANDSCAPED PAVING

Date	No.	Description
REVISION RECORD		
2024-10-01		Rezoning Application
ISSUE RECORD		



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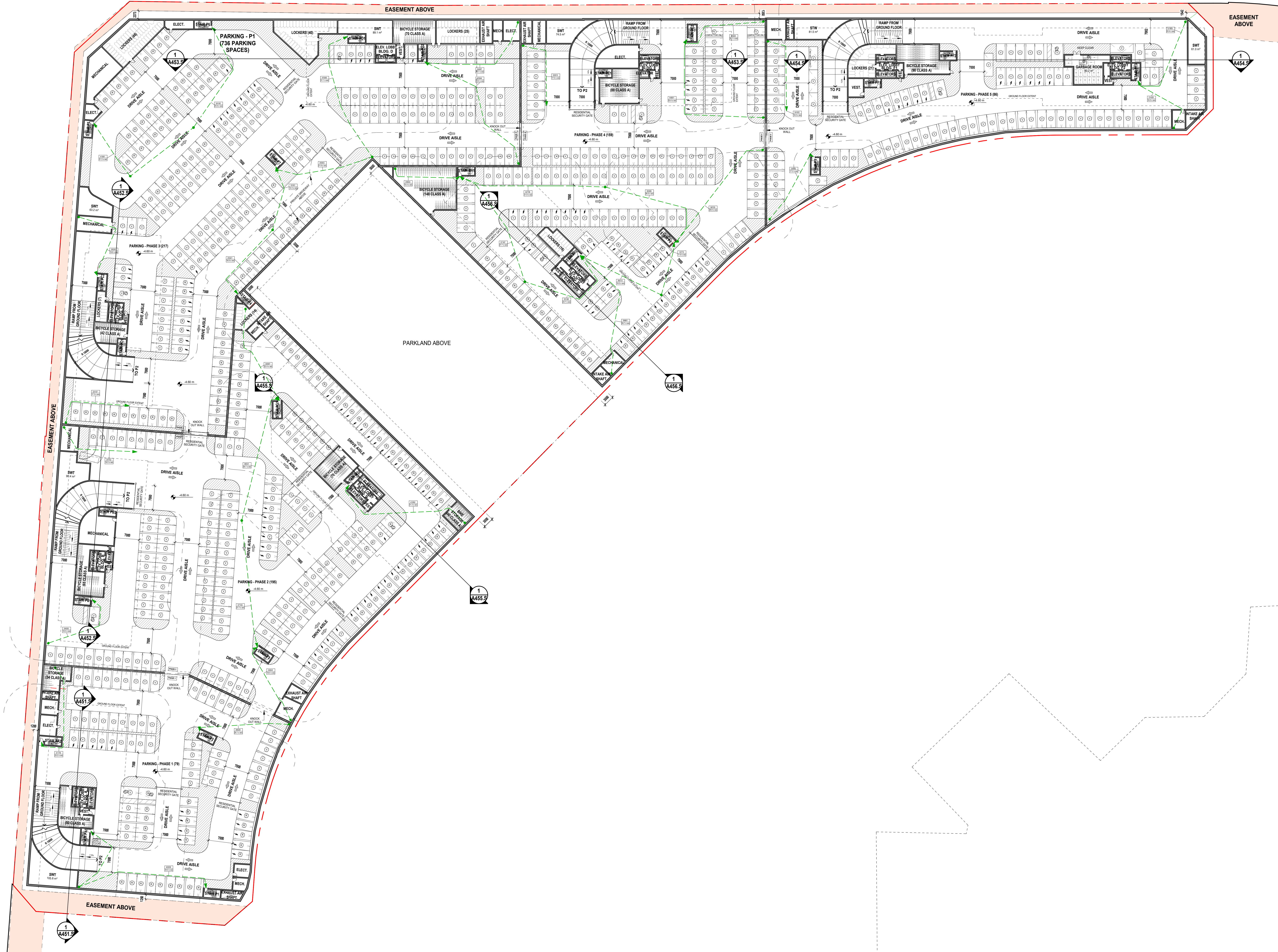
23032 1:500 AT MF
 PROJECT SCALE DRAWN REVIEWED

Site Plan

A104.S

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Architect: BDP | Erin Mills Town Centre Mall | P:\BDP\ERIN MILLS_TOWN CENTRE_MALL\PHYSICAL\A104_S\A104_S.dwg | 2024-10-01



- PARKING NOTES:**
1. MINIMUM PARKING SPACE SIZES (UNLESS OTHERWISE NOTED):
 - 2800mm WIDE X 5200mm LONG (NO SIDES OBSTRUCTED)
 - 2800mm WIDE X 5200mm LONG (ONE SIDE OBSTRUCTED)
 - 3200mm WIDE X 5200mm LONG (TWO SIDES OBSTRUCTED)
 OTHERWISE NOTED
 2. MAINTAIN MINIMUM DRIVE AISLE WIDTH OF 7000mm UNLESS OTHERWISE NOTED
 3. MAINTAIN MINIMUM HEADROOM CLEARANCE OF 2100mm THROUGHOUT.
 4. LEVEL 2 ELECTRIC VEHICLE CHARGING CRITERIA AS DEFINED BY SAE INTERNATIONAL'S J1772 STANDARD

- PARKING LEGEND:**
- ERIN MILLS TOWN CENTRE PROPERTY LINE
- PROPERTY LINE DEVELOPMENT LANDS (BLOCK 1)
- Commercial Parking Space
 - Residential Parking Space
 - Visitor Parking Space
 - Existing Parking Space
 - Bike Locker
 - Bike Parking (Floor Mounted)
 - Bike Parking (Stacked)
 - Bike Parking (Vertical)
 - Convex Mirror
 - Electric Vehicle
 - Light Standard
 - Painted Lines
 - Easement
 - Fire-Rated Bulkhead
- Typical dimensions for parking stalls and aisles are shown, including accessible stalls and one-side obstructed stalls.

Date	No.	Description
REVISION RECORD		
2024-10-01		Rezoning Application
ISSUE RECORD		

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 for Pemberton Group

23032 1:400 AT MF
 PROJECT SCALE DRAWN REVIEWED

Underground Parking - P1

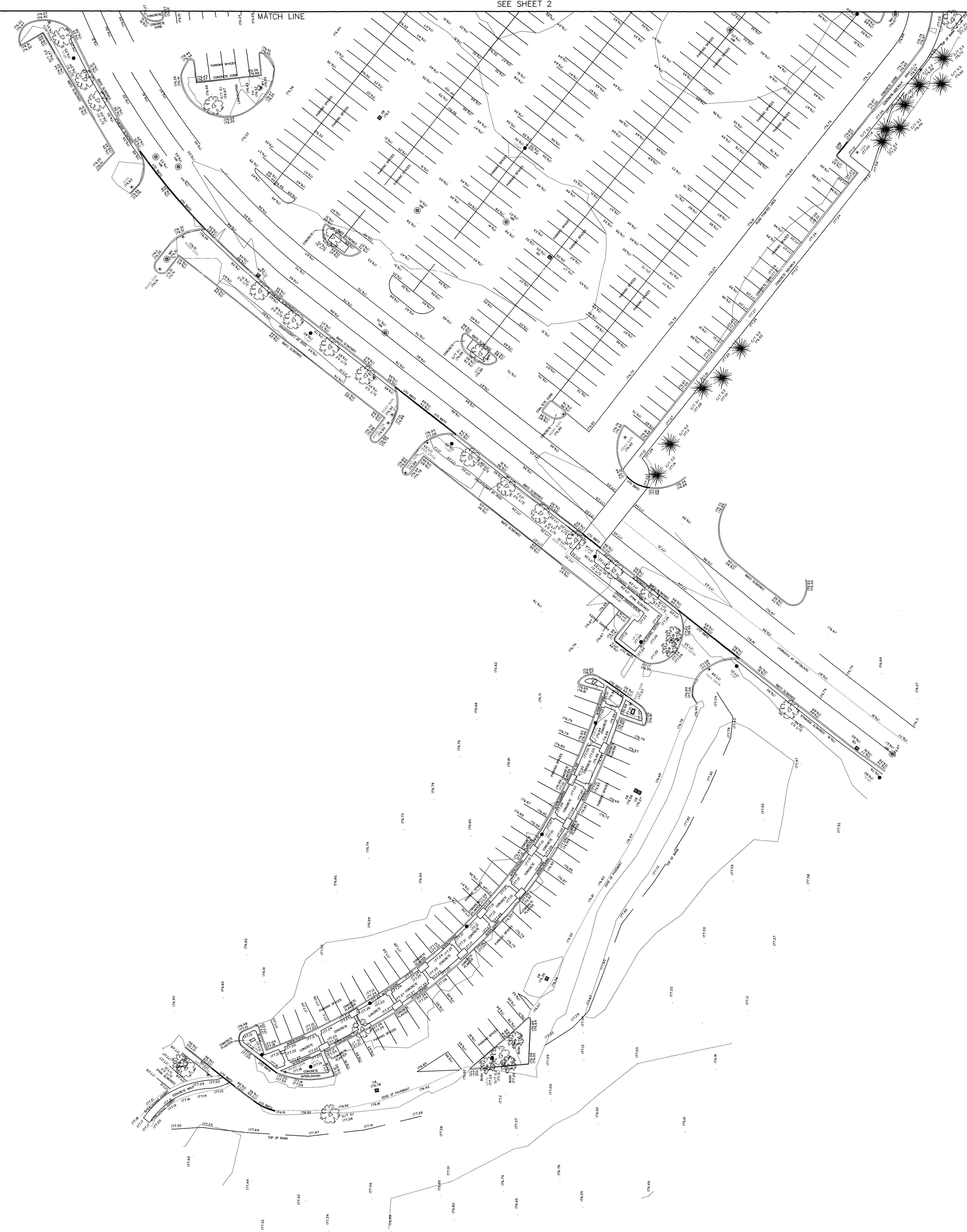
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Architect: BDP | Erin Mills Town Centre Master Plan | 2023-24

APPENDIX B

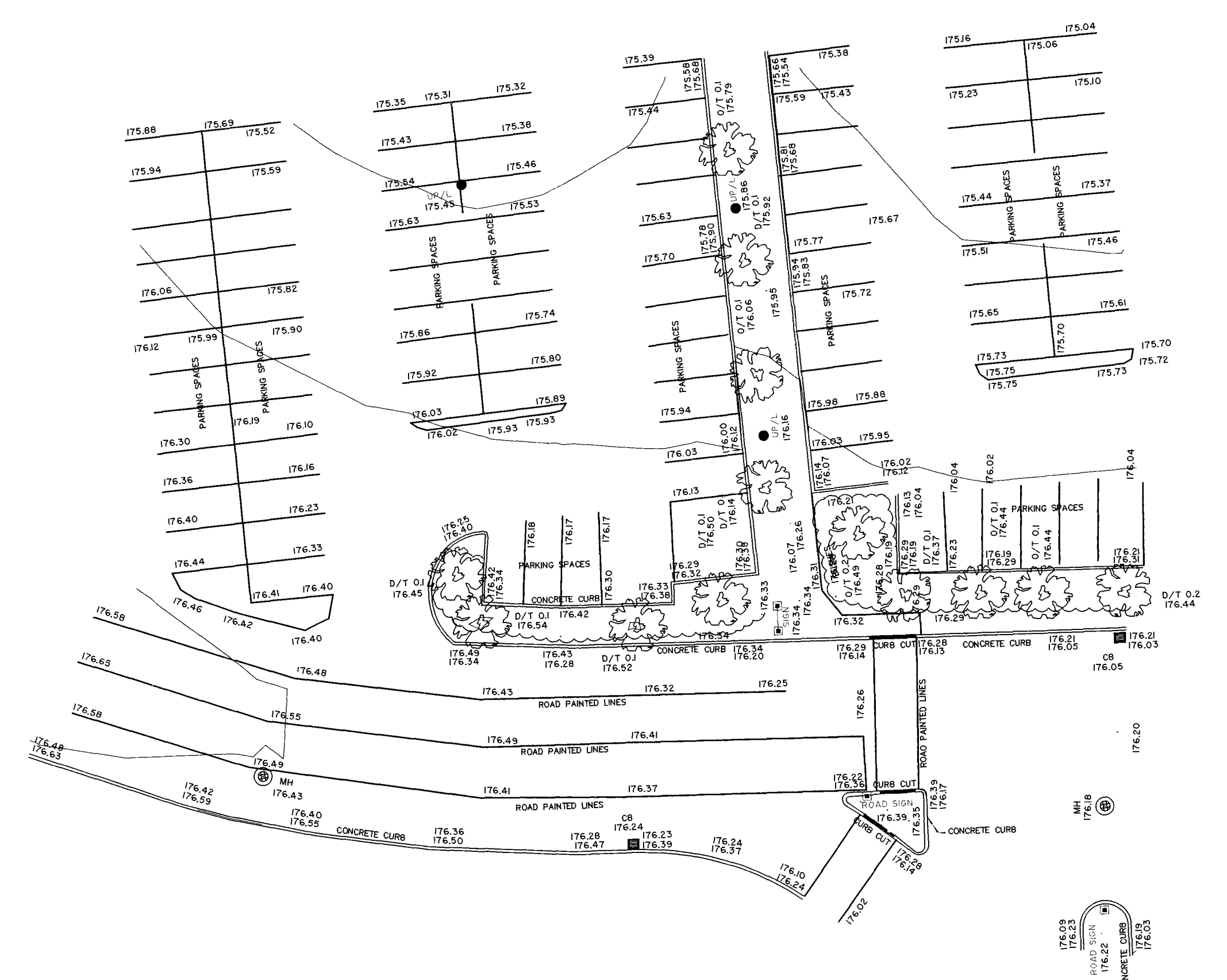
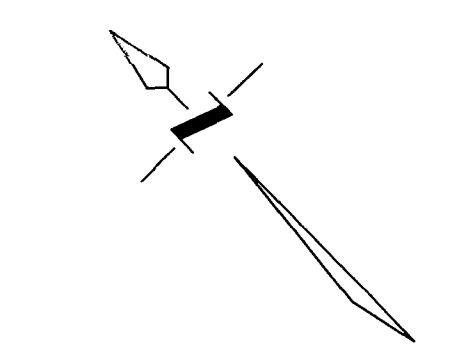
RECORD DRAWINGS AND BACKGROUND INFORMATION



TOPOGRAPHIC SURVEY OF
PART OF BLOCK 1
REGISTERED PLAN 43M-823
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEEL
SCALE 1:300

0 2.5 5 10 15 20 METRES
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METRIC MEASUREMENTS SHOWN
ON THIS PLAN ARE IN METRES
AND CAN BE CONVERTED TO
FEET BY DIVIDING BY 0.3048.



- NOTES**
- BB DENOTES BELL BOX
 - CB DENOTES CATCH BASIN
 - MH DENOTES MANHOLE
 - HW DENOTES HAND WELL
 - WV DENOTES WATER VALVE
 - UP DENOTES UTILITY POLE
 - LD DENOTES LIGHT POLE
 - FFE DENOTES FINISHED FLOOR ELEVATION
 - DT 0.10 DENOTES DECIDUOUS TREE 0.10m dia.
 - CT 0.10 DENOTES CONIFEROUS TREE 0.10m dia.
 - PH DENOTES FIRE HYDRANT
 - CC DENOTES CONCRETE COLUMN
 - PP (100) DENOTES PLASTIC PIPE (100mm DIA.)
 - AL DENOTES UNDERGROUND ALLSTREAM COMMUNICATIONS CABLES
 - BT DENOTES UNDERGROUND BELL TELEPHONE CABLES
 - CBM DENOTES UNDERGROUND CATCH BASIN LEAD PIPE
 - COM DENOTES UNDERGROUND PRIVATE COMMUNICATION CABLES
 - EL DENOTES UNDERGROUND ELECTRICAL CABLES
 - FDL DENOTES UNDERGROUND FIBRE OPTIC CABLES
 - FL DENOTES UNDERGROUND FIBRE OPTIC CABLES
 - FM DENOTES UNDERGROUND FIBRE OPTIC CABLES
 - GA DENOTES UNDERGROUND GAS MAIN PIPE
 - GS DENOTES UNDERGROUND GAS SERVICE PIPE
 - HE DENOTES UNDERGROUND HYDRO FIBRE CABLES
 - HL DENOTES UNDERGROUND HYDRO CABLES
 - HY DENOTES UNDERGROUND HYDRO CABLES
 - MULT DENOTES UNDERGROUND MULTI-TRENCH BT/TV/H (OR W) CABLES
 - RODEN DENOTES UNDERGROUND ROSEBERRY PIPE OPTIC CABLES
 - SAN DENOTES UNDERGROUND SANITARY SERVICE PIPE
 - SE DENOTES UNDERGROUND SUB-IRRIG PIPE
 - SL DENOTES UNDERGROUND STEAM LINE PIPE
 - ST DENOTES UNDERGROUND STEEL LIGHT CABLES
 - STM DENOTES UNDERGROUND STEAM SERVICE PIPE
 - TL DENOTES UNDERGROUND CABLE TELEVISION CABLES
 - WM DENOTES UNDERGROUND WATER MAIN PIPE
 - WS DENOTES UNDERGROUND WATER SERVICE PIPE

BENCHMARK
ELEVATIONS SHOWN HEREON ARE RELATED TO MISSISSAUGA DATUM AND ARE REFERRED TO CITY OF MISSISSAUGA BENCHMARK No. 968 HAVING A PUBLISHED ELEVATION OF 169.796 METRES.

CONTOUR INTERVAL 0.50m

CAUTION
THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED EXCEPT FOR THE PURPOSE INDICATED IN THE TITLE BLOCK. NO REGISTRY SEARCH WAS PERFORMED OR SHOWN.

DURING THE SURVEY WE ATTEMPTED TO UNCOVER ALL SURFACE FEATURES. HOWEVER, WE ARE NOT LIABLE FOR ANY SUCH FEATURES THAT WERE COVERED BY SNOW OR ICE AT THE TIME OF THE SURVEY.

SURVEYOR'S CERTIFICATE
I CERTIFY THAT THE FIELD SURVEY REPRESENTED ON THIS TOPOGRAPHIC PLAN WAS COMPLETED ON THE 5th DAY OF MARCH, 2012

DATE: MARCH 5, 2012

DAN DZALDOV
ONTARIO LAND SURVEYOR

UPDATED: JULY 27, 2012
UPDATED: APRIL 9, 2013
UPDATED: JUNE 27, 2013
UPDATED: JULY 11, 2013

THIS DOCUMENT IS A PLAN
AND CAN BE CONVERTED TO
FEET BY DIVIDING BY 0.3048

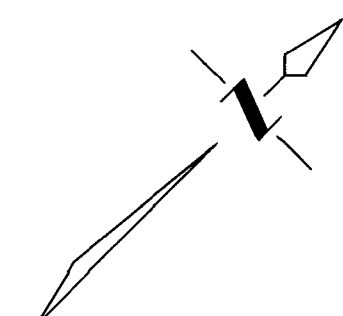
TOPOGRAPHIC SURVEY OF
PART OF BLOCK 1
REGISTERED PLAN 43M-823
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEEL
SCALE 1:300

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METRIC MEASUREMENTS SHOWN
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NOTES

- 1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
- 2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
- 3. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE SPECIFIED.
- 4. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE ROAD UNLESS OTHERWISE SPECIFIED.
- 5. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE RAILROAD UNLESS OTHERWISE SPECIFIED.
- 6. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE CANAL UNLESS OTHERWISE SPECIFIED.
- 7. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE DRAINAGE CANAL UNLESS OTHERWISE SPECIFIED.
- 8. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 9. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 10. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 11. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 12. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 13. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 14. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 15. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 16. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 17. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 18. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 19. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.
- 20. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE UTILITY TRENCH UNLESS OTHERWISE SPECIFIED.



MATCH LINE
SEE SHEET 1

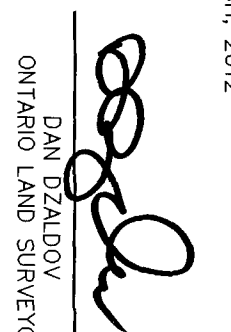
MATCH LINE

SEE SHEET 3

SURVEYOR'S CERTIFICATE

I CERTIFY THAT
THE FIELD SURVEY REPRESENTED ON THIS SURVEYING PLAN
WAS CONDUCTED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION
AND WAS MADE ON THE 5th DAY OF MARCH, 2012

DATE: MARCH 5, 2012


DAVID SCHAFFER
SURVEYOR

ISSUED: 04/17/2012
REVISED: 04/17/2012
DATE: JUNE 27, 2013
DATE: MAY 13, 2013

SCHAFFER DZALDOV BENNETT LTD.
44 JARDIN DRIVE, MISSISSAUGA, ONTARIO L4V 1R7
TEL: (905) 276-2222
FAX: (905) 276-2222

BENCHMARK
ELEVATION SHOWN IN METRES AND FEET TO NEAREST MILLIMETER AND ARE REFERRED TO
HAVING A FINISHED ELEVATION OF 162.796 METRES

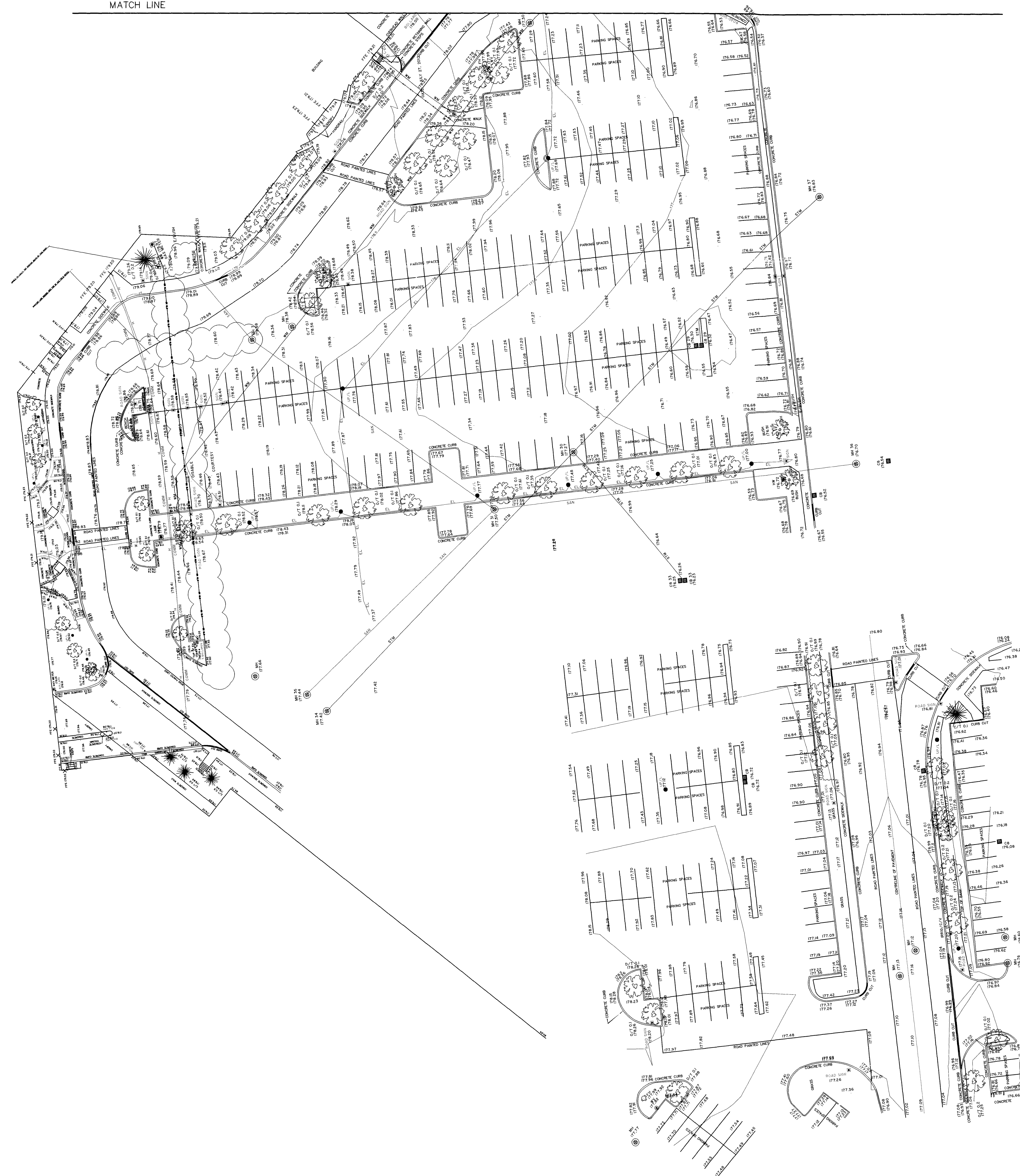
CONTAIN INTERNAL DIMS.

CAUTION
DIM OF SURVEY SHALL NOT BE USED
EXCEPT FOR THE PURPOSE INDICATED IN THE TITLE BLOCK.
NO REVERSE DIMS WAS REPORTED OR SHOWN.

OTHER: THE SURVEY WAS ATTEMPTED TO LOCATE ALL SURFACE FEATURES,
EXCEPT FOR THE PURPOSE INDICATED IN THE TITLE BLOCK, THAT WERE COVERED BY
SNOW OR ICE AT THE TIME OF THE SURVEY.

SEE SHEET 3

MATCH LINE



www.undergroundengineering.ca
UNDERGROUND
ENGINEERING
SERVICES

DIVISION OF PRIMARY TELECOM NO. 200 474-4555 SUITE 200
WILLOWDALE, ON L2B 0P6 OFFICE NO. 416 494-8814 FAX 416 494-8800

UNDERGROUND ENGINEERING SERVICES

CERTIFY THAT:
THE SURVEY DATA COMPLETED AND ASSESSED
ON THE 11TH DAY OF MARCH, 2013
U/S SERVICE WAS RENDERED BY ME
ON THE 11TH DAY OF MARCH, 2013



www.undergroundengineering.ca
UNDERGROUND
ENGINEERING
SERVICES

DIVISION OF PRIMARY TELECOM NO. 200 474-4555 SUITE 200
WILLOWDALE, ON L2B 0P6 OFFICE NO. 416 494-8814 FAX 416 494-8800

UNDERGROUND ENGINEERING SERVICES

CERTIFY THAT:
THE SURVEY DATA COMPLETED AND ASSESSED
ON THE 28TH DAY OF JUNE, 2013
U/S SERVICE WAS RENDERED BY ME
ON THE 28TH DAY OF JUNE, 2013

INVERT TABLE NORTH*

MH/ CB #	Type of sewer	Grade Elevation (m)	Direction	Materials	Depth (m)	Depth (ft)	Size (mm)	Flows to	Elevation (Invert (m))	Elevation (Obvert (m))	Remarks
MH 1	Storm	171.04	N	CON	5.20	3.83	1375	N	165.84	167.22	
		171.04	E	CON	4.50	4.00	500		166.54	167.04	
		171.04	S	CON	5.10	3.72	1375		165.94	167.32	
		171.04	W	CON	3.10	2.40	700		167.94	168.64	
MH 2	Sanitary	171.02	S	CON	7.40	7.15	250	N	163.62	163.87	
		171.02	E	CON	7.30	7.10	200		163.72	163.92	
		171.02	N	CON	7.40	7.15	250		163.62	163.87	
		170.98	E	CON	2.40	1.70	700		168.58	169.28	
MH 3	Storm	170.98	W	CON	2.10	1.55	550	E	168.88	169.43	
		170.98	S	CON	2.30	1.85	450		168.68	169.13	
		170.57	NW	CON	1.71	1.31	400		168.86	169.26	
		173.29	NW	CON	3.10	2.73	375		170.19	170.57	
MH 5	Storm	173.29	NW	CON	3.00	2.60	400	E	170.29	170.69	
		173.29	E	CON	3.30	2.78	525		169.99	170.52	
		N/A	E	CON	3.25	2.50	750		N/A	N/A	
		N/A	SW	CON	3.04	2.69	350		N/A	N/A	
MH 6	Storm	N/A	SW	CON	2.97	2.67	300	E	N/A	N/A	
		170.60	NE	CON	3.48	2.68	800		167.12	167.92	
		170.60	SW	CON	3.14	2.44	700		167.46	168.16	
		170.60	NW	CON	3.20	2.70	500		167.40	167.90	
CB 8	Storm	170.43	E	CON	1.65	1.20	450	SE	168.78	169.23	
		170.41	SE	CON	1.93	1.48	450		168.93	169.33	
		170.35	W	CON	3.40	2.65	750		166.95	167.70	
		170.35	SE	CON	3.30	2.70	600		167.05	167.65	
MH 9	Storm	170.35	SE	CON	3.90	2.70	1200	N	166.45	167.65	
		170.35	N	CON	4.00	2.63	1375		166.35	167.73	
		170.28	N	CON	6.25	6.00	250		164.03	164.28	
		170.28	SE	CON	6.21	6.01	200		164.07	164.27	
CB11	Storm	170.28	S	CON	6.18	5.93	250	W	164.10	164.35	
		170.22	W	PVC	1.24	1.04	200		168.98	169.18	
		170.22	N	PE	0.97	0.87	100		169.25	169.35	
		170.16	N	PE	1.05	0.95	100		169.11	169.21	
CB11A	Storm	170.16	S	PE	1.04	0.94	100	E	169.12	169.22	
		170.16	E	PVC	1.34	1.09	250		168.82	169.07	
		170.08	E	CON	1.79	1.34	450		169.19	169.64	
		171.03	N	PE	0.86	0.76	100		170.17	170.27	
CB12A	Storm	171.03	W	PVC	1.07	0.87	250	W	169.86	170.21	
		171.77	SW	PVC	1.30	1.00	300		170.47	170.77	
		171.93	NW	PE	1.17	1.07	100		170.76	170.86	
		171.93	NW	PE	1.19	1.09	100		170.74	170.84	
DCB13A	Storm	171.93	NW	PE	1.07	0.97	100	SW	170.86	170.96	
		171.93	NE	CON	1.43	0.98	450		170.50	170.95	
		171.93	SE	CON	1.46	1.06	400		170.47	170.87	
		170.96	NW	CON	7.10	6.90	200		163.86	164.06	
MH 14	Sanitary	170.96	NW	CON	7.10	6.90	200	NW	163.86	164.06	
		170.97	W	CON	4.08	3.58	500		166.89	167.39	
		171.76	W	CON	5.05	4.70	350		166.71	167.06	
		172.16	NE	CON	7.20	5.83	1375		164.96	166.34	
MH 16	Storm	172.16	NE	CON	7.20	5.83	1375	NE	165.06	166.44	
		172.16	NW	CON	4.00	3.40	600		168.16	168.76	
		172.16	NW	CON	6.50	6.05	450		165.69	166.11	
		172.46	NW	CON	3.10	2.75	350		169.36	169.71	
MH 17	Storm	172.46	NW	CON	2.80	2.35	450	SE	169.66	170.11	
		172.46	SE	CON	3.10	2.50	600		169.56	169.96	
		172.27	SW	PVC	1.27	1.02	250		171.00	171.25	
		172.27	NW	PE	1.02	0.92	100		171.25	171.35	
CB 18	Storm	172.27	SW	PE	1.00	0.90	100	SW	171.27	171.37	
		172.10	N	CON	1.95	1.55	400		170.15	170.55	
		174.08	S	PVC	3.04	2.84	200		171.04	171.24	
		174.08	N	PVC	3.60	3.35	250		170.48	170.73	
CB 19	Storm	174.08	N	PVC	3.60	3.35	250	N	170.48	170.73	
		172.94	NE	PVC	7.05	6.75	300		165.89	166.19	
		172.94	SW	PVC	3.90	3.65	250		169.04	169.29	
		172.94	SW	PVC	7.00	6.75	250		165.94	166.19	
MH 20	Sanitary	172.94	SW	PVC	6.00	5.70	300	NE	166.94	167.24	
		172.94	W	PVC	6.85	6.55	250		165.04	166.39	
		174.34	SE	CON	3.14	2.79	350		171.20	171.55	
		174.34	W	CON	2.82	2.47	350		171.52	171.87	
MH 21	Sanitary	174.34	W	CON	2.82	2.47	350	NE	171.52	171.87	
		172.94	SW	PVC	6.00	5.70	300		166.94	167.24	
		172.94	W	PVC	6.85	6.55	250		165.04	166.39	
		174.34	SE	CON	3.14	2.79	350		171.20	171.55	
MH 22	Storm	174.34	SE	CON	3.14	2.79	350	SE	171.20	171.55	
		174.34	W	CON	2.82	2.47	350		171.52	171.87	
		N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	Out of work area
		175.48	SE	CON	8.00	7.70	300		167.48	167.78	
MH 23	Storm	175.48	SE	CON	8.00	7.70	300	SE	167.48	167.78	
		175.48	N	CON	7.90	7.60	300		167.58	167.88	
		175.34	S	CON	1.76	1.39	375		173.58	173.96	
		175.34	W	PE	1.02	0.92	100		174.32	174.42	

INVERT TABLE NORTH*

MH/ CB #	Type of sewer	Grade Elevation (m)	Direction	Materials	Depth (m)	Depth (ft)	Size (mm)	Flows to	Elevation (Invert (m))	Elevation (Obvert (m))	Remarks
CB26	Storm	171.74	E	CON	1.72	1.32	400	E	170.02	170.42	
		172.55	S	CON	1.25	0.80	450		171.30	171.75	
		173.02	W	CON	3.39	3.09	300		169.63	169.93	
		173.02	E	CON	3.48	2.98	500		169.54	170.04	
MH28	Storm	173.02	E	CON	3.48	2.98	500	E	169.54	170.04	
		173.02	W	CON	3.18	2.73	450		169.84	170.29	
		176.32	NE	CON	1.28	0.88	400		175.04	175.44	
		177.27	W	CON	7.07	6.47	600		170.20	170.80	
CB29	Storm	177.27	W	CON	7.07	6.47	600	NE	170.20	170.80	
		177.27	E	CON	7.19	6.44	750		170.08	170.83	
		177.27	S	CON	4.71	4.26	450		172.56	173.01	
		177.27	S	CON	6.74	6.44	300		170.53	170.83	Drop pipe
MH30	Storm	177.27	S	CON	6.74	6.44	300	E	170.53	170.83	
		177.50	NE	CON	6.25	6.00	250		171.25	171.50	
		177.50	W	CON	6.24	5.99	250		171.26	171.51	
		177.50	W	CON	6.30	6.05	250		171.20	171.45	
MH31	Sanitary	177.50	W	CON	6.30	6.05	250	SE	171.20	171.45	
		178.48	S	CON	6.70	6.45	250		171.78	172.03	
		178.48	N	CON	6.61	6.46	150		171.87	172.02	
		178.48	NW	CON	6.64	6.49	150		171.84	171.99	
CB33	Storm	178.48	N	CON	6.64	6.49	150	N	171.84	171.99	
		176.25	N	CON	1.80	1.35	450		174.45	174.90	
		177.42	E	CON	6.71	6.11	600		170.71	171.31	
		177.42	NW	CON	6.37	5.97	400		171.05	171.45	
MH34	Storm	177.42	NW	CON	6.37	5.97	400	E	171.05	171.45	
		177.42	SW	CON	6.35	5.95	400		171.07	171.47	
		177.44	E	CON	5.65	5.40	250		171.79	172.04	
		177.44	W	CON	5.58	5.33	250		171.86	172.11	
MH35	Sanitary	177.44	W	CON	5.58	5.33	250	E	171.86	172.11	
		177.44	NW	CON	5.56	5.31	250		171.88	172.13	
		176.70	NW	CON	7.38	7.18	200		169.32	169.52	
		176.70	SW	CON	7.48	7.23	250		169.22	169.47	
MH36</											

BLOCK I
N'HOOD 208

GLEN ERIN DRIVE

PROPOSED SUB-STATION
BLOCK 20

EGLENTON AVENUE

NOTE

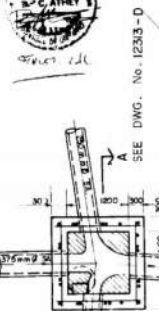
- NO LARGE PIECES OF SHALE ARE TO BE USED AS TRENCH BACKFILL. ONLY APPROVED NATIVE MATERIAL COMPACTED TO A MIN. OF 95% S.P.D.
- ALL MANHOLES SHALL BE 1200mm (PRECAST) UNLESS SHOWN OTHERWISE
- LATEST STANDARDS FOR THE CITY OF MISSISSAUGA & REGION OF FEEB SHALL BE USED.
- WIRE-HOLE DATA SHOWN IS FOR INFORMATION ONLY. NO RESPONSIBILITY IS ASSUMED THEREBY.
- BACKFILL LIFT THICKNESS SHALL BE NO GREATER THAN 200mm.
- ANY UTILITY RELOCATIONS REQUIRED DUE TO THE GRAB CUT OF THE SUBJECT LANDS TO UNDERTAKEN AT THE EXPENSE OF THE DEVELOPER.
- ALL FILL WITHIN ROAD ALLOWANCE TO BE COMPACTED TO MIN. 95% STANDARD PROCTOR DENSITY. THE SUITABILITY AND COMPACTON OF ALL FILL MATERIAL IS TO BE CONFIRMED BY A RECOGNIZED SOIL CONSULTANT TO THE CITY ENGINEER PRIOR TO THE INSTALLATION OF ANY ROAD BASE MATERIAL.
- CONTRACTOR TO BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. THE VARIOUS UTILITIES COMPANIES MUST BE GIVEN REQUIRED ADVANCE NOTICE PRIOR TO ANY DIGGING FOR FIELD STAKE OUT.
- CATCHBASIN FRAMES AS PER OPSD-400.02
- CATCHBASIN ON GLEN ERIN DRIVE TO HAVE INLET CONTROL DEVICES LIMITED MAXIMUM FLOW TO 20 LITRES PER SECOND.

KEY PLAN

RADIUS PIPE DATA

Δ = 42° 00' 00"
R = 22.000 m
T = 8.445 m
A = 16.27 m
L = 15.766 m

SEE DWG. NO. 12320-D



SA MH 1A
FOR MANHOLE CONSTRUCTION NOTES
SEE OPSD-400.02-PS
HEIGHT OF MANHOLE CHAMBER AS INDICATED IN PROFILE
SEE SECTION A-A ON DWG. NO. ST-8473-PS

TYPICAL ROAD CROSS SECTION
SCALE: 1:200

ROAD DESIGN TABLE
all dimensions in millimetres

Street	HL3	HLB	Crushed Limestone		Total Thickness
			20mm	50mm	
Glen Erin Drive	40	100	150	410	700

NOTE
AN ADDITIONAL 150mm THICKNESS OF 30mm CRUSHED LIMESTONE TO BE ADDED AT THE INTERSECTIONS. EXTRA DEPTH WILL EXTEND FOR 1.5m FROM THE PROPERTY LINE OF THE INTERSECTING STREET.

MATERIAL NOTES (AS CONSTRUCTED)
HYDRANTS - MEDIUM
VALVES - CRANE HEAVY

METRIC
ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE SHOWN

Revisions

Date	No.	Details	By
JAN 27/88	1	CATCHBASIN FRAMES REVISED	D.A.
JAN 27/88	2	STREET SEWER TEST TRENCH FROM 205M TO 20.1500M FROM SW 1/4 10	D.A.
FEB 1/88	3	NEW 150mm DIA. 200 SERVICE FROM WATER NUMBER 1638 REVISED	D.A.
FEB 22/88	4	NOTE NO. 10 ADDED	D.A.
MARCH 19/88	5	MH'S 37A - 38A & 38B ADDED	D.A.
MARCH 19/88	6	CB'S ADDED	D.A.
MARCH 19/88	7	CURE TYPE CHANGED TO BARRIER CURE	D.A.
JUN 25/88	8	LINE MARKING ADDED AS PER I.A. GROUP DWG. NO. ST-8473-PS	D.A.
SEPT 2/88	9	RELOCATED LAMINIS PLATFORM ADDED ON EGLENTON AVE	D.A.
MAY 3/90	10	AS CONSTRUCTED	D.A.

- General Notes**
- Curbside at intersections shall be 450mm unless otherwise shown.
 - Sewer bedding types refer to drawing 2-31.1 St. 2-31.3 St.
 - All non-saturated concrete pipe and reinforced concrete pipe shall conform with A.S.T.M. specifications C-12 and C-18 respectively and shall be of the strength indicated.
 - Full length sub-drains shall be installed as per DWG. No. A1-8473-012.
 - All sanitary sewers shall have precast rubber gasket joints.
 - All storm sewers shall have standard rubber gasket joints.
 - The pavement design shall be as shown on drawing No. A1-8473-014.
 - The minimum distance between water services and other utilities to be 1.00m.
 - All excavations and trenching to be done in accordance with Job Occupant Health and Safety Act.
 - Sewer Bedding Material to conform with City and Region standards and all pertinent documents.
 - Single manholes with road allowance as per OPSD 705.02 with 250mm Ø CONC. CB LEAD (L1000) TYPE B BEDDING unless otherwise noted.
 - Double manholes with road allowance as per OPSD 705.02 with 300mm Ø CONC. CB LEAD (L1000) TYPE B BEDDING unless otherwise noted.
 - Temporary Double manholes with OTHER INLET as per OPSD 705.02 with CB lead as indicated on dwg.
 - Double manholes with SLANT TOP DITCH INLET as per OPSD 705.02 with CB LEAD as indicated on dwg.

Bench Mark
BM #209 - On the W. face of the S. corner of the W. end of a concrete box culvert across Erin Mill Highway, 45.7m N. of Egleton Ave. E.L. 165.998



Designed By _____ Approved By _____

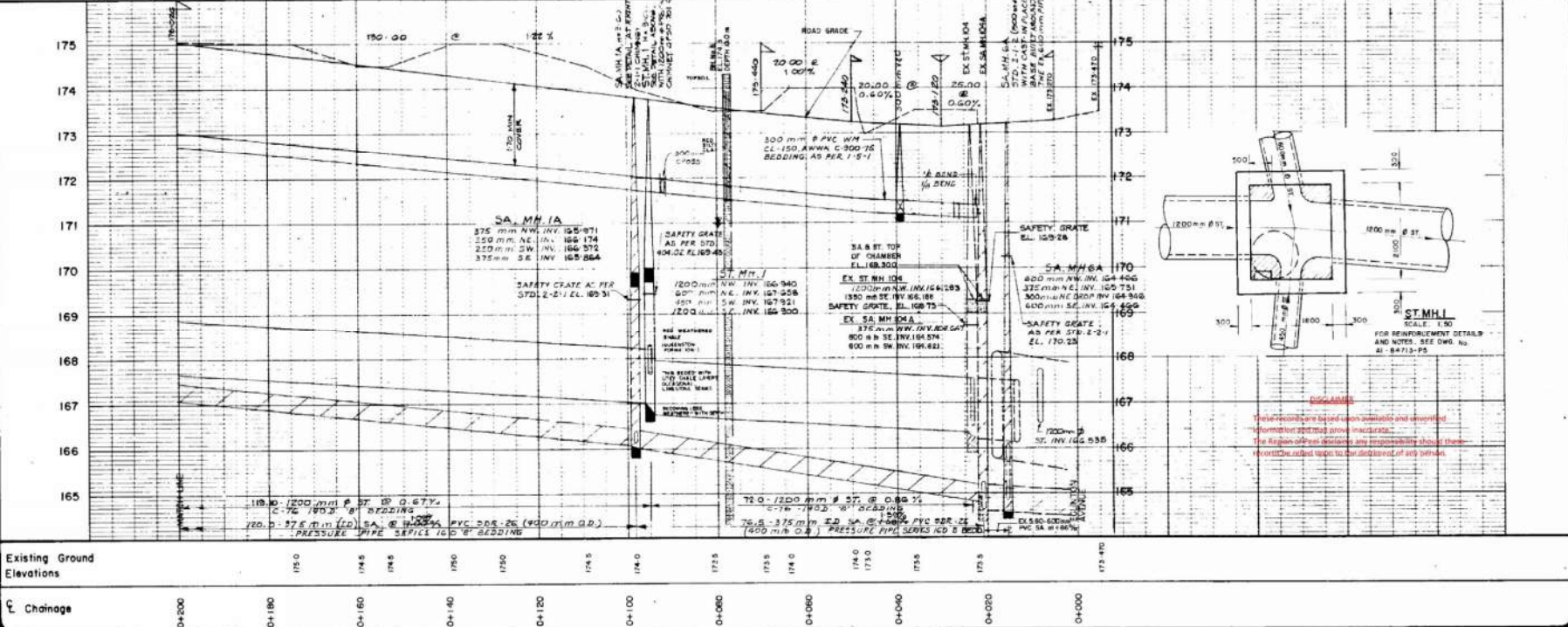
Proctor & Redfern
Consulting Engineers
Toronto

Drawn DGH/BTS, Chkd A.R.D., Rev 10
Dwg No. **A1-84713-P1**
Appr. O.A.

City of Mississauga
Region of Peel
Engineering Department

Glen Erin Drive
Sheet 1 of 3
From Sta. 0+000
To Sta. 0+200

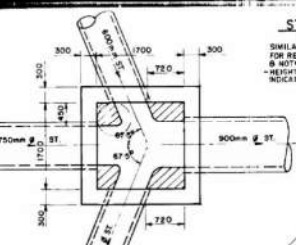
Scale
Horizontal : 1:300
Vertical : 1:50
Drawn : Project No.
Chkd : Area
Date : JUN 1987
Plan No. 12312-D
C-21T-79061M



Existing Ground Elevations

Chainage

0+200	0+180	0+160	0+140	0+120	0+100	0+080	0+060	0+040	0+020	0+000
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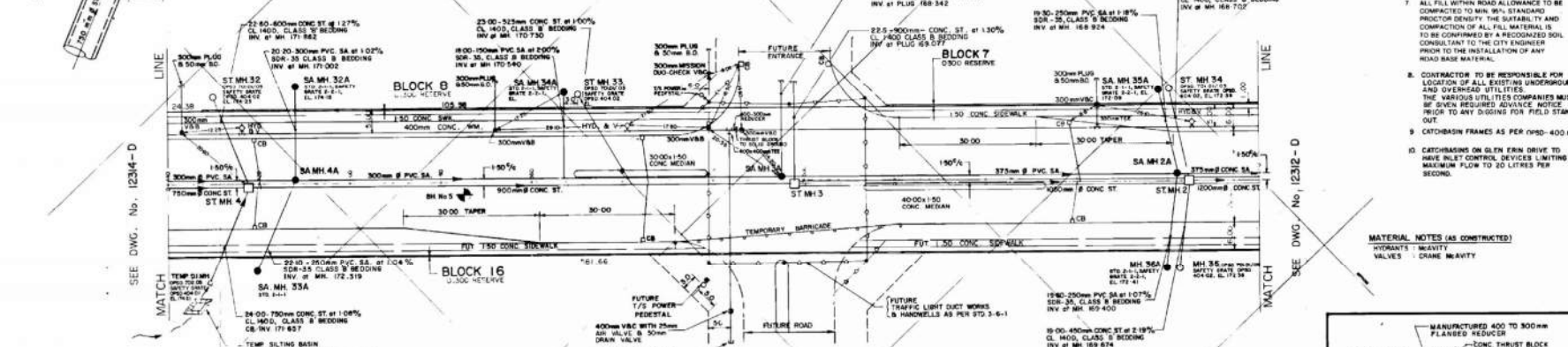
ST MH 4
SCALE 1:50
SIMILAR MANHOLES P. 3
FOR REINFORCEMENT DETAILS
SEE NOTE 5 SEE DWG. NO. 12314-05
HEIGHT OF CHAMBER HAS
INDICATED IN THIS PROFILE



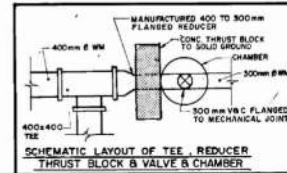
NOTE

1. NO LARGE PIECES OF SHALE ARE TO BE USED AS TRENCH BACKFILL. ONLY APPROVED NATIVE MATERIAL CONTRACTED TO A MIN. OF 95% S.P.D.
2. ALL MANHOLES SHALL BE 1200mm Ø PRECAST UNLESS SHOWN OTHERWISE.
3. LATEST STANDARDS FOR THE CITY OF MISSISSAUGA & REGION OF PEEL SHALL BE USED.
4. BOREHOLE DATA SHOWN IS FOR INFO. MATCH ONLY. NO RESPONSIBILITY IS ASSUMED THEREBY.
5. BACKFILL LIFT THICKNESS SHALL BE NO GREATER THAN 300mm.
6. ANY UTILITY RELOCATIONS REQUIRED DUE TO THE DEVELOPMENT OF THE SUBJECT LOTS TO BE UNDERTAKEN AT THE EXPENSE OF THE DEVELOPER.
7. ALL FILL WITHIN ROAD ALLOWANCE TO BE CONTRACTED TO MIN. PER STANDARD. CONTRACTOR VERIFY THE SUITABILITY AND PRODUCTION OF ALL FILL MATERIALS TO BE CONSUMED BY A RECOGNIZED SOIL CONSULTANT TO THE CITY ENGINEER PRIOR TO THE INSTALLATION OF ANY ROAD BASE MATERIAL.
8. CONTRACTOR TO BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. THE VARIOUS UTILITIES COMPANIES MUST BE GIVEN REASONABLE ADVANCE NOTICE PRIOR TO ANY DIGGING FOR FIELD STAKE-OUT.
9. CATCHBASIN FRAMES AS PER OPS-400-02.
10. CATCHBASIN ON GLEN ERIN DRIVE TO HAVE INLET CONTROL DEVICES LIMITING MAXIMUM FLOW TO 20 LITRES PER SECOND.

GLEN ERIN DRIVE

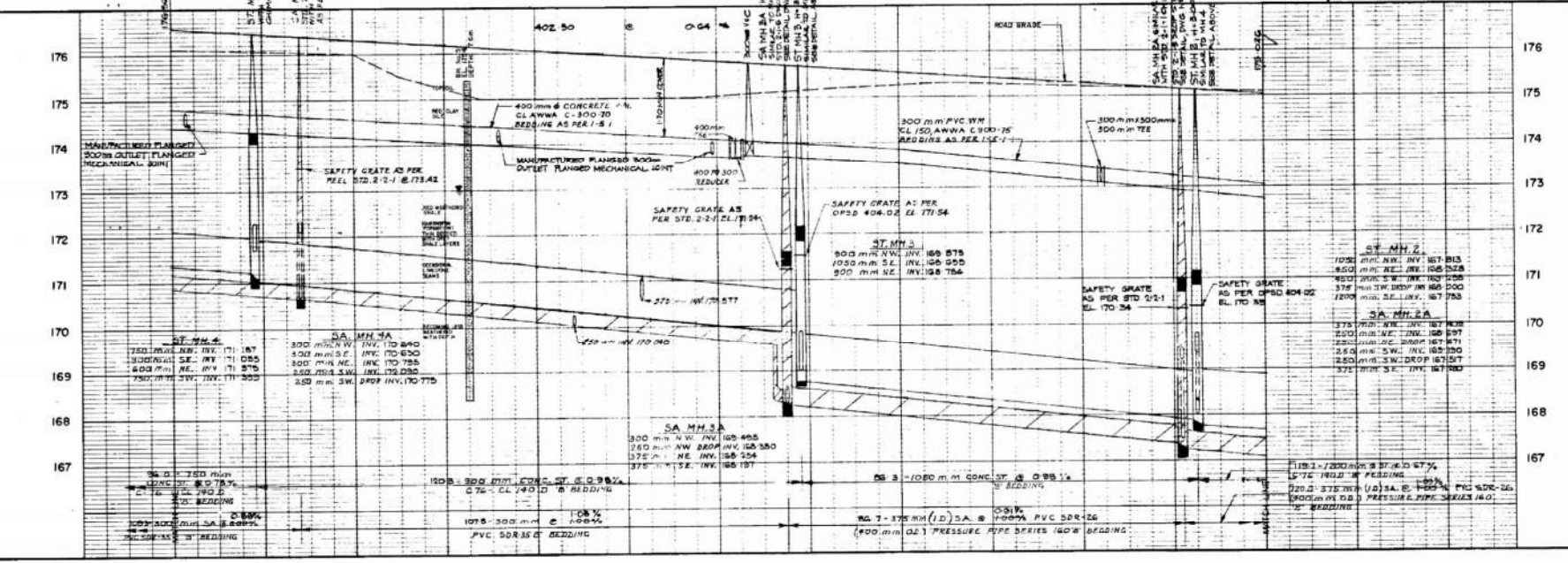


FOR EXTERNAL & SWALE DRAINAGE
SEE DWG. NO. 84713-05
FOR REDIRECTION



SCHEMATIC LAYOUT OF TEE, REDUCER, THRUST BLOCK & VALVE & CHAMBER

DISCLAIMER
These records are based upon available and unverified information and may prove inaccurate. The Region of Peel disclaims any responsibility should these records be relied upon to the detriment of any person.



Existing Ground Elevations

176	175	174	173	172	171	170	169	168	167
0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580



Revisions

Date	No.	Details	Int.
JAN 7/88	1	NOTE NO. 9 REVISED	0
JAN 21/88	2	SA SERVICES FROM MH 3 & MH 44 TO 10	0
FEB 1/88	3	NOTE NO. 10 ADDED	0
FEB 22/88	4	MANHOLES ADDED TO THE DRAINAGE SYSTEM	0
APR 25/88	5	PIPE MARKING ADDED TO THE DRAINAGE SYSTEM	0
APR 25/88	6	PIPE MARKING ADDED TO THE DRAINAGE SYSTEM	0
MAY 3/90	7	AS CONSTRUCTED	0

- General Notes**
1. Civil data at intersections shall be shown unless otherwise shown.
 2. Sewer bedding types refer to drawing 2-131 (S1) 2-3 (S2).
 3. All non-reinforced concrete pipe and reinforced concrete pipe shall conform with A.S.T.M. specifications C-14 and C-76 respectively and shall be of the strengths indicated.
 4. Full length sub drains to be installed as per drawing No. A1-84713-02.
 5. All sanitary sewers shall have premium rubber gasket joints.
 6. All manhole frames shall have standard rubber gasket joints.
 7. The pavement design shall be as shown on drawing No. A1-84713-01.
 8. The minimum distance between water services and other utilities shall be 1200mm.
 9. All excavation and trenching to be done in accordance with the Occupational Health and Safety Act.
 10. Sewer bedding material to conform with City and Region standards and with manufacturer's instructions.
 11. Single catchbasin with road allowance as per OPS-705-02 with 300mm Ø CONC. CHAMBER (C-1000) TYPE B BEDDING unless otherwise noted.
 12. Double catchbasin with road allowance as per OPS-705-02 with 300mm Ø CONC. CHAMBER (C-1000) TYPE B BEDDING unless otherwise noted.
 13. Temporary Double catchbasin with DITCH INLET as per OPS-705-02 with 150mm Ø CONC. CHAMBER (C-1000) TYPE B BEDDING unless otherwise noted.
 14. Double catchbasin with SLANT TOP & DITCH INLET as per OPS-705-02 with 150mm Ø CONC. CHAMBER (C-1000) TYPE B BEDDING unless otherwise noted.

Drawn D.G.M./R.T.S. Chkd S.S. Rev 7
Dwg No. A1-84713-P2
Appr. DA

City of Mississauga
Region of Peel
Engineering Department

Glen Erin Drive
Sheet 2 of 3
From Sta. 0+200
To Sta. 0+440

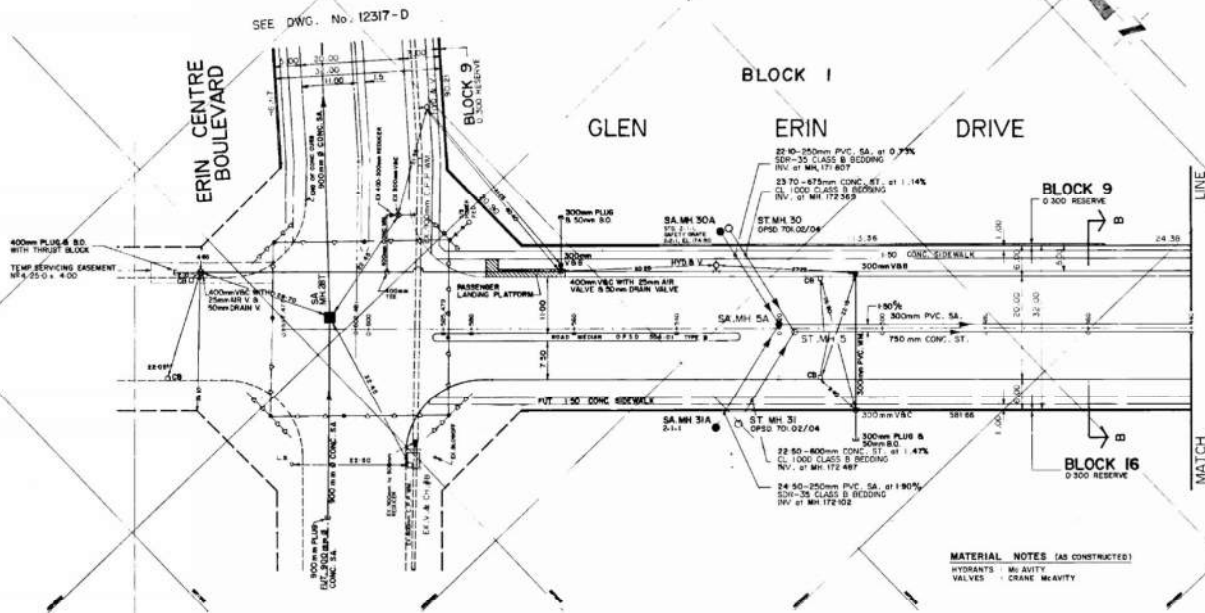
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Drawn
Chkd
Date MAY 1987

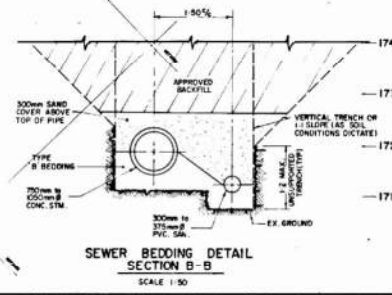
Project No
Area
Plan No. 12313-D
C-21T-79061M

Designed By
Approved By

Proctor & Redfern
Consulting Engineers
Toronto



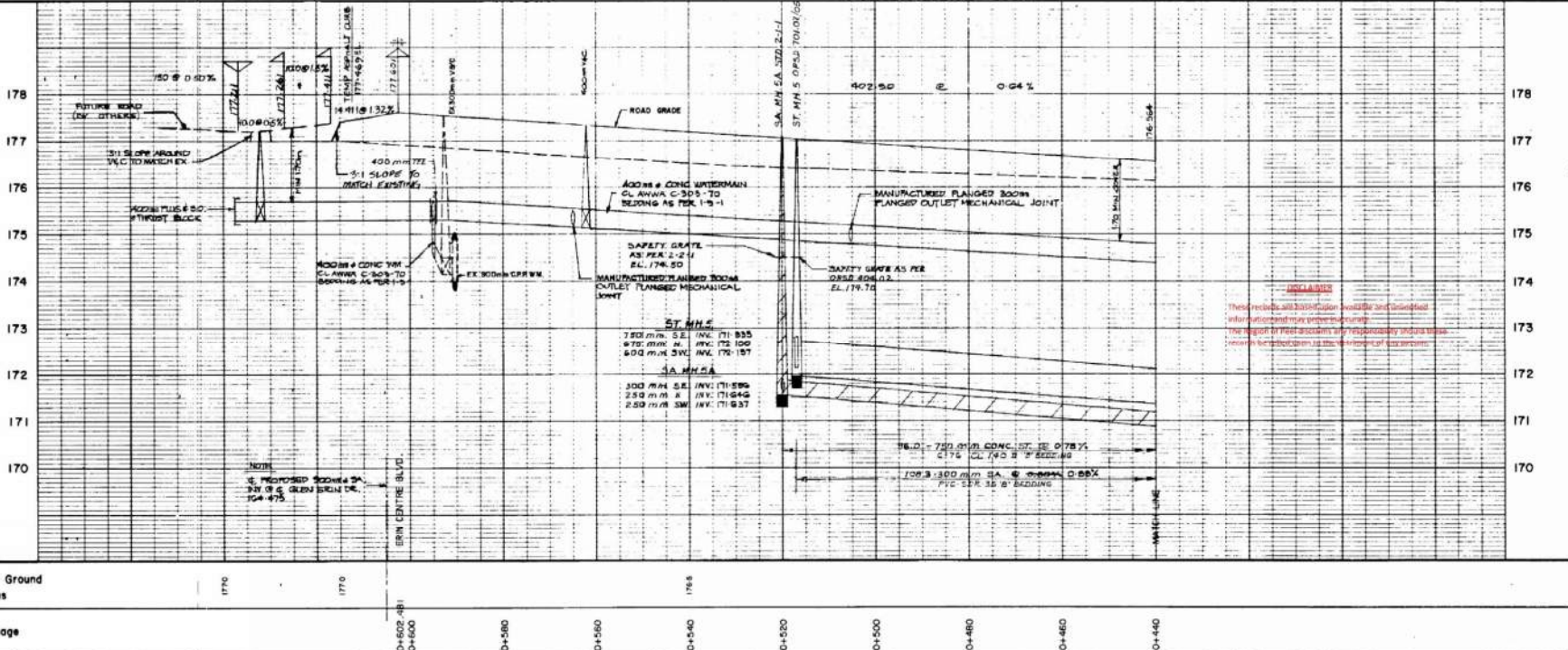
- NOTE**
- NO LARGE PIECES OF SHALE ARE TO BE USED AS TRENCH BACKFILL. ONLY APPROVED NATIVE MATERIAL COMPACTED TO A MIN. OF 95% S.P.C.
 - ALL MANHOLES SHALL BE 1500mm Ø PRECAST UNLESS SHOWN OTHERWISE.
 - LATEST STANDARDS FOR THE CITY OF MISSISSAUGA & REGION OF PEEL SHALL BE USED.
 - BOREHOLE DATA SHOWN IS FOR INFORMATION ONLY. NO RESPONSIBILITY IS ASSUMED THEREBY.
 - BACKFILL LIFT THICKNESS SHALL BE NO GREATER THAN 200mm.
 - ANY UTILITY RELOCATIONS REQUIRED DUE TO THE DEVELOPMENT OF THE SUBJECT LANDS TO BE UNDERTAKEN AT THE EXPENSE OF THE DEVELOPER.
 - ALL FILL WITHIN ROAD ALLOWANCE TO BE COMPACTED TO MIN 95% STANDARD PROCTOR DENSITY. THE SUITABILITY AND COMPACTON OF ALL FILL MATERIAL IS TO BE CONFIRMED BY A RECOGNIZED SOIL CONSULTANT TO THE CITY ENGINEER PRIOR TO THE INSTALLATION OF ANY ROAD BASE MATERIAL.
 - CONTRACTOR TO BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. THE VARIOUS UTILITIES COMPANIES MUST BE ADVISED RELEVANT TO THE PROJECT PRIOR TO ANY DIGGING FOR FIELD STAKE OUT.
 - CATCHBASIN FRAMES AS PER OPSD-002-00
 - CATCHBASIN ON GLEN ERIN DRIVE TO HAVE INLET CONTROL DEVICES. LIMITING MAXIMUM FLOW TO 20 LITRES PER SECOND.



MATERIAL NOTES (AS CONSTRUCTED)
 HYDRANTS: M.V. AVITY
 VALVES: CRANE M.V. AVITY

SEE DWG. No. 12317-D

SEWER BEDDING DETAIL SECTION B-B
 SCALE: 1:50



DISCLAIMER
 These records and specifications available and identified information may prove erroneous. The Region of Peel assumes no responsibility for any errors or omissions that may occur in the use of these records.



Revisions		
Date	No.	Details
JAN 7/88	1	ADD 'PREPAC' SIGNAL 'ELECT' WORK AND MANHOLE AT GLEN ERIN DR & ERIN CENTRE BLVD.
JAN 7/88	2	CATCHBASIN FRAMES REVISED
FEB 1/88	3	NOTE No. 10 ADDED
FEB 8/88	4	SEWERY MH SET MOVED TO 500' W NORTH OF CENTRE LINE
FEB 22/88	5	MH # 30-30A-31 & 31A ADDED
APR 18/88	6	ROAD PROFILE REVISED AT INTERSECTION
APR 25/88	7	LINE MARKINGS ADDED AS PER B.A. GROUP DWGS. SEE PLAN FOR LOCATION OF LINE MARKINGS
SEPT 2/88	8	PREPACER LANDING PLATFORM ADDED ON GLEN ERIN DRIVE
MAY 5/90	9	AS CONSTRUCTED

- General Notes**
- Curb radii at intersections shall be 8.0m unless otherwise shown.
 - See sewer bedding types refer to drawing 2-3-1 (447) P. 1-1 (181).
 - All non-reinforced concrete pipe and structural concrete pipe shall conform with 4.1 M. use locations C-1 and C-76 respectively and shall be of the strengths indicated.
 - Full length app. drains to be installed as per dwg. No. A1-84713-02.
 - All sanitary sewers shall have premium rubber gasket joints.
 - All storm sewers shall have standard rubber gasket joints.
 - The pavement design shall be as shown on drawing No. A1-84713-P-1.
 - The minimum distance between water services and other utilities to be 1.20m.
 - All excavation and trenching to be done in accordance with the occupational health and safety act.
 - Sewer bedding material to conform with City and Region standards and with approved documents.
 - Single catchbasin when used otherwise as per OPSD 705-02, with 250mm Ø CONC. OR LEAD CL. 0001 FIVE B BEDDING, unless otherwise noted.
 - Double catchbasin with road otherwise as per OPSD 705-02, with 300mm Ø CONC. OR LEAD CL. 0001 FIVE B BEDDING, unless otherwise noted.
 - Temporary Double catchbasin with DITCH INLET as per OPSD 705-02, with at least as indicated on dwg.
 - Double catchbasin with SLANT TOP DITCH INLET as per OPSD 705-02, with as indicated on dwg.

Drawn: P.H./B.T.S. Chk'd: K.D. Rev. 0
 Dwg No: A1-84713-P3
 Appr. D.A.



Designed By: [Signature] Approved By: [Signature]

Proctor & Redfern
 Consulting Engineers
 Toronto

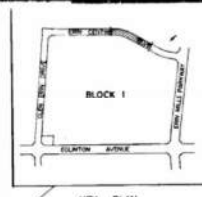
City of Mississauga
 Region of Peel
 Engineering Department

Glen Erin Drive
 Sheet 3 of 3
 From Sta. 0+440
 To Sta. 0+602.481

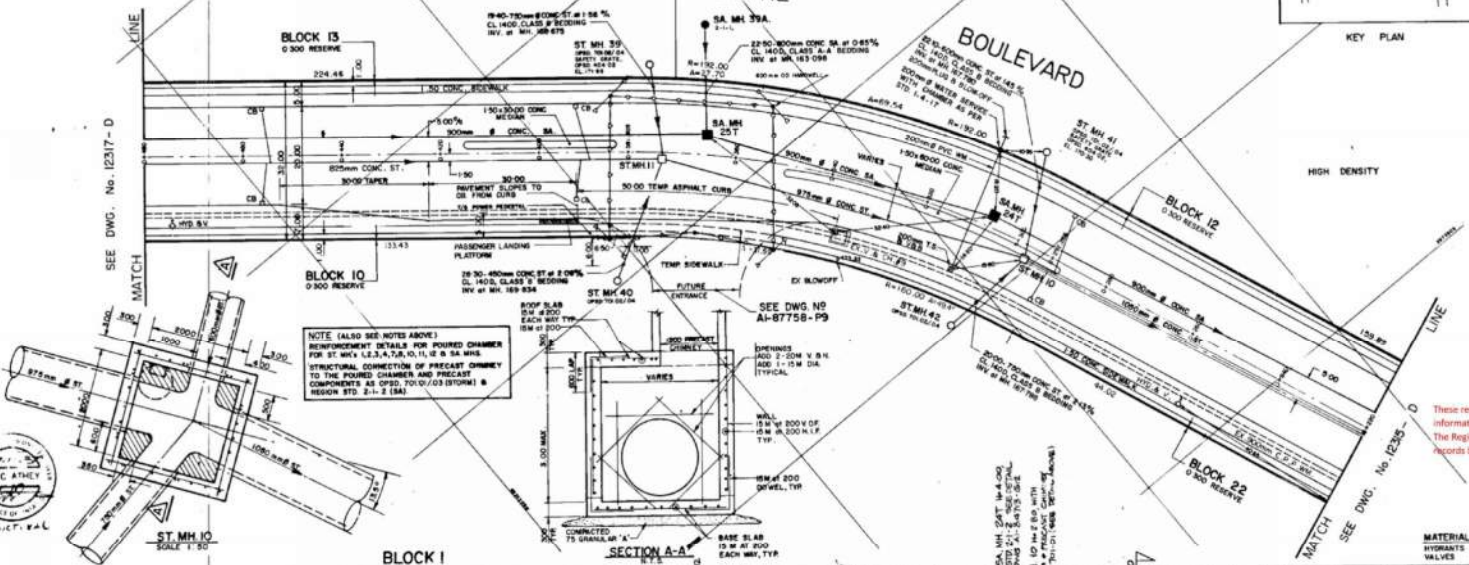
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 Chk'd: [Signature] Area:
 Date: JUNE 1987 Plan No: I2314-D
 C-
 21T-79061M

GENERAL NOTES (FOR MANHOLE CONSTRUCTION)
 MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS - 40 MPa.
 REINFORCING STEEL SHALL CONFORM TO CSA 930 IEM, GRADE 400
 ALL REINFORCING STEEL TO BE PLACED IN THE CENTRE OF ELEMENTS
 MINIMUM CLEAR COVER IN ALL AREAS 30 mm
 DO NOT BACKFILL WALLS UNTIL ROOF ELEMENT IS IN PLACE
 BACKFILL WALLS SIMULTANEOUSLY WITH GRANULAR FILL IN 300 LIFTS,
 COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 REINFORCE AND SAFEGUARD AS NECESSARY ALL OPENINGS THROUGH AND
 SUPPORT ADJACENT STRUCTURES.

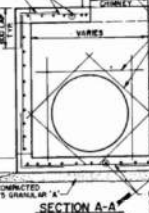
NOTE: SANITARY TRUNK SEWER JOINTS ARE INTENTIONAL



- NOTE**
- NO LARGE PIECES OF SHALE ARE TO BE USED AS TRENCH BACKFILL. ONLY APPROVED NATIVE MATERIAL COMPACTED TO A MIN. 95% S.P.D.
 - ALL MANHOLES SHALL BE 1000mm Ø PRECAST UNLESS SHOWN OTHERWISE.
 - LATEST STANDARDS FOR THE CITY OF MISSISSAUGA & REGION OF PEEL SHALL BE USED.
 - SCHEMATIC DATA SHOWN IS FOR INFORMATION ONLY. NO RESPONSIBILITY IS ASSUMED THEREBY.
 - BACKFILL LIFT THICKNESS SHALL BE NO GREATER THAN 200mm.
 - ANY UTILITY RELOCATIONS REQUIRED DUE TO THE DEVELOPMENT OF THE SUBJECT LANDS TO BE UNDERTAKEN AT THE EXPENSE OF THE DEVELOPER.
 - ALL FILL WITHIN ROAD ALLOWANCE TO BE COMPACTED TO MIN. 90% STANDARD PROCTOR DENSITY. THE STABILITY AND COMPACTOR OF ALL FILL MATERIAL IS TO BE CONFIRMED BY A REGISTERED SOIL CONSULTANT TO THE CITY ENGINEER PRIOR TO THE INSTALLATION OF ANY ROAD BASE MATERIAL.
 - AT ALL SEWER SERVICES CROSSING UNDER EX. TRUNK WATER MAIN, THE WATERMAIN IS TO BE SUPPORTED TO REGION OF PEEL SPECIFICATIONS.
 - CONTRACTOR TO BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UNDERGROUND AND SURFACE UTILITIES. THE VARIOUS UTILITIES COMPANIES MUST BE GIVEN REQUISITE ADVANCE NOTICE PRIOR TO ANY DIGGING FOR FIELD STAKE-OUT.
 - CATWALK FRAMES AS PER OPSD-800-C-03



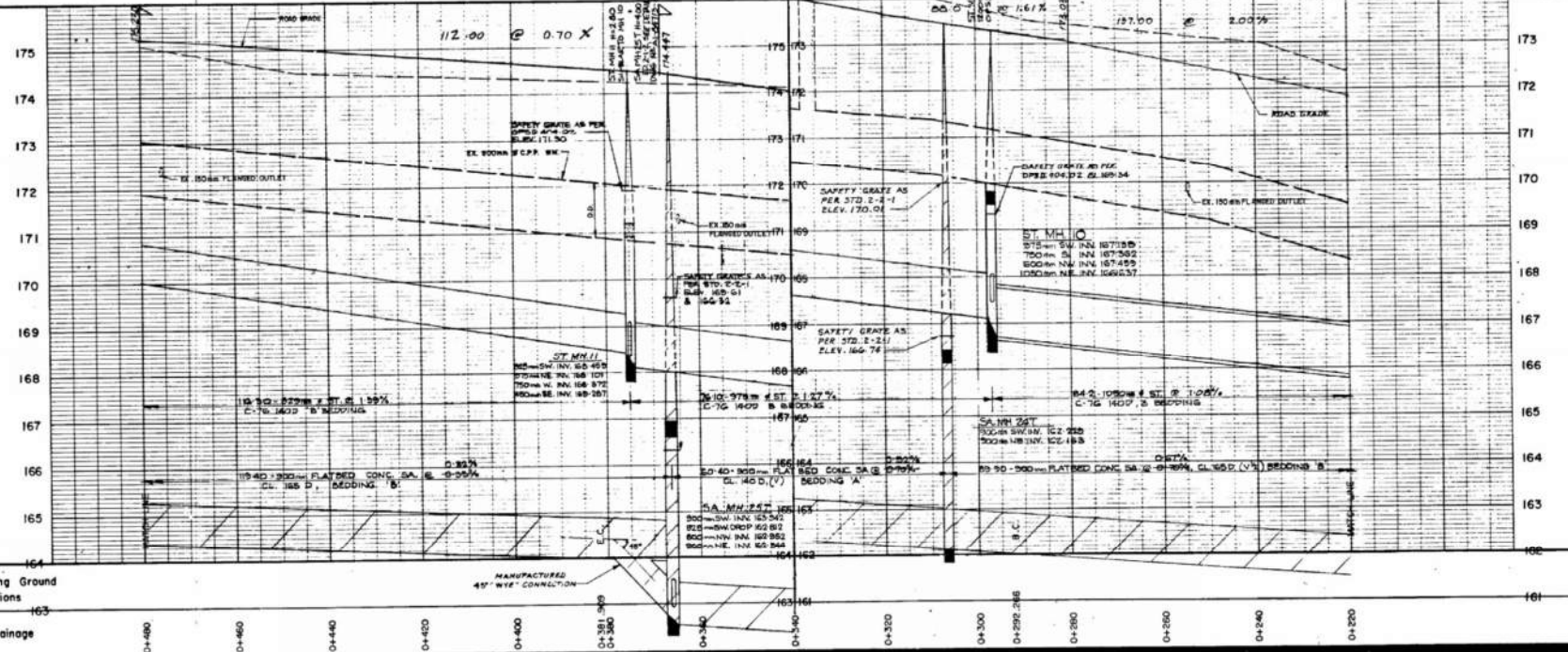
NOTE (ALSO SEE NOTES ABOVE)
 REINFORCEMENT DETAILS FOR Poured CHAMBER FOR ST MH 42, 43, 44, 45, 46, 47, 48 & SA MANHOLE STRUCTURAL CONNECTION OF PRECAST CHIMNEY TO THE Poured CHAMBER AND PRECAST COMPONENTS AS OPSD 705-03 (3) (3) (3) & REGION STD. 2-1-2 (SA)



DISCLAIMER

These records are based upon available and unverified information and may prove inaccurate. The Region of Peel disclaims any responsibility should the records be relied upon to the detriment of any person.

MATERIAL NOTES (AS CONSTRUCTED)
 HYDRANTS - MAINTY GRADE MAINTY VALVES



Date	No.	Details	(Int)
DEC. 14/87	1	SANITARY TRUNK SEWER ADDED	D.A.
JAN. 7/88	2	NOTE NO. 9 REVISED	D.A.
JAN. 21/88	3	SAFETY GRATES IN M.H. 21 & 23 REVISED	D.A.
FEB. 8/88	4	REVISE SANITARY TRUNK FROM M.H. 21 TO M.H. 23 AND CONNECTION OFF M.H. 21	D.A.
FEB. 22/88	5	M.H. 28, 40, 41 & 42 ADDED	D.A.
MAR. 8/88	6	TRUNK SERVICE OFF ST. MH. 40 REVISED	D.A.
APR. 11/88	7	ROAD GRADE REVISED STA. 0+320 TO 0+440	HT
APR. 08/88	8	1. LAMP REVISIONS ACCORDS AS PER SA GROUP DMSG 2. 150mm Ø CONC. MEDIAN ADDED	D.A.
APR. 26/88	9	TWO CONC. MEDIAN ADDED	D.A.
SEPT. 2/88	10	REVISIONS TO DRAINAGE SYSTEM ADDED ON ERIN CENTRE BOULEVARD	D.A.
MAR. 23/89	11	WATER SERVICE TO PARK BLOCK ADDED	HW
MAY. 31/90	12	SEE CONSTRUCTION	D.A.

- Con. note at intersections shall be as in unless otherwise shown.
- Sewer bedding types refer to drawing 2-1-1 (SA).
- All non-reinforced concrete pipe and reinforced concrete pipe shall conform with A.S.T.M. specifications C-14 and C-76 respectively and shall be as the drawings indicate.
- Full length web drains to be installed as per drawing No. A1-8473-02.
- All sanitary sewers shall have premium rubber gasket joints.
- All storm sewers shall have standard rubber gasket joints.
- The proposed design shall be as shown on drawing No. A1-8473-04.
- The minimum distance between water services and other utilities to be 1.50m.
- All excavation & bedding to be done in accordance with the appropriate health and safety regulations.
- Sewer bedding material to conform with City and Region standards per work contracts documents.
- Single connections within road allowance as per OPSD 705-03 with 200mm Ø CONC. OR LEAD (C-100) TYPE B BEDDING unless otherwise noted.
- Double connections within road allowance as per OPSD 705-03 with 300mm Ø CONC. OR LEAD (C-100) TYPE B BEDDING unless otherwise noted.
- Temporary double connections with OPEN INLET as per OPSD 705-03 with 150mm Ø unless as indicated on drawing.
- Double connections with SLANT TOP OPEN INLET as per OPSD 705-03 with 150mm Ø unless as indicated on drawing.

Bench Mark
 BM #609 - On the N. face of the S. corner of the W. end of a concrete base support corner Con. wall Footway, 437m N. of Eglinton Ave. W.
 C.L. 165.996

Designed By: [Signature] Approved By: [Signature]

Proctor & Redfern
 Consulting Engineers
 Toronto

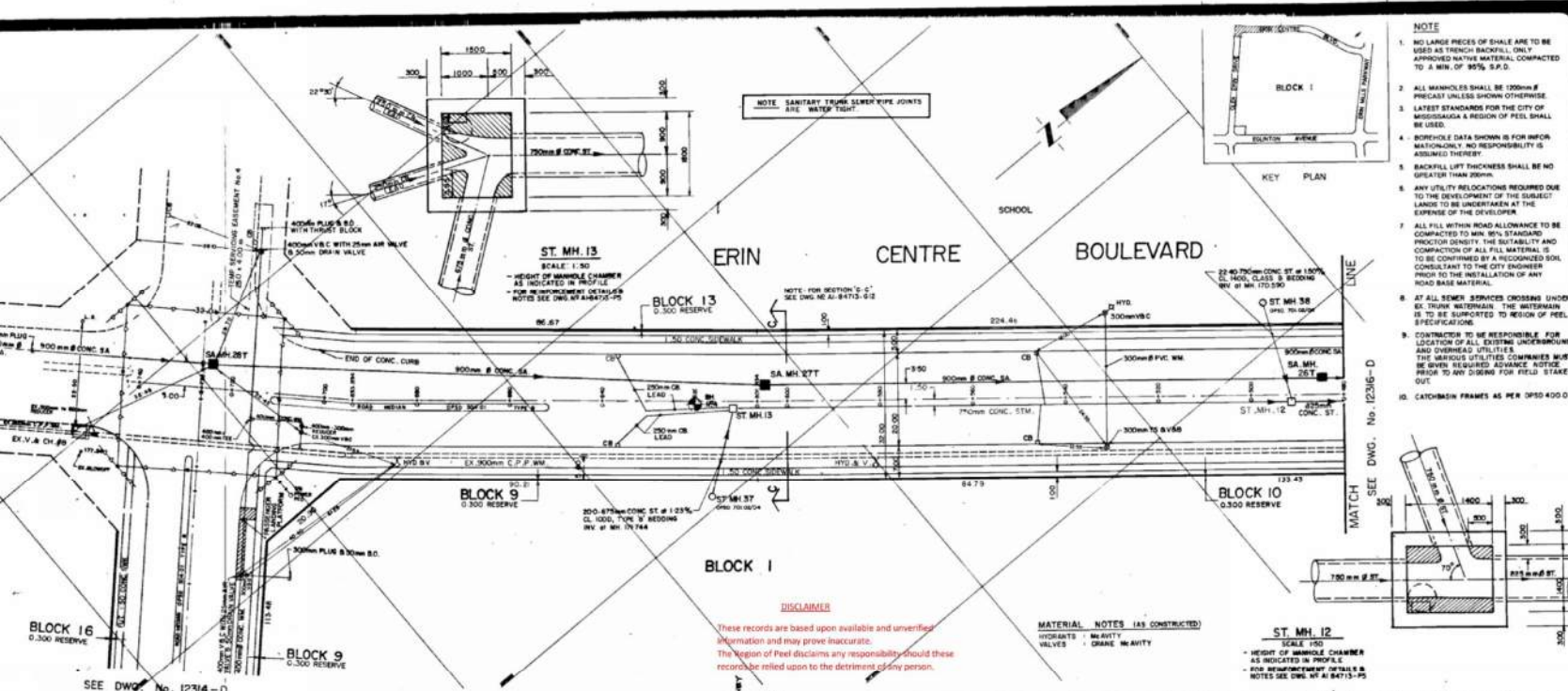
Drawn: G.H./B.T.S. Chk'd: A.D. Rev. 12
 Dwg No: A1-84713-P5
 Appr. D.A.

City of Mississauga
 Region of Peel
 Engineering Department

Erin Centre Blvd.
 Sheet 2 of 3
 From Sta. 0+220
 To Sta. 0+480

Scale
 Horizontal 1:500 Vertical 1:20
 Drawn Project No.
 Chk'd Area
 Date: June 1987 Plan No. 12316-D
 C-21T-79061M

12316-D

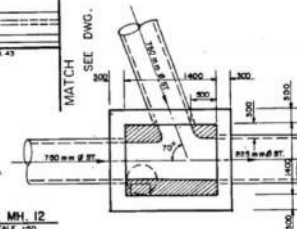


- NOTE**
- NO LARGE PIECES OF SHALE ARE TO BE USED AS TRENCH BACKFILL. ONLY APPROVED NATIVE MATERIAL COMPACTED TO A MIN. OF 95% S.P.D.
 - ALL MANHOLES SHALL BE 1200mm Ø PRECAST UNLESS SHOWN OTHERWISE.
 - LATEST STANDARDS FOR THE CITY OF MISSISSAUGA & REGION OF PEEL SHALL BE USED.
 - BORHOLED DATA SHOWN IS FOR INFO. MATCHLINES & NO RESPONSIBILITY IS ASSUMED THEREBY.
 - BACKFILL LIFT THICKNESS SHALL BE NO GREATER THAN 200mm.
 - ANY UTILITY RELOCATIONS REQUIRED DUE TO THE DEVELOPMENT OF THE SUBJECT LAND TO BE UNDERTAKEN AT THE EXPENSE OF THE DEVELOPER.
 - ALL FILL WITHIN ROAD ALLOWANCE TO BE COMPACTED TO MIN. 90% STANDARD PROCTOR DENSITY. THE SUSTAINABILITY AND COMPACTOR OF ALL FILL MATERIALS IS TO BE CONFIRMED BY A RECOGNIZED SOIL CONSULTANT TO THE CITY ENGINEER PRIOR TO THE INSTALLATION OF ANY ROAD BASE MATERIAL.
 - AT ALL SEWER SERVICES CROSSING UNDER EX. TRUNK WATERMAIN THE REGION OF PEEL SPECIFICATIONS.
 - CONTRACTOR TO BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. THE MANHOLES UTILIZED COUNTRIES MUST BE GENTLY REQUIRED ADVANCE NOTICE PRIOR TO ANY DIGGING FOR FIELD STAKE-OUT.
 - CATCHBASIN FRAMES AS PER OPS 400.02



Date	No.	Revisions	(int)
DEC. 14/87	1	SANITARY TRUNK SEWER ADDED	D.A.
JAN 7/88	2	CATCHBASIN FRAMES REVISED	D.A.
JAN 7/88	3	ADD 'WIPIC' SIGNAL 'X' W/ 1000WELL	D.A.
JAN 7/88	4	ADD 475 mm SERVICE CONNECTION OFF	D.A.
FEB 8/88	5	SANITARY MANHOLE MOVED TO 5.00 NORTH	D.A.
FEB 8/88	6	REVISE SANITARY SEWER FROM 'B' TO 'E'	D.A.
FEB 22/88	7	M.H. 11 & 12 ADDED	D.A.
APRIL/88	8	LINE MARKINGS ADDED AS PER THE GROUP DWG.	D.A.
SEPT. 2/88	9	PASSENGER LANDING PLATFORM ADDED ON	D.A.
MAR 23/89	10	WATER SERVICE TO SCHOOL BLOCK ADDED	RWS
MAY 3/90	11	AS CONSTRUCTED	D.A.

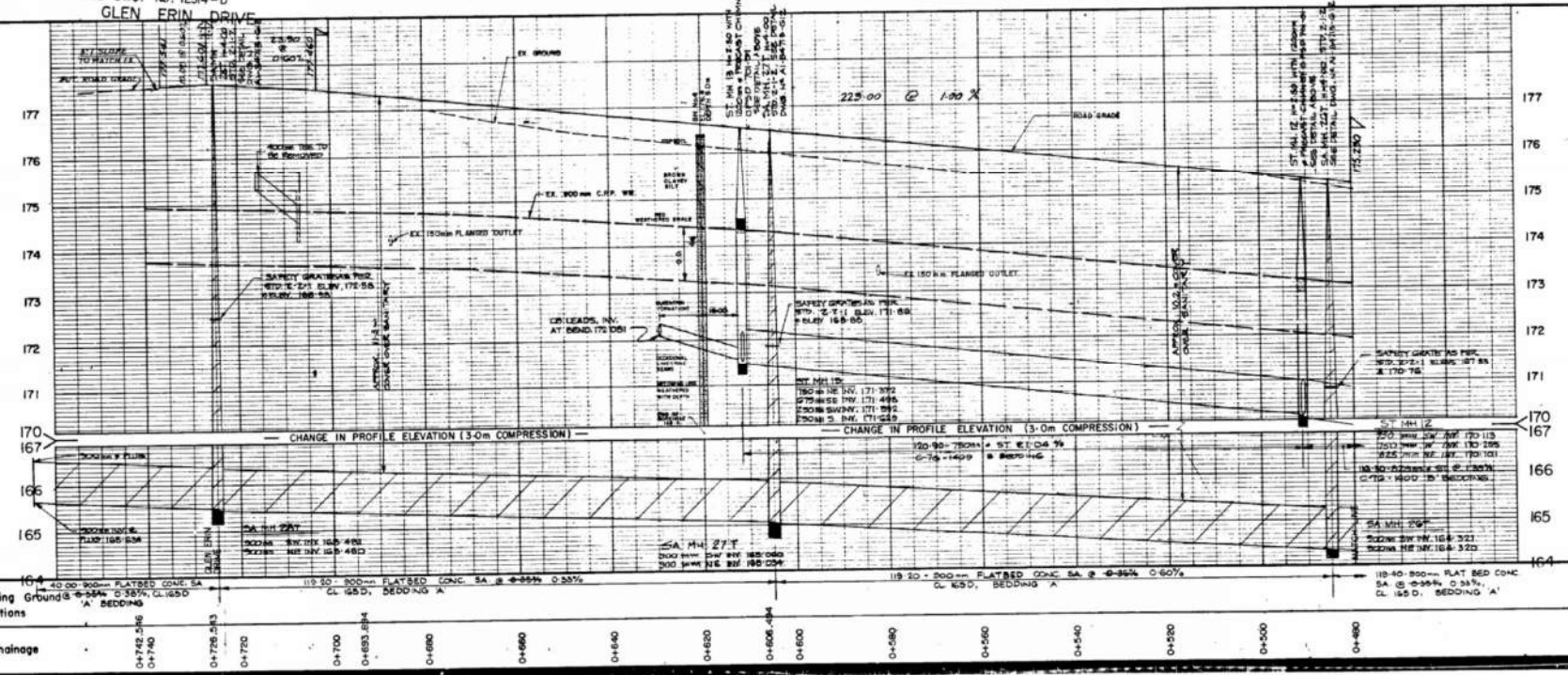
- General Notes**
- Curb cuts at intersections shall be as shown unless otherwise shown.
 - Sewer bedding types refer to drawing 2-3-31 (REV. 8-7-1981).
 - All non-reinforced concrete pipe and reinforced concrete pipe shall conform with A.S.T.M. specifications C14 and C15 respectively and shall be of the strength indicated.
 - Full length sub-drains to be installed as per spec. No. AP-84713-02.
 - All sanitary sewers shall have premium rubber gasket joints.
 - All storm sewers shall have standard rubber gasket joints.
 - The pavement design shall be as shown on drawing No. A1-84713-P4.
 - The minimum distance between sewer service and other utilities to be 1.20m.
 - All excavations of trenching to be done in accordance with the occupational health and safety act.
 - Sewer bedding material to conform with City and Region standards and with contract documents.
 - Single catchbasins within road allowance as per OPS 705-02, with 250mm Ø CONC. OR LEAD/LEAD TYPE B BEDDING unless otherwise noted.
 - Double catchbasins within road allowance as per OPS 705-02, with 300mm Ø CONC. OR LEAD/LEAD TYPE B BEDDING unless otherwise noted.
 - Temporary double catchbasins with ditch inlet as per OPS 705-02 with 600mm Ø lead as indicated on plan.
 - Double catchbasins with SLANT TOP & DITCH INLET as per OPS 705-02 with 600mm Ø lead as indicated on plan.



DISCLAIMER
 These records are based upon available and unverified information and may prove inaccurate. The Region of Peel disclaims any responsibility should these records be relied upon to the detriment of any person.

MATERIAL NOTES (AS CONSTRUCTED)
 HYDRANTS : HEAVY
 VALVES : GRANE HEAVY

ST. MH. 12
 SCALE: 1:50
 HEIGHT OF MANHOLE CHAMBER AS INDICATED IN PROFILE
 FOR REINFORCEMENT DETAILS & NOTES SEE DWG. NO. A1-84713-P5



SW. 8608-On the W. face of the S. end of a concrete box culvert across Chk. W. Highway, 457m. N. of Eglington Ave. S.L. 185.358

Designed By: *[Signature]*
 Approved By: *[Signature]*

Proctor & Redfern
 Consulting Engineers
 Toronto

Drawn P.H./D.O. Chk'd A.K.G. Rev. 11
 Dwg No A1-84713-P6
 App'd D.A.

City of Mississauga
 Region of Peel
 Engineering Department

Erin Centre Blvd.
 Sheet 3 of 3
 From Sta. 0+480
 To Sta. 0+726.543

Scale
 Horizontal : 1:500
 Vertical : 1:50
 Drawn : Chk'd :
 Date : JUNE 1987
 Area :
 Plan No : 12317-D
 C :
 21T-79061M

12317-D



**Erin Mills Twon Centre
Proposed Mixed-Use Development
5100 Erin Mills Parkway, Mississauga, Ontario**

Type of Document:

Geotechnical Investigation

Client:

Mr. Barry Stern
The Muzzo Group of Companies
50 Confederation Parkway
Concord, Ontario
L4K 4T8

Project Number:

GTR-00257769-H0

Submitted By:

EXP Services Inc.
1595 Clark Boulevard
Brampton, ON
L6T 4V1

t: +1.905.793.9800

f: +1.905.793.0641

Date Submitted:

March 21, 2024

Table of Contents

1. Introduction	1
2. Procedure.....	2
3. Surface Conditions	3
3.1 Soil	3
3.1.1 Asphalt and Topsoil.....	3
3.1.2 Fill.....	3
3.1.3 Silt	3
3.1.4 Sandy Silt to Silty Sand.....	3
3.1.5 Silt Till.....	4
3.1.6 Shale Bedrock.....	4
3.2 Groundwater Condition.....	6
4. Engineering Discussion and Recommendations	7
4.1 Foundation	7
4.2 Foundation General.....	8
4.3 Temporary Shoring	9
4.4 Earth Pressure	11
4.5 Excavation and Groundwater Control	12
4.6 Floor Slab and Permanent Drainage.....	12
4.7 Backfill Considerations	144
4.8 Earthquake Considerations	144
4.9 Subsurface Concrete Structures	15
5. General Comments	166

Drawings: Borehole Location Plan and Logs

Appendix A: Grain Size Analysis Results

Appendix B: Certificate of Analysis

Appendix C: EXP 2020 Borehole Logs

1. Introduction

This report presents the results of a Geotechnical Investigation carried out at the Erin Mills Town Centre located at 5100 Erin Mills Parkway in Mississauga, Ontario. The Site, which covers an area of about 12.4 acres, is situated at the northwest corner of the existing Erin Mills Town Centre in the City Mississauga, Ontario.

EXP Services Inc. (EXP) understands that the proposed development will comprise of a total of nine (9) residential towers (with some commercial space) and a parkland area. The proposed structures will be between 20 and 44 storeys in height. The development will include three (3) levels of underground parking (P3 is assumed to extend up to 10 m below ground surface). The site is currently occupied in part by a single-storey commercial building along with paved surface parking and landscape areas.

EXP carried out a preliminary geotechnical investigation at the Erin Mills Town Centre in the spring of 2020. At that time, a total of twenty (20) boreholes were advanced to depths ranging from about 1.5 to 6.7 m throughout the entire Erin Mills Town Centre area. The findings were presented in our report BRM-00257769-A1 dated March 27, 2020. In the fall of 2022, a supplementary geotechnical investigation (Report BRM-00257769-G0 dated November 10, 2022) was carried out when six (6) boreholes were advanced to about 10.1 to 13.8 m below existing grade. The logs for previous boreholes that fall within the boundary of the current site are included in Appendix C.

The purpose of this investigation was to determine the subsurface conditions at the site by drilling a limited number of new and deeper boreholes and based on this information, supplemented by information obtained in the preliminary investigation, to provide geotechnical engineering guidelines for the design and construction of the proposed development. Specifically, recommendations and/or comments regarding foundation type, allowable bearing pressures, groundwater conditions, excavation and backfill, slab-on-grade construction, permanent drainage requirements and earthquake considerations were to be provided.

The information contained in this report in no way reflects the environmental aspects of the soil and groundwater as this is beyond our terms of reference. The comments and recommendations given in this report are based on the assumption that the above-described design concept will proceed into construction. If changes are made either in the design phase or during construction, this office must be retained to review these modifications. The result of this review may be a modification of our recommendations or the requirement of additional field or laboratory work to check whether the changes are acceptable from a geotechnical viewpoint.

A Phase II Environmental Site Assessment (ESA) and Hydrogeological Investigation were carried out concurrently with the Geotechnical Investigation. The findings of the Phase II ESA and Hydrogeological investigation will be reported under separate covers.

2. Procedure

The fieldwork for this investigation was carried out during the period of January 4 to 22, 2024. A total of fourteen (14) boreholes, Boreholes 201 to 214, were drilled for the Geotechnical Investigation at the approximate locations shown on the attached Borehole Location Plan (Drawing No. 1). The boreholes were extended to depth of about 15.3 to 15.9 m below existing ground surface.

Prior to the commencement of drilling operations, Ontario OneCall was contacted for clearing underground services in the investigation areas. In addition, a private locator was also retained to scan around each borehole location to minimize the risk of contacting any buried utilities.

All boreholes were advanced using a drill rig adapted for soil sampling purposes owned and operated by a specialist drilling contractor. A representative of EXP was present throughout the drilling operations to monitor and direct the drilling and sampling operations, logged the borings, made groundwater observations during and upon completion of drilling, processed the recovered samples and prepared the borehole logs. Representative samples of the subsurface soils were recovered at regular intervals using conventional 50 mm O.D. split spoon sampling equipment driven in accordance with Standard Penetration Test (SPT) procedures (ASTM D1586). Coring of the shale bedrock was carried out using a HQ size core barrel at all borehole locations. All split spoon and rock core samples were returned to EXP's Brampton laboratory for testing which included moisture content, unit weight determinations and grain size analysis on selected samples.

Water level observations were carried out in the open boreholes during the course of the fieldwork. Subsequent water level observations were carried out in a monitoring well installed in each borehole for Phase II ESA and Hydrogeological purposes.

The locations of the boreholes were established in the field by EXP personnel based on a drawing provided by the client. Ground surface elevations (Geodetic) at each borehole location was derived from SOKKIA TopNET Live RTK Network with the use of a SOKKIA GCX3 Controller.

3. Surface Conditions

3.1 Soil

The detailed soil profile encountered in each borehole and the results of laboratory moisture content determinations are indicated on the attached borehole logs. It should be noted the soil boundaries indicated on the borehole logs are inferred from non-continuous sampling and observations during drilling. These boundaries are intended to reflect approximate transition zones for the purpose of geotechnical design and should not be interpreted as exact planes of geological change.

The "Notes on Sample Descriptions" and "Explanatory Sheet to Core Log" preceding the borehole logs form an integral part of and should be read in conjunction with this report.

The following is a brief description of the soil conditions encountered during the investigation:

3.1.1 Asphalt and Topsoil

Asphalt with thickness ranging from about 70 to 140 mm was encountered at the surface of Boreholes 201, 202, 203, 204, 205, 206 and 209D.

At the ground surface of Boreholes 207, 210, 211, 212, 213 and 214D, topsoil cover with thickness ranging from about 100 to 200 mm was encountered.

At Borehole 208, a topsoil layer of about 125 mm thick was encountered below the surficial pebble layer.

3.1.2 Fill

Fill, comprising sand and gravel, silty sand and clayey silt was encountered below the asphalt or topsoil at all borehole locations. The fill extends to depths ranging from about 0.7 to 2 m below existing ground surface (El. ~176.1 to 173.3 m).

3.1.3 Silt

The fill in Borehole 205 is underlain by a silt deposit which is brown to grey in colour, contains a trace of clay and gravel. It is in a dense to very dense state of compactness (recorded 'N'-values of 41 to over 100) and extends to a depth of about 8.5 m below existing grade (El. ~166.8 m).

3.1.4 Sandy Silt to Silty Sand

A sandy silt to silty sand deposit was encountered below the fill in Borehole 206. This deposit is brown in colour and is in a compact state of compactness. The sandy silt to silty sand extends to a depth of about 2.5 m below existing ground surface (El. ~173.5 m).

3.1.5 Silt Till

A silt till deposit was encountered below the silt in Borehole 205, below the sandy silt to silty sand in Borehole 206 and below the fill in the remaining boreholes. The silt till is generally reddish brown in colour, contains some clay, a trace of sand with a trace of shale fragments at lower level of the deposit. It has moisture contents of about 5 to 11 percent of dry mass and is in a dense to very dense state of compactness (recorded 'N'-values of 38 to over 100). The silt till extends to depths of about 2.6 to 10.1 m below existing ground surface (El. ~174.2 to 165.2 m).

Grain size analyses were carried out on seven (7) representative samples recovered from the boreholes. The test results are presented in Appendix A and summarized in Table 1 below:

Table 1: Summary of Grain Size Analysis Results

Sample	Depth (m)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Description
BH203 SS2	0.8 – 1.4	0.0	3.7	83.8	12.5	Silt, some Clay, trace Sand
BH205 SS5	3.1 – 3.7	0.7	11.8	79.9	7.6	Silt, some Sand, trace Clay & Gravel
BH205 SS8	7.6 - 8.0	3.6	50.8	42.6	3.0	Sand & Silt, trace Clay & Gravel
BH207 SS3	1.5 – 2.1	0.0	4.8	68.0	27.2	Clayey Silt, trace Sand
BH211 SS2	0.8 – 1.4	0.0	2.4	73.1	24.5	Clayey Silt, trace Sand
BH212 SS4	2.3 – 2.8	0.0	6.5	78.8	14.7	Silt, some Clay, trace Sand
BH214 SS7	4.6 – 5.0	0.0	12.7	80.0	7.3	Silt, some Sand, trace Clay

3.1.6 Shale Bedrock

Shale bedrock of the Queenston Formation was encountered below the silt till at all borehole locations. The approximate elevation for the bedrock encountered in each borehole is presented in the individual borehole and core logs and summarized in Table 2 on the following page.

Approximately 4.7 to 12.6 m of shale bedrock was cored in the boreholes and the detailed findings from the rock cores are presented in the respective rock core logs for each borehole. Based on the rock core information, the shale bedrock comprises about 62 to 98% shale, 1 to 11% limestone, 1 to 26% siltstone and 1 to 2% clay seams. The core recovery ranged from 92 to 100%. The Rock Quality Designation (RQD), a rock quality indicator, is defined as the sum of core lengths of 100 mm or greater divided by the total length of the drill run. The recorded RQD ranged from about 0 to 100% with the lower values recorded in the weathered or rubble zones within the shale bedrock. In general, the RQD values beyond the weathered or rubble zones ranged from about 56 to 100%, indicating a fair quality. The shale bedrock generally consists of moderately soft bedded red shale with some limestone interbeds and is highly weathered in the upper zones and becomes sound with depth. All 14 deep boreholes were terminated in the shale bedrock at depths ranging from about 15.3 to 15.9 m below existing ground surface (El. 161.6 to 159.8 m).

Table 2: Summary of Shale Bedrock Level

Borehole No.	Top of Borehole Elevation (m)	Approximate Depth to Shale Bedrock below Existing Grade/Elevation (m)
201	176.84	~2.7 / ~174.1
202	176.76	~2.6 / 174.2
203	176.31	~3.4 / ~172.9
204	176.51	~3.3 / ~173.2
205	175.26	~10.1 / ~165.2
206	176.02	~4.6 / ~171.4
207	176.12	~3.0 / ~173.1
208	176.52	~3.2 / ~173.3
209D	176.87	~3.1 / ~173.8
210	176.76	~3.2 / ~173.6
211	176.86	~3.2 / ~173.7
212	176.12	~4.0 / ~172.1
213	176.15	~4.7 / ~171.4
214D	175.97	~5.8 / ~170.2

The Queenston Formation consists of red shale with interbeds of limestone and siltstone. Typically, the hard layers comprise about 15 to 20 percent of the unit. The hard layers are usually less than about 100 to 150 mm thick, but some layers are much thicker. The thicker layers have been observed to be as much as 750 to 900 mm at other sites. The layers are actually lenses and they can vary significantly in thickness over short distances.

Stress relief features such as folds and faults are common in the Queenston Formation. In these features the rock is heavily fractured and sheared and contains layers of shale rubble and clay. Due to the fracturing, these features may also be groundwater conduits, which could result in excessive water flow into excavations. Weathering is much deeper than the surrounding rock in these features and often there can be a lateral displacement of the stress relief features resulting in sound un-weathered bedrock overlying fractured and weather bedrock. The stress relief features are usually in the order of 4 to 6 m wide, but the depth can vary from 4 to 5 m to in excess of 10 m. Such zones were not encountered in the boreholes cored at the site.

3.2 Groundwater Condition

Groundwater conditions were assessed by taking readings in open holes during the course of the fieldwork and in monitoring wells installed in selected boreholes. Short-term groundwater level observations are recorded on the attached borehole logs and summarized in Table 3 below.

Table 3: Summary of Observed Groundwater Levels

Borehole Number	Date of Completion	Well Depth (m)	Depth to Groundwater Level Below Existing Grade/Elevation (m)	
			January 29, 2024	February 4, 2024
202	January 18, 2024	~7.2 (~169.6)	~5.9 (~170.8)	~6.0 (~170.8)
203	January 19, 2024	~6.9 (~169.4)	~6.5 (~169.8)	~6.2 (~170.2)
205	January 12, 2024	~15.4 (~159.9)	~5.3 (~169.9)	~5.6 (~169.7)
207	January 11, 2024	~15.5 (~160.6)	~6.1 (~170.0)	~5.1 (~108.4)
209D	January 15, 2024	~15.2 (~161.7)	~7.9 (~169.0)	~8.0 (~168.9)
209S	January 15, 2024	~6.9 (~170.0)	No Free Water (>170.0)	No Free Water (>170.0)
212	January 5, 2024	~15.4 (~160.7)	~5.7 (~170.4)	~5.8 (~170.3)
214D	January 4, 2024	~15.7 (~160.3)	~6.1 (~169.9)	~6.3 (~169.7)
214S	January 4, 2024	~6.1 (~169.9)	~5.9 (~170.1)	~6.0 (~170.0)

Seasonal fluctuations in groundwater levels should be anticipated.

Groundwater conditions are discussed in detail in the hydrogeological study report which was issued under separate cover.

4. Engineering Discussion and Recommendations

The site is part of the existing Erin Mills Town Centre located at 5100 Erin Mills Parkway in Mississauga, Ontario. The proposed development, which covers an area of about 12.4 acres, is situated at the northwest corner of the Erin Mills Town Centre in the City Mississauga, Ontario.

EXP understands that the proposed development will comprise of a total of nine (9) residential towers (with some commercial space) and a parkland area. All proposed structures will be between 20 and 44 storeys in height. The development will include three (3) levels of underground parking (P3 is assumed to extend up to 10 m below ground surface). The site is currently occupied in part by a single-storey commercial building along with paved surface parking and landscape areas.

The following recommendations are provided for preliminary consideration. When the development plan is finalized, additional boreholes and testing may be required to refine the preliminary recommendations provided.

4.1 Foundation

Based on the findings in the 14 boreholes, shale bedrock was encountered between El. ~174.1 m in Borehole 201 and El. ~165.2 m in Borehole 205 – a bedrock level differential of about 9 m. In general, the average bedrock level was found to be around El. 173.5 m in the central part of the site, dipping down to El. ~170.2 m in Borehole 214 (towards the southwest) and to El. ~165.2 m in Borehole 205 (towards the northeast).

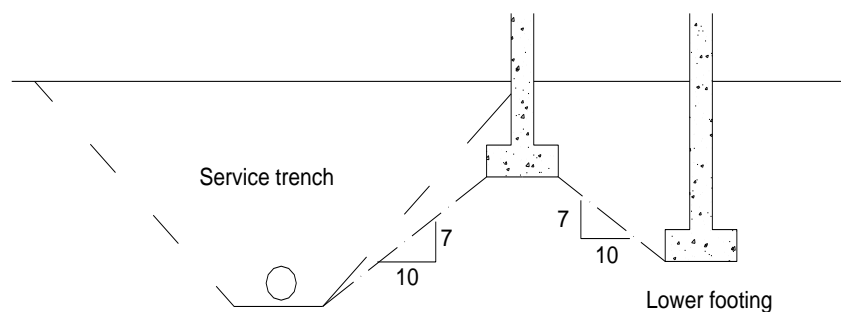
For the proposed condominium structures with 3 levels of common below grade parking, the anticipated lowest basement level (P3) will be set at about 10 m below grade. The footings are therefore expected to be at about 1.5 m below the P3 slab, i.e. ~11.5 m below existing ground level ~El. ~164.5 m (assuming existing grade is at El. ~176.0 m).

At this level, the footings will be well into the shale bedrock except for Borehole 205 which is just into the shale bedrock. The proposed structures may be supported on conventional spread and strip footings founded on the sound shale bedrock below any disturbed or weathered zones. Based on the rock core information, the footings in the vicinity of Borehole 205 may have to be extended to below the weathered/fractured zones to at least El. ~162.5 m to found on sound shale. A factored ULS bearing value of 3750 kPa can be used for the footing design. The SLS bearing value does not apply for foundations founded on sound shale bedrock. All footing bases must be hand cleaned and evaluated by this office at the time of construction. In the event where rubble zones, faults, etc. are encountered in the shale bedrock, the footings would have to be lowered to competent rock.

During excavation, care is needed to avoid fracturing, loosening or softening the shale at the foundation level. Loose, broken or remolded shale under the foundation, unless removed, may cause excessive differential settlements. Shale bedrock, immediately above the foundation level (thickness of about 1 m) should be removed carefully at the latest possible stage before concreting and construction to minimize exposure to the weather and to reduce the risk of rock slab heave resulting from high horizontal stresses. Footing bases should be protected by a concrete skim coat (~50 mm thick) if concrete placement does not occur on the same day after excavation.

4.2 Foundation General

Footings which are to be placed at different elevations should be located such that the higher footing is set below a line drawn up at 10 horizontal to 7 vertical from the near edge of the lower footing. This concept should also be applied to excavations for new foundations in relation to existing footings or underground services.



FOOTINGS NEAR SERVICE TRENCHES OR AT DIFFERENT ELEVATIONS

All footings exposed to seasonal freezing conditions should be protected from frost action by at least 1.2 m of soil cover or equivalent insulation for frost protection, depending on the final grade requirements. There is no official rule governing the required founding depth for footings below unheated basement floors. Certainly it will not be greater than the 1.2 m required in Southern Ontario for exterior footings. Unmonitored experience in the last few years indicates that a shallower depth ranging from about 0.82 to 0.9 m for interior footings and 0.4 m for wall footings has been successful where 2 or more basement levels apply. Adjacent to air shafts and entrance and exit doors, a footing depth of 1.2 m below floor surface level is required or, alternatively, insulation protection must be provided.

The total and differential settlements of well designed and constructed footings placed on sound shale bedrock in accordance with the above recommendations are expected to be 12 mm and 6 mm, respectively.

It should be noted that the recommended bearing capacity has been calculated by EXP from the borehole information for the design stage only. The investigation and comments are necessarily ongoing as new information on underground conditions becomes available. For example, it should be appreciated modification to the bearing levels may be required if unforeseen subsoil conditions are revealed after the excavation is exposed to full view or if final design decisions differ from those assumed in this report. As stated before, the results of this geotechnical study should therefore be regarded as very preliminary at best due to the limited number of boreholes drilled to the required depth for the proposed development.

4.3 Temporary Shoring

Based on the anticipated building elevations and assumed plans for excavation to extend to the property boundaries, site constraints will not allow for an open cut excavation. Therefore, temporary shoring and localized shallow excavations will be required during footing and elevator pit installations.

The shoring should be designed to resist lateral load imposed by the adjacent soils and surcharge loadings. A shoring system comprising soldier pile and lagging, may be considered for the proposed development. A stiffer system, such as caisson walls, should be considered for groundwater cut-off purposes as well as to support the existing structures and roadways.

For a soldier pile and lagging system through the sand layer, the space behind the lagging boards must be filled with concrete sand. The lagging boards should retain all soil while allowing groundwater seepage from wet sand seams to drain from behind. Dewatering of the sand will be required if the seepages are significant and caused the sand to wash into the excavation.

Assuming that the lagging boards will be installed in 1.2 m lifts, the filter fabric should be nailed to the excavated face of the lowest lagging and then line the fabric up behind the lagging in a continuous sheet. At the junction of the upper lagging, the spaces should be filled with filter fabric so that no soil particles can escape from behind the lagging boards.

Unshored excavation heights should not exceed 1.2 m in the excavation as per the Occupational Health and Safety Act. However, the side slopes should be flattened where instability is noted.

The temporary shoring of the soil boundaries for this project should be designed on the basis of the state-of-the-art information given in the fourth edition of the Canadian Foundation Engineering Manual (CFEM).

A rectangular pressure distribution as outlined in the CFEM can be used for calculating the earth pressures. If the shoring system does not extend up to the top of the ground, the sloped bank should either be treated as a surcharge to the shoring system or alternatively, a higher K_a value, reflecting the sloping ground, should be used.

The parameters that are considered to be applicable for this project and have been used successfully on many other deep excavations in the greater Toronto area, are as follows:

Earth pressure coefficient

- = 0.25 (where small movements are permissible)
- = 0.35 (where utilities, roads, sidewalks must be protected from significant movement, or where vibration from traffic is a factor)
- = 0.40 (where adjacent building footings or movement sensitive services, i.e., gas and water mains, are above a line 60 degrees from the horizontal extending from the bottom edge of the excavation)

Approximate soil unit weight (γ)	= 22.0 kN/m ³
Approximate soil unit weight of shale	= 24.5 kN/m ³
Bond resistance for rock anchors in sound shale	= 400 kPa

It should be noted that water bearing sand seams exist in the native deposits at this site and as such, the tieback holes should be cased to minimize loss of soil during tieback installation.

The recommended design parameters should be confirmed by load testing a number of anchors to 200% design load in accordance with the current edition of the CFEM. As a minimum for this site, at least four (4) anchor load tests should be carried out to verify the capacity of the anchors. The design for the production anchors should then be modified based on the test results, where necessary. All remaining anchors must be installed in similar procedures and proof tested to 1.33 times the design load.

It is recommended that the contract have a performance specification limiting movement. A maximum of 13 mm is generally acceptable for a street where movement sensitive utilities are not nearby. Otherwise, the engineering departments of the utility companies must be contacted to assess what movement is acceptable. Anchor spacing and elevation, and the timing of the excavation and anchoring operations are critical in determining the movements.

During winter months, the shoring walls should be covered with thermal blankets to prevent frost penetration behind the shoring system which may result in unacceptable movements.

EXP should be retained to review the shoring design, to monitor installation and testing of the system, and to monitor the shoring movements during all phases of the excavation. Inclinometers should be installed at locations where sensitive buildings or services lie close to the excavation. Careful monitoring is needed in any shored excavation, especially when buildings are located in close proximity. This is necessary not only to anticipate when and if additional support is needed, but also to provide data to meet claims from adjacent property owners. In this regard, it is essential that detailed precondition surveys be carried out on adjacent buildings.

4.4 Earth Pressure

The lateral earth pressure acting on basement walls may be calculated from the following equation:

$$p = K(\gamma h + q)$$

- where
- p = lateral earth pressure in kPa acting at depth h ;
 - K = earth pressure coefficient a value of 0.4 is recommended;
 - γ = unit weight of retained soil, a value of 22 kN/m³ is recommended
 - h = depth to point of interest in m; and
 - q = equivalent value of any surcharge on the ground surface in kPa.

The above expression assumes that the perimeter drainage system is effective to prevent hydrostatic pressure build-up behind the perimeter walls.

If water is retained such as in the case of tanking the underground structure, submerged unit weight can be used for the retained soil below the groundwater table and full hydrostatic pressure should be added. The lateral earth pressures acting on basement walls may be calculated from the following expression:

$$p = K(\gamma h_1 + \gamma' h_2 + q) + \gamma_w h_2$$

- where
- p = lateral earth pressure in kPa acting at depth h ;
 - K = earth pressure coefficient a value of 0.4 is recommended;
 - γ = unit weight of retained soil, a value of 22 kN/m³ may be assumed
 - h_1 = depth in meters above the water table
 - γ' = effective unit weight of soil, a value of 12 kN/m³ may be assumed
 - γ_w = unit weight of water (10 kN/m³)
 - h_2 = depth in metres below the water table; and
 - q = equivalent value of surcharge on the ground surface in kPa

The basement walls should be designed to resist hydrostatic pressure imposed by the recorded groundwater level. All basement walls must be waterproofed up to 1 m below the final exterior grade or at grade as per manufacturer's recommendations.

4.5 Excavation and Groundwater Control

Excavation for the proposed structure with 4 basement levels can be carried out utilizing conventional hydraulic type backhoe and must be carried out in accordance with the latest edition of the Occupational Health and Safety Act (OHSA). The soil encountered at this site can be classified as follows:

- Fill Type 3
- Silt Type 3
- Sandy Silt to Silty Sand (above groundwater table or dewatered) Type 3
- Sandy Silt to Silty Sand (below groundwater table) Type 4
- Silt Till Type 2
- Shale Bedrock Type 1

Excavation into shale bedrock is expected to be carried out by heavy dozers and backhoes equipped with ripping teeth. Because of the presence of hard limestone layers within the shale bedrock, rock breaking equipment will likely be required for removal in some areas. The trimming of excavation faces is generally carried out using a backhoe equipped with ripping teeth and/or vibrating breaker point. In mass excavation, it is possible to lift limestone slabs at joints and cracked edges and continue on with ripping and digging.

It should be noted that cobbles and boulders exist in glacial till deposits and their presence could influence the progress of excavation. Consequently, provisions should be made in the contract documents to cover any delays caused by boulder obstructions.

Some seepage of free water perched in the fill or from the more pervious seams within the native soil should be anticipated during construction. It should be possible to control and remove any such seepage by pumping from temporary sumps and ditches. Where water bearing sand seams are encountered on the side slopes, the area should be covered with filter fabric and a layer of riprap size rocks to allow drainage and to minimize surface erosion. The extent and requirements would have to be evaluated during the excavation.

4.6 Floor Slab and Permanent Drainage

Preliminary project information indicates that the P3 basement floor slab will be set at about 10 m below grade, i.e. El. ~166.0 m assuming the existing grade is at El. 176.0 m. At this level, the P3 slab is expected to be set in shale bedrock except for Borehole 205 which will be set in the very dense silt till. For slab-on-grade construction on shale bedrock, all disturbed or broken rock should be removed from the underfloor area. The silt till should be proof-rolled and any soft area identified should be sub-excavated. Any over excavated areas should be brought up to design grades using approved materials described in the “Backfill Considerations” section of this report.

A 200 mm layer of 19 mm clear crushed stone should be placed between the prepared subgrade and the floor slab to serve as a moisture barrier.

The conventional method in handling permanent drainage for the proposed structure with 3 levels of basement is to install a network of perimeter and underfloor drainage systems to collect groundwater in a sump and discharged into the City system. Recently the City is reviewing each discharge application using a more stringent guideline on the groundwater quality and quantity. The hydrogeological study will address the groundwater issues for this site.

If there is capacity in the City sewer, the groundwater quality meets the City of Mississauga stormwater guidelines and is allowed to discharge into the City system, the groundwater can be collected in a sump before being discharged. Since the excavation will probably come up to the boundary limits, commercially available wall drains, such as SITEDRAIN HQ240 by American Wick Drain or equivalent, will be required. The drains should extend continuously and from about 1.0 m below ground level to the base of the excavation. Prior to placing the wall drains, a Terrafix 600R or equivalent filter fabric should be nailed to the shoring wall to minimize the risk of plugging the wall drains.

A suggested perimeter drainage system against shoring is shown on the enclosed Drawing No. 18: Suggested Exterior Drainage Against Shoring System. Full coverage of the basement walls is recommended.

A solid pipe should be installed to within 1 m of the exterior wall to collect seepage from the wall drains. Underfloor drains and perimeter drains should not be connected into the same collector pipe. See Drawing Nos. 18 and 19 for a recommended perimeter and underfloor drainage systems, respectively. Further comments can be provided once design plans are finalized.

Shale bedrock can deteriorate and swell if it is submerged in water. As such, in order to minimize the risk of water accumulation under the slab, underfloor drainage pipes are recommended. As a minimum, a row of weeping tile should be placed within all utility trenches to remove any water seepages present in the bedrock. Depending on the spacing of the utility trenches, additional rows may be required. This can be evaluated once the foundation and mechanical pipe layouts are available. Since the underfloor drains will be installed in shale bedrock, clear stone or HPB may be used as backfill in the trenches. A minimum drain slope should suffice since the water can develop its own gradient within the drainage line. All underfloor drains should be connected to the interior sumps for removal off site.

The weeping tile should be connected into the storm sump for removal off site. The layout and details of the underfloor drainage system should be reviewed by this office prior to construction.

To minimize the risk of groundwater penetrating through the concrete, considerations can be given to waterproofing the walls in addition to the use of drainage boards. Around the perimeter of the building the ground surface should be sloped on a positive grade away from the structure to promote surface water run-off and reduce groundwater infiltration adjacent to the foundations.

The raft foundation option will have to be utilized if foundation drainage into the City's sewer system is not allowed. In this case, the basement needs to be designed as a watertight structure. For raft foundation, underfloor weeping tiles should not be installed under the raft slab and perimeter wall drains will not be required. If underground services are to be located above the raft, a layer of clear stone can be used on top of the raft foundation and a slab on grade placed over this clear stone layer. The foundation walls and the raft should be designed to resist full hydrostatic pressures and uplift based on the design groundwater level as determined in the Hydrogeological Study report.

4.7 Backfill Considerations

Given that the floor slab will be within the shale bedrock, 19 mm clear limestone can be used for backfilling under the floor slab.

If Granular B is used, it should be placed in maximum lift thickness of 200 mm in the loose state. Each lift should be compacted to at least 95% standard Proctor maximum dry density before subsequent lifts are placed. The degree of compaction achieved in the field should be checked by in-place density tests. 19 mm clear limestone do not require compaction.

4.8 Earthquake Considerations

The recommendations for the geotechnical aspects to determine the earthquake loading for design using the OBC 2012 (R2019) are presented below.

4.8.1 Subsoil Conditions

The subsoil and groundwater information at this site have been examined in relation to Section 4.1.8.4 of the OBC 2012 (R2019). The subsoils generally consist of fill, silt, sandy silt to silty sand, silt till and shale bedrock. The foundation of the proposed structures with 3 levels of underground parking will be supported on sound shale bedrock.

4.8.2 Depth of Boreholes

Table 4.1.8.4.A. Site Classification for Seismic Site Response in OBC 2012 (R2019) indicated that to determine the site classification, the average properties in the top 30 m (below the lowest basement level) are to be used. The boreholes advanced at this site terminated at depths of about 15.3 to 15.9 m below existing grade. Therefore, the site classification recommendation would be based on the available information as well as our interpretation of conditions below the boreholes based on our knowledge of the soil conditions in the area.

4.8.3 Site Classification

Based on the above assumptions and currently available information, the Site Class for the proposed structure with 4 levels of underground parking is “B” as per Table 4.1.8.4.A, Site Classification for Seismic Site Response, OBC 2012 (R2019).

4.9 Subsurface Concrete Structures

Two (2) native soil samples were analyzed for pH and sulphate concentrations and the test results are summarized in Table 4 below:

Table 4: Summary of pH and Sulphate Test Results

Sample Identification	Sample Location	pH	Sulphate (µg/g)
BH202 SS2 (5614359)	Borehole 202 – 0.8 to 1.0 m	7.45	13
BH205 SS6 (5614371)	Borehole 205 – 4.6 to 5.2 m	7.50	49

The sulphate content of the sample analyzed indicates a negligible degree of sulphate attack on buried concrete structures. The Certificate of Analysis is included in Appendix B.

For information regarding the selection of cement type for subsurface concrete structures, reference is made to CSA Standard CAN 3-A23.

5. General Comments

The information presented in this report is based on a limited investigation designed to provide information to support an overall assessment of the current geotechnical conditions of the subject property. The conclusions presented in this report reflect site conditions existing at the time of the investigation.

The comments given in this report are intended only for the guidance of design engineers. The number of boreholes required to determine the localized underground conditions between boreholes affecting construction costs, techniques, sequencing, equipment, scheduling, etc. could be greater than has been carried out for design purposes. Contractors bidding on or undertaking the works should, in this light, decide on their own investigations as well as their own interpretations of the factual borehole results so that they may draw their own conclusions as to how the subsurface conditions may affect them.

The information contained in this report in no way reflects on the environmental aspects of the soils, which has not been addressed in this report, since this is beyond our terms of reference. More specific information with respect to the conditions between samples or the lateral and vertical extent of materials may become apparent during excavation operations. The interpretation of the borehole information must, therefore, be validated during excavation operations. Consequently, during the future development of the property, conditions not observed during this investigation may become apparent; should this occur, EXP should be contacted to assess the situation and additional testing and reporting may be required. EXP has qualified personnel to provide assistance in regard to future geotechnical issues related to this property.

EXP Services Inc. should be retained for a general review of the final design and specifications to verify that this report has been properly interpreted and implemented. If not accorded the privilege of making this review, EXP Services Inc. will assume no responsibility for interpretation of the recommendations in the report.

We trust this report is satisfactory for your purposes. Should you have any questions or comments, please do not hesitate to contact this office.

Yours truly,

EXP Services Inc.



Kevin W. Y. Leung, M. Sc., P. Eng.
Senior Engineer, Geotechnical Division



Stephen S. M. Cheng, P. Eng.
Discipline Manager, Geotechnical Division

Drawings

Borehole Location Plan

Borehole and Core Logs

Suggested Exterior Drainage Against Shoring System

Drainage and Backfill Recommendations



LEGEND:

- BOREHOLE (EXP, 2020)
- BOREHOLE (EXP, 2022)
- BOREHOLE (EXP, 2024)

SCALE:

0 20 40 60 80 100 m

	DRAWN BY: JA	CHECKED BY: KL

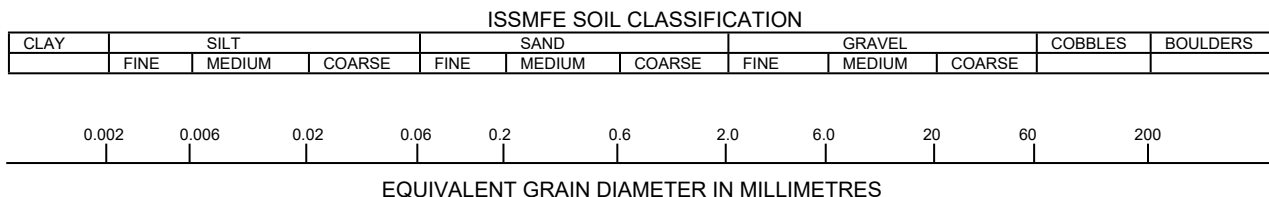
- NOTES:**
1. THE BOUNDARIES AND SOIL TYPE HAVE BEEN ESTABLISHED ONLY AT THE BOREHOLE LOCATIONS. BETWEEN BOREHOLES BOUNDARIES ARE ASSUMED AND MAY BE SUBJECT TO CONSIDERABLE ERROR.
 2. SOIL SAMPLES WILL BE RETAINED IN STORAGE FOR 3 MONTHS AND THEN DESTROYED UNLESS THE CLIENT ADVISES OTHERWISE.
 3. TOPSOIL QUANTITIES AND/OR VOLUME OF UNSUITABLE FILL SHOULD NOT BE ESTABLISHED FROM THE INFORMATION PROVIDED AT THE BOREHOLE LOCATIONS.
 4. BOREHOLE ELEVATION SHOULD NOT BE USED TO DESIGN BUILDING(S), OR FLOOR SLAB(S), OR PARKING LOT(S) GRADES.
 5. THE DRAWING IS TO BE READ WITH SUBJECT REPORT, PROJECT NUMBER AS SHOWN BELOW.
 6. SEE REPORT TEXT FOR SITE DATUM.
 7. BOREHOLE LOCATIONS ARE APPROXIMATE.
 8. DIMENSIONS SHOWN ON THIS DRAWING ARE IN METRIC UNITS, UNLESS OTHERWISE NOTED.

BOREHOLE LOCATION PLAN	DRAWING: 1
SUPPLEMENTARY GEOTECHNICAL INVESTIGATION 5100 ERIN MILLS PARKWAY MISSISSAUGA, ONTARIO	
PROJECT NUMBER: GTR-00257769-H0	DATE: JANUARY 2024

Notes On Sample Descriptions

Drawing 1A

1. All sample descriptions included in this report follow the Canadian Foundations Engineering Manual soil classification system. This system follows the standard proposed by the International Society for Soil Mechanics and Foundation Engineering. Laboratory grain size analyses provided by EXP Services Inc. also follow the same system. Different classification systems may be used by others; one such system is the Unified Soil Classification. Please note that, with the exception of those samples where a grain size analysis has been made, all samples are classified visually. Visual classification is not sufficiently accurate to provide exact grain sizing or precise differentiation between size classification systems.



CLAY (PLASTIC TO	FINE	MEDIUM	CRS.	FINE	COARSE
SILT (NONPLASTIC)	SAND			GRAVEL	

UNIFIED SOIL CLASSIFICATION

2. **Fill:** Where fill is designated on the borehole log it is defined as indicated by the sample recovered during the boring process. The reader is cautioned that fills are heterogeneous in nature and variable in density or degree of compaction. The borehole description may therefore not be applicable as a general description of site fill materials. All fills should be expected to contain obstruction such as wood, large concrete pieces or subsurface basements, floors, tanks, etc.; none of these may have been encountered in the boreholes. Since boreholes cannot accurately define the contents of the fill, test pits are recommended to provide supplementary information. Despite the use of test pits, the heterogeneous nature of fill will leave some ambiguity as to the exact composition of the fill. Most fills contain pockets, seams, or layers of organically contaminated soil. This organic material can result in the generation of methane gas and/or significant ongoing and future settlements. Fill at this site may have been monitored for the presence of methane gas and, if so, the results are given on the borehole logs. The monitoring process does not indicate the volume of gas that can be potentially generated nor does it pinpoint the source of the gas. These readings are to advise of the presence of gas only, and a detailed study is recommended for sites where any explosive gas/methane is detected. Some fill material may be contaminated by toxic/hazardous waste that renders it unacceptable for deposition in any but designated land fill sites; unless specifically stated the fill on this site has not been tested for contaminants that may be considered toxic or hazardous. This testing and a potential hazard study can be undertaken if requested. In most residential/commercial areas undergoing reconstruction, buried oil tanks are common and are generally not detected in a conventional geotechnical site investigation.
3. **Till:** The term till on the borehole logs indicates that the material originates from a geological process associated with glaciation. Because of this geological process the till must be considered heterogeneous in composition and as such may contain pockets and/or seams of material such as sand, gravel, silt or clay. Till often contains cobbles (60 to 200 mm) or boulders (over 200 mm). Contractors may therefore encounter cobbles and boulders during excavation, even if they are not indicated by the borings. It should be appreciated that normal sampling equipment cannot differentiate the size or type of any obstruction. Because of the horizontal and vertical variability of till, the sample description may be applicable to a very limited zone; caution is therefore essential when dealing with sensitive excavations or dewatering programs in till materials.

Explanatory Sheet To Core Log

Column No.

Description

13	Strength of Rock Material		<p>Very High strength = specimen can only be chipped by geological hammer</p> <p>High strength = specimen requires a number of blows to fracture it; cannot be scrapped with a pocket knife</p> <p>Medium strength = specimen can be fractured by a single blow of geological hammer; can be scrapped with pocket knife, not peeled</p> <p>Low strength = shallow indentations made with a firm blow of geological hammer; can be peeled by pocket knife with difficulty</p> <p>Very low strength = crumbles under firm blow with point of geological hammer; can be peeled by pocket knife</p>	<p>Approx. Uniaxial Compressive Strength</p> <p>>200 MPa</p> <p>50 – 200 MPa</p> <p>15 – 50 MPa</p> <p>4 – 15 MPa</p> <p>1 – 4 MPa</p>
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14 Fracture Frequency: Number of natural joints occurring over a metre length of core. All natural joints are counted irrespective of the number of joint sets.

<u>Fracture Frequency</u>	=	<u>Joint Spacing</u>	=
	<p><0.3/m</p> <p>0.3 – 1/m</p> <p>1 – 3/m</p> <p>3 – 20/m</p> <p>>20/m</p>	<p>Very wide</p> <p>Wide</p> <p>Moderate</p> <p>Close</p> <p>Very Close</p>	<p>= 3 m</p> <p>= 1 – 3 m</p> <p>= 30 cm – 1 m</p> <p>= 5 – 30 cm</p> <p>= <5 cm</p>

15 Run Number: Drill run number

16 Core Recovery: Core recovery is the total length of core pieces, irrespective of their individual lengths, obtained in a core run and expressed as a percentage of the length of that core run.

17 Rock Quality Designation (RQD): The total length of those pieces of sound core which are 10 cm or greater in length in a core run expressed as a percentage of the total length of that core run. Sound pieces of rock are those pieces separated by natural breaks and not machine breaks or subsequent artificial breaks.

<u>RQD</u>	<u>Rock Mass Classification (After Deere)</u>
0 – 25%	very poor
25 – 50%	poor
50 – 75%	fair
75 – 90%	good
90 – 100%	excellent

18 Water Recovery: The estimated water returning out of the casing

19 Water Colour: The colour of the water returning out of the casing

Log of Borehole 201

Project No. GTR-00257769-H0

Drawing No. 2

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 19 - 22, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

Combustible Vapour Reading

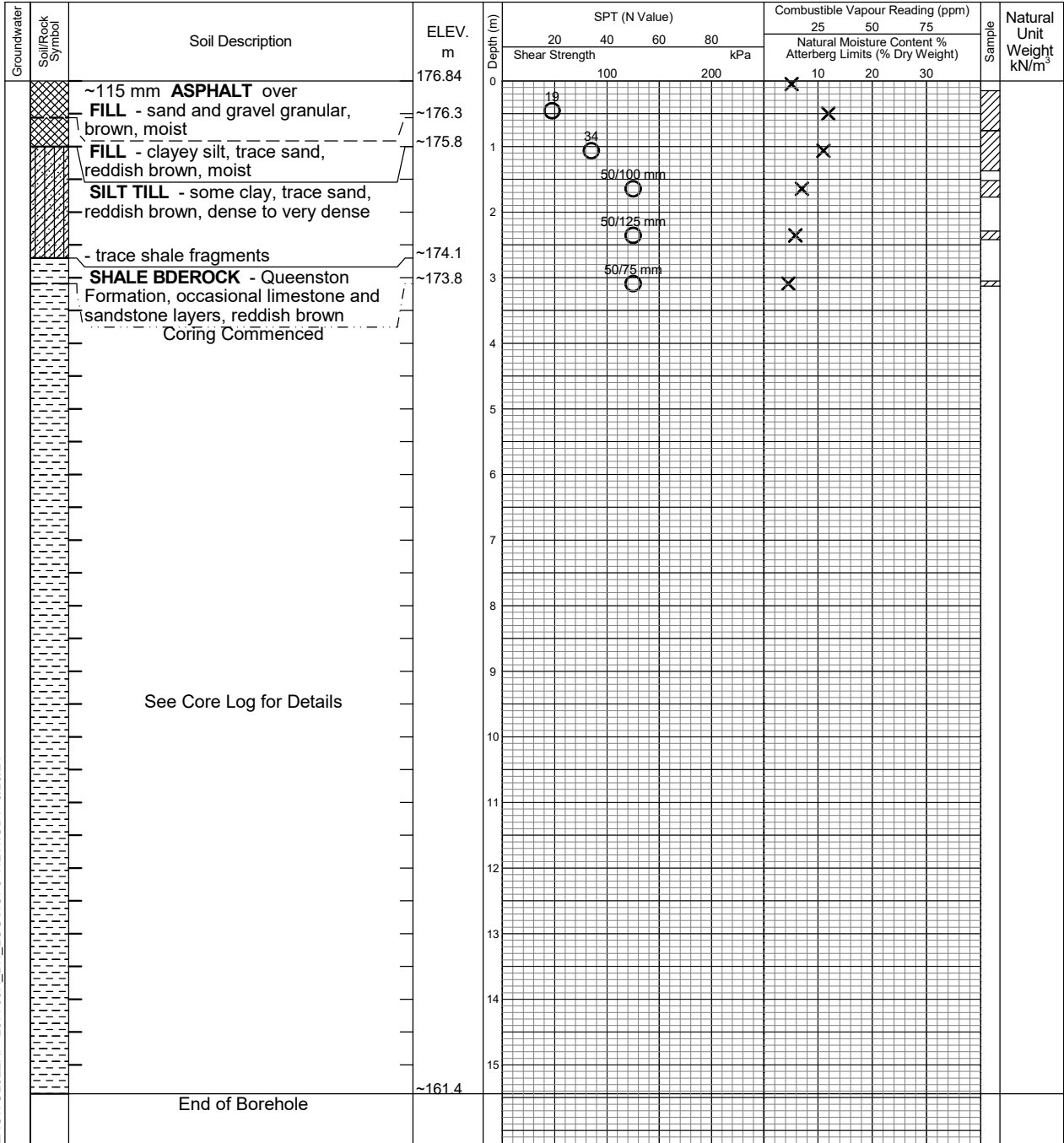
Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at

% Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.4 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 201

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/22/23	COMPLETED 01/22/23	LOGGED BY D. Panchal	DRAWING NUMBER 2A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
174.3			See Borehole Log for Details															
173.8	3		QUEENSTON FORMATION															
173.7				1	F B	V F	C C	RU RU						1	100	75	95	Red
173.3			Shale with interbedded siltstone, and clay layers.															
173.0			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~7.2 and between moderately weathered and unweathered below.	1	B F F	F V V	C M	RU RP						2	100	91	100	Red
172.4			Limestone (6%) fine grained, grey, medium strength, unweathered															
172.3			Siltstone (14%) fine grained, grey, medium strength, unweathered.															
171.8	5		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
171.5			Vertical fractures were noted at ~3.1 m, 4.4 m, 4.5 m, 6.3 m and 6.5 m.	1	B	F	VC VC	RP RP		SO	180 mm			3	100	56	90	Red
171.1			Clay (2%) layers, heavily weathered, very low strength were noted at ~5.5 m, 5.9 m and 6.4 m.							NC	20 mm							
170.9	6		Rubble layers, heavily weathered, very low strength were noted at ~5.1m (50 mm) and 6.3 m (40 mm).		F F	V V				NC	70 mm							
170.8																		
170.6																		
170.5																		
170.4																		
170.4																		
170.3	7			1	B	F	C M	RP SU						4	100	90	100	Red
170.1																		
169.6																		
169.6																		
169.5																		
169.3	8																	
169.0																		
168.9																		
168.7																		
168.5																		
168.1				1	B	F	W W	SU SP						5	100	100	100	Red
168.0	9																	
167.7																		
167.6																		
167.2																		
167.1																		
166.8	10			1	B	F	W W	SP SP						6	100	100	100	Red
166.8																		

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 201

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/22/23	COMPLETED 01/22/23	LOGGED BY D. Panchal	DRAWING NUMBER 2A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS								WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
166.3			QUEENSTON FORMATION																
166.1																			
165.5	11		Shale with interbedded siltstone, and clay layers.																
165.4			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~7.2 and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	100	100	Red	
165.1																			
165.1	12		Limestone (6%) fine grained, grey, medium strength, unweathered																
164.7			Siltstone (14%) fine grained, grey, medium strength, unweathered.																
164.6																			
164.0	13		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.																
163.6			Vertical fractures were noted at ~3.1 m, 4.4 m, 4.5 m, 6.3 m and 6.5 m.																
163.5			Clay (2%) layers, heavily weathered, very low strength were noted at ~5.5 m, 5.9 m and 6.4 m.	1	B	F	W	SP						8	100	100	100	Red	
163.1																			
163.0	14		Rubble layers, heavily weathered, very low strength were noted at ~5.1m (50 mm) and 6.3 m (40 mm).																
162.6																			
162.6	15			1	B	F	W	SP						9	100	100	100	Red	
161.7																			
161.6																			
161.4			End of Borehole at 15.4 m																
	16																		
	17																		
	18																		

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 202

Project No. GTR-00257769-H0

Drawing No. 3

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 17 - 18, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

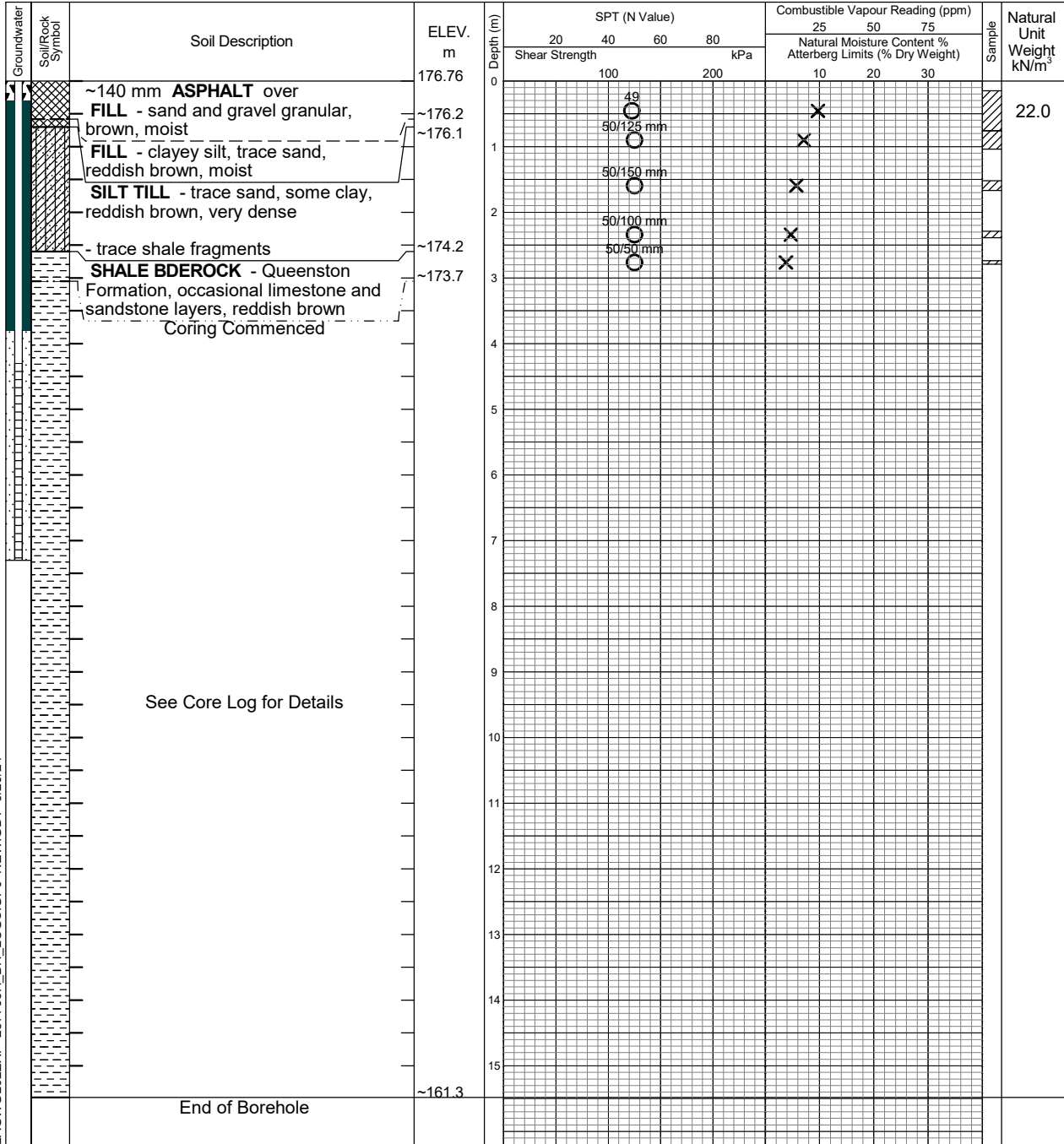
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.5 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~5.9	Well
February 4, 2024	~6.0	Well

ROCK CORE LOG

BH 202

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/18/23	COMPLETED 01/18/23	LOGGED BY D. Panchal	DRAWING NUMBER 3A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 75 - Truck	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
174.3			See Borehole Log for Details															
173.7	3		QUEENSTON FORMATION															
173.6				1	F	V	C	RU						1	100	76	95	Red
173.5			Shale with interbedded siltstone, and clay layers.		B	F	C	RU										
173.4																		
173.3																		
173.2			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.0 m and between moderately weathered and unweathered below.															
172.6	4			1	B	F	C	RU						2	98	94	100	Red
172.5			Limestone (9%) fine grained, grey, medium strength, unweathered															
171.9			Siltstone (13%) fine grained, grey, medium strength, unweathered.															
171.8	5																	
171.5			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
171.5			Vertical fractures were noted at ~3.2 m, 3.3 m and 8.0 m.															
171.0																		
170.9				1	B	F	C	RP	SU					3	100	100	100	Red
170.7	6																	
170.6																		
170.1																		
169.9																		
169.8																		
169.7	7			1	B	F	M	SU	SU					4	100	98	100	Red
169.6																		
169.1																		
168.8																		
168.8	8				F	V												
168.6																		
168.4																		
167.8																		
167.8	9			1	B	F	W	SU	SP					5	100	100	100	Red
167.7																		
167.4																		
167.3																		
166.8																		
166.8	10																	
166.7																		
166.5																		
166.5				1	B	F	W	SP						6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG_GDT_3/20/24



ROCK CORE LOG

BH 202

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/18/23	COMPLETED 01/18/23	LOGGED BY D. Panchal	DRAWING NUMBER 3A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 75 - Truck	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.1			QUEENSTON FORMATION				W	SP										
165.9	11		Shale with interbedded siltstone, and clay layers.															
165.3			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.0 m and between moderately weathered and unweathered below.															
165.0																		
164.9	12		Limestone (9%) fine grained, grey, medium strength, unweathered	1	B	F	W	SP						7	100	100	100	Red
164.4			Siltstone (13%) fine grained, grey, medium strength, unweathered.															
164.4																		
163.9	13		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
163.6			Vertical fractures were noted at ~3.2 m, 3.3 m and 8.0 m.															
163.5																		
163.3																		
163.1																		
162.9	14																	
162.2																		
162.1																		
161.7	15																	
161.6																		
161.3			End of Borehole at 15.5 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 203

Project No. GTR-00257769-H0

Drawing No. 4

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 17 - 19, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

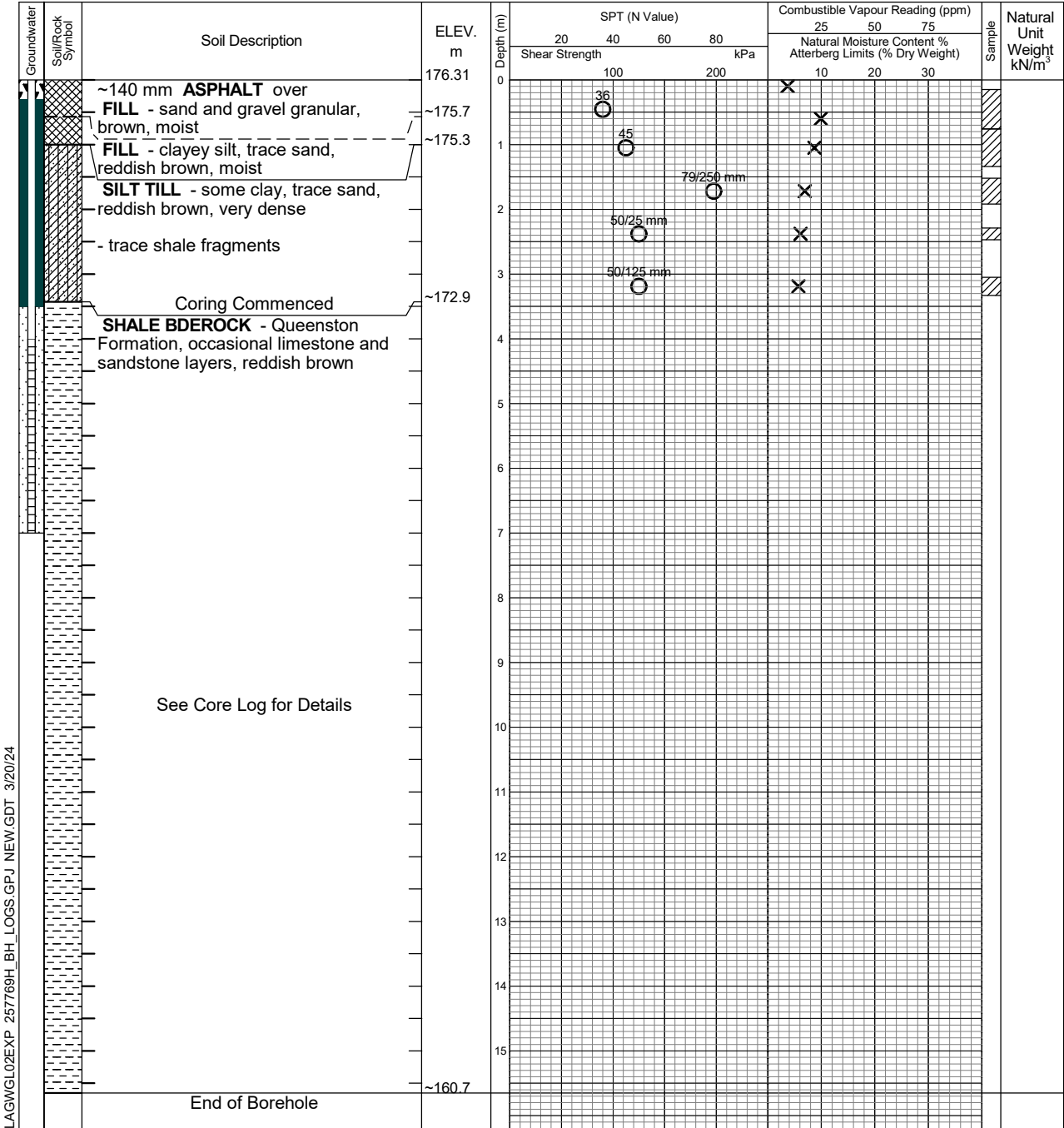
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.7 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~6.5	Well
February 4, 2024	~6.2	Well

ROCK CORE LOG

BH 203

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.3	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/19/23	COMPLETED 01/19/23	LOGGED BY D. Panchal	DRAWING NUMBER 4A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 75 - Truck	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
173.3	3		See Borehole Log for Details															
172.9			QUEENSTON FORMATION	1	B	F	C	RU						1	100	0	95	Red
172.8							C	RU										
172.6			Shale with interbedded siltstone, and clay layers.															
172.6	4		Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.	1	B	F	M	RU						2	98	87	95	Red
171.7							C	RP										
171.6			Limestone (6%) fine grained, grey, medium strength, unweathered			F	V											
171.3	5		Siltstone (19%) fine grained, grey, medium strength, unweathered.			F	V											
171.2						F	V											
171.2			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.			F	V											
171.1																		
171.0																		
170.9	6		Vertical fractures were noted at ~5.1 m, 5.2 m, 5.4 m, 6.4 m, 6.8 m, 7.0 m, 7.2 m, 8.4 m, 11.6 m and 13.4 m.	1	B	F	C	RP						3	100	90	100	Red
170.0							C	RP										
169.9																		
169.7																		
169.6																		
169.4						F	V											
169.3	7					F	V											
169.1						F	V											
169.0																		
168.9																		
168.8																		
168.8																		
168.6																		
168.5	8																	
168.0																		
167.9						F	V											
167.6																		
167.6																		
167.3																		
167.3	9					B	F	C	SU					5	95	94	100	Red
167.1								W	SP									
167.0																		
166.5																		
166.4																		
166.2																		
166.2	10					B	F	W	SP					6	100	100	100	Red
165.4								W	SP									

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT 3/20/24



ROCK CORE LOG

BH 203

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.3	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/19/23	COMPLETED 01/19/23	LOGGED BY D. Panchal	DRAWING NUMBER 4A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 75 - Truck	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
165.3	11		QUEENSTON FORMATION															
165.1																		
165.0																		
164.8			Shale with interbedded siltstone, and clay layers.		F	V												
164.7																		
164.5																		
164.5	12		Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.	1	B	F	C	SP						7	100	97	100	Red
164.3																		
164.0			Limestone (6%) fine grained, grey, medium strength, unweathered															
163.5																		
163.5	13		Siltstone (19%) fine grained, grey, medium strength, unweathered.															
163.0			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
162.9																		
162.7																		
162.6			Vertical fractures were noted at ~5.1 m, 5.2 m, 5.4 m, 6.4 m, 6.8 m, 7.0 m, 7.2 m, 8.4 m, 11.6 m and 13.4 m.	1	B	V	M	SP						8	100	98	100	Red
162.5																		
162.4	14																	
161.7																		
161.6																		
161.3																		
161.3	15			1	B	F	W	SP						9	100	100	100	Red
161.1																		
161.0																		
160.7			End of Borehole at 15.7 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 204

Project No. GTR-00257769-H0

Drawing No. 5

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 19 - 22, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

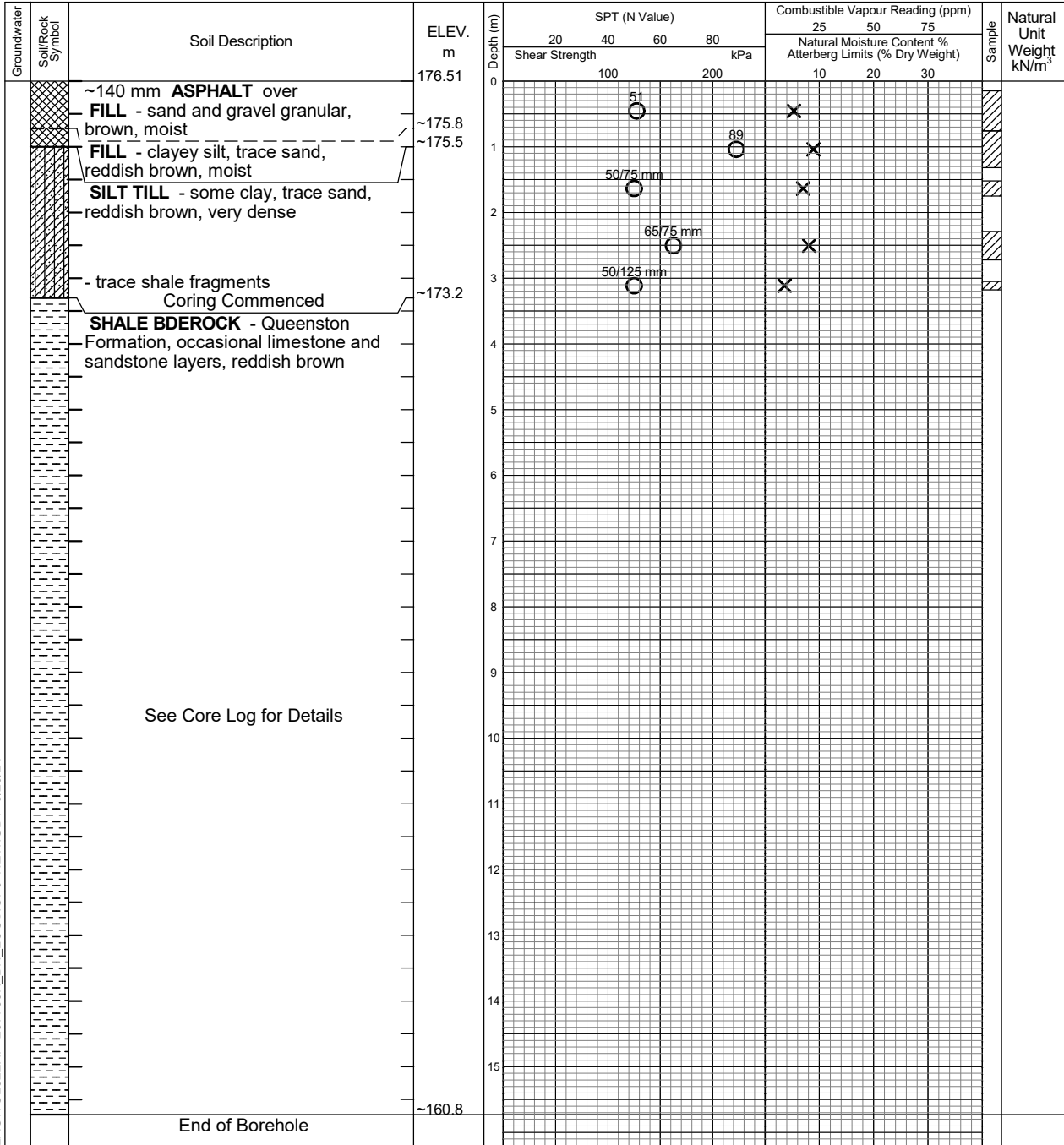
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.7 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 204

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.5	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/22/23	COMPLETED 01/22/23	LOGGED BY D. Panchal	DRAWING NUMBER 5A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
174.0																		
173.2	3		See Borehole Log for Details															
173.1			QUEENSTON FORMATION	1	B	F	C	RU						1	100	0	95	Red
173.1					F	V	C	RU										
173.0			Shale with interbedded siltstone, and clay layers.															
172.9	4				F	V												
172.6			Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.9 and between moderately weathered and unweathered below.	1	B	F	M	RU						2	100	90	100	Red
172.3					F	V	C	RP										
172.2																		
171.7			Limestone (3%) fine grained, grey, medium strength, unweathered															
171.6	5				F	V												
171.5			Siltstone (22%) fine grained, grey, medium strength, unweathered.															
171.4			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
171.0			Vertical fractures were noted at ~ 3.5 m, 3.9 m, 4.3 m, 4.8 m, 5.1 m, 6.5 m, 7.0 m, 9.6 m and 10.5 m.	1	B	F	C	RP						3	100	92	100	Red
170.8								RP										
170.7	6							RP										
170.4			A Rubble layers, heavily weathered, low strength was noted at ~10.1 m (110 mm).															
170.3					F	V												
170.2																		
170.1																		
170.0																		
169.8																		
169.5	7				F	V												
169.1																		
169.0				1	B	F	C	RP						4	100	83	100	Red
168.7								SU										
168.7	8																	
168.4																		
168.4																		
168.0																		
167.9																		
167.6																		
167.5	9			1	B	F	M	SU						5	100	100	100	Red
167.5								SP										
167.4																		
167.3																		
167.2																		
166.9					F	V												
166.8																		
166.8	10																	
166.7																		
166.5																		
166.4				1	B	F	M	SP						6	100	97	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 204

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.5	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/22/23	COMPLETED 01/22/23	LOGGED BY D. Panchal	DRAWING NUMBER 5A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.3			QUEENSTON FORMATION															
166.1						F	V	M	SP									
166.0																		
166.0	11		Shale with interbedded siltstone, and clay layers.															
165.5																		
165.4																		
165.1			Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.9 and between moderately weathered and unweathered below.															
165.0																		
164.7																		
164.6	12		Limestone (3%) fine grained, grey, medium strength, unweathered	1	B	F	W	SP						7	100	100	100	Red
164.5																		
164.2			Siltstone (22%) fine grained, grey, medium strength, unweathered.															
163.9			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
163.6																		
163.5	13		Vertical fractures were noted at ~ 3.5 m, 3.9 m, 4.3 m, 4.8 m, 5.1 m, 6.5 m, 7.0 m, 9.6 m and 10.5 m.															
163.3																		
163.2			A Rubble layers, heavily weathered, low strength was noted at ~10.1 m (110 mm).	1	B	F	M	SP						8	100	97	100	Red
162.8																		
162.8																		
162.4	14																	
162.3																		
161.7																		
161.7	15																	
161.3																		
161.1																		
160.8			End of Borehole at 15.7 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT 3/20/24



Log of Borehole 205

Project No. GTR-00257769-H0

Drawing No. 6

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 12, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

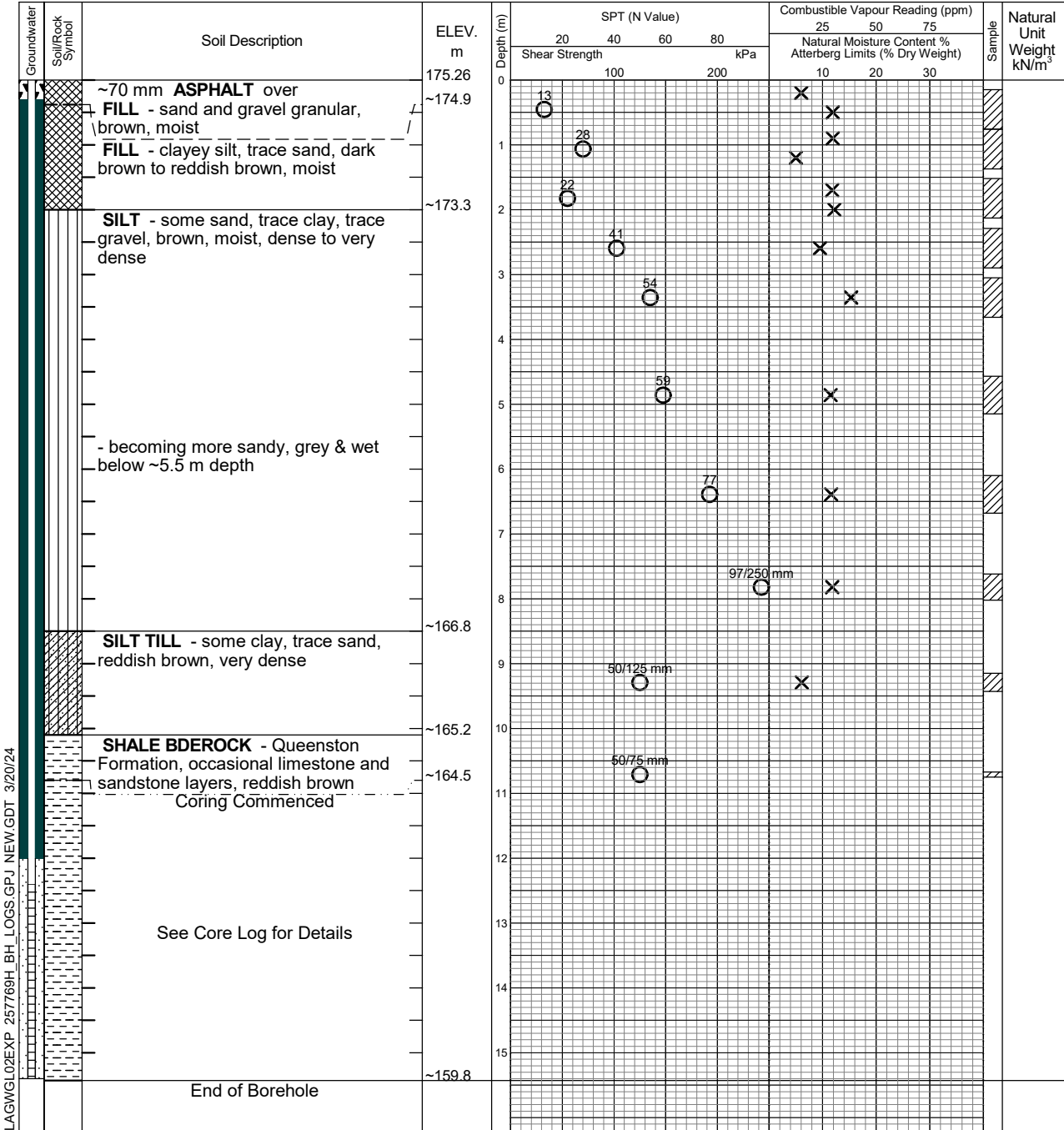
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



Notes:

- Borehole advanced to completion at ~15.4 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
- This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Brampton

Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~5.3	Well
February 4, 2024	~5.6	Well

ROCK CORE LOG

BH 205

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 175.3	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/12/23	COMPLETED 01/12/23	LOGGED BY D. Panchal	DRAWING NUMBER 6A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 1

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
165.0			See Borehole Log for Details															
164.5			QUEENSTON FORMATION															
164.4	11		Shale with interbedded siltstone, and clay layers.	1	B F	F V	VC C	RU RP						1	92	0	90	Red
164.1																		
164.0																		
163.8																		
163.6																		
163.6	12		Shale (62%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~11.7 m and between moderately weathered and unweathered below.	1	B	F	C	RP SU						2	100	78	100	Red
163.1																		
163.0																		
162.8																		
162.7																		
162.7																		
162.1	13		Limestone (11%) fine grained, grey, medium strength, unweathered															
161.9																		
161.8																		
161.7																		
161.6																		
161.6	14		Siltstone (26%) fine grained, grey, medium strength, unweathered.															
161.2																		
161.2																		
161.1																		
161.0																		
160.9																		
160.7																		
160.6																		
160.5	15		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
161.9																		
161.8																		
161.7																		
161.6																		
161.6																		
161.2																		
161.2																		
161.1																		
161.0																		
160.9																		
160.7																		
160.6																		
160.5																		
160.5	15		Vertical fractures were noted at ~ 11.0 m, 11.6 m, 12.5 m, 13.4 m and 14.2 m.	1	B	F	M	SU SP	NC	50 mm				3	100	87	100	Red
161.9																		
161.8																		
161.7																		
161.6																		
161.6																		
161.2																		
161.2																		
161.1																		
161.0																		
160.9																		
160.7																		
160.6																		
160.5																		
160.5																		
160.5	15		A Clay (1%) layer, heavily weathered, very low strength was noted at ~13.5 m.															
161.9																		
161.8																		
161.7																		
161.6																		
161.6																		
161.2																		
161.2																		
161.1																		
161.0																		
160.9																		
160.7																		
160.6																		
160.5																		
160.5																		
160.5	15		A Rubble layer, heavily weathered, low strength was noted at ~10.8 m (80 mm).															
161.9																		
161.8																		
161.7																		
161.6																		
161.6																		
161.2																		
161.2																		
161.1																		
161.0																		
160.9																		
160.7																		
160.6																		
160.5																		
160.5																		
160.5	15		Limestone (11%) fine grained, grey, medium strength, unweathered															
161.9																		
161.8																		
161.7																		
161.6																		
161.6																		
161.2																		
161.2																		
161.1																		
161.0																		
160.9																		
160.7																		
160.6																		
160.5																		
160.5																		
160.5	15		Siltstone (26%) fine grained, grey, medium															

Log of Borehole 206

Project No. GTR-00257769-H0

Drawing No. 7

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 11, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

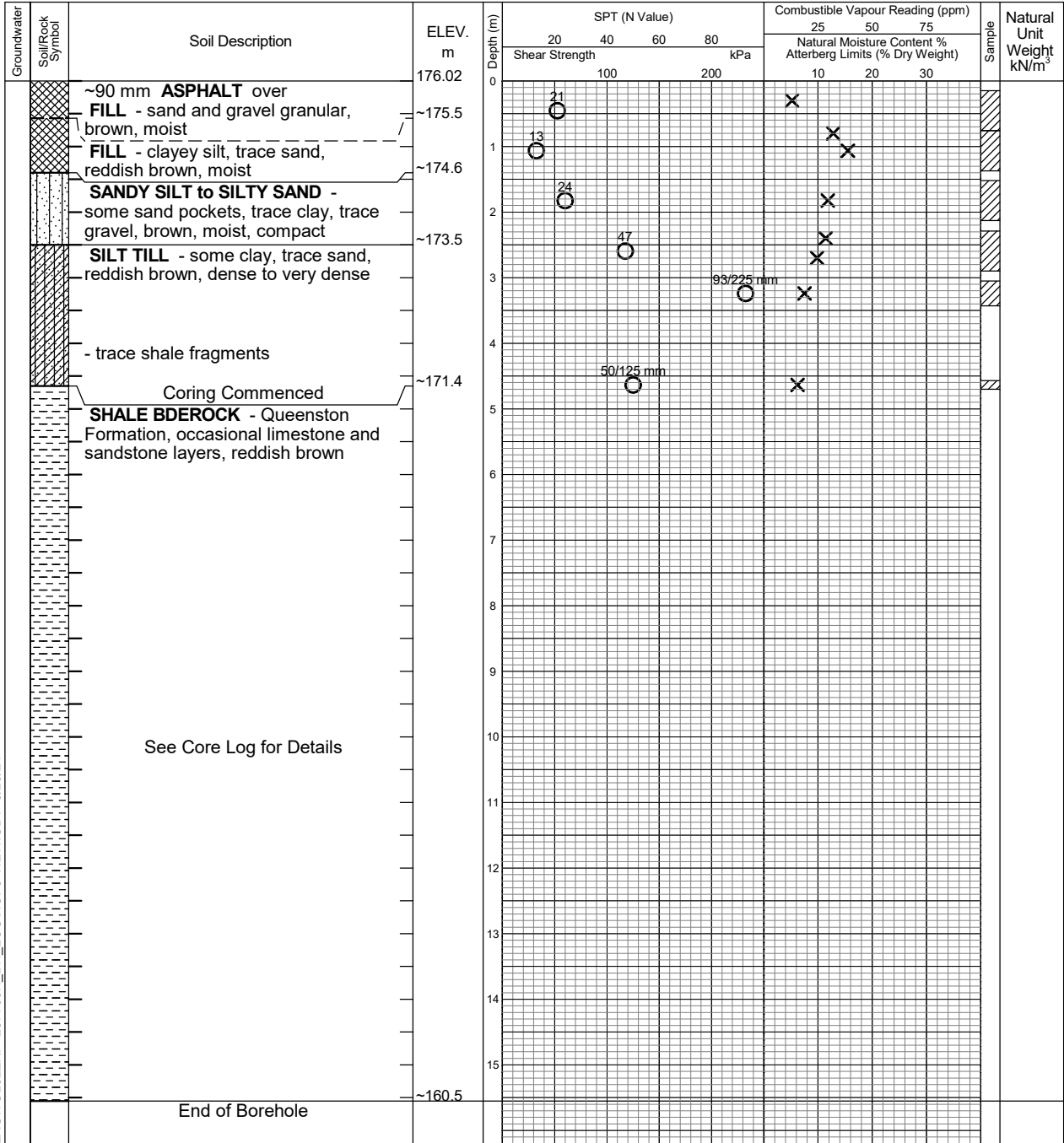
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.6 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 206

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.0	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/11/23	COMPLETED 01/12/23	LOGGED BY D. Panchal	DRAWING NUMBER 7A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
171.8			See Borehole Log for Details															
171.4			QUEENSTON FORMATION															
171.1	5		Shale with interbedded siltstone, and clay layers.	1	B	F	VC	RU	RP					1	100	88	95	
170.9			Shale (86%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.5 m and between moderately weathered and unweathered below.	1	B	F	C	RP	RP					2	100	73	100	
170.7			Limestone (4%) fine grained, grey, medium strength, unweathered		F	V												
170.6			Siltstone (8%) fine grained, grey, medium strength, unweathered.		F	V												
170.1	6		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.		F	V												
169.9			Vertical fractures were noted at ~6.0 m, 6.2 m, 6.5 m, 6.9 m, 7.2 m, 7.4 m, 8.2 m, 10.1 m and 12.1 m.	1	B	F	C	RP	RP					3	100	70	100	
169.8			Rubble layers, heavily weathered, very low strength were noted at ~9.9 m (80 mm) and 10.3 m (160 mm).		F	V												
169.6																		
169.5																		
169.4																		
169.3																		
169.1	7																	
168.4																		
168.4																		
168.0	8																	
168.0																		
167.9																		
167.8																		
167.4																		
167.3																		
166.9	9																	
166.8																		
166.1																		
166.1	10																	
165.8																		
165.7																		
165.4																		
165.3																		
165.0	11																	
164.9																		
164.7																		
164.6																		
164.4																		
164.2																		
164.1	12																	
				1	B	F	M	SU						6	100	92	100	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 206

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.0	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/11/23	COMPLETED 01/12/23	LOGGED BY D. Panchal	DRAWING NUMBER 7A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
163.8			QUEENSTON FORMATION				M	SP										
163.7			Shale with interbedded siltstone, and clay layers.															
163.6			Shale (86%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.5 m and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	100	100	
162.5			Limestone (4%) fine grained, grey, medium strength, unweathered				W	SP										
162.4			Siltstone (8%) fine grained, grey, medium strength, unweathered.				W	SP										
162.2			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
162.1			Vertical fractures were noted at ~6.0 m, 6.2 m, 6.5 m, 6.9 m, 7.2 m, 7.4 m, 8.2 m, 10.1 m and 12.1 m.	1	B	F	W	SP						8	100	100	100	
161.8			Rubble layers, heavily weathered, very low strength were noted at ~9.9 m (80 mm) and 10.3 m (160 mm).				W	SP										
161.6																		
161.5																		
161.4																		
161.0																		
160.9																		
160.5			End of Borehole at 15.6 m															

Log of Borehole 207

Project No. GTR-00257769-H0

Drawing No. 8

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 10 - 11, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

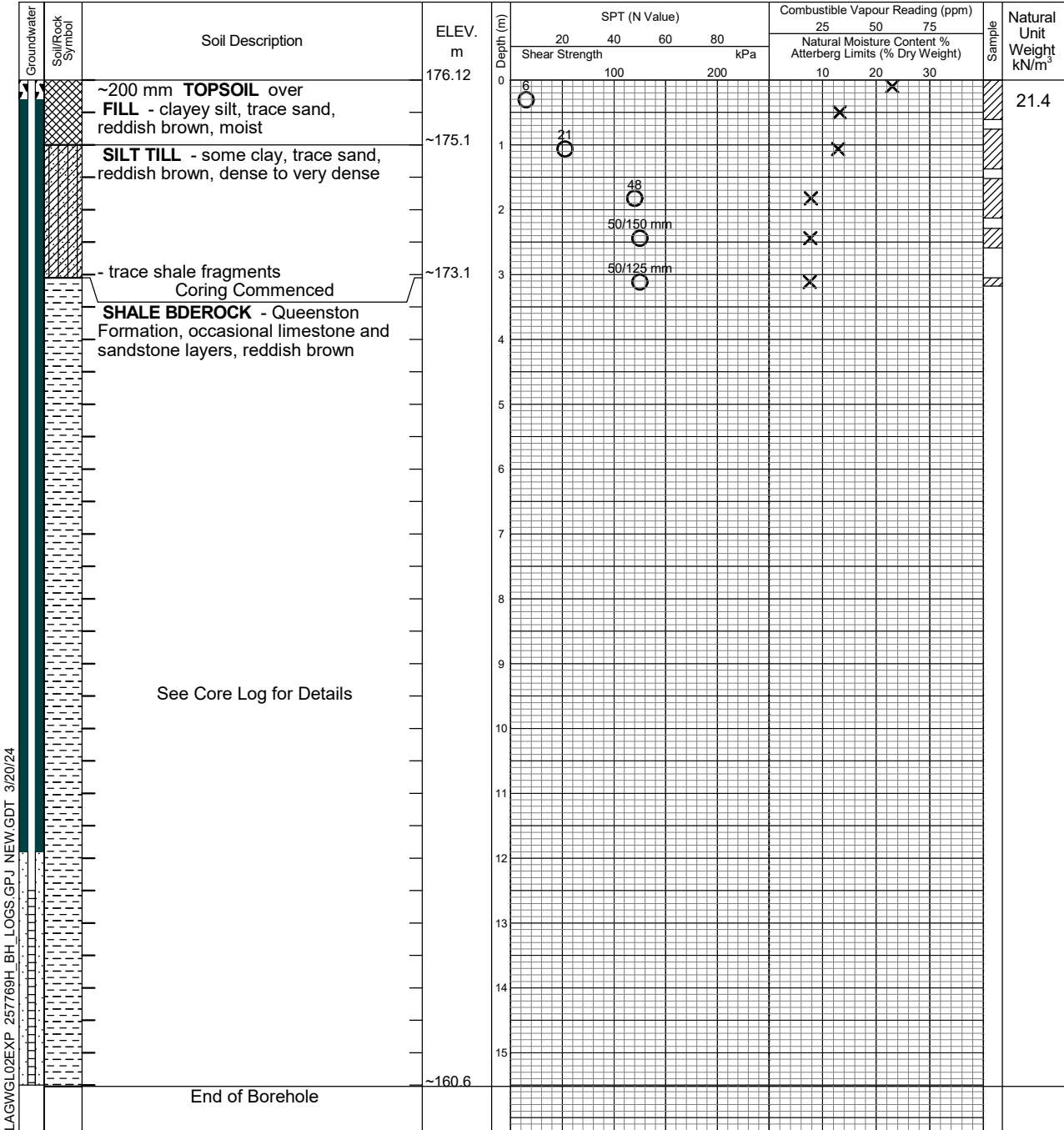
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.5 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Brampton

Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~6.1	Well
February 4, 2024	~7.4	Well

ROCK CORE LOG

BH 207

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.1	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/11/23	COMPLETED 01/11/23	LOGGED BY D. Panchal	DRAWING NUMBER 8A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
173.6			See Borehole Log for Details															
173.1	3		QUEENSTON FORMATION	1	B	F	C C	RU RP					1	100	100	95	Red	
			Shale with interbedded siltstone, and clay layers.															
	4		Shale (73%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~3.4 m and between moderately weathered and unweathered below.	1	B	F	C C	RP RP					2	100	82	100	Red	
171.8			Limestone (3%) fine grained, grey, medium strength, unweathered		F	V												
171.8			Siltstone (24%) fine grained, grey, medium strength, unweathered.		F	V												
171.7					F	V												
171.6					F	V												
171.4					F	V												
171.3	5		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.		F	V												
171.2					F	V												
170.8			Vertical fractures were noted at ~4.5 m, 4.8 m, 5.0 m, 5.3 m, 5.6 m, 6.8 m, 9.2 m, 12.4 m, 13.4 m and 14.8 m.	1	B	F	C C	RP SU					3	100	85	100	Red	
170.6					F	V												
170.4	6				F	V												
170.0					F	V												
170.0					F	V												
169.8					F	V												
169.6					F	V												
169.4					F	V												
169.2	7			1	B	F	C M	SU SU					4	100	93	100	Red	
169.0					F	V												
168.9					F	V												
168.8					F	V												
168.6					F	V												
168.5					F	V												
168.4	8				F	V												
168.0					F	V												
167.9					F	V												
167.5					F	V												
167.5					F	V												
167.2	9			1	B	F	W M	SU SP					5	100	97	100	Red	
167.1					F	V												
167.0					F	V												
166.9					F	V												
166.7					F	V												
166.7					F	V												
166.2	10				F	V												
166.2					F	V												
165.9					F	V												
165.8				1	B	F	W	SP					6	100	100	100	Red	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 207

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.1	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/11/23	COMPLETED 01/11/23	LOGGED BY D. Panchal	DRAWING NUMBER 8A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			QUEENSTON FORMATION				W	SP										
164.9	11		Shale with interbedded siltstone, and clay layers.															
164.8			Shale (73%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~3.4 m and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	93	100	Red
164.5																		
164.4																		
164.3																		
164.1	12		Limestone (3%) fine grained, grey, medium strength, unweathered				C	SU										
164.0																		
163.9																		
163.8			Siltstone (24%) fine grained, grey, medium strength, unweathered.															
163.8																		
163.7			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
163.5																		
163.4	13		Vertical fractures were noted at ~4.5 m, 4.8 m, 5.0 m, 5.3 m, 5.6 m, 6.8 m, 9.2 m, 12.4 m, 13.4 m and 14.8 m.	1	B F	F V	M M	SU SP						8	100	93	100	Red
162.8																		
162.7																		
162.6																		
161.7	14																	
161.7																		
161.5																		
161.4																		
161.3																		
161.0	15																	
160.9																		
160.9																		
160.6			End of Borehole at 15.5 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ CORE_LOG.GDT 3/20/24



Log of Borehole 208

Project No. GTR-00257769-H0

Drawing No. 9

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 10, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

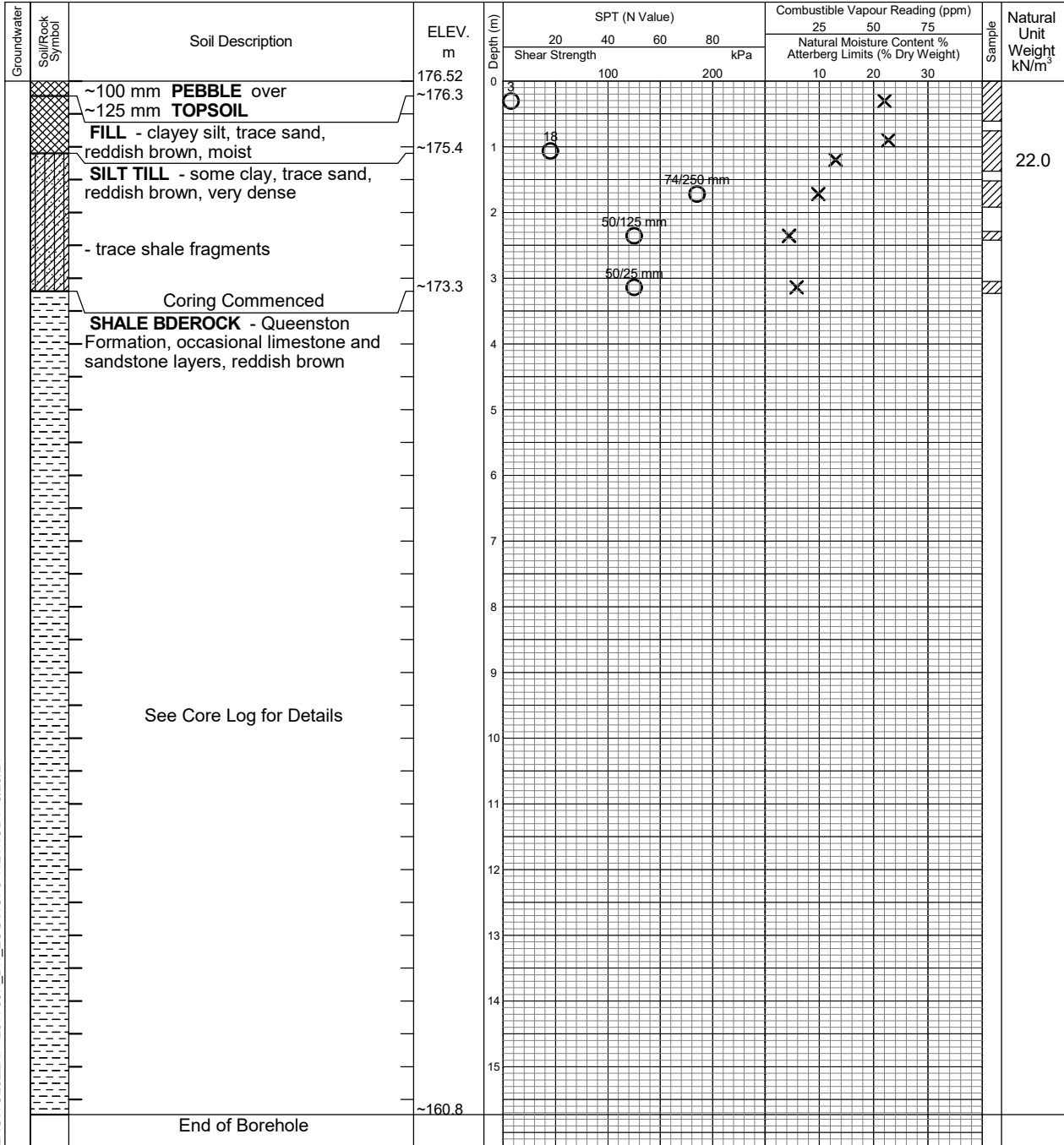
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.7 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 208

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.5	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/10/23	COMPLETED 01/10/23	LOGGED BY D. Panchal	DRAWING NUMBER 9A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
173.8			See Borehole Log for Details															
173.3		3	QUEENSTON FORMATION															
173.2				1	B	F	C	RU						1	100	53	100	Red
173.2							C	RU										
172.9			Shale with interbedded siltstone, and clay layers.															
172.8																		
172.5		4	Shale (87%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.1 m and between moderately weathered and unweathered below.	1	B	F	C	RU						2	100	88	100	Red
172.5					F	V	C	RP										
172.4																		
172.3																		
171.9			Limestone (3%) fine grained, grey, medium strength, unweathered			F	V											
171.9																		
171.7																		
171.6		5	Siltstone (9%) fine grained, grey, medium strength, unweathered.															
171.3																		
171.2			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
170.9																		
170.8			Vertical fractures were noted at ~4.4 m, 4.7 m, 6.4 m, 7.1 m, 8.4 m, 10.8 m and 14.6 m.	1	B	F	M	RP						3	100	93	100	Red
170.5		6	A Clay (1%) layer, heavily weathered, very low strength was noted at ~15.7 m.				C	RP										
170.4																		
170.1						F	V											
170.1																		
169.8																		
169.6		7				F	V											
169.2																		
169.1																		
169.0				1	B	F	C	RP						4	100	70	100	Red
168.9							M	SU										
168.8																		
168.8		8																
168.8																		
168.7																		
168.1						F	V											
168.0																		
167.8																		
167.6		9		1	B	F	C	SU						5	100	95	100	Red
167.3							M	SP										
167.3																		
166.5		10		1	B	F	W	SP						6	100	97	100	Red
166.3							M	SP										

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 208

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.5	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/10/23	COMPLETED 01/10/23	LOGGED BY D. Panchal	DRAWING NUMBER 9A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
165.8			QUEENSTON FORMATION		F	V												
165.7	11		Shale with interbedded siltstone, and clay layers.															
165.4			Shale (87%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.1 m and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	100	100	Red
165.2			Limestone (3%) fine grained, grey, medium strength, unweathered				W	SP										
164.4	12		Siltstone (9%) fine grained, grey, medium strength, unweathered.															
164.2			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
163.8			Vertical fractures were noted at ~4.4 m, 4.7 m, 6.4 m, 7.1 m, 8.4 m, 10.8 m and 14.6 m.															
163.7			A Clay (1%) layer, heavily weathered, very low strength was noted at ~15.7 m.	1	B	F	W	SP						8	100	100	100	Red
163.5	13																	
163.4																		
163.2																		
163.1																		
162.7	14																	
162.6																		
161.6																		
161.5	15																	
161.4																		
161.3																		
161.2																		
161.1																		
160.9																		
160.8	16		End of Borehole at 15.7 m							NC	50							
160.8																		
160.8																		
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ CORE_LOG.GDT 3/20/24



Log of Borehole 209D

Project No. GTR-00257769-H0

Drawing No. 10

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 15, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

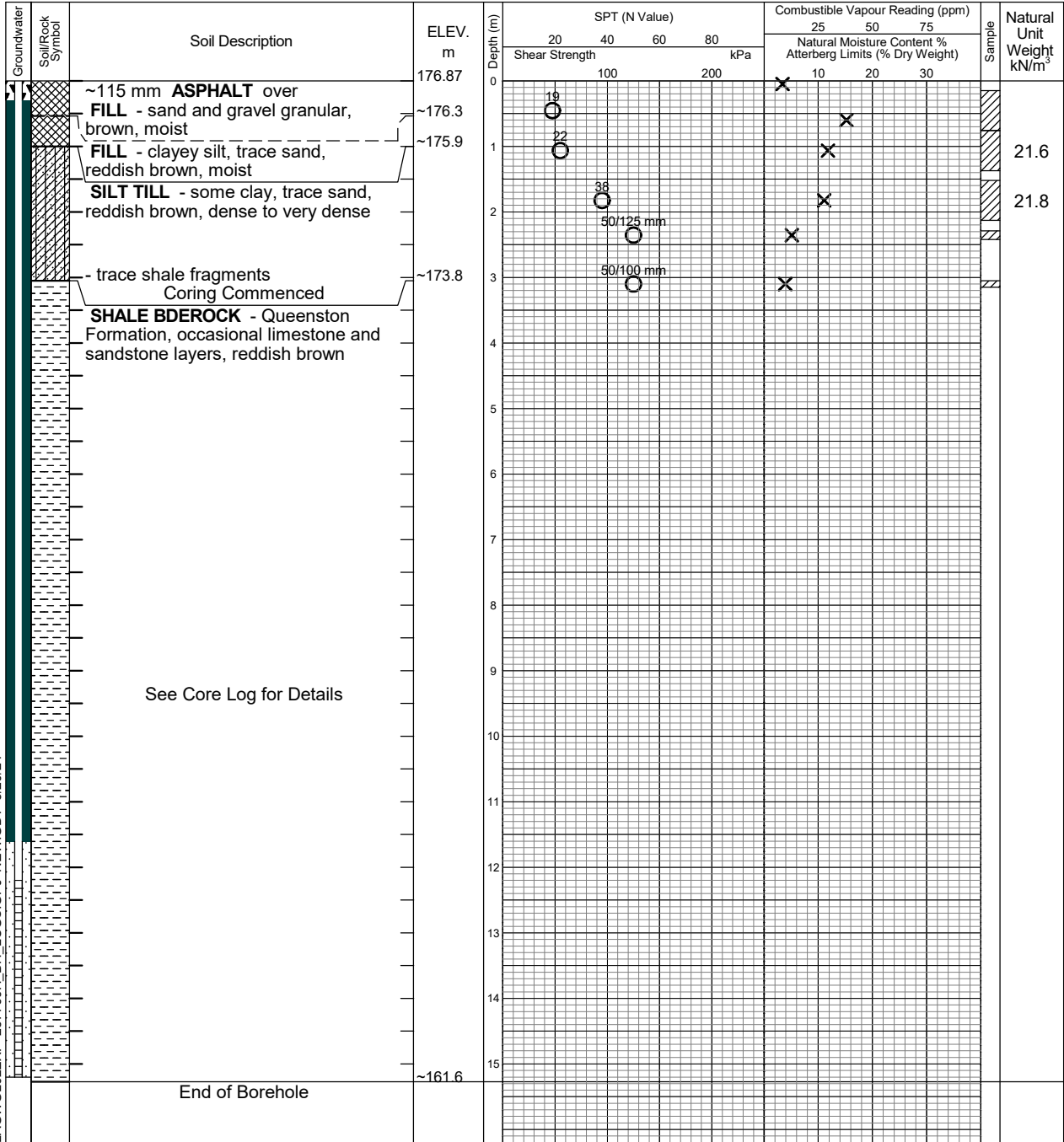
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.3 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~7.9	Well
February 4, 2024	~8.0	Well

ROCK CORE LOG

BH 209D

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.9	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/15/23	COMPLETED 01/15/23	LOGGED BY D. Panchal	DRAWING NUMBER 10A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
174.4			See Borehole Log for Details															
173.8	3		QUEENSTON FORMATION															
173.7				1	F B F	V F V	VC C	RU RU						1	100	68	95	Red
173.4			Shale with interbedded siltstone, and clay layers.															
173.3																		
173.0			Shale (98%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.4 m and between moderately weathered and unweathered below.															
173.0	4			1	F B	V F	C M	RU RP						2	100	92	100	Red
172.7			Limestone (1%) fine grained, grey, medium strength, unweathered															
172.6			Siltstone (1%) fine grained, grey, medium strength, unweathered.															
			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
171.5			Vertical fractures were noted at ~3.2 m, 3.5 m, 4.2 m, 6.2 m and 6.7 m.															
171.4																		
171.1				1	B	F	M C	RP RP						3	100	98	100	Red
171.0	6																	
170.7																		
170.6																		
170.5																		
170.4																		
170.2																		
170.0	7																	
169.6				1	B	F	C C	RP SU						4	100	97	100	Red
169.4																		
169.0																		
168.9	8																	
168.9																		
168.8																		
168.7																		
168.5																		
168.3																		
168.3	9			1	B	F	W W	SU SP						5	100	100	100	Red
167.5																		
167.3																		
167.1																		
167.1	10																	
166.8																		
166.8																		
166.5				1	B	F	M	SP						6	100	100	100	Red

EXP_ROCKCORE_257769H.ROCK_LOGS.GPJ CORE LOG.GDT 3/20/24



ROCK CORE LOG

BH 209D

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.9	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/15/23	COMPLETED 01/15/23	LOGGED BY D. Panchal	DRAWING NUMBER 10A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.4			QUEENSTON FORMATION				M	SP										
166.2																		
166.1																		
165.9	11		Shale with interbedded siltstone, and clay layers.															
165.7																		
165.5			Shale (98%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.4 m and between moderately weathered and unweathered below.															
165.4																		
165.1	12		Limestone (1%) fine grained, grey, medium strength, unweathered	1	B	F	M	SP						7	100	97	100	Red
165.0							M	SP										
164.6			Siltstone (1%) fine grained, grey, medium strength, unweathered.															
164.5																		
164.3			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
164.1	13		Vertical fractures were noted at ~3.2 m, 3.5 m, 4.2 m, 6.2 m and 6.7 m.															
163.9																		
163.7																		
163.3	14			1	B	F	W	SP						8	100	100	100	Red
163.1							W	SP										
162.6	15																	
162.5																		
162.4																		
162.3				1	B	F	W	SP						9	100	100	100	Red
161.6			End of Borehole at 15.3 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 209S

Project No. GTR-00257769-H0

Drawing No. 11

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 15, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

Datum: Geodetic

Shelby Tube

Undrained Triaxial at

Field Vane Test

% Strain at Failure

Penetrometer

Groundwater Soil/Rock Symbol	Soil Description	ELEV. m	SPT (N Value)				Combustible Vapour Reading (ppm)			Sample	Natural Unit Weight kN/m ³
			20	40	60	80	25	50	75		
			Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)				
		176.87	100		200						
	See Log of Borehole 209D for Details										
	End of Borehole	~170.8									

LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~6.1 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	No Free Water	Well
February 4, 2024	No Free Water	Well

Log of Borehole 210

Project No. GTR-00257769-H0

Drawing No. 12

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 8 - 9, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

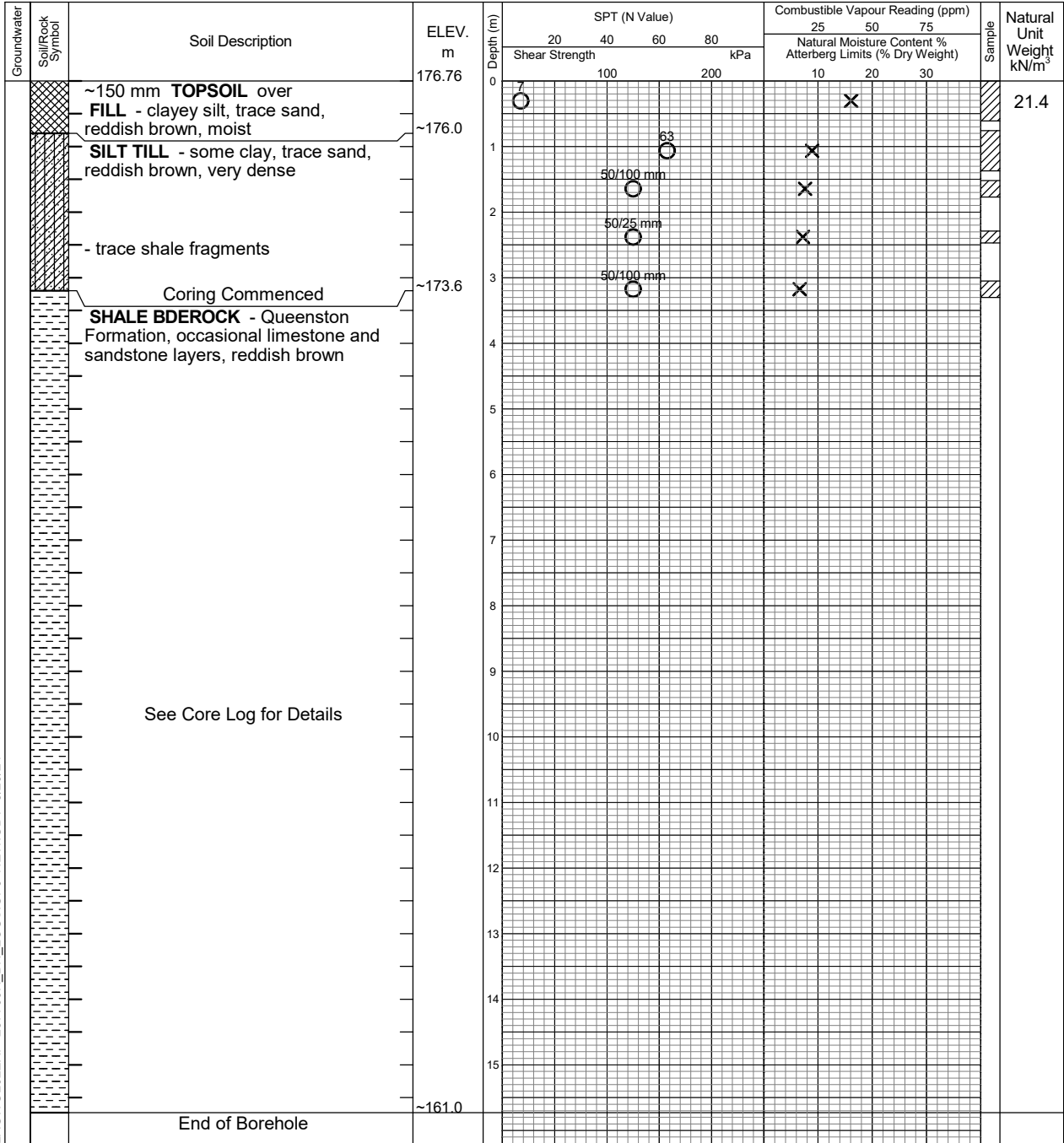
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.7 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 210

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/09/23	COMPLETED 01/09/23	LOGGED BY D. Panchal	DRAWING NUMBER 12A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
174.3			See Borehole Log for Details															
173.6			QUEENSTON FORMATION															
173.5				1	B	F	C	RU						1	100	100	95	Red
173.4						F	V	C	RP									
173.3			Shale with interbedded siltstone, and clay layers.															
173.1				4														
172.8			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.	1	B	F	C	RP	SU					2	100	100	100	Red
172.7							M											
			Limestone (7%) fine grained, grey, medium strength, unweathered															
171.9				5														
171.7			Siltstone (15%) fine grained, grey, medium strength, unweathered.															
171.3			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
171.2				1	B	F	M	SU	SP					3	100	100	100	Red
170.8			Vertical fractures were noted at ~3.6 m and 13.5 m.				M											
170.7				6														
170.0																		
169.9				7														
169.8																		
169.7				1	B	F	M	SP	SP					4	100	100	100	Red
169.3							W											
169.0																		
168.7				8														
168.7																		
168.5																		
168.4																		
167.8				1	B	F	W	SP	SP					5	100	100	100	Red
167.7							W											
167.1																		
167.1																		
167.0																		
166.9				10														
166.4				1	B	F	W	SP	SP					6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT 3/20/24



ROCK CORE LOG

BH 210

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/09/23	COMPLETED 01/09/23	LOGGED BY D. Panchal	DRAWING NUMBER 12A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.3			QUEENSTON FORMATION															
165.9	11		Shale with interbedded siltstone, and clay layers.															
165.2			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	100	100	Red
164.9			Limestone (7%) fine grained, grey, medium strength, unweathered				W	SP										
164.8	12		Siltstone (15%) fine grained, grey, medium strength, unweathered.			F	V											
164.0			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
163.8	13		Vertical fractures were noted at ~3.6 m and 13.5 m.	1	B	F	M	SP						8	100	100	100	Red
163.3							M	SP										
163.2																		
163.1																		
162.6	14																	
162.2																		
162.1																		
161.6	15			1	B	F	W	SP						9	100	100	100	Red
161.4							W	SP										
161.0	16		End of Borehole at 15.7 m															
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 211

Project No. GTR-00257769-H0

Drawing No. 13

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 8, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

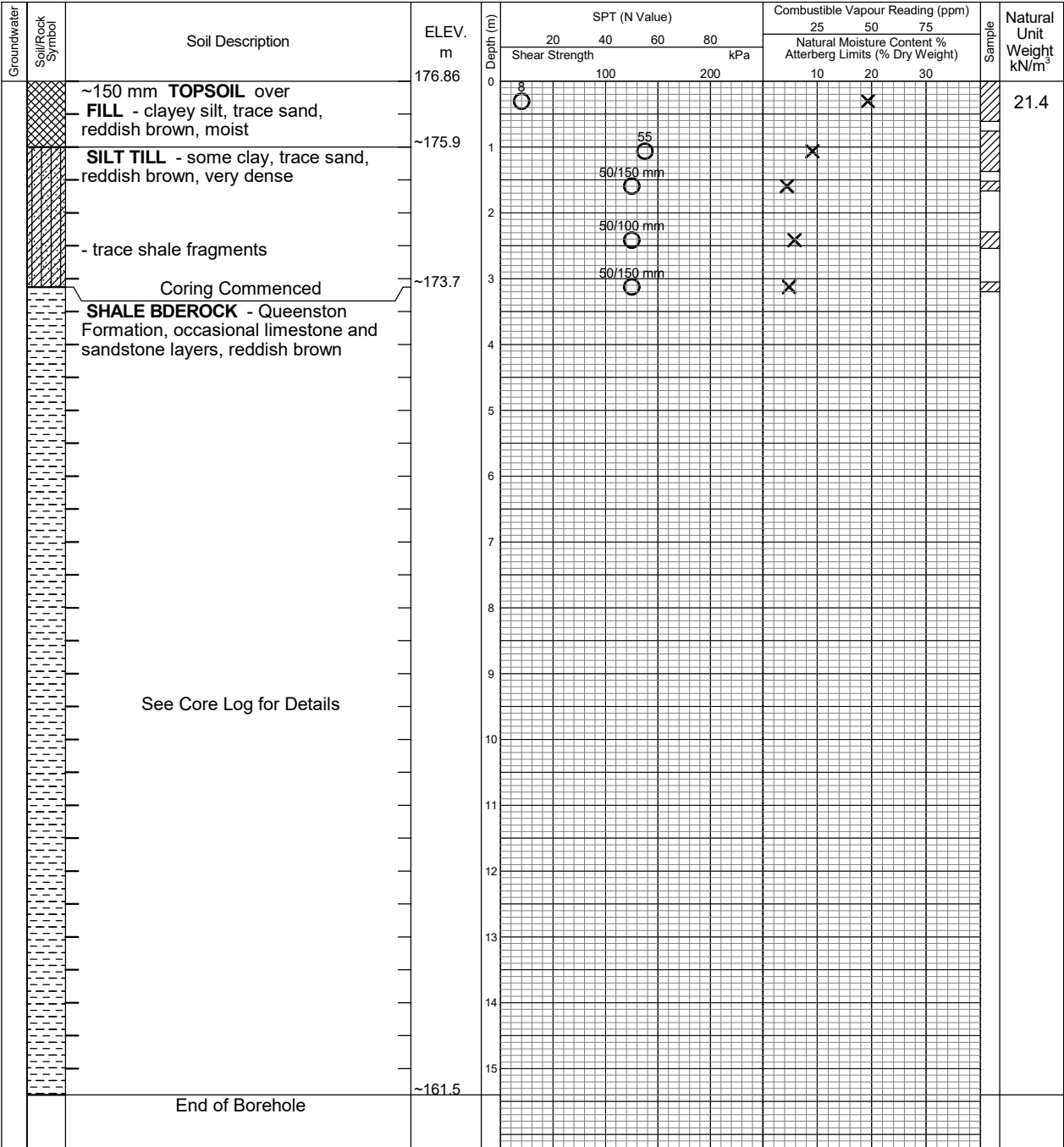
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.4 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 211

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.9	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/08/23	COMPLETED 01/08/23	LOGGED BY D. Panchal	DRAWING NUMBER 13A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
174.4			See Borehole Log for Details															
173.7	3		QUEENSTON FORMATION															
173.6			Shale with interbedded siltstone, and clay layers.	1	B	F	C	RU						1	94	94	90	Red
173.5						F	V	C										
173.3																		
173.1	4		Shale (87%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.8 and between moderately weathered and unweathered below.	1	F	V	C	RP	SU					2	100	90	100	Red
			Limestone (6%) fine grained, grey, medium strength, unweathered				M											
	5		Siltstone (7%) fine grained, grey, medium strength, unweathered.															
			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
171.2	6		Vertical fractures were noted at ~3.6 m, 4.2 m and 6.9 m.	1	B	F	M	SU	SU					3	100	97	100	Red
171.2							C											
170.0	7					F	V											
169.9																		
169.4	8			1	B	F	M	SU	SP					4	100	100	100	Red
169.2																		
169.0																		
168.9	8																	
168.3																		
168.3																		
167.7	9			1	B	F	W	SP	SP					5	100	100	100	Red
167.6																		
167.3																		
167.2																		
166.7	10																	
166.7																		
166.4														6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT 3/20/24



ROCK CORE LOG

BH 211

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.9	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/08/23	COMPLETED 01/08/23	LOGGED BY D. Panchal	DRAWING NUMBER 13A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.2			QUEENSTON FORMATION	1	B	F	W	SP										
165.9	11		Shale with interbedded siltstone, and clay layers.															
165.8			Shale (87%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.8 and between moderately weathered and unweathered below.															
165.2			Limestone (6%) fine grained, grey, medium strength, unweathered	1	B	F	W	SP						7	100	100	100	Red
165.1			Siltstone (7%) fine grained, grey, medium strength, unweathered.															
164.8	12		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
164.8			Vertical fractures were noted at ~3.6 m, 4.2 m and 6.9 m.															
164.1				1	B	F	W	SP						8	100	100	100	Red
163.8	13																	
163.4				1	B	F	W	SP						9	100	100	100	Red
163.2																		
162.8	14																	
162.8																		
162.3				1	B	F	W	SP										
162.2																		
161.9	15																	
161.8																		
161.5			End of Borehole at 15.4 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 212

Project No. GTR-00257769-H0

Drawing No. 14

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 5, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

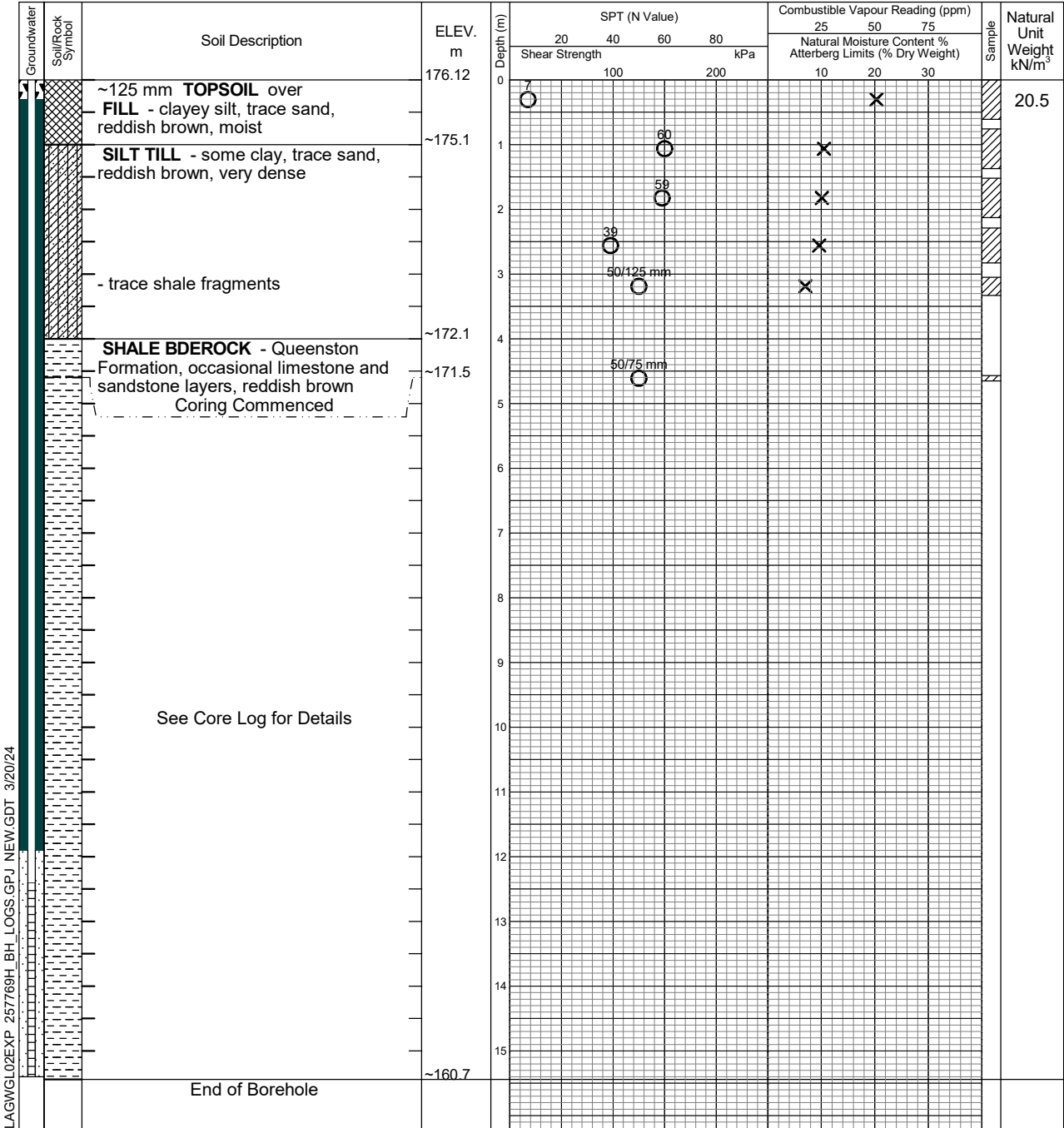
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.4 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~5.7	Well
February 4, 2024	~5.8	Well

ROCK CORE LOG

BH 212

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.1	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/05/23	COMPLETED 01/05/23	LOGGED BY D. Panchal	DRAWING NUMBER 14A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
171.9			See Borehole Log for Details															
171.5			QUEENSTON FORMATION															
171.1	5		Shale with interbedded siltstone, and clay layers.	1	B	F	C C	RU RP						1	100	74	95	Red
171.0																		
170.7			Shale (71%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.7 m and between moderately weathered and unweathered below.						NC	20 mm								
170.5																		
170.4	6		Limestone (3%) fine grained, grey, medium strength, unweathered	1	B	F	C C	RP RP						2	100	100	100	Red
170.0																		
170.0			Limestone (3%) fine grained, grey, medium strength, unweathered															
169.6			Siltstone (25%) fine grained, grey, medium strength, unweathered.															
169.5						F	V											
169.5			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.						NC	20 mm								
169.3									NC	60 mm								
169.3	7		Vertical fractures were noted at ~6.6 m, 7.1 m, 7.6 m, 9.1 m and 10.2 m.	1	F B	V F	C C	RP SU						3	100	74	100	Red
169.1																		
168.7			A Clay (1%) layers, heavily weathered, very low strength were noted at ~5.4 m, 6.6 m and 6.8 m.			F	V											
168.7																		
168.6																		
168.5																		
168.3	8																	
168.1																		
167.6																		
167.6																		
167.2																		
167.2	9			1	B	F	W M	SU SP						4	100	89	100	Red
167.1						F	V											
166.9																		
166.8																		
166.7																		
166.5																		
166.5																		
166.0																		
166.0	10					F	V											
165.7																		
165.7					1	B	F	M W	SP SP					5	100	91	100	Red
165.1																		
165.0	11																	
164.9																		
164.7																		
164.7	12			1	B	F	W W	SP SP						6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 212

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.1	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/05/23	COMPLETED 01/05/23	LOGGED BY D. Panchal	DRAWING NUMBER 14A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
163.9			QUEENSTON FORMATION															
163.7																		
163.4			Shale with interbedded siltstone, and clay layers.															
163.0	13		Shale (71%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.7 m and between moderately weathered and unweathered below.	1	B	F	W W	SP SP						7	100	100	100	Red
162.0	14		Limestone (3%) fine grained, grey, medium strength, unweathered															
161.9			Siltstone (25%) fine grained, grey, medium strength, unweathered.															
161.1	15		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
160.9			Vertical fractures were noted at ~6.6 m, 7.1 m, 7.6 m, 9.1 m and 10.2 m.	1	B	F	W W	SP SP						8	100	100	100	Red
160.7			A Clay (1%) layers, heavily weathered, very low strength were noted at ~5.4 m, 6.6 m and 6.8 m.															
			End of Borehole at 15.4 m															
	16																	
	17																	
	18																	
	19																	
	20																	

Log of Borehole 213

Project No. GTR-00257769-H0

Drawing No. 15

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 4 - 5, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

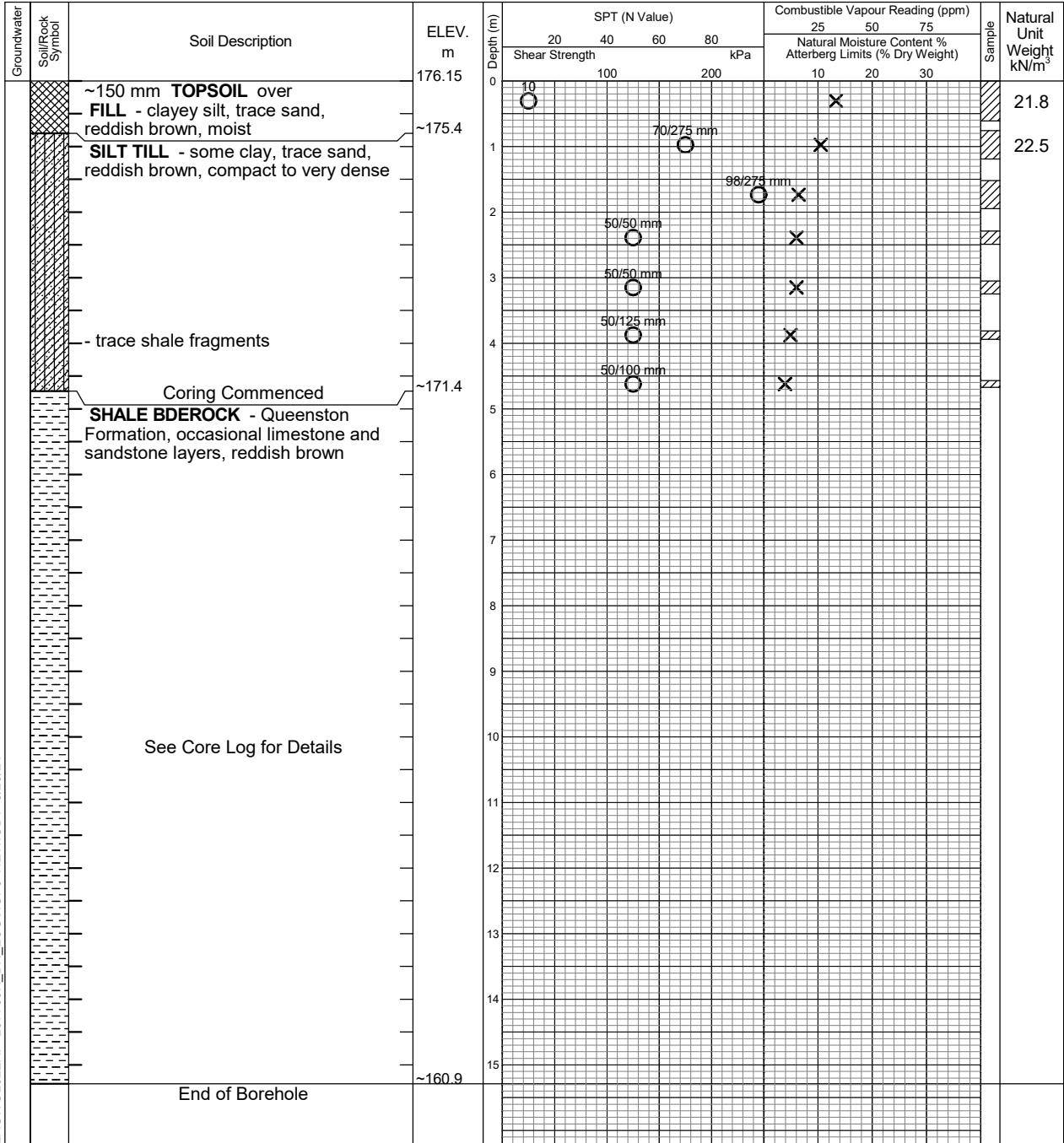
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.3 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 213

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.2	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/05/23	COMPLETED 01/05/23	LOGGED BY D. Panchal	DRAWING NUMBER 15A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS								WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
172.0			See Borehole Log for Details																
171.4			QUEENSTON FORMATION																
170.9	5		Shale with interbedded siltstone, and clay layers.	1	B	F	M	RU						1	100	100	95	Red	
170.9						F	V												
170.7			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.6 and between moderately weathered and unweathered below.																
170.6																			
170.4																			
170.4	6		Limestone (2%) fine grained, grey, medium strength, unweathered	1	B	F	C	RP	NC	20				2	100	97	100	Red	
170.2							M	SU	NC	20									
170.2																			
169.8			Siltstone (20%) fine grained, grey, medium strength, unweathered.																
169.7																			
169.1	7		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.																
169.1																			
169.0			A Vertical fracture was noted at ~5.3 m.																
168.9																			
168.9			Clay (1%) layers, heavily weathered, very low strength were noted at ~5.8 m, 5.9 m and 7.0 m.	1	B	F	C	SU		20				3	100	90	100	Red	
168.8							M	SP											
168.7																			
168.6	8																		
168.4																			
167.5																			
167.3	9			1	B	F	W	SP						4	100	100	100	Red	
167.0							W	SP											
166.9																			
166.3																			
166.2	10																		
165.7																			
165.6				1	B	F	W	SP						5	100	100	100	Red	
164.5							W	SP											
164.4	11																		
164.5																			
164.4	12			1	B	F	W	SP						6	100	100	100	Red	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 213

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.2	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/05/23	COMPLETED 01/05/23	LOGGED BY D. Panchal	DRAWING NUMBER 15A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
163.9			QUEENSTON FORMATION				W	SP										
163.8																		
163.6			Shale with interbedded siltstone, and clay layers.															
163.2	13		Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.6 and between moderately weathered and unweathered below.															
162.9																		
162.7				1	B	F	M	SP						7	100	100	100	Red
162.4			Limestone (2%) fine grained, grey, medium strength, unweathered				W	SP										
162.3	14		Siltstone (20%) fine grained, grey, medium strength, unweathered.															
			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
			A Vertical fracture was noted at ~5.3 m.															
161.3				1	B	F	M	SP						8	100	100	100	Red
161.2	15		Clay (1%) layers, heavily weathered, very low strength were noted at ~5.8 m, 5.9 m and 7.0 m.				M	SP										
160.9			End of Borehole at 15.3 m															
	16																	
	17																	
	18																	
	19																	
	20																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT 3/20/24



Log of Borehole 214D

Project No. GTR-00257769-H0

Drawing No. 16

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 4, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

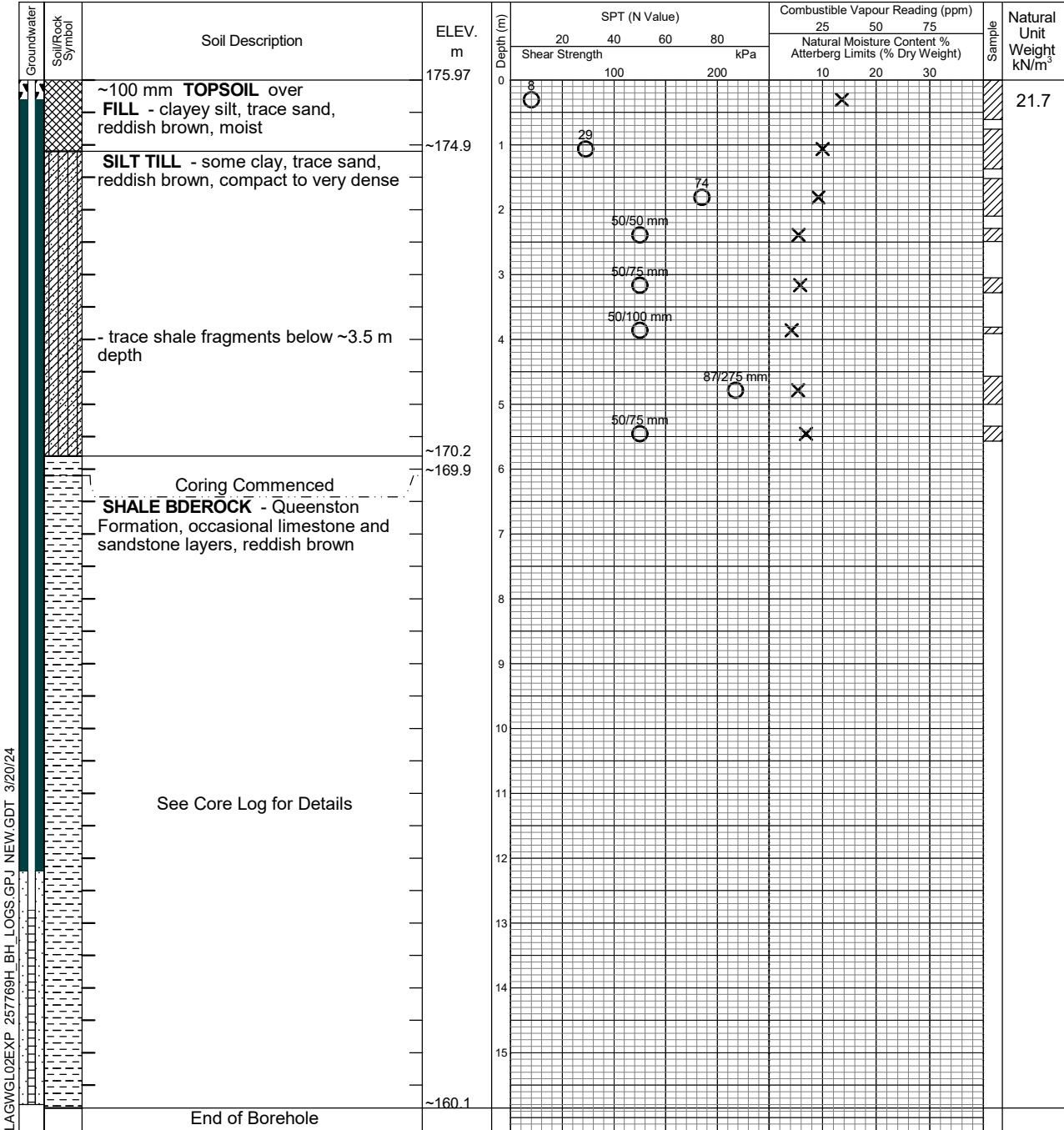
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



Notes:

- Borehole advanced to completion at ~15.9 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
- This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Brampton

Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~6.1	Well
February 4, 2024	~6.3	Well

ROCK CORE LOG

BH 214D

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.0	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/04/23	COMPLETED 01/04/23	LOGGED BY D. Panchal	DRAWING NUMBER 16A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
170.3			See Borehole Log for Details															
169.9	6		QUEENSTON FORMATION															
			Shale with interbedded siltstone, and clay layers.	1	B	F	C	RU	RP					1	100	88	95	Red
169.0	7		Shale (91%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~6.6 and between moderately weathered and unweathered below.															
168.8			Limestone (1%) fine grained, grey, medium strength, unweathered	1	B	F	M	RP	SP					2	100	97	100	Red
168.7			Siltstone (8%) fine grained, grey, medium strength, unweathered.															
168.4			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to close intervals.															
168.1	8																	
167.0	9			1	B	F	W	SU	SP					3	100	100	100	Red
166.9																		
166.6																		
166.5																		
	10																	
165.3				1	B	F	W	SP	SP					4	100	100	100	Red
165.2																		
	11																	
164.5																		
164.4																		
164.0	12			1	B	F	W	SP	SP					5	100	100	100	Red
163.9																		
163.7																		
163.6																		
	13																	
163.0																		
162.8				1	B	F	W	SP						6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 214D

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.0	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/04/23	COMPLETED 01/04/23	LOGGED BY D. Panchal	DRAWING NUMBER 16A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
162.0	14		QUEENSTON FORMATION Shale with interbedded siltstone, and clay layers.				W	SP										
161.9																		
161.6			Shale (91%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~6.6 and between moderately weathered and unweathered below.															
161.6																		
	15		Limestone (1%) fine grained, grey, medium strength, unweathered	1	B	F	W	SP						7	100	100	100	Red
160.7			Siltstone (8%) fine grained, grey, medium strength, unweathered.				W	SP										
160.5																		
160.3			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to close intervals.															
160.1			End of Borehole at 15.9 m															
	16																	
	17																	
	18																	
	19																	
	20																	
	21																	

Log of Borehole 214S

Project No. GTR-00257769-H0

Drawing No. 17

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 4, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at

% Strain at Failure

Penetrometer

Groundwater Soil/Rock Symbol	Soil Description	ELEV. m	SPT (N Value)				Combustible Vapour Reading (ppm)			Sample	Natural Unit Weight kN/m ³
			20	40	60	80	25	50	75		
			Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)				
		175.97	100		200						
	See Log of Borehole 214D for Details										
	End of Borehole	~169.9									

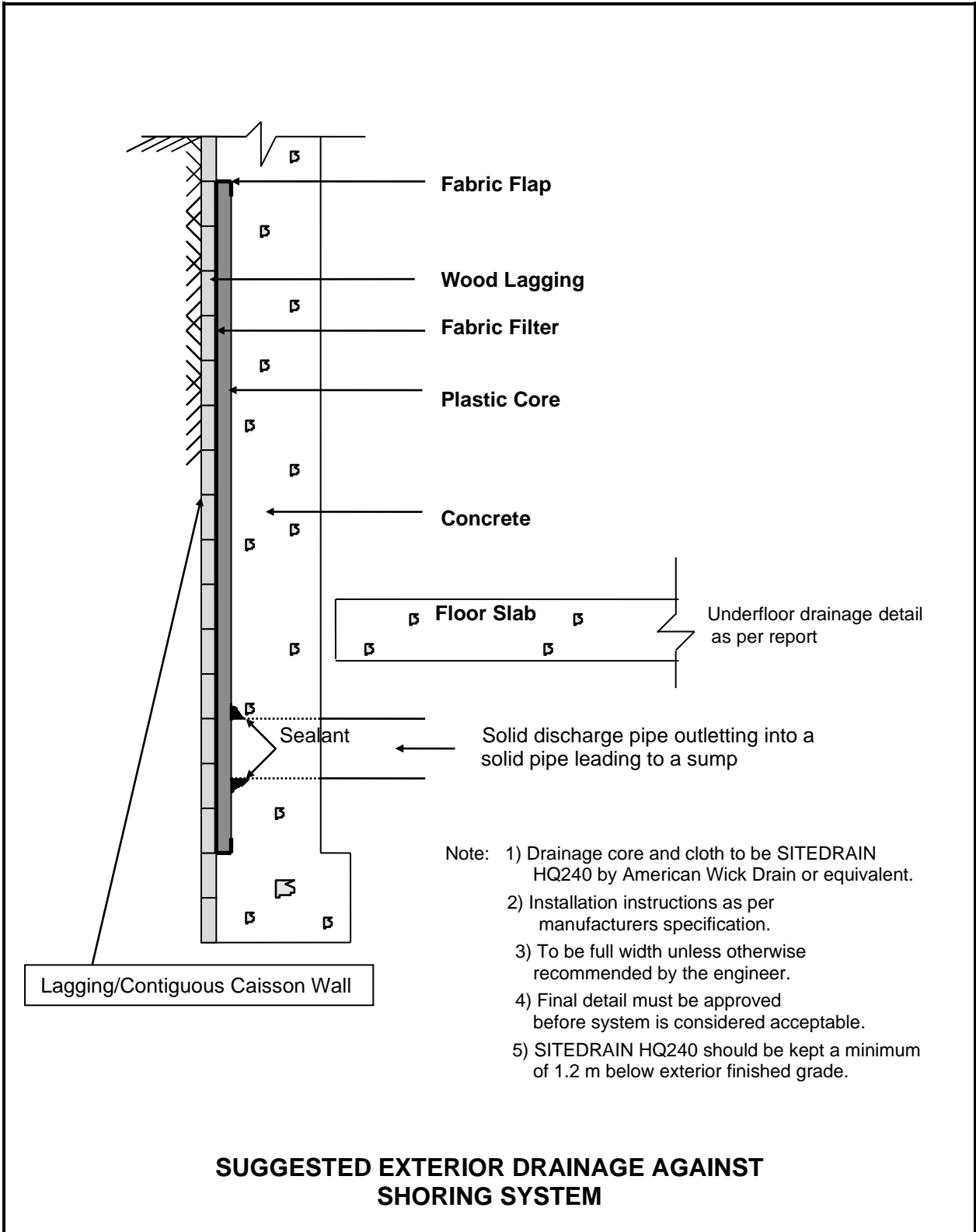
LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

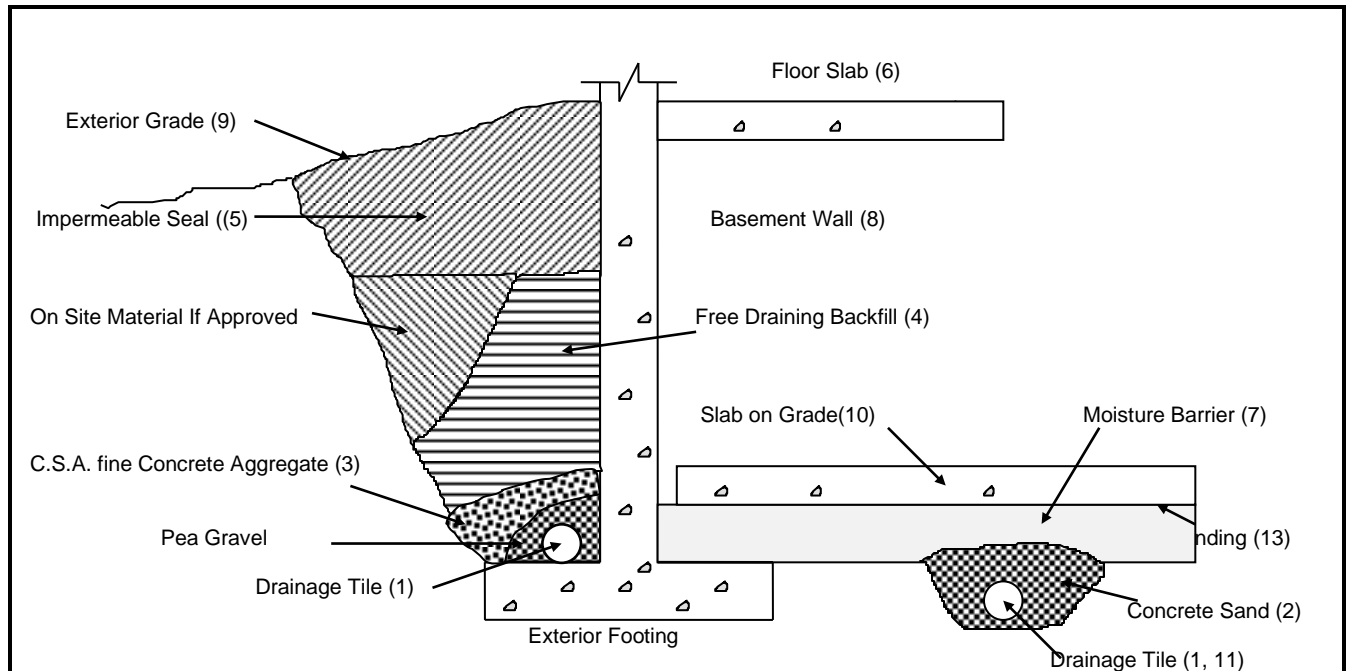
Notes:
 1. Borehole advanced to completion at ~6.1 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Brampton

Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~5.9	Well
February 4, 2024	~6.0	Well





Notes

1. Drainage tile to consist of 100 mm (4") diameter weeping tile or equivalent perforated pipe leading to a positive sump or outlet.
2. Concrete sand - 150 mm (6") top and side of drain. If drain is not on footing, place 100 mm (4 inches) of pea gravel below drain. 20 mm (3/4") clear stone is an alternative provided it is surrounded by an approved filter fabric (Terrafix 600R or equivalent).
3. C.S.A. fine concrete aggregate to act as filter material. Minimum 300 mm (12") top and side of tile drain. This may be replaced by an approved filter fabric as indicated in (2).
4. Free Draining backfill - OPSS Granular B or equivalent compacted to the specified density. Do not use heavy compaction equipment within 450 mm (18") of the wall. Use hand controlled light compaction equipment within 1.8 m (6') of wall.
5. Impermeable backfill seal - compacted clay, clayey silt or equivalent. If original soil is free-draining, seal may be omitted.
6. Do not backfill until wall is supported by basement and floor slabs or adequate bracing.
7. Moisture barrier to be at least 200 mm (8") of compacted clear 20 mm (3/4") stone.
8. Basement wall to be damp-proofed or waterproofed as per report.
9. Exterior grade to slope away from building.
10. Slab on grade should not be structurally connected to the wall or footing.
11. Underfloor drain invert to be at least 300 mm(12") below underside of floor slab. Drainage tile placed in parallel rows 6 to 8 m (20 to 25') centres one way. Place drain below subgrade with 150 mm(6") of concrete sand on top and sides.
12. Do not connect the underfloor drains to perimeter drains.
13. If the 20 mm (3/4") stone requires surface blinding, use 6 mm (1/4") clear stone chips.

DRAINAGE AND BACKFILL RECOMMENDATIONS

(not to scale)

Appendix A

Grain Size Analysis Results



exp Services Inc.
1595 Clark Boulevard, Brampton
Ontario, Canada, L6T 4V1
Telephone: (905) 793-9800
Fax: (905) 793-0641

Grain Size Analysis & Hydrometer Test Report

ST08

Sample Test No.: 438426-2

Report No.: 1

Date Reported: 18-Jan-24

Project No.: gtr-00257769-h0 c300

Project Name: Supplemental Geotechnical Investigation (Lab Testing
and Reporting)

Grain Size Proportion (%)

Gravel (> 4.75mm):

Sand (> 75µm, < 4.75mm): **6.5**

Silt (> 2µm, < 75µm): **78.8**

Clay (< 2µm): **14.7**

Total: **100.0**

Sample Information

Location: BH 212

Sample Method: SS

Sample No.: 4

Depth: 2.3 - 2.8 m

Sample Description: Silt, some Clay, trace Sand; Reddish Brown

Sampled By: D. P.

Sampling Date: 1/4/2024

Date Received: 1/5/2024

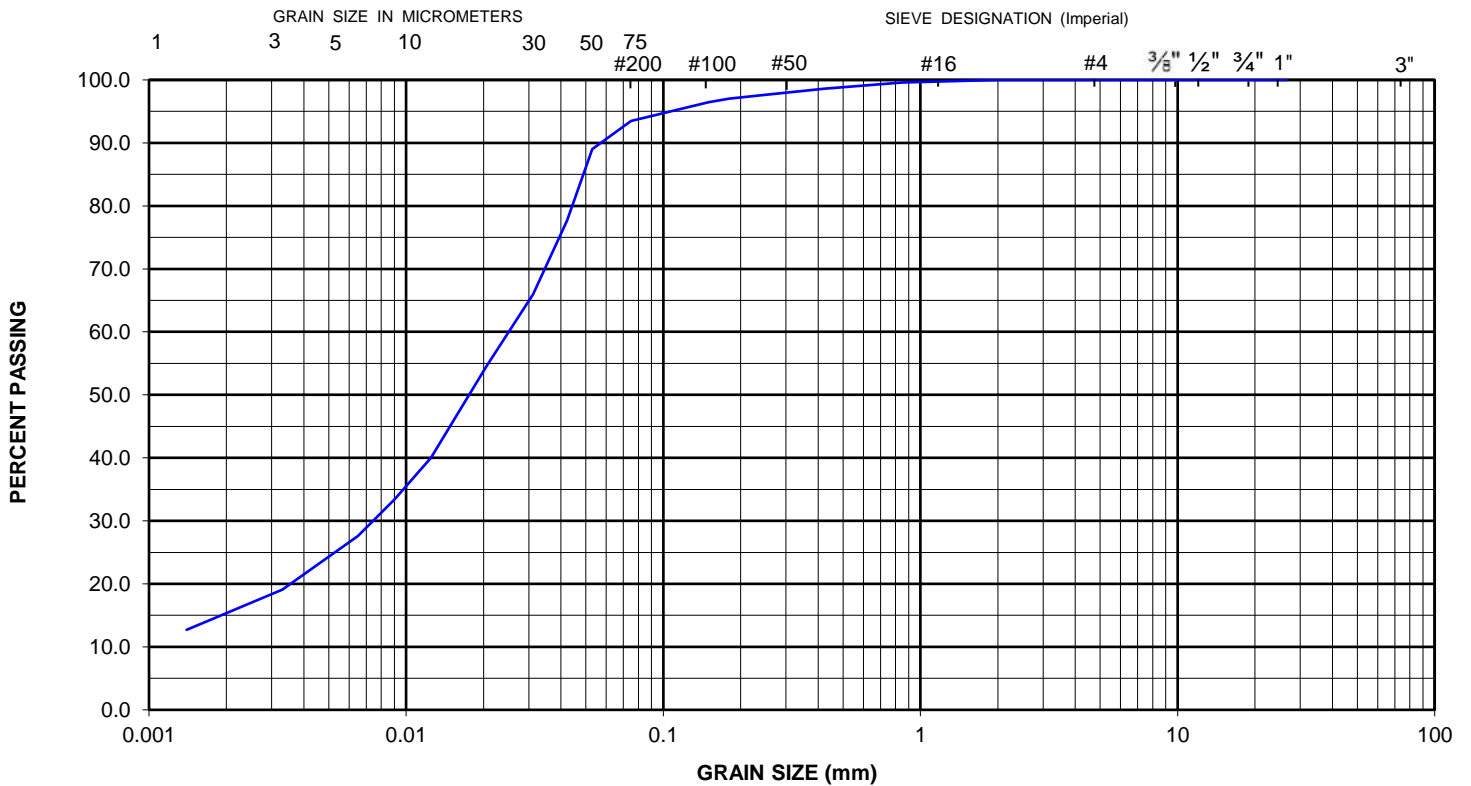
Client Sample ID:

Comments:

Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
26.5	100.0	0.0422	77.7
22.4	100.0	0.0312	66.0
19	100.0	0.0205	54.5
16	100.0	0.0125	40.0
13.2	100.0	0.0090	33.4
12.5	100.0	0.0065	27.6
9.5	100.0	0.0033	19.1
6.7	100.0	0.0014	12.7
4.75	100.0		
2	100.0		
0.85	99.6		
0.425	98.6		
0.25	97.6		
0.18	97.0		
0.15	96.4		
0.075	93.5		
0.053	89.0		

UNIFIED SOIL CLASSIFICATION SYSTEM

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Project Manager: Kevin Leung

Approved By: Original Signed By

Date Approved: 18-Jan-24

Arcadio Petrola, Lab Supervisor



exp Services Inc.
 1595 Clark Boulevard, Brampton
 Ontario, Canada, L6T 4V1
 Telephone: (905) 793-9800
 Fax: (905) 793-0641

Grain Size Analysis & Hydrometer Test Report

ST08

Sample Test No.: 438441-2

Report No.: 2

Date Reported: 18-Jan-24

Project No.: gtr-00257769-h0 c300

Project Name: Supplemental Geotechnical Investigation (Lab Testing and Reporting)

Grain Size Proportion (%)

Gravel (> 4.75mm):
 Sand (> 75µm, < 4.75mm): **12.7**
 Silt (> 2µm), < 75µm): **80.0**
 Clay (< 2µm): **7.3**
 Total: **100.0**

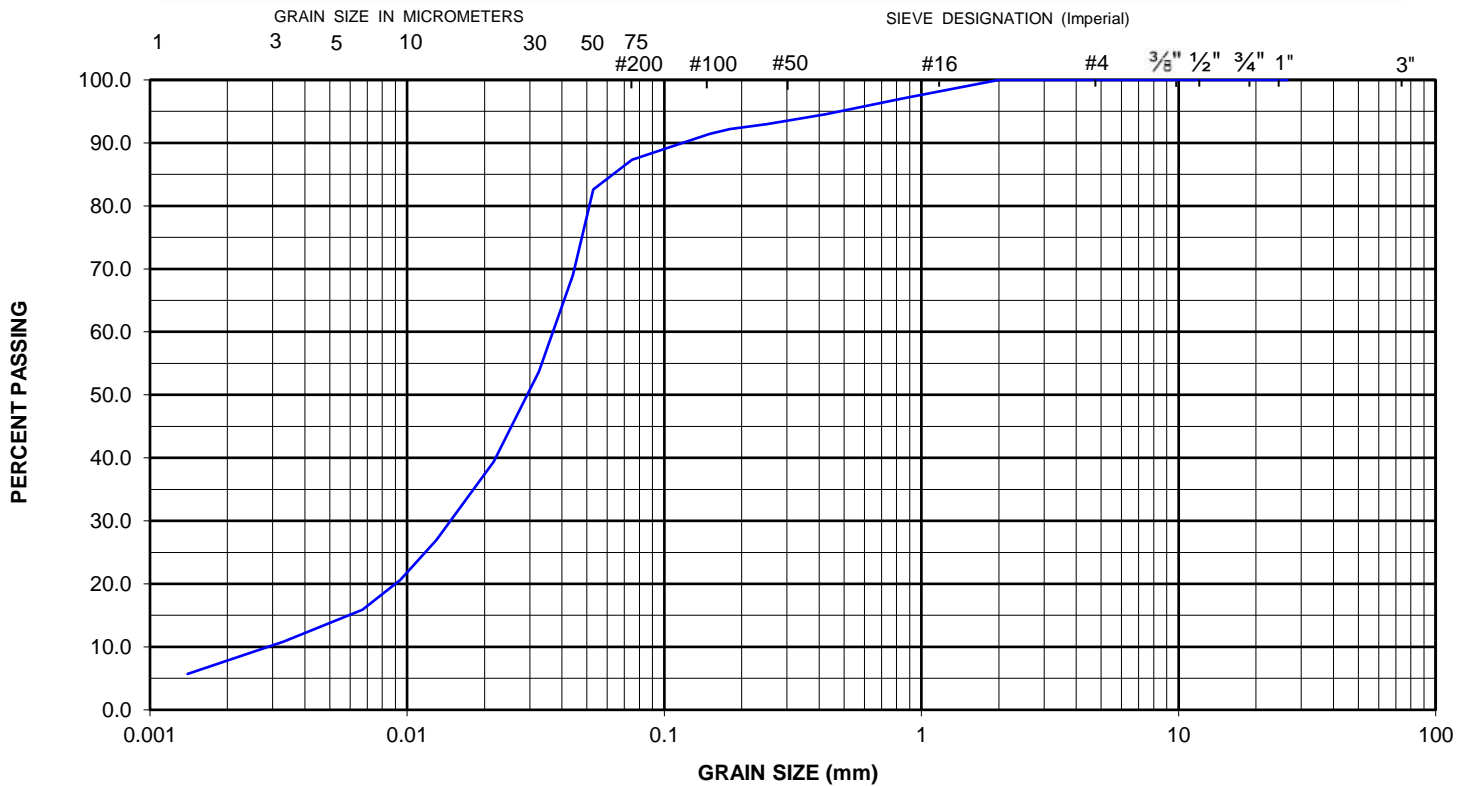
Sample Information

Location: BH 214
 Sample Method: SS
 Sample No.: 7
 Depth: 4.6 - 5.0 m
 Sample Description: Silt, some Sand, trace Clay; Reddish Brown
 Sampled By: D. P.
 Sampling Date: 1/5/2024
 Date Received: 1/5/2024
 Client Sample ID:
 Comments:

Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
26.5	100.0	0.0441	69.0
22.4	100.0	0.0326	53.7
19	100.0	0.0217	39.4
16	100.0	0.0130	27.0
13.2	100.0	0.0094	20.6
12.5	100.0	0.0067	15.9
9.5	100.0	0.0033	10.8
6.7	100.0	0.0014	5.7
4.75	100.0		
2	100.0		
0.85	97.1		
0.425	94.5		
0.25	93.0		
0.18	92.2		
0.15	91.4		
0.075	87.3		
0.053	82.6		

UNIFIED SOIL CLASSIFICATION SYSTEM

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Project Manager: Kevin Leung

Approved By: Original Signed By
Arcadio Petrola, Lab Supervisor

Date Approved: 18-Jan-24



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Grain Size Analysis & Hydrometer Test Report

ST08

Sample Test No.: 438707-2

Report No.: 3

Date Reported: 22-Jan-24

Project No.: gtr-00257769-h0 c300

Project Name: Supplemental Geotechnical Investigation (Lab Testing and Reporting)

Grain Size Proportion (%)

Gravel (> 4.75mm): **3.6**
Sand (> 75µm, < 4.75mm): **50.8**
Silt (> 2µm, < 75µm): **42.6**
Clay (< 2µm): **3.0**
Total: **100.0**

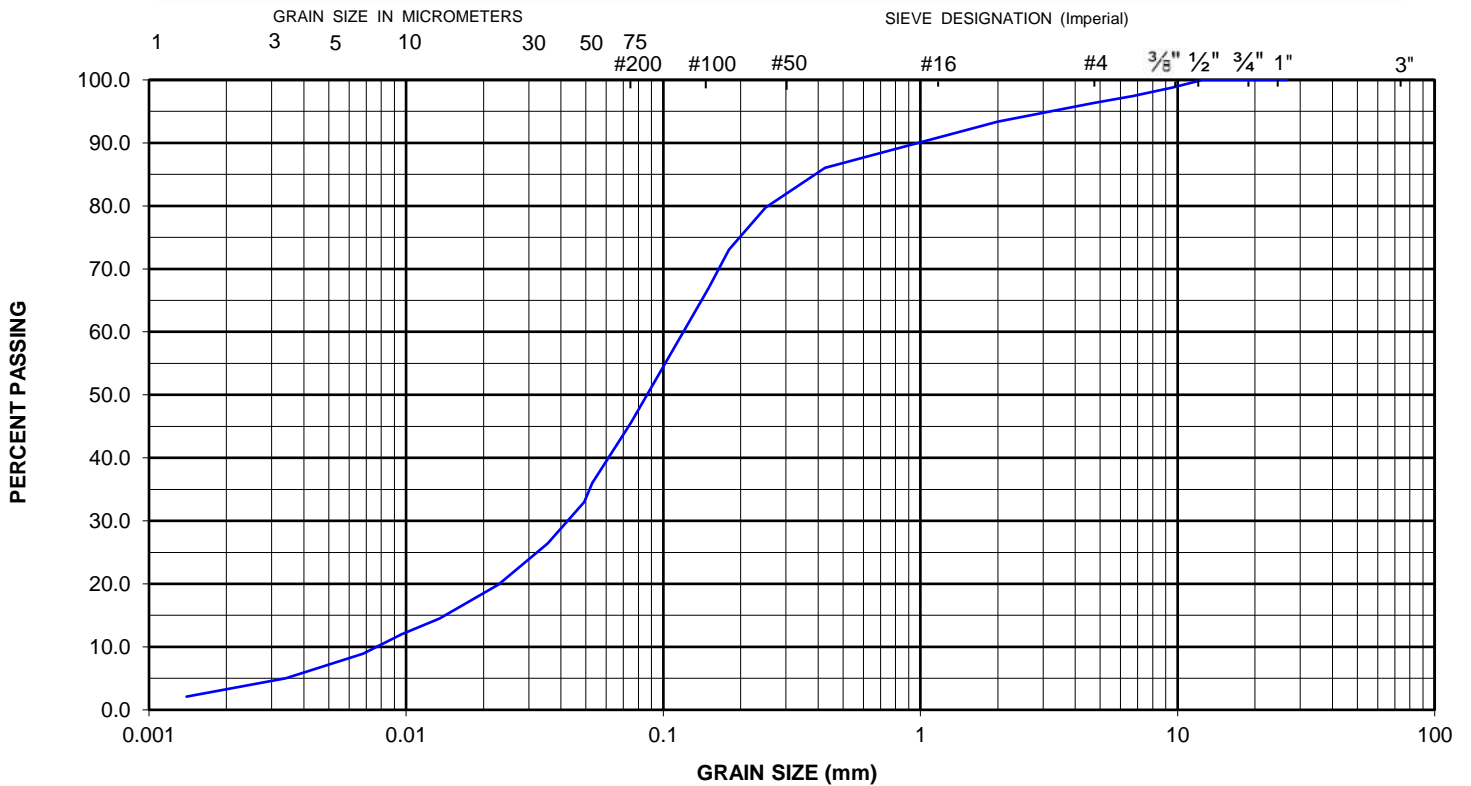
Sample Information

Location: BH 205
Sample Method: SS
Sample No.: 8
Depth: 7.6 - 8.0 m
Sample Description: Sand and Silt, trace Gravel and Clay; Brown
Sampled By: D. P.
Sampling Date: 1/12/2024
Date Received: 1/12/2024
Client Sample ID:
Comments:

Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
26.5	100.0	0.0492	33.0
22.4	100.0	0.0355	26.4
19	100.0	0.0229	19.9
16	100.0	0.0135	14.5
13.2	100.0	0.0096	12.0
12.5	100.0	0.0068	8.9
9.5	98.8	0.0034	5.0
6.7	97.4	0.0014	2.1
4.75	96.4		
2	93.4		
0.85	89.3		
0.425	86.1		
0.25	79.7		
0.18	73.1		
0.15	66.9		
0.075	45.6		
0.053	36.0		

UNIFIED SOIL CLASSIFICATION SYSTEM

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Project Manager: Kevin Leung

Approved By: Original Signed By
Arcadio Petrola, Lab Supervisor

Date Approved: 22-Jan-24



exp Services Inc.
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Ontario, Canada, L6T 4V1
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Grain Size Analysis & Hydrometer Test Report

ST08

Sample Test No.: 438693-2

Report No.: 4

Date Reported: 22-Jan-24

Project No.: gtr-00257769-h0 c300

Project Name: Supplemental Geotechnical Investigation (Lab Testing and Reporting)

Grain Size Proportion (%)

Gravel (> 4.75mm):
Sand (> 75µm, < 4.75mm): **2.4**
Silt (> 2µm), < 75µm): **73.1**
Clay (< 2µm): **24.5**
Total: **100.0**

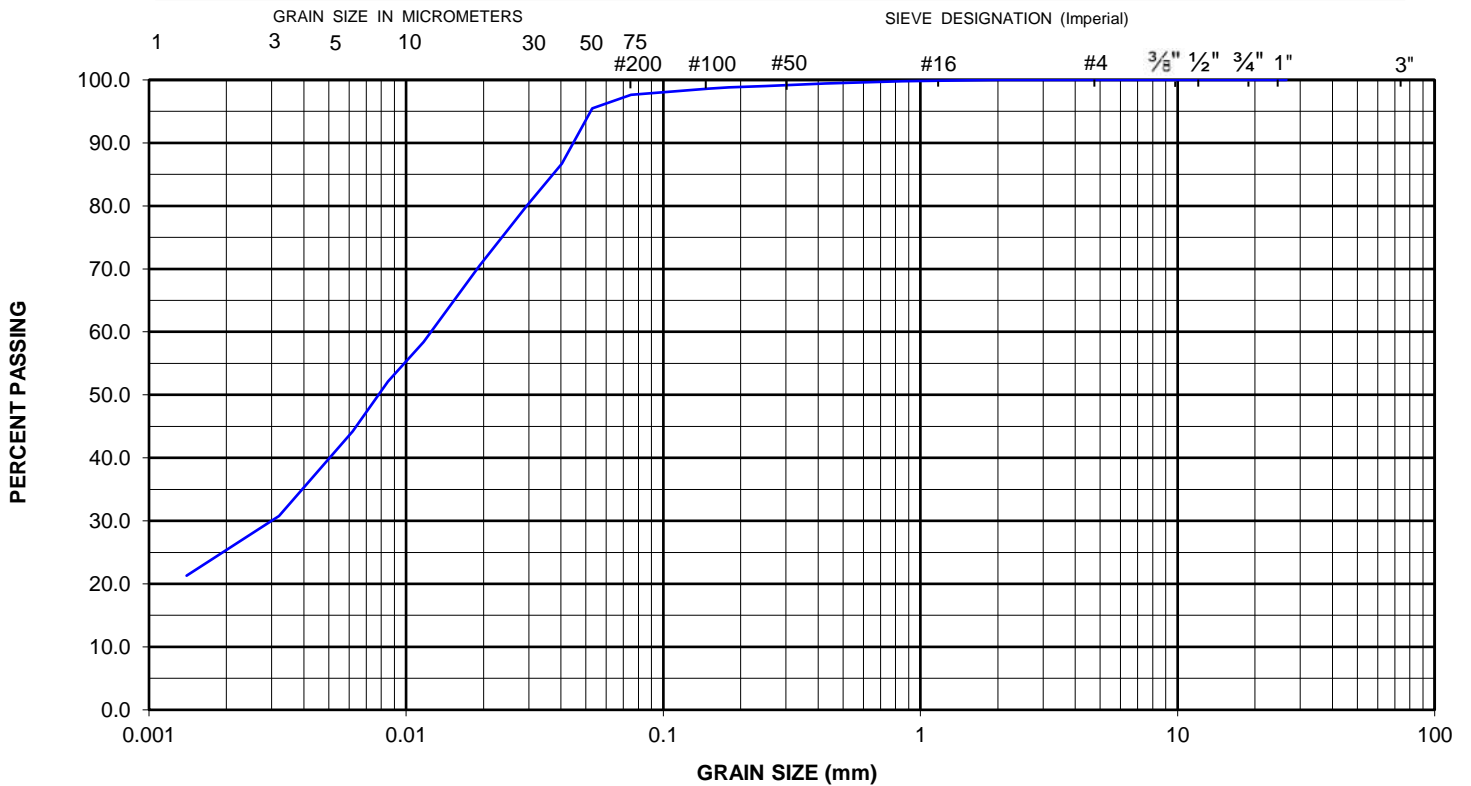
Sample Information

Location: BH 211
Sample Method: SS
Sample No.: 2
Depth: 0.8 - 1.4 m
Sample Description: Clayey Silt, trace Sand; Reddish Brown
Sampled By: D. P.
Sampling Date: 1/10/2024
Date Received: 1/12/2024
Client Sample ID:
Comments:

Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
26.5	100.0	0.0403	86.7
22.4	100.0	0.0294	80.0
19	100.0	0.0193	70.5
16	100.0	0.0117	58.4
13.2	100.0	0.0085	52.1
12.5	100.0	0.0062	44.2
9.5	100.0	0.0032	30.8
6.7	100.0	0.0014	21.3
4.75	100.0		
2	100.0		
0.85	99.8		
0.425	99.4		
0.25	99.0		
0.18	98.8		
0.15	98.6		
0.075	97.6		
0.053	95.5		

UNIFIED SOIL CLASSIFICATION SYSTEM

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Project Manager: Kevin Leung

Approved By: Original Signed By
Arcadio Petrola, Lab Supervisor

Date Approved: 22-Jan-24



exp Services Inc.
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Ontario, Canada, L6T 4V1
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Grain Size Analysis & Hydrometer Test Report

ST08

Sample Test No.: 438678-2

Report No.: 5

Date Reported: 22-Jan-24

Project No.: gtr-00257769-h0 c300

Project Name: Supplemental Geotechnical Investigation (Lab Testing and Reporting)

Grain Size Proportion (%)

Gravel (> 4.75mm):

Sand (> 75µm, < 4.75mm): **4.8**

Silt (> 2µm, < 75µm): **68.0**

Clay (< 2µm): **27.2**

Total: **100.0**

Sample Information

Location: BH 207

Sample Method: SS

Sample No.: 3

Depth: 1.5 - 2.1 m

Sample Description: Clayey Silt, trace Sand; Reddish Brown

Sampled By: D. P.

Sampling Date: 1/8/2024

Date Received: 1/12/2024

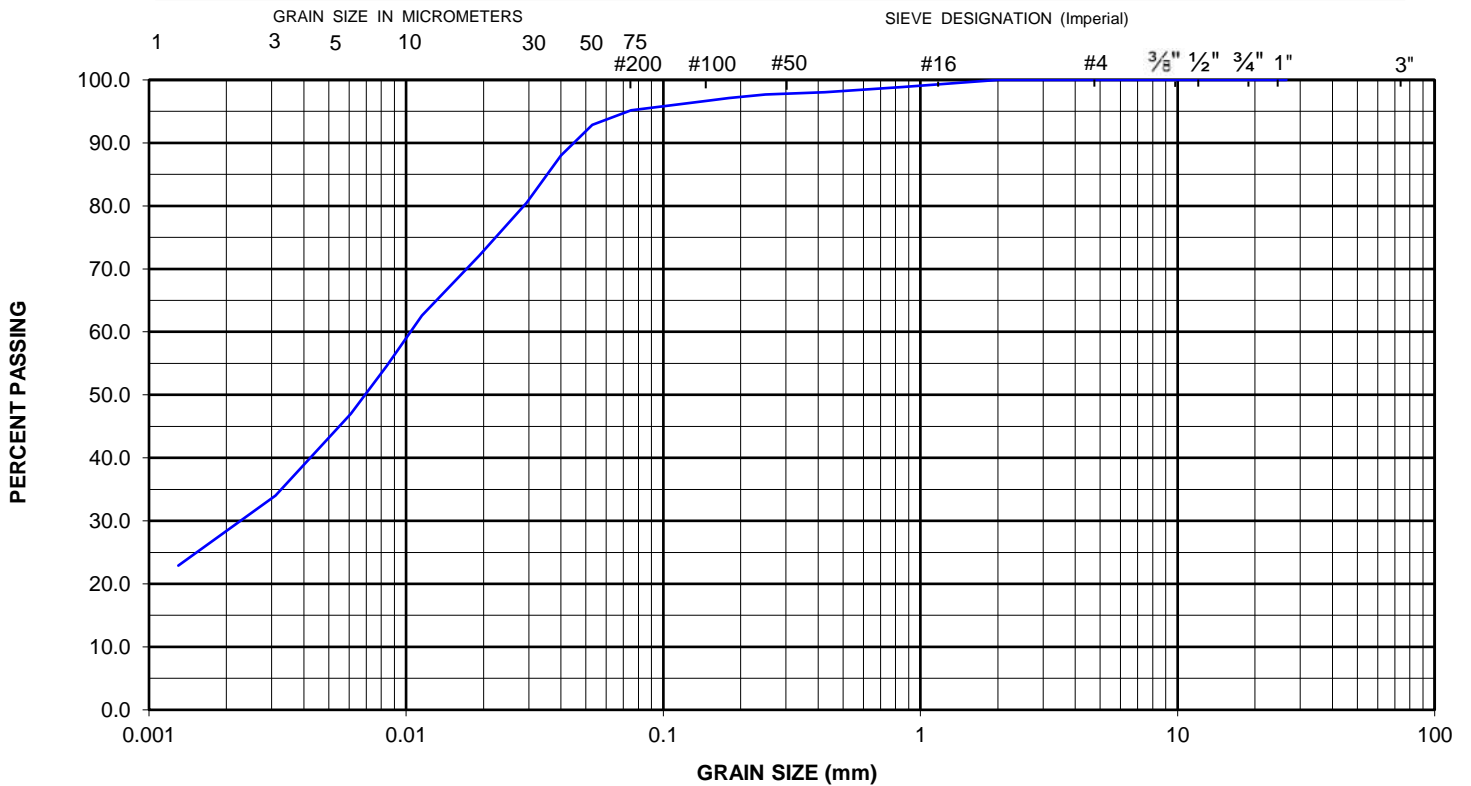
Client Sample ID:

Comments:

Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
26.5	100.0	0.0400	88.0
22.4	100.0	0.0294	80.5
19	100.0	0.0192	72.1
16	100.0	0.0115	62.6
13.2	100.0	0.0084	54.6
12.5	100.0	0.0061	47.0
9.5	100.0	0.0031	34.0
6.7	100.0	0.0013	22.9
4.75	100.0		
2	100.0		
0.85	98.8		
0.425	98.1		
0.25	97.7		
0.18	97.1		
0.15	96.7		
0.075	95.2		
0.053	92.9		

UNIFIED SOIL CLASSIFICATION SYSTEM

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Project Manager: Kevin Leung

Approved By: Original Signed By
Arcadio Petrola, Lab Supervisor

Date Approved: 22-Jan-24



exp Services Inc.
1595 Clark Boulevard, Brampton
Ontario, Canada, L6T 4V1
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Grain Size Analysis & Hydrometer Test Report

ST08

Sample Test No.: 438704-2

Report No.: 6

Date Reported: 22-Jan-24

Project No.: gtr-00257769-h0 c300

Project Name: Supplemental Geotechnical Investigation (Lab Testing and Reporting)

Grain Size Proportion (%)

Gravel (> 4.75mm): **0.7**
Sand (> 75µm, < 4.75mm): **11.8**
Silt (> 2µm, < 75µm): **79.9**
Clay (< 2µm): **7.6**
Total: **100.0**

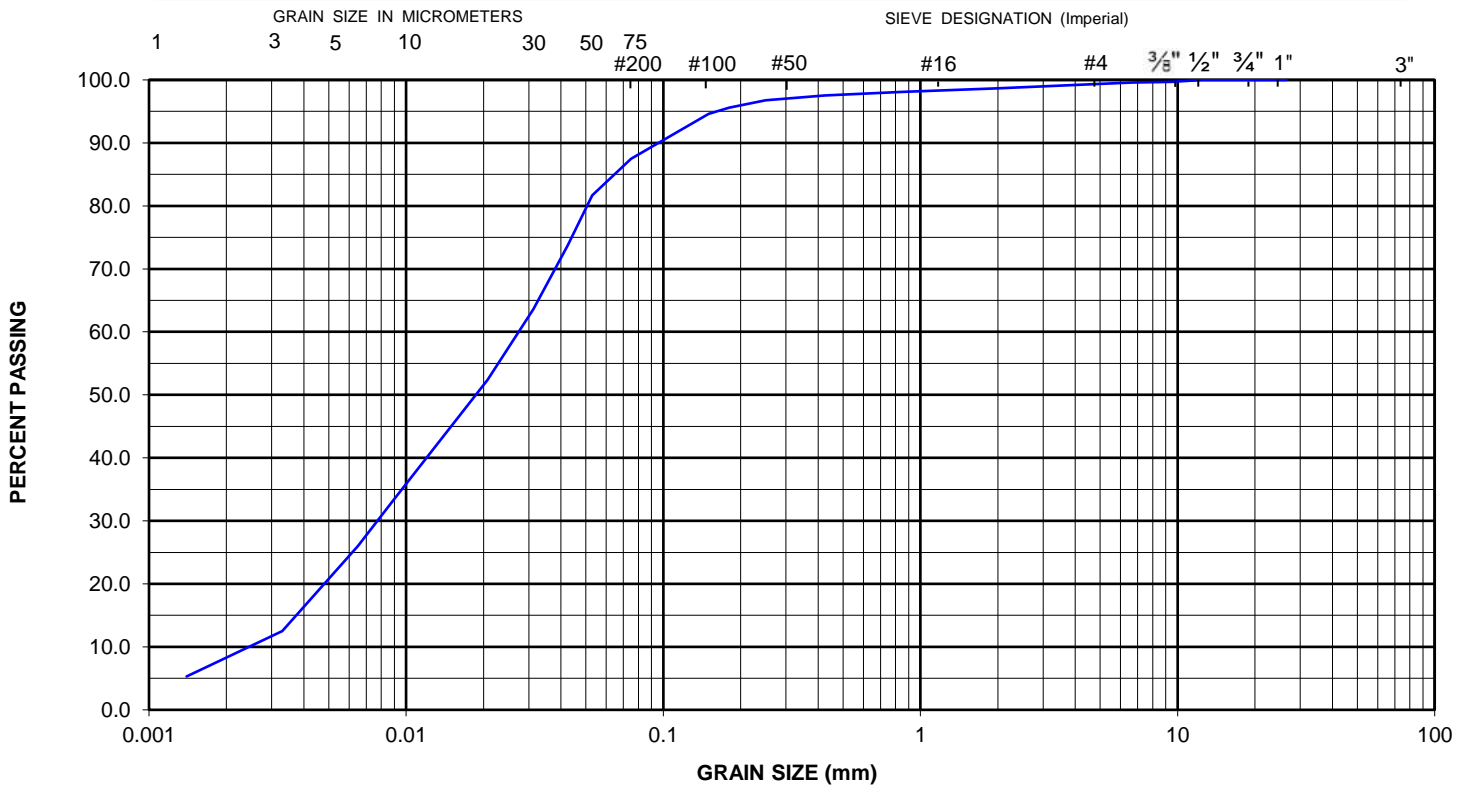
Sample Information

Location: BH 205
Sample Method: SS
Sample No.: 5
Depth: 3.1 - 3.7 m
Sample Description: Silt, some Sand, trace Clay and Gravel; Brown
Sampled By: D. P.
Sampling Date: 1/12/2024
Date Received: 1/12/2024
Client Sample ID:
Comments:

Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
26.5	100.0	0.0425	73.7
22.4	100.0	0.0313	63.6
19	100.0	0.0207	52.4
16	100.0	0.0124	40.8
13.2	100.0	0.0090	33.5
12.5	100.0	0.0065	26.0
9.5	99.7	0.0033	12.5
6.7	99.6	0.0014	5.3
4.75	99.3		
2	98.7		
0.85	98.1		
0.425	97.5		
0.25	96.8		
0.18	95.6		
0.15	94.6		
0.075	87.5		
0.053	81.7		

UNIFIED SOIL CLASSIFICATION SYSTEM

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Project Manager: Kevin Leung

Approved By: Original Signed By
Arcadio Petrola, Lab Supervisor

Date Approved: 22-Jan-24



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Grain Size Analysis & Hydrometer Test Report

ST08

Sample Test No.: 439055-2

Report No.: 7

Date Reported: 26-Jan-24

Project No.: gtr-00257769-h0 c300

Project Name: Supplemental Geotechnical Investigation (Lab Testing and Reporting)

Grain Size Proportion (%)

Gravel (> 4.75mm):

Sand (> 75µm, < 4.75mm): **3.7**

Silt (> 2µm, < 75µm): **83.8**

Clay (< 2µm): **12.5**

Total: **100.0**

Sample Information

Location: BH 203

Sample Method: SS

Sample No.: 2

Depth: 0.8 - 1.4 m

Sample Description: Silt, some Clay, trace Sand; Reddish Brown

Sampled By: D. P.

Sampling Date: 1/17/2024

Date Received: 1/17/2024

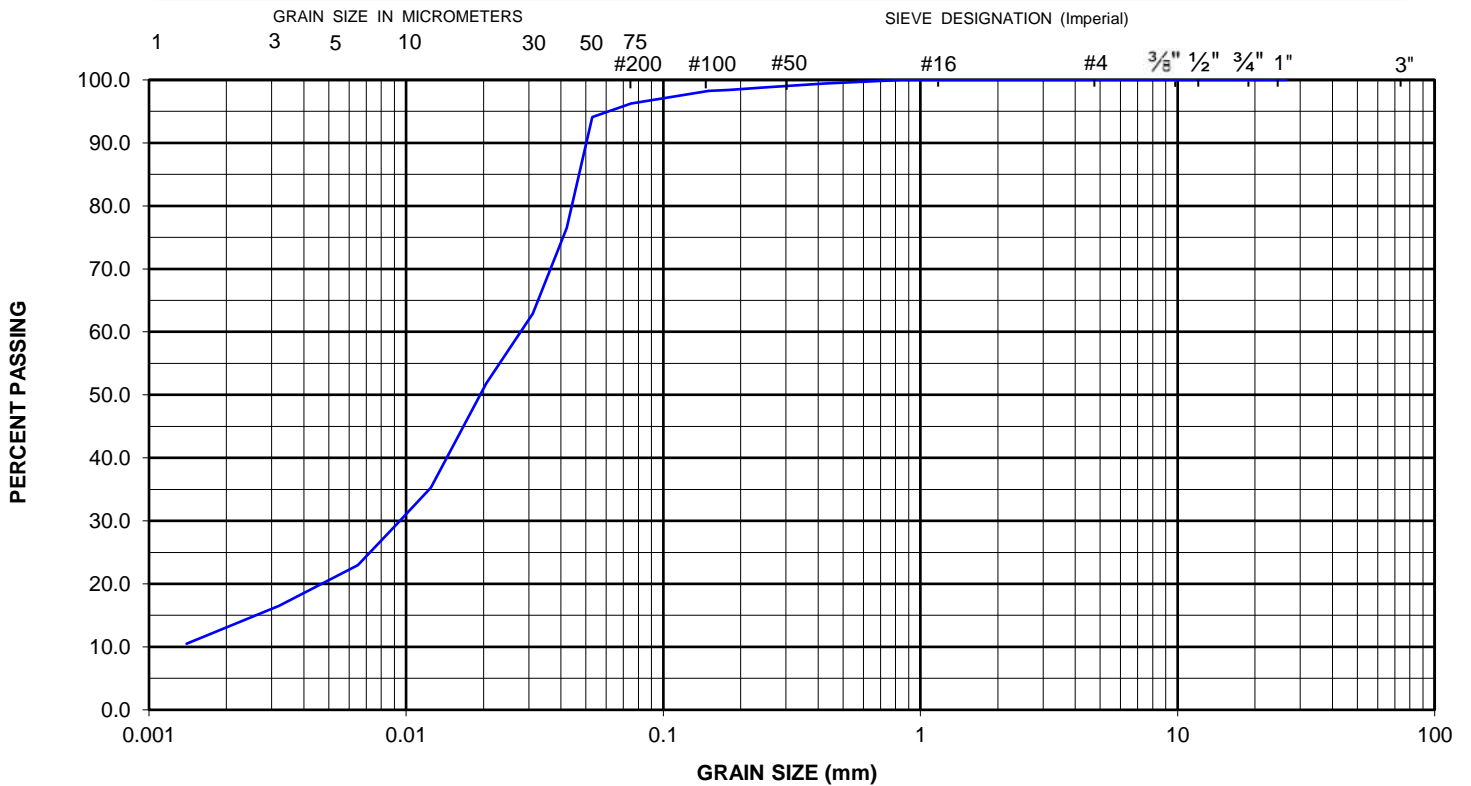
Client Sample ID:

Comments:

Grain Size (mm)	% Passing	Grain Size (mm)	% Passing
26.5	100.0	0.0421	76.5
22.4	100.0	0.0311	62.9
19	100.0	0.0205	51.8
16	100.0	0.0125	35.3
13.2	100.0	0.0090	29.1
12.5	100.0	0.0065	23.0
9.5	100.0	0.0032	16.5
6.7	100.0	0.0014	10.5
4.75	100.0		
2	100.0		
0.85	100.0		
0.425	99.4		
0.25	98.8		
0.18	98.4		
0.15	98.2		
0.075	96.3		
0.053	94.1		

UNIFIED SOIL CLASSIFICATION SYSTEM

CLAY AND SILT	SAND			GRAVEL	
	Fine	Medium	Coarse	Fine	Coarse



Project Manager: Kevin Leung

Approved By: Original Signed By

Date Approved: 26-Jan-24

Arcadio Petrola, Lab Supervisor

Appendix B

Certificate of Analysis

**CLIENT NAME: EXP SERVICES INC
1595 CLARK BLVD.
BRAMPTON, ON L6T4V1
(905) 793-9800**

**ATTENTION TO: Alessandro Girardo
PROJECT: GTR-00257769-H0**

AGAT WORK ORDER: 24T116256

**SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganic Team Lead
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist**

DATE REPORTED: Feb 09, 2024

PAGES (INCLUDING COVER): 13

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

***Notes**

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.
- For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.

Certificate of Analysis

AGAT WORK ORDER: 24T116256

PROJECT: GTR-00257769-H0

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: EXP SERVICES INC
SAMPLING SITE: 5100 Erin Mills

ATTENTION TO: Alessandro Girardo
SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2024-01-31

DATE REPORTED: 2024-02-09

Parameter	Unit	SAMPLE DESCRIPTION:		RDL	BH202-SS2	BH205-SS2	BH205-SS6	BH209-SS2	BH203-SS2	BH211-SS2
		SAMPLE TYPE:			Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:			2024-01-30	2024-01-30	2024-01-30	2024-01-30	2024-01-30	2024-01-30
		G / S: A	G / S: B		5614359	5614370	5614371	5614372	5614373	5614382
Antimony	µg/g	1.3	7.5	0.8	<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8[<A]
Arsenic	µg/g	18	18	1	6[<A]	3[<A]	2[<A]	5[<A]	5[<A]	5[<A]
Barium	µg/g	220	390	2.0	70.1[<A]	51.4[<A]	22.4[<A]	65.7[<A]	72.5[<A]	74.4[<A]
Beryllium	µg/g	2.5	4	0.5	0.8[<A]	<0.5[<A]	<0.5[<A]	0.8[<A]	0.7[<A]	0.7[<A]
Boron	µg/g	36	120	5	20[<A]	8[<A]	<5[<A]	14[<A]	18[<A]	17[<A]
Boron (Hot Water Soluble)	µg/g	NA	1.5	0.10	0.21[<B]	0.16[<B]	<0.10[<B]	0.11[<B]	0.18[<B]	0.11[<B]
Cadmium	µg/g	1.2	1.2	0.5	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]
Chromium	µg/g	70	160	5	26[<A]	18[<A]	8[<A]	24[<A]	26[<A]	24[<A]
Cobalt	µg/g	21	22	0.8	14.4[<A]	7.3[<A]	3.3[<A]	15.4[<A]	14.9[<A]	14.3[<A]
Copper	µg/g	92	140	1.0	7.6[<A]	14.1[<A]	7.3[<A]	9.7[<A]	8.0[<A]	8.8[<A]
Lead	µg/g	120	120	1	9[<A]	5[<A]	2[<A]	9[<A]	10[<A]	9[<A]
Molybdenum	µg/g	2	6.9	0.5	1.2[<A]	0.5[<A]	<0.5[<A]	1.1[<A]	1.1[<A]	0.7[<A]
Nickel	µg/g	82	100	1	31[<A]	16[<A]	6[<A]	32[<A]	31[<A]	30[<A]
Selenium	µg/g	1.5	2.4	0.8	<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8[<A]	<0.8[<A]
Silver	µg/g	0.5	20	0.5	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]
Thallium	µg/g	1	1	0.5	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]	<0.5[<A]
Uranium	µg/g	2.5	23	0.50	0.64[<A]	0.60[<A]	<0.50[<A]	0.64[<A]	0.61[<A]	0.81[<A]
Vanadium	µg/g	86	86	2.0	31.7[<A]	27.7[<A]	16.9[<A]	31.8[<A]	32.5[<A]	40.8[<A]
Zinc	µg/g	290	340	5	65[<A]	37[<A]	19[<A]	67[<A]	71[<A]	61[<A]
Chromium, Hexavalent	µg/g	0.66	8	0.2	<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]	<0.2[<A]
Cyanide, WAD	µg/g	0.051	0.051	0.040	<0.040[<A]	<0.040[<A]	<0.040[<A]	<0.040[<A]	<0.040[<A]	<0.040[<A]
Mercury	µg/g	0.27	0.27	0.10	<0.10[<A]	<0.10[<A]	<0.10[<A]	<0.10[<A]	<0.10[<A]	<0.10[<A]
Electrical Conductivity (2:1)	mS/cm	0.57	0.7	0.005	0.282[<A]	1.04[>B]	1.10[>B]	0.697[A-B]	0.486[<A]	0.141[<A]
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	5	N/A	3.08[A-B]	7.94[>B]	12.8[>B]	12.3[>B]	5.96[>B]	2.08[<A]
pH, 2:1 CaCl2 Extraction	pH Units			NA	7.45	8.10	7.50	7.43	7.40	7.15

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 24T116256

PROJECT: GTR-00257769-H0

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: EXP SERVICES INC

SAMPLING SITE: 5100 Erin Mills

ATTENTION TO: Alessandro Girardo

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2024-01-31

DATE REPORTED: 2024-02-09

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: A Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, B Refers to O. Reg. 406/19 TABLE 2.1: Full Depth Potable Ground Water Condition Volume Independent - RP
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

5614359-5614382 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl₂ extract prepared at 2:1 ratio. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Mylene Basly

Certificate of Analysis

AGAT WORK ORDER: 24T116256

PROJECT: GTR-00257769-H0

5835 COOPERS AVENUE
 MISSISSAUGA, ONTARIO
 CANADA L4Z 1Y2
 TEL (905)712-5100
 FAX (905)712-5122
<http://www.agatlabs.com>

CLIENT NAME: EXP SERVICES INC

SAMPLING SITE: 5100 Erin Mills

ATTENTION TO: Alessandro Girardo

SAMPLED BY:

Sulphate

DATE RECEIVED: 2024-01-31

DATE REPORTED: 2024-02-09

Parameter	Unit	SAMPLE DESCRIPTION:		DATE SAMPLED:	
		G / S	RDL	G / S	RDL
		BH202-SS2	BH205-SS6	2024-01-30	2024-01-30
		Soil	Soil	5614359	5614371
Sulphate (2:1)	µg/g	2	13	49	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

5614359-5614371 Sulphate was determined on the extract obtained from the 2:1 leaching procedure (2 parts DI water: 1 part soil).

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Mylene Basly



Exceedance Summary

AGAT WORK ORDER: 24T116256

PROJECT: GTR-00257769-H0

5835 COOPERS AVENUE
 MISSISSAUGA, ONTARIO
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<http://www.agatlabs.com>

CLIENT NAME: EXP SERVICES INC

ATTENTION TO: Alessandro Girardo

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
5614359	BH202-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	3.08
5614370	BH205-SS2	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	1.04
5614370	BH205-SS2	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	7.94
5614370	BH205-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	1.04
5614370	BH205-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	7.94
5614371	BH205-SS6	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.7	1.10
5614371	BH205-SS6	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	12.8
5614371	BH205-SS6	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	1.10
5614371	BH205-SS6	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	12.8
5614372	BH209-SS2	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	12.3
5614372	BH209-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Electrical Conductivity (2:1)	mS/cm	0.57	0.697
5614372	BH209-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	12.3
5614373	BH203-SS2	ON 406/19 T2.1 RP	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	5	5.96
5614373	BH203-SS2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	5.96

Quality Assurance

CLIENT NAME: EXP SERVICES INC
PROJECT: GTR-00257769-H0
SAMPLING SITE: 5100 Erin Mills

AGAT WORK ORDER: 24T116256
ATTENTION TO: Alessandro Girardo
SAMPLED BY:

Soil Analysis															
RPT Date: Feb 09, 2024			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

O. Reg. 153(511) - Metals & Inorganics (Soil)

Antimony	5615305		<0.8	<0.8	NA	< 0.8	105%	70%	130%	104%	80%	120%	96%	70%	130%
Arsenic	5615305		4	4	NA	< 1	124%	70%	130%	101%	80%	120%	100%	70%	130%
Barium	5615305		133	138	3.7%	< 2.0	106%	70%	130%	102%	80%	120%	113%	70%	130%
Beryllium	5615305		1.0	0.9	NA	< 0.5	106%	70%	130%	117%	80%	120%	93%	70%	130%
Boron	5615305		7	9	NA	< 5	86%	70%	130%	107%	80%	120%	85%	70%	130%
Boron (Hot Water Soluble)	5614359	5614359	0.21	0.21	NA	< 0.10	101%	60%	140%	105%	70%	130%	95%	60%	140%
Cadmium	5615305		<0.5	<0.5	NA	< 0.5	114%	70%	130%	100%	80%	120%	101%	70%	130%
Chromium	5615305		34	35	2.9%	< 5	100%	70%	130%	99%	80%	120%	99%	70%	130%
Cobalt	5615305		12.4	12.7	2.4%	< 0.8	111%	70%	130%	103%	80%	120%	101%	70%	130%
Copper	5615305		17.9	18.7	4.4%	< 1.0	99%	70%	130%	99%	80%	120%	93%	70%	130%
Lead	5615305		15	15	0.0%	< 1	116%	70%	130%	93%	80%	120%	87%	70%	130%
Molybdenum	5615305		<0.5	<0.5	NA	< 0.5	119%	70%	130%	105%	80%	120%	107%	70%	130%
Nickel	5615305		23	24	4.3%	< 1	114%	70%	130%	105%	80%	120%	104%	70%	130%
Selenium	5615305		<0.8	<0.8	NA	< 0.8	121%	70%	130%	102%	80%	120%	101%	70%	130%
Silver	5615305		<0.5	<0.5	NA	< 0.5	105%	70%	130%	101%	80%	120%	97%	70%	130%
Thallium	5615305		<0.5	<0.5	NA	< 0.5	104%	70%	130%	97%	80%	120%	90%	70%	130%
Uranium	5615305		0.87	0.83	NA	< 0.50	124%	70%	130%	108%	80%	120%	108%	70%	130%
Vanadium	5615305		50.1	49.9	0.4%	< 2.0	109%	70%	130%	107%	80%	120%	99%	70%	130%
Zinc	5615305		75	78	3.9%	< 5	108%	70%	130%	102%	80%	120%	100%	70%	130%
Chromium, Hexavalent	5620358		<0.2	<0.2	NA	< 0.2	104%	70%	130%	87%	80%	120%	73%	70%	130%
Cyanide, WAD	5615066		<0.040	<0.040	NA	< 0.040	107%	70%	130%	101%	80%	120%	92%	70%	130%
Mercury	5615305		<0.10	<0.10	NA	< 0.10	120%	70%	130%	102%	80%	120%	108%	70%	130%
Electrical Conductivity (2:1)	5614359	5614359	0.282	0.345	20.1%	< 0.005	89%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	5614359	5614359	3.08	3.34	8.1%	NA									
pH, 2:1 CaCl2 Extraction	5615975		6.32	6.60	4.3%	NA	102%	80%	120%						

Comments: NA signifies Not Applicable.
 pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
 Duplicate NA: results are under 5X the RDL and will not be calculated.

Sulphate

Sulphate (2:1)	5615730		72	72	0.0%	< 2	103%	70%	130%	92%	80%	120%	94%	70%	130%
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Certified By:



Quality Assurance

CLIENT NAME: EXP SERVICES INC
PROJECT: GTR-00257769-H0
SAMPLING SITE: 5100 Erin Mills

AGAT WORK ORDER: 24T116256
ATTENTION TO: Alessandro Girardo
SAMPLED BY:

Trace Organics Analysis

RPT Date: Feb 09, 2024			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

O. Reg. 153(511) - PAHs (Soil)

Naphthalene	5620834	<0.05	<0.05	NA	< 0.05	71%	50%	140%	85%	50%	140%	73%	50%	140%
Acenaphthylene	5620834	<0.05	<0.05	NA	< 0.05	67%	50%	140%	103%	50%	140%	95%	50%	140%
Acenaphthene	5620834	<0.05	<0.05	NA	< 0.05	95%	50%	140%	100%	50%	140%	83%	50%	140%
Fluorene	5620834	<0.05	<0.05	NA	< 0.05	107%	50%	140%	105%	50%	140%	88%	50%	140%
Phenanthrene	5620834	<0.05	<0.05	NA	< 0.05	83%	50%	140%	75%	50%	140%	93%	50%	140%
Anthracene	5620834	<0.05	<0.05	NA	< 0.05	113%	50%	140%	95%	50%	140%	80%	50%	140%
Fluoranthene	5620834	<0.05	<0.05	NA	< 0.05	108%	50%	140%	88%	50%	140%	75%	50%	140%
Pyrene	5620834	<0.05	<0.05	NA	< 0.05	90%	50%	140%	73%	50%	140%	98%	50%	140%
Benz(a)anthracene	5620834	<0.05	<0.05	NA	< 0.05	113%	50%	140%	73%	50%	140%	78%	50%	140%
Chrysene	5620834	<0.05	<0.05	NA	< 0.05	74%	50%	140%	80%	50%	140%	100%	50%	140%
Benzo(b)fluoranthene	5620834	<0.05	<0.05	NA	< 0.05	106%	50%	140%	85%	50%	140%	73%	50%	140%
Benzo(k)fluoranthene	5620834	<0.05	<0.05	NA	< 0.05	95%	50%	140%	108%	50%	140%	80%	50%	140%
Benzo(a)pyrene	5620834	<0.05	<0.05	NA	< 0.05	83%	50%	140%	100%	50%	140%	75%	50%	140%
Indeno(1,2,3-cd)pyrene	5620834	<0.05	<0.05	NA	< 0.05	101%	50%	140%	95%	50%	140%	80%	50%	140%
Dibenz(a,h)anthracene	5620834	<0.05	<0.05	NA	< 0.05	97%	50%	140%	100%	50%	140%	108%	50%	140%
Benzo(g,h,i)perylene	5620834	<0.05	<0.05	NA	< 0.05	98%	50%	140%	95%	50%	140%	100%	50%	140%

O. Reg. 153(511) - PHCs F1 - F4 (with VOC) (Soil)

F1 (C6 to C10)	5613514	<5	<5	NA	< 5	86%	60%	140%	105%	60%	140%	102%	60%	140%
F2 (C10 to C16)	5614495	< 10	< 10	NA	< 10	115%	60%	140%	110%	60%	140%	110%	60%	140%
F3 (C16 to C34)	5614495	< 50	< 50	NA	< 50	112%	60%	140%	118%	60%	140%	120%	60%	140%
F4 (C34 to C50)	5614495	< 50	< 50	NA	< 50	72%	60%	140%	83%	60%	140%	81%	60%	140%

O. Reg. 153(511) - VOCs (with PHC) (Soil)

Dichlorodifluoromethane	5613514	<0.05	<0.05	NA	< 0.05	108%	50%	140%	102%	50%	140%	85%	50%	140%
Vinyl Chloride	5613514	<0.02	<0.02	NA	< 0.02	95%	50%	140%	103%	50%	140%	113%	50%	140%
Bromomethane	5613514	<0.05	<0.05	NA	< 0.05	97%	50%	140%	97%	50%	140%	90%	50%	140%
Trichlorofluoromethane	5613514	<0.05	<0.05	NA	< 0.05	103%	50%	140%	91%	50%	140%	110%	50%	140%
Acetone	5613514	<0.50	<0.50	NA	< 0.50	94%	50%	140%	105%	50%	140%	112%	50%	140%
1,1-Dichloroethylene	5613514	<0.05	<0.05	NA	< 0.05	100%	50%	140%	86%	60%	130%	86%	50%	140%
Methylene Chloride	5613514	<0.05	<0.05	NA	< 0.05	108%	50%	140%	96%	60%	130%	94%	50%	140%
Trans- 1,2-Dichloroethylene	5613514	<0.05	<0.05	NA	< 0.05	82%	50%	140%	90%	60%	130%	85%	50%	140%
Methyl tert-butyl Ether	5613514	<0.05	<0.05	NA	< 0.05	69%	50%	140%	97%	60%	130%	72%	50%	140%
1,1-Dichloroethane	5613514	<0.02	<0.02	NA	< 0.02	102%	50%	140%	93%	60%	130%	93%	50%	140%
Methyl Ethyl Ketone	5613514	<0.50	<0.50	NA	< 0.50	105%	50%	140%	94%	50%	140%	110%	50%	140%
Cis- 1,2-Dichloroethylene	5613514	<0.02	<0.02	NA	< 0.02	66%	50%	140%	77%	60%	130%	66%	50%	140%
Chloroform	5613514	<0.04	<0.04	NA	< 0.04	84%	50%	140%	75%	60%	130%	106%	50%	140%
1,2-Dichloroethane	5613514	<0.03	<0.03	NA	< 0.03	78%	50%	140%	67%	60%	130%	97%	50%	140%
1,1,1-Trichloroethane	5613514	<0.05	<0.05	NA	< 0.05	87%	50%	140%	60%	60%	130%	88%	50%	140%
Carbon Tetrachloride	5613514	<0.05	<0.05	NA	< 0.05	101%	50%	140%	88%	60%	130%	81%	50%	140%

Quality Assurance

CLIENT NAME: EXP SERVICES INC
PROJECT: GTR-00257769-H0
SAMPLING SITE: 5100 Erin Mills

AGAT WORK ORDER: 24T116256
ATTENTION TO: Alessandro Girardo
SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Feb 09, 2024			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Benzene	5613514		<0.02	<0.02	NA	< 0.02	67%	50%	140%	109%	60%	130%	91%	50%	140%
1,2-Dichloropropane	5613514		<0.03	<0.03	NA	< 0.03	70%	50%	140%	102%	60%	130%	87%	50%	140%
Trichloroethylene	5613514		<0.03	<0.03	NA	< 0.03	82%	50%	140%	100%	60%	130%	98%	50%	140%
Bromodichloromethane	5613514		<0.05	<0.05	NA	< 0.05	88%	50%	140%	86%	60%	130%	93%	50%	140%
Methyl Isobutyl Ketone	5613514		<0.50	<0.50	NA	< 0.50	99%	50%	140%	95%	50%	140%	96%	50%	140%
1,1,2-Trichloroethane	5613514		<0.04	<0.04	NA	< 0.04	80%	50%	140%	90%	60%	130%	100%	50%	140%
Toluene	5613514		<0.05	<0.05	NA	< 0.05	111%	50%	140%	101%	60%	130%	105%	50%	140%
Dibromochloromethane	5613514		<0.05	<0.05	NA	< 0.05	89%	50%	140%	94%	60%	130%	93%	50%	140%
Ethylene Dibromide	5613514		<0.04	<0.04	NA	< 0.04	84%	50%	140%	102%	60%	130%	74%	50%	140%
Tetrachloroethylene	5613514		< 0.05	< 0.05	NA	< 0.05	89%	50%	140%	90%	60%	130%	93%	50%	140%
1,1,1,2-Tetrachloroethane	5613514		<0.04	<0.04	NA	< 0.04	84%	50%	140%	97%	60%	130%	103%	50%	140%
Chlorobenzene	5613514		<0.05	<0.05	NA	< 0.05	76%	50%	140%	104%	60%	130%	81%	50%	140%
Ethylbenzene	5613514		<0.05	<0.05	NA	< 0.05	83%	50%	140%	96%	60%	130%	82%	50%	140%
m & p-Xylene	5613514		<0.05	<0.05	NA	< 0.05	106%	50%	140%	108%	60%	130%	106%	50%	140%
Bromoform	5613514		<0.05	<0.05	NA	< 0.05	92%	50%	140%	90%	60%	130%	85%	50%	140%
Styrene	5613514		<0.05	<0.05	NA	< 0.05	89%	50%	140%	79%	60%	130%	85%	50%	140%
1,1,2,2-Tetrachloroethane	5613514		<0.05	<0.05	NA	< 0.05	98%	50%	140%	94%	60%	130%	90%	50%	140%
o-Xylene	5613514		<0.05	<0.05	NA	< 0.05	99%	50%	140%	91%	60%	130%	104%	50%	140%
1,3-Dichlorobenzene	5613514		<0.05	<0.05	NA	< 0.05	89%	50%	140%	97%	60%	130%	87%	50%	140%
1,4-Dichlorobenzene	5613514		<0.05	<0.05	NA	< 0.05	90%	50%	140%	74%	60%	130%	83%	50%	140%
1,2-Dichlorobenzene	5613514		<0.05	<0.05	NA	< 0.05	83%	50%	140%	75%	60%	130%	103%	50%	140%
n-Hexane	1		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	85%	60%	130%	101%	50%	140%
4-Bromofluorobenzene	5613514		77	73	5.7%	< 1	NA			NA			106%		

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)

F1 (C6 to C10)	5613514	<5	<5	NA	< 5	86%	60%	140%	105%	60%	140%	102%	60%	140%
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O. Reg. 153(511) - PCBs (Soil)

Polychlorinated Biphenyls	5620362	< 0.1	< 0.1	NA	< 0.1	106%	50%	140%	91%	50%	140%	93%	50%	140%
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Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:



Method Summary

CLIENT NAME: EXP SERVICES INC
 PROJECT: GTR-00257769-H0
 SAMPLING SITE:5100 Erin Mills

AGAT WORK ORDER: 24T116256
 ATTENTION TO: Alessandro Girardo
 SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, WAD	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	SEGMENTED FLOW ANALYSIS
Mercury	MET-93-6103	modified from EPA 7471B and SM 3112 B	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE
Sulphate (2:1)	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH

Method Summary

CLIENT NAME: EXP SERVICES INC
AGAT WORK ORDER: 24T116256
PROJECT: GTR-00257769-H0
ATTENTION TO: Alessandro Girardo
SAMPLING SITE: 5100 Erin Mills
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Polychlorinated Biphenyls	ORG-91-5113	modified from EPA SW-846 3570 & 8082A	GC/ECD
Decachlorobiphenyl	ORG-91-5113	modified from EPA SW-846 3541 & 8082A	GC/ECD
F1 (C6 to C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID

Method Summary

CLIENT NAME: EXP SERVICES INC
PROJECT: GTR-00257769-H0
SAMPLING SITE: 5100 Erin Mills

AGAT WORK ORDER: 24T116256
ATTENTION TO: Alessandro Girardo
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS

Method Summary

CLIENT NAME: EXP SERVICES INC
PROJECT: GTR-00257769-H0
SAMPLING SITE: 5100 Erin Mills
AGAT WORK ORDER: 24T116256
ATTENTION TO: Alessandro Girardo
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035A and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5035A & EPA 8260D	(P&T)GC/MS

Have feedback?
Scan here for a quick survey!



5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Laboratory Use Only

Work Order #: 24T116256
Cooler Quantity: 1 large
Arrival Temperatures: 5.6 | 5.8 | 6.0
Custody Seal Intact: Yes No N/A
Notes: loose ice

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:
Company: EXP SERVICES INC
Contact: _____
Address: 1595 CLARK BLVD, BRAMPTON, ON
LGT 4V1
Phone: 905-793-9800 Fax: _____
Reports to be sent to:
1. Email: alessandro.girardo@exp.com
2. Email: _____

Regulatory Requirements:

(Please check all applicable boxes)

Regulation 153/04 Regulation 406 Sewer Use
 Ind/Corn Sanitary Storm
 Res/Park Agriculture Regulation 558 Prov. Water Quality Objectives (PWQO)
 CCME Other
 Soil Texture (Check One)
 Coarse Fine
 Indicate One

Is this submission for a Record of Site Condition?

Yes No

Report Guideline on Certificate of Analysis

Yes No

Project Information:
Project: GTR-00257769-H0
Site Location: 5100 ERIE MILLS
Sampled By: _____
AGAT Quote #: _____ PO: _____
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information: Bill To Same: Yes No
Company: EXP SERVICES INC
Contact: ACCOUNTS PAYABLE
Address: _____
Email: AP@EXP.COM, KAREN.BURKE@EXP.COM

Sample Matrix Legend

GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Y/N	Field Filtered - Metals, Hg, CrVI, DOC										Potentially Hazardous or High Concentration (Y/N)		
							Metals & Inorganics	Metals - CrVI, Hg, HWSB	BTEX, F1-FA PHCs	VOC	PAHs	PCBS	PCBs: Aroclors	O. Reg 558 Landfill Disposal Characterization TCLP: TCLP: <input type="checkbox"/> M&I <input type="checkbox"/> VOCs <input type="checkbox"/> ABNS <input type="checkbox"/> B(a)p <input type="checkbox"/> PCBs	O. Reg 406 Regulation 406 SPLP Rainwater Leach SPLP: <input type="checkbox"/> Metals <input type="checkbox"/> VOCs <input type="checkbox"/> SVOCs	Regulation 406 Characterization Package pH, ICPMS Metals, BTEX, F1-F4		Corrosivity: <input type="checkbox"/> Moisture <input type="checkbox"/> Sulphide	
1. BH202 - 552	01/30/24	AM	2	S	Limited Supply		✓												
2. BH202 - 553		PM	3																
3. BH205 - 551		AM	1																
4. BH205 - 552		PM	5		Limited Sample		✓												
5. BH205 - 556		AM					✓												
6. BH209 - 552		PM					✓												
7. BH203 - 552		AM	2		Limited Sample		✓												
8. BH203 - 553		PM	3				✓												
9. BH210 - 552		AM	3				✓												
10. BH211 - 552		PM	2		Limited Sample		✓												
11.		AM																	

Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:
			<u>JK</u>	<u>Jan 31</u>	<u>11:53p</u>
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:

No: **T-152429**

Pink Copy - Client | Yellow Copy - AGAT | White Copy - AGAT

Appendix C

EXP 2020 Borehole Logs

Log of Borehole BH 3

Project No. BRM-00257769-A1

Drawing No. 4

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 5100 Erin Mills Parkway

Erin Mills Town Centre

Date Drilled: March 4, 2020

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Solid Stem Auger

Dynamic Cone Test

Plastic and Liquid Limit

Datum: Geodetic

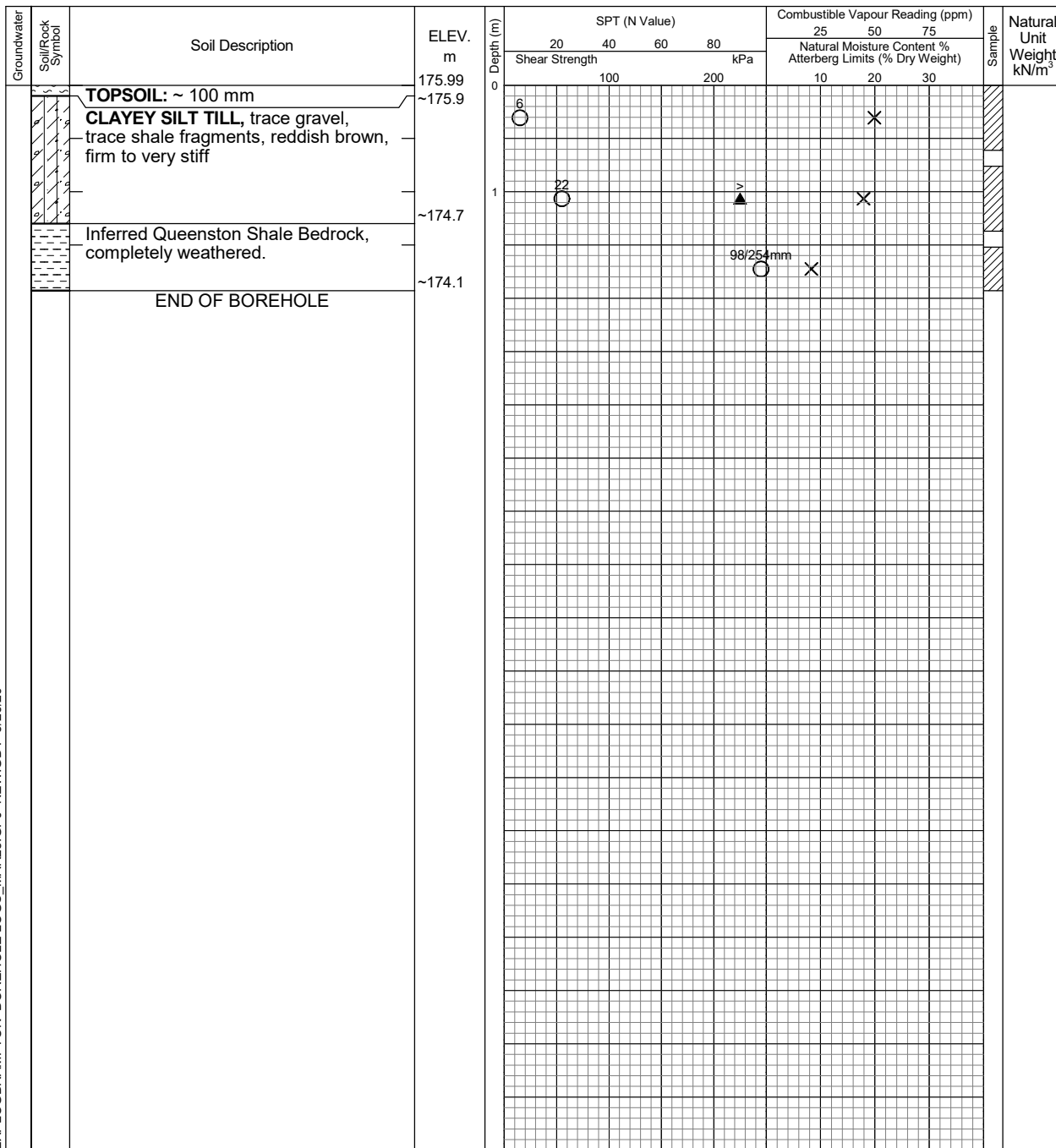
Shelby Tube

Undrained Triaxial at

Field Vane Test

% Strain at Failure

Penetrometer



EXPLOGBRAMPTON BOREHOLE LOGS_MAR25.GPJ_NEW.GDT 3/26/20

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	Open



Log of Borehole BH 4

Project No. BRM-00257769-A1

Drawing No. 5

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 5100 Erin Mills Parkway

Erin Mills Town Centre

Date Drilled: March 4, 2020

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Solid Stem Auger

Dynamic Cone Test

Plastic and Liquid Limit

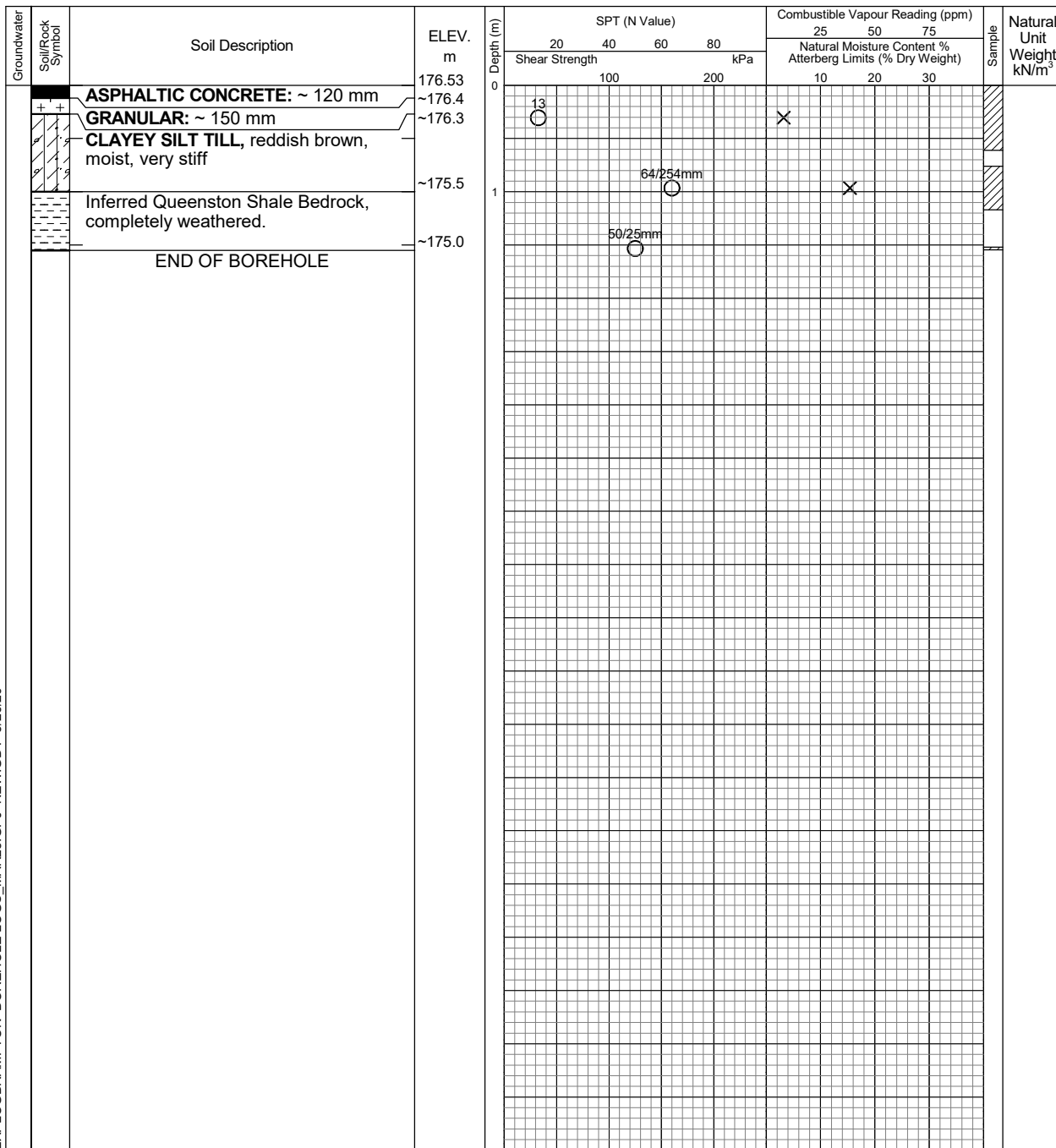
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BOREHOLE LOGS_MAR25.GPJ NEW.GDT 3/26/20

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	Open



Log of Borehole BH 5

Project No. BRM-00257769-A1

Drawing No. 6

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 5100 Erin Mills Parkway

Erin Mills Town Centre

Date Drilled: March 4, 2020

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Solid Stem Auger

Dynamic Cone Test

Plastic and Liquid Limit

Datum: Geodetic

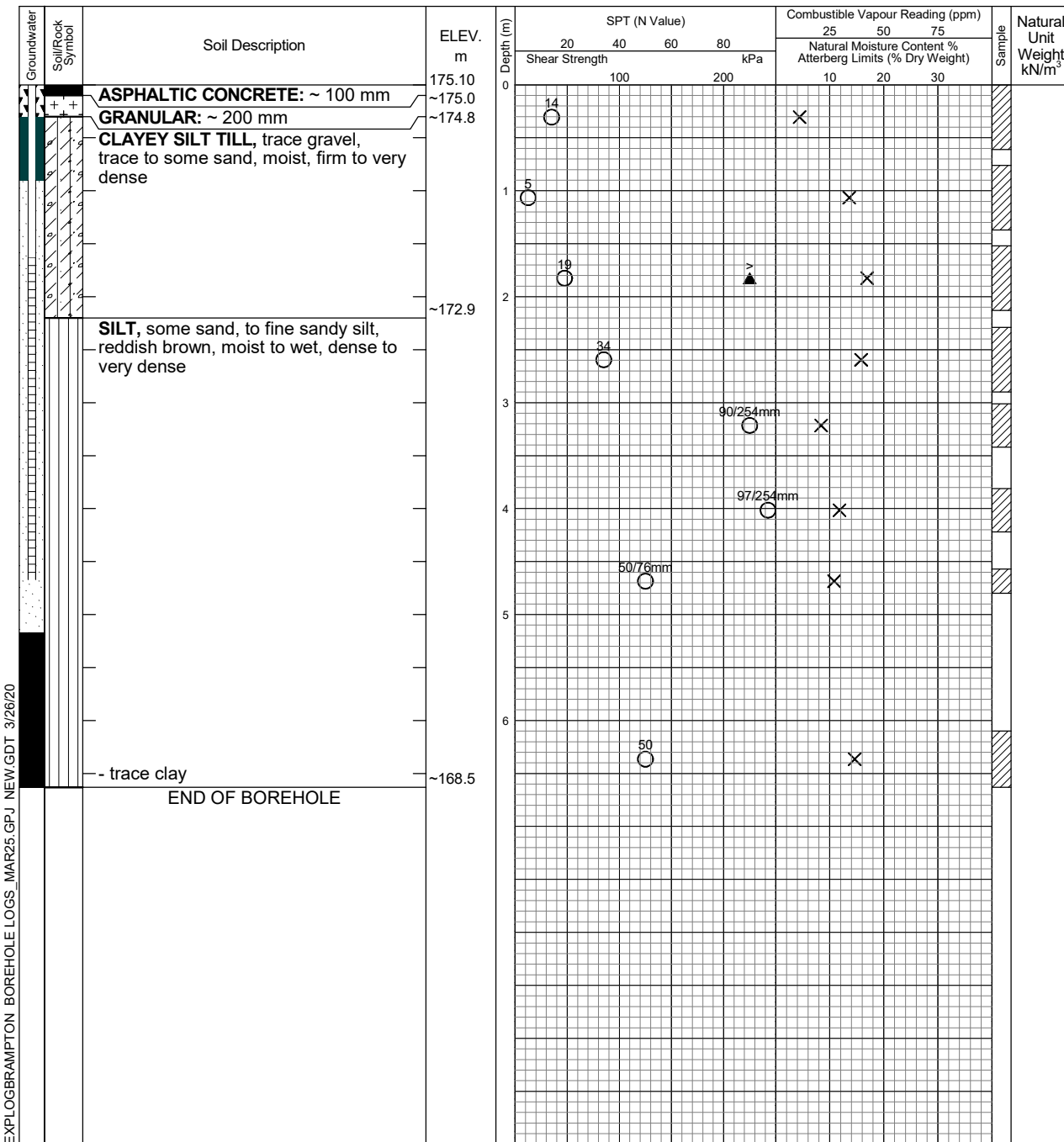
Shelby Tube

Undrained Triaxial at

Field Vane Test

% Strain at Failure

Penetrometer



EXPLOGBRAMPTON BOREHOLE LOGS_MAR25.GPJ NEW.GDT 3/26/20

Date	Water Level (m)	Hole Open to (m)
On Completion	1.2	
March 10, 2020	Dry	
March 16, 2020	Dry	
March 19, 2020	Dry	



Log of Borehole BH 20

Project No. BRM-00257769-A1

Drawing No. 21

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 5100 Erin Mills Parkway

Erin Mills Town Centre

Date Drilled: March 5, 2020

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Solid Stem Auger

Dynamic Cone Test

Plastic and Liquid Limit

Datum: Geodetic

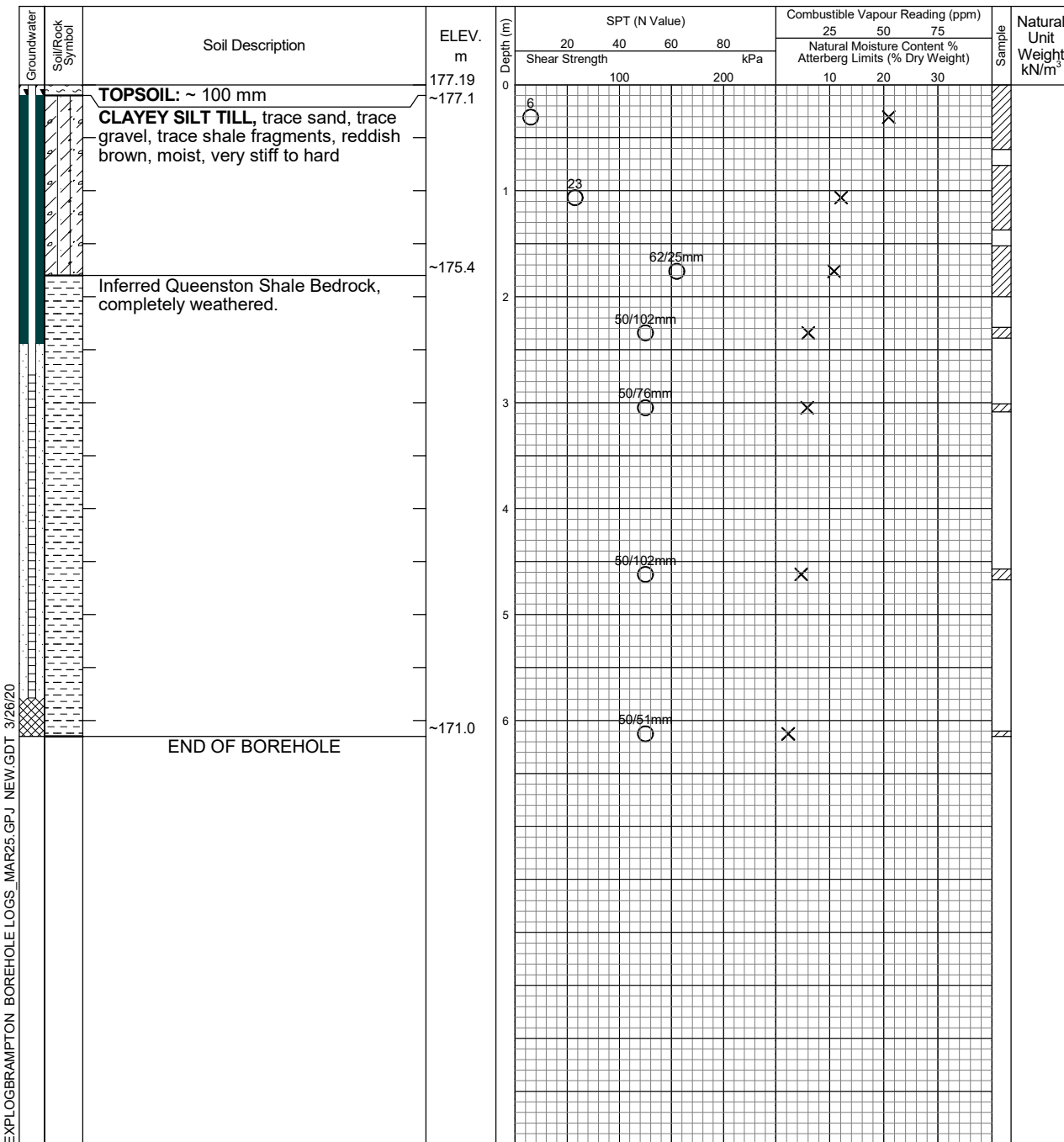
Shelby Tube

Undrained Triaxial at

Field Vane Test

% Strain at Failure

Penetrometer



EXPLOGBRAMPTON BOREHOLE LOGS_MAR25.GPJ NEW.GDT 3/26/20

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	5.8
March 10, 2020	Dry	
March 16, 2020	Dry	
March 19, 2020	Dry	



Log of Borehole 101

Project No. GTR-00257769-G0

Drawing No. 2

Project: Geotechnical Investigation

Sheet No. 1 of 2

Location: 5100 Erin Mills Parkway

Date Drilled: Oct 24, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Auger

Dynamic Cone Test

Plastic and Liquid Limit

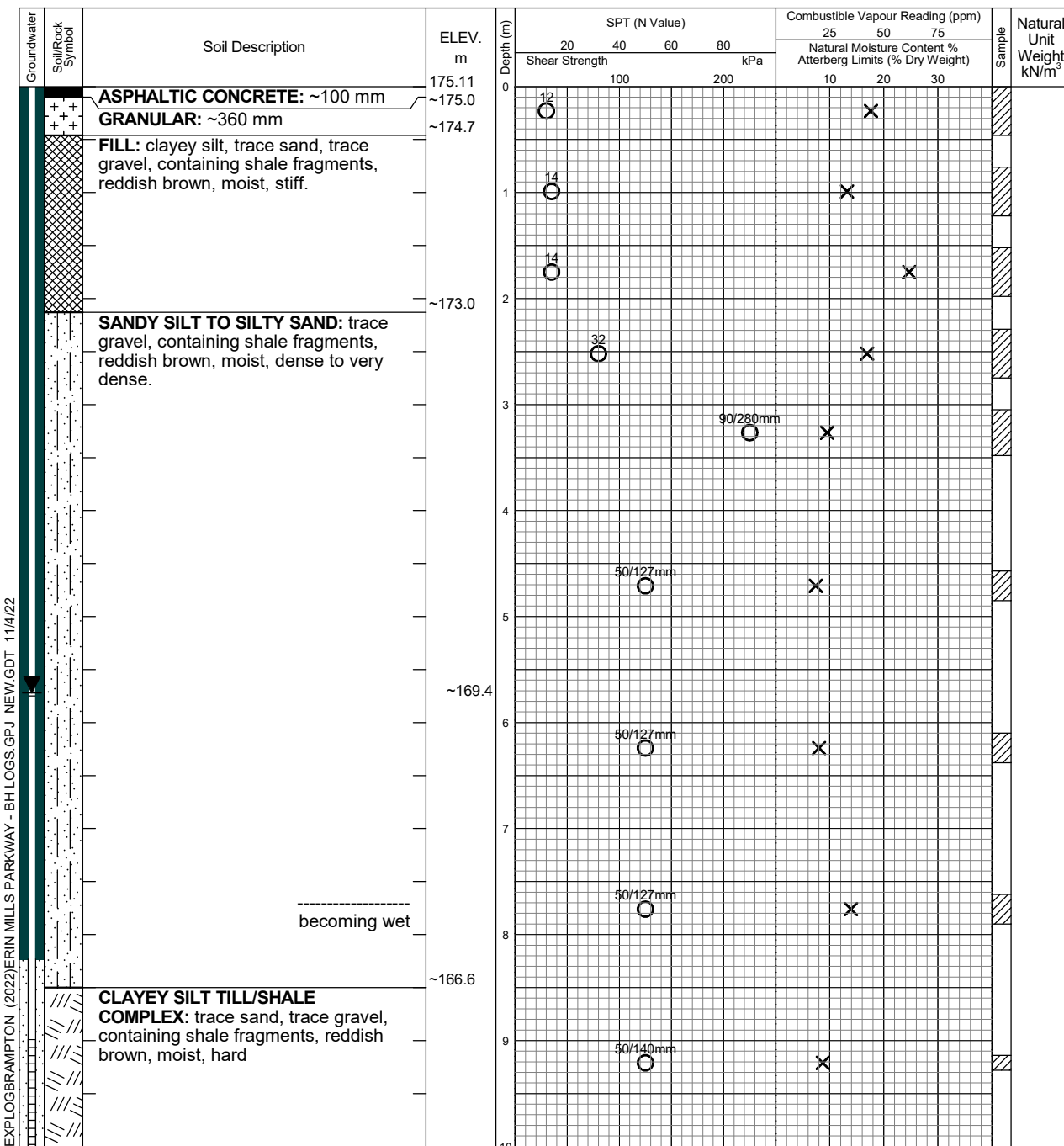
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



Continued Next Page

Elapsed Time	Water Level (m)	Hole Open to (m)
Upon completion Oct 31, 2022	~10.3m 5.75	



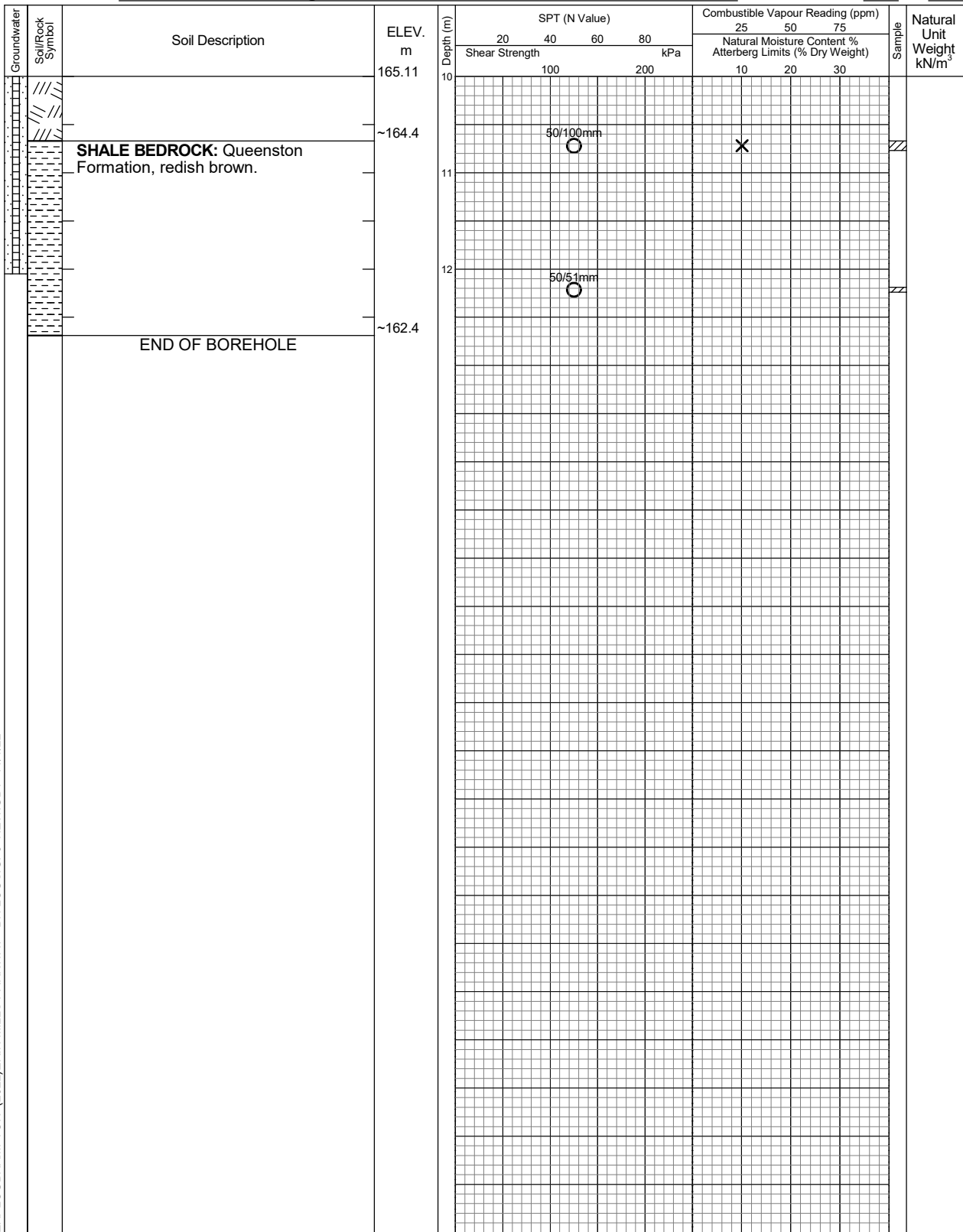
Log of Borehole 101

Project No. GTR-00257769-G0

Drawing No. 2

Project: Geotechnical Investigation

Sheet No. 2 of 2



EXPLOGBRAMPTON (2022)ERIN MILLS PARKWAY - BH LOGS.GPJ NEW.GDT 11/4/22

Elapsed Time	Water Level (m)	Hole Open to (m)
Upon completion Oct 31, 2022	~10.3m 5.75	



STORM DRAINAGE DESIGN CHART
FOR CIRCULAR DRAINS FLOWING FULL

LOCATION OF SITE	From Upstream MH#	To Downstream MH#	Adjacent Contributory Area A (ha)	Total Contributory Area ΣA (ha)	Runoff Coefficient C	Area Times Runoff Coefficient A*C	Accumulated Area Times Runoff Coefficient for Section ΣA*C	Time of Concentration at Upstream End of Section tc ₁ (min)	Flow Time within Section tc _f (min)	Time of Concentration at Downstream End of Section tc=tc ₁ + tc _f (min)	Intensity of Rainfall (10 Year Event) i ₁₀ (mm / hr)	Quantity of Flow to be Accommodated in Section Q = A _{iC} /360 (m ³ / s)	Type of Pipe	Manning's Roughness Coefficient n	Slope s (%)	Nominal Diameter D (mm)	Length of Section L (m)	Velocity of Flow with Pipe Flowing Full V (m / s)	Capacity of Pipe Flowing Full Q (m ³ / s)	SURCHARGED?	% FREE (m)	Time of Flow in Section t = L/V*60 (min)
													CONC									
			0.90		0.75	0.675																
			0.58		0.75	0.435																
GLEN ERIN DRIVE	5	4	0.68	2.16	0.75	0.510	1.62	15.00	0.70	15.70	99.17	0.446	CL 50D	0.013	0.80	750	95.0	2.254	0.996		55.18%	0.702
			1.27		0.75	0.953																
			0.77		0.75	0.578																
			0.40		0.75	0.300																
GLEN ERIN DRIVE	4	3	1.02	5.62	0.75	0.765	4.22	15.70	0.70	16.41	96.48	1.130	CL 50D	0.013	1.00	900	120.0	2.846	1.810		37.60%	0.703
			3.36		0.75	2.520																
GLEN ERIN DRIVE	3	2	0.24	9.22	0.75	0.180	6.92	16.41	0.46	16.87	93.95	1.805	CL 50D	0.013	1.00	1050	87.0	3.154	2.731		33.91%	0.460
			0.75		0.75	0.563																
			0.38		0.75	0.285																
GLEN ERIN DRIVE	2	1	0.43	10.78	0.75	0.323	8.09	16.87	0.75	17.61	92.38	2.075	CL 50D	0.013	0.60	1200	120.0	2.670	3.020		31.30%	0.749
			1.20		0.75	0.900																
			0.29		0.75	0.218																
GLEN ERIN DRIVE	1	EX.104	0.87	13.14	0.75	0.653	9.86	17.61	0.49	18.10	89.94	2.462	CL 50D	0.013	0.50	1200	71.5	2.438	2.757		10.69%	0.489
GLEN ERIN DRIVE	EX.104	EX. TRUNK		13.14			9.86	18.10	0.07	18.18	88.43	2.421	CL 50D	0.013	0.50	1350	11.5	2.637	3.774		35.86%	0.073
			0.95		0.25	0.238																
GLEN ERIN DRIVE	6	1	1.20	2.15	0.75	0.900	1.14	16.66	0.19	16.85	93.07	0.294	CL 50D	0.013	0.87	600	23.5	2.026	0.573		48.65%	0.193

SUBDIVISION N'HOOD 208 - ERIN MILLS TOWN CENTRE
CONSULTANT PROCTOR & REDFERN
MAJOR DRAINAGE AREA SAWMILL

CITY OF MISSISSAUGA
STORM DRAINAGE DESIGN CHART
FOR CIRCULAR DRAINS FLOWING FULL

SHEET NO. 1 OF 3 DATE: 12/08/87

PROJECT NO. EO 84713
DESIGNED BY ANDY K. DRZEWIECKI

LOCATION OF SECTION	FROM M.H.	TO DOWN - STREAM M.H.	ADJACENT CONTRIB-UTARY AREA	RUNOFF COEFF.	ACCUM. AREA DRAINED BY SECTION	ACCUM. AREA x RUNOFF COEFF. FOR SECTION	FLOW TIME TO SECTION	INITIAL TIME OF CONC. AT UPSTREAM END OF SECTION	TIME OF CONC. AT UPSTREAM RAINFALL	INTENSITY OF RAINFALL	QTY. OF FLOW	TYPE OF PIPE	MAN- NINGS COEFF.	SLOPE	DIA.	CAP.	LENGTH OF SECTION	VEL. FLOWING FULL	PIPE INVERT AT UPSTREAM MH	PIPE INVERT AT DWNSTREAM MH	TIME OF FLOW IN SECTION	
	MH #	MH #	A A (ha)	C A	A x C A A	A (ha)	A x C	t cf (min)	t ci (min)	t=t + t c cf ci (min)	I (mm/hr)	Q = --- 360 (m ³ /sec)	n	S (%)	D (mm)	L (m)	V (m/sec)			L t = ---- Vx60 (min)		
GLEN ERIN DR.	5	4	0.90 0.58 0.68	0.75 0.75 0.75	0.68 0.44 0.51	2.16	1.62		15.00	15.00	100.9	0.454	CONC.	0.013	0.80	750	1.039	95.0	2.28	171.965	171.205	0.70
GLEN ERIN DR.	4	3	1.27 0.77 0.40 1.02	0.75 0.75 0.75 0.75	0.95 0.58 0.30 0.77	5.62	4.22	0.70	15.00	15.70	98.3	1.151	CONC.	0.013	1.00	900	1.889	120.0	2.88	171.055	169.855	0.70
GLEN ERIN DR.	3	2	3.36 0.24	0.75 0.75	2.52 0.18	9.22	6.92	1.39	15.00	16.39	95.8	1.841	CONC.	0.013	1.00	1050	2.849	87.0	3.19	168.753	167.883	0.45
GLEN ERIN DR.	2	1	0.75 0.38 0.43	0.75 0.75 0.75	0.56 0.29 0.32	10.78	8.09	1.85	15.00	16.85	94.3	2.118	CONC.	0.013	0.60	1200	3.151	120.0	2.70	167.733	167.013	0.74
GLEN ERIN DR.	1	EX.104	1.00 0.29 0.87	0.75 0.75 0.75	0.75 0.22 0.65	12.94	9.71	0.00	19.42	19.42	86.5	2.331	CONC.	0.013	0.50	1200	2.876	71.5	2.46	166.698	166.340	0.48
GLEN ERIN DR.	EX.104	EX.TRUNK				12.94	9.71	0.48	19.42	19.90	85.1	2.295	CONC.	0.013	0.50	1350	3.937	11.5	2.66	166.195	166.137	0.07
GLEN ERIN DR.	6	1	1.00	0.75	0.75	1.00	0.75		19.42	19.42	86.5	0.180	CONC.	0.013	1.00	600	0.641	28.0	2.19	167.947	167.667	0.21

SUBDIVISION N'HOOD 208 - ERIN MILLS TOWN CENTRE
CONSULTANT PROCTOR & REDFERN
MAJOR DRAINAGE AREA SAWMILL

CITY OF MISSISSAUGA
STORM DRAINAGE DESIGN CHART
FOR CIRCULAR DRAINS FLOWING FULL

SHEET NO. 2 OF 3 DATE: 12/08/87

PROJECT NO. EO 84713
DESIGNED BY ANDY K. DRZEWIECKI

LOCATION OF SECTION	FROM M.H.	TO DOWN-STREAM M.H.	ADJACENT CONTRIB-UTARY AREA	RUNOFF COEFF.	ACCUM. AREA DRAINED BY SECTION	ACCUM. AREA x RUNOFF COEFF. FOR SECTION	FLOW TIME TO SECTION	INITIAL TIME OF CONC. AT END OF SECTION	TIME OF CONC. AT UPSTREAM END OF SECTION	INTENSITY OF RAINFALL	QTY. OF FLOW	TYPE OF PIPE	MAN-NINGS COEFF.	SLOPE	DIA.	CAP.	LENGTH OF SECTION	VEL. FLOWING FULL	PIPE INVERT AT UPSTREAM MH	PIPE INVERT AT DWNSTREAM MH	TIME OF FLOW IN SECTION	
	MH #	MH #	A A (ha)	C A	A x C A A	A (ha)	A x C	t cf (min)	t ci (min)	t=t + t c cf ci (min)	I (mm/hr)	Q = --- 360 (m3/sec)	n	S (%)	D (mm)	CAP. (m3/sec)	L (m)	V (m/sec)	(m)	(m)	L t = ---- Vx60 (min)	
EGLINTON AVE. WEST	PLUG	15	2.10 3.65 0.86	0.75 0.75	1.58 (two-way area) 2.74	6.61 4.96			17.50	17.50	92.2	1.269	CONC.	0.013	0.70	1050	2.383	16.5	2.67	168.152	168.036	0.10
EGLINTON AVE. WEST	15	14				6.61 4.96		0.10	17.50	17.60	91.9	1.265	CONC.	0.013	0.70	1050	2.383	106.0	2.67	167.997	167.255	0.66
EGLINTON AVE. WEST	14	EX.TRUNK				6.61 4.96		0.77	17.50	18.27	89.8	1.237	CONC.	0.013	0.70	1200	3.403	73.0	2.91	167.061	166.550	0.42

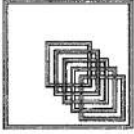
SUBDIVISION N'HOOD 208 - ERIN MILLS TOWN CENTRE
CONSULTANT PROCTOR & REDFERN
MAJOR DRAINAGE AREA SAWMILL

CITY OF MISSISSAUGA
STORM DRAINAGE DESIGN CHART
FOR CIRCULAR DRAINS FLOWING FULL

SHEET NO. 1 OF 1 DATE: 01/20/88

PROJECT NO. EO 84713
DESIGNED BY ANDY K. DRZEWIECKI

LOCATION OF SERVICE	FROM M.H.	TO DOWN-STREAM M.H.	ADJACENT CONTRIB-UTARY AREA	RUNOFF COEFF.	ACCUM. AREA DRAINED BY SECTION	ACCUM. AREA x RUNOFF COEFF. FOR SECTION	FLOW TIME TO SECTION	INITIAL TIME OF CONC. AT END OF SECTION	TIME OF CONC. AT UPSTREAM END OF SECTION	INTENSITY OF RAINFALL	QTY. OF FLOW	TYPE OF PIPE	MAN-INGS COEFF.	SLOPE	DIA.	CAP.	LENGTH OF SECTION	VEL. FLOWING FULL	PIPE INVERT AT UPSTREAM MH	PIPE INVERT AT DWNSTREAM MH	TIME OF FLOW IN SECTION
	MH #	MH #	A A (ha)	C A	A x C A A	A (ha)	A x C	t _{cf} (min)	t _{ci} (min)	t=t _c + t _i (min)	I (mm/hr)	Q = IAC 360 (m ³ /sec)	n	S (%)	D (mm)	(m ³ /sec)	L (m)	V (m/sec)	(m)	(m)	t = L / V Vx60 (min)
GLEN ERIN DR.	N-208	5		0.75		0.90	0.68			15.00	100.9	0.189	CONC.	0.013	1.00	675	0.877				
GLEN ERIN DR.	N-209	5		0.75		0.68	0.51			15.00	100.9	0.143	CONC.	0.013	1.00	600	0.641				
GLEN ERIN DR.	N-208	4		0.75		1.27	0.95			15.00	100.9	0.267	CONC.	0.013	1.00	600	0.641				
GLEN ERIN DR.	N-209	4		0.75		1.02	0.77			15.00	100.9	0.214	CONC.	0.013	1.00	600	0.641				
GLEN ERIN DR.	N-208	sta.0+337		0.75		0.77	0.58			15.00	100.9	0.162	CONC.	0.013	1.00	525	0.449				
GLEN ERIN DR.	N-208	3		0.75		3.36	2.52			15.00	100.9	0.706	CONC.	0.013	1.00	825	1.498				
GLEN ERIN DR.	N-208	2		0.75		0.75	0.56			15.00	100.9	0.158	CONC.	0.013	1.00	450	0.297				
GLEN ERIN DR.	N-209	2		0.75		0.43	0.32			15.00	100.9	0.090	CONC.	0.013	1.00	450	0.297				
GLEN ERIN DR.	N-209	1		0.75		0.87	0.65			15.00	100.9	0.183	CONC.	0.013	1.00	450	0.297				
ERIN CENTRE BLVD.	N-208	13		0.75		0.93	0.70			15.00	100.9	0.195	CONC.	0.013	1.00	675	0.877				
ERIN CENTRE BLVD.	N-207	12		0.75		1.42	1.07			15.00	100.9	0.298	CONC.	0.013	1.00	750	1.161				
ERIN CENTRE BLVD.	N-208	11		0.90		0.51	0.46			15.00	100.9	0.129	CONC.	0.013	1.00	450	0.297				
ERIN CENTRE BLVD.	N-207	11		0.75		3.78	2.84			15.00	100.9	0.794	CONC.	0.013	1.00	750	1.161				
ERIN CENTRE BLVD.	N-208	10		0.90		3.88	3.49			15.00	100.9	0.978	CONC.	0.013	1.50	750	1.422				
ERIN CENTRE BLVD.	N-207	10		0.75		2.45	1.84			15.00	100.9	0.515	CONC.	0.013	1.00	600	0.297				
ERIN CENTRE BLVD.	N-208	8		0.85 aver.		14.86	12.63			15.00	100.9	3.539	CONC.	0.013	1.00	1200	1.161				
ERIN CENTRE BLVD.	N-207	8		0.75		1.50	1.13			15.00	100.9	0.315	CONC.	0.013	1.00	600	0.641				



280 esplanade avenue east
toronto, ontario M4P 1L4
telephone: (416) 487-3295
facsimile: (416) 487-4870
2145 dundas drive west #49
mississauga, ont. L5 1G2
telephone: (416) 608-2967
facsimile: (416) 608-2979



- 1 GENERAL NOTES
- 2 REVISED PER ADDENDUM #2
- 3 REVISED PER PERMIT
- 4 GENERAL NOTES
- 5 REVISED PER PERMIT
- 6 REVISED PER PERMIT

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BRUMAR
ENGINEERING LTD.
126 Select Avenue, #4
Mississauga, Ontario M7Y 3J6
(416) 734-8020

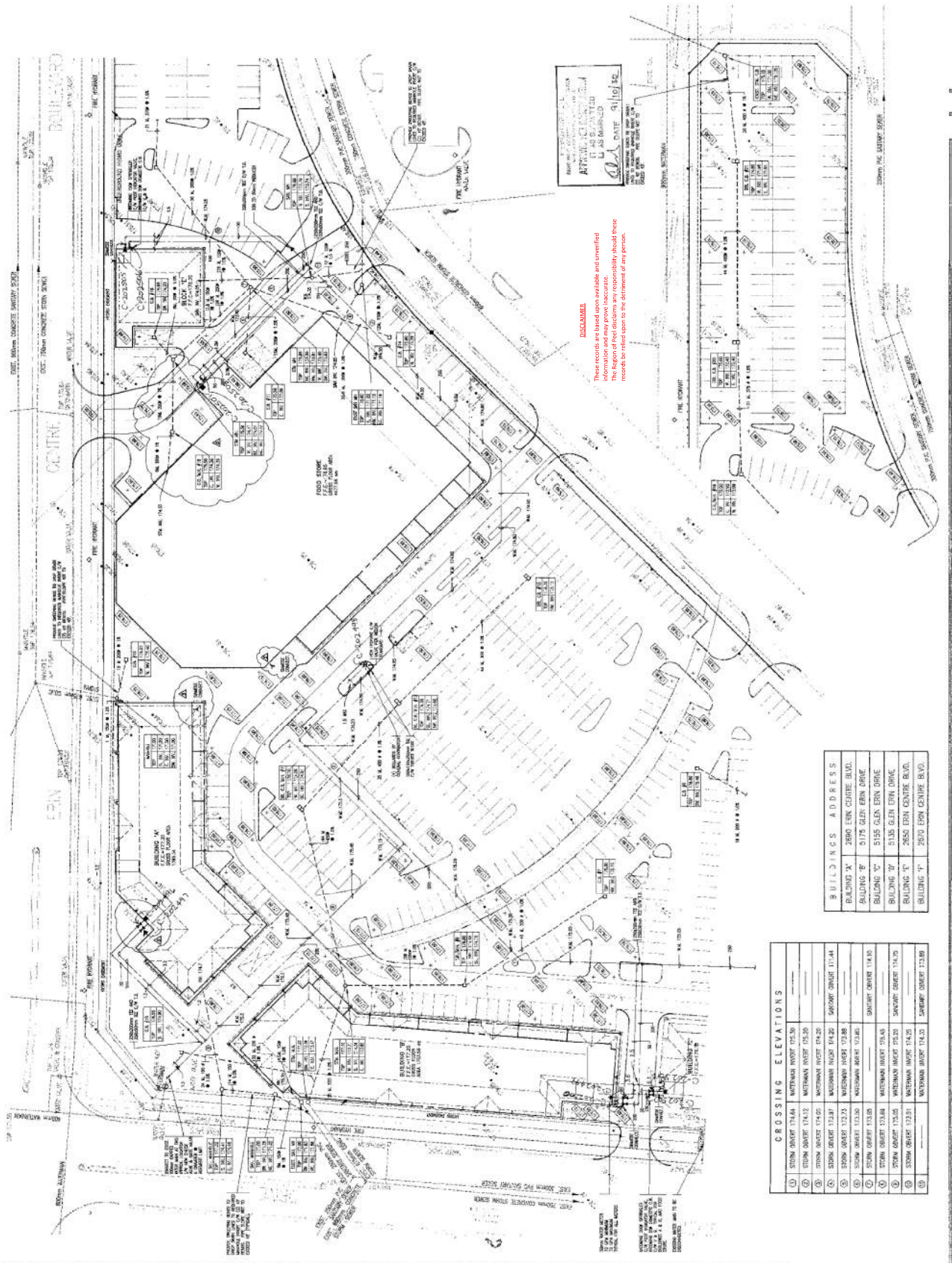


C-202496 1 of 2

PROJECT: RETAIL DEVELOPMENT ERIN MILLS TOWN PLAZA MISSISSAUGA, ONTARIO

PARTIAL SITE PLAN NORTH SECTION

DATE: 08/15/2011
DRAWN BY: [Name]
CHECKED BY: [Name]
SCALE: 1:100
PROJECT NUMBER: 91-143 SE-1



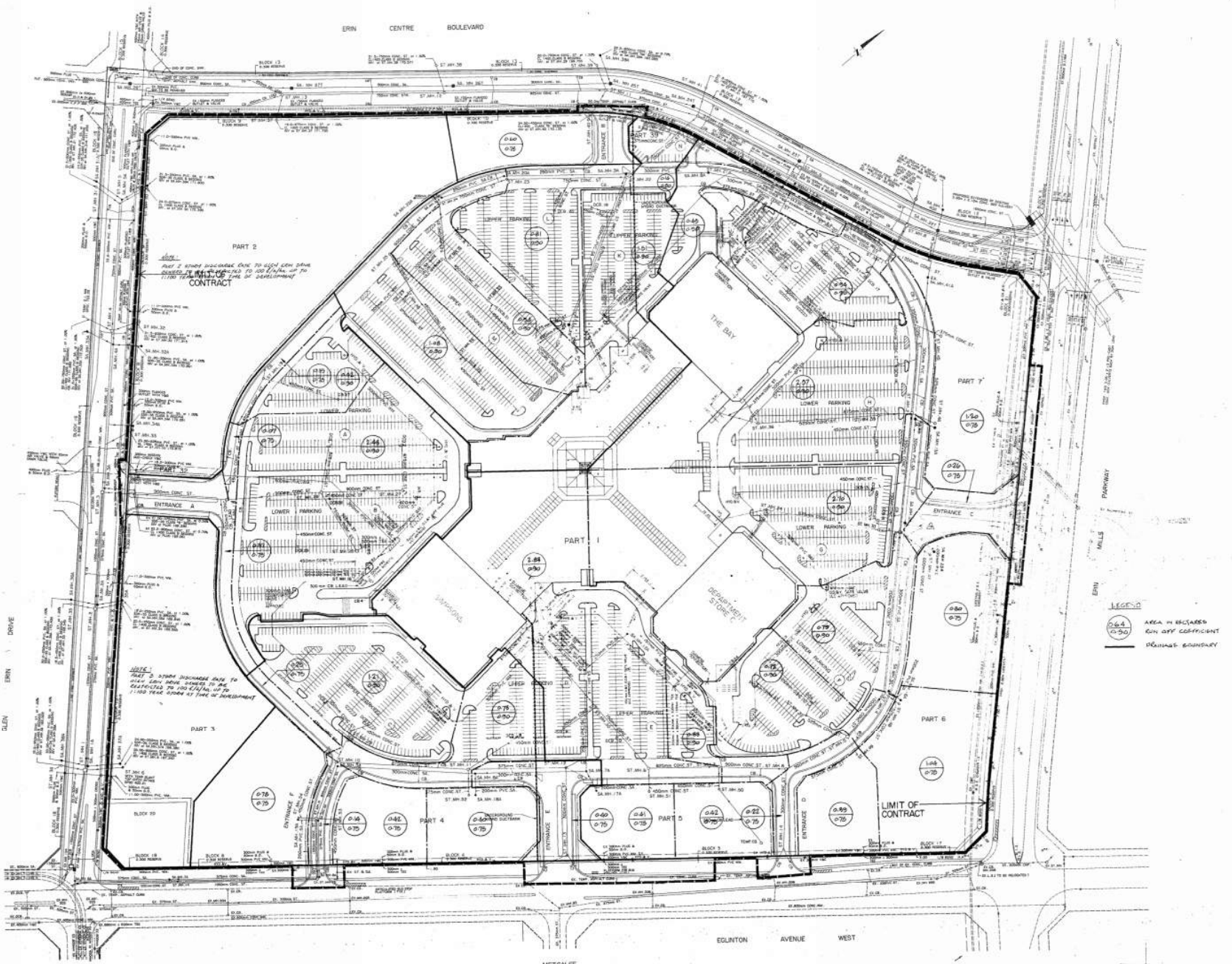
DISCLAIMER:
These records do not constitute a warranty of any kind. The Region of Peel does not assume any responsibility for the accuracy of the information provided. The Region of Peel disclaims any responsibility should these records be relied upon to the detriment of any person.

BUILDINGS	ADDRESS
BUILDING 'A'	2690 ERN CENTRE BLVD.
BUILDING 'B'	5175 GLEN ERN DRIVE
BUILDING 'C'	5155 GLEN ERN DRIVE
BUILDING 'D'	5135 GLEN ERN DRIVE
BUILDING 'E'	2650 ERN CENTRE BLVD.
BUILDING 'F'	2670 ERN CENTRE BLVD.

CROSSING ELEVATIONS
① STORM DRAIN 174.64 WATERMAIN INVERT 175.26
② STORM DRAIN 174.12 WATERMAIN INVERT 175.26
③ STORM DRAIN 174.25 WATERMAIN INVERT 174.25
④ STORM DRAIN 173.87 WATERMAIN INVERT 174.25
⑤ STORM DRAIN 173.27 WATERMAIN INVERT 173.88
⑥ STORM DRAIN 173.50 WATERMAIN INVERT 174.10
⑦ STORM DRAIN 173.66 WATERMAIN INVERT 174.10
⑧ STORM DRAIN 173.25 WATERMAIN INVERT 174.25
⑨ STORM DRAIN 173.21 WATERMAIN INVERT 174.25
⑩ WATERMAIN INVERT 174.25 WATERMAIN INVERT 173.89

Revisions

Date	No.	Details	By
APRIL 22/88	1	1ST WATER SERVICE PARTY SUBMITTED AT 400 ANDRUS DRIVE	D.A.
APRIL 27/88	2	WATER SERVICE LOCATIONS REVISED AT ANDRUS DRIVE	D.A.
APRIL 27/88	3	NOTES FOR ALL APPROVALS TO BE BY WATER VALUE ISSUED	D.A.
MAY 4/88	4	ADDITIONAL FIRE TRUCK ROUTES TO CONSTITUTE	D.A.
MAY 4/88	5	OR SUBMITTED AT 400 ANDRUS DRIVE	D.A.
MAY 4/88	6	TEMPORARY OF ACCESS IN PART 2	D.A.
MAY 4/88	7	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	8	WELPS ISSUED TO JACKSON-LAWES CO. LTD.	D.A.
MAY 12/88	9	"REVISIONS" TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	10	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	11	"REVISIONS" TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	12	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	13	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	14	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	15	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	16	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	17	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	18	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	19	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	20	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	21	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	22	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	23	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	24	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	25	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	26	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	27	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	28	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	29	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	30	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	31	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	32	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	33	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	34	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	35	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	36	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	37	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	38	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	39	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	40	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	41	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	42	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	43	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	44	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	45	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	46	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	47	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	48	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	49	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.
MAY 12/88	50	REVISIONS TO CONSTITUTE SERVICES AT ANDRUS DRIVE	D.A.



Bench Mark
ON THE WEST FACE AT THE SOUTH CORNER OF THE WEST END OF A CONCRETE
OR COLLECTOR UNDER WEST MILLS DRIVE, 457.76 M. OF ELEVATION AVE. 100.000

Designed By: *Proctor & Redfern*
Approved By: *Proctor & Redfern*

Proctor & Redfern
Consulting Engineers
Toronto

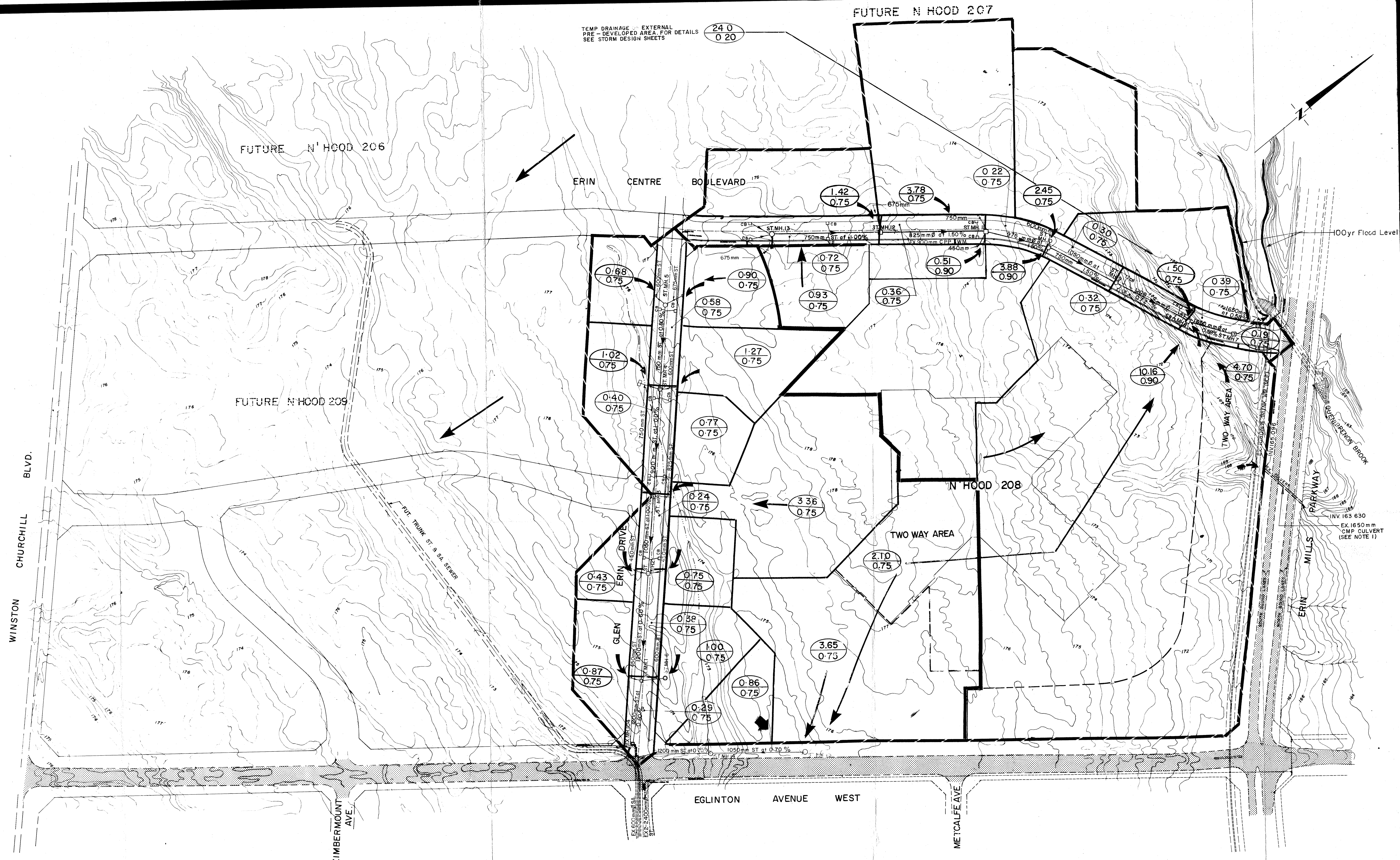
Drawn: DM Ch'd: CF, DA Rev
Des. No.: X-87758-01
Appr.

City of Mississauga
Region of Peel
Engineering Department

ERIN MILLS
TOWN CENTRE
GENERAL
SERVICING PLAN

Scale
Horizontal: 1:1000 Vertical: —
Drawn: DM Project No.: —
Ch'd: DA Area: —
Date: MARCH 1988 Plan No.: —

STORM DRAINAGE PLAN



TEMP DRAINAGE EXTERNAL
PRE-DEVELOPED AREA FOR DETAILS
SEE STORM DESIGN SHEETS

EX. N'HOODS 210 / 211

LEGEND
 (100) — AREA IN HECTARES
 (0.75) — RUN-OFF COEFFICIENT

METRIC
 ALL DIMENSIONS AND ELEVATIONS
 ARE IN METRES UNLESS
 OTHERWISE SHOWN

Revisions		
Date	No.	Details
JAN 7 / 88	1	STORM PIPE CHANGED TO 1000mm FROM 750mm FROM 14 TO TRUNK 13 STORM SERVICE SIZES OFF 13
JAN 19 / 88	2	REVISE DRAINAGE AREAS ADJACENT TO ERIN CENTRE BLVD.

NOTE
 EXISTING 1650 mm Ø CMP SHALL BE EXTENDED INTERNALLY,
 AS REQUIRED IN CONJUNCTION WITH THE INTERNAL
 DEVELOPMENT NEIGHBOURHOOD 208

2. BLOCK DRAINAGE TO BE SELF CONTAINED

Bench Mark
 BM #609 ON THE W FACE AT THE S. CORNER OF THE W. END OF
 A CONCRETE BOX CULVERT ACROSS ERIN MILLS PARKWAY 457m N.
 OF EGLINTON AVE. W. EL. 165.998



Designed By: [Signature] Approved By: [Signature]

Proctor & Redfern
 Consulting Engineers
 Toronto

Drawn: [Signature] Chk'd: [Signature] Rev. 1
 Dw'g No. AI-84713-G6
 Appr: [Signature]

City of Mississauga
 Region of Peel
 Engineering Department

**STORM DRAINAGE
 PLAN**

Scale 1:2000
 Horizontal: Drawn B.T.S., Chk'd A.K.D., Date JUNE 1987
 Vertical: Project No., Area, Plan No., C-

APPENDIX C

STORMWATER MANAGEMENT CALCULATIONS

EXISTING WEIGHTED RUNOFF COEFFICIENT

Catchment 10 Outlets to: Glen Erin Drive

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Existing Development	0.75	0.78	0.75	0.83	0.90	0.94
TOTAL		0.78	0.75	0.83	0.90	0.94

Catchment 20 Outlets to: Glen Erin Drive

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Existing Development	0.75	1.20	0.75	0.83	0.90	0.94
TOTAL		1.20	0.75	0.83	0.90	0.94

Catchment 30 Outlets to: Glen Erin Drive

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Existing Development	0.75	0.87	0.75	0.83	0.90	0.94
TOTAL		0.87	0.75	0.83	0.90	0.94

Catchment 40 Outlets to: Erin Centre Blvd

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Existing Development	0.75	0.91	0.75	0.83	0.90	0.94
TOTAL		0.91	0.75	0.83	0.90	0.94

Catchment 50 Outlets to: Erin Centre Blvd

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Existing Development	0.90	0.52	0.90	0.99	1.00	1.00
TOTAL		0.52	0.90	0.99	1.00	1.00

Glen Erin Drive Total

Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
10	0.75	0.78	0.21	0.23	0.25	0.26
20	0.75	1.20	0.32	0.35	0.38	0.39
30	0.75	0.87	0.23	0.25	0.27	0.29
TOTAL		2.85	0.75	0.83	0.90	0.94

Erin Centre Blvd Total

Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
40	0.75	0.91	0.48	0.53	0.57	0.60
50	0.90	0.52	0.33	0.36	0.36	0.36
TOTAL		1.43	0.80	0.89	0.94	0.96

Overall Total

Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
10	0.75	0.78	0.14	0.15	0.16	0.17
20	0.75	1.20	0.21	0.23	0.25	0.26
30	0.75	0.87	0.15	0.17	0.18	0.19
40	0.75	0.91	0.16	0.18	0.19	0.20
50	0.90	0.52	0.11	0.12	0.12	0.12
TOTAL		4.28	0.77	0.85	0.91	0.95

ALLOWABLE RELEASE RATE

10 Year storm

IDF Parameters* $\left\{ \begin{array}{l} a = 1010 \\ t = 15 \quad \text{min} \\ b = 4.6 \\ c = 0.78 \end{array} \right.$

Runoff Coefficient: $\begin{array}{l} C1^{**} = 0.75 \\ C2^{**} = 0.80 \end{array}$

Allowable Release Rate Calculation				
Outlet	Area	time	Intensity	Flow
ID		t	$i=a/(t+b)^c$	$Q=CI/360$
	ha	min	mm/hr	l/s
Glen Erin Drive	2.850	15.00	99.17	588.8
Erin Centre Blvd	1.430	15.00	99.17	316.9

* a,b,c's per City of Mississauga

**Runoff Coefficients as per City of Mississauga Storm Drainage Plan

PROPOSED RELEASE RATE

10 Year storm (City of Mississauga)

IDF Parameters { **a** = 1010
t = 15 min
b = 4.6
c = 0.78

Area 1100 3.25
Area 2100 1.27

Proposed Release Rate Calculation			
Outlet	Area	10-Year Flow to Glen Erin Drive	10-Year Flow to Erin Centre Boulevard
ID		$Q=CiA/360$	$Q=CiA/360$
	<i>ha</i>	<i>l/s</i>	<i>l/s</i>
110	0.45	74.4	--
120	0.94	161.6	--
130	1.12	194.7	--
220	0.74	--	186.0
230	0.52	--	130.9
140 (Park)*	0.51	31.2	--
Total	4.28	461.9	316.9

*Note: Catchment 140 flow is anticipated capacity of the Ring Road sewer prior to entering Glen Erin Drive

PROPOSED WEIGHTED RUNOFF COEFFICIENT

Catchment 110 Outlets to: Glen Erin Drive

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Medium Density Development	0.85	0.45	0.85	0.94	1.00	1.00
TOTAL		0.45	0.85	0.94	1.00	1.00

Catchment 120 Outlets to: Glen Erin Drive

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Medium Density Development	0.85	0.94	0.85	0.94	1.00	1.00
TOTAL		0.94	0.85	0.94	1.00	1.00

Catchment 130 Outlets to: Glen Erin Drive

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Medium Density Development	0.85	1.12	0.85	0.94	1.00	1.00
TOTAL		1.12	0.85	0.94	1.00	1.00

Catchment 210 Outlets to: Erin Centre Blvd

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Medium Density Development	0.85	0.74	0.85	0.94	1.00	1.00
TOTAL		0.74	0.85	0.94	1.00	1.00

Catchment 220 Outlets to: Erin Centre Blvd

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Medium Density Development	0.85	0.52	0.85	0.94	1.00	1.00
TOTAL		0.52	0.85	0.94	1.00	1.00

Catchment 140 Outlets to: Ring Road

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
Park	0.30	0.51	0.30	0.33	0.36	0.38
TOTAL		0.51	0.30	0.33	0.36	0.38

PROPOSED WEIGHTED RUNOFF COEFFICIENT

Glen Erin Drive Total

Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
110	0.85	0.45	0.12	0.13	0.14	0.14
120	0.85	0.94	0.24	0.27	0.29	0.29
130	0.85	1.12	0.29	0.32	0.34	0.34
TOTAL		3.25	0.66	0.72	0.77	0.77

Erin Centre Blvd Total

Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
210	0.85	0.74	0.50	0.62	0.67	0.67
220	0.85	0.52	0.35	0.44	0.47	0.47
TOTAL		1.27	0.85	1.06	1.13	1.13

Ring Road Total

Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
140	0.30	0.51	0.30	0.33	0.19	0.13
TOTAL		0.51	0.30	0.33	0.19	0.13

Overall Total

Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient	Weighted Runoff Coefficient (25 Year)	Weighted Runoff Coefficient (50 Year)	Weighted Runoff Coefficient (100 Year)
110	0.85	0.45	0.09	0.10	0.11	0.11
120	0.85	0.94	0.19	0.20	0.22	0.22
130	0.85	1.12	0.22	0.24	0.26	0.26
210	0.85	0.74	0.15	0.16	0.17	0.17
220	0.85	0.52	0.10	0.11	0.12	0.12
140	0.30	0.51	0.04	0.04	0.04	0.04
TOTAL		4.28	0.78	0.86	0.92	0.93

SUMMARY

Catchment ID	Routing	Building No. ¹	Rooftop Release Rate (L/s/ha)	Runoff Coef.	Area (ha)	100 Year			Release Rate (L/s)	Uncontrolled Release Rate (L/s)
						Release Rate (L/s) ¹	Storage Required (m ³) ¹	Storage Available (m ³)		
110	is routed through			1.00	0.45	95.6	80.4	0.0	95.6	
120	is routed through			1.00	0.94	204.9	154.7	0.0	204.9	
130	is routed through			1.00	1.12	164.0	289.3	0.0	164.0	
210	is routed through			1.00	0.74	73.3	254.3	0.0	73.3	
220	is routed through			1.00	0.52	179.8	23.0	0.0	179.8	
140	is routed through			0.38	0.51	30.4	45.5	0.0	30.4	
Total					4.28	717.5	801.6	0.0	-	

Glen Erin Drive Allowable Release Rate	588.8	L/s
Glen Erin Drive Proposed Release Rate	494.8	L/s
Erin Centre Blvd Allowable Release Rate	316.9	L/s
Erin Centre Blvd Proposed Release Rate	253.1	L/s

Notes:

¹ Per Modified Rational Calculations (attached)

³ Draw down time calculated based on surface storage only

MODIFIED RATIONAL METHOD

Area ID: 140

Area =	0.508 ha		
"C" =	0.38		
AC=	0.1905		
Tc =	15.0 min		
Time Increment =	5.0 min	City of	
Release Rate =	30.42 l/s	Mississauga	100 Year
Max.Storage =	45.5 m ³	a=	1450
		b=	4.9
		c=	0.78

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	140.7	74.51	67.1	27.4	39.7
20.0	118.1	62.56	75.1	31.9	43.1
25.0	102.4	54.24	81.4	36.5	44.9
30.0	90.8	48.07	86.5	41.1	45.5
35.0	81.8	43.31	90.9	45.6	45.3
40.0	74.6	39.50	94.8	50.2	44.6
45.0	68.7	36.37	98.2	54.7	43.5
50.0	63.8	33.76	101.3	59.3	42.0
55.0	59.6	31.54	104.1	63.9	40.2
60.0	56.0	29.63	106.7	68.4	38.2
65.0	52.8	27.97	109.1	73.0	36.1
70.0	50.0	26.50	111.3	77.6	33.7
75.0	47.6	25.20	113.4	82.1	31.3
80.0	45.4	24.03	115.3	86.7	28.7
85.0	43.4	22.98	117.2	91.2	26.0
90.0	41.6	22.03	119.0	95.8	23.2
95.0	40.0	21.17	120.6	100.4	20.3
100.0	38.5	20.38	122.3	104.9	17.3
105.0	37.1	19.65	123.8	109.5	14.3
110.0	35.8	18.98	125.3	114.1	11.2
115.0	34.7	18.36	126.7	118.6	8.0
120.0	33.6	17.78	128.0	123.2	4.8
125.0	32.6	17.25	129.3	127.7	1.6
130.0	31.6	16.75	130.6	132.3	0.0

<<<<

APPENDIX D

SANITARY DEMAND CALCULATIONS

INPUT:

Municipality: <input type="text" value="Custom"/>	Existing Avg. Domestic Flow:	270	L/ca/day
	Proposed Avg. Domestic Flow:	290	L/ca/day
	Infiltration Rate:	0.26	L/s/ha
	Max. Harmon Peaking Factor:	4	
	Min. Harmon Peaking Factor:	2	

OUTPUT:

<u>Existing Sanitary Flow Calculations</u>	
Average Flow Rate	270 litres/emp/day
Existing Site Area	4.280 ha
Existing Population (50 persons/ha)	214 emp
Peaking Factor	4.00
Peak Flow	2.675 L/s
Site Infiltration (0.26 litres/second/ha)	1.113 L/s
Total Existing Site Sanitary Flows	3.788 L/s

INPUT:

Municipality: <input type="text" value="Custom"/>	Existing Avg. Domestic Flow:	270	L/ca/day
	Proposed Avg. Domestic Flow:	290	L/ca/day
	Infiltration Rate:	0.26	L/s/ha
	Max. Harmon Peaking Factor:	4	
	Min. Harmon Peaking Factor:	2	

OUTPUT:

Proposed Sanitary Flow Calculations - Building A	
Average Flow Rate	290 litres/capita/day
Building A Residential Units	364 units
Building A Residential Population (2.7 persons/unit, population equivalent is greater than 475 persons/h:	983 persons
Peaking Factor	3.80
Peak Flow	12.551 L/s
Total Building A Site Area	0.440 ha
Site Infiltration (0.26 litres/second/ha)	0.114 L/s
Total Proposed Peak Sanitary Flow from Building A	12.666 L/s

INPUT:

Municipality: <input type="text" value="Custom"/>	Existing Avg. Domestic Flow:	270	L/ca/day
	Proposed Avg. Domestic Flow:	290	L/ca/day
	Infiltration Rate:	0.26	L/s/ha
	Max. Harmon Peaking Factor:	4	
	Min. Harmon Peaking Factor:	2	

OUTPUT:

Proposed Sanitary Flow Calculations - Building B	
Average Flow Rate	290 litres/capita/day
Building B Residential Units	298 units
Building B Residential Population (2.7 persons/unit, population equivalent is greater than 475 persons/h:	805 persons
Peaking Factor	3.86
Peak Flow	10.421 L/s
Total Building B Site Area	0.390 ha
Site Infiltration (0.26 litres/second/ha)	0.101 L/s
Total Proposed Peak Sanitary Flow from Building B	10.523 L/s

INPUT:

Municipality: <input type="text" value="Custom"/>	Existing Avg. Domestic Flow:	270	L/ca/day
	Proposed Avg. Domestic Flow:	290	L/ca/day
	Infiltration Rate:	0.26	L/s/ha
	Max. Harmon Peaking Factor:	4	
	Min. Harmon Peaking Factor:	2	

OUTPUT:

Proposed Sanitary Flow Calculations - Building C	
Average Flow Rate	290 litres/capita/day
Building C Residential Units	231 units
Building C Residential Population (2.7 persons/unit, population equivalent is greater than 475 persons/h)	624 persons
Peaking Factor	3.92
Peak Flow	8.212 L/s
Total Building C Site Area	0.530 ha
Site Infiltration (0.26 litres/second/ha)	0.138 L/s
Total Proposed Peak Sanitary Flow from Building C	8.350 L/s

INPUT:

Municipality: <input type="text" value="Custom"/>	Existing Avg. Domestic Flow:	270	L/ca/day
	Proposed Avg. Domestic Flow:	290	L/ca/day
	Infiltration Rate:	0.26	L/s/ha
	Max. Harmon Peaking Factor:	4	
	Min. Harmon Peaking Factor:	2	

OUTPUT:

<u>Proposed Sanitary Flow Calculations - Building D</u>	
Average Flow Rate	290 litres/capita/day
Building D Residential Units	231 units
Building D Residential Population (2.7 persons/unit, population equivalent is greater than 475 persons/h:	624 persons
Peaking Factor	3.92
Peak Flow	8.212 L/s
Total Building D Site Area	0.520 ha
Site Infiltration (0.26 litres/second/ha)	0.135 L/s
Total Proposed Peak Sanitary Flow from Building D	8.348 L/s

INPUT:

Municipality: <input type="text" value="Custom"/>	Existing Avg. Domestic Flow:	270	L/ca/day
	Proposed Avg. Domestic Flow:	290	L/ca/day
	Infiltration Rate:	0.26	L/s/ha
	Max. Harmon Peaking Factor:	4	
	Min. Harmon Peaking Factor:	2	

OUTPUT:

Proposed Sanitary Flow Calculations - Building E	
Average Flow Rate	290 litres/capita/day
Building E Residential Units	298 units
Building E Residential Population (2.7 persons/unit, population equivalent is greater than 475 persons/h:	805 persons
Peaking Factor	3.86
Peak Flow	10.421 L/s
Total Building E Site Area	0.270 ha
Site Infiltration (0.26 litres/second/ha)	0.070 L/s
Total Proposed Peak Sanitary Flow from Building E	10.492 L/s

INPUT:

Municipality: <input type="text" value="Custom"/>	Existing Avg. Domestic Flow:	270	L/ca/day
	Proposed Avg. Domestic Flow:	290	L/ca/day
	Infiltration Rate:	0.26	L/s/ha
	Max. Harmon Peaking Factor:	4	
	Min. Harmon Peaking Factor:	2	

OUTPUT:

Proposed Sanitary Flow Calculations - Building F	
Average Flow Rate	290 litres/capita/day
Building F Residential Units	709 units
Building F Residential Population (2.7 persons/unit, population equivalent is greater than 475 persons/ha)	1,914 persons
Peaking Factor	3.60
Peak Flow	23.134 L/s
Total Building F Site Area	0.500 ha
Site Infiltration (0.26 litres/second/ha)	0.130 L/s
Total Proposed Peak Sanitary Flow from Building F	23.264 L/s

INPUT:

Municipality: <input type="text" value="Custom"/>	Existing Avg. Domestic Flow:	270	L/ca/day
	Proposed Avg. Domestic Flow:	290	L/ca/day
	Infiltration Rate:	0.26	L/s/ha
	Max. Harmon Peaking Factor:	4	
	Min. Harmon Peaking Factor:	2	

OUTPUT:

Proposed Sanitary Flow Calculations - Building G	
Average Flow Rate	290 litres/capita/day
Building G Residential Units	546 units
Building G Residential Population (2.7 persons/unit, population equivalent is greater than 475 persons/h:	1,474 persons
Peaking Factor	3.68
Peak Flow	18.234 L/s
Total Building G Site Area	0.520 ha
Site Infiltration (0.26 litres/second/ha)	0.135 L/s
Total Proposed Peak Sanitary Flow from Building G	18.369 L/s

INPUT:

Municipality: <input type="text" value="Custom"/>	Existing Avg. Domestic Flow:	270	L/ca/day
	Proposed Avg. Domestic Flow:	290	L/ca/day
	Infiltration Rate:	0.26	L/s/ha
	Max. Harmon Peaking Factor:	4	
	Min. Harmon Peaking Factor:	2	

OUTPUT:

Proposed Sanitary Flow Calculations - Building H	
Average Flow Rate	290 litres/capita/day
Building H Residential Units	485 units
Building H Residential Population (2.7 persons/unit, population equivalent is greater than 475 persons/h:	1,310 persons
Peaking Factor	3.72
Peak Flow	16.357 L/s
Total Building H Site Area	0.440 ha
Site Infiltration (0.26 litres/second/ha)	0.114 L/s
Total Proposed Peak Sanitary Flow from Building H	16.471 L/s

SANITARY FLOW CALCULATIONS

Erin Mills Town Centre Block 1, Mississauga
Job Number: 2228
Date: October 2024
Designer Initials: D.P.R.S

BUILDING	No. of Units	Area (ha)	Connection Size (mm)	Connection Slope (%)	Connection Capacity (L/s)	Sanitary Demand (L/s)
A	364	0.44	200	1.00	32.80	12.67
B	298	0.39	300	1.80	129.74	10.52
C	231	0.53	250	1.40	70.36	8.35
D	231	0.52	200	1.00	32.80	8.35
E	298	0.27	200	1.00	32.80	10.49
F	709	0.50	200	1.00	32.80	23.26
G	546	0.52	200	1.00	32.80	18.37
H	485	0.44	200	1.00	32.80	16.47

APPENDIX E

WATER DEMAND CALCULATIONS

BDP. Quadrangle

27 February 2024

Mr. Barry Stern
Erin Mills Town Centre Holdings Inc.
50 Confederation Parkway
Concord, ON L4K 4T8

Re: 5100 Erin Mills Town Centre (Block 1), Mississauga, Ontario
Fire Flow Demand Calculations Building Design Assumptions

Dear Barry:


We understand that the City of Toronto has requested a letter from us as the architects to support the assumptions SCS Consulting Group is making for the fire protection demand calculations as part of the Zoning Bylaw Amendment application and Site Plan Approval application for the above-noted project. This is to confirm that the construction of the proposed building is as follows:

- The building structure will be of fire-resistive construction (reinforced concrete);
- The building will be sprinklered for fire protection and the sprinklers will be fully monitored in accordance with NFPA 13;
- The building's exterior and interior will meet the requirements of the Ontario Building Code (OBC) with respect to non-combustible construction for Group C residential occupancy;
- The building will provide the required fire-rating and protection at vertical service shafts and vertical transportation shafts as required by the OBC; and
- There will be no exterior vertical communications in the form of exterior shafts and stairwells.

Should you have any questions, please do not hesitate to contact us at any time.

Yours sincerely,

Quadrangle Architects Limited

Per:  _____
Leslie M. Klein LICENCE
2969

Enclosure
Copies

23032.001_Rev01.docx

DOMESTIC WATER USAGE CALCULATION SHEET

BUILDING A

	No. of Units	PPU	L/P/d	Avg. Day (L/d)
Apartments	364	2.7	280	275,184
Residential Use Avg. Day (L/d)				275,184
Avg Day (L/s)				3.19
<i>Peak flows</i>				
	<i>f</i>			
Peak hour (L/hr)	3			34,398
Max day (L/d)	2			550,368
Peak Hour (L/s)				9.56
Max Day (L/s)				6.37

Fire Flow

Land Use	No. of Units (U)	Min. Mississauga Fire Flow (L/s)	FUS Fire Flow (L/s)	Required Fire Flow (L/s)
Apartments	364	N/A	50	50

SITE SUMMARY - BUILDING A	
Residential Use Avg. Day (L/d)	275,184
Avg Day (L/s)	3.19
Max Day (L/s)	6.37
Peak Hour (L/s)	9.56
Max day plus Fire Flow (L/s)	56.37

BUILDING A

Address: <u>5100 Erin Mills Town Centre</u>	Notes: <u>Project Number: 2228</u>
<u>City of Mississauga</u>	<u>Date: October 2024</u>
<u>Region of Peel</u>	<u>2020 FUS</u>

BASE FLOW CALCULATION FLOW (L/min)

C= Type I Fire Resistive Construction	0.6	
A= Effective area	2100 m ²	
F= Required fire flow	6,049 L/min.	
"F" Rounded to nearest 1,000	6,000 L/min.	6,000

OCCUPANCY ADJUSTED FLOW (F') % CREDIT/CHARGE (L/min) FLOW (L/min)

Occupancy and Contents type:			
Limited combustible	-15%	-900	5,100

SPRINKLER AND EXPOSURE ADJUSTMENTS % CREDIT/CHARGE (L/min)
Sprinkler Adjustments (S)

Percentage of Floor Area Serviced by Sprinkler System	100%		
Automatic Sprinkler Protection per NFPA Standards	Yes	-30%	
Water Supply is Standard for Sprinkler System and Hose Lines	Yes	-10%	
Fully Supervised System	Yes	-10%	
All other buildings within 30m of the subject building are fully sprinklered as per NFPA	No	0%	
S = Total Sprinkler Credit	-50%		-2,550

Exposure Adjustments (E)

Exposure	Separation (m)	Proposed Wall		Length-Height Factor	Exposed Building Type		
		Length (m)	# Storeys				
N	20	25	30	750	Type I-II, protected openings	3%	
E	174	58	30	1740	Type III-IV, unprotected openings	0%	
S	76	25	30	750	Type III-IV, unprotected openings	0%	
W	100	58	30	1740	Type III-IV, unprotected openings	0%	
E = Total Exposure Charge						3%	153

REQUIRED FLOW (F''=F'+S+E) (L/min) 3,000 (USGPM) 793

DOMESTIC WATER USAGE CALCULATION SHEET

BUILDING B

	No. of Units	PPU	L/P/d	Avg. Day (L/d)
Apartments	298	2.7	280	225,288
Residential Use Avg. Day (L/d)				225,288
Avg Day (L/s)				2.61
<i>Peak flows</i>				
	<i>f</i>			
Peak hour (L/hr)	3			28,161
Max day (L/d)	2			450,576
Peak Hour (L/s)				7.83
Max Day (L/s)				5.22

Fire Flow

Land Use	No. of Units (U)	Min. Mississauga Fire Flow (L/s)	FUS Fire Flow (L/s)	Required Fire Flow (L/s)
Apartments	298	N/A	50	50

SITE SUMMARY - BUILDING B	
Residential Use Avg. Day (L/d)	225,288
Avg Day (L/s)	2.61
Max Day (L/s)	5.22
Peak Hour (L/s)	7.83
Max day plus Fire Flow (L/s)	55.22

BUILDING B

Address: <u>5100 Erin Mills Town Centre</u>	Notes: <u>Project Number: 2228</u>
<u>City of Mississauga</u>	<u>Date: October 2024</u>
<u>Region of Peel</u>	<u>2020 FUS</u>

BASE FLOW CALCULATION FLOW (L/min)

C= Type I Fire Resistive Construction	0.6	
A= Effective area	2100 m ²	
F= Required fire flow	6,049 L/min.	
"F" Rounded to nearest 1,000	6,000 L/min.	6,000

OCCUPANCY ADJUSTED FLOW (F') % CREDIT/CHARGE (L/min) FLOW (L/min)

Occupancy and Contents type:			
Limited combustible	-15%	-900	5,100

SPRINKLER AND EXPOSURE ADJUSTMENTS % CREDIT/CHARGE (L/min)
Sprinkler Adjustments (S)

Percentage of Floor Area Serviced by Sprinkler System	100%		
Automatic Sprinkler Protection per NFPA Standards	Yes	-30%	
Water Supply is Standard for Sprinkler System and Hose Lines	Yes	-10%	
Fully Supervised System	Yes	-10%	
All other buildings within 30m of the subject building are fully sprinklered as per NFPA	No	0%	
S = Total Sprinkler Credit	-50%		-2,550

Exposure Adjustments (E)

Exposure	Separation (m)	Proposed Wall		Length-Height Factor	Exposed Building Type		
		Length (m)	# Storeys				
N	16	25	25	625	Type I-II, protected openings	3%	
E	33	54	25	1350	Type I-II, protected openings	0%	
S	20	25	25	625	Type I-II, protected openings	3%	
W	60	54	25	1350	Type III-IV, unprotected openings	0%	
E = Total Exposure Charge						6%	306

REQUIRED FLOW (F''=F'+S+E) (L/min) 3,000 (USGPM) 793

DOMESTIC WATER USAGE CALCULATION SHEET

BUILDING C

	No. of Units	PPU	L/P/d	Avg. Day (L/d)
Apartments	231	2.7	280	174,636
Residential Use Avg. Day (L/d)				174,636
Avg Day (L/s)				2.03
<i>Peak flows</i>				
	<i>f</i>			
Peak hour (L/hr)	3			21,830
Max day (L/d)	2			349,272
Peak Hour (L/s)				6.07
Max Day (L/s)				4.05

Fire Flow

Land Use	No. of Units (U)	Min. Mississauga Fire Flow (L/s)	FUS Fire Flow (L/s)	Required Fire Flow (L/s)
Apartments	231	N/A	33	33

SITE SUMMARY - BUILDING C	
Residential Use Avg. Day (L/d)	174,636
Avg Day (L/s)	2.03
Max Day (L/s)	4.05
Peak Hour (L/s)	6.07
Max day plus Fire Flow (L/s)	37.38

BUILDING C

Address: 5100 Erin Mills Town Centre	Notes: Project Number: 2228
City of Mississauga	Date: October 2024
Region of Peel	2020 FUS

BASE FLOW CALCULATION FLOW (L/min)

C= Type I Fire Resistive Construction	0.6	
A= Effective area	1893 m ²	
F= Required fire flow	5,743 L/min.	
"F" Rounded to nearest 1,000	6,000 L/min.	6,000

OCCUPANCY ADJUSTED FLOW (F') FLOW (L/min)

	%	CREDIT/CHARGE (L/min)	FLOW (L/min)
Occupancy and Contents type:			
Limited combustible	-15%	-900	5,100

SPRINKLER AND EXPOSURE ADJUSTMENTS CREDIT/CHARGE (L/min)

Sprinkler Adjustments (S)

Percentage of Floor Area Served by Sprinkler System	100%		
Automatic Sprinkler Protection per NFPA Standards	Yes	-30%	
Water Supply is Standard for Sprinkler System and Hose Lines	Yes	-10%	
Fully Supervised System	Yes	-10%	
All other buildings within 30m of the subject building are fully sprinklered as per NFPA	No	0%	
S = Total Sprinkler Credit	-50%		-2,550

Exposure Adjustments (E)

Exposure	Separation (m)	Proposed Wall		Length-Height Factor	Exposed Building Type		
		Length (m)	# Storeys				
N	57	25	20	500	Type I-II, protected openings	0%	
E	32	50	20	1000	Type I-II, protected openings	0%	
S	16	25	20	500	Type I-II, protected openings	3%	
W	50	50	20	1000	Type III-IV, unprotected openings	0%	
E = Total Exposure Charge						3%	153

REQUIRED FLOW (F''=F'+S+E) FLOW (L/min) 3,000
(USGPM) 793

DOMESTIC WATER USAGE CALCULATION SHEET

BUILDING D

	No. of Units	PPU	L/P/d	Avg. Day (L/d)
Apartments	231	2.7	280	174,636
Residential Use Avg. Day (L/d)				174,636
Avg Day (L/s)				2.03
<i>Peak flows</i>				
	<i>f</i>			
Peak hour (L/hr)	3			21,830
Max day (L/d)	2			349,272
Peak Hour (L/s)				6.07
Max Day (L/s)				4.05

Fire Flow

Land Use	No. of Units (U)	Min. Mississauga Fire Flow (L/s)	FUS Fire Flow (L/s)	Required Fire Flow (L/s)
Apartments	231	N/A	50	50

SITE SUMMARY - BUILDING D	
Residential Use Avg. Day (L/d)	174,636
Avg Day (L/s)	2.03
Max Day (L/s)	4.05
Peak Hour (L/s)	6.07
Max day plus Fire Flow (L/s)	54.05

BUILDING D

Address: <u>5100 Erin Mills Town Centre</u>	Notes: <u>Project Number: 2228</u>
<u>City of Mississauga</u>	<u>Date: October 2024</u>
<u>Region of Peel</u>	<u>2020 FUS</u>

BASE FLOW CALCULATION FLOW (L/min)

C= Type I Fire Resistive Construction	0.6	
A= Effective area	2235 m ²	
F= Required fire flow	6,240 L/min.	
"F" Rounded to nearest 1,000	6,000 L/min.	6,000

OCCUPANCY ADJUSTED FLOW (F') % CREDIT/CHARGE (L/min) FLOW (L/min)

Occupancy and Contents type:			
Limited combustible	-15%	-900	5,100

SPRINKLER AND EXPOSURE ADJUSTMENTS % CREDIT/CHARGE (L/min)
Sprinkler Adjustments (S)

Percentage of Floor Area Served by Sprinkler System	100%		
Automatic Sprinkler Protection per NFPA Standards	Yes	-30%	
Water Supply is Standard for Sprinkler System and Hose Lines	Yes	-10%	
Fully Supervised System	Yes	-10%	
All other buildings within 30m of the subject building are fully sprinklered as per NFPA	No	0%	
S = Total Sprinkler Credit	-50%		-2,550

Exposure Adjustments (E)

Exposure	Separation (m)	Proposed Wall		Length-Height Factor	Exposed Building Type		
		Length (m)	# Storeys				
N	13	25	20	500	Type I-II, protected openings	3%	
E	21	63	20	1260	Type I-II, protected openings	0%	
S	57	25	20	500	Type I-II, protected openings	0%	
W	48	63	20	1260	Type III-IV, unprotected openings	0%	
E = Total Exposure Charge						3%	153

REQUIRED FLOW (F''=F'+S+E) (L/min) 3,000 (USGPM) 793

DOMESTIC WATER USAGE CALCULATION SHEET

BUILDING E

	No. of Units	PPU	L/P/d	Avg. Day (L/d)
Apartments	298	2.7	280	225,288
Residential Use Avg. Day (L/d)				225,288
Avg Day (L/s)				2.61
<i>Peak flows</i>				
	<i>f</i>			
Peak hour (L/hr)	3			28,161
Max day (L/d)	2			450,576
Peak Hour (L/s)				7.83
Max Day (L/s)				5.22

Fire Flow

Land Use	No. of Units (U)	Min. Mississauga Fire Flow (L/s)	FUS Fire Flow (L/s)	Required Fire Flow (L/s)
Apartments	298	N/A	33	33

SITE SUMMARY - BUILDING E	
Residential Use Avg. Day (L/d)	225,288
Avg Day (L/s)	2.61
Max Day (L/s)	5.22
Peak Hour (L/s)	7.83
Max day plus Fire Flow (L/s)	38.55

BUILDING E

Address: <u>5100 Erin Mills Town Centre</u>	Notes: <u>Project Number: 2228</u>
<u>City of Mississauga</u>	<u>Date: October 2024</u>
<u>Region of Peel</u>	<u>2020 FUS</u>

BASE FLOW CALCULATION FLOW (L/min)

C= Type I Fire Resistive Construction	0.6	
A= Effective area	1818 m ²	
F= Required fire flow	5,628 L/min.	
"F" Rounded to nearest 1,000	6,000 L/min.	6,000

OCCUPANCY ADJUSTED FLOW (F') % CREDIT/CHARGE (L/min) FLOW (L/min)

Occupancy and Contents type:			
Limited combustible	-15%	-900	5,100

SPRINKLER AND EXPOSURE ADJUSTMENTS % CREDIT/CHARGE (L/min)
Sprinkler Adjustments (S)

Percentage of Floor Area Serviced by Sprinkler System	100%		
Automatic Sprinkler Protection per NFPA Standards	Yes	-30%	
Water Supply is Standard for Sprinkler System and Hose Lines	Yes	-10%	
Fully Supervised System	Yes	-10%	
All other buildings within 30m of the subject building are fully sprinklered as per NFPA	No	0%	
S = Total Sprinkler Credit	-50%		-2,550

Exposure Adjustments (E)

Exposure	Separation (m)	Proposed Wall		Length-Height Factor	Exposed Building Type		
		Length (m)	# Storeys				
N	19	25	25	625	Type I-II, protected openings	3%	
E	23	50	25	1250	Type I-II, protected openings	0%	
S	12	25	25	625	Type I-II, protected openings	3%	
W	72	50	25	1250	Type III-IV, unprotected openings	0%	
E = Total Exposure Charge						6%	306

REQUIRED FLOW (F''=F'+S+E) (L/min) 3,000 (USGPM) 793

DOMESTIC WATER USAGE CALCULATION SHEET

BUILDING F

	No. of Units	PPU	L/P/d	Avg. Day (L/d)
Apartments	709	2.7	280	536,004
Large Apartments (>750 sq.ft)	-	3.0	280	-
Residential Use Avg. Day (L/d)				536,004
Avg Day (L/s)				6.21
<i>Peak flows</i>				
	<i>f</i>			
Peak hour (L/hr)	3			67,001
Max day (L/d)	2			1,072,008
Peak Hour (L/s)				18.62
Max Day (L/s)				12.41

Fire Flow

Land Use	No. of Units (U)	Min. Mississauga Fire Flow (L/s)	FUS Fire Flow (L/s)	Required Fire Flow (L/s)
Apartments	709	N/A	67	67

SITE SUMMARY - BUILDING F	
Residential Use Avg. Day (L/d)	536,004
Avg Day (L/s)	6.21
Max Day (L/s)	12.41
Peak Hour (L/s)	18.62
Max day plus Fire Flow (L/s)	79.08

BUILDING F

Address: 5100 Erin Mills Town Centre	Notes: Project Number: 2228
City of Mississauga	Date: October 2024
Region of Peel	2020 FUS

BASE FLOW CALCULATION FLOW (L/min)

C= Type I Fire Resistive Construction	0.6	
A= Effective area	4044 m ²	
F= Required fire flow	8,394 L/min.	
"F" Rounded to nearest 1,000	8,000 L/min.	8,000

OCCUPANCY ADJUSTED FLOW (F') % CREDIT/CHARGE (L/min) FLOW (L/min)

Occupancy and Contents type:			
Limited combustible	-15%	-1,200	6,800

SPRINKLER AND EXPOSURE ADJUSTMENTS % CREDIT/CHARGE (L/min)
Sprinkler Adjustments (S)

Percentage of Floor Area Served by Sprinkler System	100%		
Automatic Sprinkler Protection per NFPA Standards	Yes	-30%	
Water Supply is Standard for Sprinkler System and Hose Lines	Yes	-10%	
Fully Supervised System	Yes	-10%	
All other buildings within 30m of the subject building are fully sprinklered as per NFPA	No	0%	
S = Total Sprinkler Credit	-50%		-3,400

Exposure Adjustments (E)

Exposure	Separation (m)	Proposed Wall		Length-Height Factor	Exposed Building Type		
		Length (m)	# Storeys				
N	111	25	30	750	Type III-IV, unprotected openings	0%	
E	69	116	30	3480	Type I-II, protected openings	0%	
S	19	25	30	750	Type I-II, protected openings	3%	
W	92	116	30	3480	Type III-IV, unprotected openings	0%	
E = Total Exposure Charge						3%	204

REQUIRED FLOW (F''=F'+S+E) (L/min) 4,000 (USGPM) 1,057

**DOMESTIC WATER USAGE
 CALCULATION SHEET**

BUILDING G

	No. of Units	PPU	L/P/d	Avg. Day (L/d)
Apartments	546	2.7	280	412,776
Residential Use Avg. Day (L/d)				412,776
Avg Day (L/s)				4.78
<i>Peak flows</i>				
<i>f</i>				
Peak hour (L/hr)	3			51,597
Max day (L/d)	2			825,552
Peak Hour (L/s)				14.34
Max Day (L/s)				9.56

Fire Flow

Land Use	No. of Units (U)	Min. Mississauga Fire Flow (L/s)	FUS Fire Flow (L/s)	Required Fire Flow (L/s)
Apartments	546	N/A	50	50

SITE SUMMARY - BUILDING G

Residential Use Avg. Day (L/d)	412,776
Avg Day (L/s)	4.78
Max Day (L/s)	9.56
Peak Hour (L/s)	14.34
Max day plus Fire Flow (L/s)	59.56

DOMESTIC WATER USAGE CALCULATION SHEET

BUILDING G

Address: <u>5100 Erin Mills Town Centre</u>	Notes: <u>Project Number: 2228</u>
<u>City of Mississauga</u>	<u>Date: October 2024</u>
<u>Region of Peel</u>	<u>2020 FUS</u>

BASE FLOW CALCULATION FLOW (L/min)

C= Type I Fire Resistive Construction	0.6	
A= Effective area	2348 m ²	
F= Required fire flow	6,396 L/min.	
"F" Rounded to nearest 1,000	6,000 L/min.	6,000

OCCUPANCY ADJUSTED FLOW (F') % CREDIT/CHARGE (L/min) FLOW (L/min)

Occupancy and Contents type:			
Limited combustible	-15%	-900	5,100

SPRINKLER AND EXPOSURE ADJUSTMENTS % CREDIT/CHARGE (L/min)

Sprinkler Adjustments (S)

Percentage of Floor Area Served by Sprinkler System	100%		
Automatic Sprinkler Protection per NFPA Standards	Yes	-30%	
Water Supply is Standard for Sprinkler System and Hose Lines	Yes	-10%	
Fully Supervised System	Yes	-10%	
All other buildings within 30m of the subject building are fully sprinklered as per NFPA	No	0%	
S = Total Sprinkler Credit		-50%	-2,550

Exposure Adjustments (E)

Exposure	Separation (m)	Proposed Wall		Length-Height Factor	Exposed Building Type		
		Length (m)	# Storeys				
N	63	69	44	3036	Type I-II, protected openings	0%	
E	151	25	44	1100	Type III-IV, unprotected openings	0%	
S	33	55	44	2420	Type I-II, protected openings	0%	
W	33	30	44	1320	Type I-II, protected openings	0%	
E = Total Exposure Charge						0%	0

REQUIRED FLOW (F" = F'+S+E) (L/min) 3,000 (USGPM) 793

DOMESTIC WATER USAGE CALCULATION SHEET

BUILDING H

	No. of Units	PPU	L/P/d	Avg. Day (L/d)
Apartments	485	2.7	280	366,660
Residential Use Avg. Day (L/d)				366,660
Avg Day (L/s)				4.25
<i>Peak flows</i>				
	<i>f</i>			
Peak hour (L/hr)	3			45,833
Max day (L/d)	2			733,320
Peak Hour (L/s)				12.74
Max Day (L/s)				8.49

Fire Flow

Land Use	No. of Units (U)	Min. Mississauga Fire Flow (L/s)	FUS Fire Flow (L/s)	Required Fire Flow (L/s)
Apartments	485	N/A	50	50

SITE SUMMARY - BUILDING H

Residential Use Avg. Day (L/d)	366,660
Avg Day (L/s)	4.25
Max Day (L/s)	8.49
Peak Hour (L/s)	12.74
Max day plus Fire Flow (L/s)	58.49

BUILDING H

Address: 5100 Erin Mills Town Centre	Notes: Project Number: 2228
City of Mississauga	Date: October 2024
Region of Peel	2020 FUS

BASE FLOW CALCULATION FLOW (L/min)

C= Type I Fire Resistive Construction	0.6	
A= Effective area	2348 m ²	
F= Required fire flow	6,396 L/min.	
"F" Rounded to nearest 1,000	6,000 L/min.	6,000

OCCUPANCY ADJUSTED FLOW (F') FLOW (L/min)

	%	CREDIT/CHARGE (L/min)	FLOW (L/min)
Occupancy and Contents type:			
Limited combustible	-15%	-900	5,100

SPRINKLER AND EXPOSURE ADJUSTMENTS CREDIT/CHARGE (L/min)
Sprinkler Adjustments (S)

Percentage of Floor Area Serviced by Sprinkler System	100%		
Automatic Sprinkler Protection per NFPA Standards	Yes	-30%	
Water Supply is Standard for Sprinkler System and Hose Lines	Yes	-10%	
Fully Supervised System	Yes	-10%	
All other buildings within 30m of the subject building are fully sprinklered as per NFPA	No	0%	
S = Total Sprinkler Credit	-50%		-2,550

Exposure Adjustments (E)

Exposure	Separation (m)	Proposed Wall		Length-Height Factor	Exposed Building Type	
		Length (m)	# Storeys			
N	23	53	30	1590	Type I-II, protected openings	0%
E	144	25	30	750	Type III-IV, unprotected openings	0%
S	63	69	30	2070	Type I-II, protected openings	0%
W	21	32	30	960	Type I-II, protected openings	0%
E = Total Exposure Charge						0

REQUIRED FLOW (F''=F'+S+E) FLOW (L/min) 3,000
(USGPM) 793

DOMESTIC WATER USAGE CALCULATION SHEET

EXISTING

	Area (ha)	PPU (employee/ha)	L/P/d	Avg. Day (L/d)
Existing	4.28	50.0	250	53,500
				-
Existing Use Avg. Day (L/d)				53,500
Avg Day (L/s)				0.62
<i>Peak flows</i>				
	<i>f</i>			
Peak hour (L/hr)	3			6,688
Max day (L/d)	1.4			74,900
Peak Hour (L/s)				1.86
Max Day (L/s)				0.87

Fire Flow

Land Use	No. of Units (U)	Min. Mississauga Fire Flow (L/s)	FUS Fire Flow (L/s)	Required Fire Flow (L/s)
Commercial	N/A	N/A	83	83

SITE SUMMARY - EXISTING

Existing Use Avg. Day (L/d)	53,500
Avg Day (L/s)	0.62
Max Day (L/s)	0.87
Peak Hour (L/s)	1.86
Max day plus Fire Flow (L/s)	83.87

EXISTING

Address: <u>5100 Erin Mills Town Centre</u>	Notes: <u>Project Number: 2228</u>
<u>City of Mississauga</u>	<u>Date: November 2024</u>
<u>Region of Peel</u>	<u>2020 FUS</u>

BASE FLOW CALCULATION FLOW (L/min)

C= Type I Fire Resistive Construction	0.6	
A= Effective area	4478 m ²	
F= Required fire flow	8,833 L/min.	
"F" Rounded to nearest 1,000	9,000 L/min.	9,000

OCCUPANCY ADJUSTED FLOW (F') % CREDIT/CHARGE (L/min) FLOW (L/min)

Occupancy and Contents type:			
Limited combustible	-15%	-1,350	7,650

SPRINKLER AND EXPOSURE ADJUSTMENTS % CREDIT/CHARGE (L/min)
Sprinkler Adjustments (S)

Percentage of Floor Area Serviced by Sprinkler System	100%		
Automatic Sprinkler Protection per NFPA Standards	Yes	-30%	
Water Supply is Standard for Sprinkler System and Hose Lines	Yes	-10%	
Fully Supervised System	Yes	-10%	
All other buildings within 30m of the subject building are fully sprinklered as per NFPA	No	0%	
S = Total Sprinkler Credit	-50%		-3,825

Exposure Adjustments (E)

Exposure	Separation (m)	Proposed Wall		Length-Height Factor	Exposed Building Type		
		Length (m)	# Storeys				
N	48	25	1	25	Type III-IV, unprotected openings	0%	
E	200	60	1	60	Type III-IV, unprotected openings	0%	
S	158	50	1	50	Type III-IV, unprotected openings	0%	
W	8	20	1	20	Type III-IV, unprotected openings	10%	
E = Total Exposure Charge						10%	765

REQUIRED FLOW (F''=F'+S+E) (L/min) 5,000 (USGPM) 1,321



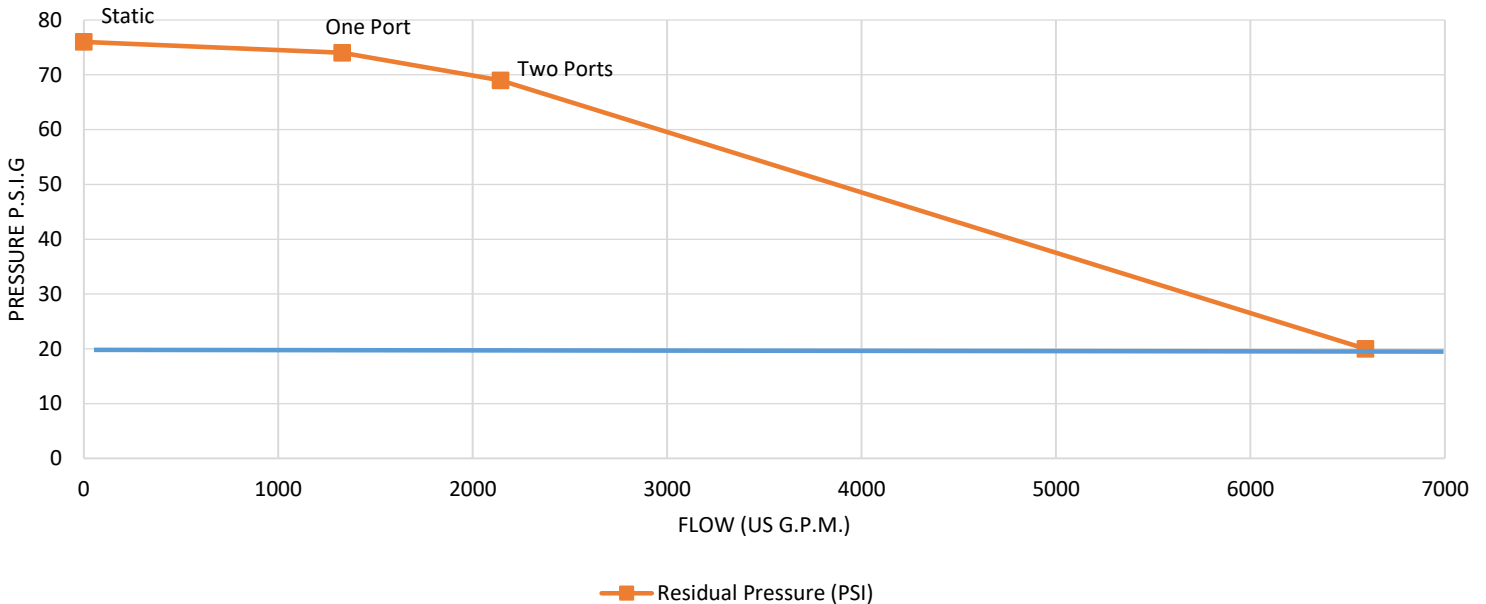
5-200 Connie Cres. Concord ON L4K 1M1 Phone 416-883-9777 Fax 905-303-6977

FLOW TEST REPORT

Location of Residual Hydrant : 1st HYD on Glen Erin Drive south of Erin Centre Blvd
 Location of Flow Hydrant : 2nd HYD on Glen Erin Drive south of Erin Centre Blvd
 Time of Test : 9:00 AM Watermain Size : 400 mm Static Pressure : 76 PSI

Number of Outlets	Pitot Pressure (PSI)	Flow (US G.P.M.)	Residual Pressure (PSI)
Static Pressure (Zero Port)	0	0	76
One 2½" Hydrant Port	63	1329	74
Two 2½" Hydrant Port	41	2144	69
Projected Approx. Flow		6591	20

FLOW TEST CHART



Project Location: SE Corner of Glen Erin Dr and Erin Centre Blvd Date: 17-May-24
 Company Name: EMTC Inc. Aquazition Employee: Sebastian Castillo Falla



Flow Hydrant

Residual Hydrant

Water and Wastewater Modelling Demand Table

Site Plan Applications

Version	Date	Description of Revision
1.0	January 10 2023	Posted to Peel Website
2.0	August 30 2024	Reflects 2023 Linear Wastewater Standards and ICI population estimates as per Peel 2020 DC background study

Introduction

Water and wastewater modelling may be required as a condition of the development approval process or prior to regional site servicing connection approval where intensification is proposed, where a possible increase in water demand or wastewater discharge is identified or where deemed necessary by Regional staff.

A completed table includes the Professional Engineer's signature and stamp as well as a site servicing concept. The table will be deemed complete once all the information below is submitted and/or included. Modelling will commence once the information is deemed complete. All required calculations must be submitted with the completed demand table. The calculations shall be based on the specific development proposal.

Application Information

Application Number:	
Address:	5100 Erin Mills Town Centre
Consulting Engineer:	SCS Consulting Group Ltd.
Date Prepared:	October 2024

Population

Existing

		Units	Persons
1	Residential ³⁾	0	
2	Institutional/Employment ³⁾		214
3	Total	0	214

Proposed

			Units	Persons
4	Residential ¹⁾	singles/semis (4.2 ppu)		
5		Townhomes (3.4 ppu)		
6		Large apartments (>1 bedroom – 3.1 ppu)	3162	8538
7		Small apartments (<=1 bedroom – 1.7 ppu)		
8		Total proposed residential	8538	8538
9	Proposed Institutional ²⁾			0
10	Proposed employment ³⁾			0
11	Total Proposed			8538

Other

12	Existing gross floor area for commercial and/or retail (sqm)		5873
13	Proposed gross floor area for commercial and/or retail (sqm)		0
14	Land area (ha)		4.28

Water Connection

Hydrant flow test ⁴⁾

15	Location 1	Residual: 1st hydrant on Glen Erin Dr south of Erin Centre Blvd
16	Location 2	Flow: 2nd hydrant on Glen Erin Dr south of Erin Centre Blvd

WATER AND WASTEWATER MODELLING DEMAND TABLE

		Pressure (kPa)	Flow (L/s)	Time
17	Minimum water pressure	282.7	135.3	9:00am
18	Maximum water pressure	434.4	83.8	9:00am

Water Demands (L/s)

		Use 1 ⁶⁾	Use 2 ⁶⁾	Use 3 ⁶⁾	Total
19	Existing fire flow ^{5) 8)}				83
20	Proposed average day flow	27.71			
21	Proposed maximum day flow	83.06			
22	Proposed peak hour flow	83.06			
23	Proposed fire flow ⁵⁾				66.7

Water calculations

Please use the following updated typical water demand criteria as per Peel's 2020 Development Charges background study.

Population Type	Unit	Average Consumption Rate	Max Day Factor	Peak Hour Factor
Residential	L/cap/d	270	1.8	3.0
Institutional/Commercial/ Industrial	L/emp/d	250	1.4	3.0

Wastewater Connection

Wastewater Effluent (L/s)

		Discharge location ⁷⁾	Flow
24	Existing effluent ⁸⁾	Glen Erin Drive & Erin Centre Blvd; refer to SUE	3.79 L/s
25	Proposed effluent	Glen Erin Drive	49.91
26	Proposed effluent	Erin Centre Boulevard	58.57
27	Proposed effluent		
28	Proposed additional effluent ⁸⁾		
29	Other proposed effluent*		
30	Total proposed effluent		108.48

*Please specify other proposed effluent (ex. occasional tank purges, off peak discharge, pool drainage)

--

Wastewater calculations

Please use the following updated daily per capita as per 2023 Peel Linear Wastewater Standards

Population Type	Unit	Average Day Demand	Min Peaking Factor	Max Peaking Factor	Inflow and Infiltration**
Residential	L/cap/d	290	2	4	0.26L/s/Ha
Non-residential	L/emp/d	270	2	4	0.26L/s/Ha

**For maintenance holes that are flood prone or located in low lying areas, an extra 0.28 L/s per maintenance hole may be added to the I&I calculation.

Notes

- 1) In accordance with Peel Linear Wastewater Standards and Region of Peel 2020 DC background Study
- 2) refer to Peel Linear Wastewater Standards
- 3) For the commercial and industrial design flow calculations, please refer to Schedule 8b on page A-9 of the Region of Peel 2020 DC background Study to determine population.
- 4) Please include the graphs associated with the hydrant flow test data. Hydrant flow tests should be performed within 2 years of submission to the Region. The Region will not permit hydrant flow tests during the winter, please contact Region Water Operations for scheduling. The Region reserves the right to request an updated hydrant flow test as required at any time.
- 5) Please reference the Fire Underwriters Survey Document
- 6) Please identify the flows for each use type, **if applicable**
- 7) Please include drainage plan for multiple discharge locations
- 8) For Intensification, sites with additions to buildings or additional buildings please provide existing flow for existing buildings and the added flows for the new proposal, **if applicable**

APPENDIX F

HYDROGEOLOGICAL INFORMATION



5100 Erin Mills Parkway – Block 1,
Mississauga, Ontario

L5M 5P5

Hydrogeological Investigation

Client:

*The Muzzo Group of Companies
50 Confederation Parkway
Concord, Ontario
L4K 4T8*

Attention: Mr. Barry Stern

Type of Document:

Preliminary Final

Project Name:

5100 Erin Mills Parkway – Block 1, Mississauga, Ontario

Project Number:

GTR-00257769-H0

EXP Services Inc.
1595 Clark Boulevard
Brampton, ON, L6T 4V1
t: 905.793.9800
f: 905.793.0641

Date Submitted:

2024-08-27

Table of Contents

1	Introduction	3
1.1	Project Description	3
1.2	Project Objectives	3
1.3	Scope of Work.....	3
1.4	Review of Previous Reports	4
2	Hydrogeological Setting	5
2.1	Regional Setting	5
2.1.1	Regional Physiography.....	5
2.1.2	Regional Geology and Hydrogeology.....	5
2.1.3	Existing Water Well Survey.....	5
2.2	Site Setting.....	6
2.2.1	Site Topography.....	6
2.2.2	Local Surface Water Features	6
2.2.3	Local Geology and Hydrogeology	6
3	Results.....	8
3.1	Monitoring Well Details.....	8
3.2	Water Level Monitoring.....	8
3.3	Hydraulic Conductivity Testing	10
3.4	Groundwater Quality	11
4	Dewatering Assessment	13
4.1	Dewatering Flow Rate Estimate and Zone of Influence.....	13
4.2	Cooper-Jacob’s Radius of Influence	13
4.3	Stormwater	14
4.4	Results of Dewatering Rate Estimates.....	14
4.4.1	Construction Dewatering Rate Estimate	14
4.4.2	Post-Construction Dewatering Rate Estimate	16
4.5	MECP Water Taking Permits.....	17
4.5.1	Short-Term Discharge Rate (Construction Phase)	17

4.5.2	Long-Term Discharge Rate (Post Construction Phase)	17
5	Environmental Impact	18
5.1	Surface Water Features	18
5.2	Highly Vulnerable Aquifers and Significant Groundwater Recharge Areas (HVAs and SGRA)	18
5.3	Groundwater Sources	18
5.4	Geotechnical Considerations	18
5.5	Groundwater Quality	18
5.6	Well Decommissioning	19
6	Conclusions and Recommendations.....	20
7	Limitations	22
8	References	23

List of Figures

- Figure 1 – Site Location Plan
- Figures 2A, 2B, 2C – Surficial Geology, Physiography and Landform
- Figure 3 – MECP Water Well Records Map
- Figure 4 – Borehole/Monitoring Well Location Plan
- Figure 5 – Cross Section A-A
- Figure 6A – Shallow Groundwater Flow Map
- Figure 6B – Deep Groundwater Flow Map

List of Appendices

- Appendix A – MECP WWR Summary Table
- Appendix B – Borehole Logs
- Appendix C – SWRT Procedures and Results
- Appendix D – Laboratory’s Certificates of Analysis
- Appendix E – Construction and Post-Construction Flow Rate Calculations
- Appendix F – ORMGP

1 Introduction

1.1 Project Description

EXP Services Inc. (EXP) was retained by The Muzzo Group of Companies. to prepare a Hydrogeological Investigation Report associated with the proposed development located at 5100 Erin Mills Parkway – Block 1, Mississauga, Ontario (hereinafter referred to as the 'Site').

The Site is currently occupied in part by a single storey commercial building along with paved surface parking and landscape areas. It is our understanding that the proposed development plan is to construct a total of nine (9) towers of 20 to 35 storeys in height. The development consists of five (5) phases which will include five (5) levels of underground parking. The Site location plan is shown on Figure 1.

In 2020 and 2024, EXP conducted Preliminary Geotechnical Investigation, Hydrogeological Investigation and Environmental Site Assessment in conjunction with this investigation. The pertinent information gathered from the noted investigations is utilized for this report.

1.2 Project Objectives

The main objectives of the Hydrogeological Investigation are as follows:

- Establish the local hydrogeological settings within the Site;
- Provide Preliminary recommendations on construction and long-term dewatering;
- Assess groundwater quality; and
- Prepare a Hydrogeological Investigation Report.

1.3 Scope of Work

To achieve the investigation objectives, EXP has completed the following scope of work:

- Reviewed available geological and hydrogeological information for the Site;
- Developed and conducted Single Well Response Tests (SWRT) on monitoring wells to assess hydraulic conductivities of the saturated soils at the Site;
- Completed two (2) rounds of groundwater level measurements at all monitoring wells;
- Collected one (1) groundwater sample for analyses of parameters, as listed in the Peel Region Sanitary and Storm Sewer Use By-Law;
- Evaluated the information collected during the field investigation program, including borehole geological information, Water Well Records (WWR), SWRT results, groundwater level measurements and groundwater water quality;
- Prepared site plans, cross sections, geological mapping and groundwater contour mapping for the Site;
- Provided preliminary recommendations on the requirements for construction and long-term dewatering;
- Provided recommendations on the Ministry of Environment, Conservation and Parks (MECP) Water Taking Permits and Peel Region Sewer Discharge Agreements (SDA) for the construction and post-construction phases; and,
- Prepared a Hydrogeological Investigation Report

The Hydrogeological Investigation was prepared in accordance with the Ontario Water Resources Act, and Ontario Regulation 387/04. The scope of work outlined above was made to assess dewatering and did not include a review of Environmental Site Assessments (ESA).

1.4 Review of Previous Reports

The following reports were reviewed as part of this Hydrogeological Investigation:

- EXP Services Inc. (November 16, 2022), Preliminary Hydrogeological Investigation, 5100 Erin Mills Parkway, Mississauga, ON, prepared for Muzzo Group.
- EXP Services Inc. (November 10, 2022), Supplementary Geotechnical Investigation, Proposed Mixed Use Development, 5100 Erin Mills Parkway, Mississauga, ON, prepared for Muzzo Group.
- EXP Services Inc. (December 1, 2020), Phase II Environmental Site Assessment, 5100 Erin Mills Parkway, Mississauga, ON, prepared for Muzzo Group.
- EXP Services Inc. (March 27, 2020), Draft Preliminary Geotechnical Investigation, 5100 Erin Mills Parkway, Mississauga, ON, prepared for Muzzo Group.
- Cushman & Wakefield Asset Services (May 22, 2019), Erin Mills Town Centre, Business Plan for a New Mixed-Use Development, prepared for Investment Management Corporation Ontario.

Any past and/or future geotechnical, hydrogeological, environmental and risk assessments, and updated development/architectural plans should be provided to update this hydrogeological report prior to submission of permits and approvals by the municipalities and agencies.

2 Hydrogeological Setting

2.1 Regional Setting

2.1.1 Regional Physiography

The Site is within a physiographic region known as the South Slope, and the physiographic landform is named Till Moraines (as shown on Figures 2B and 2C). The South Slope is a sloping plain that extends along the southern boundary of the Peel Plain to the shoreline of former Lake Iroquois. This physiographic region represents the southern flank of the Oak Ridges Moraine and is underlain by glacial till. The resulting soil types are predominantly clay with some clay loam and loam. Since the topography is not hummocky like the Oak Ridges, runoff is relatively high and infiltration is correspondingly low.

2.1.2 Regional Geology and Hydrogeology

The surficial geology can be described as glaciolacustrine-derived silty to clayey till in northern portion of the site and Paleozoic Bedrock in the southern portion of the site (Ministry of Northern Development and Mines, 2010). The surficial geology of the Site and surrounding areas is shown on Figure 2.

Based on the available regional geology maps, the subsurface stratigraphy of the Site from top to bottom is summarized in Table 2-1 (TRCA, 2008 and Oak Ridge Moraine Groundwater Program, 2024). The overburden thickness is approximately 11.09 m.

Table 2-1: Summary of Subsurface Stratigraphy

Stratigraphic Unit	General Description	Top Elevation of Stratigraphic Unit
Halton Till or Equivalent (Aquitard)	This lithologic unit typically consists of sandy silt to clayey silt till interbedded with silt, clay, sand and gravel.	172.36
Newmarket Till (Aquitard)	This lithologic unit mainly consist of a massive and dense silty sand unit.	162.2
Queenston Formation (Aquifer)	Bedrock consists of interbedded shale, limestone, dolostone and siltstone. It belongs to the Upper Ordovician, (Ministry of Northern Development and Mines, 2012).	165.22

Regional groundwater across the area flows northeast, towards the Credit River (Oak Ridge Moraine Groundwater Program, 2024). Local deviation from the regional groundwater flow pattern may occur in response to changes in topography and/or soils, as well as the presence of surface water features and/or existing subsurface infrastructure.

2.1.3 Existing Water Well Survey

Water Well Records (WWRs) were compiled from the database maintained by the Ministry of the Environment, Conservation and Parks (MECP) and reviewed to determine the number of water wells documented within a 500-m radius of the Site boundaries. The locations of the MECP WWRs within 500 m of the Site are shown on Figure 3. A summary of the WWR is included in Appendix A.

The MECP WWR database indicates that sixteen (16) records within a 500 m radius from the Site centroid where three (3) well records are identified onsite (Figure 3 and Appendix A). Well distances are calculated relative to the Site centroid, therefore some distances in Appendix A exceed 500 m.

All offsite wells were reportedly identified as monitoring and observation wells, test holes, wells, abandoned and/or listed with unknown use.

2.2 Site Setting

2.2.1 Site Topography

The Site is in an urban land use setting. The topography is considered relatively flat with a regional gradual southeasterly slope towards Credit River and Lake Ontario. The surface elevation of the Site ranges between approximately 175.26 to 176.87 meters above sea level (masl).

2.2.2 Local Surface Water Features

The Site is within the Credit River watershed. No surface water features exist onsite. The nearest surface water feature is an unnamed tributary of Mullet Creek, approximately located 500 meters northeast of the Site boundary. Lake Ontario is approximately 10 km from the Site boundary to the southeast.

2.2.3 Local Geology and Hydrogeology

A summary of subsurface soil stratigraphy is provided in the following paragraphs. The soil descriptions are based on the geotechnical investigation report (EXP, 2024). They are summarized for the hydrogeological interpretations. As such, the information provided in this section shall not be used for construction design purposes.

The detailed soil profiles encountered in each borehole and the results of moisture content determinations are presented on the attached borehole logs (Appendix B). The soil boundaries indicated on the borehole logs are inferred from non-continuous sampling and observations during drilling. These boundaries are intended to reflect approximate transition zones for the Hydrogeological Investigation and shall not be interpreted as exact planes of geological change.

The "Notes on Sample Description" preceding the borehole logs form an integral part of and should be read in conjunction with this report. The following is a brief description of the soil conditions encountered during the investigation.

Based on the results of the geotechnical investigation, the general subsurface soil stratigraphy consists of the following units from top to bottom:

Asphalt and Topsoil

Asphalt with thickness ranging from about 70 to 140 mm was encountered at the surface of Boreholes 201, 202, 203, 204, 205, 206 and 209D. At the ground surface of Boreholes 207, 210, 211, 212, 213 and 214D, topsoil cover with thickness ranging from about 100 to 200 mm was encountered. At Borehole 208, a topsoil layer of about 125 mm thick was encountered below the surficial pebble layer.

Fill

Fill, comprising sand and gravel, silty sand and clayey silt was encountered below the asphalt or topsoil at all borehole locations. The fill extends to depths ranging from about 0.7 to 2 m below existing ground surface (El. ~176.1 to 173.3 m).

Silt

The fill in Borehole 205 is underlain by a silt deposit which is brown to grey in colour, contains a trace of clay and gravel. It is in a dense to very dense state of compactness (recorded 'N'-values of 41 to over 100) and extends to a depth of about 8.5 m below existing grade (El. ~166.8 m).

Sandy Silt to Silty Sand

A sandy silt to silty sand deposit was encountered below the fill in Borehole 206. This deposit is brown in colour and is in a compact state of compactness. The sandy silt to silty sand extends to a depth of about 2.5 m below existing ground surface (El. ~173.5 m).

Silt Till

A silt till deposit was encountered below the silt in Borehole 205, below the sandy silt to silty sand in Borehole 206 and below the fill in the remaining boreholes. The silt till is generally reddish brown in colour, contains some clay, a trace of sand with a trace of shale fragments at lower level of the deposit. It has moisture contents of about 5 to 11 percent of dry mass and is in a dense to very dense state of compactness (recorded 'N'-values of 38 to over 100). The silt till extends to depths of about 2.6 to 10.1 m below existing ground surface (El. ~174.2 to 165.2 m).

Shale Bedrock

Shale bedrock of the Queenston Formation was encountered below the silt till at all borehole locations. The approximate elevation for the bedrock encountered in each borehole is presented in the individual borehole and core logs. Approximately 4.7 to 12.6 m of shale bedrock was cored in the boreholes and the detailed findings from the rock cores are presented in the respective rock core logs for each borehole.

Based on the rock core information, the shale bedrock comprises about 62 to 98% shale, 1 to 11% limestone, 1 to 26% siltstone and 1 to 2% clay seams. The core recovery ranged from 92 to 100%. The Rock Quality Designation (RQD), a rock quality indicator, is defined as the sum of core lengths of 100 mm or greater divided by the total length of the drill run. The recorded RQD ranged from about 0 to 100% with the lower values recorded in the weathered or rubble zones within the shale bedrock. In general, the RQD values beyond the weathered or rubble zones ranged from about 56 to 100%, indicating a fair quality. The shale bedrock generally consists of moderately soft bedded red shale with some limestone interbeds and is highly weathered in the upper zones and becoming sound with depth. All 14 deep boreholes were terminated in the shale bedrock at depths ranging from about 15.3 to 15.9 m below existing ground surface (El. 161.6 to 159.8 m).

The Queenston Formation consists of red shale with interbeds of limestone and siltstone. Typically, the hard layers comprise about 15 to 20 percent of the unit. The hard layers are usually less than about 100 to 150 mm thick but some layers are much thicker. The thicker layers have been observed to be as much as 750 to 900 mm at other sites. The layers are actually lenses and they can vary significantly in thickness over short distances.

The borehole and monitoring well locations are shown on Figure 4. Geological cross-sections were generated based on the available borehole logs completed as part of the previous and current investigations and shown on Figure 5 (Cross section A-A') The cross section shows a simplified representation of soil conditions and soil deposits may be interconnected differently than represented. Borehole logs used to generate both cross-sections are provided in Appendix B.

3 Results

3.1 Monitoring Well Details

The monitoring well network was installed as part of the Geotechnical and Environmental Investigations at the Site. It consists of the following:

- Two (2) shallow overburden monitoring wells (BH5 and BH20) were installed as part of the previous investigation;
- One (1) deep monitoring well (BH101) was installed as part of the previous investigation;
- Four (4) shallow monitoring wells (BH/MW 202, BH/MW 203, BH/MW 209S and BH/MW 214S) were installed as part of the current investigation;
- Five (5) deep monitoring wells (BH/MW 205, BH/MW 207, BH/MW 209D, BH/MW 212, and BH/MW 214D) were installed as part of the current investigation.

The diameter of all monitoring wells is 50 mm. All wells were installed with a flush mount protective casing. Borehole logs and monitoring well installation details are provided in Appendix B. The monitoring well locations are shown on Figure 4.

3.2 Water Level Monitoring

As part of the Hydrogeological Investigation, static water levels in the monitoring wells installed outside of the existing building were recorded in five (5) monitoring events between October 26, 2022 and February 4, 2024. A summary of all static water level data as it relates to the elevation survey is given in Table 3-1 below.

The groundwater elevation recorded in the shallow wells ranged from 167.74 masl to 172.30 masl. The groundwater elevation recorded in the deep wells ranged from 168.90 masl to 170.42 masl

Table 3-1: Summary of Measured Groundwater Elevations

Monitoring Well ID	Ground Surface Elevation (masl)	Stick Up (m)*	Approximate Full Well Depth (mbTOP)*	Approximate Full Well Depth (mbgs)	Minimum Groundwater Elevation (masl)	Maximum Groundwater Elevation (masl)	Depth	26-Oct-22	28-Oct-22	31-Oct-22	29-Jan-24	4-Feb-24
BH 5	175.10	0.00	4.68	4.68	169.38	169.38	mbTOP	DRY	-	DRY	5.72	5.72
							mbgs	-	-	-	5.72	5.72
							masl	-	-	-	169.38	169.38
BH 20	177.19	0.76	6.56	5.80	172.23	172.30	mbTOP	5.65	-	5.67	5.72	5.72
							mbgs	4.89	-	4.91	4.96	4.96
							masl	172.30	-	172.28	172.23	172.23
BH 101	175.11	0.00	12.05	12.05	169.37	169.44	mbTOP	5.72	5.67	5.75	5.72	5.72
							mbgs	5.72	5.67	5.75	5.72	5.72
							masl	169.40	169.44	169.37	169.39	169.39
BH 202	176.76	0.00	7.21	7.21	170.79	170.82	mbTOP	-	-	-	5.94	5.97
							mbgs	-	-	-	5.94	5.97
							masl	-	-	-	170.82	170.79
BH 203	176.31	0.00	6.94	6.94	169.84	170.15	mbTOP	-	-	-	6.47	6.16
							mbgs	-	-	-	6.47	6.16
							masl	-	-	-	169.84	170.15
BH 205	175.26	0.00	15.20	15.20	169.70	169.92	mbTOP	-	-	-	5.34	5.56
							mbgs	-	-	-	5.34	5.56
							masl	-	-	-	169.92	169.70
BH 207	176.12	0.96	15.50	14.54	168.74	170.01	mbTOP	-	-	-	7.07	8.34
							mbgs	-	-	-	6.11	7.38
							masl	-	-	-	170.01	168.74
BH 209 S	176.87	0.00	6.91	6.91			mbTOP	-	-	-	DRY	DRY
							mbgs	-	-	-	DRY	DRY
							masl	-	-	-	DRY	DRY
BH 209 D	176.87	0.00	14.60	14.60	168.90	169.02	mbTOP	-	-	-	7.85	7.97
							mbgs	-	-	-	7.85	7.97
							masl	-	-	-	169.02	168.90
BH 212	176.12	0.89	15.94	15.05	170.30	170.42	mbTOP	-	-	-	6.59	6.71
							mbgs	-	-	-	5.70	5.82
							masl	-	-	-	170.42	170.30
BH 214 S	175.97	1.10	7.21	6.11	170.02	170.05	mbTOP	-	-	-	7.02	7.05
							mbgs	-	-	-	5.92	5.95
							masl	-	-	-	170.05	170.02
BH 214 D	175.97	0.95	16.77	15.82	169.69	169.92	mbTOP	-	-	-	7.00	7.23
							mbgs	-	-	-	6.05	6.28
							masl	-	-	-	169.92	169.69

Two (2) maps were created for the Site to show groundwater contours of the shallow and deep water-bearing zones (Figures 6). Accordingly, the general groundwater flow direction is interpreted to be northeast of the Site for the shallow and deep water-bearing zones respectively, towards Mullet Creek, one of the tributaries of Credit River. This is consistent with the Oak Ridges Moraine Groundwater Program database. Groundwater levels are expected to show seasonal fluctuations and vary in response to prevailing climate conditions. This may also affect the direction and rate of flow. It is recommended to conduct seasonal groundwater level measurements to provide more information on seasonal groundwater level fluctuations.

3.3 Hydraulic Conductivity Testing

Two (2) Single Well Response Tests (SWRT’s) were completed on monitoring wells BH20 and BH101 on October 31, 2022, as well as an additional six (6) on BH/MW 202, BH/MW 205, BH/MW 207, BH/MW 209D, BH/MW 212, and BH/MW 214D on February 4, 2024. The tests were completed to estimate the saturated hydraulic conductivity (K) of the soils at the well screen depths utilizing data loggers, preprogrammed to take measurement on (time in sec/ half sec/minutes) intervals.

The static water level within each monitoring well was measured prior to the start of testing. In advance of performing SWRTs, each monitoring well underwent development to remove fines introduced into the screens following construction. The development process involved purging of the monitoring wells to induce the flow of fresh formation water through the screen. Each monitoring well was permitted to fully recover prior to performing SWRTs.

Hydraulic conductivity values were calculated from the SWRT and constant rate test data as per Hvorslev’s solution included in the Aqtesolv Pro. V.4.5 software package. The semi-log plots for normalized drawdown versus time are included in Appendix C. A summary of the hydraulic conductivities (K-values) estimated from the SWRTs are provided in Table 3-2.

Table 3-5: Summary of Hydraulic Conductivity Testing

Monitoring Well	Well Depth (mbgs)	Screen Interval (mbgs)		Soil formation Screened	Estimated Hydraulic Conductivity (m/s)
		from	to		
BH 20	6.56	3.56	6.56	Shale	1.2E-06
BH 101	12.05	9.05	12.05	Shale	2.7E-07
BH/MW 202	7.21	4.21	7.21	Shale	4.6E-08
BH/MW 205	15.2	12.2	15.2	Shale	5.7E-08
BH/MW 207	15.5	12.5	15.5	Shale	1.8E-07
BH/MW 209D	14.6	11.6	14.6	Shale	3.5E-07
BH/MW 212	15.05	12.05	15.05	Shale	1.6E-07
BH/MW 214D	15.82	12.82	15.82	Shale	1.3E-06
Highest Estimated K Value					1.3E-06
Geometric Mean of Estimated K Values					2.6E-07
Arithmetic Mean of Estimated K Values					4.6E-07

SWRTs provide K-estimates of the geological formation surrounding the well screens and may not be representative of bulk formation hydraulic conductivity. As shown in Table 3-2, the highest K-value of the tested water-bearing zone is 1.3E-06 m/s, and the geometric mean of the K-values is 2.6E-07 m/s.

3.4 Groundwater Quality

To assess the suitability for discharging pumped groundwater into the sewers owned by the Peel Region and/or the City of Mississauga during dewatering activities, one (1) groundwater sample was collected from monitoring well BH 101 on October 28, 2022 and BH 205 on February 2, 2024 using a peristaltic pump. Prior to collecting the noted water sample, approximately three (3) standing well volumes of groundwater were purged from the referred well. The samples were collected unfiltered and placed into pre-cleaned laboratory-supplied vials and/or bottles provided with analytical test group specific preservatives, as required. Dedicated nitrile gloves were used during sample handling. The groundwater samples were submitted for analysis to Bureau Veritas Laboratory, a CALA certified independent laboratory in Mississauga, Ontario. Analytical results are provided in Appendix D.

Table 3-3 summarizes exceedance(s) of the Sanitary (Table 1) and Storm (Table 2) Sewer Use By-Law parameters.

When comparing the chemistry of the collected groundwater samples to the Peel Region’s Sanitary and Combined Sewer Discharge Criteria, there were no parameter exceedances to be reported.

When comparing the chemistry of the collected groundwater samples to the Peel Region’s Storm Sewer Discharge Criteria, the concentrations of Total Kjeldahl Nitrogen (TKN), Total Suspended Solids (TSS), and Total and Dissolved Manganese (Mn) exceeded the applicable guidelines.

Please note that the City of Mississauga updated their sewer use By-Law in 2022 (0046-2022) and as a result the only parameter which exceeded the City of Mississauga Storm sewer use By-Law limits was Total Suspended Solids (TSS).

Reporting detection limits (RDLs) were below the Sewer Use By-Law parameter criteria of Tables 1 and 2.

Table 3-3: Summary of Analytical Results

Parameter	Units	Peel Region Sanitary and Combined Sewer Discharge Limit	Peel Region Storm Sewer Discharge Limit	The City of Mississauga’s Storm Sewer Discharge Limit	BH 101 October 28, 2022	BH 205 February 2, 2024
Total Suspended Solids (TSS)	mg/L	350	15	15	27	27
Total Manganese (Mn)	µg/L	5,000	50	2,000	(370)	(82)
Dissolved Manganese (Mn)	µg/L	5,000	50	2,000	-	-
Total Kjeldahl Nitrogen (TKN)	µg/L	100	1	-	(1.5)	(2.3)

Bold – Exceeds City of Mississauga and Peel Region’s Storm Sewer Discharge limit.

Bolded and in brackets: Exceeds Peel Region’s Storm Sewer Discharge criteria, however it complies with the City of Mississauga’s Storm Discharge criteria.

For the short-term dewatering system (construction phase), it is anticipated that TSS levels and some other parameters (for example, Total Metals) in the pumped groundwater may become elevated and exceed both, Sanitary and Storm Sewer Use By-Law limits. To control the concentration of TSS and associated metals, it is recommended that a suitable treatment method be implemented (filtration or decantation facilities and/ or any other applicable treatment system) during construction dewatering activities to discharge to the applicable sewer system. The specifications of the treatment system will need to be adjusted to the reported water quality results by the treatment contractor/process engineer.

Post construction (long-term) discharge to the Region of Peel’s sanitary system is not permitted. Should the pumped groundwater be released into the Region of Peel’s sanitary system and based on the groundwater quality results, using a pre-treatment is required for the long-term phase.

Should the pumped groundwater be released into the Region of Peel’s storm system and based on the groundwater quality results, using a pre-treatment system is required for the long-term phase.

Should pumped groundwater be released into the City of Mississauga’s storm system and based on the groundwater quality results, using a pre-treatment system is required for the long-term phase.

The water quality results presented in this report may not be representative of the long-term condition of groundwater quality onsite. As such, regular water quality monitoring is recommended for the post-construction phase, as required by the City. An agreement to discharge into the sewers owned by Peel Region will be required prior to releasing dewatering effluent. The Environmental Site Assessment Report(s) shall be reviewed for more information on the groundwater quality conditions at the Site.

4 Dewatering Assessment

4.1 Dewatering Flow Rate Estimate and Zone of Influence

The Dupuit-Forcheimer equation for radial flow to both sides of an excavation through an unconfined aquifer resting on a horizontal impervious surface was used to obtain a flow rate estimate. Dewatering flow rate is expressed as follows:

$$Q_w = \frac{\pi K(H^2 - h^2)}{\text{Ln} \left[\frac{R_o}{r_e} \right]}$$

$$r_e = \frac{a+b}{\pi} \qquad R_o = R_{cj} + r_e$$

Where:

- Q_w = Rate of pumping (m³/s)
- X = Length of excavation (m)
- K = Hydraulic conductivity (m/s)
- H = Hydraulic head beyond the influence of pumping (static groundwater elevation) (m)
- h = Hydraulic head above the base of aquifer in an excavation (m)
- R_o = Radius of influence (m)
- R_{cj} = Cooper-Jacob's radius of influence (m)
- r_e = Equivalent perimeter (m)
- a = Length of the excavation area (m)
- b = Width of the excavation area (m)

It is expected that the initial dewatering rate will be higher to remove groundwater from within the overburden formation. The dewatering rates are expected to decrease once the target water level is achieved in the excavation footprint as groundwater will have been removed, primarily from storage, resulting in lower seepage rates into the excavation.

4.2 Cooper-Jacob's Radius of Influence

The radius of influence (R_{cj}) for the construction dewatering was calculated based on Cooper-Jacob's equation. This equation is used to predict the distance at which the drawdown resulting from pumping is negligible.

The estimated radius of influence due to pumping is based on Cooper-Jacob's formula as follows:

$$R_{cj} = \sqrt{2.25KDt/s}$$

Where:

- R_o = Estimated radius of influence (m)
- D = Aquifer thickness (original saturated thickness) (m)
- K = Hydraulic conductivity (m/s)
- S = Storage coefficient
- t = Duration of pumping (s)

4.3 Stormwater

Additional pumping capacity may be required to maintain dry conditions within the excavation during and following significant precipitation events. Therefore, the dewatering rates at the Site should also include removing stormwater from the excavation.

A 15 mm precipitation event was utilized for estimating the stormwater volume. The calculation of the stormwater volume is included in Appendix E.

The estimate of the stormwater volume only accounts for direct precipitation into the excavation. The dimensions of the excavation are considered in the dewatering calculations. Runoff which originated outside of the excavation's footprint is excluded and it should be directed away from the excavation.

During precipitation events greater than 15 mm (ex: 100-year storm), measures should be taken by the contractor to retain stormwater onsite in a safe manner to not exceed the allowable water taking and discharge limits, as necessary. A two (2) and a one hundred (100) year storm event over a 24-hour period are approximately 57 and 124.4 mm.

4.4 Results of Dewatering Rate Estimates

4.4.1 Construction Dewatering Rate Estimate

For this assessment, it was assumed that the proposed construction plans include an excavation with shoring extending to the Site boundaries. EXP should be retained to review the assumptions outlined in this section, should the assumed shoring design change.

Short-term (construction) and long term (post construction) dewatering calculations are presented in Appendix E.

Pits (elevator, sump pits) are assumed to have the same excavation depth and dewatering target as the main excavation; deeper pits may require localized dewatering and revised dewatering estimates.

Based on the assumptions provided in this report, the results of the dewatering rate estimate can be summarized as follows:

Table 4-1 Summary of Construction Dewatering Assumptions and Rate

Input Parameter	Phase 1 Building A	Phase 2 Building B and G	Phase 3 Building C and D	Phase 4 Building E and H	Phase 5 Building F1-F2	Units	Notes
Number of Subgrade Levels	5 Levels					-	
Ground Elevations	175.97	175.97	177.03	176.22	175.16	masl	Average elevation of boreholes and wells across each phase.
Top of Slab Elevation	160.57	161.04	161.63	160.82	159.76	masl	Assumed to be approximately 15.40 meters below ground surface elevation to P5 per Drawing A451.S.
Lowest Footing Elevation	159.07	159.54	160.13	159.32	158.26	masl	Assumed to be approximately 1.5 m below the top of slab elevation
Excavation Area (Length x Width)	4,900 (70 x 70)	1,1000 (100 x 110)	1,2100 (110 x 110)	8,100 (90 x 90)	5,200 (130 x 40)	m ² (m x m)	Approximate area (length x width) of Site parking area for the proposed development
Short Term Dewatering							
With Safety Factor and Precipitation	380,000	652,000	699,000	518,000	440,000	L/day	15 mm of precipitation
With Safety Factor	258,000	377,000	396,000	316,000	310,000	L/day	With safety factor of 2 and without precipitation
Without Safety Factor	251,000	463,000	501,000	360,000	285,000	L/day	Without precipitation
Long Term Dewatering							
With Safety Factor	71,000	58,000	62,000	48,000	47,000	L/day	Safety Factor of 1.5

Local dewatering may be required for pits (elevator pits, sump pits), if these extend deeper than the dewatering target. Local dewatering is not considered to be part of this assessment. Dewatering estimates should be reviewed once the pit dimensions are available.

Local dewatering may be required for pits (elevator pits, sump pits, raft) and for localized areas with permeable, soft, or wet soil conditions. Local dewatering is not considered to be part of this assessment, but contractor should be ready to install additional system to manage such conditions. Dewatering estimates should be reviewed once the pit dimensions are available.

All grading around the perimeter of the excavation should be graded away from the shoring the systems and ramp/site access to redirect runoff away from excavation.

The dewatering assumptions are based on using shoring system without open cuts and sloped excavations.

If groundwater cutoff systems (ex: caisson walls, sheet piles) are installed, these should be designed for maximal hydrostatic pressure for shallow and deep water levels, without dewatering on the outer side of the groundwater cutoff. Soldier pile and lagging and caisson wall systems should be designed to account for shallow groundwater conditions and take into consideration that dewatering systems may not provide fully dewatered soil conditions.

If groundwater cutoff systems are used for decreasing long-term dewatering rates, these should be designed as permanent structures to cutoff groundwater inflow in the long-term. All perforations should be sealed permanently (ex: tiebacks, breaches, and cold joints) with no leakages and inspected. Fillers should extend into low permeability deposits (ex: sound bedrock or till) to cutoff groundwater from water bearing zones. Inspections should be conducted to confirm the depth of low permeability deposits along shoring system and that fillers are keyed into low permeability soil deposits.

All grading around the perimeter of the construction Site should be graded away from the shoring the system.

The contractor is responsible for the design of the dewatering systems (depth of wells, screen length, number of wells, spacing sand pack around screens, prevent soil loss etc.) to ensure that dry conditions are always maintained within the excavation at all costs.

Dewatering should be monitored using dedicated monitoring wells within and around the perimeter of the excavation, and these wells should be monitored using manual measurements and with electronic data loggers; records should be maintained on site to track dewatering progress. Discharge rates should be monitored using calibrated flow meters and records of dewatering progress, and daily precipitation as per MECP requirements should be maintained.

4.4.2 Post-Construction Dewatering Rate Estimate

It is our understanding that the development plan includes a permanent foundation sub-drain system that will ultimately discharge to the municipal sewer system if conventional footings are installed.

The long-term dewatering was based on the same equations as construction dewatering shown in Section 4.1.

The calculation for the estimated flow to the future sub-drain system (with no cutoff walls) is provided in Appendix E. The dewatering target for the foundation drainage system is taken at 0.5 m below the lowest slab elevation.

The foundation drain analysis provides a flow rate estimate. Once the foundation drain is built, actual flow rate measurements of the sump discharge will be required to confirm the estimated flow rate.

Based on the assumptions provided in this report, the estimated sub-drain discharge volumes are summarized in Appendix E. Seasonal and daily fluctuations are expected. These estimates may be affected by hydrogeological conditions beyond those encountered at this time, fluctuations in groundwater regimes, surrounding Site alterations, and existing and future infrastructures.

Intermittent cycling of sump pumps and seasonal fluctuation in groundwater regimes should be considered for pump specifications. A safety factor was applied to the flow rate to account for water level fluctuations due to seasonal changes.

These estimates assume that pits (elevator and/or sump pits) are made as watertight structures (without drainage), if their depths extend below the dewatering target, as previously stated. The dewatering assumptions are based on using shoring system without open cuts. Open cuts can act as preferential groundwater pathways in the long-term and cause foundation drainage volumes to increase.

The sub-drain rate estimate is based on the assumptions outlined in this report. Any variations in hydrogeological conditions beyond those encountered as part of this investigation may significantly influence the sub-drain discharge volumes.

4.5 MECP Water Taking Permits

4.5.1 Short-Term Discharge Rate (Construction Phase)

In accordance with the Ontario Water Resources Act, if the water taking for the construction dewatering is more than 50,000 L/day but less than 400,000 L/day, then an online registration in the Environmental Activity and Sector Registry (EASR) with the MECP will be required. If groundwater dewatering rates onsite exceed 400,000 L/day, a Category 3 Permit to Take Water (PTTW) will be required from the MECP.

As of July 1, 2021, an amendment of O. Reg. 63/16 has come into effect and replaced the former subsection 7 (5) such that the EASR water taking limit of 400,000 L/day would apply to groundwater takings of each dewatered work area only, excluding stormwater.

The dewatering estimate including a safety factor is greater than 50,000 L/day and as shown in Table 4-1 for Phase 1 through 5. The MECP construction dewatering rate excludes the precipitation amount and is the rate used for the permit application. Based on the MECP construction dewatering an EASR will be required to facilitate the construction dewatering program for these buildings.

A Discharge Plan (dewatering sketch, sewer discharge agreement) must be developed and applied for any discharges from the Site. Monitoring of both water quantity and water quality must be carried out for the entire duration of the construction dewatering phase. During this phase, the Discharge Plan and the daily water taking records must be available onsite.

The EASR, Discharge Plan, hydrogeological investigation report, and geotechnical assessment of settlements must also be available at the construction Site during the entire construction dewatering. EXP should be notified immediately about any changes to the construction dewatering schedule or design, since the EASR will need to be updated to reflect these modifications. Altogether, the hydrogeological report, EASR, Discharge Plan and geotechnical assessment constitute the Water Taking Plan which needs to be available onsite during the construction dewatering.

4.5.2 Long-Term Discharge Rate (Post Construction Phase)

In accordance with the Ontario Water Resources Act, if the water taking for the construction dewatering is more than 50,000 L/day, then an application for a Category 3 Permit to Take Water (PTTW) will be required from the MECP.

Based on the long term dewatering estimates shown in Table 4-1, a Category 3 Permit to Take Water (PTTW) will not be required to facilitate the post-development phase for Phases 4 and 5, but will be required for Phases 1, 2 and 3.

The safety factor for construction (short-term) dewatering is selected larger than for long-term to account for anticipated greater groundwater volumes during initial dewatering. The applied analytical formula is adequate for long-term (steady state) conditions as it omits specific yield and time dependency. When the formula is used for short-term conditions a larger safety factor is recommended to cover a larger initial dewatering rate, which is required to remove stored groundwater. Moreover, a large initial construction dewatering rate is favorable, as it supports reducing the time to reach the dewatering target elevation.

5 Environmental Impact

5.1 Surface Water Features

The Site is within the Credit River watershed. No surface water features exist onsite. The nearest surface water feature is an unnamed tributary of Mullet Creek, approximately located 500 meters northeast of the Site boundary. Lake Ontario is approximately 10 km from the Site boundary to the southeast.

Due to the limited extent of zone of influence and the wide distance to the nearest surface water feature, no detrimental impacts on surface water features are expected during construction activities.

5.2 Highly Vulnerable Aquifers and Significant Groundwater Recharge Areas (HVAs and SGRA)

Based on the Ontario Source Protection Information Atlas, the Site is partially identified within a Highly Vulnerable Aquifer (HVA) area. Moreover, the Significant Groundwater Recharge Areas (SGRA) are identified at the close proximity of the Site boundary (Appendix F).

5.3 Groundwater Sources

Well Records from the MECP Water Well Record (WWR) Database were reviewed to determine the presence and number of water supply wells within a 500 m radius of the Site boundaries. Given that no water supply wells exist within the 500 m buffer, no dewatering related impact on water supply wells is expected in the area.

5.4 Geotechnical Considerations

As per the MECP technical requirement for PTTW and EASRs, the geotechnical assessment of the stability of the soils due to water taking (ex: settlement, soil loss, subsidence, etc.) is required. The water taking should not have unacceptable interference on soils and underground structures (foundations, utilities, etc.).

A letter related to geotechnical issues as it pertains to the Site is required to be completed under a separate cover.

5.5 Groundwater Quality

It is our understanding that the potential effluent from the dewatering system during the construction will be released to the municipal sewer system. As such, the quality of groundwater discharge is required to comply with the Peel Region Sewer Use By-Law.

Dewatering (short and long-term) may induce migration of contaminants within the zone of influence and beyond due to changing hydraulic gradients, hydrogeological conditions beyond Site boundaries and preferential pathways in utility beddings etc. The water quality sampling conducted as part of this assessment was performed under static conditions. As a result, monitoring may be required during dewatering activities (short and long-term) to monitor potential migration, and this should be performed more frequently during early dewatering stages.

Post construction (long-term) discharge to the Region of Peel's sanitary system is optional. Should the pumped groundwater be released into the Region of Peel's sanitary system and based on the groundwater quality results, using a pre-treatment is not required for the long-term phase.

Should the pumped groundwater be released into the Region of Peel's storm system and based on the groundwater quality results, using a pre-treatment system is required for the long-term phase.

Should pumped groundwater be released into the City of Mississauga's storm system and based on the groundwater quality results, using a pre-treatment system is required for the long-term phase.

The water quality results presented in this report may not be representative of the long-term condition of groundwater quality onsite. As such, regular water quality monitoring is recommended for the post-construction phase as required by the City.

An agreement to discharge into the sewers owned by Peel Region (Sanitary) and Municipality (Storm) will be required prior to releasing dewatering effluent.

The Environmental Site Assessment Report(s) shall be reviewed for more information on the groundwater quality conditions at the Site.

5.6 Well Decommissioning

In conformance with Regulation 903 of the Ontario Water Resources Act, the installation and eventual decommissioning of any dewatering system wells or monitoring wells must be completed by a licensed well contractor. This will be required for all wells that are no longer in use.

6 Conclusions and Recommendations

Based on the findings of the Hydrogeological Investigation, the following conclusions and recommendations are provided:

- When comparing the chemistry of the collected groundwater samples to the Peel Region's Sanitary and Combined Sewer Discharge Criteria, there were no parameter exceedances to be reported.
- When comparing the chemistry of the collected groundwater samples to the Peel Region's Storm Sewer Discharge Criteria, the concentrations of Total Kjeldahl Nitrogen (TKN), Total Suspended Solids (TSS), and Total and Dissolved Manganese (Mn) exceeded the applicable guidelines. Please note that the City of Mississauga updated their sewer use By-Law in 2022 (0046-2022) and as a result the only parameter which exceeded the City of Mississauga Storm sewer use By-Law limits was Total Suspended Solids (TSS).
- Reporting detection limits (RDLs) were below the Sewer Use By-Law parameter criteria of Tables 1 and 2.
- Based on the assumptions outlined in this report, the estimated peak dewatering rate for proposed construction activities is approximately 380,000 L/day, 652,000 L/day, 699,000 L/day, 518,000 L/day, and 440,000 L/day for Phases 1 through 5 respectively. These are the rates which will be required to be discharged to the municipal sewer system.
- The dewatering estimate including a safety factor is greater than 50,000 L/day and as shown in Table 4-1 for Phase 1 through 5. The MECP construction dewatering rate excludes the precipitation amount and is the rate used for the permit application. Based on the MECP construction dewatering an EASR will be required to facilitate the construction dewatering program for these buildings.
- Based on the long term dewatering estimates shown in Table 4-1, a Category 3 Permit to Take Water (PTTW) will not be required to facilitate the post-development phase for Phases 4, and 5, but will be required for Phases 1, 2 and 3. It is recommended that once the sub-drain system is in place, a flow meter be installed at the sump(s) to record daily discharge volumes during the commissioning stage of the system. Regular maintenance/cleaning of the sub-drain system is recommended to ensure its proper operation.
- The construction dewatering and long-term estimate of sub-drain discharge volumes is based on the assumptions outlined in this report. Any variations in hydrogeological conditions beyond those encountered as part of this preliminary investigation may significantly influence the discharge volumes.
- For the short-term dewatering system (construction phase), it is anticipated that TSS levels and some other parameters (for example, Total Metals) in the pumped groundwater may become elevated and exceed both, Sanitary and Storm Sewer Use By-Law limits. To control the concentration of TSS and associated metals, it is recommended that a suitable treatment method be implemented (filtration or decantation facilities and/ or any other applicable treatment system) during construction dewatering activities to discharge to the applicable sewer system. The specifications of the treatment system will need to be adjusted to the reported water quality results by the treatment contractor/process engineer.
- For the long-term dewatering discharge to the storm sewer system (post-development phase) and based on the water quality results, it is recommended to implement a suitable pre-treatment as required.
- As per the MECP technical requirement for EASRs, the geotechnical assessment of the stability of the soils due to water taking (ex: settlement, soil loss, subsidence etc.) is required. The water taking should not have unacceptable interference on soils and underground structures (foundations, utilities etc.). A letter related to geotechnical issues as it pertains to the Site is required to be completed under a separate cover.
- An agreement to discharge into the sewers owned by the Peel Region will be required prior to releasing dewatering effluent.
- The EASR registration allows construction dewatering discharge of up to 400,000 L/day. A Discharge Plan (dewatering sketch, sewer discharge agreement) must be developed and applied for any discharges from the Site. The Discharge Plan and monitoring for both water quantity and water quality must be carried at the Site during the entire construction dewatering phase. The daily water taking records must be maintained onsite for the entire construction dewatering phase.

The EASR, Discharge Plan, hydrogeological investigation report, and geotechnical assessment of settlements must always also be available at the construction Site for the entire construction dewatering. EXP should be notified immediately about any changes to the construction dewatering schedule or design, since EASR will need to be updated to reflect these modifications. The hydrogeological report, EASR, Discharge Plan and geotechnical assessment constitutes the Water Taking Plan which needs to be available onsite for the duration of construction dewatering.

- In conformance with Regulation 903 of the Ontario Water Resources Act, the installation and eventual decommissioning of any dewatering system wells or monitoring wells must be completed by a licensed well contractor. This will be required for all wells that are no longer in use.

The conclusions and recommendations provided above should be reviewed in conjunction with the entirety of the report. They assume that the present design concept described throughout the report will proceed to construction. This report is solely intended for the construction and long-term dewatering assessments. Any changes to the design concept may result in a modification to the recommendations provided in this report.

7 Limitations

This report is based on a limited investigation designed to provide information to support an assessment of the current hydrogeological conditions within the study area. The conclusions and recommendations presented within this report reflect Site conditions existing at the time of the assessment. EXP must be contacted immediately, if any unforeseen Site conditions are experienced during construction activities. This will allow EXP to review the new findings and provide appropriate recommendations to allow the construction to proceed in a timely and cost-effective manner.

Our undertaking at EXP, therefore, is to perform our work within limits prescribed by our clients, with the usual thoroughness and competence of the geoscience/engineering profession. No other warranty or representation, either expressed or implied, is included or intended in this report.

This report was prepared for the exclusive use of The Muzzo Group of Companies. This report may not be reproduced in whole or in part, without the prior written consent of EXP, or used or relied upon in whole or in part by other parties for any purposes whatsoever. Any use which a third party makes of this report, or any part thereof, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. EXP Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We trust that this information is satisfactory for your purposes. Should you have any questions or comments, please do not hesitate to contact this office.

Sincerely,

EXP Services Inc.



Nicolas Sabo, B.Sc., M.E.S.
Junior Project Manager
Environmental Services

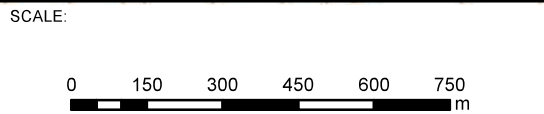
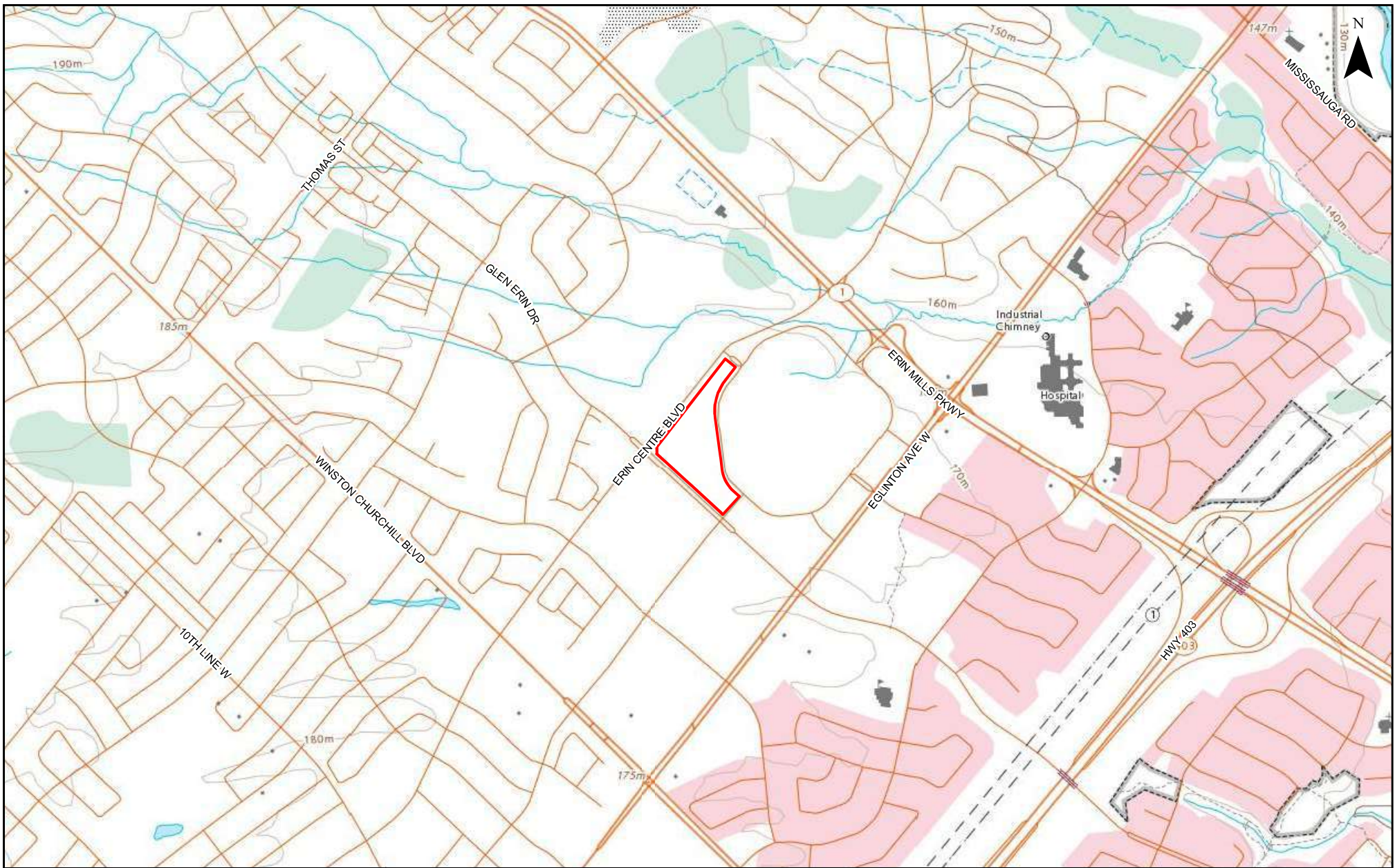


Reinhard Zapata Blosa, P.Geo., Ph.D.
Senior Hydrogeologist
Environmental Services

8 References

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- Toronto and Region Conservation (2008/2009), Humber/Don River State of the Watershed Report – Geology and Groundwater Resources.

Figures



LEGEND:

APPROXIMATE SITE BOUNDARY

SITE LOCATION PLAN

FIGURE:
1

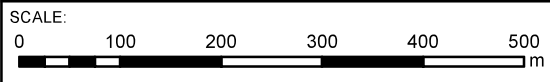
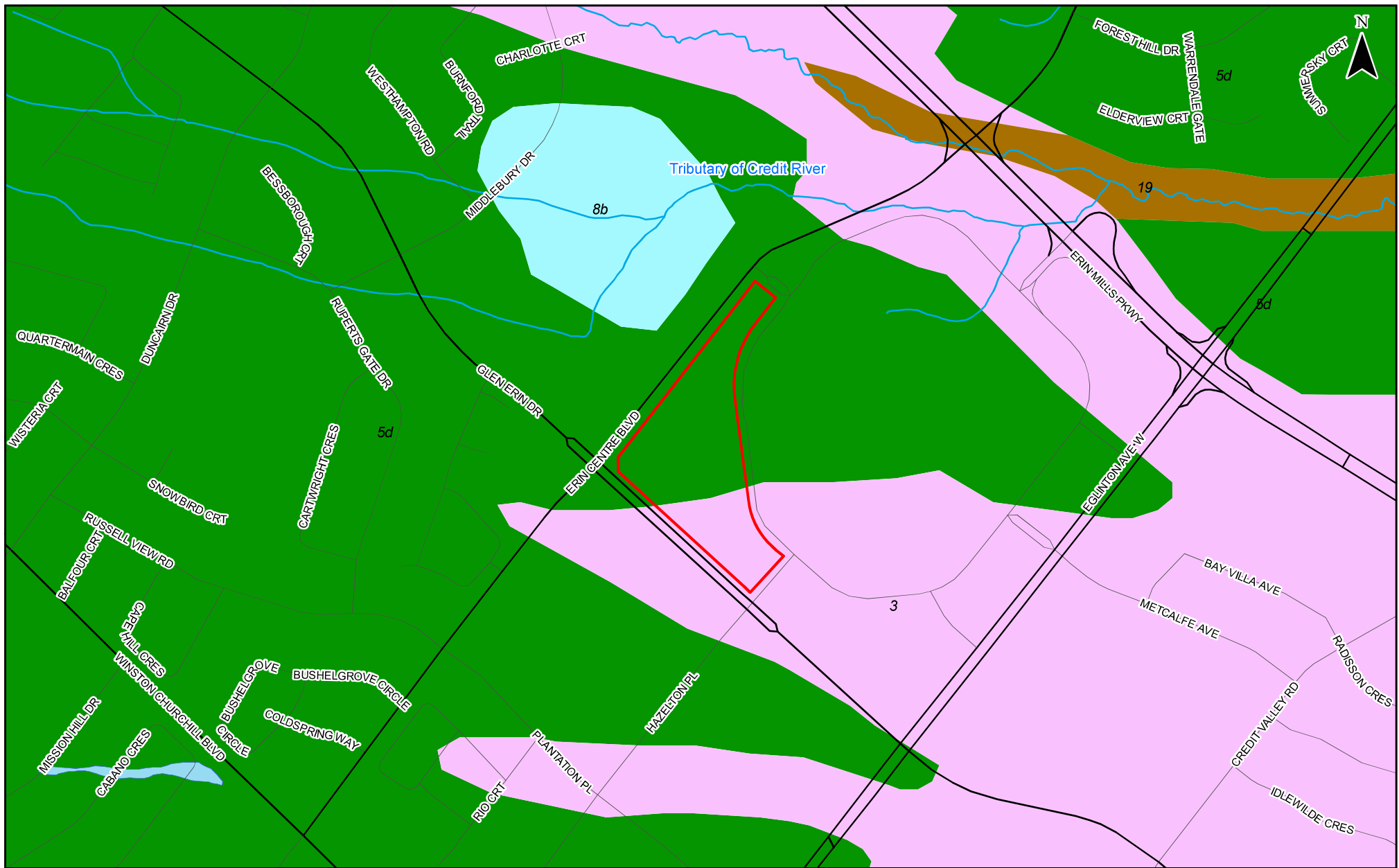


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HYDROGEOLOGICAL INVESTIGATION
5100 ERIN MILLS PARKWAY - BLOCK 1
MISSISSAUGA, ONTARIO

PROJECT NUMBER: GTR-00257769-H0 DATE: FEBRUARY 2024



SOURCE:
 BASED ON ONTARIO GEOLOGICAL SURVEY DATA PUBLISHED IN 2010

LEGEND:

	APPROXIMATE SITE BOUNDARY
	19: MODERN ALLUVIAL DEPOSITS
	8B: FINE-TEXTURED GLACIOLAUSTRINE DEPOSITS
	5D: GLACIOLAUSTRINE-DERIVED SILTY TO CLAYEY TILL
	3: PALEOZOIC BEDROCK

SURFICIAL/QUATERNARY GEOLOGY

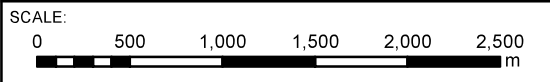
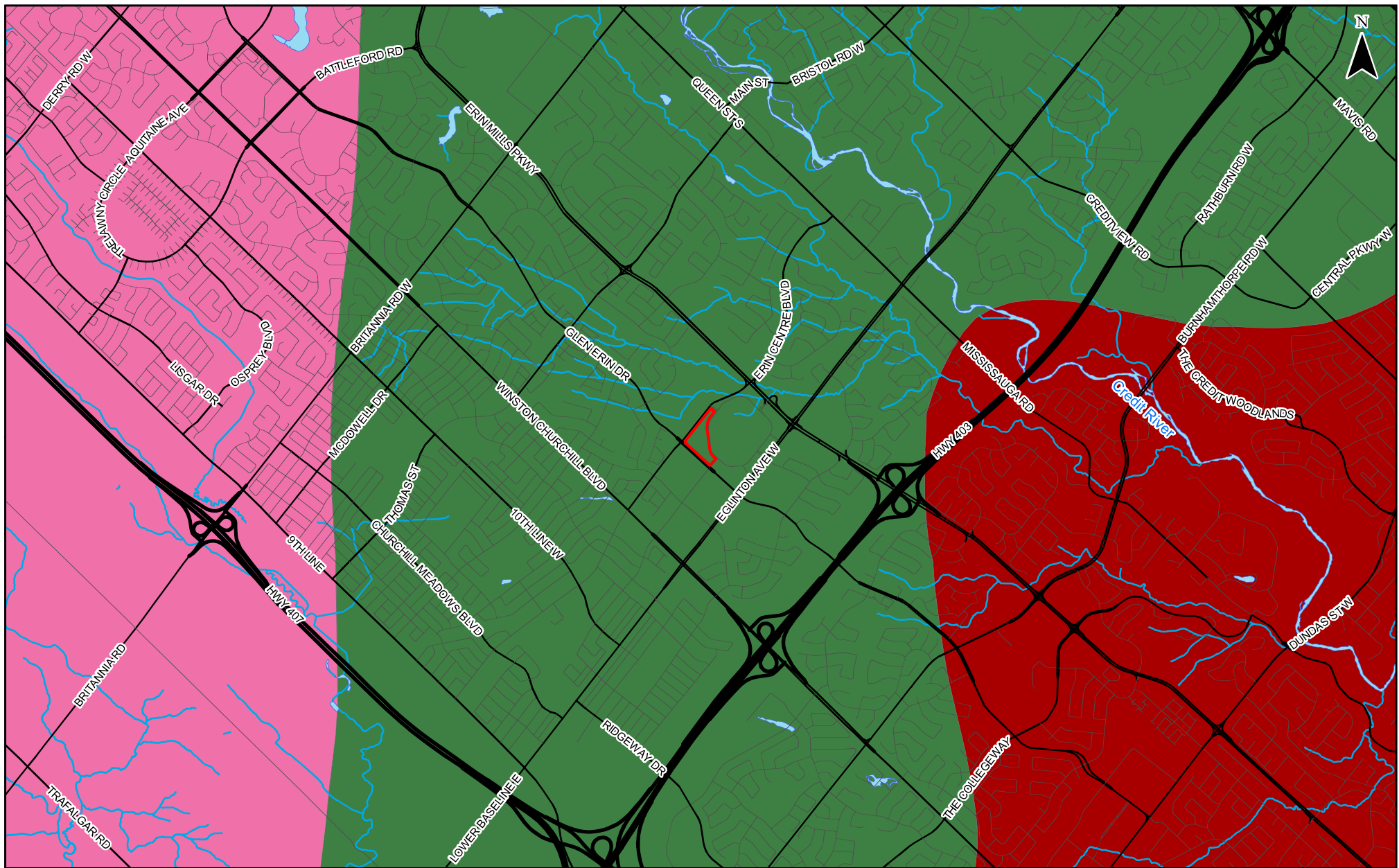
FIGURE:
 2A

HYDROGEOLOGICAL INVESTIGATION
 5100 ERIN MILLS PARKWAY - BLOCK 1
 MISSISSAUGA, ONTARIO



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 AC

CHECKED BY:
 NS



SOURCE:
 BASED ON ONTARIO GEOLOGICAL SURVEY DATA PUBLISHED IN 2007

LEGEND:

	APPROXIMATE SITE BOUNDARY
	IROQUOIS PLAIN
	PEEL PLAIN
	SOUTH SLOPE

PHYSIOGRAPHIC REGIONS

FIGURE: 2B

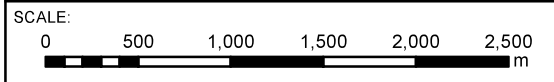
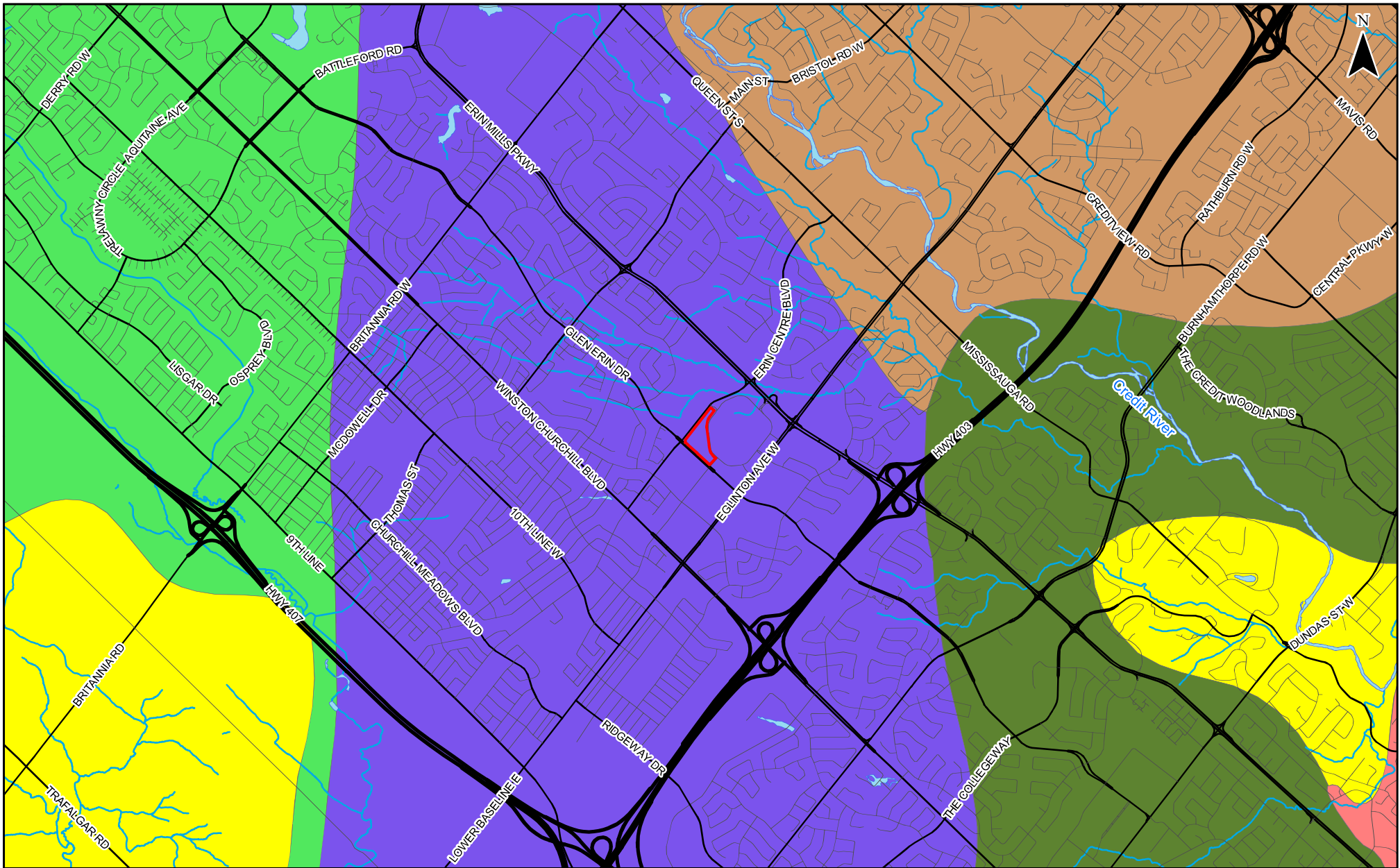
HYDROGEOLOGICAL INVESTIGATION
 5100 ERIN MILLS PARKWAY - BLOCK 1
 MISSISSAUGA, ONTARIO

PROJECT NUMBER: GTR-00257769-H0 DATE: FEBRUARY 2024



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SOURCE:
 BASED ON ONTARIO GEOLOGICAL SURVEY DATA PUBLISHED IN 2007

LEGEND:

- APPROXIMATE SITE BOUNDARY
- BEACHES
- BEVELLED TILL PLAINS
- SAND PLAINS
- SHALE PLAINS
- TILL MORAINES
- TILL PLAINS (DRUMLINIZED)



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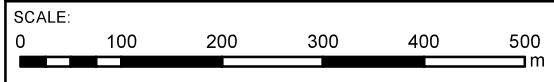
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PHYSIOGRAPHIC LANDFORMS

FIGURE:
 2C

HYDROGEOLOGICAL INVESTIGATION
 5100 ERIN MILLS PARKWAY - BLOCK 1
 MISSISSAUGA, ONTARIO

PROJECT NUMBER: GTR-00257769-H0 DATE: FEBRUARY 2024



SOURCE:
 BASED ON ONTARIO GEOLOGICAL SURVEY DATA PUBLISHED IN 2011

LEGEND:

- APPROXIMATE SITE BOUNDARY
- 55a: QUEENSTON FORMATION (SHALE, LIMESTONE, DOLOSTONE, SILTSTONE)

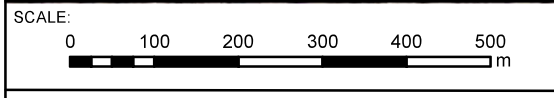
FIGURE:
BEDROCK GEOLOGY 2D

exp.

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HYDROGEOLOGICAL INVESTIGATION
 5100 ERIN MILLS PARKWAY - BLOCK 1
 MISSISSAUGA, ONTARIO

PROJECT NUMBER: GTR-00257769-H0 DATE: FEBRUARY 2024



SOURCE:
 BASED ON GOOGLE EARTH IMAGERY DATED 2020
 AVAILABLE WELL RECORD INFORMATION AS OF JUNE 2022

- LEGEND:
- MONITORING WELL / TEST HOLE
 - ABANDONED WELL
 - UNCLASSIFIED / UNFINISHED WELL
 - APPROXIMATE SITE BOUNDARY
 - 500 m ZONE

MECP WATER WELL
 RECORDS MAP

FIGURE:
 3

HYDROGEOLOGICAL INVESTIGATION
 5100 ERIN MILLS PARKWAY - BLOCK 1
 MISSISSAUGA, ONTARIO

PROJECT NUMBER: GTR-00257769-H0 DATE: FEBRUARY 2024

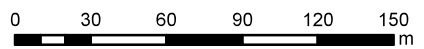


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SCALE:



LEGEND:

- ⊕ BOREHOLE (EXP, 2020)
- ⊕ BOREHOLE (EXP, 2024)
- ⊙ BOREHOLE / MONITORING WELL (EXP, 2020)
- ⊙ BOREHOLE / MONITORING WELL (EXP, 2022)
- BOREHOLE / MONITORING WELL (EXP, 2024)
- ▭ APPROXIMATE SITE BOUNDARY

BOREHOLE / MONITORING WELL LOCATION PLAN

FIGURE: 4

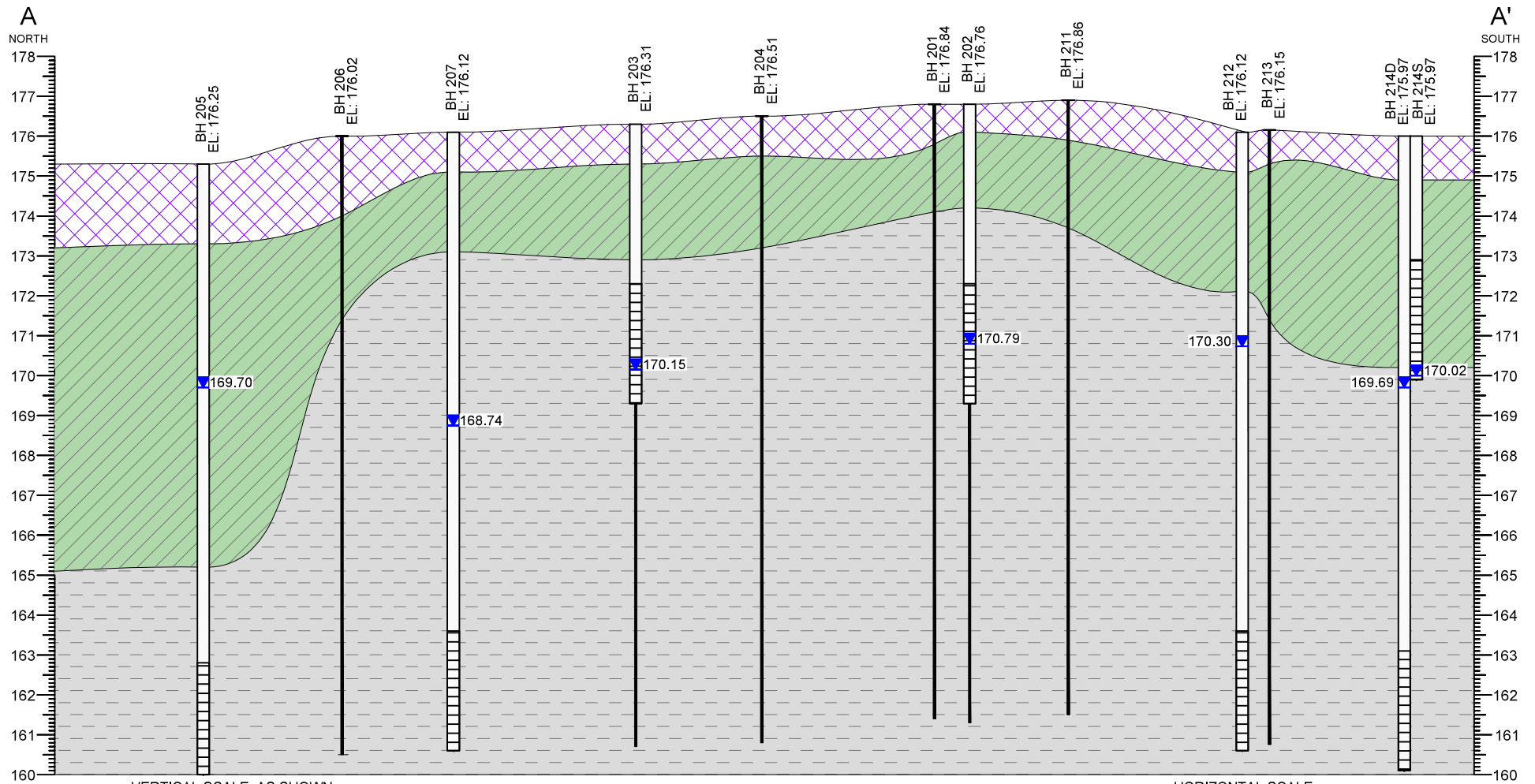
HYDROGEOLOGICAL INVESTIGATION
5100 ERIN MILLS PARKWAY - BLOCK 1
MISSISSAUGA, ONTARIO

PROJECT NUMBER: GTR-00257769-H0 DATE: FEBRUARY 2024



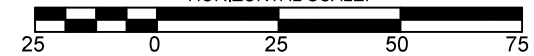
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VERTICAL SCALE: AS SHOWN

HORIZONTAL SCALE:



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LEGEND:

- FILL
- SILT TILL
- SHALE BEDROCK
- GROUNDWATER ELEVATION ON FEBRUARY 4, 2024

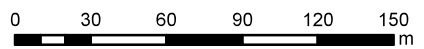
TITLE AND LOCATION:

CROSS SECTION A-A'
 5100 ERIN MILLS PARKWAY - BLOCK 1,
 MISSISSAUGA, ONTARIO

PROJECT NO.: GTR-00257769-H0	DWN.: NS
SCALE: AS NOTED	CK: FC
DATE: MARCH 19, 2024	FIG. NO.: 5



SCALE:



LEGEND:

- BOREHOLE (EXP, 2020)
- BOREHOLE (EXP, 2024)
- BOREHOLE / MONITORING WELL (EXP, 2020)
- BOREHOLE / MONITORING WELL (EXP, 2022)
- BOREHOLE / MONITORING WELL (EXP, 2024)
- APPROXIMATE SITE BOUNDARY

SHALLOW GROUNDWATER
CONTOUR PLAN

FIGURE
6A

HYDROGEOLOGICAL INVESTIGATION
5100 ERIN MILLS PARKWAY - BLOCK 1
MISSISSAUGA, ONTARIO

PROJECT NUMBER: GTR-00257769-H0 DATE: FEBRUARY 2024

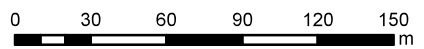


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SCALE:



LEGEND:

- ⊕ BOREHOLE (EXP, 2020)
- ⊕ BOREHOLE (EXP, 2024)
- ⊙ BOREHOLE / MONITORING WELL (EXP, 2020)
- ⊙ BOREHOLE / MONITORING WELL (EXP, 2022)
- ⊙ BOREHOLE / MONITORING WELL (EXP, 2024)
- ▭ APPROXIMATE SITE BOUNDARY

DEEP GROUNDWATER
CONTOUR PLAN

FIGURE
6B

HYDROGEOLOGICAL INVESTIGATION
5100 ERIN MILLS PARKWAY - BLOCK 1
MISSISSAUGA, ONTARIO



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AC

CHECKED BY:
NS

Appendix A – MECP WWR Summary Table

On-Site															
BORE_HOLE_ID	WELL_ID	DATE	EAST83	NORTH83	ELEVATION (m ASL)	STREET	CITY	DISTANCE FROM SITE CENTROID (m)	CONSTRUCTION METHOD	WELL DEPTH (m bgs)	WATER FOUND (m bgs)	CASING DIAMETER (cm)	1st USE	2nd USE	FINAL STATUS
1008282276	7359193	3/9/2020	603826	4823775	175.0										
1008282282	7359195		603704	4823484	176.5										
1008282291	7359198	3/4/2020	603821	4823770	175.0										
Off-Site															
BORE_HOLE_ID	WELL_ID	DATE	EAST83	NORTH83	ELEVATION (m ASL)	STREET	CITY	DISTANCE FROM SITE BOUNDARY (m)	CONSTRUCTION METHOD	WELL DEPTH (m bgs)	WATER FOUND (m bgs)	CASING DIAMETER (cm)	1st USE	2nd USE	FINAL STATUS
1004406302	7204509	6/14/2013	604305	4823884	167.6	NE ERIN MILLS PKWAY	Mississauga	474	Direct Push	5.5		5.1	Monitoring and Test Hole		Test Hole
1004678358	7214240	9/6/2013	604301	4823895	167.0	THOMAS ST	MISSISSAUGA	472				3.2	Monitoring		Abandoned-Other
1004797352	7221248	3/6/2014	604289	4823243	174.1	3413 WOLFDALE RD	Mississauga	469	Direct Push	3.0		5.1	Monitoring and Test Hole		Test Hole
1005289451	7235929	8/26/2014	603314	4823281	176.4	5881 10TH LINE	Mississauga	397				91.4			Abandoned-Other
1005769002	7250859	8/27/2015	604058	4823121	172.4	N. BOUND LANE OF GLEN ERIN DR. APPX. 40M S. OF EGLINTON AVE. WEST	Mississauga	351							Abandoned-Other
1005769180	7250862	8/27/2015	604085	4824030	169.7	ERIN MILLS PARKWAY APPROX. 30M N. OF ERIN CENTRE BLVD.	Mississauga	344							Abandoned-Other
1005769846	7250863	8/27/2015	603845	4824256	173.8	ERIN MILLS PARKWAY APPROX. 350M NORTH OF ERIN CENTRE	Mississauga	447							Abandoned-Other
1008282279	7359194		604149	4823733	171.8			312							
1008282285	7359196		604175	4823421	175.9			322							
1008282288	7359197	3/3/2020	604036	4823244	174.5			251							
1008794122	7398521	8/5/2021	604288	4823900	167.0			460							
1008794911	7398525	8/5/2021	604291	4823900	167.0			460							
1008794914	7398526	8/5/2021	604323	4823884	167.3			491							

Appendix B – Borehole Logs

Log of Borehole BH 5

Project No. BRM-00257769-A1

Drawing No. 6

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 5100 Erin Mills Parkway

Erin Mills Town Centre

Date Drilled: March 4, 2020

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Solid Stem Auger

Dynamic Cone Test

Plastic and Liquid Limit

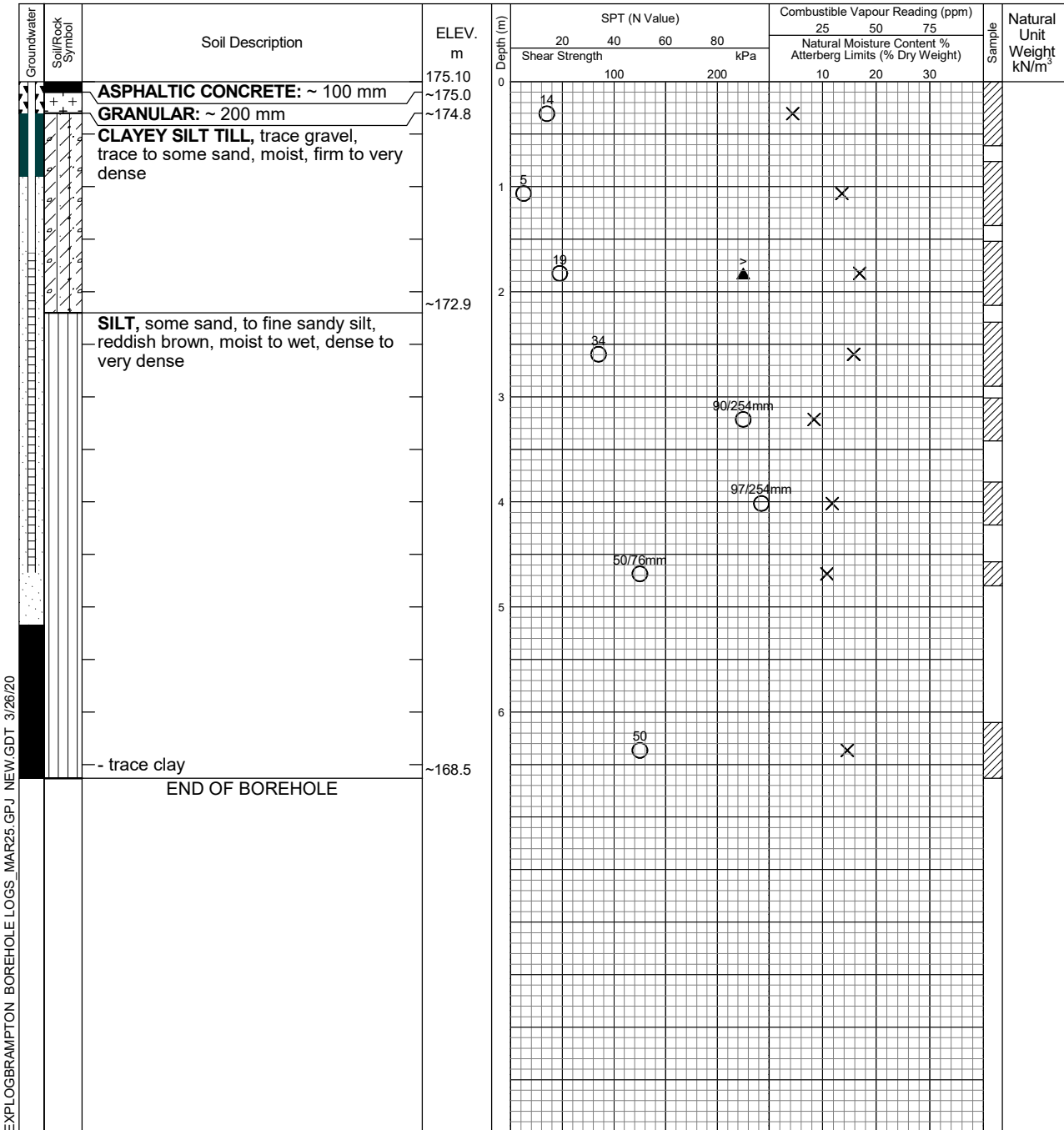
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BOREHOLE LOGS_MAR25.GPJ NEW.GDT 3/26/20

Date	Water Level (m)	Hole Open to (m)
On Completion	1.2	
March 10, 2020	Dry	
March 16, 2020	Dry	
March 19, 2020	Dry	



Log of Borehole BH 20

Project No. BRM-00257769-A1

Drawing No. 21

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: 5100 Erin Mills Parkway

Erin Mills Town Centre

Date Drilled: March 5, 2020

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Solid Stem Auger

Dynamic Cone Test

Plastic and Liquid Limit

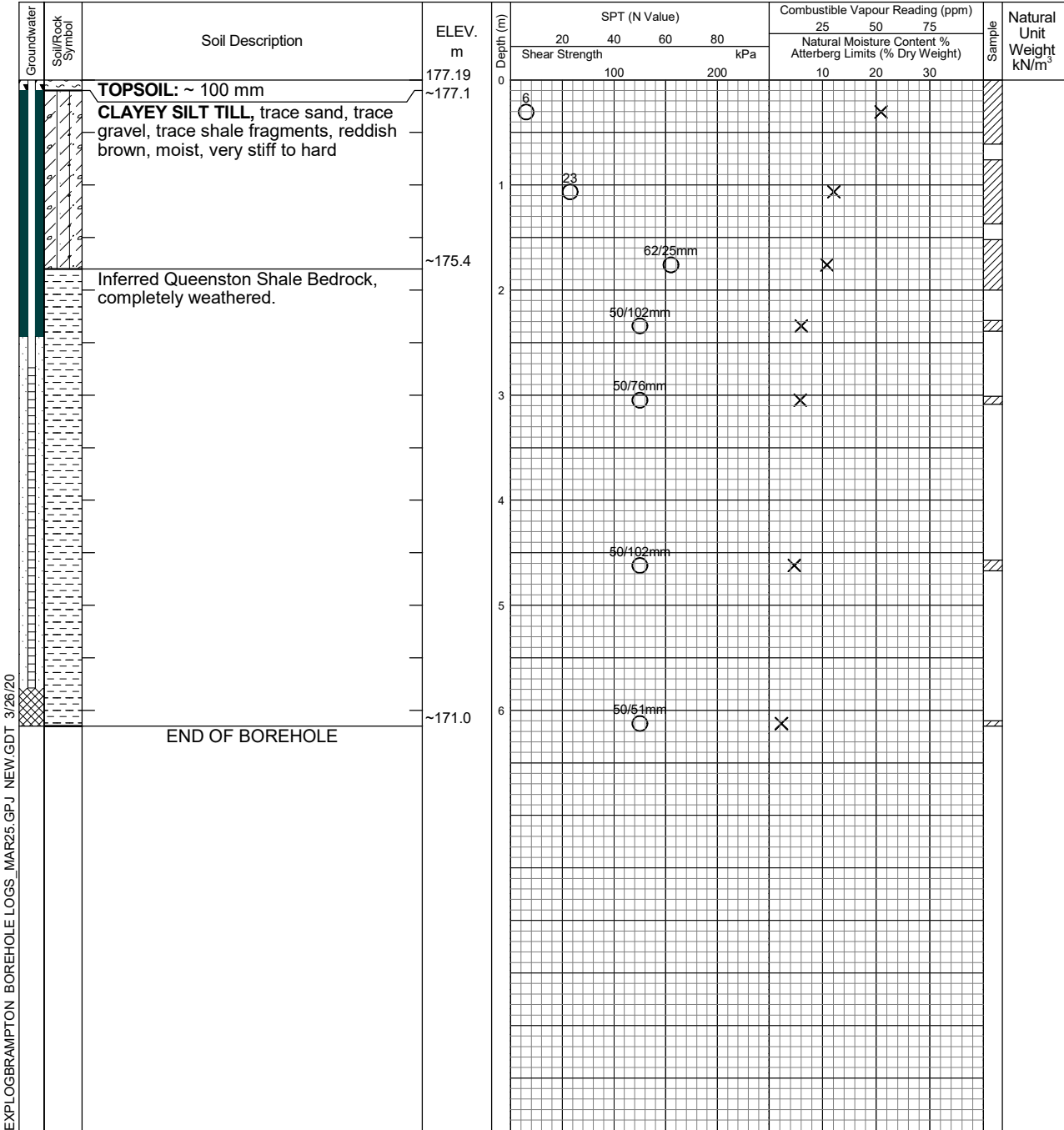
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



EXPLOGBRAMPTON BOREHOLE LOGS_MAR25.GPJ NEW.GDT 3/26/20

Date	Water Level (m)	Hole Open to (m)
On Completion	Dry	5.8
March 10, 2020	Dry	
March 16, 2020	Dry	
March 19, 2020	Dry	



Log of Borehole 101

Project No. GTR-00257769-G0

Drawing No. 2

Project: Geotechnical Investigation

Sheet No. 1 of 2

Location: 5100 Erin Mills Parkway

Date Drilled: Oct 24, 2022

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Auger

Dynamic Cone Test

Plastic and Liquid Limit

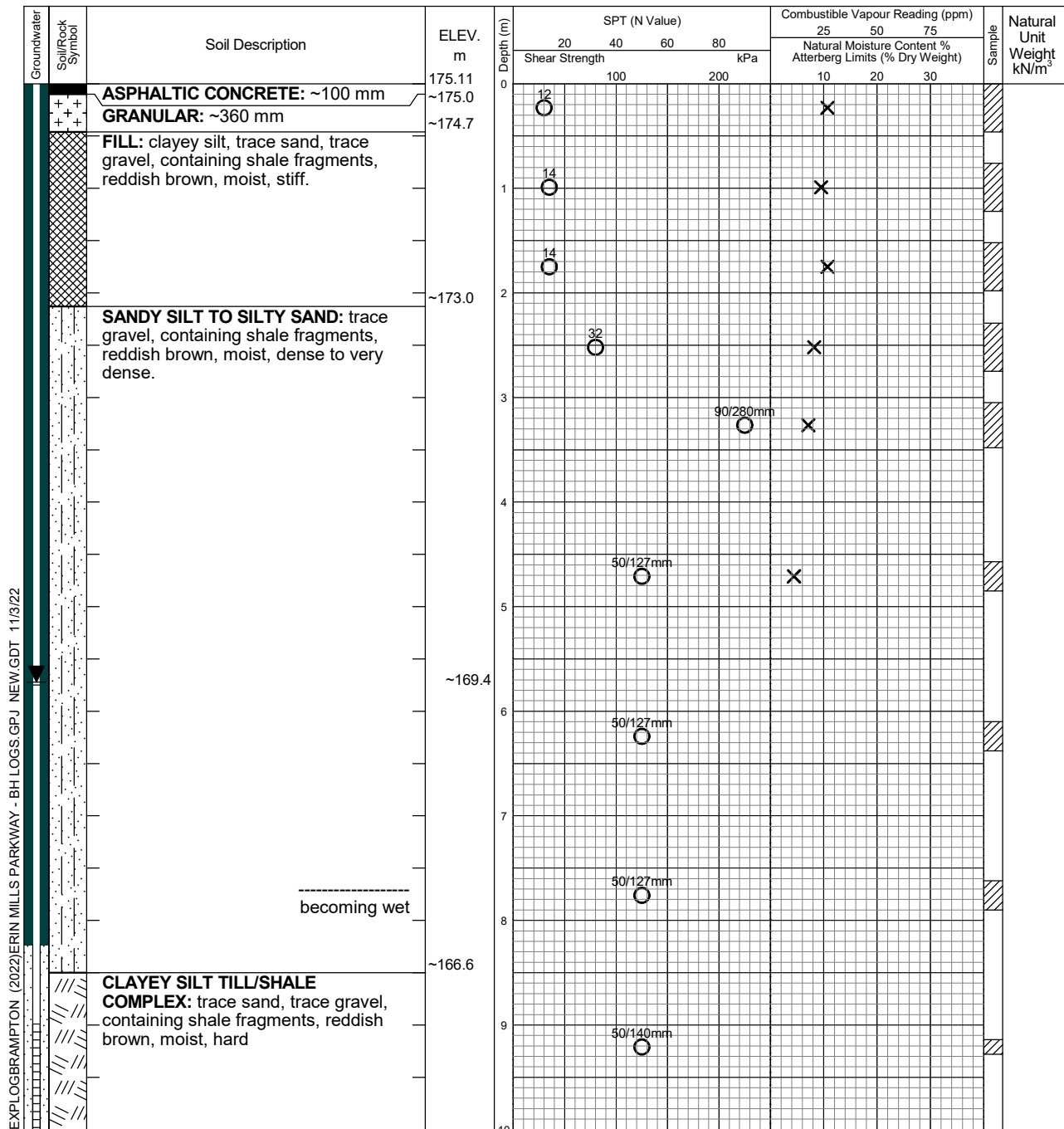
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



Continued Next Page

Elapsed Time	Water Level (m)	Hole Open to (m)
Upon completion Oct 31, 2022	~10.3m 5.75	



ROCK CORE LOG

BH 212

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.1	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/05/23	COMPLETED 01/05/23	LOGGED BY D. Panchal	DRAWING NUMBER 14A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
171.9			See Borehole Log for Details															
171.5			QUEENSTON FORMATION															
171.1	5		Shale with interbedded siltstone, and clay layers.	1	B	F	C C	RU RP						1	100	74	95	Red
171.0																		
170.7			Shale (71%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.7 m and between moderately weathered and unweathered below.						NC	20 mm								
170.5																		
170.4	6		Limestone (3%) fine grained, grey, medium strength, unweathered	1	B	F	C C	RP RP						2	100	100	100	Red
170.0																		
170.0			Limestone (3%) fine grained, grey, medium strength, unweathered															
169.6			Siltstone (25%) fine grained, grey, medium strength, unweathered.															
169.5						F	V											
169.5			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.						NC	20 mm								
169.3									NC	60 mm								
169.3	7		Vertical fractures were noted at ~6.6 m, 7.1 m, 7.6 m, 9.1 m and 10.2 m.	1	F B	V F	C C	RP SU						3	100	74	100	Red
169.1																		
168.7			A Clay (1%) layers, heavily weathered, very low strength were noted at ~5.4 m, 6.6 m and 6.8 m.			F	V											
168.7																		
168.6																		
168.5																		
168.3	8																	
168.1																		
167.6																		
167.6																		
167.2																		
167.2	9			1	B	F	W M	SU SP						4	100	89	100	Red
167.1						F	V											
166.9																		
166.8																		
166.7																		
166.5																		
166.5																		
166.0	10					F	V											
165.7																		
165.7				1	B	F	M W	SP SP						5	100	91	100	Red
165.1	11																	
165.0																		
164.9																		
164.7																		
164.7	12			1	B	F	W W	SP SP						6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 212

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.1	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/05/23	COMPLETED 01/05/23	LOGGED BY D. Panchal	DRAWING NUMBER 14A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
163.9			QUEENSTON FORMATION															
163.7																		
163.4			Shale with interbedded siltstone, and clay layers.															
163.0	13		Shale (71%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.7 m and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	100	100	Red
			Limestone (3%) fine grained, grey, medium strength, unweathered				W	SP										
162.0	14		Siltstone (25%) fine grained, grey, medium strength, unweathered.															
161.9			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
			Vertical fractures were noted at ~6.6 m, 7.1 m, 7.6 m, 9.1 m and 10.2 m.	1	B	F	W	SP						8	100	100	100	Red
161.1	15		A Clay (1%) layers, heavily weathered, very low strength were noted at ~5.4 m, 6.6 m and 6.8 m.				W	SP										
160.9																		
160.7			End of Borehole at 15.4 m															
	16																	
	17																	
	18																	
	19																	
	20																	

ROCK CORE LOG

BH 201

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/22/23	COMPLETED 01/22/23	LOGGED BY D. Panchal	DRAWING NUMBER 2A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
174.3			See Borehole Log for Details															
173.8	3		QUEENSTON FORMATION															
173.7				1	F B	V F	C C	RU RU						1	100	75	95	Red
173.3			Shale with interbedded siltstone, and clay layers.															
173.0			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~7.2 and between moderately weathered and unweathered below.	1	B F F	F V V	C M	RU RP						2	100	91	100	Red
172.4			Limestone (6%) fine grained, grey, medium strength, unweathered															
172.3			Siltstone (14%) fine grained, grey, medium strength, unweathered.															
171.8	5		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
171.5			Vertical fractures were noted at ~3.1 m, 4.4 m, 4.5 m, 6.3 m and 6.5 m.	1	B	F	VC VC	RP RP		SO	180 mm			3	100	56	90	Red
171.1			Clay (2%) layers, heavily weathered, very low strength were noted at ~5.5 m, 5.9 m and 6.4 m.							NC	20 mm							
170.9	6		Rubble layers, heavily weathered, very low strength were noted at ~5.1m (50 mm) and 6.3 m (40 mm).		F F	V V				NC	70 mm							
170.8																		
170.6																		
170.5																		
170.4																		
170.4																		
170.3	7			1	B	F	C M	RP SU						4	100	90	100	Red
170.1																		
169.6																		
169.6																		
169.5																		
169.3	8																	
169.0																		
168.9																		
168.7																		
168.5																		
168.1				1	B	F	W W	SU SP						5	100	100	100	Red
168.0	9																	
167.7																		
167.6																		
167.2																		
167.1																		
166.8	10			1	B	F	W W	SP SP						6	100	100	100	Red
166.8																		

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 201

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/22/23	COMPLETED 01/22/23	LOGGED BY D. Panchal	DRAWING NUMBER 2A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.3			QUEENSTON FORMATION															
166.1																		
165.5	11		Shale with interbedded siltstone, and clay layers.															
165.4			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~7.2 and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	100	100	Red
165.1																		
165.1	12		Limestone (6%) fine grained, grey, medium strength, unweathered															
164.7			Siltstone (14%) fine grained, grey, medium strength, unweathered.															
164.6																		
164.0	13		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
163.6			Vertical fractures were noted at ~3.1 m, 4.4 m, 4.5 m, 6.3 m and 6.5 m.															
163.5			Clay (2%) layers, heavily weathered, very low strength were noted at ~5.5 m, 5.9 m and 6.4 m.	1	B	F	W	SP						8	100	100	100	Red
163.1																		
163.0	14		Rubble layers, heavily weathered, very low strength were noted at ~5.1m (50 mm) and 6.3 m (40 mm).															
162.6																		
162.6																		
161.7	15																	
161.7																		
161.4			End of Borehole at 15.4 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 202

Project No. GTR-00257769-H0

Drawing No. 3

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 17 - 18, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

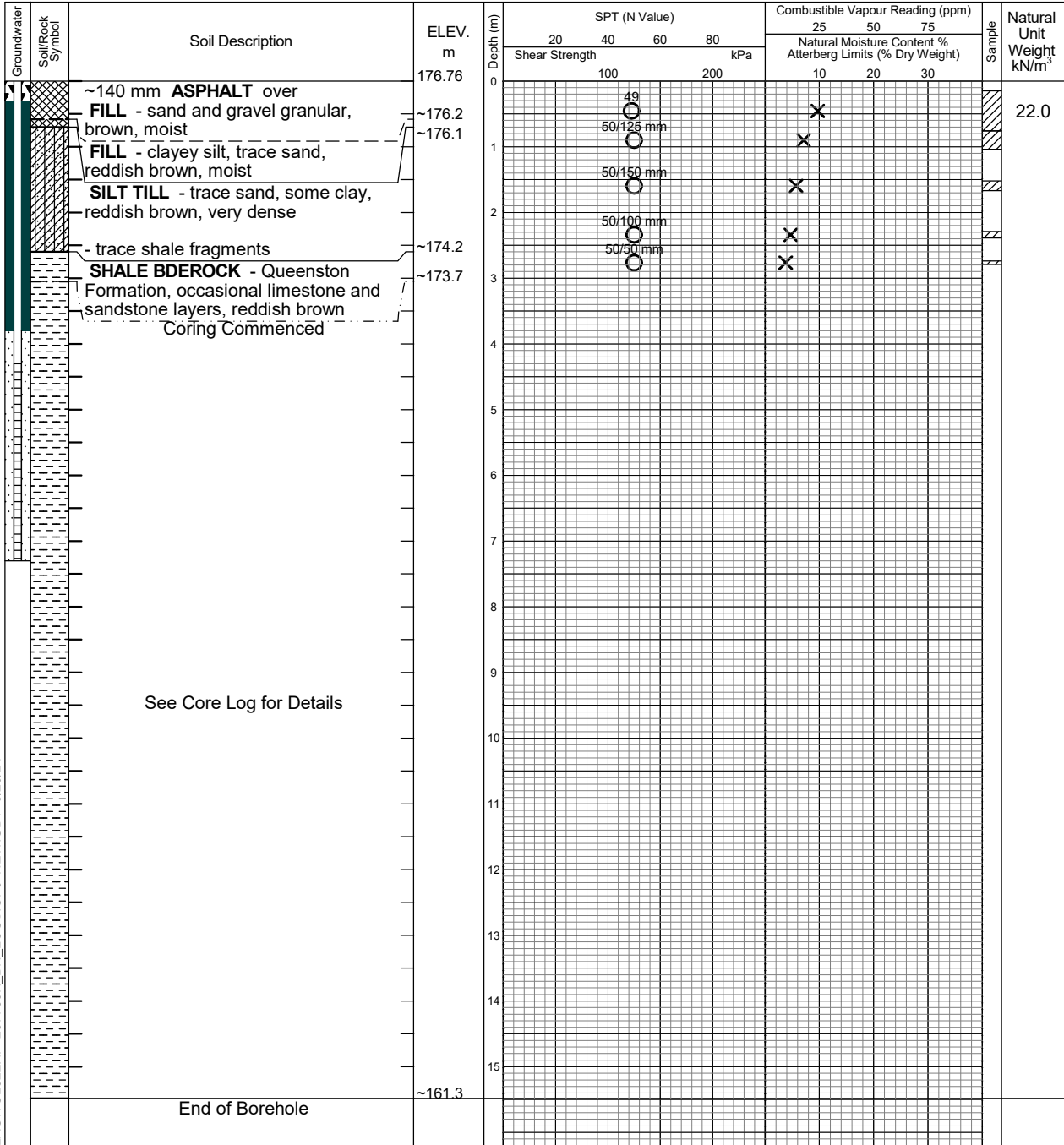
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.5 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~5.9	Well
February 4, 2024	~6.0	Well

ROCK CORE LOG

BH 202

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/18/23	COMPLETED 01/18/23	LOGGED BY D. Panchal	DRAWING NUMBER 3A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 75 - Truck	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
174.3			See Borehole Log for Details															
173.7	3		QUEENSTON FORMATION															
173.6				1	F	V	C	RU						1	100	76	95	Red
173.5			Shale with interbedded siltstone, and clay layers.		B	F	C	RU										
173.4																		
173.3																		
173.2			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.0 m and between moderately weathered and unweathered below.															
172.6	4			1	B	F	C	RU						2	98	94	100	Red
172.5			Limestone (9%) fine grained, grey, medium strength, unweathered															
171.9			Siltstone (13%) fine grained, grey, medium strength, unweathered.															
171.8	5																	
171.5			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
171.5			Vertical fractures were noted at ~3.2 m, 3.3 m and 8.0 m.															
171.0																		
170.9				1	B	F	C	RP	SU					3	100	100	100	Red
170.7	6						M	SU										
170.6																		
170.1																		
169.9																		
169.8	7			1	B	F	M	SU						4	100	98	100	Red
169.7																		
169.6																		
169.1																		
168.8	8				F	V												
168.8																		
168.6																		
168.4																		
167.8	9			1	B	F	W	SU						5	100	100	100	Red
167.7							W	SP										
167.4																		
167.3																		
166.8	10																	
166.7																		
166.5																		
166.5				1	B	F	W	SP						6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG_GDT_3/20/24



ROCK CORE LOG

BH 202

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/18/23	COMPLETED 01/18/23	LOGGED BY D. Panchal	DRAWING NUMBER 3A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 75 - Truck	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.1			QUEENSTON FORMATION				W	SP										
165.9	11		Shale with interbedded siltstone, and clay layers.															
165.3			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.0 m and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	100	100	Red
165.0			Limestone (9%) fine grained, grey, medium strength, unweathered				W	SP										
164.9	12		Siltstone (13%) fine grained, grey, medium strength, unweathered.				W	SP										
164.4			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
164.4			Vertical fractures were noted at ~3.2 m, 3.3 m and 8.0 m.															
163.9	13			1	B	F	W	SP						8	100	100	100	Red
163.6							W	SP										
163.5																		
163.3																		
163.1																		
162.9	14																	
162.2																		
162.1																		
161.7	15			1	B	F	W	SP						9	100	100	100	Red
161.6							W	SP										
161.3			End of Borehole at 15.5 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 203

Project No. GTR-00257769-H0

Drawing No. 4

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 17 - 19, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

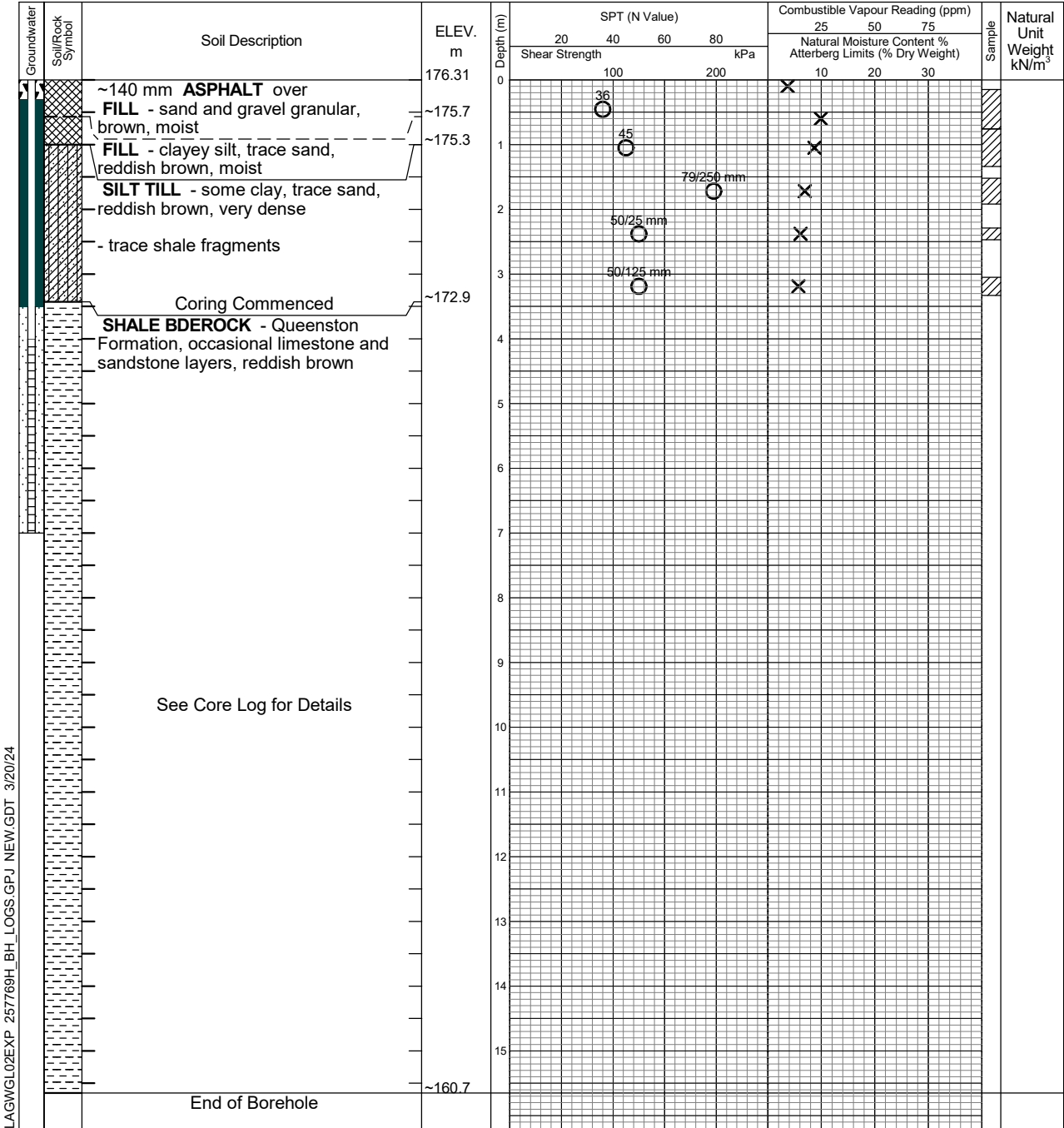
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.7 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~6.5	Well
February 4, 2024	~6.2	Well

ROCK CORE LOG

BH 203

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.3	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/19/23	COMPLETED 01/19/23	LOGGED BY D. Panchal	DRAWING NUMBER 4A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 75 - Truck	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
173.3	3		See Borehole Log for Details															
172.9			QUEENSTON FORMATION	1	B	F	C	RU						1	100	0	95	Red
172.8							C	RU										
172.6			Shale with interbedded siltstone, and clay layers.															
172.6	4		Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.	1	B	F	M	RU						2	98	87	95	Red
171.7							C	RP										
171.6			Limestone (6%) fine grained, grey, medium strength, unweathered			F	V											
171.3	5		Siltstone (19%) fine grained, grey, medium strength, unweathered.			F	V											
171.2						F	V											
171.2			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.			F	V											
171.1																		
171.0																		
170.9	6		Vertical fractures were noted at ~5.1 m, 5.2 m, 5.4 m, 6.4 m, 6.8 m, 7.0 m, 7.2 m, 8.4 m, 11.6 m and 13.4 m.	1	B	F	C	RP						3	100	90	100	Red
170.0							C	RP										
169.9																		
169.7																		
169.6																		
169.4						F	V											
169.3	7					F	V											
169.1						F	V											
169.0																		
168.9																		
168.8																		
168.8																		
168.6																		
168.5	8																	
168.0																		
167.9						F	V											
167.6																		
167.6																		
167.3																		
167.3	9					B	F	C	SU					5	95	94	100	Red
167.1								W	SP									
167.0																		
166.5																		
166.4																		
166.2																		
166.2	10					B	F	W	SP					6	100	100	100	Red
165.4								W	SP									

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 203

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.3	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/19/23	COMPLETED 01/19/23	LOGGED BY D. Panchal	DRAWING NUMBER 4A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 75 - Truck	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
165.3	11		QUEENSTON FORMATION															
165.1																		
165.0																		
164.8			Shale with interbedded siltstone, and clay layers.		F	V												
164.7																		
164.5																		
164.5	12		Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.	1	B	F	C W	SP SP						7	100	97	100	Red
164.3																		
164.0			Limestone (6%) fine grained, grey, medium strength, unweathered															
163.5																		
163.5	13		Siltstone (19%) fine grained, grey, medium strength, unweathered.															
163.0			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
162.9																		
162.7																		
162.6			Vertical fractures were noted at ~5.1 m, 5.2 m, 5.4 m, 6.4 m, 6.8 m, 7.0 m, 7.2 m, 8.4 m, 11.6 m and 13.4 m.	1	F B	V F	M M	SP SP						8	100	98	100	Red
162.5																		
162.4	14																	
161.7																		
161.6																		
161.3																		
161.3	15			1	B	F	W W	SP SP						9	100	100	100	Red
161.1																		
161.0																		
160.7			End of Borehole at 15.7 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 204

Project No. GTR-00257769-H0

Drawing No. 5

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 19 - 22, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

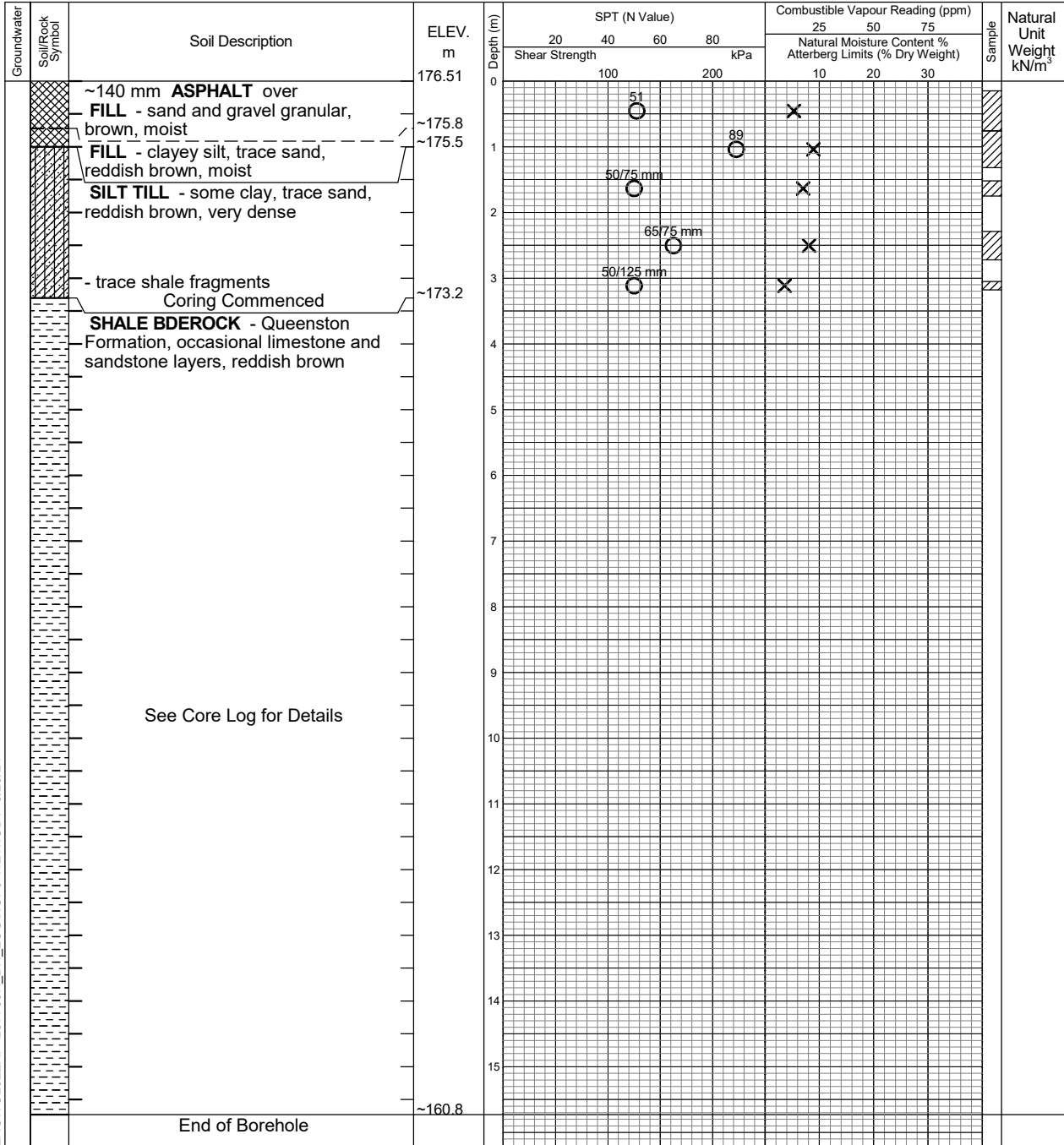
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.7 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 204

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.5	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/22/23	COMPLETED 01/22/23	LOGGED BY D. Panchal	DRAWING NUMBER 5A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR	
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
174.0																			
	3		See Borehole Log for Details																
173.2			QUEENSTON FORMATION	1	B	F	C	RU						1	100	0	95	Red	
173.1					F	V	C	RU											
173.0			Shale with interbedded siltstone, and clay layers.																
172.9					F	V													
172.6			Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.9 and between moderately weathered and unweathered below.	1	B	F	M	RU						2	100	90	100	Red	
172.3					F	V	C	RP											
172.2																			
171.7			Limestone (3%) fine grained, grey, medium strength, unweathered																
171.6					F	V													
171.5			Siltstone (22%) fine grained, grey, medium strength, unweathered.																
171.4					F	V													
171.0			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.																
170.8																			
170.7			Vertical fractures were noted at ~ 3.5 m, 3.9 m, 4.3 m, 4.8 m, 5.1 m, 6.5 m, 7.0 m, 9.6 m and 10.5 m.	1	B	F	C	RP						3	100	92	100	Red	
170.4								RP											
170.3			A Rubble layers, heavily weathered, low strength was noted at ~10.1 m (110 mm).																
170.2					F	V													
170.1																			
170.0																			
169.8																			
169.5					F	V													
169.1																			
169.0				1	B	F	C	RP						4	100	83	100	Red	
168.7								SU											
168.4																			
168.0																			
167.9																			
167.6																			
167.5				1	B	F	M	SU						5	100	100	100	Red	
167.5								SP											
167.4																			
167.3																			
167.2																			
166.9					F	V													
166.8																			
166.8																			
166.7																			
166.5																			
166.4				1	B	F	M	SP						6	100	97	100	Red	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 204

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.5	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/22/23	COMPLETED 01/22/23	LOGGED BY D. Panchal	DRAWING NUMBER 5A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.3			QUEENSTON FORMATION															
166.1						F	V	M	SP									
166.0																		
166.0	11		Shale with interbedded siltstone, and clay layers.															
165.5																		
165.4																		
165.1			Shale (74%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.9 and between moderately weathered and unweathered below.															
165.0																		
164.7																		
164.6	12		Limestone (3%) fine grained, grey, medium strength, unweathered	1	B	F	W	SP						7	100	100	100	Red
164.5							W	SP										
164.2			Siltstone (22%) fine grained, grey, medium strength, unweathered.															
163.9			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
163.6																		
163.5	13		Vertical fractures were noted at ~ 3.5 m, 3.9 m, 4.3 m, 4.8 m, 5.1 m, 6.5 m, 7.0 m, 9.6 m and 10.5 m.															
163.3																		
163.2			A Rubble layers, heavily weathered, low strength was noted at ~10.1 m (110 mm).	1	B	F	M	SP						8	100	97	100	Red
162.8							M	SP										
162.8																		
162.4	14																	
162.3																		
161.7																		
161.7	15																	
161.3																		
161.1																		
160.8			End of Borehole at 15.7 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT 3/20/24



Log of Borehole 205

Project No. GTR-00257769-H0

Drawing No. 6

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 12, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

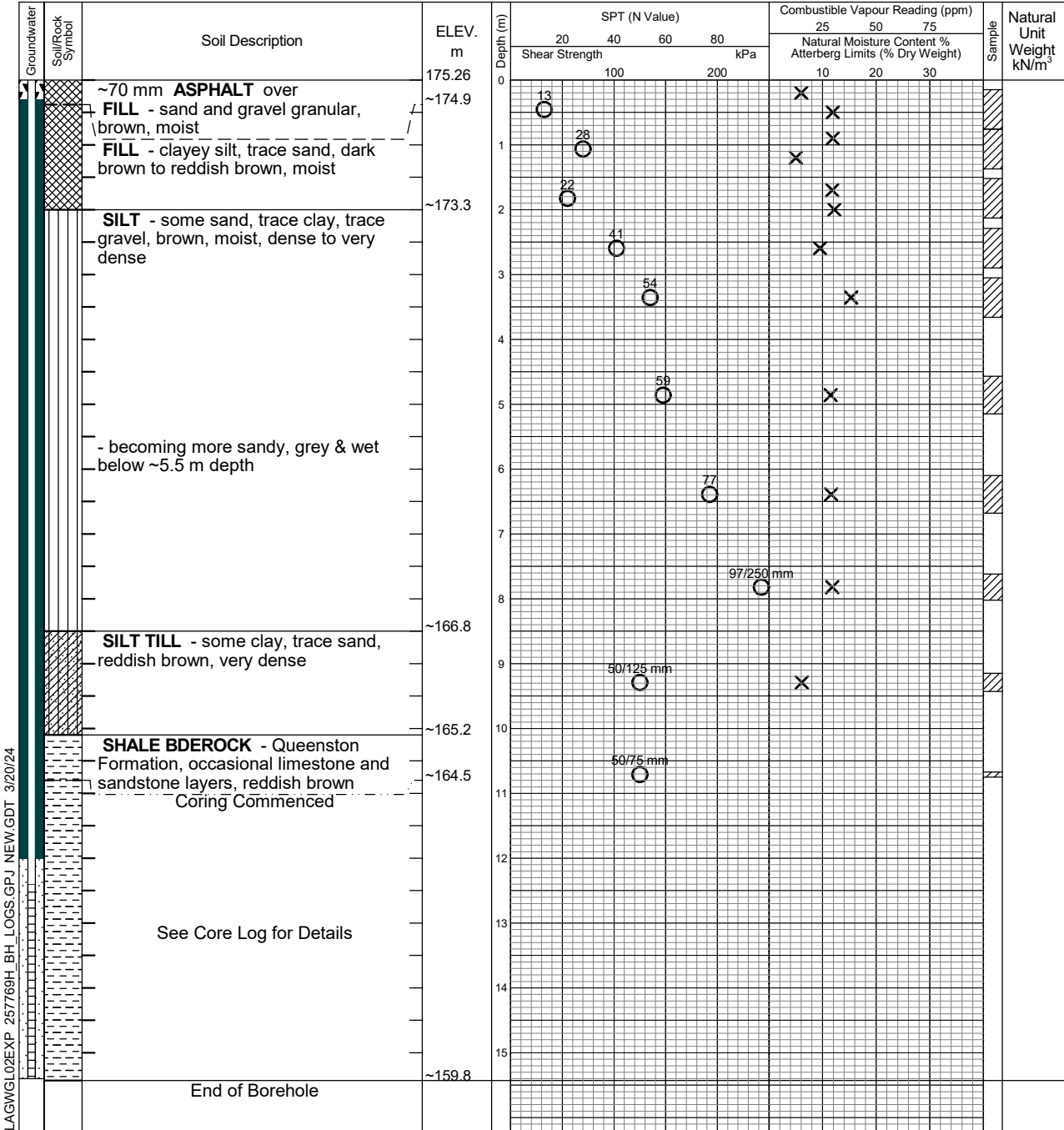
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



Notes:

- Borehole advanced to completion at ~15.4 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
- This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Brampton

Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~5.3	Well
February 4, 2024	~5.6	Well

ROCK CORE LOG

BH 205

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 175.3	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/12/23	COMPLETED 01/12/23	LOGGED BY D. Panchal	DRAWING NUMBER 6A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 1

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
165.0			See Borehole Log for Details															
164.5			QUEENSTON FORMATION															
164.4	11		Shale with interbedded siltstone, and clay layers.	1	B F	F V	VC C	RU RP						1	92	0	90	Red
164.1																		
164.0																		
163.8																		
163.6																		
163.6	12		Shale (62%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~11.7 m and between moderately weathered and unweathered below.	1	B	F	C C	RP SU						2	100	78	100	Red
163.1																		
163.0																		
162.8																		
162.7																		
162.1	13		Limestone (11%) fine grained, grey, medium strength, unweathered															
161.9																		
161.8																		
161.7																		
161.6																		
161.2	14		Siltstone (26%) fine grained, grey, medium strength, unweathered.															
161.2																		
161.1																		
161.0																		
160.9																		
160.7																		
160.6																		
160.5	15		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
160.5																		
159.9																		
159.8																		
159.8			End of Borehole at 15.4 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 206

Project No. GTR-00257769-H0

Drawing No. 7

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 11, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

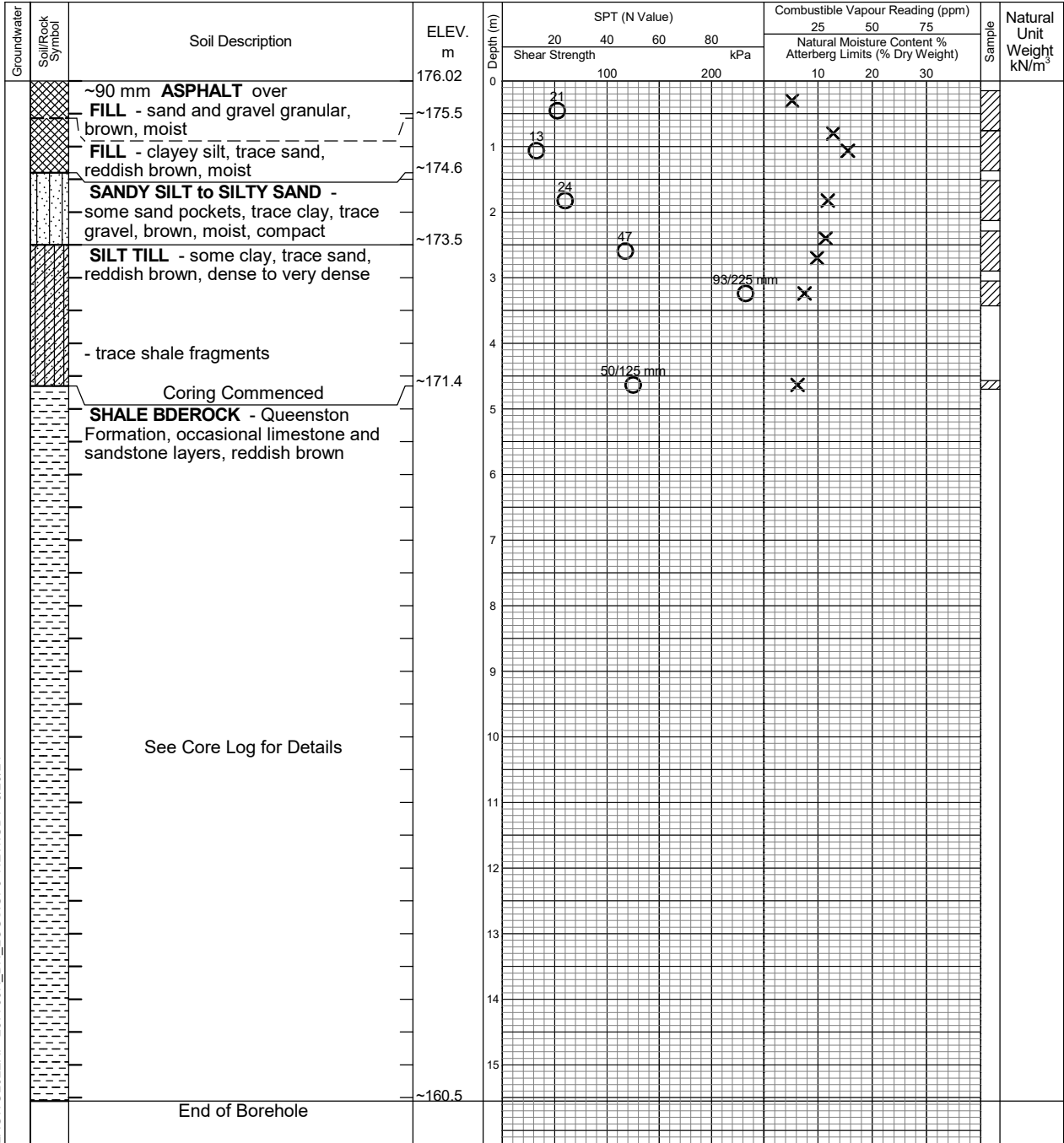
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.6 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 206

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.0	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/11/23	COMPLETED 01/12/23	LOGGED BY D. Panchal	DRAWING NUMBER 7A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
171.8			See Borehole Log for Details															
171.4			QUEENSTON FORMATION															
171.1	5		Shale with interbedded siltstone, and clay layers.	1	B	F	VC C	RU RP						1	100	88	95	
170.9			Shale (86%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.5 m and between moderately weathered and unweathered below.	1	B F	F V	C C	RP RP						2	100	73	100	
170.1	6		Limestone (4%) fine grained, grey, medium strength, unweathered			F	V											
169.9			Siltstone (8%) fine grained, grey, medium strength, unweathered.			F	V											
169.6			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.			F	V											
169.4			Vertical fractures were noted at ~6.0 m, 6.2 m, 6.5 m, 6.9 m, 7.2 m, 7.4 m, 8.2 m, 10.1 m and 12.1 m.	1	B F	F V	C C	RP RP						3	100	70	100	
169.3			Rubble layers, heavily weathered, very low strength were noted at ~9.9 m (80 mm) and 10.3 m (160 mm).			F	V											
169.1	7																	
168.4																		
168.4	8																	
168.0																		
168.0																		
167.9																		
167.8																		
167.4																		
167.3	9																	
166.9																		
166.8																		
166.1																		
166.1	10																	
165.8																		
165.7																		
165.7	11																	
165.4																		
165.3																		
165.0																		
164.9	12																	
164.7																		
164.6																		
164.4																		
164.2																		
164.1																		
164.1	12																	
				1	B	F	M	SU						6	100	92	100	

ROCK CORE LOG

BH 206

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.0	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/11/23	COMPLETED 01/12/23	LOGGED BY D. Panchal	DRAWING NUMBER 7A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
163.8			QUEENSTON FORMATION				M	SP										
163.7			Shale with interbedded siltstone, and clay layers.															
163.6			Shale (86%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.5 m and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	100	100	
162.5			Limestone (4%) fine grained, grey, medium strength, unweathered				W	SP										
162.4			Siltstone (8%) fine grained, grey, medium strength, unweathered.				W	SP										
162.2			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
162.1			Vertical fractures were noted at ~6.0 m, 6.2 m, 6.5 m, 6.9 m, 7.2 m, 7.4 m, 8.2 m, 10.1 m and 12.1 m.	1	B	F	W	SP						8	100	100	100	
161.8			Rubble layers, heavily weathered, very low strength were noted at ~9.9 m (80 mm) and 10.3 m (160 mm).				W	SP										
161.6																		
161.5																		
161.4																		
161.0																		
160.9																		
160.5			End of Borehole at 15.6 m															

Log of Borehole 207

Project No. GTR-00257769-H0

Drawing No. 8

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 10 - 11, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

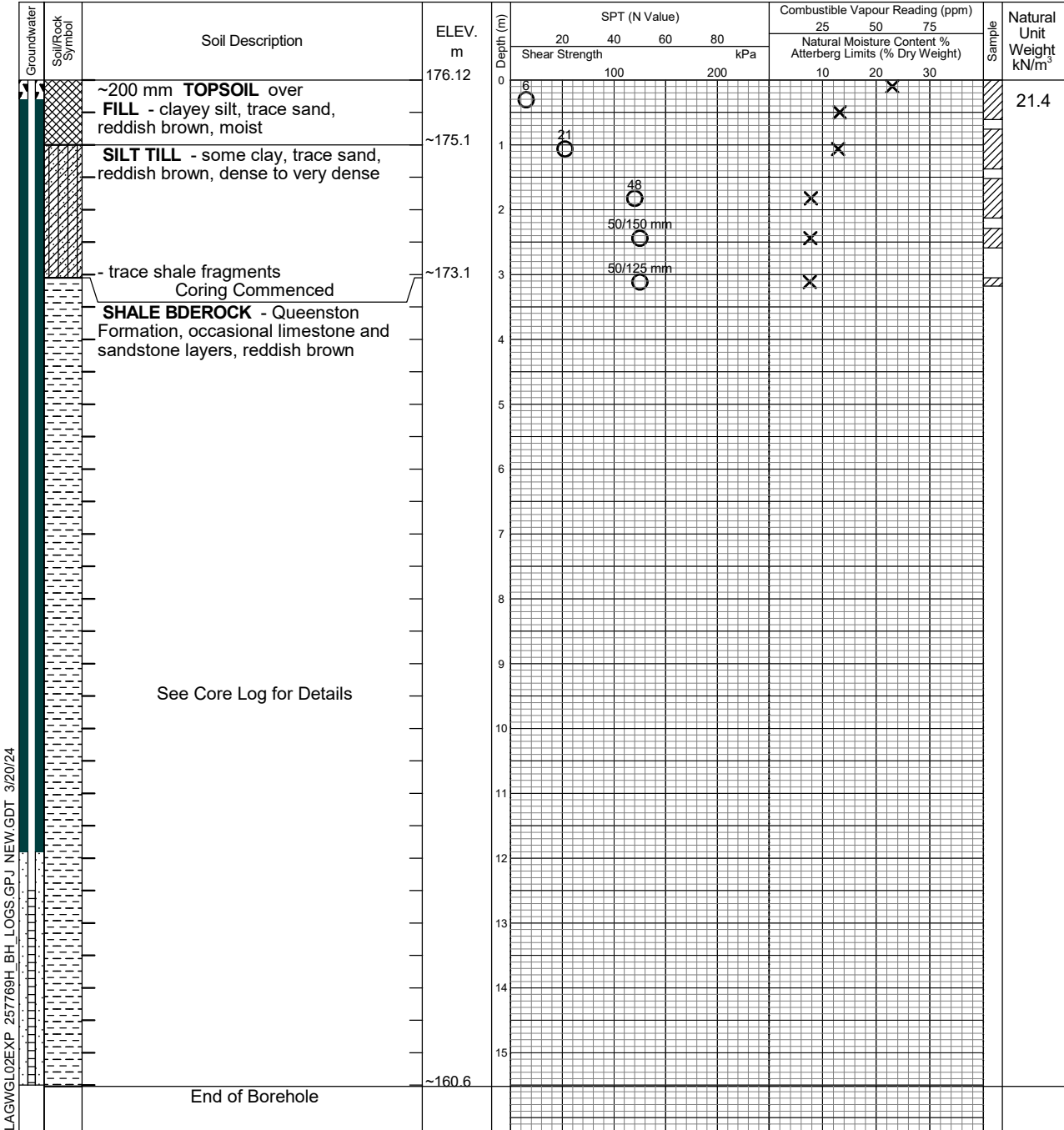
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.5 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Brampton

Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~6.1	Well
February 4, 2024	~7.4	Well

ROCK CORE LOG

BH 207

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.1	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/11/23	COMPLETED 01/11/23	LOGGED BY D. Panchal	DRAWING NUMBER 8A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
173.6			See Borehole Log for Details															
173.1	3		QUEENSTON FORMATION	1	B	F	C C	RU RP					1	100	100	95	Red	
			Shale with interbedded siltstone, and clay layers.															
	4		Shale (73%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~3.4 m and between moderately weathered and unweathered below.	1	B	F	C C	RP RP					2	100	82	100	Red	
171.8			Limestone (3%) fine grained, grey, medium strength, unweathered			F	V											
171.8			Siltstone (24%) fine grained, grey, medium strength, unweathered.			F	V											
171.7						F	V											
171.6						F	V											
171.4						F	V											
171.3	5		Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.			F	V											
171.2			Vertical fractures were noted at ~4.5 m, 4.8 m, 5.0 m, 5.3 m, 5.6 m, 6.8 m, 9.2 m, 12.4 m, 13.4 m and 14.8 m.	1	B	F	C C	RP SU					3	100	85	100	Red	
170.8						F	V											
170.6						F	V											
170.4	6					F	V											
170.0						F	V											
170.0						F	V											
169.8						F	V											
169.6						F	V											
169.4						F	V											
169.2	7					F	V											
169.0						F	V											
168.9						F	V											
168.8					1	B	F	C M	SU SU				4	100	93	100	Red	
168.6						F	V											
168.5						F	V											
168.4						F	V											
168.0	8					F	V											
167.9						F	V											
167.5						F	V											
167.5						F	V											
167.2	9				1	B	F	W M	SU SP				5	100	97	100	Red	
167.1						F	V											
167.0						F	V											
166.9						F	V											
166.7						F	V											
166.7						F	V											
166.2						F	V											
166.2	10					F	V											
165.9						F	V											
165.8					1	B	F	W	SP				6	100	100	100	Red	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 207

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.1	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/11/23	COMPLETED 01/11/23	LOGGED BY D. Panchal	DRAWING NUMBER 8A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			QUEENSTON FORMATION				W	SP										
164.9	11		Shale with interbedded siltstone, and clay layers.															
164.8			Shale (73%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~3.4 m and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	93	100	Red
164.5																		
164.4																		
164.3																		
164.1	12		Limestone (3%) fine grained, grey, medium strength, unweathered				C	SU										
164.0																		
163.9																		
163.8			Siltstone (24%) fine grained, grey, medium strength, unweathered.															
163.8																		
163.7			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
163.5																		
163.4	13		Vertical fractures were noted at ~4.5 m, 4.8 m, 5.0 m, 5.3 m, 5.6 m, 6.8 m, 9.2 m, 12.4 m, 13.4 m and 14.8 m.	1	B F	F V	M M	SU SP						8	100	93	100	Red
162.8																		
162.7																		
162.6																		
161.7	14																	
161.5																		
161.4																		
161.3																		
161.0	15																	
160.9																		
160.6			End of Borehole at 15.5 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ CORE_LOG.GDT 3/20/24



Log of Borehole 208

Project No. GTR-00257769-H0

Drawing No. 9

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 10, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

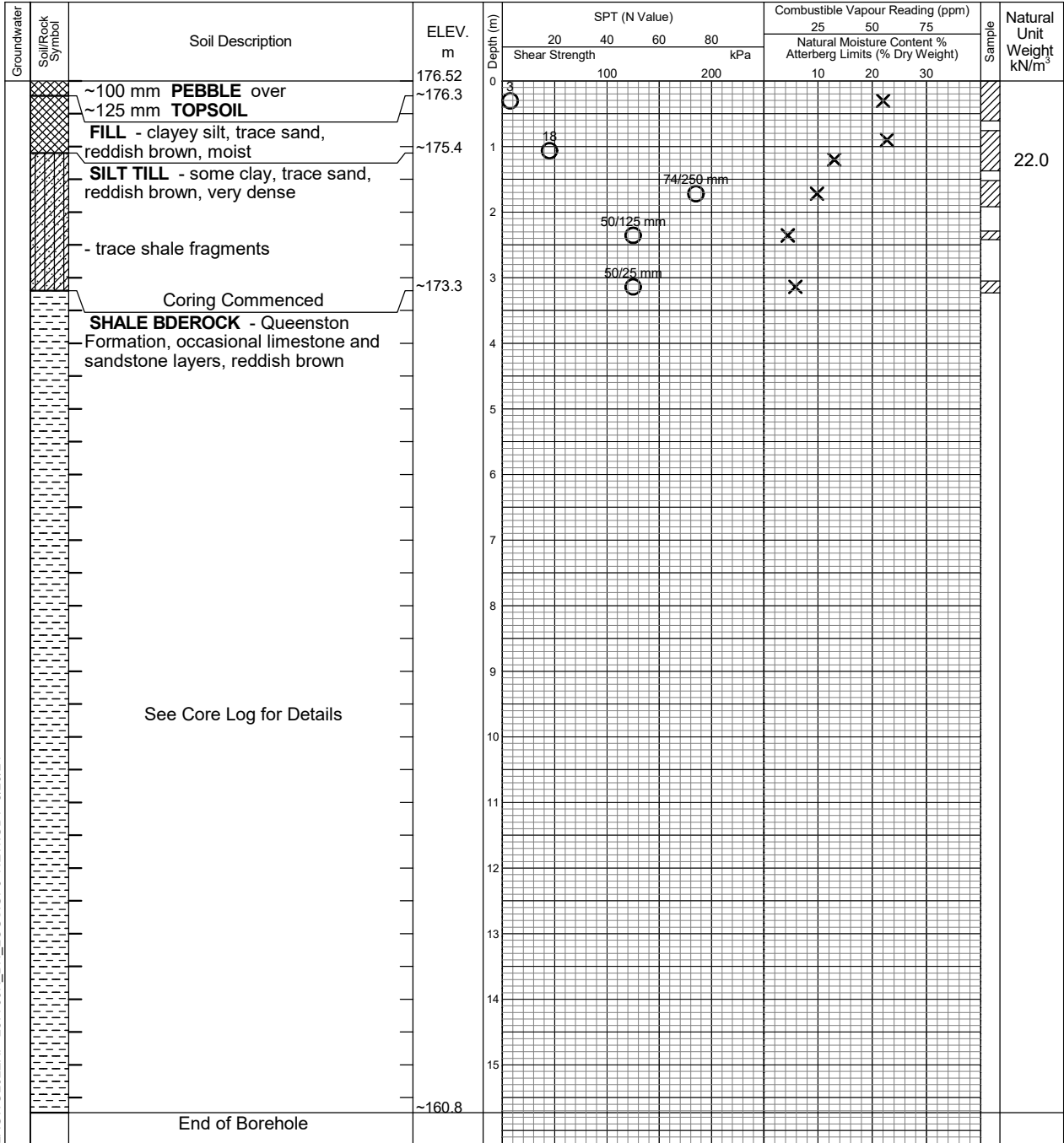
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.7 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 208

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.5	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/10/23	COMPLETED 01/10/23	LOGGED BY D. Panchal	DRAWING NUMBER 9A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
173.8			See Borehole Log for Details															
173.3		3	QUEENSTON FORMATION															
173.2				1	B	F	C	RU						1	100	53	100	Red
173.2							C	RU										
172.9			Shale with interbedded siltstone, and clay layers.															
172.8																		
172.5		4	Shale (87%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.1 m and between moderately weathered and unweathered below.	1	B	F	C	RU						2	100	88	100	Red
172.5					F	V	C	RP										
172.4																		
172.3																		
171.9			Limestone (3%) fine grained, grey, medium strength, unweathered			F	V											
171.9																		
171.7																		
171.6		5	Siltstone (9%) fine grained, grey, medium strength, unweathered.															
171.3																		
171.2			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
170.9																		
170.8			Vertical fractures were noted at ~4.4 m, 4.7 m, 6.4 m, 7.1 m, 8.4 m, 10.8 m and 14.6 m.	1	B	F	M	RP						3	100	93	100	Red
170.5		6	A Clay (1%) layer, heavily weathered, very low strength was noted at ~15.7 m.				C	RP										
170.4																		
170.1						F	V											
170.1																		
169.8																		
169.6		7				F	V											
169.2																		
169.1																		
169.0				1	B	F	C	RP						4	100	70	100	Red
168.9							M	SU										
168.8																		
168.8		8																
168.8																		
168.7																		
168.1						F	V											
168.0																		
167.8																		
167.6		9		1	B	F	C	SU						5	100	95	100	Red
167.3							M	SP										
167.3																		
166.5		10		1	B	F	W	SP						6	100	97	100	Red
166.3							M	SP										

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 208

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.5	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/10/23	COMPLETED 01/10/23	LOGGED BY D. Panchal	DRAWING NUMBER 9A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
165.8			QUEENSTON FORMATION		F	V												
165.7	11		Shale with interbedded siltstone, and clay layers.															
165.4			Shale (87%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.1 m and between moderately weathered and unweathered below.	1	B	F	W W	SP SP						7	100	100	100	Red
164.4	12		Limestone (3%) fine grained, grey, medium strength, unweathered															
164.2			Siltstone (9%) fine grained, grey, medium strength, unweathered.															
163.8			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
163.7			Vertical fractures were noted at ~4.4 m, 4.7 m, 6.4 m, 7.1 m, 8.4 m, 10.8 m and 14.6 m.															
163.5	13		A Clay (1%) layer, heavily weathered, very low strength was noted at ~15.7 m.	1	B	F	W W	SP SP						8	100	100	100	Red
163.4																		
163.2																		
163.1																		
162.7	14																	
162.6																		
161.6																		
161.5	15																	
161.4																		
161.3																		
161.2																		
161.1																		
160.9																		
160.9			End of Borehole at 15.7 m								NC							
160.8	16										50							
160.8											mm							
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ CORE_LOG.GDT 3/20/24



Log of Borehole 209D

Project No. GTR-00257769-H0

Drawing No. 10

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 15, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

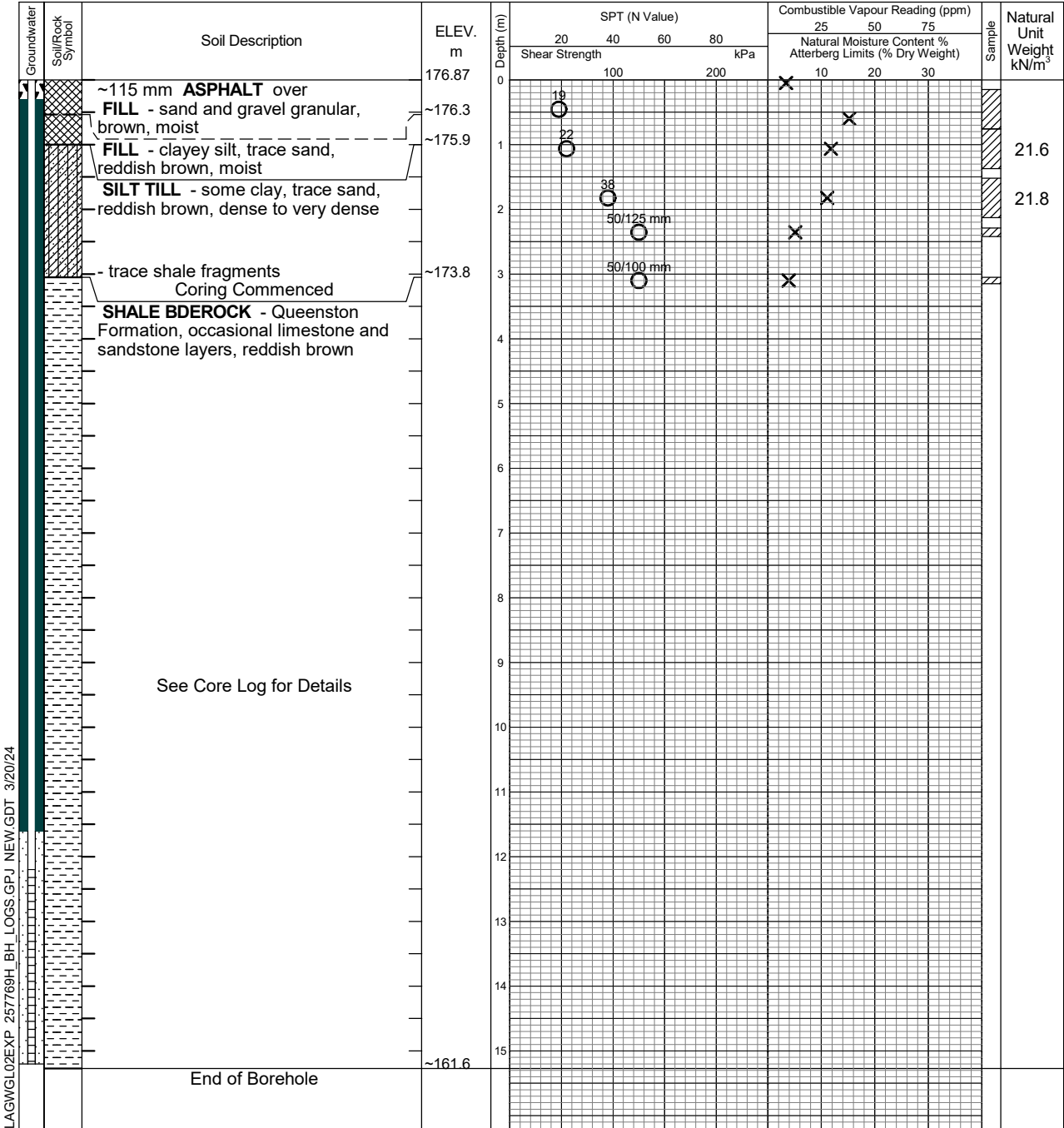
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.3 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~7.9	Well
February 4, 2024	~8.0	Well

ROCK CORE LOG

BH 209D

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.9	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/15/23	COMPLETED 01/15/23	LOGGED BY D. Panchal	DRAWING NUMBER 10A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
174.4			See Borehole Log for Details															
173.8	3		QUEENSTON FORMATION															
173.7				1	F B F	V F V	VC C	RU RU						1	100	68	95	Red
173.4			Shale with interbedded siltstone, and clay layers.															
173.3																		
173.0			Shale (98%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.4 m and between moderately weathered and unweathered below.															
173.0	4			1	F B	V F	C M	RU RP						2	100	92	100	Red
172.7			Limestone (1%) fine grained, grey, medium strength, unweathered															
172.6			Siltstone (1%) fine grained, grey, medium strength, unweathered.															
			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
171.5			Vertical fractures were noted at ~3.2 m, 3.5 m, 4.2 m, 6.2 m and 6.7 m.															
171.4																		
171.1				1	B	F	M C	RP RP						3	100	98	100	Red
171.0	6																	
170.7																		
170.6																		
170.5																		
170.4																		
170.2																		
170.0	7																	
169.6				1	B	F	C C	RP SU						4	100	97	100	Red
169.4																		
169.0																		
168.9	8																	
168.9																		
168.8																		
168.7																		
168.5																		
168.3																		
168.3	9			1	B	F	W W	SU SP						5	100	100	100	Red
167.5																		
167.3																		
167.1																		
167.1	10																	
166.8																		
166.8																		
166.5				1	B	F	M	SP						6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 209D

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.9	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/15/23	COMPLETED 01/15/23	LOGGED BY D. Panchal	DRAWING NUMBER 10A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.4			QUEENSTON FORMATION				M	SP										
166.2																		
166.1																		
165.9	11		Shale with interbedded siltstone, and clay layers.															
165.7																		
165.5			Shale (98%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.4 m and between moderately weathered and unweathered below.	1	B	F	M	SP						7	100	97	100	Red
165.4																		
165.1			Limestone (1%) fine grained, grey, medium strength, unweathered				M	SP										
165.0	12		Siltstone (1%) fine grained, grey, medium strength, unweathered.															
164.6			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
164.5																		
164.3			Vertical fractures were noted at ~3.2 m, 3.5 m, 4.2 m, 6.2 m and 6.7 m.															
164.1																		
163.9	13			1	B	F	W	SP						8	100	100	100	Red
163.7																		
163.3																		
163.1	14																	
162.6																		
162.5																		
162.4																		
162.3	15			1	B	F	W	SP						9	100	100	100	Red
161.6			End of Borehole at 15.3 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 209S

Project No. GTR-00257769-H0

Drawing No. 11

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 15, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

Datum: Geodetic

Shelby Tube

Undrained Triaxial at

Field Vane Test

% Strain at Failure

Penetrometer

Groundwater Soil/Rock Symbol	Soil Description	ELEV. m	SPT (N Value)				Combustible Vapour Reading (ppm)			Sample	Natural Unit Weight kN/m ³
			20	40	60	80	25	50	75		
			Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)				
		176.87	100		200						
	See Log of Borehole 209D for Details										
	End of Borehole	~170.8									

LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~6.1 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	No Free Water	Well
February 4, 2024	No Free Water	Well

Log of Borehole 210

Project No. GTR-00257769-H0

Drawing No. 12

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 8 - 9, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

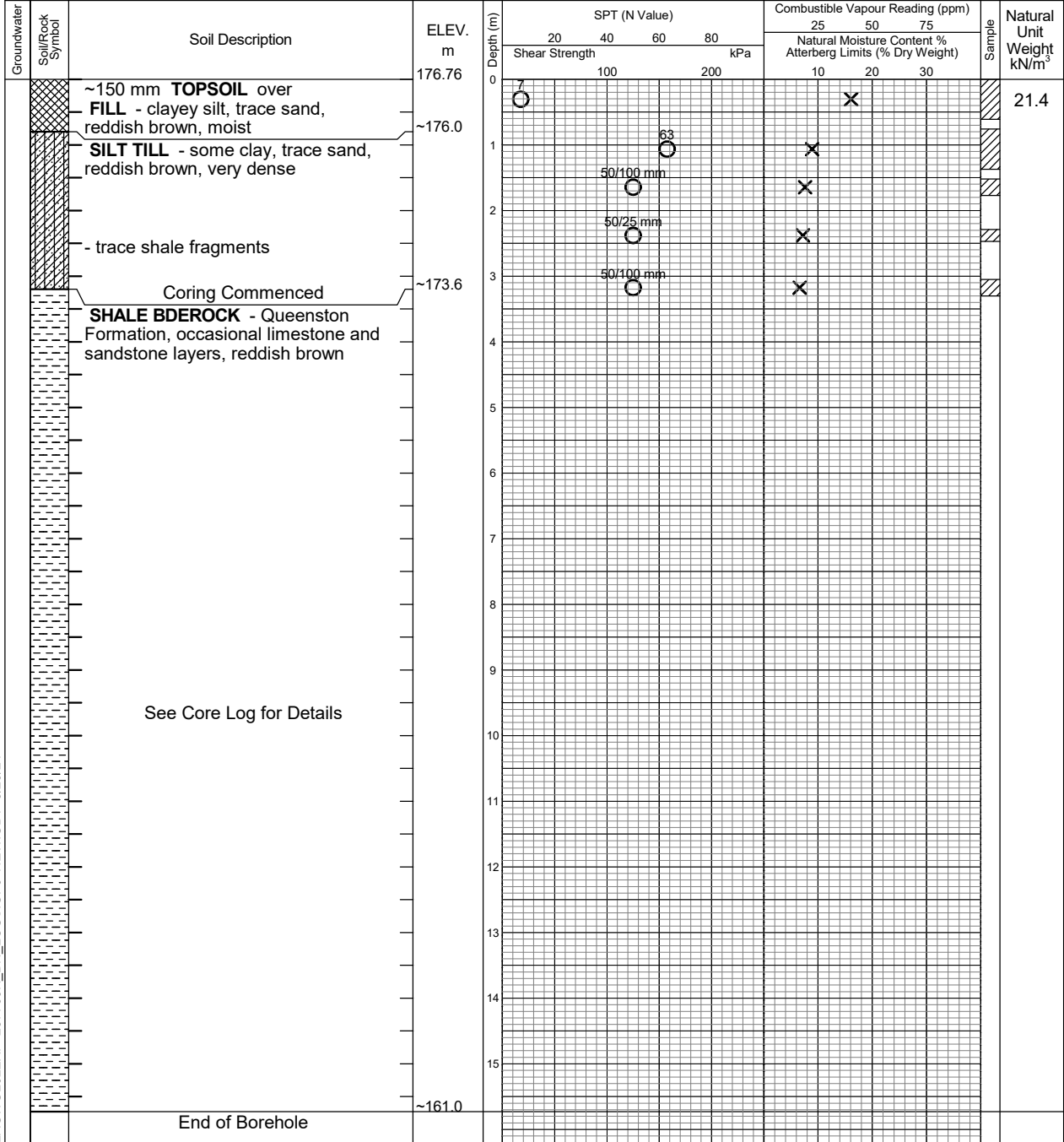
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.7 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Brampton

Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 210

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/09/23	COMPLETED 01/09/23	LOGGED BY D. Panchal	DRAWING NUMBER 12A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
174.3			See Borehole Log for Details															
173.6			QUEENSTON FORMATION															
173.5				1	B	F	C	RU						1	100	100	95	Red
173.4						F	V	C	RP									
173.3			Shale with interbedded siltstone, and clay layers.															
173.1				4														
172.8			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.	1	B	F	C	RP	SU					2	100	100	100	Red
172.7							M											
			Limestone (7%) fine grained, grey, medium strength, unweathered															
171.9				5														
171.7			Siltstone (15%) fine grained, grey, medium strength, unweathered.															
171.3			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
171.2				1	B	F	M	SU	SP					3	100	100	100	Red
170.8			Vertical fractures were noted at ~3.6 m and 13.5 m.				M											
170.7				6														
170.0																		
169.9				7														
169.8																		
169.7				1	B	F	M	SP	SP					4	100	100	100	Red
169.3							W											
169.0																		
168.7				8														
168.7																		
168.5																		
168.4																		
167.8				1	B	F	W	SP	SP					5	100	100	100	Red
167.7							W											
167.1																		
167.1																		
167.0																		
166.9				10														
166.4				1	B	F	W	SP	SP					6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 210

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.8	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/09/23	COMPLETED 01/09/23	LOGGED BY D. Panchal	DRAWING NUMBER 12A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.3			QUEENSTON FORMATION															
165.9	11		Shale with interbedded siltstone, and clay layers.															
165.2			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~4.5 m and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	100	100	Red
164.9			Limestone (7%) fine grained, grey, medium strength, unweathered				W	SP										
164.8	12		Siltstone (15%) fine grained, grey, medium strength, unweathered.			F	V											
164.0			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
163.8	13		Vertical fractures were noted at ~3.6 m and 13.5 m.	1	B	F	M	SP						8	100	100	100	Red
163.3							M	SP										
163.2																		
163.1																		
162.6	14																	
162.2																		
162.1																		
161.6	15			1	B	F	W	SP						9	100	100	100	Red
161.4							W	SP										
161.0	16		End of Borehole at 15.7 m															
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ CORE_LOG.GDT 3/20/24



Log of Borehole 211

Project No. GTR-00257769-H0

Drawing No. 13

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 8, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

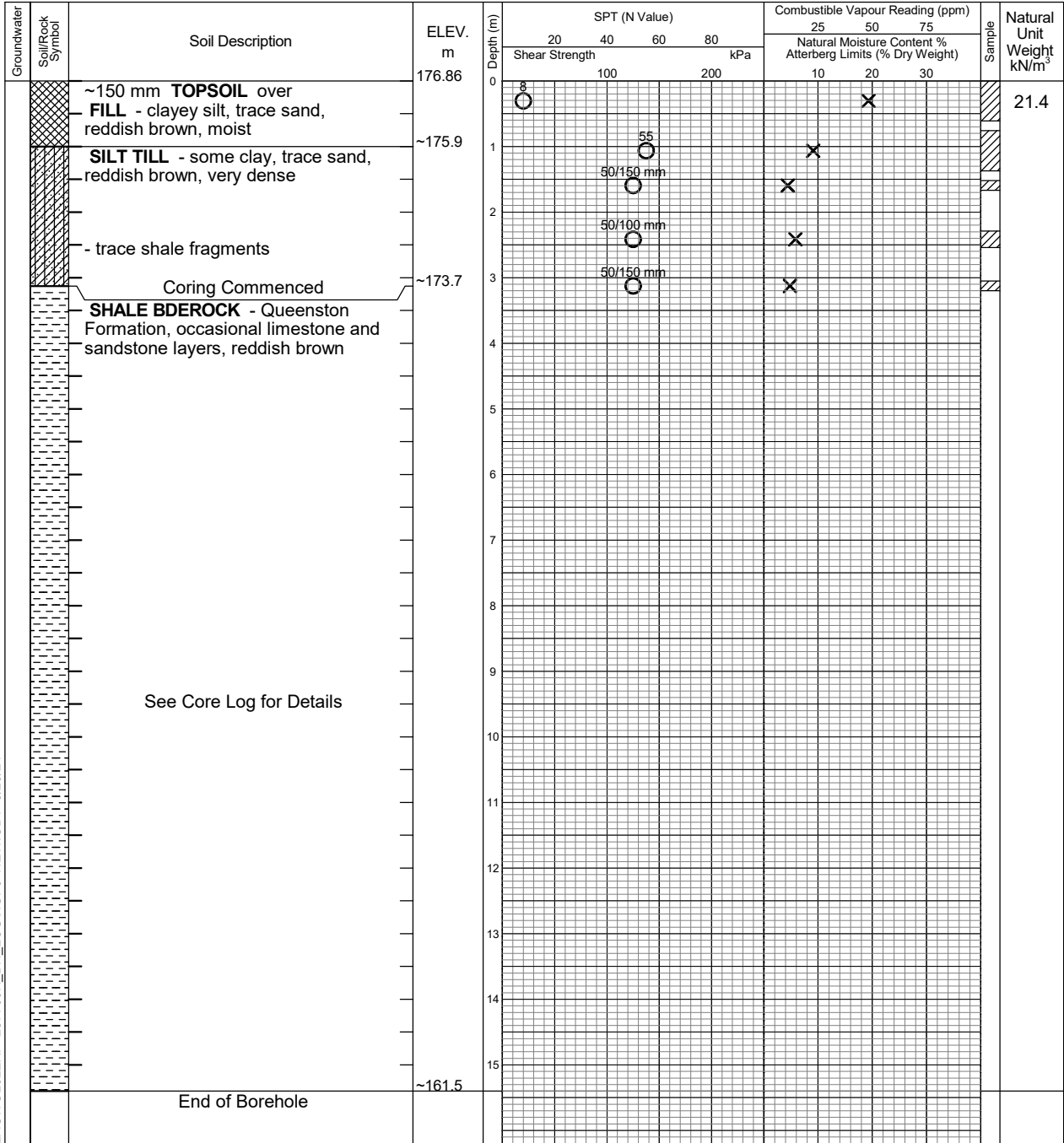
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.4 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)

ROCK CORE LOG

BH 211

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.9	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/08/23	COMPLETED 01/08/23	LOGGED BY D. Panchal	DRAWING NUMBER 13A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS								WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
174.4			See Borehole Log for Details																
173.7	3		QUEENSTON FORMATION																
173.6				1	B	F	C	RU						1	94	94	90	Red	
173.5						F	V	C	RP										
173.3			Shale with interbedded siltstone, and clay layers.																
173.1	4		Shale (87%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.8 and between moderately weathered and unweathered below.	1	B	F	C	RP	SU					2	100	90	100	Red	
			Limestone (6%) fine grained, grey, medium strength, unweathered				M												
	5		Siltstone (7%) fine grained, grey, medium strength, unweathered.																
			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.																
171.2	6		Vertical fractures were noted at ~3.6 m, 4.2 m and 6.9 m.	1	B	F	M	SU	SU					3	100	97	100	Red	
171.2							C												
170.0	7					F	V												
169.9																			
169.4				1	B	F	M	SU	SP					4	100	100	100	Red	
169.2																			
169.0																			
168.9	8																		
168.3																			
168.3																			
167.7	9			1	B	F	W	SP	SP					5	100	100	100	Red	
167.6																			
167.3																			
167.2																			
166.7	10																		
166.7																			
166.4														6	100	100	100	Red	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT 3/20/24



ROCK CORE LOG

BH 211

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.9	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/08/23	COMPLETED 01/08/23	LOGGED BY D. Panchal	DRAWING NUMBER 13A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
166.2			QUEENSTON FORMATION	1	B	F	W	SP										
165.9	11		Shale with interbedded siltstone, and clay layers.															
165.8			Shale (87%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.8 and between moderately weathered and unweathered below.															
165.2				1	B	F	W	SP						7	100	100	100	Red
165.1			Limestone (6%) fine grained, grey, medium strength, unweathered															
164.8	12		Siltstone (7%) fine grained, grey, medium strength, unweathered.															
164.8			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
164.1			Vertical fractures were noted at ~3.6 m, 4.2 m and 6.9 m.															
163.8	13			1	B	F	W	SP						8	100	100	100	Red
163.4																		
163.2																		
162.8	14																	
162.8																		
162.3																		
162.2				1	B	F	W	SP						9	100	100	100	Red
161.9	15																	
161.8																		
161.5			End of Borehole at 15.4 m															
	16																	
	17																	
	18																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



Log of Borehole 212

Project No. GTR-00257769-H0

Drawing No. 14

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 5, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

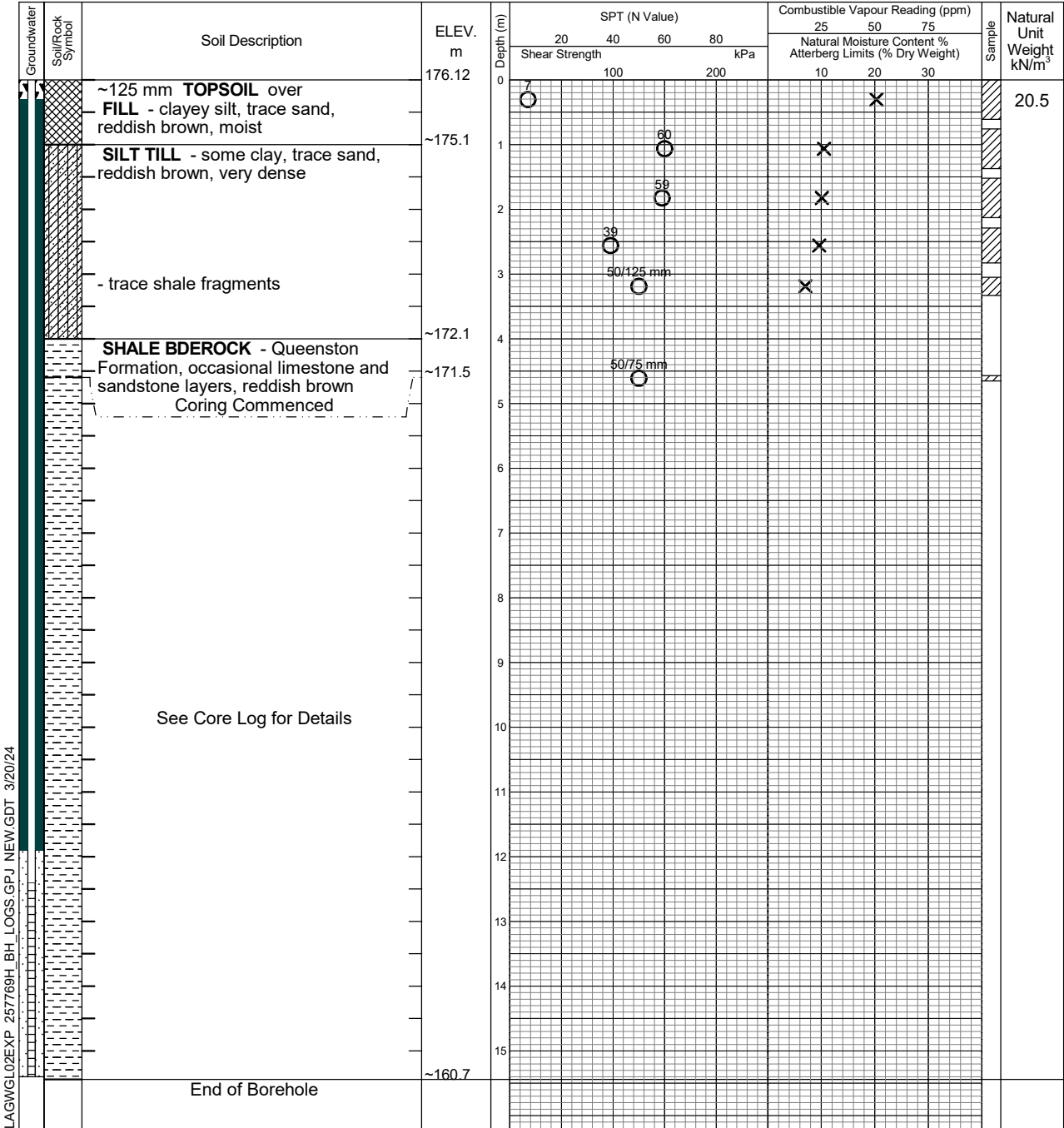
Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at % Strain at Failure

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.4 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~5.7	Well
February 4, 2024	~5.8	Well

ROCK CORE LOG

BH 212

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.1	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/05/23	COMPLETED 01/05/23	LOGGED BY D. Panchal	DRAWING NUMBER 14A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
171.9			See Borehole Log for Details															
171.5			QUEENSTON FORMATION															
171.1	5		Shale with interbedded siltstone, and clay layers.	1	B	F	C C	RU RP						1	100	74	95	Red
171.0																		
170.7			Shale (71%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.7 m and between moderately weathered and unweathered below.						NC	20 mm								
170.5																		
170.4	6		Limestone (3%) fine grained, grey, medium strength, unweathered	1	B	F	C C	RP RP						2	100	100	100	Red
170.0																		
170.0			Limestone (3%) fine grained, grey, medium strength, unweathered															
169.6			Siltstone (25%) fine grained, grey, medium strength, unweathered.															
169.5						F	V											
169.5			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.						NC	20 mm								
169.3									NC	60 mm								
169.3	7		Vertical fractures were noted at ~6.6 m, 7.1 m, 7.6 m, 9.1 m and 10.2 m.	1	F B	V F	C C	RP SU						3	100	74	100	Red
169.1																		
168.7			A Clay (1%) layers, heavily weathered, very low strength were noted at ~5.4 m, 6.6 m and 6.8 m.			F	V											
168.7																		
168.6																		
168.5																		
168.3	8																	
168.1																		
167.6																		
167.6																		
167.2																		
167.2	9			1	B	F	W M	SU SP						4	100	89	100	Red
167.1						F	V											
166.9																		
166.8																		
166.7																		
166.5																		
166.5																		
166.0	10					F	V											
165.7																		
165.7				1	B	F	M W	SP SP						5	100	91	100	Red
165.1	11																	
165.0																		
164.9																		
164.7																		
164.7	12			1	B	F	W W	SP SP						6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 212

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.1	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/05/23	COMPLETED 01/05/23	LOGGED BY D. Panchal	DRAWING NUMBER 14A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
163.9			QUEENSTON FORMATION															
163.7																		
163.4			Shale with interbedded siltstone, and clay layers.															
163.0	13		Shale (71%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.7 m and between moderately weathered and unweathered below.	1	B	F	W	SP						7	100	100	100	Red
			Limestone (3%) fine grained, grey, medium strength, unweathered				W	SP										
162.0	14		Siltstone (25%) fine grained, grey, medium strength, unweathered.															
161.9			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
			Vertical fractures were noted at ~6.6 m, 7.1 m, 7.6 m, 9.1 m and 10.2 m.	1	B	F	W	SP						8	100	100	100	Red
161.1	15		A Clay (1%) layers, heavily weathered, very low strength were noted at ~5.4 m, 6.6 m and 6.8 m.				W	SP										
160.9																		
160.7			End of Borehole at 15.4 m															
	16																	
	17																	
	18																	
	19																	
	20																	

ROCK CORE LOG

BH 213

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.2	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/05/23	COMPLETED 01/05/23	LOGGED BY D. Panchal	DRAWING NUMBER 15A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS								WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
172.0			See Borehole Log for Details																
171.4			QUEENSTON FORMATION																
170.9	5		Shale with interbedded siltstone, and clay layers.	1	B	F	M	RU						1	100	100	95	Red	
170.9						F	V												
170.7			Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.6 and between moderately weathered and unweathered below.																
170.6																			
170.4	6		Limestone (2%) fine grained, grey, medium strength, unweathered	1	B	F	C	RP	NC	20				2	100	97	100	Red	
170.2							M	SU	NC	20									
170.2			Limestone (2%) fine grained, grey, medium strength, unweathered																
169.8			Siltstone (20%) fine grained, grey, medium strength, unweathered.																
169.7			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.																
169.1	7		Clay (1%) layers, heavily weathered, very low strength were noted at ~5.8 m, 5.9 m and 7.0 m.	1	B	F	C	SU	NC	20				3	100	90	100	Red	
169.1			A Vertical fracture was noted at ~5.3 m.																
168.9																			
168.8																			
168.7	8																		
168.6																			
168.4																			
167.5	9			1	B	F	W	SP						4	100	100	100	Red	
167.3																			
167.0																			
166.9																			
166.3	10																		
166.2																			
165.7	11			1	B	F	W	SP						5	100	100	100	Red	
165.6																			
164.5	12			1	B	F	W	SP						6	100	100	100	Red	
164.4																			

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 213

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.2	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/05/23	COMPLETED 01/05/23	LOGGED BY D. Panchal	DRAWING NUMBER 15A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
163.9			QUEENSTON FORMATION				W	SP										
163.8																		
163.6			Shale with interbedded siltstone, and clay layers.															
163.2	13		Shale (78%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~5.6 and between moderately weathered and unweathered below.															
162.9																		
162.7				1	B	F	M	SP						7	100	100	100	Red
162.4			Limestone (2%) fine grained, grey, medium strength, unweathered				W	SP										
162.3	14		Siltstone (20%) fine grained, grey, medium strength, unweathered.															
			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to very close intervals.															
			A Vertical fracture was noted at ~5.3 m.															
161.3				1	B	F	M	SP						8	100	100	100	Red
161.2	15		Clay (1%) layers, heavily weathered, very low strength were noted at ~5.8 m, 5.9 m and 7.0 m.				M	SP										
160.9			End of Borehole at 15.3 m															
	16																	
	17																	
	18																	
	19																	
	20																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT 3/20/24



Log of Borehole 214D

Project No. GTR-00257769-H0

Drawing No. 16

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 4, 2024

Auger Sample

Combustible Vapour Reading

SPT (N) Value

Natural Moisture

Drill Type: Hollow Stem Augers

Dynamic Cone Test

Plastic and Liquid Limit

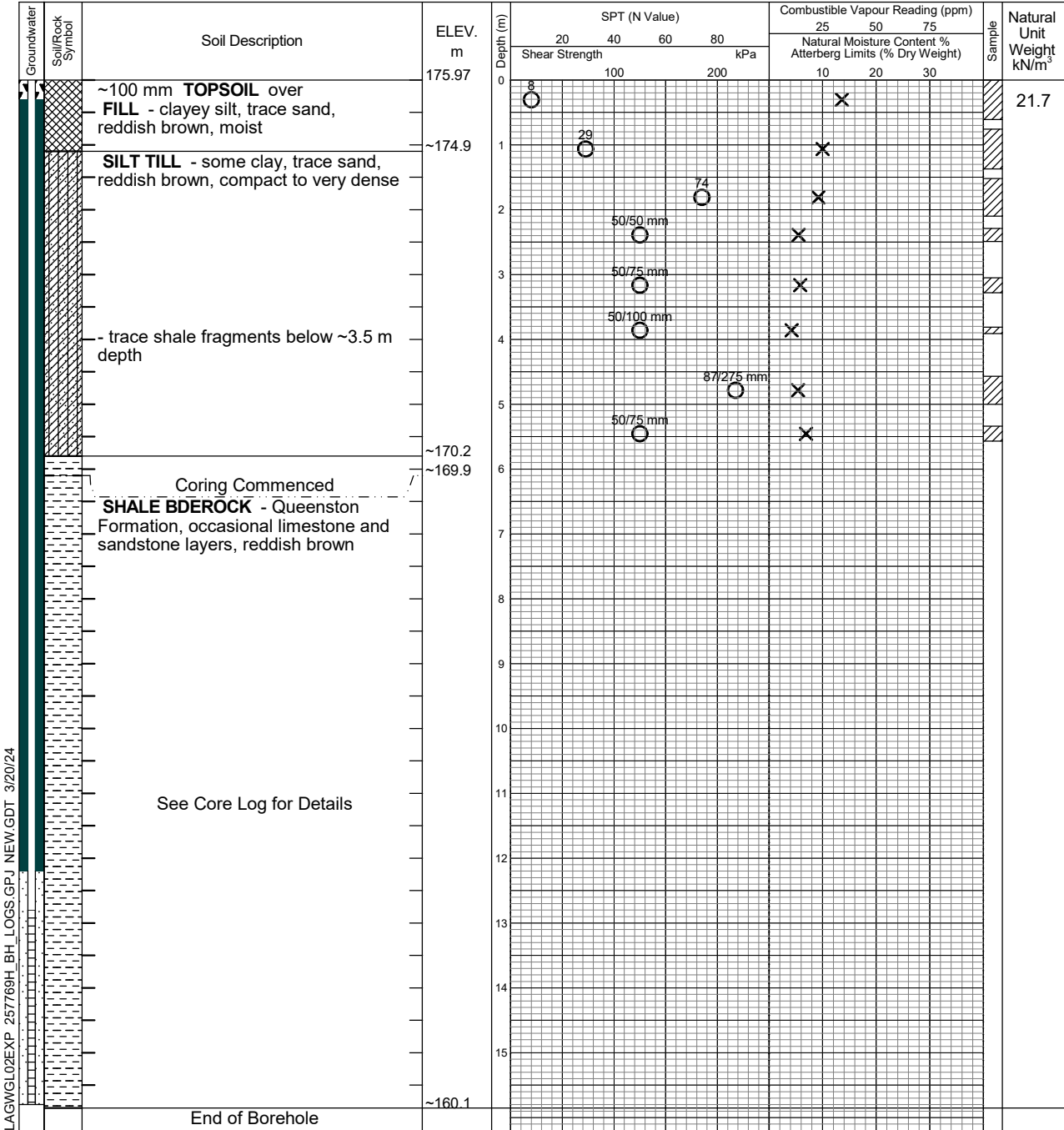
Datum: Geodetic

Shelby Tube

Undrained Triaxial at % Strain at Failure

Field Vane Test

Penetrometer



LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

Notes:
 1. Borehole advanced to completion at ~15.9 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~6.1	Well
February 4, 2024	~6.3	Well

ROCK CORE LOG

BH 214D

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.0	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/04/23	COMPLETED 01/04/23	LOGGED BY D. Panchal	DRAWING NUMBER 16A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 1 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
170.3			See Borehole Log for Details															
169.9	6		QUEENSTON FORMATION															
169.0	7		Shale with interbedded siltstone, and clay layers.	1	B	F	C	RU						1	100	88	95	Red
168.9			Shale (91%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~6.6 and between moderately weathered and unweathered below.															
168.8				1	B	F	M	RP						2	100	97	100	Red
168.7			Limestone (1%) fine grained, grey, medium strength, unweathered				M	SP										
168.4																		
168.1	8		Siltstone (8%) fine grained, grey, medium strength, unweathered.															
168.1			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to close intervals.															
167.0	9			1	B	F	W	SU						3	100	100	100	Red
166.9							W	SP										
166.6																		
166.5																		
165.3	10			1	B	F	W	SP						4	100	100	100	Red
165.2							W	SP										
164.5	11																	
164.4																		
164.0	12			1	B	F	W	SP						5	100	100	100	Red
163.9							W	SP										
163.7																		
163.6																		
163.0	13																	
162.8				1	B	F	W	SP						6	100	100	100	Red

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ_CORE_LOG.GDT_3/20/24



ROCK CORE LOG

BH 214D

PROJECT Geotechnical Investigation	ORIENTATION Vertical	ELEVATION (m) 176.0	DATUM Geodetic	PROJECT NUMBER GTR-00257769-H0
LOCATION 5100 Erin Mills Parkway, Mississauga, Ontario	DATE STARTED 01/04/23	COMPLETED 01/04/23	LOGGED BY D. Panchal	DRAWING NUMBER 16A
CLIENT The Muzzo Group of Companies	DRILLER Davis Drilling	DRILL TYPE CME 55 - Track	CORE BARREL HQ	SHEET 2 of 2

ELEVATION (m)	DEPTH (m)	SYMBOL	GENERAL DESCRIPTION	JOINT CHARACTERISTICS							WEATHERING	STRENGTH	FRACTURE FREQUENCY	RUN NUMBER	RECOVERY (%)	RQD	WATER RECOVERY (%)	WATER COLOUR
				NO. OF SETS	JOINT TYPE	ORIENTATION	SPACING	ROUGHNESS	FILLING	APERTURE (mm)								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
162.0	14		QUEENSTON FORMATION Shale with interbedded siltstone, and clay layers.				W	SP										
161.9																		
161.6			Shale (91%) thinly bedded or laminated, red, low strength, alternating between heavily and slightly weathered to ~6.6 and between moderately weathered and unweathered below.															
161.6																		
	15		Limestone (1%) fine grained, grey, medium strength, unweathered	1	B	F	W	SP						7	100	100	100	Red
160.7			Siltstone (8%) fine grained, grey, medium strength, unweathered.				W	SP										
160.5																		
160.3			Discontinuities: bedding joints are rough planar to smooth undulating and at wide to close intervals.															
160.1			End of Borehole at 15.9 m															
	16																	
	17																	
	18																	
	19																	
	20																	
	21																	

EXP_ROCKCORE_257769H_ROCK_LOGS.GPJ CORE_LOG.GDT 3/20/24



Log of Borehole 214S

Project No. GTR-00257769-H0

Drawing No. 17

Project: Geotechnical Investigation

Sheet No. 1 of 1

Location: Erin Mills Town Centre, 5100 Erin Mills Parkway, Mississauga, Ontario

Date Drilled: January 4, 2024

Drill Type: Hollow Stem Augers

Datum: Geodetic

Auger Sample

SPT (N) Value

Dynamic Cone Test

Shelby Tube

Field Vane Test

Combustible Vapour Reading

Natural Moisture

Plastic and Liquid Limit

Undrained Triaxial at

% Strain at Failure

Penetrometer

Groundwater Soil/Rock Symbol	Soil Description	ELEV. m	SPT (N Value)				Combustible Vapour Reading (ppm)			Sample	Natural Unit Weight kN/m ³
			20	40	60	80	25	50	75		
			Shear Strength kPa				Natural Moisture Content % Atterberg Limits (% Dry Weight)				
		175.97	100		200						
	See Log of Borehole 214D for Details										
	End of Borehole	~169.9									

LAGWGL02EXP 257769H_BH_LOGS.GPJ NEW.GDT 3/20/24

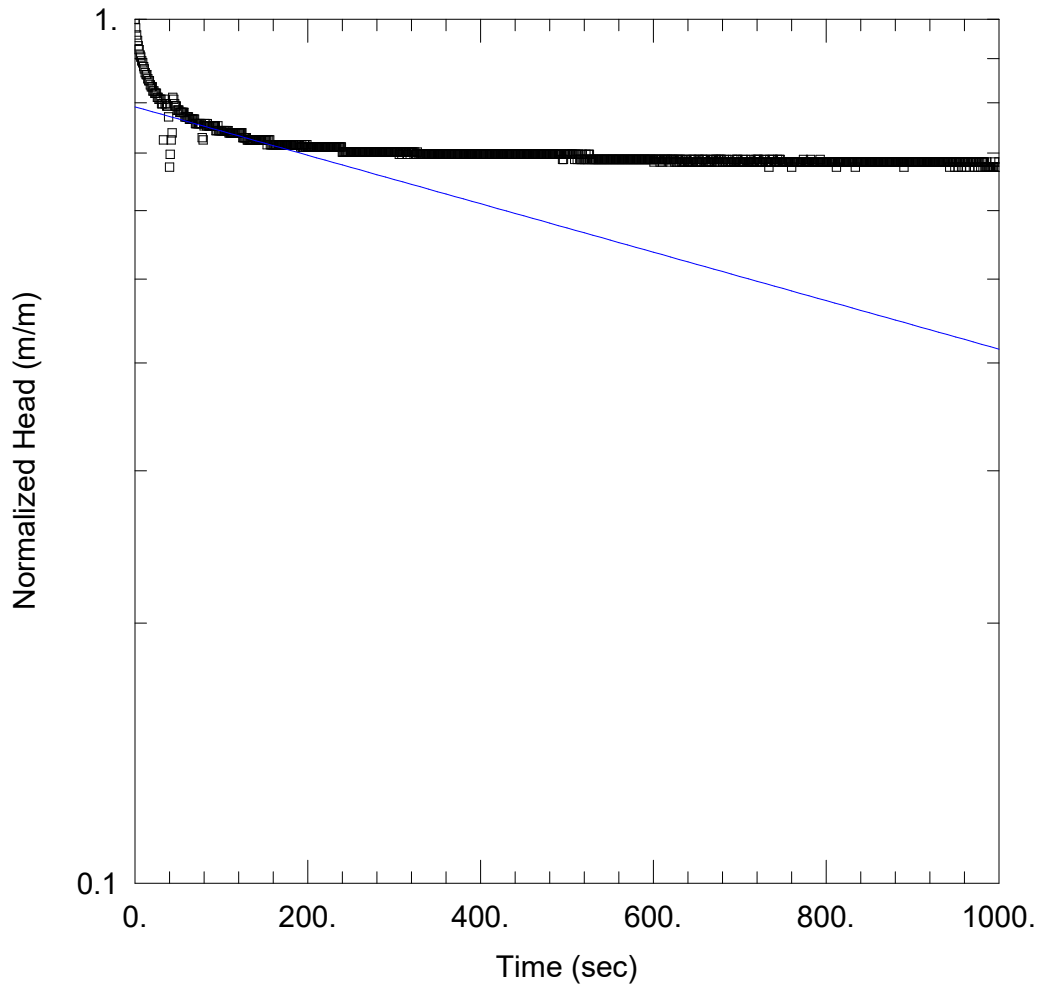
Notes:
 1. Borehole advanced to completion at ~6.1 m depth by conventional soil sampling methods using a specialist drilling subcontractor. For borehole definitions, see notes prior to logs.
 2. This drawing forms part of and must be read in conjunction with the subject report (Ref. No.: GTR-00257769-H0); borehole data requires interpretation assistance by exp professional staff before use by others.



Brampton

Elapsed Time	Water Level (m)	Hole Open to (m)
January 29, 2024	~5.9	Well
February 4, 2024	~6.0	Well

Appendix C – SWRT Procedures and Results



BH 20 RISING HEAD

Data Set: ...\BH 20 RH.aqt

Date: 11/01/22

Time: 11:26:00

PROJECT INFORMATION

Company: EXP Services Inc

Client: Muzzo Group

Project: GTR-00257769-G0

Location: 5100 Erin Mills Parkway

Test Well: BH 20 Rising Head

Test Date: October 31, 2022

AQUIFER DATA

Saturated Thickness: 0.89 m

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH 20 Rising Head)

Initial Displacement: 0.218 m

Static Water Column Height: 0.89 m

Total Well Penetration Depth: 3. m

Screen Length: 3. m

Casing Radius: 0.025 m

Well Radius: 0.025 m

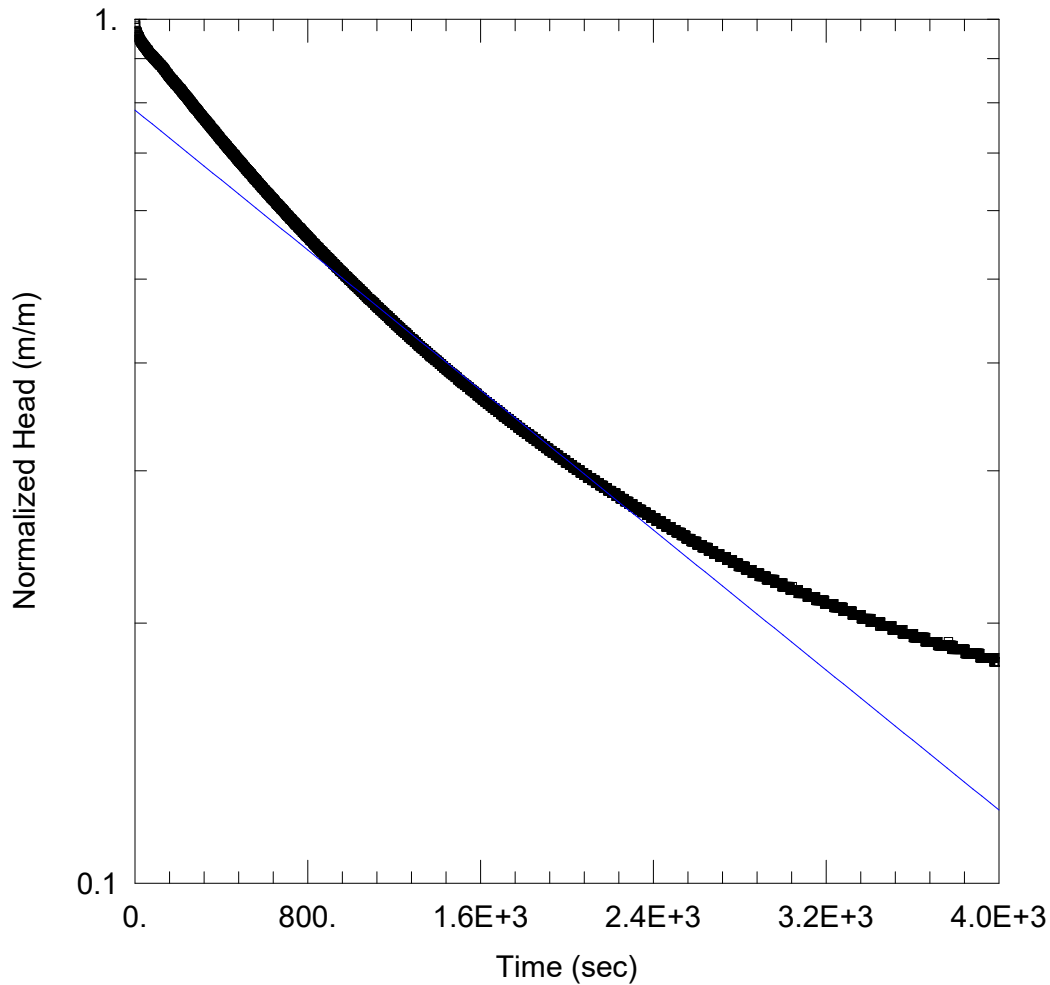
SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 1.201E-6 m/sec

y0 = 0.1726 m



BH 101 FALLING HEAD

Data Set: C:\...\BH 101 FH.aqt
 Date: 10/31/22

Time: 23:00:40

PROJECT INFORMATION

Company: EXP Services Inc
 Client: Muzzo Group
 Project: GTR-00257769-G0
 Location: 5100 Erin Mills Parkway
 Test Well: BH 101 Falling Head
 Test Date: October 31, 2022

AQUIFER DATA

Saturated Thickness: 6.305 m

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH 101 Falling Head)

Initial Displacement: 1.497 m
 Total Well Penetration Depth: 6.305 m
 Casing Radius: 0.025 m

Static Water Column Height: 6.305 m
 Screen Length: 3. m
 Well Radius: 0.025 m

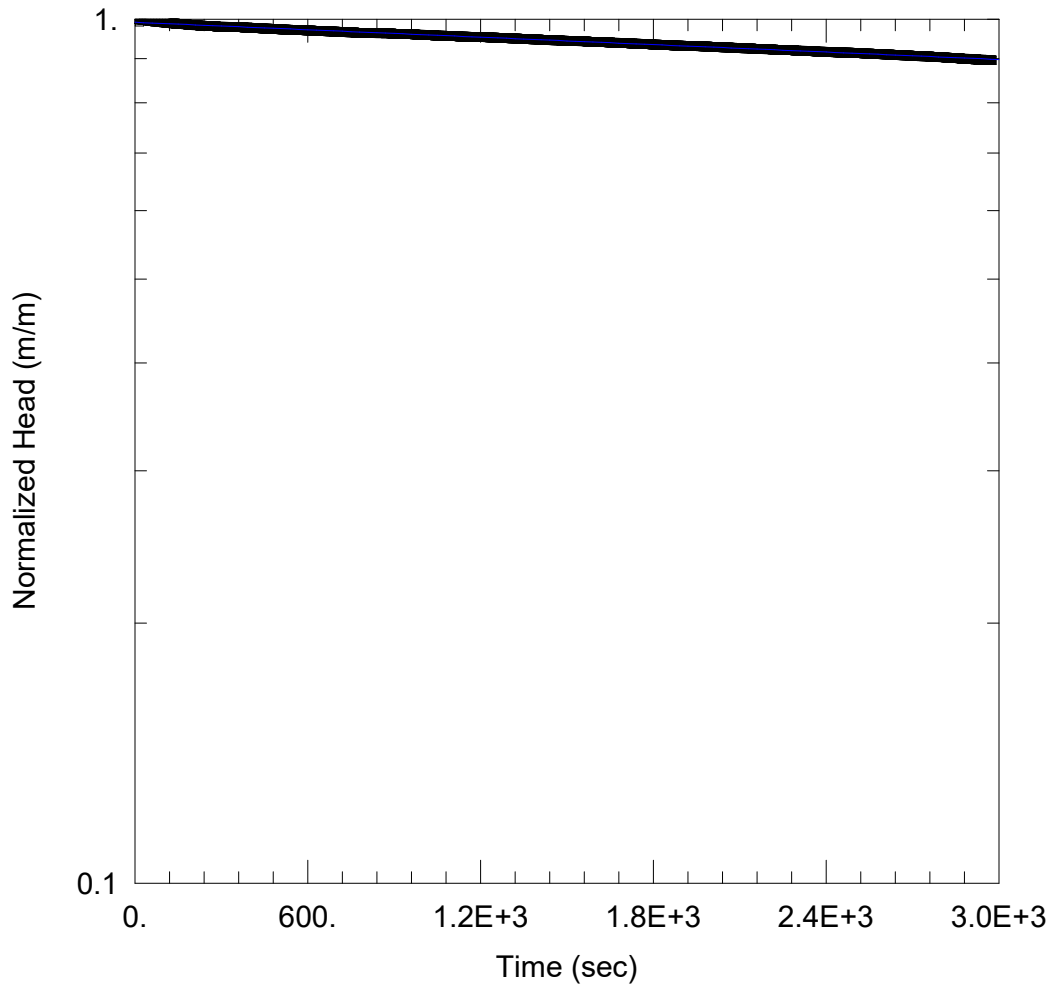
SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 2.663E-7 m/sec

y0 = 1.175 m



BH/MW 202 RISING HEAD

Data Set: E:\...\BH 202 Rising Head.aqt

Date: 02/13/24

Time: 12:09:01

PROJECT INFORMATION

Company: EXP Services Inc.

Client: The Muzzo Group of Companies

Project: GTR-00257769-H0

Location: 5100 Erin Mills Parkway

Test Well: BH/MW 202 Rising Head

Test Date: February 2, 2024

AQUIFER DATA

Saturated Thickness: 1.24 m

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH/MW 202 Rising Head)

Initial Displacement: 3.993 m

Static Water Column Height: 1.24 m

Total Well Penetration Depth: 3. m

Screen Length: 3. m

Casing Radius: 0.0254 m

Well Radius: 0.0254 m

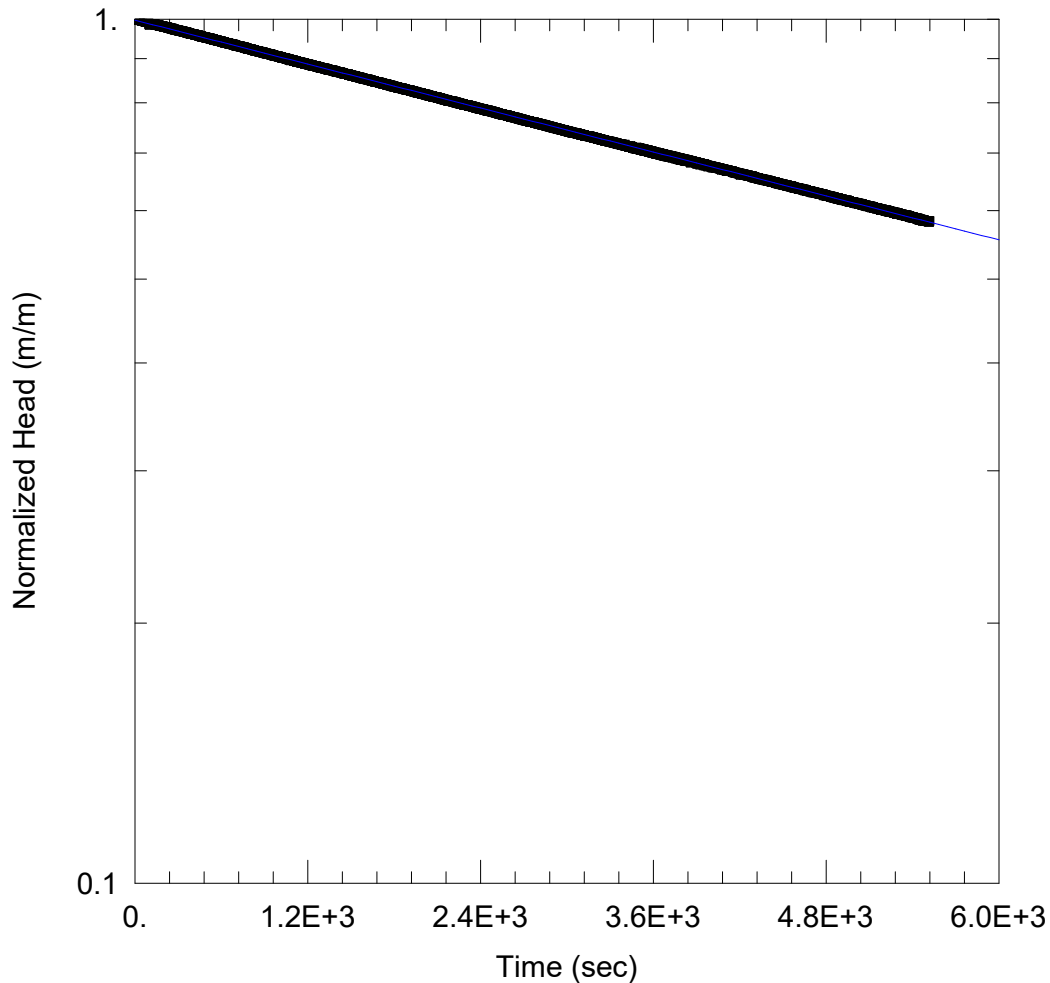
SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 4.555E-8 m/sec

y0 = 3.959 m



BH/MW 205 RISING HEAD

Data Set: E:\...\BH 205 Rising Head.aqt

Date: 02/13/24

Time: 12:22:27

PROJECT INFORMATION

Company: EXP Services Inc.

Client: The Muzzo Group of Companies

Project: GTR-00257769-H0

Location: 5100 Erin Mills Parkway

Test Well: BH/MW 205 Rising Head

Test Date: February 2, 2024

AQUIFER DATA

Saturated Thickness: 9.75 m

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH/MW 205 Rising Head)

Initial Displacement: 3.327 m

Static Water Column Height: 9.75 m

Total Well Penetration Depth: 9.75 m

Screen Length: 3. m

Casing Radius: 0.0254 m

Well Radius: 0.0254 m

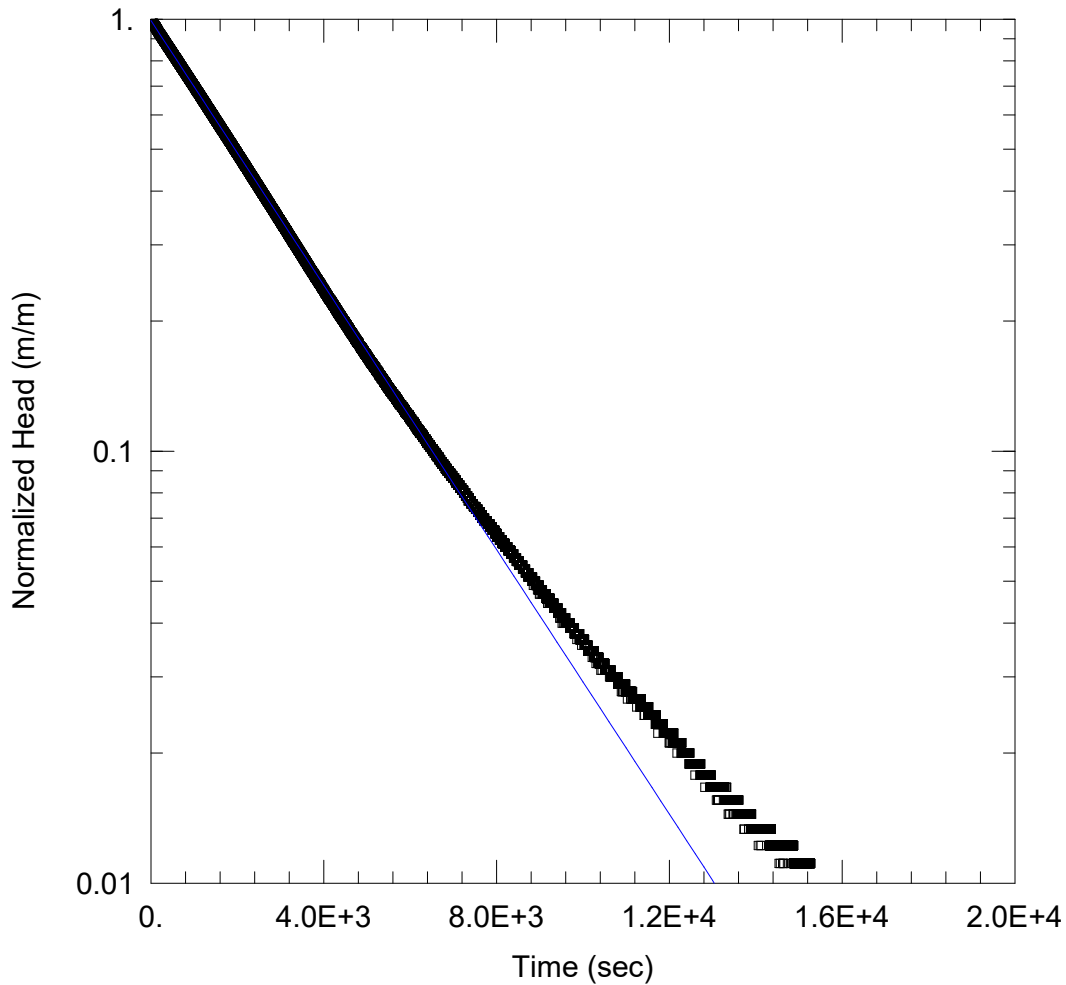
SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 5.733E-8 m/sec

y0 = 3.318 m



BH/MW 207 RISING HEAD

Data Set: E:\...\BH 207 Rising Head.aqt

Date: 02/13/24

Time: 12:26:25

PROJECT INFORMATION

Company: EXP Services Inc.

Client: The Muzzo Group of Companies

Project: GTR-00257769-H0

Location: 5100 Erin Mills Parkway

Test Well: BH/MW 207 Rising Head

Test Date: February 2, 2024

AQUIFER DATA

Saturated Thickness: 8.06 m

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH/MW 207 Rising Head)

Initial Displacement: 2.7 m

Static Water Column Height: 8.06 m

Total Well Penetration Depth: 8.06 m

Screen Length: 3. m

Casing Radius: 0.0254 m

Well Radius: 0.0254 m

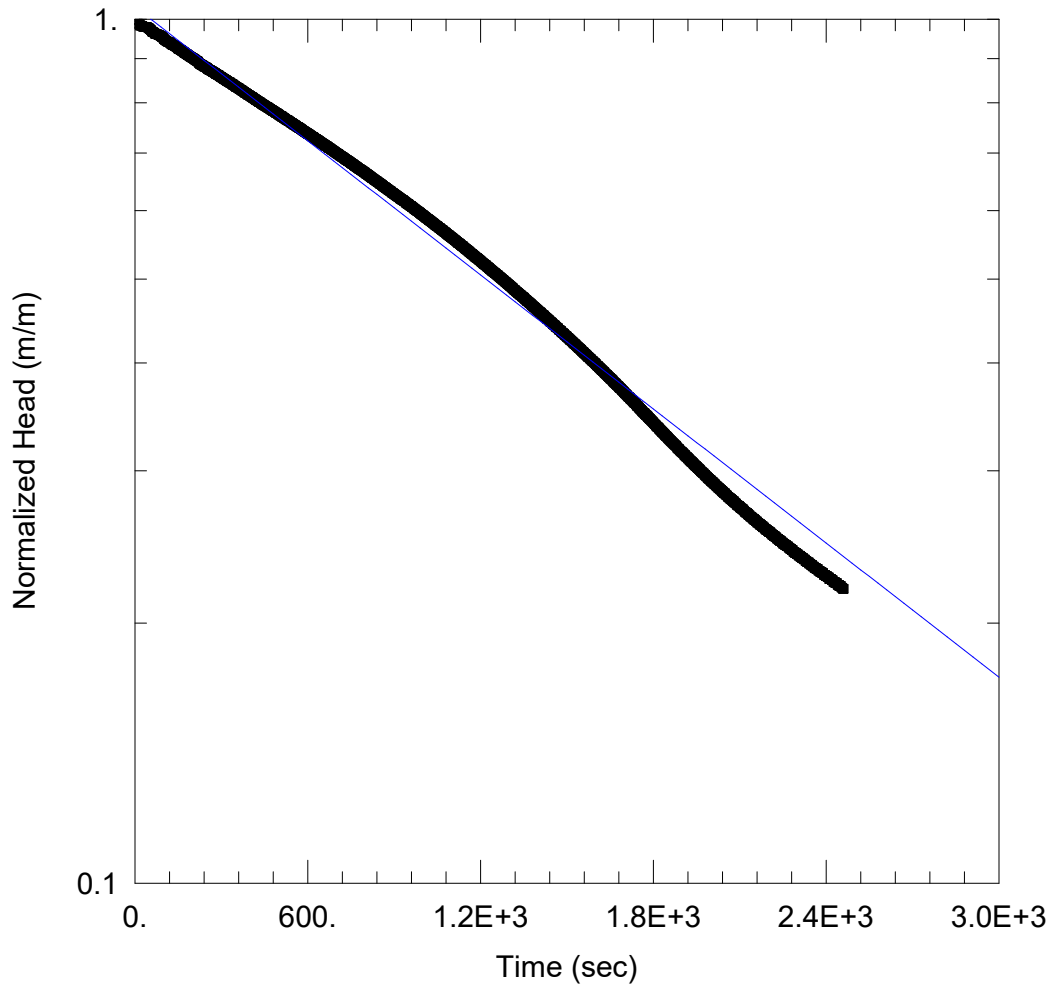
SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 1.808E-7 m/sec

y0 = 2.678 m



BH/MW 209D RISING HEAD

Data Set: E:\...\BH 209D Rising Head.aqt

Date: 02/13/24

Time: 12:30:05

PROJECT INFORMATION

Company: EXP Services Inc.

Client: The Muzzo Group of Companies

Project: GTR-00257769-H0

Location: 5100 Erin Mills Parkway

Test Well: BH/MW 209D Rising Head

Test Date: February 2, 2024

AQUIFER DATA

Saturated Thickness: 6.63 m

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH/MW 209D Rising Head)

Initial Displacement: 3.534 m

Static Water Column Height: 6.63 m

Total Well Penetration Depth: 6.63 m

Screen Length: 3. m

Casing Radius: 0.0254 m

Well Radius: 0.0254 m

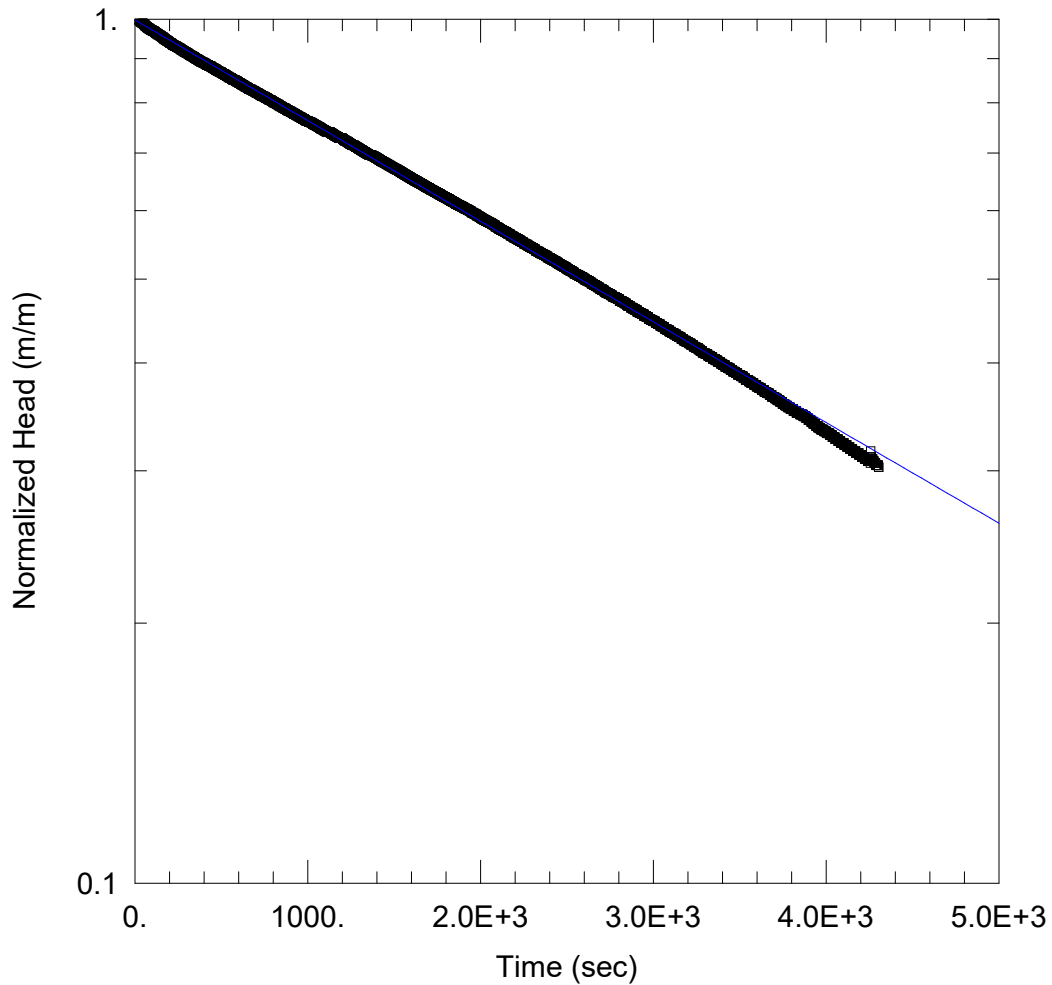
SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 3.499E-7 m/sec

y0 = 3.652 m



BH/MW 212 FALLING HEAD

Data Set: E:\...\BH 212 Falling Head.aqt

Date: 02/13/24

Time: 12:36:23

PROJECT INFORMATION

Company: EXP Services Inc.

Client: The Muzzo Group of Companies

Project: GTR-00257769-H0

Location: 5100 Erin Mills Parkway

Test Well: BH/MW 212 Falling Head

Test Date: February 2, 2024

AQUIFER DATA

Saturated Thickness: 9.28 m

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH/MW 212 Falling Head)

Initial Displacement: 1.773 m

Static Water Column Height: 9.28 m

Total Well Penetration Depth: 9.28 m

Screen Length: 3. m

Casing Radius: 0.0254 m

Well Radius: 0.0254 m

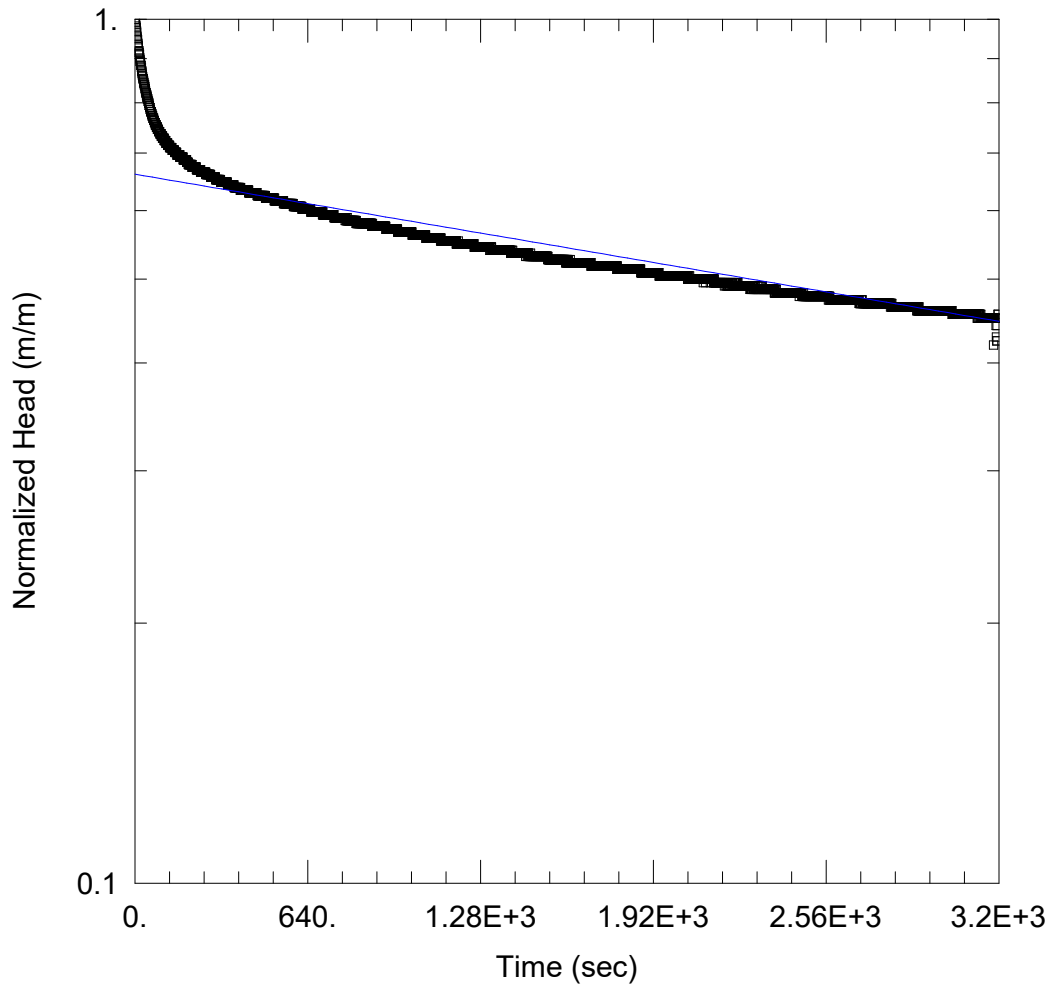
SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 1.576E-7 m/sec

y0 = 1.768 m



BH/MW 214D RISING HEAD

Data Set: E:\...\BH 214D Rising Head.aqt
 Date: 02/13/24

Time: 12:40:59

PROJECT INFORMATION

Company: EXP Services Inc.
 Client: The Muzzo Group of Companies
 Project: GTR-00257769-H0
 Location: 5100 Erin Mills Parkway
 Test Well: BH/MW 214D Rising Head
 Test Date: February 2, 2024

AQUIFER DATA

Saturated Thickness: 0.16 m

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (BH/MW 214D Rising Head)

Initial Displacement: 0.672 m
 Total Well Penetration Depth: 3. m
 Casing Radius: 0.0254 m

Static Water Column Height: 0.16 m
 Screen Length: 3. m
 Well Radius: 0.0254 m

SOLUTION

Aquifer Model: Unconfined

Solution Method: Hvorslev

K = 1.309E-6 m/sec

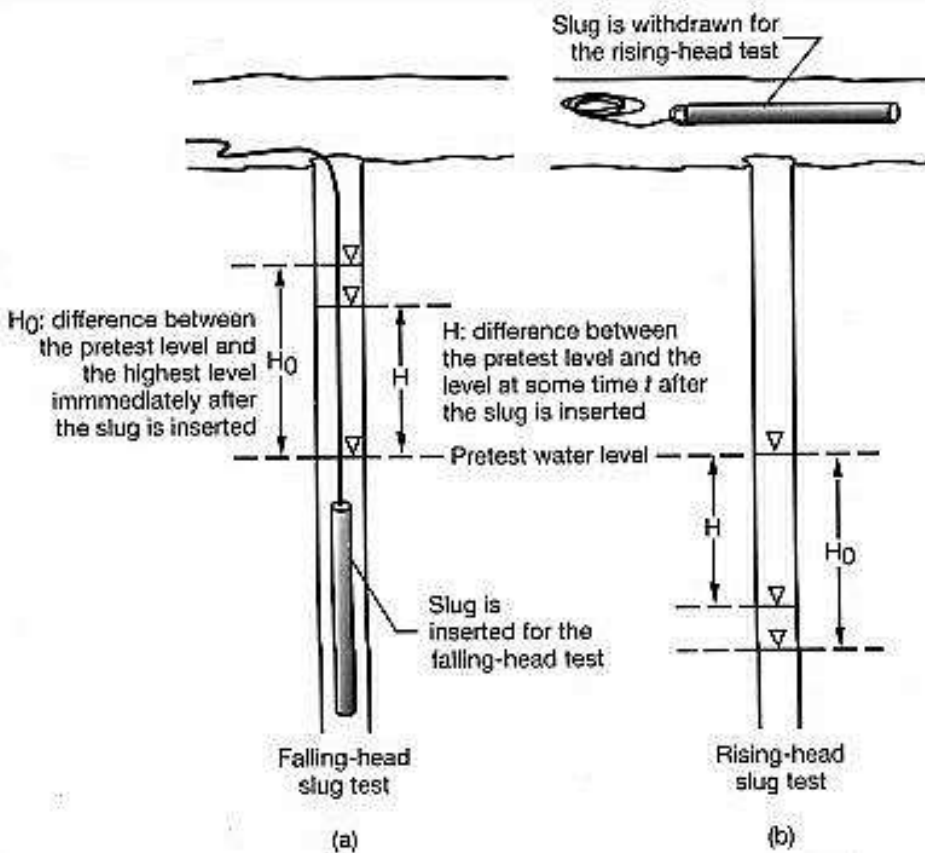
y0 = 0.4445 m

Single Well Response Test Procedure

A Single Well Response Test (SWRT), also known as a bail test or a slug test, is conducted in order to determine the saturated hydraulic conductivity (K) of an aquifer. The method of the SWRT is to characterize the change of groundwater level in a well or borehole over time.

In order to ensure consistency and repeatability, all **exp** employees are to follow the procedure outlined in this document when conducting SWRTs.

The figure below depicts a schematic of a slug and bail test and the respective water level changes.





Slug Test Procedure

Equipment Required

- Copy of a signed health and safety plan
- Copy of the work program
- PPE as required by Site-Specific HASP
- Copy of the monitoring well location plan/site plan
- Waterproof pen and bound field note book
- SWRT field data Entry form
- Disposable gloves
- Duct tape
- Deionized water
- Alconox (phosphate free detergent)
- Spray bottles
- Electronic water level meter and spare batteries
- Solid PVC or stainless steel slug of known volume or clean water
- String (nylon)
- Water pressure transducer (data logger) and baro-logger
- Watch or stop watch with second hand
- Plastic sheeting

Testing Procedure

1. Remove cap from well and collect static water level
2. Remove waterra tubing/bailer and place in garbage bag. Record static water level measurement again.
3. Lower the slug into the well and record the dynamic water level.
4. Record the drawdown (for the slug test) at set five (5) second intervals for the first five (5) minutes, then reduce to every one (1) minute.
5. Continue recording the drawdown until 95% recovery is reached. To calculate this value: Find the difference between the dynamic water level and the static water level, then multiply by 95% (.95). Add the resulting value to the dynamic water level.
(Static Water Level – Dynamic Water Level).95 + Static Water Level = 95% Recovery Value
6. Once complete, replace the waterra tubing/bailer and re-secure the well cap.

Note: If the well is deep, more than one slug may be inserted by attaching the slugs to a series.

Slugs must be washed with methanol, then lab grade soap, and then rinsed with de-ionized water after each use.



Based on the recorded observations, the hydraulic conductivity (in m/s) of the aquifer will be determined. In order to determine the hydraulic conductivity; the well diameter, radius of the borehole and length of the screen will also be required.

Bail Test Procedure

Equipment Required

- 20 L (5 gal) Graduated pail
- Stop watch or watch with seconds
- Garbage bags
- Water level meter
- Field sheets/log book
- Latex Gloves
- Bailer and Rope

Procedure

1. Remove cap from well and collect static water level.
2. If using a **bailer**:
 - a. Affix the rope to the bailer.
 - b. Remove the watterra tubing and place in garbage bag
 - c. Record static water level measurement again.
 - d. Record how much water was removed by either counting the number of full bailers or emptying removed water into a container.
 - e. Quickly lower the bailer into the well and remove.
 - f. Continue this process until the water level will reduce no further.
 - g. Record the dynamic water level.
3. If using **watterra** to bail the water:
 - a. Pump the water into graduated bucket until the water level will reduce no further.
 - b. Record how much water has been removed.
 - c. Record the dynamic water level.
4. Record the recovery at set five (5) second intervals for the first (5) minutes, then reduce to every one (1) minute.
5. Continue recording the drawdown/recovery until 95% recovery is reached.
6. Once complete, replace any watterra tubing that may have been removed from the well and re-secure the well cap.

Appendix D – Laboratory’s Certificates of Analysis



Your P.O. #: ENV – BRM
 Your Project #: BRM-00257769-DO
 Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
 PARKWAY, ON
 Your C.O.C. #: 904630-01-01

Attention: Francois Chartier

exp Services Inc
 1595 Clark Blvd
 Brampton, ON
 CANADA L6T 4V1

Report Date: 2022/11/15
 Report #: R7388943
 Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2V6314

Received: 2022/10/28, 16:56

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
ABN Compounds in Water by GC/MS	1	2022/10/31	2022/11/01	CAM SOP-00301	EPA 8270 m
Carbonaceous BOD	1	2022/10/29	2022/11/03	CAM SOP-00427	SM 23 5210B m
Total Cyanide	1	2022/10/31	2022/10/31	CAM SOP-00457	OMOE E3015 5 m
Fluoride	1	2022/10/31	2022/11/03	CAM SOP-00449	SM 23 4500-F C m
Mercury in Water by CVAA	1	2022/10/29	2022/10/31	CAM SOP-00453	EPA 7470A m
Total Metals Analysis by ICPMS	1	N/A	2022/11/03	CAM SOP-00447	EPA 6020B m
E.coli, (CFU/100mL)	1	N/A	2022/10/28	CAM SOP-00552	
Total Nonylphenol in Liquids by HPLC	1	2022/11/01	2022/11/02	CAM SOP-00313	In-house Method
Nonylphenol Ethoxylates in Liquids: HPLC	1	2022/11/01	2022/11/02	CAM SOP-00313	Bureau Veritas
Animal and Vegetable Oil and Grease	1	N/A	2022/11/05	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2022/11/05	2022/11/05	CAM SOP-00326	EPA1664B m,SM5520B m
Polychlorinated Biphenyl in Water	1	2022/11/01	2022/11/02	CAM SOP-00309	EPA 8082A m
pH	1	2022/10/31	2022/11/03	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2022/11/04	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	1	N/A	2022/11/07	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	1	2022/11/02	2022/11/03	CAM SOP-00938	OMOE E3516 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2022/11/05	2022/11/05	CAM SOP-00326	EPA1664B m,SM5520F m
Total Suspended Solids	1	2022/11/01	2022/11/02	CAM SOP-00428	SM 23 2540D m
Volatile Organic Compounds in Water	1	N/A	2022/11/05	CAM SOP-00228	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report.



Your P.O. #: ENV – BRM
Your Project #: BRM-00257769-DO
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your C.O.C. #: 904630-01-01

Attention: Francois Chartier

exp Services Inc
1595 Clark Blvd
Brampton, ON
CANADA L6T 4V1

Report Date: 2022/11/15
Report #: R7388943
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C2V6314

Received: 2022/10/28, 16:56

Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Encryption Key

Patricia Legette
Project Manager
15 Nov 2022 13:43:41

Please direct all questions regarding this Certificate of Analysis to:

Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

=====

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/15

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

PEEL SANITARY & STORM SEWER (53-2010)

Bureau Veritas ID			UDN173			UDN173		
Sampling Date			2022/10/28 14:45			2022/10/28 14:45		
COC Number			904630-01-01			904630-01-01		
	UNITS	Criteria	BH-101	RDL	QC Batch	BH-101 Lab-Dup	RDL	QC Batch
Calculated Parameters								
Total Animal/Vegetable Oil and Grease	mg/L	-	2.0	0.50	8311791			
Inorganics								
Total Carbonaceous BOD	mg/L	-	ND	2	8314278	ND	2	8314278
Fluoride (F-)	mg/L	-	0.32	0.10	8317666			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	1.5	0.10	8321895			
pH	pH	6:9	7.78		8317668			
Phenols-4AAP	mg/L	0.008	ND	0.0010	8326699			
Total Suspended Solids	mg/L	15	27	10	8317203	29	10	8317203
Dissolved Sulphate (SO4)	mg/L	-	26	1.0	8317818			
Total Cyanide (CN)	mg/L	0.02	ND	0.0050	8315904	ND	0.0050	8315904
Petroleum Hydrocarbons								
Total Oil & Grease	mg/L	-	2.0	0.50	8328693			
Total Oil & Grease Mineral/Synthetic	mg/L	-	ND	0.50	8328696			
Miscellaneous Parameters								
Nonylphenol Ethoxylate (Total)	mg/L	-	ND	0.025	8318084			
Nonylphenol (Total)	mg/L	-	ND	0.001	8318078			
Metals								
Mercury (Hg)	mg/L	0.0004	ND	0.00010	8314675			
Total Aluminum (Al)	ug/L	1000	580	4.9	8320768			
Total Antimony (Sb)	ug/L	-	ND	0.50	8320768			
Total Arsenic (As)	ug/L	20	5.0	1.0	8320768			
Total Cadmium (Cd)	ug/L	8	ND	0.090	8320768			
Total Chromium (Cr)	ug/L	80	ND	5.0	8320768			
Total Cobalt (Co)	ug/L	-	1.1	0.50	8320768			
Total Copper (Cu)	ug/L	40	1.1	0.90	8320768			
Total Lead (Pb)	ug/L	120	ND	0.50	8320768			
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: City of Mississauga Storm Sewer Use By-Law 0046-2022								
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/15

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

PEEL SANITARY & STORM SEWER (53-2010)

Bureau Veritas ID			UDN173			UDN173		
Sampling Date			2022/10/28 14:45			2022/10/28 14:45		
COC Number			904630-01-01			904630-01-01		
	UNITS	Criteria	BH-101	RDL	QC Batch	BH-101 Lab-Dup	RDL	QC Batch
Total Manganese (Mn)	ug/L	2000	370	2.0	8320768			
Total Molybdenum (Mo)	ug/L	-	7.3	0.50	8320768			
Total Nickel (Ni)	ug/L	80	2.3	1.0	8320768			
Total Phosphorus (P)	ug/L	400	ND	100	8320768			
Total Selenium (Se)	ug/L	20	ND	2.0	8320768			
Total Silver (Ag)	ug/L	120	ND	0.090	8320768			
Total Tin (Sn)	ug/L	-	1.1	1.0	8320768			
Total Titanium (Ti)	ug/L	-	22	5.0	8320768			
Total Zinc (Zn)	ug/L	200	7.5	5.0	8320768			
Semivolatile Organics								
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	2.0	8316914			
Di-N-butyl phthalate	ug/L	-	ND	2.0	8316914			
Volatile Organics								
Benzene	ug/L	2	0.44	0.40	8316663			
Chloroform	ug/L	-	ND	0.40	8316663			
1,2-Dichlorobenzene	ug/L	5.6	ND	0.80	8316663			
1,4-Dichlorobenzene	ug/L	6.8	ND	0.80	8316663			
cis-1,2-Dichloroethylene	ug/L	-	ND	1.0	8316663			
trans-1,3-Dichloropropene	ug/L	-	ND	0.80	8316663			
Ethylbenzene	ug/L	2	ND	0.40	8316663			
Methylene Chloride(Dichloromethane)	ug/L	5.2	ND	4.0	8316663			
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	ND	20	8316663			
Styrene	ug/L	-	ND	0.80	8316663			
1,1,2,2-Tetrachloroethane	ug/L	17	ND	0.80	8316663			
Tetrachloroethylene	ug/L	4.4	ND	0.40	8316663			
Toluene	ug/L	2	ND	0.40	8316663			
Trichloroethylene	ug/L	7.6	ND	0.40	8316663			
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: City of Mississauga Storm Sewer Use By-Law 0046-2022								
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/15

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

PEEL SANITARY & STORM SEWER (53-2010)

Bureau Veritas ID			UDN173			UDN173		
Sampling Date			2022/10/28 14:45			2022/10/28 14:45		
COC Number			904630-01-01			904630-01-01		
	UNITS	Criteria	BH-101	RDL	QC Batch	BH-101 Lab-Dup	RDL	QC Batch
p+m-Xylene	ug/L	-	ND	0.40	8316663			
o-Xylene	ug/L	-	ND	0.40	8316663			
Total Xylenes	ug/L	4.4	ND	0.40	8316663			
PCBs								
Total PCB	ug/L	0.4	ND	0.05	8318695			
Microbiological								
Escherichia coli	CFU/100mL	200	<10	10	8313975			
Surrogate Recovery (%)								
2,4,6-Tribromophenol	%	-	2.0 (1)		8316914			
2-Fluorobiphenyl	%	-	56		8316914			
2-Fluorophenol	%	-	0.70 (1)		8316914			
D14-Terphenyl	%	-	97		8316914			
D5-Nitrobenzene	%	-	91		8316914			
D5-Phenol	%	-	7.3 (1)		8316914			
Decachlorobiphenyl	%	-	71		8318695			
4-Bromofluorobenzene	%	-	89		8316663			
D4-1,2-Dichloroethane	%	-	114		8316663			
D8-Toluene	%	-	90		8316663			
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: City of Mississauga Storm Sewer Use By-Law 0046-2022								
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								
(1) Surrogate recovery was below our acceptance limit. Since the surrogate standard is not relevant to the analysis of the required phthalate esters, it has been evaluated as having no significant effect on the data reported.								



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/15

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

TEST SUMMARY

Bureau Veritas ID: UDN173
Sample ID: BH-101
Matrix: Water

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ABN Compounds in Water by GC/MS	GC/MS	8316914	2022/10/31	2022/11/01	Anh Lieu
Carbonaceous BOD	DO	8314278	2022/10/29	2022/11/03	Gurjot Kaur
Total Cyanide	SKAL/CN	8315904	2022/10/31	2022/10/31	Prgya Panchal
Fluoride	ISE	8317666	2022/10/31	2022/11/03	Kien Tran
Mercury in Water by CVAA	CV/AA	8314675	2022/10/29	2022/10/31	Japneet Gill
Total Metals Analysis by ICPMS	ICP/MS	8320768	N/A	2022/11/03	Rupinder Gill
E.coli, (CFU/100mL)	PL	8313975	N/A	2022/10/28	Farhana Rahman
Total Nonylphenol in Liquids by HPLC	LC/FLU	8318078	2022/11/01	2022/11/02	Furneesh Kumar
Nonylphenol Ethoxylates in Liquids: HPLC	LC/FLU	8318084	2022/11/01	2022/11/02	Furneesh Kumar
Animal and Vegetable Oil and Grease	BAL	8311791	N/A	2022/11/05	Automated Statchk
Total Oil and Grease	BAL	8328693	2022/11/05	2022/11/05	Maulik Jashubhai Patel
Polychlorinated Biphenyl in Water	GC/ECD	8318695	2022/11/01	2022/11/02	Li Peng
pH	AT	8317668	2022/10/31	2022/11/03	Kien Tran
Phenols (4AAP)	TECH/PHEN	8326699	N/A	2022/11/04	Mandeep Kaur
Sulphate by Automated Colourimetry	KONE	8317818	N/A	2022/11/07	Samuel Law
Total Kjeldahl Nitrogen in Water	SKAL	8321895	2022/11/02	2022/11/03	Rajni Tyagi
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8328696	2022/11/05	2022/11/05	Maulik Jashubhai Patel
Total Suspended Solids	BAL	8317203	2022/11/01	2022/11/02	Masood Siddiqui
Volatile Organic Compounds in Water	GC/MS	8316663	N/A	2022/11/05	Mariana Cojocar

Bureau Veritas ID: UDN173 Dup
Sample ID: BH-101
Matrix: Water

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonaceous BOD	DO	8314278	2022/10/29	2022/11/03	Gurjot Kaur
Total Cyanide	SKAL/CN	8315904	2022/10/31	2022/10/31	Prgya Panchal
Total Suspended Solids	BAL	8317203	2022/11/01	2022/11/02	Masood Siddiqui



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/15

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	13.3°C
-----------	--------

Revised Report (2022/11/15): Mississauga Storm criteria policy has been included in this CofA as per Peyman Sayyah's request.

Sample UDN173 [BH-101] : VOC Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314

Report Date: 2022/11/15

QUALITY ASSURANCE REPORT

exp Services Inc

Client Project #: BRM-00257769-D0

ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS

Site Location: PARKWAY, ON

Your P.O. #: ENV – BRM

Sampler Initials: TM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8316663	4-Bromofluorobenzene	2022/11/05	101	70 - 130	102	70 - 130	97	%				
8316663	D4-1,2-Dichloroethane	2022/11/05	103	70 - 130	100	70 - 130	111	%				
8316663	D8-Toluene	2022/11/05	108	70 - 130	107	70 - 130	90	%				
8316914	2,4,6-Tribromophenol	2022/11/01	98	10 - 130	95	10 - 130	67	%				
8316914	2-Fluorobiphenyl	2022/11/01	71	30 - 130	63	30 - 130	69	%				
8316914	2-Fluorophenol	2022/11/01	62	10 - 130	51	10 - 130	43	%				
8316914	D14-Terphenyl	2022/11/01	98	30 - 130	93	30 - 130	85	%				
8316914	D5-Nitrobenzene	2022/11/01	105	30 - 130	83	30 - 130	80	%				
8316914	D5-Phenol	2022/11/01	43	10 - 130	34	10 - 130	29	%				
8318695	Decachlorobiphenyl	2022/11/02	72	60 - 130	81	60 - 130	72	%				
8314278	Total Carbonaceous BOD	2022/11/03					ND,RDL=2	mg/L	NC	30	94	85 - 115
8314675	Mercury (Hg)	2022/10/31	91	75 - 125	95	80 - 120	ND, RDL=0.00010	mg/L	NC	20		
8315904	Total Cyanide (CN)	2022/10/31	97	80 - 120	99	80 - 120	ND, RDL=0.0050	mg/L	NC	20		
8316663	1,1,2,2-Tetrachloroethane	2022/11/05	100	70 - 130	90	70 - 130	ND, RDL=0.40	ug/L	NC	30		
8316663	1,2-Dichlorobenzene	2022/11/05	99	70 - 130	93	70 - 130	ND, RDL=0.40	ug/L	NC	30		
8316663	1,4-Dichlorobenzene	2022/11/05	112	70 - 130	109	70 - 130	ND, RDL=0.40	ug/L	NC	30		
8316663	Benzene	2022/11/05	95	70 - 130	91	70 - 130	ND, RDL=0.20	ug/L	NC	30		
8316663	Chloroform	2022/11/05	99	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC	30		
8316663	cis-1,2-Dichloroethylene	2022/11/05	102	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC	30		
8316663	Ethylbenzene	2022/11/05	96	70 - 130	93	70 - 130	ND, RDL=0.20	ug/L	NC	30		
8316663	Methyl Ethyl Ketone (2-Butanone)	2022/11/05	110	60 - 140	103	60 - 140	ND, RDL=10	ug/L	NC	30		
8316663	Methylene Chloride(Dichloromethane)	2022/11/05	91	70 - 130	95	70 - 130	ND, RDL=2.0	ug/L	NC	30		
8316663	o-Xylene	2022/11/05	95	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30		
8316663	p+m-Xylene	2022/11/05	103	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30		
8316663	Styrene	2022/11/05	111	70 - 130	111	70 - 130	ND, RDL=0.40	ug/L	NC	30		
8316663	Tetrachloroethylene	2022/11/05	90	70 - 130	88	70 - 130	ND, RDL=0.20	ug/L	5.8	30		
8316663	Toluene	2022/11/05	101	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30		



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314

Report Date: 2022/11/15

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc

Client Project #: BRM-00257769-D0

ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS

Site Location: PARKWAY, ON

Your P.O. #: ENV – BRM

Sampler Initials: TM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8316663	Total Xylenes	2022/11/05					ND, RDL=0.20	ug/L	NC	30		
8316663	trans-1,3-Dichloropropene	2022/11/05	115	70 - 130	103	70 - 130	ND, RDL=0.40	ug/L	NC	30		
8316663	Trichloroethylene	2022/11/05	97	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	11	30		
8316914	Bis(2-ethylhexyl)phthalate	2022/11/01	105	30 - 130	104	30 - 130	ND, RDL=2.0	ug/L	NC	40		
8316914	Di-N-butyl phthalate	2022/11/01	101	30 - 130	107	30 - 130	ND, RDL=2.0	ug/L	NC	40		
8317203	Total Suspended Solids	2022/11/02					ND, RDL=10	mg/L	7.1	25	96	85 - 115
8317666	Fluoride (F-)	2022/11/03	100	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	3.8	20		
8317668	pH	2022/11/03			102	98 - 103			0.30	N/A		
8317818	Dissolved Sulphate (SO4)	2022/11/07	NC	75 - 125	108	80 - 120	ND, RDL=1.0	mg/L	0.84	20		
8318078	Nonylphenol (Total)	2022/11/02	97	50 - 130	79	50 - 130	ND, RDL=0.001	mg/L	NC	40		
8318084	Nonylphenol Ethoxylate (Total)	2022/11/02	112	50 - 130	98	50 - 130	ND, RDL=0.025	mg/L	NC	40		
8318695	Total PCB	2022/11/02	67	60 - 130	82	60 - 130	ND, RDL=0.05	ug/L	NC	40		
8320768	Total Aluminum (Al)	2022/11/03	97	80 - 120	95	80 - 120	ND, RDL=4.9	ug/L	0.020	20		
8320768	Total Antimony (Sb)	2022/11/03	114	80 - 120	112	80 - 120	ND, RDL=0.50	ug/L				
8320768	Total Arsenic (As)	2022/11/03	103	80 - 120	104	80 - 120	ND, RDL=1.0	ug/L				
8320768	Total Cadmium (Cd)	2022/11/03	105	80 - 120	105	80 - 120	ND, RDL=0.090	ug/L	NC	20		
8320768	Total Chromium (Cr)	2022/11/03	95	80 - 120	96	80 - 120	ND, RDL=5.0	ug/L	NC	20		
8320768	Total Cobalt (Co)	2022/11/03	96	80 - 120	98	80 - 120	ND, RDL=0.50	ug/L				
8320768	Total Copper (Cu)	2022/11/03	97	80 - 120	97	80 - 120	ND, RDL=0.90	ug/L	0.50	20		
8320768	Total Lead (Pb)	2022/11/03	99	80 - 120	99	80 - 120	ND, RDL=0.50	ug/L	NC	20		
8320768	Total Manganese (Mn)	2022/11/03	95	80 - 120	97	80 - 120	ND, RDL=2.0	ug/L				
8320768	Total Molybdenum (Mo)	2022/11/03	102	80 - 120	101	80 - 120	ND, RDL=0.50	ug/L				
8320768	Total Nickel (Ni)	2022/11/03	95	80 - 120	97	80 - 120	ND, RDL=1.0	ug/L	NC	20		
8320768	Total Phosphorus (P)	2022/11/03	99	80 - 120	104	80 - 120	ND, RDL=100	ug/L				
8320768	Total Selenium (Se)	2022/11/03	106	80 - 120	108	80 - 120	ND, RDL=2.0	ug/L				
8320768	Total Silver (Ag)	2022/11/03	102	80 - 120	102	80 - 120	ND, RDL=0.090	ug/L				



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314

Report Date: 2022/11/15

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc

Client Project #: BRM-00257769-D0

ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS

Site Location: PARKWAY, ON

Your P.O. #: ENV – BRM

Sampler Initials: TM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8320768	Total Tin (Sn)	2022/11/03	106	80 - 120	105	80 - 120	ND, RDL=1.0	ug/L				
8320768	Total Titanium (Ti)	2022/11/03	96	80 - 120	98	80 - 120	ND, RDL=5.0	ug/L				
8320768	Total Zinc (Zn)	2022/11/03	102	80 - 120	106	80 - 120	ND, RDL=5.0	ug/L	4.3	20		
8321895	Total Kjeldahl Nitrogen (TKN)	2022/11/04	101	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L	NC	20	101	80 - 120
8326699	Phenols-4AAP	2022/11/04	102	80 - 120	100	80 - 120	ND, RDL=0.0010	mg/L	11	20		
8328693	Total Oil & Grease	2022/11/05			99	85 - 115	ND, RDL=0.50	mg/L	0.25	25		
8328696	Total Oil & Grease Mineral/Synthetic	2022/11/05			97	85 - 115	ND, RDL=0.50	mg/L	0.52	25		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/15

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Farhana Rahman, Senior Analyst

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.



MICRO

Bureau Veritas
8710 Campbellville Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6206 Fax (905) 817-5777 www.bvna.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #30554 exp Services Inc		Company Name: EXP Services Inc		Quotation #: C20374		Bureau Veritas Job #:	
Attention: Accounts Payable		Attention: Francois Chartier		P.O. #: ENV - BRM		Bottle Order #:	
Address: 1595 Clark Blvd		Address: Peyman.Sayyah@exp.com		Project: BRM-00257769-D0		COC #:	
Brampton ON L8T 4V1		Thabiso Modise@exp.com		Project Name: Erin Mills Town Centre - 5100		Project Manager:	
Tel: (905) 793-9800 Fax: (905) 793-0641		Tel: (905) 793-9800 Ext: 2523 Fax:		Site #: Erin Mills Town Centre - 5100		Patricia Legette	
Email: AP@exp.com; Karen.Burke@exp.com		Email: Francois.Chartier@exp.com		Sampled By: Thabiso Modise		C9904630-01-01	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects		
Regulation 153 (2011)			Other Regulations			Special Instructions											Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input checked="" type="checkbox"/> Sanitary Sewer Bylaw		Field Filtered (please circle): Metals / hg / Cr / VI PEEL SANITARY & STORM SEWER (S3-20-D)										Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)		
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input checked="" type="checkbox"/> Storm Sewer Bylaw												# of Bottles		Comments
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality: PEEL REGION														
<input type="checkbox"/> Table			<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 405 Table														
Include Criteria on Certificate of Analysis (C/A)? <input checked="" type="checkbox"/>																		
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix														
1	BH-101	23/Oct/22	14:45	GW	NO	✓											17	PLEASE INCLUDE COC IN COA
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

28-Oct-22 16:56
 Patricia Legette

 C2V6314
 DSG ENV-1487

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
Thabiso Modise		22/10/23	17:55	[Signature]		20/10/23	16:56		Time Sensitive	Temperature (°C) on Reel	Custody Seal Present	Yes	No
										13/14/18	Intact		✓

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COCC-TERMS-AND-CONDITIONS.

** IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

SAMPLES MUST BE KEPT COOL (< 10° C.) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client
 OR -ice



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/15

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

**Exceedance Summary Table – Mississauga Storm Sewer
Result Exceedances**

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH-101	UDN173-06	Total Suspended Solids	15	27	10	mg/L
BH-101	UDN173-06-Lab Dup	Total Suspended Solids	15	29	10	mg/L

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.



Your P.O. #: ENV-BRM
 Your Project #: GTR-00257769-H0
 Site Location: ERIN MILLS TOWN CENTRE
 Your C.O.C. #: 974246-01-01

Attention: Francois Chartier

exp Services Inc
 1595 Clark Blvd
 Brampton, ON
 CANADA L6T 4V1

Report Date: 2024/02/12
 Report #: R8025151
 Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C433501

Received: 2024/02/02, 16:15

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
ABN Compounds in Water by GC/MS	1	2024/02/05	2024/02/06	CAM SOP-00301	EPA 8270 m
Biochemical Oxygen Demand (BOD)	1	2024/02/03	2024/02/08	CAM SOP-00427	SM 24 5210B m
Carbonaceous BOD	1	2024/02/03	2024/02/08	CAM SOP-00427	SM 24 5210B m
Total Residual Chlorine	1	2024/02/05	2024/02/05	CAM SOP 00425	SM 24 4500-CL G m
Chromium (VI) in Water	1	N/A	2024/02/06	CAM SOP-00436	EPA 7199 m
Total Cyanide	1	2024/02/05	2024/02/07	CAM SOP-00457	OMOE E3015 5 m
Fluoride	1	2024/02/03	2024/02/03	CAM SOP-00449	SM 24 4500-F C m
Mercury in Water by CVAA	1	2024/02/06	2024/02/08	CAM SOP-00453	EPA 7470A m
Total Metals Analysis by ICPMS	1	2024/02/07	2024/02/07	CAM SOP-00447	EPA 6020B m
E.coli, (CFU/100mL)	1	N/A	2024/02/02	CAM SOP-00552	MECP E3371
Total Nonylphenol in Liquids by HPLC	1	2024/02/06	2024/02/07	CAM SOP-00313	In-house Method
Nonylphenol Ethoxylates in Liquids: HPLC	1	2024/02/06	2024/02/07	CAM SOP-00313	Bureau Veritas
Animal and Vegetable Oil and Grease	1	N/A	2024/02/06	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2024/02/06	2024/02/06	CAM SOP-00326	EPA1664B m,SM5520B m
PAH Compounds in Water by GC/MS (SIM)	1	2024/02/05	2024/02/06	CAM SOP-00318	EPA 8270E
Polychlorinated Biphenyl in Water	1	2024/02/06	2024/02/07	CAM SOP-00309	EPA 8082A m
Phenols (4AAP)	1	N/A	2024/02/05	CAM SOP-00444	OMOE E3179 m
pH	1	2024/02/03	2024/02/05	CAM SOP-00413	SM 24th-4500H+ B
Sulphate by Automated Turbidimetry	1	N/A	2024/02/05	CAM SOP-00464	SM 24 4500-SO42- E m
Total Kjeldahl Nitrogen in Water	1	2024/02/05	2024/02/08	CAM SOP-00938	OMOE E3516 m
Total PAHs: Barrie/Mississauga Sewer Use (1)	1	N/A	2024/02/07	CAM SOP - 00301	
Mineral/Synthetic O & G (TPH Heavy Oil) (2)	1	2024/02/06	2024/02/06	CAM SOP-00326	EPA1664B m,SM5520F m
Total Suspended Solids	1	2024/02/05	2024/02/06	CAM SOP-00428	SM 24 2540D m
Volatile Organic Compounds in Water	1	N/A	2024/02/07	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in



Your P.O. #: ENV-BRM
Your Project #: GTR-00257769-H0
Site Location: ERIN MILLS TOWN CENTRE
Your C.O.C. #: 974246-01-01

Attention: Francois Chartier

exp Services Inc
1595 Clark Blvd
Brampton, ON
CANADA L6T 4V1

Report Date: 2024/02/12
Report #: R8025151
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C433501

Received: 2024/02/02, 16:15

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Total PAHs include only those PAHs specified in the sewer use by-law.

(2) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Encryption Key

Christine Gripton
Senior Project Manager
12 Feb 2024 16:18:18

Please direct all questions regarding this Certificate of Analysis to:

Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

=====
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C433501
Report Date: 2024/02/12

exp Services Inc
Client Project #: GTR-00257769-HO
Site Location: ERIN MILLS TOWN CENTRE
Your P.O. #: ENV-BRM
Sampler Initials: RA

MISSISSAUGA STORM SEWER BYLAW (46-2022)

Bureau Veritas ID			YHA068			YHA068		
Sampling Date			2024/02/02 14:40			2024/02/02 14:40		
COC Number			974246-01-01			974246-01-01		
	UNITS	Criteria	BH205	RDL	QC Batch	BH205 Lab-Dup	RDL	QC Batch
Inorganics								
Total BOD	mg/L	15	3	2	9200177			
Total Chlorine	mg/L	1.0	0.1	0.1	9202574	0.1	0.1	9202574
Metals								
Chromium (VI)	ug/L	40	ND	0.50	9201991			
Calculated Parameters								
Total PAHs	ug/L	2	ND	0.28	9199903			
Polyaromatic Hydrocarbons								
Acenaphthene	ug/L	-	ND	0.050	9202403			
Acenaphthylene	ug/L	-	ND	0.050	9202403			
Anthracene	ug/L	-	ND	0.050	9202403			
Benzo(a)anthracene	ug/L	-	ND	0.050	9202403			
Benzo(a)pyrene	ug/L	-	ND	0.0090	9202403			
Benzo(g,h,i)perylene	ug/L	-	ND	0.050	9202403			
Benzo(k)fluoranthene	ug/L	-	ND	0.050	9202403			
Chrysene	ug/L	-	ND	0.050	9202403			
Dibenzo(a,h)anthracene	ug/L	-	ND	0.050	9202403			
Fluoranthene	ug/L	-	ND	0.050	9202403			
Fluorene	ug/L	-	ND	0.050	9202403			
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	0.050	9202403			
1-Methylnaphthalene	ug/L	-	ND	0.050	9202403			
2-Methylnaphthalene	ug/L	-	ND	0.050	9202403			
Naphthalene	ug/L	-	ND	0.050	9202403			
Phenanthrene	ug/L	-	ND	0.030	9202403			
Pyrene	ug/L	-	ND	0.050	9202403			
Benzo(b)fluoranthene	ug/L	-	ND	0.030	9202403			
Surrogate Recovery (%)								
D10-Anthracene	%	-	89		9202403			
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: City of Mississauga Storm Sewer Use By-Law 0046-2022								
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								



BUREAU
VERITAS

Bureau Veritas Job #: C433501
Report Date: 2024/02/12

exp Services Inc
Client Project #: GTR-00257769-H0
Site Location: ERIN MILLS TOWN CENTRE
Your P.O. #: ENV-BRM
Sampler Initials: RA

MISSISSAUGA STORM SEWER BYLAW (46-2022)

Bureau Veritas ID			YHA068			YHA068		
Sampling Date			2024/02/02 14:40			2024/02/02 14:40		
COC Number			974246-01-01			974246-01-01		
	UNITS	Criteria	BH205	RDL	QC Batch	BH205 Lab-Dup	RDL	QC Batch
D14-Terphenyl (FS)	%	-	78		9202403			
D8-Acenaphthylene	%	-	79		9202403			
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: City of Mississauga Storm Sewer Use By-Law 0046-2022								



BUREAU
VERITAS

Bureau Veritas Job #: C433501
Report Date: 2024/02/12

exp Services Inc
Client Project #: GTR-00257769-HO
Site Location: ERIN MILLS TOWN CENTRE
Your P.O. #: ENV-BRM
Sampler Initials: RA

PEEL SANITARY & STORM SEWER (53-2010)

Bureau Veritas ID			YHA068			YHA068		
Sampling Date			2024/02/02 14:40			2024/02/02 14:40		
COC Number			974246-01-01			974246-01-01		
	UNITS	Criteria	BH205	RDL	QC Batch	BH205 Lab-Dup	RDL	QC Batch

Calculated Parameters								
Total Animal/Vegetable Oil and Grease	mg/L	-	1.3	0.50	9198519			
Inorganics								
Total Carbonaceous BOD	mg/L	-	ND	2	9200181			
Fluoride (F-)	mg/L	-	0.92	0.10	9200566	0.91	0.10	9200566
Total Kjeldahl Nitrogen (TKN)	mg/L	-	2.3	0.10	9201743			
pH	pH	6:9	7.84		9200551	7.85		9200551
Phenols-4AAP	mg/L	0.008	ND	0.0010	9201380			
Total Suspended Solids	mg/L	15	27	10	9201247			
Dissolved Sulphate (SO4)	mg/L	-	38	1.0	9200625			
Total Cyanide (CN)	mg/L	0.02	ND	0.0050	9201193			
Petroleum Hydrocarbons								
Total Oil & Grease	mg/L	-	1.8	0.50	9203900			
Total Oil & Grease Mineral/Synthetic	mg/L	-	0.50	0.50	9203904			
Miscellaneous Parameters								
Nonylphenol Ethoxylate (Total)	mg/L	-	ND	0.025	9204456			
Nonylphenol (Total)	mg/L	-	ND	0.001	9204438			
Metals								
Mercury (Hg)	mg/L	0.0004	ND	0.00010	9204585			
Total Aluminum (Al)	ug/L	1000	450	4.9	9206140			
Total Antimony (Sb)	ug/L	-	ND	0.50	9206140			
Total Arsenic (As)	ug/L	20	5.6	1.0	9206140			
Total Cadmium (Cd)	ug/L	8	ND	0.090	9206140			
Total Chromium (Cr)	ug/L	80	6.7	5.0	9206140			
Total Cobalt (Co)	ug/L	-	0.55	0.50	9206140			
Total Copper (Cu)	ug/L	40	3.1	0.90	9206140			
Total Lead (Pb)	ug/L	120	0.64	0.50	9206140			
Total Manganese (Mn)	ug/L	2000	82	2.0	9206140			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria: City of Mississauga Storm Sewer Use By-Law 0046-2022
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C433501
Report Date: 2024/02/12

exp Services Inc
Client Project #: GTR-00257769-HO
Site Location: ERIN MILLS TOWN CENTRE
Your P.O. #: ENV-BRM
Sampler Initials: RA

PEEL SANITARY & STORM SEWER (53-2010)

Bureau Veritas ID			YHA068			YHA068		
Sampling Date			2024/02/02 14:40			2024/02/02 14:40		
COC Number			974246-01-01			974246-01-01		
	UNITS	Criteria	BH205	RDL	QC Batch	BH205 Lab-Dup	RDL	QC Batch
Total Molybdenum (Mo)	ug/L	-	21	0.50	9206140			
Total Nickel (Ni)	ug/L	80	5.1	1.0	9206140			
Total Phosphorus (P)	ug/L	400	ND	100	9206140			
Total Selenium (Se)	ug/L	20	ND	2.0	9206140			
Total Silver (Ag)	ug/L	120	ND	0.090	9206140			
Total Tin (Sn)	ug/L	-	ND	1.0	9206140			
Total Titanium (Ti)	ug/L	-	12	5.0	9206140			
Total Zinc (Zn)	ug/L	200	16	5.0	9206140			
Semivolatile Organics								
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	2.0	9202240			
Di-N-butyl phthalate	ug/L	-	ND	2.0	9202240			
Volatile Organics								
Benzene	ug/L	2	ND	0.20	9203242			
Chloroform	ug/L	-	0.59	0.20	9203242			
1,2-Dichlorobenzene	ug/L	5.6	ND	0.40	9203242			
1,4-Dichlorobenzene	ug/L	6.8	ND	0.40	9203242			
cis-1,2-Dichloroethylene	ug/L	-	ND	0.50	9203242			
trans-1,3-Dichloropropene	ug/L	-	ND	0.40	9203242			
Ethylbenzene	ug/L	2	ND	0.20	9203242			
Methylene Chloride(Dichloromethane)	ug/L	5.2	ND	2.0	9203242			
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	ND	10	9203242			
Styrene	ug/L	-	ND	0.40	9203242			
1,1,2,2-Tetrachloroethane	ug/L	17	ND	0.40	9203242			
Tetrachloroethylene	ug/L	4.4	ND	0.20	9203242			
Toluene	ug/L	2	ND	0.20	9203242			
Trichloroethylene	ug/L	7.6	ND	0.20	9203242			
p+m-Xylene	ug/L	-	ND	0.20	9203242			
o-Xylene	ug/L	-	ND	0.20	9203242			
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: City of Mississauga Storm Sewer Use By-Law 0046-2022								
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								



BUREAU
VERITAS

Bureau Veritas Job #: C433501
Report Date: 2024/02/12

exp Services Inc
Client Project #: GTR-00257769-HO
Site Location: ERIN MILLS TOWN CENTRE
Your P.O. #: ENV-BRM
Sampler Initials: RA

PEEL SANITARY & STORM SEWER (53-2010)

Bureau Veritas ID			YHA068			YHA068		
Sampling Date			2024/02/02 14:40			2024/02/02 14:40		
COC Number			974246-01-01			974246-01-01		
	UNITS	Criteria	BH205	RDL	QC Batch	BH205 Lab-Dup	RDL	QC Batch
Total Xylenes	ug/L	4.4	ND	0.20	9203242			
PCBs								
Total PCB	ug/L	0.4	ND	0.05	9204315	ND	0.05	9204315
Microbiological								
Escherichia coli	CFU/100mL	200	<10	10	9199983			
Surrogate Recovery (%)								
2,4,6-Tribromophenol	%	-	62		9202240			
2-Fluorobiphenyl	%	-	51		9202240			
2-Fluorophenol	%	-	22		9202240			
D14-Terphenyl	%	-	87		9202240			
D5-Nitrobenzene	%	-	55		9202240			
D5-Phenol	%	-	14		9202240			
Decachlorobiphenyl	%	-	116		9204315	108		9204315
4-Bromofluorobenzene	%	-	105		9203242			
D4-1,2-Dichloroethane	%	-	114		9203242			
D8-Toluene	%	-	84		9203242			
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Lab-Dup = Laboratory Initiated Duplicate								
Criteria: City of Mississauga Storm Sewer Use By-Law 0046-2022								
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								



BUREAU
VERITAS

Bureau Veritas Job #: C433501
Report Date: 2024/02/12

exp Services Inc
Client Project #: GTR-00257769-HO
Site Location: ERIN MILLS TOWN CENTRE
Your P.O. #: ENV-BRM
Sampler Initials: RA

TEST SUMMARY

Bureau Veritas ID: YHA068
Sample ID: BH205
Matrix: Water

Collected: 2024/02/02
Shipped:
Received: 2024/02/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ABN Compounds in Water by GC/MS	GC/MS	9202240	2024/02/05	2024/02/06	Kathy Horvat
Biochemical Oxygen Demand (BOD)	DO	9200177	2024/02/03	2024/02/08	Amrutha Anilkumar
Carbonaceous BOD	DO	9200181	2024/02/03	2024/02/08	Amrutha Anilkumar
Total Residual Chlorine	SPEC	9202574	2024/02/05	2024/02/05	Taslina Aktar
Chromium (VI) in Water	IC	9201991	N/A	2024/02/06	Surleen Kaur Romana
Total Cyanide	SKAL/CN	9201193	2024/02/05	2024/02/07	Jency Sara Johnson
Fluoride	ISE	9200566	2024/02/03	2024/02/03	Nachiketa Gohil
Mercury in Water by CVAA	CV/AA	9204585	2024/02/06	2024/02/08	Aswathy Neduveli Suresh
Total Metals Analysis by ICPMS	ICP/MS	9206140	2024/02/07	2024/02/07	Azita Fazaeli
E.coli, (CFU/100mL)	PL	9199983	N/A	2024/02/02	Yizhou Han
Total Nonylphenol in Liquids by HPLC	LC/FLU	9204438	2024/02/06	2024/02/07	Dennis Boodram
Nonylphenol Ethoxylates in Liquids: HPLC	LC/FLU	9204456	2024/02/06	2024/02/07	Dennis Boodram
Animal and Vegetable Oil and Grease	BAL	9198519	N/A	2024/02/06	Automated Statchk
Total Oil and Grease	BAL	9203900	2024/02/06	2024/02/06	Kishan Patel
PAH Compounds in Water by GC/MS (SIM)	GC/MS	9202403	2024/02/05	2024/02/06	Mitesh Raj
Polychlorinated Biphenyl in Water	GC/ECD	9204315	2024/02/06	2024/02/07	Svitlana Shaula
Phenols (4AAP)	TECH/PHEN	9201380	N/A	2024/02/05	Chloe Pollock
pH	AT	9200551	2024/02/03	2024/02/05	Nachiketa Gohil
Sulphate by Automated Turbidimetry	SKAL	9200625	N/A	2024/02/05	Massarat Jan
Total Kjeldahl Nitrogen in Water	SKAL	9201743	2024/02/05	2024/02/08	Kruti Jitesh Patel
Total PAHs: Barrie/Mississauga Sewer Use	CALC	9199903	N/A	2024/02/07	Automated Statchk
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	9203904	2024/02/06	2024/02/06	Kishan Patel
Total Suspended Solids	BAL	9201247	2024/02/05	2024/02/06	Darshan Patel
Volatile Organic Compounds in Water	GC/MS	9203242	N/A	2024/02/07	Gabriella Morrone

Bureau Veritas ID: YHA068 Dup
Sample ID: BH205
Matrix: Water

Collected: 2024/02/02
Shipped:
Received: 2024/02/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Residual Chlorine	SPEC	9202574	2024/02/05	2024/02/05	Taslina Aktar
Fluoride	ISE	9200566	2024/02/03	2024/02/03	Nachiketa Gohil
Polychlorinated Biphenyl in Water	GC/ECD	9204315	2024/02/06	2024/02/07	Svitlana Shaula
pH	AT	9200551	2024/02/03	2024/02/05	Nachiketa Gohil



BUREAU
VERITAS

Bureau Veritas Job #: C433501
Report Date: 2024/02/12

exp Services Inc
Client Project #: GTR-00257769-HO
Site Location: ERIN MILLS TOWN CENTRE
Your P.O. #: ENV-BRM
Sampler Initials: RA

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.3°C
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Revised report (2023/02/12): Includes Mississauga Storm Sewer Use By-law criteria.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C433501

Report Date: 2024/02/12

QUALITY ASSURANCE REPORT

exp Services Inc

Client Project #: GTR-00257769-H0

Site Location: ERIN MILLS TOWN CENTRE

Your P.O. #: ENV-BRM

Sampler Initials: RA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9202240	2,4,6-Tribromophenol	2024/02/06	127	10 - 130	110	10 - 130	80	%				
9202240	2-Fluorobiphenyl	2024/02/06	71	30 - 130	72	30 - 130	83	%				
9202240	2-Fluorophenol	2024/02/06	13	10 - 130	54	10 - 130	37	%				
9202240	D14-Terphenyl	2024/02/06	108	30 - 130	103	30 - 130	98	%				
9202240	D5-Nitrobenzene	2024/02/06	85	30 - 130	85	30 - 130	86	%				
9202240	D5-Phenol	2024/02/06	14	10 - 130	36	10 - 130	24	%				
9202403	D10-Anthracene	2024/02/06	94	50 - 130	99	50 - 130	99	%				
9202403	D14-Terphenyl (FS)	2024/02/06	92	50 - 130	96	50 - 130	98	%				
9202403	D8-Acenaphthylene	2024/02/06	83	50 - 130	87	50 - 130	85	%				
9203242	4-Bromofluorobenzene	2024/02/07	104	70 - 130	101	70 - 130	109	%				
9203242	D4-1,2-Dichloroethane	2024/02/07	105	70 - 130	102	70 - 130	99	%				
9203242	D8-Toluene	2024/02/07	102	70 - 130	104	70 - 130	84	%				
9204315	Decachlorobiphenyl	2024/02/06	118	60 - 130	107	60 - 130	92	%				
9200177	Total BOD	2024/02/08					ND,RDL=2	mg/L	2.4	30	96	80 - 120
9200181	Total Carbonaceous BOD	2024/02/08					ND,RDL=2	mg/L	2.8	30	99	80 - 120
9200551	pH	2024/02/05			102	98 - 103			0.18	N/A		
9200566	Fluoride (F-)	2024/02/03	102	80 - 120	100	80 - 120	ND, RDL=0.10	mg/L	0.48	20		
9200625	Dissolved Sulphate (SO4)	2024/02/05	NC	75 - 125	95	80 - 120	ND, RDL=1.0	mg/L	0.32	20		
9201193	Total Cyanide (CN)	2024/02/08	65 (1)	80 - 120	99	80 - 120	ND, RDL=0.0050	mg/L	NC	20		
9201247	Total Suspended Solids	2024/02/06			100	80 - 120	ND, RDL=10	mg/L	15	20		
9201380	Phenols-4AAP	2024/02/05	104	80 - 120	101	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
9201743	Total Kjeldahl Nitrogen (TKN)	2024/02/07	98	80 - 120	97	80 - 120	ND, RDL=0.10	mg/L	2.0	20	97	80 - 120
9201991	Chromium (VI)	2024/02/06	104	80 - 120	103	80 - 120	ND, RDL=0.50	ug/L	1.2	20		
9202240	Bis(2-ethylhexyl)phthalate	2024/02/06	111	30 - 130	112	30 - 130	ND, RDL=2.0	ug/L	NC	40		
9202240	Di-N-butyl phthalate	2024/02/06	120	30 - 130	120	30 - 130	ND, RDL=2.0	ug/L	NC	40		
9202403	1-Methylnaphthalene	2024/02/06	58	50 - 130	79	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	2-Methylnaphthalene	2024/02/06	50	50 - 130	67	50 - 130	ND, RDL=0.050	ug/L	NC	30		



BUREAU
VERITAS

Bureau Veritas Job #: C433501

Report Date: 2024/02/12

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc

Client Project #: GTR-00257769-H0

Site Location: ERIN MILLS TOWN CENTRE

Your P.O. #: ENV-BRM

Sampler Initials: RA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9202403	Acenaphthene	2024/02/06	71	50 - 130	90	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Acenaphthylene	2024/02/06	70	50 - 130	89	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Anthracene	2024/02/06	85	50 - 130	102	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Benzo(a)anthracene	2024/02/06	85	50 - 130	101	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Benzo(a)pyrene	2024/02/06	83	50 - 130	97	50 - 130	ND, RDL=0.0090	ug/L	NC	30		
9202403	Benzo(b)fluoranthene	2024/02/06	89	50 - 130	101	50 - 130	ND, RDL=0.030	ug/L				
9202403	Benzo(g,h,i)perylene	2024/02/06	83	50 - 130	118	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Benzo(k)fluoranthene	2024/02/06	87	50 - 130	101	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Chrysene	2024/02/06	79	50 - 130	96	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Dibenzo(a,h)anthracene	2024/02/06	88	50 - 130	106	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Fluoranthene	2024/02/06	85	50 - 130	107	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Fluorene	2024/02/06	75	50 - 130	94	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Indeno(1,2,3-cd)pyrene	2024/02/06	92	50 - 130	113	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Naphthalene	2024/02/06	51	50 - 130	71	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202403	Phenanthrene	2024/02/06	81	50 - 130	97	50 - 130	ND, RDL=0.030	ug/L	NC	30		
9202403	Pyrene	2024/02/06	87	50 - 130	102	50 - 130	ND, RDL=0.050	ug/L	NC	30		
9202574	Total Chlorine	2024/02/05	103	85 - 115	102	85 - 115	ND, RDL=0.1	mg/L	9.5	25		



BUREAU
VERITAS

Bureau Veritas Job #: C433501

Report Date: 2024/02/12

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc

Client Project #: GTR-00257769-H0

Site Location: ERIN MILLS TOWN CENTRE

Your P.O. #: ENV-BRM

Sampler Initials: RA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9203242	1,1,2,2-Tetrachloroethane	2024/02/07	99	70 - 130	97	70 - 130	ND, RDL=0.40	ug/L				
9203242	1,2-Dichlorobenzene	2024/02/07	94	70 - 130	94	70 - 130	ND, RDL=0.40	ug/L				
9203242	1,4-Dichlorobenzene	2024/02/07	105	70 - 130	105	70 - 130	ND, RDL=0.40	ug/L				
9203242	Benzene	2024/02/07	94	70 - 130	86	70 - 130	ND, RDL=0.20	ug/L				
9203242	Chloroform	2024/02/07	105	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L				
9203242	cis-1,2-Dichloroethylene	2024/02/07	102	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L				
9203242	Ethylbenzene	2024/02/07	84	70 - 130	88	70 - 130	ND, RDL=0.20	ug/L				
9203242	Methyl Ethyl Ketone (2-Butanone)	2024/02/07	109	60 - 140	99	60 - 140	ND, RDL=10	ug/L				
9203242	Methylene Chloride(Dichloromethane)	2024/02/07	97	70 - 130	84	70 - 130	ND, RDL=2.0	ug/L				
9203242	o-Xylene	2024/02/07	76	70 - 130	83	70 - 130	ND, RDL=0.20	ug/L	NC	30		
9203242	p+m-Xylene	2024/02/07	91	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30		
9203242	Styrene	2024/02/07	103	70 - 130	106	70 - 130	ND, RDL=0.40	ug/L				
9203242	Tetrachloroethylene	2024/02/07	96	70 - 130	91	70 - 130	ND, RDL=0.20	ug/L				
9203242	Toluene	2024/02/07	95	70 - 130	91	70 - 130	ND, RDL=0.20	ug/L	NC	30		
9203242	Total Xylenes	2024/02/07					ND, RDL=0.20	ug/L	NC	30		
9203242	trans-1,3-Dichloropropene	2024/02/07	109	70 - 130	97	70 - 130	ND, RDL=0.40	ug/L				
9203242	Trichloroethylene	2024/02/07	102	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L				
9203900	Total Oil & Grease	2024/02/06			98	80 - 110	ND, RDL=0.50	mg/L	0.51	25		
9203904	Total Oil & Grease Mineral/Synthetic	2024/02/06			96	65 - 130	ND, RDL=0.50	mg/L	1.6	25		
9204315	Total PCB	2024/02/07	84	60 - 130	84	60 - 130	ND, RDL=0.05	ug/L	NC	40		
9204438	Nonylphenol (Total)	2024/02/07	78	50 - 130	83	50 - 130	ND, RDL=0.001	mg/L	NC	40		
9204456	Nonylphenol Ethoxylate (Total)	2024/02/07	85	50 - 130	95	50 - 130	ND, RDL=0.025	mg/L	NC	40		
9204585	Mercury (Hg)	2024/02/08	104	75 - 125	110	80 - 120	ND, RDL=0.00010	mg/L	NC	20		
9206140	Total Aluminum (Al)	2024/02/07	NC	80 - 120	98	80 - 120	ND, RDL=4.9	ug/L	6.7	20		
9206140	Total Antimony (Sb)	2024/02/07	113	80 - 120	108	80 - 120	ND, RDL=0.50	ug/L				
9206140	Total Arsenic (As)	2024/02/07	107	80 - 120	104	80 - 120	ND, RDL=1.0	ug/L				
9206140	Total Cadmium (Cd)	2024/02/07	107	80 - 120	103	80 - 120	ND, RDL=0.090	ug/L	2.3	20		



BUREAU
VERITAS

Bureau Veritas Job #: C433501

Report Date: 2024/02/12

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc

Client Project #: GTR-00257769-H0

Site Location: ERIN MILLS TOWN CENTRE

Your P.O. #: ENV-BRM

Sampler Initials: RA

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9206140	Total Chromium (Cr)	2024/02/07	101	80 - 120	98	80 - 120	ND, RDL=5.0	ug/L	3.2	20		
9206140	Total Cobalt (Co)	2024/02/07	101	80 - 120	98	80 - 120	ND, RDL=0.50	ug/L				
9206140	Total Copper (Cu)	2024/02/07	101	80 - 120	97	80 - 120	ND, RDL=0.90	ug/L	0.13	20		
9206140	Total Lead (Pb)	2024/02/07	102	80 - 120	99	80 - 120	ND, RDL=0.50	ug/L	4.7	20		
9206140	Total Manganese (Mn)	2024/02/07	103	80 - 120	98	80 - 120	ND, RDL=2.0	ug/L				
9206140	Total Molybdenum (Mo)	2024/02/07	110	80 - 120	104	80 - 120	ND, RDL=0.50	ug/L				
9206140	Total Nickel (Ni)	2024/02/07	101	80 - 120	98	80 - 120	ND, RDL=1.0	ug/L	7.6	20		
9206140	Total Phosphorus (P)	2024/02/07	110	80 - 120	98	80 - 120	ND, RDL=100	ug/L				
9206140	Total Selenium (Se)	2024/02/07	112	80 - 120	108	80 - 120	ND, RDL=2.0	ug/L				
9206140	Total Silver (Ag)	2024/02/07	101	80 - 120	98	80 - 120	ND, RDL=0.090	ug/L				
9206140	Total Tin (Sn)	2024/02/07	107	80 - 120	102	80 - 120	ND, RDL=1.0	ug/L				
9206140	Total Titanium (Ti)	2024/02/07	108	80 - 120	99	80 - 120	ND, RDL=5.0	ug/L				
9206140	Total Zinc (Zn)	2024/02/07	106	80 - 120	107	80 - 120	ND, RDL=5.0	ug/L	8.6	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

Bureau Veritas Job #: C433501
Report Date: 2024/02/12

exp Services Inc
Client Project #: GTR-00257769-H0
Site Location: ERIN MILLS TOWN CENTRE
Your P.O. #: ENV-BRM
Sampler Initials: RA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Yizhou Han, Analyst 1

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



Bureau Veritas
6749 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free: 800-563-6266 Fax:(905) 817-5777 www.bvna.com

CHAIN OF CUSTODY



NONT-2024-02-203

1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name: #9590 exp Services Inc	Company Name: <u>exp Services Inc</u>	Quotation #: C31678	<u>Stream 2</u>		
Attention: Accounts Payable	Attention: <u>Francois Chartier</u>	P.O. #: <u>ENV-BRM</u>			
Address: 1595 Clark Blvd	Address: <u>Ryan.Alexander@exp.com</u>	Project: GTR-00257769-H0			
Brampton ON L6T 4V1		Project Name: <u>ERIN Mills Town Centre</u>			
Tel: (905) 793-9800 Fax: (905) 793-0641	Tel: (905) 793-9800 Ext: 2523 Fax:	Site #: <u>BA</u>			
Email: AP@exp.com; Karen.Burke@exp.com	Email: Francois.Chartier@exp.com, nicolas.sabo@exp.com	Sampled By: <u>BA</u>			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY			ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects							
Regulation 153 (2011) <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table _____		Other Regulations <input type="checkbox"/> CCME <input checked="" type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input checked="" type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA Municipality <u>Peel</u> <input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table _____ <input type="checkbox"/> Other _____		Special Instructions		Field Filtered (please circle): Metals / Hg / Cr / V	Peel Sanitary & Storm Sewer (53-2010)	Mississauga Storm Sewer Bylaw (45-2022)											Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
Include Criteria on Certificate of Analysis (Y/N)? <u>Yes</u>														Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)						

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr / V	Peel Sanitary & Storm Sewer (53-2010)	Mississauga Storm Sewer Bylaw (45-2022)	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										# of Bottles	Comments						
1	BH 205	24/02/02	14:40	GW	NO	X	X																	19	Please include COC in final report
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# Jars used and not submitted	Laboratory Use Only				
<u>Ryan ALEXANDER</u>		<u>24/02/02</u>	<u>16:10</u>	<u>[Signature]</u>		<u>20/02/02</u>	<u>16:15</u>		Time Sensitive	Temperature (°C) on Recl	Custody Seal Present	Yes	No
										<u>8/8/9</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COG-TERMS-AND-CONDITIONS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client

[Signature]



Bureau Veritas
6740 Campbellville Road, Mississauga, Ontario Canada L5N 2L9 Tel (905) 817-5700 Toll-free 800-563-6266 Fax (905) 817-5777 www.bvna.com

CHAIN OF CUSTODY RECORD

02-Feb-24 16:15

Patricia Legette

C433501

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Lab	
Company Name: #30554 exp Services Inc	Company Name: EXP Services Inc	Quotation #: C31675	Stream 7	Bureau Veritas		Barcode	
Attention: Accounts Payable	Attention: Nicolas Sabo Francis Chartier	P.O. #: ENV-BRM					
Address: 1595 Clark Blvd Brampton ON L6T 4V1	Address: RYAN.ALEXANDER@EXP.COM FRANCIS.CHARTIER@EXP.COM	Project: MAIN-2301-2028-AG-GTR-0025	7769-40 RUK	ENV-1442			
Tel: (905) 793-9800 Fax: (905) 793-0641	Tel: Fax:	Project Name: ERIN Mills Town Centre		COC #: ENV-1442		Project Manager: Patricia Legette	
Email: AP@exp.com; Karen.Burke@exp.com	Email: nicolas.sabo@exp.com; arwin.chessell@exp.com	Site #: RA		Barcode		C#974011-02-01	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required:											
Regulation 153 (2011)			Other Regulations			Special Instructions	Field Filled (please circle):	Metals / Hg / Cr VI	Negative Sanitary & Comb. Sewer (2014)	Total residual Chlorine										Regular (Standard) TAT:							
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input checked="" type="checkbox"/> Sanitary Sewer Bylaw																				<input checked="" type="checkbox"/>			
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input checked="" type="checkbox"/> Storm Sewer Bylaw																				<input type="checkbox"/>			
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agr/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality: Peel																							
<input type="checkbox"/> Table			<input type="checkbox"/> PWGO	<input type="checkbox"/> Reg 405 Table																							
Include Criteria on Certificate of Analysis (CN)?						yes																					
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix																					# of Bottles	Comments	
1	BH 205	24/02/05	14:35	GW	NO																				1	Please include COC in final report.	
2																											
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only					
Ryan Alexander		24/02/05	15:10	Arwin Chessell		20/02/05	15:13		Time Sensitive	Temperature (°C) of Recal	10/10/10	Custody Seal Present	Yes	No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

White: Bureau Veritas Yellow: Client

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS



BUREAU
VERITAS

Bureau Veritas Job #: C433501
Report Date: 2024/02/12

exp Services Inc
Client Project #: GTR-00257769-H0
Site Location: ERIN MILLS TOWN CENTRE
Your P.O. #: ENV-BRM
Sampler Initials: RA

**Exceedance Summary Table – Mississauga Storm Sewer
Result Exceedances**

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH205	YHA068-06	Total Suspended Solids	15	27	10	mg/L

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.



Your P.O. #: ENV – BRM
 Your Project #: BRM-00257769-DO
 Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
 PARKWAY, ON
 Your C.O.C. #: 904630-01-01

Attention: Francois Chartier

exp Services Inc
 1595 Clark Blvd
 Brampton, ON
 CANADA L6T 4V1

Report Date: 2022/11/08
 Report #: R7378450
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2V6314

Received: 2022/10/28, 16:56

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
ABN Compounds in Water by GC/MS	1	2022/10/31	2022/11/01	CAM SOP-00301	EPA 8270 m
Carbonaceous BOD	1	2022/10/29	2022/11/03	CAM SOP-00427	SM 23 5210B m
Total Cyanide	1	2022/10/31	2022/10/31	CAM SOP-00457	OMOE E3015 5 m
Fluoride	1	2022/10/31	2022/11/03	CAM SOP-00449	SM 23 4500-F C m
Mercury in Water by CVAA	1	2022/10/29	2022/10/31	CAM SOP-00453	EPA 7470A m
Total Metals Analysis by ICPMS	1	N/A	2022/11/03	CAM SOP-00447	EPA 6020B m
E.coli, (CFU/100mL)	1	N/A	2022/10/28	CAM SOP-00552	
Total Nonylphenol in Liquids by HPLC	1	2022/11/01	2022/11/02	CAM SOP-00313	In-house Method
Nonylphenol Ethoxylates in Liquids: HPLC	1	2022/11/01	2022/11/02	CAM SOP-00313	Bureau Veritas
Animal and Vegetable Oil and Grease	1	N/A	2022/11/05	CAM SOP-00326	EPA1664B m,SM5520B m
Total Oil and Grease	1	2022/11/05	2022/11/05	CAM SOP-00326	EPA1664B m,SM5520B m
Polychlorinated Biphenyl in Water	1	2022/11/01	2022/11/02	CAM SOP-00309	EPA 8082A m
pH	1	2022/10/31	2022/11/03	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	1	N/A	2022/11/04	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	1	N/A	2022/11/07	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	1	2022/11/02	2022/11/03	CAM SOP-00938	OMOE E3516 m
Mineral/Synthetic O & G (TPH Heavy Oil) (1)	1	2022/11/05	2022/11/05	CAM SOP-00326	EPA1664B m,SM5520F m
Total Suspended Solids	1	2022/11/01	2022/11/02	CAM SOP-00428	SM 23 2540D m
Volatile Organic Compounds in Water	1	N/A	2022/11/05	CAM SOP-00228	EPA 8260C m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report.



Your P.O. #: ENV – BRM
 Your Project #: BRM-00257769-DO
 Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
 PARKWAY, ON
 Your C.O.C. #: 904630-01-01

Attention: Francois Chartier

exp Services Inc
 1595 Clark Blvd
 Brampton, ON
 CANADA L6T 4V1

Report Date: 2022/11/08
 Report #: R7378450
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2V6314

Received: 2022/10/28, 16:56

Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Note: TPH (Heavy Oil) is equivalent to Mineral / Synthetic Oil & Grease

Encryption Key



**AUTHORIZED REPORT
 RAPPORT AUTORISÉ**

Bureau Veritas

08 Nov 2022 10:22:43

Please direct all questions regarding this Certificate of Analysis to:

Patricia Legette, Project Manager
 Email: Patricia.Legette@bureauveritas.com
 Phone# (905)817-5799

=====

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BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/08

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

PEEL SANITARY & STORM SEWER (53-2010)

Bureau Veritas ID				UDN173			UDN173		
Sampling Date				2022/10/28 14:45			2022/10/28 14:45		
COC Number				904630-01-01			904630-01-01		
	UNITS	Criteria	Criteria-2	BH-101	RDL	QC Batch	BH-101 Lab-Dup	RDL	QC Batch

Calculated Parameters									
Total Animal/Vegetable Oil and Grease	mg/L	-	150	2.0	0.50	8311791			
Inorganics									
Total Carbonaceous BOD	mg/L	15	300	ND	2	8314278	ND	2	8314278
Fluoride (F-)	mg/L	-	10	0.32	0.10	8317666			
Total Kjeldahl Nitrogen (TKN)	mg/L	1	100	1.5	0.10	8321895			
pH	pH	6.0:9.0	5.5:10.0	7.78		8317668			
Phenols-4AAP	mg/L	0.008	1	ND	0.0010	8326699			
Total Suspended Solids	mg/L	15	350	27	10	8317203	29	10	8317203
Dissolved Sulphate (SO4)	mg/L	-	1500	26	1.0	8317818			
Total Cyanide (CN)	mg/L	0.02	2	ND	0.0050	8315904	ND	0.0050	8315904
Petroleum Hydrocarbons									
Total Oil & Grease	mg/L	-	-	2.0	0.50	8328693			
Total Oil & Grease Mineral/Synthetic	mg/L	-	15	ND	0.50	8328696			
Miscellaneous Parameters									
Nonylphenol Ethoxylate (Total)	mg/L	-	0.2	ND	0.025	8318084			
Nonylphenol (Total)	mg/L	-	0.02	ND	0.001	8318078			
Metals									
Mercury (Hg)	mg/L	0.0004	0.01	ND	0.00010	8314675			
Total Aluminum (Al)	ug/L	-	50000	580	4.9	8320768			
Total Antimony (Sb)	ug/L	-	5000	ND	0.50	8320768			
Total Arsenic (As)	ug/L	20	1000	5.0	1.0	8320768			
Total Cadmium (Cd)	ug/L	8	700	ND	0.090	8320768			
Total Chromium (Cr)	ug/L	80	5000	ND	5.0	8320768			
Total Cobalt (Co)	ug/L	-	5000	1.1	0.50	8320768			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 Criteria: The Regional Municipality of Peel Storm Sewer Discharge.
 By-Law Number 53-2010.
 Criteria-2: The Regional Municipality of Peel Sanitary Sewer Discharge.
 By-Law Number 53-2010.
 ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/08

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

PEEL SANITARY & STORM SEWER (53-2010)

Bureau Veritas ID				UDN173			UDN173		
Sampling Date				2022/10/28 14:45			2022/10/28 14:45		
COC Number				904630-01-01			904630-01-01		
	UNITS	Criteria	Criteria-2	BH-101	RDL	QC Batch	BH-101 Lab-Dup	RDL	QC Batch
Total Copper (Cu)	ug/L	50	3000	1.1	0.90	8320768			
Total Lead (Pb)	ug/L	120	3000	ND	0.50	8320768			
Total Manganese (Mn)	ug/L	50	5000	370	2.0	8320768			
Total Molybdenum (Mo)	ug/L	-	5000	7.3	0.50	8320768			
Total Nickel (Ni)	ug/L	80	3000	2.3	1.0	8320768			
Total Phosphorus (P)	ug/L	-	10000	ND	100	8320768			
Total Selenium (Se)	ug/L	20	1000	ND	2.0	8320768			
Total Silver (Ag)	ug/L	120	5000	ND	0.090	8320768			
Total Tin (Sn)	ug/L	-	5000	1.1	1.0	8320768			
Total Titanium (Ti)	ug/L	-	5000	22	5.0	8320768			
Total Zinc (Zn)	ug/L	40	3000	7.5	5.0	8320768			
Semivolatile Organics									
Bis(2-ethylhexyl)phthalate	ug/L	8.8	12	ND	2.0	8316914			
Di-N-butyl phthalate	ug/L	15	80	ND	2.0	8316914			
Volatile Organics									
Benzene	ug/L	2	10	0.44	0.40	8316663			
Chloroform	ug/L	2	40	ND	0.40	8316663			
1,2-Dichlorobenzene	ug/L	5.6	50	ND	0.80	8316663			
1,4-Dichlorobenzene	ug/L	6.8	80	ND	0.80	8316663			
cis-1,2-Dichloroethylene	ug/L	5.6	4000	ND	1.0	8316663			
trans-1,3-Dichloropropene	ug/L	5.6	140	ND	0.80	8316663			
Ethylbenzene	ug/L	2	160	ND	0.40	8316663			
Methylene Chloride(Dichloromethane)	ug/L	5.2	2000	ND	4.0	8316663			
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	8000	ND	20	8316663			
Styrene	ug/L	-	200	ND	0.80	8316663			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 Criteria: The Regional Municipality of Peel Storm Sewer Discharge.
 By-Law Number 53-2010.
 Criteria-2: The Regional Municipality of Peel Sanitary Sewer Discharge.
 By-Law Number 53-2010.
 ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/08

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

PEEL SANITARY & STORM SEWER (53-2010)

Bureau Veritas ID				UDN173			UDN173		
Sampling Date				2022/10/28 14:45			2022/10/28 14:45		
COC Number				904630-01-01			904630-01-01		
	UNITS	Criteria	Criteria-2	BH-101	RDL	QC Batch	BH-101 Lab-Dup	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/L	17	1400	ND	0.80	8316663			
Tetrachloroethylene	ug/L	4.4	1000	ND	0.40	8316663			
Toluene	ug/L	2	270	ND	0.40	8316663			
Trichloroethylene	ug/L	8	400	ND	0.40	8316663			
p+m-Xylene	ug/L	-	-	ND	0.40	8316663			
o-Xylene	ug/L	-	-	ND	0.40	8316663			
Total Xylenes	ug/L	4.4	1400	ND	0.40	8316663			
PCBs									
Total PCB	ug/L	0.4	1	ND	0.05	8318695			
Microbiological									
Escherichia coli	CFU/100mL	200	-	<10	10	8313975			
Surrogate Recovery (%)									
2,4,6-Tribromophenol	%	-	-	2.0 (1)		8316914			
2-Fluorobiphenyl	%	-	-	56		8316914			
2-Fluorophenol	%	-	-	0.70 (1)		8316914			
D14-Terphenyl	%	-	-	97		8316914			
D5-Nitrobenzene	%	-	-	91		8316914			
D5-Phenol	%	-	-	7.3 (1)		8316914			
Decachlorobiphenyl	%	-	-	71		8318695			
4-Bromofluorobenzene	%	-	-	89		8316663			
D4-1,2-Dichloroethane	%	-	-	114		8316663			
D8-Toluene	%	-	-	90		8316663			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: The Regional Municipality of Peel Storm Sewer Discharge.

By-Law Number 53-2010.

Criteria-2: The Regional Municipality of Peel Sanitary Sewer Discharge.

By-Law Number 53-2010.

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

(1) Surrogate recovery was below our acceptance limit. Since the surrogate standard is not relevant to the analysis of the required phthalate esters, it has been evaluated as having no significant effect on the data reported.



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/08

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

TEST SUMMARY

Bureau Veritas ID: UDN173
Sample ID: BH-101
Matrix: Water

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ABN Compounds in Water by GC/MS	GC/MS	8316914	2022/10/31	2022/11/01	Anh Lieu
Carbonaceous BOD	DO	8314278	2022/10/29	2022/11/03	Gurjot Kaur
Total Cyanide	SKAL/CN	8315904	2022/10/31	2022/10/31	Prgya Panchal
Fluoride	ISE	8317666	2022/10/31	2022/11/03	Kien Tran
Mercury in Water by CVAA	CV/AA	8314675	2022/10/29	2022/10/31	Japneet Gill
Total Metals Analysis by ICPMS	ICP/MS	8320768	N/A	2022/11/03	Rupinder Gill
E.coli, (CFU/100mL)	PL	8313975	N/A	2022/10/28	Farhana Rahman
Total Nonylphenol in Liquids by HPLC	LC/FLU	8318078	2022/11/01	2022/11/02	Furneesh Kumar
Nonylphenol Ethoxylates in Liquids: HPLC	LC/FLU	8318084	2022/11/01	2022/11/02	Furneesh Kumar
Animal and Vegetable Oil and Grease	BAL	8311791	N/A	2022/11/05	Automated Statchk
Total Oil and Grease	BAL	8328693	2022/11/05	2022/11/05	Maulik Jashubhai Patel
Polychlorinated Biphenyl in Water	GC/ECD	8318695	2022/11/01	2022/11/02	Li Peng
pH	AT	8317668	2022/10/31	2022/11/03	Kien Tran
Phenols (4AAP)	TECH/PHEN	8326699	N/A	2022/11/04	Mandeep Kaur
Sulphate by Automated Colourimetry	KONE	8317818	N/A	2022/11/07	Samuel Law
Total Kjeldahl Nitrogen in Water	SKAL	8321895	2022/11/02	2022/11/03	Rajni Tyagi
Mineral/Synthetic O & G (TPH Heavy Oil)	BAL	8328696	2022/11/05	2022/11/05	Maulik Jashubhai Patel
Total Suspended Solids	BAL	8317203	2022/11/01	2022/11/02	Masood Siddiqui
Volatile Organic Compounds in Water	GC/MS	8316663	N/A	2022/11/05	Mariana Cojocar

Bureau Veritas ID: UDN173 Dup
Sample ID: BH-101
Matrix: Water

Collected: 2022/10/28
Shipped:
Received: 2022/10/28

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonaceous BOD	DO	8314278	2022/10/29	2022/11/03	Gurjot Kaur
Total Cyanide	SKAL/CN	8315904	2022/10/31	2022/10/31	Prgya Panchal
Total Suspended Solids	BAL	8317203	2022/11/01	2022/11/02	Masood Siddiqui



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/08

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	13.3°C
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Sample UDN173 [BH-101] : VOC Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314

Report Date: 2022/11/08

QUALITY ASSURANCE REPORT

exp Services Inc

Client Project #: BRM-00257769-D0

ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS

Site Location: PARKWAY, ON

Your P.O. #: ENV – BRM

Sampler Initials: TM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8316663	4-Bromofluorobenzene	2022/11/05	101	70 - 130	102	70 - 130	97	%				
8316663	D4-1,2-Dichloroethane	2022/11/05	103	70 - 130	100	70 - 130	111	%				
8316663	D8-Toluene	2022/11/05	108	70 - 130	107	70 - 130	90	%				
8316914	2,4,6-Tribromophenol	2022/11/01	98	10 - 130	95	10 - 130	67	%				
8316914	2-Fluorobiphenyl	2022/11/01	71	30 - 130	63	30 - 130	69	%				
8316914	2-Fluorophenol	2022/11/01	62	10 - 130	51	10 - 130	43	%				
8316914	D14-Terphenyl	2022/11/01	98	30 - 130	93	30 - 130	85	%				
8316914	D5-Nitrobenzene	2022/11/01	105	30 - 130	83	30 - 130	80	%				
8316914	D5-Phenol	2022/11/01	43	10 - 130	34	10 - 130	29	%				
8318695	Decachlorobiphenyl	2022/11/02	72	60 - 130	81	60 - 130	72	%				
8314278	Total Carbonaceous BOD	2022/11/03					ND,RDL=2	mg/L	NC	30	94	85 - 115
8314675	Mercury (Hg)	2022/10/31	91	75 - 125	95	80 - 120	ND, RDL=0.00010	mg/L	NC	20		
8315904	Total Cyanide (CN)	2022/10/31	97	80 - 120	99	80 - 120	ND, RDL=0.0050	mg/L	NC	20		
8316663	1,1,2,2-Tetrachloroethane	2022/11/05	100	70 - 130	90	70 - 130	ND, RDL=0.40	ug/L	NC	30		
8316663	1,2-Dichlorobenzene	2022/11/05	99	70 - 130	93	70 - 130	ND, RDL=0.40	ug/L	NC	30		
8316663	1,4-Dichlorobenzene	2022/11/05	112	70 - 130	109	70 - 130	ND, RDL=0.40	ug/L	NC	30		
8316663	Benzene	2022/11/05	95	70 - 130	91	70 - 130	ND, RDL=0.20	ug/L	NC	30		
8316663	Chloroform	2022/11/05	99	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC	30		
8316663	cis-1,2-Dichloroethylene	2022/11/05	102	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC	30		
8316663	Ethylbenzene	2022/11/05	96	70 - 130	93	70 - 130	ND, RDL=0.20	ug/L	NC	30		
8316663	Methyl Ethyl Ketone (2-Butanone)	2022/11/05	110	60 - 140	103	60 - 140	ND, RDL=10	ug/L	NC	30		
8316663	Methylene Chloride(Dichloromethane)	2022/11/05	91	70 - 130	95	70 - 130	ND, RDL=2.0	ug/L	NC	30		
8316663	o-Xylene	2022/11/05	95	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30		
8316663	p+m-Xylene	2022/11/05	103	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30		
8316663	Styrene	2022/11/05	111	70 - 130	111	70 - 130	ND, RDL=0.40	ug/L	NC	30		
8316663	Tetrachloroethylene	2022/11/05	90	70 - 130	88	70 - 130	ND, RDL=0.20	ug/L	5.8	30		
8316663	Toluene	2022/11/05	101	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30		



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314

Report Date: 2022/11/08

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc

Client Project #: BRM-00257769-D0

ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS

Site Location: PARKWAY, ON

Your P.O. #: ENV – BRM

Sampler Initials: TM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8316663	Total Xylenes	2022/11/05					ND, RDL=0.20	ug/L	NC	30		
8316663	trans-1,3-Dichloropropene	2022/11/05	115	70 - 130	103	70 - 130	ND, RDL=0.40	ug/L	NC	30		
8316663	Trichloroethylene	2022/11/05	97	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	11	30		
8316914	Bis(2-ethylhexyl)phthalate	2022/11/01	105	30 - 130	104	30 - 130	ND, RDL=2.0	ug/L	NC	40		
8316914	Di-N-butyl phthalate	2022/11/01	101	30 - 130	107	30 - 130	ND, RDL=2.0	ug/L	NC	40		
8317203	Total Suspended Solids	2022/11/02					ND, RDL=10	mg/L	7.1	25	96	85 - 115
8317666	Fluoride (F-)	2022/11/03	100	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	3.8	20		
8317668	pH	2022/11/03			102	98 - 103			0.30	N/A		
8317818	Dissolved Sulphate (SO4)	2022/11/07	NC	75 - 125	108	80 - 120	ND, RDL=1.0	mg/L	0.84	20		
8318078	Nonylphenol (Total)	2022/11/02	97	50 - 130	79	50 - 130	ND, RDL=0.001	mg/L	NC	40		
8318084	Nonylphenol Ethoxylate (Total)	2022/11/02	112	50 - 130	98	50 - 130	ND, RDL=0.025	mg/L	NC	40		
8318695	Total PCB	2022/11/02	67	60 - 130	82	60 - 130	ND, RDL=0.05	ug/L	NC	40		
8320768	Total Aluminum (Al)	2022/11/03	97	80 - 120	95	80 - 120	ND, RDL=4.9	ug/L	0.020	20		
8320768	Total Antimony (Sb)	2022/11/03	114	80 - 120	112	80 - 120	ND, RDL=0.50	ug/L				
8320768	Total Arsenic (As)	2022/11/03	103	80 - 120	104	80 - 120	ND, RDL=1.0	ug/L				
8320768	Total Cadmium (Cd)	2022/11/03	105	80 - 120	105	80 - 120	ND, RDL=0.090	ug/L	NC	20		
8320768	Total Chromium (Cr)	2022/11/03	95	80 - 120	96	80 - 120	ND, RDL=5.0	ug/L	NC	20		
8320768	Total Cobalt (Co)	2022/11/03	96	80 - 120	98	80 - 120	ND, RDL=0.50	ug/L				
8320768	Total Copper (Cu)	2022/11/03	97	80 - 120	97	80 - 120	ND, RDL=0.90	ug/L	0.50	20		
8320768	Total Lead (Pb)	2022/11/03	99	80 - 120	99	80 - 120	ND, RDL=0.50	ug/L	NC	20		
8320768	Total Manganese (Mn)	2022/11/03	95	80 - 120	97	80 - 120	ND, RDL=2.0	ug/L				
8320768	Total Molybdenum (Mo)	2022/11/03	102	80 - 120	101	80 - 120	ND, RDL=0.50	ug/L				
8320768	Total Nickel (Ni)	2022/11/03	95	80 - 120	97	80 - 120	ND, RDL=1.0	ug/L	NC	20		
8320768	Total Phosphorus (P)	2022/11/03	99	80 - 120	104	80 - 120	ND, RDL=100	ug/L				
8320768	Total Selenium (Se)	2022/11/03	106	80 - 120	108	80 - 120	ND, RDL=2.0	ug/L				
8320768	Total Silver (Ag)	2022/11/03	102	80 - 120	102	80 - 120	ND, RDL=0.090	ug/L				



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314

Report Date: 2022/11/08

QUALITY ASSURANCE REPORT(CONT'D)

exp Services Inc

Client Project #: BRM-00257769-D0

ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS

Site Location: PARKWAY, ON

Your P.O. #: ENV – BRM

Sampler Initials: TM

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8320768	Total Tin (Sn)	2022/11/03	106	80 - 120	105	80 - 120	ND, RDL=1.0	ug/L				
8320768	Total Titanium (Ti)	2022/11/03	96	80 - 120	98	80 - 120	ND, RDL=5.0	ug/L				
8320768	Total Zinc (Zn)	2022/11/03	102	80 - 120	106	80 - 120	ND, RDL=5.0	ug/L	4.3	20		
8321895	Total Kjeldahl Nitrogen (TKN)	2022/11/04	101	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L	NC	20	101	80 - 120
8326699	Phenols-4AAP	2022/11/04	102	80 - 120	100	80 - 120	ND, RDL=0.0010	mg/L	11	20		
8328693	Total Oil & Grease	2022/11/05			99	85 - 115	ND, RDL=0.50	mg/L	0.25	25		
8328696	Total Oil & Grease Mineral/Synthetic	2022/11/05			97	85 - 115	ND, RDL=0.50	mg/L	0.52	25		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/08

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Farhana Rahman, Senior Analyst

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.



MICRO

Bureau Veritas
8710 Campbellville Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6206 Fax: (905) 817-5777 www.bvna.com

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #30554 exp Services Inc		Company Name: EXP Services Inc		Quotation #: C20374		Bureau Veritas Job #:	
Attention: Accounts Payable		Attention: Francois Chartier		P.O. #: ENV - BRM		Bottle Order #:	
Address: 1595 Clark Blvd		Address: Peyman.Sayyah@exp.com		Project: BRM-00257769-D0		COC #:	
Brampton ON L8T 4V1		Thabiso Modise@exp.com		Project Name: Erin Mills Town Centre - 5100		Project Manager:	
Tel: (905) 793-9800 Fax: (905) 793-0641		Tel: (905) 793-9800 Ext: 2523 Fax:		Site #: Erin Mills Town Centre - 5100		Patricia Legette	
Email: AP@exp.com; Karen.Burke@exp.com		Email: Francois.Chartier@exp.com		Sampled By: Thabiso Modise		C9904630-01-01	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects				
Regulation 153 (2011)			Other Regulations			Special Instructions	Field Filtered (please circle): Metals / hg / Cr / VI	PEEL Sanitary & Storm Sewer (S3-20-D)											Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input checked="" type="checkbox"/> Sanitary Sewer Bylaw	Special Instructions PEEL REGION		NO	✓											Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)	
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input checked="" type="checkbox"/> Storm Sewer Bylaw															# of Bottles: _____ Comments: _____	
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality															28-Oct-22 16:56 Patricia Legette C2V6314	
<input type="checkbox"/> Table _____			<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 405 Table															DSG ENV-1487	
Include Criteria on Certificate of Analysis (C/N)? <input checked="" type="checkbox"/>																				
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix																
1	BH-101	23/Oct/22	14:45	GW											17 PLEASE INCLUDE COC IN COA					
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

* RELINQUISHED BY: (Signature/Print) Thabiso Modise		Date: (YY/MM/DD) 22/10/23	Time 17:55	RECEIVED BY: (Signature/Print) [Signature]		Date: (YY/MM/DD) 20/10/23	Time 16:56	# jars used and not submitted	Laboratory Use Only				
								Time Sensitive		Temperature (°C) on Reel 13/14/18	Custody Seal Present	Yes	No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COCC-TERMS-AND-CONDITIONS.

** IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

SAMPLES MUST BE KEPT COOL (< 10° C.) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client
OK - ice



BUREAU
VERITAS

Bureau Veritas Job #: C2V6314
Report Date: 2022/11/08

exp Services Inc
Client Project #: BRM-00257769-D0
Site Location: ERIN MILLS TOWN CENTRE – 5100 ERIN MILLS
PARKWAY, ON
Your P.O. #: ENV – BRM
Sampler Initials: TM

Exceedance Summary Table – Peel Region Storm 2010

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
BH-101	UDN173-07	Total Kjeldahl Nitrogen (TKN)	1	1.5	0.10	mg/L
BH-101	UDN173-08	Total Manganese (Mn)	50	370	2.0	ug/L
BH-101	UDN173-06	Total Suspended Solids	15	27	10	mg/L
BH-101	UDN173-06-Lab Dup	Total Suspended Solids	15	29	10	mg/L

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

Exceedance Summary Table – Peel Region Sanitary 2010

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

Appendix E – Construction and Post-Construction Flow Rate Calculations

APPENDIX E: Dewatering Flow Rates

Erin Mills Town Centre
GTR-00257769-H0

Table E-1: Construction and Post Construction Dewatering Assessments

Parameters	Symbols	Unit	PHASE 1 BUILDING A		PHASE 2 BUILDING B AND G (Combined)		PHASE 3 BUILDING C AND D (Combined)		PHASE 4 BUILDING E AND H (Combined)		PHASE 5 BUILDING F1-F2 (Combined)	
			Construction	Post Construction	Construction	Post Construction	Construction	Post Construction	Construction	Post Construction	Construction	Post Construction
			Glacial Deposit	Glacial Deposit	Glacial Deposit	Glacial Deposit	Glacial Deposit	Glacial Deposit	Glacial Deposit	Glacial Deposit	Glacial Deposit	Glacial Deposit
INPUTS												
Ground Elevation	-	mASL	175.97	175.97	176.44	176.44	177.03	177.03	176.22	176.22	175.16	175.16
Highest Groundwater Elevation	-	mASL	171.05	171.05	171.82	171.82	172.30	172.30	171.15	171.15	170.92	170.92
Lowest Top Slab Elevation	-	mASL	160.57	160.57	161.04	161.04	161.63	161.63	160.82	160.82	159.76	159.76
Lowest Foundation Invert Elevation	-	mASL	159.07	-	159.54	-	160.13	-	159.32	-	158.26	-
Height of Static Water Table Above the Base of the Water-Bearing Zone	H	m	25.05	25.05	25.82	15.82	26.30	16.30	25.15	15.15	24.92	14.92
Dewatering Target Elevation	-	mASL	158.07	160.07	158.54	160.54	159.13	161.13	158.32	160.32	157.26	159.26
Height of Target Water Level Above the Base of Water-Bearing Zone	h _w	m	12.07	14.07	12.54	4.54	13.13	5.13	12.32	4.32	11.26	3.26
Drawdown	s	m	12.98	10.98	13.28	11.28	13.17	11.17	12.84	10.84	13.68	11.68
Dupuit Check (< 45%)	-	m	48%	56%	49%	29%	50%	31%	49%	28%	45%	22%
Base of Aquifer / Water Bearing Zone	-	mASL	146.00	146.00	146.00	156.00	146.00	156.00	146.00	156.00	146.00	156.00
Hydraulic Conductivity	K	m/s	4.5E-07	4.5E-07	4.5E-07	4.5E-07	4.5E-07	4.5E-07	4.5E-07	4.5E-07	4.5E-07	4.5E-07
Length of Excavation	-	m	70.00	70.00	100.00	100.00	110.00	110.00	90.00	90.00	130.00	130.00
Width of Excavation	-	m	70.00	70.00	110.00	110.00	110.00	110.00	90.00	90.00	40.00	40.00
Area of Excavation	-	m ²	4,900	4,900	11,000	11,000	12,100	12,100	8,100	8,100	5,200	5,200
Equivalent Radius (equivalent perimeter)	r _e	m	44.56	44.56	66.85	66.85	70.03	70.03	57.30	57.30	54.11	54.11
Method to Calculate Radius of Influence	-	-	Cooper-Jacob	Cooper-Jacob	Cooper-Jacob	Cooper-Jacob	Cooper-Jacob	Cooper-Jacob	Cooper-Jacob	Cooper-Jacob	Cooper-Jacob	Cooper-Jacob
Time (days)	-	-	30.00	365.00	30.00	365.00	30.00	365.00	30.00	365.00	30.00	365.00
Time (seconds)	t	s	2,592,000	31,536,000	2,592,000	31,536,000	2,592,000	31,536,000	2,592,000	31,536,000	2,592,000	31,536,000
Specific Yield	Sy	-	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
OUTPUTS												
Cooper-Jacob's Radius of Influence from Sides of Excavation	R _{cj}	m	25.53	89.06	25.92	70.78	26.16	71.84	25.58	69.26	25.47	68.74
Radius of Influence	R _o	m	70.10	133.63	92.77	137.62	96.19	141.87	82.88	126.56	79.58	122.85
Dewatering Flow Rate (unconfined radial flow component)	Q	m ³ /day	128.85	47.38	188.29	38.52	198.16	41.07	157.78	32.24	155.24	31.32
Factor of Safety	fs	-	2.00	1.50	2.00	1.50	2.00	1.50	2.00	1.50	2.00	1.50
Dewatering Flow Rate (multiplied by factor of safety)	Q.fs	m ³ /day	258	71	377	58	396	62	316	48	310	47
Precipitation Event	-	mm/day	25	-	25	-	25	-	25	-	25	-
Volume from Precipitation	-	m ³ /day	123	-	275	-	303	-	203	-	130	-
Total Volume (L/day) Discharge of Groundwater (Construction dewatering) without Safety Factor (including precipitation)	-	m ³ /day	251	-	463	-	501	-	360	-	285	-
Total Volume (L/day) Discharge of Groundwater (Construction dewatering) with Safety Factor (including precipitation)	-	m ³ /day	380	-	652	-	699	-	518	-	440	-
Precipitation Event 2 year storm	-	mm/day	57	-	57	-	57	-	57	-	57	-
Volume from Precipitation	-	m ³ /event	279	-	627	-	690	-	462	-	296	-
Precipitation Event 100 year storm	-	mm/day	124.4	-	124.4	-	124.4	-	124.4	-	124.4	-
Volume from Precipitation	-	m ³ /event	610	-	1,368	-	1,505	-	1,008	-	647	-

Notes:
mASL - meters above sea level

Analytical Solution for Estimating Radial Flow from an Unconfined Aquifer to a Fully-Penetrating Excavation

$$Q_w = \frac{\pi K (H^2 - h_w^2)}{\ln \left[\frac{R_o}{r_e} \right]} \quad \text{(Based on the Dupuit-Forchheimer Equation)}$$

$$r_e = \frac{a+b}{\pi} \quad R_o = R_{cj} + r_e \quad R_{cj} = \sqrt{2.25KDt/S}$$

Where:
 Q_w = Flow rate per unit length of excavation (m³/s)
 K = Hydraulic conductivity (m/s)
 H = Height of static water table above base of water-bearing zone (m)
 h_w = Height of target water level above the base of water-bearing zone (m)
 R_{cj} = Cooper Jacob Radius of Influence (m)
 R_o = Radius of influence (m)
 r_e = Equivalent perimeter (m)

Appendix F – ORMGP

Thickness of Overburden_5100 Erin Mills Parkway, Mississauga, ON

Legend

Quaternary Sediment Thickness (depth) (ORMGP)



343.1 0 171.55 343.1 Km

1: 6,754



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This map is for information purposes only and the Oak Ridges Moraine Groundwater Program takes no responsibility for, nor guarantees, the accuracy of all the information contained within the map.

SOURCE: ORMGP, 2022; MNRF, 2022;
PROJECTION: WGS_1984_Web_Mercator_Auxiliary_Sphere
DATE PRINTED: October 20, 2022

Top of Halton_5100 Erin Mills Parkway, Mississauga, ON

Legend

 Top of Halton Till (or equiv.) (mASL)



 **Region of Peel**
working with you

343.1 0 171.55 343.1 Km

1: 6,754



© Oak Ridges Moraine Groundwater Program, 2022
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Program, 101 Exchange Avenue, Vaughan, Ontario, M3N 1S4
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SOURCE: ORMGP, 2022; MNR, 2022;
PROJECTION: WGS_1984_Web_Mercator_A
uxiliary_Sphere
DATE PRINTED: October 20, 2022

Top of Bedrock_5100 Erin Mills Parkway, Mississauga, ON

Legend

Bedrock (mASL)



Region of Peel
working with you

343.1 0 171.55 343.1 Km

1: 6,754



© Oak Ridges Moraine Groundwater Program, 2022

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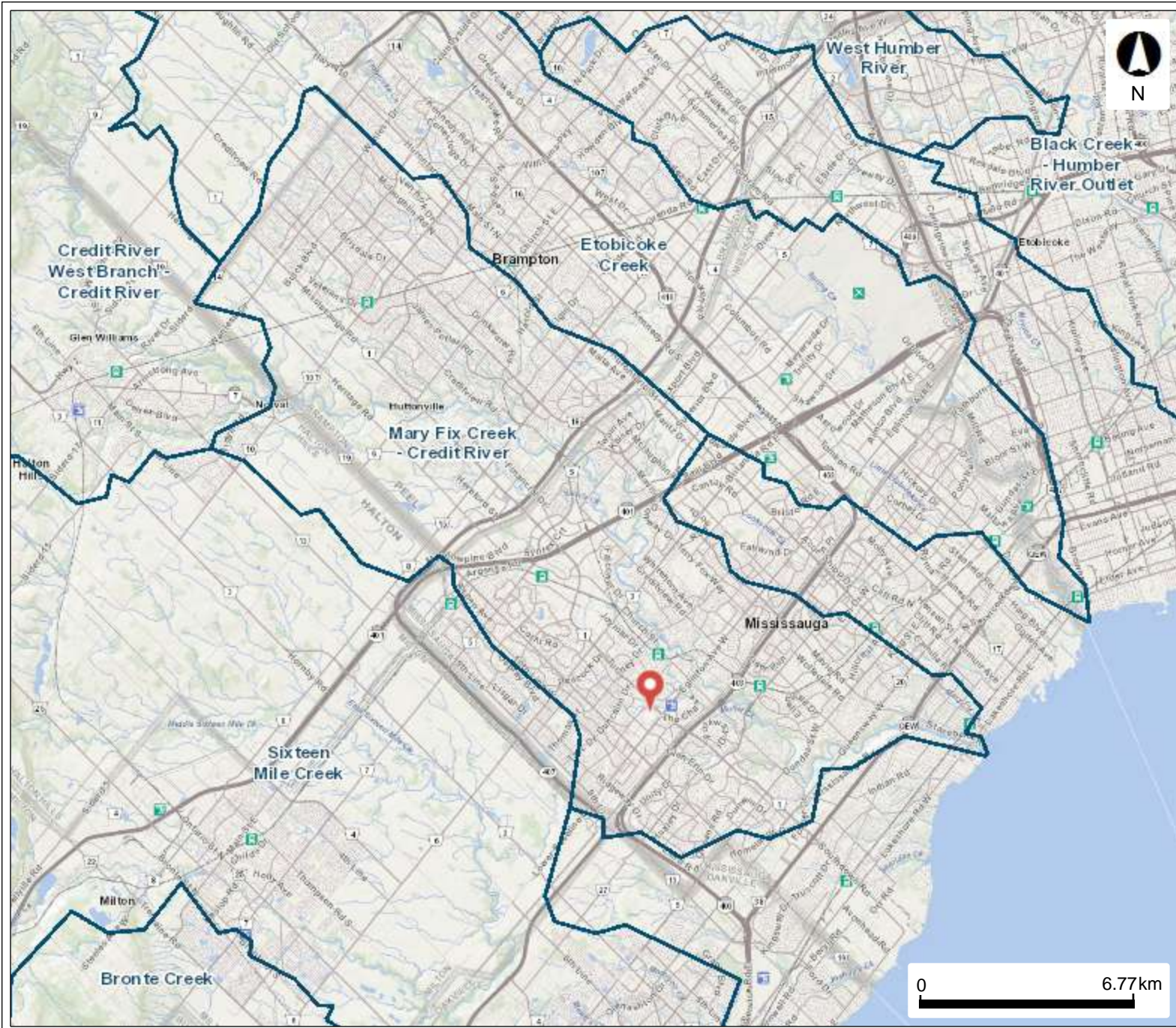
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SOURCE: ORMGP, 2022; MNR, 2022;


PROJECTION: WGS_1984_Web_Mercator_Auxiliary_Sphere

DATE PRINTED: October 20, 2022

Watershed_5100 Erin Mills Parkway, Mississauga, ON

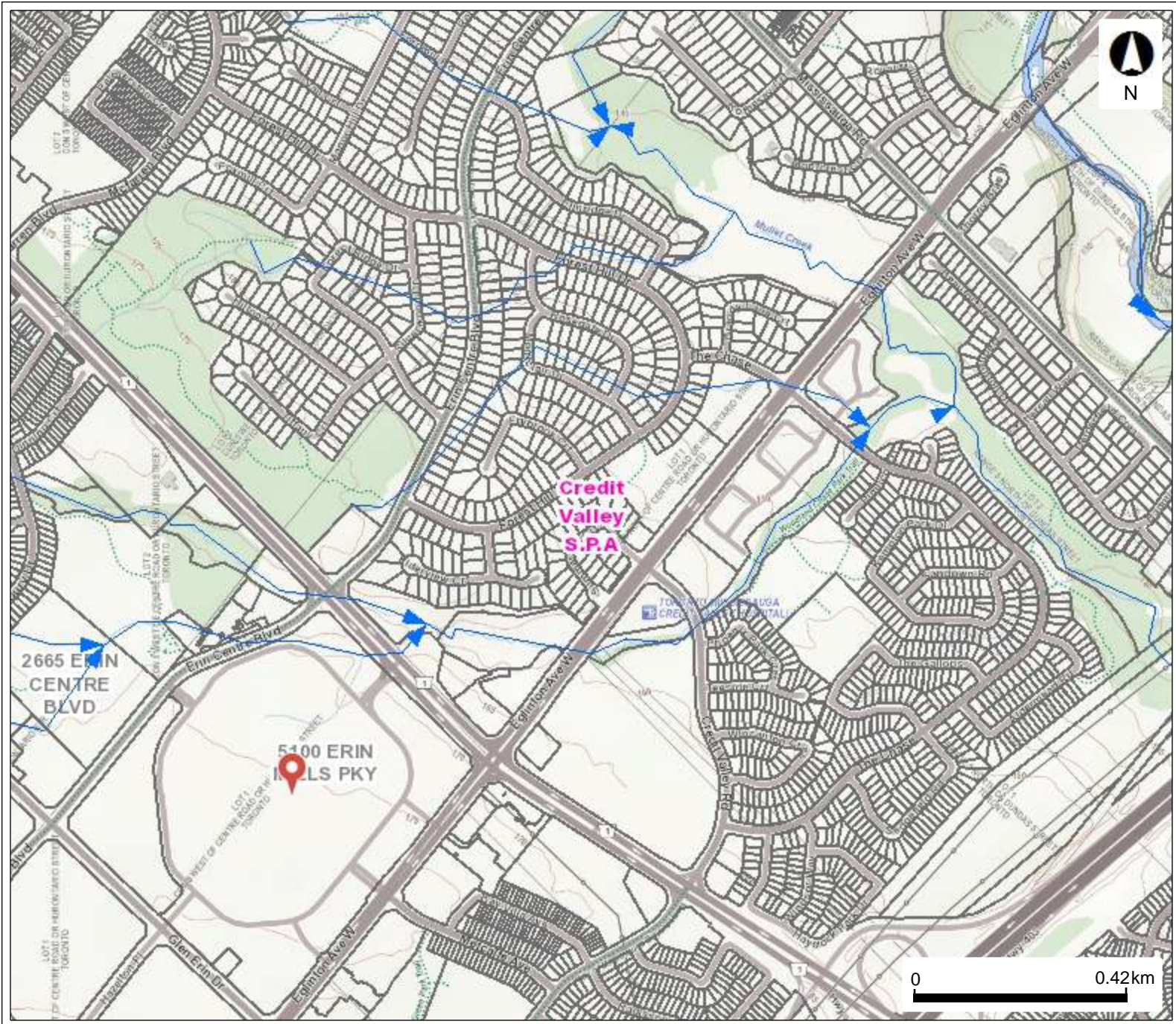


Legend

 Quaternary

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Environment, Conservation and Parks (MECP) shall not be liable in any way for the use or any information on this map. of, or reliance upon, this map.

Surface Water Features_5100 Erin Mills Parkway, Mississauga, ON

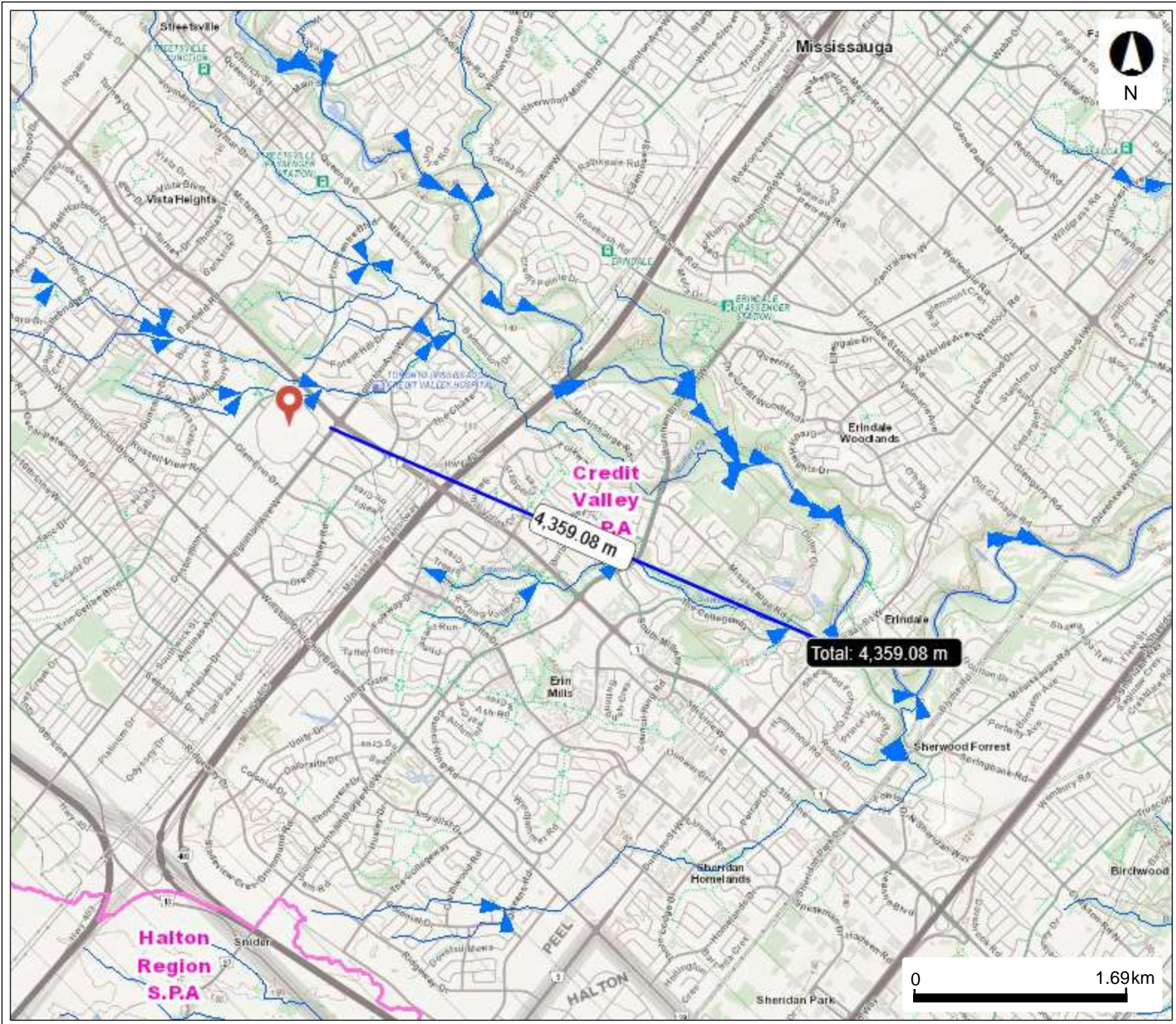


Legend

- ▶ Watercourse Direction
- Source Protection Areas
- Assessment Parcel with Address

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Environment, Conservation and Parks (MECP) shall not be liable in any way for the use or any information on this map. of, or reliance upon, this map.

Surface Water Features_5100 Erin Mills Parkway, Mississauga, ON



Legend

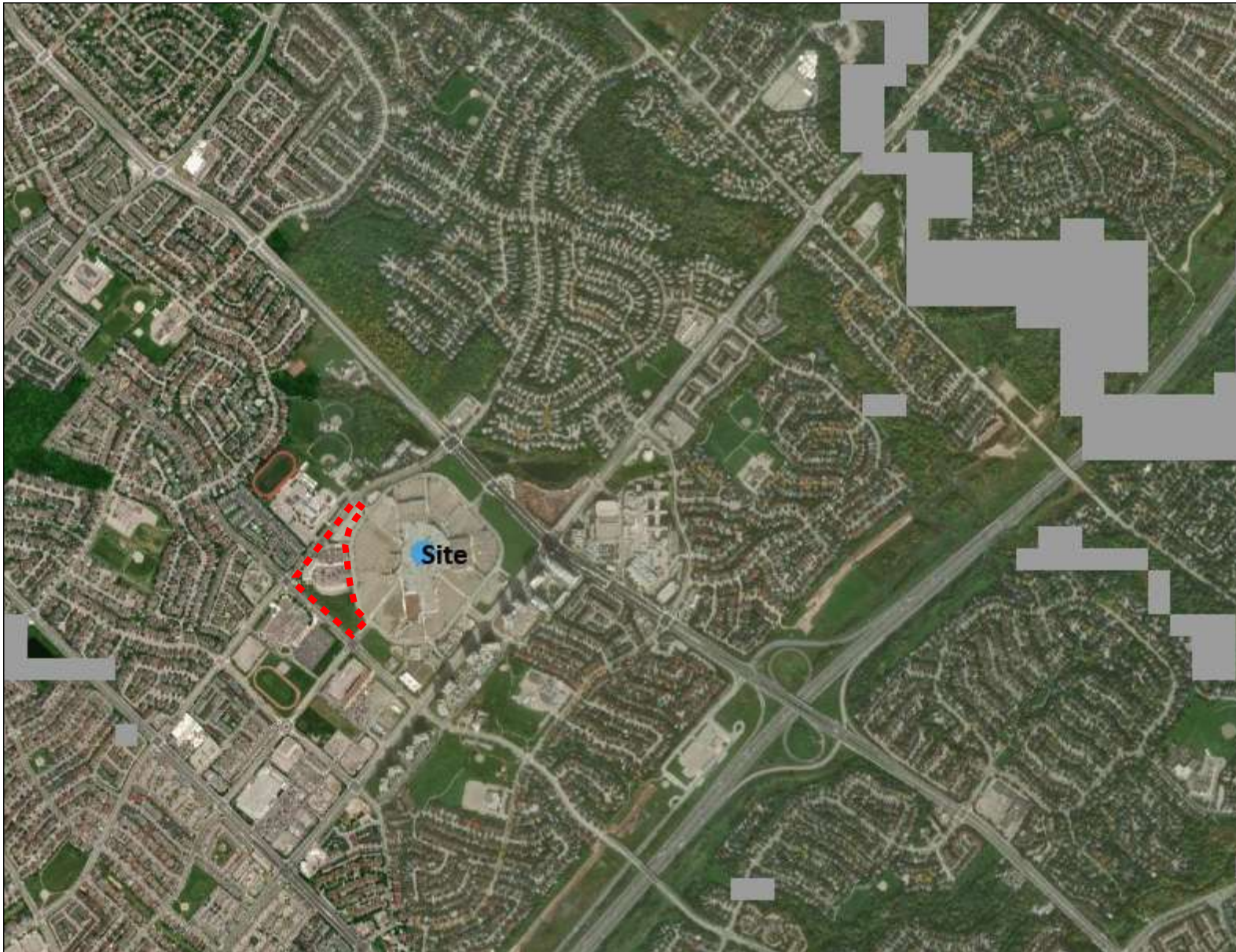
- ▶ Watercourse Direction
- Source Protection Areas

N

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Environment, Conservation and Parks (MECP) shall not be liable in any way for the use or any information on this map. of, or reliance upon, this map.

Legend

■ Potential Discharge Areas (WT0)



1,372.4 0 686.19 1,372.4 Km

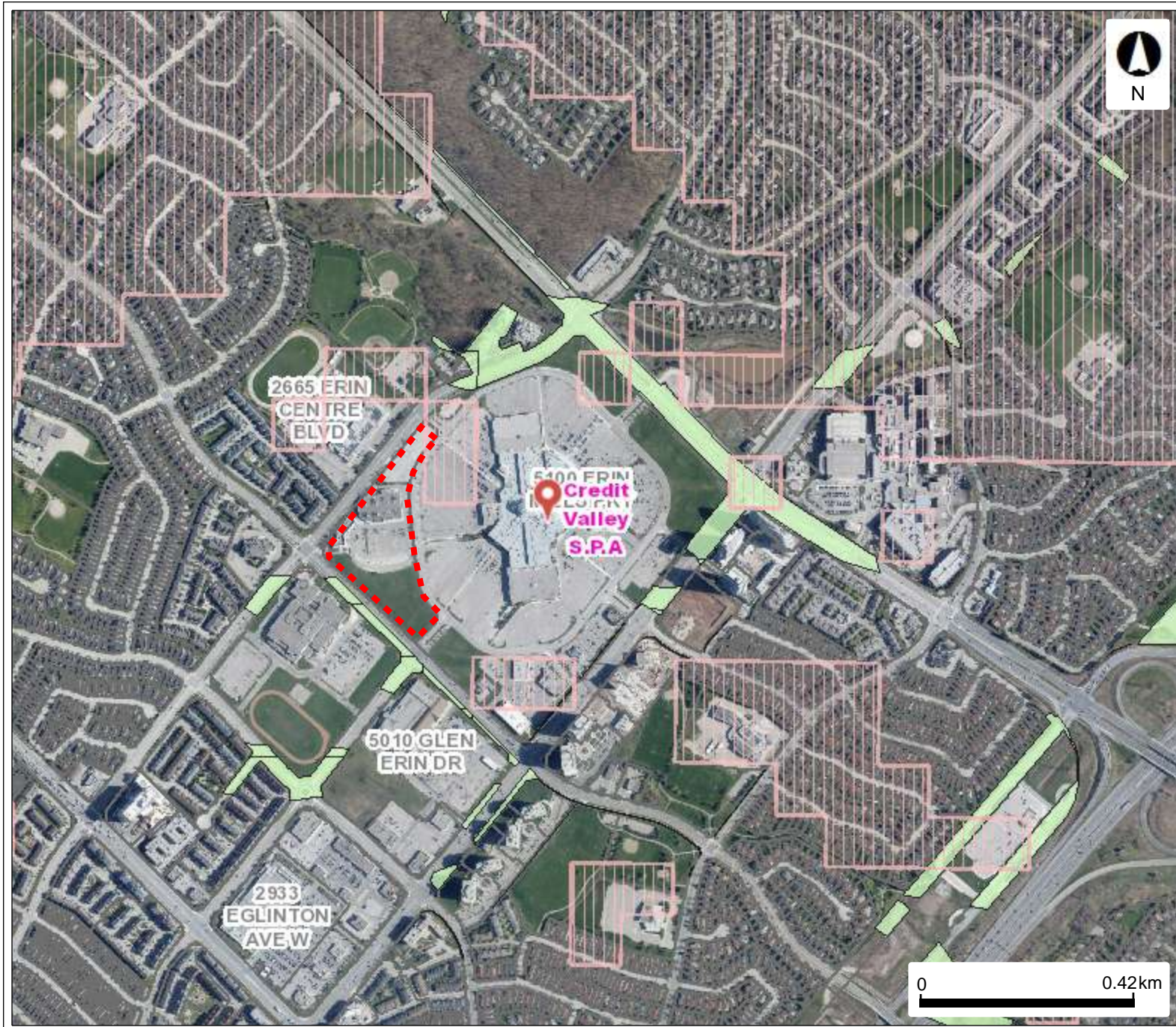
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SOURCE: ORMGP, 2022; MNR, 2022;
PROJECTION: WGS_1984_Web_Mercator_A
uxiliary_Sphere
DATE PRINTED: October 20, 2022

HVA & SGWRA_5100 Erin Mills Parkway, Mississauga, ON

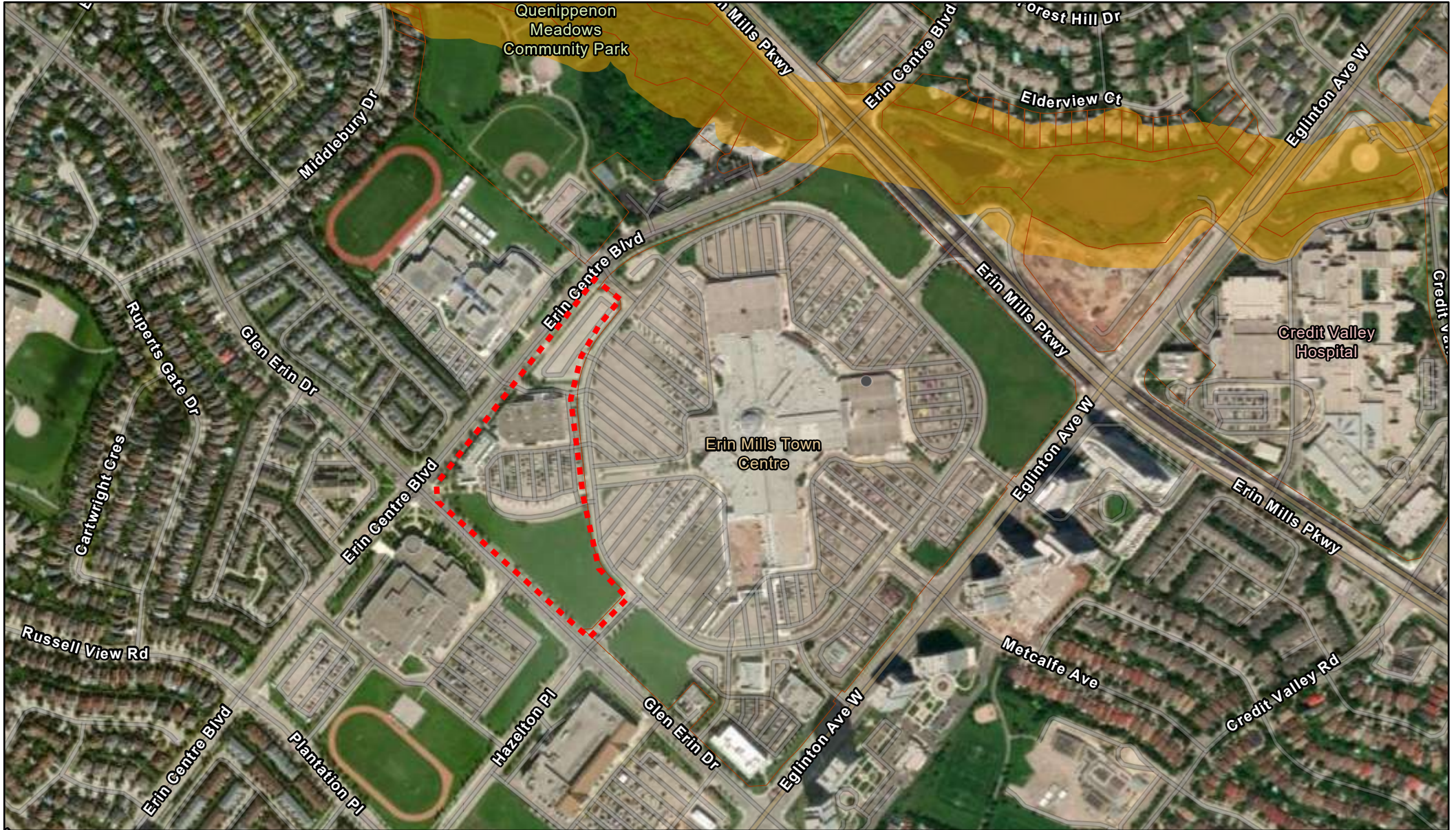


Legend

- Source Protection Areas
- Highly Vulnerable Aquifers
- Significant Groundwater Recharge Area
 - 0
 - 2
 - 4
 - 6
- Assessment Parcel with Address

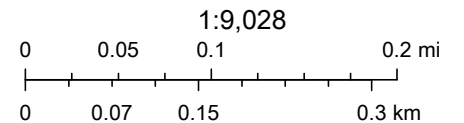
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Regulation Screening- Credit Valley Conservation



10/21/2022, 12:07:54 PM

- Credit River Watershed Boundary
- Parcels around Regulated Area
- Generic Regulation Mapping



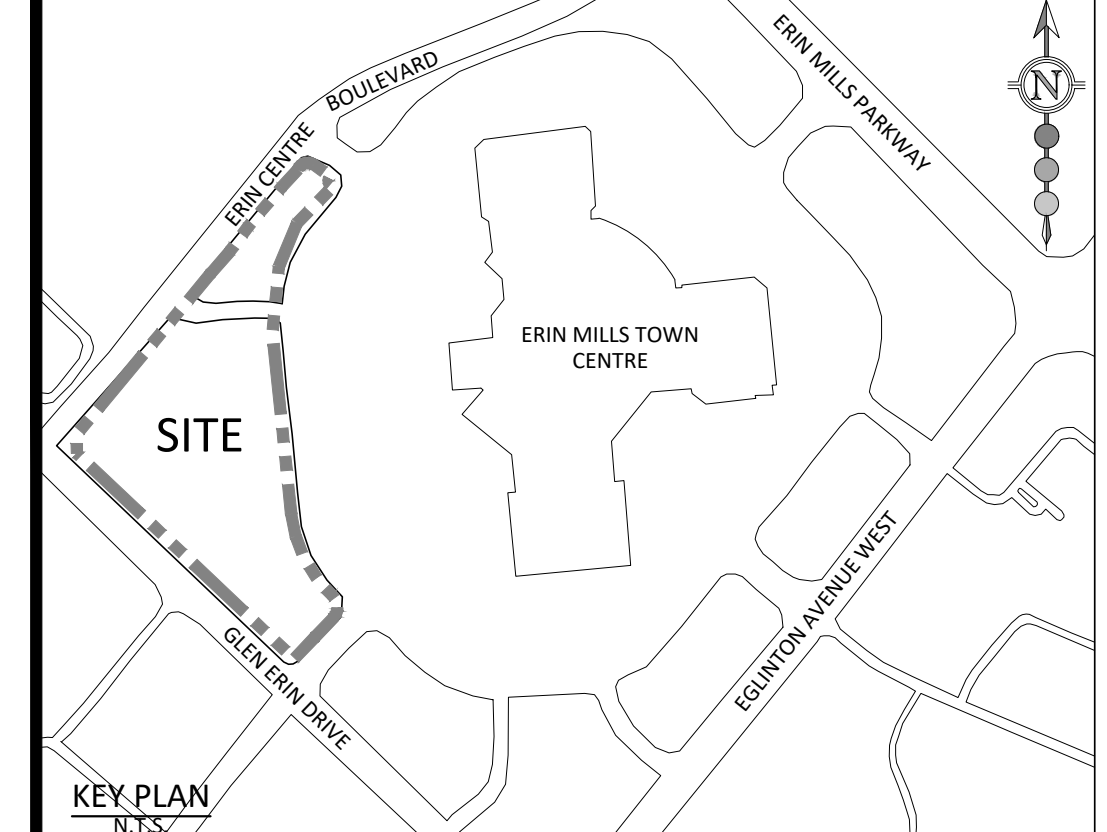
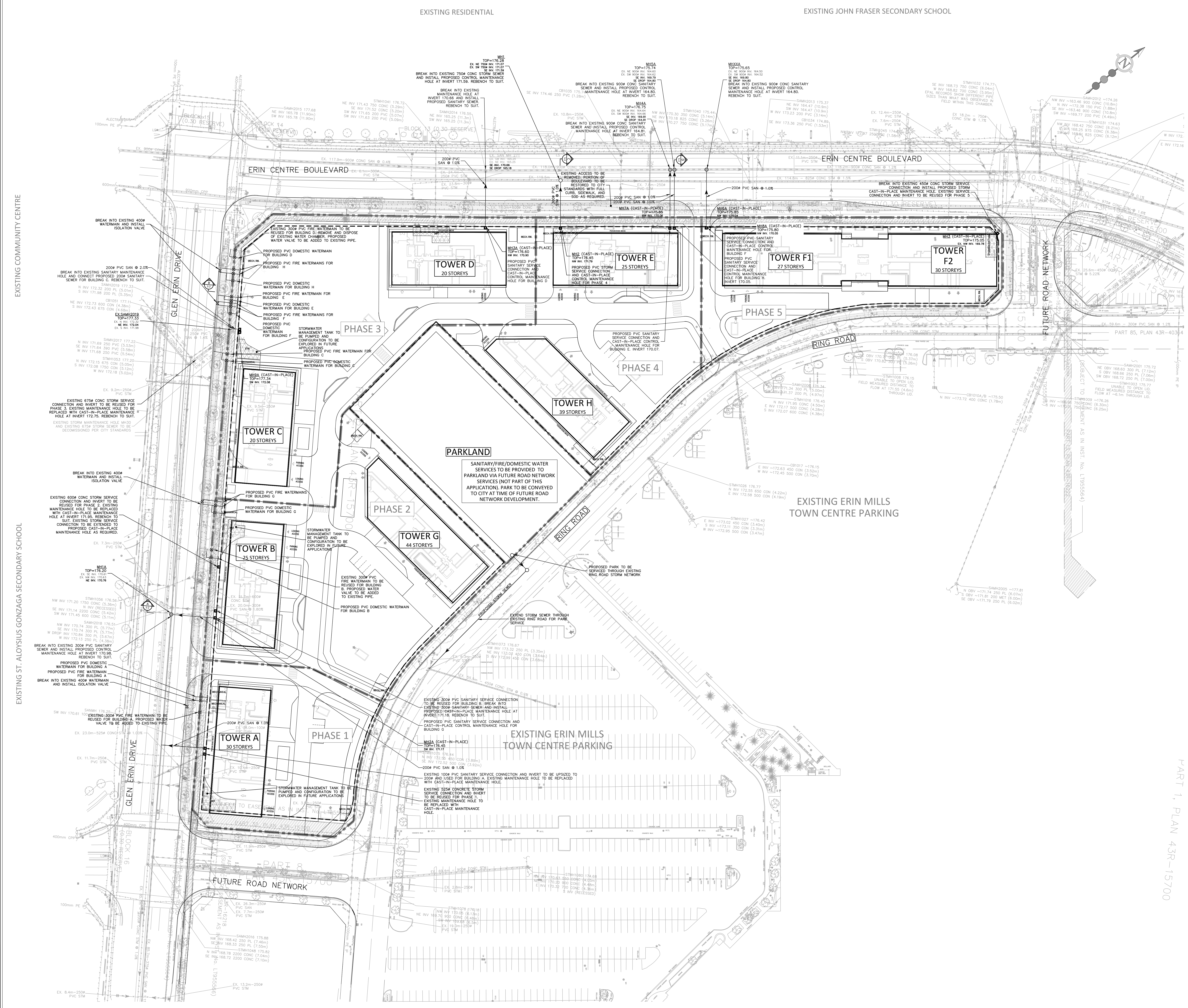
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Credit Valley Conservation

APPENDIX G

DRAWINGS





BENCHMARK: ELEV. 169.786
 ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO CITY OF MISSISSAUGA BENCHMARK NO. 866 LOCATED AT THE NORTHEAST CORNER OF ERIN MILLS PARKWAY AND ERIN CENTRE BOULEVARD, HAVING A PUBLISHED ELEVATION OF 169.786 METRES

- LEGEND:**
- LIMIT OF PROPERTY
 - PHASE LIMIT
 - SANITARY MANHOLE AND SEWER
 - STORM MANHOLE AND SEWER
 - CAST-IN-PLACE SANITARY MAINTENANCE HOLE
 - CAST-IN-PLACE STORM MAINTENANCE HOLE
 - WATER VALVE
 - UNDERGROUND STORMWATER MANAGEMENT CHAMBER
 - EXISTING FIRE HYDRANT
 - EXISTING SANITARY SEWER
 - EXISTING ROGERS COAXIAL
 - EXISTING BELL TELECOMMUNICATIONS
 - EXISTING WATER
 - EXISTING UNKNOWN CONDUCTIVE SIGNAL
 - EXISTING HYDRANT
 - EXISTING TRAFFIC LIGHT
 - EXISTING GAS
 - EXISTING ROGERS FIBER OPTIC
 - EXISTING STREETLIGHT
 - EXISTING STORM SEWER
 - EASEMENT ON SUBJECT LAND SUBJECT TO INST. NO. L1955564

NOTE: DESIGN SHOWN HEREIN IS FOR DARCO OPA/ZBA SUBMISSION PURPOSES ONLY. FURTHER DETAILS TO BE PROVIDED IN SUPPORT OF A FUTURE SITE PLAN APPLICATION.

PROPERTY AS PART OF REGISTERED PLAN 43R-15700
 TOPOGRAPHIC SURVEY PROVIDED BY SCHAEFFER QUALITY BENNETT LTD., FEBRUARY 2024

REVISIONS			
No.	DESCRIPTION	DATE	BY / APPROVED
1	ISSUED FOR DARCO OPA/ZBA SUBMISSION	OCT 29/24	D.S.

CITY OF MISSISSAUGA

EMTC HOLDINGS INC.
 5100 ERIN MILLS PARKWAY - ERIN MILLS TOWN CENTRE PH. 1

SERVICING PLAN

DATE: OCTOBER 2024 DESIGNED BY: D.S. CHECKED BY: P.C.
 SCALE: 1:500 DRAWN BY: D.S. CHECKED BY: P.C.

PROJECT NO: 2228
 DRAWING NO: S-1

SGS consulting group ltd
 30 CENTURION DRIVE, SUITE 500
 MARKHAM, ONTARIO L3R 8B8
 TEL: (905) 475-3300
 FAX: (905) 475-8335

D. P. R. SHORE
 PROFESSIONAL ENGINEER
 PREVIOUS OF ONTARIO

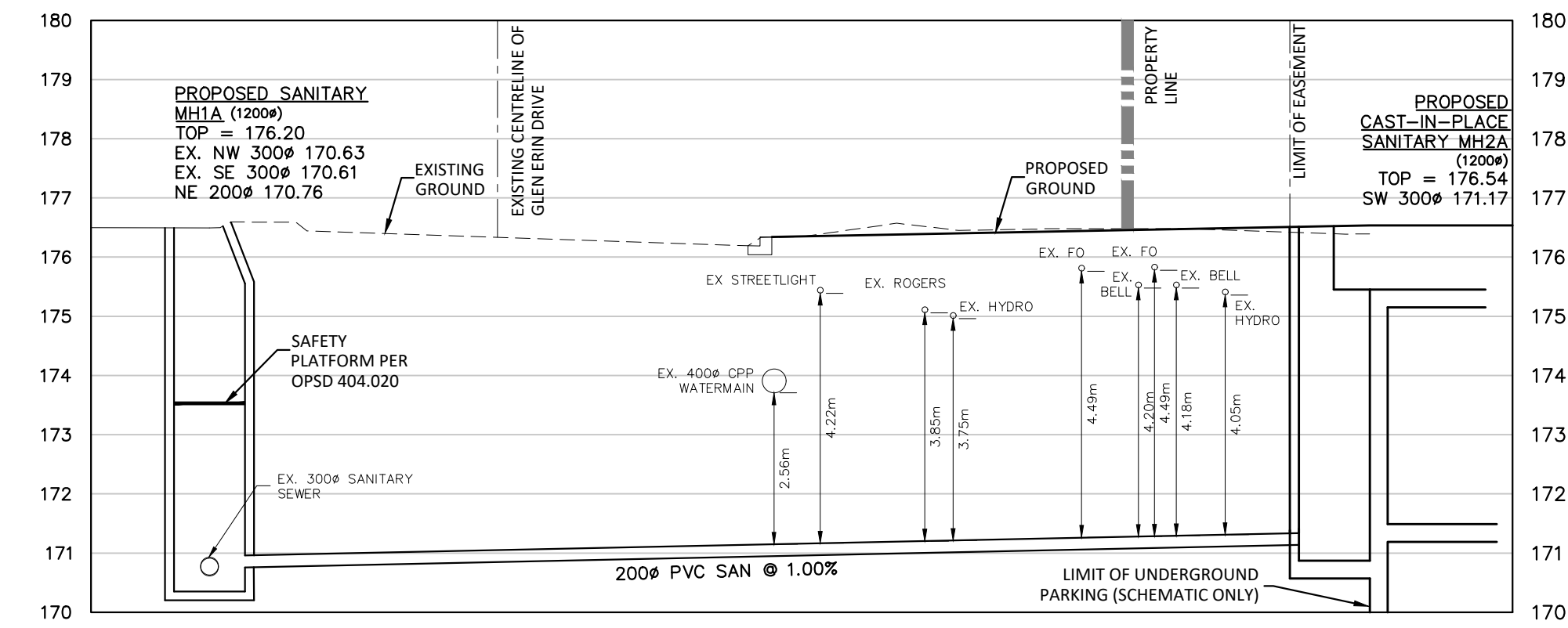
EXISTING COMMUNITY CENTRE

EXISTING ST. ALOYSIUS GONZAGA SECONDARY SCHOOL

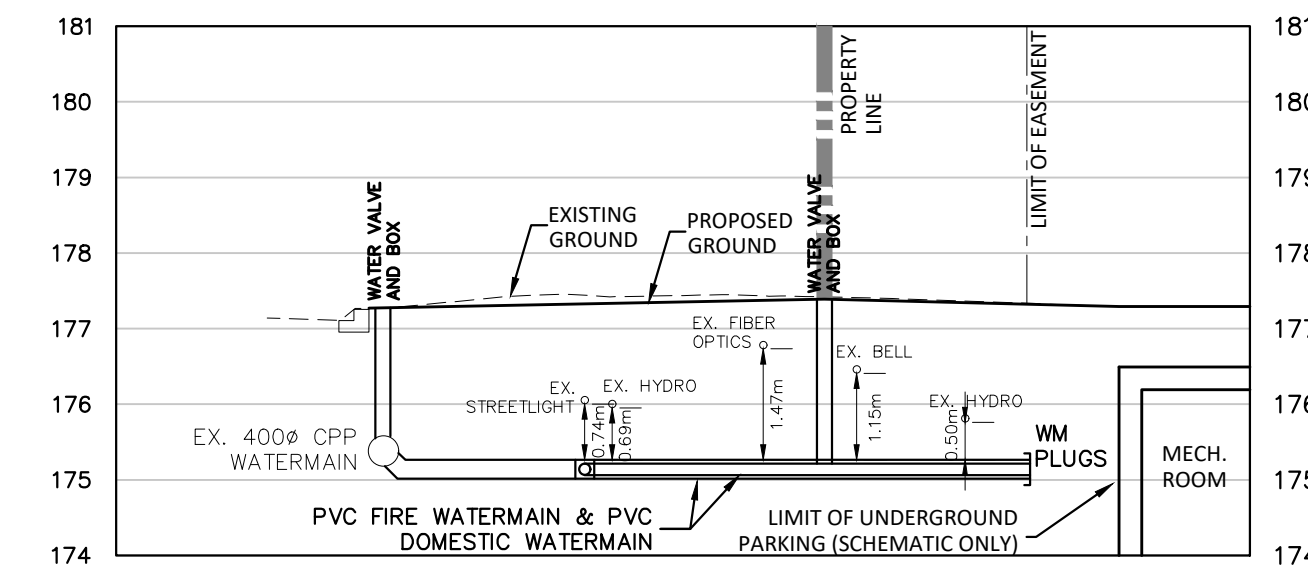
EXISTING RESIDENTIAL

EXISTING JOHN FRASER SECONDARY SCHOOL

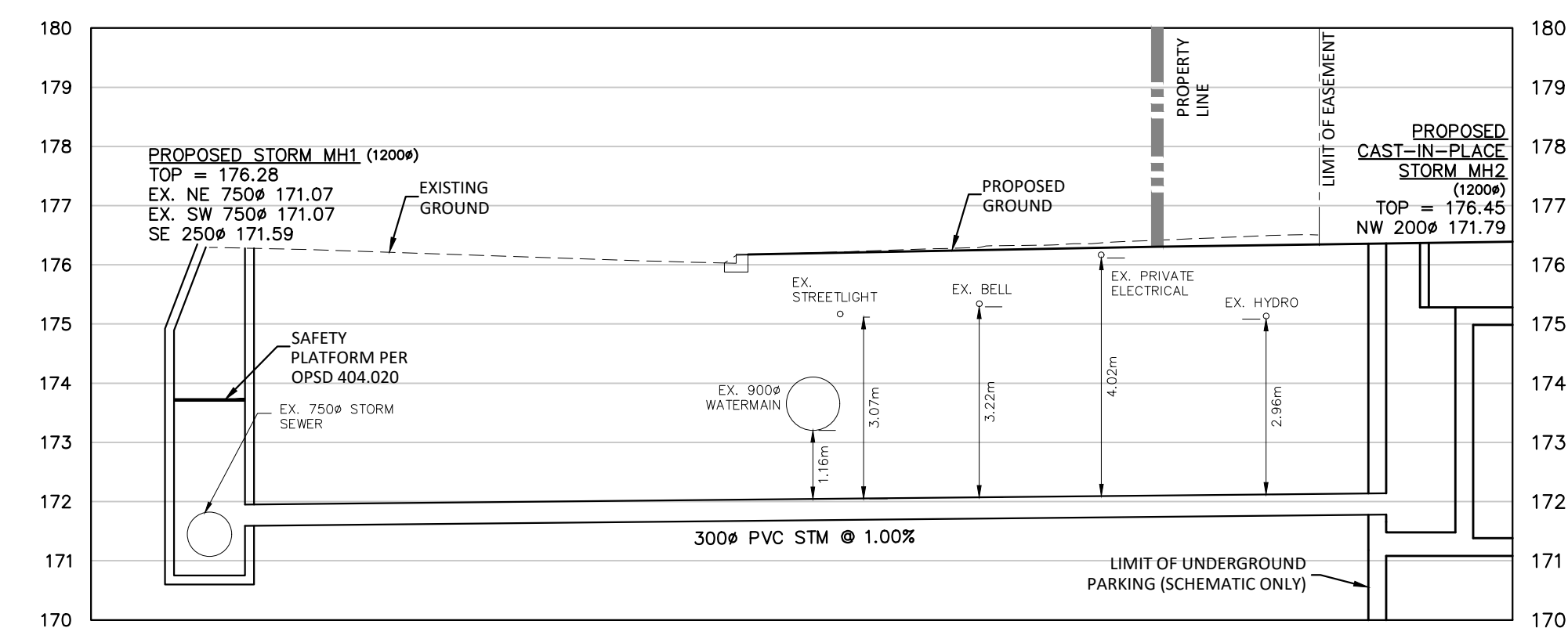
PART 1, PLAN 43R-15700



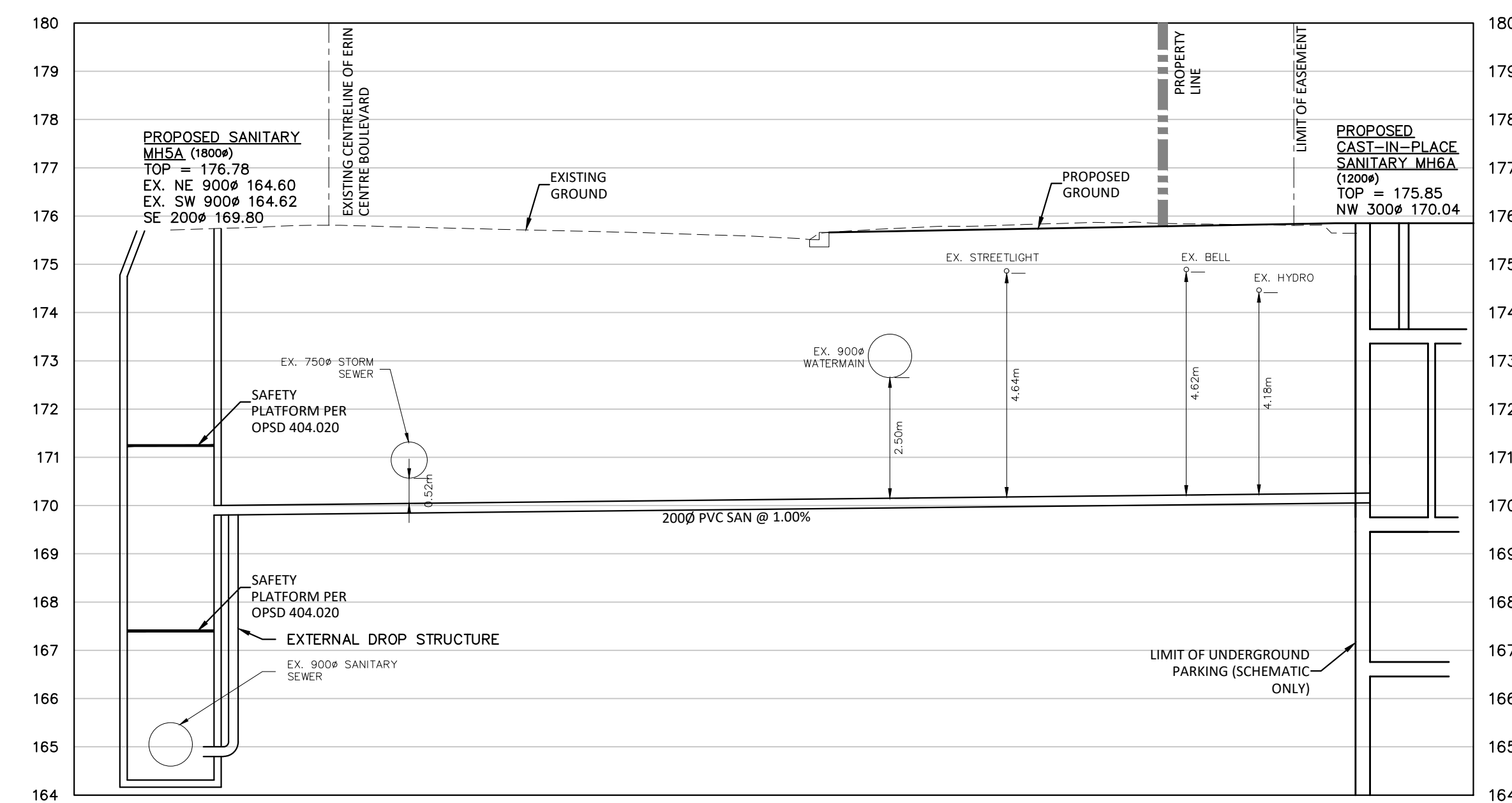
A EXAMPLE SANITARY SERVICE CONNECTION - GLEN ERIN DRIVE
SCALE 1:50



B EXAMPLE WATER CONNECTION - GLEN ERIN DRIVE
SCALE 1:50



C EXAMPLE STORM SERVICE CONNECTION - ERIN CENTRE BOULEVARD
SCALE 1:50



D EXAMPLE SANITARY SERVICE CONNECTION - ERIN CENTRE BOULEVARD
SCALE 1:50

NOTE: DESIGN SHOWN HEREIN IS FOR DARC OPA/ZBA SUBMISSION PURPOSES ONLY. FURTHER DETAILS TO BE PROVIDED IN SUPPORT OF A FUTURE SITE PLAN APPLICATION.

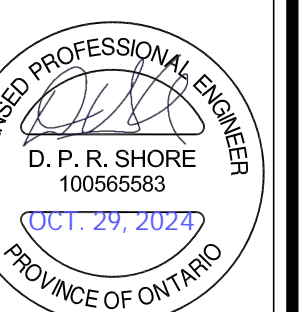
NOTE: EXAMPLE SERVICING CROSS SECTIONS SHOWN TO ILLUSTRATE ADEQUATE CROSSING AND SERVICING FEASIBILITY. FOR ADDITIONAL SECTIONS SHOWING THE STREETSCAPE CONDITIONS, REFER TO DRAWINGS UP-4-7.

REVISIONS				
No.	DESCRIPTION	DATE	BY	APPROVED
1	ISSUED FOR DARC OPA/ZBA SUBMISSION	OCT 29/24	D.S.	

SGS consulting group Ltd
30 CENTURIAN DRIVE, SUITE 500
MARKHAM, ONTARIO L3R 8B8
TEL: (905) 475-1500
FAX: (905) 475-8335

CITY OF MISSISSAUGA

EMTC HOLDINGS INC.
5100 ERIN MILLS PARKWAY -
ERIN MILLS TOWN CENTRE PH. 1



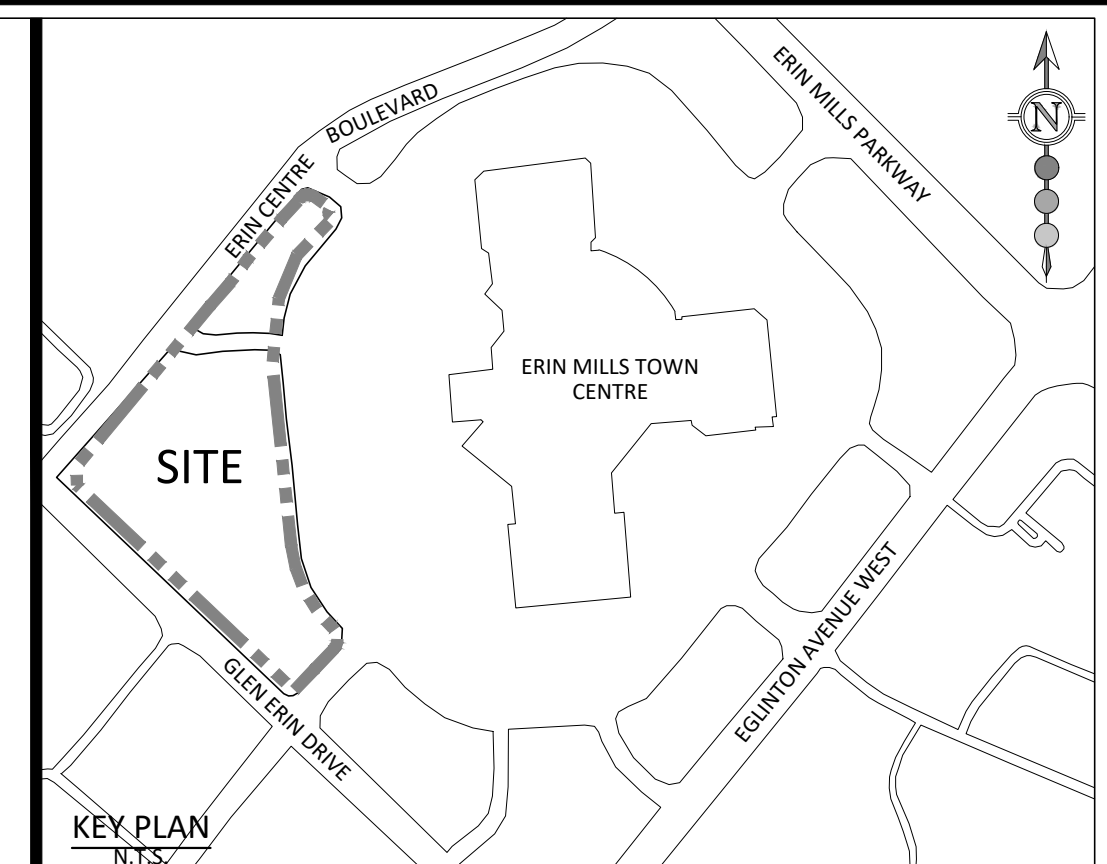
EXAMPLE CROSS-SECTIONS

DATE: OCTOBER 2024	DESIGNED BY: D.S.	CHECKED BY: P.C.
SCALE: AS SHOWN	DRAWN BY: D.S.	CHECKED BY: P.C.

PROJECT No: 2228
DRAWING No: S-2

EXISTING RESIDENTIAL

EXISTING JOHN FRASER SECONDARY SCHOOL

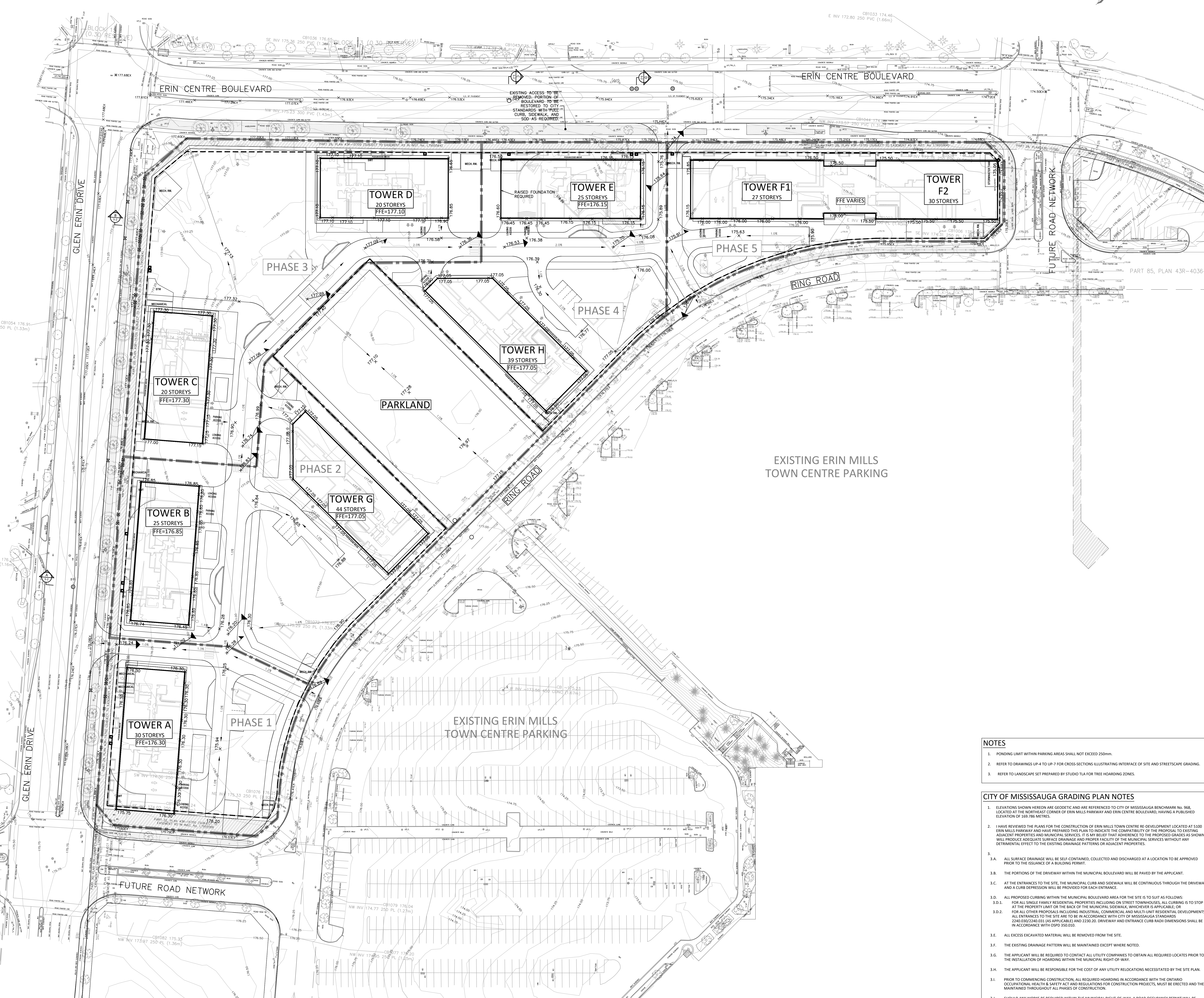


BENCHMARK: ELEV. 169.786
 ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERENCED TO CITY OF MISSISSAUGA BENCHMARK NO. 968, LOCATED AT THE NORTHEAST CORNER OF ERIN MILLS PARKWAY AND ERIN CENTRE BOULEVARD, HAVING A PUBLISHED ELEVATION OF 169.786 METRES

- LEGEND:**
- LIMIT OF PROPERTY
 - - - PHASE LIMIT
 - SANITARY MAINTENANCE HOLE / CAST-IN-PLACE MAINTENANCE HOLE
 - STORM MAINTENANCE HOLE / CAST-IN-PLACE MAINTENANCE HOLE
 - ⊕ WATER VALVE
 - ⊕ HYDRANT AND VALVE
 - EXISTING ELEVATION
 - PROPOSED ELEVATION
 - - - PROPOSED LANEWAY GRADE
 - - - LIMIT OF UNDERGROUND
 - - - EXISTING CONTOUR AND ELEVATION
 - ▨ EASEMENT ON SUBJECT LAND SUBJECT TO INST. NO. L1955564

EXISTING COMMUNITY CENTRE

EXISTING ST. ALOYSIUS GONZAGA SECONDARY SCHOOL



- NOTES**
- PONDING LIMIT WITHIN PARKING AREAS SHALL NOT EXCEED 250mm.
 - REFER TO DRAWINGS UP-4 TO UP-7 FOR CROSS-SECTIONS ILLUSTRATING INTERFACE OF SITE AND STREETS/CURB GRADING.
 - REFER TO LANDSCAPE SET PREPARED BY STUDIO TLA FOR TREE HOODING ZONES.

NOTE: DESIGN SHOWN HEREIN IS FOR DARC OPA/ZBA SUBMISSION PURPOSES ONLY. FURTHER DETAILS TO BE PROVIDED IN SUPPORT OF A FUTURE SITE PLAN APPLICATION.

- CITY OF MISSISSAUGA GRADING PLAN NOTES**
- ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERENCED TO CITY OF MISSISSAUGA BENCHMARK NO. 968, LOCATED AT THE NORTHEAST CORNER OF ERIN MILLS PARKWAY AND ERIN CENTRE BOULEVARD, HAVING A PUBLISHED ELEVATION OF 169.786 METRES.
 - I HAVE REVIEWED THE PLANS FOR THE CONSTRUCTION OF ERIN MILLS TOWN CENTRE RE-DEVELOPMENT LOCATED AT 5100 ERIN MILLS PARKWAY AND HAVE PREPARED THIS PLAN TO INDICATE THE COMPATIBILITY OF THE PROPOSAL TO EXISTING ADJACENT PROPERTIES AND MUNICIPAL SERVICES. IT IS MY BELIEF THAT ADHERING TO THE PROPOSED GRADES AS SHOWN WILL PRODUCE ADEQUATE SURFACE DRAINAGE AND PROPER FACILITY OF THE MUNICIPAL SERVICES WITHOUT ANY DETRIMENTAL EFFECT TO THE EXISTING DRAINAGE PATTERNS OR ADJACENT PROPERTIES.
 - ALL SURFACE DRAINAGE WILL BE SELF-CONTAINED, COLLECTED AND DISCHARGED AT A LOCATION TO BE APPROVED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.
 - THE PORTIONS OF THE DRIVEWAY WITHIN THE MUNICIPAL BOULEVARD WILL BE PAVED BY THE APPLICANT.
 - AT THE ENTRANCES TO THE SITE, THE MUNICIPAL CURB AND SIDEWALK WILL BE CONTINUOUS THROUGH THE DRIVEWAY AND A CURB DEPRESSION WILL BE PROVIDED FOR EACH ENTRANCE.
 - ALL PROPOSED CURBING WITHIN THE MUNICIPAL BOULEVARD AREA FOR THE SITE IS TO SUIT AS FOLLOWS:
 3.0.1. FOR ALL SINGLE FAMILY RESIDENTIAL PROPERTIES INCLUDING ON STREET TOWNHOUSES, ALL CURBING IS TO STOP AT THE PROPERTY LIMIT ON THE BACK OF THE MUNICIPAL SIDEWALK, WHICHEVER IS APPLICABLE, OR
 3.0.2. FOR ALL OTHER PROPOSALS INCLUDING INDUSTRIAL, COMMERCIAL AND MULTI-UNIT RESIDENTIAL DEVELOPMENTS, ALL ENTRANCES TO THE SITE ARE TO BE IN ACCORDANCE WITH CITY OF MISSISSAUGA STANDARDS 2280.030/2280.031 (AS APPLICABLE) AND 2230.20. DRIVEWAY AND ENTRANCE CURB RADIUS DIMENSIONS SHALL BE IN ACCORDANCE WITH OSPD 350.030.
 - ALL EXCESS EXCAVATED MATERIAL WILL BE REMOVED FROM THE SITE.
 - THE EXISTING DRAINAGE PATTERN WILL BE MAINTAINED EXCEPT WHERE NOTED.
 - THE APPLICANT WILL BE REQUIRED TO CONTACT ALL UTILITY COMPANIES TO OBTAIN ALL REQUIRED LOCATES PRIOR TO THE INSTALLATION OF HOARDING WITHIN THE MUNICIPAL RIGHT-OF-WAY.
 - THE APPLICANT WILL BE RESPONSIBLE FOR THE COST OF ANY UTILITY RELOCATIONS NECESSITATED BY THE SITE PLAN. PRIOR TO COMMENCING CONSTRUCTION, ALL REQUIRED HOARDING IN ACCORDANCE WITH THE ONTARIO OCCUPATIONAL HEALTH & SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS, MUST BE ERECTED AND MAINTAINED THROUGHOUT ALL PHASES OF CONSTRUCTION.
 - SHOULD ANY WORKS BE REQUIRED WITHIN THE MUNICIPAL RIGHT-OF-WAY, A ROAD OCCUPANCY PERMIT WILL BE REQUIRED. PLEASE APPROVAL WILL BE REQUIRED. FOR FURTHER INFORMATION, PLEASE CONTACT THE PUBLIC WORKS TECHNOLOGIST, AT 905-615-4950 OR BY EMAIL AT TN.COUNTY@MISSISSAUGA.CA OR VISIT THE WEBSITE LINK BELOW: [https://www.mississauga.ca/services-and-programs/transportation-and-streets/roads-and-streets/apply-for-a-road-occupancy-permit/](https://www.mississauga.ca/services-and-programs/transportation-and-streets/roads-and-streets/roads-and-streets/apply-for-a-road-occupancy-permit/)

PROPERTY AS PART OF REGISTERED PLAN 434-823
 TOPOGRAPHIC SURVEY PROVIDED BY SCHAEFER GZALOVY BENNET LTD., FEBRUARY 2024

No.	DESCRIPTION	DATE	BY	APPROVED
1	ISSUED FOR DARC OPA/ZBA SUBMISSION	OCT 29/24	D.S.	

SUS consulting group ltd
 30 CENTURIAN DRIVE, SUITE 500
 MARKHAM, ONTARIO L3R 8B8
 TEL: (905) 475-1300
 FAX: (905) 475-8335

CITY OF MISSISSAUGA

EMTC HOLDINGS INC.

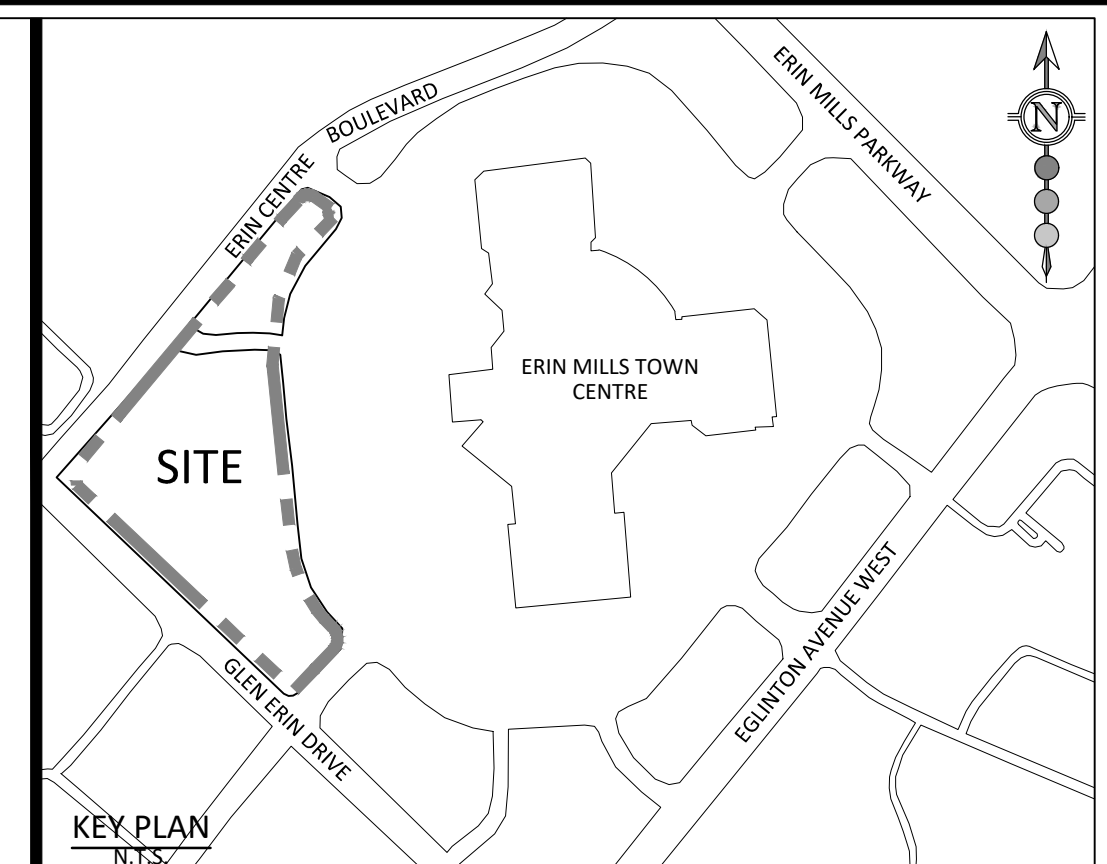
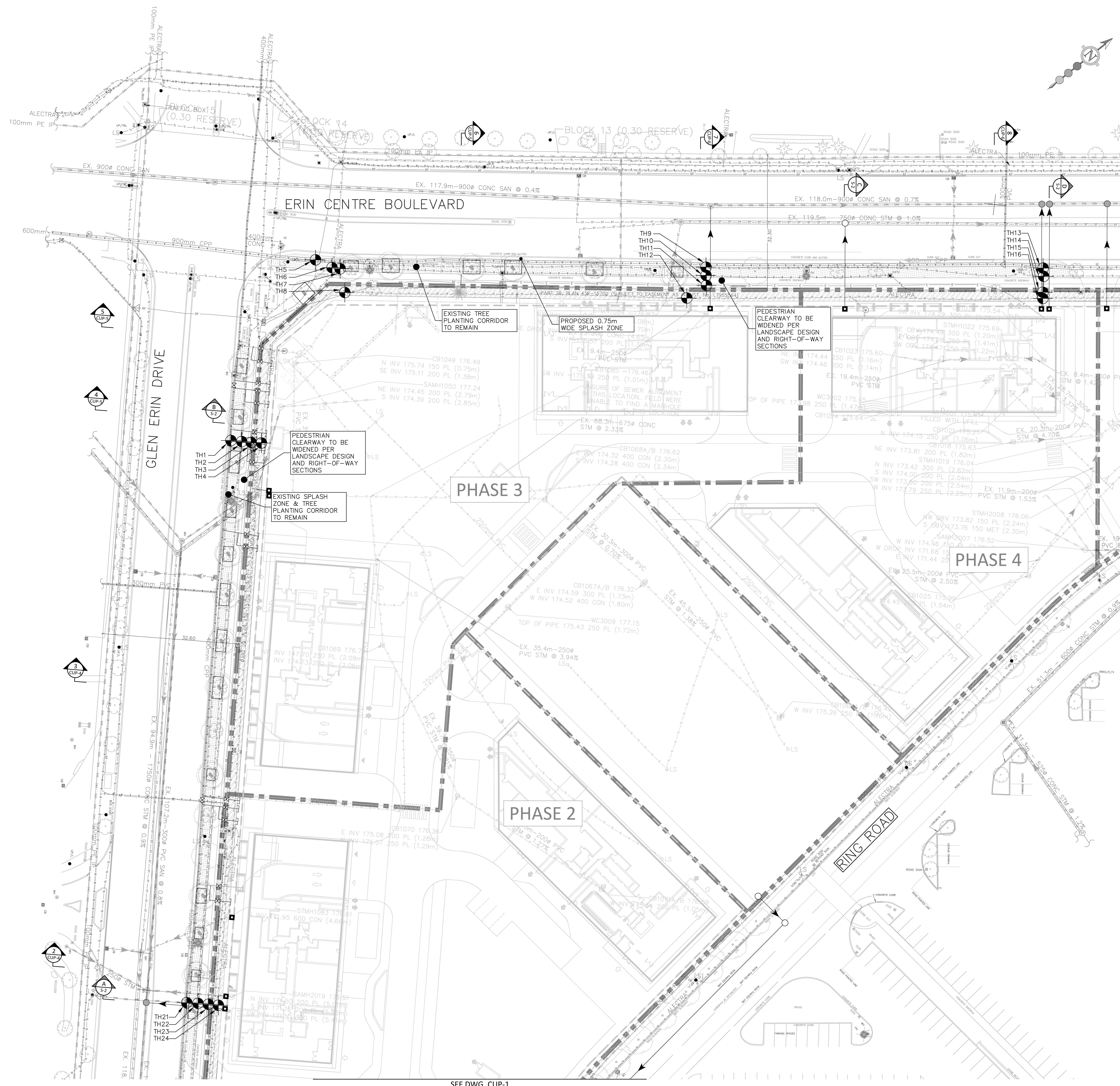
5100 ERIN MILLS PARKWAY - ERIN MILLS TOWN CENTRE PH. 1

GRADING PLAN

DATE: OCTOBER 2024 DESIGNED BY: D.S. CHECKED BY: P.C.
 SCALE: 1:500 DRAWN BY: D.S. PROJECT NO: 2228
 DRAWING NO: GR-1

EXISTING COMMUNITY CENTRE

LOYSIUS GONZAGA SECONDARY SCHOOL



BENCHMARK: ELEV. 169.786
 ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERENCED TO CITY OF MISSISSAUGA BENCHMARK NO. 966 LOCATED AT THE NORTHWEST CORNER OF ERIN MILLS PARKWAY AND ERIN CENTRE BOULEVARD, HAVING A PUBLISHED ELEVATION OF 169.786 METRES

LEGEND:

[Symbol]	LIMIT OF PROPERTY
[Symbol]	PHASE LIMIT
[Symbol]	SANITARY SEWER AND MAINTENANCE HOLE
[Symbol]	CAST-IN-PLACE SANITARY MAINTENANCE HOLE
[Symbol]	STORM SEWER AND MAINTENANCE HOLE
[Symbol]	CAST-IN-PLACE STORM MAINTENANCE HOLE
[Symbol]	WATERMAIN
[Symbol]	SINGLE CATCHBASIN
[Symbol]	DOUBLE CATCHBASIN
[Symbol]	WATER VALVE
[Symbol]	VALVE AND CHAMBER
[Symbol]	HYDRANT AND VALVE
[Symbol]	TEST HOLE AND LABEL
[Symbol]	TACTILE PLATE (OPSD 310.03B) AND CURB RAMP (OPSD 310.03C)
[Symbol]	EMBANKMENT (MAX 3:1 SLOPE UNLESS OTHERWISE NOTED)
[Symbol]	EXISTING SANITARY SEWER
[Symbol]	EXISTING ROGERS COAXIAL
[Symbol]	EXISTING BELL TELECOMMUNICATIONS
[Symbol]	EXISTING WATER
[Symbol]	EXISTING UNKNOWN CONDUCTIVE SIGNAL
[Symbol]	EXISTING HYDRO
[Symbol]	EXISTING TRAFFIC LIGHT
[Symbol]	EXISTING GAS
[Symbol]	EXISTING ROGERS FIBER OPTIC
[Symbol]	EXISTING STREETLIGHT
[Symbol]	EXISTING STORM SEWER
[Symbol]	EXISTING SANITARY SEWER TO BE REMOVED
[Symbol]	EXISTING ROGERS COAXIAL TO BE REMOVED
[Symbol]	EXISTING BELL TELECOMMUNICATIONS TO BE REMOVED
[Symbol]	EXISTING WATER TO BE REMOVED
[Symbol]	EXISTING UNKNOWN CONDUCTIVE SIGNAL TO BE REMOVED
[Symbol]	EXISTING HYDRO TO BE REMOVED
[Symbol]	EXISTING TRAFFIC LIGHT TO BE REMOVED
[Symbol]	EXISTING GAS TO BE REMOVED
[Symbol]	EXISTING ROGERS FIBER OPTIC TO BE REMOVED
[Symbol]	EXISTING STREETLIGHT TO BE REMOVED
[Symbol]	EXISTING STORM SEWER TO BE REMOVED
[Symbol]	EASEMENT ON SUBJECT LAND SUBJECT TO INST. NO. 1795564

THESE PLANS ARE TO BE READ IN CONJUNCTION WITH UP-4-7. REFER TO CROSS-SECTIONS ON DRAWINGS UP-4-7 FOR ALL RELEVANT DIMENSIONS AND OFFSETS FROM PROPERTY LINE.

PROPERTY AS PART OF REGISTERED PLAN 434-823
 TOPOGRAPHIC SURVEY PROVIDED BY SCHAEFER QUALITY BENNETT LTD., FEBRUARY 2024

No.	DESCRIPTION	DATE	BY	APPROVED
1	ISSUED FOR DARC DPA/24 SUBMISSION	OCT 29/24	D.S.	

SGS consulting group ltd
 30 CENTURIAN DRIVE, SUITE 500
 MARKHAM, ONTARIO L3R 8B8
 TEL: (905) 475-1300
 FAX: (905) 475-8335

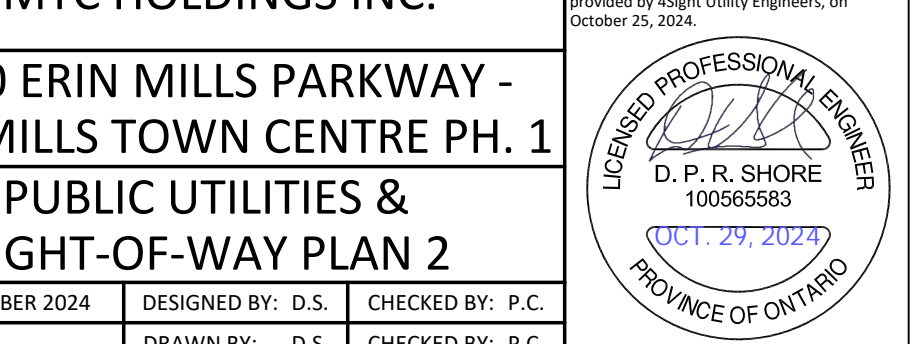
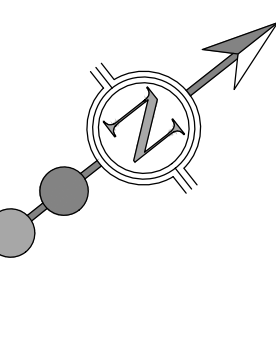
CITY OF MISSISSAUGA

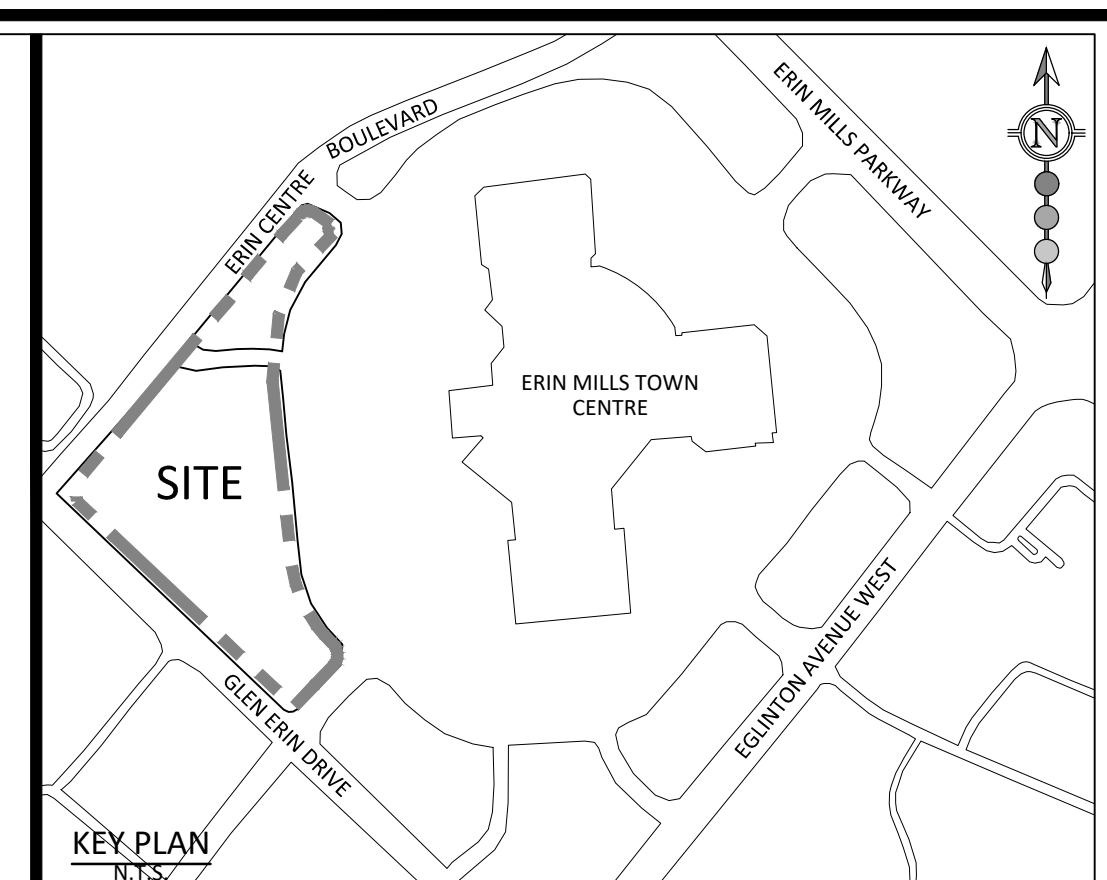
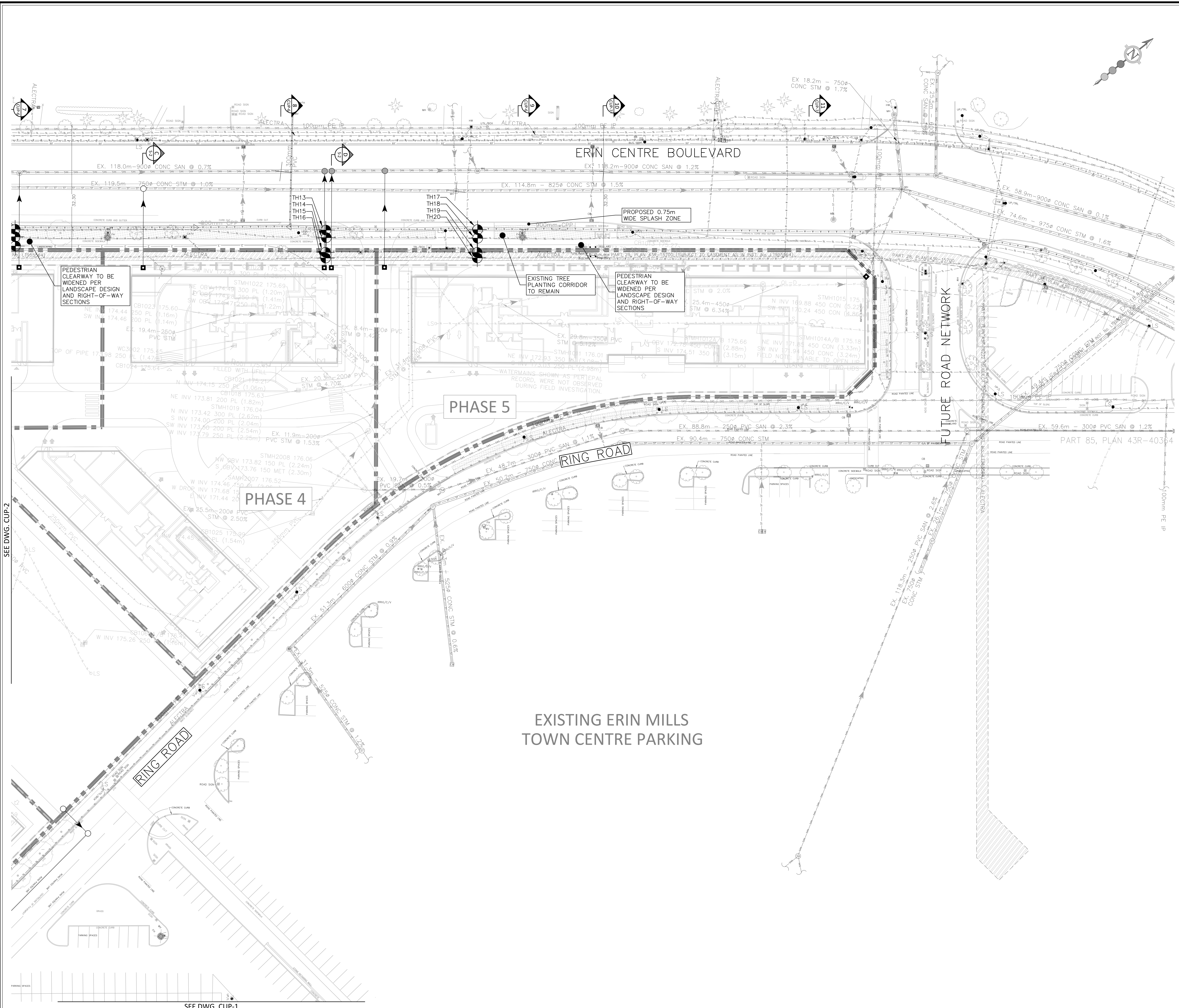
EMTC HOLDINGS INC.
5100 ERIN MILLS PARKWAY - ERIN MILLS TOWN CENTRE PH. 1
PUBLIC UTILITIES & RIGHT-OF-WAY PLAN 2
 DATE: OCTOBER 2024 DESIGNED BY: D.S. CHECKED BY: P.C.
 SCALE: 1:300 DRAWN BY: D.S. CHECKED BY: P.C.

PROJECT NO: **2228**
 DRAWING NO: **UP-2**

SEE DWG. CUP-1

SEE DWG. CUP-3





BENCHMARK: ELEV. 169.786
 ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERENCED TO CITY OF MISSISSAUGA BENCHMARK NO. 966 LOCATED AT THE NORTHEAST CORNER OF ERIN MILLS PARKWAY AND ERIN CENTRE BOULEVARD, HAVING A PUBLISHED ELEVATION OF 169.786 METRES

LEGEND:

[Symbol]	LIMIT OF PROPERTY
[Symbol]	PHASE LIMIT
[Symbol]	SANITARY SEWER AND MAINTENANCE HOLE
[Symbol]	CAST-IN-PLACE SANITARY MAINTENANCE HOLE
[Symbol]	STORM SEWER AND MAINTENANCE HOLE
[Symbol]	CAST-IN-PLACE STORM MAINTENANCE HOLE
[Symbol]	WATERMAIN
[Symbol]	SINGUL CATCHBASIN
[Symbol]	DOUBLE CATCHBASIN
[Symbol]	WATER VALVE
[Symbol]	VALVE AND CHAMBER
[Symbol]	HYDRANT AND VALVE
[Symbol]	TEST HOLE AND LABEL
[Symbol]	TACTILE PLATE (OPSD 310.03B) AND CURB RAMP (OPSD 310.03C)
[Symbol]	EMBANKMENT (MAX 3:1 SLOPE UNLESS OTHERWISE NOTED)
[Symbol]	EXISTING SANITARY SEWER
[Symbol]	EXISTING ROGERS COAXIAL
[Symbol]	EXISTING BELL TELECOMMUNICATIONS
[Symbol]	EXISTING WATER
[Symbol]	EXISTING UNKNOWN CONDUCTIVE SIGNAL
[Symbol]	EXISTING HYDRO
[Symbol]	EXISTING TRAFFIC LIGHT
[Symbol]	EXISTING GAS
[Symbol]	EXISTING ROGERS FIBER OPTIC
[Symbol]	EXISTING STREETLIGHT
[Symbol]	EXISTING STORM SEWER
[Symbol]	EXISTING SANITARY SEWER TO BE REMOVED
[Symbol]	EXISTING ROGERS COAXIAL TO BE REMOVED
[Symbol]	EXISTING BELL TELECOMMUNICATIONS TO BE REMOVED
[Symbol]	EXISTING WATER TO BE REMOVED
[Symbol]	EXISTING UNKNOWN CONDUCTIVE SIGNAL TO BE REMOVED
[Symbol]	EXISTING HYDRO TO BE REMOVED
[Symbol]	EXISTING TRAFFIC LIGHT TO BE REMOVED
[Symbol]	EXISTING GAS TO BE REMOVED
[Symbol]	EXISTING ROGERS FIBER OPTIC TO BE REMOVED
[Symbol]	EXISTING STREETLIGHT TO BE REMOVED
[Symbol]	EXISTING STORM SEWER TO BE REMOVED
[Symbol]	EASEMENT ON SUBJECT LAND SUBJECT TO INST. NO. L1955564

THESE PLANS ARE TO BE READ IN CONJUNCTION WITH UP-4-7. REFER TO CROSS-SECTIONS ON DRAWINGS UP-4-7 FOR ALL RELEVANT DIMENSIONS AND OFFSETS FROM PROPERTY LINE.

PROPERTY AS PART OF REGISTERED PLAN 43M-823
 TOPOGRAPHIC SURVEY PROVIDED BY SCHAEFER QUALOVO BENNETT LTD., FEBRUARY 2024

REVISIONS			
No.	DESCRIPTION	DATE	BY / APPROVED
1	ISSUED FOR DARC OPA/ZBA SUBMISSION	OCT 29/24	D.S.

SGS consulting group ltd
 30 CENTURIAN DRIVE, SUITE 500
 MARKHAM, ONTARIO L3R 8B8
 TEL: (905) 475-1300
 FAX: (905) 475-8335

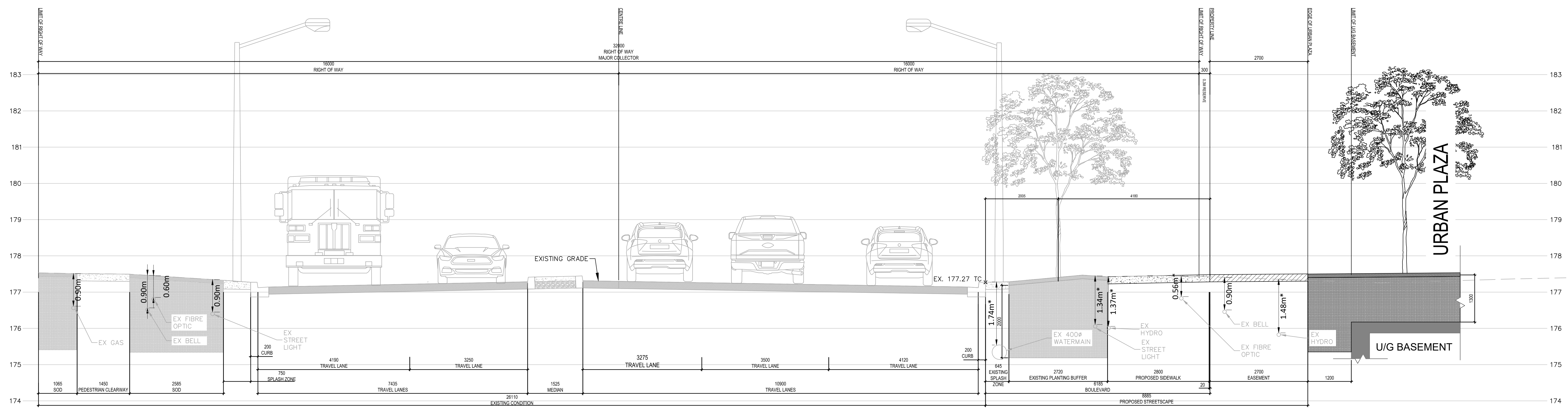
CITY OF MISSISSAUGA
EMTC HOLDINGS INC.
5100 ERIN MILLS PARKWAY - ERIN MILLS TOWN CENTRE PH. 1
PUBLIC UTILITIES & RIGHT-OF-WAY PLAN 3

DATE: OCTOBER 2024	DESIGNED BY: D.S.	CHECKED BY: P.C.
SCALE: 1:300	DRAWN BY: D.S.	CHECKED BY: P.C.

PROJECT NO: **2228**
 DRAWING NO: **UP-3**

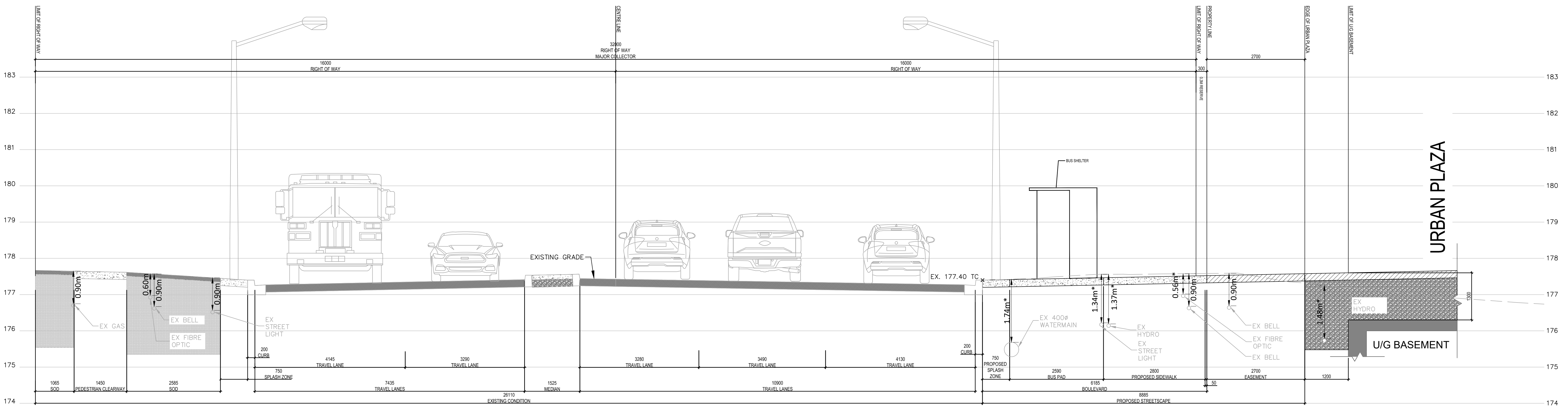
SEE DWG. CUP-2

SEE DWG. CUP-1



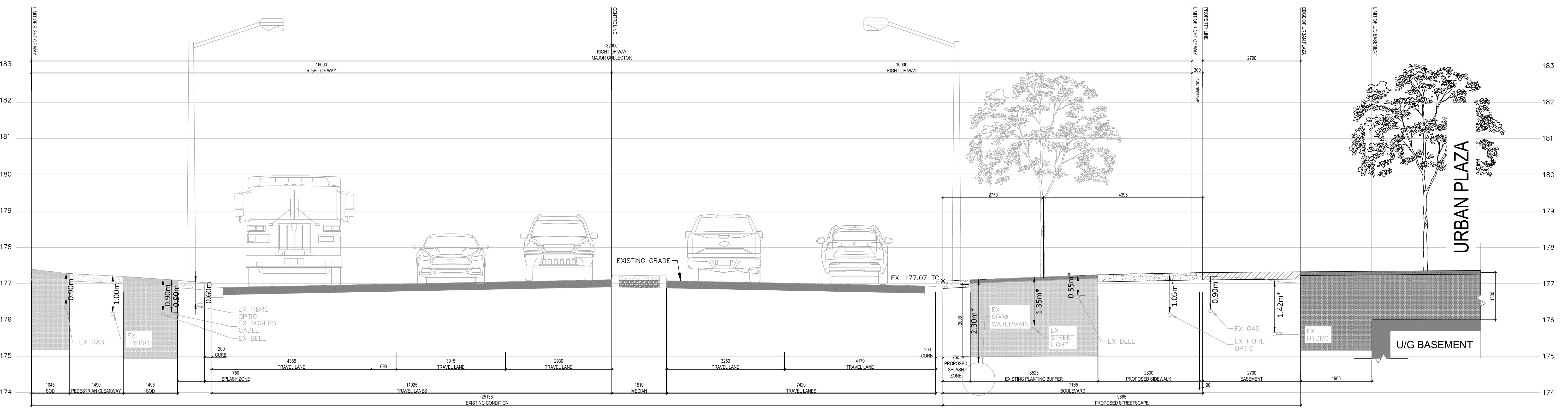
*DEPTHS FROM EXISTING GRADE DERIVED FROM TEST PIT DATA RECEIVED FROM ASIGHT UTILITY ENGINEERS. EXISTING GRADE BASED ON SURVEYED DATA RECEIVED FROM SCHAEFFER-DZALDOV PURCELL.

4 GLEN ERIN DRIVE - MAJOR COLLECTOR ROW SECTION AT URBAN PLAZA - LOOKING NORTH
CUP-2 SCALE: 1:50



*DEPTHS FROM EXISTING GRADE DERIVED FROM TEST PIT DATA RECEIVED FROM ASIGHT UTILITY ENGINEERS. EXISTING GRADE BASED ON SURVEYED DATA RECEIVED FROM SCHAEFFER-DZALDOV PURCELL.

5 GLEN ERIN DRIVE - MAJOR COLLECTOR ROW SECTION AT URBAN PLAZA - BUS SHELTER - LOOKING NORTH
CUP-2 SCALE: 1:50



*DEPTHS FROM EXISTING GRADE DERIVED FROM TEST PIT DATA RECEIVED FROM ASIGHT UTILITY ENGINEERS. EXISTING GRADE BASED ON SURVEYED DATA RECEIVED FROM SCHAEFFER-DZALDOV PURCELL.

6 ERIN CENTRE BOULEVARD - MAJOR COLLECTOR ROW SECTION AT URBAN PLAZA - LOOKING EAST
CUP-2 SCALE: 1:50

REVISIONS				
No.	DESCRIPTION	DATE	BY	APPROVED
1	ISSUED FOR DARC/DPA/DBA SUBMISSION	OCT 29/24	D.S.	

sgs consulting group ltd 30 CENTURIAN DRIVE, SUITE 500 MARKHAM, ONTARIO L3R 8B8 TEL: (905) 475-1300 FAX: (905) 475-8335

CITY OF MISSISSAUGA

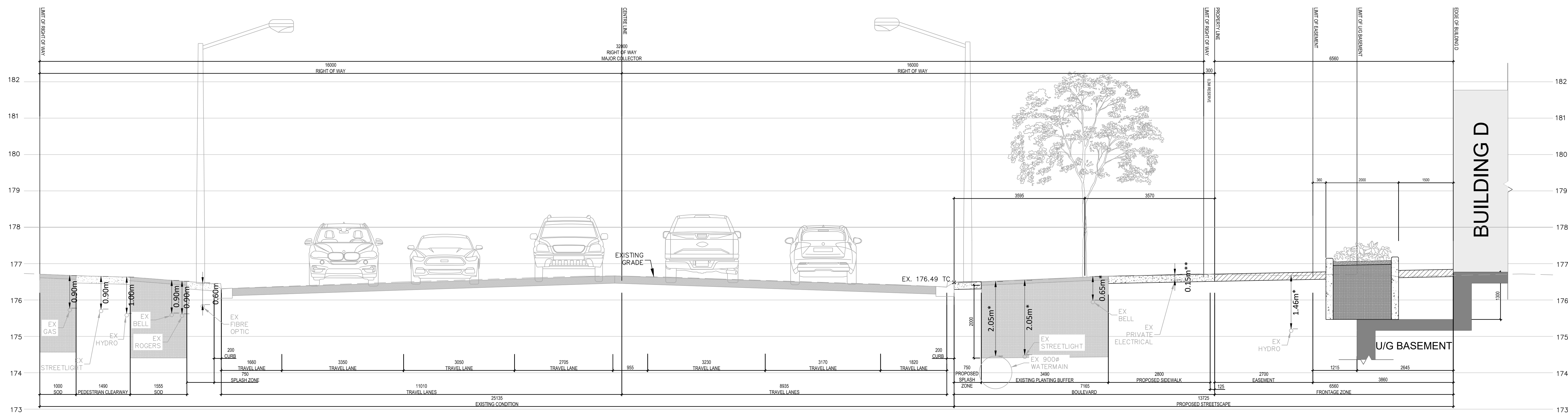
EMTC HOLDINGS INC.

5100 ERIN MILLS PARKWAY - ERIN MILLS TOWN CENTRE PH. 1

PUBLIC UTILITIES & RIGHT-OF-WAY CROSS SECTIONS

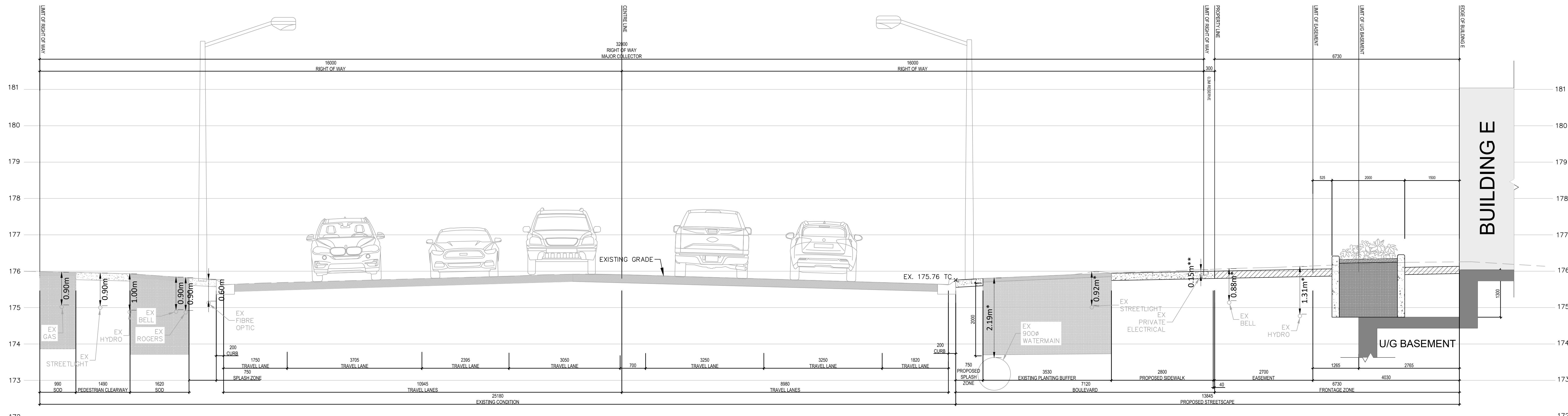
DATE: OCTOBER 2024 DESIGNED BY: D.S. CHECKED BY: P.C. SCALE: AS SHOWN DRAWN BY: D.S. CHECKED BY: P.C.

PROJECT NO: **2228**
DRAWING NO: **UP-5**



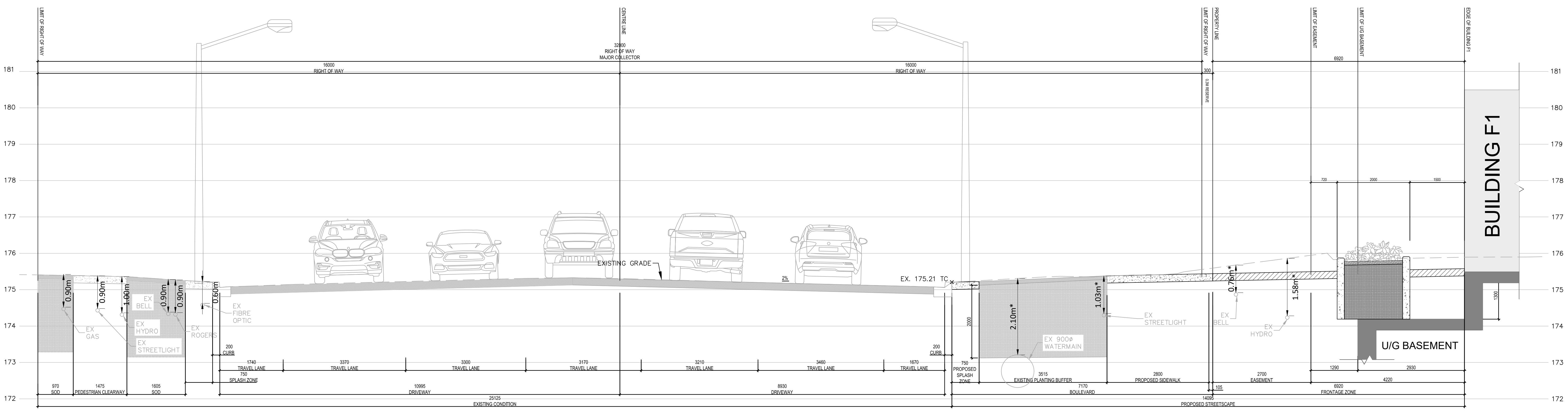
7 ERIN CENTRE BOULEVARD - MAJOR COLLECTOR ROW SECTION AT BUILDING D - LOOKING EAST
SCALE: 1:50

*DEPTHS FROM EXISTING GRADE DERIVED FROM TEST PIT DATA RECEIVED FROM ASIGHT UTILITY ENGINEERS. EXISTING GRADE BASED ON SURVEYED DATA RECEIVED FROM SCHAEFFER-DZALDOV PURCELL.
**FURTHER INVESTIGATION ONGOING TO CONFIRM PRIVATE ELECTRICAL SERVICE IS ONLY ACTIVE FOR EXISTING DEVELOPMENTS ON SUBJECT LANDS. IF SO, SERVICE IS TO BE REMOVED. OTHERWISE SERVICE IS TO BE LOWERED BY ELECTRICAL CONTRACTOR AS REQUIRED.



8 ERIN CENTRE BOULEVARD - MAJOR COLLECTOR ROW SECTION AT BUILDING E - LOOKING EAST
SCALE: 1:50

*DEPTHS FROM EXISTING GRADE DERIVED FROM TEST PIT DATA RECEIVED FROM ASIGHT UTILITY ENGINEERS. EXISTING GRADE BASED ON SURVEYED DATA RECEIVED FROM SCHAEFFER-DZALDOV PURCELL.
**FURTHER INVESTIGATION ONGOING TO CONFIRM PRIVATE ELECTRICAL SERVICE IS ONLY ACTIVE FOR EXISTING DEVELOPMENTS ON SUBJECT LANDS. IF SO, SERVICE IS TO BE REMOVED. OTHERWISE SERVICE IS TO BE LOWERED BY ELECTRICAL CONTRACTOR AS REQUIRED.



9 ERIN CENTRE BOULEVARD - MAJOR COLLECTOR ROW SECTION AT BUILDING F1 - LOOKING EAST
SCALE: 1:50

*DEPTHS FROM EXISTING GRADE DERIVED FROM TEST PIT DATA RECEIVED FROM ASIGHT UTILITY ENGINEERS. EXISTING GRADE BASED ON SURVEYED DATA RECEIVED FROM SCHAEFFER-DZALDOV PURCELL.

No.	DESCRIPTION	DATE	BY	APPROVED
1	ISSUED FOR DARC OPA/DBA SUBMISSION	OCT 29/24	D.S.	

S&S consulting group ltd 30 CENTURIAN DRIVE, SUITE 100 MARKHAM, ONTARIO L3R 8B8 TEL: (905) 475-1300 FAX: (905) 475-8335

CITY OF MISSISSAUGA

EMTC HOLDINGS INC.

5100 ERIN MILLS PARKWAY - ERIN MILLS TOWN CENTRE PH. 1

PUBLIC UTILITIES & RIGHT-OF-WAY CROSS SECTIONS

DATE: OCTOBER 2024 DESIGNED BY: D.S. CHECKED BY: P.C. SCALE: AS SHOWN DRAWN BY: D.S. CHECKED BY: P.C.

D. P. R. SHORE 100565883
LICENSED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

PROJECT NO: 2228
DRAWING NO: UP-6

SCS Consulting Group Ltd
30 Centurian Drive, Suite 100
Markham, ON, L3R 8B8
Phone 905 475 1900
Fax 905 475 8335

