



**Starmont Estates Inc.
2555 Erin Mills Boulevard**

Functional Servicing Report

November 2024

Submitted by:

**SCS Consulting Group Ltd
30 Centurian Drive, Suite 100
Markham, ON, L3R 8B8
Phone 905 475 1900
Fax 905 475 8335**

Project Number: 2730

Table of Contents

	Page
1.0 Introduction	3
1.1 Purpose of the Report	3
1.2 Study Area	3
1.3 Background Servicing Information	4
2.0 Storm Servicing	6
2.1 Existing Storm Sewer System	6
2.2 Proposed Storm Sewer System	6
3.0 Stormwater Management	7
3.1 Existing Drainage	7
3.2 Allowable Release Rates	7
3.3 Stormwater Runoff Control Criteria	8
3.4 Stormwater Best Management Practices Selection	8
3.4.1 At-Source Controls Evaluation	9
3.4.2 Conveyance Controls Evaluation	9
3.4.3 Proposed End-of-Pipe Controls	10
3.5 Proposed Storm Drainage	11
3.5.1 Quantity Control	11
3.5.2 Quality Control	12
3.5.3 Erosion/Volume Control	12
3.5.4 Water Balance	13
4.0 Sanitary Servicing	14
4.1 Existing Sanitary Servicing	14
4.2 Proposed Sanitary Servicing	14
5.0 Water Servicing	16
5.1 Existing Water Servicing	16
5.2 Proposed Water Servicing	16
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	21
9.0 Summary	22

List of Tables

- Table 3.1: Summary of Existing Peak Flows
Table 3.2: Stormwater Runoff Control Criteria
Table 3.3: Summary of the Recommended Stormwater Best Management Practices (BMPs)
Table 3.4: Summary of 100 Year Release Rates
Table 3.5: Summary of 100 Year Storage Volumes
Table 3.6: Phosphorus Budget Summary

List of Figures

- Figure 1.1 Site Location Plan
Figure 3.1 Existing Storm Drainage Plan
Figure 3.2 Proposed Storm Drainage Plan

List of Appendices

- Appendix A Site Plan
Appendix B Excerpts from Background Reports
Appendix C Stormwater Management Calculations
Appendix D MTD Sizing and Maintenance Information
Appendix E Sanitary Flow Calculations
Appendix F Water Distribution Analysis

List of Drawings (Appendix G)

- Drawing S-1 Servicing Plan
Drawing GR-1 Grading Plan
Drawing DETL-1 Details Plan

Submission History

Submission	Date	In Support Of	Distributed To
1 st	November 2024	Official Plan Amendment (OPA) and Zoning By-Law Amendment (ZBA)	City of Mississauga, Region of Peel, Credit Valley Conservation Authority



1.0 Introduction

SCS Consulting Group Ltd. has been retained by Starmont Estates Inc. to prepare a Functional Servicing and Stormwater Management (FSSWMR) Report for a proposed mixed use condominium development located north of Erin Centre Boulevard and east of Erin Mills Parkway within the lands municipally known as 2555 Erin Centre Boulevard in the City of Mississauga in Peel Region.

1.1 Purpose of the Report

The Functional Servicing and SWM Report has been prepared in support of the 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, 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 wood park, a private urban plaza, residential homes and Quenippenon Pond located within the City of Mississauga. As shown on **Figure 1.1**, the study area is bound by:

- Erin woods park to the north and east;
- Erin Centre Boulevard and existing residential to the southeast;
- Erin Mills Parkway to the west; and
- Erin mills Town Centre to the south

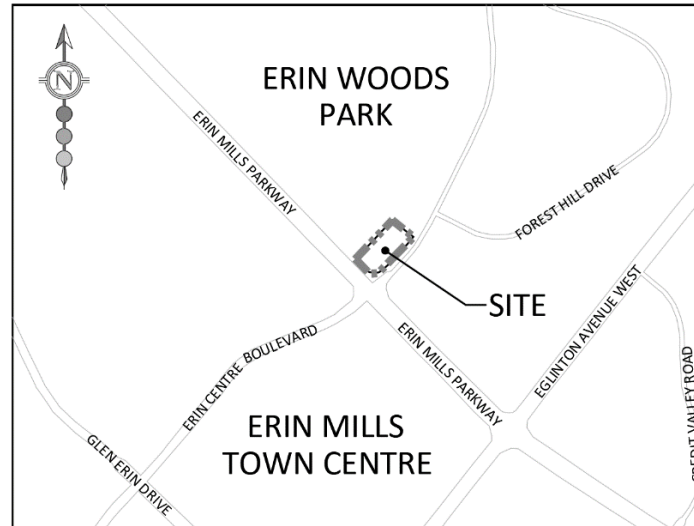


Figure 1: Site Plan Location

Figure 1.1: Site Location Plan

The proposed development is approximately 1.01 ha in size and consists of 3 mixed use condominium towers, with retail at grade and 4 levels of underground parking (refer to the Site Plan in **Appendix A**). Access to the proposed development is proposed from Erin Centre Boulevard.

The development consist of two Blocks (Block A and B). Block A will have two towers (Tower 1 & 2), 34 and 31 storey buildings with a shared 7 storey podium. Block B will be a 28 storey building with a 7 storey podium.

1.3 Background Servicing Information

The following reports and guidelines have been referred to with regard to the proposed development (relevant excerpts are included in **Appendix B**):

- Ministry of Transportation (MTO) Drainage Management Manual (1997);
- Region of Peel, Public Works Stormwater Design Criteria and Procedural Manual (June 2019);
- Ministry of Environment (MOE) Stormwater Management Planning and Design Manual (March 2003);
- City of Mississauga, Development Requirements Manual (November 2020);
- Credit Valley Conservation (CVC), Stormwater Management Guideline (July 2022)
- Grounded Engineering, Hydrogeological Review Report (September 2024); and



- ➡ Grounded Engineering, Geotechnical Engineering Report (August 2024).

The site servicing and SWM strategies in this report are based on the following approved Engineering Drawings:

- ➡ Erin Centre Boulevard – Sta. 0+000 to 0+2200 – Plan and Profile Drawing, Dwg No. A1-84713-P10, prepared by Proctor and Redfern Consulting Engineers, dated June 1987;
- ➡ Erin Centre Boulevard – Sta. 1+365.202 to 1+541.253 – Plan and Profile Drawing, Dwg No. A1-85755-P11, prepared by Proctor and Redfern Consulting Engineers, dated June 1987.
- ➡ Erin Mills Parkway and Erin Centre Boulevard – Sta. 6+300 to 6+600 – Plan and Profile Drawing, Dwg No. 45575-D, prepared by Genivar, dated November 2012; and
- ➡ Erin Mills Parkway – Sta. 0+280 to 0+560 - Plan and Profile Drawing, Dwg No. 51628-D, prepared by Stantec, dated February 2016.

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 675mm diameter storm sewer on Erin Mills Parkway flowing south east; and
- ➡ 825mm to 900 mm diameter storm sewer on Erin Mills Parkway flowing south east; and
- ➡ A 3-cell 3050 mm x 2130 mm concrete box culvert is located under the intersection of Erin Mills Parkway and Erin Centre Boulevard that discharges through a gabion outfall structure to a storm pond located south of the site; and
- ➡ A 450mm diameter storm sewer, that currently services the site, flowing south east and connecting to the 3-cell box culvert.

2.2 Proposed Storm Sewer System

The proposed storm sewer system (minor system) within the proposed development (**Figure 3.2** and **Drawing S-1**) has been designed for the 10 year return storm per the Peel Region and City of Mississauga engineering standards. The storm sewer system was designed in accordance with the Municipality, Ontario Building Code and MECP guidelines, including the following:

- ➡ Pipes to be sized to accommodate runoff from a 10 year storm event
- ➡ Minimum Pipe Size: 300 mm diameter
- ➡ Maximum Flow Velocity: 4.0 m/s
- ➡ Minimum Flow Velocity: 0.8 m/s
- ➡ Minimum Pipe Depth: 1.2 m to invert

The proposed storm sewer system will connect via a new storm maintenance hole on property line that will connect into the existing 450 mm diameter storm sewer on Erin Centre Boulevard as shown on **Drawing S-1**. The proposed storm sewer has 1.90m of cover at the proposed service connection, which is sufficient to service the proposed development. A closed-circuit television (CCTV) investigation was conducted on June 25, 2024 by 4Sight Utility Engineers to determine the condition of the existing 200mm diameter PVC storm sewer on Bayview Avenue. Based on the CCTV video and report (**Appendix B**), the sewer appears to be in good condition. It is therefore proposed to use the existing 450mm diameter concrete storm lateral for the proposed development.



3.0 Stormwater Management

3.1 Existing Drainage

The majority of the existing lands (Catchment 101, 0.97 ha, **Figure 3.1**) and external catchment (Catchment EXT-1, 0.69 ha, **Figure 3.1**) drain via overland flow towards four existing catchbasins located within the existing development and is directed to an existing 450 mm diameter storm sewer on Erin Center Boulevard. The storm sewer outlets to the existing 3050 mm x 2130 mm concrete box culvert under the Erin Mills Parkway and Erin Centre Boulevard intersection, which drains to a SWM pond, ultimately outletting to Mullet Creek. The remainder of existing lands (Catchment 102, 0.04 ha) drains uncontrolled north east to the existing forested and grassed area adjacent to the development.

3.2 Allowable Release Rates

As the development is located within the Mullet Creek subwatershed of the Credit River watershed, the City of Mississauga Development Requirements Manual (2020) states that the quantity control criteria is to control the proposed peak flows to existing peak flows for the 2 through 100 year storm, and Regional Storm events or to the designed capacity of the storm sewer (City of Mississauga), whichever is more conservative. Therefore, the allowable release rates for the proposed development is to control the proposed peak flow for the subject lands for the 10 year storm event up to and including the 100 year storm event to the existing 10 year storm event peak flow. The allowable release rate for the 2 year and 5 year storm events is to control the proposed peak flow to exiting peak flow rates.

The rational method was used to determine the allowable release rates from the site based on Intensity-Duration-Frequency (IDF) rainfall curves from the City of Mississauga Development Requirements Manual. Supporting calculations are provided in **Appendix C**. **Table 3.1** summarizes the allowable release rates.

Table 3.1: Summary of Allowable Release Rates

Return Period Storm	Erin Centre Boulevard (L/s)	Forested Area (L/s)
10 Year	228.8	6.1
5 Year	185.3	4.9
2 Year	137.8	3.7



3.3 Stormwater Runoff Control Criteria

The following stormwater runoff control criteria have been established based on the City of Mississauga Design Requirements Manual (2020) and the MOE Stormwater Management Planning and Design Manual (2003). The stormwater runoff criteria are summarized below in **Table 3.2**.

Table 3.2 Stormwater Runoff Control Criteria

Criteria	Control Measure
Quantity Control	As the proposed site is located within the Mullet Creek subwatershed, proposed peak flows to be controlled to existing peak flows for the 2 through 100 year storm, and Regional Storm events (CVC); or To the designed capacity of the storm sewer (City of Mississauga), whichever is more conservative.
Quality Control	Provide MECP Enhanced (Level 1) Protection for 80% TSS Removal (CVC, MECP).
Erosion/Volume Control	Retain the 5 mm rainfall runoff on-site by way of infiltration, evapotranspiration, re-use or filtration (City of Mississauga, CVC).
Water Balance	As this site does not lie within a Wellhead Protection Area (WHPA) and is location in a Low Volume Groundwater Recharge Areas (LGRA), site specific water balance is not required. Best efforts to maintain recharge is expected (CVC)

3.4 Stormwater Best Management Practices Selection

In accordance with the MOE Stormwater Management Planning and Design Manual (2003), a review of stormwater management best practices was completed using a treatment train approach, which evaluated at-source, conveyance system, and end-of-pipe alternatives. The potential best management practices were evaluated based on the stormwater management objectives listed in **Table 3.2**.

The following site characteristics were taken into consideration:

- ➔ Developable area of 1.01 ha consisting of mixed-use development with underground parking;
- ➔ Soil type generally consists of topsoil, clayey silt, silt sand and silt with some clay; and
- ➔ The maximum groundwater was observed at 167 m, 2.4 m below surface.

The following are examples of at-source, 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.



3.4.1 At-Source Controls Evaluation

At-source controls are at-source measures that reduce runoff prior to stormwater entering the conveyance system. It is noted these controls are proposed on private properties. Incorporating controls that require minimal routine maintenance can be an effective method in the treatment train approach to SWM. The following controls have been evaluated for use in the proposed development:

Increased Topsoil Depth

An increase in the proposed topsoil depth is recommended to promote at source infiltration (minimum 0.3 m depth). Increased topsoil depth will also contribute to at source quality and quantity control and will contribute to ground water recharge. A topsoil depth of 0.30 m is proposed.

Roof Leaders to Grassed Areas

Roof leaders discharged to grassed areas can promote at-source infiltration, thereby contributing to water quality and quantity control. Roof leaders to grassed areas are not proposed for this development as roof leaders will be directly connected to the mechanical storm system located in the proposed underground parking garage and directed to the proposed water re-use tank.

Passive Landscaping

Planting of gardens and other vegetation designed to minimize local runoff or use rainwater as a watering source can be used to reduce rainwater runoff by increasing evaporation, transpiration, infiltration and contribute to groundwater recharge. By promoting infiltration through passive landscaping, water quality and quantity control is provided for the volume of water infiltrated. Passive landscaping can provide significant stormwater management benefits as part of the overall treatment train approach for the proposed development. Landscaped areas are proposed on the north and east sides of the proposed development.

3.4.2 Conveyance Controls Evaluation

Conveyance controls provide treatment of stormwater during the transport of runoff from individual lots to the receiving watercourse or end-of-pipe facility. The following conveyance controls have been evaluated for use in the proposed development:

Grassed Swales

Grassed swales conveying runoff promote infiltration, filtration, and evapotranspiration, contributing to water quality and quantity control, and contribute to groundwater recharge. Grassed swales are proposed.



3.4.3 Proposed End-of-Pipe Controls

While at-source and conveyance system controls are valuable components of the overall SWM plan, on their own they are not sufficient to meet the quantity and quality control objectives for the proposed development. 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 outlet. Accordingly, the following end-of-pipe controls have been evaluated for use in the proposed development:

Underground Storage

To meet quantity control targets, flow restrictors can be used to control stormwater release rates. To accommodate the reduced release rate, stormwater detention facilities are required to store stormwater runoff. Stormwater storage is proposed to be provided via an underground stormwater tank, located within the proposed underground parking garage as shown on **Figure 3.2**.

Manufactured Treatment Device

A properly sized manufactured treatment device (MTD) can assist in providing MECP Enhanced (Level 1) treatment and can contribute to the treatment train approach for water quality control. The proposed MTD unit specified (HF-13) is Environmental Technology Verification (ETV) certified, to provide 80% TSS removal. Therefore, at-source and conveyance controls will work in conjunction with the MTD unit to provide overall Enhanced quality control.

Table 3.3 below summarizes the recommended stormwater management Best Management Practices (BMPs) for the proposed development.

Table 3.3: Summary of the Recommended Stormwater Best Management Practices (BMPs)

Stormwater Management Control	Recommended BMP
At-Source Controls	Increased Topsoil Depth Passive Landscaping
Conveyance System Controls	Grassed Swales
End Of Pipe Controls	Underground Stormwater Detention System Manufactured Treatment Device



3.5 Proposed Storm Drainage

The proposed major and minor system flow patterns and drainage areas are shown on **Figure 3.2**. As shown on **Figure 3.2**, the proposed development will convey flows to two (2) outlets, one to the existing 450 mm diameter storm sewer on Erin Centre Boulevard and the other to the forested area adjacent to the site on the north east side.

Drainage from Catchment 201 (0.90 ha, **Figure 3.2**) and external catchment EXT-1 (0.69 ha) will be captured via proposed area drains connected to the proposed internal storm sewer system and detained in an underground storage tank, located in the proposed underground parking garage. Drainage from the underground storage tank will outlet to the existing 450 mm diameter storm sewer on Erin Centre Boulevard. Drainage from Catchment 203 (0.10 ha, **Figure 3.2**) will be conveyed south uncontrolled towards Erin Centre Boulevard and ultimately to the existing 450 mm diameter storm sewer.

Drainage from Catchment 202 (0.01 ha, **Figure 3.2**) will be conveyed uncontrolled north east to the forested area, following the same drainage path as runoff from the existing development.

3.5.1 Quantity Control

As mentioned in **Section 3.2**, the proposed 100 year peak flow from the majority of the development will be controlled to the existing 10 year peak runoff rate to Erin Centre Boulevard. Flows will be controlled via an orifice tube located downstream of the underground stormwater tank (**Figure 3.2**). Proposed release rates and required storage volumes were calculated using the modified rational method and the IDF rainfall curves from the City of Mississauga Development Requirements Manual. Calculations are included in **Appendix C**.

To accommodate the controlled release rate, an underground stormwater tank is located within the underground parking garage. A 250 mm diameter orifice tube located downstream of the stormwater management tank will control the release rate from the proposed development. The underground storage will provide approximately 287.5 m³ of storage. Calculations are provided in **Appendix C**. A summary of the quantity control provided is listed in **Table 3.4** and **Table 3.5**.



Table 3.4: Summary of Proposed Flows to Erin Centre Boulevard

To Erin Centre Boulevard						
Storm Event	Allowable Release Rate (L/s)	Controlled Site Release Rate (L/s)	Uncontrolled Site Release Rate (L/s)	Total Proposed Site Release Rate (L/s)	Storage Required (m³)	Storage Provided (m³)
2 Year	137.8	124.4	13.4	137.8	35.0	278.5
5 Year	185.3	167.3	18.0	185.3	47.0	
10 Year	228.2	193.0	22.2	215.2	69.3	
25 Year			28.0	221.0	128.8	
50 Year			31.7	224.7	193.1	
100 Year			35.2	228.2	244.6	

Table 3.5: Summary of Proposed Flows to the Forested Area Outlet

Storm Event	Allowable Release Rate (L/s)	Total Proposed Site Release Rate (L/s)
2 Year	3.7	0.6
5 Year	4.9	0.8
10 Year	6.1	1.0
25 Year		1.2
50 Year		1.5
100 Year		1.7

3.5.2 Quality Control

To contribute to the treatment train approach and to improve the level of quality control, an MTD, specifically a HydroFilter unit is provided to treat runoff from the proposed development prior to discharging to Erin Centre Boulevard. The HydroFilter HF13 is sized to provide MECP Enhanced (Level 1) Protection (80% TSS removal). Sizing calculations, as well as operation and maintenance information are provided in **Appendix D**.

3.5.3 Erosion/Volume Control

Erosion and volume control will be provided via a proposed water re-use tank, which will be located in the underground parking garage. The required erosion/volume control volume is 33.9m³. The water re-use tank has been sized to provide 49.2m³ of storage to provide a volume equivalent to the first 5 mm of runoff from all impervious surfaces.



3.5.4 Water Balance

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

As noted in **Section 3.1**, the subject site does not fall within a source protection area. Therefore, a best-efforts approach to provide the required retention can be provided via the water re-use tank outlined in **Section 3.5.3** to achieve the erosion control criteria of 5 mm retention. The required water balance volume is 33.9m³ and the water re-use tank outlined in **Section 3.5.3** is sufficient to address the water balance requirements. Refer to **Appendix C** for water balance calculations.

4.0 Sanitary Servicing

4.1 Existing Sanitary Servicing

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

- ➡ A 2400 mm diameter concrete sanitary sewer on Erin Mills Parkway flowing south east;
- ➡ A 250 mm diameter PVC sanitary sewer from the site to Erin Centre Boulevard; and
- ➡ A 900 mm diameter concrete sanitary sewer on Erin Centre Boulevard and Erin Mills Parkway flowing south east through an easement behind the existing subdivision on Forest Hill Drive.

Based on City of Mississauga record drawings and the subsurface utility investigation plan completed by 4 Sight Utility Engineers dated August 9, 2024, the wastewater from the existing site flows south via a 250 mm diameter PVC sanitary sewer on Erin Centre Boulevard to the existing 900 mm diameter concrete sanitary sewer on Erin Centre Blvd. (approximately 16 m downstream of the site).

4.2 Proposed Sanitary Servicing

The sanitary servicing system from the proposed development is proposed to connect to the existing 250mm diameter PVC sanitary sewer on Erin Centre Boulevard via a proposed sanitary maintenance hole at the property line at the south west corner of the site, as shown on **Drawing S-1**. A closed-circuit television (CCTV) investigation was conducted on June 25, 2024 by 4Sight Utility Engineers to determine the condition of the existing 250mm diameter PVC sanitary sewer. Based on the CCTV video and report the existing lateral appears to be in good condition. It is therefore proposed to use the existing 250mm diameter PVC sanitary lateral for the proposed development. The sanitary lateral has 3.38m of cover at the proposed service connection, which is sufficient to service the proposed development.

The sanitary servicing system will be designed in accordance with Peel Region, and MECP criteria, including but not limited to:

- ➡ Sanitary Generation Rate:
 - Residential: 290 L/cap/day
 - Non-Residential: 270 L/emp/day
- ➡ Residential Population Density:
 - 1.7 persons/unit (Bachelor/one bedroom apartment)



- 3.1 persons/unit (two or more bedrooms apartment)
- Peaking Factor: Harmon (Max. 4.0, Min. 2.0)
- Infiltration Rate: 0.26 L/s/ha
- Minimum Pipe Size: 200 mm diameter
- Minimum Pipe Cover: 2.5 m
- Minimum Actual Velocity: 0.75 m/s
- Maximum Velocity: 3.0 m/s

The proposed development will consist of two Blocks; Block A and B. Block A will have 2 towers and Block B will have one tower. These two blocks will form two condominium corporations. Both condominium corporations will have their own dedicated sanitary pipes running internal to the building through the underground parking structure. They will both converge to one single sanitary plug at the south west side of the proposed development.

As per the site statistics prepared by Arcadis, dated October 11, 2024, as well as the Region of Peel criteria, the peak domestic flow generated from the site will be 29.74 L/s, refer to calculations and the Multi-Use Demand table in **Appendix E**. We understand that the Region of Peel is to confirm if there is adequate downstream sewer capacity in the existing wastewater system to service the proposed development.

5.0 Water Servicing

5.1 Existing Water Servicing

As indicated in the survey (**Appendix B**), the following existing watermain surrounds the site:

- ➡ A 900 mm diameter concrete watermain on the northeast side of Erin Mills Parkway;
- ➡ A 1500 mm diameter concrete watermain in the centre of Erin Mills Parkway;
- ➡ A 600 mm diameter CPP watermain on the south-west side of Erin Mills Parkway;
- ➡ A 300 mm diameter PVC watermain on the south-west side of Erin Mills Parkway;
- ➡ A 900 mm diameter CPP watermain on the south side of Erin Mills Parkway;
- ➡ A 300 mm diameter PVC watermain on the north side of Erin Centre Boulevard;
- ➡ A 1050 mm diameter concrete watermain on the south side of Erin Mills Parkway.

A hydrant flow test was completed on June 20, 2024 to determine existing flows and pressures for the Erin Centre Boulevard 300 mm diameter watermain (see Hydrant flow test completed by Aquazition in **Appendix F**). The calculated flow at 20 psi is 611.62 L/s and the static pressure is 60 psi.

Any existing water infrastructure within the site will be decommissioned and removed offsite by a qualified contractor as per MECP, City of Mississauga and Peel Region's specifications and standards.

5.2 Proposed Water Servicing

Water supply for the proposed development will be provided from the existing 300 mm diameter watermain along Erin Mills Boulevard. The proposed domestic service connection will be 150 mm in diameter and the fire service will be 250 mm in diameter. A separate 150 mm diameter connection is proposed to service the retail spaces and an additional 250 mm diameter fire service is required since the proposed buildings are greater than 84m in height. The proposed water service connections are shown on **Drawing S-1**. The proposed water distribution system will be designed in accordance with the City of Mississauga and MECP criteria including:

- ➡ Minimum Pipe Size for mainlines:
 - Residential Areas: 150 mm diameter



- Industrial/Commercial Areas: 300 mm diameter
- ➔ Minimum Pipe Depth: 1.7 m
- ➔ Maximum Hydrant Spacing:
 - Residential Areas: 150 m
 - Industrial, Commercial, and Institutional Areas: 100 m

A water demand analysis and Multi Use Demand Table (**Appendix F**) was completed for the site in accordance with the Region of Peel (Water and Wastewater Modelling Demand Table Ver. 2.0), Ontario Building Code, and MECP criteria, including:

- ➔ Water usage rate
 - Residential: 270 L/cap/day
 - Industrial, Commercial, or Institutional (ICI): 250 L/emp/day
- ➔ Residential Population Density:
 - 1.7 persons/unit (Bachelor/one bedroom apartment)
 - 3.1 persons/unit (two or more bedrooms apartment)
- ➔ Commercial Population Density: 50 people/ha
- ➔ Peaking Factors:
 - Maximum Hour = 3.0 (Residential or ICI)
 - Maximum Day = 1.8 (Residential) or 1.4 (ICI)

As per the site statistics prepared by Arcadis, dated October 11, 2024, as well as Region of Peel criteria, the domestic water demands and Fire Underwriters Survey (FUS) 2020 calculations can be found in **Appendix F**. A summary of the domestic and fire demands is as follows:

Table 5.1 – Water Demands

Building	FUS Fire Flow	Average Day	Max Day	Peak Hour	Max Day + Fire Flow
Block A (Tower 1 & 2)	83 L/s	4.83 L/s	8.68 L/s	14.47 L/s	91.68 L/s
Block B (Tower 3)	67 L/s	1.63 L/s	2.93 L/s	4.88 L/s	69.93 L/s

We understand that the Region of Peel will confirm if there is capacity for the existing watermain system to service the proposed development.



6.0 Grading

6.1 Existing Grading Conditions

The existing topography has slopes in the range of 1.0% in the existing parking lot to 22% in the west corner. The ground surface elevations through the study area range from approximately 167.35 m in the north east side of the site to approximately 170.99 m in the west corner.

6.2 Proposed Grading Concept

In general, the proposed development will be graded in a manner which satisfies the following goals:

Satisfy the City of Mississauga lot and road grading criteria, create required depth for sanitary sewer, as well as provision of an efficient earthworks program, including:

- Minimum Road Grade: 0.5%
- Maximum Road Grade: 6.0%
- Minimum Lot Grade: 2%
- Maximum Lot Grade: 5%
- Minimum Driveway Grade: 1%
- Maximum Driveway Grade: 6%
- 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 **Drawing G-1**. At the Site Plan application stage, the preliminary grading will be subject to a more in-depth analysis in an attempt to further minimize slopes and retaining walls.



7.0 Groundwater Discharge

A preliminary Hydrogeological investigation was prepared by Grounded Engineering Inc. (**Appendix I**) to address concerns relating to temporary and permanent groundwater discharge for the proposed development. The groundwater discharge rates from this report are summarized in **Tables 6.1** and **6.2** below.

Table 6.1 – Short Term (Construction) Dewatering Rates

Estimated Groundwater Seepage (L/day)	Design Rainfall Event (25mm) (L/day)	Estimated Total Short Term Discharge (L/day)	Estimated Total Short Term Discharge (L/s)	Sanitary Demand (L/s) (Block A & B)
140,000	266,000	406,000	4.69	.29.55

Table 6.2 – Long Term (Permanent) Dewatering Rates

Estimated Groundwater Seepage (L/day)	Estimated Infiltrated Stormwater Design Rainfall Event (25mm) (L/day)	Estimated Total Daily Water Takings (L/day)	Estimated Total Daily Water Takings (L/s)
125,000	16,000	141,000	1.63

As per Grounded Engineering Inc. hydrogeological investigation, as of July 11, 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 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 Erin Centre Boulevard. The calculated sanitary demand for Blocks A & B is 29.55 L/s. The Region of Peel is to confirm whether these sewers have capacity to accommodate the sanitary demands of the development. Since the average dewatering rate is less than the sanitary demands, 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 Discharged Agreement with the Region of Peel Water (for sanitary discharge) or City of Mississauga Water (for storm discharge).

As per Grounded Engineering Inc.'s hydrogeological report, pretreatment is required in both short term and long-term dewatering conditions. Refer to the Hydrogeological Investigation in **Appendix I** 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. The 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 prepared for review and approval by the City of Mississauga and CVC prior to any proposed grading being undertaken. This 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 are minimized both during and following construction.

9.0 Summary

This Functional Servicing and SWM Report has outlined the means by which:

- The site can be serviced by full municipal services (storm, sanitary and water); and
- The Site Plan layout supports the stormwater management requirements.

This Functional Servicing and SWM Report has outlined the means by which proposed development at 2555 Erin Centre Boulevard will meet the objectives the City of Mississauga and Region of Peel guidelines through the following measures:

Quantity Control

- Quantity control for the proposed development will be provided via an underground storage tank to control proposed runoff via an orifice tube for all storm events up to and including the 100 year storm to the allowable release rate outletting to Erin Centre Boulevard.

Quality Control

- The water quality objective will be satisfied by the implementation of an MTD unit to reach 80% TSS removal.

Water Balance

- On-site retention of runoff from a 5 mm rainfall event will be provided through the use of a water re-use tank for rainwater re-use via irrigation.

Erosion Control

- The runoff volume from the equivalent of a 5 mm rainfall event will be retained on-site via a rain water re-use tank.

Respectfully Submitted:

SCS Consulting Group Ltd.



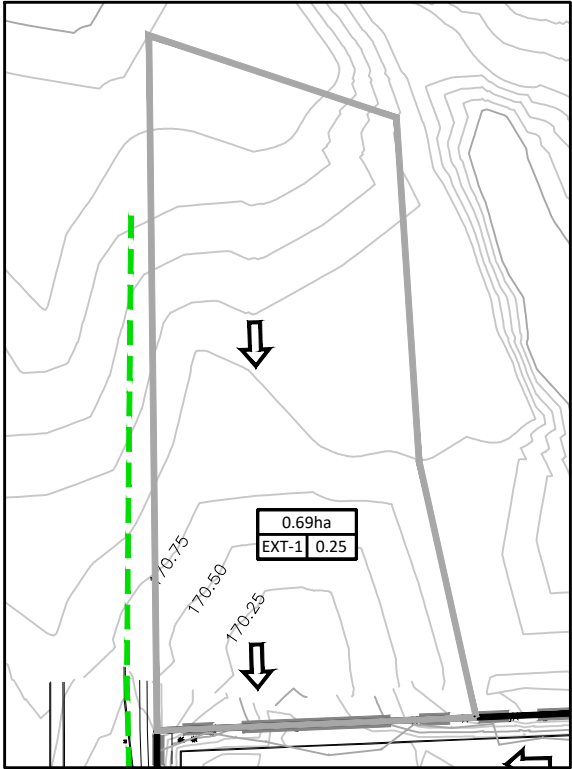
Kelvin Lui, P.Eng
klui@scsconsultinggroup.com



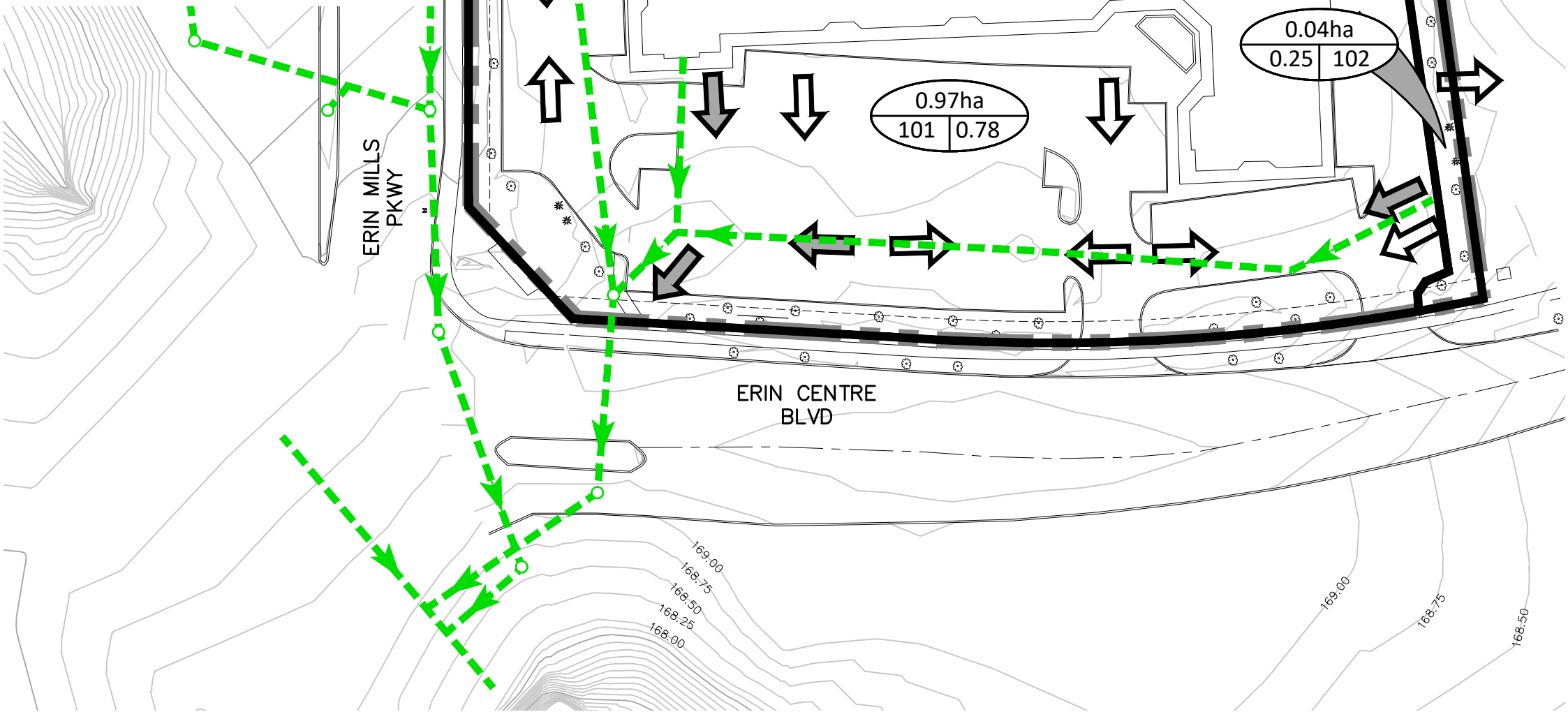
Paige Turchet, P.Eng
pturchet@scsconsultinggroup.com

P:\2730 2555 Erin Centre Blvd\Design\Reports\FSR\2730 - 2555 Erin Mills Boulevard FSR - 2024 11(Nov) 19.docx

SEE LEFT



SCALE: 1:1500



LEGEND:

- LIMIT OF DEVELOPMENT
- EXISTING CONTOUR AND ELEVATION
- EXISTING STORM SEWER
- EXISTING MAJOR FLOW - OVERLAND FLOW
- MINOR SYSTEM - STORM SEWER
- STORM DRAINAGE BOUNDARY
- EXTERNAL STORM DRAINAGE BOUNDARY
- DRAINAGE AREA (HECTARES)
- RUNOFF COEFFICIENT
- CATCHMENT ID
- EXTERNAL STORM DRAINAGE AREA (HECTARES)
- RUNOFF COEFFICIENT
- CATCHMENT ID



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

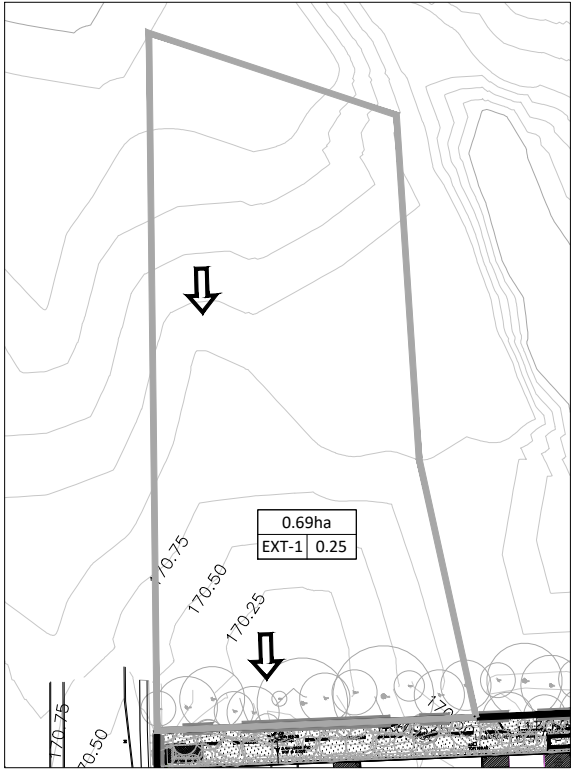
STARMONT ESTATES INC.

2555 ERIN CENTRE BOULEVARD

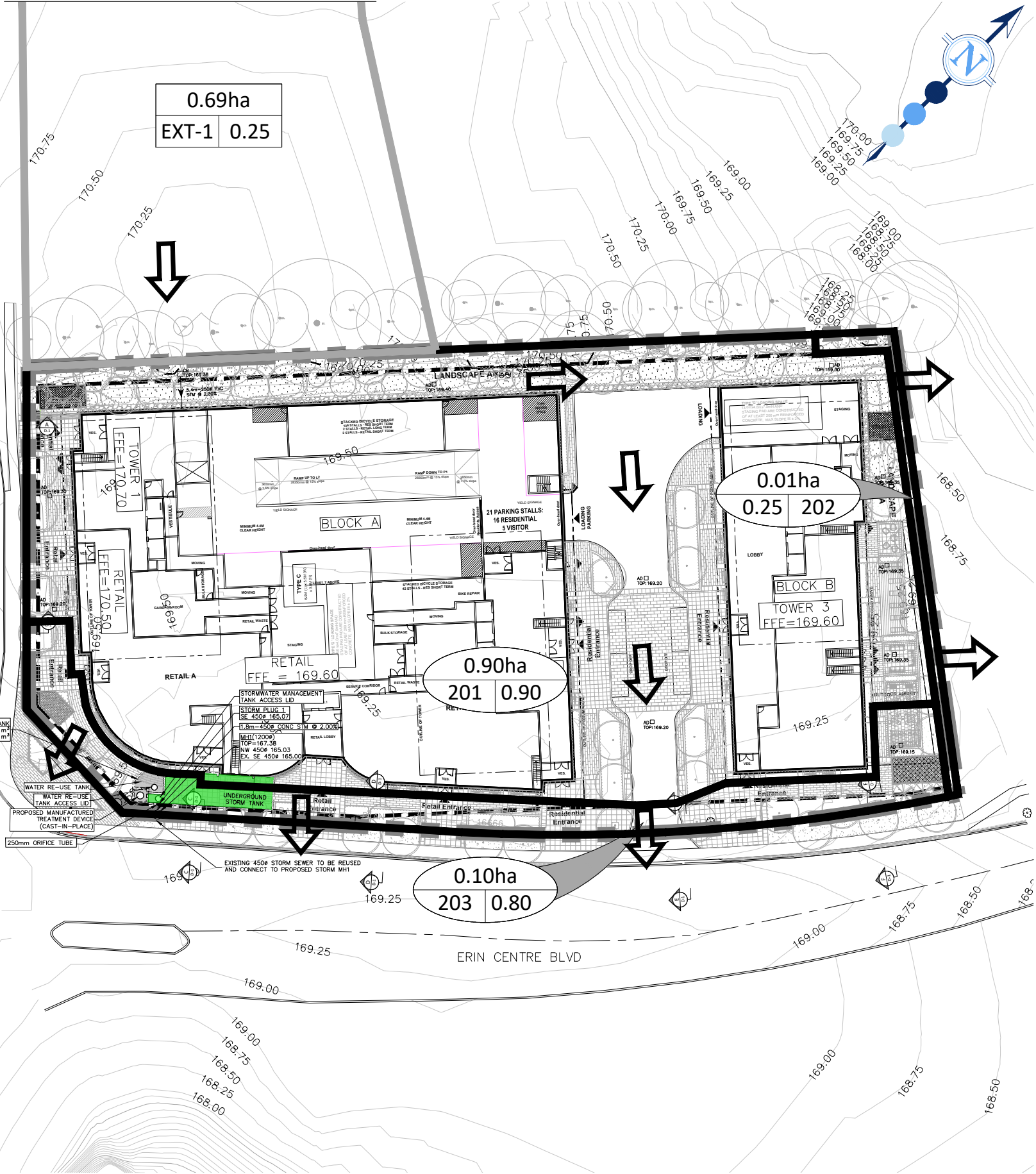
EXISTING STORM DRAINAGE PLAN

DESIGNED BY:	K.T.	CHECKED BY:	P.A.T.
SCALE:	1:750	DATE:	OCTOBER 2024
PROJECT No:	2730	FIGURE No:	3.1

SEE LEFT



SCALE: 1:1500



LEGEND:

- LIMIT OF DEVELOPMENT
- EXISTING CONTOUR AND ELEVATION
- MAJOR FLOW - OVERLAND FLOW
- STORM DRAINAGE BOUNDARY
- EXTERNAL STORM DRAINAGE BOUNDARY
- DRAINAGE AREA (HECTARES)
- PERCENT (%) IMPERVIOUS
- CATCHMENT ID
- EXTERNAL STORM DRAINAGE AREA (HECTARES)
- RUNOFF COEFFICIENT
- CATCHMENT ID
- AREA DRAIN
- UNDERGROUND STORM TANK

*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

STARMONT ESTATES INC.

2555 ERIN CENTRE BOULEVARD

PROPOSED STORM DRAINAGE PLAN

DESIGNED BY:	K.T.	CHECKED BY:	P.A.T
SCALE:	1:750	DATE:	NOVEMBER 2024
PROJECT No:	2730	FIGURE No:	3.2

Appendix A Site Plan

2555 ERIN CENTRE

Preliminary Project Statistics

SITE	Area (sqm)
Site area (A)	10153.00
Building Area (B)	5517.10
Vehicular Paved Area + walk ways(C)	2588.80
Landscape Open space [A - (B+C)]	2047.10

SUMMARY	m²	ft²
Site Area	10,153	109,246
Total GCA	76,398	843,562
Total GFA	69,297	745,630
Landscape Area	2,047	22,027

GFA & GCA	m²	ft²
Tower 1 (34+MPH) & Block A Podium		
GCA	36,459	392,293
GFA	31,413	337,999
Tower 2 (31+MPH)		
GCA	16,310	175,017
GFA	10,766	116,466
Tower 3 (28+MPH) & Block B Podium		
GCA	23,629	254,292
GFA	21,118	227,225
Site Total (Block A & Block B)		
GCA	76,398	843,562
GFA	69,297	745,630

PARKING GCA	m²	ft²
Ground	1,462.3	15,734
2nd Floor	1,806.5	19,438
3rd Floor	2,311.4	24,871
4th Floor	2,319.4	24,967
P1	9,116.7	98,096
P2	9,116.7	98,096
P3	9,116.7	98,096
P4	9,116.7	98,096
Total	49,368	477,392

RETAIL	Proposed
Ground Floor	m² ft²
	1,080 11,629

FSI	m²	ft²
Site Area	10,153.0	109,299
Net Site Area (Excluding ROWS)	10,153.0	109,299
Landscape Area	2,047.1	22,035
Lot Coverage %		
FSI	6.83	

UNIT MIX	Block A (Tower 1)	Block A (Tower 2)	Block B (Tower 3)	Total	
Unit Type	Total	%	Total	%	Total %
Studio	0	0%	0	0%	0%
1B	83	23%	55	16%	67 21%
1B+D	154	42%	163	48%	318 44%
2B	312	31%	103	9%	415 29%
2B+D	18	5%	16	5%	34 5%
3B	0	0%	0	0%	0 0%
Tower Total Units	567	100%	337	100%	904 100%
Block Total Units					318
Overall Total Units					1222

AMENITY	Indoor Amenity	Outdoor Amenity
	Required (2m²/Unit)	Proposed
Level B	442.1	871.7
Level S	1005.1	621.7
Block A (Tower 1 & 2) Total	1,408.0	1,493.4
Level B	184.3	474.4
Ground Floor	428.7	367.1
Block B (Tower 3) Total	613.0	636.0
Combined Total	2,044.9	2,564.9

VEHICULAR PARKING	Parking	Req.	Provided	Ratio
Residential (0.85/unit)		869		0.85
P4			256	
P3			256	
P2			254	
P1			20	
GF			13	
L2			36	
L3			52	
L4			55	
Residential Total		869	942	
EVSE Required 20% of Total Residential		174	174	20%
Visitor (0.2/unit)		204		0.2
Retail Req. (Included within Visitor Req.)		58		
P1			199	
Ground Floor			5	
Retail/Visitor Total		204	204	
Visitor Accessible Parking		7	7	2 + 2% of Total
EVSE Required 10% of total visitor		21	21	10%
VEHICULAR PARKING TOTAL		1073	1146	

BICYCLE PARKING	BIKE	Req.	Provided	Ratio
Residential Long Term (0.6/unit)		613	614	0.6
P1			362	
P2			252	
Residential Short Term (0.05 unit)		51		0.05
Ground Floor			52	
Retail Long Term (Retail Area/100)		2		0.10/100sqm
Ground Floor			2	
Retail Short Term (Retail Area/100)		2		0.2/100sqm
Ground Floor			2	
Total		668	1284	

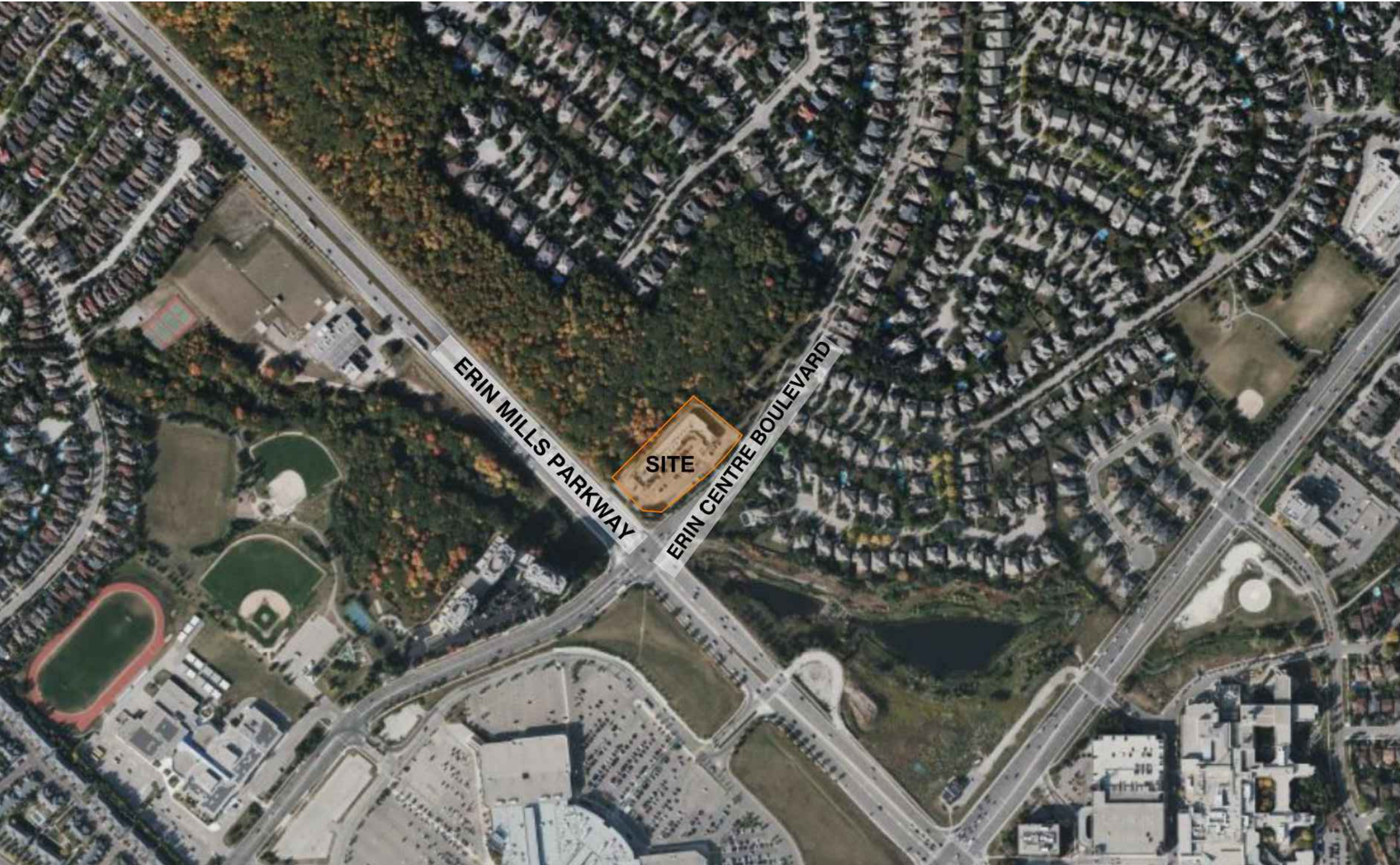
RESIDENTIAL LOCKERS	Req.	Provided
L7		41
L6		41
L4		44
L3		44
Ground Floor		70
P1		21
P2		47
P3		138
P4		138
Total		580

LOADING SPACES	Req.	Provided
Residential		3
Retail	Shared	Shared

WASTE MANAGEMENT	TYPE	BUILDING A	BUILDING B	BUILDING C
Residential - GARBAGE (3CY)		7	7	8
Residential - RECYCLING (3CY)		9	8	8
Commercial - GARBAGE (3CY)		2	1	
Commercial - RECYCLING (3CY)		2	1	
TOTAL		28	17	14

BUILDING HEIGHT	Proposed
Number of Storeys - Tower 1 (Block A)	34+MPH1
Number of Storeys - Tower 2 (Block A)	31+MPH1
Number of Storeys - Tower 3 (Block B)	28+MPH1

Notes:
*GFA is calculated based on the City of Ottawa Definition copied below.
Gross Floor Area (GFA) means the total area of each floor whether located above, at or below grade, measured from the exterior of outside walls and including floor area occupied by interior walls and floor area covered by key windows, but excluding:
(a) floor area occupied by shared mechanical, service and electrical equipment that serves the building (By-law 2006-206);
(b) common hallways, corridors, stairways, elevator shafts and other voids, steps and landings;
(c) City of Ottawa zoning By-law 2016-2017 (2017-2020 Consolidation);
(d) City of Ottawa zoning By-law 2016-2017 (2017-2020 Consolidation);
(e) any 2006-2009 (By-law 2017-2020 Consolidation);
(f) the building's interior mechanical and heating equipment;
(g) common lavatory, storage and washroom facilities that serve the building or tenants;
(h) common storage areas that are necessary to the principal use of the building (By-law 2006-206);
(i) common amenity areas and play areas accessory to a principal use on the lot, and (By-law 2006-206);
(j) living quarters for a caretaker of the building (surface de plancher locs occurs inside)



CLIENT
STARMONT ESTATES
INC.

1681 Langstaff Rd, Vaughan, ON L4K 5T3

COPYRIGHT
This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.

ISSUES
01 ISSUED FOR REZONING OCT.18th 2024

SEAL



55 St. Clair Avenue West,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930
www.arcadis.com

PROJECT
2555 ERIN CENTRE BLVD

PROJECT NO:

SHEET TITLE
CONTEXT & SITE STATISTICS

SHEET NUMBER
A100

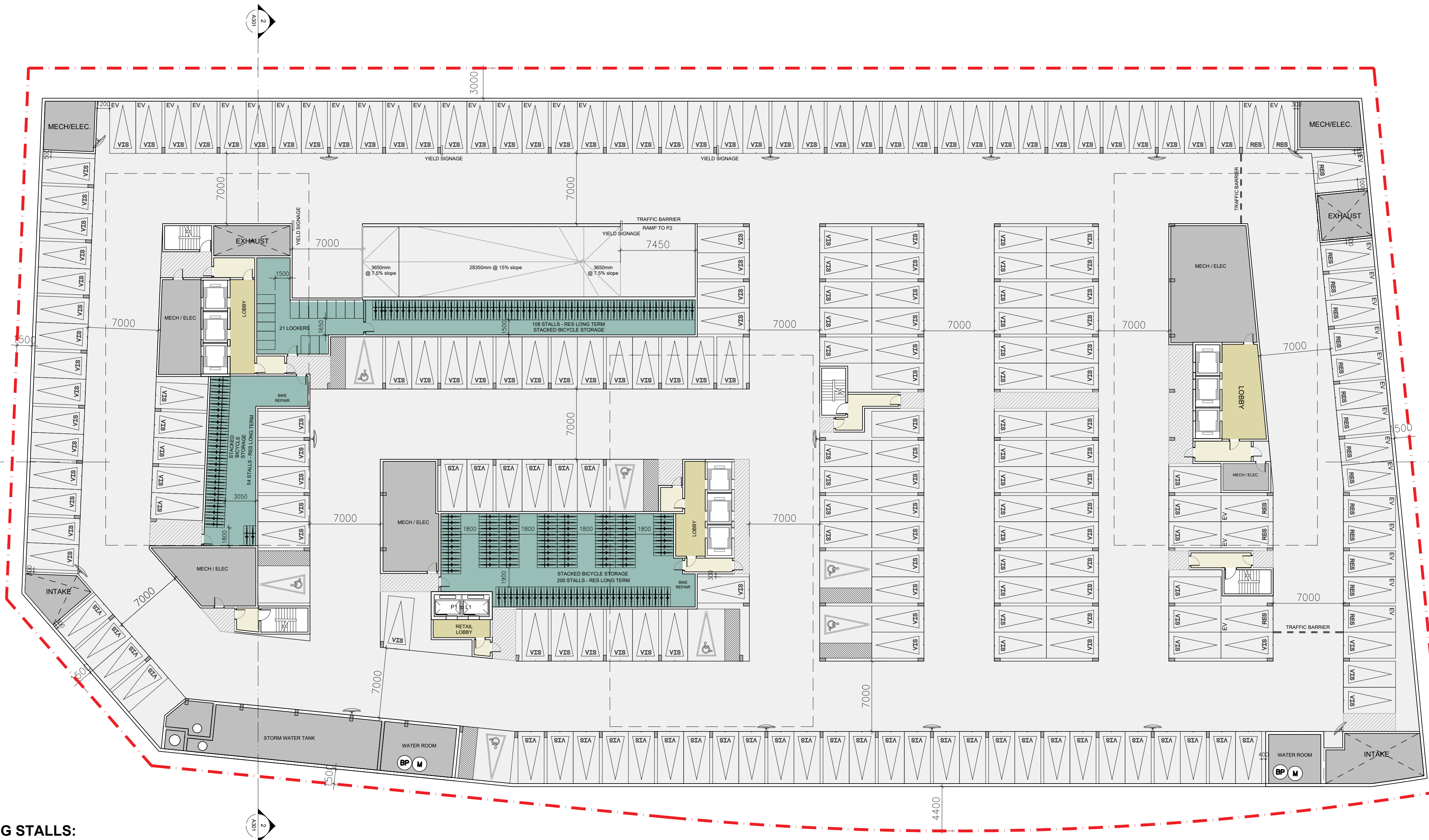
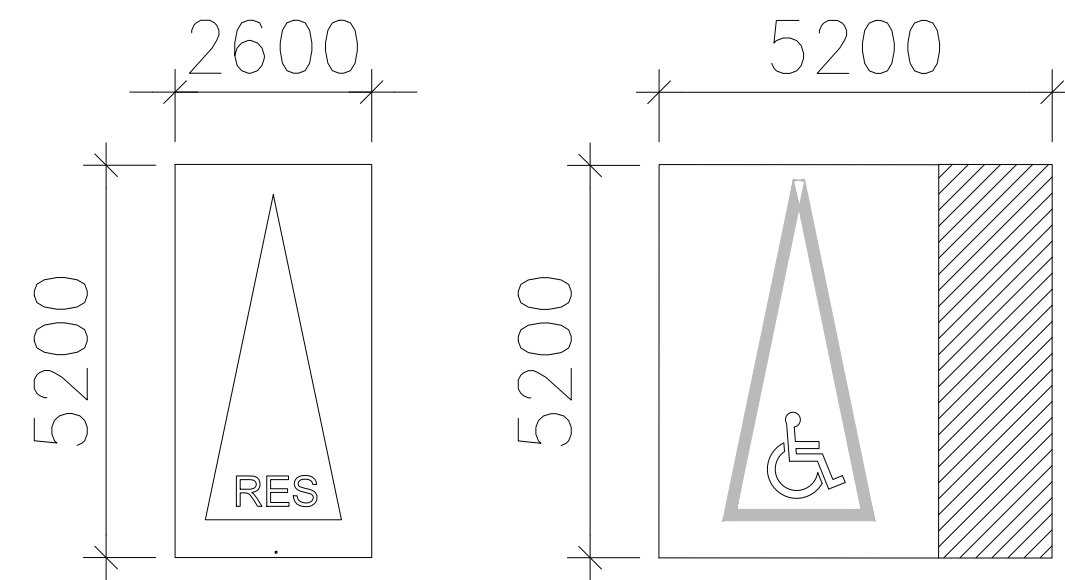
ISSUE



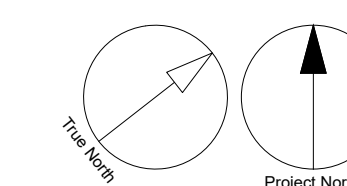
CLIENT STARMONT ESTATES INC. 1681 Langstaff Rd, Vaughan, ON L4K 5T3	
COPYRIGHT This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.	
ISSUES 01 ISSUED FOR REZONING OCT. 18th 2024	
SEAL	
PROJECT 2555 ERIN CENTRE BLVD	
PROJECT NO:	
SHEET TITLE SITE PLAN	
SHEET NUMBER A102	ISSUE



55 St. Clair Avenue West,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930
www.arcadis.com

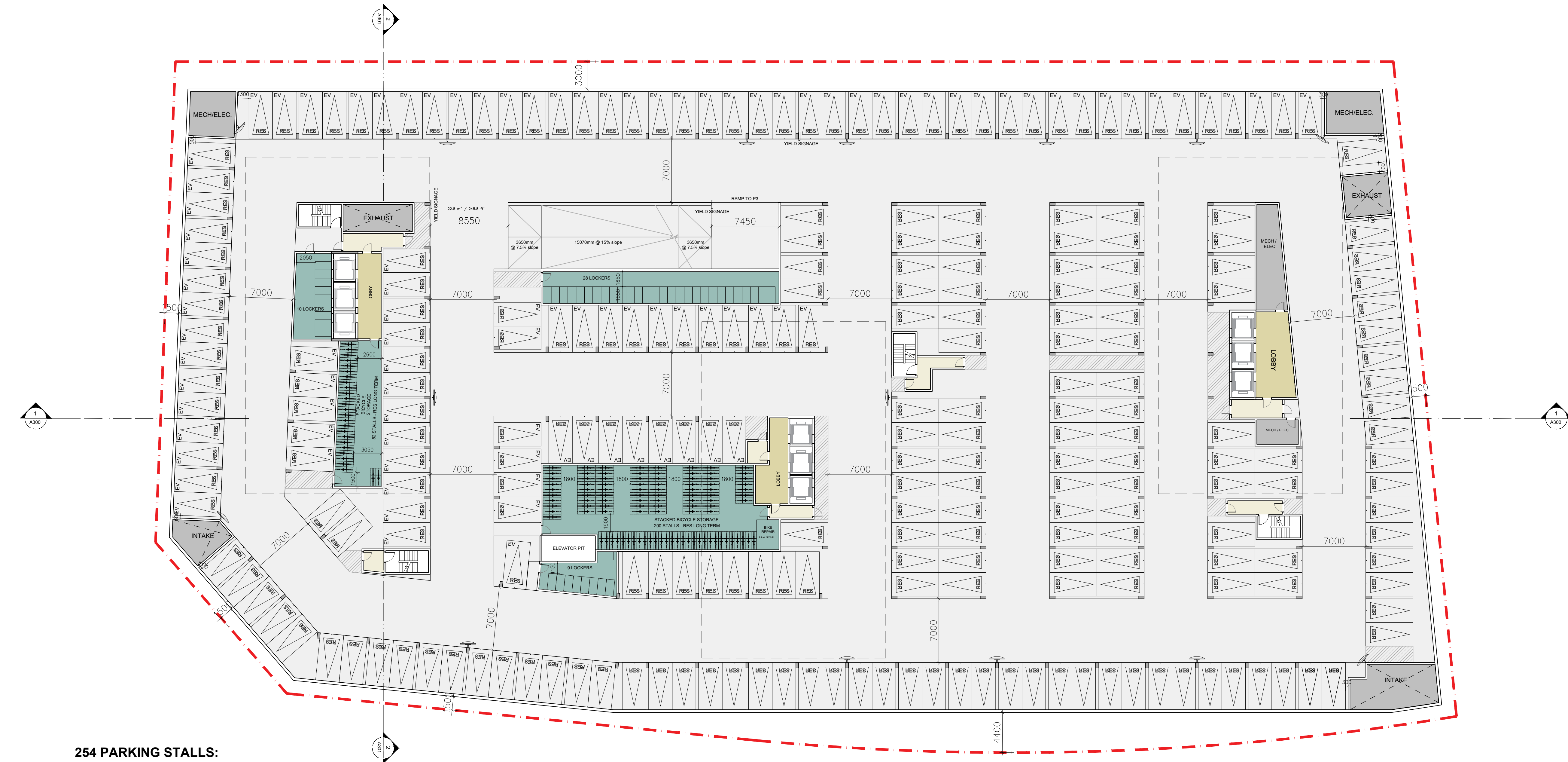


219 PARKING STALLS:
199 VISITOR
20 RESIDENTIAL



SCALE - 1:250

CLIENT STARMONT ESTATES INC. 1681 Langstaff Rd, Vaughan, ON L4K 5T3		
COPYRIGHT This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.		
ISSUES 01 ISSUED FOR REZONING OCT. 18th 2024		
SEAL		
ARCADIS 55 St. Clair Avenue West, Toronto, ON M4V 2Y7, Canada tel 416 596 1930 www.arcadis.com		
PROJECT 2555 ERIN CENTRE BLVD		
PROJECT NO:		
SHEET TITLE PARKING LEVEL P1		
SHEET NUMBER A150	ISSUE	



**254 PARKING STALLS:
254 RESIDENTIAL**

CLIENT

STARMONT ESTATES
INC.

1681 Langstaff Rd, Vaughan, ON L4K 5T3

COPYRIGHT

This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.

ISSUES		
01	ISSUED FOR REZONING	OCT. 18th 2024

SEAL



55 St. Clair Avenue West,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930
www.arcadis.com

PROJECT
2555 ERIN CENTRE BLVD

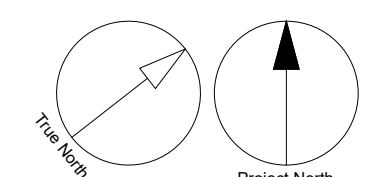
PROJECT NO:

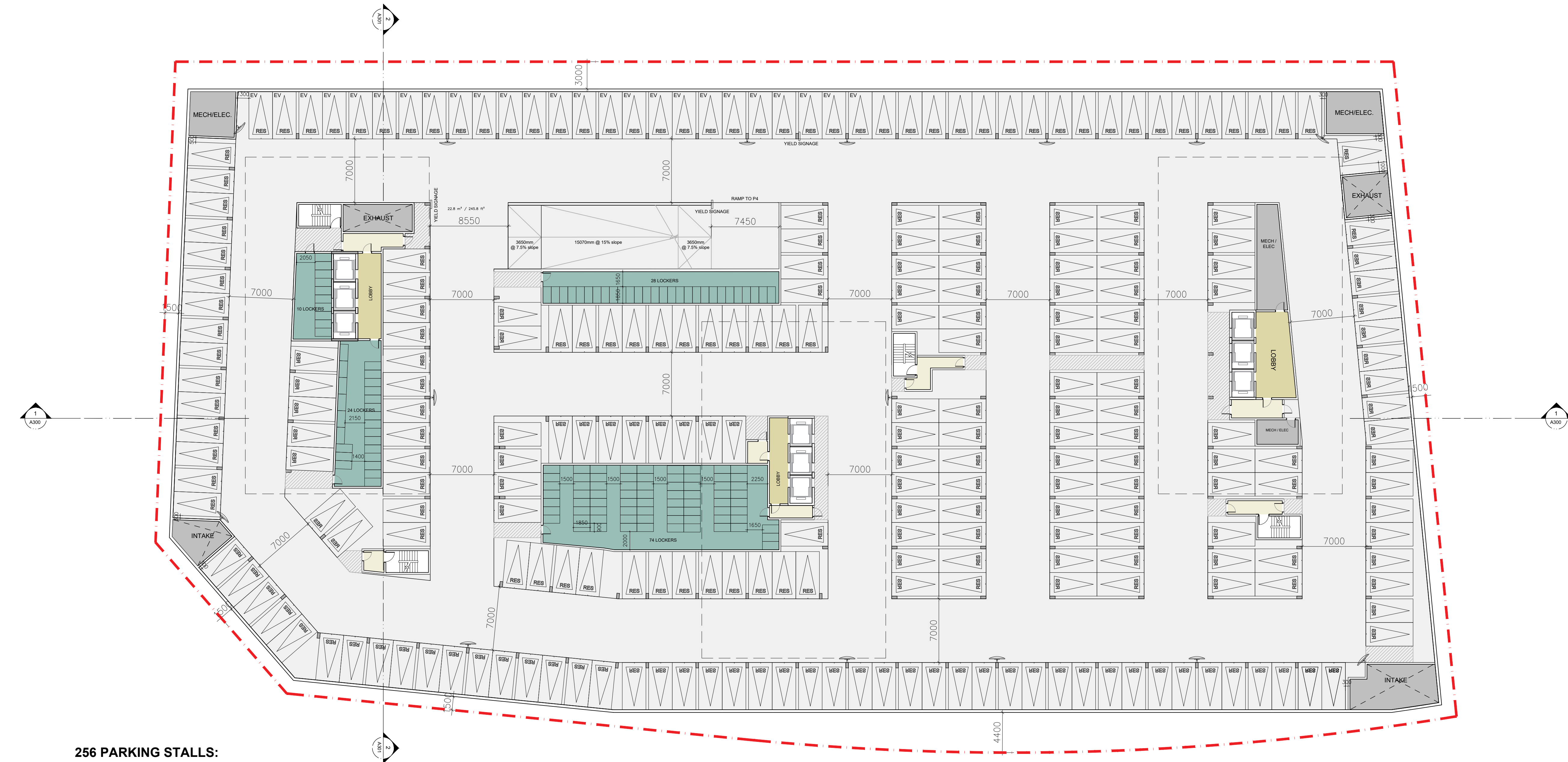
SHEET TITLE
PARKING LEVEL P2

SHEET NUMBER
A151

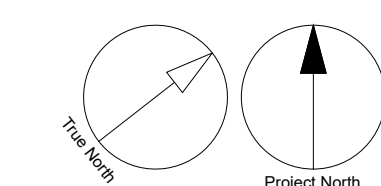
SCALE CHECK

SCALE - 1:250





**256 PARKING STALLS:
256 RESIDENTIAL**



SCALE - 1:250

CLIENT
STARMONT ESTATES
INC.

1681 Langstaff Rd, Vaughan, ON L4K 5T3

COPYRIGHT

This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.

ISSUES

01	ISSUED FOR REZONING	OCT. 18th 2024
----	---------------------	----------------

SEAL



55 St. Clair Avenue West,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930
www.arcadis.com

PROJECT
2555 ERIN CENTRE BLVD

PROJECT NO:

SHEET TITLE	PARKING LEVEL P3 - P4
-------------	-----------------------

SHEET NUMBER
A152

SCALE CHECK



CLIENT

STARMONT ESTATES INC.

1681 Langstaff Rd, Vaughan, ON L4K 5T3

COPYRIGHT

This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.

ISSUES

01 ISSUED FOR REZONING OCT. 18th, 2024

SEAL

ARCADIS

55 St. Clair Avenue West,
Toronto, ON M4V 2Y7, Canada
tel 416 596 1930
www.arcadis.com

PROJECT

2555 ERIN CENTRE BLVD

PROJECT NO:

SHEET TITLE

GROUND FLOOR PLAN

SHEET NUMBER

A200

ISSUE

Appendix B Excerpts from Background Reports

SUE Report

Project #: 24-0240

**2730-2555 Erin Centre Blvd,
Mississauga**

Submitted by:

4Sight Utility Engineers

Aug 12, 2024



Qualifications and Limitations

4Sight Inc. (4Sight) has prepared this report for the Consultant and Project Owner in accordance with the industry practices and the scope of work agreed upon for the project. The information contained is based on the judgement of the Professional Engineer stamping the drawing based on the information provided to 4Sight and collected by 4Sight. The information is current as per the date that the information was collected, and any changes made following the investigation are not covered by this report and not the responsibility of 4Sight.

Some information for this report were provided by the Consultant and/or Project Owner and 4Sight is relying on the accuracy of that information for our report.

The report should be treated as confidential information and should not be used by any third parties unless agreed upon by 4Sight and the Consultant and/or Project Owner. Any damages incurred by unauthorized parties using the data is their responsibility.

Signature and Revision Log


Prepared by: Jay Goswami, EIT, PMP Stamped/Signed by: Lawrence Arcand, P. Eng Date: August 12, 2024			
Revision #	Revised By	Date	Revision Summary

Table of Contents

Qualifications and Limitations

Revision Log and Signatures

1.	Project Summary.....	1
a.	Investigation Limits	1
2.	Investigation Scope and Methodology.....	3
a.	ASCE 38 Quality Level Description	3
b.	Scope of Work Outlined in Proposal Document	3
3.	Investigation Techniques Utilized	5
a.	Pipe and Cable Locators (PCL's)	5
b.	Magnetometers (Metal Detectors).....	5
c.	Measuring Rods.....	5
d.	Survey Grade GPS.....	5
e.	CCTV Equipment.....	6
4.	Key Investigation Findings.....	6
a.	Water	6
b.	Sewers.....	6
c.	Gas/Pipelines	6
d.	Telecom.....	6
e.	Electrical.....	6
f.	Unknown.....	7
g.	CCTV Investigation	7
5.	Summary.....	7

Appendix A – Utility Records Contact List

Appendix B – SUE Drawings

Appendix C – Photo Report

Appendix D – CCTV Report

1. Project Summary

4Sight Inc (4Sight) completed a Subsurface Utility Engineering (SUE) Investigation for SCS Consulting Group Ltd. at 2730-2555 Erin Centre Blvd in Mississauga. The Quality Level B SUE investigation was completed in June 2024. The objective of these investigations was to identify the location of the key utilities on the project in accordance with the ASCE 38-22 Standard.

a. Investigation Limits

The location is at 2730-2555 Erin Centre Blvd. in Mississauga. The investigation will be as per outlined in red & Blue below.

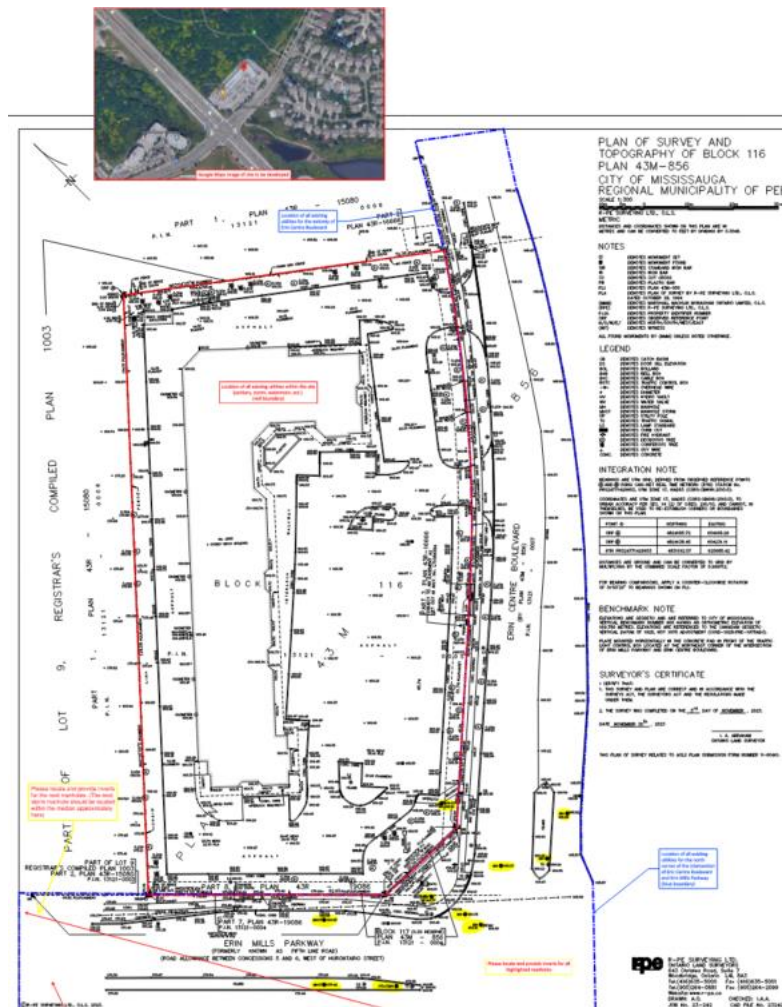


Figure 1 – Investigation Area from Client



Figure 2 – Investigation Area on existing Aerial map

2. Investigation Scope and Methodology

4Sight's investigation was completed in accordance with ASCE 38-22 Standard.

a. ASCE 38 Quality Level Description

All utility information collected and depicted as part of this investigation were assigned a quality level in accordance with the ASCE 38 Standard. The following is a summary of the Quality Level descriptions identified in the ASCE 38 Standard.

Quality Level D (QLD) – Information shown on the drawing is based solely on information provided by Utility Owners, As-built records, verbal recounts, or other third-party sources.

Quality Level C (QLC) – Information shown the drawing is based on correlating surveyed surface features with records information provided by Utility Owners, As-built records, verbal recounts, or other third-party sources.

Quality Level B (QLB) – Information shown on the drawing is based on geophysical designating using a variety of geophysical sources which are outlined in the report.

Quality Level A (QLA) – Information shown on the drawing is based on exposure of the utility at test hole locations, and the subsequent survey of those points.

b. Scope of Work Outlined in Proposal Document

SUE QLB Investigation

4Sight will complete a SUE investigation in accordance with ASCE 38-22. We will attempt to achieve Quality Level B for all conductive utilities with the exception of gravity sewers for which we will aim for QL-C. The base scope of this investigation will include:

Request and collect Utility records information from the various Utility Companies. Review utility records information provided by SCS Consulting Group Ltd., and those received from our records request.

- Obtain required permits required to complete the field investigation.
- Complete a field investigation using electromagnetic pipe and cable locate equipment to attempt to determine the horizontal alignment of the conductive utilities present within the investigation area. Any utilities that were not identified on the records will be considered as un-documented. 4Sight will attempt to find undocumented utilities however cannot confirm that we will find all undocumented utilities.
 - Utilities that will be located in this investigation will be water, telecom, hydro, fuel and gas to Quality Level B where possible. An attempt will be made to locate utility services to the buildings within the limit. Where Quality Level B can not be achieved for a utility, that facility will be depicted per utility record information (i.e. Quality Level D).

- Storage tanks will be shown on the plan at Quality Level D, if present, if shown on records received.
 - Utilities that will be excluded for the investigation will be: landscape irrigation.
- Collect measure down values at sewer manholes and catch-basin locations and use this data along with records information to determine as best as possible the alignments of the sanitary and storm sewers at Quality Level C. Invert values will be calculated utilizing the collected measure down values and the rim elevations provided from the client's topographic survey.
 - If manhole or catch basins are inaccessible, they will be noted and brought to the attention of the client.
 - Lateral locations will be shown per record information at QLD, if shown on available utility records. If precise location and alignment of laterals to the properties is required, then a CCTV investigation will be required.
- Survey paint marks in the field and tie them into the control provided for the project.
- Produce a set of signed and sealed (by a licensed professional engineer in the province of Ontario) deliverables which will include:
 - An ASCE 38 compliant drawing in Autodesk Civil 3D showing utilities at the quality level determined by the professional engineer in charge.
 - A SUE report summarizing the results of the investigation.

CCTV Inspection of Sanitary & Storm Sewers

4Sight will inspect Sanitary & Storm Sewers & map the laterals as marked up by client in "CCTV Markup" PDF:

- Coordinate required permits.
- Complete CCTV inspection using a CCTV truck equipped with mainline and lateral CCTV equipment. The primary goal of the lateral launching will be to determine the alignment and confirm the condition of the mainline sewers as well as any storm and sanitary sewers running towards the property.
- Provide a traffic protection crew to flag traffic and allow for traffic to flow during the investigation.
- Lateral locations will be marked on the ground, surveyed, and added to the drawings, towards the subject property.

3. Investigation Techniques Utilized

4Sight used a number of techniques for the collection of information contained in this report. Details regarding the merits of these techniques can be found in the ASCE 38 standard. The following outlines the techniques used.

a. Pipe and Cable Locators (PCL's)

Pipe and Cable Locators (PCL's) were the key designating equipment utilized to complete the investigation. A variety of equipment were used including Vivax Vloc and 810. Scans were completed using a variety of frequencies such as 8kHz, 33kHz and passive 60Hz mode.

PCL's operate by inducing a signal on the utility to be found and designated the location based on the electromagnetic field picked up by the receiver. Utilities must be conductive in nature for the PCL to work.

Results from the PCL can be affected by a number of factors including the quality of the electrical conductivity of the conductor and/or tracer wire, the ground conductivity, the presence/interference from adjacent utilities and/or conductive elements.



b. Magnetometers (Metal Detectors)

Magnetometers were used to find any metallic elements such as MH lids, and Valves that are not visible at surface. Magnetometers work by picking up a distortion in the background magnetic field that is created in the presence of metallic objects.



c. Measuring Rods

A measuring rod was used to complete the inverts collected on the project. The modifications to the rod allow for more accurate measurements particularly in pipes that are offset from the MH lid.



d. Survey Grade GPS

4Sight uses a Trimble data collector and R12i GNSS system to survey the paint markings, utility features and to record invert information collected on site. 4Sight uses the project control information provided by the client to complete a site calibration on the job file to ensure accurate integration of our data into the project.



e. CCTV Equipment

CCTV truck equipped with mainline and lateral CCTV equipment was used to investigate the mainline sewer and side launch/locate the laterals within the project area.



4. Key Investigation Findings

4Sight completed the SUE investigation in June 2024. The following are some key findings that were identified.

a. Water

Watermains within the project limits are owned by Region of Peel (900mm CPP, 1500mm CPP, 300mm PVC WM). Most of the water mains alignments were verified to Quality Level B, with some small segments shown at Quality Level D (where unable to be field verified).

b. Sewers

4Sight collected the invert information within the accessible sewer chambers (MH's and CB's) within the project limit. Sewers have been shown on the drawing on a combination of field verified information and record information, at a combination of QLC and QLD.

c. Gas/Pipelines

Gas mains within the project limits are owned by Enbridge. There was gas services alignments were verified to Quality Level B. We have added small segments at Quality Level D (where unable to be field verified).

d. Telecom

Telecommunication owners within the project limits identified by records and field investigation are Bell, Telus, PSN, and Rogers. Generally, the telecoms were designated and are shown at Quality Level B (where field verified) with some segments shown at Quality Level D (where unable to be field verified).

e. Electrical

Alectra has underground electrical plant within the project limits, overhead utilities were not included in the project scope. 4Sight crew was able to locate traffic light alignments within investigation area.

f. Unknown

One unknown utility was located during this investigation. 4Sight was unable to determine the utility type, owner, or function of this unknown signal. QLA test holes may aid in identifying the unknown utility.

g. CCTV Investigation

4Sight successfully conducted CCTV investigation between STMMH1 & STMMH2 and MH1 & Plug (Sanitary). CCTV investigation confirmed that there is no plug towards the end of Sanitary alignment and MH is buried. Also, line between STMMH1 & STMMH2 is active and has diameter of 450mm.

5. Summary

This Preliminary SUE Report outlines the successful completion of a Subsurface Utility Engineering (SUE) investigation, in accordance with the ASCE 38-22 standards and within the project scope. The primary objective was to achieve Quality Level B for all conductive utilities through a comprehensive process. This first phase of the investigation took place in June 2024.

This report provides a complete analysis of all the findings of these investigations, including accurate mapping and classification of the underground utilities and the identification of potential conflicts.

Appendix A – Utility Records Circulation List

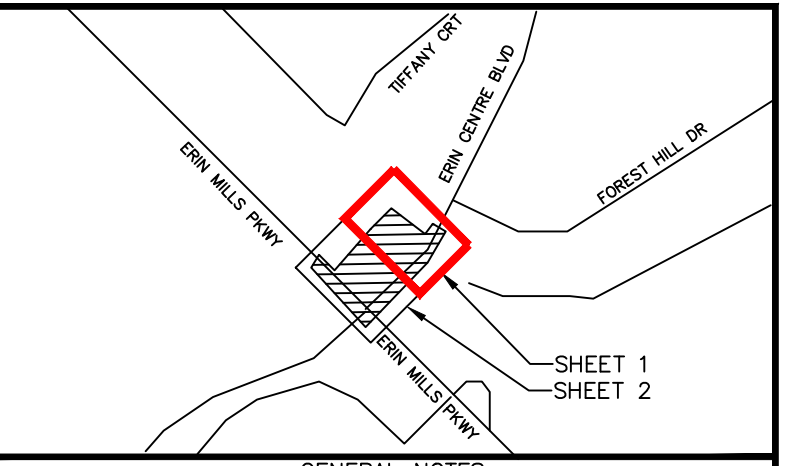
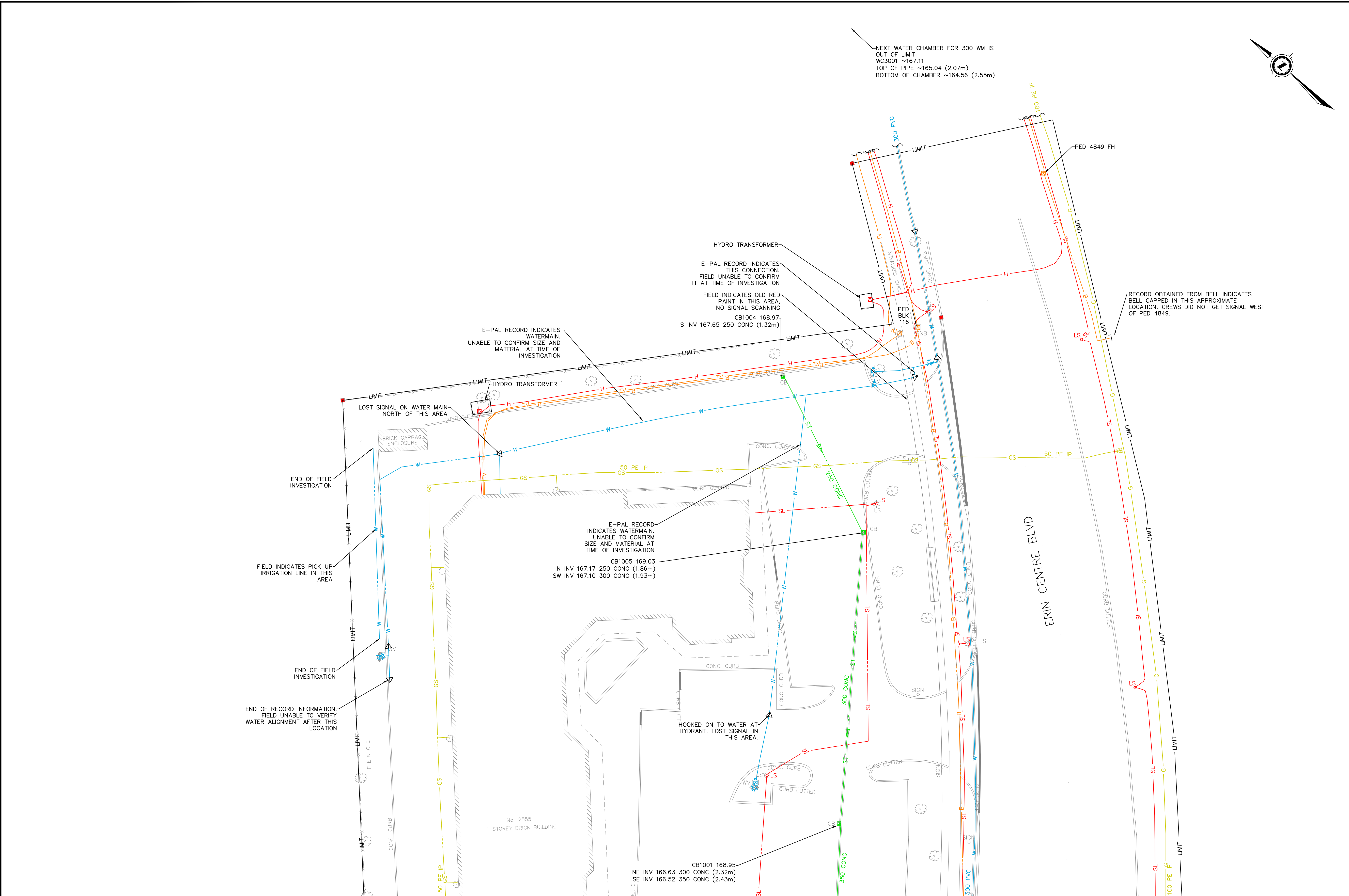
Project Name: 2555 Erin Centre Blvd Completed By: Daniela Giosu
Project Number: 24-0240 Checked By: Atusa Nizamy

Utility Records Circulations List



UTILITY	CONTACT TYPE	EMAIL ADDRESS	PHONE NUMBER	EXTENSION	First Req		Follow Up		MATERIAL RECEIVED	COMMENTS
					DATE REQUESTED	DATE RECEIVED	DATE REQUESTED	DATE RECEIVED		
Ontario 1Call Planning Ticket	Website	www.on1call.com	(800) 400-2255		May-28-24	May-28-24	-	-	2024228438	Complete planning request for records, compare utility owner list to list below and update as req.
PEEL Region	Online Database	https://epal.peelregion.ca/epal/	(905) 791-7800		May-28-24	May-28-24	-	-	PDF, PNG	Contact zzg-pwservicerequests@peelregion.ca with any questions.
City of Mississauga	Records Research Folder				May-28-24					Access Storm Record info through C:\4SightOneDrive\4Sight Utility Engineers\Projects - Documents\Records Research\Record Info\City of Mississauga
PSN Fibre	General Mailbox	PUCC.PSN@mississauga.ca			May-28-24	May-29-24	-	-	PDF	
Bell Canada	General Mailbox	bellmarkups@bell.ca	(416) 296-6587		May-28-24	June-12-24	-	-	PDF, DWG, DGN	
Beanfield Technologies Inc.	General Mailbox	gtapucc@beanfield.com			May-28-24	May-30-24	-	-	No confl	
Cogeco Connexion	General Mailbox	permits.cptconsents@cogeco.com			May-28-24	May-28-24	-	-	No confl	
Group Telecom	General Mailbox	GT.moc@telecon.ca			May-28-24	May-31-24	-	-	No confl	
Rogers Cable Communications	General Mailbox	GTA.markups@rci.rogers.com	(905) 361-4953		May-28-24	June-5-24	-	-	PDF, DWG	
Zayo (Formerly Allstream)	General Mailbox	utility.circulations@Zayo.com	(416) 649-7509		May-28-24	May-28-24	-	-	No confl	
Enbridge Gas Distribution	General Mailbox	mark-ups@enbridge.com	(416) 758-7956		May-28-24	June-5-24	-	-	PDF	
Hydro One Underground	General Mailbox	tpumarkup@hydroone.com			May-28-24	June-4-24	-	-	No confl	High Voltage - Underground Facilities
Hydro One Aerial	General Mailbox	westcentralzonescheduling@hydroone.ca			May-28-24	June-4-24	-	-	No confl	High Voltage - Aerial Facilities

Appendix B – SUE Drawing



- GENERAL NOTES**
1. THE FIELD INVESTIGATION WAS COMPLETED IN JUNE 2024.
 2. THE LIMITS OF THE INVESTIGATION ARE AS PER SHOWN ON THE DRAWING.
 3. THE BASE PLAN FOR THIS DRAWING WAS PROVIDED BY THE CLIENT AND 4SIGHT IS NOT RESPONSIBLE FOR ITS ACCURACY.
 4. UTILITY SIZES AND MATERIALS ARE SHOWN IF AVAILABLE FROM RECORD INFORMATION.
 5. KNOWN UTILITY OWNERS IDENTIFIED WITHIN PUBLIC RIGHT OF WAY INCLUDE:
 - a. WATER & SEWERS - REGION OF PEEL
 - b. ELECTRICAL - ALECTRA
 - c. TELECOM - BELL, ROGERS, TELUS, PSN
 - d. GAS - ENBRIDGE
 6. SEE PROJECT REPORT FOR ADDITIONAL DETAILS.

- LEGEND:**
- B BELL TELECOMMUNICATIONS
 - TV ROGERS COAXIAL
 - C PRIVATE COMMUNICATIONS
 - FO FIBER OPTIC
 - BF BELL FIBER OPTIC
 - RF ROGERS FIBER OPTIC
 - CF COGECO FIBER OPTIC
 - ZF ZAYO FIBER OPTIC
 - H HYDRO
 - SL STREETLIGHT
 - TL TRAFFIC LIGHT
 - E PRIVATE ELECTRICAL
 - G GAS
 - PL PIPELINE
 - W WATER
 - WS WATER SERVICE
 - SA SANITARY SEWER
 - FM SANITARY FORCEMAIN
 - ST STORM SEWER
 - U UNKNOWN CONDUCTIVE SIGNAL
 - QUALITY LEVEL "B"
 - QUALITY LEVEL "C"
 - QUALITY LEVEL "D"
 - - - - - LIMIT OF INVESTIGATION
 - S CONTINUES OUT OF LIMITS
 - > FLOW ARROW
 - [END CAP
 - # LOCATION BASED ON RECORD INFO
 - * LOCATION BASED ON FIELD OBSERVATION
 - △ LOSS OF SIGNAL
 - ⊙ STORM MAINTENANCE HOLE
 - ⊙ SANITARY MAINTENANCE HOLE
 - ⊙ CATCH BASIN
 - ⊙ WATER CHAMBER
 - ⊙ FIRE HYDRANT
 - ⊙ WATER VALVE
 - ⊙ GAS VALVE
 - UP UTILITY POLE
 - LS LIGHT STANDARD
 - HW HAND WELL
 - ⊙ HYDRO MAINTENANCE HOLE
 - ⊙ HYDRO VAULT / TRANSFORMER
 - ⊙ TELECOM PEDESTAL
 - ⊙ FLUSH-TO-GRADE
 - ⊙ BELL MAINTENANCE HOLE
 - ⊙ ROGERS MAINTENANCE HOLE
 - ⊙ UNKNOWN MAINTENANCE HOLE
 - ⊙ TH TEST HOLE

ASCE QUALITY LEVELS

THE UTILITY INFORMATION SHOWN ON THIS DRAWING WAS COLLECTED IN ACCORDANCE TO ASCE STANDARD 38-22. THE INFORMATION IS SHOWN BY QUALITY LEVEL WHICH INDICATES THE LEVEL OF EFFORT USED TO DETERMINE THE LOCATION OF THE DATA.

QUALITY LEVEL "D" - INFORMATION DERIVED FROM EXISTING RECORDS OR VERBAL RECOLLECTIONS.

QUALITY LEVEL "C" - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGEMENT IN CORRELATING THIS INFORMATION TO THE QUALITY LEVEL "D" INFORMATION.

QUALITY LEVEL "B" - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF THE UTILITIES.

QUALITY LEVEL "A" - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES.



PREPARED BY:	REVISIONS	DISCLAIMER.
		THIS DRAWING WAS PRODUCED BY 4SIGHT INC FOR THE USE OF THE CLIENT. 4SIGHT INC DOES NOT ACCEPT ANY RESPONSIBILITY FOR ANY UNAUTHORIZED USE BY THIRD PARTIES, OR ANY MODIFICATION MADE TO THIS DRAWING.

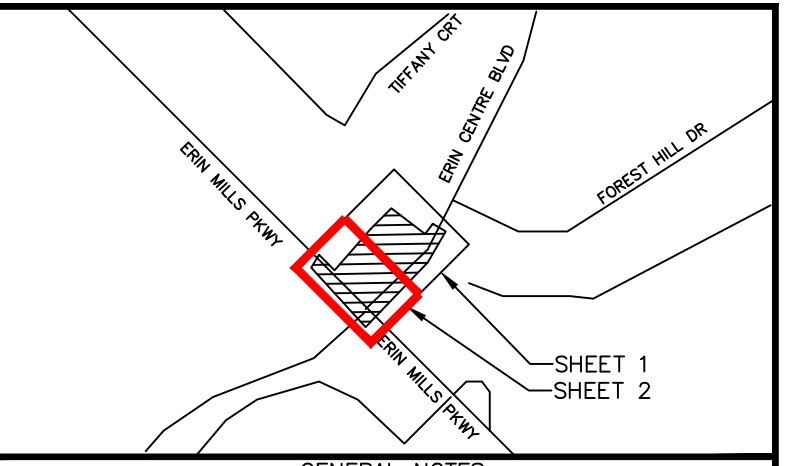
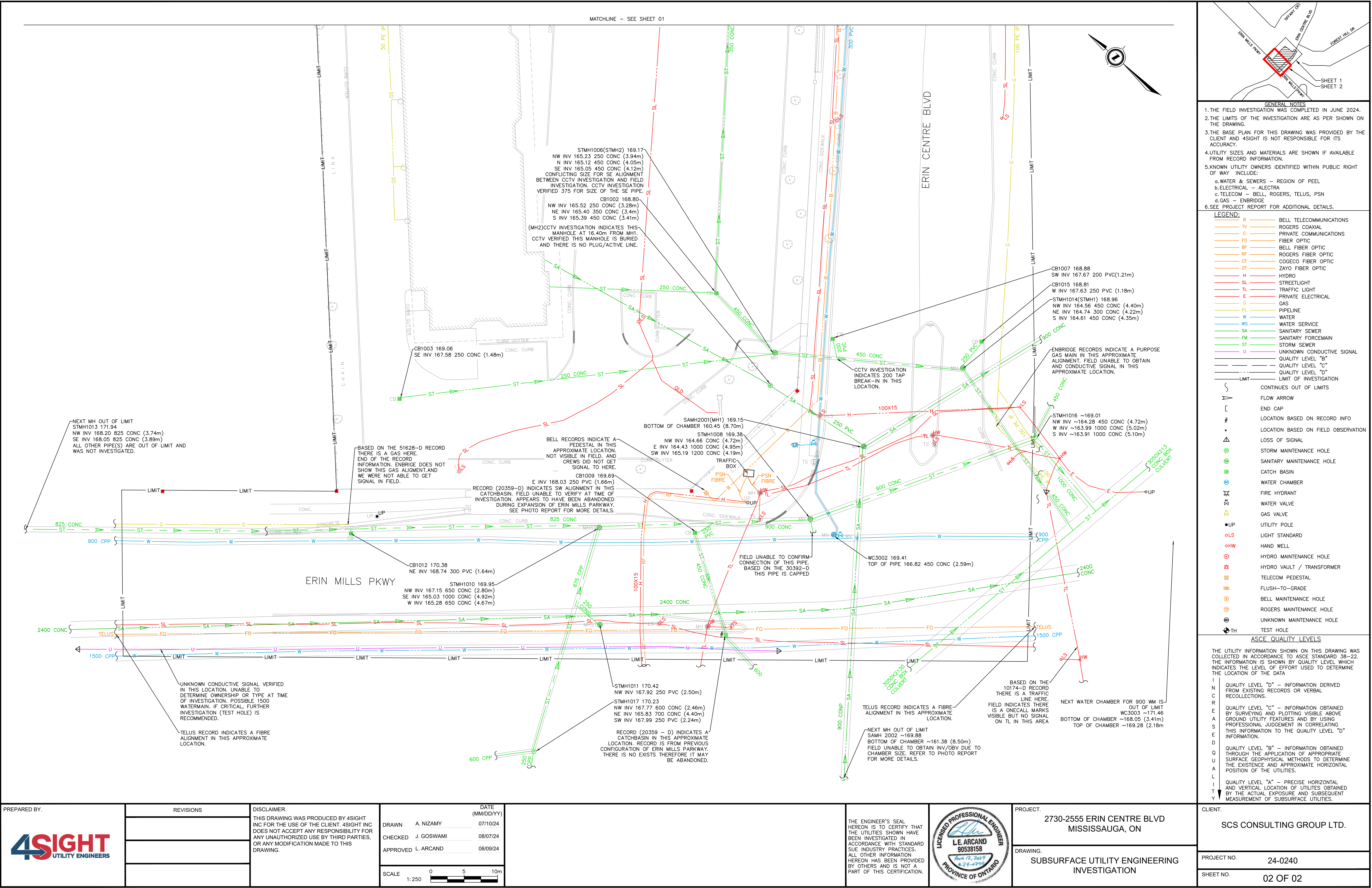
DRAWN	A. NIZAMY	DATE (MM/DD/YY)	07/10/24
CHECKED	J. GOSWAMI	08/07/24	
APPROVED	L. ARCAND	08/09/24	
SCALE	1:250		

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES SHOWN HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT A PART OF THIS CERTIFICATION.



PROJECT:	2730-2555 ERIN CENTRE BLVD MISSISSAUGA, ON
DRAWING:	SUBSURFACE UTILITY ENGINEERING INVESTIGATION

CLIENT:	SCS CONSULTING GROUP LTD.
PROJECT NO.	24-0240
SHEET NO.	01 OF 02



- GENERAL NOTES**
- 1.THE FIELD INVESTIGATION WAS COMPLETED IN JUNE 2024.
 - 2.THE LIMITS OF THE INVESTIGATION ARE AS PER SHOWN ON THE DRAWING.
 - 3.THE BASE PLAN FOR THIS DRAWING WAS PROVIDED BY THE CLIENT AND 4SIGHT IS NOT RESPONSIBLE FOR ITS ACCURACY.
 - 4.UTILITY SIZES AND MATERIALS ARE SHOWN IF AVAILABLE FROM RECORD INFORMATION.
 - 5.KNOWN UTILITY OWNERS IDENTIFIED WITHIN PUBLIC RIGHT OF WAY INCLUDE:
a.WATER & SEWERS – REGION OF PEEL
b.ELECTRICAL – ALECTRA
c.TELECOM – BELL, ROGERS, TELUS, PSN
d.GAS – ENBRIDGE
 - 6.SEE PROJECT REPORT FOR ADDITIONAL DETAILS.

- LEGEND:**
- B BELL TELECOMMUNICATIONS
 - TV ROGERS COAXIAL
 - C PRIVATE COMMUNICATIONS
 - FO FIBER OPTIC
 - BF BELL FIBER OPTIC
 - RF ROGERS FIBER OPTIC
 - CF COGECO FIBER OPTIC
 - ZF ZAYO FIBER OPTIC
 - H HYDRO
 - SL STREETLIGHT
 - TL TRAFFIC LIGHT
 - E PRIVATE ELECTRICAL
 - G GAS
 - PL PIPELINE
 - W WATER
 - WS WATER SERVICE
 - SA SANITARY SEWER
 - FM SANITARY FORCEMAIN
 - ST STORM SEWER
 - U UNKNOWN CONDUCTIVE SIGNAL
 - QUALITY LEVEL "B"
 - QUALITY LEVEL "C"
 - QUALITY LEVEL "D"
 - LIMIT OF INVESTIGATION
 - CONTINUES OUT OF LIMITS
 - FLOW ARROW
 - END CAP
 - LOCATION BASED ON RECORD INFO
 - LOCATION BASED ON FIELD OBSERVATION
 - LOSS OF SIGNAL
 - STORM MAINTENANCE HOLE
 - SANITARY MAINTENANCE HOLE
 - CATCH BASIN
 - WATER CHAMBER
 - FIRE HYDRANT
 - WATER VALVE
 - GAS VALVE
 - UTILITY POLE
 - LIGHT STANDARD
 - HAND WELL
 - HYDRO MAINTENANCE HOLE
 - HYDRO VAULT / TRANSFORMER
 - TELECOM PEDESTAL
 - FLUSH-TO-GRADE
 - BELL MAINTENANCE HOLE
 - ROGERS MAINTENANCE HOLE
 - UNKNOWN MAINTENANCE HOLE
 - TEST HOLE

ASCE QUALITY LEVELS

THE UTILITY INFORMATION SHOWN ON THIS DRAWING WAS COLLECTED IN ACCORDANCE TO ASCE STANDARD 38-22. THE INFORMATION IS SHOWN BY QUALITY LEVEL WHICH INDICATES THE LEVEL OF EFFORT USED TO DETERMINE THE LOCATION OF THE DATA.

QUALITY LEVEL "D" – INFORMATION DERIVED FROM EXISTING RECORDS OR VERBAL RECOLLECTIONS.

QUALITY LEVEL "C" – INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGEMENT IN CORRELATING THIS INFORMATION TO THE QUALITY LEVEL "D" INFORMATION.

QUALITY LEVEL "B" – INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF THE UTILITIES.

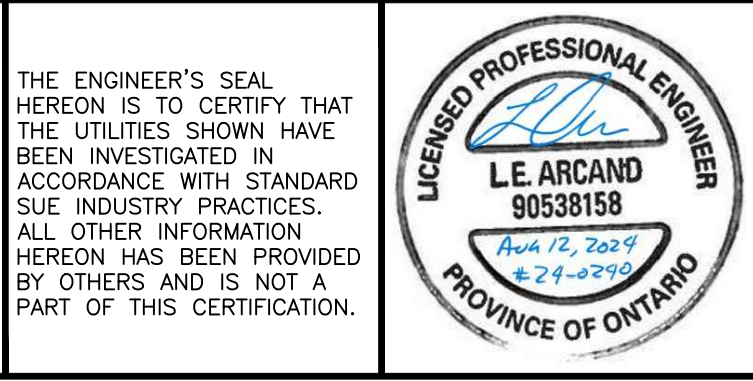
QUALITY LEVEL "A" – PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES.



PREPARED BY:	REVISIONS	DISCLAIMER:
		THIS DRAWING WAS PRODUCED BY 4SIGHT INC FOR THE USE OF THE CLIENT. 4SIGHT INC DOES NOT ACCEPT ANY RESPONSIBILITY FOR ANY UNAUTHORIZED USE BY THIRD PARTIES, OR ANY MODIFICATION MADE TO THIS DRAWING.

DRAWN	DATE (MM/DD/YY)
A. NIZAMY	07/10/24
CHECKED	
J. GOSWAMI	08/07/24
APPROVED	
L. ARCAD	08/09/24
SCALE	
1:250	0 5 10m

THE ENGINEER'S SEAL HEREON IS TO CERTIFY THAT THE UTILITIES SHOWN HAVE BEEN INVESTIGATED IN ACCORDANCE WITH STANDARD SUE INDUSTRY PRACTICES. ALL OTHER INFORMATION HEREON HAS BEEN PROVIDED BY OTHERS AND IS NOT A PART OF THIS CERTIFICATION.



PROJECT: 2730-2555 ERIN CENTRE BLVD MISSISSAUGA, ON

DRAWING: SUBSURFACE UTILITY ENGINEERING INVESTIGATION

CLIENT:	SCS CONSULTING GROUP LTD.
PROJECT NO.	24-0240
SHEET NO.	02 OF 02

Appendix C – Site Photos



24-0240
2730-2555 ERIN
CENTER BLVD

Photo Report



































Erin Mills
24-0240
1015
10.06.2024 11:02
43.56198, -79.71024
2555 Erin Centre Blvd, Mississauga, ON L5M







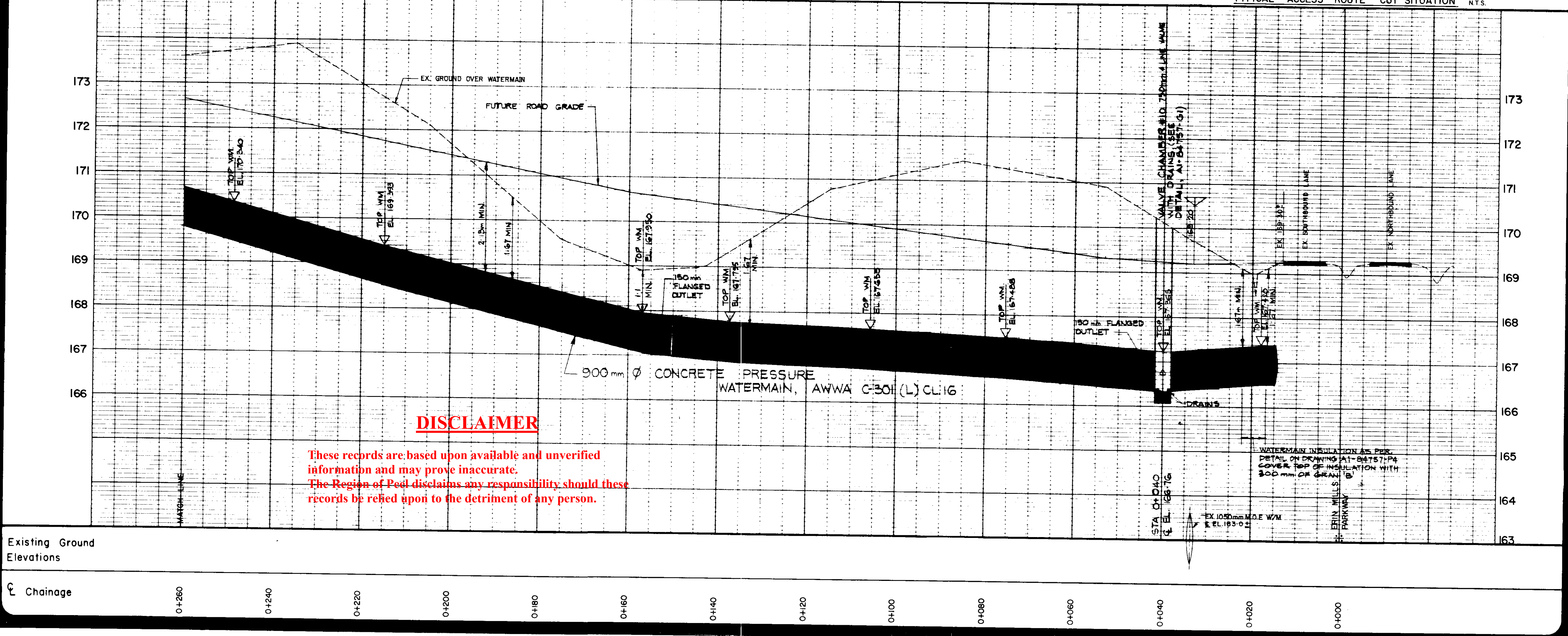
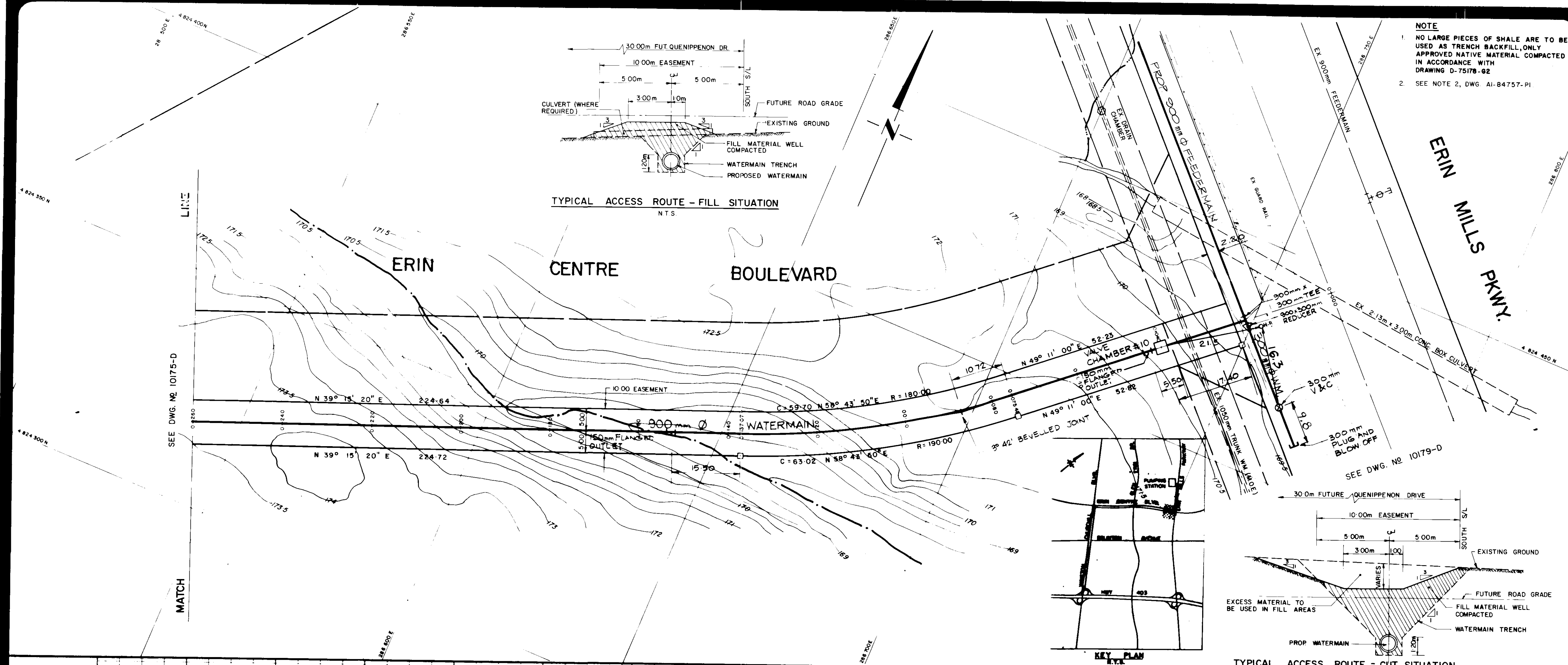








Appendix D – CCTV Report



ERIN MILLS

METRIC

ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE SHOWN

Revisions

Date	No.	Details	In
85-07-26	1	300mm Ø WM REVISED TO 2.20m OFFSET	TJK
30 JULY '86		AS CONSTRUCTED	

General Notes

- Water services to single lots to be located at mid point of lot
- Waterservice to semi-detached lots to be 3.5 m either side of centre of lot
- The minimum lateral distance between water services and other utilities shall be 1.2 m
- Curb radii at intersections shall be 7.5 m unless otherwise shown
- Sewer bedding types refer to drawing A 5508
- 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 strength indicated
- All watermain 100 mm to 300 mm dia. shall be ductile iron, A.N.S.I. class 52 cement lined with tyton joint
- 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.

Legend

S Denotes a semi detached lot

--- 20mm dia. water service (type 'K' copper)

(172.30) Proposed finished ground elevation at house

▽ Single house service

▽ Double house service

(All services located on lot lines are double services)

Bench Mark

Designed By

Approved By

Proctor & Redfern
Consulting Engineers
Toronto

Drawn Chk'd Rev. I
Dwg No. AI-84757-PI0
Appr.

City of Mississauga
Region of Peel
Engineering Department

Zone 4 Feedermain
Erin Centre Blvd.

Sheet 1 of 5
From Sta. 0+000
To Sta. 0+260

Scale
Horizontal 1:500
Vertical 1:50

Drawn Project No.
Chk'd Area
Date Plan No. 10174-D

T-83046B

10174-D

Revisions			
Date	No.	Details	By
85 07 26		900mm Ø WM REVISED TO 2.20m OFFSET ERIN MILLS DRIVE	T.V.
30 JULY 86		AS CONSTRUCTED	

General Notes

- Water services to single lots to be located at mid point of lot
- Water service to semi-detached lots to be 3.5m either side of centre of lot
- The minimum lateral distance between water services and other utilities shall be 1.2m
- Curb radii at intersections shall be 7.5m unless otherwise shown
- Sewer bedding types refer to drawing A 5508
- 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
- All watermain 100mm to 300mm dia. shall be ductile iron, A.N.S.I. class 52 cement lined with tyton joint
- 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.

Legend

- S** Denotes a semi-detached lot
- 20mm dia. water service (type 'K' copper)
- (172.30) Proposed finished ground elevation at house
- ▽ Single house service
▽ Double house service
(All services located on lot lines are double services)

Bench Mark

Designed By _____ Approved By _____

Proctor & Redfern
Consulting Engineers
Toronto

Drawn _____ Chk'd _____ Rev _____
Dwg No. **AI-84757-P11**
Appr _____

City of Mississauga
Region of Peel
Engineering Department

Zone 4 Feedermain
Erin Mills Parkway

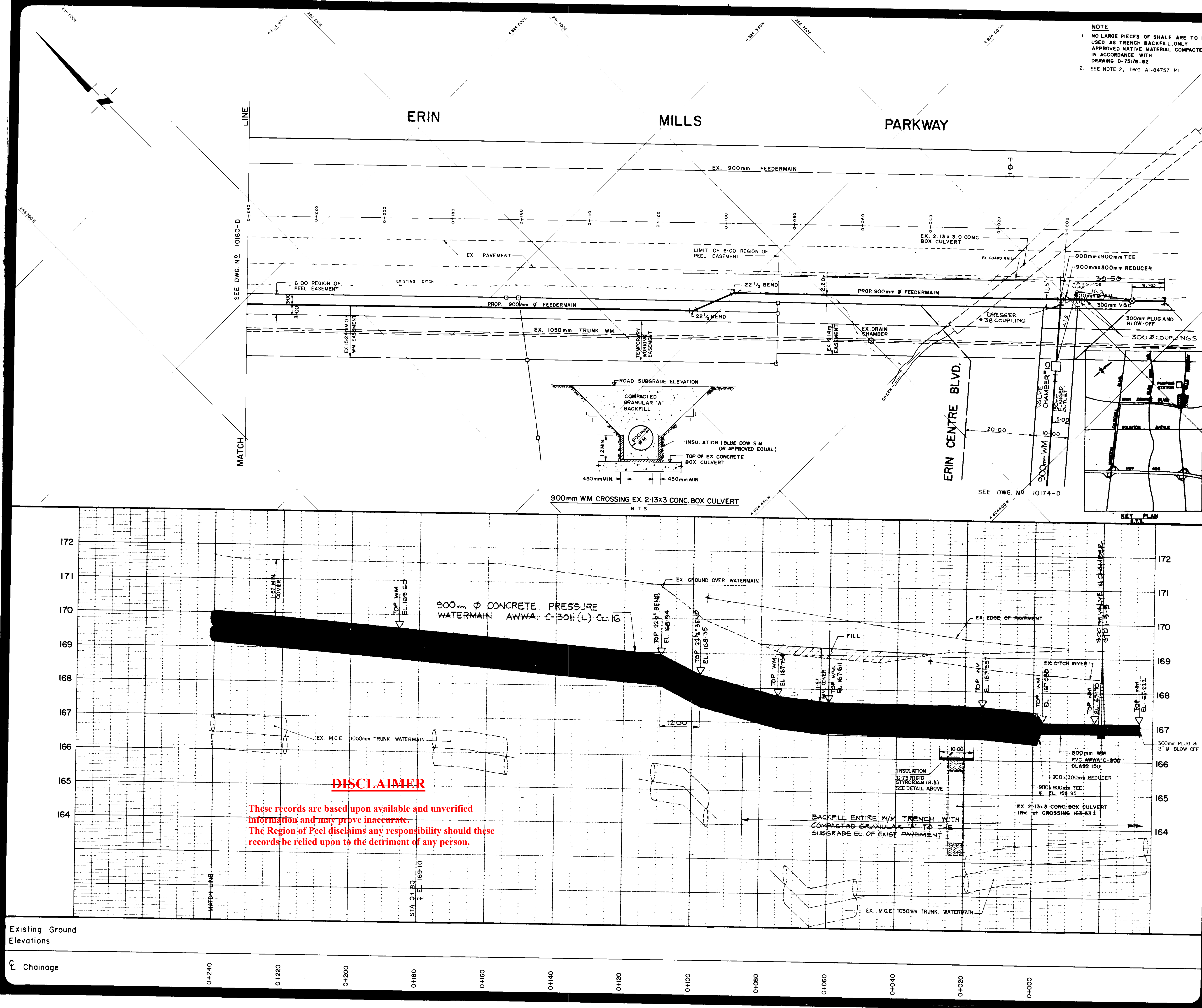
Sheet 1 of 2

From Sta. 0+000
To Sta. 0+240

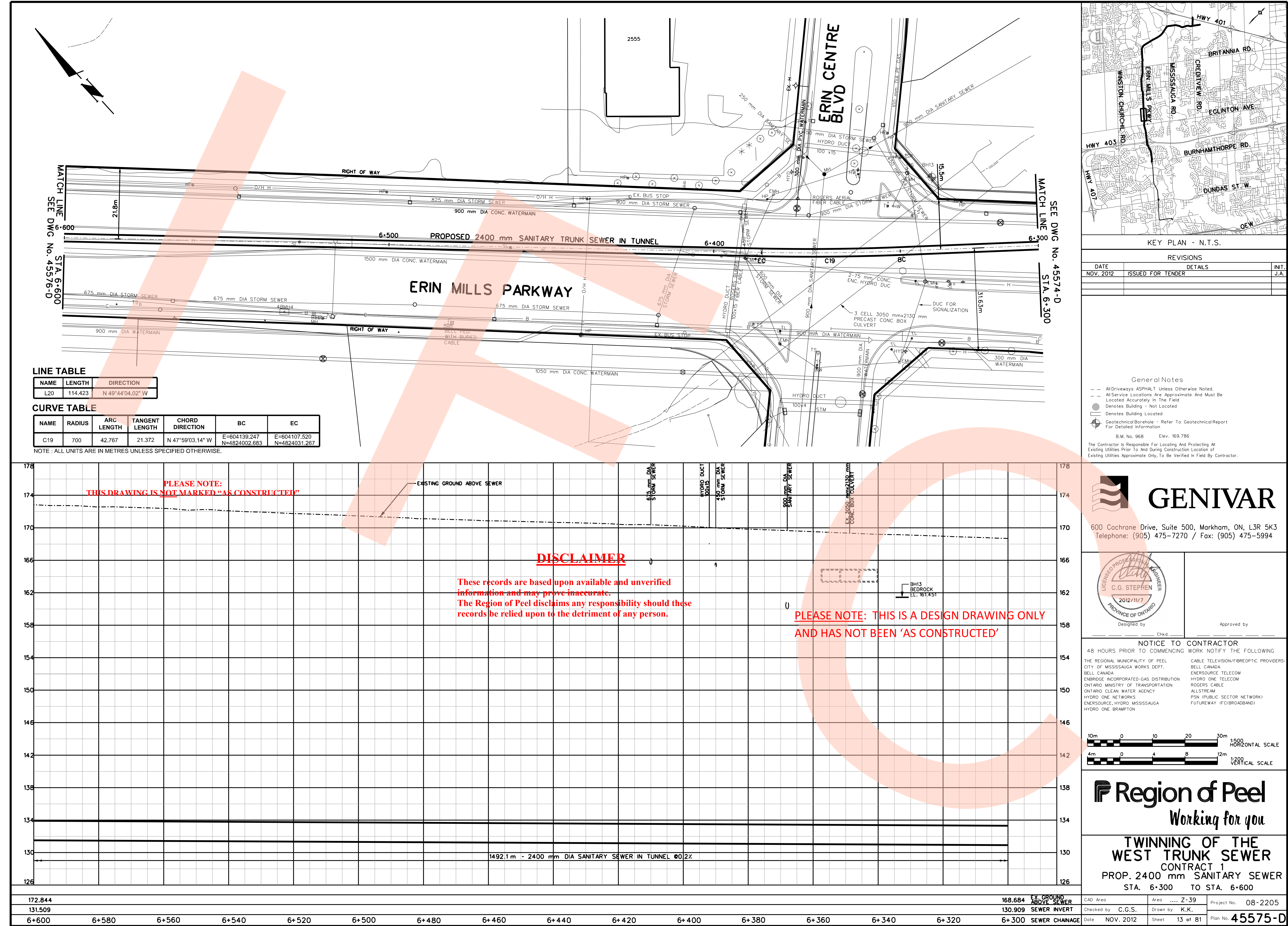
Scale
Horizontal 1:500 Vertical 1:50
Drawn _____ Project No. _____
Chk'd _____ Area _____
Date _____ Plan No. 10179-D

T-83046 B

10179-D



Existing Ground Elevations
Chainage



MATCH LINE
SEE DWG No. 45576-D
STA. 6+600

MATCH LINE
SEE DWG No. 45574-D
STA. 6+300

LINE TABLE

NAME	LENGTH	DIRECTION
L20	114.423	N 49°44'04.02" W

CURVE TABLE

NAME	RADIUS	ARC LENGTH	TANGENT LENGTH	CHORD DIRECTION	BC	EC
C19	700	42.767	21.372	N 47°59'03.14" W	E=604139.247 N=4824002.683	E=604107.520 N=4824031.267

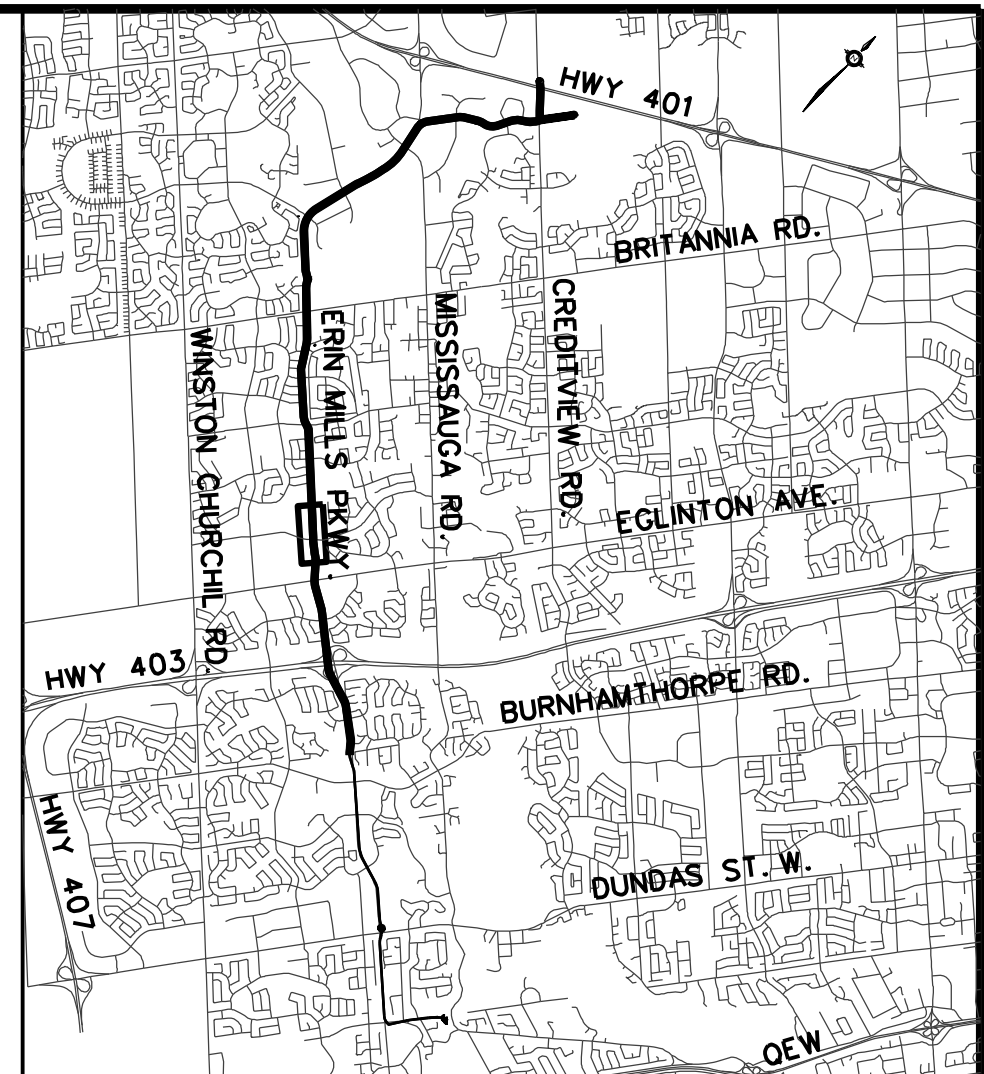
NOTE : ALL UNITS ARE IN METRES UNLESS SPECIFIED OTHERWISE.

PLEASE NOTE:
THIS DRAWING IS NOT MARKED "AS CONSTRUCTED"

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.

PLEASE NOTE: THIS IS A DESIGN DRAWING ONLY AND HAS NOT BEEN 'AS CONSTRUCTED'



KEY PLAN - N.T.S.

REVISIONS

DATE	DETAILS	INIT.
NOV. 2012	ISSUED FOR TENDER	J.A.

General Notes

- All Driveways ASPHALT Unless Otherwise Noted.
- All Service Locations Are Approximate And Must Be Located Accurately In The Field
- ⊙ Denotes Building - Not Located
- ⊞ Denotes Building Located
- ⊕ Geotechnical Borehole - Refer To Geotechnical Report For Detailed Information

B.M. No. 968 Elev. 169.786

The Contractor is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction Location of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

600 Cochrane Drive, Suite 500, Markham, ON, L3R 5K3
Telephone: (905) 475-7270 / Fax: (905) 475-5994

Designed by _____

Approved by _____

NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

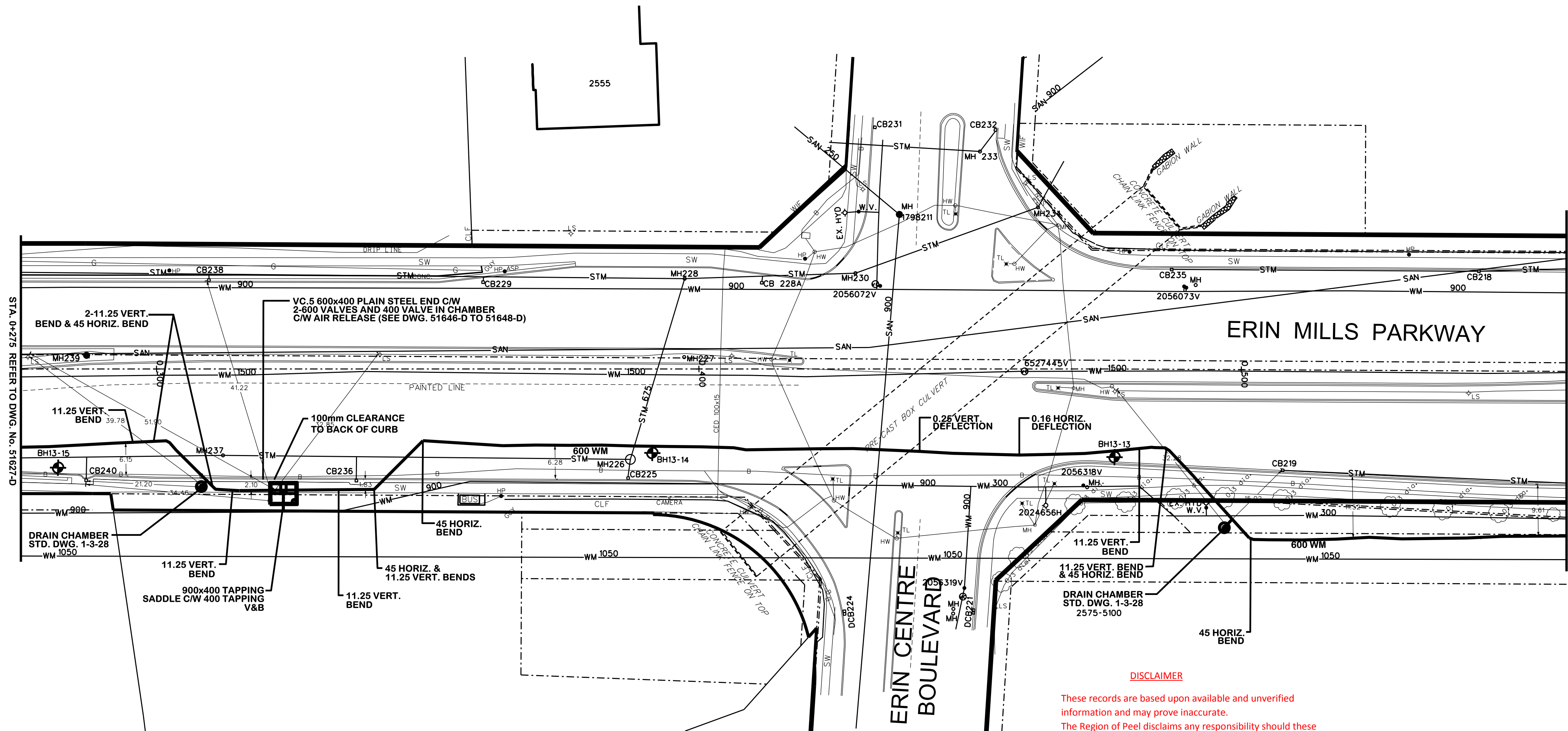
THE REGIONAL MUNICIPALITY OF PEEL	CABLE TELEVISION/FIBRE/OPTIC PROVIDERS:
CITY OF MISSISSAUGA WORKS DEPT.	BELL CANADA
BELL CANADA	ENERSOURCE TELECOM
ENBRIDGE INCORPORATED-GAS DISTRIBUTION	HYDRO ONE TELECOM
ONTARIO MINISTRY OF TRANSPORTATION	ROGERS CABLE
ONTARIO CLEAN WATER AGENCY	ALLSTREAM
HYDRO ONE NETWORKS	PSN (PUBLIC SECTOR NETWORK)
ENERSOURCE, HYDRO MISSISSAUGA	FUTUREWAY (FIBRE/BROADBAND)
HYDRO ONE BRAMPTON	



Working for you

TWINNING OF THE WEST TRUNK SEWER
CONTRACT 1
PROP. 2400 mm SANITARY SEWER
STA. 6+300 TO STA. 6+600

CAD Area	Area Z-39	Project No.	08-2205
Checked by C.G.S.	Drawn by K.K.	Date	NOV. 2012
Sheet	13 of 81	Plan No.	45575-D



SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS	DEC. 6, 2013	C.S.	GAS MAINS	JULY 9, 2013	C.S.
STORM SEWERS	DEC. 6, 2013	C.S.	BELL U/G CABLE	JULY 9, 2013	C.S.
WATERMANS	DEC. 6, 2013	C.S.	HYDRO U/G CABLE	JULY 22, 2013	C.S.
TRANSIT			HYDRO ONE	JULY 22, 2013	C.S.
PARKS & REC.			CTV	JULY 30, 2013	C.S.
ONT. CLEAN WATER			COMMUNIC. CABLES	JULY 18, 2013	C.S.
REVISIONS					
DATE	DETAILS				INIT.
FEB. 19, 2016	AS-RECORDED				C.S.
FEB 28, 2014	ISSUED PUCG (ECM-14-06)				C.S.
JUNE 17, 2014	ISSUED FOR TENDER				C.S.
JUNE 24, 2014	ISSUED FOR CONSTRUCTION				C.S.
JAN. 21, 2015	ISSUED FOR REVISION #1				C.S.

KEY PLAN (N.T.S.)

- NOTE:**
- FOR GENERAL NOTES, DETAILS AND LEGEND SEE GENERAL NOTES DWG. 51626-D
 - A MINIMUM OF 0.6m HORIZONTAL (1.0m FOR BORING) AND 0.3m VERTICAL CLEARANCE TO GAS MAINS MUST BE MAINTAINED. VERTICAL CLEARANCE MUST BE INCREASED TO 0.6m FOR MAINS NPS 12 AND LARGER.
 - A PERMIT FROM CREDIT VALLEY CONSERVATION AUTHORITY IS REQUIRED FOR CULVERT CROSSING. CONTRACTOR TO SUBMIT EROSION SEDIMENT CONTROL PLAN MIN. TWO WEEKS PRIOR TO WORK TO PROCURE PERMIT.
 - CONTRACTOR TO 'DAYLIGHT' EXISTING 900mm CPP WATERMAIN TO CONFIRM HORIZONTAL AND VERTICAL LOCATION AND IDENTIFY LOCATION OF EXISTING JOINTS, PRIOR TO DRAWING SUBMITAL.

LEGEND:

BH - .no. BOREHOLE



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.

General Notes

All Driveways Are ASPHALT Unless Otherwise Noted

All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field

All Horizontal And Vertical Bends Are In Degrees

All Pipes Size In mm

20C Existing Water Service, Size In mm

WS20 Proposed Water Service, Size In mm

B.M. No. 075125018 Elev. 173.408m

Description Brass cap set in the sidewalk at the northeast corner of Eglinton Avenue West and Glen Erin Drive, 15.2m north of the centreline of Eglinton Avenue West and 20.7m east of the centreline of Glen Erin Drive.

Location NORTHING: 4823167.755, EASTING: 604026.821

The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction, Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

Designed by Chid.

Approved by [Signature]

NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL	CABLE TELEVISION/FIBROPTIC PROVIDERS:
CITY OF MISSISSAUGA WORKS DEPT.	BELL CANADA
CITY OF BRAMPTON WORKS DEPT.	ENERSOURCE TELECOM
TOWN OF CALEDON WORKS DEPT.	HYDRO ONE TELECOM
BELL CANADA	ROGERS CABLE
ENBRIDGE INCORPORATED-GAS DISTRIBUTION	ALLSTREAM
ONTARIO MINISTRY OF TRANSPORTATION	PSN (PUBLIC SECTOR NETWORK)
ONTARIO CLEAN WATER AGENCY	FUTUREWAY (FIBRE BROADBAND)
HYDRO ONE NETWORKS	
ENERSOURCE, HYDRO MISSISSAUGA	
HYDRO ONE BRAMPTON	

10m 0 10 20 30m HORIZONTAL SCALE

1m 0 1 2 3m VERTICAL SCALE

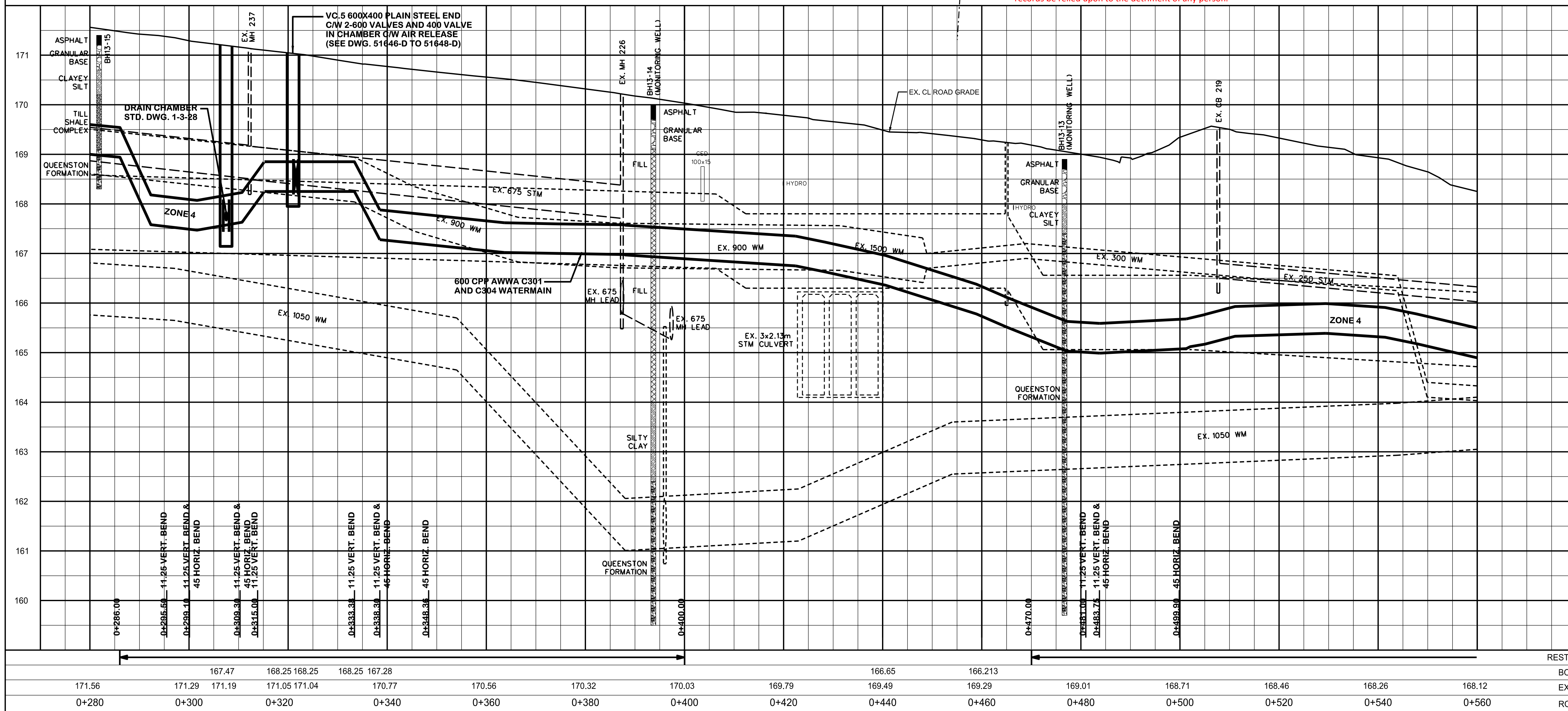
Region of Peel
Working for you

ERIN MILLS PARKWAY
(FROM STREETSVILLE PUMPING STA. TO EGLINTON AVE.)

600mm WATERMAIN

STA. 0+280 TO STA. 0+560

CAD Area	Area	Z-39	Project No.
Checked by	C.S.	D.P.	13-1117
Date	FEB. 2016	Sheet 4 of 18	Plan No. 51628-D



Appendix C Stormwater Management Calculations

EXISTING WEIGHTED RUNOFF COEFFICIENT

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Catchment 101		Outlets to: Erin Center Blvd	
	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient
Asphalt	0.90	0.52	0.49
Rooftops	0.90	0.25	0.23
Sidewalk	0.90	0.04	0.04
Grass	0.25	0.15	0.04
TOTAL		0.97	0.80

Catchment 102		Outlets to: Forested Area	
	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient
Grass	0.25	0.04	0.25
TOTAL		0.04	0.25

Catchment EXT-1		Outlets to: Erin Center Blvd	
	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient
Grass	0.25	0.69	0.25
TOTAL		0.69	0.25

Erin Center Blvd Total			
Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient
101	0.80	0.97	0.47
EXT-1	0.25	0.69	0.10
TOTAL		1.66	0.57

Forested Area Total			
Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient
102	0.25	0.04	0.25
TOTAL		0.04	0.25

Overall Total			
Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient
101	0.80	0.97	0.45
102	0.25	0.04	0.01
TOTAL		1.70	0.56

2 Year storm

IDF Parameters* {
 $a = 610$
 $t = 15$ min
 $b = 4.60$
 $c = 0.78$

Runoff Coefficient: $C1 = 0.50$
 $C2 = 0.50$

Allowable Release Rate Calculation				
Outlet	Area	time	Intensity	Flow
ID		t	$i=a/(t+b)^c$	$Q=CiA/360$
	ha	min	mm/hr	l/s
Erin Center Blvd	1.657	15.00	59.89	137.8
Forested Area	0.044	15.00	59.89	3.7

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

5 Year storm

IDF Parameters* {
 $a = 820$
 $t = 15$ min
 $b = 4.6$
 $c = 0.78$

Runoff Coefficient: $C1 = 0.50$
 $C2 = 0.50$

Allowable Release Rate Calculation				
Outlet	Area	time	Intensity	Flow
ID		t	$i=a/(t+b)^c$	$Q=CiA/360$
	ha	min	mm/hr	l/s
Erin Center Blvd	1.657	15.00	80.51	185.3
Forested Area	0.044	15.00	80.51	4.9

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

10 Year storm

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

Runoff Coefficient: $C1 = 0.50$
 $C2 = 0.50$

Allowable Release Rate Calculation				
Outlet	Area	time	Intensity	Flow
ID		t	$i=a/(t+b)^c$	$Q=CiA/360$
	ha	min	mm/hr	l/s
Erin Center Blvd	1.657	15.00	99.17	228.2
Forested Area	0.044	15.00	99.17	6.1

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

Runoff Coefficient of 0.50 is used as per City of Mississauga quantity control criteria

Catchment 201 Outlets to: Erin Center Blvd

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient
Asphalt	0.90	0.16	0.16
Rooftops	0.90	0.60	0.61
Grass	0.25	0.13	0.04
TOTAL		0.90	0.90

0.90 is used as the weighted runoff coefficient since Mississauga runoff-coefficient for high-rise residential is 0.90

Catchment 202 Outlets to: Forested Area

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient
Grass	0.25	0.01	0.25
TOTAL		0.01	0.25

Catchment 203 Outlets to: Erin Center Blvd

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient
Asphalt	0.90	0.09	0.76
Grass	0.25	0.02	0.04
TOTAL		0.10	0.80

Catchment EXT-1 Outlets to: Erin Center Blvd

	Runoff Coefficient	Area (ha)	Weighted Runoff Coefficient
Grass	0.25	0.69	0.25
TOTAL		0.69	0.25

Erin Center Blvd Total

Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient
201	0.90	0.90	0.48
203	0.80	0.10	0.05
EXT-1	0.25	0.69	0.10
TOTAL		1.69	0.63

Forested Area Total

Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient
202	0.25	0.01	0.25
TOTAL		0.01	0.25

Overall Total

Catchment	Runoff Coefficient	Area	Weighted Runoff Coefficient
201	0.90	0.90	0.47
202	0.25	0.01	0.00
203	0.80	0.10	0.05
TOTAL		1.70	0.63

SUMMARY

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Catchment ID	Routing	Runoff Coef.	Area (ha)	100 Year			Orifice Size (mm) ²	Orifice Release Rate (L/s)	Uncontrolled Release Rate (L/s)
				Release Rate (L/s) ¹	Storage Required (m ³)	Storage Available (m ³)			
201	is routed through	1.00	0.90	193.0	244.6	278.5	250	193.0	
202	is routed through	0.31	0.01	1.7	0.0	0.0	uncontrolled	-	1.7
203	is routed through	0.89	0.10	35.2	0.0	0.0	uncontrolled	-	35.2
EXT-1	is routed through	0.31	0.69	84.3	0.0	0.0	uncontrolled	-	84.3
Total			1.70	314.2	244.6	278.5	-	-	

Erin Center Blvd Allowable Release Rate 228.2 L/s
Erin Center Blvd Proposed Release Rate 228.2 L/s

Forested Area Allowable Release Rate 6.1 L/s
Forested Area Proposed Release Rate 1.7 L/s

Notes:

¹ Per Modified Rational Calculations (attached)

² See attached for orifice details

Catchment ID	Routing	Runoff Coef.	Area (ha)	50 Year			Orifice Size (mm) ²	Orifice Release Rate (L/s)	Uncontrolled Release Rate (L/s)
				Release Rate (L/s) ¹	Storage Required (m ³)	Storage Available (m ³)			
201	is routed through	1.00	0.90	193.0	193.1	278.5	250.00	193.0	
202	is routed through	0.30	0.01	1.5	0.0	0.0	uncontrolled	-	1.5
203	is routed through	0.89	0.10	31.7	0.0	0.0	uncontrolled	-	31.7
EXT-1	is routed through	0.30	0.69	73.2	0.0	0.0	uncontrolled	-	73.2
Total			1.70	299.4	193.1	278.5	-	-	

Erin Center Blvd Allowable Release Rate 228.2 L/s
Erin Center Blvd Proposed Release Rate 224.7 L/s

Forested Area Allowable Release Rate 6.1 L/s
Forested Area Proposed Release Rate 1.5 L/s

Notes:

¹ Per Modified Rational Calculations (attached)

² See attached for orifice details

SUMMARY

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Catchment ID	Routing	Runoff Coef.	Area (ha)	25 Year			Orifice Size (mm) ²	Orifice Release Rate (L/s)	Uncontrolled Release Rate (L/s)
				Release Rate (L/s) ¹	Storage Required (m ³)	Storage Available (m ³)			
201	is routed through	0.95	0.90	193.0	128.8	278.5	250.00	193.0	
202	is routed through	0.28	0.01	1.2	0.0	0.0	uncontrolled	-	1.2
203	is routed through	0.88	0.10	28.0	0.0	0.0	uncontrolled	-	28.0
EXT-1	is routed through 201	0.28	0.69	60.1	0.0	0.0	uncontrolled	-	60.1
Total			1.70	282.3	128.8	278.5	-	-	

Erin Center Blvd Allowable Release Rate 228.2 L/s
Erin Center Blvd Proposed Release Rate 221.0 L/s

Forested Area Allowable Release Rate 6.1 L/s
Forested Area Proposed Release Rate 1.2 L/s

Notes:

¹ Per Modified Rational Calculations (attached)

² See attached for orifice details

Catchment ID	Routing	Runoff Coef.	Area (ha)	10 Year			Orifice Size (mm) ²	Orifice Release Rate (L/s)	Uncontrolled Release Rate (L/s)
				Release Rate (L/s) ¹	Storage Required (m ³)	Storage Available (m ³)			
201	is routed through	0.90	0.90	193.0	69.3	278.5	250	193.0	
202	is routed through	0.25	0.01	1.0	0.0	0.0	uncontrolled	-	1.0
203	is routed through	0.80	0.10	22.2	0.0	0.0	uncontrolled	-	22.2
EXT-1	is routed through 201	0.25	0.69	47.6	0.0	0.0	uncontrolled	-	47.6
Total			1.70	263.7	69.3	278.5	-	-	

Erin Center Blvd Allowable Release Rate 228.2 L/s
Erin Center Blvd Proposed Release Rate 215.2 L/s

Forested Area Allowable Release Rate 6.1 L/s
Forested Area Proposed Release Rate 1.0 L/s

Notes:

¹ Per Modified Rational Calculations (attached)

² See attached for orifice details

SUMMARY

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Catchment ID	Routing	Runoff Coef.	Area (ha)	5 Year				Orifice Release Rate (L/s)	Uncontrolled Release Rate (L/s)
				Release Rate (L/s) ¹	Storage Required (m ³)	Storage Available (m ³)	Orifice Size (mm) ²		
201	is routed through	0.90	0.90	167.3	47	279	250.00	167.3	
202	is routed through	0.25	0.01	0.8	0	0	uncontrolled	-	0.8
203	is routed through	0.80	0.10	18.0	0	0	uncontrolled	-	18.0
EXT-1	is routed through 201	0.25	0.69	38.6	0	0	uncontrolled	-	38.6
Total									
			1.70	224.7	46.7	279			

Erin Center Blvd Allowable Release Rate 185.3 L/s
Erin Center Blvd Proposed Release Rate 185.3 L/s

Forested Area Allowable Release Rate 4.9 L/s
Forested Area Proposed Release Rate 0.8 L/s

Notes:

¹ Per Modified Rational Calculations (attached)

² See attached for orifice details

Catchment ID	Routing	Runoff Coef.	Area (ha)	2 Year				Orifice Release Rate (L/s)	Uncontrolled Release Rate (L/s)
				Release Rate (L/s) ¹	Storage Required (m ³)	Storage Available (m ³)	Orifice Size (mm) ²		
201	is routed through	0.90	0.90	124.4	35	279	250.00	124.4	
202	is routed through	0.25	0.01	0.6	0	0	uncontrolled	-	0.6
203	is routed through	0.80	0.10	13.4	0	0	uncontrolled	-	13.4
EXT-1	is routed through 201	0.25	0.69	28.7	0	0	uncontrolled	-	28.7
Total									
			1.70	167.1	34.8	279			

Erin Center Blvd Allowable Release Rate 137.8 L/s
Erin Center Blvd Proposed Release Rate 137.8 L/s

Forested Area Allowable Release Rate 3.7 L/s
Forested Area Proposed Release Rate 0.6 L/s

Notes:

¹ Per Modified Rational Calculations (attached)

² See attached for orifice details

Area ID: 201

Area = 0.90 ha
"C" = 1.00
AC= 0.8964
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 193.00 l/s
Max.Storage = 244.6 m³

City of Mississauga 100 Year
a= 1450
b= 4.9
c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

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	434.95	391.5	173.7	217.8
20.0	118.1	365.18	438.2	202.7	235.6
25.0	102.4	316.61	474.9	231.6	243.3
30.0	90.8	280.64	505.1	260.6	244.6
35.0	81.8	252.81	530.9	289.5	241.4
40.0	74.6	230.57	553.4	318.5	234.9
45.0	68.7	212.34	573.3	347.4	225.9
50.0	63.8	197.10	591.3	376.4	214.9
55.0	59.6	184.14	607.7	405.3	202.4
60.0	56.0	172.98	622.7	434.3	188.5
65.0	52.8	163.25	636.7	463.2	173.5
70.0	50.0	154.69	649.7	492.2	157.5
75.0	47.6	147.08	661.9	521.1	140.8
80.0	45.4	140.28	673.3	550.1	123.3
85.0	43.4	134.16	684.2	579.0	105.2
90.0	41.6	128.61	694.5	608.0	86.5
95.0	40.0	123.56	704.3	636.9	67.4
100.0	38.5	118.94	713.7	665.9	47.8
105.0	37.1	114.70	722.6	694.8	27.8
110.0	35.8	110.79	731.2	723.8	7.4
115.0	34.7	107.17	739.5	752.7	-13.3
120.0	33.6	103.81	747.4	781.7	-34.3
125.0	32.6	100.68	755.1	810.6	-55.5
130.0	31.6	97.75	762.5	839.6	-77.1

<<<<

¹ The Storm Runoff from Catchment EXT-1 has been added to the storm runoff of Catchment 201

Area ID: 201

Area = 0.90 ha
"C" = 1.00
AC= 0.8964
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 193.00 l/s
Max.Storage = 193.1 m³

City of Mississauga 50 Year
a= 1300
b= 4.7
c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	127.1	389.99	351.0	173.7	177.3
20.0	106.6	326.92	392.3	202.7	189.6
25.0	92.3	283.13	424.7	231.6	193.1
30.0	81.7	250.77	451.4	260.6	190.8
35.0	73.6	225.78	474.1	289.5	184.6
40.0	67.1	205.83	494.0	318.5	175.5
45.0	61.8	189.49	511.6	347.4	164.2
50.0	57.3	175.84	527.5	376.4	151.2
55.0	53.5	164.24	542.0	405.3	136.7
60.0	50.3	154.25	555.3	434.3	121.1
65.0	47.4	145.55	567.7	463.2	104.4
70.0	45.0	137.90	579.2	492.2	87.0
75.0	42.7	131.10	589.9	521.1	68.8
80.0	40.8	125.02	600.1	550.1	50.1
85.0	39.0	119.55	609.7	579.0	30.7
90.0	37.4	114.60	618.8	608.0	10.9
95.0	35.9	110.09	627.5	636.9	-9.4
100.0	34.5	105.97	635.8	665.9	-30.0
105.0	33.3	102.18	643.8	694.8	-51.1
110.0	32.2	98.69	651.4	723.8	-72.4
115.0	31.1	95.46	658.7	752.7	-94.0
120.0	30.1	92.46	665.7	781.7	-115.9
125.0	29.2	89.67	672.5	810.6	-138.1
130.0	28.4	87.06	679.1	839.6	-160.5

<<<<

¹ The Storm Runoff from Catchment EXT-1 has been added to the storm runoff of Catchment 201

Area ID: 201

Area = 0.90 ha
"C" = 0.95
AC= 0.8516
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 193.00 l/s
Max.Storage = 128.8 m³

City of Mississauga 25 Year
a= 1160
b= 4.6
c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	113.9	329.72	296.8	173.7	123.0
20.0	95.4	276.17	331.4	202.7	128.8
25.0	82.6	239.06	358.6	231.6	127.0
30.0	73.1	211.66	381.0	260.6	120.4
35.0	65.8	190.51	400.1	289.5	110.6
40.0	60.0	173.63	416.7	318.5	98.3
45.0	55.2	159.82	431.5	347.4	84.1
50.0	51.2	148.29	444.9	376.4	68.5
55.0	47.8	138.49	457.0	405.3	51.7
60.0	44.9	130.06	468.2	434.3	33.9
65.0	42.4	122.71	478.6	463.2	15.4
70.0	40.2	116.24	488.2	492.2	-3.9
75.0	38.2	110.51	497.3	521.1	-23.8
80.0	36.4	105.38	505.8	550.1	-44.2
85.0	34.8	100.76	513.9	579.0	-65.1
90.0	33.4	96.59	521.6	608.0	-86.4
95.0	32.0	92.78	528.9	636.9	-108.0
100.0	30.8	89.30	535.8	665.9	-130.0
105.0	29.7	86.11	542.5	694.8	-152.3
110.0	28.7	83.17	548.9	723.8	-174.9
115.0	27.8	80.44	555.0	752.7	-197.7
120.0	26.9	77.91	561.0	781.7	-220.7
125.0	26.1	75.56	566.7	810.6	-243.9
130.0	25.3	73.36	572.2	839.6	-267.4

<<<<

¹ The Storm Runoff from Catchment EXT-1 has been added to the storm runoff of Catchment 201

Area ID: 201

Area = 0.90 ha
"C" = 0.90
AC= 0.8068
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 193.00 l/s
Max.Storage = 69.3 m³

City of Mississauga 10 Year
a= 1010
b= 4.6
c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	99.2	269.97	243.0	173.7	69.3
20.0	83.1	226.13	271.4	202.7	68.7
25.0	71.9	195.74	293.6	231.6	62.0
30.0	63.7	173.30	311.9	260.6	51.4
35.0	57.3	155.98	327.6	289.5	38.1
40.0	52.2	142.17	341.2	318.5	22.7
45.0	48.1	130.86	353.3	347.4	5.9
50.0	44.6	121.42	364.2	376.4	-12.1
55.0	41.7	113.39	374.2	405.3	-31.1
60.0	39.1	106.49	383.4	434.3	-50.9
65.0	36.9	100.47	391.8	463.2	-71.4
70.0	35.0	95.18	399.8	492.2	-92.4
75.0	33.2	90.48	407.2	521.1	-113.9
80.0	31.7	86.28	414.2	550.1	-135.9
85.0	30.3	82.51	420.8	579.0	-158.2
90.0	29.0	79.08	427.1	608.0	-180.9
95.0	27.9	75.97	433.0	636.9	-203.9
100.0	26.9	73.12	438.7	665.9	-227.1
105.0	25.9	70.51	444.2	694.8	-250.6
110.0	25.0	68.10	449.4	723.8	-274.3
115.0	24.2	65.86	454.5	752.7	-298.2
120.0	23.4	63.79	459.3	781.7	-322.3
125.0	22.7	61.87	464.0	810.6	-346.6
130.0	22.1	60.07	468.5	839.6	-371.1

<<<<

¹ The Storm Runoff from Catchment EXT-1 has been added to the storm runoff of Catchment 201

Area ID: 201

Area = 0.90 ha
"C" = 0.90
AC= 0.8068
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 167.28 l/s
Max.Storage = 46.7 m³

City of Mississauga 5 Year
a= 820
b= 4.6
c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	80.5	219.19	197.3	150.6	46.7
20.0	67.4	183.59	220.3	175.6	44.7
25.0	58.4	158.92	238.4	200.7	37.6
30.0	51.7	140.70	253.3	225.8	27.4
35.0	46.5	126.64	265.9	250.9	15.0
40.0	42.4	115.42	277.0	276.0	1.0
45.0	39.0	106.24	286.9	301.1	-14.3
50.0	36.2	98.57	295.7	326.2	-30.5
55.0	33.8	92.06	303.8	351.3	-47.5
60.0	31.8	86.46	311.2	376.4	-65.1
65.0	30.0	81.57	318.1	401.5	-83.3
70.0	28.4	77.28	324.6	426.6	-102.0
75.0	27.0	73.46	330.6	451.7	-121.1
80.0	25.7	70.05	336.3	476.8	-140.5
85.0	24.6	66.98	341.6	501.8	-160.2
90.0	23.6	64.21	346.7	526.9	-180.2
95.0	22.7	61.68	351.6	552.0	-200.5
100.0	21.8	59.37	356.2	577.1	-220.9
105.0	21.0	57.24	360.6	602.2	-241.6
110.0	20.3	55.29	364.9	627.3	-262.4
115.0	19.6	53.47	369.0	652.4	-283.4
120.0	19.0	51.79	372.9	677.5	-304.6
125.0	18.4	50.23	376.7	702.6	-325.9
130.0	17.9	48.77	380.4	727.7	-347.3

<<<<

¹ The Storm Runoff from Catchment EXT-1 has been added to the storm runoff of Catchment 201

Area ID: 201

Area = 0.90 ha
"C" = 0.90
AC= 0.8068
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 124.40 l/s
Max.Storage = 34.8 m³

City of Mississauga 2 Year
a= 610
b= 4.6
c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	59.9	163.05	146.7	112.0	34.8
20.0	50.2	136.57	163.9	130.6	33.3
25.0	43.4	118.22	177.3	149.3	28.1
30.0	38.4	104.67	188.4	167.9	20.5
35.0	34.6	94.21	197.8	186.6	11.2
40.0	31.5	85.86	206.1	205.3	0.8
45.0	29.0	79.03	213.4	223.9	-10.5
50.0	26.9	73.33	220.0	242.6	-22.6
55.0	25.2	68.49	226.0	261.2	-35.2
60.0	23.6	64.31	231.5	279.9	-48.4
65.0	22.3	60.68	236.7	298.6	-61.9
70.0	21.1	57.49	241.4	317.2	-75.8
75.0	20.1	54.65	245.9	335.9	-90.0
80.0	19.1	52.11	250.1	354.5	-104.4
85.0	18.3	49.83	254.1	373.2	-119.1
90.0	17.5	47.76	257.9	391.8	-133.9
95.0	16.9	45.88	261.5	410.5	-149.0
100.0	16.2	44.16	265.0	429.2	-164.2
105.0	15.6	42.58	268.3	447.8	-179.6
110.0	15.1	41.13	271.4	466.5	-195.0
115.0	14.6	39.78	274.5	485.1	-210.7
120.0	14.2	38.53	277.4	503.8	-226.4
125.0	13.7	37.36	280.2	522.5	-242.2
130.0	13.3	36.28	283.0	541.1	-258.2

<<<<

¹ The Storm Runoff from Catchment EXT-1 has been added to the storm runoff of Catchment 201

Area ID 201

Orifice Equation: $Q = C_d A (2gh)^{1/2}$

	250	mm
Area:	0.049	m ²
g =	9.81	m/sec ²
C _d =	0.82	

Type of Control:	Tube
Location:	1

Underground Storage

Volume = 278.5 m³

	Stage (m)	Head (m)	Storage (m ³)	Discharge (m ³ /s)
Invert E.L.	165.07	0.00	0.0	0.00
Ground E.L.	167.38	2.19	0.0	0.264
2 Year WL	165.68	0.49	278.5	0.124
100 Year WL	166.37	1.17	278.5	0.193

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 202

Area = 0.01 ha
"C" = 0.31
AC= 0.0043
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 1.70 l/s
Max.Storage = 0.0 m³

City of Mississauga 100 Year
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	1.70	1.5	1.5	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 202

Area = 0.01 ha
"C" = 0.30
AC= 0.0042
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 1.48 l/s
Max.Storage = 0.0 m³

City of Mississauga 50 Year
a= 1300
b= 4.7
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	127.1	1.48	1.3	1.3	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 202

Area = 0.01 ha
"C" = 0.28
AC= 0.0038
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 1.21 l/s
Max.Storage = 0.0 m³

City of Mississauga 25 Year
a= 1160
b= 4.6
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	113.9	1.21	1.1	1.1	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 202

Area = 0.01 ha
"C" = 0.25
AC= 0.0035
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 0.96 l/s
Max.Storage = 0.0 m³

City of Mississauga 10 Year
a= 1010
b= 4.6
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	99.2	0.96	0.9	0.9	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 202

Area = 0.01 ha
"C" = 0.25
AC= 0.0035
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 0.78 l/s
Max.Storage = 0.0 m³

City of Mississauga 5 Year
a= 820
b= 4.6
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	80.5	0.78	0.7	0.7	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 202

Area = 0.01 ha
"C" = 0.25
AC= 0.0035
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 0.58 l/s
Max.Storage = 0.0 m³

City of Mississauga 2 Year
a= 610
b= 4.6
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	59.9	0.58	0.5	0.5	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 203

Area = 0.10 ha
"C" = 0.89
AC= 0.0900
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 35.20 l/s
Max.Storage = 0.0 m³

City of Mississauga 100 Year
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	35.20	31.7	31.7	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 203

Area = 0.10 ha
"C" = 0.89
AC= 0.0898
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 31.74 l/s
Max.Storage = 0.0 m³

City of Mississauga 50 Year
a= 1300
b= 4.7
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	127.1	31.74	28.6	28.6	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 203

Area = 0.10 ha
"C" = 0.88
AC= 0.0886
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 28.04 l/s
Max.Storage = 0.0 m³

City of Mississauga 25 Year
a= 1160
b= 4.6
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	113.9	28.04	25.2	25.2	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 203

Area = 0.10 ha
"C" = 0.80
AC= 0.0805
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 22.19 l/s
Max.Storage = 0.0 m³

City of Mississauga 10 Year
a= 1010
b= 4.6
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	99.2	22.19	20.0	20.0	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 203

Area = 0.10 ha
"C" = 0.80
AC= 0.0805
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 18.02 l/s
Max.Storage = 0.0 m³

City of Mississauga 5 Year
a= 820
b= 4.6
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	80.5	18.02	16.2	16.2	0.0

<<<<

MODIFIED RATIONAL METHOD

Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Area ID: 203

Area = 0.10 ha
"C" = 0.80
AC= 0.0805
Tc = 15.0 min
Time Increment = 5.0 min
Release Rate = 13.40 l/s
Max.Storage = 0.0 m³

City of Mississauga 2 Year
a= 610
b= 4.6
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	59.9	13.40	12.1	12.1	0.0

<<<<

Area ID: EXT-1

Area = **0.69** ha
 "C" = **0.31**
 AC= **0.2156**
 Tc = **15.0** min
 Time Increment = **5.0** min
 Release Rate = **84.33** l/s
 Max.Storage = **0.0** m³

City of Mississauga 100 Year
 a= 1450
 b= 4.9
 c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

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	84.33	75.9	75.9	0.0

<<<<

Area ID: EXT-1

Area = **0.69** ha
 "C" = **0.30**
 AC= **0.2070**
 Tc = **15.0** min
 Time Increment = **5.0** min
 Release Rate = **73.16** l/s
 Max.Storage = **0.0** m³

City of Mississauga 50 Year
 a= 1300
 b= 4.7
 c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	127.1	73.16	65.8	65.8	0.0

<<<<

Area ID: EXT-1

Area = **0.69** ha
 "C" = **0.28**
 AC= **0.1898**
 Tc = **15.0** min
 Time Increment = **5.0** min
 Release Rate = **60.08** l/s
 Max.Storage = **0.0** m³

City of Mississauga 25 Year
 a= 1160
 b= 4.6
 c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	113.9	60.08	54.1	54.1	0.0

<<<<

Area ID: EXT-1

Area = **0.69** ha
 "C" = **0.25**
 AC= **0.1725**
 Tc = **15.0** min
 Time Increment = **5.0** min
 Release Rate = **47.55** l/s
 Max.Storage = **0.0** m³

City of Mississauga 10 Year
 a= 1010
 b= 4.6
 c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	99.2	47.55	42.8	42.8	0.0

<<<<

Area ID: EXT-1

Area = **0.69** ha
 "C" = **0.25**
 AC= **0.1725**
 Tc = **15.0** min
 Time Increment = **5.0** min
 Release Rate = **38.61** l/s
 Max.Storage = **0.0** m³

City of Mississauga 5 Year
 a= 820
 b= 4.6
 c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	80.5	38.61	34.7	34.7	0.0

<<<<

Area ID: EXT-1

Area = **0.69** ha
 "C" = **0.25**
 AC= **0.1725**
 Tc = **15.0** min
 Time Increment = **5.0** min
 Release Rate = **28.72** l/s
 Max.Storage = **0.0** m³

City of Mississauga 2 Year
 a= 610
 b= 4.6
 c= 0.78

NOTE: Catchment EXT-1 is routed through Catchment 201.

Time (min)	Rainfall Intensity (mm/hr)	Storm Runoff (l/s)	Runoff Volume (m ³)	Released Volume (m ³)	Storage Volume (m ³)
15.0	59.9	28.72	25.8	25.8	0.0

<<<<

WATER BALANCE/VOLUME CONTROL

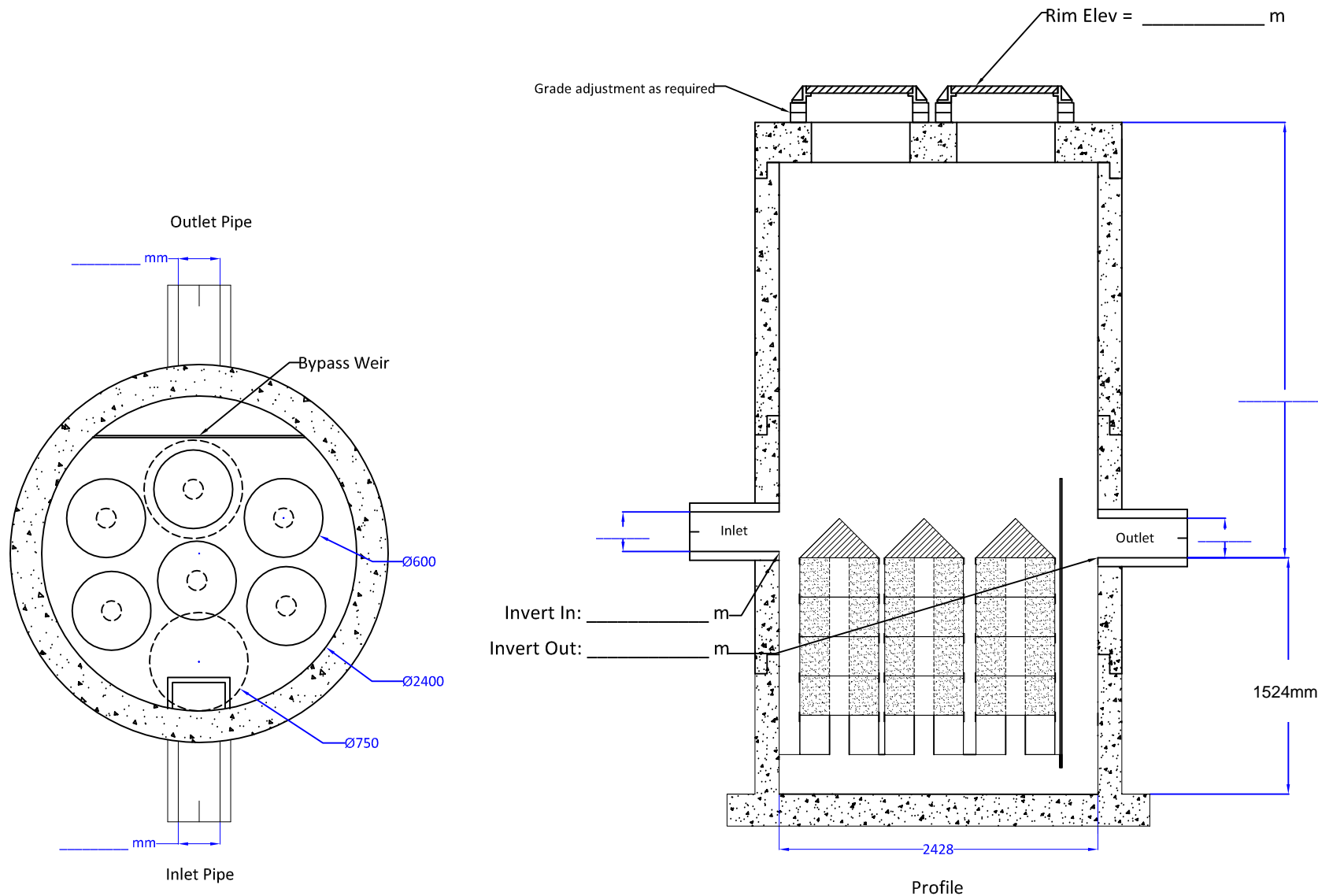
Erin Mills Boulevard
Project Number: 2730
Date: November 2024
Designer Initials: K.T.

Post-Development Conditions

Catchment	Area (ha)	Rainfall Depth (mm)	Rainfall Volume (m ³)	Initial Abstraction (mm)	Initial Abstraction Volume (m ³)	Runoff Volume (m ³)
	(1)	(2)	(3) = (2)x(1)x10 m ³ /ha-mm	(4)	(5) = (4)x(1)x10 m ³ /ha-mm	(6) = (3) - (5)
Asphalt	0.24	5	12.1	1	2.4	9.7
Rooftops	0.60	5	30.2	1	6.0	24.2
Grass	0.85	5	42.7	5	42.7	0.0
Total	1.70		85.1		51.2	33.9

Therefore, 51.2 cu.m of rainfall will be captured via initial abstraction and soil infiltration. Water balance treatment of the remaining 33.9 cu.m is required and will be provided via a water re-use tank.

Appendix D MTD Sizing and Maintenance Information



Plan

Profile

Canadian Infrastructure
Products
www.c-i-p.ca
519-212-9161
HydroFilter by
Hydroworks, LLC
US Patent 7,758,747
www.hydroworks.com
888-290-7900

HydroFilter HF13-24 (2400mmØ)

PROJECT: Erin Centre Blvd.

LOCATION: Mississauga

REVISION DATE: Oct 14, 2024





Hydroworks Sizing Summary

Erin Centre Blvd

Mississauga, Ontario

10-15-2024

Recommended Size: HydroFilter HF13

Hydroworks Sizing Program Version 5.8.5

A HydroFilter HF13 is recommended to provide 80 % annual TSS removal based on a drainage area of 1.59 (ha) with an imperviousness of 58 % and Toronto Central, Ontario rainfall for the ETV particle size distribution.

The recommended HydroFilter HF13 treats 90 % of the annual runoff and provides 84 % annual TSS removal for the Toronto Central rainfall records and ETV particle size distribution.

This summary report provides the main parameters that were used for sizing. These parameters are shown on the summary tables and graphs provided in this report.

If you have any questions regarding this sizing summary please do not hesitate to contact Hydroworks at 888-290-7900 or email us at support@hydroworks.com.

The sizing program is for sizing purposes only and does not address any site specific parameters such as hydraulic gradeline, tailwater submergence, groundwater, soils bearing capacity, etc. Headloss calculations are not a hydraulic gradeline calculation since this requires a starting water level and an analysis of the entire system downstream of the HydroFilter .

TSS Removal Sizing Summary

Hydroworks HydroFilter Sizing Program

File Product Units CAD Video Help

Main Rainfall Site TSS PSD TSS Load Site Storage By-Pass CAD Video Other

Site Parameters

Area (ha) 1.59

Imperviousness (%) 58

Units

☐ U.S.

☒ Metric

Rainfall Station

Toronto Central

Ontario

1982 To 1999

Rainfall Timestep = 15 min.

Project Title (2 lines)

Erin Centre Blvd

Mississauga, Ontario

ETV Lab Testing Results ☐ Post Treatment Recharge

HydroFilter Annual Sizing Results

Use HydroDome with HydroFilter ☐ Yes

Number of Cartridges 13 **Estimate**

Annual TSS Removal (%) 84

Annual Flow Treatment (%) 90

Particle Size Distribution

Size (um)	%	SG
1	5	2.65
4	5	2.65
6	5	2.65
7	5	2.65
18	15	2.65
45	10	2.65
70	5	2.65
90	10	2.65
125	15	2.65
200	15	2.65

Note: Results vary significantly based on particle size distribution

Simulate

TSS Particle Size Distribution

Hydroworks HydroFilter Sizing Program

File Product Units CAD Video Help

Main Rainfall Site TSS PSD TSS Load Site Storage By-Pass CAD Video Other

TSS Particle Size Distribution

Size (um)	%	SG
1	5	2.65
4	5	2.65
6	5	2.65
7	5	2.65
18	15	2.65
45	10	2.65
70	5	2.65
90	10	2.65
125	15	2.65
200	15	2.65
400	5	2.65
850	5	2.65
*		

Notes:

1. To change data just click a cell and type in the new value(s)
2. To add a row just go to the bottom of the table and start typing.
3. To delete a row, select the row by clicking on the first pointer column, then press delete
4. To sort the table click on one of the column headings

TSS Distributions

☒ ETV Canada

☐ Standard HDS Design

☐ Alden Laboratory

☐ OK110

☐ Toronto

☐ Ontario Fine

☐ ETV Canada (Calgary)

☐ Calgary Forebay

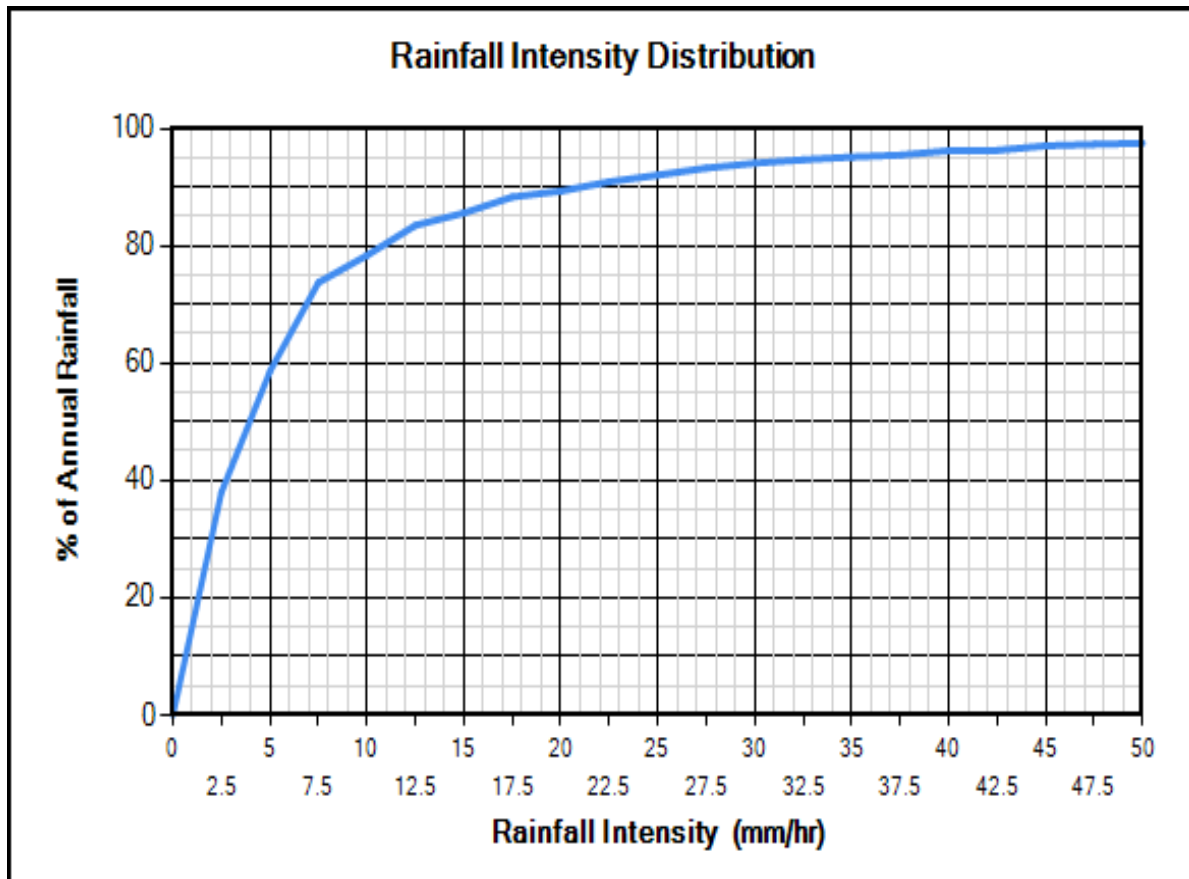
☐ Kitchener

☐ User Defined

Clear

You must select a particle size distribution for TSS to simulate TSS removal

Water Temp (C) 20



Site Physical Characteristics

Hydroworks HydroFilter Sizing Program

File Product Units CAD Video Help

Main Rainfall Site TSS PSD TSS Load Site Storage By-Pass CAD Video Other

Catchment Parameters

Width (m) Imperv. Mannings n Maintenance Frequency (months)

Perv Mannings n

Slope (%) Imp. Depress. Storage (mm)

Perv. Depress. Storage (mm)

Daily Evaporation (mm/day)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	2.54	2.54	3.81	3.81	3.81	2.54	2.54	0	0

Infiltration

Max. Infiltration Rate (mm/hr)

Min. Infiltration Rate (mm/hr)

Infiltration Decay Rate (1/s)

Infiltration Regen. Rate (1/s)

Catch Basins

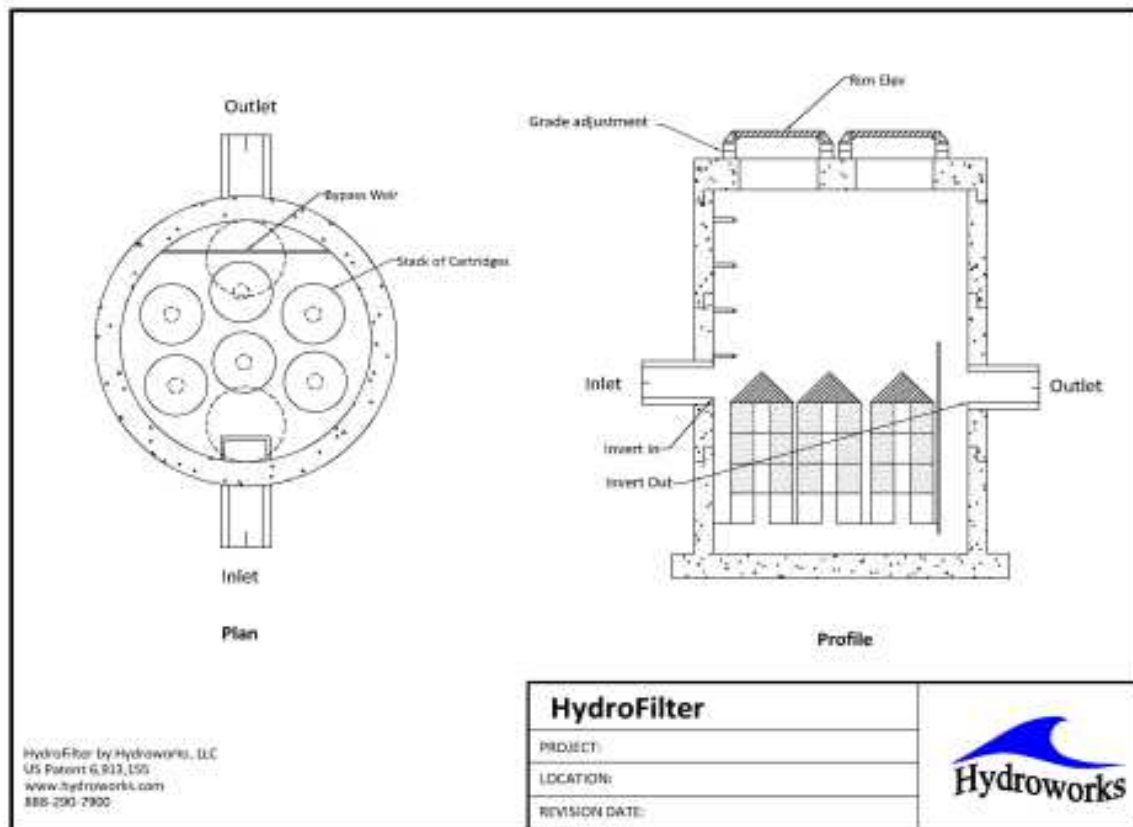
of Catch basins

Constant Baseflow

Roof Runoff (m3/s)

Resets all parameters excluding input catchment width.

Generic HF13 CAD Drawing



TSS Buildup And Washoff

Hydroworks HydroFilter Sizing Program

File Product Units CAD Video Help

Main Rainfall Site TSS PSD TSS Load Site Storage By-Pass CAD Video Other

TSS Buildup

☐ Power Linear
☒ Exponential
☐ Michaelis-Menton
☐ No Buildup Required

TSS Washoff

☒ Power-Exponential
☐ Rating Curve (no upper limit)
☐ Rating Curve (limited to buildup)
☐ Event Mean Concentration

Street Sweeping

Efficiency (%) 30
Start Month May
Stop Month Sep
Frequency (days) 30
Available Fraction .3

Soil Erosion

☐ Add Erosion to TSS

Reset to Default Values

TSS Buildup Parameters

Limit (kg/ha) 28.02
Coeff (kg/ha) 67.25
Exponent .5

TSS Washoff Parameters

Coefficient .0855
Exponent 1.1

TSS Buildup

☒ Based on Area
☐ Based on Curb Length

Upstream Quantity Storage

Hydroworks HydroFilter Sizing Program

File Product Units CAD Video Help

Main Rainfall Site TSS PSD TSS Load Site Storage By-Pass CAD Video Other

Quantity Control Storage		
	Storage (m3)	Discharge (m3/s)
	0	0
	354	0.124
	354	0.167
▶	354	0.193
*		

Clear

Other Parameters

Hydroworks HydroFilter Sizing Program

File Product Units CAD Video Help

Main Rainfall Site TSS PSD TSS Load Site Storage By-Pass CAD Video Other

Flagged Issues

None

Hydroworks Sizing Program - Version 5.8.5

Copyright Hydroworks, LLC, 2024

1-800-290-7900

www.hydroworks.com

Appendix E Sanitary Flow Calculations

Existing Sanitary Flow Calculations

Average Flow Rate - Commercial	270 litres/capita/day
Commercial floor area	0.21 ha
Commercial Population (50 persons/ha)	10 persons
Peaking Factor	4.00
Peak Flow	0.13 L/s
Total Site Area	1.01 ha
Infiltration (0.26 litres/second/ha)	0.26 L/s

Total Existing Peak Sanitary Flow	0.39 L/s
--	-----------------

Proposed Sanitary Flow Calculations

Average Flow Rate - Commercial	270 litres/capita/day
Average Flow Rate - Residential	290 litres/capita/day

Block A - Tower 1:

Commercial floor area - Tower 1	0.07 ha
Commercial Population (50 persons/ha)	4 persons

Residential Units (1 Bedroom)	239 units
Residential Population (1.7 persons/unit)	407 persons

Residential Units (2 or more Bedroom) - Tower A	128 units
Residential Population (3.1 persons/unit)	397 persons

Peaking Factor - Tower 1	3.86
Peak Flow	10.46 L/s

Total Site Area - Block A - Tower 1	0.32 ha
Infiltration (0.26 litres/second/ha)	0.08 L/s

Total Proposed Peak Sanitary Flow - Tower A	10.54 L/s
---	-----------

Block A - Tower 2:

Commercial floor area - Tower 2	0.04 ha
Commercial Population (50 persons/ha)	2 persons

Residential Units (1 Bedroom) - Tower 2	218 units
Residential Population (1.7 persons/unit)	371 persons

Residential Units (2 or more Bedroom) - Tower 2	119 units
Residential Population (3.1 persons/unit)	369 persons

Peaking Factor - Tower 2	3.88
Peak Flow	9.66 L/s

Total Site Area - Tower 2	0.36 ha
Infiltration (0.26 litres/second/ha)	0.09 L/s

Total Proposed Peak Sanitary Flow - Tower 2	9.75 L/s
---	----------

Block B - Tower 3:		
Residential Units (1 Bedroom) - Tower 3		206 units
Residential Population (1.7 persons/unit)		351 persons
Residential Units (2 or more Bedroom) - Tower 3		112 units
Residential Population (3.1 persons/unit)		348 persons
Peaking Factor - Tower 3	□	3.89
Peak Flow		9.13 L/s
Total Site Area - Tower 3		0.33 ha
Infiltration (0.26 litres/second/ha)		0.13 L/s
Total Proposed Peak Sanitary Flow - Tower 3		9.26 L/s
Total Proposed Peak Sanitary Flow		29.55 L/s

Appendix F Water Distribution Analysis

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:	24-39 W11
Address:	2555 Erin Centre Blvd, Mississauga, ON L5M 5G9
Consulting Engineer:	SCS Consulting Group Ltd.
Date Prepared:	October 3, 2024

Population

Existing

		Units	Persons
1	Residential ⁸⁾	N/A	N/A
2	Institutional/Employment ⁸⁾		10
3	Total	N/A	10

Proposed

			Units	Persons
4	Residential ¹⁾	singles/semis (4.2 ppu)	N/A	N/A
5		Townhomes (3.4 ppu)	N/A	N/A
6		Large apartments (>1 bedroom – 3.1 ppu)	359	1112.9
7		Small apartments (<=1 bedroom – 1.7 ppu)	663	1127.1
8		Total proposed residential	1022	2240
9	Proposed Institutional ²⁾			N/A
10	Proposed employment ³⁾			6
11	Total Proposed			2246

Other

12	Existing gross floor area for commercial and/or retail (sqm)	2063
13	Proposed gross floor area for commercial and/or retail (sqm)	1097
14	Land area (ha)	1.01

Water Connection**Hydrant flow test ⁴⁾**

15	Location 1	Refer to attached hydrant flow test results completed by Aquazition dated June 20, 2024.
16	Location 2	Refer to attached hydrant flow test results completed by Aquazition dated June 20, 2024.

WATER AND WASTEWATER MODELLING DEMAND TABLE

		Pressure (kPa)	Flow (L/s)	Time
17	Minimum water pressure	399.90 kPa	121.32 L/s	12:32PM
18	Maximum water pressure	406.79 kPa	74.70 L/s	12:32PM

Water Demands (L/s)

Tower 1&2

Tower 3

		Use 1 ⁶⁾	Use 2 ⁶⁾	Use 3 ⁶⁾	Total
19	Existing fire flow ^{5) 8)}				611.64 L/s @ 20 psi
20	Proposed average day flow	4.85 L/s	1.63 L/s		6.48 L/s
21	Proposed maximum day flow	8.71 L/s	2.93 L/s		11.64 L/s
22	Proposed peak hour flow	14.52 L/s	4.88 L/s		19.40 L/s
23	Proposed fire flow ⁵⁾				Fire Flow for Block A Tower 1 & 2 = 83 L/s

Fire Flow for Block B
(Tower 3) = 67 L/s

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⁾	Existing sanitary lateral for Commercial Plaza.	0.39 L/s
25	Proposed effluent	Proposed sanitary lateral for Tower 1	10.54 L/s
26	Proposed effluent	Proposed sanitary lateral for Tower 2	9.75 L/s
27	Proposed effluent	Proposed sanitary lateral for Tower 3	9.26 L/s
28	Proposed additional effluent ⁸⁾	N/A	N/A
29	Other proposed effluent*	N/A	N/A
30	Total proposed effluent		29.55 L/s

*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**

BLOCK A - TOWER 1 and 2				
Unit Type	No. of Units	PPU	L/P/d	Avg. Day (L/d)
Small Apartments (>1 bedroom)	457	1.7	270	209,763
Large Apartments (<=1 bedroom)	247	3.1	270	206,739
Residential Use Avg. Day (L/d)				416,502
Avg Day (L/s)				4.83
	Area (ha)	PPH	L/P/d	Avg. Day (L/d)
Commercial	0.11	50.0	250	1,372
Commercial Use Avg. Day (L/d)				1,372
Avg Day (L/s)				0.02
Residential Peak flows <i>f</i>				
Peak hour (L/hr)	3.0			52,063
Max day (L/d)	1.8			749,704
Peak Hour (L/s)				14.47
Max Day (L/s)				8.68
Commercial Peak flows <i>f</i>				
Peak hour (L/hr)	3.0			172
Max day (L/d)	1.4			1,921
Peak Hour (L/s)				0.05
Max Day (L/s)				0.03

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	704	N/A	83	83

SITE SUMMARY - BLOCK A - TOWER 1& 2 - RESIDENTIAL	
Residential Use Avg. Day (L/d)	416,502
Avg Day (L/s)	4.83
Max Day (L/s)	8.68
Peak Hour (L/s)	14.47
Max day plus Fire Flow (L/s)	92.01

SITE SUMMARY BLOCK A - TOWER 1 & 2 - COMMERCIAL	
Commercial Use Avg. Day (L/d)	1,372
Avg Day (L/s)	0.02
Max Day (L/s)	0.03
Peak Hour (L/s)	0.05

SITE SUMMARY - BLOCK A - TOWER 1& 2	
Avg Day (L/d)	417,874
Avg Day (L/s)	4.85
Max Day (L/s)	8.71
Peak Hour (L/s)	14.52
Max day plus Fire Flow (L/s)	91.71

DOMESTIC WATER USAGE
CALCULATION SHEET

BLOCK B - TOWER 3

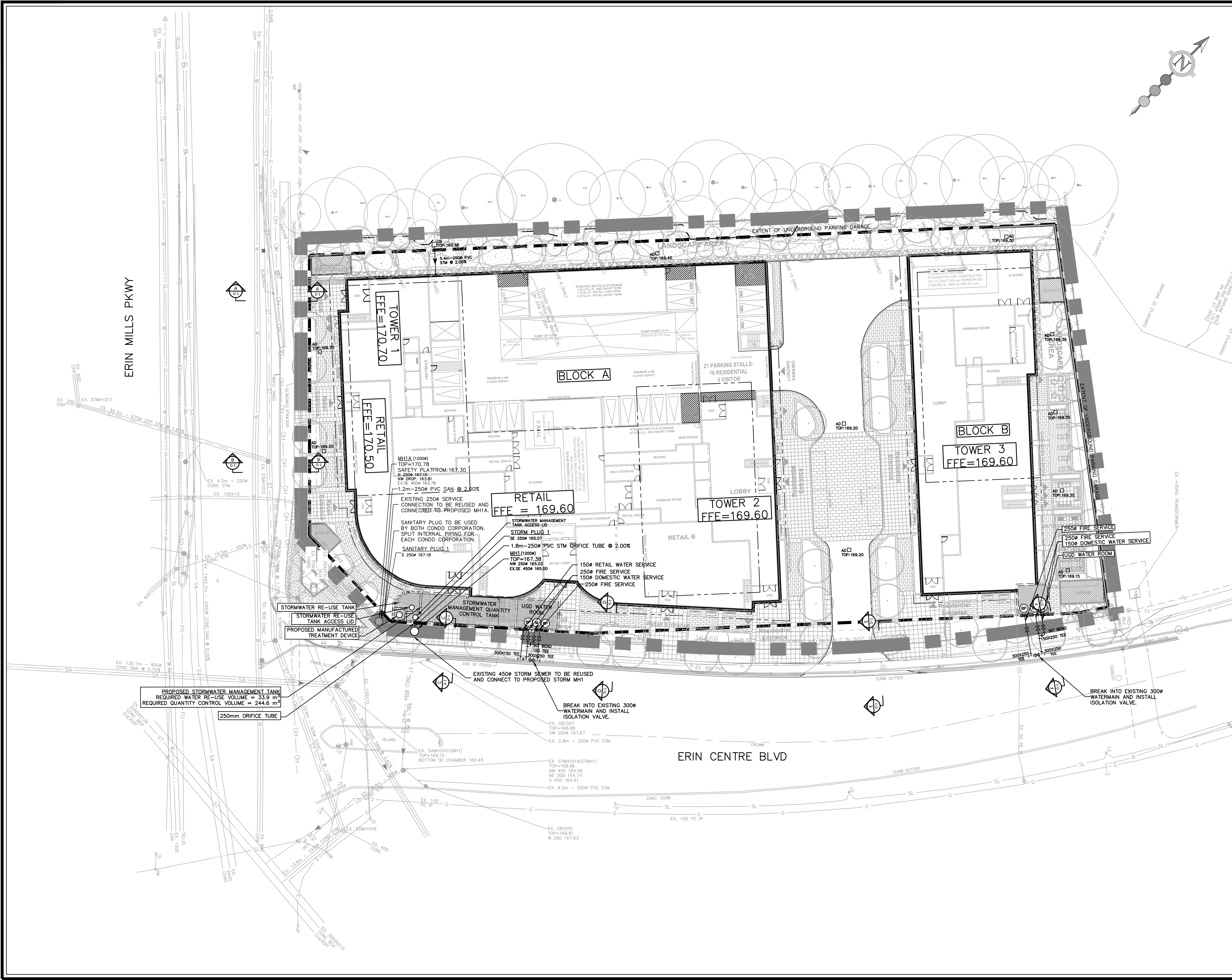
Unit Type	No. of Units	PPU	L/P/d	Avg. Day (L/d)
Small Apartments (>1 bedroom)	206	1.7	270	94,554
Large Apartments (<=1 bedroom)	100	1.7	270	45,900
Residential Use Avg. Day (L/d)				140,454
Avg Day (L/s)				1.63
Peak flows <i>f</i>				
Peak hour (L/hr)	3			17,557
Max day (L/d)	1.8			252,818
Peak Hour (L/s)				4.88
Max Day (L/s)				2.93

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	306	N/A	67	67

SITE SUMMARY - BUILDING A	
Residential Use Avg. Day (L/d)	140,454
Avg Day (L/s)	1.63
Max Day (L/s)	2.93
Peak Hour (L/s)	4.88
Max day plus Fire Flow (L/s)	69.93

Appendix G Drawings



BENCHMARK: ELEV. 169.786
ELEVATIONS ARE GEODETIC AND ARE REFERENCE TO CITY OF MISSISSAUGA VERTICAL BENCHMARK NUMBER 968 HAVING AN ORTHOMETRIC ELEVATION OF 169.786 METRES. ELEVATIONS ARE REFERENCE TO THE CANADIAN GEODETIC VERTICAL DATUM OF 1928, NOT 1978 ADJUSTMENT (CGVD-1928 PRE-1978 ADJ)

- LEGEND:**
- LIMIT OF PROPERTY
 - SANITARY MAINTENANCE HOLE AND SEWER
 - STORM MAINTENANCE HOLE AND SEWER
 - CB CATCHBASIN
 - AD AREA DRAIN
 - WATERMAIN
 - WATER VALVE
 - HYDRANT AND VALVE
 - WATER METER
 - BACKFLOW PREVENTER
 - PROPOSED RETAINING WALL (PART OF BUILDING STRUCTURE)
 - PROPOSED CAST-IN-PLACE STORMWATER MANAGEMENT TANK WITHIN UNDERGROUND PARKING GARAGE
 - TREE HOARDING FENCE
 - EMBANKMENT (MAX 3:1 SLOPE UNLESS OTHERWISE NOTED)
 - EXISTING STORM MAINTENANCE HOLE AND SEWER
 - EXISTING SANITARY MAINTENANCE HOLE AND SEWER
 - EXISTING WATERMAIN
 - EXISTING WATER VALVE
 - EXISTING HYDRANT AND VALVE
 - EXISTING VALVE AND CHAMBER

TOPOGRAPHIC SURVEY PROVIDED BY R-PE SURVEYING LTD. NOVEMBER 2023

REVISIONS				
No.	DESCRIPTION	DATE	BY	APPROVED
1.	ISSUED FOR OPA/ZBA APPLICATION - 1ST SUBMISSION	NOV/29/24	K.L.	P.G.

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

MISSISSAUGA
300 CITY CENTRE DRIVE
MISSISSAUGA, ONTARIO L5B 3C1
TEL: (905) 896 3000

I have reviewed the plans for the construction of three mixed use condominium towers located at 2555 Erin Centre Blvd and have prepared this plan to indicate the compatibility of the proposed project with existing adjacent properties and municipal services. It is my belief that adherence 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.

STARMONT ESTATES INC.

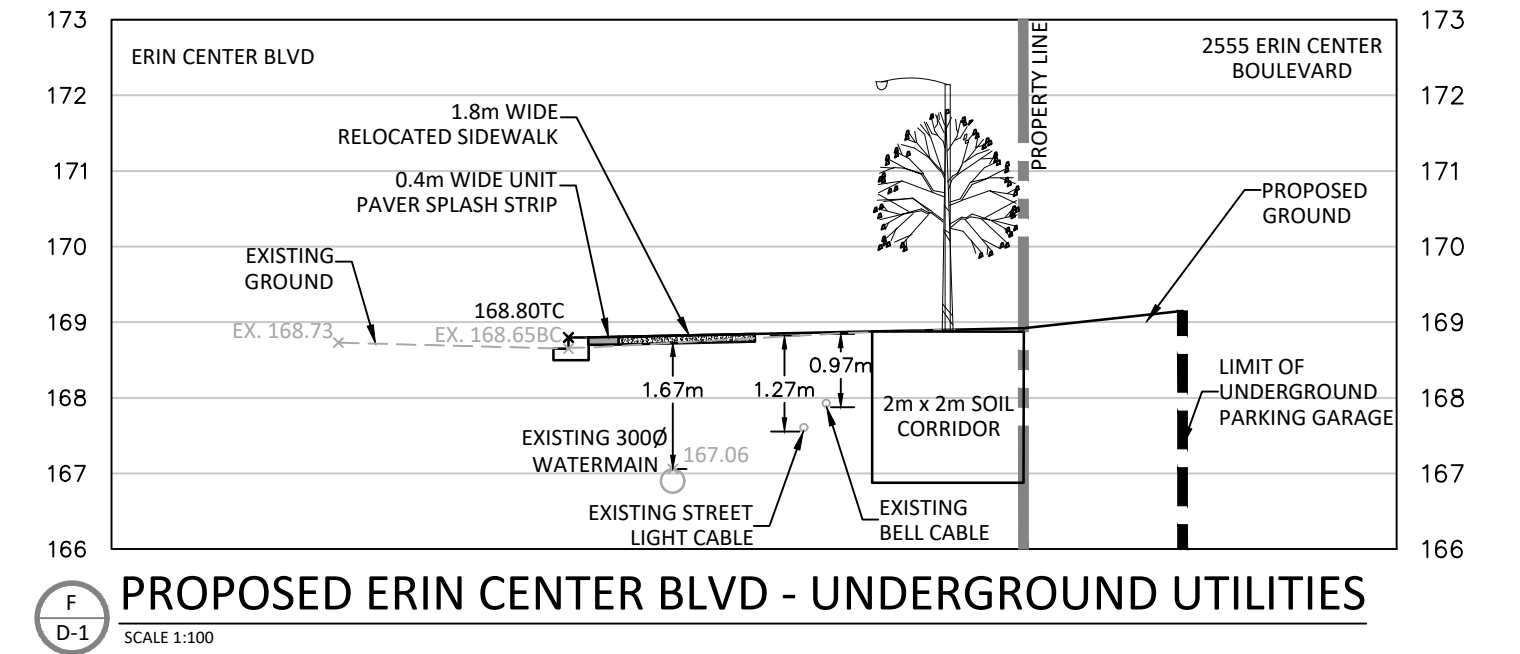
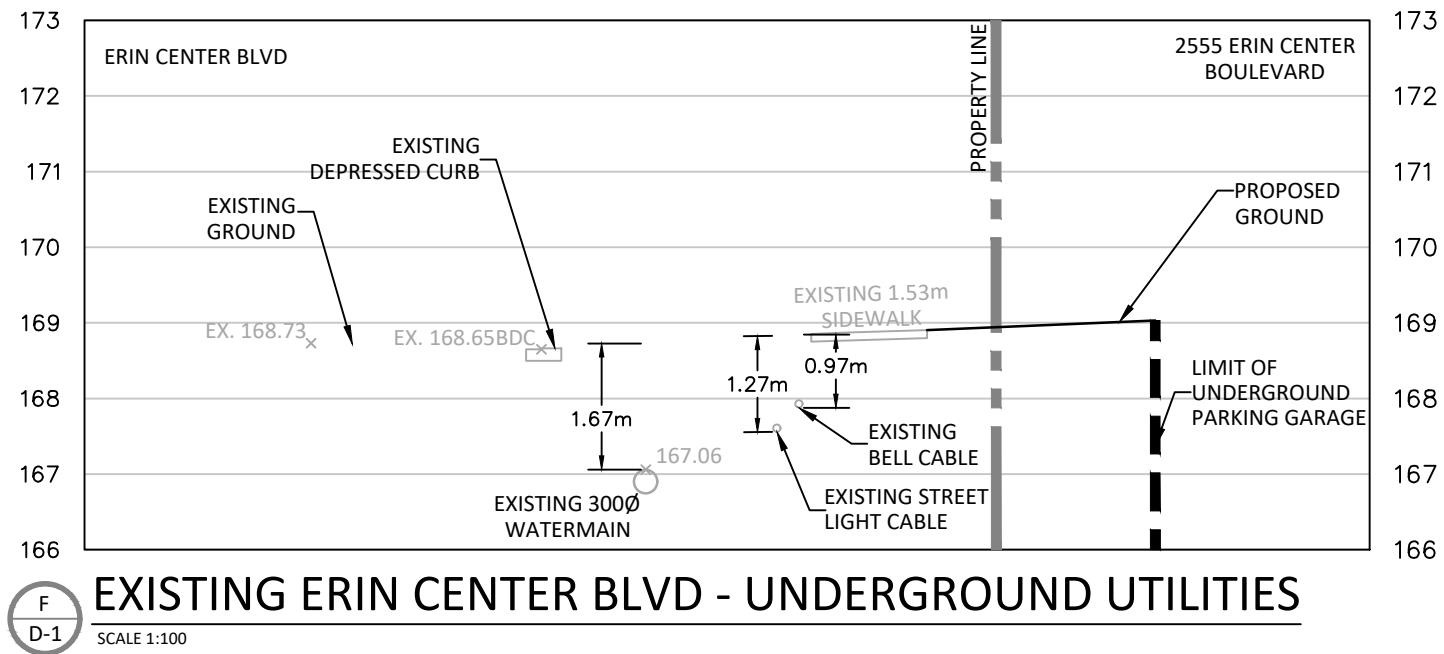
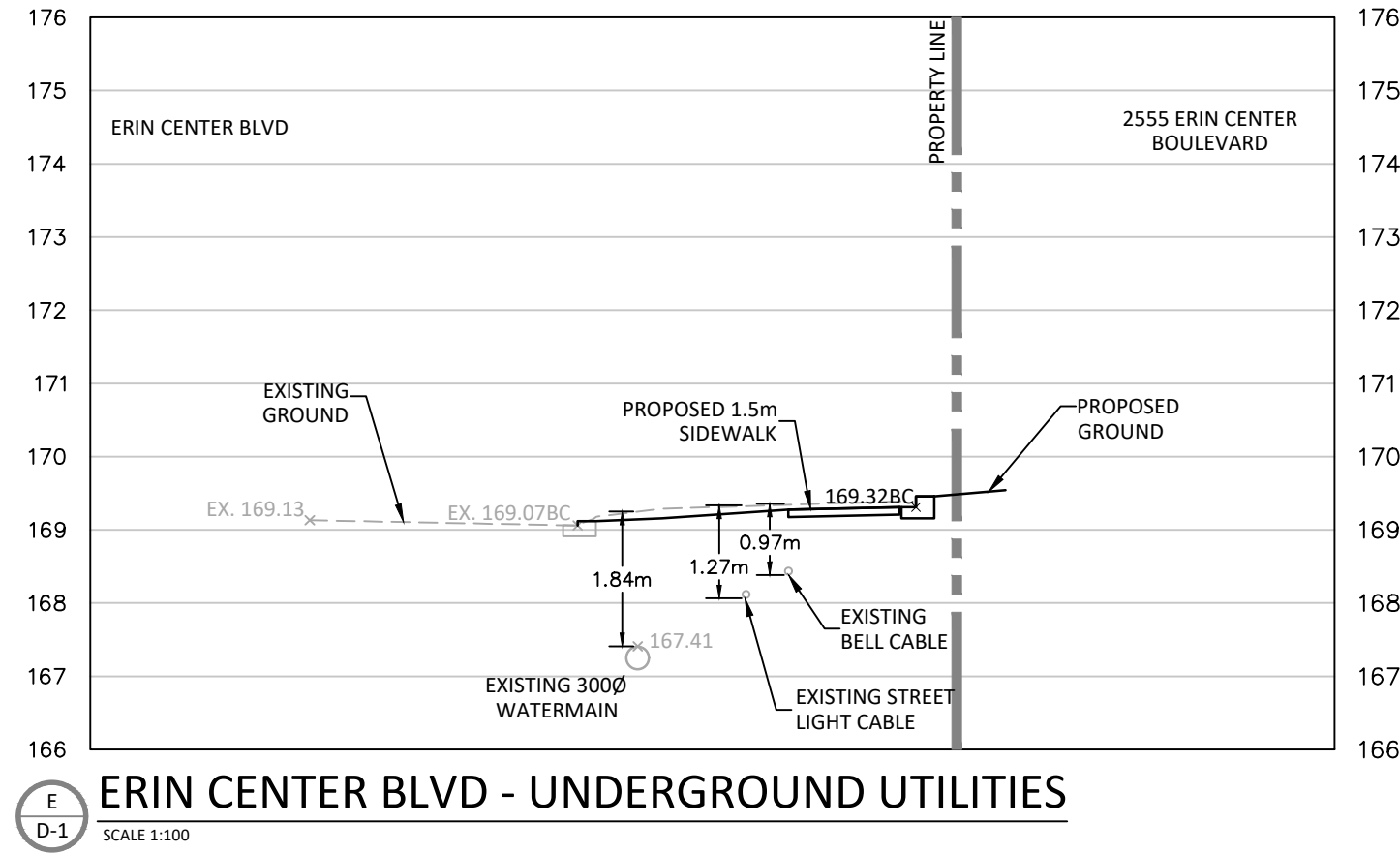
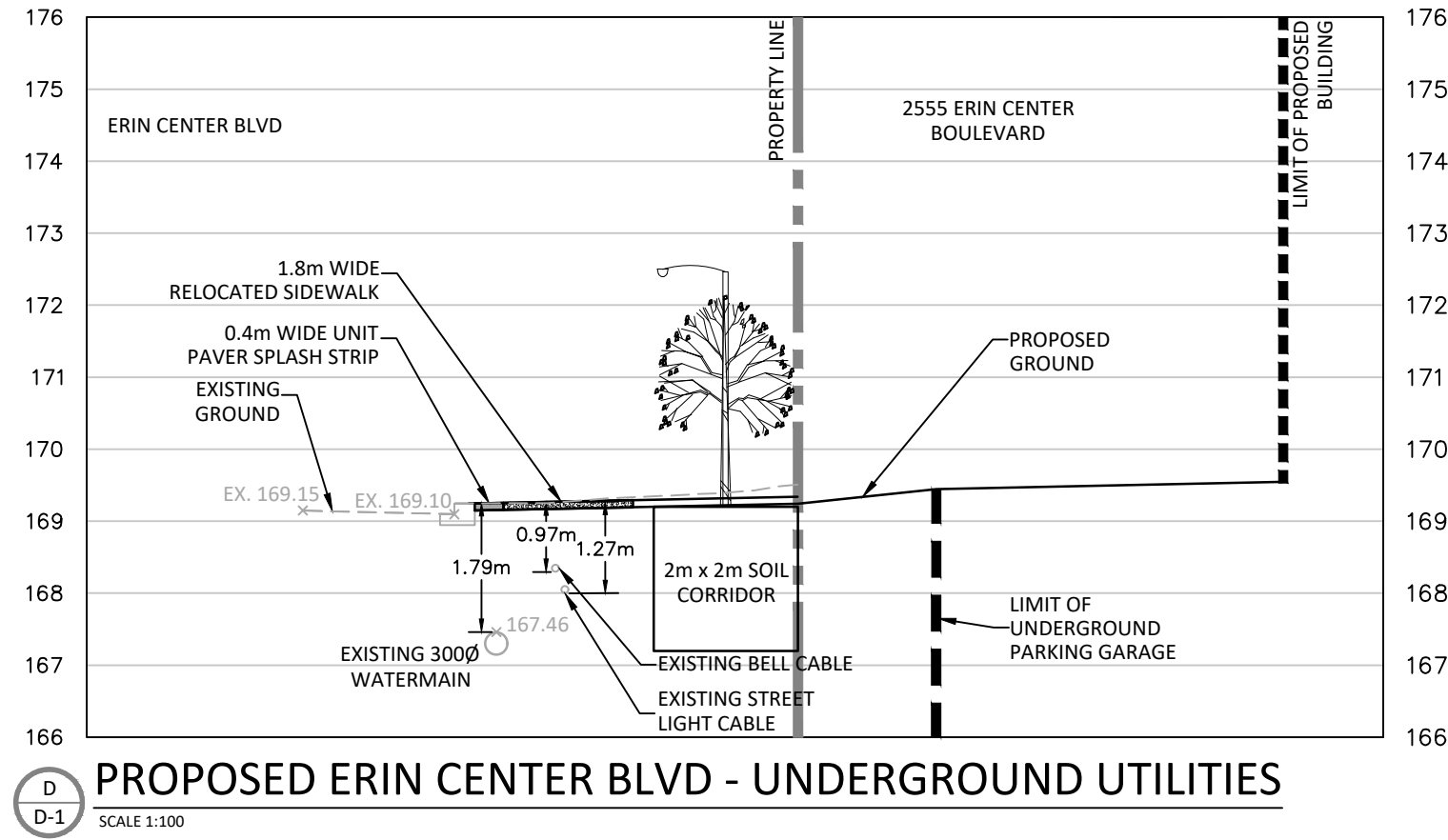
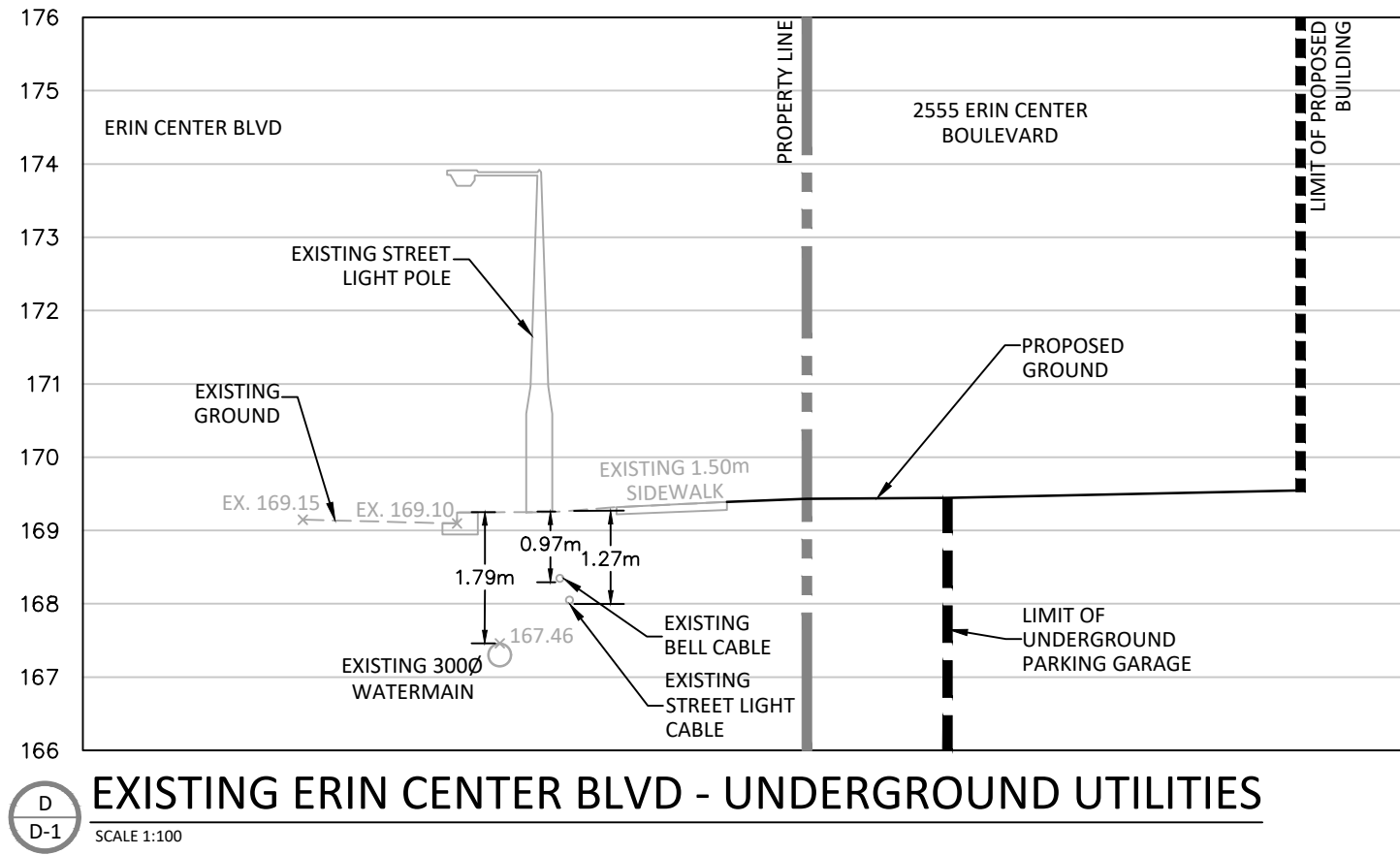
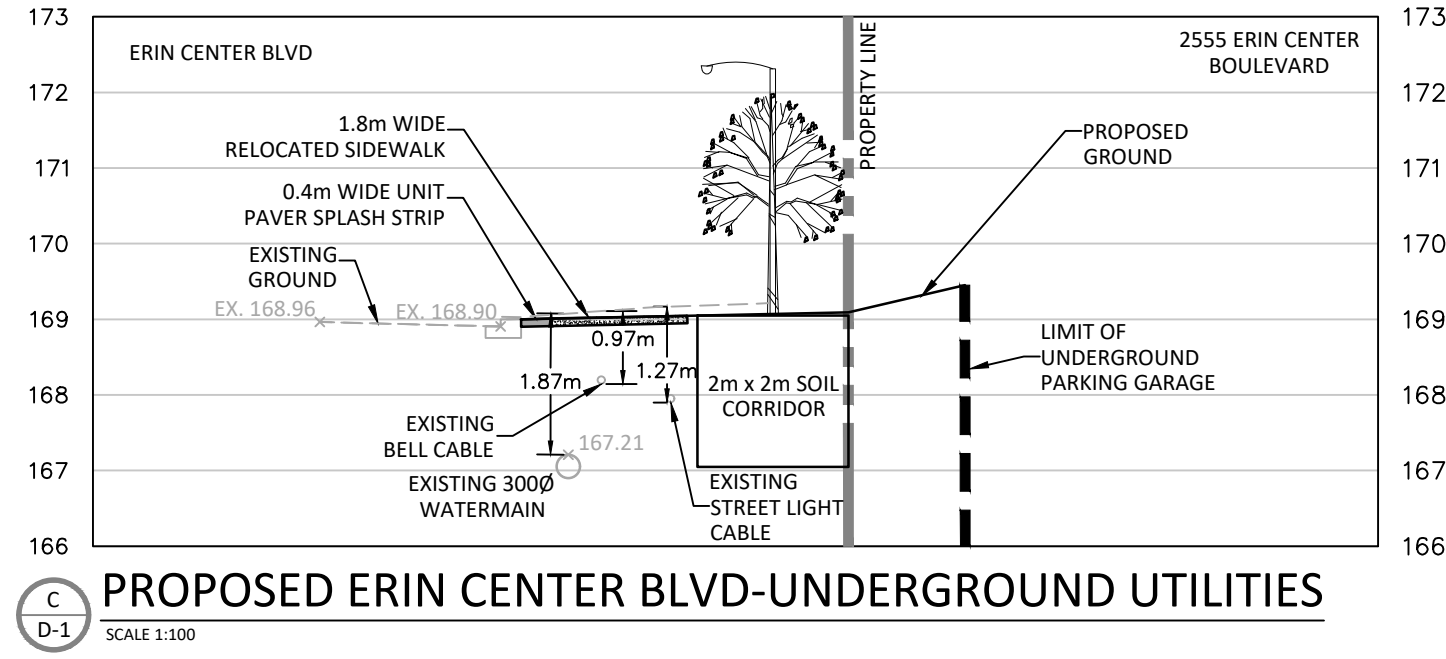
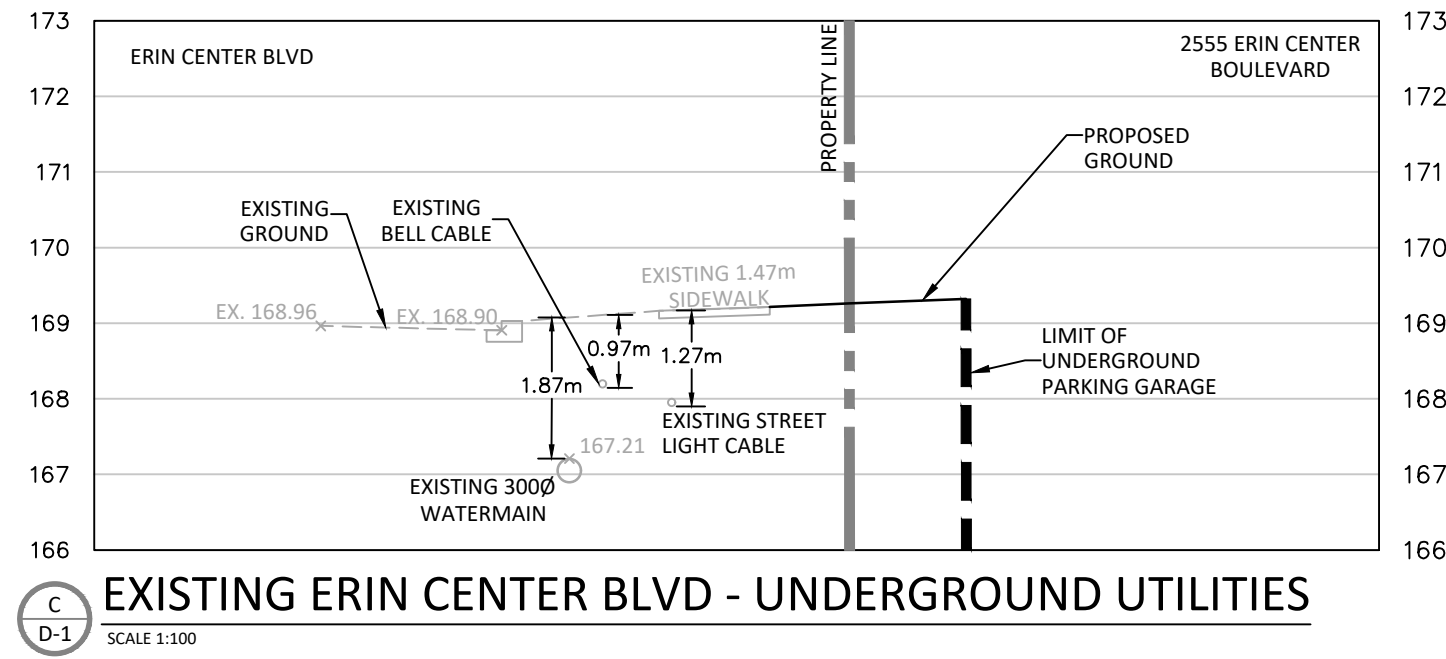
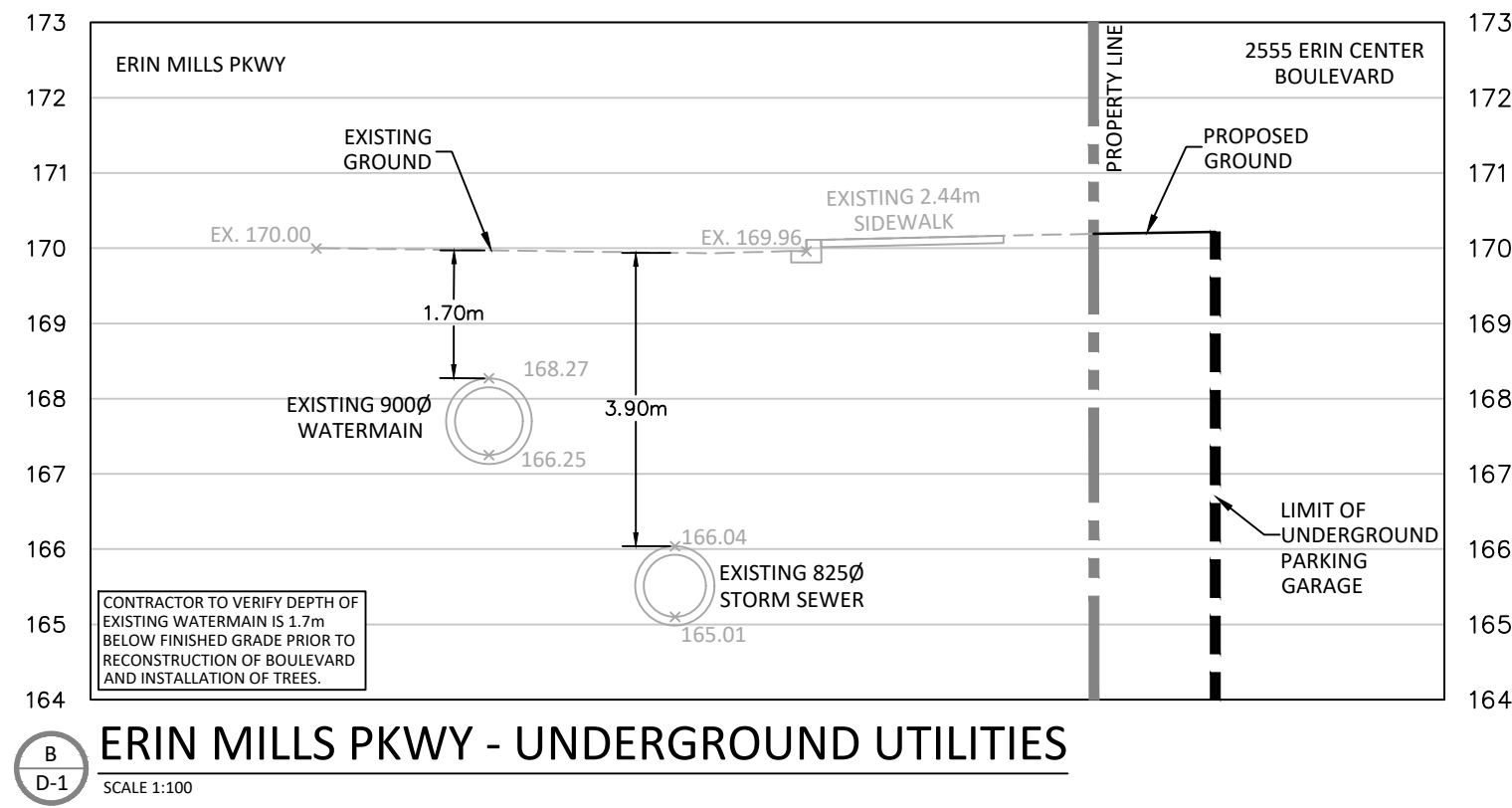
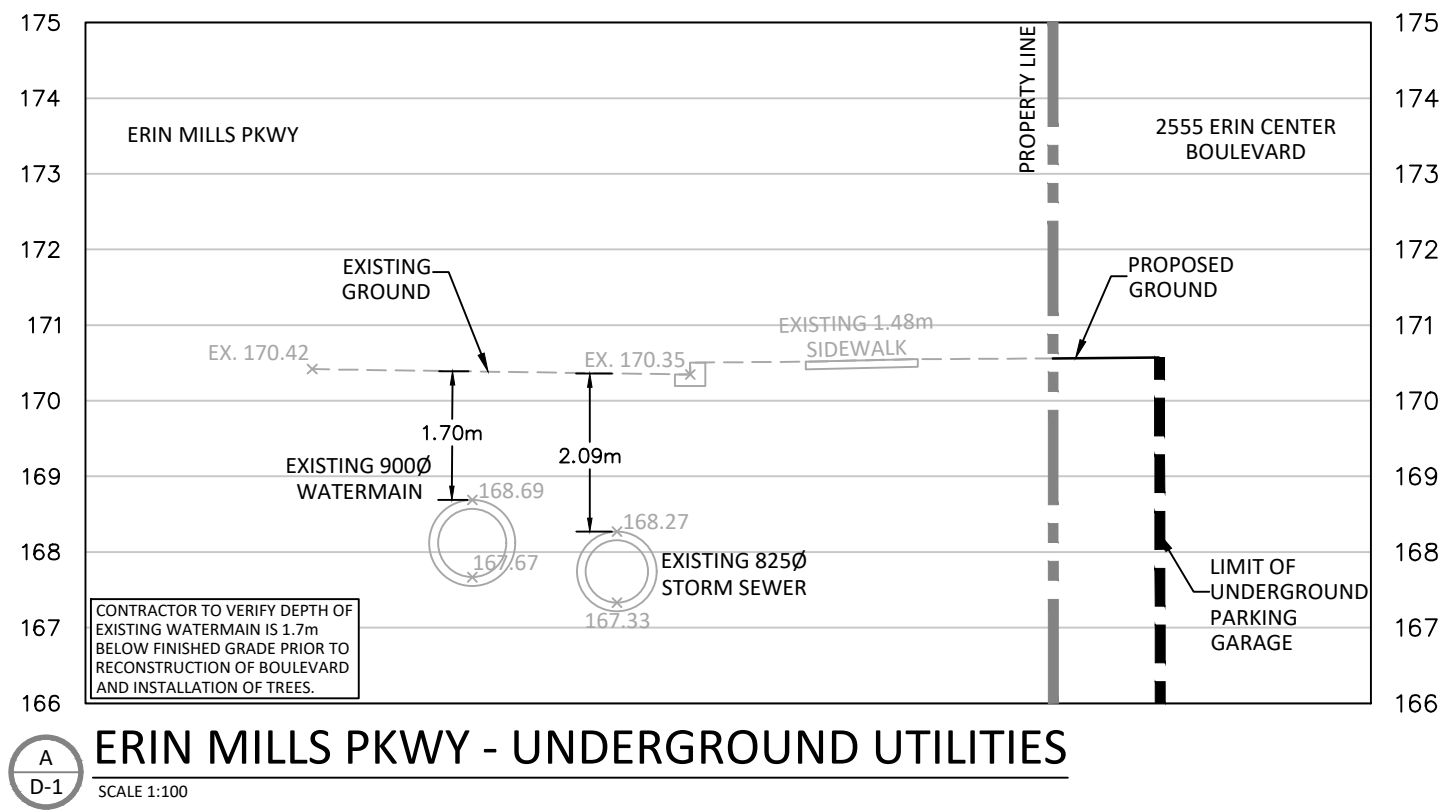
2555 ERIN CENTRE BOULEVARD

PRELIMINARY SERVICING PLAN


DATE:	NOVEMBER 2024	DESIGNED BY:	K.L.	CHECKED BY:	P.G.
SCALE:	1:300	DRAWN BY:	K.L.	CHECKED BY:	K.L.
1 0 5 10 15 20 25					

Accepted to be in accordance with the City of Mississauga Standards. This acceptance is not to be construed as verification of engineering content.
Review Staff: _____
Signature: _____ Date: _____
Manager, Development Engineering


PROJECT No: **2730**
DRAWING No: **S-1**



REVISIONS				
No.	DESCRIPTION	DATE	BY	APPROVED
1.	ISSUED FOR OPA/ZBA APPLICATION - 1ST SUBMISSION	OCT/XX/24	K.L.	P.G.



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



300 CITY CENTRE DRIVE
MISSISSAUGA, ONTARIO L5B 3C1
TEL: (905) 896 5000

STARMONT ESTATES INC.

2555 ERIN CENTRE BOULEVARD

DETAILS PLAN BOULEVARD
CROSS SECTIONS

DATE: OCTOBER 2024	DESIGNED BY: K.L.	CHECKED BY: P.G.
SCALE: AS NOTED	DRAWN BY: K.L.	CHECKED BY: K.L.

Accepted to be in accordance with the City of Mississauga Standards. This acceptance is not to be construed as verification of engineering content.
Review Staff: _____

Signature: _____ Date: _____
Manager, Development Engineering

PROJECT No: 2730
DRAWING No: DETL-1

SCS Consulting Group Ltd
30 Centurian Drive, Suite 100
Markham, ON, L3R 8B8
Phone 905 475 1900
Fax 905 475 8335