SITE SERVICING & STORMWATER MANAGEMENT REPORT

1148-1154 MONA ROAD DEVELOPMENT

CITY OF MISSISSAUGA
REGION OF PEEL

PREPARED FOR:

QUEENSCORP (MONA II) INC.

PREPARED BY:

C.F. CROZIER & ASSOCIATES INC.
211 YONGE STREET, SUITE 600
TORONTO, ON M5B 1M4

NOVEMBER 2024

CFCA FILE NO. 1113-7066

CROZIER &ASSOCIATES
Consulting Engineers

Revision Number	Date	Comments
Rev.0	November 21, 2024	Issued for Official Plan Amendment (OPA) and Zoning By-Law Amendment (ZBA)

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1.0 INTRODUCTION

C.F. Crozier & Associates Inc. (Crozier) was retained by Queenscorp (Mona II) Inc. for civil engineering design of the proposed residential development at 1148-1154 Mona Road (Site) in the City of Mississauga, Ontario.

The purpose of this report is to demonstrate how the proposed site can be developed in accordance with the guidelines set by the City of Mississauga, Region of Peel, and Credit Valley Conservation Authority from a functional servicing and stormwater management perspective.

2.0 SITE DESCRIPTION

The subject lands cover an area of approximately 0.25 ha, and currently consist of two single detached residential houses. The property is bound by Mona Road to the east, and residential properties to the north, west and south. This Site is situated in an urban low-density neighbourhood.

The proposed development per the site plan by Joseph N Campitelli Architect Inc. consists of 6 row townhouse units (Block 1), and two semi-detached buildings (Blocks 2 & 3), each containing two units, for a total of four semi-detached units. Block 1 will be accessed via a proposed drive aisle with a connection to Mona Road. Blocks 2 and 3 are to have direct driveway access to Mona Road.

The proposed population for the development was calculated using equivalent population density factors from the Region of Peel Linear Wastewater Standards (March 2023) and unit information from the site plan by Joseph N Campitelli Architect Inc. **Table 1** below summarizes the proposed populations of the subject property.

Table 1: Estimated Proposed Population Density

Unit Type	Number of Units	Equivalent Population Density	Population
Townhouse	6	3.4	20
Semi-Detached	4	4.2	17
Total	10	-	37

3.0 WATER SERVICING

3.1 Existing Water Servicing

A review of the Region of Peel Department of Public Works as-constructed drawing 8733-D indicates an existing 150 mm diameter watermain in proximity of the site on Mona Road, and an existing fire hydrant located at the southeast corner of the property. Refer to **Drawing C102** for further detail.

3.2 Design Water Demand

The water demand for the proposed development was calculated in reference to the Region of Peel Public Design Standards. An average residential daily demand of 280 L/capita/day was used along with the estimated population in **Table 1** to determine the proposed water demands. A summary of the water demands can be seen in **Table 2** below.

Table 2: Estimated Domestic Water Demand

Condition	Average Daily Demand (L/s)	Max Day Demand (L/s)	Peak Hour Demand (L/s)
Existing	0.03	0.05	0.08
Proposed	0.12	0.24	0.36
Increase	0.09	0.19	0.28

As shown in **Table 2** the peak hourly water demand for the proposed development is 0.36 L/s. Detailed calculations can be found in **Appendix A.**

3.3 Fire Flow Demand

The Fire Underwriters Survey method (FUS, 2020) was used to estimate the fire flow requirements for the proposed development. Flow requirements were calculated using the gross floor area (GFA) of the 6 townhouse units from the site plan by Joseph N Campitelli Architect Inc. The building is assumed to be of wood frame construction and have no sprinkler protection. Additionally, the building is assumed to have limited combustible occupancy. It is recommended that the building have a fire wall between units 3 and 4, therefore half of the GFA of the building is utilized in the fire flow demand calculation.

Table 3 summarizes the required fire flow and duration to meet fire protection for the proposed development.

Table 1: Estimated Fire Demand

Method	Effective Floor Area (m^2)	Construction Type (Coefficient)	Occupancy Surcharge (%)	Sprinkler Protection (%)	Fire Demand Flow (L/s)
Fire Underwriters Survey	755.3	Wood Frame (1.5)	-15%	0%	183.33

The proposed fire service is required to accommodate a fire flow of 183.33 L/s. The maximum day plus fire flow requirement for the site will be 183.57 L/s. Detailed calculations can be found in **Appendix A.**

A hydrant flow test was completed on September 13, 2024, for the existing 150 mm watermain on Mona Road, which is included in **Appendix A**. The results of the hydrant flow test show that the

projected fire flow available at a minimum of 20 psi is 206 L/s. Therefore, there is sufficient flow from the municipal watermain to meet the demand.

3.4 Proposed Water Servicing

The proposed domestic servicing for the site includes a 150 mm watermain that lies within the proposed drive aisle and will connect to the existing 150 mm watermain on Mona Road. The proposed townhouses will be serviced individually through 25 mm domestic service connections that will connect to the proposed 150 mm watermain within the drive aisle. Servicing for the semi-detached houses will be achieved individually for each unit through 25 mm domestic service connections to the existing watermain on Mona Road.

4.0 SANITARY SERVICING

4.1 Existing Sanitary Servicing

A review of the Region of Peel Department of Public Works as-constructed drawing 8733-D indicates an existing 250mm diameter sanitary sewer on Mona Road. Refer to drawing **C102** for further detail.

4.2 Design Sanitary Flow

The sanitary flow for the proposed development was calculated in reference to the Region of Peel Linear Wastewater Standard. An average residential daily demand of 290 L/capita/day was used in along with the estimated population in **Table 1** to determine the proposed water demands. A summary of the sanitary flows can be seen in **Table 4** below.

Table 4: Estimated Sanitary Flow

Condition	Average Daily Flow (L/s)	Peak Flow (L/s)	Infiltration Flow (L/s)	Total Peak Flow (L/s)
Existing	0.03	0.11	0.05	0.16
Proposed	0.12	0.50	0.05	0.54
Increase	0.09	0.39	0.00	0.38

As shown in **Table 4** the peak hourly sanitary flow for the proposed development is 0.54 L/s. Detailed calculations can be found in **Appendix B.**

4.3 Proposed Sanitary Servicing

The proposed sanitary servicing for the site includes a 150 mm sanitary sewer that lies within the proposed drive aisle and will connect to the existing 250 mm sanitary sewer on Mona Road. The proposed townhouses will be serviced individually through 100 mm sanitary Y-connections that will connect to the proposed 150 mm sanitary sewer within the drive aisle. Servicing for the semi-detached houses will be achieved individually for each unit through 100 mm sanitary connections to the existing 250 mm sanitary sewer on Mona Road.

4.4 Existing Sanitary Capacity

A sanitary capacity analysis was performed for the adjacent development at 1142 Mona Road (Application NO: SP 20/092 W1) for the same owner, which is included in **Appendix B**. This analysis showed the fullest pipe, located on Rosemere Road between nodes 1784012 and 624860, has a peak flow of 17.35 L/s. This pipe has a 30.58 L/s capacity, meaning it is at 57% capacity. Therefore, the existing sanitary sewer system will be able to accommodate the proposed sanitary demand increase of 0.38 L/s.

5.0 STORMWATER DRAINAGE CONDITIONS

5.1 Pre-Development Conditions

Based on a review of the topographic survey by Genesis Land Surveying Inc dated March 30, 2023, the majority of the site (Catchment 101 and 103) drains northeast towards the existing ditch on Mona Road. The rest of the site (Catchment 102) drains southwest towards Kenollie Creek. The sites drainage all flows overland, as there is no existing storm infrastructure within the property. A breakdown of each catchment is provided below, summarized in **Table 5,** and shown in **Figure 1**.

Catchment 101:

This 0.11 ha catchment is comprised mainly of grassed backyards, as well as two single detached houses and existing concrete driveways. This catchment sheet flows northeast towards the existing ditch along Mona Road. The ditch drains to a 600 mm culvert south of the site, which slopes towards Mary Fix Creek.

Catchment 102:

This 0.04 ha catchment is comprised entirely of grassed area and contains within it a Tree Protection Zone along the West property line. This catchment sheet flows towards Kenollie Creek. Kenollie Creek flows north to south and outlets to Mary Fix Creek. After the Kenollie Creek and Mary Fix Creek junction, Mary Fix Creek discharges to the Credit River.

Catchment 103:

This 0.10 ha catchment is comprised two detached houses and landscaped area. This catchment sheet flows northeast towards the existing ditch along Mona Road. The ditch drains to a 600 mm culvert south of the site, which slopes towards Mary Fix Creek.

Table 5: Pre-Development Land Areas and Runoff Coefficients

Catchment Area	Outlet Location	Pervious Area (ha) (RC = 0.25)	Impervious Area (ha) (RC = 0.90)	Total Area (ha)	Weighted Runoff Coefficient (RC)
101	Mona Road R.O.W.	0.10	0.01	0.11	0.32
102	Kenollie Creek	0.04	0.00	0.04	0.25
Contributing SWM Area	Mary Fix Creek	0.14	0.01	0.15	0.30
103	Mary Fix Creek	0.06	0.04	0.10	0.50

5.2 Post-Development Conditions

Under post-development conditions, the Site is divided into three catchment areas, as shown in **Figure 2**. The majority of the site is comprised of a mixture of grassed areas, permeable pavers and building roofs, and drains to the existing ditch on Mona Road via an internal stormwater system. As various driveways are proposed over the existing ditch within the west side of Mona Road, a culvert will be constructed to convey the existing drainage that flows through the ditch, as well as the proposed drainage from the site. A small portion of the site (Catchment UC1) remains uncontrolled and drains to the west.

A breakdown of each catchment is provided below and summarized in **Table 6**.

Catchment 201:

This 0.15 ha catchment contains the majority of the site and consists of a mixture of roof, grassed areas and permeable pavers. This catchment is captured by catchbasins located within the drive aisle and are controlled to the allowable release rate by an underground storage tank. This flow is then pumped to the existing ditch located on Mona Road.

Catchment UC1:

This 0.003 ha uncontrolled catchment consists of the Tree Protection Zone and will remain uncontrolled and flow overland to the west as in the pre-development condition, due to limitations with grading within the protected zone. As this area cannot be regraded to drain to the internal stormwater system, the catchment flows towards Kenollie Creek flows which discharges to Mary Fix Creek.

Catchment 202:

This 0.10 ha catchment consists of two semi-detached houses that front Mona Road. This catchment consists of the roof, permeable pavers, and grassed areas.

Table 6: Post-Development Land Areas and Runoff Coefficients

Catchment Area	Outlet Location	Pervious Area (ha) (RC = 0.25)	Permeable Pavers Area (ha) (RC = 0.50)	Impervious Area (ha) (RC = 0.90)	Total Area (ha)	Weighted RC
201	Mona Road ROW	0.04	0.05	0.06	0.15	0.59
UC1	Kenollie Creek	0.003	0.00	0.00	0.003	0.25
Entire Site	Mary Fix Creek	0.043	0.05	0.06	0.15	0.59
202	Mona Road ROW	0.04	0.01	0.04	0.10	0.58

5.3 Groundwater Conditions

A Hydrogeological Investigation for the subject site was completed by Grounded Engineering Inc. dated September 18, 2024, which describes the Site's subsurface and groundwater conditions. Three monitoring wells were advanced to depths of 4.0 metres below ground surface. The major conclusions of the investigation are summarized in the bullets below:

- Monitoring Well 1, located in the northeast corner of the site, determined a groundwater elevation of 1.5 mbgs, or 82.5 masl.
- Monitoring Well 2, located in the southeast corner of the site, determined a groundwater elevation of 1.6 mbgs, or 82.2 masl.
- Monitoring Well 3, located in the southwest corner of the site, determined a groundwater elevation of 2.6 mbgs, or 81.9 masl.
- Infiltration rates of 54 mm/hr and 23.9 mm/hr (6.4 mm/hr and 2.8 mm/hr after use of a safety factor of 8.5) were obtained on site.

Short-term de-watering of the various excavations is required, with an estimated 49,000 L/day required to be removed from the site. The short-term dewatering plan to be designed by the de-watering contractor, with de-watering operations taking place prior to any excavation.

6.0 STORMWATER MANAGEMENT

6.1 Stormwater Criteria

The stormwater management for the Site includes controlling the stormwater from the subject property in accordance with the standards set out by the 'Development Requirements Manual' (City of Mississauga Transportation and Works, 2020) and the 'Stormwater Management Criteria' (Credit Valley Conservation (CVC), 2022). As the Site is located within the Kenollie Creek and Mary Fix Creek subwatersheds and the ultimate storm sewer outlet is Mary Fix Creek, the SWM objectives for the proposed SWM Plan were based on CVC and Ministry of Environment, Conservation and Parks (MECP) criteria as follows:

- Quantity Control: Control 10-yr post-development peak flows to 2-yr pre-development peak flow levels.
- Quality Control: Enhanced Levels of Protection per MECP Standards (80% TSS Removal).
- Water Balance: 5 mm retention of stormwater across the entire Site.
- Erosion and Sediment Control: Controls to be provided during construction.

6.2 Stormwater Quantity Control to Mona Road

Catchment 201, which is comprised of the proposed townhouse block, permeable pavers and most of the landscaped area, is proposed to be entirely captured, controlled, and conveyed to the east towards Mona Road.

Flows within Catchment 201 are captured by a catchbasin manhole, then conveyed through a storm sewer system to a proposed underground stormwater storage tank with 29.0 m^3 of storage located within the drive aisle. The flow from this tank drains into an adjacent manhole, where it is pumped at the allowable release rate of 5.74 L/s to the required outlet elevation at the property line manhole. The pump is to be designed by a mechanical engineer during the detailed design phase. The property line manhole is designed to drain by gravity to a proposed 200 mm culvert that will direct flows from the existing ditch on Mona Road under the proposed driveways for the development.

The stormwater management system is designed to control the 10-year post-development flowrate from Catchment 201 to the 2-year pre-development flowrate from Catchment 101. The pump located in the manhole adjacent to the tank will be designed to pump the flow at the 2-year pre-development rate.

Table 7: Summary of Catchment 201 Post-development Flows to Mona Road

Storm Event	C	i (mm/hr)	A (ha)	Q (m^3/s)	Q (L/s)	Active Storage (m^3)
2	0.59	59.89	0.15	0.015	14.7	-
10		99.17		0.024	24.3	-
					Required	22.3
					Provided	29.0

6.3 Stormwater Quantity Control to the West

Catchment UC1, which is comprised of the Tree Protection Zone along the west property line, will flow uncontrolled toward the property to the west, matching the pre-development condition. This is due to the inability to grade the area and direct the flows to be captured in the storm system within Catchment 201. As an attempt at best efforts the in the post-development condition, the area that will flow towards the neighbouring property has been reduced from 393 m^2 in the pre-development condition to 32 m^2 in the post-development condition and will remain completely landscaped. Please see a summary table demonstrating pre and post-development flows to the west below.

Table 8: Summary of Uncontrolled Pre and Post-development flows

Storm Event	Pre-dev Flow (L/s)	Post-Dev Flow (L/s)
2	1.97	0.31
10	3.26	0.51

6.4 Stormwater Quality Control

The City of Mississauga criteria for stormwater quality refers to the MECP stormwater quality Enhanced Level Protection of 80% removal of total suspended solids from 90% of the runoff volume for the proposed development. As the Site is made up of rooftop, landscaped areas, and permeable pavers, which all have a TSS removal credit of 80%, no stormwater quality treatment is required for the Site. As such, 80% TSS removal for the entire Site is met, without the requirement for additional stormwater treatment devices. A breakdown of the Site areas is shown in **Table 9.**

Table 9: Summary of Post-Development Site Composition

Surface Type	Area (m^2)	TSS Removal
Roof	583	80%
Landscape	409	80%
Permeable Pavers	545	80%
Total	1537	80%

6.5 Water Balance

The water balance requirement for the site is retention of 5mm of rainfall across the site area. For the site area of 0.154 ha, the required water balance volume is 7.69 m^3. In order to meet the water balance requirement for the site, a combination of increased initial abstraction from extra deep topsoil in landscaped areas and permeable pavers is proposed. A summary of initial abstraction from the various surface types is provided below:

Table 10: Summary of Post-Development Water Balance

Surface Type	Area (m^2)	Initial Abstraction (mm)	Volume (m^3)
Roof and At-Grade Impervious	583	1	0.58
Landscape (Topsoil Depth of 600mm)	409	10	4.09
Permeable Pavers	545	5	2.73
Total	**1537**	**-**	**7.40**

It is proposed that runoff from impervious areas on site, including the roof and at-grade patios, will be directed via downspouts and sheet flow, respectively, to landscaped areas with increased topsoil depth. The topsoil depth for the entire landscaped area of the site will be increased from the standard 300 mm to a depth of 600 mm, providing twice the void space volume than a standard topsoil. As the void space volume within the soil is doubled, it has the ability to capture and contain twice the volume of water from the surface and infiltrate it into the native soils, which is why an initial abstraction depth of 10 mm has been accounted for.

As the total water balance volume for the site is 7.40 m^3, best efforts have been proposed to meet the required water balance volume for the site of 7.69 m^3.

7.0 CONCLUSIONS & RECOMMENDATIONS

Based on the information contained within this summary report, we offer the following conclusions:

- Water servicing will be provided by a proposed 150 mm diameter watermain located in the drive aisle to the existing 150 mm diameter watermain on Mona Road. Each proposed townhouse unit will have its own individual 25 mm diameter connection to the proposed 150 mm watermain in the drive aisle.

- A fire flow demand of 183.33 L/s is required, which can be met as shown on the Hydrant Flow Test completed on September 13, 2024.

- Sanitary servicing will be provided by a proposed 150 mm diameter sanitary sewer that connects to the existing 250 mm diameter sanitary sewer on Mona Road. Sanitary servicing to the townhouse units is provided through Y-connections which are connected to the proposed 150 mm diameter sanitary sewer within the drive aisle.

- Stormwater quality control will be met as the site is set to be entirely comprised of grassed areas, roof, and permeable pavers to achieve the required 80% TSS removal for 100% of the runoff volume prior to discharging off-site.

- Stormwater quantity control objectives will be met using an underground storage tank and pump that will be designed to operate at the 2-year pre-development flow rate of 5.74 L/s.

- All Site drainage will be self-contained with the exception of UC1, which best efforts has been made to minimize the amount of area flowing uncontrolled to the neighbouring site.

- Water balance will be met on site using a combination of increased initial abstraction in landscaped areas and permeable pavers.

Based on these conclusions, we recommend approval of the site plan application from the perspective of site servicing and stormwater management.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.

Liam Ellis

Liam Ellis, EIT
Land Development

C.F. CROZIER & ASSOCIATES INC.

Julie Scott, P.Eng.
Manager, Land Development

APPENDIX A

Water Demand Calculations

CROZIER & ASSOCIATES Consulting Engineers

1148-1154 Mona Road
Fire Protection Volume Calculation
CFCA File: 1113-7066

Date: 2024-11-21
Design: L.E.
Check: J.S.

Water Supply for Public Fire Protection - 2020
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

1. An estimate of fire flow required for a given area may be determined by the formula:

$$F = 220 * C * \sqrt{A}$$

where

F = the required fire flow in litres per minute

C = coefficient related to the type of construction:

=	1.5	for Type V Wood Frame Construction
=	0.8	for Type IV-A Mass Timber Construction
=	0.9	for Type IV-B Mass Timer Construction
=	1.0	for Type IV-C Mass Timber Construction
=	1.5	for Type IV-D Mass Timber Construction
=	1.0	for Type III Ordinary Construction
=	0.8	for Type II Non-combustible Construction
=	0.6	for Type I Fire-Resistive construction

A = The total floor area in square metres

Proposed Buildings

Block 1	GFA 1st Floor	419.4 sq.m	50%	***fire wall be implemented between Units 3 and 4**
	GFA 2nd Floor	592.8 sq.m	50%	
	GFA 3rd Floor	498.4 sq.m	50%	
	Total Area =	755.3 sq.m		

C = 1.5 Assume Type V Wood Frame Construction

Therefore F = 9,069 L/min

2. Values obtained in No. 1 may be reduced by as much as 25% for occupancies having low contents fire hazard or may be increased by up to 25% surcharge for occupancies having a high fire hazard.

Non-Combustible	-25%	Free Burning	15%
Limited Combustible	-15%	Rapid Burning	25%
Combustible	0% (No Change)		

Limited Combustible	-15% Reduction

-1,360 L/min reduction
7,709 L/min

Note: Flow determined shall not be less than 2,000 L/min

3. Sprinklers - The value obtained in No. 2 above maybe reduced by up to 50% for complete automatic sprinkler protection. The credit for the system will be a maximum of 30% for an adequately designed system conforming to NFPA 13 and other NFPA sprinkler standards.

As part of this analysis, building is assumed to have no sprinkler protection

0 L/min reduction

Water Supply for Public Fire Protection - 2020
Fire Underwriters Survey

Part II - Guide for Determination of Required Fire Flow

4. Exposure - To the value obtained in No. 2, a percentage should be added for structures exposed within 30 metres by the fire area under consideration. The percentage shall depend upon the height, area, and construction of the building(s) being exposed, the separation, openings in the exposed building(s), the length and height of exposure, the provision of automatic sprinklers and/or outside sprinklers in the building(s) exposed, the occupancy of the exposed building(s) and the effect of hillside locations on the possible spread of fire.

Separation		Charge	Separation	Charge
0 to 3 m	Max.	25%	20.1 to 30 m Max.	10%
3.1 to 10 m	Max.	20%	> 30m	0%
10.1 to 20 m	Max.	15%		

Per Table 6 "Exposure Adjustment Factors for Subject Building considering Construction Type of Exposed Building Face", the above table of exposure factors is the maximum to be used. The length to height ratio for the exposed wall on each side of the building, including the construction type of the exposed building, and whether or not the exposed building has protected openings, was taken into account for each wall of the proposed buildings, in addition to the distance between the subject building and the exposed building.

	Distance (m)	Length of Exposed Building Face	Height of exposed building in stories	Length-Height Ratio	Building Type	Protected Openings?	Exposure Charge	Surcharge
North	3.3	23	2	46	V	Yes	17%	1310.5
South	14	37	3	111	V	Yes	15%	1156.3
East	7	7	2	14	V	Yes	15%	1156.3
West	-	-	-	-	-	-	0%	0.0
								3623.2 L/min Surcharge

Determine Required Fire Flow

No.1	9,069		
No. 2	-1,360	reduction	
No. 3	0	reduction	
No. 4	3,623	surcharge	
Required Flow:	**11,332**	**L/min**	
Rounded to nearest 1000 L/min:	**11,000**	**L/min**	or 183.33 L/s
			2,906 USGPM

Project: 1148-1154 Mona Road | **Created By:** L.E. | **Date:** 2024-07-04
Project No.: 1113-7066 | **Checked By:** J.S. | **Updated:** 2024-11-21

Domestic Water Demand

Total Site Area:	0.25	ha
Single-Detached	2	units
Single-Detached Density	4.2	persons/unit
Population:	8	persons

Design Parameters

Average Demand (L/capita/d)
280

Water Demand:

Average Daily Demand = 2,352 L/day
0.03 L/s

Peaking Factors

Max Day = 2.0
Peak Hour = 3.0

Average Day =	0.03	L/s
Max Day =	**0.05**	L/s
Peak Hour =	**0.08**	L/s

Region	Average Daily Water Demand (L/s)	Max Day Demand (L/s)	Peak Hourly Demand (L/s)
Region of Peel	0.03	0.05	0.08

Notes & References

R 1.0 Region of Peel Linear Wastewater Standards (March 2023)

Region of Peel Public Works Watermain Design Criteria (June 2010)

Region of Peel Public Works Watermain Design Criteria (June 2010)

Max Day = Average Day Demand * Max Day
Peak Hour = Average Day Demand * Peak Hour

Project: 1148-1154 Mona Road | **Created By:** L.E. | **Date:** 2024-07-04
Project No.: 1113-7066 | **Checked By:** J.S. | **Updated:** 2024-11-21

Domestic Water Demand

Total Site Area:	0.25	ha
Townhouse	6	units
Semi-Detached	4	units
Townhouse Density	3.4	persons/unit
Semi-Detached Density	4.2	persons/unit
Population:	37	persons

Notes & References

Site plan prepared by Joseph N. Campitelli Architects Inc

R 1.0 Region of Peel Linear Wastewater Standards (March 2023)

Design Parameters

Average Demand (L/capita/d)
280

Region of Peel Public Works Watermain Design Criteria (June 2010)

Water Demand:

Average Daily Demand = 10,416 L/day
0.12 L/s

Peaking Factors

Region of Peel Public Works Watermain Design Criteria (June 2010)

Max Day =	2.0	
Peak Hour =	3.0	
Average Day =	0.12	L/s
Max Day =	**0.24**	L/s
Peak Hour =	**0.36**	L/s

Max Day = Average Day Demand * Max Day
Peak Hour = Average Day Demand * Peak Hour

Region	Average Daily Water Demand (L/s)	Max Day Demand (L/s)	Peak Hourly Demand (L/s)
Region of Peel	0.12	0.24	0.36

APPENDIX B

Sanitary Flow Calculations

CROZIER CONSULTING ENGINEERS

Project: 1148-1154 Mona Road | **Created By:** L.E. | **Date:** 2024-07-04
Project No.: 1113-7066 | **Checked By:** J.S. | **Updated:** 2024-11-21

Domestic Sanitary Demand

Total Site Area:	0.25	ha
Single-Detached	2.0	unit
Single-Detached Density	4.2	persons/unit
Population:	8	persons

Notes & References

Site plan prepared by Joseph N. Campitelli Architects Inc

R 1.0 Region of Peel Linear Wastewater Standards (March 2023)

Design Parameters

Average Flow (L/capita/d)
290

R 1.0 Region of Peel Linear Wastewater Standards (March 2023)

Average Daily Flow =	**0.03**	L/s	
Peaking Factor, PF =	**4.00**		PF = 1 + 14 / (4 + (p/1000)^.5)
Peak Flow =	**0.11**	L/s	Peak Flow = Average Daily Flow * PF
Infiltration Rate =	0.26	L/s/ha	
Total Infiltration =	**0.05**	L/s	
Total Peak Flow =	**0.16**	L/s	Total Peak Flow = Peak Flow + Total Infiltration

Summary Table

Average Daily Flow (L/s)	**Peaking Factor**	**Peak Flow** (L/s)	**Infiltration Flow** (L/s)	**Total Peak Flow** (L/s)
0.03	4.00	0.11	0.05	0.16

CROZIER CONSULTING ENGINEERS

Project: 1148-1154 Mona Road | **Created By:** L.E. | **Date:** 2024-07-04
Project No.: 1113-7066 | **Checked By:** J.S. | **Updated:** 2024-11-21

Domestic Sanitary Demand

			Notes & References
Total Site Area:	0.25	ha	Site plan prepared by Joseph N. Campitelli Architects Inc
Townhouse	6	units	
Semi-Detached	4	units	
Townhouse Density	3.4	persons/unit	R 1.0 Region of Peel Linear Wastewater Standards (March 2023)
Semi-Detached Density	4.2	persons/unit	
Population:	37	persons	

Design Parameters

Average Flow (L/capita/d)	Notes & References
290	R 1.0 Region of Peel Linear Wastewater Standards (March 2023)

Average Daily Flow =	**0.12**	L/s	
Peaking Factor, PF =	**4.00**		PF = 1 + 14 / (4 + (p/1000)^.5)
Peak Flow =	**0.50**	L/s	Peak Flow = Average Daily Flow * PF
Infiltration Rate =	0.26	L/s/ha	
Total Infiltration =	**0.05**	L/s	
Total Peak Flow =	**0.54**	L/s	Total Peak Flow = Peak Flow + Total Infiltration

Summary Table

Average Daily Flow (L/s)	Peaking Factor	Peak Flow (L/s)	Infiltration Flow (L/s)	Total Peak Flow (L/s)
0.12	4.00	0.50	0.05	0.54

APPENDIX C

External Sanitary Sewer Analysis

CROZIER
CONSULTING ENGINEERS

EXTERNAL SANITARY SEWER CAPACITY ANALYSIS

EXISTING CONDITIONS

PROJECT No.:	1113-4178
DESIGN:	KW
CHECK:	BP
UPDATED:	2020/08/07

Unit Type	PPU
Single & Semi Detached	4.15
Institutional	0.33

Note: a population density of 1 / 3 the total number of students, with a minimum of 600 students is used for Junior Public Schools, as described in the Region of Peel Public Works Design Criteria Manual. The number of students that attend Kenollie Public School in Catchment EXT1 is 181, so the minimum of 600 students has been used.

Mannings "n":	0.013
Peak Factor (M):	1+(14/4+(P/1000)^0.5)
Domesic Flow (L/cap/day)	302.8
Infiltration Q (L/ha.s):	0.2

CATCHMENT I.D.	STREET	FROM MH NO	TO MH NO	AREA (Ha)	SINGLE/SEMI UNITS	NUMBER OF STUDENTS	EQUIV. INSTITUTIONAL POP.	POP.	TOTAL TRIB. POP.	PEAK FACTOR	AVG. FLOW (l/s)	MAX. FLOW (l/s)	INFILT. (l/s)	TOTAL INFILT. (l/s)	TOTAL FLOW (l/s)	LENGTH (m)	PIPE DIAM. (mm)	SLOPE (%)	CAP. (l/s)	CAP. (%)
1	Mona Road	1784013	1784008	1.61	8	0	0	34	34.0	4.35	0.12	0.52	0.32	0.32	**0.84**	74.5	250	0.80%	**53.19**	**1.6%**
2	N/A	1784008	1784009	0.24	1	0	0	5	39.0	4.34	0.14	0.59	0.05	0.37	**0.96**	89.6	250	0.60%	**46.06**	**2.1%**
3	N/A	1784009	1784010	0.14	0	0	0	0	39.0	4.34	0.14	0.59	0.03	0.40	**0.99**	53.6	250	1.80%	**79.78**	**1.2%**
EXT1	N/A	1784055	1784010	31.30	130	600	200	740	740.0	3.88	2.59	10.06	6.26	6.26	**16.32**	32.6	300	0.60%	**74.90**	**21.8%**
4	N/A	1784010	1784011	0.15	0	0	0	0	779.0	3.87	2.73	10.56	0.03	6.69	**17.25**	88.7	300	0.30%	**52.97**	**32.6%**
5	Rosemere Road	1784011	1784012	0.07	0	0	0	0	779.0	3.87	2.73	10.56	0.01	6.70	**17.26**	21.3	300	1.00%	**96.70**	**17.8%**
6	Rosemere Road	1784012	624860	0.14	1	0	0	5	784.0	3.87	2.75	10.62	0.03	6.73	**17.35**	35.9	300	0.10%	**30.58**	**56.7%**
EXT2	Stavebank	1784057	624860	4.19	23	0	0	96	96.0	4.25	0.34	1.43	0.84	0.84	**2.27**	88.0	250	2.20%	**88.20**	**2.6%**
Pumping Station	Rosemere Road	624860	X		0	0	0	0	880.0	3.84	3.08	11.83	0.00	7.57	**19.40**				**25.00**	**77.6%**

CROZIER
CONSULTING ENGINEERS

EXTERNAL SANITARY SEWER CAPACITY ANALYSIS

PROPOSED CONDITIONS

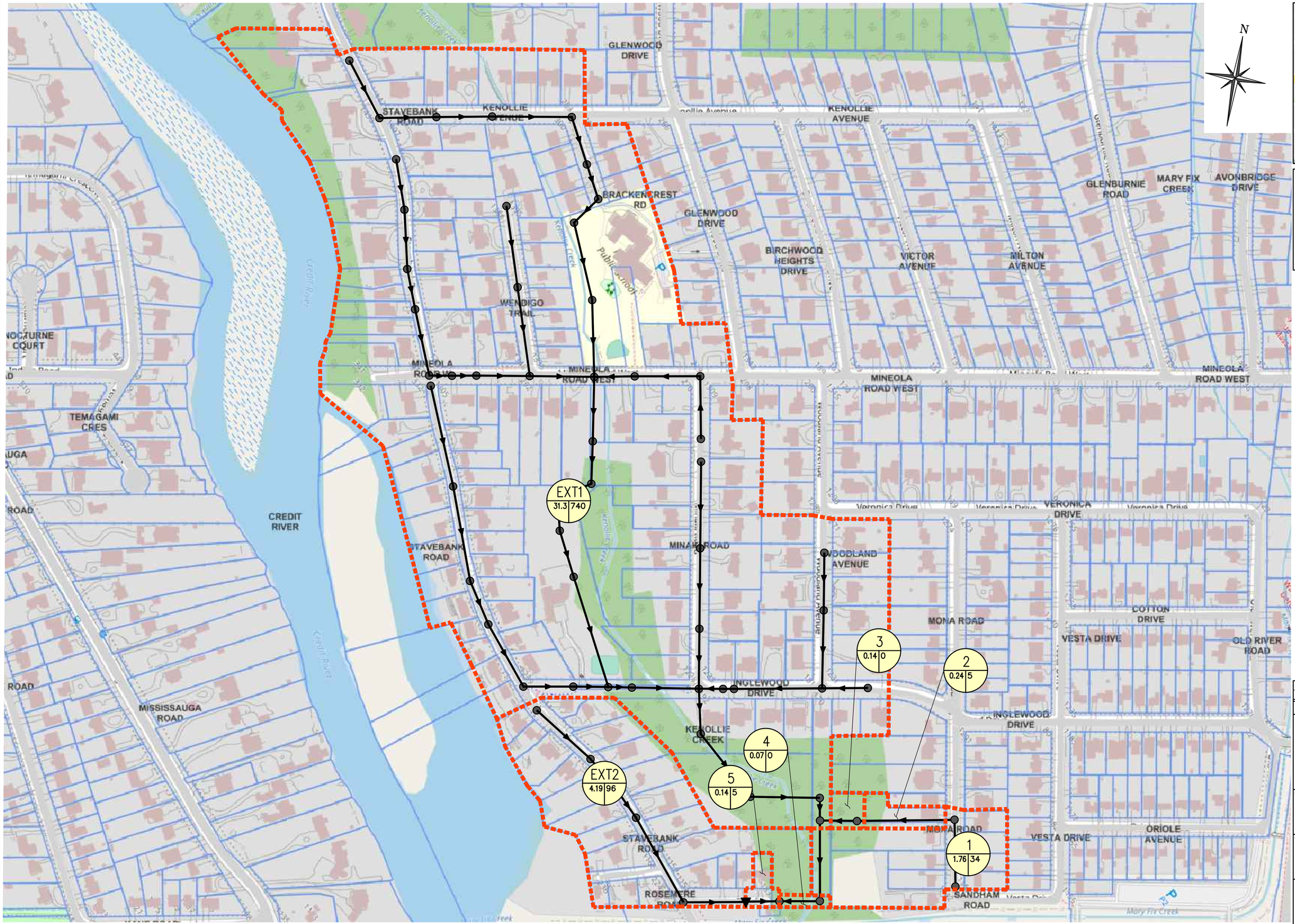
PROJECT No.:	1113-4178
DESIGN:	KW
CHECK:	BP
UPDATED:	2020/08/07

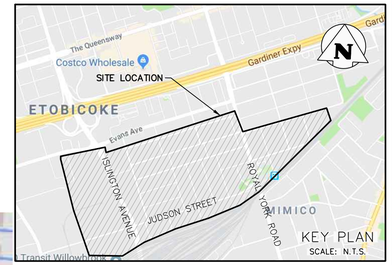
Unit Type	PPU
Single & Semi Detached	4.15
Townhouse	3.50
Institutional	0.33

Note: a population density of 1 / 3 the total number of students, with a minimum of 600 students is used for Junior Public Schools, as described in the Region of Peel Public Works Design Criteria Manual. The number of students that attend Kenollie Public School in Catchment EXT1 is 181, so the minimum of 600 students has been used.

Mannings "n":	0.013
Peak Factor (M):	1+(14/4+(P/1000)^0.5)
Domesic Flow (L/cap/day)	302.8
Infiltration Q (L/ha.s):	0.2

CATCHMENT I.D.	STREET	FROM MH NO	TO MH NO	AREA (Ha)	SINGLE/SEMI UNITS	TOWNHOME/APARTMENT UNITS	NUMBER OF STUDENTS	EQUIV. INSTITUTIONAL POP.	POP.	TOTAL TRIB. POP.	PEAK FACTOR	AVG. FLOW (l/s)	MAX. FLOW (l/s)	INFILT. (l/s)	TOTAL INFILT. (l/s)	TOTAL FLOW (l/s)	LENGTH (m)	PIPE DIAM. (mm)	SLOPE (%)	CAP. (l/s)	CAP. (%)
Site (1142 Mona Road)	Mona Road	4	1784013	0.50	1	17			64	64.0	4.29	0.22	0.96	0.10	0.10	**1.06**	15.1	250	1.00%	**59.47**	**1.8%**
1	Mona Road	1784013	1784008	1.11	7		0	0	30	94.0	4.25	0.33	1.40	0.22	0.32	**1.72**	74.5	250	0.80%	**53.19**	**3.2%**
2	N/A	1784008	1784009	0.24	1		0	0	5	99.0	4.24	0.35	1.47	0.05	0.37	**1.84**	89.6	250	0.60%	**46.06**	**4.0%**
3	N/A	1784009	1784010	0.14	0		0	0	0	99.0	4.24	0.35	1.47	0.03	0.40	**1.87**	53.6	250	1.80%	**79.78**	**2.3%**
EXT1	N/A	1784055	1784010	31.30	130		600	200	740	740.0	3.88	2.59	10.06	6.26	6.26	**16.32**	32.6	300	0.60%	**74.90**	**21.8%**
4	N/A	1784010	1784011	0.15	0		0	0	0	839.0	3.85	2.94	11.31	0.03	6.69	**18.00**	88.7	300	0.30%	**52.97**	**34.0%**
5	Rosemere Road	1784011	1784012	0.07	0		0	0	0	839.0	3.85	2.94	11.31	0.01	6.70	**18.02**	21.3	300	1.00%	**96.70**	**18.6%**
6	Rosemere Road	1784012	624860	0.14	1		0	0	5	844.0	3.85	2.96	11.38	0.03	6.73	**18.11**	35.9	300	0.10%	**30.58**	**59.2%**
EXT2	Stavebank	1784057	624860	4.19	23		0	0	96	96.0	4.25	0.34	1.43	0.84	0.84	**2.27**	88.0	250	2.20%	**88.20**	**2.6%**
Pumping Station	Rosemere Road	624860	X		0		0	0	0	940.0	3.82	3.29	12.58	0.00	7.57	**20.14**				**25.00**	**80.6%**





LEGEND

- PROPERTY LINE
- PROPOSED SANITARY SEWER & MANHOLE
- SANITARY DRAINAGE CATCHMENT
- ID / A|POP — AREA NUMBER; AREA (ha) | POPULATION

No.	ISSUE / REVISION	YYYY/MMM/DD
0	ISSUED FOR COORDINATION	2020/JULY/03

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ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project

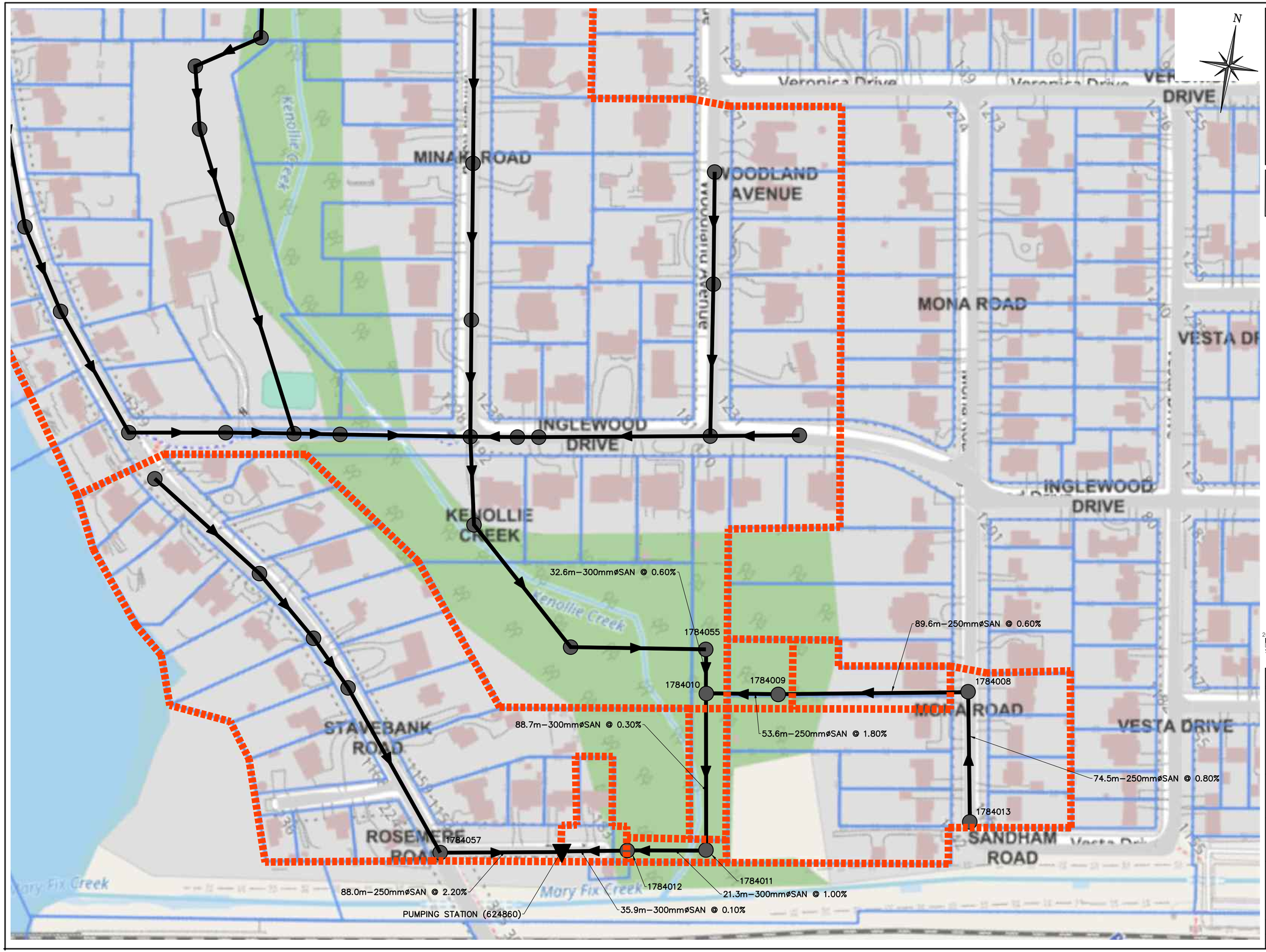
1142 MONA ROAD
MISSISSAUGA, ONTARIO

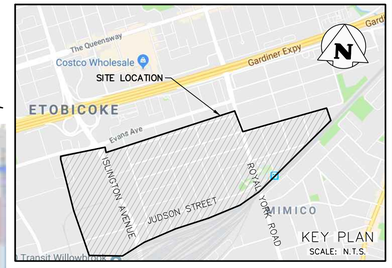
Drawing

PROPOSED SANITARY DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS
211 Yonge Street
Suite 301
Toronto, ON M5B 1M4
416-477-3392 T
www.cfcrozier.ca

Drawn	Design	Project No.	
K.W.	K.W./B.M.P.		1113-4178
Check	Check	Scale	Dwg.
B.M.P.	A.S.	1:3000	FIG. 01





LEGEND

PROPOSED SANITARY SEWER & MANHOLE

SANITARY DRAINAGE CATCHMENT

20 0m 20 40 60 80

SCALE: 1:1000

No.	ISSUE / REVISION	YYYY/MMM/DD
0	ISSUED FOR COORDINATION	2020/JULY/03

Project

1142 MONA ROAD
MISSISSAUGA, ONTARIO

Drawing

SANITARY SEWER NETWORK

CROZIER CONSULTING ENGINEERS

211 Yonge Street
Suite 301
Toronto, ON M5B 1M4
416-477-3392 T
www.cfcrozier.ca

Drawn	Design	Project No.	
D.B.	J.B./B.M.P.		1113-4178
Check	Check	Scale	Dwg.
B.M.P.	A.S.	1:2500	FIG. 02

APPENDIX D

Stormwater Management Calculations

CROZIER CONSULTING ENGINEERS

Project: 1148-1154 Mona Road
Project No.: 1113-7066
Created By: LE
Checked By: KW
Date: 2024-07-10
Updated: 2024-11-21

Modified Rational Calculations - Input Parameters

Storm Data: City of Mississauga

Time of Concentration: T_c = **15.00** **mins**

Return Period	A	B	C	I (mm/hr)
2 Year	610.0	4.6	0.78	59.89
10 Year	1010.0	4.6	0.78	99.17

Pre-Development Conditions				
Land Use	**Area** (ha)	**Area** (m^2)	**C**	**Weighted Average C**
Catchment 101 to Ditch on Mona Road				
Pervious	0.10	1022	**0.25**	**0.22**
Impervious	0.01	121	**0.90**	**0.10**
Total Subcatchment	**0.11**	**1143**	**-**	**0.32**
Catchment 102 to Kenollie Creek				
Pervious	0.04	393	**0.25**	**0.25**
Impervious	0.00	0	**0.90**	**0.00**
Total Subcatchment	**0.04**	**393**	**-**	**0.25**
Total Area Contribution to SWM	**0.15**	**1536**	**-**	**0.30**
Catchment 103 to Ditch on Mona Road				
Pervious	0.06	587	**0.25**	**0.15**
Impervious	0.04	367	**0.90**	**0.35**
Total Subcatchment	**0.10**	**954**	**-**	**0.50**

Post-Development Conditions				
Land Use	**Area** (ha)	**Area** (m^2)	**C**	**Weighted Average C**
Catchment 201 to Ditch on Mona Road				
Pervious	0.04	377	**0.25**	**0.06**
Permeable Pavers	0.05	545	**0.50**	**0.18**
Impervious	0.06	583	**0.90**	**0.35**
Total Subcatchment	**0.15**	**1505**	**-**	**0.59**
Catchment UC1 to Kenollie Creek				
Pervious	0.003	32	**0.25**	**0.25**
Impervious	0.000	0	**0.90**	**0.00**
Total Subcatchment	**0.00**	**32**	**-**	**0.25**
Total Area Contribution to SWM	**0.15**	**1537**	**-**	**0.59**
Catchment 202 to Ditch on Mona Road				
Pervious	0.04	377	**0.25**	**0.10**
Permeable Pavers	0.01	140	**0.50**	**0.07**
Impervious	0.04	438	**0.90**	**0.41**
Total Subcatchment	**0.10**	**954**	**-**	**0.58**

References

Criteria per City of Mississauga Development Requirements Manual Section 8

Intensity
I = A/(T+B)^C

Peak Flow
Q = 0.0028 • C • I • A

*Max C in Mississauga for pre-development = 0.50

CROZIER CONSULTING ENGINEERS

Project: 1148-1154 Mona Road
Project No.: 1113-7066
Created By: LE
Checked By: KW
Date: 2024-07-10
Updated: 2024-11-21

Modified Rational Calculations - Peak Flow Summary

Pre-Development

Catchment 101 to Ditch on Mona Road					
Storm Event	**C**	**i (mm/hr)**	**A (ha)**	**Q (m^3/s)**	**Q (L/s)**
2 Year	0.30	59.89	0.11	0.006	5.74
10 Year	0.30	99.17		0.009	9.50

Allowable Release Rate (from site) = 2-Year Pre-Devlopment Flows

Allowable Release Rate = 5.74 L/s

Allowable Release Rate (from tank) = 2-Year Pre-Devlopment Flows - 10-Year Post-Development Uncontrolled Flows

Allowable Release Rate = 5.74 L/s

Catchment 102 to Kenollie Creek					
Storm Event	**C**	**i (mm/hr)**	**A (ha)**	**Q (m^3/s)**	**Q (L/s)**
2 Year	0.30	59.89	0.04	0.002	1.97
10 Year	0.30	99.17		0.003	3.26

Post-Development

Catchment 201 to Ditch on Mona Road					
Storm Event	**C**	**i (mm/hr)**	**A (ha)**	**Q (m^3/s)**	**Q (L/s)**
2 Year	0.59	59.89	0.15	0.015	14.7
10 Year	0.59	99.17		0.024	24.3

Peak Flows (L/s)			
Q_{pre101}	Q_{target}	$Q_{allowable(from\ tank)}$	$Q_{actual\ (from\ orifice)}$
5.74	5.74	5.74	#REF!

Catchment UC1 to Kenollie Creek					
Storm Event	**C**	**i (mm/hr)**	**A (ha)**	**Q (m^3/s)**	**Q (L/s)**
2 Year	0.59	59.89	0.003	0.0003	0.31
10 Year	0.59	99.17		0.0005	0.51

Project: 1148-1154 Mona Road
Project No.: 1113-7066
Modelled By: LE
Date: 2024-07-10

MODIFIED RATIONAL METHOD

Rainfall IDF Coefficients	10 Year
A =	1010.0
B =	4.6
C =	0.78

Rational Method Calculation		
Area =	0.15	ha
Runoff Coefficient, C =	0.59	
C*A =	0.09	
Time of Concentration, t_c =	15.0	min
Storm Duration Increment =	5.0	min
Release Rate =	5.74	L/s

10 Year

Storm Duration (min)	Rainfall Intensity (mm/hr)	Max. Runoff Flow (L/s)	Runoff Volume (m^3)	Released Volume (m^3)	Storage Volume (m^3)	Max. Storage Volume Required (m^3)	Notes
15.0	99.17	24.78	22	5	17.1		
20.0	83.06	20.75	25	6	18.9		
25.0	71.90	17.96	27	7	20.1		
30.0	63.66	15.90	29	8	20.9		
35.0	57.30	14.32	30	9	21.5		
40.0	52.22	13.05	31	9	21.8		
45.0	48.07	12.01	32	10	22.1		
50.0	44.60	11.14	33	11	22.2		
55.0	41.65	10.41	34	12	22.3	**22.3**	
60.0	39.11	9.77	35	13	22.3		
65.0	36.91	9.22	36	14	22.2		
70.0	34.96	8.74	37	15	22.1		
75.0	33.24	8.30	37	15	21.9		
80.0	31.69	7.92	38	16	21.7		
85.0	30.31	7.57	39	17	21.4		
90.0	29.05	7.26	39	18	21.1		
95.0	27.90	6.97	40	19	20.8		
100.0	26.86	6.71	40	20	20.5		
105.0	25.90	6.47	41	21	20.1		
110.0	25.01	6.25	41	22	19.7		
115.0	24.19	6.04	42	22	19.3		
120.0	23.43	5.85	42	23	18.9		
125.0	22.72	5.68	43	24	18.5		

CROZIER CONSULTING ENGINEERS

Project: 1148-1154 Mona Road
Project No: 1113-7066
Created By: LE
Checked By: KW
Date: 2024-07-10
Updated: 2024-11-21

TANK SIZING

100-Year

Allowable Release Rate **5.74** **L/s**

Tank Sizing

Required Active Storage	**22.3**	m^3
Required Dead Storage	**2.3**	m^3

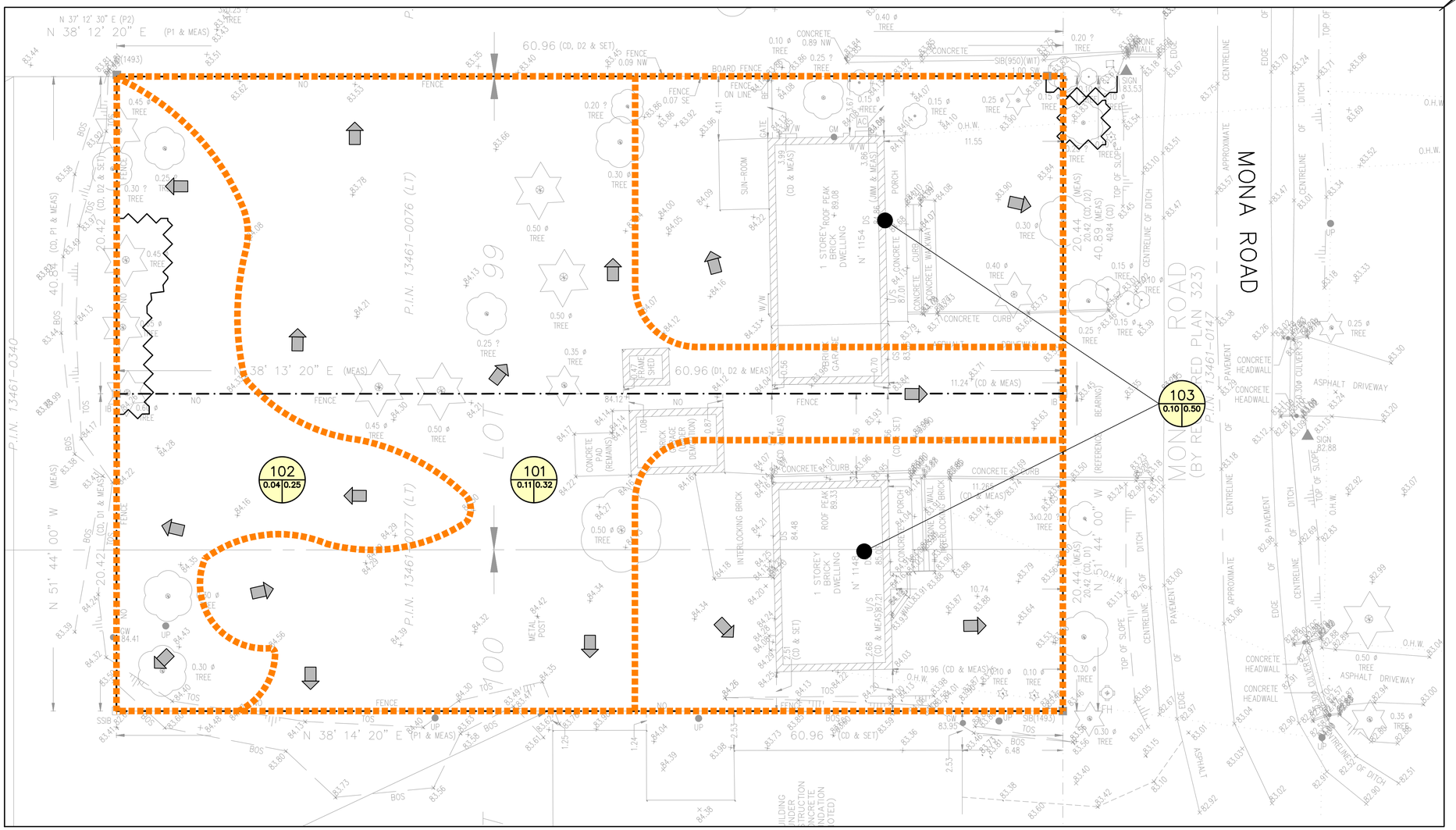
Top of Tank	82.57	m
Outlet Invert	81.07	m
Bottom of Tank	81.03	m
Height to Top of Tank	1.50	m
Free Board	0.15	m
Maximum Active Height	1.35	m

Tank Dimensions

Area	21.50	m^2

Provided Active Storage	**29.0**	m^3
Provided Dead Storage	**0.9**	m^3
Total Storage	**29.9**	m^3

FIGURES & DRAWINGS



LEGEND

- PROPERTY LINE
- ×160.00 EXISTING GRADE
- EXISTING OVERLAND FLOW DIRECTION
- STORM DRAINAGE CATCHMENT
- TREE PROTECTION ZONE
- ID / A|RC — CATCHMENT I.D. / AREA (ha) | RUNOFF COEFFICIENT

No.	ISSUE / REVISION	YYYY/MMM/DD
0	ISSUED FOR OPA/ZBA	2024/NOV/21

ELEVATION NOTE:

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO CITY OF MISSISSAUGA BENCHMARK N° 757 WITH A PUBLISHED ELEVATION OF 83.725 METERS (CGVD-1928)

SURVEY NOTES:

SURVEY COMPLETED BY GENESIS LAND SURVEYING INC. DATED MARCH 30, 2023
PROJECT No. GLS-1640

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

BEARING NOTES:

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHWESTERLY LIMIT OF MONA ROAD HAVING A BEARING OF N 51° 44' 00" W AS SHOWN ON REGISTERED PLAN 323

DRAWING NOTES:

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Project

1148 & 1154 MONA ROAD
CITY OF MISSISSAUGA

Drawing

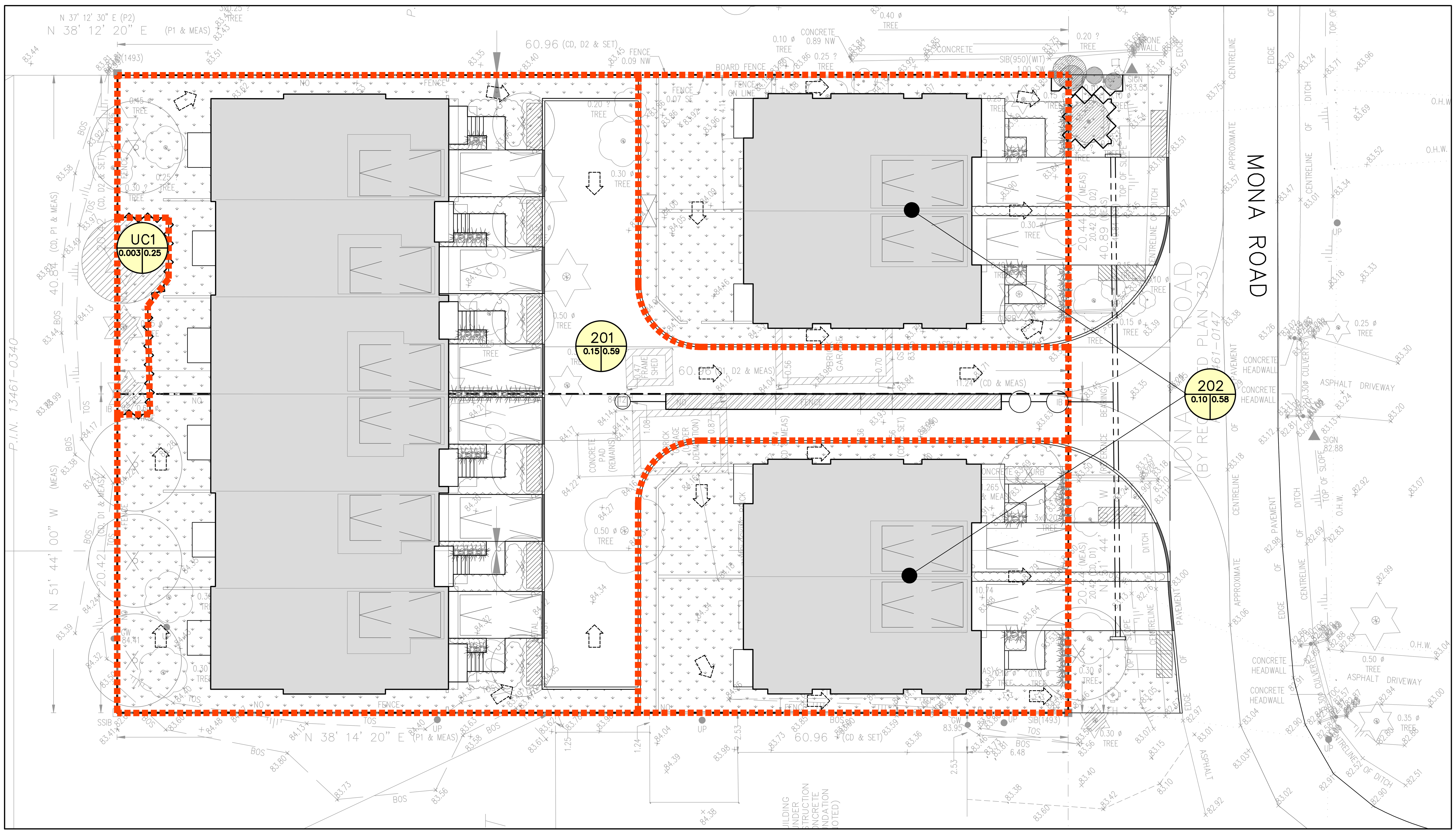
PRE-DEVELOPMENT DRAINAGE PLAN

5 0m 5 10
SCALE: 1:150

Stamp | Stamp

CROZIER CONSULTING ENGINEERS

Drawn A.A./L.E.	Design K.W./J.S.	Project No.	1113-7066
Check J.S.	Check J.S.	Scale 1:150	DWG. FIG 1



LEGEND

- PROPERTY LINE
- TREE PROTECTION ZONE
- EXISTING GRADE (×160.00)
- PROPOSED OVERLAND FLOW DIRECTION
- PROPOSED STORM SEWER & MANHOLE
- PROPOSED STORMWATER TANK
- INTERNAL PROPOSED DRAINAGE AREA
- CATCHMENT I.D. (ID; A | RC) — AREA (ha) | RUNOFF COEFFICIENT

No.	ISSUE / REVISION	YYYY/MMM/DD
0	ISSUED FOR OPA/ZBA	2024/NOV/21

ELEVATION NOTE:

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO CITY OF MISSISSAUGA BENCHMARK N° 757 WITH A PUBLISHED ELEVATION OF 83.725 METERS (CGVD-1928)

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Project

1148 & 1154 MONA ROAD
CITY OF MISSISSAUGA

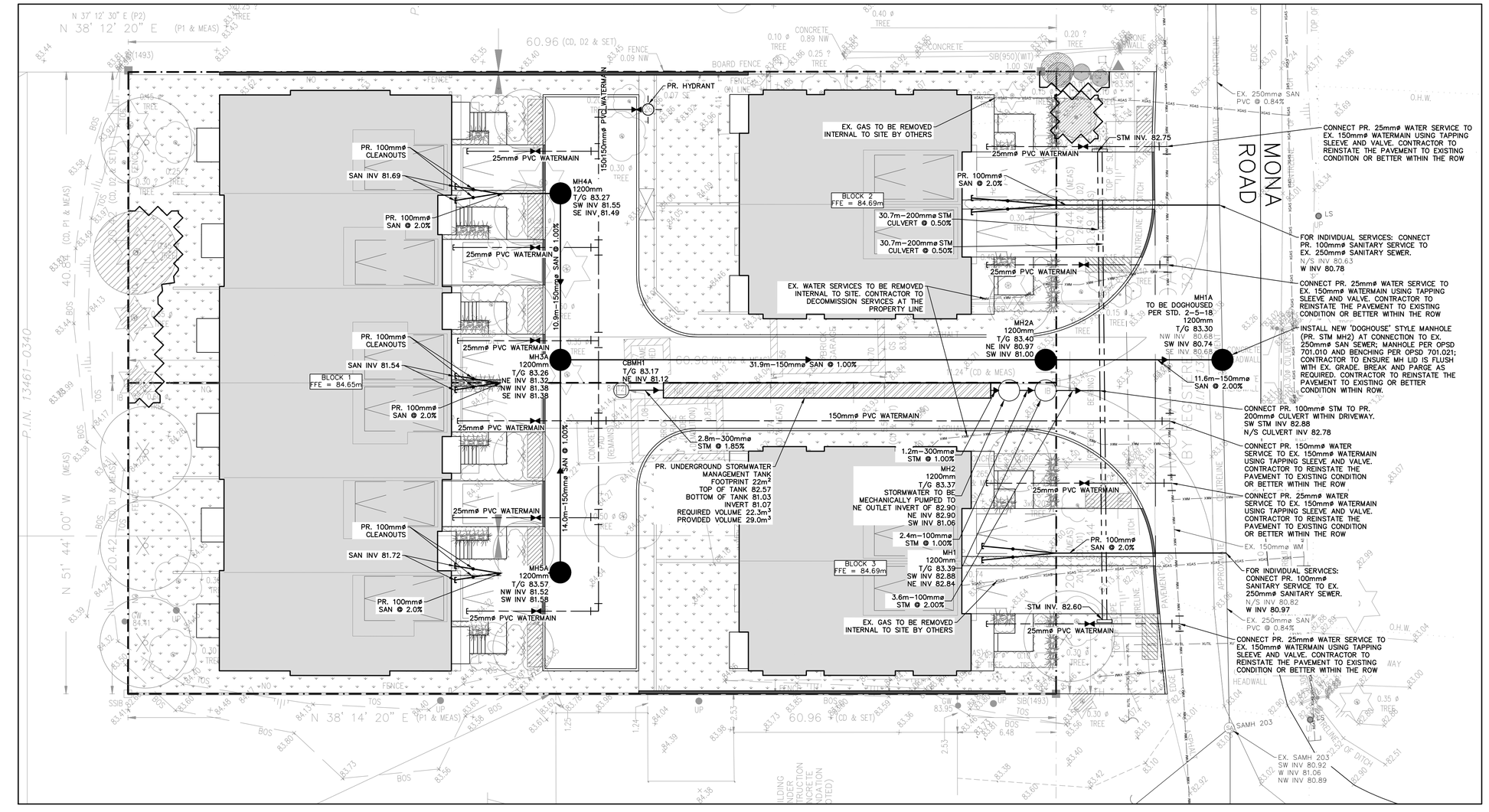
Drawing

POST-DEVELOPMENT DRAINAGE PLAN

Stamp | Stamp

CROZIER CONSULTING ENGINEERS

Drawn	A.A./L.E.	Design	K.W./J.S.	Project No.	1113-7066
Check	J.S.	Check	J.S.	Scale 1:150	DWG. FIG 2



LEGEND

- PROPERTY LINE
- EXISTING WATERMAIN & GATE VALVE
- EXISTING STORM SEWER & MANHOLE
- EXISTING SINGLE / DOUBLE CATCHBASIN
- EXISTING SANITARY SEWER & MANHOLE
- PROPOSED WATERMAIN & GATE VALVE
- PROPOSED FIRE HYDRANT & GATE VALVE
- PROPOSED SIAMESE CONNECTION
- PROPOSED WATER METER
- PROPOSED STORM SEWER & MANHOLE
- PROPOSED STORMWATER TANK
- PROPOSED SANITARY SEWER & MANHOLE
- TREE PROTECTION ZONE (PER DRAWING BY ALEXANDER BUDREVICS AND ASSOCIATES LIMITED)
- PROPOSED RETAINING WALL

REGION OF PEEL NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO THE CURRENT PEEL PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
2. WATERMAIN AND / OR WATER SERVICE MATERIALS 100 MM (4") AND LARGER MUST BE PVC DR18 CONSTRUCTED AS PER AWWA C900–16. SIZE 50 MM (2") AND SMALLER MUST BE TYPE K SOFT COPPER CONSTRUCTED AS PER ASTM B88–49 OR POLYETHYLENE CONSTRUCTED AS PER AWWA C901 AND CSA B.137.10 (CHOOSE ONLY ONE MATERIAL).
3. WATERMAINS AND / OR WATER SERVICES ARE TO HAVE A MINIMUM COVER OF 1.7 M (5'6") WITH A MINIMUM HORIZONTAL SPACING OF 1.2 M (4") FROM THEMSELVES AND ALL OTHER UTILITIES.
4. PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED WITH AT LEAST A 50 MM (2") OUTLET ON 100 MM (4") AND LARGER LINES. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE END, THE SAME SIZE AS THE LINE. THEY MUST ALSO BE HOSED OR PIPED TO ALLOW THE WATER TO DRAIN ONTO A PARKING LOT OR DOWN A DRAIN. ON FIRE LINES, FLUSHING OUTLET TO BE 100 MM (4") DIAMETER MINIMUM ON A HYDRANT.
5. ALL CURB STOPS TO BE 3.0 M (10') OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.
6. HYDRANT AND VALVE SET TO REGION STANDARD 1 – 6 – 1 DIMENSION A AND B, 0.7 M (2') AND 0.9 M (3') AND TO HAVE PUMPER NOZZLE.
7. WATERMAINS TO BE INSTALLED TO GRADES AS SHOWN ON APPROVED SITE PLAN. COPY OF GRADE SHEET MUST BE SUPPLIED TO INSPECTOR PRIOR TO COMMENCEMENT OF WORK, WHERE REQUESTED BY INSPECTOR.
8. WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.3 M (12") OVER / 0.5 M (20") UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
9. ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATING FROM EXISTING SYSTEMS.
10. ALL LIVE TAPPING AND OPERATION OF REGION WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE OPERATIONS AND MAINTENANCE DIVISION.
11. LOCATION OF ALL EXISTING UTILITIES IN THE FIELD TO BE ESTABLISHED BY THE CONTRACTOR.
12. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATES, EXPOSING, SUPPORTING AND PROTECTING OF ALL UNDERGROUND AND OVERHEAD UTILITIES AND STRUCTURES EXISTING AT THE TIME OF CONSTRUCTION IN THE AREA OF THEIR WORK. WHETHER SHOWN ON THE PLANS OR NOT AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FROM DAMAGE TO SAME.
13. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE TO GIVE 72 HOURS WRITTEN NOTICE TO THE UTILITIES PRIOR TO CROSSING SUCH UTILITIES, FOR THE PURPOSE OF INSPECTION BY THE CONCERNED UTILITY. THIS INSPECTION WILL BE FOR THE DURATION OF THE CONSTRUCTION, WITH THE CONTRACTOR RESPONSIBLE FOR ALL COSTS ARISING FROM SUCH INSPECTION.
14. ALL PROPOSED WATER PIPING MUST BE ISOLATED THROUGH A TEMPORARY CONNECTION THAT SHALL INCLUDE AN APPROPRIATE CROSS–CONNECTION CONTROL DEVICE, CONSISTENT WITH THE DEGREE OF HAZARD, FOR BACKFLOW PREVENTION OF THE ACTIVE DISTRIBUTION SYSTEM, CONFORMING TO REGION OF PEEL STANDARDS 1–7–7 OR 1–7–8.
15. ALL WATER METERS MUST BE INSTALLED IN HEATED AND ACCESSIBLE SPACE.

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0	ISSUED FOR OPA/ZBA	2024/NOV/21

ELEVATION NOTE:

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO CITY OF MISSISSAUGA BENCHMARK N° 757 WITH A PUBLISHED ELEVATION OF 83.725 METERS (CGVD–1928)

SURVEY NOTES:

SURVEY COMPLETED BY GENESIS LAND SURVEYING INC. DATED MARCH 30, 2023
PROJECT No. QLS–1640

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

BEARING NOTES:

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHWESTERLY LIMIT OF MONA ROAD HAVING A BEARING OF N 51° 44' 00" W AS SHOWN ON REGISTERED PLAN 323

DRAWING NOTES:

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.

THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. DO NOT SCALE THIS DRAWING.

ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project

1148 & 1154 MONA ROAD CITY OF MISSISSAUGA

Drawing

SERVICING PLAN

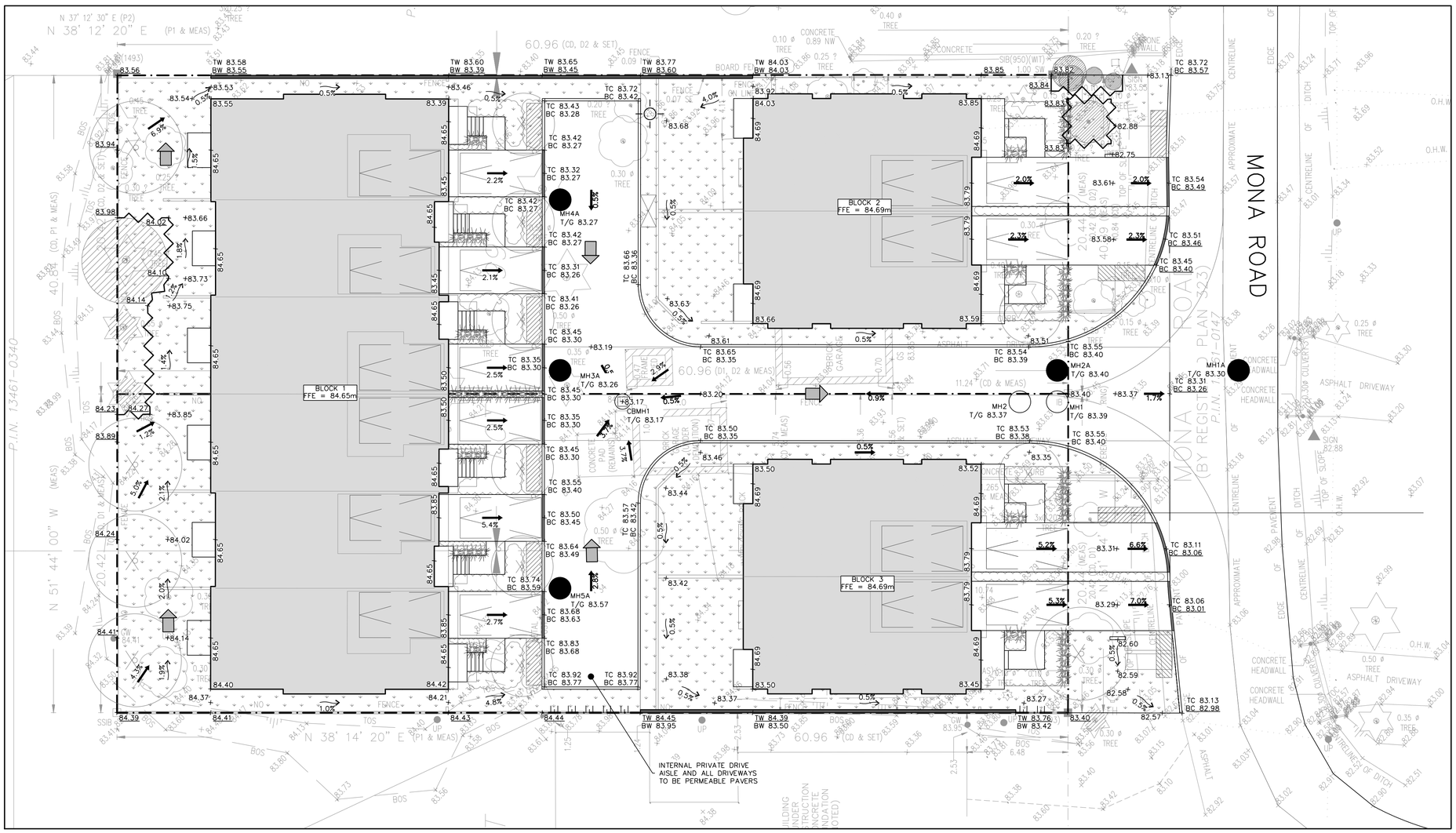
Stamp

Stamp

LICENSED PROFESSIONAL ENGINEER
J. M. SCOTT
100214964
NOV 21 2024
1113-7066
PROVINCE OF ONTARIO

CROZIER
CONSULTING ENGINEERS

Drawn	Design	Project No.	
A.A./L.E.	K.W./J.S.		1113–7066
Check	Check	Scale	DWG.
J.S.	J.S.	1:150	C102



LEGEND

- PROPERTY LINE
- TREE PROTECTION ZONE (PER DRAWING BY ALEXANDER BUDREVICS AND ASSOCIATES LIMITED)
- ×80.00 EXISTING GRADE
- ×80.00 PROPOSED GRADE
- ×80.00 PROPOSED GRADE (TO MATCH EXISTING)
- 2.0% PROPOSED MINOR FLOW DIRECTION
- 2.0% PROPOSED GRASSED SWALE
- PROPOSED RETAINING WALL
- PROPOSED SLOPE (3:1 MAX.)
- BUILDING ENTRANCE (PERSONNEL DOOR)
- BUILDING ENTRANCE (OVERHEAD DOOR)
- PROPOSED MAJOR OVERLAND FLOW DIRECTION
- EXISTING MAJOR OVERLAND FLOW DIRECTION
- PROPOSED FIRE HYDRANT & GATE VALVE
- PROPOSED WATERMAIN VALVE
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- LANDSCAPED AREA

NOTES:

1. NO GRADING, STRUCTURES, RETAINING WALLS, CONSTRUCTION OR SITE/CONSTRUCTION ACCESS ARE PERMITTED ON OR FROM THE MUNICIPAL PARKLAND.
2. B. THE PLACEMENT OF UNAPPROVED MATERIALS OR STRUCTURES WITHIN MUNICIPAL PARKLAND/GREENBELT/WOODLAND BLOCKS IS NOT PERMITTED BY COMMUNITY SERVICES AT ANY STAGE OF DEVELOPMENT. THIS INCLUDES, BUT IS NOT LIMITED TO, TOPSOIL STOCKPILING, CONSTRUCTION TRAILERS AND VEHICLES, CONSTRUCTION MATERIALS AND DEBRIS, SALES/PROMOTIONAL TRAILERS AND SIGNAGE.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PARK AND TREE PRESERVATION HOARDING IN AN APPROVED AND FUNCTIONING CONDITION AS REQUIRED BY THE COMMUNITY SERVICES DEPARTMENT THROUGH ALL PHASES OF CONSTRUCTION.
4. INFORM THE COMMUNITY SERVICES DEPT. OF THE CONSTRUCTION SCHEDULE AS IT PERTAINS TO THE MUNICIPALLY OWNED PARKLAND, ITS PROTECTIVE HOARDING, CLEAN UPS, REINSTATEMENT AND ISSUES AFFECTING PARKLAND USE, CONSTRUCTION AND MAINTENANCE. IT IS THE RESPONSIBILITY OF THE APPLICANT TO ARRANGE FOR COMMUNITY SERVICES – PARK PLANNING SECTION INSPECTIONS AND APPROVALS AS REQUIRED.
5. REMOVE CONSTRUCTION RELATED DEBRIS OR LITTER THAT HAS MIGRATED OR HAS THE POTENTIAL TO MIGRATE INTO THE ADJACENT MUNICIPALLY OWNED LANDS. SHOULD THE CONTRACTOR/APPLICANT FAIL TO DO SO, ARRANGEMENTS WILL BE MADE TO DRAW ON THE SUBMITTED PARK PROTECTION AND REINSTATEMENT SECURITIES TO FUND PARK CLEAN UP ACTIVITIES.
6. PRIOR TO THE RELEASE OF SECURITIES, THE COMMUNITY SERVICES DEPARTMENT IS TO INSPECT AND APPROVE ANY REQUIRED RESTORATION, REINSTATEMENT AND/OR CLEAN UP WORKS INCLUDING HOARDING REMOVAL AND OFF-SITE DISPOSAL, CONDUCTED AT THE SHARED PROPERTY LINE WITH AND WITHIN CITY LANDS.

NOTE: EXISTING MATCH GRADES ALONG THE SOUTH PROPERTY LINE HAVE BEEN UPDATED TO MATCH THE EXISTING ELEVATIONS AT 1142 MONA ROAD PRIOR TO CONSTRUCTION.

5 0m 5 10
SCALE: 1:150

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Project

1148 & 1154 MONA ROAD CITY OF MISSISSAUGA

Drawing

GRADING PLAN

Stamp

Stamp

LICENSED PROFESSIONAL ENGINEER
J. M. SCOTT
100214964
NOV 21 2024
PROVINCE OF ONTARIO

CROZIER CONSULTING ENGINEERS

Drawn	Design	Project No.
A.A./L.E.	K.W./J.S.	1113-7066
Check	Check	Scale
J.S.	J.S.	1:150

DWG. C103