

**SITE SERVICING & STORMWATER
MANAGEMENT REPORT**

**1148-1154 MONA ROAD
DEVELOPMENT**

**CITY OF MISSISSAUGA
REGION OF PEEL**

**PREPARED FOR:
QUEENSCORP (MONA II) INC.**

**PREPARED BY:
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CFCA FILE NO. 1113-7066

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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 with each unit having its own lot. Block 1 will be accessed via a proposed drive aisle with a connection to Mona Road. Lots 2-4 for the semi-detached buildings 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 by Hydrant Testing Ontario 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. The catchment area is delineated from the remainder of the site area based on the future lotlines for the proposed semi-detached houses and is the same area as post-development Catchment 203. 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. (Ultimately Mary Fix Creek)	0.10	0.01	0.11	0.32
102	Kenollie Creek (Ultimately Mary Fix Creek)	0.04	0.00	0.04	0.25
Total Contributing SWM Area (101 & 102)	Mary Fix Creek	0.14	0.01	0.15	0.30
103	Mona Road R.O.W. (Ultimately 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, including the six townhouses, and consists of a mixture of roof, grassed areas and permeable pavers. This catchment is captured by catchbasins located within the drive aisle and is 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 202:

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 203:

This 0.10 ha catchment consists of four semi-detached houses that front Mona Road. This catchment consists of the roof, permeable pavers, and grassed areas. It should be noted that these semi-detached homes will be under their own ownership structure and will not be part of a condo corporation with the remainder of the site.

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 (Ultimately Mary Fix Creek)	0.04	0.05	0.06	0.15	0.59
202	Kenollie Creek (Ultimately Mary Fix Creek)	0.003	0.00	0.00	0.003	0.25
Total Contributing SWM Area (201 & 202)	Mary Fix Creek	0.043	0.05	0.06	0.15	0.59
203	Mona Road ROW (Ultimately Mary Fix Creek)	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
- 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. Rooftop flows will be conveyed to the proposed landscape areas, driveways and roadway via downspouts that splash to grade. No downspouts will be connected to the internal storm sewer system directly.

Flows within Catchment 201 are captured by several catchbasins, then conveyed through a storm sewer system to a proposed underground closed-bottom stormwater detention tank with 24.00 m³ 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 5.7 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. In the event of pump failure, stormwater will back up through the storm system and outlet through the catchbasin grates, draining through the drive aisle to the Mona Road ROW. The property line manhole is designed to drain by gravity to a proposed 300 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 of 5.7 L/s. The pump located in the manhole adjacent to the tank will be designed to pump the flow at the 2-year pre-development rate. Detailed stormwater management calculations are provided in **Appendix D**.

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

Storm Event	C	i (mm/hr)	A (ha)	Q (m³/s)	Q (pre-controls) (L/s)	Q (pump flow rate) (L/s)	Active Storage (m³)
2	0.59	59.89	0.15	0.015	14.7	5.7	-
10		99.17		0.024	24.3	5.7	-
Required							22.3
Provided							24.0

Catchment 203 is comprised of the four semi-detached homes fronting Mona Road. These semi-detached homes will be under their own ownership structure and will not be part of a condo corporation with the remainder of the site. As such, these lots are treated as single-family homes and no stormwater quantity control, quality control, or water balance is provided. As specified in email correspondence with the City of Mississauga, "since these units are individually owned and not part of a condominium corporation, they may be treated similarly to single-family homes. As a result, they would be exempt from quantity control but are still encouraged to implement measures that reduce runoff where possible". Long grassed swales with increased topsoil depth are proposed around the houses to direct drainage to Mona Road, while slowing down the velocity of the stormwater surface flows and promoting infiltration of stormwater into the ground. Email correspondence from the City of Mississauga has been provided in **Appendix D**.

6.3 Stormwater Quantity Control to the West

Catchment 202, 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 in the post-development condition, the area that will flow towards the neighbouring property has been reduced from 393 m² in the pre-development condition (Catchment 102) to 32 m² 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 with granular storage bed, 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, since there are no surfaces proposed on site in which TSS removal is not met. 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 all impervious areas on site. For the site area of 1537 m², 409 m² is made up of grassed landscaped areas, 545 m² is made up of permeable pavers, and 583 m² is made up of rooftops and impermeable raised patios at the townhouse entrances. As such, a volume of 5.64 m³ ((583 m² + 545 m²) x 0.005 m) is required to be retained on site. Due to the high groundwater level on site, there is no opportunity to infiltrate the rooftop water in an underground infiltration facility. As such, use of the permeable paver storage bed is proposed for the driveways and private roadway. Rooftop and impermeable patio flows from the townhouse block will be discharged through downspouts which splash to grade and drain towards the permeable pavers, infiltrating into the granular storage bed and ultimately into the native soils. As specified in email correspondence with the City of Mississauga, "an enhanced storage bed beneath permeable pavers is an acceptable solution as long as it effectively stores and slowly releases water while meeting the City's 5 mm water balance requirement or another approved alternative. Additionally, directing roof leader downspouts to permeable pavers should also be an effective approach to help meet the water balance target". Email correspondence from the City of Mississauga is provided in **Appendix D**.

Standard granular depth for permeable pavers is 150 mm depth. Assuming a granular void ratio of 0.4, the void storage space provided over the 545 m² area of permeable pavers is 32.7 m³. This is more than sufficient to store and infiltrate the required water balance volume of 5.64 m³. As such, the permeable pavers will have more than enough storage capacity to infiltrate the at-grade and rooftop flows, thus meeting the water balance requirement for the site. A further review of the permeable paver design will be completed at detailed design, in coordination with the Landscape Architect.

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. Water servicing will be provided to the semi-detached units via direct connections to the 150 mm diameter watermain on Mona Road.
- 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. Sanitary servicing to the semi-detached units will be provided via Y-connections which are connected to the existing 250 mm diameter sanitary sewer on Mona Road.
- 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 Catchment 202 associated with a tree protection zone. Note, best efforts have been made to minimize the amount of area flowing uncontrolled to the neighbouring site.
- Water balance will be met on site using permeable pavers to infiltrate water from the rooftops and at-grade surfaces.

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

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.



Liam Ellis, EIT
Land Development

KW/stm

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C.F. CROZIER & ASSOCIATES INC.



Julie Scott, P.Eng.
Manager, Land Development



APPENDIX A

Water Demand Calculations

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

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

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

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

Design Parameters

Average Demand (L/capita/d)
280

Water Demand:

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

Peaking Factors

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

Notes & References

Site plan prepared by Joseph N. Campitelli Architects Inc

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

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



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 Timber 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%
	GFA 2nd Floor	592.8 sq.m	50%
	GFA 3rd Floor	498.4 sq.m	50%
	Total Area =	755.3 sq.m	

***fire wall be implemented between Units 3 and 4**

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 may be 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



Hydrant Testing Ontario

Tel: 289-354-1942

Info@HTOntario.ca

REPORT

N°. 2511

September 13, 2024

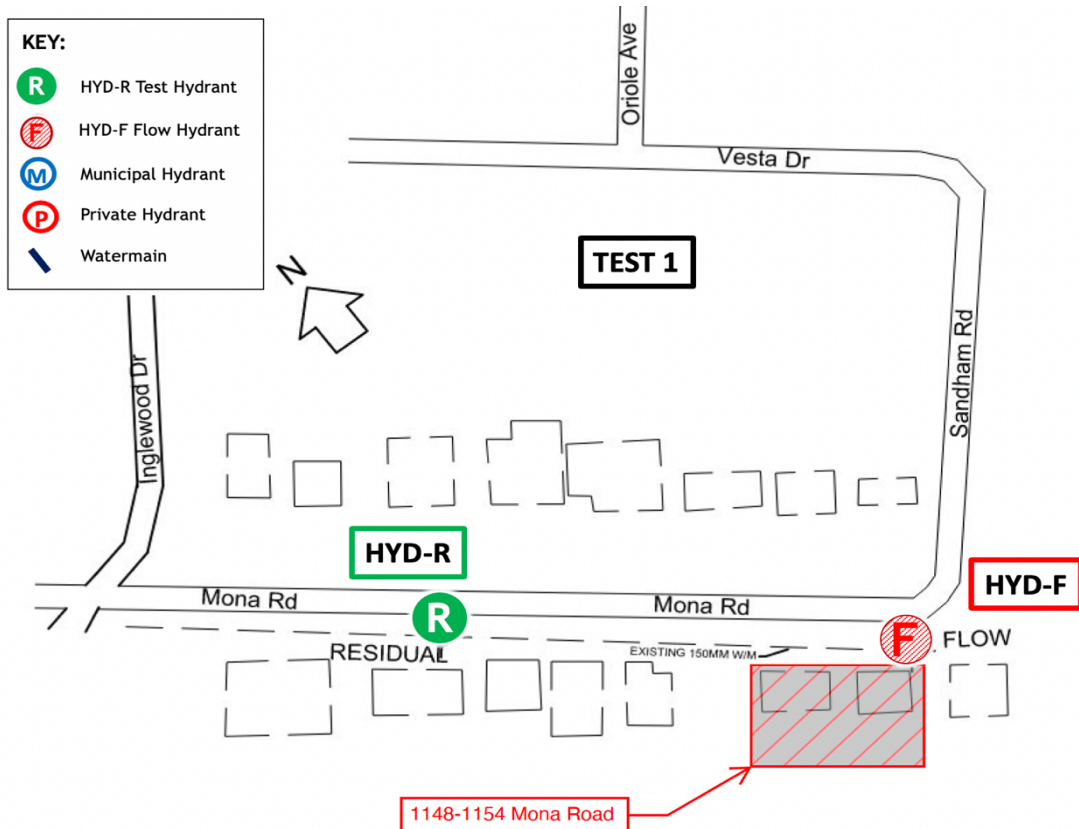
To: Ida Assogna
QUEENSCORP®
170 Evans Avenue
Suite 300
Toronto On M8Z 1J7

RE: Hydrant Flow Test - 1148-1154 Mona Road, Mississauga

Please find the Report for the following works

Scope: Conducted Hydrant Flow Test as per NFPA291 Recommended Practices for Water Flow Testing and Marking of Hydrants.

Hydrant Test Plan





HYDRANT FLOW TEST

MISSISSAUGA

DATE: September 12, 2024

TIME: 12:30 AM

R - TEST HYDRANT 1190 MONA ROAD

HYDRANT No. HYD-R

HYDRANT MODEL: McAVITY

COLOUR: BLUE

STATIC PRESSURE psi (hr-20^{0.54}): 85

VARIANCE: 22.35%

Q - FLOW HYDRANT 1148 MONA ROAD

HYDRANT No. HYD-F

HYDRANT MODEL: McAvity

COLOUR: BLUE

No. Outlets	Residual Pressure ($h_f - R^{0.54}$)	Orifice Dia Dia. (in.) (d^2)	Coefficient	Nozzle PSI ($\sqrt{psi}$)	Q = Flow (USGPM) $Q = 29.83 (c) (d2) (\sqrt{psi})$
1	75	2.5	0.9	55	1244
2	66	2.5	0.9	25	839
Q_F = Total Flow (USGPM)					1678

Q_R = flow predicted @ 20 psi

$$Q_R = Q_F * (H_r - 20^{0.54}) / (H_f - R^{0.54})$$

3260

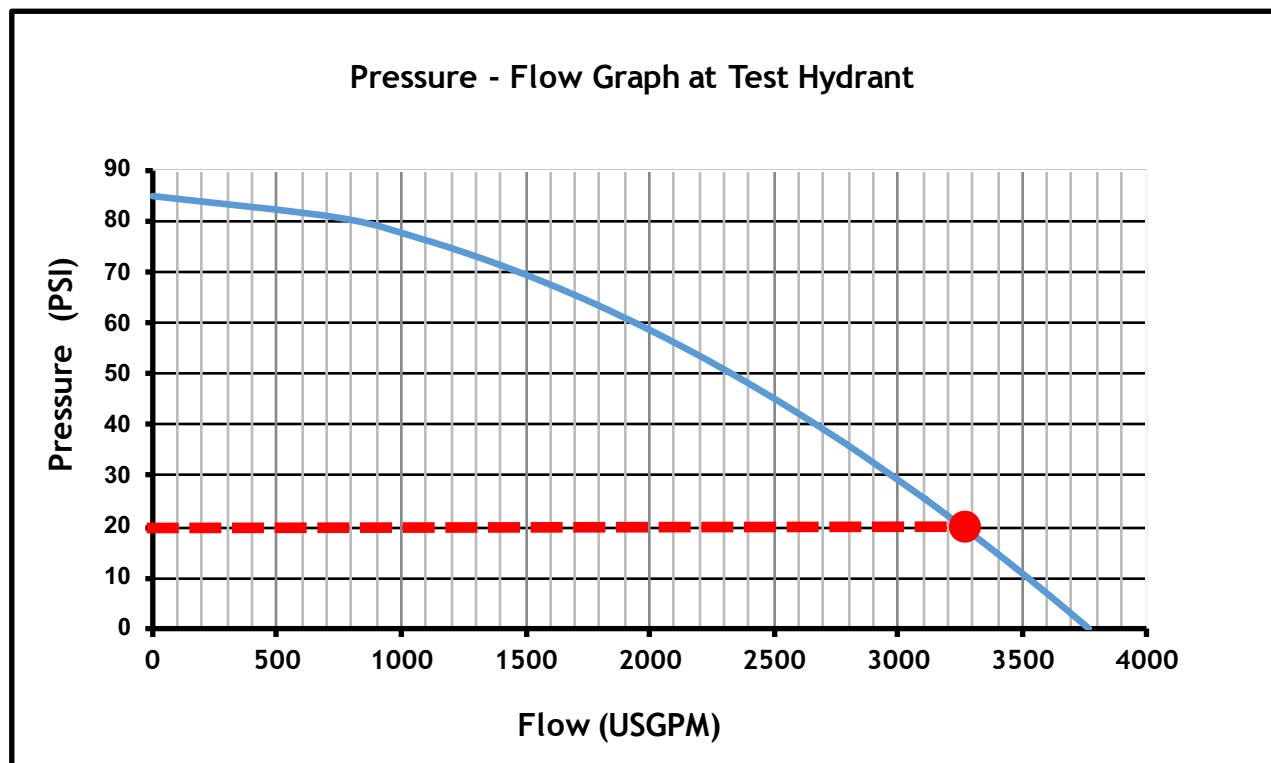
USGPMA

206

L/s

NFPA Rating:

CLASS AA - BLUE



Test Conclusion

The system at the time of testing produced a theoretical projected flow rate of:

	Total USGPM	USGPM at 20 psi	lps at 20 psi
MONA ROAD	1678	3260	206

Hydrants are classified in accordance with their rated capacities as per NFPA291.

COLOUR	CLASS	Available Flow @ 20psi
BLUE	AA	1500 GPM or more
GREEN	A	1000 - 1499 GPM
ORANGE	B	500 - 999 GPM
RED	C	Below 500 GPM

We strongly feel that all attempts have been made to ensure that the required data as stipulated was captured, stored and presented in an accurate, efficient and timely manner for the required period.

We look forward to working with you in the future.

Please feel free to contact the undersigned should you require any further information.

Best Regards



Rob Gamache E.P
Manager of Operations
Hydrant Testing Ontario
Info@HTOntario.ca

APPENDIX B

Sanitary Flow Calculations

Domestic Sanitary Demand

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

Design Parameters

Average Flow (L/capita/d)
290

Average Daily Flow = **0.03** L/s
 Peaking Factor, PF = **4.00**
 Peak Flow = **0.11** L/s

 Infiltration Rate = 0.26 L/s/ha
 Total Infiltration = **0.05** L/s

 Total Peak Flow = **0.16** L/s

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

Notes & References

Site plan prepared by Joseph N. Campitelli Architects Inc

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

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

$PF = 1 + 14 / (4 + (p/1000)^{.5})$

Peak Flow = Average Daily Flow * PF

Total Peak Flow = Peak Flow + Total Infiltration

Domestic Sanitary 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

Design Parameters

Average Flow (L/capita/d)
290

Average Daily Flow =	0.12	L/s
Peaking Factor, PF =	4.00	
Peak Flow =	0.50	L/s
Infiltration Rate =	0.26	L/s/ha
Total Infiltration =	0.05	L/s
Total Peak Flow =	0.54	L/s

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

Notes & References

Site plan prepared by Joseph N. Campitelli Architects Inc

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

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

$PF = 1 + 14 / (4 + (p/1000)^{.5})$
 Peak Flow = Average Daily Flow * PF

Total Peak Flow = Peak Flow + Total Infiltration

APPENDIX C

External Sanitary Sewer Analysis

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/SE MI 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%

EXTERNAL SANITARY SEWER CAPACITY ANALYSIS

PROPOSED CONDITIONS

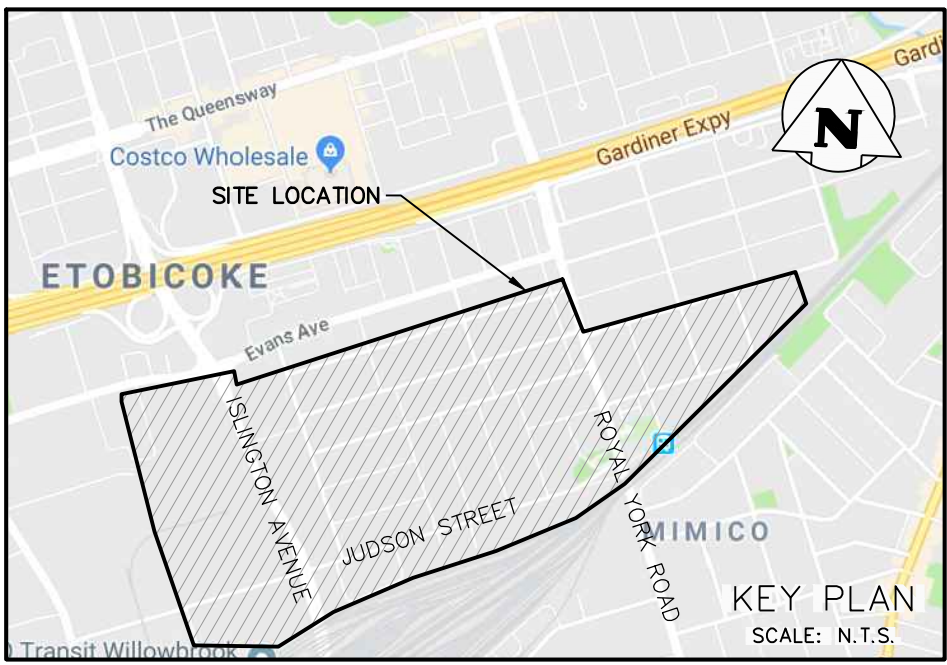
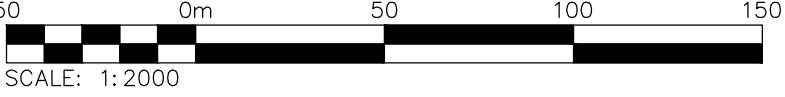
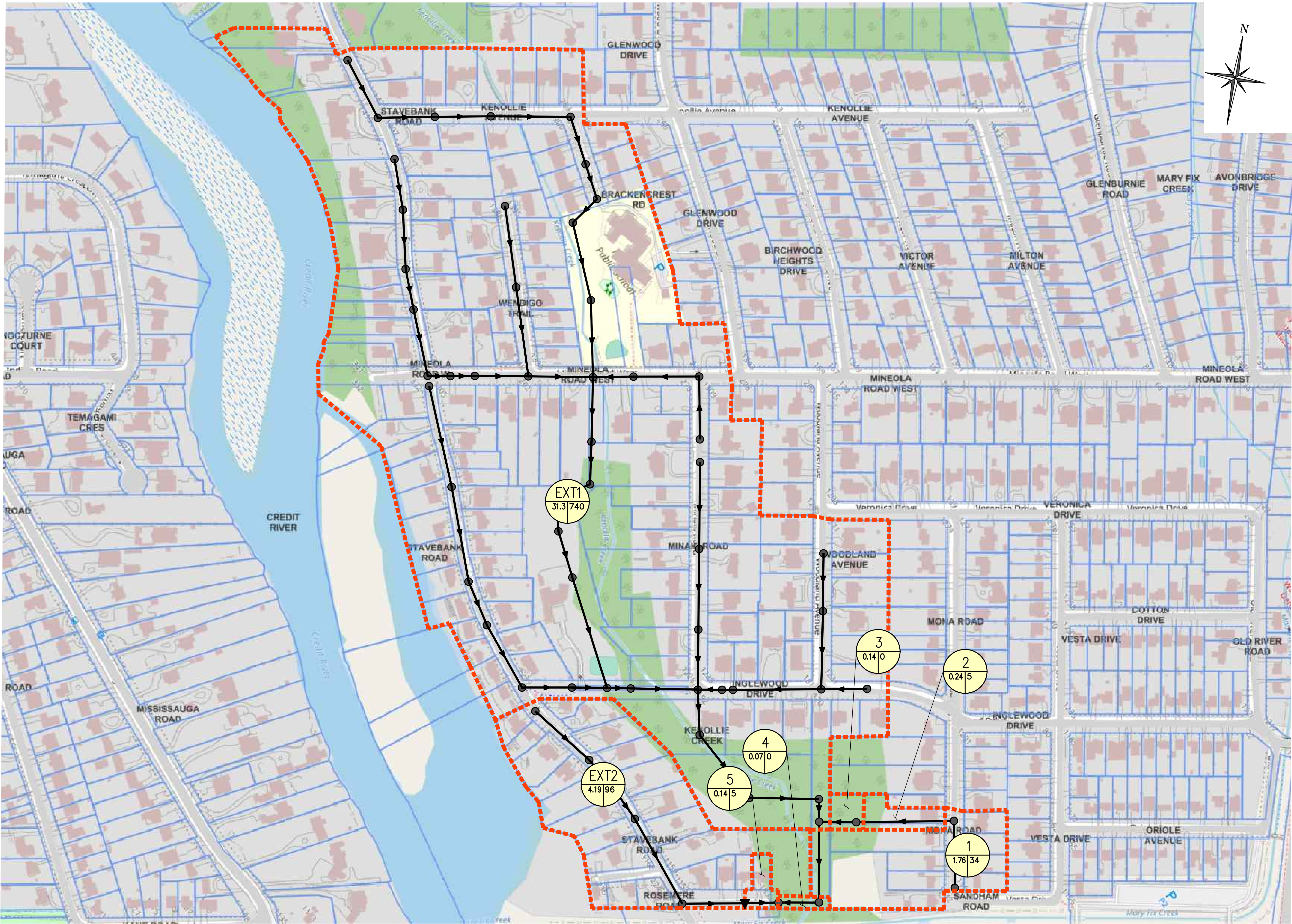
PROJECT No.:	1113-4178
DESIGN:	KW
CHECK:	BP
UPDATED:	2020/08/07

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

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

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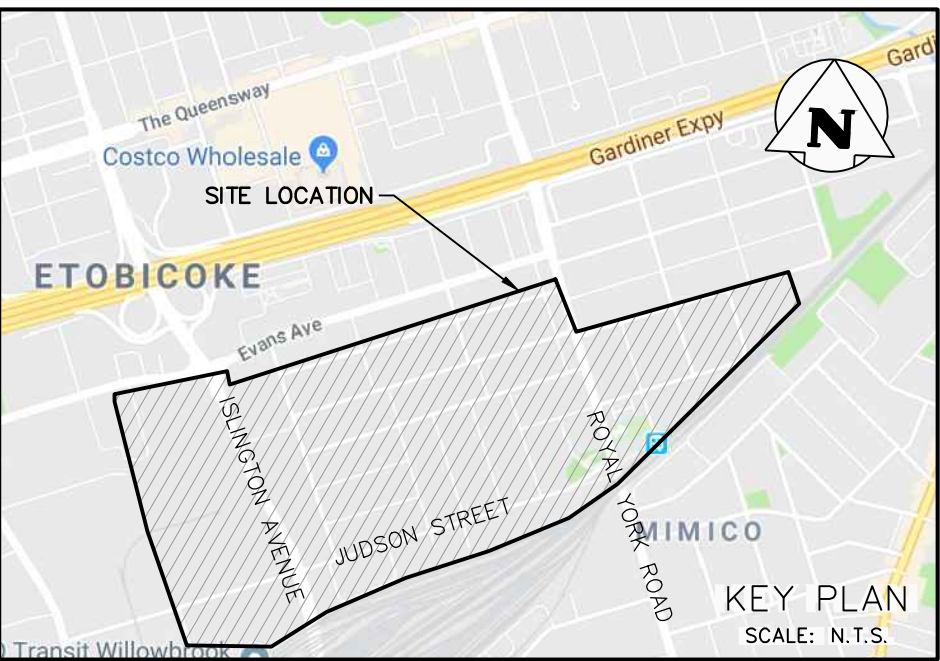
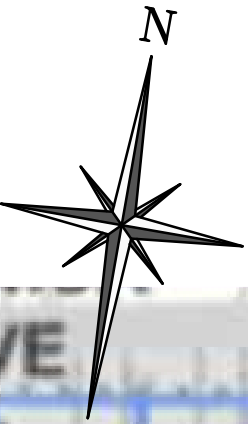
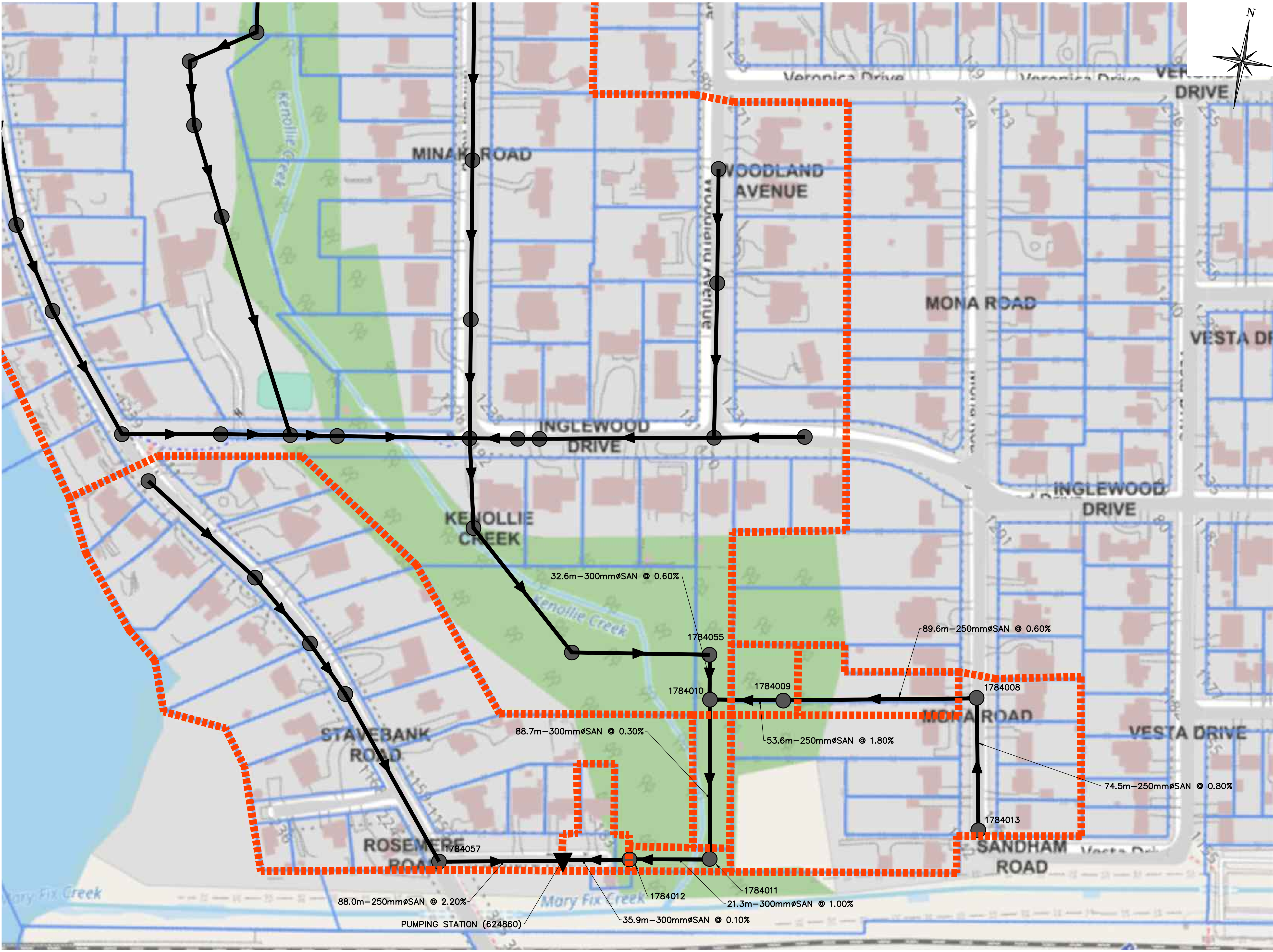
Project
**1142 MONA ROAD
MISSISSAUGA, ONTARIO**

Drawing
**PROPOSED SANITARY
DRAINAGE PLAN**

**CROZIER**
CONSULTING ENGINEERS

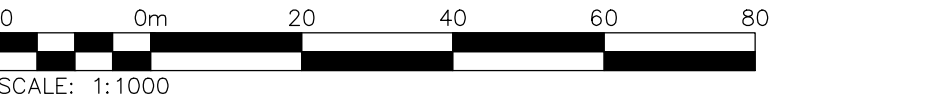
211 Yonge Street
Suite 301
Toronto, ON M5B 1M4
416-477-3392 T
www.cfcrozier.ca

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



LEGEND

- PROPOSED SANITARY SEWER & MANHOLE
- SANITARY DRAINAGE CATCHMENT



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

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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
**SANITARY
SEWER NETWORK**

CROZIER
CONSULTING ENGINEERS

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

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

APPENDIX D

Stormwater Management Calculations

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 202 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 203 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

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

$$Q = 0.0028 \cdot C \cdot I \cdot A$$

*Max C in Mississauga for pre-development = 0.50

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-Development Flows

Allowable Release Rate = 5.74 L/s

Allowable Release Rate (from tank) = 2-Year Pre-Development 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} (pumped)
5.74	5.74	5.74	5.74

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

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		

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

7066_Greenstorm
201 POND

Project Name	1148 & 1154 Mona Road									
Location	Mississauga, ON									
Date	March 17, 2025									
Chamber Model	GreenStorm-ST									
Number of Layers	2.0				Top Stone	0.15	m			
Height of Chambers	1.32				Bottom Stone	0.00	m			
Chamber Length	20.80				Perimeter Stone	0.10	m			
Chamber Width	0.80				Stone Qty	8.82	m³			
Storage Void Ratio	0.96				Stone Void Ratio	40.00%				
System Perimeter	43.60									
System Area	21.00									
System Base Elevation	81.03									
Height of System		GreenStorm Volume		Stone Volume		Cumulative Storage Volume		Elevation		
mm	in	m³	ft³	m³	ft³	m³	ft³	m	ft	
1470	57.87	0.00	0.00	0.38	13.35	24.69	872.09	82.50	270.67	System Top
1425	56.10	0.00	0.00	0.21	7.42	24.32	858.74	82.46	270.52	
1400	55.12	0.00	0.00	0.21	7.42	24.11	851.33	82.43	270.44	
1375	54.13	0.00	0.00	0.21	7.42	23.90	843.91	82.41	270.36	
1350	53.15	0.00	0.00	0.21	7.42	23.69	836.49	82.38	270.28	
1325	52.17	0.80	28.21	0.09	3.08	23.48	829.08	82.36	270.19	
1275	50.20	0.40	14.10	0.04	1.54	22.59	797.79	82.31	270.03	Top of GreenStorm
1250	49.21	0.40	14.10	0.04	1.54	22.15	782.15	82.28	269.95	
1225	48.23	0.40	14.10	0.04	1.54	21.71	766.51	82.26	269.87	
1200	47.24	0.40	14.10	0.04	1.54	21.26	750.86	82.23	269.78	
1175	46.26	0.40	14.10	0.04	1.54	20.82	735.22	82.21	269.70	
1150	45.28	0.40	14.10	0.04	1.54	20.38	719.58	82.18	269.62	
1125	44.29	0.40	14.10	0.04	1.54	19.93	703.93	82.16	269.54	
1100	43.31	0.40	14.10	0.04	1.54	19.49	688.29	82.13	269.46	
1075	42.32	0.40	14.10	0.04	1.54	19.05	672.65	82.11	269.37	
1050	41.34	0.40	14.10	0.04	1.54	18.60	657.01	82.08	269.29	
1025	40.35	0.40	14.10	0.04	1.54	18.16	641.36	82.06	269.21	
1000	39.37	0.40	14.10	0.04	1.54	17.72	625.72	82.03	269.13	
975	38.39	0.40	14.10	0.04	1.54	17.28	610.08	82.01	269.05	
950	37.40	0.40	14.10	0.04	1.54	16.83	594.43	81.98	268.96	
925	36.42	0.40	14.10	0.04	1.54	16.39	578.79	81.96	268.88	
900	35.43	0.40	14.10	0.04	1.54	15.95	563.15	81.93	268.80	
875	34.45	0.40	14.10	0.04	1.54	15.50	547.50	81.91	268.72	
850	33.46	0.40	14.10	0.04	1.54	15.06	531.86	81.88	268.64	
825	32.48	0.40	14.10	0.04	1.54	14.62	516.22	81.86	268.55	
800	31.50	0.40	14.10	0.04	1.54	14.17	500.58	81.83	268.47	
775	30.51	0.40	14.10	0.04	1.54	13.73	484.93	81.81	268.39	
750	29.53	0.40	14.10	0.04	1.54	13.29	469.29	81.78	268.31	
725	28.54	0.40	14.10	0.04	1.54	12.85	453.65	81.76	268.23	
700	27.56	0.40	14.10	0.04	1.54	12.40	438.00	81.73	268.14	
675	26.57	0.40	14.10	0.04	1.54	11.96	422.36	81.71	268.06	
650	25.59	0.40	14.10	0.04	1.54	11.52	406.72	81.68	267.98	
625	24.61	0.40	14.10	0.04	1.54	11.07	391.07	81.66	267.90	
600	23.62	0.40	14.10	0.04	1.54	10.63	375.43	81.63	267.81	
575	22.64	0.40	14.10	0.04	1.54	10.19	359.79	81.61	267.73	
550	21.65	0.40	14.10	0.04	1.54	9.75	344.15	81.58	267.65	
525	20.67	0.40	14.10	0.04	1.54	9.30	328.50	81.56	267.57	
500	19.69	0.40	14.10	0.04	1.54	8.86	312.86	81.53	267.49	
475	18.70	0.40	14.10	0.04	1.54	8.42	297.22	81.51	267.40	
450	17.72	0.40	14.10	0.04	1.54	7.97	281.57	81.48	267.32	
425	16.73	0.40	14.10	0.04	1.54	7.53	265.93	81.46	267.24	
400	15.75	0.40	14.10	0.04	1.54	7.09	250.29	81.43	267.16	
375	14.76	0.40	14.10	0.04	1.54	6.64	234.64	81.41	267.08	
350	13.78	0.40	14.10	0.04	1.54	6.20	219.00	81.38	266.99	
325	12.80	0.40	14.10	0.04	1.54	5.76	203.36	81.36	266.91	
300	11.81	0.40	14.10	0.04	1.54	5.32	187.72	81.33	266.83	
275	10.83	0.40	14.10	0.04	1.54	4.87	172.07	81.31	266.75	
250	9.84	0.40	14.10	0.04	1.54	4.43	156.43	81.28	266.67	
225	8.86	0.40	14.10	0.04	1.54	3.99	140.79	81.26	266.58	

7066_Greenstorm
201 POND

Height of System		GreenStorm Volume		Stone Volume		Cumulative Storage Volume		Elevation		
mm	in	m ³	ft ³	m ³	ft ³	m ³	ft ³	m	ft	
200	7.87	0.40	14.10	0.04	1.54	3.54	125.14	81.23	266.50	
175	6.89	0.40	14.10	0.04	1.54	3.10	109.50	81.21	266.42	
150	5.91	0.40	14.10	0.04	1.54	2.66	93.86	81.18	266.34	
125	4.92	0.40	14.10	0.04	1.54	2.21	78.21	81.16	266.26	
100	3.94	0.40	14.10	0.04	1.54	1.77	62.57	81.13	266.17	
75	2.95	0.40	14.10	0.04	1.54	1.33	46.93	81.11	266.09	
50	1.97	0.40	14.10	0.04	1.54	0.89	31.29	81.08	266.01	
25	0.98	0.40	14.10	0.04	1.54	0.44	15.64	81.06	265.93	
0	0.00	0.00	0.00	0.21	7.42	0.00	0.00	81.03	265.85	System Bottom
		0.00	0.00	0.21	7.42	-0.21				
		0.00	0.00	0.21	7.42	-0.42				
		0.00	0.00	0.21	7.42	-0.63				
		0.00	0.00	0.21	7.42	-0.84				
		0.00	0.00	0.21	7.42	-1.05				
		0.00	0.00	0.21	7.42	-1.26				
		0.00	0.00	0.21	7.42	-1.47				
		0.00	0.00	0.21	7.42	-1.68				
		0.00	0.00	0.21	7.42	-1.89				
		0.00	0.00	0.21	7.42	-2.10				
		0.00	0.00	0.21	7.42	-2.31				
		0.00	0.00	0.21	7.42	-2.52				
		0.00	0.00	0.21	7.42	-2.73				
		0.00	0.00	0.21	7.42	-2.94				
		0.00	0.00	0.21	7.42	-3.15				
		0.00	0.00	0.21	7.42	-3.36				
		0.00	0.00	0.21	7.42	-3.57				
		0.00	0.00	0.21	7.42	-3.78				
		0.00	0.00	0.21	7.42	-3.99				
		0.00	0.00	0.21	7.42	-4.20				
		0.00	0.00	0.21	7.42	-4.41				
		0.00	0.00	0.21	7.42	-4.62				
		0.00	0.00	0.21	7.42	-4.83				
		0.00	0.00	0.21	7.42	-5.04				
		0.00	0.00	0.21	7.42	-5.25				
		0.00	0.00	0.21	7.42	-5.46				
		0.00	0.00	0.21	7.42	-5.67				
		0.00	0.00	0.21	7.42	-5.88				
		0.00	0.00	0.21	7.42	-6.09				
		0.00	0.00	0.21	7.42	-6.30				
		0.00	0.00	0.21	7.42	-6.51				
		0.00	0.00	0.21	7.42	-6.72				
		0.00	0.00	0.21	7.42	-6.93				
		0.00	0.00	0.21	7.42	-7.14				
		0.00	0.00	0.21	7.42	-7.35				
		0.00	0.00	0.21	7.42	-7.56				
		0.00	0.00	0.21	7.42	-7.77				
		0.00	0.00	0.21	7.42	-7.98				
		0.00	0.00	0.21	7.42	-8.19				
		0.00	0.00	0.21	7.42	-8.40				
		0.00	0.00	0.21	7.42	-8.61				
		0.00	0.00	0.21	7.42	-8.82				
		0.00	0.00	0.21	7.42	-9.03				
		0.00	0.00	0.21	7.42	-9.24				
		0.00	0.00	0.21	7.42	-9.45				
		0.00	0.00	0.21	7.42	-9.66				
		0.00	0.00	0.21	7.42	-9.87				
		0.00	0.00	0.21	7.42	-10.08				
		0.00	0.00	0.21	7.42	-10.29				
		0.00	0.00	0.21	7.42	-10.50				
		0.00	0.00	0.21	7.42	-10.71				
		0.00	0.00	0.21	7.42	-10.92				
		0.00	0.00	0.21	7.42	-11.13				
		0.00	0.00	0.21	7.42	-11.34				
		0.00	0.00	0.21	7.42	-11.55				
		0.00	0.00	0.21	7.42	-11.76				
		0.00	0.00	0.21	7.42	-11.97				

7066_Greenstorm
201 POND

Height of System		GreenStorm Volume		Stone Volume		Cumulative Storage Volume		Elevation		
mm	in	m ³	ft ³	m ³	ft ³	m ³	ft ³	m	ft	
		0.00	0.00	0.21	7.42	-12.18				
		0.00	0.00	0.21	7.42	-12.39				
		0.00	0.00	0.21	7.42	-12.60				
		0.00	0.00	0.21	7.42	-12.81				
		0.00	0.00	0.21	7.42	-13.02				

Katrina Weel

From: Neda Razeghi <Neda.Razeghi@mississauga.ca>
Sent: March 19, 2025 5:02 PM
To: Katrina Weel
Cc: Julie Scott
Subject: RE: 1148-1154 Mona Road [City File No. OZ/OPA 25-2 W1]

Hi Katrina,

Thank you for reaching out. Yes, that should be acceptable.

Best regards,



Neda Razeghi
Storm Drainage Technologist
T: 905-615-3200
neda.razeghi@mississauga.ca

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Infrastructure Planning & Engineering Services
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From: Katrina Weel <kweel@cfcrozier.ca>
Sent: Wednesday, March 19, 2025 4:20 PM
To: Neda Razeghi <Neda.Razeghi@mississauga.ca>
Cc: Julie Scott <jscott@cfcrozier.ca>
Subject: [EXTERNAL] RE: 1148-1154 Mona Road [City File No. OZ/OPA 25-2 W1]

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Hi Neda,

We have one more question we would like to clarify with you ahead of our submission, which we are hoping to complete tomorrow. In our experience, sites made up of only grassed and permeable paver surfaces at-grade do not require a quality treatment device, as both landscaped areas and permeable pavers (with granular storage bed, which we are providing) are credited with 80% TSS removal. As all of the driveways and private roadway are proposed to be permeable pavers, can you please confirm that this is sufficient to meet the 80% TSS removal requirement, and that a treatment device will not be required?

Thank you,

Katrina Weel, P.Eng.
Project Engineer, Land Development
Office: 416.842.0026
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Neda Razeghi <Neda.Razeghi@mississauga.ca>
Sent: March 7, 2025 1:18 PM
To: Katrina Weel <kweel@cfcrozier.ca>
Cc: Julie Scott <jscott@cfcrozier.ca>
Subject: RE: 1148-1154 Mona Road [City File No. OZ/OPA 25-2 W1]

Hi Katrina,

Thank you for your patience. I've reviewed your questions, and I'd like to provide the following clarifications:

For the alternative water balance approach, if groundwater conditions prevent infiltration, alternative solutions may be considered. Under the City's updated criteria, if infiltration is not feasible or has reached its limit, filtration should be considered next, followed by detention if all other options have been exhausted. This will become even more important as we transition to a 27mm water balance target.

An enhanced storage bed beneath permeable pavers is an acceptable solution as long as it effectively stores and slowly releases water while meeting the City's 5mm water balance requirement or another approved alternative. Additionally, directing roof leader downspouts to permeable pavers should also be an effective approach to help meet the water balance target.

Given the high groundwater table, the City has been flexible in allowing a reduced water balance target, as long as it is demonstrated that all reasonable efforts have been made to meet the requirement.

For the quantity control requirements for semi-detached homes in Catchment 202, since these units are individually owned and not part of a condominium corporation, they may be treated similarly to single-family homes. As a result, they would be exempt from quantity control but are still encouraged to implement measures that help reduce runoff where possible.

Please let me know if you need any further clarification. If you still feel a meeting is needed, both 9:30 and 11:30 on Monday work for me.

Best regards,



Neda Razeghi
Storm Drainage Technologist
T: 905-615-3200
neda.razeghi@mississauga.ca

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Infrastructure Planning & Engineering Services
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From: Katrina Weel <kweel@cfcrozier.ca>
Sent: Thursday, March 6, 2025 4:53 PM

To: Neda Razeghi <Neda.Razeghi@mississauga.ca>

Cc: Julie Scott <jscott@cfcrozier.ca>

Subject: [EXTERNAL] RE: 1148-1154 Mona Road [City File No. OZ/OPA 25-2 W1]

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Hi Neda,

Just clarifying that the storm tank on site is not an infiltration tank, and will only be used for stormwater quantity control.

We would like to be able to infiltrate on site, however due to a high groundwater table, there is no location on site in which we can provide an infiltration tank or gallery with 1 m separation from the groundwater table. We have provided permeable pavers within the roadway and driveway areas, which will achieve water balance for the at-grade surfaces. For water balance for the roofs, would the City accept some sort of enhanced storage bed beneath the permeable pavers, and downspouts that splash to grade which direct rooftop drainage to the pavers? Further, would the City accept a reduced water balance target for the site given the high groundwater?

We would like to discuss part a of the below comment, with regards to Catchment 202 and the semi-detached homes. As the semi-detached houses are each under their own ownership structure and not a part of the condominium corporation (acting more like single family homes), we were wondering if the quantity control requirements will still apply. We found the following in the City's Criteria for stormwater retention for single lots:

The exemption to this requirement is for individual single-family dwellings although even in this case the applicants are encouraged to do best efforts to reduce stormwater runoff from their lands. Recognizing that the City requires roof leader downspouts to be disconnected, other measures that can be implemented include:

Are you free at 9:30am or 11:30am on Monday for a brief meeting to discuss?

Regards,

Katrina Weel, P.Eng.
Project Engineer, Land Development
Office: 416.842.0026
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Neda Razeghi <Neda.Razeghi@mississauga.ca>

Sent: March 6, 2025 10:17 AM

To: Katrina Weel <kweel@cfcrozier.ca>

Cc: Julie Scott <jscott@cfcrozier.ca>

Subject: RE: 1148-1154 Mona Road [City File No. OZ/OPA 25-2 W1]

Hi Katrina,

Could you please kindly provide further clarification on your concern? From my understanding, your main considerations are related to the 5mm water balance requirement and 72 hour drawdown compliance. If so, could you specify how much of the first 5mm of rainfall can be effectively utilized through irrigation within 72 hours?

Would it be feasible to use 3mm, 2mm, or another amount?

As I am still new to the team, I would like to first discuss your concerns with my manager and obtain his approval before providing a response. I want to ensure I am giving you the most accurate information and do not take up unnecessary time of revisions.

Thank you for your patience and understanding.

Best regards,



Neda Razeghi

Storm Drainage Technologist

T: 905-615-3200

neda.razeghi@mississauga.ca

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Infrastructure Planning & Engineering Services

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From: Katrina Weel <kweel@cfcrozier.ca>

Sent: Thursday, March 6, 2025 8:44 AM

To: Neda Razeghi <Neda.Razeghi@mississauga.ca>

Cc: Julie Scott <jscott@cfcrozier.ca>

Subject: [EXTERNAL] RE: 1148-1154 Mona Road [City File No. OZ/OPA 25-2 W1]

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Hi Neda,

Thank you for your clarification of the comments. We would still like to schedule a brief meeting, mostly to discuss some strategies for achieving water balance, given the nature of the site and its constraints.

If you could please advise on your availability, I can send a meeting invite.

Thank you,

Katrina Weel, P.Eng.

Project Engineer, Land Development

Office: 416.842.0026

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From: Neda Razeghi <Neda.Razeghi@mississauga.ca>

Sent: March 5, 2025 7:51 PM

To: Katrina Weel <kweel@cfcrozier.ca>

Cc: Julie Scott <jscott@cfcrozier.ca>

Subject: RE: 1148-1154 Mona Road [City File No. OZ/OPA 25-2 W1]

Hi Katrina,

Thank you for your email. I'm happy to provide further clarification on each comment, as this may help you better understand the comments provided in ePlan,

(A) The report on Page 9 references Catchment 202 as a 0.10 ha drainage area consisting of two semi-detached houses fronting Mona Road, including roof areas, permeable pavers, and grassed surfaces. However, on Page 11, there is no corresponding discussion or analysis of stormwater quantity control measures for this catchment, particularly regarding any catchbasin.

Please clarify why Catchment 202 is missing from the stormwater quantity control section.

(B) Section 6.5 (Water Balance) – Initial Abstraction Exclusion Comment (B) refers to Page 8-16 of the City of Mississauga Storm Drainage Design Requirements (see the screenshot below), which clearly states that initial abstraction must be excluded from water balance calculations.

According to City standards, the entire 5mm depth of rainfall must be applied only to the impervious area and must not include landscaped areas or initial abstraction in the calculation. However, in your submitted FSR, initial abstraction has been included, which does not align with City requirements.

REQUIREMENT

The first 5mm of runoff shall be retained on-site and managed by way of infiltration, evapotranspiration, re-use or filtration. This is calculated as the product of impervious site area times 5mm, excluding initial abstraction. This is a minimum requirement whereas applicable Master Drainage Plans or Subwatershed Plans may carry a higher minimum requirement. Methods to achieve this can include measures such as permeable pavements, infiltration systems, rainwater harvesting tanks, bioretention systems or green roofs.

The exemption to this requirement is for individual single-family dwellings although even in this case the applicants are encouraged to do best efforts to reduce stormwater runoff from their lands. Recognizing that the City requires roof leader downspouts to be disconnected, other measures that can be implemented include:

- Incorporation of rain barrels at the roof leader downspouts or rain gardens to absorb flows
- Use of infiltration galleries, if soil conditions are conducive, located on the property considering Ontario Building Code requirements
- Incorporation of permeable materials within the driveway where permitted by applicable zoning by-law
- Increase of topsoil depth around the property to 300mm to allow for greater absorption

For further details, you can refer to the City of Mississauga Stormwater Guidelines at the following link:

<https://www.mississauga.ca/wp-content/uploads/2020/08/26144147/Section-8-Storm-Drainage-Design-Requirements-1.pdf>

(C) Please provide a cross-section detail of the proposed stormwater tank, clearly showing its elevation above the groundwater level.

(D)**This comment is for your reference only.** In accordance with MECP and City of Mississauga stormwater management requirements, any new roadway development must include an Oil Grit Separator (OGS) that meets the 80% Total Suspended Solids (TSS) removal efficiency standard.

(E)The previous requirement for a minimum 300mm culvert diameter has been revised. **A 200mm culvert with a precast headwall is now acceptable** based on recent updates to City standards.

Please review these comments and let me know if you need any additional details or if you still would like to schedule a meeting on Monday morning.

Thanks,



Neda Razeghi
Storm Drainage Technologist
T: 905-615-3200
neda.razeghi@mississauga.ca

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Infrastructure Planning & Engineering Services
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From: Katrina Weel <kweel@cfcrozier.ca>
Sent: Wednesday, March 5, 2025 4:53 PM
To: Neda Razeghi <Neda.Razeghi@mississauga.ca>
Cc: Julie Scott <jscott@cfcrozier.ca>
Subject: [EXTERNAL] 1148-1154 Mona Road [City File No. OZ/OPA 25-2 W1]

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Good afternoon,

I am reaching out from Crozier Consulting Engineers, the civil consultants for the development located at 1148-1154 Mona road. We received the following comment (b) regarding the site water balance:

SWM GENERAL: Based on the plans and the Functional Servicing and Stormwater Management Report prepared by C.F. Crozier & Associates Inc., dated November 21, 2024, the following comments are provided for review and clarification:

Note: The page numbers referenced below correspond to the PDF file, as the submitted report does not include page numbers.

(a) Stormwater Quantity Control: On Page 11 of the report, please clarify why there is no information provided about Catchment 202 in the stormwater quantity control subsections.

(B) Section 6.5 (Water Balance): On Page 12, The report states, 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. According to the City's Section 8 standards, initial abstraction should not be included in the calculations. Additionally, the water balance calculation must only account for the impervious site area (excluding landscaped areas) multiplied by 5mm. Kindly revise all calculations to exclude initial abstraction. Please note that removing initial abstraction may impact the design and require adjustments to align with the City's specifications.

(c) Cross-Section Details: Ensure the tank sits 1m above g/w level. Clarify what the drawdown time is. Note it cannot exceed 72 hours.

(d) (OGS) Requirement: For the proposed roadway, an OGS will be required that meets 80% TSS standards in accordance with MECP.

(e) Servicing Plan: The proposed driveway culvert size is noted as 200mm. However, per the City of Mississauga Stormwater Guidelines (Section 8, Page 8-12), driveway culverts must have a minimum diameter of 300mm and be fitted with precast headwalls.

We would like to schedule a brief meeting to discuss this comment. Could you please let us know your availability for a meeting Friday afternoon or early next week to discuss?

Regards,

Katrina Weel, P.Eng.

Project Engineer, Land Development

Office: 416.842.0026

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FIGURES & DRAWINGS

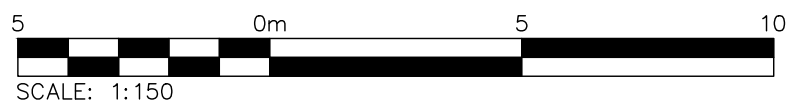


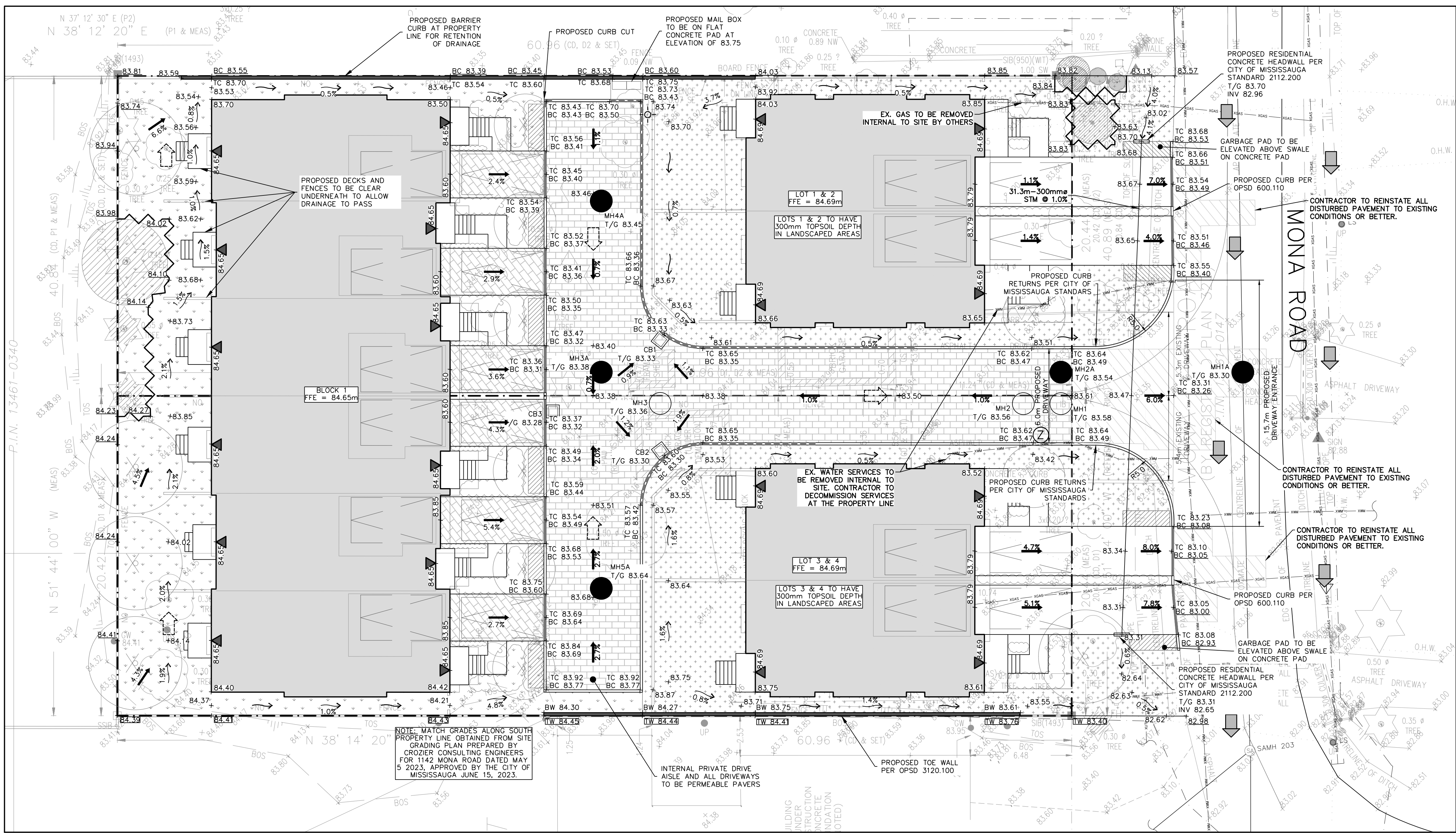
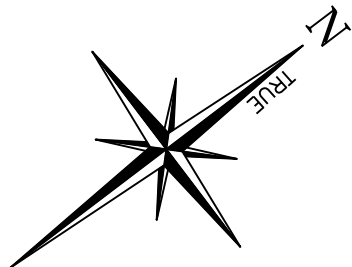
- | | |
|--|--|
| | PROPERTY LINE |
| | EXISTING WATERMAIN & GATE VALVE |
| | EXISTING STORM SEWER & MANHOLE |
| | EXISTING SINGLE / DOUBLE CATCHBASIN |
| | EXISTING SANITARY SEWER & MANHOLE |
| | PROPOSED WATERMAIN & GATE VALVE |
| | PROPOSED FIRE HYDRANT & GATE VALVE |
| | PROPOSED SIAMESE CONNECTION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

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

NOTE:

DOWNSPOUTS FOR LOTS 1, 2, 3 AND 4 ARE TO DISCHARGE ROOFTOP FLOWS TO GRADE VIA CONCRETE SPLASHPADS. NO DIRECT CONNECTION FROM THE DOWNSPOUTS TO THE INTERNAL STORM SEWER SYSTEM IS PERMITTED





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:

THERE ARE NO PROPOSED BASEMENTS AS PART OF THIS DEVELOPMENT

NOTE:

DOWNSPOUTS FOR THE PROPOSED TOWNHOUSE BLOCK ARE TO DISCHARGE ROOFTOP FLOWS TO GRADE VIA CONCRETE SPLASHPADS. NO DIRECT CONNECTION FROM DOWNSPOUTS TO THE INTERNAL STORM SEWER SYSTEM IS PERMITTED. SPLASHPADS TO DIRECT ROOFTOP FLOWS TO PERMEABLE PAVERS WITHIN PRIVATE ROADWAY

NOTE:

DOWNSPOUTS FOR LOTS 1, 2, 3 AND 4 ARE TO DISCHARGE ROOFTOP FLOWS TO GRADE VIA CONCRETE SPLASHPADS. NO DIRECT CONNECTION FROM THE DOWNSPOUTS TO THE INTERNAL STORM SEWER SYSTEM IS PERMITTED

NOTE:

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

NOTE:

ALL INTERNAL CURBS TO BE CURB AND GUTTER PER OPSD 600.040

NOTE:

I HAVE REVIEWED THE PLANS FOR THE CONSTRUCTION OF THE TOWNHOUSE COMPLEX LOCATED AT 1130, 1136 & 1138 MONA ROAD AND HAVE PREPARED THIS PLAN TO INDICATE THE COMPATIBILITY OF THE PROPOSAL TO EXISTING ADJACENT PROPERTIES AND MUNICIPAL SERVICES. IT IS MY BELIEF THAT ADHERANCE 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.

Stamp

Stamp



LEGEND	
	PROPERTY LINE
	TREE PROTECTION ZONE (PER DRAWING BY ALEXANDER BUDREVICS AND ASSOCIATES LIMITED)
	EXISTING GRADE
	PROPOSED GRADE
	PROPOSED GRADE (TO MATCH EXISTING)
	GRADE TO MATCH SITE GRADING PLAN FOR 1142 MONA ROAD BY CROZIER CONSULTING ENGINEERS
	PROPOSED MINOR FLOW DIRECTION
	PROPOSED GRASSED SWALE
	PROPOSED RETAINING WALL
	PROPOSED 0.3m HIGH CURB
	PROPOSED SLOPE (3:1 MAX.)
	BUILDING ENTRANCE (PERSONNEL 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 (REFER TO LANDSCAPE PLAN BY ALEXANDER BUDREVICS & ASSOCIATED LIMITED LANDSCAPE ARCHITECTS)
	PERMEABLE PAVERS
	300mm DEPTH TOPSOIL
	PROPOSED GARBAGE PADS
	PROPOSED PAVEMENT REINSTATEMENT

1	ISSUED FOR OPA/ZBA	2025/MAR/25
0	ISSUED FOR OPA/ZBA	2024/NOV/21
No.	ISSUE / REVISION	YYYY/MM/DD

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

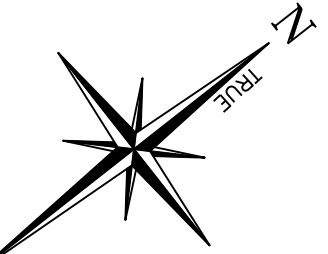
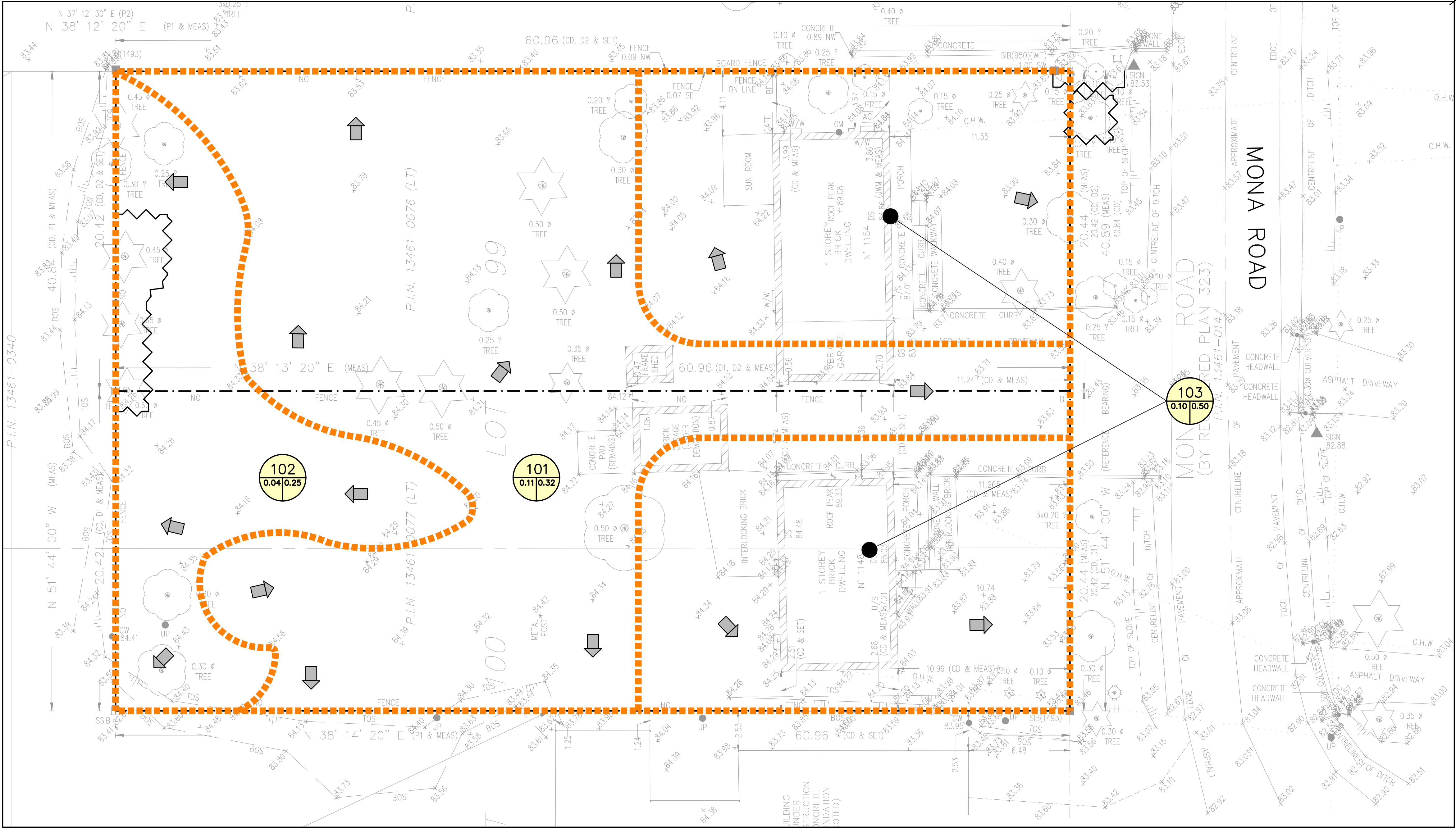
BEARING NOTES:
BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHWESTERLY LIMIT OF MONA ROAD HAVING A BEARING OF N 51° 44' 00" W AS SHOWN ON REGISTERED PLAN 323

DRAWING NOTES:
THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE REPRODUCTION OF ANY PART OF IT WITHOUT PRIOR WRITTEN CONSENT OF THIS OFFICE IS STRICTLY PROHIBITED.
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
GRADING PLAN

Drawn A.A./L.E.	Design K.W./J.S.
Check J.S.	Check J.S.
Project No. 1113-7066	
Scale 1:150	
DWG. C103	



KEY PLAN

SCALE: N.T.S.

LEGEND

- PROPERTY LINE
- EXISTING GRADE
- EXISTING OVERLAND FLOW DIRECTION
- STORM DRAINAGE CATCHMENT
- TREE PROTECTION ZONE
- CATCHMENT I.D.
- AREA (ha) | RUNOFF COEFFICIENT

1	ISSUED FOR OPA/ZBA	2025/MAR/25
0	ISSUED FOR OPA/ZBA	2024/NOV/21
No.	ISSUE / REVISION	YYYY/MM/DD

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

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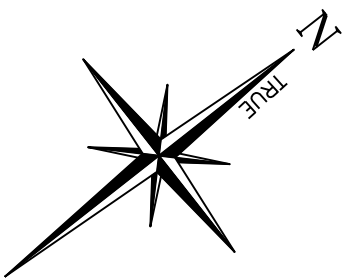
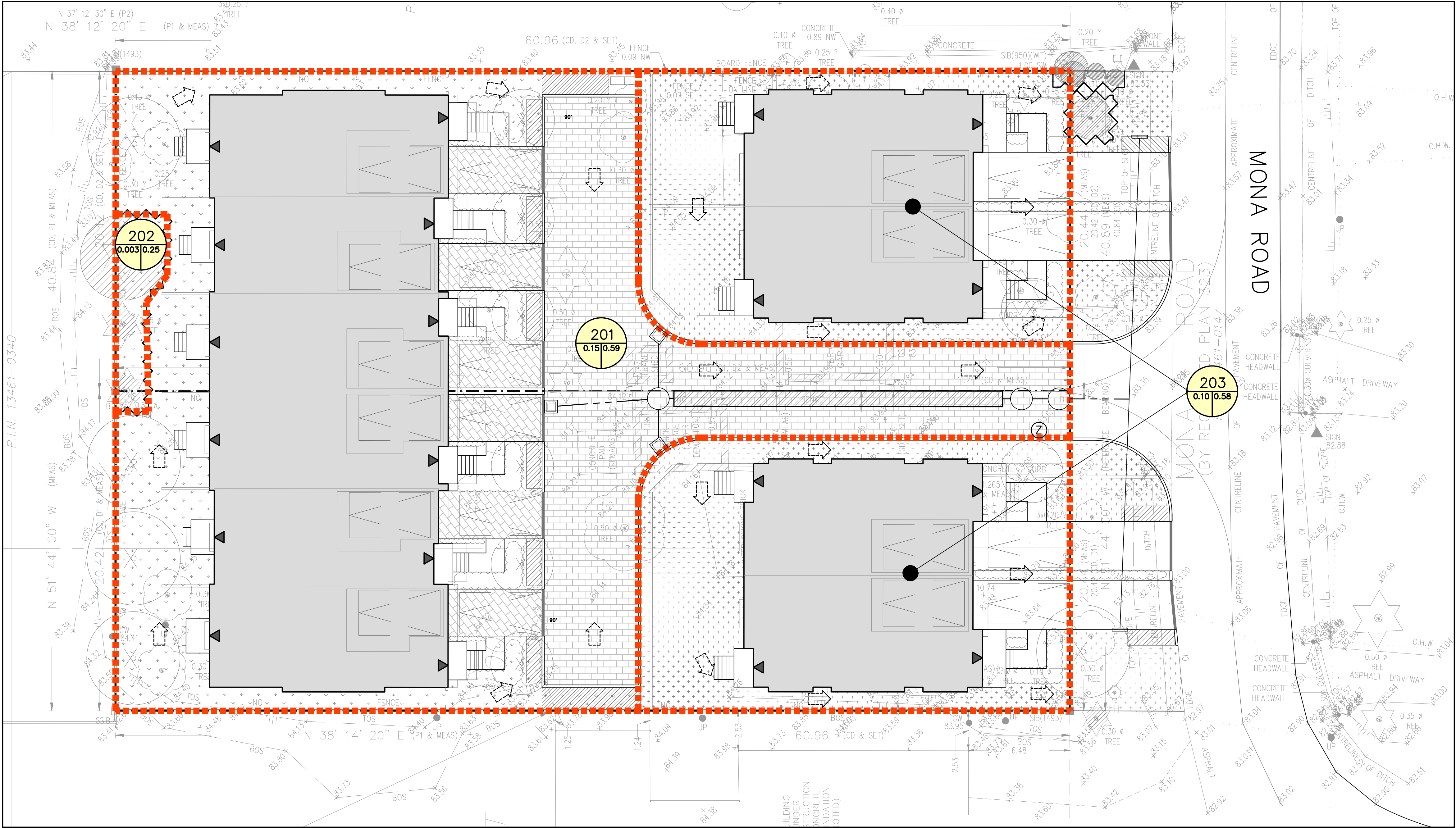
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Project
1148 & 1154 MONA ROAD
CITY OF MISSISSAUGA

Drawing
PRE-DEVELOPMENT
DRAINAGE PLAN

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





KEY PLAN

SCALE: N.T.S.

SITE LOCATION

LEGEND

- PROPERTY LINE
- TREE PROTECTION ZONE
- EXISTING GRADE
- PROPOSED OVERLAND FLOW DIRECTION
- PROPOSED STORM SEWER & MANHOLE
- PROPOSED STORMWATER TANK
- INTERNAL PROPOSED DRAINAGE AREA
- CATCHMENT I.D.
- AREA (ha) | RUNOFF COEFFICIENT
- PROPOSED PERMEABLE PAVERS
- PROPOSED LANDSCAPED AREA
- PROPOSED 300mm DEPTH TOPSOIL

1	ISSUED FOR OPA/ZBA	2025/MAR/25
0	ISSUED FOR OPA/ZBA	2024/NOV/21
No.	ISSUE / REVISION	YYYY/MM/DD

ELEVATION NOTE:
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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:
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Project
1148 & 1154 MONA ROAD
CITY OF MISSISSAUGA

Drawing
POST-DEVELOPMENT
DRAINAGE PLAN

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



Stamp

Stamp