

FUNCTIONAL SERVICING REPORT

Water, Wastewater, and Stormwater Management

PROPOSED MIXED-USE CONDOMINIUM TOWER

118-132 CROSS AVENUE
TOWN OF OAKVILLE

OUR FILE: 1873

PREPARED FOR BATORY PLANNING + MANAGEMENT

AUGUST 2026

REVISION HISTORY

DATE	REVISION	SUBMISSION
August, 2026	1	Issued for OPA/ZBA Application

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1.0 INTRODUCTION

1.1 Scope of Functional Servicing Report

This report has been prepared in support of the Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) to permit the construction of a 38-storey mixed-use condominium tower located at 118-132 Cross Avenue in the Town of Oakville, herein referred to as the subject lands (a copy of the preliminary Site Plan and Site Statistics are included in Appendix 'A'). The subject lands are located in Midtown Oakville. This report discusses how the subject lands can be serviced by the existing and future infrastructure for water, wastewater, storm drainage/stormwater management. Site grading, erosion and sediment control, and groundwater are also discussed. This report may be updated and refined as the project moves through the planning approval process to support the Site Plan and Building Permit phases.

Information provided in this report is based on our general knowledge of the area as well as information/drawings obtained from the Town of Oakville and the Region of Halton. Additionally, the following documents have been reviewed to inform the preparation of this report:

- Midtown Oakville OPA (2025 OPA), adopted by council February 18, 2025
- Midtown Stormwater Management Plan Report (Midtown SWMPR), Jacobs Consultancy Canada Inc., November 24, 2025.
- Midtown Water and Wastewater Area Servicing Plan (2026 ASP), Jacobs Consultancy Canada Inc., March 2026 (Addendum 2).

For the purpose of this report, north-south is taken as perpendicular to Cross Avenue, with Cross Avenue considered as running east-west.

1.2 Site Location and Description

As mentioned, the subject lands are known municipally as 118 to 132 Cross Avenue in the Town of Oakville and has a gross area of 0.2466 hectares. The subject lands currently consist of 5 single family dwellings, each with their own driveway access directly to Cross Avenue. Each dwelling is being used for residential purposes with the exception of 118 Cross which has been converted into a dentist office. The subject lands are bound to the north by Cross Avenue, Metrolinx land to the south (Oakville GO parking), a 2-storey commercial building to the east, and a hydro substation managed by Oakville Hydro to the west. A copy of the topographic survey is provided in Appendix 'A' for reference.

1.3 Proposed Development

The development proposal consists of a 38-storey mixed used condominium tower consisting of 429 residential units, approximately 581 m² of non-residential space, and 984 m² of indoor amenity space. Three levels of underground parking are proposed that extend essentially to the property lines. A copy of the architect's site plan and site statistics are included in Appendix 'A' for reference purposes.

Schedule L5 of the Midtown Oakville OPA identifies the transportation network with approximate alignments and road allowance widths for Midtown. This development is impacted by the widening of Cross Avenue along the entire north frontage of the subject lands. The widening is 7.94 m and will be dedicated to the Town as part of the rezoning application. The net developable area of the subject lands is reduced to 0.1945 hectares as a result of a road widening for Cross Avenue. Schedule L5 has been included in Appendix 'E' for reference.

The grading for the subject lands will be designed to be compatible with both the current conditions along Cross Avenue and future curb alignments. This is discussed further in Section 6.0.

All proposed services must be in accordance with the National Building Code (NBC), Town of Oakville, and Region of Halton standards and requirements. A copy of the Preliminary Servicing Plan (dwg. 1873S1) and Preliminary Grading Plan (dwg. 1873G1) are included in Appendix 'F' and should be read in conjunction with this report.

2.0 MUNICIPAL WATER

The proposed development will be serviced for domestic water and fire protection via the local existing watermain on Cross Avenue. The Town of Oakville's 2026 ASP notes there is sufficient fire flow and domestic water pressure for all service locations within the Midtown servicing area.

2.1 Existing Municipal Water

2.1.1 Linear Infrastructure

Based on record drawings and operating maps from the Region of Halton, there is a local 300 mm diameter PVC watermain on the north side of Cross Avenue and a 900 mm diameter concrete transmission main on the south side of Cross Avenue. Record drawings indicate there are 25 mm diameter water services connected to the 300 mm diameter watermain at each of the existing dwellings on the subject lands (5 services total).

Fire hydrants exist on the north side of Cross Avenue in the vicinity of the subject lands and more specifically in front of 111 and 117 Cross Avenue. Flow tests results were not available to confirm the capacity of the existing local system. This report will be updated with the results when they are made available. The above infrastructure is shown on record drawing O-13130 and is included in Appendix 'E'.

2.1.2 Water Demands

Using the gross development area and Region of Halton design criteria (95 persons/ha and 90 persons/ha for single family and light commercial uses respectively) the existing domestic water demand is estimated using 23 persons and summarized below (refer to Appendix 'B' for supporting calculations).

Table 1: Existing Water Demands (L/min)

Average Daily Demand	4
Minimum Hourly Demand	4
Maximum Hourly Demand	11
Maximum Daily Demand	7
Estimated Fire Demand (FUS 1999)	7000
Maximum Daily Plus Fire Demand	7007

2.2 **Proposed Municipal Water**

2.2.1 Water Service Connections

The proposed development will be serviced for domestic water and fire protection via connections to the existing 300 mm diameter local watermain on Cross Avenue. The tower's overall height is 124.50 m. The OBC requires buildings over 84 m in height be provided with a second water service connection for fire protection. The proposed water service connections consist of two 200 mm diameter service laterals, one of which will have a 150 mm diameter branch for domestic service for the residential units, and a 100 mm diameter domestic service for non-residential space.

The proposed location of the fire department connection as shown on the architect's site plan is located within 45 m of a municipal fire hydrant. Service connection details can be found on the Preliminary Servicing Plan (dwg. 1873S1) located in Appendix 'F'.

2.2.2 Water Demands

The residential population is estimated using the proposed unit count and Table 2-1 of the Region of Halton's 2025 Linear Design Manual (LDM) (1.7 persons per unit for apartments) resulting in

an estimated residential population of 729 persons. The commercial population is estimated using Table 2-2 of the Region's 2025 LDM (37.4 m² per employee for commercial) resulting in a commercial population of 16 persons. The domestic water usage is estimated and summarized below (see Appendix 'B' for supporting calculations). The fire flow is estimated for demand purposes only using the Fire Underwriter's Survey methodology and should be confirmed by a sprinkler consultant at the building permit stage. Refer to Table 2 for a summary of the estimated water demands.

Table 2: Proposed Water Demands (L/min)

Average Daily Demand	119
Minimum Hourly Demand	119
Maximum Hourly Demand	356
Maximum Daily Demand	225
Estimated Fire Demand (FUS 1999)	6000
Maximum Daily Plus Fire Demand	6225

3.0 MUNICIPAL WASTEWATER

3.1 Background

The Town of Oakville and the Region of Halton are collaborating on water and wastewater infrastructure upgrades in Midtown Oakville through the Midtown Implementation Program and the PR3447/PR3547 Trafalgar Road Capital Works project. The Midtown Implementation Program is analyzing water and wastewater needs to support anticipated growth guiding future development. The program focuses on upgrading wastewater infrastructure, including the installation of a 1200 mm diameter trunk wastewater sewer on Trafalgar Road between Lawson Street and Argus Road, connecting to an existing 1050 mm sewer south of Lawson Street. Refer to Figure 1 below for the Region of Halton's trunk wastewater sewer location (PR3447/PR3547).

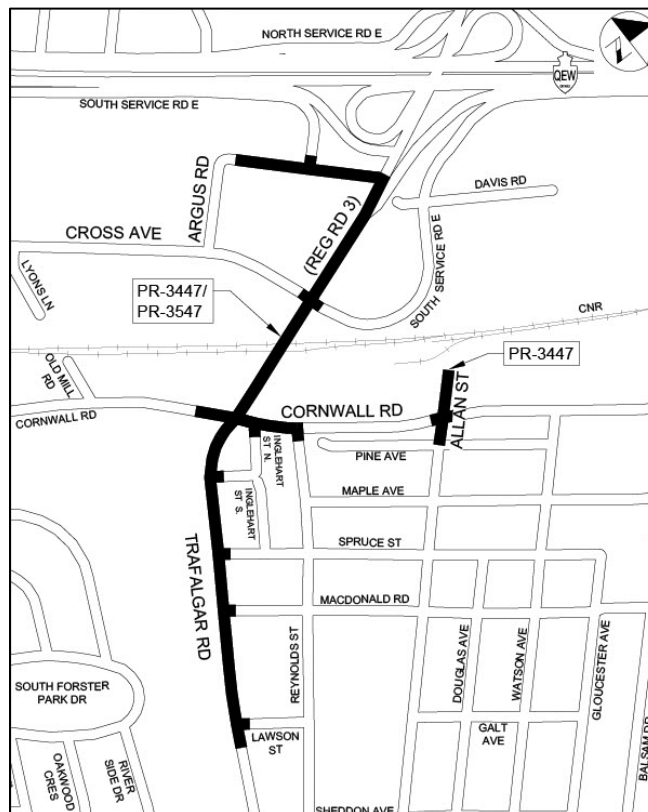


Figure 1: Region of Halton Trunk Wastewater Sewer Location (PR3447/PR3547)

The PR3447/PR3547 project is progressing in the construction phase, with project completion targeted for 2027. These efforts aim to ensure robust wastewater systems to support Midtown Oakville's growth and development.

To ensure there is sufficient wastewater capacity in the existing municipal system for the subject lands a wastewater sewer capacity analysis was completed. Refer to Section 3.3 for more details on the wastewater sewer capacity analysis.

3.2 Existing Municipal Wastewater

3.2.1 Linear Infrastructure

There is an existing 300 mm diameter PVC wastewater sewer flowing eastward along Cross Avenue. This sewer outlets to a 525 mm wastewater sewer that traverses the Metrolinx Go Lands in a north-south direction.

The site is currently serviced through five, 125 mm diameter service laterals to each of the existing dwellings on the subject lands.

3.2.2 Existing Wastewater Demands

Using the development area and Region of Halton design criteria (95 persons/ha and 105 persons/ha for single family and light commercial uses respectively), the estimated existing wastewater flows are determined based on an equivalent population of 25 persons and 215 and 185 L/cap/day for residential and commercial uses respectively (see Appendix 'C' for supporting calculations).

Table 3: Existing Wastewater Flow (L/s)

Average Daily Dry Weather Flow	0.18
Residential Peaking Factor	4.39
ICI Peaking Factor	4.44
Infiltration Allowance (0.286 L/s-ha)	0.07
Peak Flow	0.43

3.3 **Proposed Municipal Wastewater**

The subject lands will be serviced for wastewater via the existing local wastewater infrastructure on Cross Avenue. All proposed services must be in accordance with the Ontario Building Code, Town of Oakville and Region of Halton standards and requirements. A copy of the Preliminary Servicing Plan is included in Appendix 'C' and should be read in conjunction with this report. Existing and proposed servicing is discussed in further detail below.

3.3.1 Wastewater Service Connection

To service the proposed development, a 375 mm diameter PVC wastewater service lateral is proposed to the new property line inspection manhole. The lateral will be connected to the 300 mm diameter wastewater sewer on Cross Avenue.

3.3.2 Proposed Wastewater Demands

Using a residential population of 729 persons and a retail population of 16 persons (refer to Section 2.2.2 for details) and 215 L/cap. Day for residential and 185 L/cap. Day for retail, the proposed wastewater flows are summarized below (see Appendix 'C' for supporting calculations).

Table 4: Proposed Wastewater Flow (L/s)

Average Daily Dry Weather Flow	1.93
Residential Harmon Peaking Factor	3.88
ICI Peaking Factor	4.39
Infiltration Allowance (0.286 L/s-ha)	0.05
Peak Flow	7.30

3.4 Wastewater Capacity Analysis

The capacity of the linear wastewater infrastructure within Midtown was assessed to ensure infrastructure can support the proposed development. Two conditions were assessed as part of this report:

1. Base Condition – Existing conditions with the PR3447/PR3547 project completed rerouting wastewater flows from north of the QEW to the 1200 mm diameter trunk on Trafalgar.
2. Interim Condition – Increased flow from the subject lands with the PR3447/PR3547 project completed (Base Condition) and no other lands in midtown developed.

Wastewater drainage plans and wastewater design sheets for the existing and interim scenarios above are included in Appendix 'C'.

In the interim condition, there is sufficient capacity to accommodate the proposed development within the base wastewater infrastructure.

The Town of Oakville's 2026 ASP does not contain enough information to determine if there is sufficient capacity for the proposed development under the ultimate buildout of Midtown Oakville. An ultimate wastewater system capacity analysis can be performed in the future once the Infoworks model has been made available.

4.0 STORM DRAINAGE AND STORMWATER MANAGEMENT

4.1 Existing Storm Drainage

The subject lands generally slope from north to south, at an average slope at 1.8%. As mentioned, the subject lands are currently occupied by 5 single family dwellings with driveways to Cross Avenue, all of which will be removed as part of the development. The existing drainage is directed to the south lot line where it flows overland on to the adjacent GO parking lot. Drainage is captured by catchbasins on the GO parking lot before ultimately discharging to Sixteen Mile Creek. There is an existing 1050 mm diameter concrete storm sewer that flows east-west along Cross Avenue.

This storm sewer outlets to Sixteen Mile Creek, matching the ultimate drainage direction as pre-development conditions.

4.2 Proposed Storm Drainage

4.2.1 Proposed Storm Service Connection

The site will be serviced by a proposed 250 mm diameter storm connection along with a property line inspection manhole that connect to the existing 1050 mm diameter storm sewer on Cross Avenue.

4.3 Stormwater Management

The Town of Oakville requirements for stormwater management are set out in the Midtown Stormwater Management Plan Report (2025).

The applicable criteria are as follows:

1. **Stormwater Quantity Control (Peak Flow Control)**

Utilize the PCSWMM model to simulate proposed development and ensure no flooding or surcharge occurs in either the minor or major conveyance systems. Design storm requirements are 5-year return for the minor system and 100-year return for the major system. If the above criteria is not met post-development peak flows must be controlled to the 5-year pre-development peak flow rate. The minimum storage requirement shall be the unit storage rate of 73.1 m³/ha.

2. **Stormwater Runoff Volume Reduction (Water Balance)**

Provide retention of 25 mm over the impervious surfaces of the site.

3. **Stormwater Quality Control**

Achieve Enhanced Level 1 Protection, as per the Ministry of Environment's Stormwater Management Planning and Design Manual (March 2003).

4.3.1 Stormwater Quantity Control (Peak Flow Control)

At the time of this report the Town's PCSWMM model for Midtown Oakville was not available. As such the more conservative approach of controlling the 100-year post development flows to the 5-year pre-development flow rate was followed.

Pre-development flow rates are calculated using the Town of Oakville IDF curves, a runoff coefficient of $C=0.55$, and a development area of 0.19 ha (net area after the widening has been taken). Post-development flow rates are calculated using the same IDF data, a runoff coefficient of $C=0.9$, and the net area. In the determination of the post-development runoff coefficient, we have conservatively not accounted for any landscaping or rooftop amenity space. A conservative value for the post-development runoff coefficient ensures adequate sizing of the stormwater management tank during the preliminary design stage.

Runoff from the site will outlet to the Cross Avenue 1050 mm diameter storm sewer via the proposed storm lateral and must be controlled to the 5-year pre-development peak flow rate to respect the capacity of the minor system.

The means by which the site's stormwater will be managed is through the use of an orifice control and stormwater tank system. All of the site's runoff will be collected internally and routed through the stormwater tank. An appropriately sized orifice plate on the upstream side of the property line inspection manhole will control post development flows up to and including the 100-year event to the 5-year pre-development flows.

An emergency overflow mechanism from the tank is provided to grade through the access lid of the tank. Emergency flows from the tank will spill to grade and flow to Cross Avenue overland.

Using the Modified Rational Method, the Town of Oakville IDF data, and HydroCAD, pre- and post-development peak flows for the subject lands were estimated and are summarized in Table 5 below.

Table 5: Stormwater Flow Summary

Return	Pre-Dev Total (L/s)	Post-Dev Orifice Flow (L/s)	Storage Required (m³)
5-yr	33.5	18.7	24.5
10-yr	39.6	20.7	30.0
25-yr	52.8	24.6	42.3
50-yr	64.1	26.7	49.5
100-yr	74.0	28.2	55.7

To control the post-development flow rate from all storms up to the 100-year event to the pre-development 5-year flow rate of 33.5 L/s, approximately 55.7 m³ of storage is required. The tank will have a plan area of approximately 125 m² and a height of 3.07 m for approximately 296.5 m³ of storage provided. In order to limit the post development peak flow rate, a 125 mm diameter orifice plate is proposed on the upstream side of the property line storm control manhole.

The minimum storage requirement per the Midtown Oakville Environmental Assessment is 13 m³. The post- to pre-development storage requirements yield a higher storage requirement and therefore govern.

4.3.2 Stormwater Runoff Volume Reduction (Water Balance)

The water balance target is calculated using the net development area, resulting in a 25 mm retention volume of 47.5 m³. The stormwater management tank has been sized to store this volume in addition to the volume required for peak flow control. There are limited opportunities for infiltration. In light of this, re-use techniques such as irrigation will be used to achieve runoff volume reduction. Additional details will be provided through detailed design.

4.3.3 Stormwater Quality Control

The Town of Oakville requires that the development meet MECP Enhanced protection (80% long-term removal of TSS). As the net area consists of roof and pedestrian amenity area, runoff from the site can be considered clean, and no quality controls measures are proposed.

5.0 GROUNDWATER

A hydrogeological investigation was undertaken by DS Consultants Ltd (December 2025) in which the long-term peak groundwater flow rate into the parking garage sub drains after initial dewatering stages was estimated to be 88,000 L/day (1.02 L/s). This investigation found that the groundwater quality exceeds the Town's storm sewer By-Law for total suspended solids, copper, manganese and zinc, therefore the groundwater must be treated before being discharged to the municipal storm sewer system. Once the flows have been treated, they may be directed to the stormwater management tank system in the underground parking garage before being discharged using the proposed stormwater lateral. The stormwater management tank and control device have been designed to accommodate the groundwater flows while still meeting the quantity control criteria.

Refer to the hydrogeological investigation prepared by DS Consultants Ltd. (25-315-100) dated December 2025 for details.

6.0 SITE GRADING

The proposed grading must ensure that drainage from the 100-year event is collected by the building's mechanical system and conveyed to the stormwater management tank. All building air

intake and exhaust shafts must be protected from overland flow by being set a minimum of 0.2 m above the spill elevation.

The proposed property line elevations adjacent to Cross Avenue have been set considering the future road cross section as set out in the Midtown Oakville Environmental Assessment. The elevations provide typical boulevard slopes under both existing and proposed curb alignments.

A copy of the Preliminary Grading Plan is provided in Appendix 'F' and should be read in conjunction with this report.

7.0 EROSION AND SEDIMENT CONTROL

Erosion and sediment controls must be installed prior to the commencement of any construction. The erosion and sediment control devices should follow the Erosion and Sediment Control Guidelines for Urban Construction as set out by the Greater Golden Horseshoe Conservation Authority. Erosion and sediment control measures should include the following:

- Double wrapped catch basins: The proposed catch basins and catch basin manholes located within the subject site and adjacent municipal roads shall be double wrapped in a woven geotextile material. Woven geotextile material is to be replaced periodically when accumulated sediments interfere with drainage. The abutting streets should be monitored and if required, swept to mitigate the accumulation of tracked material on the roads on a routine basis in keeping with good construction housekeeping practices.
- Stone Access Pad: A stone access (mud) mat is to be installed at the entrance to the construction zone to prevent mud tracking from the site to the municipal roads.
- Silt Fencing: Silt fence is to be installed along the property line to intercept sheet flow.

A detailed Erosion and Sediment Control Plan is provided in Appendix 'F' for reference.

8.0 CONCLUSION

The information presented in this Functional Servicing Report demonstrates that adequate municipal infrastructure exists to support the sought-after Zoning Amendments.

The following is a summary of the report findings:

- There is existing municipal water infrastructure adjacent to the site that can readily service the site. Water servicing will be by way of two, 200 mm diameter fire services, with

an 'H' connection for a 150 mm diameter domestic service for the residential units, and a 100 mm diameter domestic service for non-residential space.

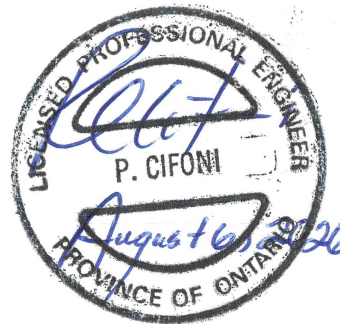
- There is existing wastewater infrastructure servicing on Argus Road adjacent to the site. The proposed development will be serviced off this existing infrastructure by way of a 375 mm wastewater lateral. There is capacity within the existing wastewater system for the proposed development.
- Post-development discharged is controlled to the 5-year pre-development peak flow rate. Stormwater is stored within an underground tank within the P1 level of the parking garage.
- To meet the Towns water balance criteria the 25 mm storm event is stored for re-use within the stormwater tank.
- All stormwater runoff from the site can be considered clean and thus no quality control measures are proposed.
- Grading of the site is designed to ensure runoff from the 100-year event is captured, and there is an emergency overland flow route.
- Erosion and sediment controls will be implemented during construction in accordance with the Erosion and Sediment Control Guidelines for Urban Construction as set out by the Greater Golden Horseshoe Conservation Authority.

This report and the drawings included in the report provide a framework from which more detailed designs can evolve as the project makes its way through the planning approval process.

PREPARED BY TRAFALGAR ENGINEERING LTD.



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Appendix 'A'

- Site Plan, BDP Quadrangle
- Site Statistics, BDP Quadrangle
- Topographic Survey, J.D. Barnes Limited.



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BUILDING AREA

Gross Floor Area Summary by Use	
Use	GFA
NON-RESIDENTIAL	580.5 m²
RESIDENTIAL	31,389.5 m²
TOTAL GROSS FLOOR AREA	31,980.1 m²

Gross Floor Area Breakdown				
Typical Levels	Floor Count	Use	Area per Floor	GFA
FLOORS 7-38	32	RESIDENTIAL	794 m²	25,417.8 m²
FLOOR 7			794 m²	25,417.8 m²
FLOOR 6	1	RESIDENTIAL	794 m²	794.3 m²
FLOOR 6			794 m²	794.3 m²
FLOOR 5	1	RESIDENTIAL	1,077 m²	1,076.9 m²
FLOOR 5			1,077 m²	1,076.9 m²
FLOOR 4	1	RESIDENTIAL	1,049 m²	1,049.1 m²
FLOOR 4			1,049 m²	1,049.1 m²
FLOOR 3	1	RESIDENTIAL	1,027 m²	1,027.3 m²
FLOOR 3			1,027 m²	1,027.3 m²
FLOOR 2	1	NON-RESIDENTIAL	274 m²	274.1 m²
FLOOR 2	1	RESIDENTIAL	814 m²	814.3 m²
FLOOR 2			1,088 m²	1,088.4 m²
GROUND FLOOR	1	NON-RESIDENTIAL	306 m²	306.4 m²
GROUND FLOOR	1	RESIDENTIAL	1,220 m²	1,219.7 m²
GROUND			1,526 m²	1,526.2 m²
TOTAL GROSS FLOOR AREA			7,357 m²	31,980.1 m²

Gross Building Area- Summary*

Name	Floor Count	GBA
GROSS BUILDING AREA	42	37,915.6 m²

* Includes above and below grade levels, with no area exclusions (excludes open to below areas).

Gross Building Area- Above Grade*

Level	Floor Count	Area per Floor	GBA
MECHANICAL PENTHOUSE	1	497.5 m²	497.5 m²
FLOORS 7-38	32	794.3 m²	25,417.8 m²
FLOOR 6	1	794.3 m²	794.3 m²
FLOOR 5	1	1,076.9 m²	1,076.9 m²
FLOOR 4	1	1,049.1 m²	1,049.1 m²
FLOOR 3	1	1,027.3 m²	1,027.3 m²
FLOOR 2	1	1,088.4 m²	1,088.4 m²
GROUND FLOOR	1	1,526.2 m²	1,526.2 m²
TOTAL ABOVE-GRADE GROSS BUILDING AREA	39		32,477.6 m²

* Excludes open to below areas.

Gross Building Area - Below Grade

Level	Floor Count	Area per Floor	GBA
P1	1	1,813 m²	1,812.7 m²
P2	1	1,813 m²	1,812.7 m²
P3	1	1,813 m²	1,812.7 m²
TOTAL BELOW-GRADE GROSS BUILDING AREA	3		5,438.0 m²

Statistics Notes

Floor Area: means the aggregate area of a building contained within the exterior walls, but does not include attic or basement space	
GFA:	GFA means the total area of all of the floors in a building measured from the exterior faces of the exterior walls, but shall not include an attic, basement or mechanical penthouse (By-Law 2023-065). GFA is used for calculating FSI
NOTE:	All open to below areas are <u>excluded</u> in GBA and GFA, unless indicated otherwise.

UNIT COUNT

Unit Mix						
Unit Type	Unit Count	Distribution	Saleable Area	Saleable Area (sqft)	Average Unit Size	Average Unit Size (sqft)
1B	176	41.0%	8,376 m²	90,154 ft²	47.6 m²	512 ft²
1B+D	74	17.2%	4,231 m²	45,537 ft²	57.2 m²	615 ft²
2B	109	25.4%	7,304 m²	78,619 ft²	67.0 m²	721 ft²
3B	38	8.9%	3,234 m²	34,813 ft²	85.1 m²	916 ft²
STUDIO	32	7.5%	1,227 m²	13,213 ft²	38.4 m²	413 ft²
TOTAL UNITS	429	100.0%	24,372 m²	262,335 ft²		

Unit Mix Per Floor									
Typical Levels	Unit Type	Units Per Floor	Total Units	Distribution	Saleable Area	Saleable Area (sqft)	Average Unit Size	Average Unit Size (sqft)	
FLOOR 2	1B	1	1	0.2%	46 m²	493 ft²	45.8 m²	493 ft²	
FLOOR 2	1B+D	1	1	0.2%	56 m²	599 ft²	55.7 m²	599 ft²	
FLOOR 2	2B	1	1	0.2%	65 m²	696 ft²	64.6 m²	696 ft²	
FLOOR 2: 3			3	0.7%	166 m²	1,788 ft²	166.1 m²	1788 ft²	
FLOOR 3	1B	5	5	1.2%	239 m²	2,571 ft²	47.8 m²	514 ft²	
FLOOR 3	1B+D	3	3	0.7%	169 m²	1,817 ft²	56.3 m²	606 ft²	
FLOOR 3	2B	4	4	0.9%	296 m²	3,189 ft²	74.1 m²	797 ft²	
FLOOR 3	3B	2	2	0.5%	183 m²	1,971 ft²	91.5 m²	985 ft²	
FLOOR 3: 14			14	3.3%	887 m²	9,549 ft²	269.7 m²	2903 ft²	
FLOOR 4	1B	5	5	1.2%	252 m²	2,716 ft²	50.5 m²	543 ft²	
FLOOR 4	1B+D	3	3	0.7%	169 m²	1,816 ft²	56.3 m²	605 ft²	
FLOOR 4	2B	4	4	0.9%	305 m²	3,279 ft²	76.1 m²	820 ft²	
FLOOR 4	3B	2	2	0.5%	182 m²	1,963 ft²	91.2 m²	981 ft²	
FLOOR 4: 14			14	3.3%	908 m²	9,774 ft²	274.0 m²	2950 ft²	
FLOOR 5	1B	5	5	1.2%	260 m²	2,800 ft²	52.0 m²	560 ft²	
FLOOR 5	1B+D	3	3	0.7%	177 m²	1,906 ft²	59.0 m²	635 ft²	
FLOOR 5	2B	4	4	0.9%	305 m²	3,279 ft²	76.1 m²	820 ft²	
FLOOR 5	3B	2	2	0.5%	194 m²	2,089 ft²	97.0 m²	1044 ft²	
FLOOR 5: 14			14	3.3%	936 m²	10,073 ft²	284.2 m²	3059 ft²	
FLOORS 7-38	1B	5	160	37.3%	7,578 m²	81,573 ft²	47.4 m²	510 ft²	
FLOORS 7-38	1B+D	2	64	14.9%	3,660 m²	39,398 ft²	57.2 m²	616 ft²	
FLOORS 7-38	2B	3	96	22.4%	6,334 m²	68,177 ft²	66.0 m²	710 ft²	
FLOORS 7-38	3B	1	32	7.5%	2,675 m²	28,790 ft²	83.6 m²	900 ft²	
FLOORS 7-38	STUDIO	1	32	7.5%	1,227 m²	13,213 ft²	38.4 m²	413 ft²	
FLOORS 7-38: 12			384	89.5%	21,475 m²	231,151 ft²	292.5 m²	3148 ft²	
TOTAL UNITS			429	100.0%	24,372 m²	262,335 ft²			

PARKING / LOADING / WASTE

Provided Car Parking			
Level	Type	Count	Designation
P3 - LOWER	2700x5700 Standard	10	Resident
P3	2700x5700 Standard	29	Resident
P3	3650x5700 Barrier Free Type A	1	Resident
P2	2700x5700 Standard	21	Resident
P2	3650x5700 Barrier Free Type B	2	Resident
Resident: 63		63	
P2	2700x5700 Standard	7	Visitor
P1	2700x5700 Standard	13	Visitor
P1	3650x5700 Barrier Free Type A	1	Visitor
Visitor: 21		21	
TOTAL PARKING SPACES: 84		84	

Provided Bicycle Parking				
Level	Usage	Type	Energized Parking	Count
GROUND	Commercial	Vertical	No	2
Commercial:				2
GROUND	Residential	Stacked	No	12
GROUND	Residential	Vertical	No	18
Residential:				30
TOTAL BICYCLE SPACES				32

Loading Statistics

RESIDENTIAL	429 UNITS
REQUIRED: 1	PROVIDED: 1

Provided Waste Statistics

Name	Level	Area
WASTE STAGING	GROUND	72 m²
WASTE ROOM	GROUND	119 m²

AMENITY / NOTES

Provided Amenity Areas		
Level	Name	Area
INDOOR AMENITY		
GROUND	INDOOR AMENITY	18 m²
FLOOR 2	INDOOR AMENITY	422 m²
FLOOR 6	INDOOR AMENITY	568 m²
		1,008 m²
OUTDOOR AMENITY		
FLOOR 2	OUTDOOR AMENITY	304 m²
FLOOR 6	OUTDOOR AMENITY	231 m²
		535 m²
Total Amenity Provided		1,543 m²

SUMMARY

Project Statistics Summary	
Municipal Address: 118-132 Cross Avenue	
Zoning Bylaw: By-law 2023-065	
Gross Site Area: 2,466.3 sm	
Road Widening 521.4 sm	
Net Site Area: 1,944.9 sm	
Building Height (Storeys): (excl. Mechanical Penthouse) 38 ST	
Building Height above Average Grade: 124.5 m	
GFA - Residential Uses 31,400.1 sm	
GFA - Non-Residential Uses 580.5 sm	
Total Combined Gross Floor Area 31,980.6 sm	
Floor Space Index (FSI) (Gross Floor Area/Gross Site Area) 12.97	
Number of Residential Units 429	
Residential Indoor Amenity Space Provided 1,008 sm	
Residential Outdoor Amenity Space Provided 535 sm	
Vehicular Parking Total Provided 84	
Bicycle Parking Total Provided 32	
Total Loading Spaces Provided 1	

Date	No.	Description
------	-----	-------------

REVISION RECORD

27-07-2026	Official Plan and Zoning Bylaw Amendment Application
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ISSUE RECORD

BDP.
Quadrangle

Quadrangle Architects Limited
901 King Street West, Suite 701 Toronto, ON M5V 3H5
t 416 598 1240 www.bdpquadrangle.com

118-132 Cross Avenue

Oakville, ON
for
Batory Planning and
Management

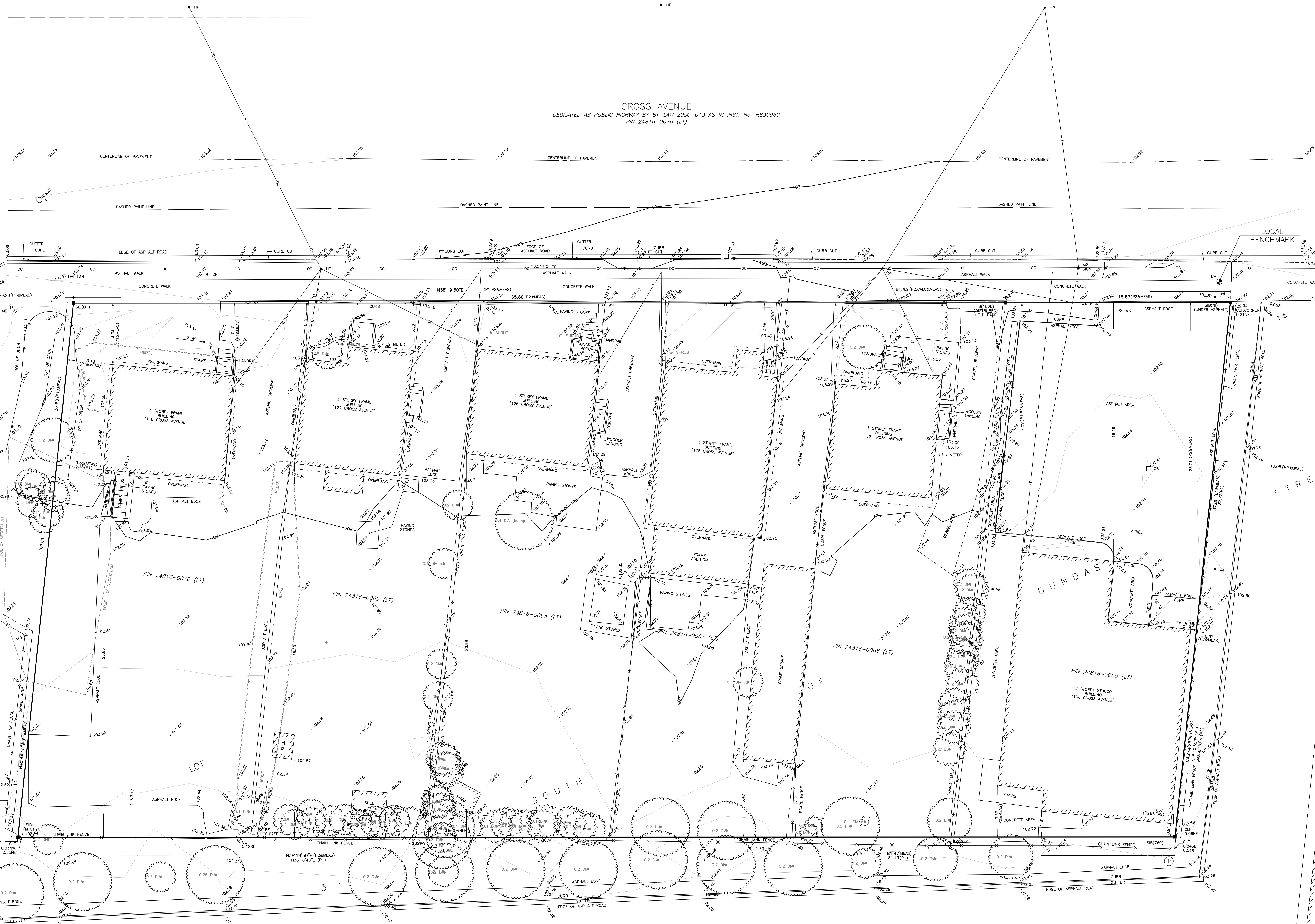
23031 1 : 1 SR SK
PROJECT SCALE DRAWN REVIEWED

Statistics

A100.S

Note: This drawing is the property of the Architect and may not be reproduced or used without the expressed consent of the Architect. The Contractor is responsible for checking and verifying all levels and dimensions and shall report all discrepancies to the Architect and obtain clarification prior to commencing work.

2026-07-28 11:16:39 AM





J.D. BARNES

LIMITED

LAND INFORMATION SPECIALISTS

401 WHEELABRATOR WAY, SUITE A, MILTON, ON L9T 3C1

T: (905) 875-9955 F: (905) 875-9956 www.jdbarnes.com

SURVEY
MAPPING
GIS

DRAWN BY:	CHECKED BY:	REFERENCE NO.:	25-30-26
MM	RSQ	DATED:	03/27/25
		PLOT DATE: 4/1/2025	



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SURVEY
MAPPING
GIS

DRAWN BY:	CHECKED BY:	REFERENCE NO.:	25-30-26
MM	RSQ	DATED:	03/27/25
		PLOT DATE: 4/1/2025	

Appendix 'B'

- Estimated Existing Water Demands
- Estimated Proposed Water Demands

TRAFALGAR ENGINEERING LTD.

ESTIMATED EXISTING WATER DEMAND

Project: 118-132 Cross Avenue
Desc: 1st Submission OPA/ZBA

Project No.: 1873
Prepared By: MW
Checked By: PC

Occupancy Data						Peaking Factors			Demand Flow		
Land Use / Occupancy Type	Area (ha)	Population Density (persons/ha)	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Demand (L/min)	Min. Hour	Peak Hour	Max. Daily	Min. Hour Demand (L/min)	Max. Hour Demand (L/min)	Max. Daily Demand (L/min)
Residential - Single Family Home	0.185	95	18	230	3	1.00	3.00	1.90	3	8	5
ICI - Light Commercial	0.062	90	6	190	1	1.00	3.00	1.90	1	2	1
*Per Cap. Demand based on O.B.C. Table 8.2.1.3.B. – 5 L/1.0m ² Stores											
TOTAL	0		23		4				4	11	7

Fire Flow

Using Fire Underwriters Survey Methodology:

Average Daily Demand: 4 (L/min)
Minimum Hourly Demand: 4 (L/min)
Maximum Hourly Demand: 11 (L/min)
Maximum Daily Demand: 7 (L/min)
Max. Daily Plus Fire: 7007 (L/min)

- An estimate of the fire flow is given by the formula $F = 220C\sqrt{A}$
 Where:
 F = The required fire flow in litres per minute
 C = Coefficient related to the type of construction
 A = The total floor area in square metres (including all storeys but excluding basements at least 50% below grade)

Type of Construction: **Wood Frame** Coefficient: 1.50 Total Floor Area: **186** (m²)
F = 5000 (L/min) Adequately Protected Vertical Openings: **No**

- Adjust the value in No. 1 for occupancy surcharge/reduction

Occupancy Contents: **Combustible** Factor: 0%
F = 5000 (L/min)

- Adjust the value in No. 2 for sprinkler

NFPA 13 Sprinkler: **No** Reduction: **0%**
 Standard Water Supply: **No** Reduction: **0%**
 Fully Supervised: **No** Reduction: **0%**

Total Reduction: 0%
Sprinkler Reduction: 0 (L/min)

- Adjust the value in No. 2 for exposure

	Separation (m)	Charge
North	50	0%
East	4.1	20%
South	50	0%
West	4.5	20%
Total Charge:		40%
Exposure Charge:		2000 (L/min)

- Estimated Fire Flow is value in No. 2 less *Sprinkler Reduction* plus *Exposure Charge*, rounded to the nearest 1000

F = 7000 (L/min)

Area Note: For fire resistive buildings, consider the two largest adjoining floors plus 50% of the remaining floors up to eight, when openings are inadequately protected. For adequately protected vertical openings consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

TRAFALGAR ENGINEERING LTD.

ESTIMATED PROPOSED WATER DEMAND

Project: 118-132 Cross Avenue
Desc: 1st Submission OPA/ZBA

Project No.: 1873
Prepared By: MW
Checked By: PC

Occupancy Data						Peaking Factors				Demand Flow		
Land Use / Occupancy Type	Units / GFA	Population Density (persons/unit / m ² /employee)	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Demand (L/min)	Min. Hour	Peak Hour	Max. Daily		Min. Hour Demand (L/min)	Max. Hour Demand (L/min)	Max. Daily Demand (L/min)
Apartments	429	1.7	729	230	116	1.00	3.00	1.90		116	349	221
ICI - Light Commercial	581	37.4	16	190	2	1.00	3.00	1.90		2	6	4
*Per Cap. Demand based on O.B.C. Table 8.2.1.3.B. – 5 L/1.0m ² Stores												
TOTAL	1010		745		119					119	356	225

Fire Flow

Using Fire Underwriters Survey Methodology:

Average Daily Demand: 119 (L/min)
Minimum Hourly Demand: 119 (L/min)
Maximum Hourly Demand: 356 (L/min)
Maximum Daily Demand: 225 (L/min)
Max. Daily Plus Fire: 6225 (L/min)

- An estimate of the fire flow is given by the formula $F = 220C\sqrt{A}$
 Where:
 F = The required fire flow in litres per minute
 C = Coefficient related to the type of construction
 A = The total floor area in square metres (including all storeys but excluding basements at least 50% below grade)

Type of Construction: **Non-Combustible** Coefficient: 0.80 Total Floor Area: **2077** (m²)
 F = **8000** (L/min)
 Adequately Protected Vertical Openings: **Yes**

Area Note: For fire resistive buildings, consider the two largest adjoining floors plus 50% of the remaining floors up to eight, when openings are inadequately protected. For adequately protected vertical openings consider only the area of the largest floor plus 25% of each of the two immediately adjoining floors

- Adjust the value in No. 1 for occupancy surcharge/reduction

Occupancy Contents: **Combustible** Factor: 0%
 F = **8000** (L/min)

- Adjust the value in No. 2 for sprinkler

NFPA 13 Sprinkler: **Yes** Reduction: **20%**
 Standard Water Supply: **Yes** Reduction: **10%**
 Fully Supervised: **Yes** Reduction: **10%**

Total Reduction: 40%
Sprinkler Reduction: 3200 (L/min)

- Adjust the value in No. 2 for exposure

Separation (m)	Charge
North 45	0%
East 5	20%
South 50	0%
West 50	0%
Total Charge: 20%	
Exposure Charge: 1600 (L/min)	

- Estimated Fire Flow is value in No. 2 less *Sprinkler Reduction* plus *Exposure Charge*, rounded to the nearest 1000

F = **6000** (L/min)

Appendix 'C'

- Estimated Existing Wastewater Demands
- Estimated Proposed Wastewater Demands
- Wastewater Sewer Design Sheet (Base Condition)
- Wastewater Sewer Design Sheet (Interim Condition)
- Existing Wastewater Drainage Plan (North), Dwg. SAN-F1
 - Base Wastewater Drainage Plan, Dwg. SAN-F2
 - Interim Wastewater Drainage Plan, Dwg. SAN-F3

TRAFALGAR ENGINEERING LTD.

ESTIMATED PROPOSED SANITARY FLOW

Project: 118-132 Cross Avenue
Desc: 1st Submission OPA/ZBA

Project No.: 1873
Prepared By: MW
Checked By: PC

Residential

Land Use / Occupancy Type	Unit Count	Population Density (pers/unit)	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Dry Weather Flow (L/s)
Apartments	429	1.7	729	215	1.8
			0		
TOTAL	429		729		1.8

Industrial / Commercial / Institutional

Land Use / Occupancy Type	GFA	Population Density (m ² /employee)	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Dry Weather Flow (L/s)
Light Commercial	581	37.4	16	185	0.0
TOTAL	581		16		0.0

Residential Peaking Factor: 3.88
 ICI Peaking Factor: 4.39
 Include ICI Peaking? **Yes**
 Tributary Area: **0.19** (ha)
 Infiltration Allowance: **0.29** (L/s ha)
 Foundation Drain Allowance: **0.00** (L/s ha)

Residential Average Flow: 1.90 (L/s)
 ICI Average Flow: 0.03 (L/s)
 Groundwater Discharge: 0.05 (L/s)
Total Average Flow: 1.93 (L/s)

Residential Peak Flow: 7.10 (L/s)
 ICI Peak Flow: 0.15 (L/s)
 Groundwater Discharge: 0.05 (L/s)
Total Peak Flow: 7.30 (L/s)

TRAFALGAR ENGINEERING LTD.

ESTIMATED EXISTING SANITARY FLOW

Project: 118-132 Cross Avenue
Desc: 1st Submission OPA/ZBA

Project No.: 1873
Prepared By: MW
Checked By: PC

Residential

Land Use / Occupancy Type	Area (ha)	Population Density (pers/ha)	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Dry Weather Flow (L/s)
Single Family Home	0.185	95.0	18	215	0.04
TOTAL	0		18		0.04

Industrial / Commercial / Institutional

Land Use / Occupancy Type	Area (ha)	Population Density (pers/ha)	Eq. Population (cap.)	Per Cap. Demand (L/cap. Day)	Average Daily Dry Weather Flow (L/s)
Light Commercial	0.062	105.0	7	185	0.01
TOTAL	0		7		0.01

Residential Peaking Factor: 4.39
 ICI Peaking Factor: 4.43
 Include ICI Peaking? **Yes**
 Tributary Area: **0.25** (ha)
 Infiltration Allowance: **0.29** (L/s ha)
 Foundation Drain Allowance: **0.00** (L/s ha)

Residential Average Flow: 0.10 (L/s)
 ICI Average Flow: 0.01 (L/s)
 Groundwater Discharge: 0.07 (L/s)
Total Average Flow: 0.18 (L/s)

Residential Peak Flow: 0.30 (L/s)
 ICI Peak Flow: 0.06 (L/s)
 Groundwater Discharge: 0.07 (L/s)
Total Peak Flow: 0.43 (L/s)

Prepared By: MW

Checked By: PC

Project No.: 1873

SANITARY SEWER DESIGN SHEET

Regional Municipality of Halton

Interim Condition

Project Name : 118-132 Cross Avenue

Municipal Number:

Date: 2025-02-04

Sheet: 1 of 2

LOCATION	FROM MH	TO MH	TRIBUTARY AND FLOW DATA																		PIPE DATA													
			Tributary Area							Population Tributary			Average Demand		Incr. Avg. Q (L/s)	Total Avg. Q (L/s)	Peaking Factor		Peak Q, Q _p (L/s)	Infiltr. (L/s)	Design Flow, Q _d (L/s)	Length, L (m)	Pipe Dia., D (mm)	Slope, s (%)	Manning's Coeff., n	Full Flow Capacity, Q _F (L/s)	Velocity		Flow Depth, d (mm)	d/D	Q _a /Q _F (%)	Type	Class	
			Area (ha)	Cum. Area (ha)	Density (ppha)	Area (ha)	Cum. Area (ha)	Density (ppha)	Total (ha)	Res (pers.)	ICI (pers.)	Total (pers.)	Res (L/cap. Day)	ICI (L/cap. Day)			K _{avg}	M _{avg}									Full (m/s)	Actual (m/s)						
Area 1	Area 1	MH3334	100.67	100.67	-				100.67	5096		5096	275		16.2	16.2	1.0	3.24	52.5	28.8	81.3											CONC		
Area 2	Area 2	MH3334	29.92	29.92	-				29.92	2478		2478	275		7.9	7.9	1.0	3.51	27.7	8.6	36.3												VC	
Area 3	Area 3	MH3334	46.80	46.80	-				46.80	3035		3035	275		9.7	9.7	1.0	3.44	33.2	13.4	46.6												VC	
Area 4	Area 4	Area 5	14.16	14.16	-				14.16	954		954	275		3.0	3.0	1.0	3.81	11.6	4.1	15.6												VC	
Area 5	MH3334	MH40461	49.58	241.13	-				241.13	3061		14623	275		9.7	46.5	1.0	2.79	129.8	69.0	198.8	115.4	675	0.23	0.013	416.0	1.13	1.13	329	0.48	48%	CON		
Area 6	Area 6	MH40461	11.77	11.77	-				11.77	1059		1059	275		3.4	3.4	1.0	3.78	12.8	3.4	16.1	25.9	250	0.85	0.013	57.2	1.13	0.98	91.44	0.36	28%	PVC		
Queen Elizabeth Way	MH40461	MH4643		252.90		0.00			252.90		0	15683		275	0.0	49.9	1.0	2.76	137.7	72.3	210.0	68.4	600	0.89	0.013	603.7	2.07	1.93	243.84	0.40	35%	CON		
	MH4643	MH40854		252.90		0.00	0.00		252.90		0	15683		275	0.0	49.9	1.0	2.76	137.7	72.3	210.0	17.1	600	0.89	0.013	603.3	2.07	1.93	243.84	0.40	35%	CON		
226 South Service Rd E	MH40854	MH4642		252.90		0.56	0.56	105	253.47		59	15742		275	0.2	50.1	1.0	2.76	138.1	72.5	210.6	59.5	600	0.33	0.013	368.5	1.26	1.31	329.18	0.54	57%	CON		
	MH4642	MH29685	0.00	252.90			0.56		253.47	0		15742		275	0.0	50.1	1.0	2.76	138.1	72.5	210.6	58.2	600	0.33	0.013	369.1	1.26	1.31	329.18	0.54	57%	CON		
				252.90			0.56																											
PR3447/PR3457	MH29685	MH100A	0.00	252.90		0.00	0.56		253.47	0		15742		275	0.0	50.1	1.0	2.76	138.1	72.5	210.6	7.0	1200	0.25	0.013	2033.7	1.74	1.18	256.03	0.21	10%	CON		
	MH100A	MH105A	0.00	252.90		0.00	0.56		253.47	0		15742		276	0.0	50.1	1.0	2.76	138.1	72.5	210.6	18.0	1200	0.25	0.013	2033.7	1.74	1.18	256.03	0.21	10%	CON		
	MH105A	MH200A	0.00	252.90		0.00	0.56		253.47	0		15742		277	0.0	50.1	1.0	2.76	138.1	72.5	210.6	132.0	1200	0.25	0.013	2033.7	1.74	1.18	256.03	0.21	10%	CON		
Trafalgar Trunk	MH200A	MH300A	0.00	252.90		0.00	0.56		253.47	0		15742		278	0.0	50.1	1.0	2.76	138.1	72.5	210.6	105.0	1200	0.25	0.013	2033.7	1.74	1.18	256.03	0.21	10%	CON		
570, 603, 234 Argus Rd	MH29686	MH29684		0.00		2.95	2.95	105	2.95		309	309		275	1.0	1.0	0.8	3.26	3.2	0.8	4.0	41.3	300	0.73	0.013	86.0	1.18	0.65	42.67	0.14	5%	PVC		
	MH29684	MH54242		0.00		0.05	2.99		2.99		0	309		275	0.0	1.0	0.8	3.26	3.2	0.9	4.1	24.9	750	0.20	0.013	519.4	1.14	0.36	45.72	0.06	1%	DI		
587 Argus Rd	MH54242	MH29682		0.00		0.27	3.26	105	3.26		28	337		275	0.1	1.1	0.8	3.25	3.5	0.9	4.4	41.9	750	1.50	0.013	1422.5	3.12	0.72	30.48	0.04	0%	DI		
590 Argus Rd	MH29682	MH29683		0.00		1.17	4.43	105	4.43		123	460		275	0.4	1.5	0.8	3.19	4.7	1.3	5.9	16.8	600	0.80	0.013	573.0	1.96	0.66	42.67	0.07	1%	PVC		
568-586 & 571-581 Argus Rd	MH29683	MH29128		0.00		1.93	6.37	105	6.37		203	663		275	0.6	2.1	0.8	3.13	6.6	1.8	8.4	114.5	600	0.92	0.013	615.1	2.11	0.77	48.77	0.08	1%	PVC		
207 Argus Rd & Cross Ave	MH29128	MH4614		0.00		0.46	6.82	105	6.82		48	711		275	0.2	2.3	0.8	3.11	7.0	2.0	9.0	65.2	600	0.24	0.013	313.8	1.08	0.51	67.06	0.11	3%	PVC		
627 Lyons Lane	MH4610	MH4611		0.00		0.79	0.79	105	0.79		83	83		275	0.3	0.3	0.8	3.41	0.9	0.2	1.1	57.5	250	2.37	0.013	95.5	1.88	0.72	17.78	0.07	1%	VC		
559 Lyons Lane	MH4611	MH4612		0.00		0.00	0.79		0.79		0	83		275	0.0	0.3	0.8	3.41	0.0	0.2	0.2	22.9	250	2.38	0.013	95.6	1.89	0.51	7.62	0.03	0%	VC		
99 Lyons Lane	MH4612	MH4613		0.00		1.46	2.25	105	2.25		153	236		275	0.5	0.8	0.8	3.30	2.5	0.6	3.1	70.0	250	0.75	0.013	53.6	1.06	0.60	40.64	0.16	6%	VC		
564 Lyons Lane	MH4613	MH22400	0.28	0.28	95		2.25		2.53	27		263	275		0.1	0.8	0.8	3.37	2.8	0.7	3.5	80.1	300	0.75	0.013	87.2	1.20	0.64	39.62	0.13	4%	PVC		
Lyons Lane & Cross Ave	MH22400	MH22401		0.28		0.00	2.25		2.53		0	263		275	0.0	0.8	0.8	3.37	2.8	0.7	3.5	22.5	300	0.58	0.013	76.7	1.05	0.57	42.67	0.14	5%	PVC		
Lyons Lane South	MH36125	MH22402		0.00		0.20	0.20		0.20		0	0		275	0.0	0.0	0.8	3.60	0.0	0.1	0.1	59.5	300	0.30	0.013	55.5	0.76	0.16	6.10	0.02	0%	PVC		
539 Lyons Lane	MH22402	MH22401		0.00		0.00	0.20		0.20		0	0		275	0.0	0.0	0.8	3.60	0.0	0.1	0.1	36.5	300	0.30	0.013	55.3	0.76	0.16	6.10	0.02	0%	PVC		
118-136 & 125 Cross Ave	MH22401	MH22399	0.25	0.53	2916	6.02	8.46	105	8.99	729	632	1624	275	275	4.3	5.2	0.8	2.97	15.3	2.6	17.9	141.7	300	0.43	0.013	66.4	0.91	0.79	106.68	0.35	27%	PVC		
142,157 Cross Ave, 166 SSR	MH22399	MH22398		0.53		2.10	10.56	105	11.09		221	1845		275	0.7	5.9	0.8	2.92	17.2	3.2	20.3	87.0	300	0.43	0.013	66.4	0.91	0.83	112.78	0.37	31%	PVC		
165 Cross Ave	MH22398	MH4619		0.53		0.70	11.26	105	11.79		73																							



Prepared By: MW
Checked By: PC
Project No. : 1873

SANITARY SEWER DESIGN SHEET
Regional Municipality of Halton
Interim Condition

Project Name : 118-132 Cross Avenue
Municipal Number:
Date: 2025-02-04
Sheet: 1 of 2

LOCATION	FROM MH	TO MH	TRIBUTARY AND FLOW DATA																	PIPE DATA													
			Tributary Area							Population Tributary			Average Demand		Incr. Avg. Q (L/s)	Total Avg. Q (L/s)	Peaking Factor		Peak Q, Q _p (L/s)	Infiltr. (L/s)	Design Flow, Q ₀ (L/s)	Length, L (m)	Pipe Dia., D (mm)	Slope, s (%)	Manning's Coeff., n	Full Flow Capacity, Q _F (L/s)	Velocity		Flow Depth, d (mm)	d/D	Q ₀ /Q _F (%)	Type	Class
			Residential			ICI			Total (ha)	Res (pers.)	ICI (pers.)	Total (pers.)	Res (L/cap. Day)	ICI (L/cap. Day)			K _{avg}	M _{avg}									Full (m/s)	Actual (m/s)					
			Area (ha)	Cum. Area (ha)	Density (ppha)	Area (ha)	Cum. Area (ha)	Density (ppha)																									
570 Trafalgar Rd	MH400A	MH500A		0.00		0.21	15.99		15.99		0	17362		275	0.0	105.4	0.8	2.17	228.8	4.6	233.4	65.0	1200	0.25	0.013	2033.7	1.74	1.23	268.22	0.22	11%	VC	
547 & 562 Trafalgar Rd	MH500A	MH600A		0.00		2.51	18.50	105	18.50		264	17626		275	0.8	106.2	0.8	2.17	230.1	5.3	235.3	48.4	1200	0.25	0.013	2033.7	1.74	1.24	268.22	0.22	12%	VC	
	MH600A	MH700A		0.00		0.00	18.50		18.50		0	17626		275	0.0	106.2	0.8	2.17	230.1	5.3	235.3	41.5	1200	0.25	0.013	2033.7	1.74	1.24	268.22	0.22	12%	VC	
	MH700A	MH800A		0.00		0.00	18.50		18.50		0	17626		275	0.0	106.2	0.8	2.17	230.1	5.3	235.3	56.0	1200	0.25	0.013	2033.7	1.74	1.24	268.22	0.22	12%	VC	
217-227 Cross Ave	MH4634	MH4651		0.00		0.93	0.93	105	0.93		98	98		275	0.3	0.3	0.8	3.40	1.1	0.3	1.3	42.2	300	2.18	0.013	149.0	2.04	0.74	18.29	0.06	1%	CON	
	MH4651	MH4631		0.00		0.00	0.93		0.93		0	98		275	0.0	0.3	0.8	3.40	1.1	0.3	1.3	67.5	300	0.56	0.013	75.7	1.04	0.41	27.43	0.09	2%	VC	
540 Trafalgar & 238 Cross	MH4631	MH4632		0.00		1.31	2.24	105	2.24		138	236		275	0.4	0.8	0.8	3.30	2.5	0.6	3.1	47.7	300	0.61	0.013	78.7	1.08	0.56	39.62	0.13	4%	VC	
238 Cross Ave	MH4632	MH800A		0.00		0.00	2.24		2.24		0	236		275	0.0	0.8	0.8	3.30	2.5	0.6	3.1	63.6	300	0.68	0.013	82.9	1.14	0.56	39.62	0.13	4%	PVC	
Cross Ave & Trafalgar Rd	MH800A	MH900A		0.00		0.10	20.85		20.85		0	17862		275	0.0	107.0	0.8	2.16	231.2	6.0	237.1	34.2	1200	0.25	0.013	2033.7	1.74	1.17	280.42	0.23	12%	PVC	
South Service E & Trafalgar	MH900A	MH1000A		0.00		0.00	20.85		20.85		0	17862		275	0.0	107.0	0.8	2.16	231.2	6.0	237.1	57.3	1200	0.25	0.013	2033.7	1.74	1.17	280.42	0.23	12%	VC	
Trafalgar Rd & CNR	MH1000A	MH1100A		0.00		0.23	21.08		21.08		0	17862		275	0.0	107.0	0.8	2.16	231.2	6.0	237.2	58.5	1200	0.25	0.013	2033.7	1.74	1.17	280.42	0.23	12%	VC	
271 Cornwall Rd	MH1100A	MH1200A		0.00		1.48	22.56	105	22.56		155	18017		275	0.5	107.4	0.8	2.16	231.9	6.5	238.4	79.0	1200	0.25	0.013	2033.7	1.74	1.18	280.42	0.23	12%	VC	
271 Cornwall Rd	MH1200A	MH1300A		0.00		0.00	22.56		22.56		0	18017		275	0.0	107.4	0.8	2.16	231.9	6.5	238.4	13.2	1200	0.25	0.013	2033.7	1.74	1.18	280.42	0.23	12%	CON	
Trafalgar Rd & Cornwall Rd	MH1300A	MH1400A		0.00		0.14	22.70		22.70		0	18017		275	0.0	107.4	0.8	2.16	231.9	6.5	238.4	107.9	1200	0.25	0.013	2033.7	1.74	1.18	280.42	0.23	12%	CON	
465 Trafalgar Rd	MH1400A	MH1500A		0.00		0.15	22.86	105	22.86		16	18033		275	0.1	107.5	0.8	2.16	232.0	6.5	238.5	68.0	1200	0.25	0.013	2033.7	1.74	1.18	280.42	0.23	12%	CON	
461 Trafalgar Rd	MH1500A	MH14087		0.00		0.00	22.86		22.86		0	18033		275	0.0	107.5	0.8	2.16	232.0	6.5	238.5	7.4	1200	0.25	0.013	2033.7	1.74	1.18	280.42	0.23	12%	CON	
TRIBUTARY AREA TOTAL			256.72	2750.38		45.62	####		3178.66	17375	4522	446250																					

Notes:
1) Pipe diameter is nominal
2) Capacity and velocity are based on Imperial I.D. (Nom. Dia x 25.4/25)
3) **Red text** denotes the catchment which contains the subject lands
3) Cells shaded denote a hard coded value
4) The average daily flow for residential and commercial values are taken from the Region of Halton Linear Design Manual, December 2025
5) The slopes of the sanitary sewers are taken from the Region Halton Infoworks Model and available record drawings

Peaking Factor $M = K_{avg} \times (1+14 / (4+P^{1/2}))$
Where P is Total population in thousands
 $K_{avg} = (A_R + 0.8 \times A_{ICI}) / (A_{Total})$
Infiltration = 0.286 L/ha/s

Full Flow Capacity (Manning's Equation), Q_F
 $Q_F = (1/n) \times A \times R^{2/3} \times s^{1/2}$
 $= (1/n) \times 311.7 \times D^{8/3} \times s^{1/2}$
Avg. Daily Flow Residential
Avg. Daily Flow Commercial

275 L/cap/d
275 L/cap/d

LOCATION	FROM MH	TO MH	TRIBUTARY AND FLOW DATA																	PIPE DATA												
			Tributary Area				Total (ha)	Population Tributary			Average Demand		Incr. Avg. Q (L/s)	Total Avg. Q (L/s)	Peaking Factor		Peak Q, Q _p (L/s)	Infiltr. (L/s)	Design Flow, Q _D (L/s)	Length, L (m)	Pipe Dia., D (mm)	Slope, s (%)	Manning's Coeff., n	Full Flow Capacity, Q _F (L/s)	Velocity		Flow Depth, d (mm)	d/D	Q _d /Q _F (%)	Type	Class	
			Residential		ICI			Res (pers.)	ICI (pers.)	Total (pers.)	Res (L/cap. Day)	ICI (L/cap. Day)			K _{avg}	M _{avg}									Full (m/s)	Actual (m/s)						
			Area (ha)	Density (ppha)	Area (ha)	Density (ppha)																										
Area 1	Area 1	MH3334	100.67	-			100.67	5096		5096	275		16.2	16.2	1.0	3.24	52.5	28.8	81.3											CONC		
Area 2	Area 2	MH3334	29.92	-			29.92	2478		2478	275		7.9	7.9	1.0	3.51	27.7	8.6	36.3												VC	
Area 3	Area 3	MH3334	46.80	-			46.80	3035		3035	275		9.7	9.7	1.0	3.44	33.2	13.4	46.6												VC	
Area 4	Area 4	Area 5	14.16	-			14.16	954		954	275		3.0	3.0	1.0	3.81	11.6	4.1	15.6												VC	
Area 5	MH3334	MH40461	49.58	-			241.13	3061		14623	275		9.7	46.5	1.0	2.79	129.8	69.0	198.8	115.4	675	0.23	0.013	416.0	1.13	1.13	329	0.48	48%	CON		
Area 6	Area 6	MH40461	11.77	-			11.77	1059		1059	275		3.4	3.4	1.0	3.78	12.8	3.4	16.1	25.9	250	0.85	0.013	57.2	1.13	0.98	91.44	0.36	28%	PVC		
Queen Elizabeth Way	MH40461	MH4643			0.00		252.90		0	15683		275	0.0	49.9	1.0	2.76	137.7	72.3	210.0	68.4	600	0.89	0.013	603.7	2.07	1.93	243.84	0.40	35%	CON		
	MH4643	MH40854			0.00		252.90		0	15683		275	0.0	49.9	1.0	2.76	137.7	72.3	210.0	17.1	600	0.89	0.013	603.3	2.07	1.93	243.84	0.40	35%	CON		
226 South Service Rd E	MH40854	MH4642			0.56	105	253.47		59	15742		275	0.2	50.1	1.0	2.76	138.1	72.5	210.6	59.5	600	0.33	0.013	368.5	1.26	1.31	329.18	0.54	57%	CON		
	MH4642	MH29685	0.00				253.47	0		15742		275	0.0	50.1	1.0	2.76	138.1	72.5	210.6	58.2	600	0.33	0.013	369.1	1.26	1.31	329.18	0.54	57%	CON		
PR3447/PR3457	MH29685	MH100A	0.00		0.00		253.47	0		15742		275	0.0	50.1	1.0	2.76	138.1	72.5	210.6	7.0	1200	0.25	0.013	2033.7	1.74	1.18	256.03	0.21	10%	CON		
	MH100A	MH105A	0.00		0.00		253.47	0		15742		276	0.0	50.1	1.0	2.76	138.1	72.5	210.6	18.0	1200	0.25	0.013	2033.7	1.74	1.18	256.03	0.21	10%	CON		
	MH105A	MH200A	0.00		0.00		253.47	0		15742		277	0.0	50.1	1.0	2.76	138.1	72.5	210.6	132.0	1200	0.25	0.013	2033.7	1.74	1.18	256.03	0.21	10%	CON		
Trafalgar Trunk	MH200A	MH300A	0.00		0.00		253.47	0		15742		278	0.0	50.1	1.0	2.76	138.1	72.5	210.6	105.0	1200	0.25	0.013	2033.7	1.74	1.18	256.03	0.21	10%	CON		
570, 603, 234 Argus Rd	MH29686	MH29684			2.95	105	2.95		309	309		275	1.0	1.0	0.8	3.26	3.2	0.8	4.0	41.3	300	0.73	0.013	86.0	1.18	0.65	42.67	0.14	5%	PVC		
	MH29684	MH54242			0.05		2.99		0	309		275	0.0	1.0	0.8	3.26	3.2	0.9	4.1	24.9	750	0.20	0.013	519.4	1.14	0.36	45.72	0.06	1%	DI		
587 Argus Rd	MH54242	MH29682			0.27	105	3.26		28	337		275	0.1	1.1	0.8	3.25	3.5	0.9	4.4	41.9	750	1.50	0.013	1422.5	3.12	0.72	30.48	0.04	0%	DI		
590 Argus Rd	MH29682	MH29683			1.17	105	4.43		123	460		275	0.4	1.5	0.8	3.19	4.7	1.3	5.9	16.8	600	0.80	0.013	573.0	1.96	0.66	42.67	0.07	1%	PVC		
568-586 & 571-581 Argus Rd	MH29683	MH29128			1.93	105	6.37		203	663		275	0.6	2.1	0.8	3.13	6.6	1.8	8.4	114.5	600	0.92	0.013	615.1	2.11	0.77	48.77	0.08	1%	PVC		
207 Argus Rd & Cross Ave	MH29128	MH4614			0.46	105	6.82		48	711		275	0.2	2.3	0.8	3.11	7.0	2.0	9.0	65.2	600	0.24	0.013	313.8	1.08	0.51	67.06	0.11	3%	PVC		
627 Lyons Lane	MH4610	MH4611			0.79	105	0.79		83	83		275	0.3	0.3	0.8	3.41	0.9	0.2	1.1	57.5	250	2.37	0.013	95.5	1.88	0.72	17.78	0.07	1%	VC		
559 Lyons Lane	MH4611	MH4612			0.00		0.79		0	83		275	0.0	0.3	0.8	3.41	0.0	0.2	0.2	22.9	250	2.38	0.013	95.6	1.89	0.51	7.62	0.03	0%	VC		
99 Lyons Lane	MH4612	MH4613			1.46	105	2.25		153	236		275	0.5	0.8	0.8	3.30	2.5	0.6	3.1	70.0	250	0.75	0.013	53.6	1.06	0.60	40.64	0.16	6%	VC		
564 Lyons Lane	MH4613	MH22400	0.28	55			2.53	15		251	275		0.0	0.8	0.8	3.38	2.7	0.7	3.4	80.1	300	0.75	0.013	87.2	1.20	0.61	39.62	0.13	4%	PVC		
Lyons Lane & Cross Ave	MH22400	MH22401			0.00		2.53		0	251		275	0.0	0.8	0.8	3.38	2.7	0.7	3.4	22.5	300	0.58	0.013	76.7	1.05	0.55	42.67	0.14	4%	PVC		
Lyons Lane South	MH36125	MH22402			0.20		0.20		0	0		275	0.0	0.0	0.8	3.60	0.0	0.1	0.1	59.5	300	0.30	0.013	55.5	0.76	0.16	6.10	0.02	0%	PVC		
539 Lyons Lane	MH22402	MH22401			0.00		0.20		0	0		275	0.0	0.0	0.8	3.60	0.0	0.1	0.1	36.5	300	0.30	0.013	55.3	0.76	0.16	6.10	0.02	0%	PVC		
118-136 & 125 Cross Ave	MH22401	MH22399	0.25	55	6.02	105	8.99	14	632	897	275	275	2.1	2.9	0.8	3.11	8.9	2.6	11.4	141.7	300	0.43	0.013	66.4	0.91	0.68	85.34	0.28	17%	PVC		
142,157 Cross Ave, 166 SSR	MH22399	MH22398			2.10	105	11.09		221	1118		275	0.7	3.6	0.8	3.05	10.9	3.2	14.0	87.0	300	0.43	0.013	66.4	0.91	0.73	94.49	0.31	21%	PVC		
165 Cross Ave	MH22398	MH4619			0.70	105	11.79		73	1191		275	0.2	3.8	0.8	3.03	11.5	3.4	14.9	51.9	300	0.57	0.013	75.8	1.04	0.81	91.44	0.30	20%	VC		
177 Cross Ave	MH4619	MH4620			0.80	105	12.59		84	1275		275	0.3	4.1	0.8	3.02	12.2	3.6	15.8	27.7	300	0.57	0.013	75.9	1.04	0.82	94.49	0.31	21%	VC		
	MH4620	MH4615			0.00		12.59		0	1275		275	0.0	4.1	0.8	3.02	12.2	3.6	15.8	6												

LOCATION	FROM MH	TO MH	TRIBUTARY AND FLOW DATA																PIPE DATA												
			Tributary Area					Population Tributary			Average Demand		Incr. Avg. Q (L/s)	Total Avg. Q (L/s)	Peaking Factor		Peak Q, Q _p (L/s)	Infiltr. (L/s)	Design Flow, Q _D (L/s)	Length, L (m)	Pipe Dia., D (mm)	Slope, s (%)	Manning's Coeff., n	Full Flow Capacity, Q _F (L/s)	Velocity		Flow Depth, d (mm)	d/D	Q _a /Q _F (%)	Type	Class
			Residential		ICI		Total (ha)	Res (pers.)	ICI (pers.)	Total (pers.)	Res (L/cap. Day)	ICI (L/cap. Day)			K _{avg}	M _{avg}									Full (m/s)	Actual (m/s)					
			Area (ha)	Density (ppha)	Area (ha)	Density (ppha)								Full (m/s)																	
374,388,420 Davis Rd	MH4669	MH4670			12.46	105	12.46		1308	1308		275	4.2	4.2	0.8	2.98	12.4	3.6	16.0	70.7	300	0.62	0.013	79.6	1.09	0.87	91.44	0.30	20%	VC	
379 Davis Rd	MH4670	MH4671			0.52	105	12.98		55	1363		275	0.2	4.3	0.8	2.97	12.9	3.7	16.6	85.2	300	0.68	0.013	83.2	1.14	0.90	91.44	0.30	20%	VC	
349-359 Davis Rd	MH4671	MH4647			1.95	105	14.93		205	1568		275	0.7	5.0	0.8	2.93	14.6	4.3	18.9	96.4	300	0.35	0.013	59.9	0.82	0.74	115.82	0.38	32%	VC	
Davis Rd & Trafalgar Rd	MH4647	MH400A			0.50	105	15.43		52	1620		275	0.2	5.2	0.8	2.92	15.1	4.4	19.5	100.9	300	0.28	0.013	53.1	0.73	0.69	124.97	0.41	37%	VC	
570 Trafalgar Rd	MH400A	MH500A			0.21		15.99		0	17362		275	0.0	105.4	0.8	2.17	228.8	4.6	233.4	65.0	1200	0.25	0.013	2033.7	1.74	1.23	268.22	0.22	11%	VC	
547 & 562 Trafalgar Rd	MH500A	MH600A			2.51	105	18.50		264	17626		275	0.8	106.2	0.8	2.17	230.1	5.3	235.3	48.4	1200	0.25	0.013	2033.7	1.74	1.24	268.22	0.22	12%	VC	
	MH600A	MH700A			0.00		18.50		0	17626		275	0.0	106.2	0.8	2.17	230.1	5.3	235.3	41.5	1200	0.25	0.013	2033.7	1.74	1.24	268.22	0.22	12%	VC	
	MH700A	MH800A			0.00		18.50		0	17626		275	0.0	106.2	0.8	2.17	230.1	5.3	235.3	56.0	1200	0.25	0.013	2033.7	1.74	1.24	268.22	0.22	12%	VC	
217-227 Cross Ave	MH4634	MH4651			0.93	105	0.93		98	98		275	0.3	0.3	0.8	3.40	1.1	0.3	1.3	42.2	300	2.18	0.013	149.0	2.04	0.74	18.29	0.06	1%	CON	
	MH4651	MH4631			0.00		0.93		0	98		275	0.0	0.3	0.8	3.40	1.1	0.3	1.3	67.5	300	0.56	0.013	75.7	1.04	0.41	27.43	0.09	2%	VC	
540 Trafalgar & 238 Cross	MH4631	MH4632			1.31	105	2.24		138	236		275	0.4	0.8	0.8	3.30	2.5	0.6	3.1	47.7	300	0.61	0.013	78.7	1.08	0.56	39.62	0.13	4%	VC	
238 Cross Ave	MH4632	MH800A			0.00		2.24		0	236		275	0.0	0.8	0.8	3.30	2.5	0.6	3.1	63.6	300	0.68	0.013	82.9	1.14	0.56	39.62	0.13	4%	PVC	
Cross Ave & Trafalgar Rd	MH800A	MH900A			0.10		20.85		0	17862		275	0.0	107.0	0.8	2.16	231.2	6.0	237.1	34.2	1200	0.25	0.013	2033.7	1.74	1.17	280.42	0.23	12%	PVC	
South Service E & Trafalgar	MH900A	MH1000A			0.00		20.85		0	17862		275	0.0	107.0	0.8	2.16	231.2	6.0	237.1	57.3	1200	0.25	0.013	2033.7	1.74	1.17	280.42	0.23	12%	VC	
Trafalgar Rd & CNR	MH1000A	MH1100A			0.23		21.08		0	17862		275	0.0	107.0	0.8	2.16	231.2	6.0	237.2	58.5	1200	0.25	0.013	2033.7	1.74	1.17	280.42	0.23	12%	VC	
271 Cornwall Rd	MH1100A	MH1200A			1.48	105	22.56		155	18017		275	0.5	107.4	0.8	2.16	231.9	6.5	238.4	79.0	1200	0.25	0.013	2033.7	1.74	1.18	280.42	0.23	12%	VC	
271 Cornwall Rd	MH1200A	MH1300A			0.00		22.56		0	18017		275	0.0	107.4	0.8	2.16	231.9	6.5	238.4	13.2	1200	0.25	0.013	2033.7	1.74	1.18	280.42	0.23	12%	CON	
Trafalgar Rd & Cornwall Rd	MH1300A	MH1400A			0.14		22.70		0	18017		275	0.0	107.4	0.8	2.16	231.9	6.5	238.4	107.9	1200	0.25	0.013	2033.7	1.74	1.18	280.42	0.23	12%	CON	
465 Trafalgar Rd	MH1400A	MH1500A			0.15	105	22.86		16	18033		275	0.1	107.5	0.8	2.16	232.0	6.5	238.5	68.0	1200	0.25	0.013	2033.7	1.74	1.18	280.42	0.23	12%	CON	
461 Trafalgar Rd	MH1500A	MH14087			0.00		22.86		0	18033		275	0.0	107.5	0.8	2.16	232.0	6.5	238.5	7.4	1200	0.25	0.013	2033.7	1.74	1.18	280.42	0.23	12%	CON	
TRIBUTARY AREA TOTAL			256.72		45.62		3178.66	16648	4522	432413																					

Notes:

1) Pipe diameter is nominal

2) Capacity and velocity are based on Imperial I.D. (Nom. Dia x 25.4/25)

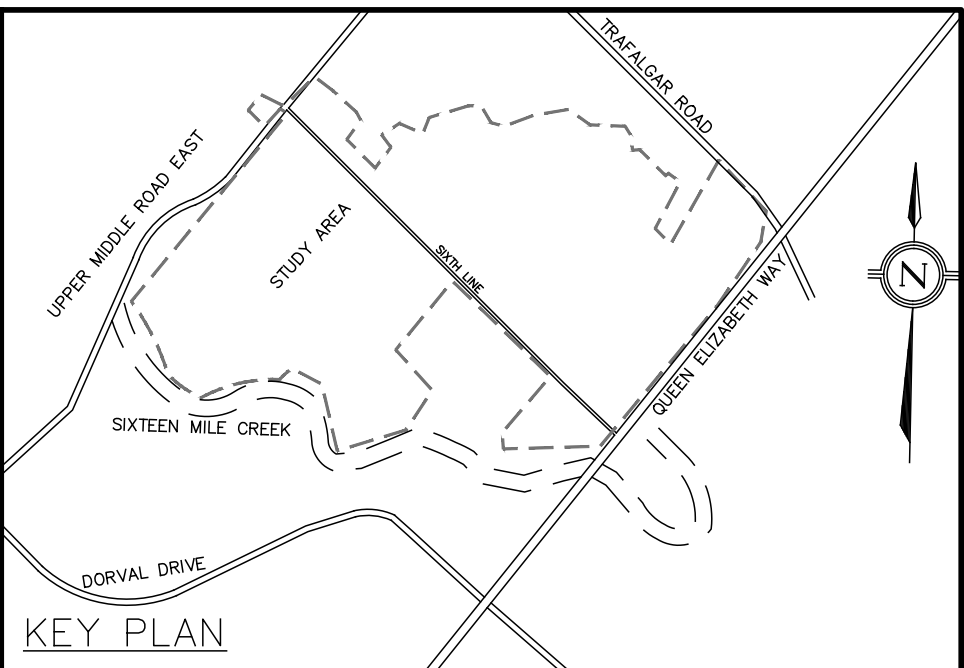
3) **Red text** dentoes the catchment which contains the subject lands

4) Cells shaded denote a hard coded value

5) The average daily flow for residential and commercial values are taken from the Region of Halton Linear Design Manual, December 2025

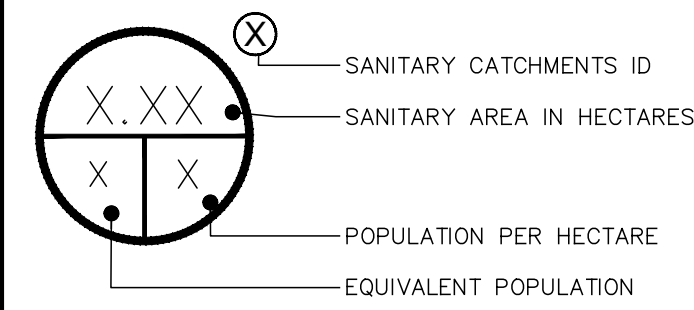
6) The slopes of the sanitary sewers are taken from the Region Halton Infoworks Model and available record drawings

Peaking Factor M = K _{avg} x (1+14 / (4+P ^{1/2}))	Full Flow Capacity (Manning's Equation), Q _F
Where P is Total population in thousands	Q _F = (1/n) x A x R ^{2/3} x s ^{1/2}
K _{avg} = (A _R + 0.8 x A _{ICI}) / (A _{Total})	= (1/n) x 311.7 x D ^{8/3} x s ^{1/2}
Infiltration = 0.286 L/ha/s	Avg. Daily Flow Residential 275 L/cap/d
	Avg. Daily Flow Commercial 275 L/cap/d



Category	Population Density	Area (m ²)	Equivalent Population
Area 4			
Community Services	40	2.69	108
Townhouses	135	0.77	104
Vacant	0	0.24	0
Commercial	90	0.00	0
Apartment	285	0.73	207
Single Family	55	9.74	536
Total		14.16	954
Area 5			
Community Services	40	0.00	0
Townhouses	135	1.58	213
Vacant	0	0.00	0
Commercial	90	0.32	29
Apartment	285	0.85	244
Single Family	55	46.83	2576
Total		49.58	3061
Area 6			
Commercial	90	11.77	1059
Total		11.77	1059

NOTE:
SANITARY DRAINAGE
BOUNDARY AS PER
HALTON REGION
INFOWORKS MODEL.



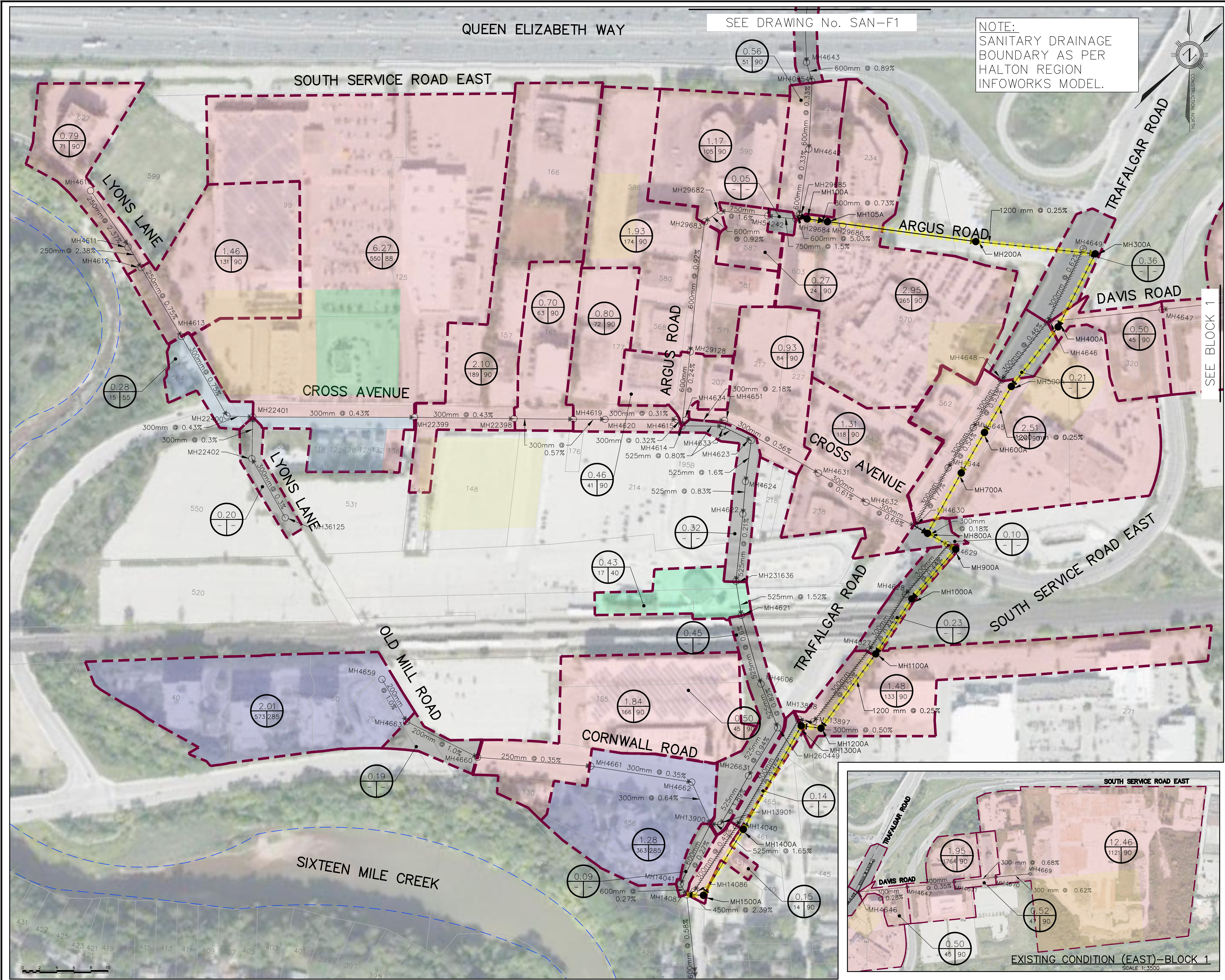
- Legend:

 -  LIGHT COMMERCIAL LAND USE (90 p/ha)
 -  LOW/MID RISE APARTMENT LAND USE (285 p/ha)
 -  STREET TOWNHOUSE LAND USE (260 p/ha)
 -  SINGLE FAMILY HOME LAND USE (55 p/ha)
 -  COMMUNITY LAND USE (40 p/ha)
 -  PARK/ROADWAY (0 p/ha)
 -  SANITARY SEWER AND MANHOLE

1	26/03/13	MW/MW	ISSUED FOR OPA/ZBA	
NO.	DATE	By/DRAWN	REVISIONS	
CAD FILE: 1873 SAN.dwg			PLOT SCALE: 1:1	PLOT DATE: Mar 12, 2026

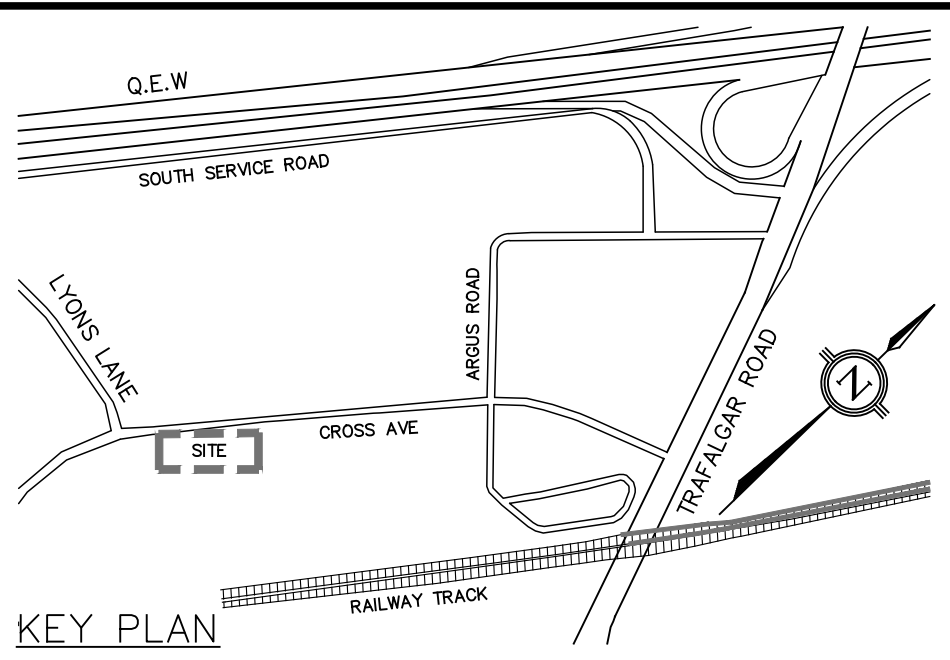
DESIGNED BY _____	APPROVED BY _____
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 TRAFALGAR ENGINEERING #1-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6 www.trafalgareng.com		
PROJECT TITLE		
PROPOSED MIXED-USE CONDOMINIUM		
LOCATION		
118-132 CROSS AVENUE OAKVILLE, ONTARIO		
DRAWING TITLE		
EXISTING WASTEWATER DRAINAGE PLAN (NORTH)		
SCALE	1:1500	DESIGN BY MW CHECKED BY PC DATE 2026-03-10 SHEET 1 OF 3
PROJECT No. 1873 PLAN No. SAN-F1		



SEE DRAWING No. SAN-F1

NOTE:
SANITARY DRAINAGE
BOUNDARY AS PER
HALTON REGION
INFOWORKS MODEL.



- SANITARY AREA IN HECTARES
POPULATION PER HECTARE
EQUIVALENT POPULATION
- DRAINAGE AREA BOUNDARY
- LIGHT COMMERCIAL LAND USE (90 p/ha)
LOW/MID RISE APARTMENT LAND USE (285 p/ha)
SINGLE FAMILY HOME LAND USE (55 p/ha)
COMMUNITY LAND USE (40 p/ha)
PARK/ROADWAY (0 p/ha)
- EXISTING SANITARY SEWER AND MANHOLE
PROPOSED SANITARY SEWER AND MANHOLE (BY REGION) (PR3447/PR3547)
PROPOSED SANITARY (BY REGION) (PR3447/PR3547)

1	26/03/13	MW/MW	ISSUED FOR OPA/ZBA
NO.	DATE	BY/DRAWN	REVISIONS
CAD FILE: 1873 SAN.dwg			PLOT SCALE: 1:1 PLOT DATE: Mar 12, 2026

DESIGNED BY

APPROVED BY

61-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com

PROJECT TITLE

PROPOSED MIXED-USE
CONDOMINIUM

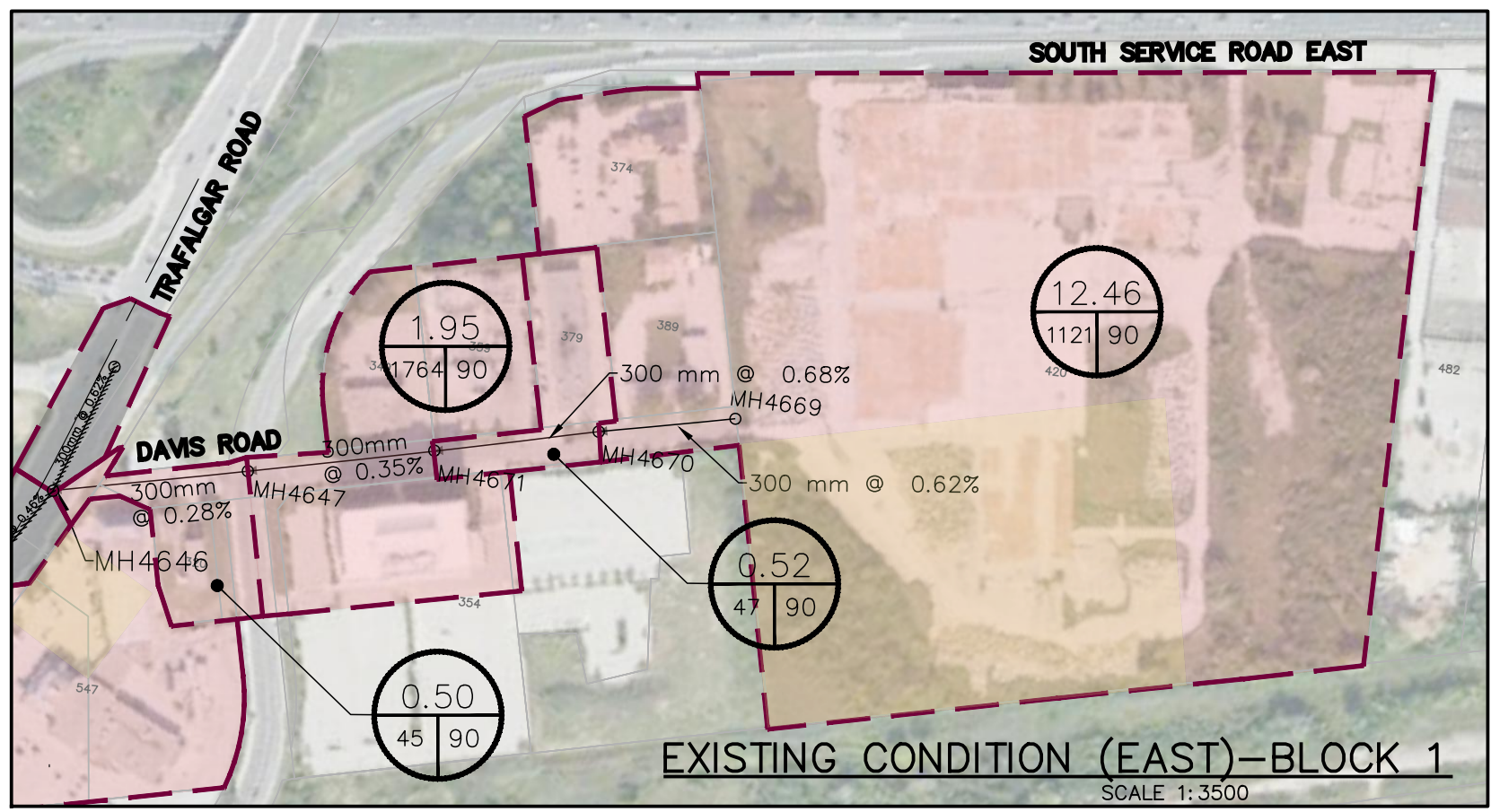
LOCATION

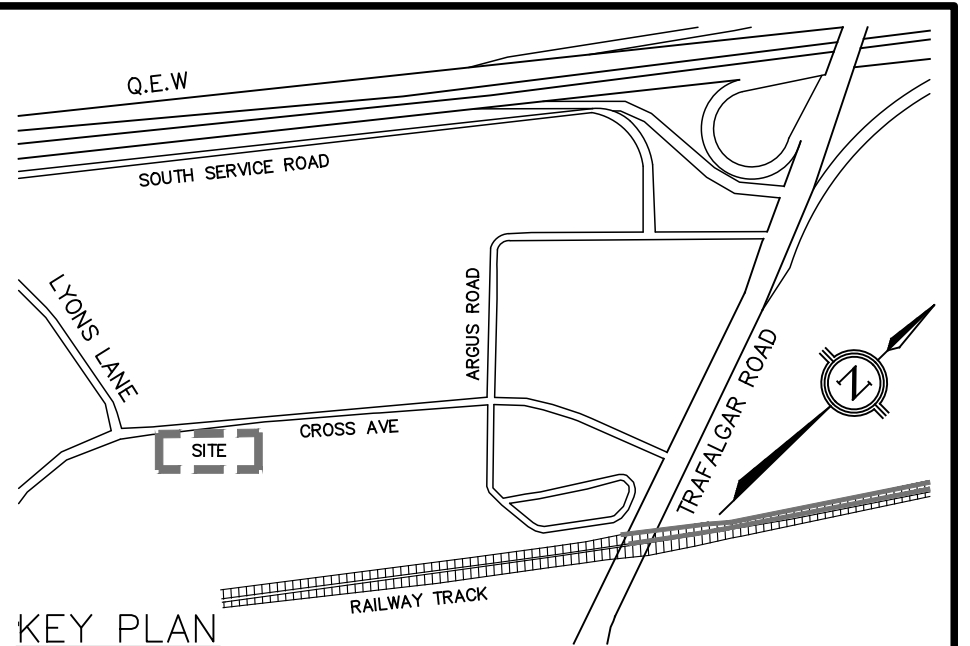
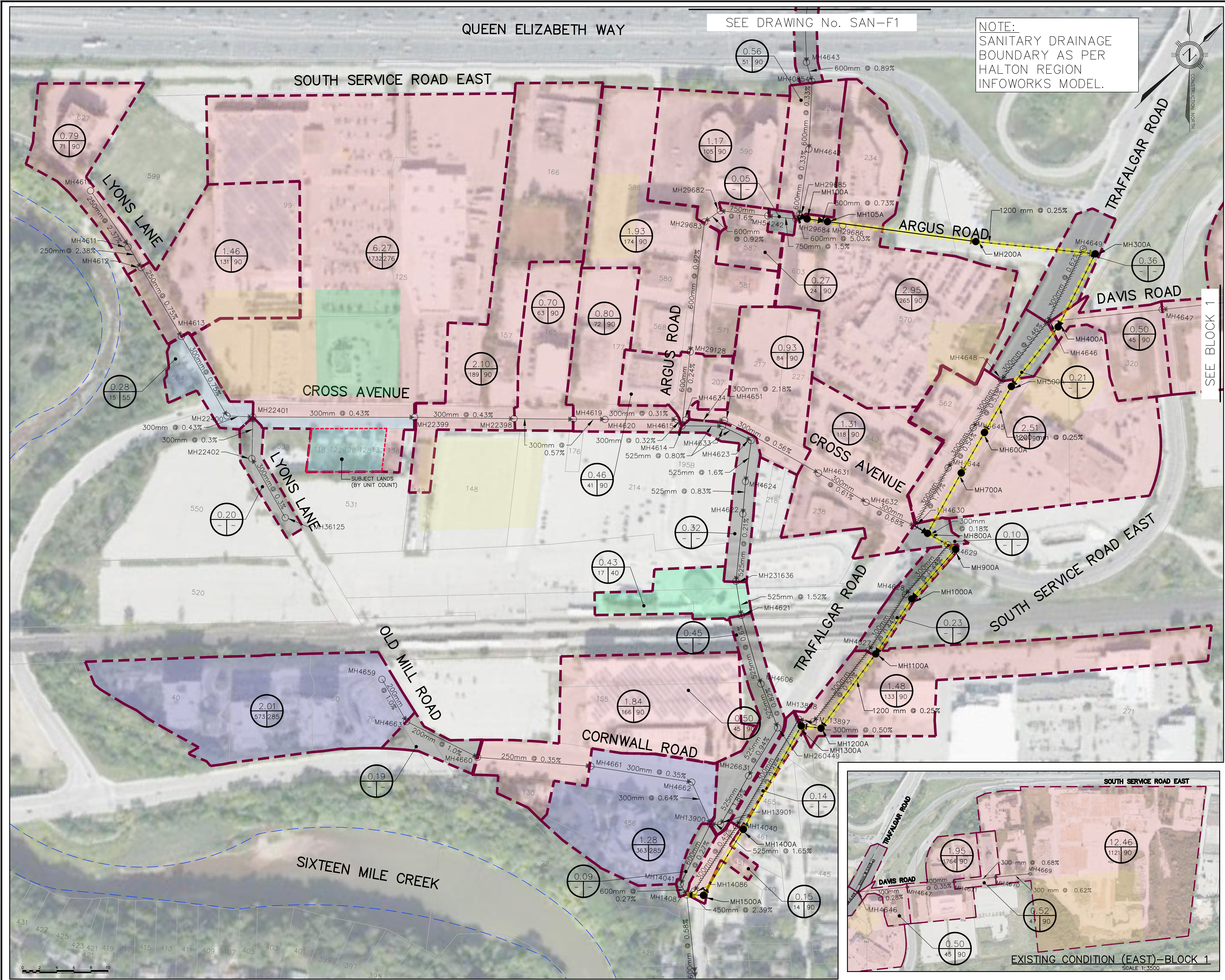
118-132 CROSS AVENUE
OAKVILLE, ONTARIO

DRAWING TITLE

BASE WASTEWATER DRAINAGE
PLAN

SCALE	1:1500	DESIGN BY	MW	PROJECT No.	1873
DRAWN BY	MW	CHECKED BY	PC	PLAN No.	SAN-F2
DATE	2028-03-10	SHEET	2 OF 3		





- LEGEND**
- Sanitary Area Data:**
 - X.XX: SANITARY AREA IN HECTARES
 - X: POPULATION PER HECTARE
 - X: EQUIVALENT POPULATION
 - Land Use:**
 - Light Commercial Land Use (90 p/ha)
 - Low/Mid Rise Apartment Land Use (285 p/ha)
 - Single Family Home Land Use (55 p/ha)
 - Community Land Use (40 p/ha)
 - Park/Roadway (0 p/ha)
 - Boundaries:**
 - : DRAINAGE AREA BOUNDARY
 - - -: SUBJECT LANDS (BY UNIT COUNT)
 - Sewer and Manhole:**
 - : EXISTING SANITARY SEWER AND MANHOLE
 - : PROPOSED SANITARY SEWER AND MANHOLE (BY REGION) (PR3447/PR3547)
 - : PROPOSED SANITARY (BY REGION) (PR3447/PR3547)

1	26/03/13	MW/MW	ISSUED FOR OPA/ZBA
NO.	DATE	BY/DRAWN	REVISIONS
CAD FILE: 1873 SAN.dwg			PLOT SCALE: 1:1 PLOT DATE: Mar 12, 2026

DESIGNED BY	APPROVED BY

CONSULTANT

TRAFALGAR ENGINEERING
81-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com

PROJECT TITLE

PROPOSED MIXED-USE CONDOMINIUM

LOCATION

118-132 CROSS AVENUE
OAKVILLE, ONTARIO

DRAWING TITLE

PROPOSED WASTEWATER DRAINAGE PLAN

SCALE	1:1500	DESIGN BY	MW	PROJECT No.	1873
DRAWN BY	MW	CHECKED BY	PC	PLAN No.	SAN-F3
DATE	2028-03-10	SHEET	3 OF 3		

Appendix 'D'

- Composite Runoff Coefficient
- HydroCAD Results
- Figure 1, Pre-Development Storm Drainage Area Plan
- Figure 2, Post-Development Storm Drainage Area Plan

TRAFALGAR ENGINEERING LTD.

COMPOSITE RUNOFF COEFFICIENT

Project: 118-132 Cross Avenue

Desc: 50 Storey Tower

Project No.: ###

Prepared By: MW

Checked By: PC

Pre-Development Composite Runoff Coefficient

Surface	'A' (m ²)	'C'	'AC'	% Imp	'AI'
Existing Impervious Area	900	0.90	810	100%	900
Existing Pervious Area	1056	0.25	264	0%	-
			-		-
			-		-
			-		-
Totals	1956		1074		900
C = 'AC'/'A' = 0.50 %I = 'AI'/'A' = 46%					

External Drainage Area Composite Runoff Coefficient

Surface	'A' (m ²)	'C'	'AC'	% Imp	'AI'
			-	0%	-
			-		-
			-		-
			-		-
			-		-
Totals	-		-		-
C = 'AC'/'A' = - %I = 'AI'/'A' = -					

Post-Development Controlled Area Composite Runoff Coefficient

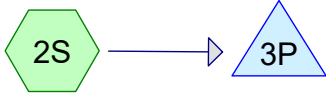
Surface	'A' (m ²)	'C'	'AC'	% Imp	'AI'
Proposed Site	1956	0.90	1760	100%	1956
			-		-
			-		-
			-		-
			-		-
Totals	1956		1760		1956
C = 'AC'/'A' = 0.90 %I = 'AI'/'A' = 100%					

Post-Development Uncontrolled Area Composite Runoff Coefficient

Surface	'A' (m ²)	'C'	'AC'	% Imp	'AI'
			-		-
			-		-
			-		-
			-		-
			-		-
Totals	-		-		-
C = 'AC'/'A' = - %I = 'AI'/'A' = -					



Pre-Dev Area



Post-Dev Site Area P1 Storm Tank

Routing Diagram for 1873 HydroCAD
Prepared by Trafalgar Engineering, Printed 2026-08-06
HydroCAD® 10.20-6a s/n 13129 © 2024 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (hectares)	C	Description (subcatchment-numbers)
0.2856	0.90	(1S, 2S)
0.1056	0.25	(1S)
0.3912	0.72	TOTAL AREA

Time span=0.00-10.00 hrs, dt=0.01 hrs, 1001 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Dev Area Runoff Area=1,956.0 m² 0.00% Impervious Runoff Depth=15 mm
Tc=10.0 min C=0.55 Runoff=0.0194 m³/s 0.029 MI

Subcatchment 2S: Post-Dev Site Area Runoff Area=1,956.0 m² 0.00% Impervious Runoff Depth=24 mm
Tc=10.0 min C=0.90 Runoff=0.0318 m³/s 0.048 MI

Pond 3P: P1 Storm Tank Peak Elev=100.065 m Storage=24.2 m³ Inflow=0.0318 m³/s 0.048 MI
Outflow=0.0194 m³/s 0.048 MI

Total Runoff Area = 0.3912 ha Runoff Volume = 0.077 MI Average Runoff Depth = 20 mm
100.00% Pervious = 0.3912 ha 0.00% Impervious = 0.0000 ha

Summary for Subcatchment 1S: Pre-Dev Area

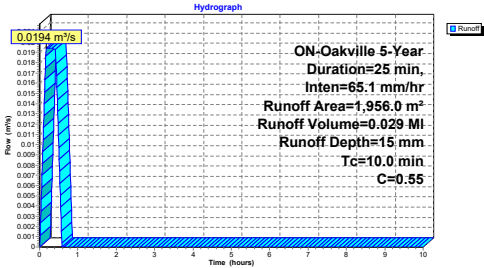
Runoff = 0.0194 m³/s @ 0.17 hrs, Volume= 0.029 MI, Depth= 15 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
ON-Oakville 5-Year Duration=25 min, Inten=65.1 mm/hr

Area (m²)	C	Description
900.0	0.90	
1,056.0	0.25	
1,956.0	0.55	Weighted Average
1,956.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 1S: Pre-Dev Area



Hydrograph for Subcatchment 1S: Pre-Dev Area

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	2.65	0.0000	5.30	0.0000	7.95	0.0000
0.05	0.0058	2.70	0.0000	5.35	0.0000	8.00	0.0000
0.10	0.0117	2.75	0.0000	5.40	0.0000	8.05	0.0000
0.15	0.0175	2.80	0.0000	5.45	0.0000	8.10	0.0000
0.20	0.0194	2.85	0.0000	5.50	0.0000	8.15	0.0000
0.25	0.0194	2.90	0.0000	5.55	0.0000	8.20	0.0000
0.30	0.0194	2.95	0.0000	5.60	0.0000	8.25	0.0000
0.35	0.0194	3.00	0.0000	5.65	0.0000	8.30	0.0000
0.40	0.0194	3.05	0.0000	5.70	0.0000	8.35	0.0000
0.45	0.0156	3.10	0.0000	5.75	0.0000	8.40	0.0000
0.50	0.0097	3.15	0.0000	5.80	0.0000	8.45	0.0000
0.55	0.0039	3.20	0.0000	5.85	0.0000	8.50	0.0000
0.60	0.0000	3.25	0.0000	5.90	0.0000	8.55	0.0000
0.65	0.0000	3.30	0.0000	5.95	0.0000	8.60	0.0000
0.70	0.0000	3.35	0.0000	6.00	0.0000	8.65	0.0000
0.75	0.0000	3.40	0.0000	6.05	0.0000	8.70	0.0000
0.80	0.0000	3.45	0.0000	6.10	0.0000	8.75	0.0000
0.85	0.0000	3.50	0.0000	6.15	0.0000	8.80	0.0000
0.90	0.0000	3.55	0.0000	6.20	0.0000	8.85	0.0000
0.95	0.0000	3.60	0.0000	6.25	0.0000	8.90	0.0000
1.00	0.0000	3.65	0.0000	6.30	0.0000	8.95	0.0000
1.05	0.0000	3.70	0.0000	6.35	0.0000	9.00	0.0000
1.10	0.0000	3.75	0.0000	6.40	0.0000	9.05	0.0000
1.15	0.0000	3.80	0.0000	6.45	0.0000	9.10	0.0000
1.20	0.0000	3.85	0.0000	6.50	0.0000	9.15	0.0000
1.25	0.0000	3.90	0.0000	6.55	0.0000	9.20	0.0000
1.30	0.0000	3.95	0.0000	6.60	0.0000	9.25	0.0000
1.35	0.0000	4.00	0.0000	6.65	0.0000	9.30	0.0000
1.40	0.0000	4.05	0.0000	6.70	0.0000	9.35	0.0000
1.45	0.0000	4.10	0.0000	6.75	0.0000	9.40	0.0000
1.50	0.0000	4.15	0.0000	6.80	0.0000	9.45	0.0000
1.55	0.0000	4.20	0.0000	6.85	0.0000	9.50	0.0000
1.60	0.0000	4.25	0.0000	6.90	0.0000	9.55	0.0000
1.65	0.0000	4.30	0.0000	6.95	0.0000	9.60	0.0000
1.70	0.0000	4.35	0.0000	7.00	0.0000	9.65	0.0000
1.75	0.0000	4.40	0.0000	7.05	0.0000	9.70	0.0000
1.80	0.0000	4.45	0.0000	7.10	0.0000	9.75	0.0000
1.85	0.0000	4.50	0.0000	7.15	0.0000	9.80	0.0000
1.90	0.0000	4.55	0.0000	7.20	0.0000	9.85	0.0000
1.95	0.0000	4.60	0.0000	7.25	0.0000	9.90	0.0000
2.00	0.0000	4.65	0.0000	7.30	0.0000	9.95	0.0000
2.05	0.0000	4.70	0.0000	7.35	0.0000	10.00	0.0000
2.10	0.0000	4.75	0.0000	7.40	0.0000		
2.15	0.0000	4.80	0.0000	7.45	0.0000		
2.20	0.0000	4.85	0.0000	7.50	0.0000		
2.25	0.0000	4.90	0.0000	7.55	0.0000		
2.30	0.0000	4.95	0.0000	7.60	0.0000		
2.35	0.0000	5.00	0.0000	7.65	0.0000		
2.40	0.0000	5.05	0.0000	7.70	0.0000		
2.45	0.0000	5.10	0.0000	7.75	0.0000		
2.50	0.0000	5.15	0.0000	7.80	0.0000		
2.55	0.0000	5.20	0.0000	7.85	0.0000		
2.60	0.0000	5.25	0.0000	7.90	0.0000		

Summary for Subcatchment 2S: Post-Dev Site Area

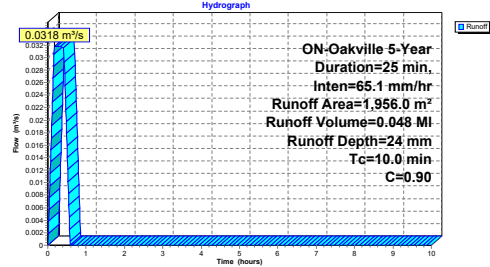
Runoff = 0.0318 m³/s @ 0.17 hrs, Volume= 0.048 MI, Depth= 24 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
ON-Oakville 5-Year Duration=25 min, Inten=65.1 mm/hr

Area (m²)	C	Description
1,956.0	0.90	
1,956.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 2S: Post-Dev Site Area



Hydrograph for Subcatchment 2S: Post-Dev Site Area

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	2.65	0.0000	5.30	0.0000	7.95	0.0000
0.05	0.0095	2.70	0.0000	5.35	0.0000	8.00	0.0000
0.10	0.0191	2.75	0.0000	5.40	0.0000	8.05	0.0000
0.15	0.0286	2.80	0.0000	5.45	0.0000	8.10	0.0000
0.20	0.0318	2.85	0.0000	5.50	0.0000	8.15	0.0000
0.25	0.0318	2.90	0.0000	5.55	0.0000	8.20	0.0000
0.30	0.0318	2.95	0.0000	5.60	0.0000	8.25	0.0000
0.35	0.0318	3.00	0.0000	5.65	0.0000	8.30	0.0000
0.40	0.0318	3.05	0.0000	5.70	0.0000	8.35	0.0000
0.45	0.0255	3.10	0.0000	5.75	0.0000	8.40	0.0000
0.50	0.0159	3.15	0.0000	5.80	0.0000	8.45	0.0000
0.55	0.0064	3.20	0.0000	5.85	0.0000	8.50	0.0000
0.60	0.0000	3.25	0.0000	5.90	0.0000	8.55	0.0000
0.65	0.0000	3.30	0.0000	5.95	0.0000	8.60	0.0000
0.70	0.0000	3.35	0.0000	6.00	0.0000	8.65	0.0000
0.75	0.0000	3.40	0.0000	6.05	0.0000	8.70	0.0000
0.80	0.0000	3.45	0.0000	6.10	0.0000	8.75	0.0000
0.85	0.0000	3.50	0.0000	6.15	0.0000	8.80	0.0000
0.90	0.0000	3.55	0.0000	6.20	0.0000	8.85	0.0000
0.95	0.0000	3.60	0.0000	6.25	0.0000	8.90	0.0000
1.00	0.0000	3.65	0.0000	6.30	0.0000	8.95	0.0000
1.05	0.0000	3.70	0.0000	6.35	0.0000	9.00	0.0000
1.10	0.0000	3.75	0.0000	6.40	0.0000	9.05	0.0000
1.15	0.0000	3.80	0.0000	6.45	0.0000	9.10	0.0000
1.20	0.0000	3.85	0.0000	6.50	0.0000	9.15	0.0000
1.25	0.0000	3.90	0.0000	6.55	0.0000	9.20	0.0000
1.30	0.0000	3.95	0.0000	6.60	0.0000	9.25	0.0000
1.35	0.0000	4.00	0.0000	6.65	0.0000	9.30	0.0000
1.40	0.0000	4.05	0.0000	6.70	0.0000	9.35	0.0000
1.45	0.0000	4.10	0.0000	6.75	0.0000	9.40	0.0000
1.50	0.0000	4.15	0.0000	6.80	0.0000	9.45	0.0000
1.55	0.0000	4.20	0.0000	6.85	0.0000	9.50	0.0000
1.60	0.0000	4.25	0.0000	6.90	0.0000	9.55	0.0000
1.65	0.0000	4.30	0.0000	6.95	0.0000	9.60	0.0000
1.70	0.0000	4.35	0.0000	7.00	0.0000	9.65	0.0000
1.75	0.0000	4.40	0.0000	7.05	0.0000	9.70	0.0000
1.80	0.0000	4.45	0.0000	7.10	0.0000	9.75	0.0000
1.85	0.0000	4.50	0.0000	7.15	0.0000	9.80	0.0000
1.90	0.0000	4.55	0.0000	7.20	0.0000	9.85	0.0000
1.95	0.0000	4.60	0.0000	7.25	0.0000	9.90	0.0000
2.00	0.0000	4.65	0.0000	7.30	0.0000	9.95	0.0000
2.05	0.0000	4.70	0.0000	7.35	0.0000	10.00	0.0000
2.10	0.0000	4.75	0.0000	7.40	0.0000		
2.15	0.0000	4.80	0.0000	7.45	0.0000		
2.20	0.0000	4.85	0.0000	7.50	0.0000		
2.25	0.0000	4.90	0.0000	7.55	0.0000		
2.30	0.0000	4.95	0.0000	7.60	0.0000		
2.35	0.0000	5.00	0.0000	7.65	0.0000		
2.40	0.0000	5.05	0.0000	7.70	0.0000		
2.45	0.0000	5.10	0.0000	7.75	0.0000		
2.50	0.0000	5.15	0.0000	7.80	0.0000		
2.55	0.0000	5.20	0.0000	7.85	0.0000		
2.60	0.0000	5.25	0.0000	7.90	0.0000		

Summary for Pond 3P: P1 Storm Tank

Inflow Area = 0.1956 ha, 0.00% Impervious, Inflow Depth = 24 mm for 5-Year event
Inflow = 0.0318 m³/s @ 0.17 hrs, Volume= 0.048 MI
Outflow = 0.0186 m³/s @ 0.49 hrs, Volume= 0.048 MI, Atten= 42%, Lag= 19.0 min
Primary = 0.0186 m³/s @ 0.49 hrs, Volume= 0.048 MI

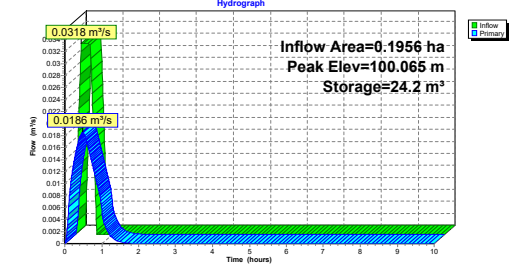
Routing by Stor-Ind method, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
Peak Elev= 100.065 m @ 0.49 hrs Surf.Area= 74.4 m² Storage= 24.2 m³
Plug-Flow detention time= 16.5 min calculated for 0.048 MI (100% of inflow)
Center-of-Mass det. time= 16.6 min (34.1 - 17.5)

Volume	Invert	Avail.Storage	Storage Description
#1	99.740 m	207.6 m³	Custom Stage Data (Prismatic) listed below (Recalc)
Elevation (meters)	Surf.Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
99.740	74.4	0.0	0.0
102.530	74.4	207.6	207.6

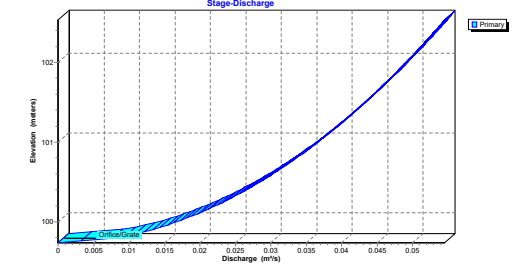
Device	Routing	Invert	Outlet Devices
#1	Primary	99.740 m	125 mm Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.0186 m³/s @ 0.49 hrs HW=100.065 m (Free Discharge)
1-Orifice/Grate (Orifice Controls 0.0186 m³/s @ 1.52 m/s)

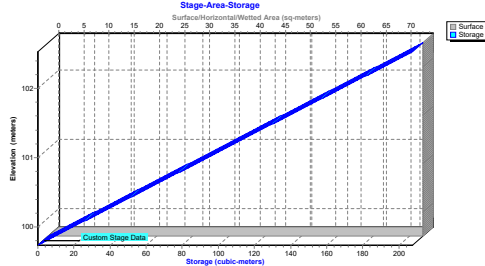
Pond 3P: P1 Storm Tank



Pond 3P: P1 Storm Tank



Pond 3P: P1 Storm Tank



Hydrograph for Pond 3P: P1 Storm Tank

Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	99.740	0.0000
0.20	0.0318	9.6	99.869	0.0117
0.40	0.0318	21.7	100.051	0.0178
0.60	0.0000	20.1	100.010	0.0169
0.80	0.0000	9.7	99.871	0.0118
1.00	0.0000	3.2	99.783	0.0058
1.20	0.0000	1.0	99.753	0.0016
1.40	0.0000	0.3	99.744	0.0005
1.60	0.0000	0.1	99.741	0.0002
1.80	0.0000	0.0	99.740	0.0001
2.00	0.0000	0.0	99.740	0.0000
2.20	0.0000	0.0	99.740	0.0000
2.40	0.0000	0.0	99.740	0.0000
2.60	0.0000	0.0	99.740	0.0000
2.80	0.0000	0.0	99.740	0.0000
3.00	0.0000	0.0	99.740	0.0000
3.20	0.0000	0.0	99.740	0.0000
3.40	0.0000	0.0	99.740	0.0000
3.60	0.0000	0.0	99.740	0.0000
3.80	0.0000	0.0	99.740	0.0000
4.00	0.0000	0.0	99.740	0.0000
4.20	0.0000	0.0	99.740	0.0000
4.40	0.0000	0.0	99.740	0.0000
4.60	0.0000	0.0	99.740	0.0000
4.80	0.0000	0.0	99.740	0.0000
5.00	0.0000	0.0	99.740	0.0000
5.20	0.0000	0.0	99.740	0.0000
5.40	0.0000	0.0	99.740	0.0000
5.60	0.0000	0.0	99.740	0.0000
5.80	0.0000	0.0	99.740	0.0000
6.00	0.0000	0.0	99.740	0.0000
6.20	0.0000	0.0	99.740	0.0000
6.40	0.0000	0.0	99.740	0.0000
6.60	0.0000	0.0	99.740	0.0000
6.80	0.0000	0.0	99.740	0.0000
7.00	0.0000	0.0	99.740	0.0000
7.20	0.0000	0.0	99.740	0.0000
7.40	0.0000	0.0	99.740	0.0000
7.60	0.0000	0.0	99.740	0.0000
7.80	0.0000	0.0	99.740	0.0000
8.00	0.0000	0.0	99.740	0.0000
8.20	0.0000	0.0	99.740	0.0000
8.40	0.0000	0.0	99.740	0.0000
8.60	0.0000	0.0	99.740	0.0000
8.80	0.0000	0.0	99.740	0.0000
9.00	0.0000	0.0	99.740	0.0000
9.20	0.0000	0.0	99.740	0.0000
9.40	0.0000	0.0	99.740	0.0000
9.60	0.0000	0.0	99.740	0.0000
9.80	0.0000	0.0	99.740	0.0000
10.00	0.0000	0.0	99.740	0.0000

Stage-Discharge for Pond 3P: P1 Storm Tank

Elevation (meters)	Primary (m³/s)	Elevation (meters)	Primary (m³/s)	Elevation (meters)	Primary (m³/s)
99.740	0.0000	100.800	0.0336	101.860	0.0475
99.760	0.0020	100.820	0.0339	101.880	0.0477
99.780	0.0057	100.840	0.0342	101.900	0.0479
99.800	0.0080	100.860	0.0345	101.920	0.0482
99.820	0.0092	100.880	0.0348	101.940	0.0484
99.840	0.0103	100.900	0.0351	101.960	0.0486
99.860	0.0113	100.920	0.0354	101.980	0.0488
99.880	0.0122	100.940	0.0357	102.000	0.0490
99.900	0.0130	100.960	0.0360	102.020	0.0492
99.920	0.0138	100.980	0.0363	102.040	0.0495
99.940	0.0146	101.000	0.0366	102.060	0.0497
99.960	0.0153	101.020	0.0369	102.080	0.0499
99.980	0.0160	101.040	0.0372	102.100	0.0501
100.000	0.0166	101.060	0.0375	102.120	0.0503
100.020	0.0173	101.080	0.0378	102.140	0.0505
100.040	0.0179	101.100	0.0380	102.160	0.0507
100.060	0.0184	101.120	0.0383	102.180	0.0509
100.080	0.0190	101.140	0.0386	102.200	0.0512
100.100	0.0196	101.160	0.0389	102.220	0.0514
100.120	0.0201	101.180	0.0391	102.240	0.0516
100.140	0.0206	101.200	0.0394	102.260	0.0518
100.160	0.0211	101.220	0.0397	102.280	0.0520
100.180	0.0216	101.240	0.0399	102.300	0.0522
100.200	0.0221	101.260	0.0402	102.320	0.0524
100.220	0.0226	101.280	0.0405	102.340	0.0526
100.240	0.0231	101.300	0.0407	102.360	0.0528
100.260	0.0235	101.320	0.0410	102.380	0.0530
100.280	0.0240	101.340	0.0413	102.400	0.0532
100.300	0.0244	101.360	0.0415	102.420	0.0534
100.320	0.0248	101.380	0.0418	102.440	0.0536
100.340	0.0253	101.400	0.0420	102.460	0.0538
100.360	0.0257	101.420	0.0423	102.480	0.0540
100.380	0.0261	101.440	0.0425	102.500	0.0542
100.400	0.0265	101.460	0.0428	102.520	0.0544
100.420	0.0269	101.480	0.0430		
100.440	0.0273	101.500	0.0433		
100.460	0.0277	101.520	0.0435		
100.480	0.0281	101.540	0.0438		
100.500	0.0284	101.560	0.0440		
100.520	0.0288	101.580	0.0442		
100.540	0.0292	101.600	0.0445		
100.560	0.0295	101.620	0.0447		
100.580	0.0299	101.640	0.0450		
100.600	0.0302	101.660	0.0452		
100.620	0.0306	101.680	0.0454		
100.640	0.0309	101.700	0.0457		
100.660	0.0313	101.720	0.0459		
100.680	0.0316	101.740	0.0461		
100.700	0.0320	101.760	0.0464		
100.720	0.0323	101.780	0.0466		
100.740	0.0326	101.800	0.0468		
100.760	0.0329	101.820	0.0470		
100.780	0.0333	101.840	0.0473		

Stage-Area-Storage for Pond 3P: P1 Storm Tank

Elevation (meters)	Surface (sq-meters)	Storage (cubic-meters)	Elevation (meters)	Surface (sq-meters)	Storage (cubic-meters)
99.740	74.4	0.0	102.390	74.4	197.2
99.790	74.4	3.7	102.440	74.4	200.9
99.840	74.4	7.4	102.490	74.4	204.6
99.890	74.4	11.2			
99.940	74.4	14.9			
99.990	74.4	18.6			
100.040	74.4	22.3			
100.090	74.4	26.0			
100.140	74.4	29.8			
100.190	74.4	33.5			
100.240	74.4	37.2			
100.290	74.4	40.9			
100.340	74.4	44.6			
100.390	74.4	48.4			
100.440	74.4	52.1			
100.490	74.4	55.8			
100.540	74.4	59.5			
100.590	74.4	63.2			
100.640	74.4	67.0			
100.690	74.4	70.7			
100.740	74.4	74.4			
100.790	74.4	78.1			
100.840	74.4	81.8			
100.890	74.4	85.6			
100.940	74.4	89.3			
100.990	74.4	93.0			
101.040	74.4	96.7			
101.090	74.4	100.4			
101.140	74.4	104.2			
101.190	74.4	107.9			
101.240	74.4	111.6			
101.290	74.4	115.3			
101.340	74.4	119.0			
101.390	74.4	122.8			
101.440	74.4	126.5			
101.490	74.4	130.2			
101.540	74.4	133.9			
101.590	74.4	137.6			
101.640	74.4	141.4			
101.690	74.4	145.1			
101.740	74.4	148.8			
101.790	74.4	152.5			
101.840	74.4	156.2			
101.890	74.4	160.0			
101.940	74.4	163.7			
101.990	74.4	167.4			
102.040	74.4	171.1			
102.090	74.4	174.8			
102.140	74.4	178.6			
102.190	74.4	182.3			
102.240	74.4	186.0			
102.290	74.4	189.7			
102.340	74.4	193.4			

Time span=0.00-10.00 hrs, dt=0.01 hrs, 1001 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Dev Area Runoff Area=1,956.0 m² 0.00% Impervious Runoff Depth=18 mm
Tc=10.0 min C=0.55 Runoff=0.0229 m³/s 0.034 MI

Subcatchment 2S: Post-Dev Site Area Runoff Area=1,956.0 m² 0.00% Impervious Runoff Depth=29 mm
Tc=10.0 min C=0.90 Runoff=0.0374 m³/s 0.056 MI

Pond 3P: P1 Storm Tank Peak Elev=100.142 m Storage=29.9 m³ Inflow=0.0374 m³/s 0.056 MI
Outflow=0.0207 m³/s 0.056 MI

Total Runoff Area = 0.3912 ha Runoff Volume = 0.090 MI Average Runoff Depth = 23 mm
100.00% Pervious = 0.3912 ha 0.00% Impervious = 0.0000 ha

Summary for Subcatchment 1S: Pre-Dev Area

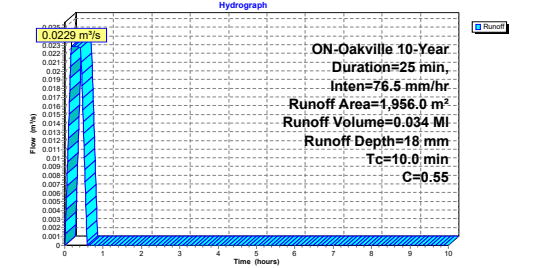
Runoff = 0.0229 m³/s @ 0.17 hrs, Volume= 0.034 MI, Depth= 18 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
ON-Oakville 10-Year Duration=25 min, Inten=76.5 mm/hr

Area (m ²)	C	Description
900.0	0.90	
1,056.0	0.25	
1,956.0	0.55	Weighted Average
1,956.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 1S: Pre-Dev Area



Hydrograph for Subcatchment 1S: Pre-Dev Area

Time (hours)	Runoff (m ³ /s)	Time (hours)	Runoff (m ³ /s)	Time (hours)	Runoff (m ³ /s)	Time (hours)	Runoff (m ³ /s)
0.00	0.0000	2.65	0.0000	5.30	0.0000	7.95	0.0000
0.05	0.0069	2.70	0.0000	5.35	0.0000	8.00	0.0000
0.10	0.0137	2.75	0.0000	5.40	0.0000	8.05	0.0000
0.15	0.0205	2.80	0.0000	5.45	0.0000	8.10	0.0000
0.20	0.0229	2.85	0.0000	5.50	0.0000	8.15	0.0000
0.25	0.0229	2.90	0.0000	5.55	0.0000	8.20	0.0000
0.30	0.0229	2.95	0.0000	5.60	0.0000	8.25	0.0000
0.35	0.0229	3.00	0.0000	5.65	0.0000	8.30	0.0000
0.40	0.0229	3.05	0.0000	5.70	0.0000	8.35	0.0000
0.45	0.0183	3.10	0.0000	5.75	0.0000	8.40	0.0000
0.50	0.0114	3.15	0.0000	5.80	0.0000	8.45	0.0000
0.55	0.0046	3.20	0.0000	5.85	0.0000	8.50	0.0000
0.60	0.0000	3.25	0.0000	5.90	0.0000	8.55	0.0000
0.65	0.0000	3.30	0.0000	5.95	0.0000	8.60	0.0000
0.70	0.0000	3.35	0.0000	6.00	0.0000	8.65	0.0000
0.75	0.0000	3.40	0.0000	6.05	0.0000	8.70	0.0000
0.80	0.0000	3.45	0.0000	6.10	0.0000	8.75	0.0000
0.85	0.0000	3.50	0.0000	6.15	0.0000	8.80	0.0000
0.90	0.0000	3.55	0.0000	6.20	0.0000	8.85	0.0000
0.95	0.0000	3.60	0.0000	6.25	0.0000	8.90	0.0000
1.00	0.0000	3.65	0.0000	6.30	0.0000	8.95	0.0000
1.05	0.0000	3.70	0.0000	6.35	0.0000	9.00	0.0000
1.10	0.0000	3.75	0.0000	6.40	0.0000	9.05	0.0000
1.15	0.0000	3.80	0.0000	6.45	0.0000	9.10	0.0000
1.20	0.0000	3.85	0.0000	6.50	0.0000	9.15	0.0000
1.25	0.0000	3.90	0.0000	6.55	0.0000	9.20	0.0000
1.30	0.0000	3.95	0.0000	6.60	0.0000	9.25	0.0000
1.35	0.0000	4.00	0.0000	6.65	0.0000	9.30	0.0000
1.40	0.0000	4.05	0.0000	6.70	0.0000	9.35	0.0000
1.45	0.0000	4.10	0.0000	6.75	0.0000	9.40	0.0000
1.50	0.0000	4.15	0.0000	6.80	0.0000	9.45	0.0000
1.55	0.0000	4.20	0.0000	6.85	0.0000	9.50	0.0000
1.60	0.0000	4.25	0.0000	6.90	0.0000	9.55	0.0000
1.65	0.0000	4.30	0.0000	6.95	0.0000	9.60	0.0000
1.70	0.0000	4.35	0.0000	7.00	0.0000	9.65	0.0000
1.75	0.0000	4.40	0.0000	7.05	0.0000	9.70	0.0000
1.80	0.0000	4.45	0.0000	7.10	0.0000	9.75	0.0000
1.85	0.0000	4.50	0.0000	7.15	0.0000	9.80	0.0000
1.90	0.0000	4.55	0.0000	7.20	0.0000	9.85	0.0000
1.95	0.0000	4.60	0.0000	7.25	0.0000	9.90	0.0000
2.00	0.0000	4.65	0.0000	7.30	0.0000	9.95	0.0000
2.05	0.0000	4.70	0.0000	7.35	0.0000	10.00	0.0000
2.10	0.0000	4.75	0.0000	7.40	0.0000		
2.15	0.0000	4.80	0.0000	7.45	0.0000		
2.20	0.0000	4.85	0.0000	7.50	0.0000		
2.25	0.0000	4.90	0.0000	7.55	0.0000		
2.30	0.0000	4.95	0.0000	7.60	0.0000		
2.35	0.0000	5.00	0.0000	7.65	0.0000		
2.40	0.0000	5.05	0.0000	7.70	0.0000		
2.45	0.0000	5.10	0.0000	7.75	0.0000		
2.50	0.0000	5.15	0.0000	7.80	0.0000		
2.55	0.0000	5.20	0.0000	7.85	0.0000		
2.60	0.0000	5.25	0.0000	7.90	0.0000		

Summary for Subcatchment 2S: Post-Dev Site Area

Runoff = 0.0374 m³/s @ 0.17 hrs, Volume= 0.056 MI, Depth= 29 mm

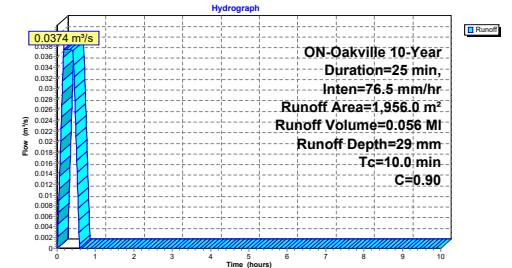
Routed to Pond 3P: P1 Storm Tank

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
ON-Oakville 10-Year Duration=25 min, Inten=76.5 mm/hr

Area (m ²)	C	Description
1,956.0	0.90	
1,956.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 2S: Post-Dev Site Area



Hydrograph for Subcatchment 2S: Post-Dev Site Area

Time (hours)	Runoff (m ³ /s)	Time (hours)	Runoff (m ³ /s)	Time (hours)	Runoff (m ³ /s)	Time (hours)	Runoff (m ³ /s)
0.00	0.0000	2.65	0.0000	5.30	0.0000	7.95	0.0000
0.05	0.0112	2.70	0.0000	5.35	0.0000	8.00	0.0000
0.10	0.0225	2.75	0.0000	5.40	0.0000	8.05	0.0000
0.15	0.0337	2.80	0.0000	5.45	0.0000	8.10	0.0000
0.20	0.0374	2.85	0.0000	5.50	0.0000	8.15	0.0000
0.25	0.0374	2.90	0.0000	5.55	0.0000	8.20	0.0000
0.30	0.0374	2.95	0.0000	5.60	0.0000	8.25	0.0000
0.35	0.0374	3.00	0.0000	5.65	0.0000	8.30	0.0000
0.40	0.0374	3.05	0.0000	5.70	0.0000	8.35	0.0000
0.45	0.0299	3.10	0.0000	5.75	0.0000	8.40	0.0000
0.50	0.0187	3.15	0.0000	5.80	0.0000	8.45	0.0000
0.55	0.0075	3.20	0.0000	5.85	0.0000	8.50	0.0000
0.60	0.0000	3.25	0.0000	5.90	0.0000	8.55	0.0000
0.65	0.0000	3.30	0.0000	5.95	0.0000	8.60	0.0000
0.70	0.0000	3.35	0.0000	6.00	0.0000	8.65	0.0000
0.75	0.0000	3.40	0.0000	6.05	0.0000	8.70	0.0000
0.80	0.0000	3.45	0.0000	6.10	0.0000	8.75	0.0000
0.85	0.0000	3.50	0.0000	6.15	0.0000	8.80	0.0000
0.90	0.0000	3.55	0.0000	6.20	0.0000	8.85	0.0000
0.95	0.0000	3.60	0.0000	6.25	0.0000	8.90	0.0000
1.00	0.0000	3.65	0.0000	6.30	0.0000	8.95	0.0000
1.05	0.0000	3.70	0.0000	6.35	0.0000	9.00	0.0000
1.10	0.0000	3.75	0.0000	6.40	0.0000	9.05	0.0000
1.15	0.0000	3.80	0.0000	6.45	0.0000	9.10	0.0000
1.20	0.0000	3.85	0.0000	6.50	0.0000	9.15	0.0000
1.25	0.0000	3.90	0.0000	6.55	0.0000	9.20	0.0000
1.30	0.0000	3.95	0.0000	6.60	0.0000	9.25	0.0000
1.35	0.0000	4.00	0.0000	6.65	0.0000	9.30	0.0000
1.40	0.0000	4.05	0.0000	6.70	0.0000	9.35	0.0000
1.45	0.0000	4.10	0.0000	6.75	0.0000	9.40	0.0000
1.50	0.0000	4.15	0.0000	6.80	0.0000	9.45	0.0000
1.55	0.0000	4.20	0.0000	6.85	0.0000	9.50	0.0000
1.60	0.0000	4.25	0.0000	6.90	0.0000	9.55	0.0000
1.65	0.0000	4.30	0.0000	6.95	0.0000	9.60	0.0000
1.70	0.0000	4.35	0.0000	7.00	0.0000	9.65	0.0000
1.75	0.0000	4.40	0.0000	7.05	0.0000	9.70	0.0000
1.80	0.0000	4.45	0.0000	7.10	0.0000	9.75	0.0000
1.85	0.0000	4.50	0.0000	7.15	0.0000	9.80	0.0000
1.90	0.0000	4.55	0.0000	7.20	0.0000	9.85	0.0000
1.95	0.0000	4.60	0.0000	7.25	0.0000	9.90	0.0000
2.00	0.0000	4.65	0.0000	7.30	0.0000	9.95	0.0000
2.05	0.0000	4.70	0.0000	7.35	0.0000	10.00	0.0000
2.10	0.0000	4.75	0.0000	7.40	0.0000		
2.15	0.0000	4.80	0.0000	7.45	0.0000		
2.20	0.0000	4.85	0.0000	7.50	0.0000		
2.25	0.0000	4.90	0.0000	7.55	0.0000		
2.30	0.0000	4.95	0.0000	7.60	0.0000		
2.35	0.0000	5.00	0.0000	7.65	0.0000		
2.40	0.0000	5.05	0.0000	7.70	0.0000		
2.45	0.0000	5.10	0.0000	7.75	0.0000		
2.50	0.0000	5.15	0.0000	7.80	0.0000		
2.55	0.0000	5.20	0.0000	7.85	0.0000		
2.60	0.0000	5.25	0.0000	7.90	0.0000		

Summary for Pond 3P: P1 Storm Tank

Inflow Area = 0.1956 ha, 0.00% Impervious, Inflow Depth = 29 mm for 10-Year event
Inflow = 0.0374 m³/s @ 0.17 hrs, Volume= 0.056 MI
Outflow = 0.0207 m³/s @ 0.49 hrs, Volume= 0.056 MI, Atten= 45%, Lag= 19.3 min
Primary = 0.0207 m³/s @ 0.49 hrs, Volume= 0.056 MI

Routing by Stor-Ind method, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
Peak Elev= 100.142 m @ 0.49 hrs Surf.Area= 74.4 m² Storage= 29.9 m³

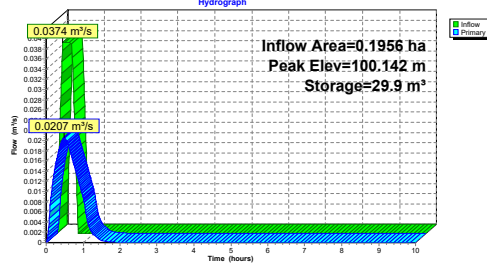
Plug-Flow detention time= 18.1 min calculated for 0.056 MI (100% of inflow)
Center-of-Mass det. time= 18.1 min (35.7 - 17.5)

Volume	Invert	Avail.Storage	Storage Description
#1	99.740 m	207.6 m³	Custom Stage Data (Prismatic), Listed below (Recalc)
Elevation (meters)	Surf Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
99.740	74.4	0.0	0.0
102.530	74.4	207.6	207.6

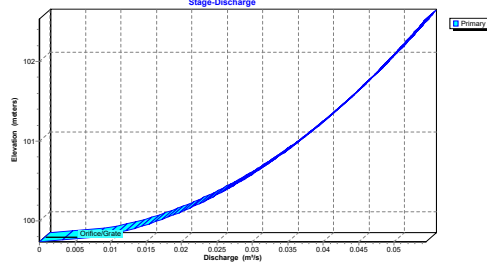
Device	Routing	Invert	Outlet Devices
#1	Primary	99.740 m	125 mm Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.0207 m³/s @ 0.49 hrs HW=100.142 m (Free Discharge)
└─1=Orifice/Grate (Orifice Controls 0.0207 m³/s @ 1.68 m/s)

Pond 3P: P1 Storm Tank



Pond 3P: P1 Storm Tank



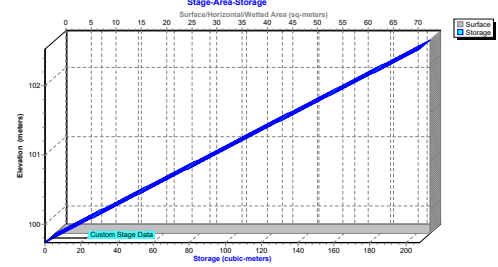
Hydrograph for Pond 3P: P1 Storm Tank

Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	99.740	0.0000
0.20	0.0374	11.5	99.894	0.0128
0.40	0.0374	25.4	100.096	0.0195
0.60	0.0000	25.4	100.032	0.0191
0.80	0.0000	13.6	99.922	0.0139
1.00	0.0000	5.4	99.813	0.0087
1.20	0.0000	1.6	99.761	0.0025
1.40	0.0000	0.5	99.747	0.0008
1.60	0.0000	0.2	99.742	0.0003
1.80	0.0000	0.1	99.741	0.0001
2.00	0.0000	0.0	99.740	0.0000
2.20	0.0000	0.0	99.740	0.0000
2.40	0.0000	0.0	99.740	0.0000
2.60	0.0000	0.0	99.740	0.0000
2.80	0.0000	0.0	99.740	0.0000
3.00	0.0000	0.0	99.740	0.0000
3.20	0.0000	0.0	99.740	0.0000
3.40	0.0000	0.0	99.740	0.0000
3.60	0.0000	0.0	99.740	0.0000
3.80	0.0000	0.0	99.740	0.0000
4.00	0.0000	0.0	99.740	0.0000
4.20	0.0000	0.0	99.740	0.0000
4.40	0.0000	0.0	99.740	0.0000
4.60	0.0000	0.0	99.740	0.0000
4.80	0.0000	0.0	99.740	0.0000
5.00	0.0000	0.0	99.740	0.0000
5.20	0.0000	0.0	99.740	0.0000
5.40	0.0000	0.0	99.740	0.0000
5.60	0.0000	0.0	99.740	0.0000
5.80	0.0000	0.0	99.740	0.0000
6.00	0.0000	0.0	99.740	0.0000
6.20	0.0000	0.0	99.740	0.0000
6.40	0.0000	0.0	99.740	0.0000
6.60	0.0000	0.0	99.740	0.0000
6.80	0.0000	0.0	99.740	0.0000
7.00	0.0000	0.0	99.740	0.0000
7.20	0.0000	0.0	99.740	0.0000
7.40	0.0000	0.0	99.740	0.0000
7.60	0.0000	0.0	99.740	0.0000
7.80	0.0000	0.0	99.740	0.0000
8.00	0.0000	0.0	99.740	0.0000
8.20	0.0000	0.0	99.740	0.0000
8.40	0.0000	0.0	99.740	0.0000
8.60	0.0000	0.0	99.740	0.0000
8.80	0.0000	0.0	99.740	0.0000
9.00	0.0000	0.0	99.740	0.0000
9.20	0.0000	0.0	99.740	0.0000
9.40	0.0000	0.0	99.740	0.0000
9.60	0.0000	0.0	99.740	0.0000
9.80	0.0000	0.0	99.740	0.0000
10.00	0.0000	0.0	99.740	0.0000

Stage-Discharge for Pond 3P: P1 Storm Tank

Elevation (meters)	Primary (m³/s)	Elevation (meters)	Primary (m³/s)	Elevation (meters)	Primary (m³/s)
99.740	0.0000	100.800	0.0336	101.960	0.0475
99.760	0.0020	100.820	0.0339	101.880	0.0477
99.780	0.0057	100.840	0.0342	101.800	0.0479
99.800	0.0090	100.860	0.0345	101.720	0.0482
99.820	0.0092	100.880	0.0348	101.640	0.0484
99.840	0.0103	100.900	0.0351	101.560	0.0486
99.860	0.0113	100.920	0.0354	101.480	0.0488
99.880	0.0122	100.940	0.0357	102.000	0.0490
99.900	0.0130	100.960	0.0360	102.020	0.0492
99.920	0.0138	100.980	0.0363	102.040	0.0495
99.940	0.0146	101.000	0.0366	102.060	0.0497
99.960	0.0153	101.020	0.0369	102.080	0.0499
99.980	0.0160	101.040	0.0372	102.100	0.0501
100.000	0.0166	101.060	0.0375	102.120	0.0503
100.020	0.0173	101.080	0.0378	102.140	0.0505
100.040	0.0179	101.100	0.0380	102.160	0.0507
100.060	0.0184	101.120	0.0383	102.180	0.0509
100.080	0.0190	101.140	0.0386	102.200	0.0512
100.100	0.0196	101.160	0.0389	102.220	0.0514
100.120	0.0201	101.180	0.0391	102.240	0.0516
100.140	0.0206	101.200	0.0394	102.260	0.0518
100.160	0.0211	101.220	0.0397	102.280	0.0520
100.180	0.0216	101.240	0.0399	102.300	0.0522
100.200	0.0221	101.260	0.0402	102.320	0.0524
100.220	0.0226	101.280	0.0405	102.340	0.0526
100.240	0.0231	101.300	0.0407	102.360	0.0528
100.260	0.0235	101.320	0.0410	102.380	0.0530
100.280	0.0240	101.340	0.0413	102.400	0.0532
100.300	0.0244	101.360	0.0415	102.420	0.0534
100.320	0.0248	101.380	0.0418	102.440	0.0536
100.340	0.0253	101.400	0.0420	102.460	0.0538
100.360	0.0257	101.420	0.0423	102.480	0.0540
100.380	0.0261	101.440	0.0425	102.500	0.0542
100.400	0.0265	101.460	0.0428	102.520	0.0544
100.420	0.0269	101.480	0.0430		
100.440	0.0273	101.500	0.0433		
100.460	0.0277	101.520	0.0435		
100.480	0.0281	101.540	0.0438		
100.500	0.0284	101.560	0.0440		
100.520	0.0288	101.580	0.0442		
100.540	0.0292	101.600	0.0445		
100.560	0.0295	101.620	0.0447		
100.580	0.0299	101.640	0.0450		
100.600	0.0302	101.660	0.0452		
100.620	0.0306	101.680	0.0454		
100.640	0.0309	101.700	0.0457		
100.660	0.0313	101.720	0.0459		
100.680	0.0316	101.740	0.0461		
100.700	0.0320	101.760	0.0464		
100.720	0.0323	101.780	0.0466		
100.740	0.0326	101.800	0.0468		
100.760	0.0329	101.820	0.0470		
100.780	0.0333	101.840	0.0473		

Pond 3P: P1 Storm Tank



Stage-Area-Storage for Pond 3P: P1 Storm Tank

Elevation (meters)	Surface (sq-meters)	Storage (cubic-meters)	Elevation (meters)	Surface (sq-meters)	Storage (cubic-meters)
99.740	74.4	0.0	102.360	74.4	197.2
99.790	74.4	3.7	102.440	74.4	200.9
99.840	74.4	7.4	102.490	74.4	204.6
99.890	74.4	11.2			
99.940	74.4	14.9			
99.990	74.4	18.6			
100.040	74.4	22.3			
100.090	74.4	26.0			
100.140	74.4	29.8			
100.190	74.4	33.5			
100.240	74.4	37.2			
100.290	74.4	40.9			
100.340	74.4	44.6			
100.390	74.4	48.4			
100.440	74.4	52.1			
100.490	74.4	55.8			
100.540	74.4	59.5			
100.590	74.4	63.2			
100.640	74.4	67.0			
100.690	74.4	70.7			
100.740	74.4	74.4			
100.790	74.4	78.1			
100.840	74.4	81.8			
100.890	74.4	85.6			
100.940	74.4	89.3			
100.990	74.4	93.0			
101.040	74.4	96.7			
101.090	74.4	100.3			
101.140	74.4	104.2			
101.190	74.4	107.9			
101.240	74.4	111.6			
101.290	74.4	115.3			
101.340	74.4	119.0			
101.390	74.4	122.8			
101.440	74.4	126.5			
101.490	74.4	130.2			
101.540	74.4	133.9			
101.590	74.4	137.6			
101.640	74.4	141.4			
101.690	74.4	145.1			
101.740	74.4	148.8			
101.790	74.4	152.5			
101.840	74.4	156.2			
101.890	74.4	160.0			
101.940	74.4	163.7			
101.990	74.4	167.4			
102.040	74.4	171.1			
102.090	74.4	174.8			
102.140	74.4	178.6			
102.190	74.4	182.3			
102.240	74.4	186.0			
102.290	74.4	189.7			
102.340	74.4	193.4			

Time span=0.00-10.00 hrs, dt=0.01 hrs, 1001 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Dev Area Runoff Area=1,956.0 m² 0.00% Impervious Runoff Depth=23 mm
Tc=10.0 min Frequency Adjusted C=0.61 Runoff=0.0303 m³/s 0.045 MI

Subcatchment 2S: Post-Dev Site Area Runoff Area=1,956.0 m² 0.00% Impervious Runoff Depth=38 mm
Tc=10.0 min Frequency Adjusted C=0.99 Runoff=0.0492 m³/s 0.074 MI

Pond 3P: P1 Storm Tank Peak Elev=100.309 m Storage=42.3 m³ Inflow=0.0492 m³/s 0.074 MI
Outflow=0.0246 m³/s 0.074 MI

Total Runoff Area = 0.3912 ha Runoff Volume = 0.119 MI Average Runoff Depth = 30 mm
100.00% Pervious = 0.3912 ha 0.00% Impervious = 0.0000 ha

Summary for Subcatchment 1S: Pre-Dev Area

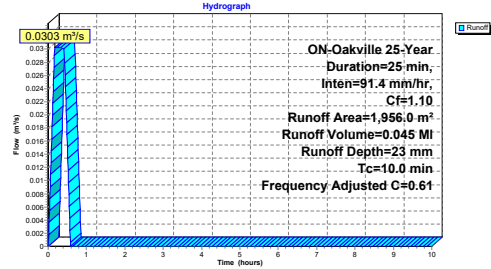
Runoff = 0.0303 m³/s @ 0.17 hrs, Volume= 0.045 MI, Depth= 23 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
ON-Oakville 25-Year Duration=25 min, Inten=91.4 mm/hr, Cf=1.10

Area (m ²)	C	Adj	Description
900.0	0.90		
1,056.0	0.25		
1,956.0	0.55	0.61	Weighted Average, Frequency Adjusted
1,956.0			100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 1S: Pre-Dev Area



Summary for Subcatchment 2S: Post-Dev Site Area

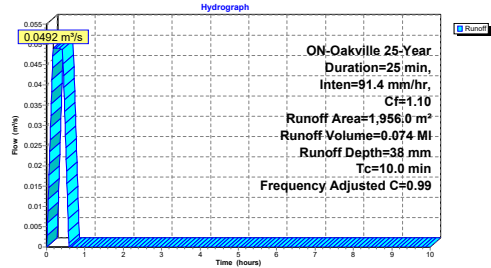
Runoff = 0.0492 m³/s @ 0.17 hrs, Volume= 0.074 MI, Depth= 38 mm
Routed to Pond 3P : P1 Storm Tank

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
ON-Oakville 25-Year Duration=25 min, Inten=91.4 mm/hr, Cf=1.10

Area (m ²)	C	Adj	Description
1,956.0	0.90		
1,956.0	0.99		
1,956.0	0.90	0.99	Weighted Average, Frequency Adjusted
1,956.0			100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m ³ /s)	Description
10.0					Direct Entry,

Subcatchment 2S: Post-Dev Site Area



Hydrograph for Subcatchment 2S: Post-Dev Site Area

Time (hours)	Runoff (m ³ /s)	Time (hours)	Runoff (m ³ /s)	Time (hours)	Runoff (m ³ /s)
0.00	0.0000	2.65	0.0000	5.30	0.0000
0.05	0.0147	2.70	0.0000	5.35	0.0000
0.10	0.0295	2.75	0.0000	5.40	0.0000
0.15	0.0442	2.80	0.0000	5.45	0.0000
0.20	0.0492	2.85	0.0000	5.50	0.0000
0.25	0.0492	2.90	0.0000	5.55	0.0000
0.30	0.0492	2.95	0.0000	5.60	0.0000
0.35	0.0492	3.00	0.0000	5.65	0.0000
0.40	0.0492	3.05	0.0000	5.70	0.0000
0.45	0.0393	3.10	0.0000	5.75	0.0000
0.50	0.0246	3.15	0.0000	5.80	0.0000
0.55	0.0098	3.20	0.0000	5.85	0.0000
0.60	0.0000	3.25	0.0000	5.90	0.0000
0.65	0.0000	3.30	0.0000	5.95	0.0000
0.70	0.0000	3.35	0.0000	6.00	0.0000
0.75	0.0000	3.40	0.0000	6.05	0.0000
0.80	0.0000	3.45	0.0000	6.10	0.0000
0.85	0.0000	3.50	0.0000	6.15	0.0000
0.90	0.0000	3.55	0.0000	6.20	0.0000
0.95	0.0000	3.60	0.0000	6.25	0.0000
1.00	0.0000	3.65	0.0000	6.30	0.0000
1.05	0.0000	3.70	0.0000	6.35	0.0000
1.10	0.0000	3.75	0.0000	6.40	0.0000
1.15	0.0000	3.80	0.0000	6.45	0.0000
1.20	0.0000	3.85	0.0000	6.50	0.0000
1.25	0.0000	3.90	0.0000	6.55	0.0000
1.30	0.0000	3.95	0.0000	6.60	0.0000
1.35	0.0000	4.00	0.0000	6.65	0.0000
1.40	0.0000	4.05	0.0000	6.70	0.0000
1.45	0.0000	4.10	0.0000	6.75	0.0000
1.50	0.0000	4.15	0.0000	6.80	0.0000
1.55	0.0000	4.20	0.0000	6.85	0.0000
1.60	0.0000	4.25	0.0000	6.90	0.0000
1.65	0.0000	4.30	0.0000	6.95	0.0000
1.70	0.0000	4.35	0.0000	7.00	0.0000
1.75	0.0000	4.40	0.0000	7.05	0.0000
1.80	0.0000	4.45	0.0000	7.10	0.0000
1.85	0.0000	4.50	0.0000	7.15	0.0000
1.90	0.0000	4.55	0.0000	7.20	0.0000
1.95	0.0000	4.60	0.0000	7.25	0.0000
2.00	0.0000	4.65	0.0000	7.30	0.0000
2.05	0.0000	4.70	0.0000	7.35	0.0000
2.10	0.0000	4.75	0.0000	7.40	0.0000
2.15	0.0000	4.80	0.0000	7.45	0.0000
2.20	0.0000	4.85	0.0000	7.50	0.0000
2.25	0.0000	4.90	0.0000	7.55	0.0000
2.30	0.0000	4.95	0.0000	7.60	0.0000
2.35	0.0000	5.00	0.0000	7.65	0.0000
2.40	0.0000	5.05	0.0000	7.70	0.0000
2.45	0.0000	5.10	0.0000	7.75	0.0000
2.50	0.0000	5.15	0.0000	7.80	0.0000
2.55	0.0000	5.20	0.0000	7.85	0.0000
2.60	0.0000	5.25	0.0000	7.90	0.0000

Hydrograph for Subcatchment 1S: Pre-Dev Area

Time (hours)	Runoff (m ³ /s)	Time (hours)	Runoff (m ³ /s)	Time (hours)	Runoff (m ³ /s)
0.00	0.0000	2.65	0.0000	5.30	0.0000
0.05	0.0091	2.70	0.0000	5.35	0.0000
0.10	0.0182	2.75	0.0000	5.40	0.0000
0.15	0.0273	2.80	0.0000	5.45	0.0000
0.20	0.0303	2.85	0.0000	5.50	0.0000
0.25	0.0303	2.90	0.0000	5.55	0.0000
0.30	0.0303	2.95	0.0000	5.60	0.0000
0.35	0.0303	3.00	0.0000	5.65	0.0000
0.40	0.0303	3.05	0.0000	5.70	0.0000
0.45	0.0242	3.10	0.0000	5.75	0.0000
0.50	0.0151	3.15	0.0000	5.80	0.0000
0.55	0.0061	3.20	0.0000	5.85	0.0000
0.60	0.0000	3.25	0.0000	5.90	0.0000
0.65	0.0000	3.30	0.0000	5.95	0.0000
0.70	0.0000	3.35	0.0000	6.00	0.0000
0.75	0.0000	3.40	0.0000	6.05	0.0000
0.80	0.0000	3.45	0.0000	6.10	0.0000
0.85	0.0000	3.50	0.0000	6.15	0.0000
0.90	0.0000	3.55	0.0000	6.20	0.0000
0.95	0.0000	3.60	0.0000	6.25	0.0000
1.00	0.0000	3.65	0.0000	6.30	0.0000
1.05	0.0000	3.70	0.0000	6.35	0.0000
1.10	0.0000	3.75	0.0000	6.40	0.0000
1.15	0.0000	3.80	0.0000	6.45	0.0000
1.20	0.0000	3.85	0.0000	6.50	0.0000
1.25	0.0000	3.90	0.0000	6.55	0.0000
1.30	0.0000	3.95	0.0000	6.60	0.0000
1.35	0.0000	4.00	0.0000	6.65	0.0000
1.40	0.0000	4.05	0.0000	6.70	0.0000
1.45	0.0000	4.10	0.0000	6.75	0.0000
1.50	0.0000	4.15	0.0000	6.80	0.0000
1.55	0.0000	4.20	0.0000	6.85	0.0000
1.60	0.0000	4.25	0.0000	6.90	0.0000
1.65	0.0000	4.30	0.0000	6.95	0.0000
1.70	0.0000	4.35	0.0000	7.00	0.0000
1.75	0.0000	4.40	0.0000	7.05	0.0000
1.80	0.0000	4.45	0.0000	7.10	0.0000
1.85	0.0000	4.50	0.0000	7.15	0.0000
1.90	0.0000	4.55	0.0000	7.20	0.0000
1.95	0.0000	4.60	0.0000	7.25	0.0000
2.00	0.0000	4.65	0.0000	7.30	0.0000
2.05	0.0000	4.70	0.0000	7.35	0.0000
2.10	0.0000	4.75	0.0000	7.40	0.0000
2.15	0.0000	4.80	0.0000	7.45	0.0000
2.20	0.0000	4.85	0.0000	7.50	0.0000
2.25	0.0000	4.90	0.0000	7.55	0.0000
2.30	0.0000	4.95	0.0000	7.60	0.0000
2.35	0.0000	5.00	0.0000	7.65	0.0000
2.40	0.0000	5.05	0.0000	7.70	0.0000
2.45	0.0000	5.10	0.0000	7.75	0.0000
2.50	0.0000	5.15	0.0000	7.80	0.0000
2.55	0.0000	5.20	0.0000	7.85	0.0000
2.60	0.0000	5.25	0.0000	7.90	0.0000

Summary for Pond 3P: P1 Storm Tank

Inflow Area = 0.1956 ha, 0.00% Impervious, Inflow Depth = 38 mm for 25-Year event
Inflow = 0.0492 m³/s @ 0.17 hrs, Volume= 0.074 MI
Outflow = 0.0246 m³/s @ 0.50 hrs, Volume= 0.074 MI, Atten= 50%, Lag= 19.8 min
Primary = 0.0246 m³/s @ 0.50 hrs, Volume= 0.074 MI

Routing by Stor-Ind method, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
Peak Elev= 100.309 m @ 0.50 hrs Surf-Area= 74.4 m² Storage= 42.3 m³

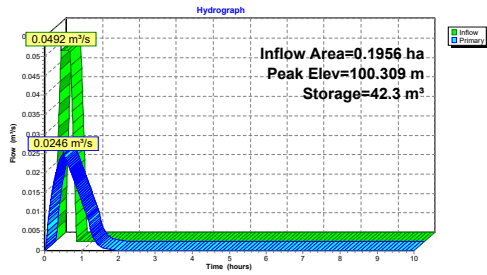
Plug-Flow detention time= 21.1 min calculated for 0.074 MI (100% of inflow)
Center-of-Mass det. time= 21.2 min (38.7 - 17.5)

Volume	Invert	Avail. Storage	Storage Description
#1	99.740 m	207.6 m ³	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (meters)	Surf Area (sq-meters)	Inc. Store (cubic-meters)	Cum. Store (cubic-meters)
99.740	74.4	0.0	0.0
102.530	74.4	207.6	207.6

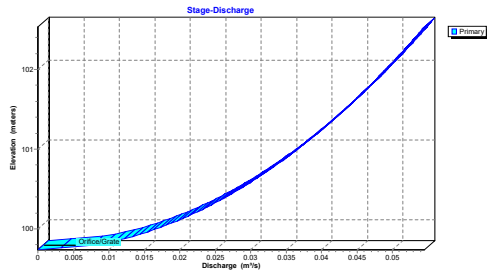
Device	Routing	Invert	Outlet Devices
#1	Primary	99.740 m	125 mm Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.0246 m³/s @ 0.50 hrs HW=100.309 m (Free Discharge)
C=1=Orifice/Grate (Orifice Controls 0.0246 m³/s @ 2.00 m/s)

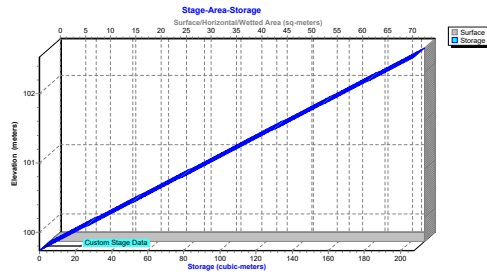
Pond 3P: P1 Storm Tank



Pond 3P: P1 Storm Tank



Pond 3P: P1 Storm Tank



Hydrograph for Pond 3P: P1 Storm Tank

Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	99.740	0.0000
0.20	0.0492	15.6	99.949	0.0149
0.40	0.0492	37.0	100.237	0.0230
0.60	0.0000	37.3	100.242	0.0231
0.80	0.0000	22.6	100.043	0.0180
1.00	0.0000	11.5	99.894	0.0128
1.20	0.0000	4.1	99.795	0.0076
1.40	0.0000	1.2	99.757	0.0020
1.60	0.0000	0.4	99.745	0.0006
1.80	0.0000	0.1	99.742	0.0002
2.00	0.0000	0.0	99.741	0.0001
2.20	0.0000	0.0	99.740	0.0000
2.40	0.0000	0.0	99.740	0.0000
2.60	0.0000	0.0	99.740	0.0000
2.80	0.0000	0.0	99.740	0.0000
3.00	0.0000	0.0	99.740	0.0000
3.20	0.0000	0.0	99.740	0.0000
3.40	0.0000	0.0	99.740	0.0000
3.60	0.0000	0.0	99.740	0.0000
3.80	0.0000	0.0	99.740	0.0000
4.00	0.0000	0.0	99.740	0.0000
4.20	0.0000	0.0	99.740	0.0000
4.40	0.0000	0.0	99.740	0.0000
4.60	0.0000	0.0	99.740	0.0000
4.80	0.0000	0.0	99.740	0.0000
5.00	0.0000	0.0	99.740	0.0000
5.20	0.0000	0.0	99.740	0.0000
5.40	0.0000	0.0	99.740	0.0000
5.60	0.0000	0.0	99.740	0.0000
5.80	0.0000	0.0	99.740	0.0000
6.00	0.0000	0.0	99.740	0.0000
6.20	0.0000	0.0	99.740	0.0000
6.40	0.0000	0.0	99.740	0.0000
6.60	0.0000	0.0	99.740	0.0000
6.80	0.0000	0.0	99.740	0.0000
7.00	0.0000	0.0	99.740	0.0000
7.20	0.0000	0.0	99.740	0.0000
7.40	0.0000	0.0	99.740	0.0000
7.60	0.0000	0.0	99.740	0.0000
7.80	0.0000	0.0	99.740	0.0000
8.00	0.0000	0.0	99.740	0.0000
8.20	0.0000	0.0	99.740	0.0000
8.40	0.0000	0.0	99.740	0.0000
8.60	0.0000	0.0	99.740	0.0000
8.80	0.0000	0.0	99.740	0.0000
9.00	0.0000	0.0	99.740	0.0000
9.20	0.0000	0.0	99.740	0.0000
9.40	0.0000	0.0	99.740	0.0000
9.60	0.0000	0.0	99.740	0.0000
9.80	0.0000	0.0	99.740	0.0000
10.00	0.0000	0.0	99.740	0.0000

Stage-Discharge for Pond 3P: P1 Storm Tank

Elevation (meters)	Primary (m³/s)	Elevation (meters)	Primary (m³/s)	Elevation (meters)	Primary (m³/s)
99.740	0.0000	100.800	0.0336	101.860	0.0475
99.760	0.0020	100.820	0.0339	101.880	0.0477
99.780	0.0057	100.840	0.0342	101.900	0.0479
99.800	0.0080	100.860	0.0345	101.920	0.0482
99.820	0.0092	100.880	0.0348	101.940	0.0484
99.840	0.0103	100.900	0.0351	101.960	0.0486
99.860	0.0113	100.920	0.0354	101.980	0.0488
99.880	0.0122	100.940	0.0357	102.000	0.0490
99.900	0.0130	100.960	0.0360	102.020	0.0492
99.920	0.0138	100.980	0.0363	102.040	0.0495
99.940	0.0146	101.000	0.0366	102.060	0.0497
99.960	0.0153	101.020	0.0369	102.080	0.0499
99.980	0.0160	101.040	0.0372	102.100	0.0501
100.000	0.0166	101.060	0.0375	102.120	0.0503
100.020	0.0173	101.080	0.0378	102.140	0.0505
100.040	0.0179	101.100	0.0380	102.160	0.0507
100.060	0.0184	101.120	0.0383	102.180	0.0509
100.080	0.0190	101.140	0.0386	102.200	0.0512
100.100	0.0196	101.160	0.0389	102.220	0.0514
100.120	0.0201	101.180	0.0391	102.240	0.0516
100.140	0.0206	101.200	0.0394	102.260	0.0518
100.160	0.0211	101.220	0.0397	102.280	0.0520
100.180	0.0216	101.240	0.0399	102.300	0.0522
100.200	0.0221	101.260	0.0402	102.320	0.0524
100.220	0.0226	101.280	0.0405	102.340	0.0526
100.240	0.0231	101.300	0.0407	102.360	0.0528
100.260	0.0235	101.320	0.0410	102.380	0.0530
100.280	0.0240	101.340	0.0413	102.400	0.0532
100.300	0.0244	101.360	0.0415	102.420	0.0534
100.320	0.0248	101.380	0.0418	102.440	0.0536
100.340	0.0253	101.400	0.0420	102.460	0.0538
100.360	0.0257	101.420	0.0423	102.480	0.0540
100.380	0.0261	101.440	0.0425	102.500	0.0542
100.400	0.0265	101.460	0.0428	102.520	0.0544
100.420	0.0269	101.480	0.0430		
100.440	0.0273	101.500	0.0433		
100.460	0.0277	101.520	0.0435		
100.480	0.0281	101.540	0.0438		
100.500	0.0284	101.560	0.0440		
100.520	0.0288	101.580	0.0442		
100.540	0.0292	101.600	0.0445		
100.560	0.0295	101.620	0.0447		
100.580	0.0299	101.640	0.0450		
100.600	0.0302	101.660	0.0452		
100.620	0.0306	101.680	0.0454		
100.640	0.0309	101.700	0.0457		
100.660	0.0313	101.720	0.0459		
100.680	0.0316	101.740	0.0461		
100.700	0.0320	101.760	0.0464		
100.720	0.0323	101.780	0.0466		
100.740	0.0326	101.800	0.0468		
100.760	0.0329	101.820	0.0470		
100.780	0.0333	101.840	0.0473		

Stage-Area-Storage for Pond 3P: P1 Storm Tank

Elevation (meters)	Surface (sq-meters)	Storage (cubic-meters)	Elevation (meters)	Surface (sq-meters)	Storage (cubic-meters)
99.740	74.4	0.0	102.390	74.4	197.2
99.790	74.4	3.7	102.440	74.4	200.9
99.840	74.4	7.4	102.490	74.4	204.6
99.890	74.4	11.2			
99.940	74.4	14.9			
99.990	74.4	18.6			
100.040	74.4	22.3			
100.090	74.4	26.0			
100.140	74.4	29.8			
100.190	74.4	33.5			
100.240	74.4	37.2			
100.290	74.4	40.9			
100.340	74.4	44.6			
100.390	74.4	48.4			
100.440	74.4	52.1			
100.490	74.4	55.8			
100.540	74.4	59.5			
100.590	74.4	63.2			
100.640	74.4	67.0			
100.690	74.4	70.7			
100.740	74.4	74.4			
100.790	74.4	78.1			
100.840	74.4	81.8			
100.890	74.4	85.6			
100.940	74.4	89.3			
100.990	74.4	93.0			
101.040	74.4	96.7			
101.090	74.4	100.4			
101.140	74.4	104.2			
101.190	74.4	107.9			
101.240	74.4	111.6			
101.290	74.4	115.3			
101.340	74.4	119.0			
101.390	74.4	122.8			
101.440	74.4	126.5			
101.490	74.4	130.2			
101.540	74.4	133.9			
101.590	74.4	137.6			
101.640	74.4	141.4			
101.690	74.4	145.1			
101.740	74.4	148.8			
101.790	74.4	152.5			
101.840	74.4	156.2			
101.890	74.4	160.0			
101.940	74.4	163.7			
101.990	74.4	167.4			
102.040	74.4	171.1			
102.090	74.4	174.8			
102.140	74.4	178.6			
102.190	74.4	182.3			
102.240	74.4	186.0			
102.290	74.4	189.7			
102.340	74.4	193.4			

Time span=0.00-10.00 hrs, dt=0.01 hrs, 1001 points

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Dev Area Runoff Area=1,956.0 m² 0.00% Impervious Runoff Depth=28 mm Tc=10.0 min Frequency Adjusted C=0.66 Runoff=0.0367 m/s 0.055 MI

Subcatchment 2S: Post-Dev Site Area Runoff Area=1,956.0 m² 0.00% Impervious Runoff Depth=43 mm Tc=10.0 min Frequency Adjusted C=1.00 Runoff=0.0557 m/s 0.084 MI

Pond 3P: P1 Storm Tank Peak Elev=100.405 m Storage=49.5 m³ Inflow=0.0557 m/s 0.084 MI Outflow=0.0266 m/s 0.084 MI

Total Runoff Area = 0.3912 ha Runoff Volume = 0.139 MI Average Runoff Depth = 35 mm

100.00% Impervious = 0.3912 ha 0.00% Impervious = 0.0000 ha

Summary for Subcatchment 1S: Pre-Dev Area

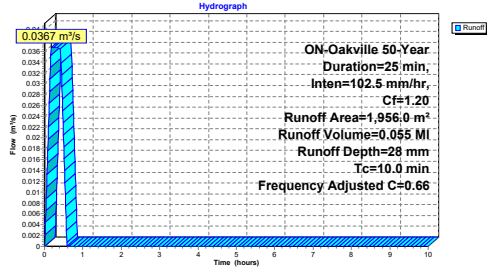
Runoff = 0.0367 m³/s @ 0.17 hrs, Volume= 0.055 MI, Depth= 28 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
ON-Oakville 50-Year Duration=25 min, Inten=102.5 mm/hr, Cf=1.20

Area (m²)	C	Adj	Description
900.0	0.90		
1,056.0	0.25		
1,956.0	0.55	0.66	Weighted Average, Frequency Adjusted
1,956.0			100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 1S: Pre-Dev Area



Hydrograph for Subcatchment 1S: Pre-Dev Area

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	2.65	0.0000	5.30	0.0000	7.95	0.0000
0.05	0.0110	2.70	0.0000	5.35	0.0000	8.00	0.0000
0.10	0.0220	2.75	0.0000	5.40	0.0000	8.05	0.0000
0.15	0.0331	2.80	0.0000	5.45	0.0000	8.10	0.0000
0.20	0.0367	2.85	0.0000	5.50	0.0000	8.15	0.0000
0.25	0.0367	2.90	0.0000	5.55	0.0000	8.20	0.0000
0.30	0.0367	2.95	0.0000	5.60	0.0000	8.25	0.0000
0.35	0.0367	3.00	0.0000	5.65	0.0000	8.30	0.0000
0.40	0.0367	3.05	0.0000	5.70	0.0000	8.35	0.0000
0.45	0.0294	3.10	0.0000	5.75	0.0000	8.40	0.0000
0.50	0.0184	3.15	0.0000	5.80	0.0000	8.45	0.0000
0.55	0.0073	3.20	0.0000	5.85	0.0000	8.50	0.0000
0.60	0.0000	3.25	0.0000	5.90	0.0000	8.55	0.0000
0.65	0.0000	3.30	0.0000	5.95	0.0000	8.60	0.0000
0.70	0.0000	3.35	0.0000	6.00	0.0000	8.65	0.0000
0.75	0.0000	3.40	0.0000	6.05	0.0000	8.70	0.0000
0.80	0.0000	3.45	0.0000	6.10	0.0000	8.75	0.0000
0.85	0.0000	3.50	0.0000	6.15	0.0000	8.80	0.0000
0.90	0.0000	3.55	0.0000	6.20	0.0000	8.85	0.0000
0.95	0.0000	3.60	0.0000	6.25	0.0000	8.90	0.0000
1.00	0.0000	3.65	0.0000	6.30	0.0000	8.95	0.0000
1.05	0.0000	3.70	0.0000	6.35	0.0000	9.00	0.0000
1.10	0.0000	3.75	0.0000	6.40	0.0000	9.05	0.0000
1.15	0.0000	3.80	0.0000	6.45	0.0000	9.10	0.0000
1.20	0.0000	3.85	0.0000	6.50	0.0000	9.15	0.0000
1.25	0.0000	3.90	0.0000	6.55	0.0000	9.20	0.0000
1.30	0.0000	3.95	0.0000	6.60	0.0000	9.25	0.0000
1.35	0.0000	4.00	0.0000	6.65	0.0000	9.30	0.0000
1.40	0.0000	4.05	0.0000	6.70	0.0000	9.35	0.0000
1.45	0.0000	4.10	0.0000	6.75	0.0000	9.40	0.0000
1.50	0.0000	4.15	0.0000	6.80	0.0000	9.45	0.0000
1.55	0.0000	4.20	0.0000	6.85	0.0000	9.50	0.0000
1.60	0.0000	4.25	0.0000	6.90	0.0000	9.55	0.0000
1.65	0.0000	4.30	0.0000	6.95	0.0000	9.60	0.0000
1.70	0.0000	4.35	0.0000	7.00	0.0000	9.65	0.0000
1.75	0.0000	4.40	0.0000	7.05	0.0000	9.70	0.0000
1.80	0.0000	4.45	0.0000	7.10	0.0000	9.75	0.0000
1.85	0.0000	4.50	0.0000	7.15	0.0000	9.80	0.0000
1.90	0.0000	4.55	0.0000	7.20	0.0000	9.85	0.0000
1.95	0.0000	4.60	0.0000	7.25	0.0000	9.90	0.0000
2.00	0.0000	4.65	0.0000	7.30	0.0000	9.95	0.0000
2.05	0.0000	4.70	0.0000	7.35	0.0000	10.00	0.0000
2.10	0.0000	4.75	0.0000	7.40	0.0000		
2.15	0.0000	4.80	0.0000	7.45	0.0000		
2.20	0.0000	4.85	0.0000	7.50	0.0000		
2.25	0.0000	4.90	0.0000	7.55	0.0000		
2.30	0.0000	4.95	0.0000	7.60	0.0000		
2.35	0.0000	5.00	0.0000	7.65	0.0000		
2.40	0.0000	5.05	0.0000	7.70	0.0000		
2.45	0.0000	5.10	0.0000	7.75	0.0000		
2.50	0.0000	5.15	0.0000	7.80	0.0000		
2.55	0.0000	5.20	0.0000	7.85	0.0000		
2.60	0.0000	5.25	0.0000	7.90	0.0000		

Summary for Subcatchment 2S: Post-Dev Site Area

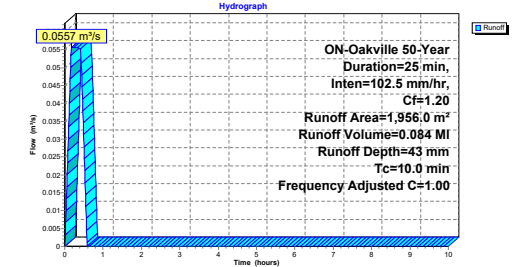
Runoff = 0.0557 m³/s @ 0.17 hrs, Volume= 0.084 MI, Depth= 43 mm
Routed to Pond 3P: P1 Storm Tank

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
ON-Oakville 50-Year Duration=25 min, Inten=102.5 mm/hr, Cf=1.20

Area (m²)	C	Adj	Description
1,956.0	0.90		
1,956.0	0.90	1.00	Weighted Average, Frequency Adjusted
1,956.0			100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 2S: Post-Dev Site Area



Hydrograph for Subcatchment 2S: Post-Dev Site Area

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	2.65	0.0000	5.30	0.0000	7.95	0.0000
0.05	0.0167	2.70	0.0000	5.35	0.0000	8.00	0.0000
0.10	0.0334	2.75	0.0000	5.40	0.0000	8.05	0.0000
0.15	0.0501	2.80	0.0000	5.45	0.0000	8.10	0.0000
0.20	0.0557	2.85	0.0000	5.50	0.0000	8.15	0.0000
0.25	0.0557	2.90	0.0000	5.55	0.0000	8.20	0.0000
0.30	0.0557	2.95	0.0000	5.60	0.0000	8.25	0.0000
0.35	0.0557	3.00	0.0000	5.65	0.0000	8.30	0.0000
0.40	0.0557	3.05	0.0000	5.70	0.0000	8.35	0.0000
0.45	0.0445	3.10	0.0000	5.75	0.0000	8.40	0.0000
0.50	0.0278	3.15	0.0000	5.80	0.0000	8.45	0.0000
0.55	0.0111	3.20	0.0000	5.85	0.0000	8.50	0.0000
0.60	0.0000	3.25	0.0000	5.90	0.0000	8.55	0.0000
0.65	0.0000	3.30	0.0000	5.95	0.0000	8.60	0.0000
0.70	0.0000	3.35	0.0000	6.00	0.0000	8.65	0.0000
0.75	0.0000	3.40	0.0000	6.05	0.0000	8.70	0.0000
0.80	0.0000	3.45	0.0000	6.10	0.0000	8.75	0.0000
0.85	0.0000	3.50	0.0000	6.15	0.0000	8.80	0.0000
0.90	0.0000	3.55	0.0000	6.20	0.0000	8.85	0.0000
0.95	0.0000	3.60	0.0000	6.25	0.0000	8.90	0.0000
1.00	0.0000	3.65	0.0000	6.30	0.0000	8.95	0.0000
1.05	0.0000	3.70	0.0000	6.35	0.0000	9.00	0.0000
1.10	0.0000	3.75	0.0000	6.40	0.0000	9.05	0.0000
1.15	0.0000	3.80	0.0000	6.45	0.0000	9.10	0.0000
1.20	0.0000	3.85	0.0000	6.50	0.0000	9.15	0.0000
1.25	0.0000	3.90	0.0000	6.55	0.0000	9.20	0.0000
1.30	0.0000	3.95	0.0000	6.60	0.0000	9.25	0.0000
1.35	0.0000	4.00	0.0000	6.65	0.0000	9.30	0.0000
1.40	0.0000	4.05	0.0000	6.70	0.0000	9.35	0.0000
1.45	0.0000	4.10	0.0000	6.75	0.0000	9.40	0.0000
1.50	0.0000	4.15	0.0000	6.80	0.0000	9.45	0.0000
1.55	0.0000	4.20	0.0000	6.85	0.0000	9.50	0.0000
1.60	0.0000	4.25	0.0000	6.90	0.0000	9.55	0.0000
1.65	0.0000	4.30	0.0000	6.95	0.0000	9.60	0.0000
1.70	0.0000	4.35	0.0000	7.00	0.0000	9.65	0.0000
1.75	0.0000	4.40	0.0000	7.05	0.0000	9.70	0.0000
1.80	0.0000	4.45	0.0000	7.10	0.0000	9.75	0.0000
1.85	0.0000	4.50	0.0000	7.15	0.0000	9.80	0.0000
1.90	0.0000	4.55	0.0000	7.20	0.0000	9.85	0.0000
1.95	0.0000	4.60	0.0000	7.25	0.0000	9.90	0.0000
2.00	0.0000	4.65	0.0000	7.30	0.0000	9.95	0.0000
2.05	0.0000	4.70	0.0000	7.35	0.0000	10.00	0.0000
2.10	0.0000	4.75	0.0000	7.40	0.0000		
2.15	0.0000	4.80	0.0000	7.45	0.0000		
2.20	0.0000	4.85	0.0000	7.50	0.0000		
2.25	0.0000	4.90	0.0000	7.55	0.0000		
2.30	0.0000	4.95	0.0000	7.60	0.0000		
2.35	0.0000	5.00	0.0000	7.65	0.0000		
2.40	0.0000	5.05	0.0000	7.70	0.0000		
2.45	0.0000	5.10	0.0000	7.75	0.0000		
2.50	0.0000	5.15	0.0000	7.80	0.0000		
2.55	0.0000	5.20	0.0000	7.85	0.0000		
2.60	0.0000	5.25	0.0000	7.90	0.0000		

Summary for Pond 3P: P1 Storm Tank

Inflow Area = 0.1956 ha, 0.00% Impervious, Inflow Depth = 43 mm for 50-Year event
Inflow = 0.0557 m³/s @ 0.17 hrs, Volume= 0.084 MI
Outflow = 0.0266 m³/s @ 0.50 hrs, Volume= 0.084 MI, Atten= 52%, Lag= 20.0 min
Primary = 0.0266 m³/s @ 0.50 hrs, Volume= 0.084 MI

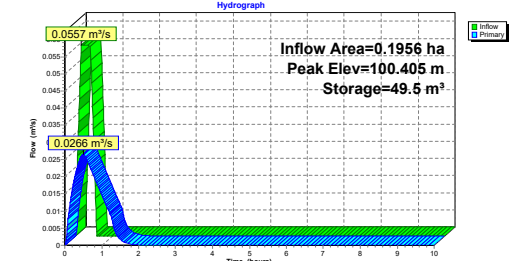
Routing by Stor-Ind method, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
Peak Elev= 100.405 m @ 0.50 hrs Surf.Area= 74.4 m² Storage= 49.5 m³

Plug-Flow detention time= 22.7 min calculated for 0.083 MI (100% of inflow)
Center-of-Mass det. time= 22.7 min (40.2 - 17.5)

Volume	Invert	Avail.Storage	Storage Description
#1	99.740 m	207.6 m³	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (meters)	Surf.Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
99.740	74.4	0.0	0.0
102.530	74.4	207.6	207.6
Device	Routing	Invert	Outlet Devices
#1	Primary	99.740 m	125 mm Horiz. Orifice/Grate C= 0.600
			Limited to weir flow at low heads

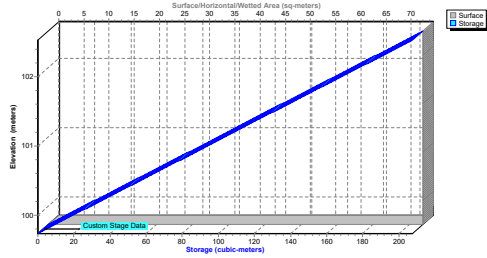
Primary OutFlow Max= 0.0266 m³/s @ 0.50 hrs HW=100.405 m (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.0266 m³/s @ 2.17 m/s)

Pond 3P: P1 Storm Tank



Pond 3P: P1 Storm Tank

Stage-Area-Storage



Hydrograph for Pond 3P: P1 Storm Tank

Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	99.740	0.0000
0.20	0.0557	17.9	99.980	0.0160
0.40	0.0557	42.9	100.317	0.0248
0.60	0.0000	44.2	100.335	0.0251
0.80	0.0000	28.0	100.116	0.0200
1.00	0.0000	15.4	99.947	0.0148
1.20	0.0000	6.6	99.829	0.0097
1.40	0.0000	2.0	99.766	0.0031
1.60	0.0000	0.6	99.748	0.0010
1.80	0.0000	0.2	99.743	0.0003
2.00	0.0000	0.1	99.741	0.0001
2.20	0.0000	0.0	99.740	0.0000
2.40	0.0000	0.0	99.740	0.0000
2.60	0.0000	0.0	99.740	0.0000
2.80	0.0000	0.0	99.740	0.0000
3.00	0.0000	0.0	99.740	0.0000
3.20	0.0000	0.0	99.740	0.0000
3.40	0.0000	0.0	99.740	0.0000
3.60	0.0000	0.0	99.740	0.0000
3.80	0.0000	0.0	99.740	0.0000
4.00	0.0000	0.0	99.740	0.0000
4.20	0.0000	0.0	99.740	0.0000
4.40	0.0000	0.0	99.740	0.0000
4.60	0.0000	0.0	99.740	0.0000
4.80	0.0000	0.0	99.740	0.0000
5.00	0.0000	0.0	99.740	0.0000
5.20	0.0000	0.0	99.740	0.0000
5.40	0.0000	0.0	99.740	0.0000
5.60	0.0000	0.0	99.740	0.0000
5.80	0.0000	0.0	99.740	0.0000
6.00	0.0000	0.0	99.740	0.0000
6.20	0.0000	0.0	99.740	0.0000
6.40	0.0000	0.0	99.740	0.0000
6.60	0.0000	0.0	99.740	0.0000
6.80	0.0000	0.0	99.740	0.0000
7.00	0.0000	0.0	99.740	0.0000
7.20	0.0000	0.0	99.740	0.0000
7.40	0.0000	0.0	99.740	0.0000
7.60	0.0000	0.0	99.740	0.0000
7.80	0.0000	0.0	99.740	0.0000
8.00	0.0000	0.0	99.740	0.0000
8.20	0.0000	0.0	99.740	0.0000
8.40	0.0000	0.0	99.740	0.0000
8.60	0.0000	0.0	99.740	0.0000
8.80	0.0000	0.0	99.740	0.0000
9.00	0.0000	0.0	99.740	0.0000
9.20	0.0000	0.0	99.740	0.0000
9.40	0.0000	0.0	99.740	0.0000
9.60	0.0000	0.0	99.740	0.0000
9.80	0.0000	0.0	99.740	0.0000
10.00	0.0000	0.0	99.740	0.0000

Stage-Discharge for Pond 3P: P1 Storm Tank

Elevation (meters)	Primary (m³/s)	Elevation (meters)	Primary (m³/s)	Elevation (meters)	Primary (m³/s)
99.740	0.0000	100.800	0.0336	101.880	0.0475
99.760	0.0020	100.820	0.0339	101.880	0.0477
99.780	0.0057	100.840	0.0342	101.900	0.0479
99.800	0.0090	100.860	0.0345	101.920	0.0482
99.820	0.0092	100.880	0.0348	101.940	0.0484
99.840	0.0103	100.900	0.0351	101.960	0.0486
99.860	0.0113	100.920	0.0354	101.980	0.0488
99.880	0.0122	100.940	0.0357	102.000	0.0490
99.900	0.0130	100.960	0.0360	102.020	0.0492
99.920	0.0138	100.980	0.0363	102.040	0.0495
99.940	0.0146	101.000	0.0366	102.060	0.0497
99.960	0.0153	101.020	0.0369	102.080	0.0499
99.980	0.0160	101.040	0.0372	102.100	0.0501
100.000	0.0166	101.060	0.0375	102.120	0.0503
100.020	0.0173	101.080	0.0378	102.140	0.0505
100.040	0.0179	101.100	0.0380	102.160	0.0507
100.060	0.0184	101.120	0.0383	102.180	0.0509
100.080	0.0190	101.140	0.0386	102.200	0.0512
100.100	0.0196	101.160	0.0389	102.220	0.0514
100.120	0.0201	101.180	0.0391	102.240	0.0516
100.140	0.0206	101.200	0.0394	102.260	0.0518
100.160	0.0211	101.220	0.0397	102.280	0.0520
100.180	0.0216	101.240	0.0399	102.300	0.0522
100.200	0.0221	101.260	0.0402	102.320	0.0524
100.220	0.0226	101.280	0.0405	102.340	0.0526
100.240	0.0231	101.300	0.0407	102.360	0.0528
100.260	0.0235	101.320	0.0410	102.380	0.0530
100.280	0.0240	101.340	0.0413	102.400	0.0532
100.300	0.0244	101.360	0.0415	102.420	0.0534
100.320	0.0248	101.380	0.0418	102.440	0.0536
100.340	0.0253	101.400	0.0420	102.460	0.0538
100.360	0.0257	101.420	0.0423	102.480	0.0540
100.380	0.0261	101.440	0.0425	102.500	0.0542
100.400	0.0265	101.460	0.0428	102.520	0.0544
100.420	0.0269	101.480	0.0430		
100.440	0.0273	101.500	0.0433		
100.460	0.0277	101.520	0.0435		
100.480	0.0281	101.540	0.0438		
100.500	0.0284	101.560	0.0440		
100.520	0.0288	101.580	0.0442		
100.540	0.0292	101.600	0.0445		
100.560	0.0295	101.620	0.0447		
100.580	0.0299	101.640	0.0450		
100.600	0.0302	101.660	0.0452		
100.620	0.0306	101.680	0.0454		
100.640	0.0309	101.700	0.0457		
100.660	0.0313	101.720	0.0459		
100.680	0.0316	101.740	0.0461		
100.700	0.0320	101.760	0.0464		
100.720	0.0323	101.780	0.0466		
100.740	0.0326	101.800	0.0468		
100.760	0.0329	101.820	0.0470		
100.780	0.0333	101.840	0.0473		

Stage-Area-Storage for Pond 3P: P1 Storm Tank

Elevation (meters)	Surface (sq-meters)	Storage (cubic-meters)	Elevation (meters)	Surface (sq-meters)	Storage (cubic-meters)
99.740	74.4	0.0	102.390	74.4	197.2
99.790	74.4	3.7	102.440	74.4	200.9
99.840	74.4	7.4	102.490	74.4	204.6
99.890	74.4	11.2			
99.940	74.4	14.9			
99.990	74.4	18.6			
100.040	74.4	22.3			
100.090	74.4	26.0			
100.140	74.4	29.8			
100.190	74.4	33.5			
100.240	74.4	37.2			
100.290	74.4	40.9			
100.340	74.4	44.6			
100.390	74.4	48.4			
100.440	74.4	52.1			
100.490	74.4	55.8			
100.540	74.4	59.5			
100.590	74.4	63.2			
100.640	74.4	67.0			
100.690	74.4	70.7			
100.740	74.4	74.4			
100.790	74.4	78.1			
100.840	74.4	81.8			
100.890	74.4	85.6			
100.940	74.4	89.3			
100.990	74.4	93.0			
101.040	74.4	96.7			
101.090	74.4	100.4			
101.140	74.4	104.2			
101.190	74.4	107.9			
101.240	74.4	111.6			
101.290	74.4	115.3			
101.340	74.4	119.0			
101.390	74.4	122.8			
101.440	74.4	126.5			
101.490	74.4	130.2			
101.540	74.4	133.9			
101.590	74.4	137.6			
101.640	74.4	141.4			
101.690	74.4	145.1			
101.740	74.4	148.8			
101.790	74.4	152.5			
101.840	74.4	156.2			
101.890	74.4	160.0			
101.940	74.4	163.7			
101.990	74.4	167.4			
102.040	74.4	171.1			
102.090	74.4	174.8			
102.140	74.4	178.6			
102.190	74.4	182.3			
102.240	74.4	186.0			
102.290	74.4	189.7			
102.340	74.4	193.4			

Time span=0.00-10.00 hrs, dt=0.01 hrs, 1001 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre-Dev Area Runoff Area=1,956.0 m² 0.00% Impervious Runoff Depth=32 mm
Tc=10.0 min Frequency Adjusted C=0.69 Runoff=0.0423 m³/s 0.063 MI

Subcatchment 2S: Post-Dev Site Area Runoff Area=1,956.0 m² 0.00% Impervious Runoff Depth=47 mm
Tc=10.0 min Frequency Adjusted C=1.00 Runoff=0.0612 m³/s 0.092 MI

Pond 3P: P1 Storm Tank Peak Elev=100.488 m Storage=55.7 m³ Inflow=0.0612 m³/s 0.092 MI
Outflow=0.0282 m³/s 0.092 MI

Total Runoff Area = 0.3912 ha Runoff Volume = 0.155 MI Average Runoff Depth = 40 mm
100.00% Pervious = 0.3912 ha 0.00% Impervious = 0.0000 ha

Summary for Subcatchment 1S: Pre-Dev Area

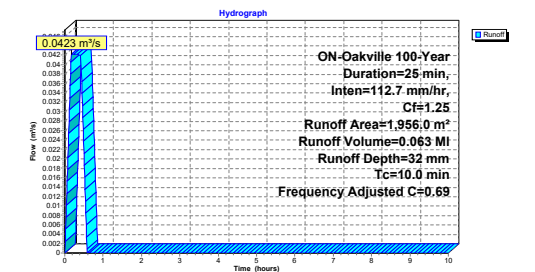
Runoff = 0.0423 m³/s @ 0.17 hrs, Volume= 0.063 MI, Depth= 32 mm

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span=0.00-10.00 hrs, dt= 0.01 hrs
ON-Oakville 100-Year Duration=25 min, Inten=112.7 mm/hr, Cf=1.25

Area (m²)	C	Adj	Description
900.0	0.30		
1,056.0	0.25		
1,956.0	0.55	0.69	Weighted Average, Frequency Adjusted
1,956.0			100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 1S: Pre-Dev Area



Hydrograph for Subcatchment 1S: Pre-Dev Area

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	2.65	0.0000	5.30	0.0000	7.95	0.0000
0.05	0.0127	2.70	0.0000	5.35	0.0000	8.00	0.0000
0.10	0.0254	2.75	0.0000	5.40	0.0000	8.05	0.0000
0.15	0.0380	2.80	0.0000	5.45	0.0000	8.10	0.0000
0.20	0.0423	2.85	0.0000	5.50	0.0000	8.15	0.0000
0.25	0.0423	2.90	0.0000	5.55	0.0000	8.20	0.0000
0.30	0.0423	2.95	0.0000	5.60	0.0000	8.25	0.0000
0.35	0.0423	3.00	0.0000	5.65	0.0000	8.30	0.0000
0.40	0.0423	3.05	0.0000	5.70	0.0000	8.35	0.0000
0.45	0.0338	3.10	0.0000	5.75	0.0000	8.40	0.0000
0.50	0.0211	3.15	0.0000	5.80	0.0000	8.45	0.0000
0.55	0.0085	3.20	0.0000	5.85	0.0000	8.50	0.0000
0.60	0.0000	3.25	0.0000	5.90	0.0000	8.55	0.0000
0.65	0.0000	3.30	0.0000	5.95	0.0000	8.60	0.0000
0.70	0.0000	3.35	0.0000	6.00	0.0000	8.65	0.0000
0.75	0.0000	3.40	0.0000	6.05	0.0000	8.70	0.0000
0.80	0.0000	3.45	0.0000	6.10	0.0000	8.75	0.0000
0.85	0.0000	3.50	0.0000	6.15	0.0000	8.80	0.0000
0.90	0.0000	3.55	0.0000	6.20	0.0000	8.85	0.0000
0.95	0.0000	3.60	0.0000	6.25	0.0000	8.90	0.0000
1.00	0.0000	3.65	0.0000	6.30	0.0000	8.95	0.0000
1.05	0.0000	3.70	0.0000	6.35	0.0000	9.00	0.0000
1.10	0.0000	3.75	0.0000	6.40	0.0000	9.05	0.0000
1.15	0.0000	3.80	0.0000	6.45	0.0000	9.10	0.0000
1.20	0.0000	3.85	0.0000	6.50	0.0000	9.15	0.0000
1.25	0.0000	3.90	0.0000	6.55	0.0000	9.20	0.0000
1.30	0.0000	3.95	0.0000	6.60	0.0000	9.25	0.0000
1.35	0.0000	4.00	0.0000	6.65	0.0000	9.30	0.0000
1.40	0.0000	4.05	0.0000	6.70	0.0000	9.35	0.0000
1.45	0.0000	4.10	0.0000	6.75	0.0000	9.40	0.0000
1.50	0.0000	4.15	0.0000	6.80	0.0000	9.45	0.0000
1.55	0.0000	4.20	0.0000	6.85	0.0000	9.50	0.0000
1.60	0.0000	4.25	0.0000	6.90	0.0000	9.55	0.0000
1.65	0.0000	4.30	0.0000	6.95	0.0000	9.60	0.0000
1.70	0.0000	4.35	0.0000	7.00	0.0000	9.65	0.0000
1.75	0.0000	4.40	0.0000	7.05	0.0000	9.70	0.0000
1.80	0.0000	4.45	0.0000	7.10	0.0000	9.75	0.0000
1.85	0.0000	4.50	0.0000	7.15	0.0000	9.80	0.0000
1.90	0.0000	4.55	0.0000	7.20	0.0000	9.85	0.0000
1.95	0.0000	4.60	0.0000	7.25	0.0000	9.90	0.0000
2.00	0.0000	4.65	0.0000	7.30	0.0000	9.95	0.0000
2.05	0.0000	4.70	0.0000	7.35	0.0000	10.00	0.0000
2.10	0.0000	4.75	0.0000	7.40	0.0000		
2.15	0.0000	4.80	0.0000	7.45	0.0000		
2.20	0.0000	4.85	0.0000	7.50	0.0000		
2.25	0.0000	4.90	0.0000	7.55	0.0000		
2.30	0.0000	4.95	0.0000	7.60	0.0000		
2.35	0.0000	5.00	0.0000	7.65	0.0000		
2.40	0.0000	5.05	0.0000	7.70	0.0000		
2.45	0.0000	5.10	0.0000	7.75	0.0000		
2.50	0.0000	5.15	0.0000	7.80	0.0000		
2.55	0.0000	5.20	0.0000	7.85	0.0000		
2.60	0.0000	5.25	0.0000	7.90	0.0000		

Summary for Subcatchment 2S: Post-Dev Site Area

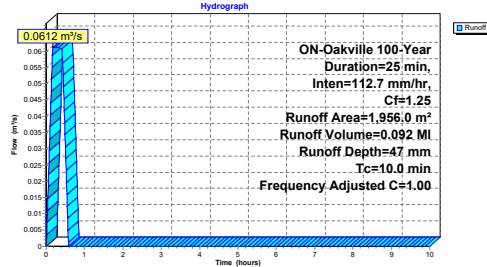
Runoff = 0.0612 m³/s @ 0.17 hrs, Volume= 0.092 MI, Depth= 47 mm
Routed to Pond 3P: P1 Storm Tank

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
ON-Oakville 100-Year Duration=25 min, Inten=112.7 mm/hr, Cf=1.25

Area (m²)	C	Adj	Description
1,956.0	0.90		
1,956.0	0.90	1.00	Weighted Average, Frequency Adjusted
1,956.0			100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					Direct Entry,

Subcatchment 2S: Post-Dev Site Area



Hydrograph for Subcatchment 2S: Post-Dev Site Area

Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)	Time (hours)	Runoff (m³/s)
0.00	0.0000	2.65	0.0000	5.30	0.0000	7.95	0.0000
0.05	0.0184	2.70	0.0000	5.35	0.0000	8.00	0.0000
0.10	0.0367	2.75	0.0000	5.40	0.0000	8.05	0.0000
0.15	0.0551	2.80	0.0000	5.45	0.0000	8.10	0.0000
0.20	0.0612	2.85	0.0000	5.50	0.0000	8.15	0.0000
0.25	0.0612	2.90	0.0000	5.55	0.0000	8.20	0.0000
0.30	0.0612	2.95	0.0000	5.60	0.0000	8.25	0.0000
0.35	0.0612	3.00	0.0000	5.65	0.0000	8.30	0.0000
0.40	0.0612	3.05	0.0000	5.70	0.0000	8.35	0.0000
0.45	0.0490	3.10	0.0000	5.75	0.0000	8.40	0.0000
0.50	0.0306	3.15	0.0000	5.80	0.0000	8.45	0.0000
0.55	0.0122	3.20	0.0000	5.85	0.0000	8.50	0.0000
0.60	0.0000	3.25	0.0000	5.90	0.0000	8.55	0.0000
0.65	0.0000	3.30	0.0000	5.95	0.0000	8.60	0.0000
0.70	0.0000	3.35	0.0000	6.00	0.0000	8.65	0.0000
0.75	0.0000	3.40	0.0000	6.05	0.0000	8.70	0.0000
0.80	0.0000	3.45	0.0000	6.10	0.0000	8.75	0.0000
0.85	0.0000	3.50	0.0000	6.15	0.0000	8.80	0.0000
0.90	0.0000	3.55	0.0000	6.20	0.0000	8.85	0.0000
0.95	0.0000	3.60	0.0000	6.25	0.0000	8.90	0.0000
1.00	0.0000	3.65	0.0000	6.30	0.0000	8.95	0.0000
1.05	0.0000	3.70	0.0000	6.35	0.0000	9.00	0.0000
1.10	0.0000	3.75	0.0000	6.40	0.0000	9.05	0.0000
1.15	0.0000	3.80	0.0000	6.45	0.0000	9.10	0.0000
1.20	0.0000	3.85	0.0000	6.50	0.0000	9.15	0.0000
1.25	0.0000	3.90	0.0000	6.55	0.0000	9.20	0.0000
1.30	0.0000	3.95	0.0000	6.60	0.0000	9.25	0.0000
1.35	0.0000	4.00	0.0000	6.65	0.0000	9.30	0.0000
1.40	0.0000	4.05	0.0000	6.70	0.0000	9.35	0.0000
1.45	0.0000	4.10	0.0000	6.75	0.0000	9.40	0.0000
1.50	0.0000	4.15	0.0000	6.80	0.0000	9.45	0.0000
1.55	0.0000	4.20	0.0000	6.85	0.0000	9.50	0.0000
1.60	0.0000	4.25	0.0000	6.90	0.0000	9.55	0.0000
1.65	0.0000	4.30	0.0000	6.95	0.0000	9.60	0.0000
1.70	0.0000	4.35	0.0000	7.00	0.0000	9.65	0.0000
1.75	0.0000	4.40	0.0000	7.05	0.0000	9.70	0.0000
1.80	0.0000	4.45	0.0000	7.10	0.0000	9.75	0.0000
1.85	0.0000	4.50	0.0000	7.15	0.0000	9.80	0.0000
1.90	0.0000	4.55	0.0000	7.20	0.0000	9.85	0.0000
1.95	0.0000	4.60	0.0000	7.25	0.0000	9.90	0.0000
2.00	0.0000	4.65	0.0000	7.30	0.0000	9.95	0.0000
2.05	0.0000	4.70	0.0000	7.35	0.0000	10.00	0.0000
2.10	0.0000	4.75	0.0000	7.40	0.0000		
2.15	0.0000	4.80	0.0000	7.45	0.0000		
2.20	0.0000	4.85	0.0000	7.50	0.0000		
2.25	0.0000	4.90	0.0000	7.55	0.0000		
2.30	0.0000	4.95	0.0000	7.60	0.0000		
2.35	0.0000	5.00	0.0000	7.65	0.0000		
2.40	0.0000	5.05	0.0000	7.70	0.0000		
2.45	0.0000	5.10	0.0000	7.75	0.0000		
2.50	0.0000	5.15	0.0000	7.80	0.0000		
2.55	0.0000	5.20	0.0000	7.85	0.0000		
2.60	0.0000	5.25	0.0000	7.90	0.0000		

Summary for Pond 3P: P1 Storm Tank

Inflow Area = 0.1956 ha, 0.00% Impervious, Inflow Depth = 47 mm for 100-Year event
Inflow = 0.0612 m³/s @ 0.17 hrs, Volume= 0.092 MI
Outflow = 0.0282 m³/s @ 0.51 hrs, Volume= 0.092 MI, Atten= 54%, Lag= 20.2 min
Primary = 0.0282 m³/s @ 0.51 hrs, Volume= 0.092 MI

Routing by Stor-Ind method, Time Span= 0.00-10.00 hrs, dt= 0.01 hrs
Peak Elev= 100.488 m @ 0.51 hrs Surf.Area= 74.4 m² Storage= 55.7 m³

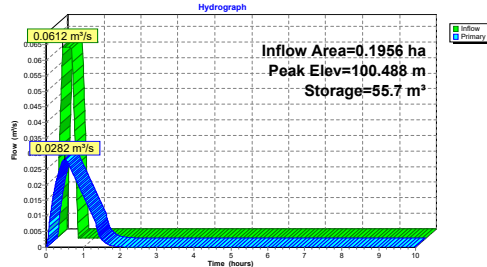
Plug-Flow detention time= 23.9 min calculated for 0.092 MI (100% of inflow)
Center-of-Mass det. time= 24.0 min (41.5 - 17.5)

Volume	Invert	Avail.Storage	Storage Description
#1	99.740 m	207.6 m³	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (meters)	Surf Area (sq-meters)	Inc.Store (cubic-meters)	Cum.Store (cubic-meters)
99.740	74.4	0.0	0.0
102.530	74.4	207.6	207.6

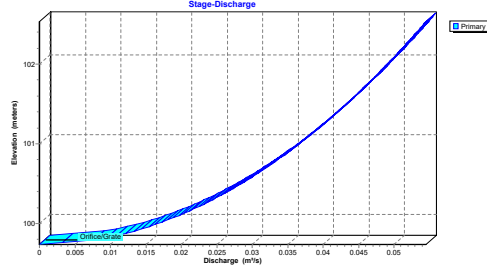
Device	Routing	Invert	Outlet Devices
#1	Primary	99.740 m	125 mm Horiz. Orifice/Gate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.0282 m³/s @ 0.51 hrs HW=100.488 m (Free Discharge)
C=1=Orifice/Gate (Orifice Controls 0.0282 m³/s @ 2.30 m/s)

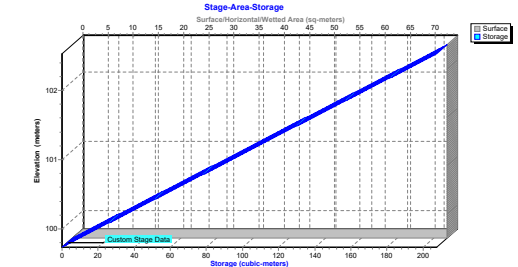
Pond 3P: P1 Storm Tank



Pond 3P: P1 Storm Tank



Pond 3P: P1 Storm Tank



Hydrograph for Pond 3P: P1 Storm Tank

Time (hours)	Inflow (m³/s)	Storage (cubic-meters)	Elevation (meters)	Primary (m³/s)
0.00	0.0000	0.0	99.740	0.0000
0.20	0.0612	19.9	100.007	0.0169
0.40	0.0612	48.1	100.386	0.0262
0.60	0.0000	59.3	100.415	0.0268
0.80	0.0000	32.8	100.181	0.0217
1.00	0.0000	19.1	99.996	0.0165
1.20	0.0000	9.0	99.861	0.0114
1.40	0.0000	2.9	99.778	0.0050
1.60	0.0000	0.9	99.752	0.0014
1.80	0.0000	0.3	99.744	0.0005
2.00	0.0000	0.1	99.741	0.0001
2.20	0.0000	0.0	99.740	0.0000
2.40	0.0000	0.0	99.740	0.0000
2.60	0.0000	0.0	99.740	0.0000
2.80	0.0000	0.0	99.740	0.0000
3.00	0.0000	0.0	99.740	0.0000
3.20	0.0000	0.0	99.740	0.0000
3.40	0.0000	0.0	99.740	0.0000
3.60	0.0000	0.0	99.740	0.0000
3.80	0.0000	0.0	99.740	0.0000
4.00	0.0000	0.0	99.740	0.0000
4.20	0.0000	0.0	99.740	0.0000
4.40	0.0000	0.0	99.740	0.0000
4.60	0.0000	0.0	99.740	0.0000
4.80	0.0000	0.0	99.740	0.0000
5.00	0.0000	0.0	99.740	0.0000
5.20	0.0000	0.0	99.740	0.0000
5.40	0.0000	0.0	99.740	0.0000
5.60	0.0000	0.0	99.740	0.0000
5.80	0.0000	0.0	99.740	0.0000
6.00	0.0000	0.0	99.740	0.0000
6.20	0.0000	0.0	99.740	0.0000
6.40	0.0000	0.0	99.740	0.0000
6.60	0.0000	0.0	99.740	0.0000
6.80	0.0000	0.0	99.740	0.0000
7.00	0.0000	0.0	99.740	0.0000
7.20	0.0000	0.0	99.740	0.0000
7.40	0.0000	0.0	99.740	0.0000
7.60	0.0000	0.0	99.740	0.0000
7.80	0.0000	0.0	99.740	0.0000
8.00	0.0000	0.0	99.740	0.0000
8.20	0.0000	0.0	99.740	0.0000
8.40	0.0000	0.0	99.740	0.0000
8.60	0.0000	0.0	99.740	0.0000
8.80	0.0000	0.0	99.740	0.0000
9.00	0.0000	0.0	99.740	0.0000
9.20	0.0000	0.0	99.740	0.0000
9.40	0.0000	0.0	99.740	0.0000
9.60	0.0000	0.0	99.740	0.0000
9.80	0.0000	0.0	99.740	0.0000
10.00	0.0000	0.0	99.740	0.0000

Stage-Discharge for Pond 3P: P1 Storm Tank

Elevation (meters)	Primary (m³/s)	Elevation (meters)	Primary (m³/s)	Elevation (meters)	Primary (m³/s)
99.740	0.0000	100.800	0.0336	101.860	0.0475
99.760	0.0020	100.820	0.0339	101.880	0.0477
99.780	0.0057	100.840	0.0342	101.900	0.0479
99.800	0.0080	100.860	0.0345	101.920	0.0482
99.820	0.0092	100.880	0.0348	101.940	0.0484
99.840	0.0103	100.900	0.0351	101.960	0.0486
99.860	0.0113	100.920	0.0354	101.980	0.0488
99.880	0.0122	100.940	0.0357	102.000	0.0490
99.900	0.0130	100.960	0.0360	102.020	0.0492
99.920	0.0138	100.980	0.0363	102.040	0.0495
99.940	0.0146	101.000	0.0366	102.060	0.0497
99.960	0.0153	101.020	0.0369	102.080	0.0499
99.980	0.0160	101.040	0.0372	102.100	0.0501
100.000	0.0166	101.060	0.0375	102.120	0.0503
100.020	0.0173	101.080	0.0378	102.140	0.0505
100.040	0.0179	101.100	0.0380	102.160	0.0507
100.060	0.0184	101.120	0.0383	102.180	0.0509
100.080	0.0190	101.140	0.0386	102.200	0.0512
100.100	0.0196	101.160	0.0389	102.220	0.0514
100.120	0.0201	101.180	0.0391	102.240	0.0516
100.140	0.0206	101.200	0.0394	102.260	0.0518
100.160	0.0211	101.220	0.0397	102.280	0.0520
100.180	0.0216	101.240	0.0399	102.300	0.0522
100.200	0.0221	101.260	0.0402	102.320	0.0524
100.220	0.0226	101.280	0.0405	102.340	0.0526
100.240	0.0231	101.300	0.0407	102.360	0.0528
100.260	0.0235	101.320	0.0410	102.380	0.0530
100.280	0.0240	101.340	0.0413	102.400	0.0532
100.300	0.0244	101.360	0.0415	102.420	0.0534
100.320	0.0248	101.380	0.0418	102.440	0.0536
100.340	0.0253	101.400	0.0420	102.460	0.0538
100.360	0.0257	101.420	0.0423	102.480	0.0540
100.380	0.0261	101.440	0.0425	102.500	0.0542
100.400	0.0265	101.460	0.0428	102.520	0.0544
100.420	0.0269	101.480	0.0430		
100.440	0.0273	101.500	0.0433		
100.460	0.0277	101.520	0.0435		
100.480	0.0281	101.540	0.0438		
100.500	0.0284	101.560	0.0440		
100.520	0.0288	101.580	0.0442		
100.540	0.0292	101.600	0.0445		
100.560	0.0295	101.620	0.0447		
100.580	0.0299	101.640	0.0450		
100.600	0.0302	101.660	0.0452		
100.620	0.0306	101.680	0.0454		
100.640	0.0309	101.700	0.0457		
100.660	0.0313	101.720	0.0459		
100.680	0.0316	101.740	0.0461		
100.700	0.0320	101.760	0.0464		
100.720	0.0323	101.780	0.0466		
100.740	0.0326	101.800	0.0468		
100.760	0.0329	101.820	0.0470		
100.780	0.0333	101.840	0.0473		

Stage-Area-Storage for Pond 3P: P1 Storm Tank

Elevation (meters)	Surface (sq-meters)	Storage (cubic-meters)	Elevation (meters)	Surface (sq-meters)	Storage (cubic-meters)
99.740	74.4	0.0	102.380	74.4	197.2
99.790	74.4	3.7	102.440	74.4	200.9
99.840	74.4	7.4	102.490	74.4	204.6
99.890	74.4	11.2			
99.940	74.4	14.9			
99.990	74.4	18.6			
100.040	74.4	22.3			
100.090	74.4	26.0			
100.140	74.4	29.8			
100.190	74.4	33.5			
100.240	74.4	37.2			
100.290	74.4	40.9			
100.340	74.4	44.6			
100.390	74.4	48.4			
100.440	74.4	52.1			
100.490	74.4	55.8			
100.540	74.4	59.5			
100.590	74.4	63.2			
100.640	74.4	67.0			
100.690	74.4	70.7			
100.740	74.4	74.4			
100.790	74.4	78.1			
100.840	74.4	81.8			
100.890	74.4	85.6			
100.940	74.4	89.3			
100.990	74.4	93.0			
101.040	74.4	96.7			
101.090	74.4	100.4			
101.140	74.4	104.2			
101.190	74.4	107.9			
101.240	74.4	111.6			
101.290	74.4	115.3			
101.340	74.4	119.0			
101.390	74.4	122.8			
101.440	74.4	126.5			
101.490	74.4	130.2			
101.540	74.4	133.9			
101.590	74.4	137.6			
101.640	74.4	141.4			
101.690	74.4	145.1			
101.740	74.4	148.8			
101.790	74.4	152.5			
101.840	74.4	156.2			
101.890	74.4	160.0			
101.940	74.4	163.7			
101.990	74.4	167.4			
102.040	74.4	171.1			
102.090	74.4	174.8			
102.140	74.4	178.6			
102.190	74.4	182.3			
102.240	74.4	186.0			
102.290	74.4	189.7			
102.340	74.4	193.4			

Events for Subcatchment 1S: Pre-Dev Area

Event	Rainfall (mm)	Runoff (m³/s)	Volume (Mega-liters)	Depth (mm)
5-Year	27	0.0194	0.029	15
10-Year	32	0.0229	0.034	18
25-Year	38	0.0303	0.045	23
50-Year	43	0.0367	0.055	28
100-Year	47	0.0423	0.063	32

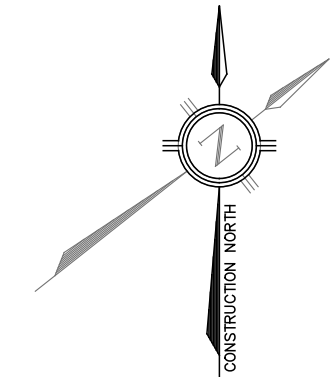
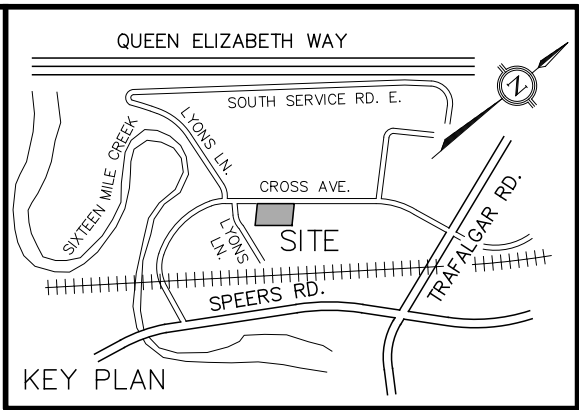
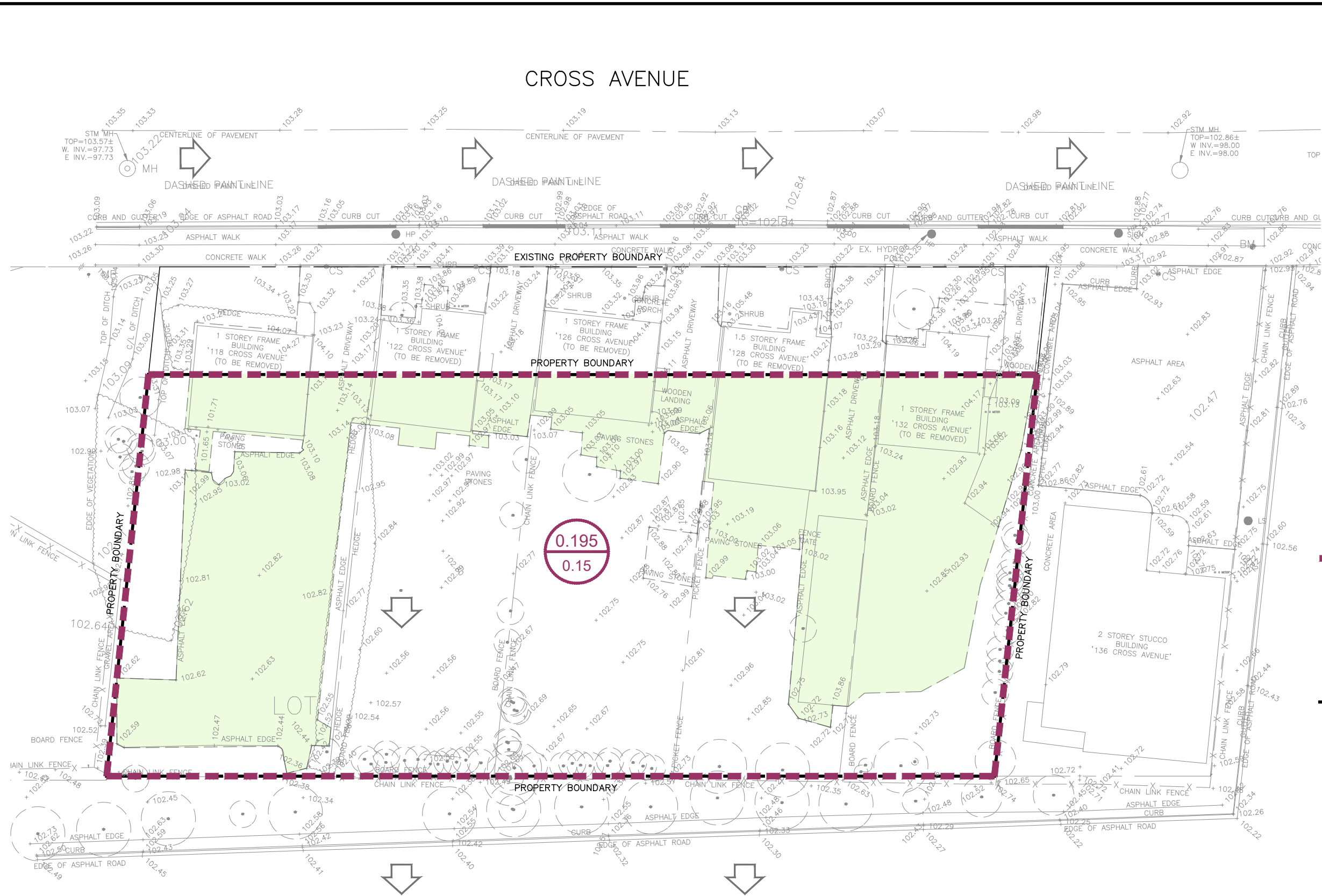
Events for Subcatchment 2S: Post-Dev Site Area

Event	Rainfall (mm)	Runoff (m³/s)	Volume (Mega-liters)	Depth (mm)
5-Year	27	0.0318	0.048	24
10-Year	32	0.0374	0.056	29
25-Year	38	0.0492	0.074	38
50-Year	43	0.0557	0.084	43
100-Year	47	0.0612	0.092	47

Events for Pond 3P: P1 Storm Tank

Event	Inflow (m³/s)	Primary (m³/s)	Elevation (meters)	Storage (cubic-meters)
5-Year	0.0318	0.0186	100.065	24.2
10-Year	0.0374	0.0207	100.142	29.9
25-Year	0.0492	0.0246	100.309	42.3
50-Year	0.0557	0.0266	100.405	49.5
100-Year	0.0612	0.0282	100.488	55.7

FILENAME: P:\1873 118-132 Cross Ave\04-CAD\03-Site Plan\1873F.dwg
PLOTDATE: Aug 06, 2026 - 3:39pm



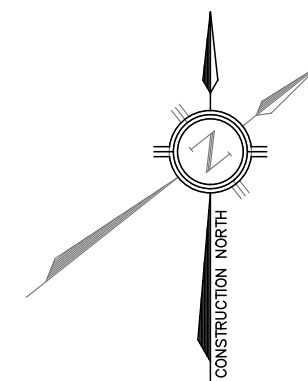
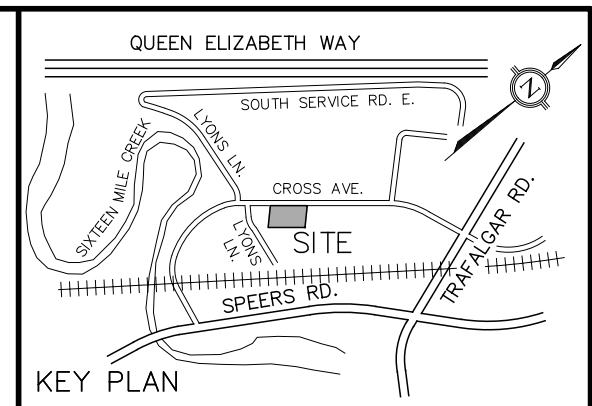
LEGEND

- 0.195 — AREA IN HECTARES
- 0.15 — RUN-OFF AREA COEFFICIENT
- STORM DRAINAGE AREA BOUNDARY
- EXISTING OVERLAND FLOW DIRECTION
- PRE-DEVELOPMENT IMPERVIOUS AREA
- PROPERTY LINE

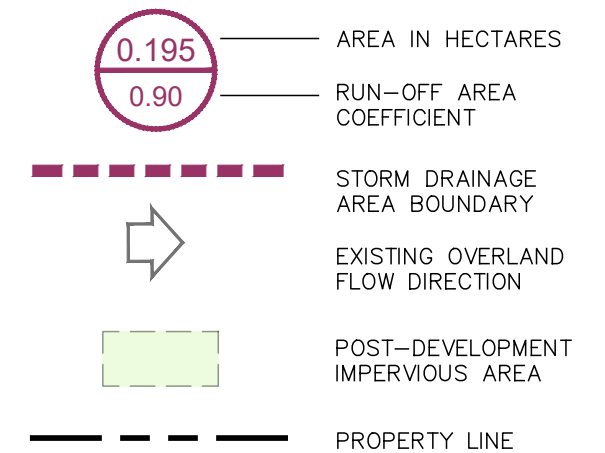
PROJECT TITLE	PROPOSED MIXED-USE CONDOMINIUM 118-132 CROSS AVENUE OAKVILLE, ONTARIO		
DRAWING TITLE	PRE-DEVELOPMENT STORM DRAINAGE AREA PLAN		



DESIGN BY	MW	SCALE	1:300	DRAWING No. FIG.1
DRAWN BY	GL	DATE	2026/07/24	



LEGEND



PROJECT TITLE

PROPOSED MIXED-USE CONDOMINIUM
118-132 CROSS AVENUE
OAKVILLE, ONTARIO

DRAWING TITLE

POST-DEVELOPMENT STORM DRAINAGE AREA PLAN



DESIGN BY	MW
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DRAWN BY GL

SCALE	1:300
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DATE	2026/07/24
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DRAWING No.

FIG. 2

Appendix 'E'

- Record Drawings
- Schedule L5 Midtown Oakville OPA



Information outside of the growth area boundary is shown for context.

**OPA No. 70
Proposed**

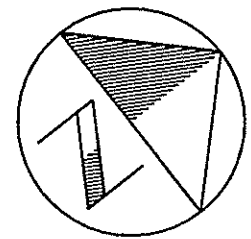
SCHEDULE L5 MIDTOWN OAKVILLE TRANSPORTATION NETWORK

- PROTECTED MAJOR TRANSIT STATION AREA / GROWTH AREA BOUNDARY
- PROPOSED TO BE REMOVED
- FUTURE LOCAL ROAD (20M)*
- FUTURE COLLECTOR (26M)*
- FUTURE MINOR ARTERIAL (30M)*
- FUTURE ARTERIAL (36M)*
- FUTURE STREET EXTENSIONS OUTSIDE OF MIDTOWN BOUNDARY
- FUTURE BRIDGE
- FUTURE UNDERPASS
- FUTURE ACTIVE TRANSPORTATION BRIDGE
- BRIDGE AND UNDERPASS ALIGNMENT SUBJECT TO FURTHER STUDY
- POTENTIAL FUTURE RAILWAY GRADE SEPARATION
- OAKVILLE GO STATION
- FUTURE PROTECTED STATION AREA
- TRAFALGAR BRT
- PROPOSED BRT STOP
- ALTERNATE BRT STOP (subject to further study)

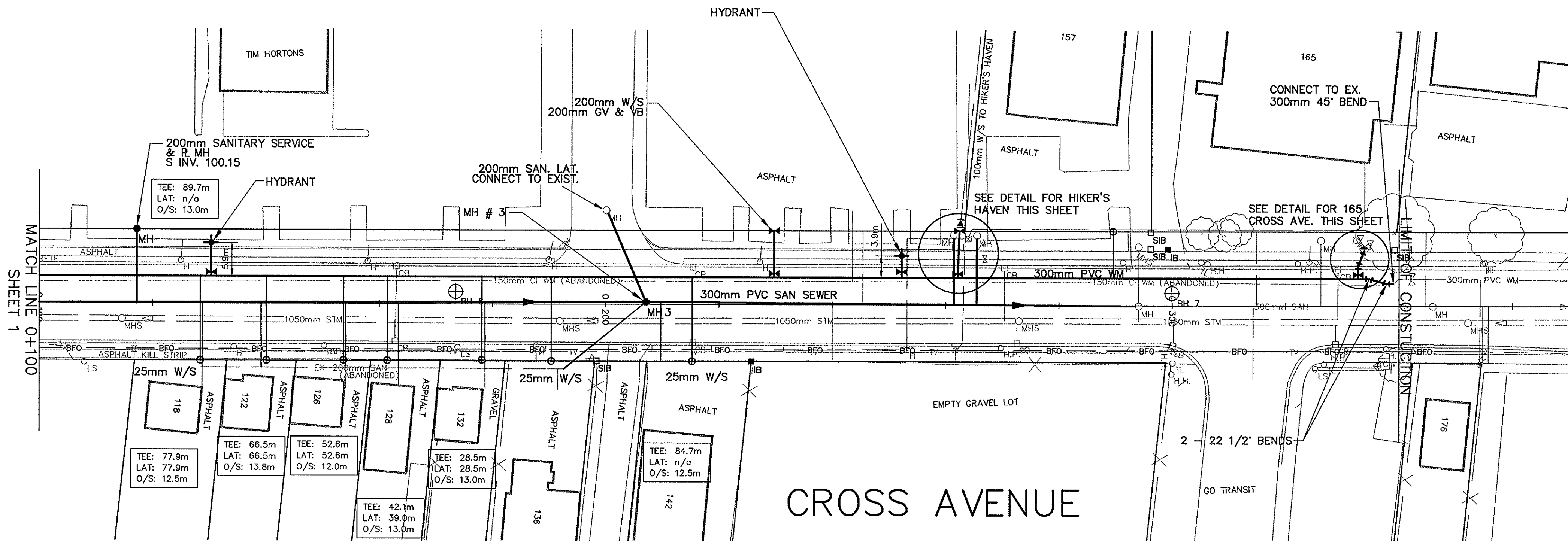
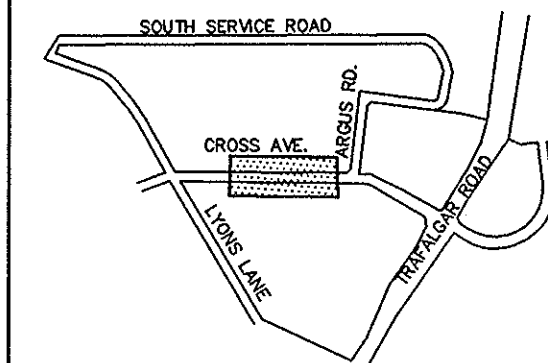
*THIS SCHEDULE DEPICTS THE PROPOSED FUTURE STREET NETWORK. FINAL ALIGNMENT SUBJECT TO FURTHER STUDY.

Refer to Part E, Midtown Oakville, for Growth Area Policies

1:6,600
FEBRUARY 2025

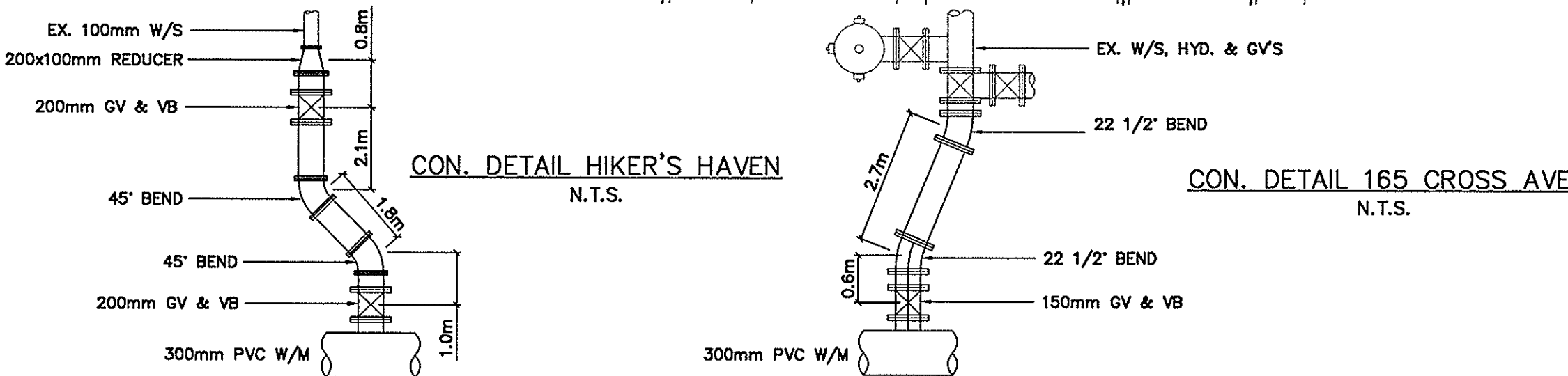


REGIONAL MUNICIPALITY OF HALTON,
ITS EMPLOYEES, OFFICERS AND AGENTS
ARE NOT RESPONSIBLE FOR ANY ERRORS,
OMISSIONS OR INACCURACIES, WHETHER
DUE TO THEIR NEGLIGENCE OR OTHERWISE.
ALL INFORMATION SHOULD BE VERIFIED.

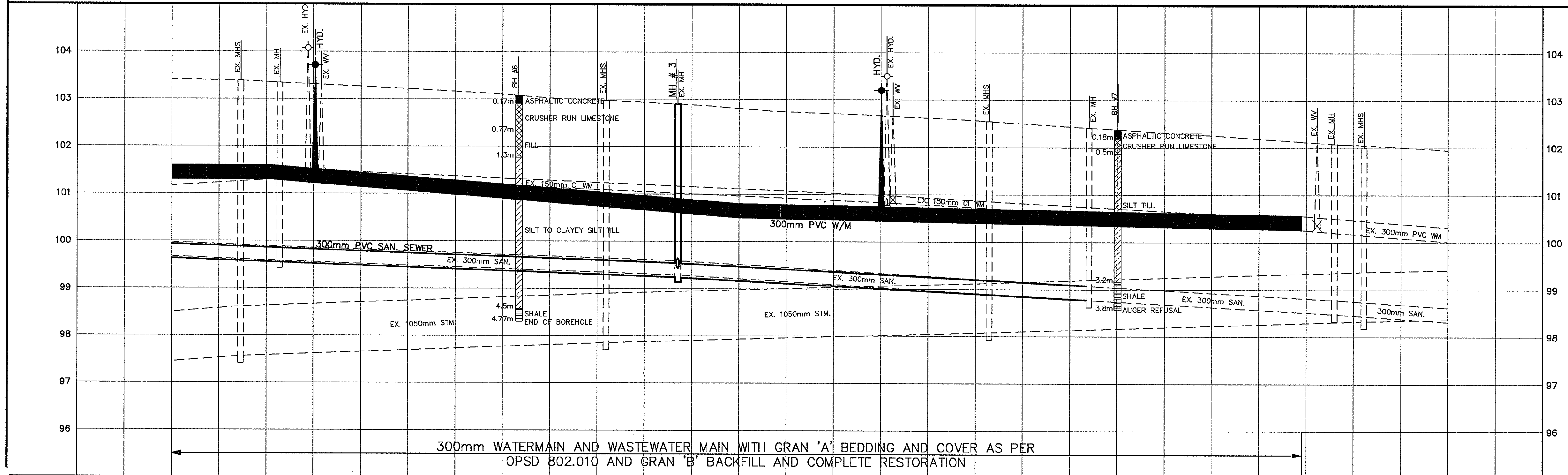


RESTRAINED LENGTHS FOR ALL WATERMAIN									
PIPE SIZE	90° H. BEND	11 1/4° H. BEND	22 1/2° H. BEND	45° H. BEND	SIZE ON SIZE TEE	VALVE, HYD., DEAD END	45° V. OFFSET*	22 1/2° V. OFFSET*	
150mm	3.71m	-	-	-	-	-	-	-	
300mm	-	0.67m	1.37m	2.83m	BR. ONLY	28.92m	11.97m / 1.61m	5.76m / 0.79m	

200x150mm REDUCING TEE: BRANCH ONLY, ASSUMING 3m MIN. ATTACHED RUN LENGTH
300x150mm REDUCING TEE: BRANCH ONLY, ASSUMING 3m MIN. ATTACHED RUN LENGTH
300x200mm REDUCING TEE: BRANCH ONLY, ASSUMING 3m MIN. ATTACHED RUN LENGTH
*FIRST NUMBER REPRESENTS THE DOWN BEND
SECOND NUMBER REPRESENTS THE UP BEND



- GENERAL NOTES
- ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
 - ALL WATERMAIN AND SANITARY SEWER INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS) AS AMENDED BY THE REGIONAL MUNICIPALITY OF HALTON.
 - THE LOCATION OF ALL EXISTING WATERMAIN, SANITARY SEWER, UTILITIES AND SERVICES ARE APPROXIMATE. THE CONTRACTOR MUST VERIFY THE LOCATION, VERIFY SIZE AND ELEVATION IN THE FIELD PRIOR TO CONSTRUCTION.
 - DRIVEWAY MATERIAL IS ASPHALT UNLESS OTHERWISE SPECIFIED.
 - UNLESS OTHERWISE NOTED, ALL NEW SANITARY SEWERS ARE TO BE PVC SDR 35 ASTM D3034 WITH GRANULAR 'A' BEDDING AND COVER AS PER OPSD 802.010 WITH GRANULAR 'B' BACKFILL.
 - UNLESS OTHERWISE NOTED, ALL EXISTING SANITARY LATERALS ARE TO BE REPLACED WITH PVC SDR28, 125mm DIA. CONNECTIONS FOR SINGLE FAMILY AND SEMI-DETACHED DWELLINGS AND 150mm DIA. CONNECTIONS FOR ALL OTHERS, AND ARE TO BE REPLACED FROM THE NEW SEWER MAIN TO EXISTING LATERALS AT THE PROPERTY LINE.
 - UNLESS OTHERWISE NOTED, ALL THE EXISTING SANITARY MANHOLES ARE TO BE EITHER REMOVED OR BROKEN DOWN 1.0m BELOW ROAD GRADE AND BACKFILLED WITH GRANULAR 'B' WITH COMPLETE RESTORATION. FRAMES AND COVERS ARE TO BE SALVAGED AND RETURNED TO THE REGIONAL STORES, 2316 SOUTH SERVICE ROAD, OAKVILLE.
 - WATERMAIN MATERIAL IS TO BE EITHER DUCTILE IRON PRESSURE CLASS 350 AS PER AWWA C-150 OR PVC SDR-18 CL-150 AS PER AWWA C-900.
 - UNLESS OTHERWISE NOTED, ALL EXISTING WATER SERVICES ARE TO BE REPLACED WITH A MIN. 19mm DIA. COPPER FOR RESIDENTIAL DWELLINGS AND 25mm DIA. COPPER FOR INDUSTRIAL AND COMMERCIAL PREMISES AS PER OPSD 1104.010. UNLESS OTHERWISE NOTED, SERVICES ARE TO BE REPLACED FROM THE MAIN TO THE PROPERTY LINE WITH A NEW CURB STOP AND SERVICE BOX AT THE PROPERTY LINE.
 - THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CAPS, PLUGS AND BLOW OFFS REQUIRED FOR TESTING THE NEW WATERMAIN.
 - MAXIMUM ALLOWABLE PIPE JOINT DEFLECTION OF THE WATERMAIN SHALL BE 70% OF THE MANUFACTURER'S SPECIFICATIONS. PIPE BARREL DEFLECTION IS STRICTLY PROHIBITED.
 - CORROSION PROTECTION IS REQUIRED FOR ALL METALLIC PIPE, VALVES, FITTINGS SERVICES AND HYDRANTS. CATHODIC PROTECTION (ZINC ANODE) AS PER THE DETAILS IN THE REGIONAL DESIGN SPECIFICATIONS OR 8 MIL MEDIUM DENSITY POLYETHYLENE ENCASEMENT AS PER AWWA C-105 SHALL BE USED.
 - AFTER REMOVING VALVE BOXES AND HYDRANTS, BACKFILL WITH COMPACTED GRANULAR 'A'. WHERE EXISTING VALVE CHAMBERS ARE TO BE ABANDONED, ALL VALVES WITHIN THE CHAMBER ARE TO BE LEFT IN PLACE AND THE CHAMBER IS TO BE BROKEN DOWN TO 1.0m BELOW FINAL GRADE AND BACKFILLED WITH NON-SHRINK BACKFILL SUBGRADE. THE AFFECTED AREA SHALL BE COMPLETELY RESTORED. ALL HYDRANTS SHOWN FOR REMOVAL SHALL BE RETURNED TO REGIONAL STORES AT 2316 SOUTH SERVICE ROAD, OAKVILLE, UNLESS OTHERWISE NOTED, ALL VALVES WHICH ARE SHOWN FOR REMOVAL SHALL BE DISPOSED OF BY CONTRACTOR.
 - EXISTING WATERMAIN IS TO BE EITHER REMOVED OR PLUGGED AND ABANDONED AS REQUIRED.
 - HYDRANTS ARE TO BE INSTALLED SUCH THAT THE LOWER ROD/STEM LENGTH SHALL NOT EXCEED 1.7m MEASURED FROM THE BREAK-OFF FLANGE.
 - REGIONAL MUNICIPALITY OF HALTON APPROVED MECHANICAL RESTRAINTS ARE TO BE USED ON ALL STANDARD BENDS, VALVES, FITTINGS AND HYDRANTS. REFER TO TABLE.



ℳ ELEVATIONS	103.40	103.40	103.36	103.31	103.26	103.22	103.16	103.10	103.03	102.98	102.94	102.88	102.81	102.74	102.70	102.66	102.62	102.56	102.50	102.44	102.38	102.32	102.26	102.26	102.26	102.26	ℳ ₂ ELEVATIONS		
WATERMAIN INVERTS																										WATERMAIN INVERTS			
SANITARY INVERTS	← 142.0m @ 0.37% → S 99.51 N 99.41 W 99.24 E 99.21 ← 87.0m @ 0.45% → W 98.82 E 98.77 (EXST.)																									SANITARY INVERTS			
CHAINAGE	0+100		0+120		0+140		0+160		0+180		0+200	0+207.09	0+220		0+240		0+260		0+280		0+294	0+300		0+320		0+339		0+360	CHAINAGE

JULY/05

D.C.

AS CONSTRUCTED - PLAN ONLY

No	Date	By	REVISIONS	MANU CAD
Design	BK	Ch'kd		Date
Drawn	DC	Ch'kd		SEPTEMBER 2001

Scale
Horiz. 1:500
Vert. 1:50

APPROVALS

Municipal

Regional

Director, Engineering Services

Manager, Design Services

Field Notes

REGION BOOK 675

Stamp

Halton

WATERMAIN AND WASTEWATER MAIN
REPLACEMENT ON
CROSS AVENUE
OAKVILLE
FROM 60m± E. OF LYONS LN.
TO 45m± W. OF ARGUS ROAD

Consultant File No

WS-1782B-01

O- 13130

Drawing No

SHEET 2 OF 2

Appendix 'F'

Preliminary Servicing Plan, Dwg. 1873S1

- Preliminary Grading Plan, Dwg. 1873G1

- Details and Sections, Dwg. 1873D1

- Erosion and Sediment Control Plan , Dwg. 1873E1

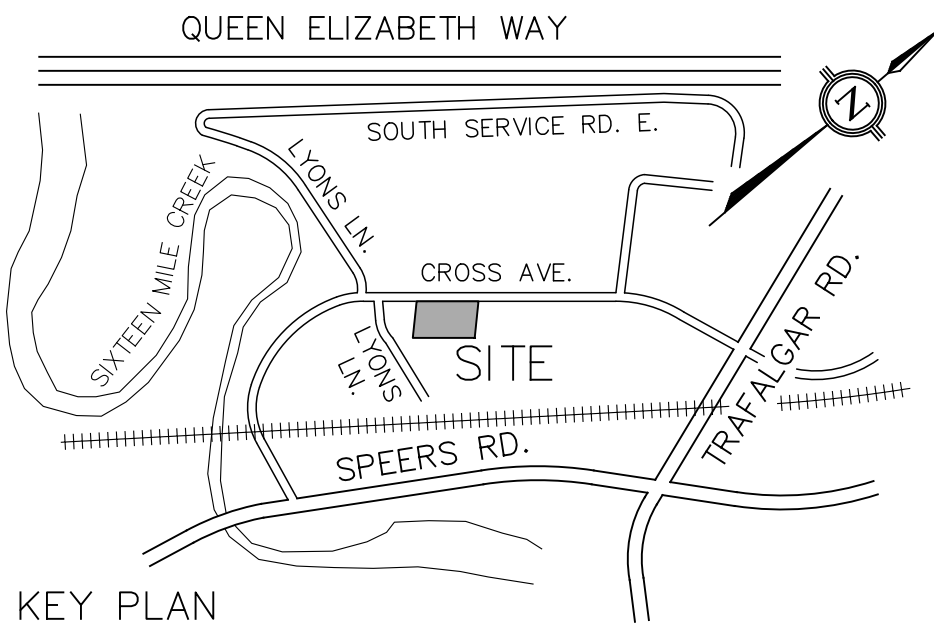
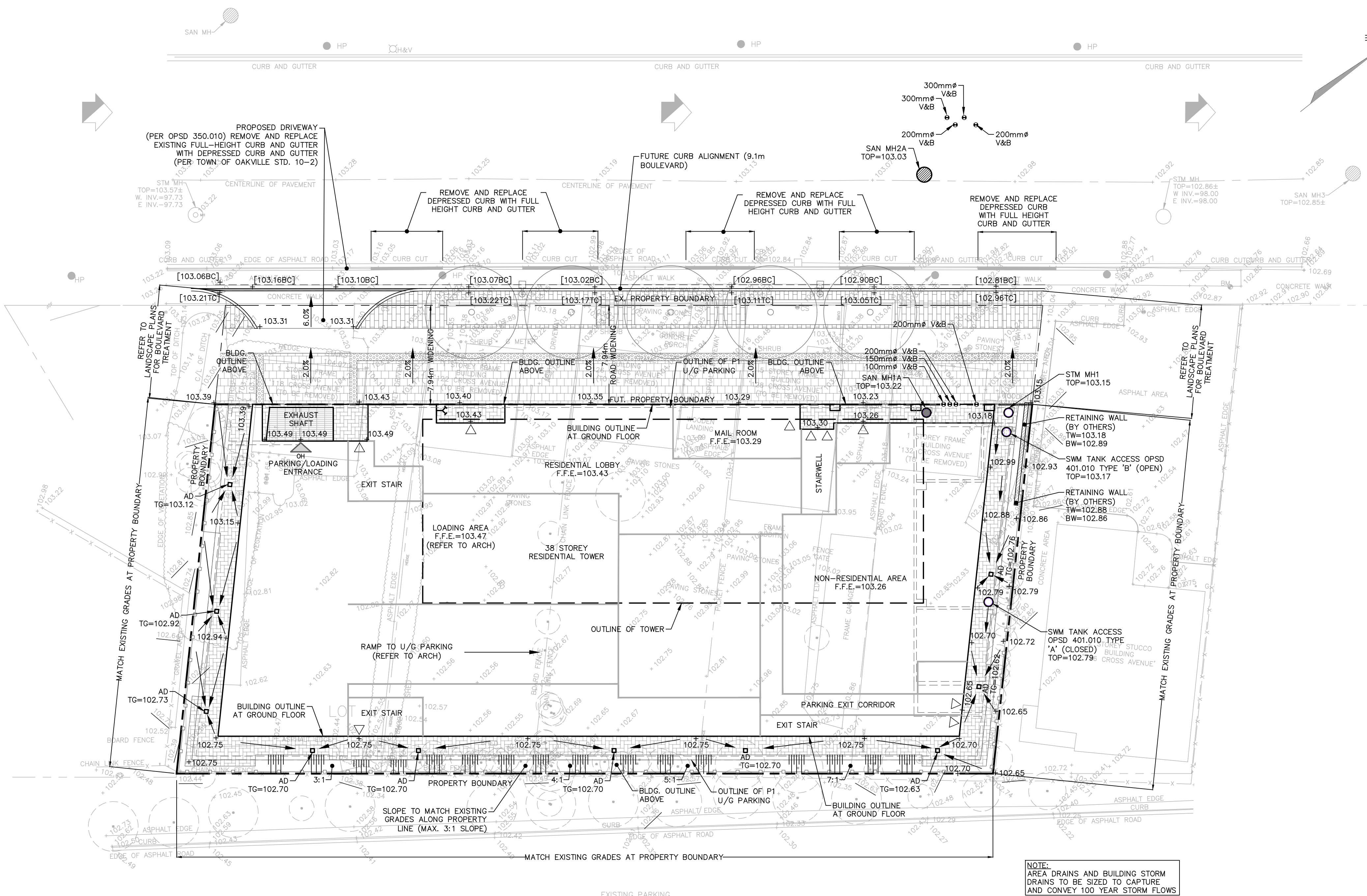
GENERAL NOTES

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- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL, MECHANICAL AND LANDSCAPE DRAWINGS.
- ALL INFORMATION SHOWN REGARDING THE LOCATION AND SIZE OF EXISTING UTILITIES AND/OR SERVICES HAS NOT BEEN VERIFIED. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATION OF UTILITIES PRIOR TO CONSTRUCTION AND PROTECTING AND MAINTAINING DURING CONSTRUCTION.
- THE CONTRACTOR SHALL CHECK AND VERIFY ALL GIVEN GRADES, DIMENSIONS, AND ELEVATIONS, PRIOR TO CONSTRUCTION AND ANY DISCREPANCIES FOUND PRIOR TO OR DURING CONSTRUCTION SHALL BE CLARIFIED WITH THE ENGINEER.
- ALL GRADING CHANGES SHALL BE APPROVED BY THE ENGINEER AND TOWN OF OAKVILLE PRIOR TO IMPLEMENTATION. ALL DISTURBED AREAS WITHIN THE PUBLIC R.O.W. TO BE REINSTATED TO THE SATISFACTION OF THE ENGINEERING AND CONSTRUCTION DEPARTMENT. EXISTING SODDED AREAS TO BE REINSTATED WITH 200MM TOPSOIL AND SOD. SIDEWALKS AND PATHWAYS SHALL BE RESTORED WITH MATERIAL TO MATCH ORIGINAL UNLESS OTHERWISE NOTED.
- CONTRACTOR TO REFER TO GEOTECHNICAL REPORT FOR PAVEMENT CONSTRUCTION AND SUBDRAINAGE DETAILS.
- ALL WORKS WITHIN THE PUBLIC ROADWAY TO BE RESTORED TO THE SATISFACTION OF THE TOWN OF OAKVILLE ENGINEERING AND CONSTRUCTION DEPARTMENT.
- RESTORE ROAD AS PER THE TOWN OF OAKVILLE ROAD CUT PERMIT.

GRADING NOTES

- ALL TOPSOIL SHALL BE STRIPPED PRIOR TO GRADING.
- ALL FILL PLACEMENT SHALL BE DONE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERS RECOMMENDATIONS.
- ALL DISTURBED AREAS TO BE SEEDED WITH 200-300mm TOPSOIL.
- ALL DISTURBED AREAS WITHIN PUBLIC R.O.W. TO BE REINSTATED WITH 200mm TOPSOIL AND SOD.
- THE MAXIMUM SLOPE ALLOWED ON ANY YARD SURFACE SIDE, FRONT, AND REAR SHALL BE 3:1 (3 HORIZONTAL TO 1 VERTICAL).
- DRIVEWAY SLOPE SHALL BE A MINIMUM OF 1.0% AND A MAXIMUM OF 7.0% UNLESS OTHERWISE INDICATED.

CROSS AVENUE



- LEGEND
- PROPOSED STORM MANHOLE
 - PROPOSED CATCHBASIN
 - PROPOSED SANITARY MANHOLE
 - ⊕ PROPOSED VALVE & BOX
 - AD □ PROPOSED AREA DRAIN
 - + 88.42 EXISTING ELEVATION
 - + 88.42 EXISTING ELEVATION TO REMAIN
 - + 88.42 PROPOSED FINISHED ELEVATION
 - [102.81BC] PROPOSED FUTURE CURB ELEVATION
 - 2.0% PROPOSED DRAINAGE DIRECTION
 - ➡ PROPOSED OVERLAND FLOW DIRECTION
 - ➡ EXISTING OVERLAND FLOW DIRECTION
 - △ PROPOSED DOOR
 - △ PROPOSED OVERHEAD DOOR
 - OH PROPOSED RETAINING WALL
 - PROPOSED SLOPE

NO.	DATE	BY/DRAWN	REVISIONS
1	26/08/06	MW/GL	ISSUED FOR OPA/ZBA

BENCHMARK
ELEVATIONS ARE OF GEODETIC ORIGIN (CGVD-1928:78), AND ARE DERIVED FROM GNSS OBSERVATIONS AND NATURAL RESOURCES CANADA'S GEOD MODEL HT2.0.

LOCAL BENCHMARK
CUT CROSS LOCATED IN FRONT OF 136 CROSS AVENUE ON THE NORTH SIDE OF CONCRETE SIDEWALK 1.1m NORTH OF HANDWELL AND 0.9m WEST OF CORNER OF SIDEWALK, AS SHOWN ON FACE OF PLAN ELEVATION: 102.83m.

NOTE
THE SURVEY WAS COMPLETED ON THE 24TH DAY OF MARCH 2025 BY J.D. BARNES LIMITED, LAND INFORMATION SPECIALISTS, REFERENCE No.: 25-30-292-00

DESIGNED BY

APPROVED BY

CONSULTANT

TRAFALGAR ENGINEERING
8201-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com

PROJECT TITLE
PROPOSED MIXED-USE CONDOMINIUM

LOCATION
**118-132 CROSS AVENUE
OAKVILLE, ONTARIO**

DRAWING TITLE
PRELIMINARY GRADING PLAN

SCALE	1:200	DESIGN BY	MW	PROJECT No.	1873
DRAWN BY	GRL	CHECKED BY	PC	PLAN No.	G1
DATE	2025/11/12	SHEET	OF		

GENERAL NOTES

- CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS OF THE REGIONAL MUNICIPALITY OF HALTON, TOWN OF OAKVILLE AND THE ONTARIO BUILDING CODE (PART 7). ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND DRAWINGS (OPSS & OPSD) SHALL BE USED IN ABSENCE OF LOCAL STANDARDS.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL, MECHANICAL AND LANDSCAPE DRAWINGS.
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- THE CONTRACTOR SHALL CHECK AND VERIFY ALL GIVEN GRADES, DIMENSIONS, AND ELEVATIONS, PRIOR TO CONSTRUCTION AND ANY DISCREPANCIES FOUND PRIOR TO OR DURING CONSTRUCTION SHALL BE CLARIFIED WITH THE ENGINEER.
- ALL GRADING CHANGES SHALL BE APPROVED BY THE ENGINEER AND TOWN OF OAKVILLE PRIOR TO IMPLEMENTATION. ALL DISTURBED AREAS WITHIN THE PUBLIC R.O.W. TO BE REINSTATED TO THE SATISFACTION OF THE ENGINEERING AND CONSTRUCTION DEPARTMENT. EXISTING SODDED AREAS TO BE REINSTATED WITH 200MM TOPSOIL AND SOD. SIDEWALKS AND PATHWAYS SHALL BE RESTORED WITH MATERIAL TO MATCH ORIGINAL UNLESS OTHERWISE NOTED.
- CONTRACTOR TO REFER TO GEOTECHNICAL REPORT FOR PAVEMENT CONSTRUCTION AND SUBDRAINAGE DETAILS.
- ALL WORKS WITHIN THE PUBLIC ROADWAY TO BE RESTORED TO THE SATISFACTION OF THE TOWN OF OAKVILLE ENGINEERING AND CONSTRUCTION DEPARTMENT.
- RESTORE ROAD AS PER THE TOWN OF OAKVILLE ROAD CUT PERMIT.
- ALL REMOVED OR DAMAGED CURBS, SIDEWALK, GRANULARS, ASPHALT, AND SOD RESULTING FROM SERVICE INSTALLATION SHALL BE REINSTATED BY SERVING CONTRACTOR TO TOWN OF OAKVILLE STANDARDS.

SERVICING NOTES

- ALL SERVICES SHALL BE BACKFILLED WITH GRANULAR BACKFILL COMPACTED TO 98% S.P.M.D. NATIVE BACKFILL MAY BE USED WITH THE PERMISSION OF THE GEOTECHNICAL CONSULTANT. BEDDING AND COVER MATERIAL SHALL BE PER THE GEOTECHNICAL CONSULTANT RECOMMENDATIONS.
- BACKFILLING AND RESTORATION WITHIN THE PUBLIC ROAD SHALL BE IN ACCORDANCE WITH THE TOWN OF OAKVILLE STANDARD AND TO THE SATISFACTION OF THE ENGINEERING & CONSTRUCTION DEPARTMENT.
- SURROUND ALL MANHOLES WITH A MINIMUM OF 1.5m COMPACTED GRANULAR 'C' BACKFILL.
- ALL ENDS OF SERVICE CONNECTIONS SHALL BE MARKED WITH 50x100 LUMBER PLACED FROM INVERT OF SERVICE TO 1.0m ABOVE GRADE. IF PROVIDING SERVICE CONNECTIONS UP TO THE PROPERTY LINE (IE. MUNICIPAL WORKS CONNECTION).
- ALL SEWERS SHALL BE FLUSHED AND CCTV INSPECTED AT COMPLETION.
- ALL REMOVED OR DAMAGED CURBS, SIDEWALK, GRANULARS, ASPHALT, AND SOD RESULTING FROM SERVICE INSTALLATION SHALL BE REINSTATED BY THE CONTRACTOR TO THE SATISFACTION OF THE MUNICIPALITY.

STORM SEWERS

- ALL STORM SEWERS 600mm AND SMALLER SHALL BE PVC SDR35 OR ULTRA RIBBED PVC CSA 182.4 WITH BEDDING PER OPSD 802.010. BEDDING MATERIAL SHALL BE CRUSHED STONE (HL-6 GRAVEL AGGREGATE) AND A GRANULAR "C" COVER MATERIAL.
- ALL STORM MANHOLES SHALL BE 1200mm PER OPSD 701.010 c/w COVER PER OPSD 401.010, UNLESS OTHERWISE NOTED. BENCHING IN MANHOLES AND CATCHBASIN MANHOLES IS TO EXTEND UP TO SPRINGLINE OF THE PIPE.

SANITARY SEWERS

- SANITARY MANHOLES AS PER O.P.S.D. 701.010 WITH FRAMES AND COVERS AS PER O.P.S.D. 401.010 TYPE "A" (AS AMENDED RESPECTIVELY BY THE REGION OF HALTON) UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- BENCHING IN MANHOLES TO BE AS PER O.P.S.D. 701.021 AS AMENDED BY THE REGION OF HALTON. BENCHING IN SANITARY MANHOLES TO BE TO THE OVERT OF THE PIPE.
- SANITARY SEWER PIPE SHALL BE PVC SDR35 (GREEN IN COLOUR) CONFORMING TO CSA B182.2 UNLESS OTHERWISE NOTED.
- SANITARY SERVICE CONNECTIONS TO BE MINIMUM 2% GRADE AND SHALL BE NON-WHITE IN COLOUR. FOR PVC LATERAL CONNECTIONS, PIPE SHALL BE GREEN IN COLOUR AND DR28 SHALL BE USED.
- SERVICES TO BE MIN. 3.15M AND MAX. 2.75M DEEP AT PROPERTY LINE. RISERS SHALL BE USED WHERE NOTED AS PER O.P.S.D. 1006.010.
- GRANULAR "A" BEDDING AND COVER ON ALL SEWERS AND CONNECTIONS TO BE AS PER O.P.S.D. 802.010 UNLESS NOTED OTHERWISE, WITH GRANULAR "B" BACKFILL.
- GRANULAR BACKFILL AROUND MANHOLES SHALL BE COMPACTED BY MECHANICAL MEANS TO A MINIMUM OF 95% S.P.D.

WATERMAINS

- WATERMAINS 150mm TO 300mm DIAMETER TO BE P.V.C. CL235 (DR-18) AS PER AWWA C900 (CSA B137.3) WITH GASKETED JOINTS.
- WATER SERVICE CONNECTIONS TO BE AS PER O.P.S.D. 1104.01. AS AMENDED BY REGION OF HALTON PIPE FOR ALL SERVICE CONNECTIONS UP TO 50mm DIA. SHALL BE TYPE "K" SOFT COPPER TUBING MEETING AWWA C800 (LATEST EDITION).
- A MIN. HORIZONTAL SEPARATION OF 2.5M MUST BE MAINTAINED BETWEEN WATERMAINS AND SANITARY OR STORM SEWERS, INCLUDING SERVICE LATERALS.
- A MIN. VERTICAL SEPARATION OF 0.15M BETWEEN WATERMAINS AND SEWERS MUST BE MAINTAINED IF WATERMAIN CROSSES ABOVE SEWER OR 0.50M IF WATERMAIN CROSSES BELOW SEWER.
- WATERMAIN BEDDING AND COVER TO BE SUITABLE GRANULAR BEDDING MATERIAL AS PER O.P.S.D. 802.010 AND O.P.S.S. 401.
- ALL METALLIC WATERMAINS, FITTINGS, AND APPURTENANCES SHALL BE INSTALLED WITH A MINIMUM OF ONE ANODE PER LENGTH PER PIPE AND ONE ANODE PER ELECTRONICALLY ISOLATED APPURTENANCE AND INSTALLED IN ACCORDANCE WITH OPSD 442 AND OPSD 1109.010 AND 1109.011. ANODE INSTALLATION IS NOT REQUIRED WITHIN VALVE CHAMBERS, DRAIN CHAMBERS, AIR RELEASE CHAMBERS OR SWAB PORTS.

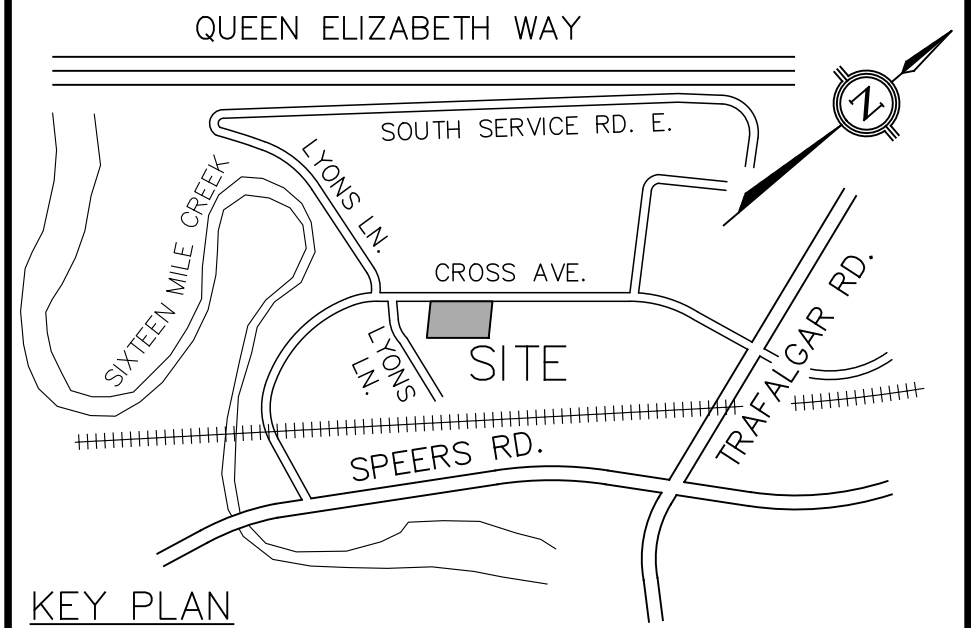
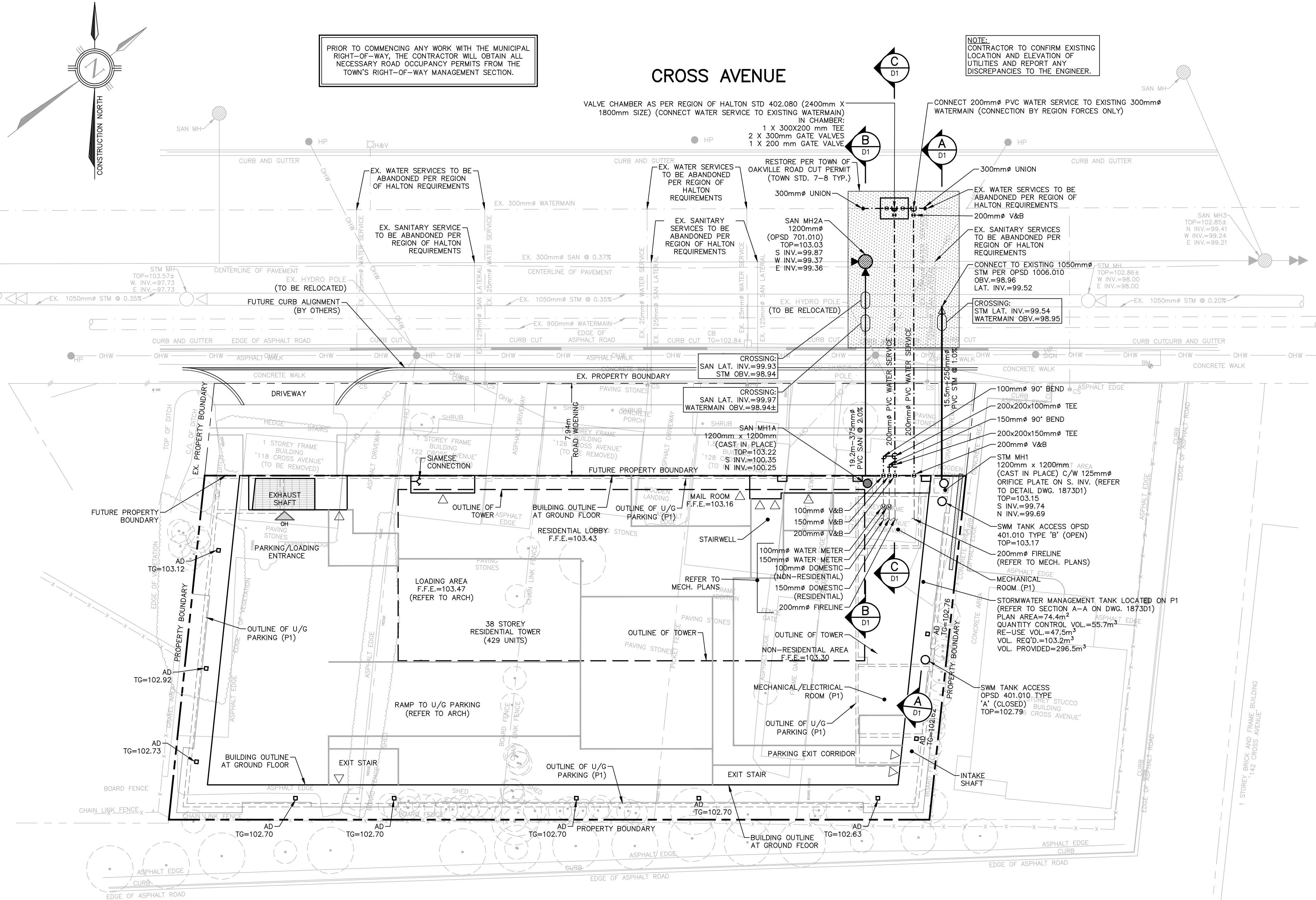
WATERMAINS CONT.

- ALL SACRIFICIAL ANODES SHALL CONFORM TO A.S.T.M. B-418 TYPE II AND SHALL BE MADE OF HIGH GRADE ELECTROLYTIC ZINC, 99.99% PURE.
- ALL WELD CONNECTIONS TO BE COATED WITH "TC MASTIC" OR APPROVED EQUIVALENT.
- FOR ALL ANODES CONNECTED TO NEW PIPE, FITTINGS OR TO EXISTING METALLIC WATERMAINS, A CADWELDER AND CA-15 OR EQUIVALENT CARTRIDGE SHALL BE USED. ANODE INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- WHERE NEW PIPE IS METALLIC OR OTHERWISE TO BE CONNECTED TO EXISTING DUCTILE IRON OR CAST IRON PIPE A 14.5KG MAGNESIUM ANODE IS TO BE CONNECTED TO THE FIRST LENGTH OF EXISTING PIPE, AS PER OPSD 442 AND OPSD 1109.010 AND 1109.011.
- ALL VALVES TO OPEN LEFT (COUNTER-CLOCKWISE), BE OF THE APPROVED TYPE WITH NON-RISING STEM AND SHALL HAVE 50MM SQUARE STANDARD AWWA OPERATING NUT.
- ALL PLUGS, CAPS, TEES, BENDS, AND OTHER APPURTENANCES SHALL BE MECHANICALLY RESTRAINED AS PER MANUFACTURER'S SPECIFICATIONS. MECHANICAL THRUST RESTRAINT DEVICES SHALL HAVE THIRD PARTY TESTING, APPROVALS FROM THE UNDERWRITERS LABORATORY (UL) AND FACTORY MUTUAL (FM), AND BE INCLUDED IN HALTON REGION'S APPROVED MANUFACTURER'S PRODUCT LIST FOR WATER SYSTEMS.

CONSTRUCTION NOTES

- CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY TRAFFIC CONTROLS, PER OTM BOOK 7.
- CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT, WITH CONTROL BARS PROVIDED BY THE OWNER. PROTECTION OF CONTROL BARS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE TO VERIFY THE SIZE AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, INCLUDING VAC TRUCK AND RESTORATION AS REQUIRED.
- CONTRACTOR SHALL PROVIDE THIRD-PARTY DIGITAL AS-BUILTS IN CAD, TO INCLUDE ALL NEW SITE SERVING INCLUDING TOPS AND INVERTS, AND FINISHED GRADES, INCLUDING PAVED AREAS, SWALES, CURBS, SIDEWALKS AND RETAINING WALLS, TO THE SATISFACTION OF THE ENGINEER.
- CONTRACTOR SHALL FLUSH AND VIDEO ALL EXISTING SEWERS PRIOR TO AND AFTER CONNECTION, AND NEW AND DISTURBED SEWERS UPON INSTALLATION AND UPON COMPLETION OF TOP WORKS AND LANDSCAPING, PER OPSD 409. VIDEOS TO BE PROVIDED TO THE ENGINEER FOR REVIEW AND APPROVAL.

FILENAME: P:\1873 118-132 Cross Ave 04-CAD 01-Base\1873TB.dwg
PLOT DATE: Nov 12, 2025 - 5:10pm



LEGEND

- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- ⊗ PROPOSED VALVE & BOX
- ⊕ WATER METER
- PROPOSED STORM
- PROPOSED SANITARY
- PROPOSED WATER SERVICE/WATERMAIN
- PROPERTY BOUNDARY
- △ PROPOSED DOOR
- △ OH PROPOSED OVERHEAD DOOR
- PROPOSED AREA DRAIN

NO.	DATE	BY/DRAWN	REVISIONS
1	26/08/06	MW/GL	ISSUED FOR OPA/ZBA

CAD FILE: 1873TB.dwg | PLOT SCALE: 1:1 | PLOT DATE: Aug 06, 2026

BENCHMARK			
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NOTE

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DESIGNED BY

APPROVED BY

CONSULTANT

8201-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
www.trafalgareng.com

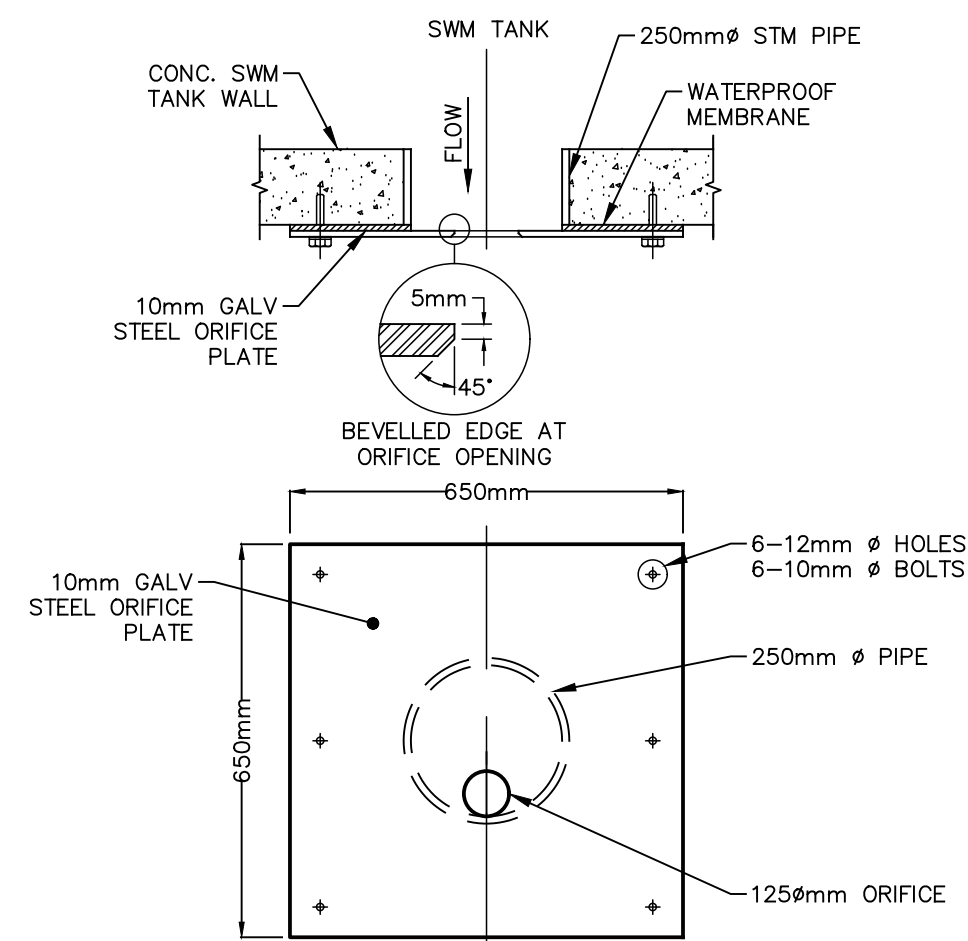
PROJECT TITLE
PROPOSED MIXED-USE CONDOMINIUM

LOCATION
**118-132 CROSS AVENUE
OAKVILLE, ONTARIO**

DRAWING TITLE
**PRELIMINARY
SERVICING PLAN**

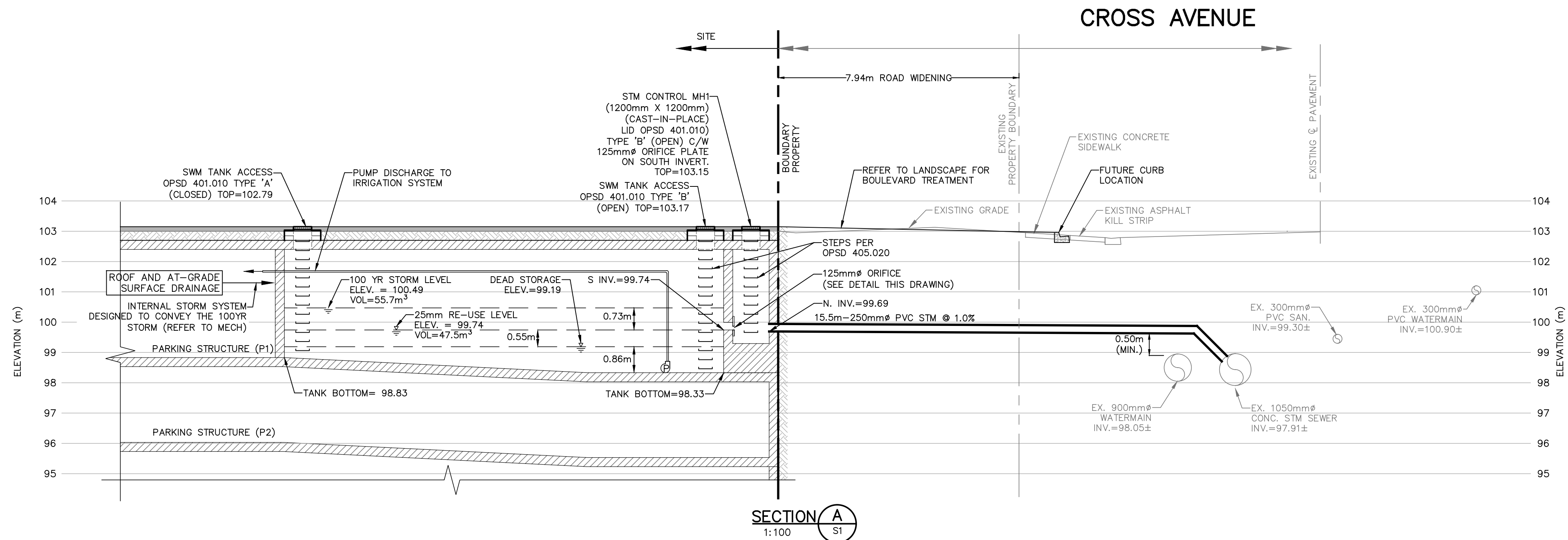
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DRAWN BY	GRL	CHECKED BY	PC	PLAN No.	S1
DATE	2025/11/12	SHEET	OF		

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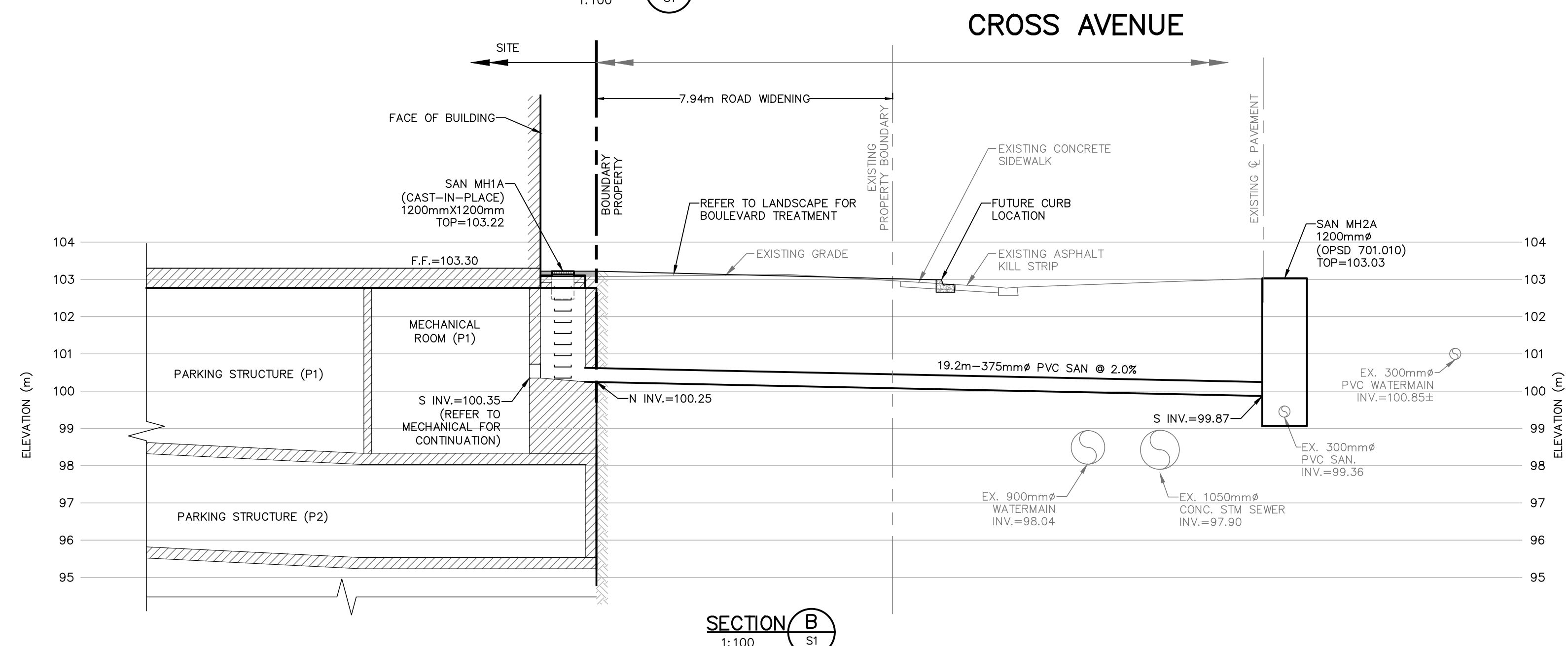


NOTE:
-ALL STEEL TO BE HOT DIPPED GALVANIZED AFTER FABRICATION
-ORIFICE PLATE TO BE WATERTIGHT
-BENCHING SHALL NOT INTERFERE WITH INSTALLATION OR REMOVAL OF PLATE

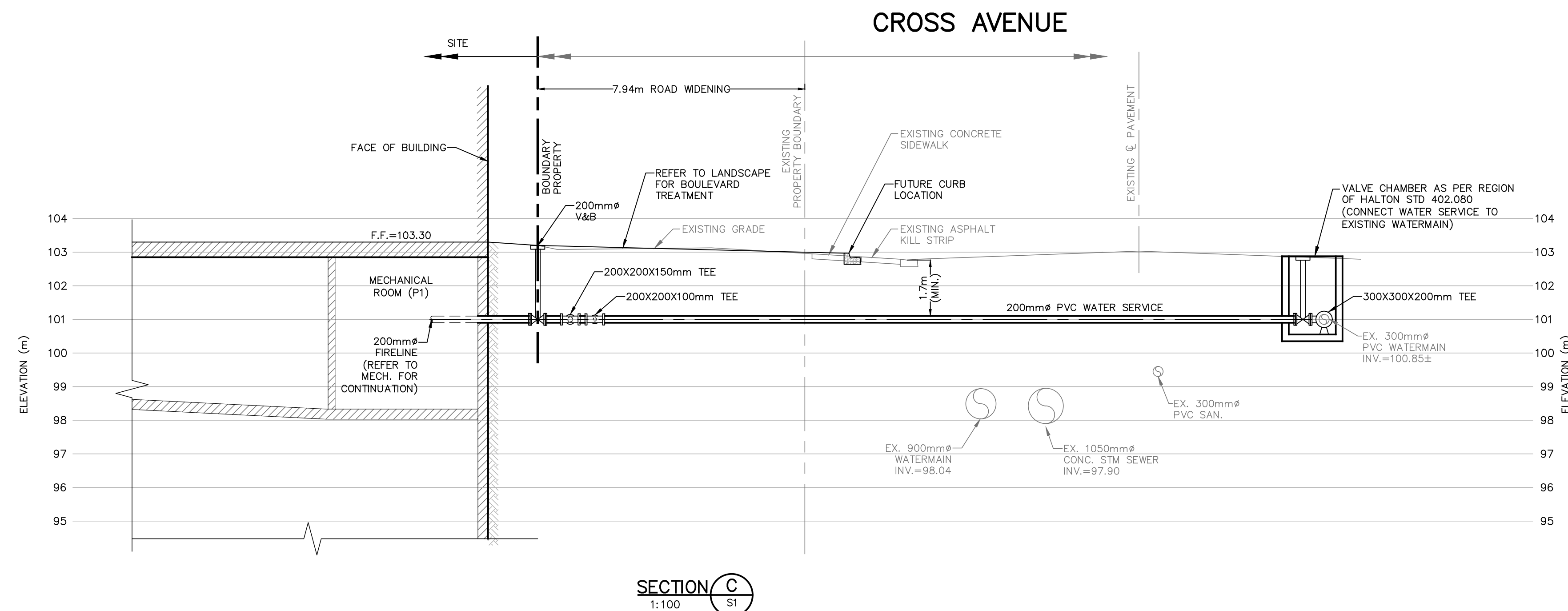
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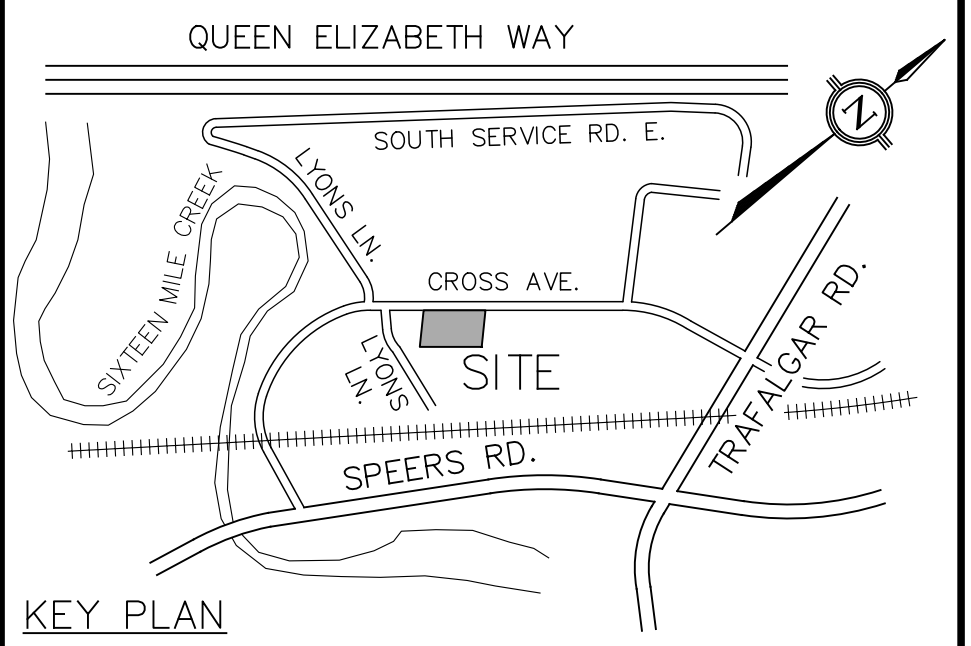
SECTION A
S1
1:100



SECTION B
S1
1:100



SECTION C
S1
1:100



KEY PLAN

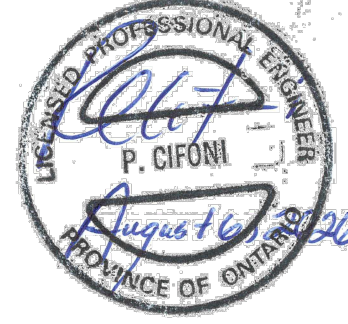
NO.	DATE	BY/DRAWN	REVISIONS
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CAD FILE: 1873TB.dwg PLOT SCALE: 1:1 PLOT DATE: Aug 06, 2026

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8201-481 MORDEN ROAD, OAKVILLE, ON, L6K 3W6
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PROJECT TITLE
PROPOSED MIXED-USE CONDOMINIUM

LOCATION
**118-132 CROSS AVENUE
OAKVILLE, ONTARIO**

DRAWING TITLE
SECTIONS AND DETAILS

SCALE	AS SHOWN	DESIGN BY	MW	PROJECT No.	1873
DRAWN BY	GRL	CHECKED BY	PC	PLAN No.	D1
DATE	2025/11/12	SHEET	OF		

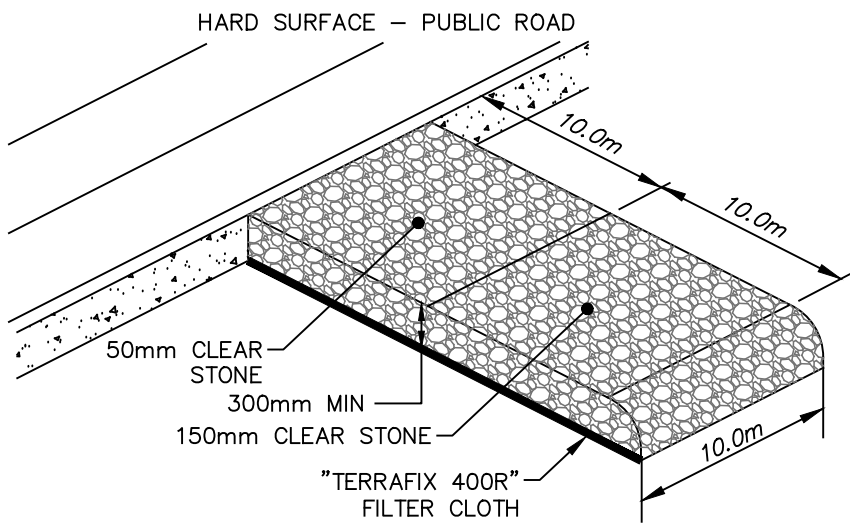
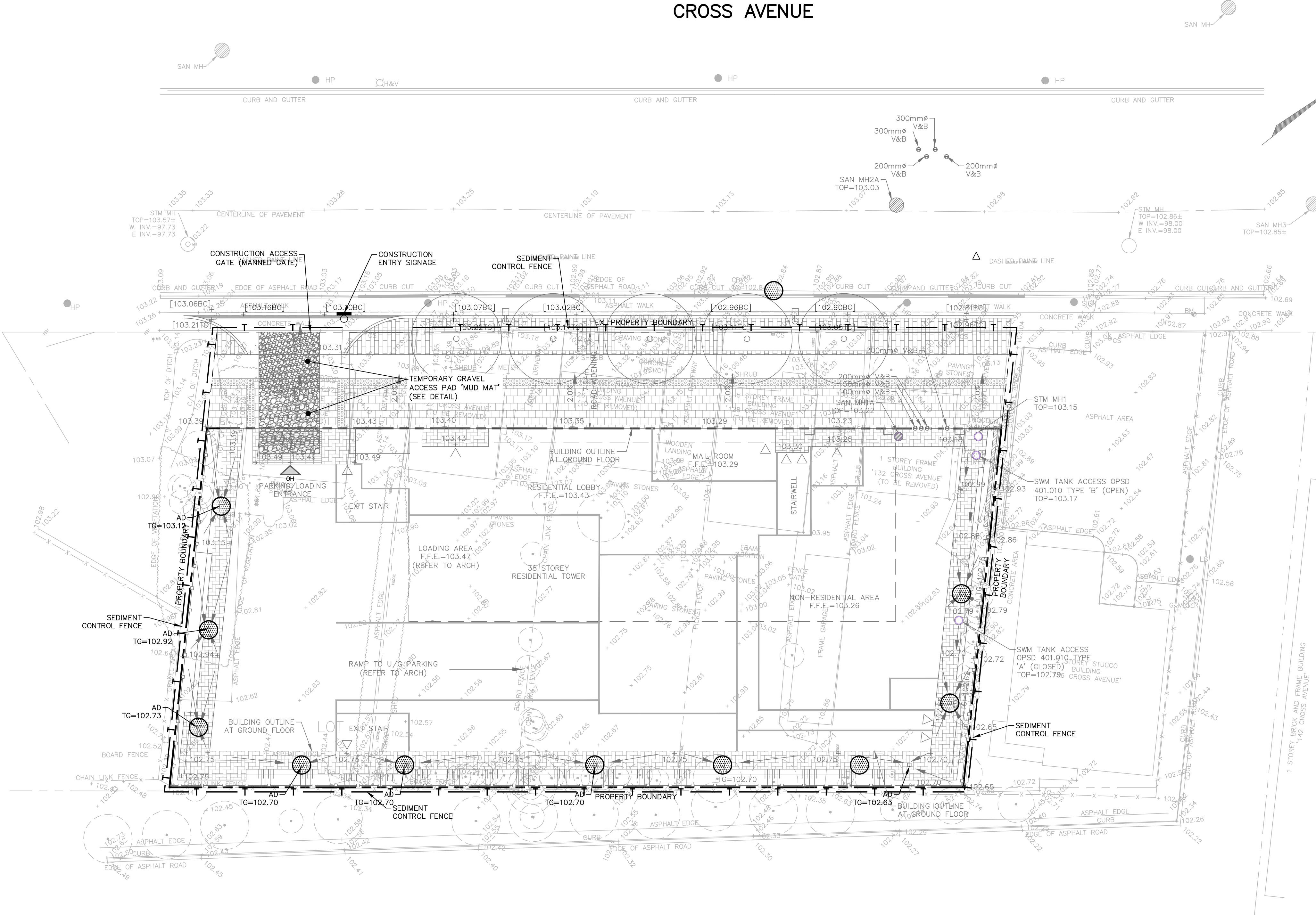
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- ALL INFORMATION SHOWN REGARDING THE LOCATION AND SIZE OF EXISTING UTILITIES AND/OR SERVICES HAS NOT BEEN VERIFIED. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATION OF UTILITIES PRIOR TO CONSTRUCTION AND PROTECTING AND MAINTAINING DURING CONSTRUCTION.
- THE CONTRACTOR SHALL CHECK AND VERIFY ALL GIVEN GRADES, DIMENSIONS, AND ELEVATIONS, PRIOR TO CONSTRUCTION AND ANY DISCREPANCIES FOUND PRIOR TO OR DURING CONSTRUCTION SHALL BE CLARIFIED WITH THE ENGINEER.
- ALL GRADING CHANGES SHALL BE APPROVED BY THE ENGINEER AND TOWN OF OAKVILLE PRIOR TO IMPLEMENTATION. ALL DISTURBED AREAS WITHIN THE PUBLIC R.O.W. TO BE REINSTATED TO THE SATISFACTION OF THE ENGINEERING AND CONSTRUCTION DEPARTMENT. EXISTING SLOPED AREAS TO BE REINSTATED WITH 200MM TOPSOIL AND SOD. SIDEWALKS AND PATHWAYS SHALL BE RESTORED WITH MATERIAL TO MATCH ORIGINAL UNLESS OTHERWISE NOTED.
- CONTRACTOR TO REFER TO GEOTECHNICAL REPORT FOR PAVEMENT CONSTRUCTION AND SUBDRAINAGE DETAILS.
- ALL WORKS WITHIN THE PUBLIC ROADWAY TO BE RESTORED TO THE SATISFACTION OF THE TOWN OF OAKVILLE ENGINEERING AND CONSTRUCTION DEPARTMENT.
- RESTORE ROAD AS PER THE TOWN OF OAKVILLE ROAD CUT PERMIT.
- ALL REMOVED OR DAMAGED CURBS, SIDEWALK, GRANULARS, ASPHALT, AND SOD RESULTING FROM SERVICE INSTALLATION SHALL BE REINSTATED BY SERVICING CONTRACTOR TO TOWN OF OAKVILLE STANDARDS.

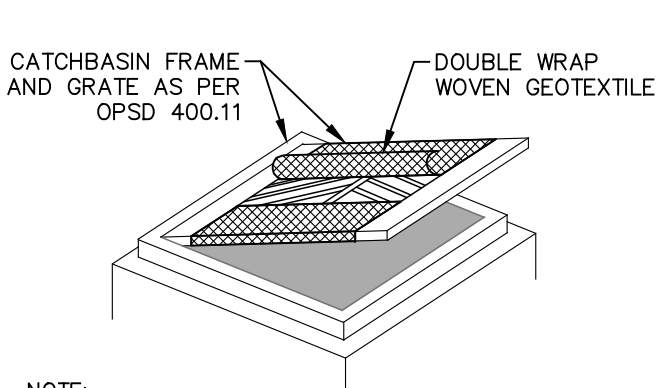
EROSION AND SEDIMENT CONTROL NOTES

- ALL EROSION AND SEDIMENT MEASURES/DEVICES SHALL BE INSTALLED PRIOR TO ANY SITE DISTURBANCE/CONSTRUCTION.
- THE MEASURES AS PROPOSED MAY BE MODIFIED AT THE DISCRETION OF THE ENGINEER TO SUIT THE PROPOSED CONSTRUCTION PROGRAMS. THE GENERAL INTENT OF THE PROPOSED EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES.
- DECOMMISSIONING OF ALL EROSION CONTROL MEASURES SHALL OCCUR ONLY ONCE VEGETATIVE COVER IS ESTABLISHED.
- DESIGNATED ENTRANCE FOR ALL CONSTRUCTION TRAFFIC TO BE INSTALLED WITH MUD CONTROL DEVICE AS PER MUD MAT DETAIL. MUD CONTROL DEVICES TO BE INSTALLED PRIOR TO START OF CONSTRUCTION AND ARE TO BE MAINTAINED IN GOOD WORKING ORDER UNTIL GRADING WORKS ARE COMPLETED. MUD MAT MAY BE DELETED WITH THE APPROVAL OF THE MUNICIPALITY.
- ANY DISTURBED AREA NOT SCHEDULED FOR FURTHER CONSTRUCTION WITHIN 30 DAYS SHALL BE PROVIDED WITH A TEMPORARY SEED.
- INSTALL CATCHBASIN SEDIMENT CONTROL ON EXISTING CATCHBASINS PRIOR TO START OF CONSTRUCTION.
- INSTALL CATCHBASIN SEDIMENT CONTROL ON NEW CATCHBASINS AT TIME OF INSTALLATION.
- EROSION AND SEDIMENT CONTROLS SHALL BE INSPECTED BY THE BUILDER/DEVELOPER:
 - WEEKLY
 - BEFORE AND AFTER ANY PREDICTED RAINFALL EVENT
 - FOLLOWING AN UNPREDICTED RAINFALL EVENT
 - DAILY, DURING EXTENDED DURATION RAINFALL EVENTS
 - AFTER SIGNIFICANT SNOW MELT EVENTS
- WHERE A SITE REQUIRES DEWATERING AND WHERE THE EXPELLED WATER CAN BE FREELY RELEASED TO A SUITABLE RECEIVER, THE EXPELLED WATER SHALL BE TREATED TO CAPTURE SUSPENDED PARTICLES GREATER THAN 40 MICRON IN SIZE. THE CAPTURED SEDIMENT SHALL BE DISPOSED OF PROPERLY PER MOCC GUIDELINES. THE CLEAN EXPELLED WATER SHALL BE FREELY RELEASED TO A SUITABLE RECEIVER THAT DOES NOT CREATE DOWNSTREAM ISSUES INCLUDING BUT NOT LIMITED TO EROSION, FLOODING - NUISANCE OR OTHERWISE, INTERFERENCE ISSUES, ETC.
- IN THE EVENT OF A SPILL (RELEASE OF DELETERIOUS MATERIAL) ON OR EMANATING FROM THE SITE, THE OWNER OR OWNERS AGENT SHALL IMMEDIATELY NOTIFY ALL APPLICABLE AGENCIES INCLUDING BUT NOT LIMITED TO MOCC, LOCAL AND REGIONAL AUTHORITIES AND FOLLOW ANY PRESCRIBED CLEAN UP PROCEDURE. THE OWNER OR OWNERS AGENT WILL ADDITIONALLY IMMEDIATELY NOTIFY THE MUNICIPALITY.

CROSS AVENUE

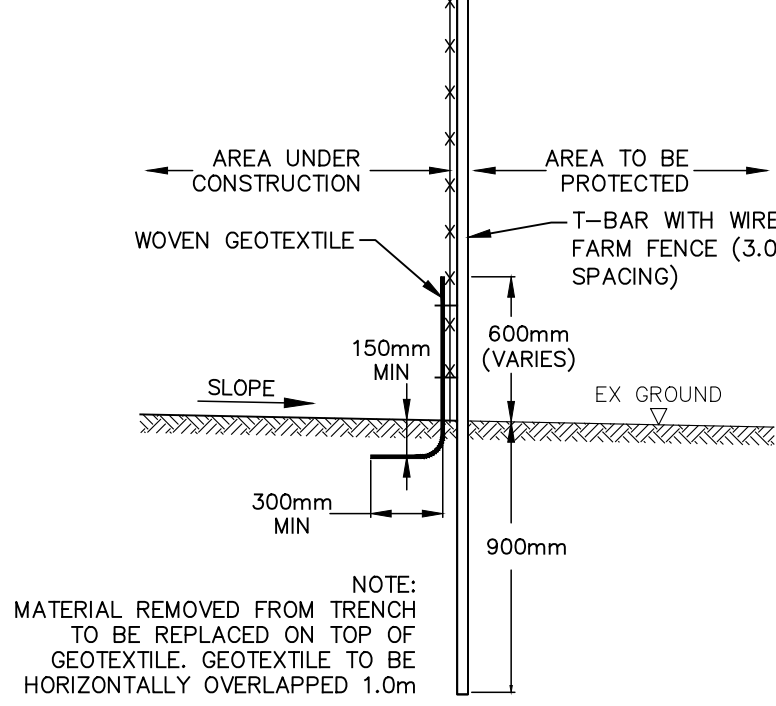


GRAVEL ACCESS PAD (MUD MAT)
N.T.S.



- NOTE:
- TO BE USED UNDER APPROPRIATE DRAINAGE CIRCUMSTANCES, BETWEEN APRIL AND DECEMBER
 - WOVEN GEOTEXTILE TO HAVE EQUIVALENT OPENING SIZE OF 0.15mm AND A MAXIMUM EQUIVALENT OPENING SIZE OF 0.25mm
 - WOVEN GEOTEXTILE TO BE REPLACED PERIODICALLY WHEN ACCUMULATED SEDIMENTS INTERFERES WITH DRAINAGE.

CATCHBASIN SEDIMENT CONTROL IN PAVED AREAS
N.T.S.



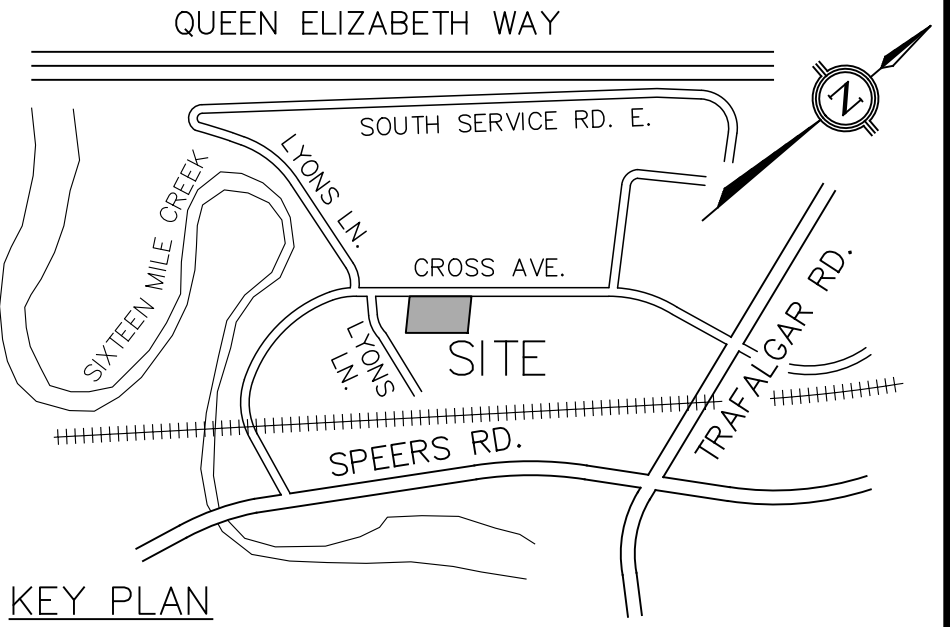
SEDIMENT CONTROL FENCE
N.T.S.

EROSION AND SEDIMENT CONTROL LEGEND

- SEDIMENT CONTROL CB IN PAVED AREAS
- SEDIMENT CONTROL CB IN LANDSCAPED AREA
- SEDIMENT CONTROL FENCE
- FIBRE ROLL

TREE PROTECTION LEGEND

- (REFER TO ARBORIST REPORT PREPARED BY GREENPRINT CONSULTING ARBORISTS)
- TREE HOARDING
 - EXISTING TREE
 - EXISTING TREE TO BE REMOVED
 - EXISTING TREE NUMBER (PER ARBORIST REPORT)



LEGEND

- PROPOSED STORM MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED VALVE & BOX
- PROPOSED AREA DRAIN
- EXISTING ELEVATION
- EXISTING ELEVATION TO REMAIN
- PROPOSED FINISHED ELEVATION
- PROPOSED DRAINAGE DIRECTION
- PROPOSED SWALE DRAINAGE DIRECTION
- PROPOSED OVERLAND FLOW DIRECTION
- PROPOSED DOOR
- PROPOSED OVERHEAD DOOR

NO.	DATE	BY/DRAWN	REVISIONS
1	26/08/06	MW/GL	ISSUED FOR OPA/ZBA

CAD FILE: 1873TB.dwg | PLOT SCALE: 1:1 | PLOT DATE: Aug 06, 2026

BENCHMARK
ELEVATIONS ARE OF GEODETIC ORIGIN (CGVD-1928:78), AND ARE DERIVED FROM GNSS OBSERVATIONS AND NATURAL RESOURCES CANADA'S GEOD MODEL HT2.0.

LOCAL BENCHMARK
CUT CROSS LOCATED IN FRONT OF 136 CROSS AVENUE ON THE NORTH SIDE OF CONCRETE SIDEWALK 1.1m NORTH OF HANDWELL AND 0.9m WEST OF CORNER OF SIDEWALK, AS SHOWN ON FACE OF PLAN ELEVATION: 102.83m.

NOTE
THE SURVEY WAS COMPLETED ON THE 24TH DAY OF MARCH 2025 BY J.D. BARNES LIMITED, LAND INFORMATION SPECIALISTS, REFERENCE No.: 25-30-292-00



DESIGNED BY | APPROVED BY

CONSULTANT

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www.trafalgareng.com

PROJECT TITLE

PROPOSED MIXED-USE CONDOMINIUM

LOCATION

**118-132 CROSS AVENUE
OAKVILLE, ONTARIO**

DRAWING TITLE

PRELIMINARY EROSION AND SEDIMENT CONTROL PLAN

SCALE	1:200	DESIGN BY	MW	PROJECT No.	1873
DRAWN BY	GRL	CHECKED BY	PC	PLAN No.	ES1
DATE	2025/11/12	SHEET	OF		