Guildwood GO Station
25200

FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT REPORT

4105 Kingston Road
Scarborough, ON
M1E 2M3

October 30, 2025

Disclaimer

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1 INTRODUCTION

1.1 SCOPE

LEA Consulting Ltd. has been retained by Fotenn to provide engineering services for the redevelopment of the 4105 Kingston Road site, which will house the Transit Oriented Community (TOC) for the Guildwood GO Station. Based on the architectural site plan, the scope of site work includes the development of a dedicated park area, a bike parking facility, GO Station Plaza, residential towers, residential/mixed-used podiums, additional greenspace, and a connection into the Timbertrin Development located north of the study area.

This report shall:

- Review existing conditions and background documents.
- Review and propose the design intent for the water supply, storm, storm water management and sanitary servicing requirement of the proposed development.

1.2 SITE LOCATION

The project site is located at 4105 Kingston Road Scarborough in the City of Toronto, ON. The proposed redevelopment will take place over the existing parking lot located within the study area with subject area of 2.91 Hectares. The project site is bounded by existing residential units to the east, Kingston Road to the north and west, and the Canadian National Railway GO Lakeshore East line to the south. Based on the background desktop research from the Toronto and Region Conservation Authority (TRCA) online regulated area maps, the project site is located outside the regulated limits of TRCA. The site access is currently accessed via Kingston Road.

Figure 1 shows the Project Site location.

LEGEND:

SITE LOCATION

TOC ACCESS CORRIDOR

Owner/Client:

FOTENN PLANNING & DESIGN

Title:

Guildwood GO - TOC
Communities Program

SITE LOCATION

Drawn By: E.A.	Checked By: G.S.
Scale: N.T.S.	Date: OCTOBER 2025
Project No.: 25200	Figure No.: 1

1.3 PRE-DEVELOPMENT CONDITIONS

Based on the review of the survey, the project site is currently occupied by an asphalt parking lot area which drains from northwest to southeast and services the Guildwood GO station. Access to the existing site is to the north via Kingston Road. The pre-development conditions are shown in **Figure 2**.

1.4 EXISTING UTILITIES

1.4.1 Surrounding Utilities

Based on the Toronto Water Atlas and the Toronto Sewer Atlas, the project site is surrounded by the following wet utilities located along Kingston Road, Payzac Avenue, and the Canadian National Railway:

- 300mm dia. concrete storm sewer flowing north east along Kingston Road
- 375mm dia. concrete storm sewer flowing north east along Kingston Road
- 900mm dia. concrete storm sewer flowing north east along Kingston Road
- 975mm dia. concrete storm sewer flowing north east along Kingston Road
- 250mm dia. AC sanitary sewer flowing north east along Kingston Road and continues south along Payzac Avenue
- 300mm dia. PVC watermain flowing north east along Kingston Road
- 600mm dia. CI watermain flowing north east along Kingston Road
- 150mm dia. TRS watermain flowing south along Payzac Avenue
- 9 City of Toronto Hydrants located along Kingston Road
- 2 City of Toronto Hydrants located along Payzac Avenue

1.4.2 Future Utilities North of the Study Area

Based on the Servicing Plan from Counterpoint Engineering, dated March 2021, the project site will be serviced by the following wet services located within the site which will connect into the residential development proposed by Tmbertin (Guildwood) GP Inc.:

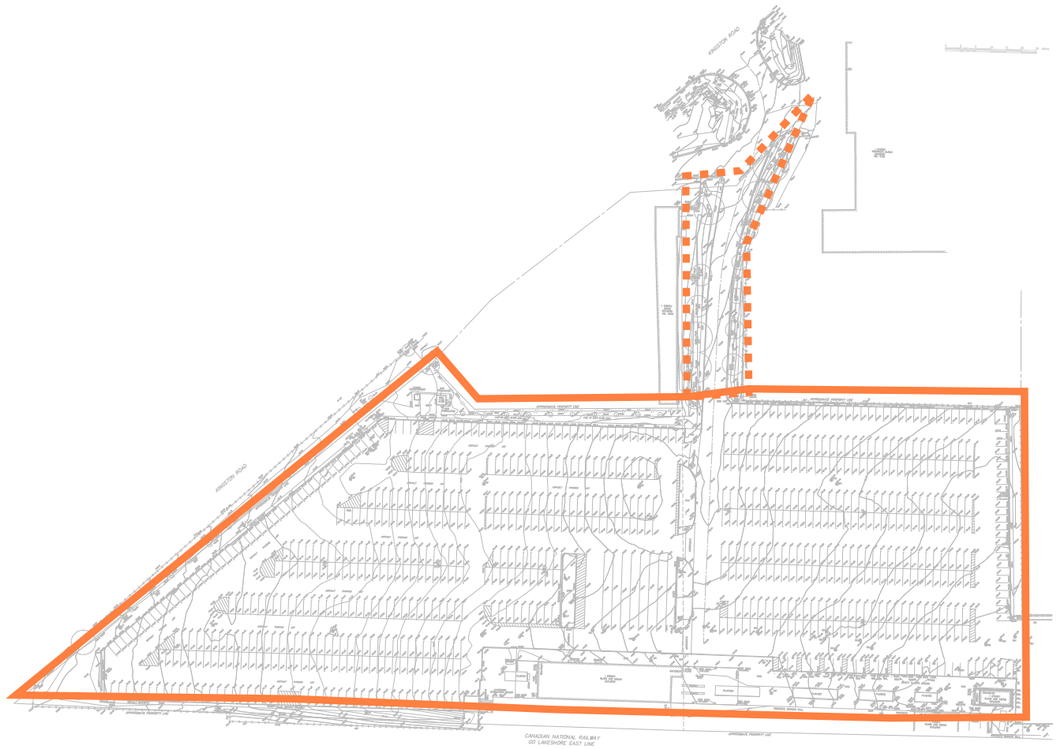
- 525mm dia. concrete storm sewer flowing north along Public ROW “A”
- 450mm dia. concrete sanitary sewer flowing north along Public ROW “A”
- 300mm dia. watermain located along along Public ROW “A”, then connecting into the 300mm dia. watermain located along Public ROW “D”.
- 300mm dia. watermain located along along Public ROW “C”, then connecting into the 300mm dia. watermain located along Public ROW “D”.
- 675mm dia. concrete storm sewer flowing north along Public ROW “C”.

1.5 POST-DEVELOPMENT CONDITIONS

The project involves the construction of 6 residential towers within 3 blocks:

- Block A
- Block B
- Block C

Block A consists of Buildings A1, A2, and a podium area, which are 40, 35, and 7 stories respectively, and combined have 710 units. Block B consists of Buildings B1, B2, and a podium area, where B1 and B2 are 60 stories and the podium is 7 stories. They have a combined unit count of 1,208. Block C consists of Buildings C1, C2, and a podium. Buildings C1 and C2 are both 30 stories, and the podium is 7 stories. They contain 616 units combined. The new residential developments will have access to a bike parking area and the Guildwood GO Station. Furthermore, the POPS area is 2,830 m^2 and will include the Station Plaza (1,000 m^2) and Livingston Connection (1,830 m^2). A dedicated 1,750 m^2 park area will also be implemented. The post-development conditions are illustrated in **Figure 3**.



LEGEND:

TOC SITE

TOC ACCESS CORRIDOR

Owner/Client:

FOTENN PLANNING & DESIGN

Title:

Guildwood GO - TOC
Communities Program

TOPOGRAPHIC SURVEY PLAN

Drawn By: E.A.	Checked By: G.S.
Scale:	Date: OCTOBER 2025
Project No.: 25200	Figure No.: 2

2 SERVICING

The purpose of this section is to outline the servicing of the subject site from a civil engineering perspective.

2.1 WATER SUPPLY

The domestic water demands for the proposed site are based on the following City of Toronto, *Design Criteria for Sewers and Watermains, January 2021*:

- Water demand rate of 190 L/Capita/day for residential multi-unit, 250 L/capita/day for commercial;
- Peaking Factor for apartments 2.50 (Peak hour) & 1.30 (Maximum Day) – for commercial 1.20 (Peak Hour) and 1.1 (Maximum Day);
- Population density: 1.4 persons/bed for 1-bed; 1.4 persons/bed for 1-bed +den; 2.1 persons/bed for 2-bed; 2.1 persons/bed for 2-bed +den; 3.1 persons/bed for 3-bed.

Existing fire and water demand calculations have been completed for the existing station building. It is assumed that existing station building is designed to be non-combustible, further coordination is required to confirm type of construction for existing buildings. Domestic water demands are based on the municipal design criteria and the fire flow demand calculations are in accordance with the Fire Underwriters Survey (FUS 2020). It is assumed the type of construction for the proposed residential buildings is to be non-combustible and will have an adequately designed system conforming to NFPA 13 and other NFPA sprinkler standards. The domestic water and fire demands are summarized in **Table 1** below. Refer **Appendix B** for detailed water and fire calculations.

Table 1: Domestic Water & Fire Demands

Building	Peak Hour Demand (L/s)	Maximum Day Demand (L/s)	Fire Demand (L/s)	Max. Day Domestic Demand + Fire Flow=Total Demand (L/s)
Ex. Building	0.02	0.02	50.0	50.02
Building A1	3.90	2.07	100.00	102.0
Building A2	3.44	1.83	83.33	85.1
Building B1	6.57	3.44	116.67	119.6
Building B2	5.71	3.00	116.67	119.6
Building C1	2.96	1.56	100.00	101.6
Building C2	3.28	1.73	100.00	101.6

Proposed development will be serviced by 300mm watermain stub that Timbertrin Development (located north of the study area) proposed for our development. Main connection for 300mm watermain due north is via existing 300mm watermain located on Kingston Road. Proposed development is to be serviced by 300mm Watermain running along the private ROW, Public ROW “C” Extension, Public ROW “E” and Public ROW “A”

Extension. These 300mm watermain lines will further service all three blocks and the park for water service connections.

The new water service connections for the proposed building are described as follows:

- Domestic Water Service:
  - All 6 proposed building in Block A, B and C will be serviced by a new 150mm dia. PVC domestic water service connection and will be connected to the proposed 200mm dia. fire protection water service with a cut-in Tee.
- Fire Protection Service:
  - A new 200mm dia. PVC fire protection service will be installed to service all 6 proposed building in Block A, B and C and will be connected to the proposed 300mm watermain on the private ROW, Public ROW "C" Extension, Public ROW "E" and Public ROW "A" Extension with tapping sleeve and valve per City standard T-1104.02-3.
- Proposed Park area is provided with 100mm water service connection.

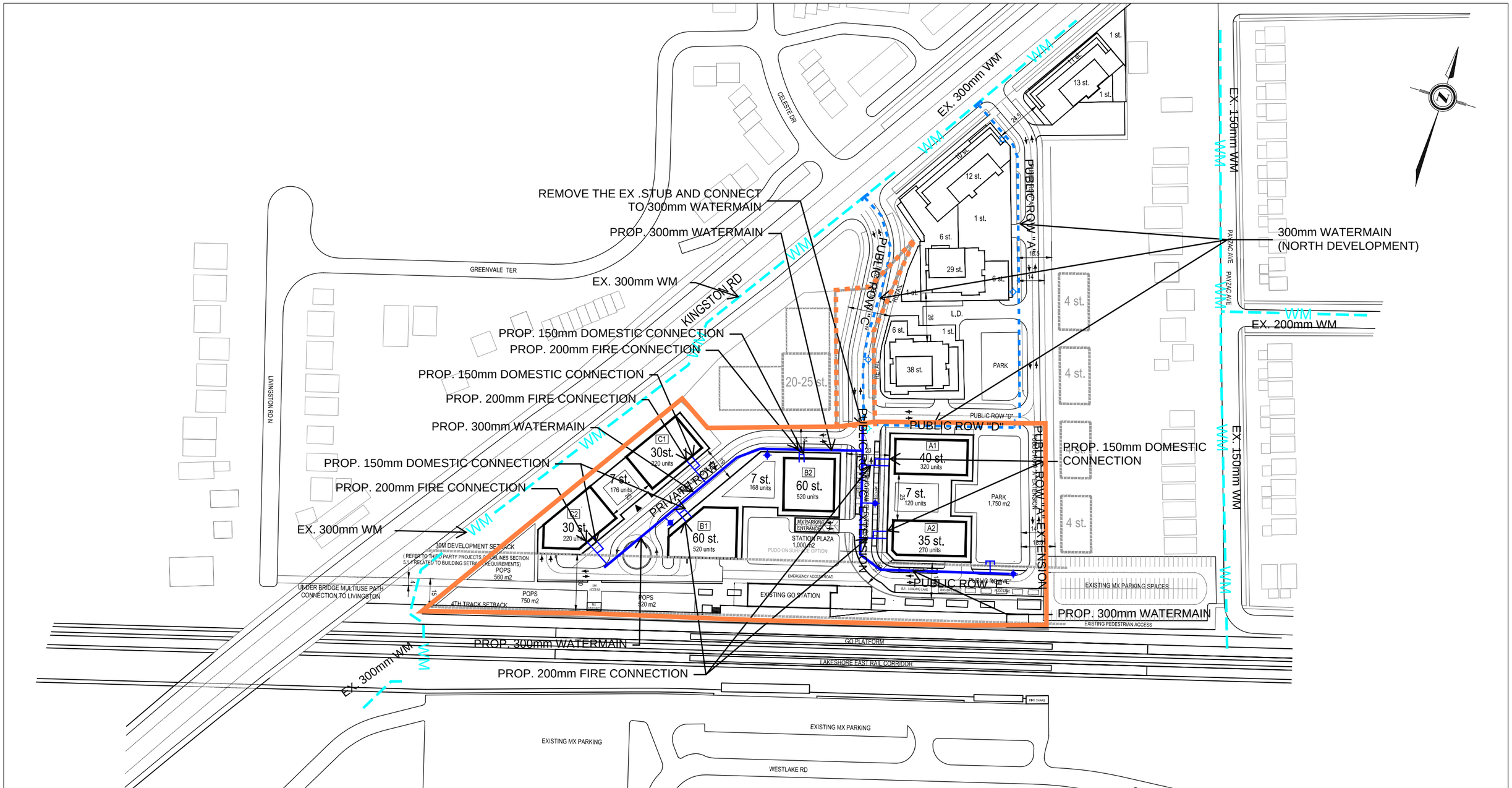
The size of the water service lines will be coordinated and finalized with the mechanical consultant at detailed design stage.

Refer to **Figure 4** for the conceptual water servicing connection.

To evaluate the adequacy of the existing watermain located on Guildwood Parkway Road, hydrant test was conducted by Bruce Fire Engineering on April 15, 2025. Hydrant test was conducted on fire hydrants located on Kingston Road. Refer to Appendix B for Hydrant flow test results and location of the existing hydrants on Kingston Road. As per proposed hydrant Tests result, watermain adequacy sheet (**Sheet C03 in Appendix B**) is prepared to portray there is enough capacity in 300mm existing watermain on Kingston Road to service proposed development. As per Hydrant testing, static pressure is 60.0 with residual pressure of 58 psi and 56 psi the flows are 844 gpm and 1265.6 gpm. Calculated flow at 20 psi is 4386 gpm. Thus, with highest water demand out of 6 proposed building and existing station building is 119.6 for buildings B and based on hydrant testing, the residual pressure for required water demand of 119.65 L/s is 51.5 psi, which is higher than minimum requirement of 20 psi.

Building code requirements stipulate that each building be serviced by a fire hydrant that is located no more than 45m away from the building's siamese connection. Four new hydrants have been proposed throughout the proposed development. 2 hydrants are proposed on private road which will service Block B and C. Block A, existing station building and Parkland will be serviced by 2 proposed hydrants located along the private Public ROW "C" Extension and Public ROW "E".

The on-site watermains located in the proposed buildings will be designed by the Site Mechanical Engineer. In accordance with City Standards, a water meter and a backflow preventer valve will be installed on the domestic line within the mechanical room. A detector assembly will be installed on the fire service line in compliance with the OBC. The meter room will need to be accessible to the city and provide remote read-out locations for the city's use in reading the meters. Details of the room's layout will be provided by the Mechanical Engineer at the detailed design stage.



LEGEND:

- TOC SITE
- TOC ACCESS CORRIDOR
- PROP. WATERMAIN
- PROP. FIRE / DOMESTIC CONNECTION
- NORTH DEVELOPMENT PROP. WATERMAIN
- WM — EX. WATERMAIN
- NORTH DEVELOPMENT PROP. HYDRANT
- PROP. HYDRANT

Owner/Client:

FOTENN PLANNING & DESIGN

Title:

Guildwood GO - TOC
Communities Program

SITE SEVICING PLAN
(WATER)

Drawn By: E.A.	Checked By: G.S.
Scale:	Date: October 2025
Project No.: 25200	Figure No.: 4

2.2 SANITARY

The sanitary demands for the proposed site are based on the following are based on the following City of Toronto, *Design Criteria for Sewers and Watermains, January 2021*:

- Sanitary demand rate of 240 L/capita/day (Residential) & 250 L/capita/day (Commercial) for sanitary service size design.
- Infiltration Allowance of 0.26 L/s/ha;
- Peaking Factor based on the Harmon Equation; and
- Population density: 1.4 persons/bed for 1-bed; 1.4 persons/bed for 1-bed +den; 2.1 persons/bed for 2-bed; 2.1 persons/bed for 2-bed +den; 3.1 persons/bed for 3-bed.

The existing sanitary demand was calculated as per current GFA of existing station building. Proposed development sanitary demand was calculated as per proposed number of units for all three blocks and the municipal design criteria was applied to calculate the flow and will be coordinated with the mechanical consultant at the design stage. The sanitary design flows are estimated in **Appendix C** and summarized in **Table 2**.

Table 2: Sanitary Flow Rate

Existing Flow Rate from Existing Building (L/s)	Proposed Flow Rate from Proposed buildings in Block A, B & C. (L/s)
0.10	43.05

As Per city of Toronto Sewer Atlas maps, there is a 250mm dia. sanitary sewer flowing in a north direction along Payzac Ave. Additionally there is an existing 250mm dia sanitary sewer on Kingston road which is flowing towards Payzac Ave. Consequently, as-built information about the existing sanitary drainage system for the station/parking lot is required at the detail design. Upon confirmation of the existing sanitary sewer, the proposed 250mm sanitary sewer shall be connected to the existing 250mm AC sanitary sewer on Payzac Ave.

The following sanitary service connection is proposed to service the proposed development:

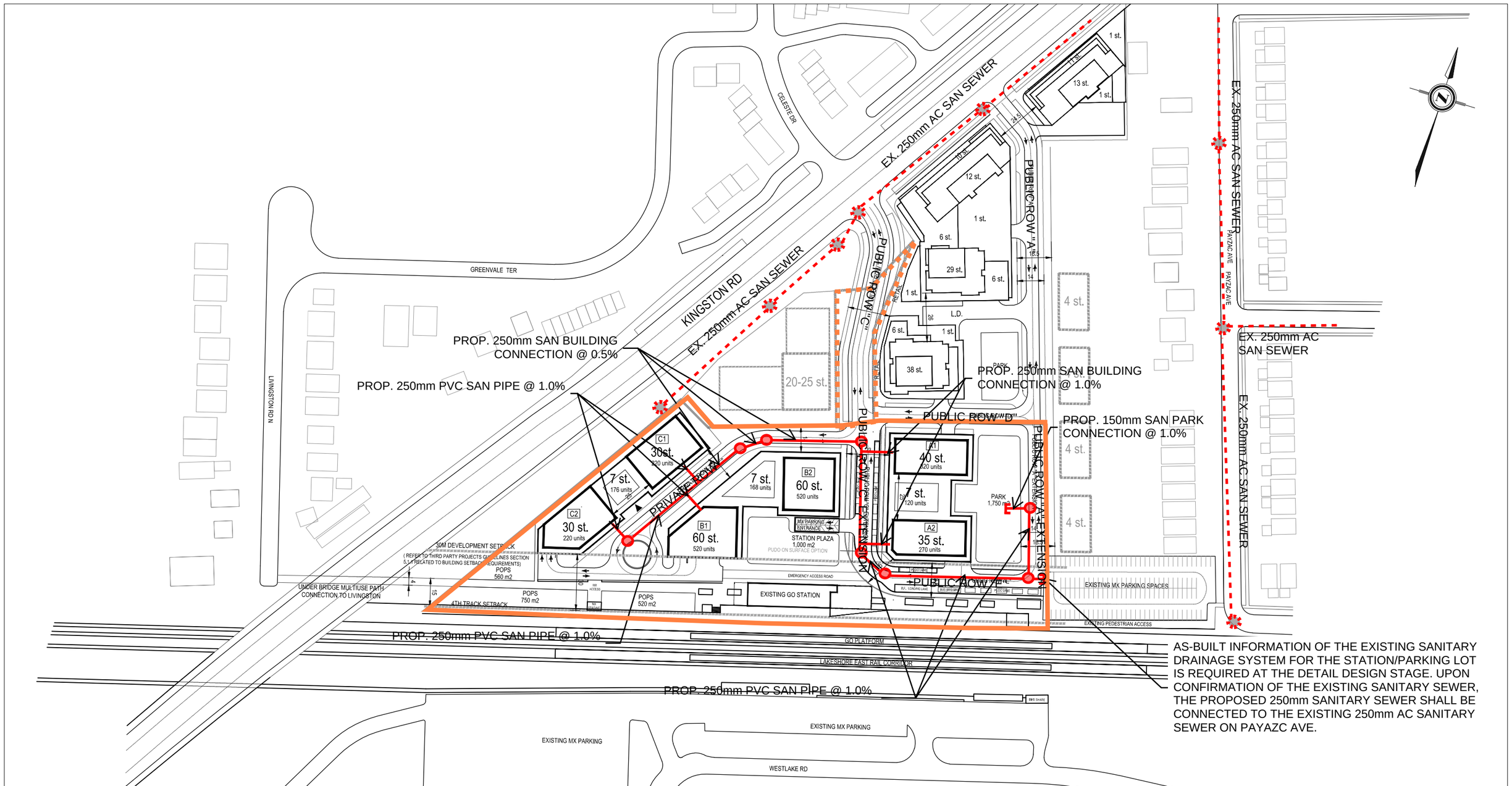
A new 250mm dia. PVC sanitary sewer is proposed along private and public road E to service Block A, B, C, existing station building and proposed parkland. For each building a 200mm sanitary service line is proposed to service the residential building along with 150mm stub for parkland. Upon confirmation of existing sanitary outlet for the existing station building, proposed 250mm sanitary sewer will connect to Payzac ave. The feasibility of using a gravity sewer system will be confirmed upon receipt and review of as-built drawings for the existing station building, associated parking lot, and sanitary sewers located on Payzac Avenue.

The actual flow velocity of the 250mm dia. PVC sanitary service at 1.0% is 1.21m/s, which is greater than the minimum required velocity of 0.6m/s as per the City of Toronto Design Criteria for Sewers and Watermains.

It should be noted that a downstream capacity analysis of the existing 250 mm sanitary sewer on Payzac Avenue to be conducted during the detailed design stage. This analysis is intended to confirm whether the proposed increase in sanitary flow—from the existing to the proposed condition—can be accommodated by the downstream sewer without significantly increasing the hydraulic grade line.

The size of the sanitary service line will be coordinated and finalized with the mechanical consultant at detailed design stage.

Refer to **Figure 5** for the conceptual sanitary servicing connection.



AS-BUILT INFORMATION OF THE EXISTING SANITARY DRAINAGE SYSTEM FOR THE STATION/PARKING LOT IS REQUIRED AT THE DETAIL DESIGN STAGE. UPON CONFIRMATION OF THE EXISTING SANITARY SEWER, THE PROPOSED 250mm SANITARY SEWER SHALL BE CONNECTED TO THE EXISTING 250mm AC SANITARY SEWER ON PAYAZC AVE.

LEGEND:

- TOC SITE
- TOC ACCESS CORRIDOR
- PROP. SANITARY SEWER
- EX. SANITARY SEWER
- EX. SANITARY MANHOLE
- PROP. SAN MANHOLE

Owner/Client:

FOTENN PLANNING & DESIGN

Title:

Guildwood GO - TOC
Communities Program

SITE SERVICING PLAN
(SANITARY)

Drawn By: E.A.	Checked By: G.S.
Scale:	Date: October 2025
Project No.: 25200	Figure No.: 5

2.3 STORMWATER MANAGEMENT

The City of Toronto has issued the Wet Weather Flow Management Guidelines (WWFMG, November 2006) to provide direction on how to manage rainfall and runoff inside the City's jurisdiction. A summary of the stormwater management criteria applicable to this project is as follows:

- **Water Balance:** The WWFMG requires a site to retain stormwater on-site, to the extent practicable, to achieve the same level of annual volume of overland runoff allowable from the development site under pre-development conditions. Typically, the minimum on-site runoff retention will require the site to retain all runoff from a 5mm storm event through infiltration, evapotranspiration or rainwater reuse.
- **Water Quality:** Under the Wet Weather Flow Management Guidelines, the site is required to provide a long-term removal of 80% of total suspended solids (TSS) on an average annual basis.
- **Erosion Control:** As indicated in WWFMG, for large redevelopment sites > 2.0 ha, for all other watersheds other than Rouge River watershed, there are two options for erosion control. Option 1 is to complete an Erosion Analysis Report to determine the erosion control criteria for the site. Option 2 is to retain runoff from a 25mm design rainfall event and release over a minimum of 24 hours.
- **Water Quantity Control and Discharge to Municipal Infrastructure:** Runoff from the 2-year to 100-year design storms must not exceed the peak runoff rate from the site under pre-development conditions. The allowable release rate to the municipal storm sewer system from the development site is the 2-year pre-development flow rate based on a maximum runoff coefficient value of 0.50.

2.4 PRE-DEVELOPMENT CONDITIONS

2.4.1 General

Based on the review of the survey, the project site is currently occupied by the existing 1-storey station building and surrounded by parking lot/driveway and landscape areas. The total site drainage area is 2.94 ha. For the purpose of this SWM analysis, the development site is divided into four (1) sub-catchment area based on the existing property boundary and topography survey, drainage pattern and post-development condition, i.e.

- Sub-Catchment EC1: includes the 1-storey exiting station building and parking lots with an area of 2.94 ha. This sub-catchment is draining west to east towards Payzac.

Sub-catchment areas and runoff coefficient are summarized below in **Table 3**. Refer to **Appendix D** for land-use areas and runoff coefficient calculations.

Table 3: Areas of Existing Sub-Catchment

Sub-catchment ID	Description	Catchment Area (m^2)	Actual Runoff Coefficient	Runoff Coefficient as per City's Criteria	Outlet
EC1	Existing station building & parking lot	29, 143.6	0.84	0.50	Northeast

Based on our review of topographic survey the site is draining west to east towards Payzac Ave but however as built information is required of the existing station building and the parking lot area to determine outlet points for onsite storm sewers. Drainage area boundaries, overland flow routes, grading and land use details under existing conditions are illustrated in **Figure 6.**

2.4.2 Rainfall Information

The rainfall runoff and intensity under proposed conditions are calculated using the following equations:

Rational Formula: **Q = 2.78CIA** (L/s)

Where: C: runoff coefficient

I: rainfall intensity (mm/hr)

A: drainage area (ha)

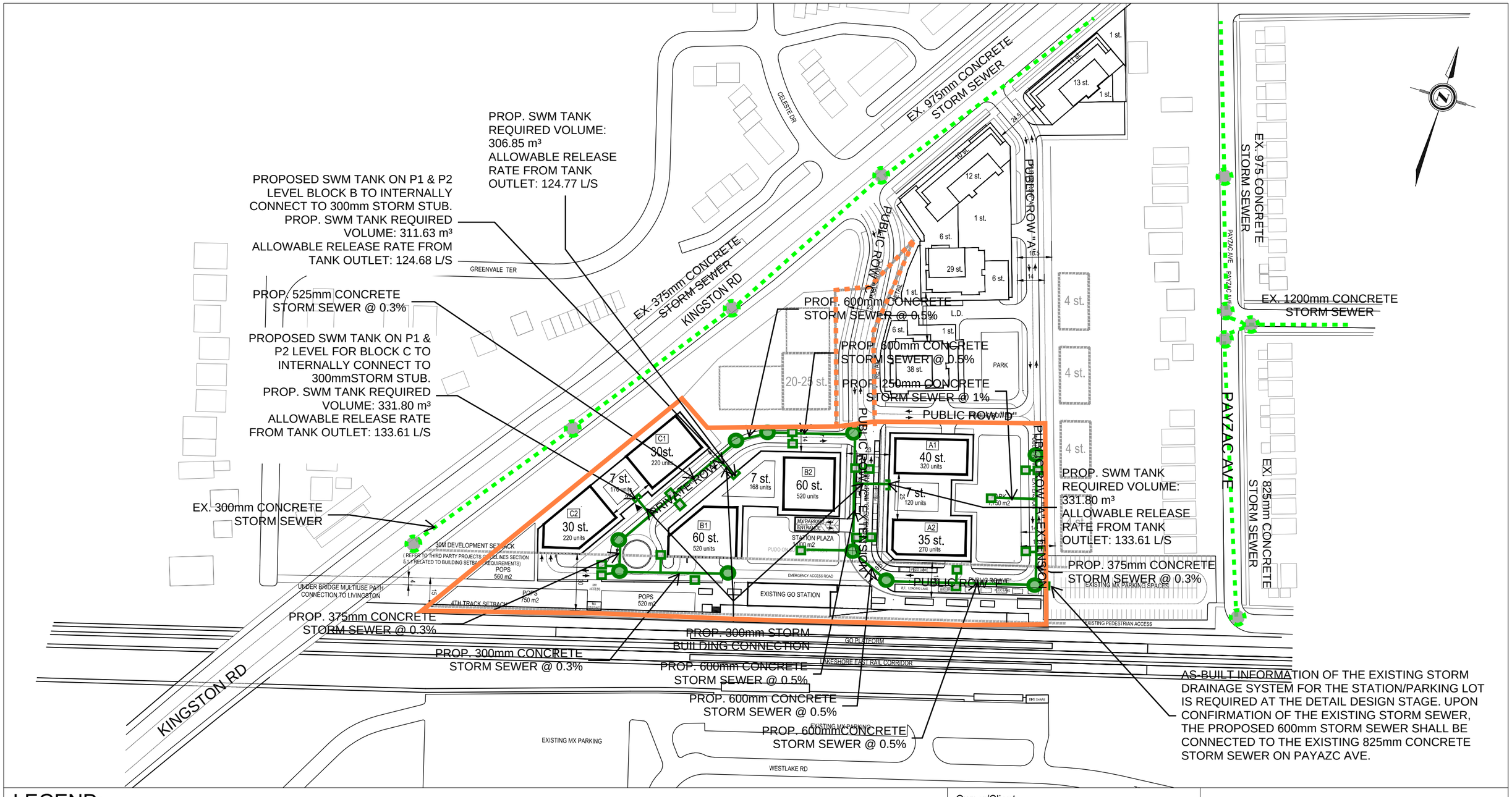
IDF Curve Equation: $\mathbf{I = aT^C}$ (for the City of Toronto)

Where: I: rainfall intensity (mm/hr)

T: time of concentration (hour)

a, c: parameters

The parameters (a and c) recommended for use in the City of Toronto are defined in section 3.1 of the WWFM Guidelines and are summarized in **Table 4**.



LEGEND:

- TOC SITE
- TOC ACCESS CORRIDOR
- EX. STORM SEWER
- PROP. STORM SEWER
- PROP. STORM MANHOLE
- PROP. CATCH BASIN
- EX . MANHOLE

Owner/Client:

FOTENN PLANNING & DESIGN

Title:

Guildwood GO - TOC
Communities Program

SITE SERVICING PLAN
(STORM)

Drawn By: E.A.	Checked By: G.S.
Scale:	Date: October 2025
Project No.: 25200	Figure No.: 6

Table 4: Values of a and c Parameters for the City of Toronto

Return Period (Year)	2	5	10	25	50	100
a	21.8	32	38.7	45.2	53.5	59.7
C	-0.78	-0.79	-0.80	-0.80	-0.80	-0.80

An initial time of concentration, T, of 10 minutes (or 0.167 hours) is recommended in the WWFMG document.

2.4.3 Peak Flow Rates Under Existing Conditions

Based on the existing site condition and rainfall parameters, the Rational Method is adopted to calculate peak flows at different design storm events.

The calculated peak flow rates for the one (1) sub-catchment areas in the pre-development condition are summarized below in **Table 5**. Detailed calculations are provided in **Appendix D.**

Table 5: Pre-Development Flow Rates (L/s)

Sub-catchment ID	Description	Flow Rate (L/s)					
		2yr	5yr	10yr	25yr	50yr	100yr
EC1	Existing station building & parking lots	357.25	533.89	657.34	767.75	908.73	1014.04

2.4.4 Allowable Flow Rate

Relevant policies from the WWFMG restrict flow rates on this site to the allowable flow rates for discharge to municipal sewers. Below is the allowable flow rate for the whole site based on the site conditions and drainage patterns.

According to the WWFMG, Section 2.2.3.8, the allowable release rates from the existing building and paved area (parking lots) to the municipal storm sewer on Payzac Ave (To be confirmed in the detail design stage upon receiving as-built information of the site) is **357.25 L/s** based on the 2-year pre-development flow rate calculated with a runoff coefficient value of 0.50 (max. allowable by city of Toronto).

This allowable release rate has been used in the storage calculations and as the discharge rates to City sewer.

2.5 POST-DEVELOPMENT CONDITIONS

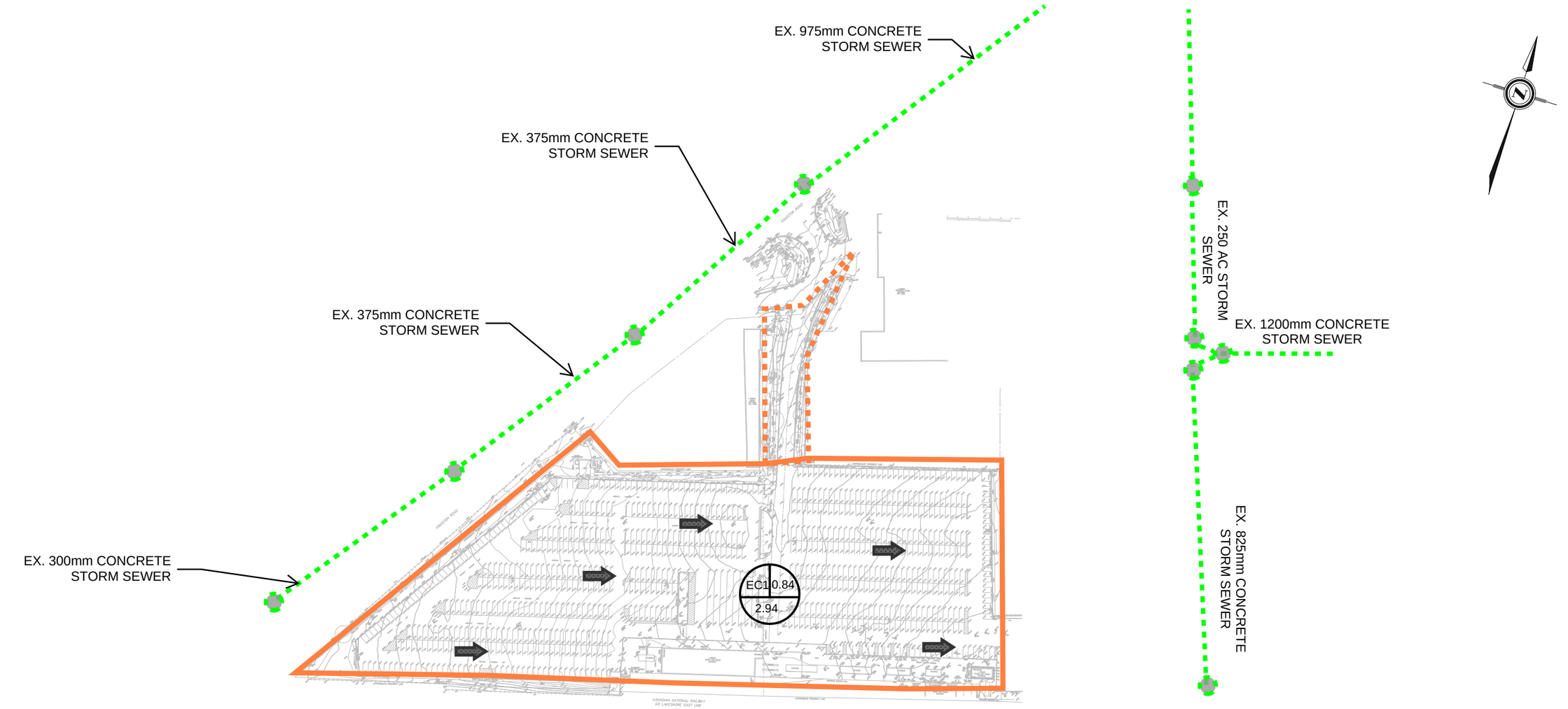
2.5.1 General

The project involves the construction of 6 high rise buildings in block A, b & C, along with proposed parkland and private and public roads. Based on the architectural site plan, the existing station building will remain proposed development will mainly take place north of existing station building within the existing parking lot area.

To maintain the existing drainage pattern under the proposed condition, one (1) sub-catchment areas are defined as following:

Sub-Catchment PC1: This catchment area is proposed to have all proposed development that includes 3 blocks (A,B & C) that will have 6 high rise buildings along with propose parkland and private & public roads. The catchment will follow existing overland flow route west to east towards Payzac Ave upon confirmation from as-built information for the site.

Figure 7 shows the proposed drainage conditions.



LEGEND:

- TOC SITE
- TOC ACCESS CORRIDOR
- PROP. STORM SEWER
- EX. STORM SEWER
- EX . MANHOLE
- EC2 0.88 / 0.44 — SUB-CATCHMENT ID. / AVERAGE RUNOFF COEFFICIENT / DRAINAGE AREA (ha)
- EX. OVERLAND FLOW ROUTE

Owner/Client:

FOTENN PLANNING & DESIGN

Title:

Guildwood GO - TOC
Communities Program

PRE-DEVELOPMENT
DRAINAGE AREA PLAN

Drawn By: E.A.	Checked By: G.S.
Scale:	Date: OCTOBER 2025
Project No.: 25200	Figure No.: 7

2.5.2 Peak Flow Rates Under Proposed Conditions

Based on the proposed site condition and rainfall parameters, the Rational Method is adopted to calculate peak flows at different design storm events.

The calculated peak flow rates for the one (1) sub-catchment areas under the post-development conditions are summarized in **Table 6**. Detailed calculations are provided in **Appendix D**.

Table 6: Post-Development Peak Flow Rates (L/s)

Sub-catchment ID	Description	Return Period (Year)					
		2	5	10	25	50	100
PC1	Outlet eastwards towards Ex. 825mm Storm sewer Payzac Ave (Upon confirmation from As-built information for the site.)	559.97	836.84	1030.35	1203.40	1424.38	1589.45

2.5.3 Impact on Water Environment

Based on the review and analysis for existing and proposed site conditions, **Table 7** summarizes the key hydrologic parameters of the site under the proposed condition.

Table 7: Key Hydrologic Parameters

Catchment ID	Description	Area (m^2)		Imperviousness (%)		Runoff Coefficient		100-year Peak Flow Rate (L/s)	
		Pre-Dev	Post-Dev	Pre-Dev	Post-Dev	Pre-Dev	Post-Dev	Pre-Dev	Post-Dev
Whole Site	Discharging Payzac Ave (As-built confirmation required)	29,144	29144	90.4	84.0	0.84 (0.5 Max as city criteria)	0.80	1014.04	1,589.45

As shown in **Table 7,** the imperviousness and runoff coefficient of the whole site have decreased under post-development conditions, however, as per city of Toronto's criteria max allowable runoff coefficient is 0.5. Therefore, mitigation measures will be required for the proposed development in accordance with the City's design criteria.

2.5.4 Water Balance Requirements

Based on the water balance criteria of the City of Toronto's WWFM Guideline, the minimum on-site runoff retention requires retaining all runoff from the first 5mm from each rainfall or 50% average annual precipitation through infiltration, evapotranspiration, or rainwater reuse, etc.

Detail calculations of water balance requirement and LID measures will be discussed in the detail design stage.

2.5.5 Water Quantity Control

As noted in Section 2.4.4, the allowable discharge rates to the municipal sewers from the site are equivalent to the peak runoff rate under pre-development conditions during a 2-year design storm event.

Based on post-development conditions of the whole site, the stormwater detention volumes at different storm events are estimated in **Appendix D** and summarized in **Table 8**.

Table 8: Required Stormwater Storage Volumes for Whole Site

Storm Event	Target Flow (L/s)	Required Detention Volume (m^3)
2-Year	357.25	121.63
5-year		287.75
10-Year		403.86
25-Year		507.69
50-Year		640.28
100-Year		739.32

In the post-development condition, storm runoff from Blocks A, B, and C will be collected and directed to a shared Stormwater Management (SWM) tank located within the P1 and P2 parking levels. Collection will occur through an internal piping system serving all three blocks.
The total allowable release rate for the entire site is 357.25 L/s, to which each block contributes proportionally:

- Block A provides a storage volume of 254.54 m^3 with a controlled release rate of 98.87 L/s.
- Block B requires a storage volume of 309.85 m^3, releasing at a rate of 124.77 L/s.
- Block C requires 331.80 m^3 of storage and releases at 133.61 L/s.

The combined provided storage from the three blocks is 887.19 m^3, which exceeds the required volume of 744.09 m^3 as we are providing 16% additional storage for the entire site area accounting for any variation during the design development stage. The total release rate from all blocks matches the allowable site-wide release rate of 357.25 L/s.
No quantity control measures are proposed for the parkland or the private and public road areas. These areas are considered uncontrolled; however, the design of Blocks A, B, and C includes additional storage capacity to compensate for these uncontrolled runoff contributions.
The storm sewer system has been designed based on a 5-year return period. Detailed hydraulic design sheets and calculations will be provided at the detailed design stage.

An orifice control will be installed at the outlet of each SWM tank so that overall allowable flow rate of 357.25L/s or lower is met. The details of the orifice control will be finalized at a later design stage.

Storm sewers are proposed along both the private and public sections of Road E to collect runoff from Blocks A, B, and C, adjacent park areas, and the existing station building. These sewers are intended to serve as the primary drainage infrastructure for the development.

The feasibility of using a gravity sewer system will be confirmed upon receipt and review of as-built drawings for the existing station building, associated parking lot, and storm sewers located on Payzac Avenue.

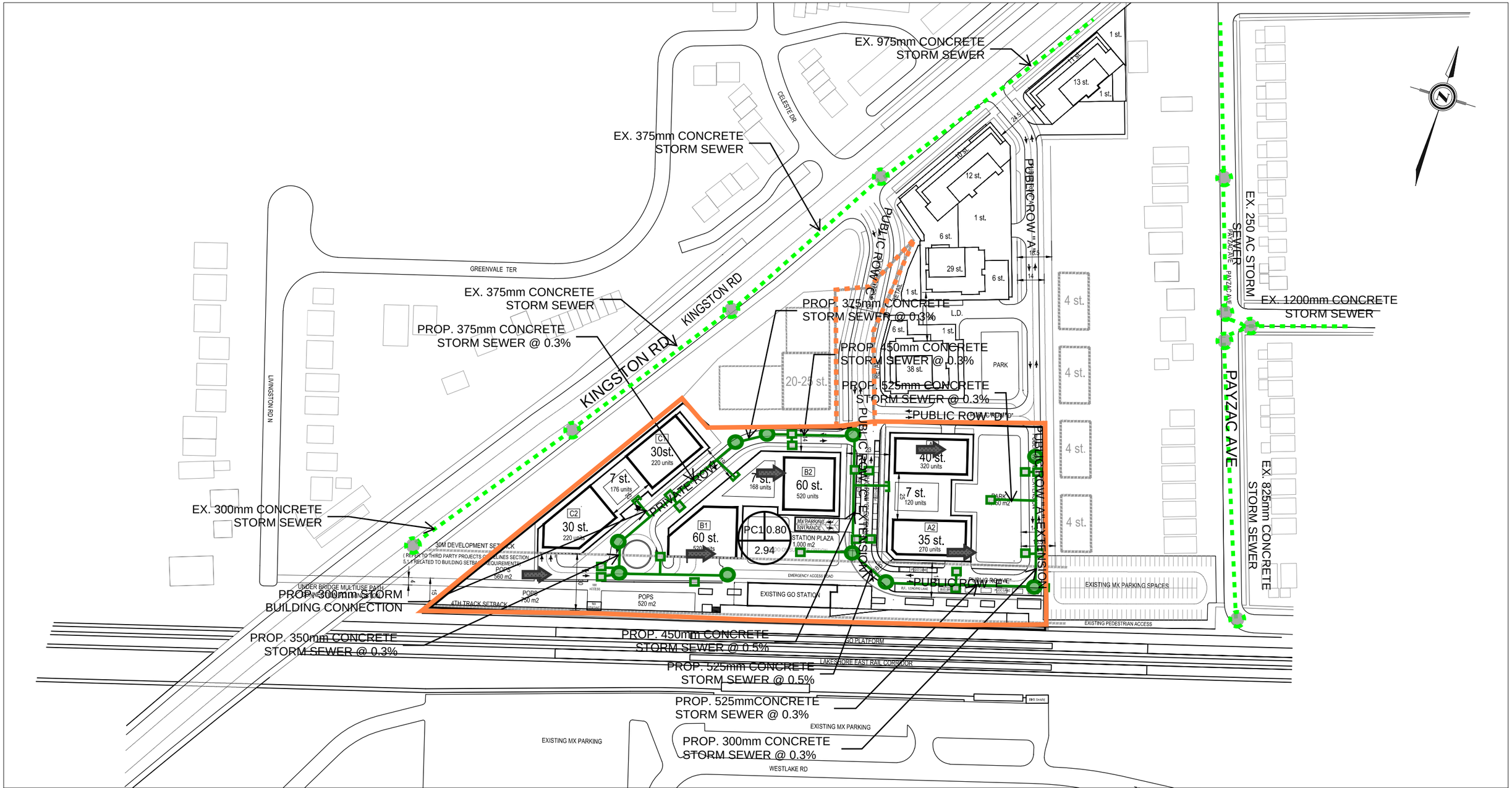
Should it be determined that gravity drainage is not viable for certain areas, stormwater flows from the proposed blocks may require pumping to discharge into the proposed storm sewer system along the public and private roads.

Refer to **Figure 8** for the layout of the proposed storm servicing network for the site and **Figure 9** for Site Conceptual Grading Plan.

2.5.6 Water Quality Control

As per City standards, stormwater should be treated to the MOECC Enhanced Level protection, and the long-term average removal of 80% TSS is required. Under the post-development condition, the proposed land use for the site includes buildings, surface parking, driveway and paved and landscaped areas. Based on the SWM design criteria, the building rooftop is not subjected to vehicular traffic and the application of sand and de-icing salt constituents, petroleum hydrocarbons, and heavy metals. Therefore, all the stormwater generated from the landscaped area and building rooftop is considered clean. However, stormwater generated from driveways and parking lots is considered 'dirty'. The TSS removal efficiencies for different stormwater management measures are based on the City's WWFM Guidelines.

To achieve a TSS removal of 80% for these areas, treatment units such as OGS units will be proposed to be installed within the parking level at downstream of the tank. Sizing details of the treatment unit will be provided at a later design stage.



LEGEND:

- TOC SITE
- TOC ACCESS CORRIDOR
- PROP. STORM SEWER
- EX. STORM SEWER
- PROP. CATCHMENT BOUNDARY
- PROP. STORM MANHOLE
- PROP. CATCH BASIN
- EX . MANHOLE
- PC10.88 / 0.44 — SUB-CATCHMENT ID. / AVERAGE RUNOFF COEFFICIENT / DRAINAGE AREA (ha)
- PROP. OVERLAND FLOW ROUTE

Owner/Client:

FOTENN PLANNING & DESIGN

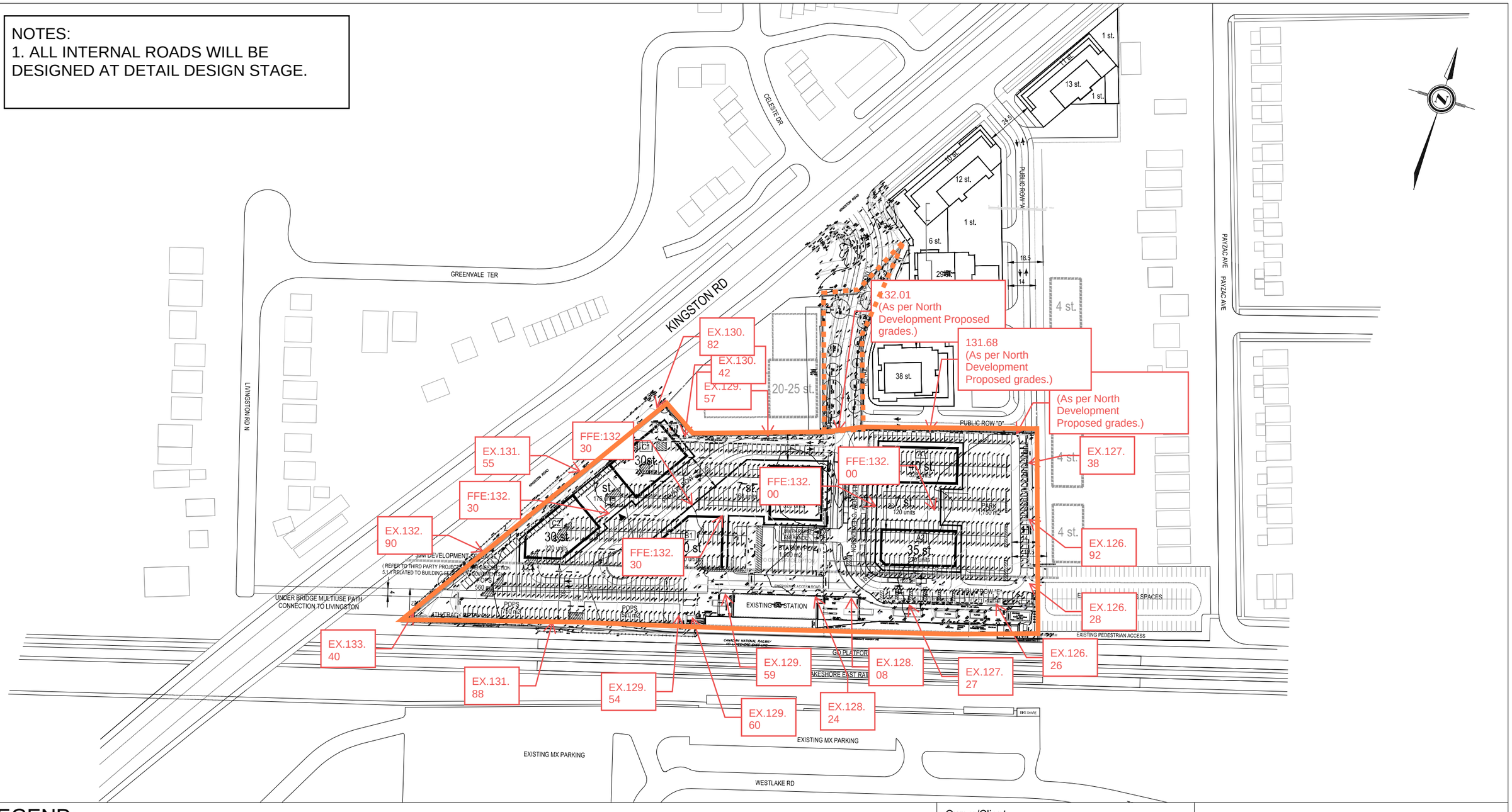
Title:

Guildwood GO - TOC
Communities Program

POST DEVELOPMENT DRAINAGE AREA PLAN

Drawn By: E.A.	Checked By: G.S.
Scale:	Date: October 2025
Project No.: 25200	Figure No.: 8

NOTES:
1. ALL INTERNAL ROADS WILL BE DESIGNED AT DETAIL DESIGN STAGE.



LEGEND:

TOC SITE

TOC ACCESS CORRIDOR

EX. 133.40 — EXISTING ELEVATIONS

FFE. 132.30 — FINISHED FLOOR ELEVATIONS

Owner/Client:

FOTENN PLANNING & DESIGN

Title:

Guildwood GO - TOC Communities Program

CONCEPTUAL GRADING PLAN

Drawn By: E.A.	Checked By: G.S.
Scale: 1:20	Date: September 2025
Project No.: 25200	Figure No.: 9

3 EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

During site construction, it is recommended that all erosion and sediment control Best Management Practices (BMPs) shall be constructed and maintained, to a minimum, in accordance with "Ministry of Natural Resources Guidelines on erosion and sediment control for urban construction sites", "Erosion and Sediment Control Guidelines for Urban Construction (TRCA, 2019)". In brief, the measures below are proposed to be provided on site during the entire period of construction:

- Siltation control fence along the perimeter of the construction site before commencement of construction;
- Sediment control measures to prevent silt entry at all the existing catch basins;
- Granular mud-mats at all construction egress locations (see mud-mat details);
- An inspection, maintenance and monitoring per TRCA guideline.

An erosion and sediment control plan will be provided in the next design stage.

4 GROUNDWATER AND SITE DEWATERING

The hydrogeological investigation is currently unavailable, and details regarding groundwater conditions and dewatering requirements will be provided during the detailed design stage.

5 CONCLUSION

The servicing requirements of the project site have been assessed with respect to the proposed development.

Water Servicing: The proposed development will be serviced by a 300mm watermain stub, provided by Timbertrin Development to the north, which connects to an existing 300mm watermain on Kingston Road. A 300mm watermain will run along both private and public sections of ROW E road to supply water to all three development blocks and the proposed park. Each of the six buildings in Blocks A, B, and C will have a new 150mm PVC domestic water service connected to a 200mm fire protection line via a cut-in Tee. A 200mm PVC fire protection service will also be installed, connecting to the 300mm main using a tapping sleeve and valve, as per City standard T-1104.02-3. The park area will be served by a separate 100mm water service connection.

A hydrant flow test was conducted on April 15, 2025, by Bruce Fire Engineering to assess the adequacy of the existing 300mm watermain on Guildwood Parkway via hydrants on Kingston Road. Test results showed sufficient capacity, with a static pressure of 60 psi, residual pressures of 58 and 56 psi at flows of 844 and 1265.6 gpm, and a calculated flow of 4386 gpm at 20 psi. The highest projected water demand of 119.65 L/s results in a residual pressure of 51.5 psi—well above the 20 psi minimum—confirming the watermain can adequately service the proposed development.

Sanitary Servicing: A new 250mm diameter PVC sanitary sewer is proposed along private and public sections of Road E to service Blocks A, B, and C, the existing station building, and the proposed park. Each block will have a 200mm sanitary service line, with an additional 150mm stub for the parkland. The new 250mm sewer

will connect to Payzac Avenue, pending confirmation of the existing station building's sanitary outlet and review of as-built drawings to verify the feasibility of a gravity system. The proposed sewer meets City of Toronto velocity requirements, with a flow velocity of 1.21 m/s at a 1.0% slope. A downstream capacity analysis of the existing 250mm sewer on Payzac Avenue will be completed during detailed design to ensure it can handle the increased flow without raising the hydraulic grade line significantly.

Stormwater Servicing & Stormwater Management:

In the post-development condition, storm runoff from Blocks A, B, and C will be directed to a shared Stormwater Management (SWM) tank located within the P1 and P2 parking levels via an internal piping system. Each block contributes proportionally to the total allowable site release rate of 357.25 L/s, with a combined storage volume of 898.91 m^3—exceeding the required 744.09 m^3—to also compensate for uncontrolled runoff from parkland and roads. Storm sewers along Road E will collect runoff from the development, and orifice controls at each SWM tank outlet will regulate flow; the system is designed for a 5-year return period, with gravity drainage feasibility to be confirmed during the detailed design stage, and pumping considered if gravity flow is not viable.

Groundwater and Dewatering:

The hydrogeological investigation is currently unavailable, and details regarding groundwater conditions and dewatering requirements will be provided during the detailed design stage.

Recommendations:

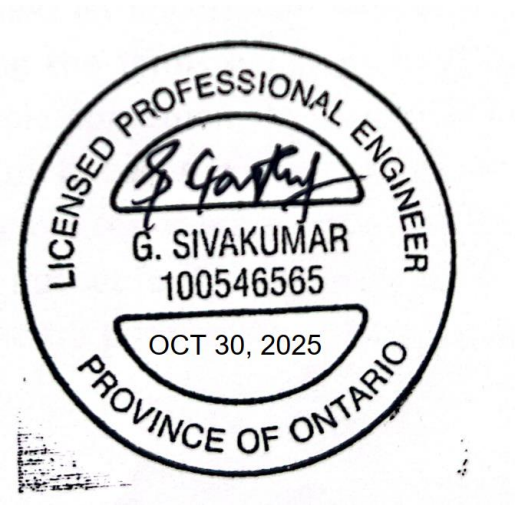
The following studies/reports/coordination are required for the later stages of the design:

- Further coordination with architect is required to confirm the type of construction and sprinkler system for both existing and proposed buildings;
- Further coordination with the mechanical consultant is required to finalize the size of the water service lines;
- As-built drawings are required to confirm the existing storm and sanitary outlets, including their invert elevations, to verify the feasibility of connecting the proposed systems to Payzac Avenue and to ensure gravity flow can be achieved.
- Further coordination with the mechanical consultant is required to finalize the size of the sanitary service lines; and

If you have any questions, please do not hesitate to contact the undersigned.

LEA CONSULTING LTD.

Respectfully Submitted ,



Prepared by:
Harshdeep Randhawa
Civil Designer

Reviewed and Approved by:
Gowtham Sivakumar, P.Eng.
Project Manager

APPENDIX A

Background Information & Proposed Site Plan

Site Statistics	Required	Provided Area (m²)
Site Area		**29,143**
Public ROW		5,217
Metrolinx Station Area		3,522
Net Developable Area		**20,404**
Parkland Dedication		1,750
Net Site Area		**18,654**
POPs (Total)		**2,830**
Station Plaza*		1,000
Livingston Connection		1,830
Private ROW		**4,266**
Development Lands		**11,558**

*Station Plaza will not be provided should PUDO Option 2 is selected as the final design

Building Statistics	Area (m²)
Below Grade GCA	47,904
Above Grade GCA	227,799
Back of House	30,911
Amenity Space (Total)	9,194
Indoor	5,562
Outdoor	3,632
Gross Floor Area (Total)	191,291
Residential GFA	189,525
Retail GFA	1,766
FSI	6.56
Net FSI	10.25

Parking Statistics					
Option 1:	**Total**		**Accessible Parking**		**PUDO Spaces**
Urban PUDO	**Required**	**Provided**	**Required**	**Provided**	**Provided**
Visitor (Metrolinx)		760	17	17	19
Visitor (TOC)	52	52			
Car-Share (TOC)	2	2			
Residential (TOC)		453	15	15	
Total		1267			
Option 2:	**Total**		**Accessible Parking**		**PUDO Spaces**
High-Ridership PUDO	**Required**	**Provided**	**Required**	**Provided**	**Provided**
Visitor (Metrolinx)		760	17	17	25
Visitor (TOC)	52	52			
Car-Share (TOC)	2	2			
Residential (TOC)		453	15		
Total		1267			
Option 3: Underground PUDO	**Total**		**Accessible Parking**		**PUDO Spaces**
	Required	**Provided**	**Required**	**Provided**	**Provided**
Visitor (Metrolinx)		709	17	17	30
Visitor (TOC)	52	52			
Car-Share (TOC)	2	2			
Residential (TOC)		453	15	15	
Total		1216	32	32	30

Bike Parking		
	Required	**Provided**
Short-Term	179	179
Long-Term	1724	1724
Total	1903	1903

Loading		
	Required	**Provided**
Type G	3	3
Type C	3	3
Type B	2	2
Total	8	8

	TOWER	Unit Count					
		1 Bed	1 Bed + Den	2 Bed	2Bed + Den	3 Bed	Total Suites
BLOCK A	Podium	0	24	24	0	72	120
	Tower A1	128	64	64	64	0	320
	Tower A2	108	54	54	54	0	270
TOTALS	PERCENTAGE	33%	20%	20%	17%	10%	100%
		236	142	142	118	72	710

	TOWER	Unit Count					
		1 Bed	1 Bed + Den	2 Bed	2Bed + Den	3 Bed	Total Suites
BLOCK B	Podium	18	102	12	0	36	168
	Tower B1	156	156	0	52	156	520
	Tower B2	104	208	0	208	0	520
TOTALS	PERCENTAGE	23%	39%	1%	22%	16%	100.00%
		278	466	12	260	192	1208

	TOWER	Unit Count					
		1 Bed	1 Bed + Den	2 Bed	2Bed + Den	3 Bed	Total Suites
BLOCK C	Podium	24	90	8	30	24	176
	Tower C1	44	88	0	88	0	220
	Tower C2	110	0	22	44	44	220
TOTALS	PERCENTAGE	29%	29%	5%	26%	11%	100%
		178	178	30	162	68	616

	TOWER	Unit Count					
		1 Bed	1 Bed + Den	2 Bed	2Bed + Den	3 Bed	Total Suites
BLOCK A+B+C	BLOCK A	236	142	142	118	72	710
	BLOCK B	278	466	12	260	192	1208
	BLOCK C	178	178	30	162	68	616
TOTALS	PERCENTAGE	27%	31%	7.3%	21%	13%	100%
		692	786	184	540	332	2534

Development Block C	Gross Construction Area	Deduction		Gross Floor Area		
		Back of House	Amenity Space	Total	Residential	Retail
Level 1	2,420	780	613	1019	568	451
Mezzanine	1,374	1,374				
Level 2	2,420	114		2306	2,306	
Level 3	2,420	114		2306	2,306	
Level 4	2,420	114		2306	2,306	
Level 5	2,420	114		2306	2,306	
Level 6	2,420	114		2306	2,306	
Level 7	2,420	114		2306	2,306	
Level 8	1,500	114	1,386			
Level 9	1,500	114		1386	1,386	
Level 10	1,500	114		1386	1,386	
Level 11	1,500	114		1386	1,386	
Level 12	1,500	114		1386	1,386	
Level 13	1,500	114		1386	1,386	
Level 14	1,500	114		1386	1,386	
Level 15	1,500	114		1386	1,386	
Level 16	1,500	114		1386	1,386	
Level 17	1,500	114		1386	1,386	
Level 18	1,500	114		1386	1,386	
Level 19	1,500	114		1386	1,386	
Level 20	1,500	114		1386	1,386	
Level 21	1,500	114		1386	1,386	
Level 22	1,500	114		1386	1,386	
Level 23	1,500	114		1386	1,386	
Level 24	1,500	114		1386	1,386	
Level 25	1,500	114		1386	1,386	
Level 26	1,500	114		1386	1,386	
Level 27	1,500	114		1386	1,386	
Level 28	1,500	114		1386	1,386	
Level 29	1,500	114		1386	1,386	
Level 30	1,500	114		1386	1,386	
MPH	1,500	1,500				
Total	54,314	6,960	1,999	45,347	44,896	451

Development Block B	Gross Construction Area	Deduction		Gross Floor Area		
		Back of House	Amenity Space	Total	Residential	Retail
Level 1	2,804	1,163	614	1027	650	377
Mezzanine	2,015	2,015				
Level 2	2,804	324		2480	2,480	
Level 3	2,804	324		2480	2,480	
Level 4	2,804	324		2480	2,480	
Level 5	2,804	324		2480	2,480	
Level 6	2,804	324		2480	2,480	
Level 7	2,804	324		2480	2,480	
Level 8	1,586	152	1,434			
Level 9	1,586	152		1434	1,434	
Level 10	1,586	152		1434	1,434	
Level 11	1,586	152		1434	1,434	
Level 12	1,586	152		1434	1,434	
Level 13	1,586	152		1434	1,434	
Level 14	1,586	152		1434	1,434	
Level 15	1,586	152		1434	1,434	
Level 16	1,586	152		1434	1,434	
Level 17	1,586	152		1434	1,434	
Level 18	1,586	152		1434	1,434	
Level 19	1,586	152		1434	1,434	
Level 20	1,586	152		1434	1,434	
Level 21	1,586	152		1434	1,434	
Level 22	1,586	152		1434	1,434	
Level 23	1,586	152		1434	1,434	
Level 24	1,586	152		1434	1,434	
Level 25	1,586	152		1434	1,434	
Level 26	1,586	152		1434	1,434	
Level 27	1,586	152		1434	1,434	
Level 28	1,586	152		1434	1,434	
Level 29	1,586	152		1434	1,434	
Level 30	1,586	152		1434	1,434	
Level 31	1,586	152		1434	1,434	
Level 32	1,586	152		1434	1,434	
Level 33	1,586	152		1434	1,434	
Level 34	1,586	152		1434	1,434	
Level 35	1,586	152		1434	1,434	
Level 36	1,586	152		1434	1,434	
Level 37	1,586	152		1434	1,434	
Level 38	1,586	152		1434	1,434	
Level 39	1,586	152		1434	1,434	
Level 40	1,586	152		1434	1,434	
Level 41	1,586	152		1434	1,434	
Level 42	1,586	152		1434	1,434	
Level 43	1,586	152		1434	1,434	
Level 44	1,586	152		1434	1,434	
Level 45	1,586	152		1434	1,434	
Level 46	1,586	152		1434	1,434	
Level 47	1,586	152		1434	1,434	
Level 48	1,586	152		1434	1,434	
Level 49	1,586	152		1434	1,434	
Level 50	1,586	152		1434	1,434	
Level 51	1,586	152		1434	1,434	
Level 52	1,586	152		1434	1,434	
Level 53	1,586	152		1434	1,434	
Level 54	1,586	152		1434	1,434	
Level 55	1,586	152		1434	1,434	
Level 56	1,586	152		1434	1,434	
Level 57	1,586	152		1434	1,434	
Level 58	1,586	152		1434	1,434	
Level 59	1,586	152		1434	1,434	
Level 60	1,586	152		1434	1,434	
MPH	1,586	1,586				
Total	107,287	14,764	2,048	90,475	90,098	377

Development Block A	Gross Construction Area	Deduction		Gross Floor Area		
		Back of House	Amenity Space	Total	Residential	Retail
Level 1	2,813	1,028	206	1579	641	938
Mezzanine	1,675	1,675				
Level 2	2,813	264		2549	2,549	
Level 3	2,813	264		2549	2,549	
Level 4	2,813	264		2549	2,549	
Level 5	2,813	264		2549	2,549	
Level 6	2,813	264		2549	2,549	
Level 7	2,813	264		2549	2,549	
Level 8	1,423	114	1,309			
Level 9	1,423	114		1309	1,309	
Level 10	1,423	114		1309	1,309	
Level 11	1,423	114		1309	1,309	
Level 12	1,423	114		1309	1,309	
Level 13	1,423	114		1309	1,309	
Level 14	1,423	114		1309	1,309	
Level 15	1,423	114		1309	1,309	
Level 16	1,423	114		1309	1,309	
Level 17	1,423	114		1309	1,309	
Level 18	1,423	114		1309	1,309	
Level 19	1,423	114		1309	1,309	
Level 20	1,423	114		1309	1,309	
Level 21	1,423	114		1309	1,309	
Level 22	1,423	114		1309	1,309	
Level 23	1,423	114		1309	1,309	
Level 24	1,423	114		1309	1,309	
Level 25	1,423	114		1309	1,309	
Level 26	1,423	114		1309	1,309	
Level 27	1,423	114		1309	1,309	
Level 28	1,423	114		1309	1,309	
Level 29	1,423	114		1309	1,309	
Level 30	1,423	114		1309	1,309	
Level 31	1,423	114		1309	1,309	
Level 32	1,423	114		1309	1,309	
Level 33	1,423	114		1309	1,309	
Level 34	1,423	114		1309	1,309	
Level 35	1,423	114		1309	1,309	
Level 36	1,423	767		656	656	
Level 37	713	57		656	656	
Level 38	713	57		656	656	
Level 39	713	57		656	656	
Level 40	713	57		656	656	
MPH	713	713				
Total	66,198	9,187	1,515	55,496	54,558	938

zeidler

Zeidler Architecture

600 – 158 Sterling Road
Toronto, Ontario M6R 2B7
T 416 596 8300 | zeidler.com

Infrastructure Ontario
1 DUNDAS STREET WEST, SUITE 2000
TORONTO, ON. M5G 1Z3

NOTE

NO.	ISSUE/ REVISION	DATE

NOT FOR CONSTRUCTION

PROJECT

GUILDWOOD GO STATION

PROJECT ADDRESS

Street
CALGARY, ALBERTA Post Code

TITLE

PROJECT STATS

PROJECT NO.	DRAWN	CHECKED
24-01-061	Author	Checker

DRAWING NO.

A-001

REVISION NO.

TOPOGRAPHIC SURVEY OF
4105 KINGSTON ROAD
CITY OF TORONTO

5 0 5 10 15 20 25 Meters

SCALE 1 : 300

J.H. Gelbloom Surveying Limited
Ontario Land Surveyor
2025

LEGEND

AN	Anchor
ASPH	Asphalt
BF	Board Fence
BH	Bell & Hydro Pole
BOL	Bollard
BTB	Bell Terminal Box
CB	Catch Basin
CC	Concrete Curb
CCBG	Concrete Curb & Gutter
CLF	Chain Link Fence
CNC	Concrete
CVP	Culvert Top of Opening (One End)
DBF	Double Board Fence
DS	Door Sill
FH	Fire Hydrant
GM	Gas Meter
GRVL	Gravel
HP	Hydro Pole
HW	Handwell
IF	Iron Fence
LS	Light Standard
MB	Mail Box
MHU	Maintenance Hole Unknown
MHW	Maintenance Hole Water
PO	Pole
RDS	Road Sign
SW	Sidewalk (Concrete)
TCP	Tactile Pad
TF	Traffic Signal Pole
TSC	Traffic Signal Control
TPR	Curb Cut
UM	Underground Utility Marker
WV	Water Valve

METRIC

Distance shown on this plan are in metric and can be converted to feet by dividing by 0.3048.

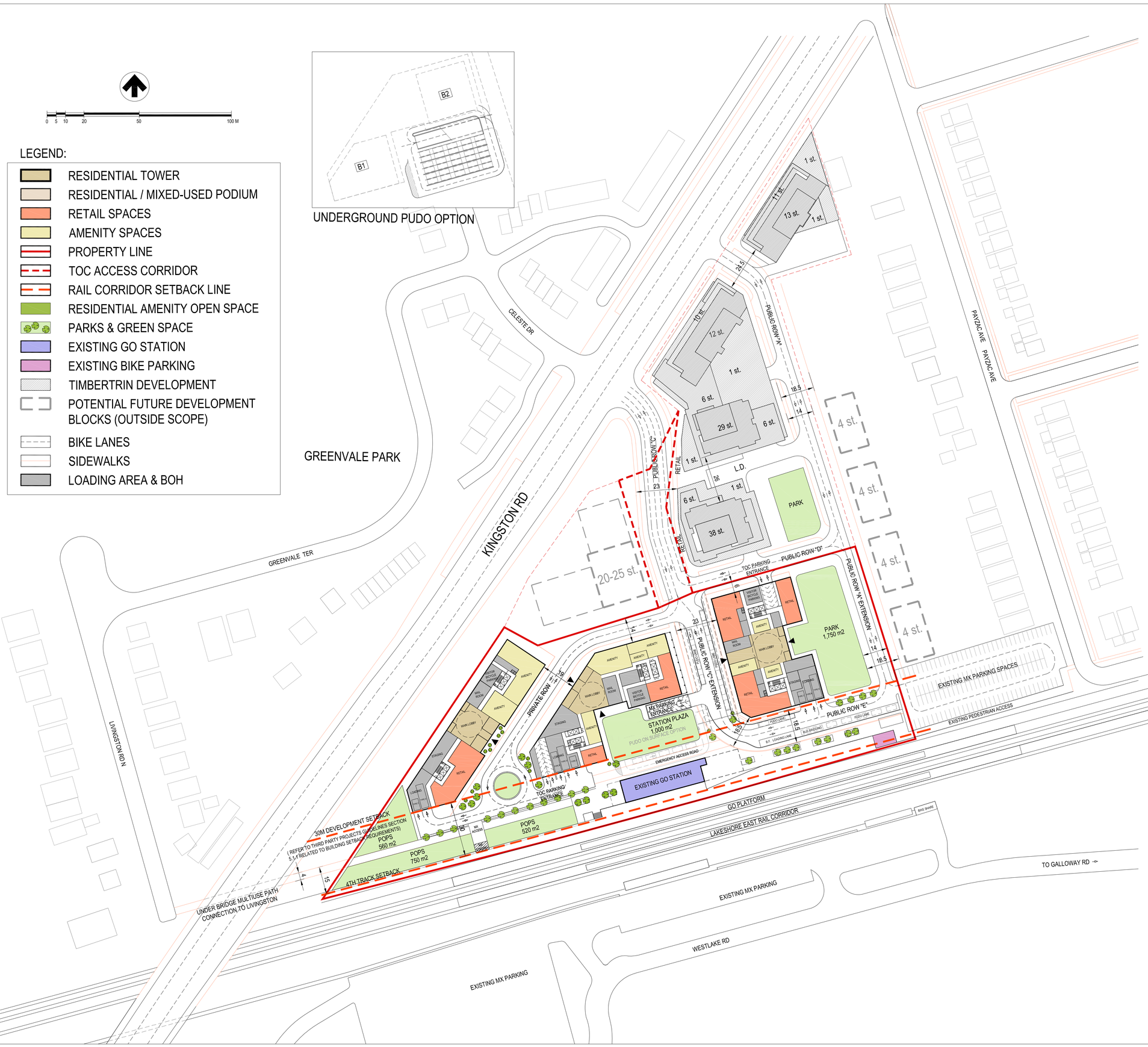
BENCHMARK

Elevations are Referred to the City of Toronto Benchmark No. 0011960UT55, having an Elevation of 142.981 m.

Topographic Survey completed on the 23rd day of November, 2024.

J. H. Gelbloom Surveying Limited
Ontario Land Surveyor
476 Morden Road, unit 102 Oakville, Ont., L6K 3W4
office@jhgsurveying.ca
Phone(905) 338-8210

Party Chief: B.N.	Project: 24-205
Drawn By: M.E.	Checked By: A.R.



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Zeidler Architecture

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Toronto, Ontario M6R 2B7
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CLIENT

Infrastructure Ontario
1 DUNDAS STREET WEST, SUITE 2000
TORONTO, ON. M5G 1Z3

KEY PLAN

NO.	ISSUE/ REVISION	DATE
1		

PROJECT

GUILDWOOD GO STATION

PROJECT ADDRESS

TITLE

GROUND FLOOR PLAN

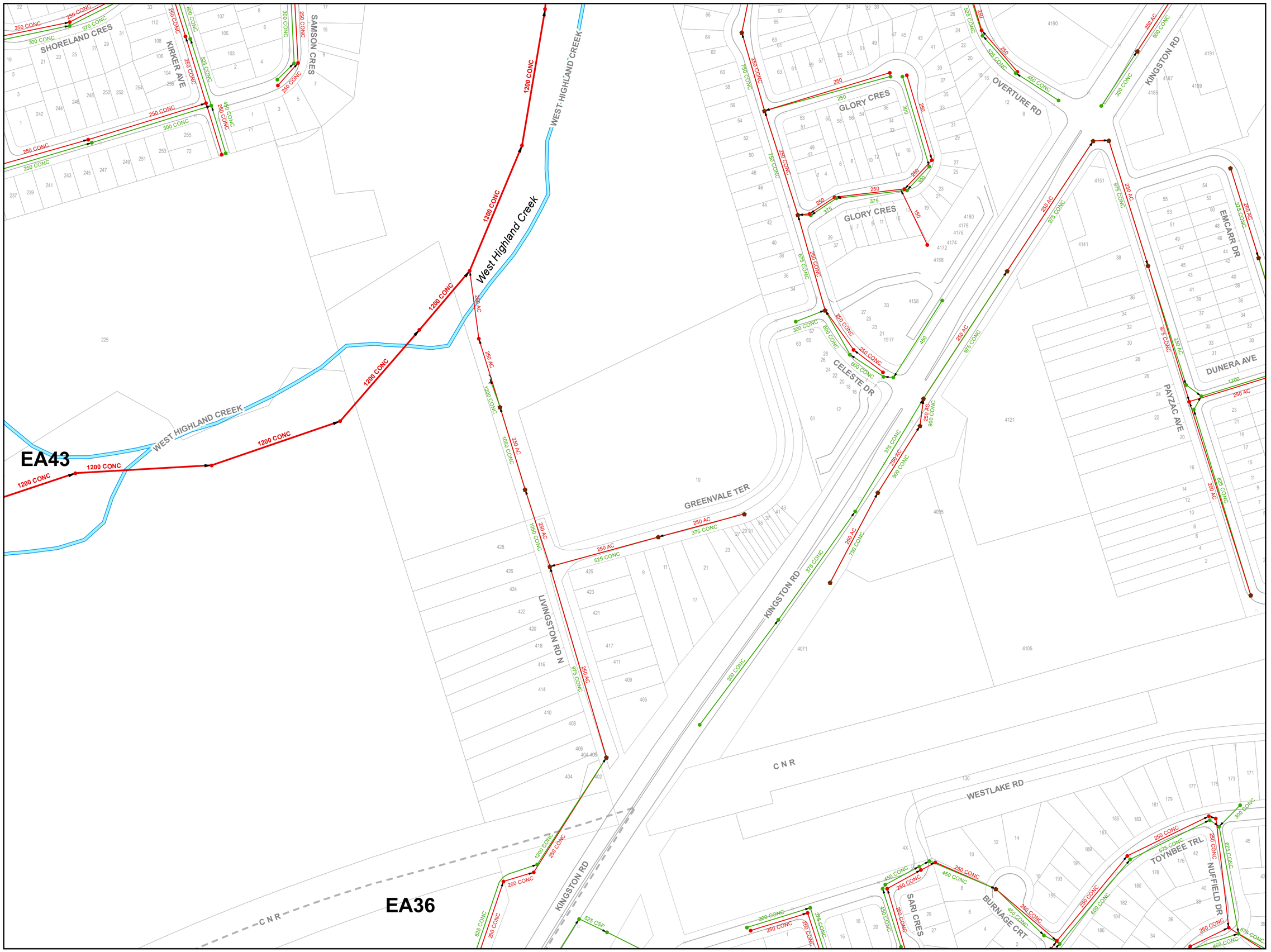
PROJECT NO.	SCALE	DRAWN	CHECKED
24-01-048	As Indicated	BP	DC

DRAWING NO.

A-102

REVISION NO.

##



Toronto Sewer Atlas

Manhole
- Combined
- Dual
- Sanitary
- Storm
- Foundation
- Large Chamber

Control Manhole
- Combined
- Dual
- Sanitary
- Storm

Outfall
- Outfall

Sewer Pump Station
- Sewer Pump Station

Catchbasin
- Other
- Twin Inlet Catchbasin

Sewer
- Foundation Drain
- Combined
- Sanitary
- Storm
- Combined Trunk
- Sanitary Trunk
- Storm Trunk
- Abandoned Sewer
- River
- Highway
- Curb
- Wards Boundary

0 50 100 150 200 Metres

Third Edition
Date: 01/09/2010

General Notes:
- The maps were prepared based on the most current data available to Toronto Water as of the Map Source Date.
- These maps are for planning purpose only and must not be used for construction, or as a replacement for a utility locate.
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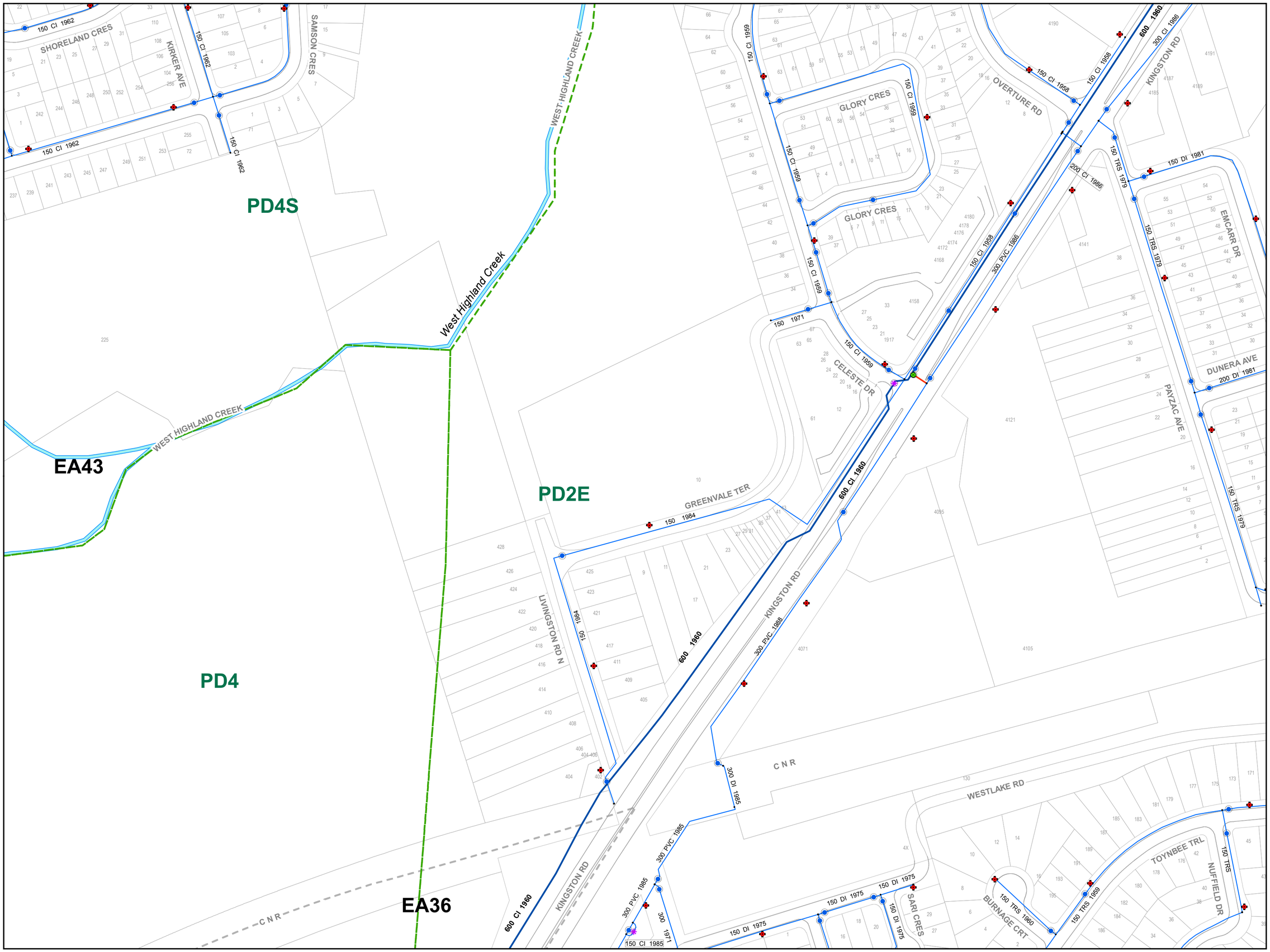
- Any discrepancies, inaccuracies, errors and/or omissions in the maps should be reported to Toronto Water, Water Infrastructure Management. (18th Floor, Metro Hall, 55 John St, Toronto, ON, M5V 3C6) (Tel: 416-392-3957)

N W E S

1140	1163	1185
1141	1164	1186
1142	1165	1187



Toronto Water Atlas

Hydrant
- Other
- City of Toronto
- Private

- PRV
- Meter
- Pressure District Valve

Metro Connection Valve
- Open
- Closed

Valve
- Open
- Closed
- Chamber
- Sanitary Pump Station

Watermain
- Distribution
- Transmission
- Metro Connection
- Encasement

- Abandoned Main
- Forcemain
- Reservoir
- Pressure District Boundary

- River
- Highway
- Curb
- Wards Boundary

0 50 100 150 200 Metres

Third Edition
Date: 01/09/2010

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N W E S

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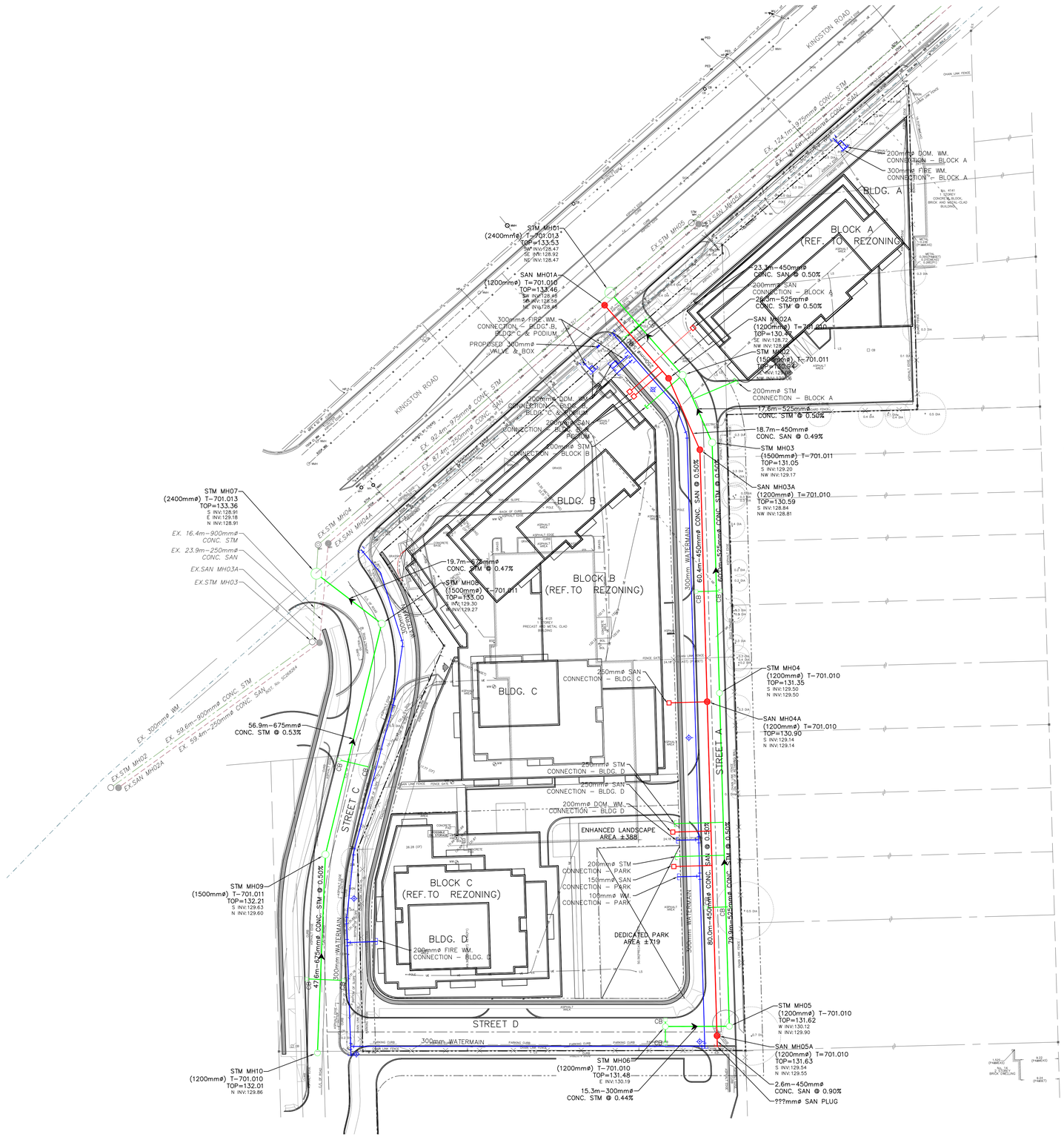

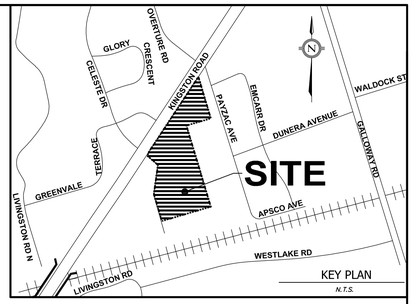

LEGEND

- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATERMAIN
- PROPOSED STORM SEWER AND MH
- PROPOSED SANITARY SEWER AND MH
- PROPOSED WATERMAIN
- PROPOSED HYDRANT
- PROPERTY LINE
- PROPOSED JOINT UTILITY TRENCH

REZONING BLOCK	DRAFT PLAN BLOCK
BLOCK A	BLOCK 1
BLOCK B	BLOCK 2
BLOCK C	BLOCK 3
DEDICATED PARK	BLOCK 4
BLOCK D	BLOCK 5
BLOCK B	BLOCK 6
BLOCK A	BLOCK 7

1. MEASUREMENTS IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN.
2. CONTRACTOR TO BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UNDERGROUND & OVERHEAD UTILITIES. VARIOUS UTILITIES CONCERNED TO BE GIVEN REQUIRED ADVANCE NOTICE PRIOR TO ANY DIGGING, FOR STAKE OUT. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF EXISTING UTILITIES AS INDICATED ON THIS DRAWING.
3. THE INFORMATION CONTAINED ON THIS PLAN PERTAINS TO THE INSTALLATION OF NEW MUNICIPAL SERVICING ONLY AND SHALL NOT BE RELIED UPON BY A THIRD PARTY FOR ANY OTHER DESIGN AND/OR CONSTRUCTION RELATED PURPOSES (INCLUDING PUBLIC & PRIVATE SERVICING/UTILITY LOCATES, SHORING DESIGN AND FIELD LAYOUT, UTILITY DESIGN AND CONSTRUCTION, AND ALL OTHER DESIGN AND CONSTRUCTION RELATED ACTIVITIES). ALL THIRD PARTIES ARE RESPONSIBLE FOR OBTAINING THEIR OWN LOCATES FOR ANY PUBLICLY OR PRIVATELY HELD INFRASTRUCTURE WITHIN OR ADJACENT TO THE SUBJECT DEVELOPMENT.

NO.	DATE	REVISION	INITIAL	SIGNED
4.	2024-06-07	ISSUED FOR RE-ZONING	L.G	J.F
3.	2023-11-14	ISSUED FOR RE-ZONING	L.G	J.F
2.	2023-05-18	ISSUED FOR COORDINATION	L.G	J.F
1.	2023-01-13	ISSUED FOR COORDINATION	L.G	J.F

LEGAL & TOPOGRAPHY
PROVIDED BY: J.D. BARNES LTD.
411 RICHMOND STREET, SUITE 107
TORONTO, ONTARIO
PHONE: 416-368-3737
DATED: MAY. 04, 2020

BENCHMARK
ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE CITY OF TORONTO BENCH MARK No 5583 HAVING A PUBLISHED ELEVATION OF 132.074 METRES.

counterpoint ENGINEERING
COUNTERPOINT ENGINEERING INC.
8395 Jane St., Suite 100, Vaughan, ON L4K 5Y2 Phone 905.326.1404 Fax 905.326.1405

LICENSED PROFESSIONAL ENGINEER
J.P. LOPEZ
100050596
JUNE 07, 2024
PROVINCE OF ONTARIO

CITY OF TORONTO ENGINEERING & CONSTRUCTION SERVICES

ACCEPTED TO BE IN ACCORDANCE WITH THE CITY OF TORONTO STANDARDS. THIS ACCEPTANCE IS NOT TO BE CONSTRUED AS VERIFICATION OF ENGINEERING CONTENT.

MANAGER, ENGINEERING REVIEW DATE:

4121 KINGSTON ROAD
CONCEPT SERVICING PLAN

DESIGN	JF	DRAWN	LG	CHECKED	CONTRACT No. 20015
SCALE:	1:500		CITY DRAWING NO.		DRAWING NUMBER CSP-01
DATE:	MAR 2021				

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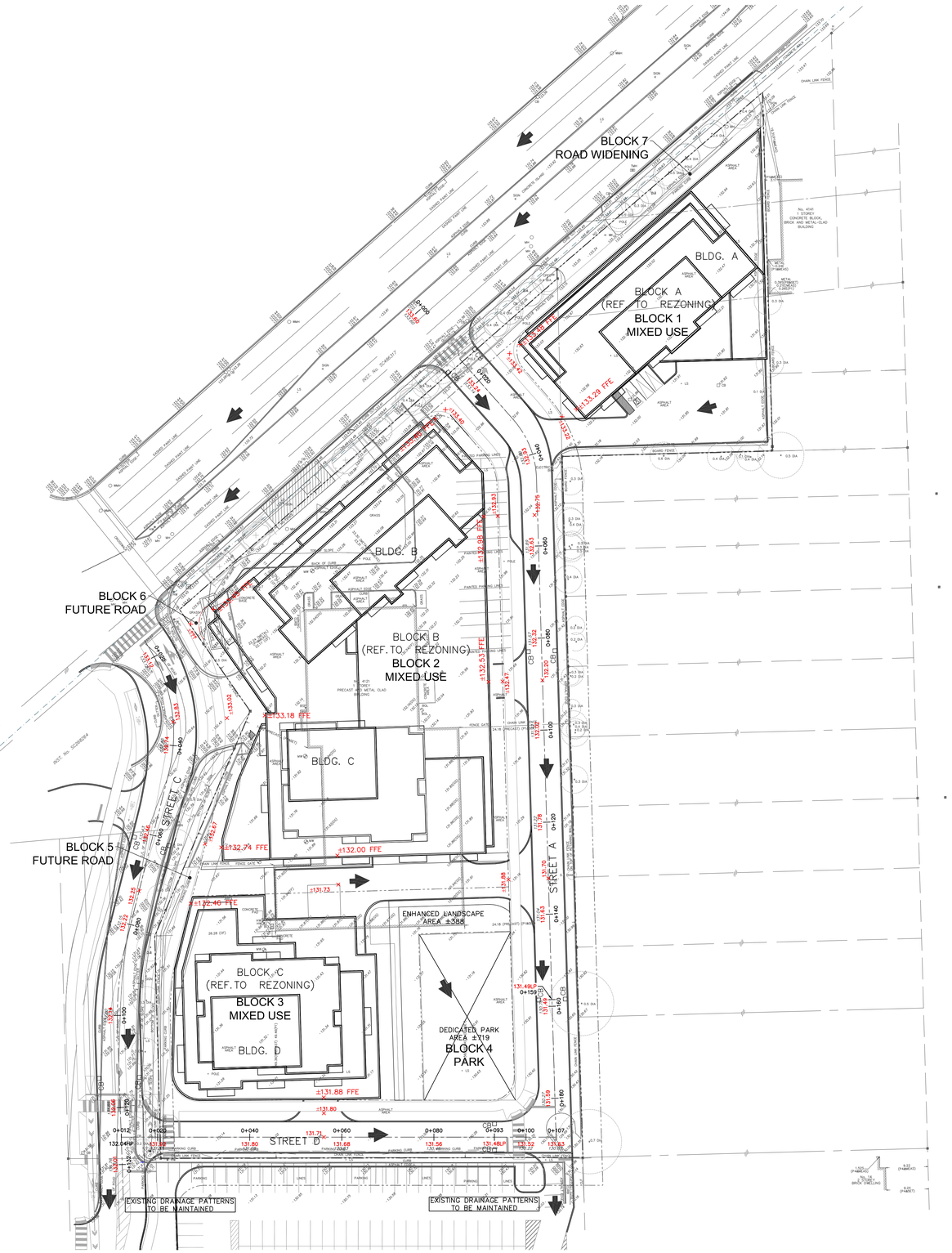

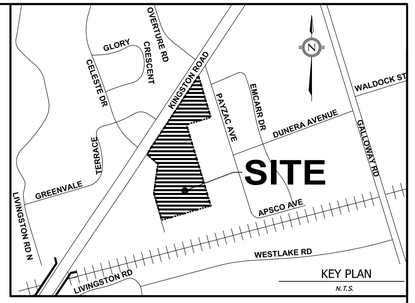

LEGEND

- PROPERTY LINE
- OVERLAND FLOW ARROW
- 0+020 — PROPOSED CHAINAGE
- 133.24 / 133.74 — PROPOSED ROAD GRADE / EXISTING GRADE
- ×±133.28 FFE — PROPOSED FINISHED FLOOR ELEVATION

REZONING BLOCK	DRAFT PLAN BLOCK
BLOCK A	BLOCK 1
BLOCK B	BLOCK 2
BLOCK C	BLOCK 3
DEDICATED PARK	BLOCK 4
BLOCK D	BLOCK 5
BLOCK B	BLOCK 6
BLOCK A	BLOCK 7

1. MEASUREMENTS IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN.
2. CONTRACTOR TO BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UNDERGROUND & OVERHEAD UTILITIES. VARIOUS UTILITIES CONCERNED TO BE GIVEN REQUIRED ADVANCE NOTICE PRIOR TO ANY DIGGING. FOR STAKE OUT, THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF EXISTING UTILITIES AS INDICATED ON THIS DRAWING.
3. THE INFORMATION CONTAINED ON THIS PLAN PERTAINS TO THE INSTALLATION OF NEW MUNICIPAL SERVICING ONLY AND SHALL NOT BE RELIED UPON BY A THIRD PARTY FOR ANY OTHER DESIGN AND/OR CONSTRUCTION RELATED PURPOSES (INCLUDING PUBLIC & PRIVATE SERVICING/UTILITY LOCATES, SHORING DESIGN AND FIELD LAYOUT, UTILITY DESIGN AND CONSTRUCTION, AND ALL OTHER DESIGN AND CONSTRUCTION RELATED ACTIVITIES). ALL THIRD PARTIES ARE RESPONSIBLE FOR OBTAINING THEIR OWN LOCATES FOR ANY PUBLICLY OR PRIVATELY HELD INFRASTRUCTURE WITHIN OR ADJACENT TO THE SUBJECT DEVELOPMENT.

NO.	DATE	REVISION	INITIAL	SIGNED
5.	2024-11-15	ISSUED FOR RE-ZONING	L.G	J.F
4.	2024-06-07	ISSUED FOR RE-ZONING	L.G	J.F
3.	2023-11-14	ISSUED FOR RE-ZONING	L.G	J.F
2.	2023-05-18	ISSUED FOR COORDINATION	L.G	J.F
1.	2023-01-13	ISSUED FOR COORDINATION	L.G	J.F

LEGAL & TOPOGRAPHY
PROVIDED BY: J.D. BARNES LTD.
411 RICHMOND STREET, SUITE 107
TORONTO, ONTARIO
PHONE: 416-368-3737
DATED: MAY. 04, 2020

BENCHMARK
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J.P. LOPEZ
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NOV. 15, 2024
PROVINCE OF ONTARIO

TORONTO ENGINEERING & CONSTRUCTION SERVICES

ACCEPTED TO BE IN ACCORDANCE WITH THE CITY OF TORONTO STANDARDS. THIS ACCEPTANCE IS NOT TO BE CONSTRUED AS VERIFICATION OF ENGINEERING CONTENT.

MANAGER, ENGINEERING REVIEW DATE:

4121 KINGSTON ROAD
CONCEPT GRADING PLAN

DESIGN	JF	DRAWN	LG	CHECKED		CONTRACT No. 20015	
SCALE:	1:500		CITY DRAWING NO.			DRAWING NUMBER	CGP-01
DATE:	MAR 2021						

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APPENDIX B

WATER DEMAND CALCULATIONS

LEA Consulting Ltd. Consulting Engineers and Planners		**Fire Demand Calculation for Existing Building**		
	Prepared:	V.J.	Page No.	B-01
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

This calculation is following the "Water Supply for Public Fire Protection"
by Fire Underwriters Survey (2020).

Formula: $F = 220C\sqrt{A}$

where F = the required fire flow in litres per minute
C = coefficient related to the type of construction.
= 0.8 for Noncombustible construction
A = the total floor area in square metres.

		Area (m^2)
LTC	Level 1	553
	A =	553

Assumed non-combustible building. Further coordination is required to confirm type of construction for existing building.

Therefore, **F = 4000 l/min**

Occupancy reduction:

For occupancies with a low contents fire hazard, the reduction rate is 15%,
Therefore: F = 3400 l/min (assumed Limited Combustible)

Reduction for sprinkler protection:
Using the NFPA sprinkler system, a reduction rate of 30% is used.
Therefore: F = 2380 l/min

Separation charge:
Charge for the separations on each side:

Separation	Charge	
Greater than 30	0%	North
Greater than 30	0%	South
Greater than 30	0%	East
Greater than 30	0%	West
Total charge in %	0%	
Total charge in l/min	0	

Required Fire Flow: 3000 l/min
or **50.00 l/s**
or **792.5 US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Water Demand Calculation for Existing Building			
	Prepared:	V.J.	Page No.	B-02
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

POPULATION CALCULATION

Proposed Land Use Type	Units/GFA(m^2)	Density		Population
Commercial	553	1.1	persons/100m^2	6
Total	**553.2**			**7**

Peak Hour Demand Calculation:

Water Demand-Commercial	250	L/capita/day
Peaking Factor (commercial)	1.20	
Peak Hour Demand	**0.02**	L/sec
TOTAL Peak Hour Demand	**0.02**	L/sec

Maximum Day Demand Calculation:

Water Demand-Commercial	250	L/capita/day
Peaking Factor (commercial)	1.10	
Maximum Day Demand	**0.02**	L/sec
TOTAL Maximum Day Demand	**0.02**	L/sec
Fire Flow for Ex. building:	50.0	L/sec
Max. Day Domestic Demand plus Fire Flow:	50.0	L/sec
Design Water Demand	**50.0**	**L/sec**
	792.9	**US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Fire Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-03
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower A1	
	Date:	30-Oct-25		

Tower A

This calculation is following the "Water Supply for Public Fire Protection" by Fire Underwriters Survey (2020).

Formula: $F = 220C\sqrt{A}$

where F = the required fire flow in litres per minute

C = coefficient related to the type of construction.
= 0.8 for Noncombustible construction

A = the effective total floor area in square metres. For non combustible buildings, consider the area of the two largest adjoining floor plus 50% of all floors immediately above them up to a maximum of eight.

		Area (m^2)
LTC	Level 1	886
	Level 2	886
	Level 3	886
	A =	1328

Therefore, **F = 6000 l/min**

Occupancy reduction:

For occupancies with a low contents fire hazard, the reduction rate is 15%,

Therefore: F = 5100 l/min (assumed Limited Combustible)

Reduction for sprinkler protection:

Using the NFPA sprinkler system, a reduction rate of 30% is used.

Therefore: F = 3570 l/min

Separation charge:

Charge for the separations on each side:

Separation	Charge	
10.1 m to 20 m	15%	North
Greater than 30	0%	East
20.1 m to 30 m	10%	West
3.1 m to 10 m	20%	South
Total charge in %	45%	
Total charge in l/min	2295	

Required Fire Flow: 6000 l/min

or **100.00 l/s**

or **1585.0 US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Fire Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-04
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower A2	
	Date:	30-Oct-25		

Tower A

This calculation is following the "Water Supply for Public Fire Protection"
by Fire Underwriters Survey (2020).

Formula: $F = 220C\sqrt{A}$

where F = the required fire flow in litres per minute
C = coefficient related to the type of construction.
= 0.8 for Noncombustible construction
A = the effective total floor area in square metres. For non combustible buildings, consider the area of the two largest adjoining floor plus 50% of all floors immediately above them up to a maximum of eight.

		Area (m^2)
LTC	Level 1	886
	Level 2	886
	Level 3	886

A = 1330

Therefore, **F = 6000 l/min**

Occupancy reduction:

For occupancies with a low contents fire hazard, the reduction rate is 15%,
Therefore: F = 5100 l/min (assumed Limited Combustible)

Reduction for sprinkler protection:

Using the NFPA sprinkler system, a reduction rate of 30% is used.
Therefore: F = 3570 l/min

Separation charge:

Charge for the separations on each side:

Separation	Charge	
3.1 m to 10 m	20%	North
Greater than 30	0%	East
Greater than 30	0%	West
Greater than 30	0%	South

Total charge in % 20%
Total charge in l/min 1020

Required Fire Flow: 5000 l/min
or **83.33 l/s**
or **1320.8 US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Fire Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-05
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower B1	
	Date:	30-Oct-25		

Tower A

This calculation is following the "Water Supply for Public Fire Protection"
by Fire Underwriters Survey (2020).

Formula: $F = 220C\sqrt{A}$

where F = the required fire flow in litres per minute
C = coefficient related to the type of construction.
= 0.8 for Noncombustible construction
A = the effective total floor area in square metres. For non combustible buildings, consider the area of the two largest adjoining floor plus 50% of all floors immediately above them up to a maximum of eight.

		Area (m^2)
LTC	Level 1	997
	Level 2	997
	Level 3	997

A = 1496

Therefore, **F = 7000 l/min**

Occupancy reduction:

For occupancies with a low contents fire hazard, the reduction rate is 15%,
Therefore: F = 5950 l/min (assumed Limited Combustible)

Reduction for sprinkler protection:

Using the NFPA sprinkler system, a reduction rate of 30% is used.
Therefore: F = 4165 l/min

Separation charge:

Charge for the separations on each side:

Separation	Charge	
3.1 m to 10 m	20%	North
20.1 m to 30 m	10%	East
20.1 m to 30 m	10%	West
Greater than 30	0%	South
Total charge in %	40%	
Total charge in l/min	2380	

Required Fire Flow: 7000 l/min
or **116.67 l/s**
or **1849.2 US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Fire Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-06
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower B2	
	Date:	30-Oct-25		

Tower A

This calculation is following the "Water Supply for Public Fire Protection"
by Fire Underwriters Survey (2020).

Formula: $F = 220C\sqrt{A}$

where F = the required fire flow in litres per minute
C = coefficient related to the type of construction.
= 0.8 for Noncombustible construction
A = the effective total floor area in square metres. For non combustible buildings, consider the area of the two largest adjoining floor plus 50% of all floors immediately above them up to a maximum of eight.

		Area (m^2)
LTC	Level 1	916
	Level 2	916
	Level 3	916

A = 1374

Therefore, **F = 7000 l/min**

Occupancy reduction:

For occupancies with a low contents fire hazard, the reduction rate is 15%,
Therefore: F = 5950 l/min (assumed Limited Combustible)

Reduction for sprinkler protection:

Using the NFPA sprinkler system, a reduction rate of 30% is used.
Therefore: F = 4165 l/min

Separation charge:

Charge for the separations on each side:

Separation	Charge	
20.1 m to 30 m	10%	North
20.1 m to 30 m	10%	East
3.1 m to 10 m	20%	West
Greater than 30	0%	South
Total charge in %	40%	
Total charge in l/min	2380	

Required Fire Flow: 7000 l/min
or **116.67 l/s**
or **1849.2 US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Fire Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-07
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower C1	
	Date:	30-Oct-25		

Tower A

This calculation is following the "Water Supply for Public Fire Protection"
by Fire Underwriters Survey (2020).

Formula: $F = 220C\sqrt{A}$

where F = the required fire flow in litres per minute
C = coefficient related to the type of construction.
= 0.8 for Noncombustible construction
A = the effective total floor area in square metres. For non combustible buildings, consider the area of the two largest adjoining floor plus 50% of all floors immediately above them up to a maximum of eight.

		Area (m^2)
LTC	Level 1	841
	Level 2	841
	Level 3	841

A = 1261

Therefore, **F = 6000 l/min**

Occupancy reduction:

For occupancies with a low contents fire hazard, the reduction rate is 15%,
Therefore: F = 5100 l/min (assumed Limited Combustible)

Reduction for sprinkler protection:

Using the NFPA sprinkler system, a reduction rate of 30% is used.
Therefore: F = 3570 l/min

Separation charge:

Charge for the separations on each side:

Separation	Charge	
10.1 m to 20 m	15%	North
20.1 m to 30 m	10%	East
Greater than 30	0%	West
3.1 m to 10 m	20%	South
Total charge in %	45%	
Total charge in l/min	2295	

Required Fire Flow: 6000 l/min
or **100.00 l/s**
or **1585.0 US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Fire Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-08
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower C2	
	Date:	30-Oct-25		

Tower A

This calculation is following the "Water Supply for Public Fire Protection"
by Fire Underwriters Survey (2020).

Formula: $F = 220C\sqrt{A}$

where F = the required fire flow in litres per minute
C = coefficient related to the type of construction.
= 0.8 for Noncombustible construction
A = the effective total floor area in square metres. For non combustible buildings, consider the area of the two largest adjoining floor plus 50% of all floors immediately above them up to a maximum of eight.

		Area (m^2)
LTC	Level 1	840
	Level 2	840
	Level 3	840

A = 1260

Therefore, **F = 6000 l/min**

Occupancy reduction:

For occupancies with a low contents fire hazard, the reduction rate is 15%,
Therefore: F = 5100 l/min (assumed Limited Combustible)

Reduction for sprinkler protection:

Using the NFPA sprinkler system, a reduction rate of 30% is used.
Therefore: F = 3570 l/min

Separation charge:

Charge for the separations on each side:

Separation	Charge	
3.1 m to 10 m	20%	North
20.1 m to 30 m	10%	East
Greater than 30	0%	West
Greater than 30	0%	South
Total charge in %	30%	
Total charge in l/min	1530	

Required Fire Flow: 6000 l/min
or **100.00 l/s**
or **1585.0 US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Water Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-09
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower A1	
	Date:	30-Oct-25		

POPULATION CALCULATION

Proposed Land Use		Density		Population
Type	Units/GFA(m^2)			
1-bed	128.0	1.4	persons/bed	179
1-bed + Den	76.0	1.4	persons/bed	106
2-bed	76.0	2.1	persons/bed	160
2-bed + Den	64.0	2.1	persons/bed	134
3-bed	36.0	3.1	persons/bed	112
Total	**380.0**			**692**
Commercial/Retail	2491	1.1	persons/100m^2	27
Total	**2491.0**			**28**

Peak Hour Demand Calculation:

Water Demand-Residential multi-unit	190	L/capita/day
Peaking Factor (Apartments)	2.50	
Peak Hour Demand (Apartments)	**3.80**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.20	
Peak Hour Demand (Commercial)	**0.10**	L/sec
TOTAL Peak Hour Demand	**3.90**	L/sec

Maximum Day Demand Calculation:

Water Demand (Residential multi-unit)	190	L/capita/day
Peaking Factor (Apartments)	1.30	
Maximum Day Demand (Apartments)	**1.98**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.10	
Maximum Day Demand (Commercial)	**0.09**	L/sec
TOTAL Maximum Day Demand	**2.07**	L/sec
Fire Flow for Prop. building:	100.0	L/sec
Max. Day Domestic Demand plus Fire Flow:	102.1	L/sec
Design Water Demand	**102.1**	**L/sec**
	1617.8	**US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Water Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-010
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower A2	
	Date:	30-Oct-25		

POPULATION CALCULATION

Proposed Land Use		Density		Population
Type	Units/GFA(m^2)			
1-bed	108.0	1.4	persons/bed	151
1-bed + Den	66.0	1.4	persons/bed	92
2-bed	66.0	2.1	persons/bed	139
2-bed + Den	54.0	2.1	persons/bed	113
3-bed	36.0	3.1	persons/bed	112
Total	**330.0**			**608**
Commercial/Retail	2485	1.1	persons/100m^2	27
Total	**2485.0**			**28**

Peak Hour Demand Calculation:

Water Demand-Residential multi-unit	190	L/capita/day
Peaking Factor (Apartments)	2.50	
Peak Hour Demand (Apartments)	**3.34**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.20	
Peak Hour Demand (Commercial)	**0.10**	L/sec
TOTAL Peak Hour Demand	**3.44**	L/sec

Maximum Day Demand Calculation:

Water Demand (Residential multi-unit)	190	L/capita/day
Peaking Factor (Apartments)	1.30	
Maximum Day Demand (Apartments)	**1.74**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.10	
Maximum Day Demand (Commercial)	**0.09**	L/sec
TOTAL Maximum Day Demand	**1.83**	L/sec
Fire Flow for Prop. building:	83.3	L/sec
Max. Day Domestic Demand plus Fire Flow:	85.2	L/sec
Design Water Demand	**85.2**	**L/sec**
	1349.8	**US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Water Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-011
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower B1	
	Date:	30-Oct-25		

POPULATION CALCULATION

Proposed Land Use		Density		Population
Type	Units/GFA(m^2)			
1-bed	165.0	1.4	persons/bed	231
1-bed + Den	207.0	1.4	persons/bed	290
2-bed	6.0	2.1	persons/bed	13
2-bed + Den	52.0	2.1	persons/bed	109
3-bed	174.0	3.1	persons/bed	539
Total	**604.0**			**1182**
Commercial/Retail	1786	1.1	persons/100m^2	20
Total	**1786.0**			**20**

Peak Hour Demand Calculation:

Water Demand-Residential multi-unit	190	L/capita/day
Peaking Factor (Apartments)	2.50	
Peak Hour Demand (Apartments)	**6.50**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.20	
Peak Hour Demand (Commercial)	**0.07**	L/sec
TOTAL Peak Hour Demand	**6.57**	L/sec

Maximum Day Demand Calculation:

Water Demand (Residential multi-unit)	190	L/capita/day
Peaking Factor (Apartments)	1.30	
Maximum Day Demand (Apartments)	**3.38**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.10	
Maximum Day Demand (Commercial)	**0.06**	L/sec
TOTAL Maximum Day Demand	**3.44**	L/sec
Fire Flow for Prop. building:	116.7	L/sec
Max. Day Domestic Demand plus Fire Flow:	120.1	L/sec
Design Water Demand	**120.1**	**L/sec**
	1903.7	**US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	**Water Demand Calculation for Proposed Building**			
	Prepared:	V.J.	Page No.	B-012
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower B2	
	Date:	30-Oct-25		

POPULATION CALCULATION

Proposed Land Use		Density		Population
Type	Units/GFA(m^2)			
1-bed	113.0	1.4	persons/bed	158
1-bed + Den	259.0	1.4	persons/bed	363
2-bed	6.0	2.1	persons/bed	13
2-bed + Den	208.0	2.1	persons/bed	437
3-bed	18.0	3.1	persons/bed	56
Total	**604.0**			**1026**
Commercial/Retail	1786	1.1	persons/100m^2	20
Total	**1786.0**			**20**

Peak Hour Demand Calculation:

Water Demand-Residential multi-unit	190	L/capita/day
Peaking Factor (Apartments)	2.50	
Peak Hour Demand (Apartments)	**5.64**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.20	
Peak Hour Demand (Commercial)	**0.07**	L/sec
TOTAL Peak Hour Demand	**5.71**	L/sec

Maximum Day Demand Calculation:

Water Demand (Residential multi-unit)	190	L/capita/day
Peaking Factor (Apartments)	1.30	
Maximum Day Demand (Apartments)	**2.93**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.10	
Maximum Day Demand (Commercial)	**0.06**	L/sec
TOTAL Maximum Day Demand	**3.00**	L/sec
Fire Flow for Prop. building:	116.7	L/sec
Max. Day Domestic Demand plus Fire Flow:	119.7	L/sec
Design Water Demand	**119.7**	**L/sec**
	1896.7	**US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Water Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-013
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower C1	
	Date:	30-Oct-25		

POPULATION CALCULATION

Proposed Land Use		Density		Population
Type	Units/GFA(m^2)			
1-bed	56.0	1.4	persons/bed	78
1-bed + Den	133.0	1.4	persons/bed	186
2-bed	4.0	2.1	persons/bed	8
2-bed + Den	103.0	2.1	persons/bed	216
3-bed	12.0	3.1	persons/bed	37
Total	**308.0**			**527**
Commercial/Retail	1514	1.1	persons/100m^2	17
Total	**1514.0**			**17**

Peak Hour Demand Calculation:

Water Demand-Residential multi-unit	190	L/capita/day
Peaking Factor (Apartments)	2.50	
Peak Hour Demand (Apartments)	**2.90**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.20	
Peak Hour Demand (Commercial)	**0.06**	L/sec
TOTAL Peak Hour Demand	**2.96**	L/sec

Maximum Day Demand Calculation:

Water Demand (Residential multi-unit)	190	L/capita/day
Peaking Factor (Apartments)	1.30	
Maximum Day Demand (Apartments)	**1.51**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.10	
Maximum Day Demand (Commercial)	**0.05**	L/sec
TOTAL Maximum Day Demand	**1.56**	L/sec
Fire Flow for Prop. building:	100.0	L/sec
Max. Day Domestic Demand plus Fire Flow:	101.6	L/sec
Design Water Demand	**101.6**	**L/sec**
	1609.7	**US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Water Demand Calculation for Proposed Building			
	Prepared:	V.J.	Page No.	B-014
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	Tower C2	
	Date:	30-Oct-25		

POPULATION CALCULATION

Proposed Land Use		Density		Population
Type	Units/GFA(m^2)			
1-bed	122.0	1.4	persons/bed	171
1-bed + Den	45.0	1.4	persons/bed	63
2-bed	26.0	2.1	persons/bed	55
2-bed + Den	59.0	2.1	persons/bed	124
3-bed	56.0	3.1	persons/bed	174
Total	**308.0**			**586**
Commercial/Retail	1514	1.1	persons/100m^2	17
Total	**1514.0**			**17**

Peak Hour Demand Calculation:

Water Demand-Residential multi-unit	190	L/capita/day
Peaking Factor (Apartments)	2.50	
Peak Hour Demand (Apartments)	**3.22**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.20	
Peak Hour Demand (Commercial)	**0.06**	L/sec
TOTAL Peak Hour Demand	**3.28**	L/sec

Maximum Day Demand Calculation:

Water Demand (Residential multi-unit)	190	L/capita/day
Peaking Factor (Apartments)	1.30	
Maximum Day Demand (Apartments)	**1.68**	L/sec
Water Demand-Commercial	250	L/capita/day
Peaking Factor (Commercial)	1.10	
Maximum Day Demand (Commercial)	**0.05**	L/sec
TOTAL Maximum Day Demand	**1.73**	L/sec
Fire Flow for Prop. building:	100.0	L/sec
Max. Day Domestic Demand plus Fire Flow:	101.7	L/sec
Design Water Demand	**101.7**	**L/sec**
	1612.4	**US GPM**

LEA Consulting Ltd. Consulting Engineers and Planners	Watermain Adequacy Calculation Sheet			
	Prepared:	H.R.	Page No.	C-03
	Checked:	G.S.		
Guildwood	Proj. #	25200		
	Date:	05-Sep-25		

Existing 300mm Watermain
Hydrant Test Results - LOCATION, Contractor, Date

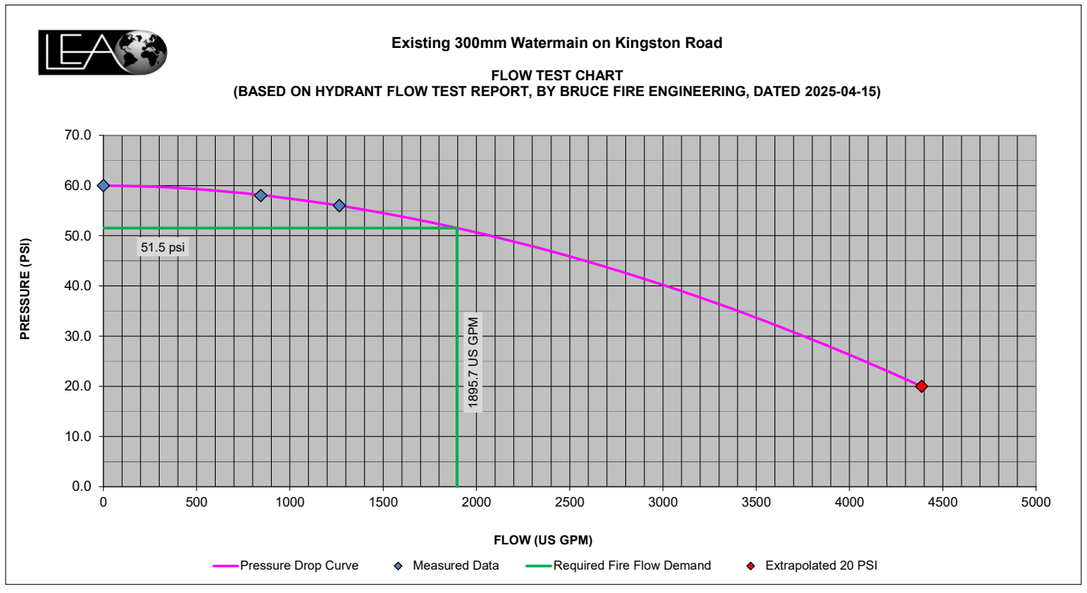
Flow (L/s)	Flow (US GPM)	Residual Pressure (PSI)	
0.0	0	60.0	Static
53.2	844	58.0	Flow response 1
79.8	1266	56.0	Flow response 2
276.7	4386	20.0	Estimated

Fire Flow + Max Day Demand

Flow (L/s)	Flow (US GPM)	Residual Pressure (PSI)
119.60	1,896	**51.5**

Residual Pressure based on Best Fit Curve

Flow (L/s)	Flow (US GPM)	Residual Pressure (psi)
0.0	**0.0**	**60.0**
13.3	211.0	59.9
26.6	422.0	59.5
39.9	633.0	58.9
53.2	**844.0**	**58.1**
59.9	949.4	57.6
66.5	1,054.8	57.1
73.2	1,160.2	56.6
79.8	**1,265.6**	**56.0**
96.3	1,525.6	54.3
112.7	1,785.7	52.4
119.6	**1,895.7**	**51.5**
129.1	2,045.7	50.3
145.5	2,305.7	47.8
161.9	2,565.8	45.2
178.3	2,825.8	42.3
194.7	3,085.8	39.1
211.1	3,345.9	35.8
227.5	3,605.9	32.2
243.9	3,865.9	28.3
260.3	4,126.0	24.3
276.7	**4,386.0**	**20.0**



"Fire Protection with Intelligence"
BRUCE Fire Engineering

Bruce Fire Engineering Ltd.

400 Applewood Crescent, Suite 100
Vaughan, Ontario
L4K 0C3

Phone: 905 482 4678
Fax: 905 581 3203
Toll Free Phone/Fax: 1 800 260 0187

Email: artem@brucefire.ca

Professional Engineers Ontario

HYDRANT FLOW TEST REPORT

TEST DATE: **April 15, 2025.** **TIME:** **12:00 pm**

LOCATION: **4095 Kingston Rd, Scarborough, ON M1E 2M3**

TESTED BY: **Artem Matthew – Bruce Fire Engineering**

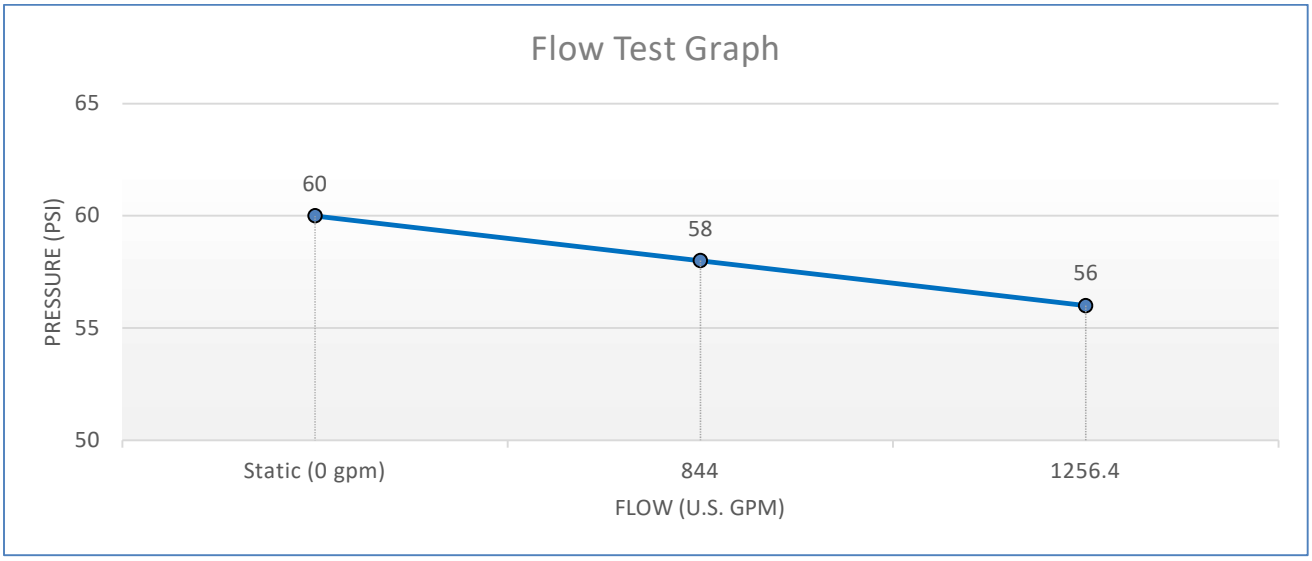
TEST RESULTS:

STATIC PRESSURE (psi)	60

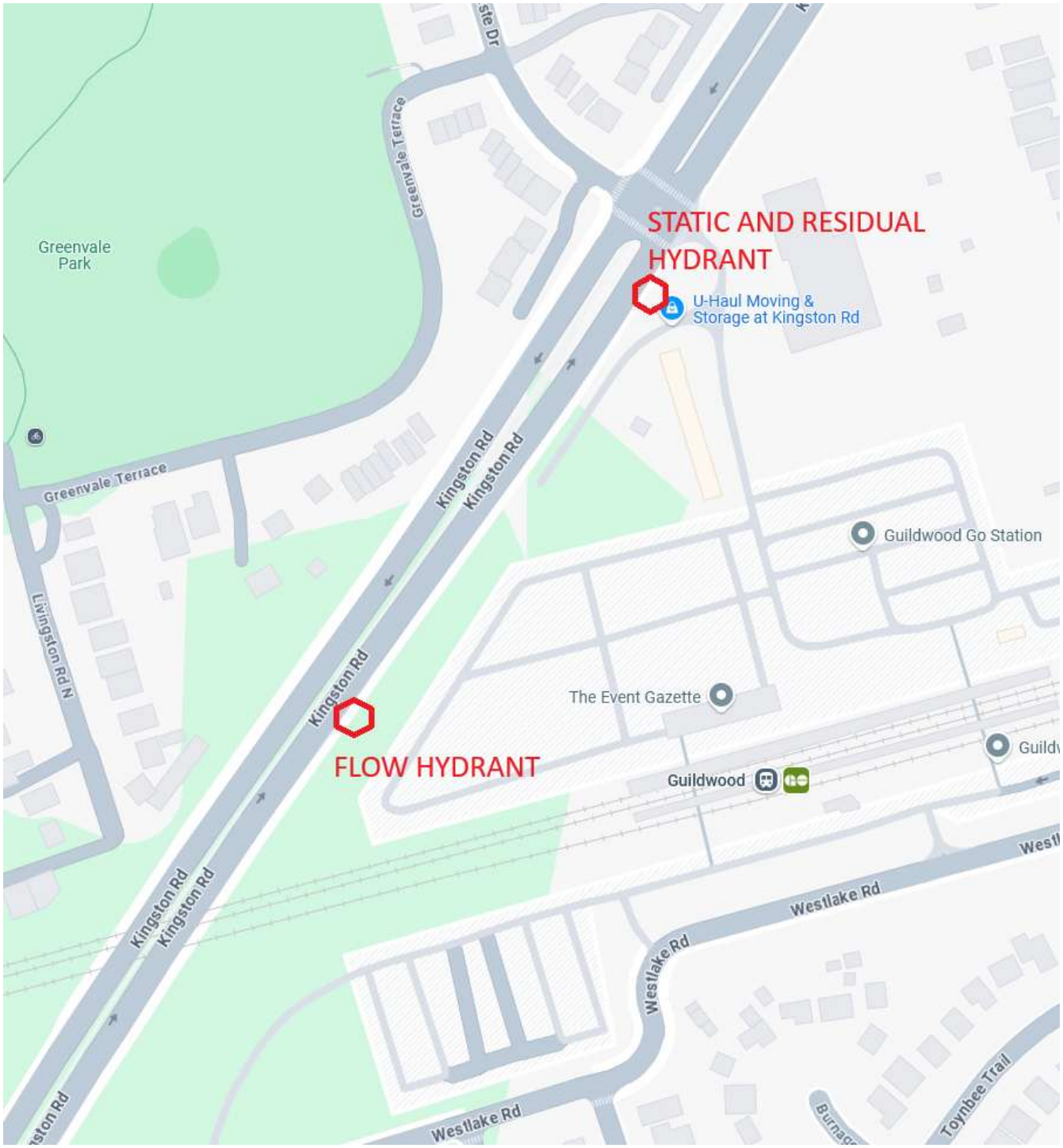
TEST NO.	NO. OF NOZZLES	NOZZLE DIAMETER (inch)	DISCHARGE COEFFICIENT	RESIDUAL PRESSURE (psi)	PITOT PRESSURE (psi)	DISCHARGE (gpm)
1	1	2½"	0.8	58	32	844
2	2	2½"	0.8	56	18/18	1265.6

Flow test done as per NFPA 291 recommendations.

Calculated Flow 4386 gpm @ 20 psi



AREA MAP


STATIC AND RESIDUAL HYDRANT
FLOW HYDRANT
U-Haul Moving & Storage at Kingston Rd
Greenvale Park
Greenvale Terrace
Kingston Rd
Livingston Rd N
Guildwood Go Station
The Event Gazette
Guildwood
Westlake Rd
Toynbee Trail

APPENDIX C

SANITARY FLOW CALCULATIONS

LEA Consulting Ltd. Consulting Engineers and Planners		**Existing Sanitary Flow Rate Calculation**		
	Prepared:	V.J.	Page No.	C-01
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

Total site area 553 m^2

POPULATION CALCULATION

Proposed Land Use		Density		Population
Type	Units/GFA(m^2)			
Commercial	553	1.1	persons/100m^2	6
Total	**553.2**			**7**

SANITARY FLOW DEMAND CALCULATION (FOR SANITARY SERVICE SIZING)

Flow generated based on calculations using the harmon peaking factor and a per capita flow rate of 250L/cap/day.

Design flow used for the design of buildings service connection

Harmon Peaking Factor: $M=1+14/(4+(P/1000)^{0.5})$

Peaking Factor	4.43	
Average Daily Wastewater Flow (Commercial)	250	L/cap/day
Peak Domestic Flow (Commercial)	**0.09**	**L/sec**
Infiltration Allowance (@ 0.26 L/sec/ha)	**0.01**	**L/sec**
Total Wastewater Flow	**0.10**	**L/sec**

	LEA Consulting Ltd. Consulting Engineers and Planners	**Proposed Sanitary Flow Rate Calculation**			
		Prepared:	V.J.	Page No.	C-02
		Checked:	G.S.		
Project: Guildwood		Proj. #	25200		
		Date:	30-Oct-25		

Total site area 29143.64 m^2

POPULATION CALCULATION

Proposed Land Use		**Density**		**Population**
Type	Units/GFA(m^2)			
1-bed	692	1.4	persons/bed	969
1-bed + Den	786	1.4	persons/bed	1100
2-bed	184	2.1	persons/bed	386
2-bed + Den	540	2.1	persons/bed	1134
3-bed	332	3.1	persons/bed	1029
Total	**2534.0**			**4619**
Commercial/Retail	1766	1.1	persons/100m^2	19
Total	**1766.0**			**20**

SANITARY FLOW DEMAND CALCULATION (FOR SANITARY SERVICE SIZING)

Flow generated based on calculations using the harmon peaking factor and a per capita flow rate of 240L/cap/day for residential and 250L/cap/day for commercial

Design flow used for the design of buildings service connection

Harmon Peaking Factor: $M=1+14/(4+(P/1000)^{0.5})$

Peaking Factor (Residential)	3.28	
Peaking Factor (Commercial)	4.38	
Average Daily Wastewater Flow (Reseidential)	240	L/cap/day
Average Daily Wastewater Flow (Commercial)	250	L/cap/day
Peak Domestic Flow (Residential)	**42.04**	**L/sec**
Peak Domestic Flow (Commercial)	**0.25**	**L/sec**
Infiltration Allowance (@ 0.26 L/sec/ha)	**0.76**	**L/sec**
Design Flow	**43.05**	**L/sec**
Full Flow Capacity of the proposed 250mm PVC pipe @ 1.0%	59.5	L/sec
Full Flow velocity of the proposed 250mm PVC pipe @ 1.0%	1.21	m/s

APPENDIX D

STORM FLOW CALCULATIONS

LEA Consulting Ltd. Consulting Engineers and Planners	Land Use			
	Prepared:	V.J.	Page No.	D-01
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

EXISTING CONDITIONS:

Land Use	Area (m^2)	%
Catchment EC1		
Paved Area	26348.2	90.4%
Landscape	2795.4	9.6%
Total Site Area:	**29143.6**	100.0%

POST DEVELOPMENT CONDITION:

Land Use	Area (m^2)	%
Catchment PC1		
Paved Area	24106.1	82.7%
Landscape	4580.0	15.7%
Green Roofs	0.0	0.0%
Sub Total of Catchment PC1	**28686.1**	98.4%

LEA Consulting Ltd. Consulting Engineers and Planners	Composite "C" Calculation			
	Prepared:	V.J.	Page No.	D-02
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

Pre-Development Composite Runoff Coefficient "C"

Catchment EC1

Location	Area (ha)	C	Composite "C"	
Paved Area	2.635	0.90		
Landscape	0.280	0.25		
Total	**2.914**		**0.84**	
			0.50	max. allowable by City of Toronto
Imperviousness Percent:			**90.4%**	

Post-Development Composite Runoff Coefficient "C"

Location	Area (ha)	C	Composite "C"
Catchment PC1			
Paved Area	2.411	0.90	
Landscape	0.458	0.25	
Green Roofs	0.000	0.25	
Sub-Total	**2.869**		**0.80**
Imperviousness Percent:			**84.0%**

LEA Consulting Ltd. Consulting Engineers and Planners	Composite "C" Calculation			
	Prepared:	V.J.	Page No.	D-03
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

Pre-Development Composite Runoff Coefficient "C"

Sub-catchment EC1

Land Use	Area (ha)	C	Composite "C"
Paved Area	2.635	0.90	
Landscape	0.280	0.25	
Total Area	**2.914**		**0.84**
Total	**2.914**		**0.84**
			0.50 max. allowable by City of Toronto

LEA Consulting Ltd. Consulting Engineers and Planners	Composite "C" Calculation			
	Prepared:	V.J.	Page No.	D-04
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

Pre-Development Composite Runoff Coefficient "C"

Sub-catchment PC1

Land Use	Area (ha)	C	Composite "C"
Paved Area/Building	2.411	0.90	
Landscape	0.458	0.25	
Green Roof	0.000	0.25	
Total Area	**2.87**		**0.80**
Total	**2.869**		**0.80**

LEA Consulting Ltd. Consulting Engineers and Planners	Pre-Development Peak Flow Rates Calculation			
	Prepared:	V.J.	Page No.	D-05
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	EC-1	
	Date:	30-Oct-25		

Rational Formulae: Q = 2.78 CIA (L/s)

Site Area:	2.914	ha
Time of Concentratior	10	minutes as per WWFM Guidelines
Runoff Coefficient :	0.50	Max. allowable by city of Toronto

Rainfall Intensity: $I = aT^c$ (City of Toronto Design Criteria for Sewers and Watermains)

Return Period:	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Rainfall Intensity (mm/hr):	88.19	131.79	162.27	189.52	224.32	250.32

Peak Flow Rate (L/s):

Return Period:	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Under existing site conditions (L/s):	357.25	533.89	657.34	767.75	908.73	1014.04

Allowable discharge rate into municipal storm sewer:

@ 2-year storm **357.25 L/s**

LEA Consulting Ltd. Consulting Engineers and Planners	Post-Development Peak Flow Rates Calculation (Uncontrolled)			
	Prepared:	V.J.	Page No.	D-06
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200	PC-1	
	Date:	30-Oct-25		

Rational Formulae: Q = 2.78 CIA (L/s)

Total Site Area:	2.869	ha
Runoff Coefficient:	0.80	Post-development
Time of Concentratior	10	minutes as per WWFM Guidelines

Rainfall Intensity: $I = aT^c$ (City of Toronto Design Criteria for Sewers and Watermains)

Return Period:	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Rainfall Intensity (mm/hr):	88.19	131.79	162.27	189.52	224.32	250.32

PC1 Peak Flow Rate (L/s):

Return Period:	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Under post-development conditions (L/s):	559.97	836.84	1030.35	1203.40	1424.38	1589.45

LEA Consulting Ltd. Consulting Engineers and Planners	On-Site Storage Calculation (2-Year Storm)			
	Prepared:	V.J.	Page No.	D-07
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

Total Drainage Area (ha) = 2.869 ha
Drainage Area Composite C = 0.80
Actual Release Rate = 357.25 L/s
Return Period = 2 Year

Site storage Requirement:

Time (minutes)	Rainfall Intensity (mm/hr)	Peak Flow (L/s)	Storm Runoff Volume (m^3)	Release Rate (L/s)	Release Flow Volume (m^3)	Required Storage Volume (m^3)
10	88.19	559.97	335.98	357.25	214.35	121.63
12	76.50	485.74	349.73	357.25	257.22	92.51
14	67.83	430.71	361.80	357.25	300.09	61.71
16	61.12	388.11	372.58	357.25	342.96	29.62
18	55.76	354.04	382.36	357.25	385.83	-3.47
20	51.36	326.11	391.33	357.25	428.70	-37.37
22	47.68	302.74	399.62	357.25	471.57	-71.95
24	44.55	282.88	407.35	357.25	514.44	-107.09
26	41.85	265.76	414.58	357.25	557.31	-142.73
28	39.50	250.83	421.40	357.25	600.18	-178.78
30	37.43	237.69	427.84	357.25	643.05	-215.21
32	35.60	226.02	433.96	357.25	685.92	-251.96

2-Year Required Storage Volume = 121.63 m^3

LEA Consulting Ltd. Consulting Engineers and Planners	On-Site Storage Calculation (2-Year Storm)			
	Prepared:	V.J.	Page No.	D-08
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

Total Drainage Area (ha) = 2.869 ha
Drainage Area Composite C = 0.80
Actual Release Rate = 357.25 L/s
Return Period = 5 Year

Site storage Requirement:

Time (minutes)	Rainfall Intensity (mm/hr)	Peak Flow (L/s)	Storm Runoff Volume (m^3)	Release Rate (L/s)	Release Flow Volume (m^3)	Required Storage Volume (m^3)
10	131.79	836.84	502.10	357.25	214.35	287.75
12	114.11	724.58	521.70	357.25	257.22	264.48
14	101.03	641.50	538.86	357.25	300.09	238.77
16	90.91	577.28	554.19	357.25	342.96	211.23
18	82.84	525.99	568.07	357.25	385.83	182.24
20	76.22	483.98	580.77	357.25	428.70	152.07
22	70.69	448.88	592.52	357.25	471.57	120.95
24	66.00	419.06	603.44	357.25	514.44	89.00
26	61.95	393.38	613.67	357.25	557.31	56.36
28	58.43	371.01	623.30	357.25	600.18	23.12
30	55.33	351.33	632.39	357.25	643.05	-10.66
32	52.58	333.87	641.02	357.25	685.92	-44.90

2-Year Required Storage Volume = 287.75 m^3

LEA Consulting Ltd. Consulting Engineers and Planners	On-Site Storage Calculation (10-Year Storm)			
	Prepared:	V.J.	Page No.	D-09
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

Total Drainage Area (ha) = 2.869 ha
Drainage Area Composite C = 0.80
Actual Release Rate = 357.25 L/s
Return Period = 10 Year

Site storage Requirement:

Time (minutes)	Rainfall Intensity (mm/hr)	Peak Flow (L/s)	Storm Runoff Volume (m^3)	Release Rate (L/s)	Release Flow Volume (m^3)	Required Storage Volume (m^3)
10	162.27	1030.35	618.21	357.25	214.35	403.86
12	140.24	890.51	641.17	357.25	257.22	383.95
14	123.97	787.19	661.24	357.25	300.09	361.15
16	111.41	707.44	679.14	357.25	342.96	336.18
18	101.39	643.82	695.33	357.25	385.83	309.50
20	93.20	591.78	710.13	357.25	428.70	281.43
22	86.36	548.33	723.80	357.25	471.57	252.23
24	80.55	511.46	736.51	357.25	514.44	222.07
26	75.55	479.74	748.39	357.25	557.31	191.08
28	71.20	452.12	759.57	357.25	600.18	159.39
30	67.38	427.84	770.12	357.25	643.05	127.07
32	63.99	406.31	780.12	357.25	685.92	94.20

10-Year Required Storage Volume = 403.86 m^3

LEA Consulting Ltd. Consulting Engineers and Planners	On-Site Storage Calculation (10-Year Storm)			
	Prepared:	V.J.	Page No.	D-010
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

Total Drainage Area (ha) = 2.869 ha
Drainage Area Composite C = 0.80
Actual Release Rate = 357.25 L/s
Return Period = 25 Year

Site storage Requirement:

Time (minutes)	Rainfall Intensity (mm/hr)	Peak Flow (L/s)	Storm Runoff Volume (m^3)	Release Rate (L/s)	Release Flow Volume (m^3)	Required Storage Volume (m^3)
10	189.52	1203.40	722.04	357.25	214.35	507.69
12	163.80	1040.08	748.86	357.25	257.22	491.64
14	144.80	919.41	772.30	357.25	300.09	472.21
16	130.13	826.26	793.21	357.25	342.96	450.25
18	118.42	751.96	812.11	357.25	385.83	426.28
20	108.85	691.17	829.41	357.25	428.70	400.71
22	100.86	640.43	845.37	357.25	471.57	373.80
24	94.08	597.37	860.21	357.25	514.44	345.77
26	88.24	560.31	874.09	357.25	557.31	316.78
28	83.16	528.06	887.14	357.25	600.18	286.96
30	78.70	499.70	899.47	357.25	643.05	256.42
32	74.74	474.56	911.15	357.25	685.92	225.23

10-Year Required Storage Volume = 507.69 m^3

LEA Consulting Ltd. Consulting Engineers and Planners	On-Site Storage Calculation (50-Year Storm)			
	Prepared:	V.J.	Page No.	D-011
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

Total Drainage Area (ha) = 2.869 ha
Drainage Area Composite C = 0.80
Actual Release Rate = 357.25 L/s
Return Period = 50 Year

Site storage Requirement:

Time (minutes)	Rainfall Intensity (mm/hr)	Peak Flow (L/s)	Storm Runoff Volume (m^3)	Release Rate (L/s)	Release Flow Volume (m^3)	Required Storage Volume (m^3)
10	224.32	1424.38	854.63	357.25	214.35	640.28
12	193.88	1231.06	886.37	357.25	257.22	629.15
14	171.38	1088.24	914.12	357.25	300.09	614.03
16	154.02	977.98	938.86	357.25	342.96	595.90
18	140.17	890.04	961.24	357.25	385.83	575.41
20	128.84	818.09	981.71	357.25	428.70	553.01
22	119.38	758.03	1000.60	357.25	471.57	529.03
24	111.35	707.06	1018.17	357.25	514.44	503.73
26	104.45	663.20	1034.60	357.25	557.31	477.29
28	98.43	625.03	1050.05	357.25	600.18	449.87
30	93.15	591.46	1064.64	357.25	643.05	421.59
32	88.46	561.70	1078.47	357.25	685.92	392.55

50-Year Required Storage Volume = 640.28 m^3

LEA Consulting Ltd. Consulting Engineers and Planners	On-Site Storage Calculation (100 - Year Storm)			
	Prepared:	V.J.	Page No.	D-012
	Checked:	G.S.		
Project: Guildwood	Proj. #	25200		
	Date:	30-Oct-25		

Total Drainage Area (ha) = 2.869 ha
Drainage Area Composite C = 0.80
Actual Release Rate = 357.25 L/s
Return Period = 100 Year

Site storage Requirement:

Time (minutes)	Rainfall Intensity (mm/hr)	Peak Flow (L/s)	Storm Runoff Volume (m^3)	Release Rate (L/s)	Release Flow Volume (m^3)	Required Storage Volume (m^3)
10	250.32	1589.45	953.67	357.25	214.35	739.32
12	216.35	1373.73	989.09	357.25	257.22	731.87
14	191.25	1214.35	1020.05	357.25	300.09	719.96
16	171.87	1091.32	1047.66	357.25	342.96	704.70
18	156.41	993.18	1072.63	357.25	385.83	686.80
20	143.77	912.90	1095.48	357.25	428.70	666.78
22	133.22	845.88	1116.56	357.25	471.57	644.99
24	124.26	789.00	1136.16	357.25	514.44	621.72
26	116.55	740.06	1154.50	357.25	557.31	597.19
28	109.84	697.46	1171.73	357.25	600.18	571.55
30	103.94	660.01	1188.01	357.25	643.05	544.96
32	98.71	626.80	1203.45	357.25	685.92	517.53

100-Year Required Storage Volume = 739.32 m^3