Final Report
Functional Servicing and Stormwater Management Report (FSR/SWM)

2400 – 2440 Dundas Street West, City of Toronto

Prepared for Fora Developments
by IBI Group
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1 Introduction

1.1 Background

IBI Group Professional Services (Canada) Inc. (IBI Group) has been retained by Fora Developments (the "Owner") to prepare a Functional Servicing Report to support the Zoning By-Law Amendment (ZBA) process for a proposed mixed-use development located at 2400 - 2440 Dundas Street West (the "Subject Site"), in the City of Toronto (the "City"). The purpose of this report is to develop a municipal site servicing strategy (stormwater, sanitary discharge, and water supply), and to identify any potential constraints within the existing municipal infrastructure. More specifically, the report will present the following:

- Calculate allowable and proposed runoff rates for the development;
- Evaluate suitable methods for attenuation and treatment of stormwater runoff;
- Develop on-site control measures and examine theoretical performance to satisfy the City's Wet Weather Flow Management Guidelines (WWFMG);
- Evaluate groundwater quantity and quality parameters from the hydrogeological report and develop a strategy to manage groundwater under both short- and long-term conditions to comply with the City of Toronto's Discharge By-Law criteria;
- Develop a Stormwater Management (SWM) plan that complies with the City's Wet Weather Flow Management Guidelines (WWFMG);
- Identify sanitary servicing opportunities and constraints and evaluate the capacity of the receiving municipal sewer; and,
- Identify water servicing opportunities and constraints, calculate the proposed domestic water and firefighting supply needs; and evaluate the capacity of the municipal infrastructure.

The following documents have been obtained from various sources:

- City of Toronto plan and profile drawings for Dundas Street West;
- City of Toronto DMOG Mapping of water and sewer networks;
- Topographic Survey prepared by KRCMAR Surveyors Ltd., dated May 2022; and,
- Architectural plans and site statistics prepared by GPA Architects

1.2 Existing Site Description

Located in the City of Toronto, the 11,143 m^2 (1.11 ha) subject site is bounded by Dundas Street West to the west, railroad tracks to the east, a single storey retail space to the north, and a mixed-use high rise building to the south. Please see **Figure 1** following the report for an aerial view of the site.

The site currently hosts (1) one-story and (1) two-storey commercial buildings and an asphalt parking surface which are to be removed. The site slopes to the south with ground surface elevations ranging from 115.14 m to 113.83 m and is self-contained with no external drainage areas to consider.

The subject site is located within Basement Flooding Study Area (BFA) #44 which is slated to be completed in 2024, therefore, the no Infoworks model was available.

1.3 Site Proposal

The proposed development includes the construction of two buildings. The north building (Building A) will consist of a 25-storey tower and an 18-storey tower with a three-storey podium. The south building (Building B) will consistof a 36-storey tower with a four-storey podium. all buildings will be connected via a shared underground level which will contain parking, storage, and utility rooms. Sample architectural drawings can be found in **Appendix A** for reference.

1.4 Service Connections

Per the City's servicing requirements for point tower developments, separate storm sewer connections and SWM facilities are required for each point tower and the shared podium, or the buildings may share a SWM facility and storm connection if the internal mechanical piping for each building is separated with sampling ports for each system upstream of the connection point to the SWM facility. Accordingly, it is proposed that the entire development share a common SWM facility and storm connection.

Per the City's servicing requirements, individual sanitary and domestic services are required for each built form. Accordingly, each tower and the podium shall be serviced independently for sanitary and domestic services.

Per the Ontario Building Code (OBC), two fire service connections separated by an isolation valve are required for any building above 84 m in height. As the proposed towers will exceed this threshold, a secondary fire line will be required to service the towers and podium.

In summary, the development site proposes one (1) storm service, four (4) sanitary services, four (4) domestic services, and two (2) fire services. Specific site servicing details will be further discussed in subsequent sections.

2 Terms of Reference and Methodology

2.1 Terms of Reference

The terms of reference used for the scope of this report have been based on the City of Toronto Design Criteria for Sewers and Watermains, dated January 2021, and the City of Toronto Wet Weather Flow Management Guidelines, dated November 2006. The City's Sewer Capacity Assessment Guidelines (July 2021) were referenced to assess the capacity of the existing sanitary sewers.

2.2 Methodology: Stormwater Management

As the proposed development has a total site area less than 5.0 ha (Table 7, Section 2, WWFMG), the following SWM criteria shall apply:

Quantity Control

The allowable release rate to the municipal storm sewer system from the development site during a 2- year design storm event must not exceed the peak runoff rate from the site under pre-development conditions during the same storm event, or existing capacity of the receiving storm sewer, whichever is less.

A maximum runoff coefficient of 0.50 shall be used in calculating the pre-development peak runoff. An overland flow route (major system) shall be provided within the developed site to direct runoff in excess of the 100-year storm to an approved overland flow outlet.

Quality Control

Long-term average removal of 80% of the total suspended solids (TSS) on an annual loading basis must be achieved. TSS removal efficiency is to be based on 100% of the runoff leaving the site from all storm events that occurs in an average year.

Water Balance

As the proposed development aims to qualify for Tier 1 of the Toronto Green Standard (TGS), controls should be in place, such that the runoff resulting from a 5 mm rainfall event must be retained on-site for rainwater re-use, infiltration, and evapotranspiration.

2.3 Methodology: Sanitary Discharge

Pre- and post-development peak sewer flows will be calculated based on the following City design criteria:

Table 2.1 Sanitary Design Parameters

DESIGN FLOWS		POPULATION DENSITIES	
Residential Flow	240 L/c/day		
ICI Flow	250 L/c/day		
Infiltration Allowance	0.26 L/s/ha	1 Bedroom Units	1.4 people / unit
Peaking Factor	Harmon Equation	2 Bedroom Units	2.1 people / unit
SANITARY SERVICE CONNECTION SIZING		3 Bedroom Units	3.1 people / unit
Population Flow	450 L/c/day	Retail Space	1.1 people/100m^2
Infiltration Allowance	0.26 L/s/ha	Office Space	3.3 people/100m^2
Peaking Factor	Harmon Equation		

Based on the calculated peak flows, the adequacy of the existing infrastructure to support the proposed development will be discussed.

2.4 Methodology: Water Supply

The domestic water usage will be calculated based on the following City of Toronto and Ontario Building Code design criteria:

Table 2.2 Water Design Parameters

Average Daily Demand		Peaking Factors		
		Land Use	Peak Hour	Max Day
Single Family	310 L/c-day	Residential	2.25	1.50
Multi-Unit	190 L/c-day	Commercial	1.20	1.10

Pressure and flow testing to determine the adequacy of the existing watermain to support the development with fire suppression in accordance with the Fire Underwriters Survey (FUS) Guidelines will be discussed in the subsequent sections.

3 Groundwater Discharge

A hydrogeological assessment was carried out by Groundwater Environmental Management Services (GEMS), dated March 6, 2023, to assess existing groundwater conditions. Per the assessment, the groundwater quality was found to be below the City's limits for discharge to the combined sewer system. Please see Appendix B for an excerpt copy of the hydrogeological assessment.

3.1 Short-Term Groundwater Discharge

The anticipated short-term groundwater discharge has been estimated by GEMS to be 751,022 L/day (8.7 L/s). At the time of this report, a dewatering plan was not made available. It is therefore assumed that groundwater pumping will operate for 6 hours per day.

The peak post-development sanitary design flow has been estimated to be 16.1 L/s (please see Section 5) which exceeds the anticipated short-term pumping rate. Therefore the long-term rate governs and will be used to assess downstream sewer capacity and compliance with MECP F-5-5 which will be discussed in subsequent sections.

Table 3.1 summarizes the recommendations for groundwater discharge during construction. It should be noted that a Permit to Take Water (PTTW) application must be submitted to the Ministry of the Environment, Conservation and Parks (MCEP) if dewatering rates exceed 50 m^3/day.

Table 3.1 Short-Term Groundwater Discharge Summary

Average Discharge	Average Discharge	Hours Of Pumping	Peak Discharge	Connection Outlet	Treatment Required
751 m^3/Day	8.7 L/s	13 Hours	16.0 L/s	Combined	No

3.2 Long-Term Groundwater Discharge

Per the City's Foundation Drainage Policy, only infiltrated storm may be permitted to be discharged to the municipal system. As the foundation is expected to fall within the groundwater table, the proposed building will be designed as water-tight without the need for a foundation drain connection to the municipal sewer system. Confirmation letters regarding this approach have been provided by the property owner, the mechanical consultant, and the structural consultant, and can be found in **Appendix B** for reference.

4 Stormwater Management

4.1 Pre-Development Conditions

There is one dedicated 450 mm storm sewer within Dundas Street West conveying flow south to Bloor Street West and eventually to High Park. As previously mentioned, the site currently hosts two existing buildings and an asphalt parking lot resulting in a pre-development runoff coefficient of 0.90, however, the allowable release rate will be calculated using 0.50 per the City's WWFMG's.

4.2 Grading

Under pre-development conditions, no external drainage enters the site and all drainage within the site is conveyed to the adjacent rights-of-way. Proposed grades and existing drainage patterns will be maintained along property lines to the extent practical. Emergency overland flow route in excess of a 100-year storm event will continue to be directed to the adjacent right-of-way matching pre-development conditions.

4.3 Gross and Net Allowable Release Rates

Using the City's IDF data for a 2-year storm event and a time of concentration of 10 minutes, the gross allowable release rate for the subject site is calculated as follows:

$$Q_{\text{Gross Allowable}} = \frac{(A \times R) * I_2}{360} = \frac{(1.1143 \text{ ha} \times 0.50) \times 88.2 \text{ mm / hr}}{360} \times \left(\frac{1000 \text{ L}}{\text{m}^3}\right) = \mathbf{136.5 \text{ L/s}}$$

As shown above, the gross allowable release rate from the subject site shall be limited to a maximum of **136.5 L/s**. The associated pre-development drainage area plan is shown on **Figure DAP-1** which can be found in **Appendix C** for reference.

Due to grading constraints, a small portion of the site will be released uncontrolled. Using the City's IDF data for a 100-year storm event and a time of concentration of 10 minutes, the un-controlled discharge is calculated as follows:

$$\text{A2 } Q_{\text{Un-Controlled}} = \frac{(A \times R) * I_{100}}{360} = \frac{(0.005 \text{ ha} \times 0.39) \times 250.3 \text{ mm / hr}}{360} \times \left(\frac{1000 \text{ L}}{\text{m}^3}\right) = \mathbf{1.4 \text{ L/s}}$$

$$\text{A3 } Q_{\text{Un-Controlled}} = \frac{(A \times R) * I_{100}}{360} = \frac{(0.035 \text{ ha} \times 0.25) \times 250.3 \text{ mm / hr}}{360} \times \left(\frac{1000 \text{ L}}{\text{m}^3}\right) = \mathbf{6.1 \text{ L/s}}$$

$$\text{A4 } Q_{\text{Un-Controlled}} = \frac{(A \times R) * I_{100}}{360} = \frac{(0.008 \text{ ha} \times 0.90) \times 250.3 \text{ mm / hr}}{360} \times \left(\frac{1000 \text{ L}}{\text{m}^3}\right) = \mathbf{5.0 \text{ L/s}}$$

Therefore, the net allowable release rate from the storage element is taken as **124.0 L/s** (136.5 L/s – 1.4 L/s– 6.1 L/s– 5.0 L/s). The detailed calculations can be found in **Appendix C** for reference. Details pertaining to the storage element will be discussed in subsequent sections.

4.4 Quantity Control

As previously mentioned, gross allowable release rate for the subject site shall be limited to the 2-year target flow which has been calculated to be **136.5 L/s**, and the net allowable release rate from the storage element will be further limited to **124.0 L/s** to account for un-controlled flows.

To attenuate flows per the City's WWFMG's, the subject site will require a stormwater management tank and an orifice control. Setting the 100-year storage depth at 1.2 m and utilizing a 200 mm orifice tube, the orifice discharge is calculated as follows:

$$Q_{Orifice} = (0.82) * \frac{\pi * (0.200)^2}{4} * \sqrt{2 * 9.81 * (1.2\text{-}0.20/2)} \times \frac{1000\ L}{1\ m^3} = \mathbf{120.8\ L/s}$$

The following a summary of the stormwater management parameters pertaining to quantity control:

Table 4.1 Orifice Control Summary

Orifice Dia. (mm)	Orifice Type	Coeff. (k)	Depth (m)	Head (m)	Discharge (L/s)
200	Tube	0.82	1.2	1.1	120.8

The following is a summary of the overall site discharge:

Table 4.2 Discharge Summary

Orifice (L/s)	Un-Controlled (L/s)	Total Site (L/s)	Allowable (L/s)
120.8	12.5	133.3	136.5

As shown above, the total site discharge (orifice + un-controlled) is less than the allowable site release rate. By providing on-site storage and an orifice control, the City's objectives for quantity control have been met. Please see detailed calculations which can be found in **Appendix C**. It should be noted that regular inspection and maintenance of any storage element and orifice control should be conducted on a regular basis to ensure that the system is functioning as designed.

4.5 Quality Control

As previously mentioned, 80% TSS removal is required in order to meet the City's WWFMG's. Based on the proposed site conditions and surface treatment, the following table summarizes the inferred TSS removal rate of the site:

Table 4.3 TSS Performance

Surface Type	Area (m^2)	Effective TSS	Overall TSS
Conv. Roof	3,976	80	28.5
Extensive Green Roof	2,719	80	19.5
Intensive Green Roof	0	80	12.9
Landscape	1,797	80	0.0
Pavers	0	80	0.0
Impervious (Dirty)	1,401	0	0.0
Impervious (Clean)	1,250	80	9.0
Total	**11,143**		69.9

The site will not satisfy the City's criteria for quality control due to the area impervious surface along the drive aisle. It is therefore proposed that a Stormfilter® treatment system, complete with 8 media filtration cartridges (or approved equal) be installed within the P1 level to treat all drive aisle areas.

This filter system is accepted as a standalone off-line treatment unit and meets the City's criteria for 80% in compliance with the WWFMGs. This TSS removal rate is based on research performed by the State of New Jersey's Department of Environmental Protection. These results are relied upon by not only the City of Toronto, but also many other jurisdictional authorities in Ontario[1].

By installing a quality control unit that is approved by the City, the requirements for quality control have been satisfied. Please see **Appendix C** for the Stormfilter® sizing letter provide by Contech® and the detail design sheet.

[1] https://www.njstormwater.org/treatment.html

4.6 Water Balance

As required by the City's TGS Tier 1, a rainfall depth of 5 mm must be retained over the entire area of development. The corresponding water balance volume required to be detained is calculated as follows:

$$\text{Vol.}_{5\text{ mm}} = 11{,}143\text{ m}^2 * 5\text{ mm} * \left(\frac{1\text{ m}}{1000\text{ mm}}\right) = \mathbf{55.7\ m^3}$$

To achieve the required volume, a combination of initial abstraction, and water re-use will be incorporated. Based on initial abstraction values for each surface type, the total abstraction is calculated as follows:

Table 4.4 Initial Abstraction

Area Type	Area (m^2)	Initial Abstraction	Vol. Retained (m^3)
Conv. Roof	3,976	1	4.0
Extensive Green Roof	2,719	5	13.6
Intensive Green Roof	0	7	0.0
Landscape	1,797	5	9.0
Pavers	0	5	0.0
Impervious (Dirty)	1,401	1	1.4
Impervious (Clean)	1,250	1	1.3
Total	**11,143**		**29.2**

As shown above, 29.2 m^3 is retained on-site through initial abstraction. The irrigation consultant has indicated that an additional water re-use purposes such as landscape irrigation and / or toilet flushing.

Table 4.5 Water Balance Summary

Strategy	Vol. Retained (m^3)
Initial Abstraction	29.2
Water Re-Use (Irrig.)	26.5
Water Re-use (Toilet)	0.0
Total	**55.7**

As indicated above it is expected that the subject site will meet the City's water balance target through a combination of initial abstraction and water re-use within a 72-hour period. An adequate sump within the stormwater management tank will be provided within the P1 level to retain the total water re-use volume. Please see **Appendix C** for the detailed design sheet and detailed **Drawing SS-01**.

4.7 Storm Service Connection

It is proposed that a new 375 mm storm service at a 2.0% slope be installed from a new control manhole at the property line to the existing 450 mm storm sewer within Dundas Street West. The following table illustrates the peak flow and corresponding capacity of the service:

Table 4.4 Storm Service Performance

From	To	Pipe Size (mm)	Pipe Slope	Peak Flow (L/S)	Capacity (L/S)	Percent of Full Flow
Cntrl.MH	Combined	375	2.0 %	120.8	248.0	49 %

As shown above, the proposed storm service and existing storm service connection can convey the controlled discharge while operating at 50% (or less) of full flow capacity. Please refer to the detailed design calculations which can be found in **Appendix C**, and the design **Drawing SS-01**.

4.8 Emergency Overflow

It is recommended that rooftop scuppers be installed to ensure emergency overflow from roof areas should rooftop drains become plugged.

- All areas at grade level have been designed with positive drainage (away from the building).
- The stormwater management tank shall be designed with a catchbasin lid (open grate) to allow storm flows to spill to the adjacent municipal right-of-way in an emergency situation.
- Maximum ponding within the development site shall not exceed City requirements of 0.30 m.

4.9 Erosion and Sediment Control

It is recommended that a sediment control fence per T-219.130-1 be installed along the perimeter of the site as required during demolition activities. All existing and proposed catch basins within close proximity of the subject site shall be protected with a geotextile fabric. A mud mat shall be installed as required to minimize distribution of mud into the public realm.

5 Sanitary Drainage System

5.1 Existing Sanitary Infrastructure

Per the City's record information, local sewer infrastructure consists of a 1,050 mm combined sewer within Dundas Street West which flows in a southerly direction and connects to a 1,350 mm combined sewer within Bloor Street West. Sewer flows are eventually conveyed to a combined sewer overflow (CSO).

Under the City's Sewer Capacity Assessment Guidelines (July 2021) for combined sewers, adequate local system capacity must be assessed, and the local network must be checked to determine if there is a local CSO point. Based on City guidelines and definitions, this combined network contains a local CSO point and therefore MECP Procedure F-5-5 shall apply to both municipal sewers.

5.2 Combined Sewer Analysis / MECP F-5-5

Pre-Development Sanitary Discharge

As previously mentioned, the subject site currently hosts two retail buildings under pre-development conditions. Using the City's population density of 1.1 pp/100 m^2 for office space, the corresponding peak sanitary discharge is calculated as follows:

$$Q_{Pre\text{-}Dev.} = \left(\frac{250\ L/c{\cdot}d \cdot 34\ pers}{86400\ s/day}\right) + (0.26\ L/s\ ha \cdot 1.11\ ha) = \mathbf{0.4 L/s}$$

Pre-Development Storm Discharge

A dye test investigation was conducted by Aquaflow Technology Inc in order to determine existing drainage patterns for the subject site. The results of this investigation show that all existing storm flows are directed to the existing 450 mm storm sewer within Dundas Street West, and no storm flows are directed to the existing 1,050 mm combined sewer. Accordingly, an off-site disconnection will be required to satisfy MECP Procedure F-5-5 which will be discussed in greater detail below. Please see **Appendix A** for a copy of the dye test investigation.

Post-Development Sanitary Discharge

It is proposed to install all new sanitary connections to the existing 1,050 mm combined sewer within Dundas Street West. Using the provided site statistics along with the design criteria outlined in **Section 2.3**, the corresponding post-development sanitary sewer flow is calculated as follows:

$$Q_{Post\text{-}Dev.} = \left(\frac{240\ L/c{\cdot}d \cdot 1{,}504\ pers \cdot 3.67_{P.F.}}{86400\ s/day}\right) + \left(\frac{250\ L/c{\cdot}d \cdot 42\ pers}{86400\ s/day}\right) + (0.26\ L/s{\cdot}ha \cdot 1.11\ ha) = \mathbf{15.7\ L/s}^2$$

Post-Development Storm Discharge

As previously mentioned in **Section 4.4**, the storm service from the site will be directed to the 450 mm storm sewer within Dundas Street West.

[2] As the foundation will be water tight, no long-term groundwater has been incorporated into the post-development flow.

MECP F-5-5 Compliance

Table 5.1 MECP F-5-5 Summary for 1,050 mm Combined Sewer

Condition	Sanitary (L/s)	2-Yr Storm (L/s)	Grnd.Wtr. (L/s)	Total (L/s)
Pre-Development	0.4	0.0	0.0	0.4
Post-Development	15.7	0.0	0.0	15.7
			Total Increase in Flow =	15.4

As shown above, the site represents an increase in flow to the 1,050 mm combined sewer within Dundas Street West. Therefore, in order to comply with MECP F-5-5, the site must present an off-site flow reduction option to offset the increase at a 2:1 ratio.

The disconnection option proposed is outlined in **Figure D-1**. By Installing a new storm sewer in the laneway and disconnecting the two catchbasins from the existing combined sewer, a total area of 1,848 m^2 can be reduced from the combined sewer drainage area. This is equivalent to a storm flow of 40.7 L/s.

As the proposed disconnection area represents a flow more than double the proposed increase from the site, the site is in compliance with MECP F-5-5 and the City of Toronto Sanitary Capacity Guidelines (July 2021).

Due to the fact that the disconnected area merges with the same pipe segment that the development site will be connecting all sanitary service connections to, there will not be an increase in flow to any pipe segment downstream of the site. Therefore, no capacity assessment is required on the combined sewers.

5.3 Sanitary Service Connections

It is proposed that four new sanitary services be connected to the existing 1,050 mm combined sewer within Dundas Street West. Using a more conservative design flow of 450 L/cd for the service connections, the corresponding post-development peak flow is calculated as follows:

$$Q_{\text{Tower A1}} = \left(\frac{450\ \text{L/c·d} \cdot 289\ \text{pers} \cdot 4.09\text{P.F.}}{86400\ \text{s / day}}\right) + (0.26\ \text{L/s·ha} \cdot 0.2775\ \text{ha}) = \mathbf{6.2\ L/s}$$

$$Q_{\text{Tower A2}} = \left(\frac{450\ \text{L/c·d} \cdot 423\ \text{pers} \cdot 4.01\text{P.F.}}{86400\ \text{s / day}}\right) + (0.26\ \text{L/s·ha} \cdot 0.2775\ \text{ha}) = \mathbf{8.9\ L/s}$$

$$Q_{\text{Tower B}} = \left(\frac{450\ \text{L/c·d} \cdot 727\ \text{pers} \cdot 3.88\text{P.F.}}{86400\ \text{s / day}}\right) + (0.26\ \text{L/s·ha} \cdot 0.2775\ \text{ha}) = \mathbf{14.8\ L/s}$$

$$Q_{\text{Podium}} = \left(\frac{450\ \text{L/c·d} \cdot 106\ \text{pers} \cdot 4.24\text{P.F.}}{86400\ \text{s / day}}\right) + (0.26\ \text{L/s·ha} \cdot 0.2775\ \text{ha}) = \mathbf{2.4\ L/s}$$

The following table summarizes the peak flow and corresponding capacity of each service:

Table 5.2 Sanitary Service Performance

From	To	Pipe Size (mm)	Pipe Slope	Peak Flow (L/S)	Capacity (L/S)	Percent Of Full Flow
Cntrl.MH1	Combined Sewer	200	2.0 %	6.2	48.4	13 %
Cntrl.MH2	Combined Sewer	200	2.0 %	8.9	48.4	18 %
Cntrl.MH3	Combined Sewer	200	2.0 %	14.8	48.4	31 %
Cntrl.MH4	Combined Sewer	200	2.0 %	2.4	48.4	5 %

As shown above, the sanitary services have ample capacity to convey their respective post-development peak sanitary flow while operating at 31 % (or less) of full flow capacity. Please see the detailed design sheet which can be found in **Appendix D**, and **Drawing SS-01**.

6 Water Supply System

6.1 Existing Water Infrastructure

Per the City's record information, local water infrastructure consists of a 300 mm watermain within Dundas Street West. In order to evaluate the municipal water supply network's ability to support the subject site, a hydrant flow test was conducted in accordance with NFPA 291 on October 28, 2022 and is summarized as follows:

Table 6.1 Hydrant Response Curve

St. Clair Ave. West (300 mm)			
Flow (Gpm)	Flow (L/S)	Pressure (Psi)	Pressure (Kpa)
0	0	51	352
712	44.9	49	338
671	42.3	46	317

As shown above, static pressure within the system is expected to be approximately 51 psi. A copy of the hydrant flow test can be found in **Appendix E** for reference.

6.2 Domestic Water Supply Demands

Using the criteria set in **Section 2.4** and the site statistics provided by the architect, the Average Day Demand (ADD), Peak Hour Demand (PHD), and Max Day Demand (MDD) have been calculated, and are summarized as follows:

Table 6.2 Domestic Water Demands

Building	Population	ADD (L/S)	PHD (L/S)	MDD (L/S)
1 Bedroom	837	1.8	4.6	2.4
2 Bedroom	391	0.9	2.1	1.1
3 Bedroom	276	0.6	1.5	0.8
Office	0	0.0	0.0	0.0
Retail	51	0.1	0.1	0.1
Total	**1,555**	**3.4**	**8.4**	**4.4**

The domestic supply line for the building will be designed based on PHD while maintaining a minimum available pressure of 40 psi (275 kPa) at the face of the building. Please see **Appendix E** for the detailed calculations.

6.3 Fire Supply Demands

The recommended fire flow demand for the subject site has been calculated using the design criteria outlined in the Water Supply for Public Fire Protection Manual, 1999 by the Fire Underwriters Survey (FUS).

As the building will be constructed using fire resistive materials, the effective floor area is taken as the largest floor area plus 25 % of the two adjacent floors.

- Effective Floor Area = Largest Floor Area + 25% (two adjoining floors)
- Effective Floor Area = 5,174 m^2 + 25% (3,186 m^2 + 6,018 m2)
- Effective Floor Area = 7,475 m^2

The following FUS factors will be applied to the water demand calculations:

Table 6.3 Fire Underwriters Survey Factors

Construction Coefficient	Building Occupancy	Sprinkler Adjustment	Proximity Factor
0.6 (Resistive)	- 15 % (Limited)	- 50 %	+ 55 %

Using the effective floor area for each building and the appropriate FUS factors, the required fire flow for each building is calculated as follows:

Table 6.4 Fire Demand Calculations

Fire Flow (F) Calculation	Applying Fus Factors	Adjusted Fire Flow	Total Demand (Td)
F = 220 · 0.6 √Area	F_1=F·0.85 = 9,350 L/min	Fire Flow = F_1 - F_2 + F_3	Td= Ff + MDD
F = 220 · 0.6 √7,475 m^2	F_2=F_1·0.50 = 4,675 L/min	FF= 10,000 L/Min (Rnd'd)	TD= 166.7 L/s + 4.4 L/s
F = 11,000 L/Min (Rnd'd)	F_3=F_1·0.55 = 5,143 L/min	FF = 166.7 L/s	TD= 171.1 L/s

The fire supply line for the building will be designed based on Total Demand (Fire Flow + MDD) while maintaining a minimum available pressure of 20 psi (140 kPa) at the face of the building. Please see **Appendix E** for the detailed calculations.

6.4 System Pressure Under Normal Operation

As previously mentioned, the domestic service shall be sized to convey domestic demands under normal system operating conditions (PHD) while maintaining a minimum available pressure of 40 psi (275 kPa). The residual pressure at the building is calculated by first interpolating the PHD residual pressure within the existing watermain, and then subtracting head losses within the system using the Hazen-Williams formula. The following table summarizes the residual pressure for the proposed domestic service:

Table 6.5 Residual Pressure Under PHD Conditions

Flow Conditions	PHD (L/s)	Domestic Service (mm)	Residual Pressure @ Main		Residual Pressure @ Bldg.	
			(Psi)	(Psi)	(Psi)	(Kpa)
PHD	8.4	150	51	350	51	350

As shown above, there is no appreciable head loss within the system, and the residual pressure at the building face is above the minimum acceptable pressure of 40 psi (275 kPa) under PHD conditions. Please see **Appendix E** for the detailed design calculations.

6.5 System Pressure Under Fire Flow

A hydrant flow test for this application was conducted by IBI Group however, the results demonstrated a sub-standard response than what would typically be expected within a well-connected 300 mm watermain network.

In order to obtain a better understanding of the water supply network, a review of adjacent development applications (1540-1550 Bloor Street West) and their respective hydrant flow tests was made. These adjacent tests reported response curves more in alignment of a typical watermain network, and in turn suggests that the hydrant flow test conducted by IBI Group may not be accurate due to a partially closed valve or other anomaly. This matter has been brought forward to the City Operation forces and is currently being further investigated. Further analysis will be made with the next submission.

6.6 Water Service Connection

To service the proposed development, two new 200 mm fire services shall be connected to the existing 300 mm watermain within Dundas Street West with a tapping sleeve and valve. Four separate 150 mm domestic services will also be provided. A new valve and box shall be installed at the property line for each incoming service, and all required water meters, backflow preventers, and double check valves shall be located inside a mechanical room within the proposed P1 level. These service sizes will be confirmed with an updated hydrant flow test.

As previously mentioned, the OBC requires two fire services separated by an isolation valve to be installed for any building above 84 m. As the proposed building exceeds this threshold a secondary 200 mm fire line will be required and shall be connected to the existing 300 mm watermain with an isolation value placed between the two fire service connections.

The National Fire Protection Association (NFPA) considers any building over 23 m in height to be classified as a high-rise building and thus requires a remotely located secondary siamese connection for each zone. Accordingly, a second siamese connection has been provided.

6.7 Hydrant Coverage

Existing municipal hydrants are located on Dundas Street West and provide the required 45 m of coverage for all proposed siamese connections to satisfy OBC requirements. Please see **Drawing SS-01** for the location of all existing and proposed water infrastructure.

7 Conclusions and Recommendations

Storm Sewer and Stormwater Management

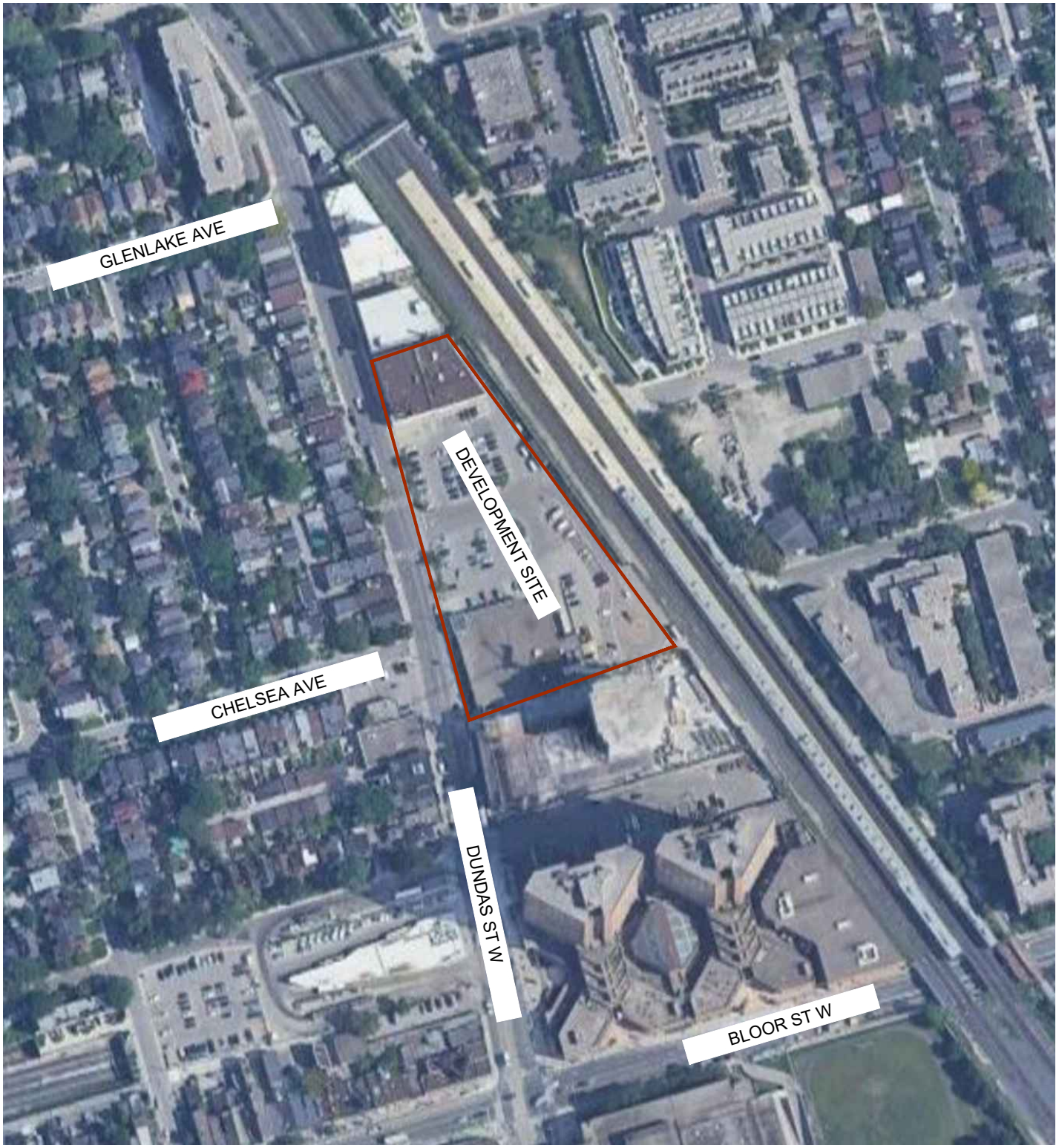
The objectives of the City's WWFMG's can be met by implementing on-site measures. Storm flows shall be attenuated on-site and released to the municipal sewer at an appropriate discharge rate thus meeting the City's target for quantity control. By adding a water quality unit, the site will meet the City's target for quality control, and through the use of initial abstraction and water re-use methods, the site will meet the City's target for water balance.

Sanitary Sewers

By implementing an offsite disconnection, the site satisfies both MECP F-5-5 and the City of Toronto's Sanitary Capacity Assessment Guidelines (July 2021). This reduction in overall flowsrepresents an overall improvement to the receiving municipal sewer system.

Water Supply

Due to the inconsistencies between hydrant flow tests, further discussions with City Operations is needed, and additional field investigation is required. Additional information and reporting will be forward once made available..



CLIENT: FORA DEVELOPMENTS 1840 EGLINTON AVE WEST, SUITE 202, TORONTO, ON, M6E 5B2	PROJECT NAME: 2400-2440 DUNDAS STREET WEST		
	SCALE: NTS	DATE: 2023-03-01	FIGURE NAME: AERIAL PLAN
	PROJECT ENG: JMJ	DRAWN BY: CG	FIGURE NO.: FIG.1
	CHECKED BY: JMJ	APPROVED BY: JMJ	REVISION: 1
	PROJECT NO: 141003		

IBI GROUP
Unit 300 – 8133 Warden Avenue
Markham ON L6G 1B3 Canada
tel 905 763 2322 fax 905 763 9983
ibigroup.com

File Location: J:\141003_2400Dundas\7.0_Production\7.03_Design\04_Civil\Sheets\Figures\Figure 1 - Aerial Plan.dwg Last Saved: November 15, 2022, by cassidy goetz Plotted: Wednesday, March 1, 2023 2:17:24 PM by Cassidy Goetz

SCALE CHECK 10mm 1 in

Appendix A
Background Information

PLAN OF SURVEY
SHOWING TOPOGRAPHICAL INFORMATION OF
LOTS 6 TO 14 (INCLUSIVE), AND LOTS 16 TO 22 (INCLUSIVE)
AND
PART OF LOT 15
AND
PART OF SOHO STREET
(KNOWN AS CHELSEA AVENUE)
(CLOSED BY BY-LAW No. 8302, INST. WH7880)
REGISTERED PLAN 776
CITY OF TORONTO

SCALE 1:200

5 0 5 10 15 20m

KRCMAR SURVEYORS LTD. 2022

METRIC: DISTANCES AND COORDINATES SHOWN HEREON ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

BEARING

BEARINGS SHOWN HEREON ARE GRID DERIVED FROM GPS OBSERVATIONS OF OBSERVED REFERENCE POINTS 'A' AND 'B', USING THE LEICA SMARTNET RTK NETWORK AND ARE REFERRED TO THE 3° MTM COORDINATE SYSTEM, ZONE 10, CENTRAL MERIDIAN 79°30' WEST LONGITUDE, (3° MODIFIED TRANSVERSE MERCATOR PROJECTION, NAD 83 (CSRS)(2010)).

DISTANCES SHOWN HEREON ARE GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.99989.

INTEGRATION DATA

3° MTM ZONE 10 COORDINATES

NAD 83 (CSRS)(2010)(CENTRAL MERIDIAN 79°30' WEST LONGITUDE)
THE MTM COORDINATES LISTED BELOW ARE TO URBAN ACCURACY AND COMPLY WITH SUBSECTION 14(2) OF ONTARIO REGULATION 216/10 FILED UNDER THE SURVEYORS ACT.

OBSERVED REFERENCE POINTS

MONUMENT ID.	NORTHING	EASTING
(A) CP(OU)	4 835 340.156	308 591.607
(B) CC(OU)	4 835 563.407	308 543.033

REFERENCE POINTS

POINT	NORTHING	EASTING
1	4 835 327.71	308 612.77
2	4 835 382.12	308 601.99
3	4 835 484.00	308 570.39
4	4 835 496.27	308 609.30
5	4 835 391.48	308 683.40
6	4 835 347.80	308 682.65

COORDINATE VALUES SHOWN ARE FOR GEOGRAPHIC INFORMATION SYSTEM INTEGRATION ONLY. COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

ELEVATION

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE RELATED TO CITY OF TORONTO BENCH MARK No. CT218, HAVING AN ELEVATION OF 114.759 METRES.

NOTE

ELEVATIONS SHOWN THUS ×123.45 DERIVED FROM PLAN SHOWING PARTIAL TOPOGRAPHY BY KRCMAR SURVEYORS LTD., O.L.S., DATED AUGUST 20, 2020, UPDATED SEPTEMBER 3, 2022 (DRAWING No. 11-019T01).

EASEMENT

(C) SUBJECT TO EASEMENT IN GROSS AS IN INST. AT4994084
(F) SUBJECT TO EASEMENT AS IN INST. AT5373161
(G) SUBJECT TO EASEMENT AS IN INST. AT5717695
(H) SUBJECT TO EASEMENT AS IN INST. AT3576186

LEGEND

■	DENOTES SURVEY MONUMENT FOUND
□	DENOTES SURVEY MONUMENT PLANTED
SIB	DENOTES STANDARD IRON BAR
SSIB	DENOTES SHORT STANDARD IRON BAR
IB	DENOTES IRON BAR
CP	DENOTES CONCRETE PIN
CC	DENOTES CUT CROSS
(M)	DENOTES MEASURED
(S)	DENOTES SET
(WIT)	DENOTES WITNESS
(N1)	DENOTES FIELD NOTES BY CITY OF TORONTO SURVEYS (SURVEY TO CHECK ENCROACHMENTS OF No. 2454 DUNDAS STREET WEST) DATED JULY 8, 1941
(P2)	DENOTES PLAN OF SURVEY BY J.D. BARNES LIMITED, O.L.S., DATED JANUARY 3, 1986
(P4)	DENOTES PLAN 64R-15496
(P7)	DENOTES PLAN OF SURVEY BY GUIDO PAPA SURVEYING LTD., O.L.S., DATED AUGUST 30, 2001
(P10)	DENOTES PLAN 66R-30390
(P11)	DENOTES EXPROPRIATION PLAN AT3576186
(P12)	DENOTES SURVEYOR'S REAL PROPERTY REPORT BY KRCMAR SURVEYORS LTD., O.L.S., DATED JULY 5, 2021
(P13)	DENOTES PLAN 66R-27192
(P14)	DENOTES PLAN 66R-31362
(P15)	DENOTES PLAN BY SPEIGHT, VAN NOSTRAND, WARD & ANDERSON, O.L.S. DATED MARCH 17, 1939
(P17)	DENOTES PLAN OF SURVEY BY E.W. PETZOLD LIMITED, O.L.S., DATED JULY 4, 1984 (PLAN L-110-104)
(P18)	DENOTES PLAN OF SURVEY BY E.W. PETZOLD LIMITED, O.L.S., DATED JULY 4, 1984 (PLAN L-110-103)
(P19)	DENOTES PLAN OF JOHN C. BEATSON, O.L.S., DATED MARCH 11, 1974
(P20)	DENOTES PLAN OF SURVEY BY JAMES, S.M. HWANG, O.L.S., DATED JULY 26, 1982
(P21)	DENOTES REGISTERED PLAN 776
(978)	DENOTES JOHN C. BEATSON, O.L.S.
(JDB)	DENOTES J.D. BARNES LIMITED, O.L.S.
(HJV)	DENOTES HOLDING JONES VANDERVEEN INC., O.L.S.
(OU)	DENOTES ORIGIN UNKNOWN
(BR)	DENOTES TIES TO BRICK
(CBK)	DENOTES TIES TO CONCRETE BLOCK
(CF)	DENOTES TIES TO CONCRETE FOUNDATION
(CONC)	DENOTES TIES TO CONCRETE
(ST)	DENOTES TIES TO STONE
(STU)	DENOTES TIES TO STUCCO
CLF	DENOTES CHAIN LINK FENCE
COL	DENOTES COLUMN
CONC	DENOTES CONCRETE
CW	DENOTES CONCRETE WALL
DSE	DENOTES DOOR SILL ELEVATION
GRL	DENOTES GUARD RAIL
HP	DENOTES HORIZONTAL PLANE
LL	DENOTES LOWER LIMITATION IN METRES
NUL	DENOTES NO UPPER LIMITATIONS
UL	DENOTES UPPER LIMITATION IN METRES
NLL	DENOTES NO LOWER LIMITATIONS
(Bc)	DENOTES BOTTOM OF CURB
(Tc)	DENOTES TOP OF CURB
(Tw)	DENOTES TOP OF WALL
	DENOTES FENCE
	DENOTES GUARD RAIL
×123.45	DENOTES EXISTING GRADE ELEVATION
BH	DENOTES BOREHOLE
BMH	DENOTES BELL MANHOLE
BBOX	DENOTES BELL BOX
BK	DENOTES BIKE PARKING
BOL	DENOTES BOLLARD
CB	DENOTES CATCH BASIN
0.1ø	DENOTES CONIFEROUS TREE WITH TRUNK DIAMETER
0.1ø	DENOTES DECIDUOUS TREE WITH TRUNK DIAMETER
	DENOTES DOWN GUY ANCHOR
FH	DENOTES FIRE HYDRANT
GM	DENOTES GAS METER
GV	DENOTES GAS VALVE
HW	DENOTES HYDRO HAND WELL
HMH	DENOTES HYDRO MANHOLE
HP/LS	DENOTES HYDRO POLE WITH LAMP STANDARD
HP/LS/TL	DENOTES HYDRO POLE WITH LAMP STANDARD AND TRAFFIC LIGHT
LS	DENOTES LAMP STANDARD
MH	DENOTES MANHOLE
POST	DENOTES POST
SIAMESE	DENOTES SIAMESE CONNECTION
SN	DENOTES SIGN
TEL	DENOTES TELEPHONE BOOTH
UBOX	DENOTES UTILITY BOX
TL	DENOTES TRAFFIC LIGHT
WV	DENOTES WATER VALVE

SURVEY REPORT

1. THE RE-ESTABLISHMENT OF THE SUBJECT PROPERTY BOUNDARIES IS BASED ON INFORMATION CONTAINED IN THE RELEVANT TITLE DOCUMENTS, REGISTERED PLANS AND ON THE EVIDENCE OF PRIOR SURVEYS FOUND DURING THE COURSE OF PREPARING THE SUBJECT SURVEY.
2. THE TYPE AND LOCATION OF THE EXISTING BUILDINGS AND OTHER IMPROVEMENTS, FENCES ETC., ON OR NEAR THE SUBJECT PROPERTY ARE AS SHOWN ON THE SURVEY PLAN.
3. COMPLIANCE WITH MUNICIPAL ZONING REQUIREMENTS IS NOT CERTIFIED BY THIS REPORT.
4. SUBJECT LAND COMPRISES ALL OF PIN 21328-0519(LT).
5. SUBJECT TO EASEMENT OVER PART 2, EXPROPRIATION PLAN AT3576186 AS IN INST. AT3476186.

TOTAL SITE AREA = 1.0374 ha

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 11th DAY OF MAY, 2022

DATE MAY 12, 2022

S.N. RAMSAMOOJ
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-26173

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29(3).

MUNICIPAL ADDRESS: No. 2400 DUNDAS STREET WEST, TORONTO

FIELD:	D.L./L.D.	DRAWN:	C.L.	CHECKED:	S.N.R.
JOB NO:	11-019				
DWG NAME:	11-019BT02	PLOT INFO:	09:31 12/May/2022	WORK ORDER NO:	36266

1137 Centre Street Thornhill ON L4J 3M6 905.738.0053 F 905.738.9221 www.krcmar.ca

PLAN AVAILABLE AT www.ProtectYourBoundaries.ca

KRCMAR

2400-2440 DUNDAS STREET WEST

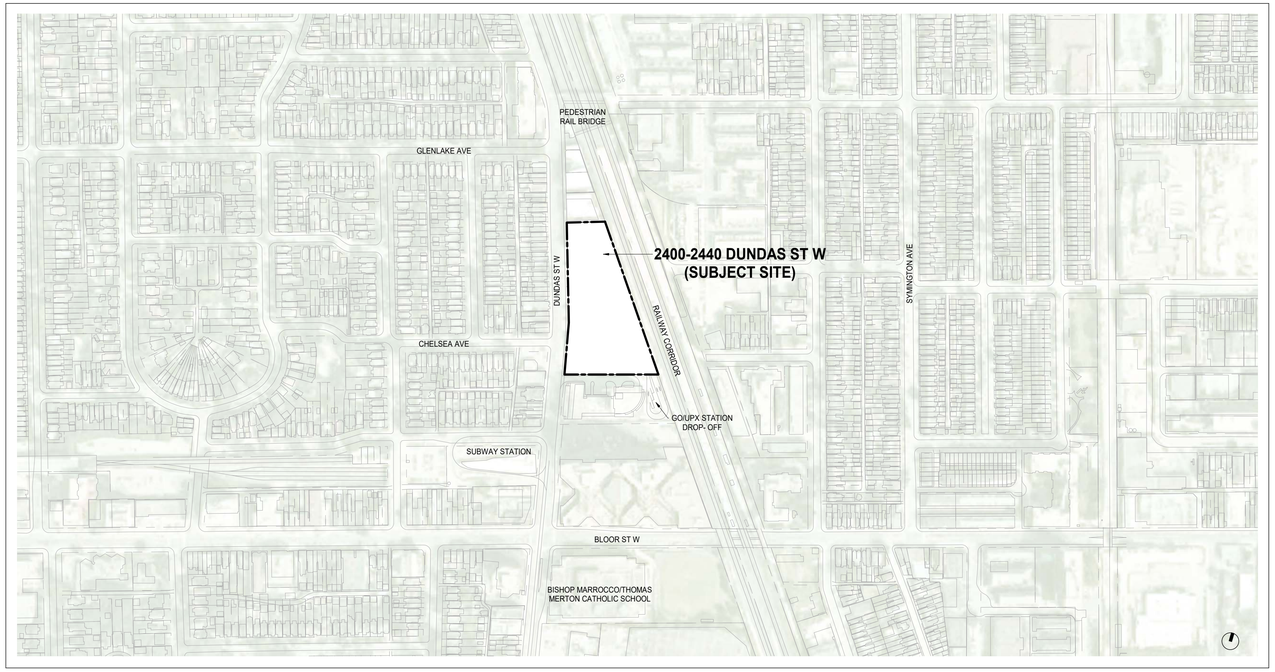
TORONTO, ONTARIO M6P 1W9

ISSUED FOR ZBA

2023-03-08

AERIAL PERSPECTIVE- VIEW LOOKING NORTH-EAST

RENDERING IS AN ARTISTIC CONCEPT INTENDED TO CONVEY ONLY BUILDING MASSING. IT DOES NOT REFLECT FINAL ARCHITECTURE OR LANDSCAPE DESIGN.



CONTEXT PLAN

DRAWING LIST

CLIENT
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TEL: 416.591.7788

PLANNER
BOUSFIELDS INC
3 CHURCH ST, SUITE 200,
TORONTO, ON, M5E 1M2
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LANDSCAPE ARCHITECT
NORTH DESIGN OFFICE INC
1A HOWARD PARK AVE, UNIT 2
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CIVIL ENGINEER
IBI GROUP
8133 WARDEN AVE, UNIT 300
MARKHAM ON L6G 1B3
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WIND & NOISE CONSULTANT
SLR CONSULTING
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RAIL SAFETY CONSULTANT
HATCH
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STRUCTURAL ENGINEER
JABLONSKY, AST, AND PARTNERS
3 CONCORDE GATE, 4TH FLOOR
TORONTO, ON M3C 3N7
TEL: 416.447.7405

MECHANICAL AND ELECTRICAL CONSULTANT
MCW CONSULTANTS LTD
207 QUEEN'S QUAY W, SUITE 615
TORONTO, ON M5J 1A7
TEL: 416.598.2920

TRAFFIC CONSULTANT
BA CONSULTING GROUP LTD
45 ST CLAIR AVE W.
TORONTO, ON M4V 1K9
TEL: 416.961.7110

CONTACT LIST

TORONTO

Statistics Template – Toronto Green Standard Version 4.0

Mid to High Rise Residential and all New Non-Residential Development

The Toronto Green Standard Version 4.0 Statistics Template is submitted with Site Plan Control Applications and stand-alone Zoning Bylaw Amendment applications. Complete the table and copy it directly onto the Site Plan submitted as part of the application.

For Zoning Bylaw Amendment applications: complete General Project Description and Section 1.
For Site Plan Control applications: complete General Project Description, Section 1 and Section 2.
For further information, please visit www.toronto.ca/greendevelopment

General Project Description	Proposed
Total Gross Floor Area	58,900.2
Breakdown of project components (m²):	
Residential	54,227.9
Retail(RETAIL+ FOOD STORE)	2309.8
Commercial (CEA USES)	2,362.6
Industrial	N/A
Institutional/Other	N/A
Total number of residential units	873

Section 1: For Stand Alone Zoning Bylaw Amendment Applications and Site Plan Control Applications

Low Emissions Transportation	Required	Proposed	Proposed %
Number of Parking Spaces	157	212	
Number of EV Parking Spaces (Residential)	152	152	100%
Number of EV Parking Spaces (non-residential)	15	15	25%

Cycling Infrastructure	Required	Proposed	Proposed %
Number of long-term bicycle parking spaces (all-uses)			
Number of long-term bicycle parking located on:	796	796	100%
a) first storey of building		148	18.6%
b) second storey of building		648	81.4%
c) first level below-ground			
d) second level below-ground			
e) other levels below-ground			

311 Service as your service

TORONTO

Statistics Template – Toronto Green Standard Version 4.0

Mid to High Rise Residential and all New Non-Residential Development

Cycling Infrastructure	Required	Proposed	Proposed %
Number of short-term bicycle parking spaces	193	193	100%
Number of shower and change facilities (non-residential)	2	2	100%

Tree Canopy	Required	Proposed	Proposed %
Total Soil Volume (40% of the site area × 66 m² x 30 m³)	2,025.9 m3		
Soil volume provided within the site area (m³)		2,112 m3	
Soil Volume provided within the public boulevard (m³)	0	0	

Section 2: For Site Plan Control Applications

Cycling Infrastructure	Required	Proposed	Proposed %
Number of short-term bicycle parking spaces (all uses) at-grade or on first level below grade	N/A		
Number of publicly accessible bicycle parking spaces			
Number of energized outlets for electric bicycles			

Tree Canopy	Required	Proposed	Proposed %
Total site area (m²)			
Total Soil Volume (40% of the site area × 66 m² x 30 m³)	N/A		
Total number of trees planted			
Number of surface parking spaces (if applicable)			
Number of shade trees located in surface parking area			

Landscaping & Biodiversity	Required	Proposed	Proposed %
Total non-roof hardscape area (m²)			
Total non-roof hardscape area treated for Urban Heat Island (minimum residential 75% or non-residential 50%) (m²)			
Area of non-roof hardscape treated with: (indicate m²)	N/A		
a) high-albedo surface material			
b) open-grid pavement			
c) shade from tree canopy			

TORONTO

Statistics Template – Toronto Green Standard Version 4.0

Mid to High Rise Residential and all New Non-Residential Development

Landscaping & Biodiversity	Required	Proposed	Proposed %
d) shade from high-albedo structures			
e) shade from energy generation structures			
Percentage of Lot Area as Soft Landscaping (non-residential only)	N/A		
Total number of plants			
Total number of native plants and % of total plants			
Available Roof Space (m²)			
Available Roof Space provided as Green Roof (m²)	N/A		
Available Roof Space provided as Cool Roof (m²)			
Available Roof Space provided as Solar Panels (m²)			

Bird Collision Deterrence	Required	Proposed	Proposed %
Total area of glazing of all elevations within 16m above grade			
Total area of treated glazing (minimum 85% of total area of glazing within 16m above grade) (m²)			
Percentage of glazing within 16m above grade treated with:	N/A		
a) Visual markers			
b) non-reflective glass			
c) Building integrated structures			

TGS STATISTICS

Revision	Date

NOT FOR CONSTRUCTION

PRELIMINARY

Revision	Date
1 ISSUED FOR ZBA	23-03-08

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2400-2440 DUNDAS STREET WEST
TORONTO, ONTARIO, CANADA

SHEET TITLE

COVER SHEET

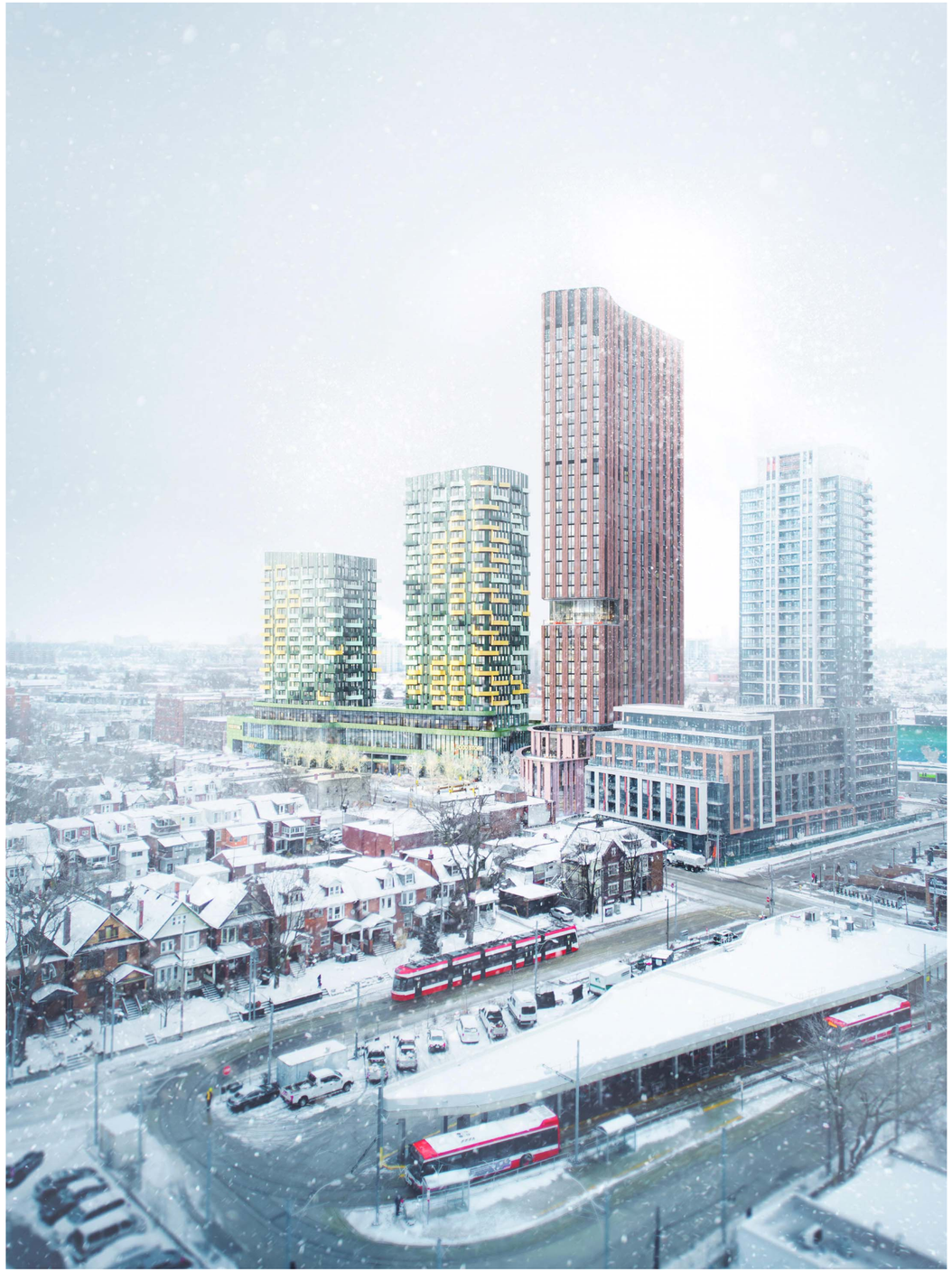
DRAWN BY:	GPAIA
CHECKED BY:	GPAIA
PROJECT START DATE:	22-04-06
PROJECT NO.:	21115
SHEET NUMBER	

A0.00

PLOT DATE: 2023-03-07 3:15:27 PM

AERIAL PERSPECTIVE- VIEW LOOKING SOUTH EAST (1)

RENDERINGS ARE AN ARTISTIC CONCEPT INTENDED TO CONVEY ONLY BUILDING MASSING. THEY DO NOT REFLECT FINAL ARCHITECTURE OR LANDSCAPE DESIGN.



AERIAL PERSPECTIVE- VIEW LOOKING NORTH EAST(2)

Revision	Date

NOT FOR CONSTRUCTION

PRELIMINARY

Revision	Date
1 ISSUED FOR ZBA	23-03-08

giannone petricone associates

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FORA

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2400-2440 DUNDAS STREET WEST
TORONTO, ONTARIO, CANADA

SHEET TITLE

PERSPECTIVES

DRAWN BY:	GPAIA
CHECKED BY:	GPAIA
PROJECT START DATE:	22-04-06
PROJECT NO.:	21115

SHEET NUMBER

A0.01

PLOT DATE: 2023-03-07 3:15:34 PM

2400 DUNDAS STREET WEST
PROJECT STATISTICS [BY-LAW 569-2013]

	FLR LVL	GROSS CONST AREA		GFA DEDUCTIONS		AMNT DEDUCTIONS		TOTAL GFA		RESIDENTIAL GFA		NON-RES GFA		UNIT							CONV	TOTAL ROOF AREA		PRIV TERRACE		OUTDR AMNT		APPL ROOF		GREEN ROOF		FLR LVL
		m²	sf	m²	sf	m²	sf	m²	sf	m²	sf	m²	sf	ST	1BD	1BD+D	2BD	3BD	TOTAL		UNITS*	m²	sf	m²	sf	m²	sf	m²	sf	m²	sf	
PODIUM	1	6,018.0	*64,777*	2,858.3	*30,766*	301.0	*3,240*	2,858.7	*30,771*	1,050.1	*11,303*	1,808.6	*19,468*	-	-	-	-	-	-		-	91.3	*983*	-	-	91.3	*983*	-	-	-	-	1
	MEZZ	1,940.8	*20,891*	1,439.8	*15,498*	-	-	501.0	*5,393*	501.0	*5,393*	-	-	-	-	7	-	-	7		-	-	-	-	-	-	-	-	-	-	-	MEZZ
	2	5,173.7	*55,690*	309.4	*3,330*	1,953.2	*21,024*	2,911.1	*31,335*	417.4	*4,493*	2,493.8	*26,843*	-	-	3	2	-	5		-	1,097.8	*11,817*	227.2	*2,446*	861.4	*9,272*	9.2	*99*	-	-	2
	2-MEZZ	469.1	*5,049*	99.1	*1,067*	-	-	370.0	*3,983*	-	-	370.0	*3,983*	-	-	-	-	-	-		-	-		-				-		-		2-MEZZ
	3	3,186.1	*34,295*	163.3	*1,758*	-	-	3,022.8	*32,537*	3,022.8	*32,537*	-	-	-	22	8	11	5	46		2	2,192.0	*23,594*	656.8	*7,070*	-	-	1,535.2	*16,525*	834.1	*8,978*	3
TOWERS A1+A2+B	4	2,248.3	*24,200*	160.7	*1,730*	-	-	2,087.6	*22,471*	2,087.6	*22,471*	-	-	-	15	8	8	3	34		6	917.7	*9,878*	210.5	*2,266*	-	-	707.2	*7,612*	451.0	*4,855*	4
	5	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	16	8	8	3	35		6	-	-	-	-	-	-	-	-	-	-	5
	6	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	16	8	8	3	35		6	-	-	-	-	-	-	-	-	-	-	6
	7	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	16	8	8	3	35		6	-	-	-	-	-	-	-	-	-	-	7
	8	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	16	8	8	3	35		6	-	-	-	-	-	-	-	-	-	-	8
	9	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	16	8	8	3	35		6	-	-	-	-	-	-	-	-	-	-	9
	10	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	16	8	8	3	35		6	-	-	-	-	-	-	-	-	-	-	10
	11	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	16	8	8	3	35		6	-	-	-	-	-	-	-	-	-	-	11
	12	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	16	8	8	3	35		6	-	-	-	-	-	-	-	-	-	-	12
	13	2,174.1	*23,402*	160.7	*1,730*	84.4	*908*	1,929.0	*20,764*	1,929.0	*20,764*	-	-	-	13	7	8	3	31		6	116.3	*1,251*	-	-	116.3	*1,251*	-	-	-	-	13
	14	2,174.1	*23,402*	160.7	*1,730*	84.4	*908*	1,929.0	*20,764*	1,929.0	*20,764*	-	-	-	13	7	8	3	31		6	-	-	-	-	-	-	-	-	-	-	14
	15	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	16	8	8	3	35		6	-	-	-	-	-	-	-	-	-	-	15
	16	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	16	8	8	3	35		6	-	-	-	-	-	-	-	-	-	-	16
	17	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	15	8	6	5	34		6	-	-	-	-	-	-	-	-	-	-	17
	18	2,280.0	*24,542*	160.7	*1,730*	-	-	2,119.3	*22,812*	2,119.3	*22,812*	-	-	-	15	8	6	5	34		6	-	-	-	-	-	-	-	-	-	-	18
	19	1,530.0	*16,469*	110.4	*1,188*	-	-	1,419.6	*15,280*	1,419.6	*15,280*	-	-	-	12	5	5	2	24		4	-	-	-	-	-	-	-	-	-	-	19
	20	1,530.0	*16,469*	110.4	*1,188*	-	-	1,419.6	*15,280*	1,419.6	*15,280*	-	-	-	12	5	5	2	24		4	-	-	-	-	-	-	-	-	-	-	20
	21	1,530.0	*16,469*	110.4	*1,188*	-	-	1,419.6	*15,280*	1,419.6	*15,280*	-	-	-	12	5	5	2	24		4	-	-	-	-	-	-	-	-	-	-	21
	22	1,530.0	*16,469*	110.4	*1,188*	-	-	1,419.6	*15,280*	1,419.6	*15,280*	-	-	-	12	5	5	2	24		4	-	-	-	-	-	-	-	-	-	-	22
	23	1,530.0	*16,469*	110.4	*1,188*	-	-	1,419.6	*15,280*	1,419.6	*15,280*	-	-	-	12	5	5	2	24		4	-	-	-	-	-	-	-	-	-	-	23
	24	1,530.0	*16,469*	110.4	*1,188*	-	-	1,419.6	*15,280*	1,419.6	*15,280*	-	-	-	11	4	5	3	23		2	-	-	-	-	-	-	-	-	-	-	24
	25	1,530.0	*16,469*	110.4	*1,188*	-	-	1,419.6	*15,280*	1,419.6	*15,280*	-	-	-	11	4	5	3	23		2	-	-	-	-	-	-	-	-	-	-	25
	26	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	8	2	2	1	13		2	-	-	-	-	-	-	-	-	-	-	26
	27	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	8	2	2	1	13		2	-	-	-	-	-	-	-	-	-	-	27
	28	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	8	2	2	1	13		2	-	-	-	-	-	-	-	-	-	-	28
	29	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	8	2	2	1	13		2	-	-	-	-	-	-	-	-	-	-	29
	30	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	8	2	2	1	13		2	-	-	-	-	-	-	-	-	-	-	30
	31	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	8	2	2	1	13		2	-	-	-	-	-	-	-	-	-	-	31
	32	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	8	2	2	1	13		2	-	-	-	-	-	-	-	-	-	-	32
	33	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	5	1	2	3	11		2	-	-	-	-	-	-	-	-	-	-	33
	34	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	5	1	2	3	11		2	-	-	-	-	-	-	-	-	-	-	34
	35	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	5	1	2	3	11		2	-	-	-	-	-	-	-	-	-	-	35
	36	780.0	*8,396*	59.8	*644*	-	-	720.2	*7,752*	720.2	*7,752*	-	-	-	5	1	2	3	11		2	-	-	-	-	-	-	-	-	-	-	36
	MECH	2,280.0	*24,542*	2,280.0	*24,542*	-	-	-	-	-	-	-	-									-	-	-	-	-	-	-	-	-	-	MECH
	ROOF																					2,280.0	*24,542*	-	-	-	-	2,280.0	*24,542*	1,433.9	*15,434*	ROOF
	ABV GR	72,314.2	*778,384*	10,991.0	*118,306*	2,423.0	*26,081*	58,900.2	*633,997*	54,227.9	*583,704*	4,672.4	*50,293*	-	411	187	186	89	873		138	6,695.1	*72,065*	1,094.5	*11,781*	1,069.0	*11,506*	4,531.6	*48,778*	2,719.0	*29,267*	
	U/G	10,501.3	*113,035*	10,501.3	*113,035*	-	-	-	-	-	-	-	-									-		-		-		-		-		U/G
	BLW GR	10,501.3	*113,035*	10,501.3	*113,035*	-	-	-	-	-	-	-	-									-		-		-		-		-		
	SUBTOTAL	82,815.5	*891,419*	21,492.3	*231,341*	2,423.0	*26,081*	58,900.2	*633,997*	54,227.9	*583,704*	4,672.4	*50,293*	-	411	187	186	89	873		138	6,695.1	*72,065*	1,094.5	*11,781*	1,069.0	*11,506*	4,531.6	*48,778*	2,719.0	*29,267*	
														0.0%	47.1%	21.4%	21.3%	10.2%			15.81%										

TOTAL		
	58,900.2	*633,997*

- GFA deductions include parking, loading and bicycle parking, storage rooms, washrooms, electrical, utility, mechanical and ventilation rooms below grade, shower and change facilities as required for bicycle parking, amenity space, elevator shafts, garbage shafts, mechanical penthouse, and exit stairwells as per the City of Toronto by-law 569-2013.

TOTAL	
	873

CONV UNITS*: UNITS THAT CAN BE CONVERTED INTO LARGER UNITS TO MEET CITY'S GROWING UP GUIDELINES

DENSITY		
GFA	58,900.2	m²
TOTAL SITE	11,143.0	m²
2400 Dundas Street West		
	11,143.0	m²
FSI	5.3	

*SASP requires a min. 8% of total GFA to be employment GFA, within which a min. 51% shall include Core Employment Area (CEA) uses (e.g. office, artist studio, lab, r&d facilities, light manufacturing, media, information and technology facilities, cultural industry spaces, incubator and/or co-work space). Min. 1,850 SM of the employment GFA must be used to replace existing grocery store.

CAR PARKING		
Resident Required	-	
Residential Visitor Required	10	
Non-Residential Required	-	
TOTAL REQUIRED	10	
Residential Provided	152	
Non-Residential Provided	60	
TOTAL PROVIDED	212	
TOTAL E.V.S.E. PROVIDED	167	*Percentage*
Residential Provided	152	100%
Non-Residential Provided	15	25%

BICYCLE STORAGE (TGS Tier 1)	
Residential Long Term Required	786
Residential Short Term Required	175
Non-Res Long Term Required	10
Non-Res Short Term Required	18
TOTAL REQUIRED	989
Residential Long Term Provided	786
Residential Short Term Provided	175
Non Res. Long Term Provided	10
Non Res. Short Term Provided	18
TOTAL PROVIDED	989

GARBAGE & RECYCLING		m²
Garbage Room Required		
First 50 Units	25m²	25.0
Remaining Units	13m² / additional 50 Units	198.9
Bulk Storage Required	10m²	10.0
TOTAL REQUIRED		233.9
Garbage Room Provided		253.9
Bulk Storage Provided		20.0
TOTAL PROVIDED		273.9

STAGING AREA		m²
Staging Area Req.	5m²/additional 50 Units	76.5
Staging Area Prov.		76.5

GREEN ROOF	m²
Gross floor area (as defined by Green roof bylaw)	69,431.2
Total Roof Area	6,695.1
Exempt Roof Area:	
Private Terrace	1,094.5
Outdoor Amenity	1,069.0
Total Exempt Roof Area	2,163.5
Applicable Roof Area	4,531.6
GREEN ROOF REQ. (60%)	2,719.0
GREEN ROOF PROVIDED	2,719.0

AMENITY AREA	m²	Ratio
Indoor Amenity Required	1,746.0	2.0m² / U
Outdoor Amenity Required	1,746.0	2.0m² / U
TOTAL REQUIRED	3,492.0	4.0m² / U
Indoor Amenity Provided	2,423.0	2.8
Outdoor Amenity Provided	1,069.0	1.2
TOTAL PROVIDED	3,492.0	4.0

BUILDING USE [BY-LAW 569-2013]			Percentage	Required
RES	54,227.9	m²	92%	
NON-RES	4,672.4	m²	8%	
Food store	1,875.4	m²	40%	(of Non-res
Retail	434.4	m²	9%	GFA)
CEA	2,362.6	m²	51%	
TOTAL	58,900.2	m²		

GFA BREAKDOWN (BY BUILDINGS) (M2)				
	BUILDING A		BUILDING B	
	RES.	NON- RES.	RES.	NON-RES.
PODIUM(Level 1-3)	3441.08	3793.0	1550.2	879.4
TOWER	TOWER A1 18 STOREYS	TOWER A2 25 STOREYS	TOWER B 36 STOREYS	
	10495.5	15386.8	23354.3	
TOTAL	33116.3		25783.9	

Bicycle Storage Provided	Non-res Long term	Non-res Short term	Res. Visitor	Res. Occupant	Subtotal	Net floor area (m²)	Percentage (GCA of each floor)
BUILDING A							
MEZZ	-	-	-	260	260	338.9	24.6%
L1	10	18	93	138	259	302.7	7.0%
U/G	-	-		-	0		
BUILDING B							
MEZZ			0	388	388	416.8	73.8%
L1	0	0	52	0	52		
U/G	0	0	30		30		
Total Provided	10	18	175	786	989	1,058.4	
Electric Bike Provided (15% of long term spaces)					120		

Revision Date

NOT FOR CONSTRUCTION

PRELIMINARY

1 ISSUED FOR ZBA 23-03-08

Revision Date

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2400-2440 DUNDAS STREET WEST
TORONTO, ONTARIO, CANADA

SHEET TITLE

OVERALL STATISTICS

DRAWN BY: GPAIA
CHECKED BY: GPAIA
PROJECT START DATE: 22-04-06
PROJECT NO.: 21115
SHEET NUMBER

A0.02

BUILDING A + U/G PARKING LEVEL
PROJECT STATISTICS [BY-LAW 569-2013]

	FLR LVL	GROSS CONST AREA		GFA DEDUCTIONS		AMNT DEDUCTIONS		TOTAL GFA		RESIDENTIAL GFA		NON-RES GFA	
		m²	*sf*	m²	*sf*	m²	*sf*	m²	*sf*	m²	*sf*	m²	*sf*
PODIUM	1	4,298.3	*46,267*	2,371.4	*25,526*	287.6	*3,096*	1,639.3	*17,645*	710.1	*7,643*	929.2	*10,002*
	MEZZ	1,375.9	*14,810*	874.9	*9,417*	-	-	501.0	*5,393*	501.0	*5,393*	-	-
	2	3,789.7	*40,792*	237.1	*2,552*	975.8	*10,503*	2,576.8	*27,737*	83.1	*894*	2,493.8	*26,843*
	2-MEZZ	469.1	*5,049*	99.1	*1,067*	-	-	370.0	*3,983*	-	-	370.0	*3,983*
	3	2,250.4	*24,223*	103.5	*1,114*	-	-	2,146.9	*23,109*	2,146.9	*23,109*	-	-
TOWERS A1+A2	4	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	5	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	6	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	7	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	8	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	9	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	10	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	11	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	12	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	13	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	14	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	15	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	16	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	17	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	18	1,500.0	*16,146*	100.9	*1,086*	-	-	1,399.1	*15,060*	1,399.1	*15,060*	-	-
	19	750.0	*8,073*	50.6	*545*	-	-	699.4	*7,528*	699.4	*7,528*	-	-
	20	750.0	*8,073*	50.6	*545*	-	-	699.4	*7,528*	699.4	*7,528*	-	-
	21	750.0	*8,073*	50.6	*545*	-	-	699.4	*7,528*	699.4	*7,528*	-	-
	22	750.0	*8,073*	50.6	*545*	-	-	699.4	*7,528*	699.4	*7,528*	-	-
	23	750.0	*8,073*	50.6	*545*	-	-	699.4	*7,528*	699.4	*7,528*	-	-
	24	750.0	*8,073*	50.6	*545*	-	-	699.4	*7,528*	699.4	*7,528*	-	-
	25	750.0	*8,073*	50.6	*545*	-	-	699.4	*7,528*	699.4	*7,528*	-	-
	MECH ROOF	750.0	*8,073*	750.0	*8,073*	-	-	-	-	-	-	-	-
	ABV GR	40,683.4	*437,913*	6,303.7	*67,852*	1,263.4	*13,599*	33,116.3	*356,461*	29,323.4	*315,634*	3,793.0	*40,827*
	U/G	10,501.3	*113,035*	10,501.3	*113,035*	-	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
	BLW GR	10,501.3	*113,035*	10,501.3	*113,035*	-	-	-	-	-	-	-	-
	SUBTOTAL	51,184.7	*550,948*	16,805.0	*180,888*	1,263.4	*13,599*	33,116.3	*356,461*	29,323.4	*315,634*	3,793.0	*40,827*

	UNIT						CONV	TOTAL ROOF AREA		PRIV TERRACE		OUTDR AMNT		APPL ROOF		GREEN ROOF		FLR LVL
	ST	1BD	1BD+D	2BD	3BD	TOTAL	UNITS*	m²	*sf*	m²	*sf*	m²	*sf*	m²	*sf*	m²	*sf*	
PODIUM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	-	-	7	-	-	7	-	-	-	-	-	-	-	-	-	-	-	MEZZ
	-	-	-	-	-	-	-	746.9	*8,040*	215.3	*2,317*	531.6	*5,722*	-	-	-	-	2
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2-MEZZ
	-	16	5	9	2	32	-	1,736.2	*18,688*	349.6	*3,763*	-	-	1,386.6	*14,925*	768.0	*8,267*	3
TOWERS A1+A2	-	8	6	6	2	22	4	746.7	*8,037*	190.2	*2,047*	-	-	556.5	*5,990*	404.1	*4,350*	4
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	5
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	6
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	7
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	8
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	9
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	10
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	11
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	12
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	13
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	14
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	15
	-	8	6	6	2	22	4	-	-	-	-	-	-	-	-	-	-	16
	-	7	6	4	4	21	4	-	-	-	-	-	-	-	-	-	-	17
	-	7	6	4	4	21	4	-	-	-	-	-	-	-	-	-	-	18
	-	4	3	3	1	11	2	-	-	-	-	-	-	-	-	-	-	19
	-	4	3	3	1	11	2	-	-	-	-	-	-	-	-	-	-	20
	-	4	3	3	1	11	2	-	-	-	-	-	-	-	-	-	-	21
	-	4	3	3	1	11	2	-	-	-	-	-	-	-	-	-	-	22
	-	4	3	3	1	11	2	-	-	-	-	-	-	-	-	-	-	23
	-	3	2	3	2	10	-	-	-	-	-	-	-	-	-	-	-	24
	-	3	2	3	2	10	-	-	-	-	-	-	-	-	-	-	-	25
								-	-	-	-	-	-	-	-	-	-	MECH ROOF
	-	160	121	116	45	442	70	3,979.8	*42,838*	755.1	*8,128*	531.6	*5,722*	2,693.1	*28,988*	1,615.9	*17,393*	
																		U/G
	-	160	121	116	45	442	70	3,979.8	*42,838*	755.1	*8,128*	531.6	*5,722*	2,693.1	*28,988*	1,615.9	*17,393*	
	0.0%	36.2%	27.4%	26.2%	10.2%		15.84%											

TOTAL		
	33,116.3	*356,461*

- GFA deductions include parking, loading and bicycle parking, storage rooms, washrooms, electrical, utility, mechanical and ventilation rooms below grade, shower and change facilities as required for bicycle parking, amenity space, elevator shafts, garbage shafts, mechanical penthouse, and exit stairwells as per the City of Toronto by-law 569-2013.

TOTAL	
	442

CONV UNITS*: UNITS THAT CAN BE CONVERTED INTO LARGER UNITS TO MEET CITY'S GROWING UP GUIDELINES

GARBAGE & RECYCLING		
		m²
Garbage Room Required		
First 50 Units	25m²	25.0
Remaining Units	13m² / additional 50 U	101.9
Bulk Storage Required	10m²	10.0
TOTAL REQUIRED		136.9
Garbage Room Provided		126.9
Bulk Storage Provided		10.0
TOTAL PROVIDED		136.9

STAGING AREA		
		m²
Staging Area Req.	5m² / additional 50 Units	44.2
Staging Area Prov.		44.2

Revision Date

NOT FOR CONSTRUCTION

PRELIMINARY

1 ISSUED FOR ZBA 23-03-08

Revision Date

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2400-2440 DUNDAS STREET WEST
TORONTO, ONTARIO, CANADA

SHEET TITLE

BUILDING A STATISTICS

DRAWN BY:	GPAIA
CHECKED BY:	GPAIA
PROJECT START DATE:	22-04-06
PROJECT NO.:	21115

SHEET NUMBER

A0.03

BUILDING B
PROJECT STATISTICS [BY-LAW 569-2013]

	FLR LVL	GROSS CONST AREA		GFA DEDUCTIONS		AMNT DEDUCTIONS		TOTAL GFA		RESIDENTIAL GFA		NON-RES GFA	
		m²	sf	m²	sf	m²	sf	m²	sf	m²	sf	m²	sf
PODIUM	1	1,719.7	18,511	486.9	5,241	13.4	144	1,219.4	13,126	340.0	3,660	879.4	9,466
	MEZZ	564.9	6,081	564.9	6,081	-	-	-	-	-	-	-	-
	2	1,384.0	14,897	72.3	778	977.4	10,521	334.3	3,598	334.3	3,598	-	-
	2-MEZZ									-			
	3	935.7	10,072	59.8	644	-	-	875.9	9,428	875.9	9,428	-	-
TOWER B	4	748.3	8,055	59.8	644	-	-	688.5	7,411	688.5	7,411	-	-
	5	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	6	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	7	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	8	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	9	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	10	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	11	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	12	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	13	674.1	7,256	59.8	644	84.4	908	529.9	5,704	529.9	5,704	-	-
	14	674.1	7,256	59.8	644	84.4	908	529.9	5,704	529.9	5,704	-	-
	15	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	16	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	17	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	18	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	19	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	20	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	21	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	22	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	23	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	24	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	25	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	26	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	27	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	28	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	29	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	30	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	31	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	32	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	33	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	34	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	35	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	36	780.0	8,396	59.8	644	-	-	720.2	7,752	720.2	7,752	-	-
	MECH ROOF	780.0	8,396	780.0	8,396	-	-	-	-	-	-	-	-
	ABV GR	30,880.8	332,398	3,937.3	42,381	1,159.6	12,482	25,783.9	277,536	24,904.5	268,070	879.4	9,466
	U/G	-	-	-	-	-	-	-	-	-	-	-	-
		-		-	-	-	-	-	-	-	-	-	-
	BLW GR	-	-	-	-	-	-	-	-	-	-	-	-
	SUBTOTAL	30,880.8	332,398	3,937.3	42,381	1,159.6	12,482	25,783.9	277,536	24,904.5	268,070	879.4	9,466

	UNIT						CONV
	ST	1BD	1BD+D	2BD	3BD	TOTAL	UNITS*
PODIUM	-	-	-	-	-	-	
	-	-	-	-	-	-	
	-	-	3	2	-	5	
	-	6	3	2	3	14	2
TOWER B	-	7	2	2	1	12	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	5	1	2	1	9	2
	-	5	1	2	1	9	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	8	2	2	1	13	2
	-	5	1	2	3	11	2
	-	5	1	2	3	11	2
	-	5	1	2	3	11	2
	-	5	1	2	3	11	2
ABV GR	-	251	66	70	44	431	68
U/G							
BLW GR							
SUBTOTAL	-	251	66	70	44	431	68
	0.0%	58.2%	15.3%	16.2%	10.2%		15.78%

	TOTAL ROOF AREA		PRIV TERRACE		OUTDR AMNT		APPL ROOF		GREEN ROOF		
	m²	sf	m²	sf	m²	sf	m²	sf	m²	sf	
PODIUM	91.3	983	-	-	91.3	983	-	-	-	-	1
	-	-	-	-	-	-	-	-	-	-	MEZZ
	350.9	3,777	11.9	128	329.8	3,550	9.2	99	-	-	2
											2-MEZZ
	455.8	4,906	307.2	3,307	-	-	148.6	1,600	66.1	711	3
TOWER B	171.0	1,841	20.3	219	-	-	150.7	1,622	46.9	505	4
	-	-	-	-	-	-	-	-	-	-	5
	-	-	-	-	-	-	-	-	-	-	6
	-	-	-	-	-	-	-	-	-	-	7
	-	-	-	-	-	-	-	-	-	-	8
	-	-	-	-	-	-	-	-	-	-	9
	-	-	-	-	-	-	-	-	-	-	10
	-	-	-	-	-	-	-	-	-	-	11
	-	-	-	-	-	-	-	-	-	-	12
	116.3	1,251	-	-	116.3	1,251	-	-	-	-	13
	-	-	-	-	-	-	-	-	-	-	14
	-	-	-	-	-	-	-	-	-	-	15
	-	-	-	-	-	-	-	-	-	-	16
	-	-	-	-	-	-	-	-	-	-	17
	-	-	-	-	-	-	-	-	-	-	18
	-	-	-	-	-	-	-	-	-	-	19
	-	-	-	-	-	-	-	-	-	-	20
	-	-	-	-	-	-	-	-	-	-	21
	-	-	-	-	-	-	-	-	-	-	22
	-	-	-	-	-	-	-	-	-	-	23
	-	-	-	-	-	-	-	-	-	-	24
	-	-	-	-	-	-	-	-	-	-	25
	-	-	-	-	-	-	-	-	-	-	26
	-	-	-	-	-	-	-	-	-	-	27
	-	-	-	-	-	-	-	-	-	-	28
	-	-	-	-	-	-	-	-	-	-	29
	-	-	-	-	-	-	-	-	-	-	30
	-	-	-	-	-	-	-	-	-	-	31
	-	-	-	-	-	-	-	-	-	-	32
	-	-	-	-	-	-	-	-	-	-	33
	-	-	-	-	-	-	-	-	-	-	34
	-	-	-	-	-	-	-	-	-	-	35
	-	-	-	-	-	-	-	-	-	-	36
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	-	-	-	-	
	-	-	-	-	-	-	780.0	8,396	540.1	5,813	MECH ROOF
	1,965.3	21,154	339.4	3,653	537.4	5,784	1,088.5	11,717	653.1	7,030	
											U/G
	1,965.3	21,154	339.4	3,653	537.4	5,784	1,088.5	11,717	653.1	7,030	

TOTAL		
	25,783.9	277,536

- GFA deductions include parking, loading and bicycle parking, storage rooms, washrooms, electrical, utility, mechanical and ventilation rooms below grade, shower and change facilities as required for bicycle parking, amenity space, elevator shafts, garbage shafts, mechanical penthouse, and exit stairwells as per the City of Toronto by-law 569-2013.

TOTAL	
	431

CONV UNITS*: UNITS THAT CAN BE CONVERTED INTO LARGER UNITS TO MEET CITY'S GROWING UP GUIDELINES

GARBAGE & RECYCLING		m²
Garbage Room Required		
First 50 Units	25m²	25.0
Remaining Units	13m² / additional 50 U	101.9
Bulk Storage Required	10m²	10.0
TOTAL REQUIRED		136.9
Garbage Room Provided		127.0
Bulk Storage Provided		10.0
TOTAL PROVIDED		137.0

STAGING AREA		m²
Staging Area Req.	5m² / additional 50 Units	44.2
Staging Area Prov.		44.2

Revision	Date

NOT FOR CONSTRUCTION

PRELIMINARY

Revision	Date
1 ISSUED FOR ZBA	23-03-08

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TORONTO, ONTARIO, CANADA

SHEET TITLE

BUILDING B STATISTICS

DRAWN BY:	GPAIA
CHECKED BY:	GPAIA
PROJECT START DATE:	22-04-06
PROJECT NO.:	21115

SHEET NUMBER

A0.04

PLOT DATE: 2023-03-07 3:15:49 PM

226 WILKINSON ROAD, BRAMPTON, ONTARIO L6T 4N7
(905) 792-8169

COMBINED & STORM SEWER INVESTIGATION REPORT
DYE TEST

700x1050 MM COMBINED SEWER
&
100 MM - 600 MM DIAMETER STORM SEWER

FOR

2400 DUNDAS STREET WEST

CITY OF TORONTO

CONSULTING ENGINEER: IBI
CONSULTING ENGINEER'S REPRESENTATIVE: JASON JENKINS
CONSULTING ENGINEER'S REPRESENTATIVE: CASSIDY GOETZ
OWNER: FORA DEVELOPMENTS
OWNER'S REPRESENTATIVE: LYLE LEVINE

FRIDAY, NOVEMBER 11TH, 2022

INDEX:

SEWER CLEANING, VIDEO INSPECTION, INSITU REPAIRS &
MUNICIPAL ENGINEERING SERVICES

2. SUMMARY REPORT AND CONCLUSIONS:

The investigation of the combined & storm sewers at 2400 Dundas Street West was carried out by Steven Lostracco, P.Eng. of Aquaflow Technology, and was authorized by Jason Jenkins of IBI Group. The investigation was carried out on Friday November, 11th, 2022.

The purpose of this report was to determine which municipal sewer the storm drains connect to.

1. Shoppers Drugmart. All roof drains discharge through the side of the building to the parking lot which drains to the CB next to MH STM-3, which then drains to the 450 mm storm sewer on Dundas Street West.

2. All parking lot drainage flows into the CB's which outlets to the 450 mm storm sewer on Dundas Street West.
.
3. Freshco. All roof drains discharge into CBMH-2 which drains to the 450 mm storm sewer on Dundas Street West.

1. Shoppers Drugmart

2. Shoppers Drugmart


3. Shoppers Drugmart
Roof drainage discharges to the parking lot surface

4. Freshco

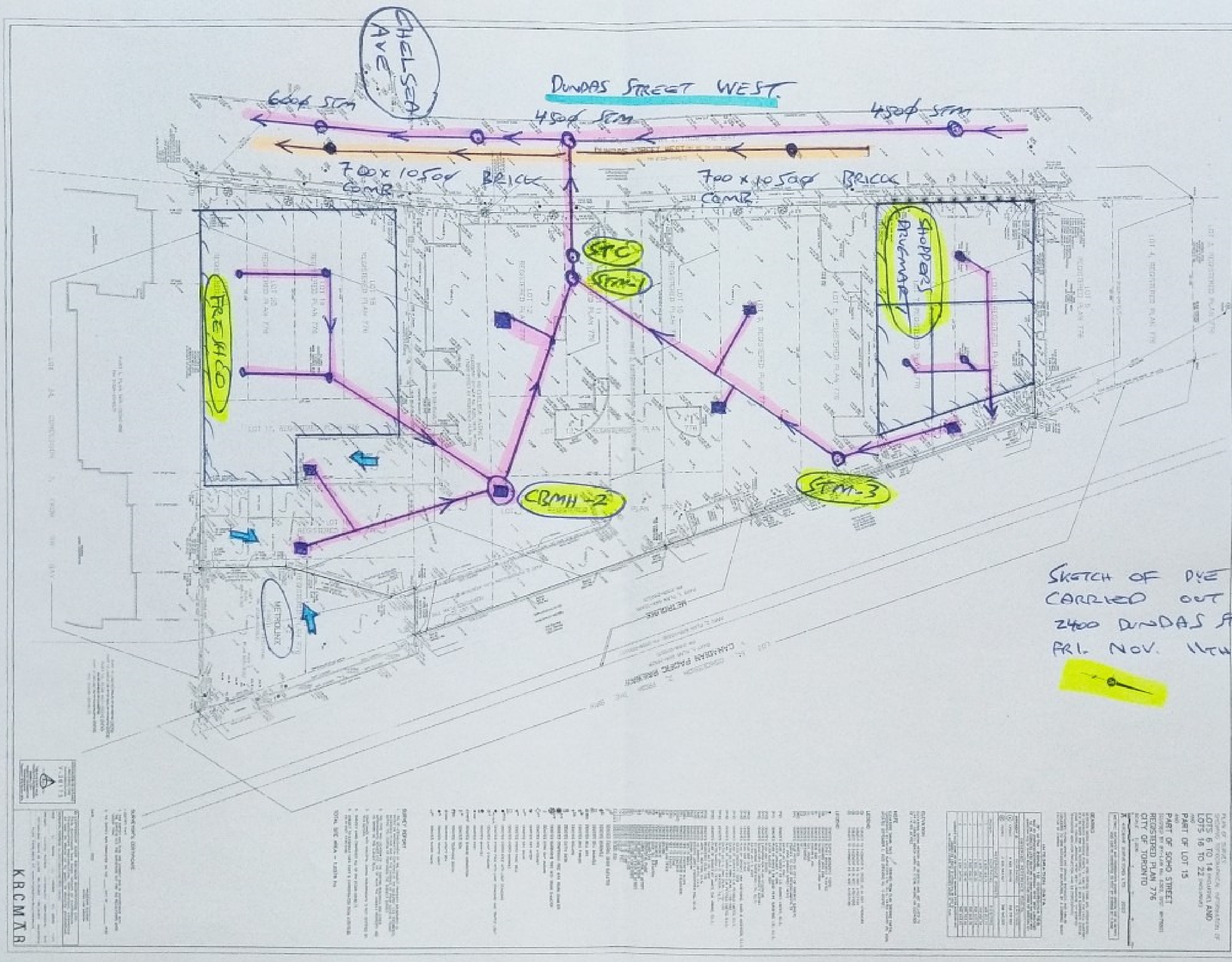

5. Freshco


6. Freshco


7. Freshco

Report Prepared by:

Steven Lostracco, P. Eng.


DUNDAS STREET WEST.
CHELSEA AVE
600ø STM
450ø STM
450ø STM
700 x 1050ø BRICK COMB.
700 x 1050ø BRICK COMB.
SHOPPERS DRUGMART
STC
STM-1
STM-3
CBMH-2
FRESHCO
METROLINX
SKETCH OF DYE TEST CARRIED OUT AT. 2400 DUNDAS ST. WEST. FRI. NOV. 11TH. 2022
PLAN OF SURVEY SHOWING TOPOGRAPHICAL INFORMATION OF
LOTS 6 TO 14 (INCLUSIVE) AND LOTS 16 TO 22 (INCLUSIVE)
AND PART OF LOT 15
AND PART OF SOHO STREET
REGISTERED PLAN 776
CITY OF TORONTO
KRCMAR

Appendix B
Groundwater

TORONTO

October 2017

SERVICING REPORT GROUNDWATER SUMMARY

The form is to be completed by the Professional that prepared the Servicing Report.
Use of the form by the City of Toronto is not to be construed as verification of engineering/hydrological content.

For City Staff Use Only:	
Name of ECS Case Manager (please print)	
Date Review Summary provided to to TW	

A. SITE INFORMAITON		**Included in SR (reference page number)**	**Report Includes this information City staff (Check)**
Date Servicing Report was prepared:	March, 2023	Cover Page	
Title of Servicing Report:	Functional Servicing & Stormwater Management	Cover Page	
Name of Consulting Firm that prepared Servicing Report:	IBI Group	Cover Page	
Site Address	2400- 2440 DUNDAS STREET WEST Toronto, Ontario	Page 1	
Postal Code	M6P 1W9	N/A	
Property Owner (identified on planning request for comments memo)	Fora Developments	Cover Page	
Proposed description of the project (ex. number of point towers, number of podiums, etc.)	The proposed development will be three point towers (36, 35 and 18 storeys with one underground levels	Page 2	
Land Use (ex. commercial, residential, mixed, industrial, institutional) as defined by the Planning Act	Mixed use	Page 2	
Number of below grade levels	1 Level of Underground Parking	Page 2	

TORONTO

October 2017

SERVICING REPORT GROUNDWATER SUMMARY

Does the SR include a private water drainage system (PWDS)? **PWDS: Private Water Drainage System:** A subsurface drainage system which may consist of but is not limited to weeping tile(s), foundation drain(s), private water collection sump(s), private water pump or any combination thereof for the disposal of private water on the surface of the ground or to a private sewer connection or drainage system for disposal in a municipal sewer.	If **Yes** continue completing Section B (Information Relating to Groundwater) **ONLY** **If Yes, Number of PWDS?** 0 *(Each of these PWDS may require a separate Toronto Water agreement)* If **No** skip to Sections C (On-site Groundwater Containment) and/or D (Water Tight Requirements) as applicable	☐ YES ☉ NO	
B. INFORMATION RELATING TO GROUNDWATER		**Included in SR (reference page number)**	**Report Includes this information City Staff (Check)**
A copy of the pump schedule(s) for **ALL** groundwater sump pump(s) for the development site has been included in the FSR **or** A letter written by a Mechanical Consultant (signed and stamped by a Professional Engineer of Ontario) shall be attached to the SR stating the peak flow rate of the groundwater discharge for the development site for all groundwater sump pump(s). This peak flow rate must be based on the pump schedule(s) that have been designed by the Mechanical Consultant. A template of this letter is attached in Schedule A.			

TORONTO

October 2017

SERVICING REPORT GROUNDWATER SUMMARY

****If there is more than one sump they must ALL be included in the letters along with a combined flow****			
Is it proposed that the groundwater from the development site will be discharged to the sanitary, combined or storm sewer?	☐ Sanitary Sewer ☐ Combined Sewer ☐ Storm Sewer		
Will the proposed PWDS discharge from the site go to the Western Beaches Tunnel (WBT)? *Reference attached WBT drainage map*	☐ YES ☐ NO **If Yes, private water discharge fees will apply and site requires a sanitary discharge agreement.**		
What is the street name where the receiving sewer is located?			
What is the diameter of the receiving sewer?			
Is there capacity in the proposed local sewer system? ☐ YES ☐ NO	Are there any improvements required to the sewer system? If yes, identify them below and refer to the section and page number of the FSR where this information can be found. If a sewer upgrade is required, the owner is required to enter into an Agreement with the City to improve the infrastructure? ☐ YES		
Total allowable peak flow rate during a 100 year storm event (L/sec) to storm sewer When groundwater is to be discharged to the storm sewer the total groundwater and stormwater discharge shall not exceed the permissible peak flow rate during a 2 year pre development storm event, as per the City's	136.5 L/sec	Page 7	

SERVICING REPORT GROUNDWATER SUMMARY

Wet Weather Flow Management Guidelines, dated 2006			
Short-Term Groundwater Discharge Provide proposed total flow rate to the sanitary/combined sewer in post-development scenario Total Flow (L/sec) = sanitary flow + peak short-term groundwater flow rate	Assumed 13 hours of pumping 16.0 L/sec	Page 5	
Long-Tem Groundwater Discharge Provide proposed total flow rate to the sanitary/combined sewer in post-development scenario Total Flow (L/sec) = sanitary flow + peak long-term groundwater flow rate	Peak DWF + GW flow + Inflitration = 15.5 L/s + 0 L/s + 0.3 L/s=15.7 L/s No long-term groundwater discharge to the sanitary sewer	Page 11 & App. D	
Does the water quality meet the receiving sewer Bylaw limits? ☉ YES ☐ NO	If the water quality does not meet the applicable receiving sewer Bylaw limits and the applicant is proposing a treatment system the applicant will need to include a letter stating that a treatment system will be installed and the details of the treatment system will be included in the private water discharge application that will be submitted to TW EM&P.	page 5	
C. ON-SITE GROUNDWATER CONTAINMENT		**Included in SR (reference page number)**	**Report Includes this information City Staff (Check)**
How is the site proposing to manage the groundwater discharge on site?	Watertight foundation	Page 5	

October 2017

SERVICING REPORT GROUNDWATER SUMMARY

Has the above proposal been approved by:	◯ TW-WIM And ◯ TW-EM&P And ◯ ECS		
If the site is proposing a groundwater infiltration gallery, has it been stated that the groundwater infiltration gallery will not be connected to the municipal sewer? A connection between the infiltration gallery/dry well and the municipal sewer is not permitted Please be advised if an infiltration gallery/dry well on site is not connected to the municipal sewer, the site **must** submit two letters using the templates in Schedule B and Schedule C.	☐ YES ☑ NO	n/a	
Confirm that the infiltration gallery can infiltrate 100% of the expected peak groundwater flow year round, ensure that the top of the infiltration trench is below the frost line (1.8m depth), not less than 5 m from the building foundation, bottom of the trench 1m above the seasonally high water table, and located so that the drainage is away from the building.	N/A	n/a	
D. WATER TIGHT REQUIREMENTS		**Included in SR (reference page number)**	**Report Includes this information City Staff**

October 2017

SERVICING REPORT GROUNDWATER SUMMARY

		(Check)
If the site is proposing a water tight structure: 1. The owner must submit a letter using the template in Schedule D. 2. A Professional Engineer (Structural), licensed to practice in Ontario and qualified in the subject must submit a letter using the template in Schedule E.	Page 5	

Provide a copy of the approved SR to Toronto Water Environmental Monitoring & Protection Unit at pwapplication@toronto.ca.

Consulting Firm that prepared Servicing Report: IBI Group

Professional Engineer who completed the report summary: Jason Jenkins, PE, P.Eng.

Print Name

Mar, 2023

Professional Engineer who completed the report summary: _____

Signature Date & Stamp

GEMS®

Groundwater Environmental Management Services

Hydrogeological Report

2400 – 2440 Dundas Street West, Toronto, Ontario

M6P 1W9

Project: 22-1465

March 6, 2023

Prepared For:
Fora Developments
2440 Dundas Street West
Toronto, ON, M6P 1W9

Prepared By:
Groundwater Environmental Management Services Inc.
150 Rivermede Road, Unit 9
Concord, ON, L4K 3M8

mean of hydraulic conductivity estimates observed is approximately 10^{-6} m/s and is within the textbook range for silty sand materials denoted by Freeze & Cherry (1979).

As a conservative estimate, GEMS recommends using the highest hydraulic conductivity result of 3.5×10^{-6} m/s to forecast the overburden dewatering rate.

4.5 Groundwater Quality

The water quality discharged by the dewatering system during construction is expected to be similar to in-situ groundwater quality.

On 2 September 2022, a groundwater sample was collected from borehole MW102D to characterize the in-situ groundwater quality at the Site. The water quality analysis results are included in **Appendix E**.

Water quality results were compared to the following criteria:

- City of Toronto Storm Sewer Discharge Use By-Law
- City of Toronto Sanitary and Combined Sewers Discharge Guidelines

The water quality met the City of Toronto Sanitary and Combined Sewers Discharge Guidelines for all parameters. It exceeded the City of Toronto Storm Sewer Discharge Use By-law criteria for Total Suspended Solids (TSS) and Total Manganese (Mn).

Exceedances to these criteria were identified and are summarized in **Table 4.5,** with the criteria exceeded in bold.

Table 4.5: Water Quality Results Exceeding Discharge Criteria

Water Quality Parameters	Units	MW102D Results	Storm Criteria	Sanitary Criteria
Total Suspended Solids (TSS)	mg/L	41	**15**	350
Total Manganese (Mn)	ug/L	170	**50**	5000

Groundwater quality should be expected to change over time during active construction dewatering. A dewatering contractor should assess the groundwater quality before any water-taking and discharging activities.

5.0 Short and Long-Term Discharge Rates

5.1 Short-Term Construction Dewatering

A construction dewatering system design may include well points, several sump pumps, and a network of gravity drains. Implementing a dewatering system is the responsibility of the property owner, and a qualified dewatering contractor with experience in construction dewatering should be retained to design and outline the methodology of the dewatering system. Construction will require that the groundwater level be lowered to a depth of at least 1.0 m below the excavation invert.

5.3 Pumping Rate Calculations

The calculation for a rectangular excavation is based on a scenario that models radial flow into a well with a calculated equivalent radius reflective of the area to be dewatered. Dewatering was simulated by analyzing radial flow to a well in an unconfined aquifer. Flows toward the well were simulated using the following formula (J.P.Powers, 2007):

$$Q = \frac{\pi \cdot K\left(H^2 - h^2\right)}{\ln\left(\frac{R_o}{r_w}\right)}$$

Where the symbols and input values are as follows:

- Q = Discharge flow (L/min)
- K = Hydraulic conductivity = 3.5 x 10^{-6} m/s
- H = Pre-construction static water level = 111.0 masl
- h = Target water level = 108.0 masl
- R_o = Radius of influence
- r_w = Effective well radius of open excavation

The simplified shape of the excavation used for the pumping rate calculations is assumed to account for the full dimensions of the underground structure, as displayed in **Figure 4**.

5.4 Construction Dewatering Rates

Assuming the dewatering wells are installed to elevations of 106.0 masl, the estimated maximum dewatering rate for initial drawdown (7 days) is 337,481 L/day (234 L/min), and during steady-state drawdown (40 days) is 154,559 L/day (107 L/min). The dewatering calculations are provided in **Appendix E.**

For the purpose of permitting applications for dewatering, GEMS recommends using the forecasted 7-day pumping rate with the application of a 1.5 safety factor. The resulting pumping rate after applying the safety factor is 506,222 L/day (351 L/min). This forecasted dewatering pumping rate will allow for uncertainties and variability in the range of hydraulic conductivity.

Additionally, it is necessary to account for contributions to the dewatering volume from significant precipitation events. Assuming a rectangular excavation with dimensions of 85 m x 128 m for underground parking, the total surface area of the excavation will be 10,880 m^2. Anticipating a 15 mm daily rainfall event, the volume of rainwater contributed to this area would be 163,200 L.

After applying the safety factor, adding the rainfall contribution to the dewatering rate brings the forecast maximum pumping rate to 751,022 L/day (521.5 L/min).

A dewatering contractor should be retained to evaluate the dewatering methods. If dewatering wells deeper than 3.0 m below the assumed excavation invert depth are required, the discharge rates should be re-evaluated by GEMS.

A summary of the construction dewatering rates is outlined in **Table 5.3.**

Table 5.3 Summary of Construction Dewatering Rates

Dewatering	Excavation Area	
	Dewatering Rate	1.5 Safety Factor
15 mm Rainfall Contribution	163,200 L/day (113 L/min)	-
Initial Drawdown for Excavation	337,481 L/day (234 L/min)	506,222 L/day (351.5 L/min)
Maximum with safety factor	751,022 L/day* (521.5 L/min)	

**Rounded for permitting*

Based on the above estimate, a Permit to take Water is required for water taking during the dewatering and construction of the proposed development, as the forecast dewatering rate is greater than 400,000 L/day.

A short-term discharge agreement with the City of Toronto will be required before discharging water into any sewers owned by the City.

5.5 Long-Term Seepage Rates

The base of the foundation will be constructed an estimated 3.1 meters below the water level after the addition of a 2.3 m November water table fluctuation allowance based on the City of Toronto foundation drainage guidelines (COT, 2021). However, it has been communicated with GEMS that the foundation will be constructed as water-tight, therefore no long-term discharge of groundwater is anticipated at the Site. The elimination of groundwater taking over the lifetime of the building will not adversely impact the aquifer over the long-term. The design and implementation of the water-tight structure is the responsibility of the construction team.

6.0 Potential for Adverse Effects

The following section identifies the potential for adverse environmental effects resulting from the proposed construction dewatering program.

6.1 Regulated and Sensitive Areas

According to The Ministry of Environment, Conservation and Parks' (MECP) Source Protection Information Atlas (MECP, 2021), the Site is not located in an area of development control as defined by the Niagara Escarpment Planning & Development Act. The Site is also not located in the Oak Ridges Moraine Conservation Area as defined by the Oak Moraine Conservation Plan.

There is no Toronto and Region Conservation Authority (TRCA) regulated areas within the zone of influence of the Site.

Location: A flow meter attached to the discharge pipe of the dewatering system.

Parameter: Total volume of discharge, date, and time of measurement.

Schedule: Minimum of daily recording by on-Site personnel, with values reported to the Project supervisor weekly for submission to the City, Region and/or MECP.

Trigger: Discharge volume exceeds the maximum rate of dewatering specified in the discharge agreement and/or the EASR.

Mitigation: Immediately reduce the pumping rate so that discharge is within permitted limit.

Reporting: Values reported to the Project supervisor weekly for submission to the City, Region and/or MECP.

Additional Fieldwork

Well decommissioning is required before construction. A licensed well contractor should decommission any inactive wells within the Site, according to Ontario Regulation 903. This regulation applies to any existing monitoring wells.

7.0 Conclusion

Based on the above analysis, the following conclusions and recommendations are offered for the proposed reconstruction of 2400-2440 Dundas Avenue West, Toronto, Ontario:

- The geology at the Site is composed of coarse to fine-textured glaciolacustrine deposits of sand to clayey silt. Excavation and dewatering activities will occur in predominately Silty Sand and Sandy Silt materials.
- Hydraulic conductivity tests for the water-bearing unit ranges from 1.8. x 10^{-6} m/s to 3.5 x 10^{-6} m/s, with a geometric mean of 2.3 x 10^{-6} m/s.
- The groundwater elevation at the Site ranged between 94.98 – 111.01 masl over the monitoring period (September to November 2022). Groundwater elevations taken from MW101D reflect that the piezometric head in the underlying Thorncliffe formation is not representative of the water table at the Site.
- The water quality met the City of Toronto Sanitary and Combined Sewers Discharge Guidelines for all parameters. It exceeded the City of Toronto Storm Sewer Discharge Use By-law criteria for:
    - Total Suspended Solids (TSS)
    - Total Manganese (Mn)
- The maximum construction dewatering rate to maintain water levels below the estimated maximum depth of excavation is 506,222 L/day (351.5 L/min), including a safety factor of 1.5.
- The estimated maximum dewatering rate for 15 mm rainfall event is 163,200 L/day (113.3 L/min).
- With the application of a safety factor of 1.5, the total maximum forecasted dewatering rate is 751,022 L/day (521.5 L/min) for groundwater and precipitation entering the excavation area.
- The zone of influence for construction dewatering is estimated to extend 94 metres from the edge of the excavation area.

- The maximum finished floor elevation is roughly 3.1 metres below the water table (after the application of a 2.3 m seasonal fluctuation allowance for November), but the foundation is to be constructed as water-tight and therefore long term discharge of groundwater is not anticipated.
- Well decommissioning will be required before construction. A licensed well contractor should decommission any inactive wells within the Site, according to Ontario Regulations.

Groundwater Environmental Management Services Inc. (GEMS) has prepared this report for our client and its agents exclusively. GEMS accepts no responsibility for any damages that third parties may suffer resulting from decisions or actions based on this report.

The findings and conclusions are site-specific and were developed in a manner consistent with the level of care and skill normally exercised by environmental professionals currently practicing under similar conditions in the area. Changing assessment techniques, regulations, and site conditions mean that environmental investigations and their conclusions can quickly become dated, so this report is current up to two years from the published date. The report should not be used after that without GEMS' review/approval.

The Project has been conducted according to our instructions and work program. Additional conditions and limitations on our liability are outlined in our work program/contract. No warranty, expressed or implied, is made.

8.0 References

Chapman, L. J., & Putnam, D. F. (2007). The Physiography of Southern Ontario: Ontario Geological Survey, 3rd edition. Ontario Geological Survey.

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COT (2020) City of Toronto Zoning By-law 569-2013 (2020). Zoning Map. City of Toronto.

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Freeze, R. A., & Cherry, J. A. (1979). Groundwater. Englewood Cliffs, New Jersey: Prentice Hall. ISBN 0-13-365312-9.

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J.P.Powers, A. C. (2007). Construction Dewatering and Groundwater Control, New Methods and Applications.

Mansur, C.I., and R.I. Kaufman, 1962: Dewatering, Chapter 3 in Foundation Engineering, G.A. Leonards (ed.), McGraw-Hill Book Company, New York, New York, pp. 241-350.

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JABLONSKY, AST AND PARTNERS
Consulting Engineers

400 - 3 Concorde Gate
Toronto, ON M3C 3N7
Telephone (416) 447-7405
www.astint.on.ca
Email jap@astint.on.ca

March 6, 2023

Attention: Executive Director, Engineering and Construction Services
c/o Manager, Development Engineering
55 John Street, 16th Floor, Toronto, ON M5V 3C6

cc: General Manager, Toronto Water
c/o Manager, Environmental Monitoring and Protection Unit
30 Dee Avenue, Toronto, ON M9N 1S9

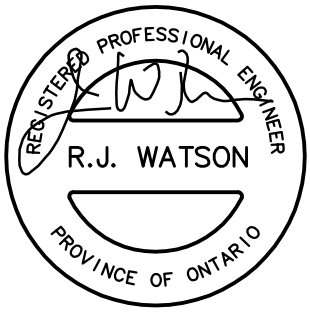
Re: 2400-2440 Dundas Street West
Raft Foundation – Water-tight Design
Our Project No. 22336

Dear Sir or Madam,

I, Jeff Watson, P. Eng., confirm that all buildings on the subject lands of 2400-2440 Dundas Street West will be structurally designed to be completely water-tight below grade in a manner that will resist hydrostatic pressure. However, as per good engineering practice, the Mechanical Engineering Firm has designed a drainage system for only the sub-floor in the event of any minor leaks or damage to the waterproofing system, which cannot be repaired after installation. The drainage system will not have any connections to the foundation wall and the water infiltration is expected to be null. The sub-floor drainage system designed by the Mechanical Engineer will comply with the current City requirements for groundwater, so any water collected will be monitored and discharged under a Sanitary Discharge Agreement with the City of Toronto.

Yours very truly,

JABLONSKY, AST AND PARTNERS
CONSULTING ENGINEERS



Jeff Watson, P. Eng.
Partner
jwatson@astint.on.ca

MCW Consultants Ltd.

Queen's Quay Terminal
207 Queen's Quay West,
Suite 615
Toronto, Ontario M5J 1A7

Phone (416) 598-2920
Fax (416) 598-5394
Internet: www.mcw.com

March 6th, 2023

Attention: Executive Director, Engineering and Construction Services

c/o Manager, Development Engineering

cc: General Manager, Toronto Water
c/o Manager, Environmental Monitoring & Protection Unit
2400-2440 Dundas Street West – Toronto, Ontario
FORA Developments

Dear Sir or Madam,

I Agustin Olt, confirm that all buildings on the subject lands at 2400-2440 Dundas Street West, in Toronto will be designed and constructed by others to be completely water-tight below grade in a manner that will resist hydrostatic pressure. However, as per good engineering practice, I will designed a drainage system for only the sub-floor in the event of any minor leaks or damage to the waterproofing system, which cannot be repaired after installation. The drainage system will not have any connections to the foundation wall and since the foundation is water-tight the water infiltration is expected to be null.

The back-up groundwater sump pumps will be sized at 0 L/sec (groundwater peak flow rate) and are expected to run approximately 0 hours per day.

This peak flow rate will be used for assessing capacity for the peak discharge flow into the City's sanitary sewer system.

The sub-floor drainage system will comply with the current City requirements for groundwater, so any water collected will be monitored and discharged under a Sanitary Discharge Agreement with the City of Toronto.

Agustin Olt
P.Eng (Mechanical)
aolt@mcw.com

Dundas Li Properties Inc.
1840 Eglinton Avenue West, Suite 202
Toronto, Ontario, M6E 2J4

March 6, 2023

Attention: Chief Engineer and Executive Director, Engineering and Construction Services
c/o Manager, Development Engineering
Toronto City Hall, 24th Floor E., 100 Queen Street W., Toronto, ON, M5H 2N2

cc: General Manager, Toronto Water
c/o Manager, Environmental Monitoring and Protection Unit
30 Dee Ave, Toronto ON M9N 1S9

Dear Sir or Madam,

I, Paolo Rovazzi , confirm and undertake that I will construct and maintain all building(s) on the subject lands at 2400-2440 Dundas Street West in a manner which shall be completely water-tight below grade and resistant to hydrostatic pressure without any necessity for Private Water Drainage System (subsurface drainage system) consisting of but not limited to weeping tile(s), foundation drain(s), private water collection sump(s), private water pump or any combination thereof for the disposal of private water on the surface of the ground or to a private sewer connection directly or indirectly or drainage system for disposal directly or indirectly in a municipal sewer.

Paolo Rovazzi, A.S.O.

Name and Title

provazzi@li-limited.com

Email

PR

Signature

I, Paolo Rovazzi , have the authority to bind the corporation.

I have attached the following documents, confirming that I have ownership to bind the corporation:

Corporation Profile Report obtained within 30 days

AND

Parcel Register obtained within 30 days

Ontario

Ministry of Public and
Business Service Delivery

Profile Report

DUNDAS LI PROPERTIES INC. as of March 06, 2023

Act	Business Corporations Act
Type	Ontario Business Corporation
Name	DUNDAS LI PROPERTIES INC.
Ontario Corporation Number (OCN)	1000156465
Governing Jurisdiction	Canada - Ontario
Status	Active
Date of Incorporation	March 25, 2022
Registered or Head Office Address	1840 Eglinton Avenue West, Suite 202, Toronto, Ontario, Canada, M6E 2J4

Certified a true copy of the record of the Ministry of Public and Business Service Delivery.

V. Quintanilla W.

Director/Registrar

This report sets out the most recent information filed on or after June 27, 1992 in respect of corporations and April 1, 1994 in respect of Business Names Act and Limited Partnerships Act filings and recorded in the electronic records maintained by the Ministry as of the date and time the report is generated, unless the report is generated for a previous date. If this report is generated for a previous date, the report sets out the most recent information filed and recorded in the electronic records maintained by the Ministry up to the "as of" date indicated on the report. Additional historical information may exist in paper or microfiche format.

Active Director(s)

Minimum Number of Directors	1
Maximum Number of Directors	10

Name	PAOLO ROVAZZI
Address for Service	1840 Eglinton Avenue West, Suite 202, Toronto, Ontario, Canada, M6E 2J4
Resident Canadian	Yes
Date Began	March 25, 2022

Active Officer(s)

Name	PAOLO ROVAZZI
Position	President
Address for Service	1840 Eglinton Avenue West, Suite 202, Toronto, Ontario, Canada, M6E 2J4
Date Began	March 25, 2022

Corporate Name History

Name	DUNDAS LI PROPERTIES INC.
Effective Date	March 25, 2022

Certified a true copy of the record of the Ministry of Public and Business Service Delivery.

V. Quintanilla W.

Director/Registrar

This report sets out the most recent information filed on or after June 27, 1992 in respect of corporations and April 1, 1994 in respect of Business Names Act and Limited Partnerships Act filings and recorded in the electronic records maintained by the Ministry as of the date and time the report is generated, unless the report is generated for a previous date. If this report is generated for a previous date, the report sets out the most recent information filed and recorded in the electronic records maintained by the Ministry up to the "as of" date indicated on the report. Additional historical information may exist in paper or microfiche format.

Active Business Names

This corporation does not have any active business names registered under the Business Names Act in Ontario.

Expired or Cancelled Business Names

This corporation does not have any expired or cancelled business names registered under the Business Names Act in Ontario.

Document List

Filing Name	Effective Date
CIA - Initial Return PAF: Paolo ROVAZZI	April 14, 2022
BCA - Articles of Incorporation	March 25, 2022

All "PAF" (person authorizing filing) information is displayed exactly as recorded in the Ontario Business Registry. Where PAF is not shown against a document, the information has not been recorded in the Ontario Business Registry.

ON: LT 6-22 PL 776 CITY WEST, SAVE AND EXCEPT PART 1 ON EXPROPRATION PLAN AT3576186; SOHO ST PL 776 CITY WEST CLOSED BY WH7880 ; SUBJECT TO AN EASEMENT OVER PART 2 ON EXPROPRATION PLAN AT3576186 AS SET OUT IN AT3576186; CITY OF TORONTO

RECENTLY:
DIVISION FROM 21328-0498

PIN CREATION DATE:
2014/05/07

IFIED

CAPACITY SHARE

ES INC.

TE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO
*DES ALL DOCUMENT TYPES (DELETED INSTRUMENTS NOT INCLUDED) **				
ST REGISTRATION UNDER THE LAND TITLES ACT, TO:				
*TION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *				
CHEATS OR FORFEITURE TO THE CROWN.				
GHTS OF ANY PERSON WHO WCULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF				
OUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY				
TION.				
ASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.				
*ION TO LAND TITLES: 2002/11/25 **				
06/16	AGREEMENT			CITY OF TORONTO
12/20	PLAN REFERENCE			
04/16	CERTIFICATE *CERTIFICATE OF APPROVAL*		METROLINX	
05/07	PLAN EXPROPRIATION *1 & 2*			METROLINX
10/12	CHARGE	$9,200,000	LI LIMITED	ROYAL BANK OF CANADA
10/12	NO ASSGN RENT GEN *AT5881721*		LI LIMITED	ROYAL BANK OF CANADA
06/09	TRANSFER		LI LIMITED	DUNDAS LI PROPERTIES INC.
07/13	CHARGE	$25,000,000	DUNDAS LI PROPERTIES INC.	CHOICE PROPERTIES GP INC.

TE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO
				FIRST CAPITAL (S.C.) CORPORATION
07/13	NO ASSGN RENT GEN		DUNDAS LI PROPERTIES INC.	CHOICE PROPERTIES GP INC. FIRST CAPITAL (S.C.) CORPORATION
ASSIGNS AT6129692				

Rovazzi (Mar 13, 2023 10:14 EDT)

vazzi@li-limited.com

Ownership_Watertight_2400-2440 Dundas

Final Audit Report 2023-03-13

Created:	2023-03-13
By:	Elsa Fancello (elsa@foradevelopments.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAERDLeVJoMOuS5M9Q-y7JfUKWfZKQf7Jk

"Ownership_Watertight_2400-2440 Dundas" History

Document created by Elsa Fancello (elsa@foradevelopments.com)
2023-03-13 - 1:35:46 PM GMT

Document emailed to Paolo Rovazzi (provazzi@li-limited.com) for signature
2023-03-13 - 1:36:15 PM GMT

Email viewed by Paolo Rovazzi (provazzi@li-limited.com)
2023-03-13 - 2:13:45 PM GMT

Document e-signed by Paolo Rovazzi (provazzi@li-limited.com)
Signature Date: 2023-03-13 - 2:14:16 PM GMT - Time Source: server

Agreement completed.
2023-03-13 - 2:14:16 PM GMT

Appendix C
Stormwater Analysis

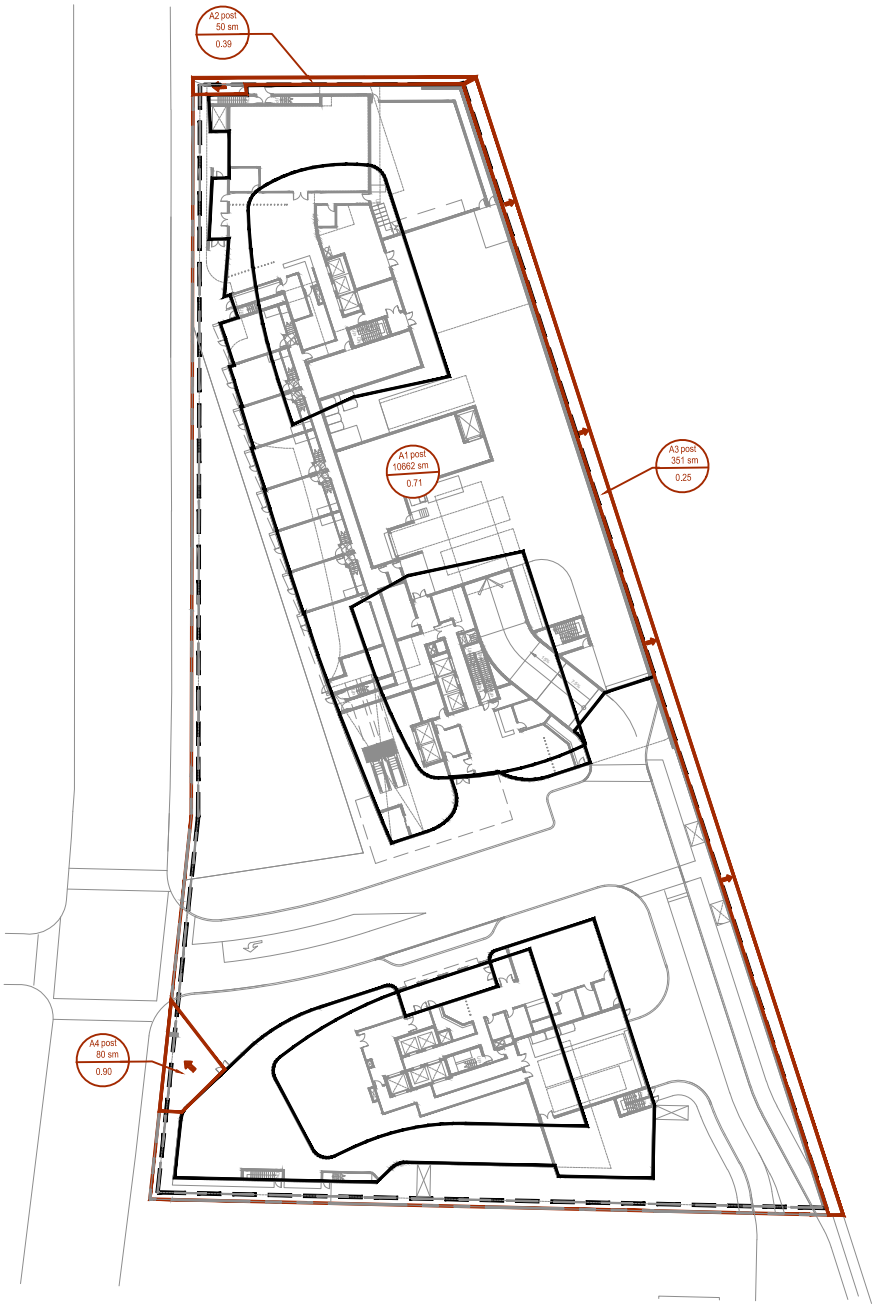
LEGEND

- PROPERTY LINE
- DRAINAGE BOUNDARY
- OVERLAND FLOW DIRECTION

CLIENT: DUNDAS LI PROPERTIES INC 1840 EGLINTON AVE WEST, SUITE 202, TORONTO, ON, M6E 5B2	PROJECT NAME: 2400 DUNDAS STREET WEST	IBI GROUP Unit 300 – 8133 Warden Avenue Markham ON L6G 1B3 Canada tel 905 763 2322 fax 905 763 9983 ibigroup.com	
	SCALE: NTS; DATE: 2022-11-15	FIGURE NAME: PRE-DEVELOPMENT STORM DRAINAGE PLAN	FIGURE NO.: DAP-1; REVISION: 1
	PROJECT ENG: JMJ; DRAWN BY: CG		
	CHECKED BY: JMJ; APPROVED BY: JMJ		
	PROJECT NO: 141003		

File Location: J:\141003_2400Dundas\7.0_Production\7.03_Design\04_CivilSheets\Figures\SWM DAPs.dwg Last Saved: March 2, 2023, by cassidy.goetz Plotted: Thursday, March 2, 2023 12:51:38 PM by Cassidy Goetz

SCALE CHECK 10mm 1 in



LEGEND

- PROPERTY LINE
- DRAINAGE BOUNDARY
- OVERLAND FLOW DIRECTION

CLIENT: DUNDAS LI PROPERTIES INC 1840 EGLINTON AVE WEST, SUITE 202, TORONTO, ON, M6E 5B2	PROJECT NAME: 2400 DUNDAS STREET WEST	IBI GROUP Unit 300 – 8133 Warden Avenue Markham ON L6G 1B3 Canada tel 905 763 2322 fax 905 763 9983 ibigroup.com	
	SCALE: NTS / DATE: 2022-11-15	FIGURE NAME: POST-DEVELOPMENT STORM DRAINAGE PLAN	FIGURE NO.: DAP-2 / REVISION: 1
	PROJECT ENG: JMJ / DRAWN BY: CG		
	CHECKED BY: JMJ / APPROVED BY: JMJ		
	PROJECT NO: 141003		

2400 Dundas Street West

Mixed Use Development

Runoff Coefficients

Project Name: 2400 Dundas Street West
Project Number: 141003
Date: 10 March 2023
Designed By: Cassidy Goetz, P.Eng.

Post Development Controlled (A1)				
Conventional Roof	3,976	37.3%	0.90	0.34
Extensive Green Roof	2,719	25.5%	0.50	0.13
Intensive Green Roof	0	0.0%	0.50	0.00
Landscape	1,407	13.2%	0.25	0.03
Landscape over P1	0	0.0%	0.45	0.00
Permeable Pavers	0	0.0%	0.55	0.00
Impervious (Dirty)	1,401	13.1%	0.90	0.12
Impervious (Clean)	1,159	10.9%	0.90	0.10
Total Area	**10,662**	100%		**0.71**

Post Development Uncontrolled (A2)				
Conventional Roof	0	0.0%	0.90	0.00
Extensive Green Roof	0	0.0%	0.50	0.00
Intensive Green Roof	0	0.0%	0.50	0.00
Landscape	39	78.0%	0.25	0.20
Landscape over P1	0	0.0%	0.45	0.00
Permeable Pavers	0	0.0%	0.55	0.00
Impervious (Clean)	11	22.0%	0.90	0.20
Total Area	**50**	100%		**0.39**

Post Development Uncontrolled (A3)				
Conventional Roof	0	0.0%	0.90	0.00
Extensive Green Roof	0	0.0%	0.50	0.00
Intensive Green Roof	0	0.0%	0.50	0.00
Landscape	351	100.0%	0.25	0.25
Landscape over P1	0	0.0%	0.45	0.00
Permeable Pavers	0	0.0%	0.55	0.00
Impervious (Dirty)	0	0.0%	0.90	0.00
Total Area	**351**	100%		**0.25**

Post Development Uncontrolled (A4)				
Conventional Roof	0	0.0%	0.90	0.00
Extensive Green Roof	0	0.0%	0.50	0.00
Intensive Green Roof	0	0.0%	0.50	0.00
Landscape	0	0.0%	0.25	0.00
Landscape over P1	0	0.0%	0.45	0.00
Permeable Pavers	0	0.0%	0.55	0.00
Impervious (Clean)	80	100.0%	0.90	0.90
Total Area	**80**	100%		**0.90**

2400 Dundas Street West

Mixed Use Development

IBI

ALLOWABLE RELEASE RATE AND STORM SERVICE DESIGN

2 / 100 -YEAR STORM SEWER DESIGN SHEET

$I_{2\text{-year}} = \frac{21.8}{(T)^{0.78}} = 88.19$ mm/hr

$I_{100\text{-year}} = \frac{59.7}{(T)^{0.80}} = 250.32$ mm/hr

Project Name: 2400 Dundas Street West
Project Number: 141003
Date: 10 March 2023
Designed By: Cassidy Goetz, P.Eng.

	From MH	To MH	DESIGN FLOW CALCULATIONS A (ha)	R	A x R	Accum. A x R	T_c (min)	I (mm/hr)	Q_{act} (l/s)	SEWER DESIGN & ANALYSIS Size of Pipe (mm)	Slope (%)	Nominal Capacity Q_{cap} (L/s)	Full Flow Velocity (m/s)	Actual Velocity (m/s)	Length (m)	Time in Sect. (min)	Total Time (min)	Percent of Full Flow (%)	Notes
ALLOWABLE RELEASE RATE																			
Allowable Release Rate (Total Site)			1.1143	0.50	0.557	0.557	10.0	88.2	**136.5**										
Uncontrolled Flow (A2)			0.0050	0.39	0.002	0.002	10.0	250.3	**1.4**										
Uncontrolled Flow (A3)			0.0351	0.25	0.009	0.009	10.0	250.3	**6.1**										
Uncontrolled Flow (A4)			0.0080	0.90	0.007	0.007	10.0	250.3	**5.0**										
Net Allowable Release Rate (SWM Tank)									**124.0**										
100-YEAR FLOWS																			
Subject Site (Un-Attenuated)			1.0662	0.90	0.960	0.960	10.0	250.3	**667.2**										
STORMFILTER / JELLYFISH SIZING																			
2-year			0.1401	0.90	0.126	0.126	10.0	88.2	**30.9**										
5-year			0.1401	0.90	0.126	0.126	10.0	131.8	**46.2**										
100-year			0.1401	0.90	0.126	0.126	10.0	250.3	**87.7**										
ORIFICE AND SERVICE DESIGN				k	Orif.(mm)	Area (m2)	depth (m)	head (m)	Q (L/s)										
Orifice and Storm Service	Cntrl MH	Combined		k=0.8	200	0.03142	1.22	1.12	**120.8**	375	2.00%	248.0	2.2	2.2	5.8	0.0	10.0	49%	

2400 Dundas Street West — **Rational Method - 100 Year Storm**

Mixed Use Development

IBI

$$I_{100\text{-year}} = \frac{59.7}{(10)^{0.80}} = 250.32 \text{ mm/hr}$$

Project Name:	2400 Dundas Street West	Controlled Area =	1.0662
Project Number:	141003	Weighed Runoff Coefficient =	0.71
Date:	10 March 2023	Orifice Discharge (L/s) =	120.8

Time (min)	Intensity (mm/hr)	Q-100 (L/s)	Q-stored (L/s)	Storage Volume (m^3)
0	0.0	0.000	0.000	0.000
10	250.3	528.012	407.170	244.302
20	143.8	303.263	182.422	218.906
30	103.9	219.253	98.412	177.142
40	82.6	174.179	53.338	128.011
50	69.1	145.703	24.862	74.585
60	59.7	125.928	5.087	18.313
70	52.8	111.318	0.000	0.000
80	47.4	100.039	0.000	0.000
90	43.2	91.044	0.000	0.000
100	39.7	83.684	0.000	0.000
110	36.8	77.541	0.000	0.000
120	34.3	72.327	0.000	0.000
130	32.2	67.840	0.000	0.000
140	30.3	63.935	0.000	0.000
150	28.7	60.502	0.000	0.000
160	27.2	57.458	0.000	0.000
170	25.9	54.737	0.000	0.000
180	24.8	52.291	0.000	0.000
190	23.7	50.077	0.000	0.000
200	22.8	48.064	0.000	0.000
210	21.9	46.224	0.000	0.000
220	21.1	44.535	0.000	0.000
230	20.4	42.979	0.000	0.000
240	19.7	41.541	0.000	0.000
250	19.1	40.206	0.000	0.000
260	18.5	38.964	0.000	0.000
270	17.9	37.805	0.000	0.000
280	17.4	36.721	0.000	0.000
290	16.9	35.705	0.000	0.000
300	16.5	34.749	0.000	0.000
310	16.0	33.850	0.000	0.000
320	15.6	33.001	0.000	0.000
330	15.3	32.198	0.000	0.000
340	14.9	31.438	0.000	0.000
350	14.6	30.718	0.000	0.000
360	14.2	30.033	0.000	0.000

Storage Volume Required (cu.m) =	**244.3**
Storage Volume Provided (cu.m) =	**266.0**
HGL Depth (m) =	1.2
Orifice Diameter (mm) =	200

2400 Dundas Street West

Mixed Use Development

IBI

Water Quality Calculations

Project Name: 2400 Dundas Street West
Project Number: 141003
Date: 10 March 2023
Designed By: Cassidy Goetz, P.Eng.

TSS Removal (Un-treated)

Surface	Area (m^2)		Effective TSS Removal	Overall TSS Removal
Conventional Roof	3,976	36%	80	28.5
Extensive Green Roof	2,719	24%	80	19.5
Intensive Green Roof	0	0%	80	0.0
Landscape	1,797	16%	80	12.9
Landscape over P1	0	0%	80	0.0
Permeable Pavers	0	0%	80	0.0
Impervious (Dirty)	1,401	13%	0	0.0
Impervious (Clean)	1,250	11%	80	9.0
Total Area:	**11,143**	100%		**69.9**

Treatment Required

2400 Dundas Street West

Mixed Use Development

Water Balance Calculations

Project Name: 2400 Dundas Street West
Project Number: 141003
Date: 10 March 2023
Designed By: Cassidy Goetz, P.Eng.

Total Volume to be Retained	
Required Water Balance (mm):	5.0
Recall Site Area (m^2):	11,143
Total Water Balance to be Retained (m^3):	**55.7**

Volume Achieved Through Initial Abstraction				
Surface	**Area (m^2)**		**I.A.**	**Vol. (m^3)**
Conventional Roof	3,976		1	4.0
Extensive Green Roof	2,719		5	13.6
Intensive Green Roof	0		7	0.0
Landscape	1,797		5	9.0
Landscape over P1	0		5	0.0
Permeable Pavers	0		5	0.0
Impervious (Dirty)	1,401		1	1.4
Impervious (Clean)	1,250		1	1.3
Total Area:	**11,143**			**29.2**

Water Balance Summary	**Vol. (m^3)**
Recall Initial Abstraction (see above):	29.2
Water Re-Use (Irrigation):	26.5
Water Re-Use (Toilet Flushing):	0.0
Total Water Balance Achieved:	**55.7**

Site Meets City's Water Balance Criteria

Check Tank Capacity to Capture Re-Use Volume	
Area of SWM Tank (m^2):	200.0
Float Switch Operating Range (m):	0.28
Total Water Balance Achieved:	**55.7**

SWM Tank has sufficient capacity for Re-Use Volumes

Determining Number of Cartridges for Flow Based Systems

Date	**02/03/2023**	**Black Cells =**	**Calculation**

Site Information

Project Name	**2400 Dundas St W**		
Project Location	**Toronto, ON**		
OGS ID	**OGS**		
Drainage Area, Ad	**0.35**	ac	(0.1401 ha)
Impervious Area, Ai	**0.35**	ac	
Pervious Area, Ap	**0.00**		
% Impervious	**100%**		
Runoff Coefficient, Rc	**0.90**		
Treatment storm flow rate, Q_{treat}	**0.25**	cfs	(7 L/s)
Peak storm flow rate, Q_{peak}	**3.10**	cfs	(87.7 L/s)

Filter System

Filtration brand	**StormFilter**	
Cartridge height	**18**	in
Specific Flow Rate	**2.00**	gpm/ft²
Flow rate per cartridge	**15.00**	gpm

SUMMARY

Number of Cartridges	8
Media Type	Perlite

Event Mean Concentration (EMC)	**150**	mg/L
Annual TSS Removal	**80%**	
Percent Runoff Capture	**90%**	

Recommend SFPD0608 vault or CIP

200 Enterprise Drive
Scarborough, ME 04074
Phone 877-907-8676
Fax 207-885-9825

Determining Number of Cartridges for Flow Based Systems

Date	**02/03/2023**	**Black Cells =**	**Calculation**

Site Information

Project Name	**2400 Dundas St W**		
Project Location	**Toronto, ON**		
OGS ID	**OGS**		
Drainage Area, Ad	**0.35**	ac	(0.1401 ha)
Impervious Area, Ai	**0.35**	ac	
Pervious Area, Ap	**0.00**		
% Impervious	**100%**		
Runoff Coefficient, Rc	**0.90**		
Treatment storm flow rate, Q_{treat}	**0.25**	cfs	(7 L/s)
Peak storm flow rate, Q_{peak}	**3.10**	cfs	(87.7 L/s)

Filter System

Filtration brand	**StormFilter**	
Cartridge height	**27**	in
Specific Flow Rate	**2.00**	gpm/ft²
Flow rate per cartridge	**22.50**	gpm

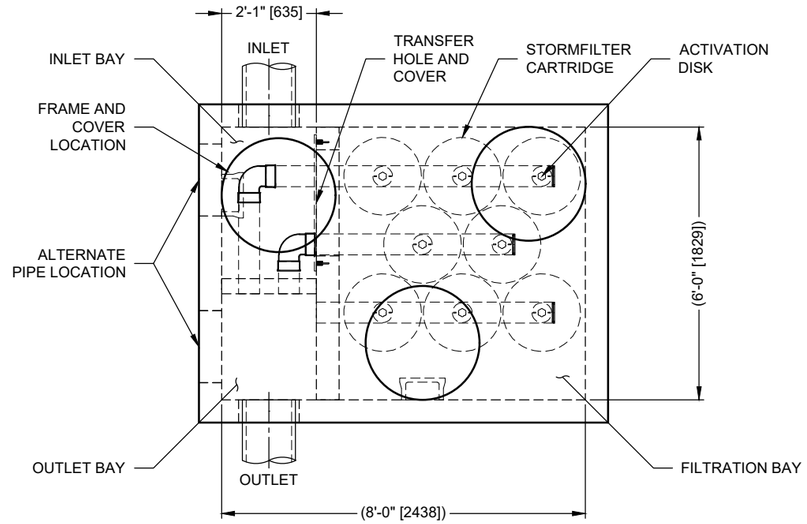
SUMMARY

Number of Cartridges	5
Media Type	Perlite

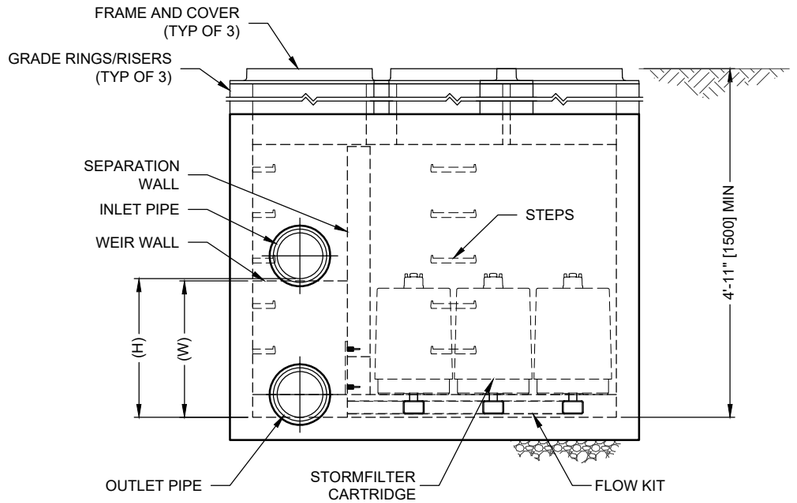
Event Mean Concentration (EMC)	**150**	mg/L
Annual TSS Removal	**80%**	
Percent Runoff Capture	**90%**	

Recommend SFPD0608 vault or CIP

200 Enterprise Drive
Scarborough, ME 04074
Phone 877-907-8676
Fax 207-885-9825



PLAN



ELEVATION

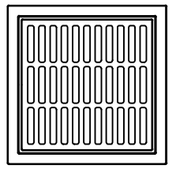
The Stormwater Management StormFilter®

STORMFILTER DESIGN NOTES

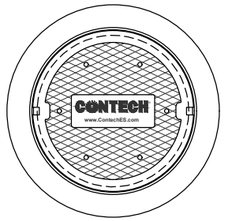
- STORMFILTER TREATMENT CAPACITY VARIES BY CARTRIDGE COUNT AND LOCALLY APPROVED SURFACE AREA SPECIFIC FLOW RATE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD
- A 6' x 8' [1829 x 2438] PEAK DIVERSION STYLE STORMFILTER IS SHOWN WITH THE MAXIMUM NUMBER OF CARTRIDGES (8) AND IS AVAILABLE IN A LEFT INLET (AS SHOWN) OR A RIGHT INLET CONFIGURATION
- ALL PARTS AND INTERNAL ASSEMBLY PROVIDED BY CONTECH UNLESS NOTED OTHERWISE

CARTRIDGE SIZE (in. [mm])	27 [686]			18 [457]			LOW DROP		
RECOMMENDED HYDRAULIC DROP (H) (ft. [mm])	3.05 [930]			2.3 [701]			1.8 [549]		
HEIGHT OF WEIR (W) (ft. [mm])	3.00 [914]			2.25 [686]			1.75 [533]		
SPECIFIC FLOW RATE (gpm/sf [L/s/m^2])	2 [1.36]	1.67* [1.13]*	1 [0.68]	2 [1.36]	1.67* [1.13]*	1 [0.68]	2 [1.36]	1.67* [1.13]*	1 [0.68]
CARTRIDGE FLOW RATE (gpm [L/s])	22.5 [1.42]	18.79 [1.19]	11.25 [0.71]	15 [0.95]	12.53 [0.79]	7.5 [0.47]	10 [0.63]	8.35 [0.53]	5 [0.32]

* 1.67 gpm/sf [1.13 L/s/m^2] SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY



FRAME AND GRATE
(24" SQUARE)
(NOT TO SCALE)



FRAME AND COVER
(30" ROUND)
(NOT TO SCALE)

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (cfs [L/s])	
PEAK FLOW RATE (cfs [L/s])	
RETURN PERIOD OF PEAK FLOW (yrs)	
CARTRIDGE FLOW RATE	
CARTRIDGE SIZE (27, 18, LOW DROP (LD))	
MEDIA TYPE (PERLITE, ZPG, PSORB)	
NUMBER OF CARTRIDGES REQUIRED	
INLET BAY RIM ELEVATION	
FILTER BAY RIM ELEVATION	

PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			

NOTES/SPECIAL REQUIREMENTS:

PERFORMANCE SPECIFICATION

FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7" [178].** FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **37 SECONDS**. SPECIFIC FLOW RATE SHALL BE **2 GPM/SF [1.36 L/s/m^2] (MAXIMUM)**. SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **6 GPM/CF [13.39 L/s/m^3] OF MEDIA (MAXIMUM).**

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. ALTERNATE DIMENSIONS ARE IN MILLIMETERS [mm] UNLESS NOTED OTHERWISE.
4. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.ContechES.com
5. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
6. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 10' [3048] AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH OUTLET PIPE INVERT WITH OUTLET BAY FLOOR.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
F. CONTRACTOR TO REMOVE THE TRANSFER OPENING COVER WHEN THE SYSTEM IS BROUGHT ONLINE.

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

SFPD0608 (6' x 8')
PEAK DIVERSION STORMFILTER
STANDARD DETAIL

Appendix D
Sanitary Analysis

Sanitary Design Calculations

2400 Dundas Street W

Mixed use development

IBI

Sanitary Sewer Design Sheet

NOTES: Post-development domestic sewage flow based upon a unit flow of 240.0 Lpcd.
Maximum flow velocity for pipe flowing full = 3.0 m/s.
Minimum flow velocity for pipe flowing partially full (actual flow) = 0.6 m/s.
Infiltration= 0.26 L/s/ha
Mannings= 0.013

Project Name: 2400 Dundas Street W
Project Number: 141003
Date: March 10, 2023
Designed By: Cassidy Goetz, P.Eng.

	From	To	DESIGN FLOW CALCULATIONS: Area (ha)	Density	Population	Cumulative Area (ha)	ICI Population	Residential Population	Peaking Factor	Sewage Flow (L/s) (1)	Infiltration Flow (L/s) (2)	Ground Water (L/s) (3)	Stormwater Flow (L/s) (4)	Total Flow, Qd (L/s) (1)+(2)+(3)+(4)	SEWER DESIGN & ANALYSIS: Nominal Diameter (mm)	Pipe Slope (%)	Pipe Length (m)	Full Flow Capacity, Qf (L/s)	Full Flow Velocity (m/s)	Actual Velocity V (m/s)	Percent of Full Flow (%)	Notes
FLOWS TO 1050 mm COMBINED SEWER																						
Pre-Development																						
Sanitary Flows			1.1100		34	1.1100	34		4.34	0.10	0.29	0.0	0.0	0.4								
Storm Flows			0.0000	--	--	0.0000	--		--	--	--	--	0.0	0.0								
														0.4	← Total Pre-Development Flow to 1050 mm Combined Sewer							
Post-Development																						
Sanitary Flows			1.1100		1545	1.1100	42	1504	3.67	15.45	0.29	0.0	0.0	15.7								
Storm Flows														0.0								
														15.7	← Total Post-Development Flow to 1050 mm Combined Sewer							
Compliance with F-5-5																						
														-15.4	← Reduction in Flows (does not comply with F-5-5)							
Post-Development (Using 450 L/cd) For Sanitary Service Design																						
Sanitary Flows (Tower A1)			0.2775		289	0.2775	289		4.09	6.15	0.07	0.0	0.0	**6.2**	200	2.0%	10.0	48.4	1.49	1.03	12.9%	Serivce Design
Sanitary Flows (Tower A2)			0.2775		423	0.2775	423		4.01	8.84	0.07	0.0	0.0	**8.9**	200	2.0%	10.0	48.4	1.49	1.14	18.4%	Serivce Design
Sanitary Flows (Tower B)			0.2775		727	0.2775	727		3.88	14.71	0.07	0.0	0.0	**14.8**	200	2.0%	10.0	48.4	1.49	1.31	30.6%	Serivce Design
Sanitary Flows (Podium)			0.2775		106	0.2775	106		4.24	2.34	0.07	0.0	0.0	**2.4**	200	2.0%	10.0	48.4	1.49	0.77	5.0%	Serivce Design

Pre-Development

	Units / Area	Density	Population
Retail	3125 m2	1.1 pp/100m2	34
			0
	Total Pre-Dev. Population =		**34**

Post-Development (Tower A1)

	Units / Area	Density	Population
1 Bedroom	103	1.4 pp/unit	144
2 Bedroom	41	2.1 pp/unit	86
3 Bedroom	19	3.1 pp/unit	59
Total Units =	**163**		**289**

Post-Development (Tower A2)

	Units / Area	Density	Population
1 Bedroom	150	1.4 pp/unit	210
2 Bedroom	66	2.1 pp/unit	139
3 Bedroom	24	3.1 pp/unit	74
Total Units =	**240**		**423**

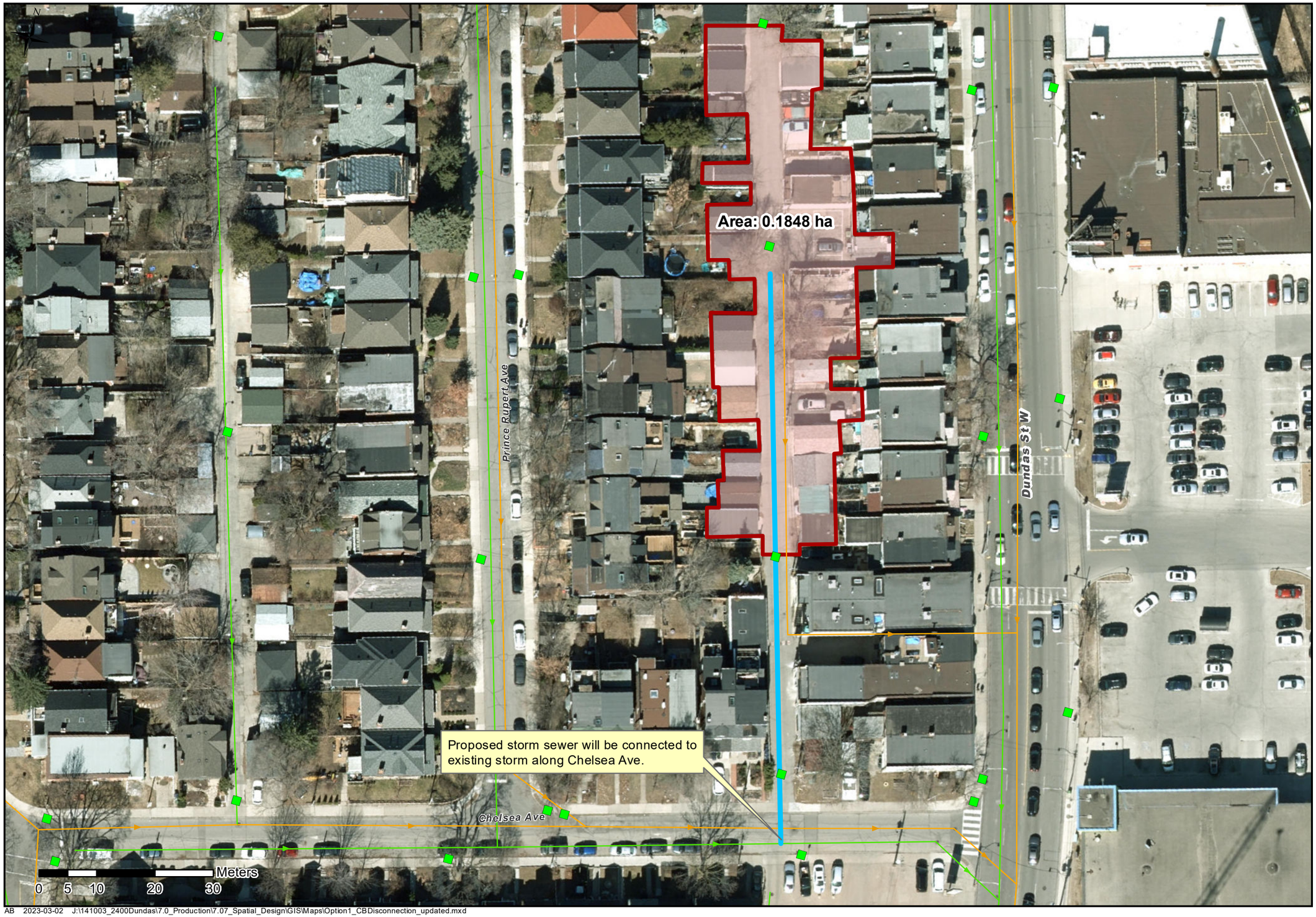
Post-Development (Tower B)

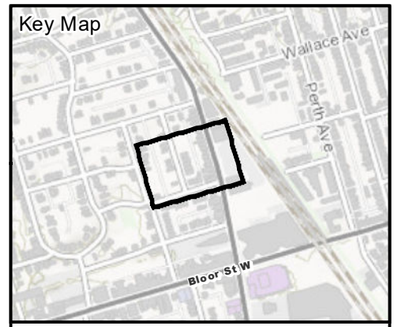
	Units / Area	Density	Population
1 Bedroom	317	1.4 pp/unit	444
2 Bedroom	70	2.1 pp/unit	147
3 Bedroom	44	3.1 pp/unit	136
Total Units =	**431**		**727**

Post-Development (Podium)

Retail	3793 m2	1.1 pp/100m2	42
1 Bedroom	28	1.4 pp/unit	39
2 Bedroom	9	2.1 pp/unit	19
3 Bedroom	2	3.1 pp/unit	6
	39		**106**

Chelsea Avenue Alleyway - Catchbasin Disconnection and Storm Sewer Installation





Legend

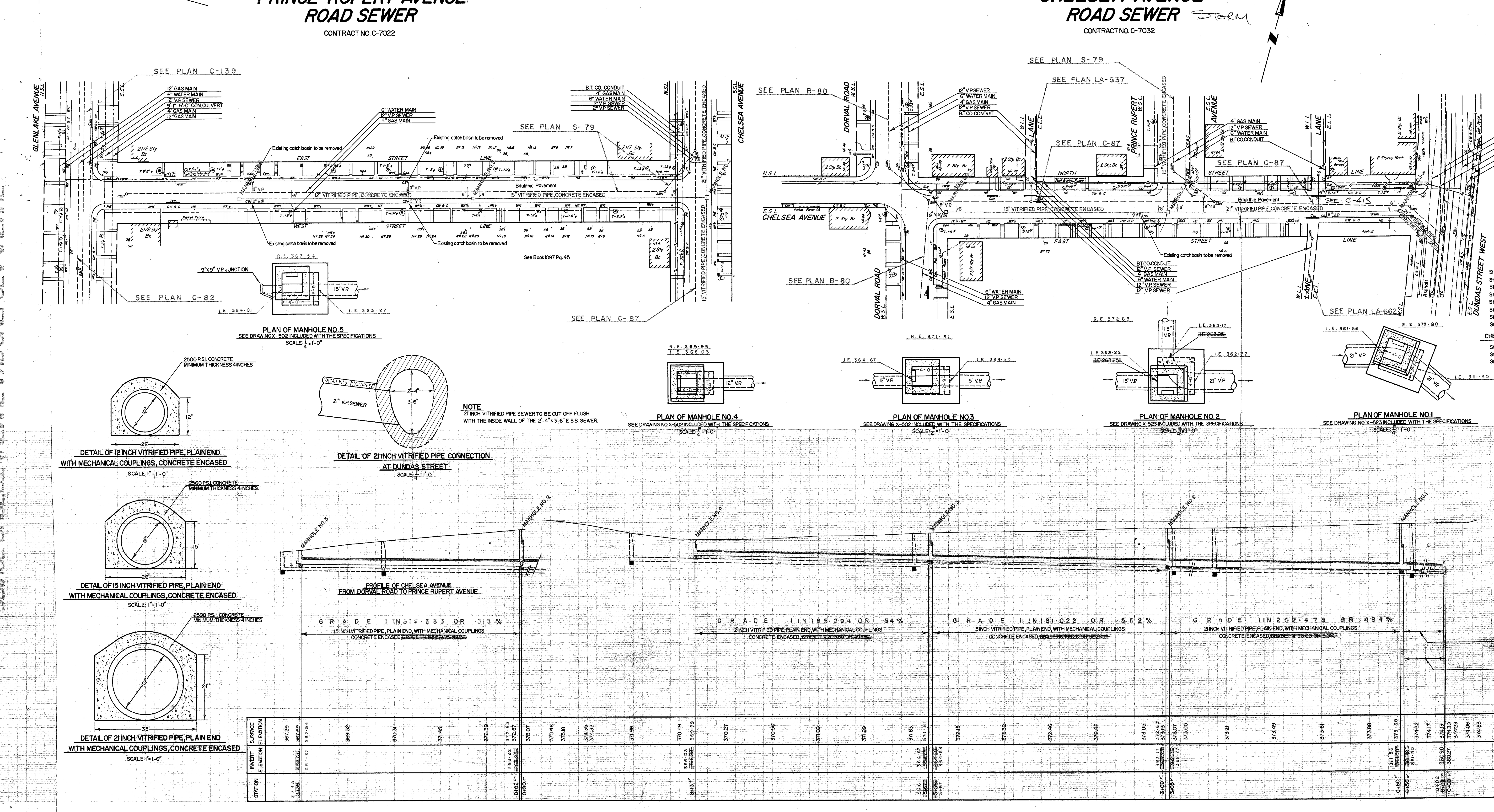
- Catchbasin
- Combined Sewer
- Sanitary Sewer
- Storm Sewer
- Proposed Storm Sewer
- Disconnected Area

Catchbasin Disconnection and
Storm Sewer Extension
2400-2440 Dundas Street West
City of Toronto

ARCADIS | IBI GROUP

Project No.:	Date:
141003	March 2023

AB 2023-03-02 J:\141003_2400Dundas\7.0_Production\7.07_Spatial_Design\GIS\Maps\Option1_CBDisconnection_updated.mxd



ALL MANHOLE TOPS, FRAMES AND STEPS WILL BE SUPPLIED BY THE CITY, BUT ARE TO BE HAULED BY THE CONTRACTOR FROM A CORPORATION YARD AT HIS OWN EXPENSE.

THE CONTRACTOR SHALL SUPPLY ALL SEWER PIPE, DRAIN PIPE, FITTINGS AND LINER PLATE.

MANHOLES (BRICK OR CONCRETE) ARE TO BE OF BRICKWORK 2'-2" DIAMETER ABOVE A POINT 1'-6" BELOW FUTURE ROADWAY GRADE.

MANHOLES WILL FINISH 2'-2" DIAMETER AT EXISTING SURFACE UNLESS OTHERWISE SHOWN ON PLAN.

THIS IS ONE OF THE DRAWINGS REFERRED TO IN MY CONTRACT WITH THE CITY.
REGENT CONSTRUCTION COMPANY
President
DATED 8 APRIL 1963
WITNESS

WORK COMMENCED 4-2-1963
WORK COMPLETED 6-4-1963
FINAL MEASUREMENT BOOK F-23 PAGE 1-6 DATE 25-4-1963
INSPECTOR D. JOYCE.
LAYOUT W. F. WALL.
SUPERVISING ENGINEER G. MARTIN.

CHELSEA AVENUE PRINCE RUPERT AVENUE

Station 1+37 south side, catch basin to be connected to new sewer.
Station 1+45 north side, catch basin to be connected to new sewer.
Station 2+68 north side, new catch basin to be constructed.
Station 2+81 north side, existing catch basin to be abandoned.
Station 6+30 east side, catch basin to be constructed.
Station 6+30 west side, catch basin to be constructed.
Station 8+00 east side, catch basin to be constructed.
Station 8+01 west side, catch basin to be constructed.

CHELSEA AVENUE, PRINCE RUPERT AVENUE TO DORVAL ROAD

Station 0+28 south side, catch basin to be constructed.
Station 2+44 south side, catch basin to be connected to new sewer.
Station 2+52 north side, catch basin to be connected to new sewer.

All catch basins shall be connected to new sewer. Extras and deductions will be paid for at scheduled rates based on horizontal measurements from the catch basin to the sewer. See quantities below.
All private drains encountered shall be supported across the trench. The contractor shall lower drains where this is required and all work involved will be paid for at sheduled rates. Catch basins are to be reconnected to new sewer.
Tunnels and trenches shall be back filled with granular material. See Clauses 12.02 and 14.10 Granular Back Fill in the Specifications for sewers.
The contractor shall supply and place temporary paving material. See Clauses 13.01 and 14.11 in the Specifications for Sewers.
Make necessary connection to existing sewer.
Abandoned catch basins to be backfilled with granular material. Walls to be cut down 2'-0" below road grade. Outlets to be bulkheaded with 9 inches of concrete.
See Drawing X-498 for detail of supporting services.

QUANTITIES CONTRACT NO. C-7032, C-7022

174 – FEET OF 9 INCH VITRIFIED PIPE.
~~251~~ 252 – FEET OF 12 INCH VITRIFIED PIPE, PLAIN END, WITH MECHANICAL COUPLINGS, CONCRETE ENCASED.
492 – FEET OF 15 INCH VITRIFIED PIPE, PLAIN END, WITH MECHANICAL COUPLINGS, CONCRETE ENCASED.
309 – FEET OF 21 INCH VITRIFIED PIPE, PLAIN END, WITH MECHANICAL COUPLINGS, CONCRETE ENCASED.
5 – MANHOLES
1 – 9 BY 9 INCH VITRIFIED PIPE JUNCTION
3 – 9 INCH VITRIFIED PIPE SLANTS
1 9 BY 15 INCH VITRIFIED PIPE JUNCTION
4 9 BY 12 INCH VITRIFIED PIPE JUNCTIONS
6 CATCH BASINS
TOTAL LENGTH OF CONTRACT ~~1052~~ 1053 FEET.

APPROVED BY
ONTARIO WATER RESOURCES COMMISSION
DATE Dec 28/62 62-A-987

REVISION

CITY OF TORONTO
DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

CHELSEA AVENUE
FROM DUNDAS STREET TO DORVAL ROAD
PRINCE RUPERT AVENUE
FROM CHELSEA AVENUE TO GLENLAKE AVENUE

ROAD SEWER

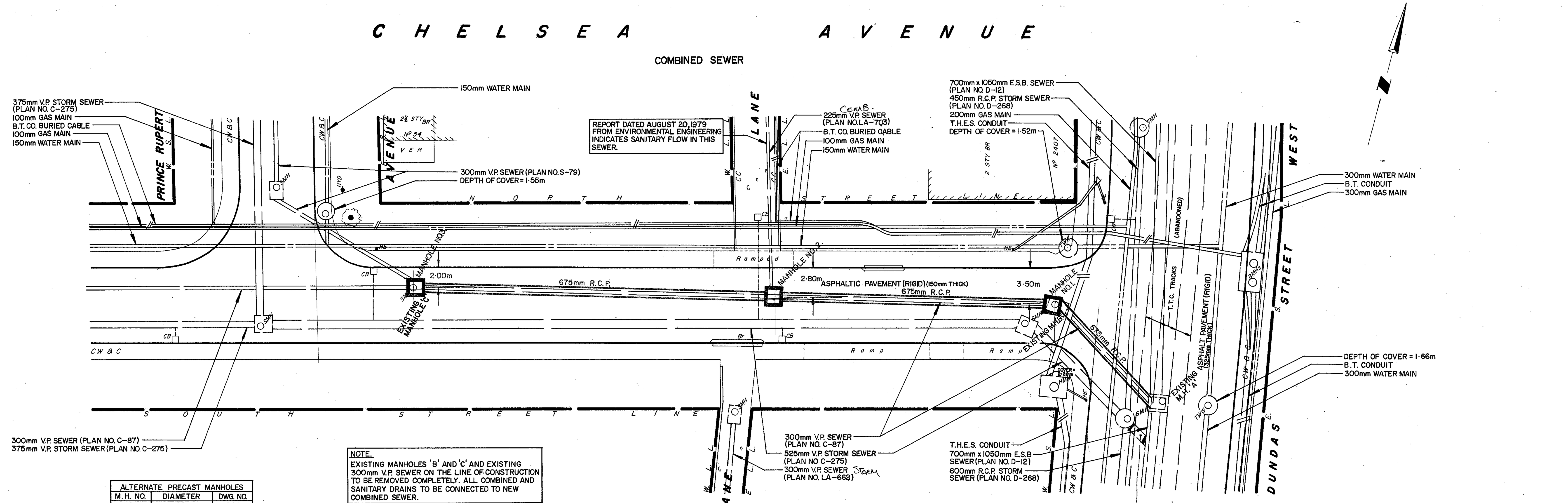
DRAWN BY R.K. — DESIGNED BY — DIRECTOR, ENGINEERING DIVISION
NOV. 19/62 — HOR. 1" = 40'-0" VERT. 1" = 10'-0" — CONTRACT NO. C-7032, C-7022 — DRAWING NO. C-275

C-275

ROAD SEWER
PRINCE RUPERT AVENUE FROM DUNDAS STREET TO GLENLAKE AVENUE AND CHELSEA AVENUE

CHELSEA AVENUE

COMBINED SEWER



375mm V.P. STORM SEWER (PLAN NO. C-275)
100mm GAS MAIN
B.T. CO. BURIED CABLE
100mm GAS MAIN
150mm WATER MAIN
PRINCE RUPERT
150mm WATER MAIN
AVENUE
300mm V.P. SEWER (PLAN NO. S-79)
DEPTH OF COVER = 1·55m
REPORT DATED AUGUST 20,1979 FROM ENVIRONMENTAL ENGINEERING INDICATES SANITARY FLOW IN THIS SEWER.
LANE
225mm V.P. SEWER (PLAN NO. LA-703)
B.T. CO. BURIED CABLE
100mm GAS MAIN
150mm WATER MAIN
700mm x 1050mm E.S.B. SEWER (PLAN NO. D-12)
450mm R.C.P. STORM SEWER (PLAN NO. D-268)
200mm GAS MAIN
T.H.E.S. CONDUIT
DEPTH OF COVER = 1·52m
(ABANDONED)
WEST
300mm WATER MAIN
B.T. CONDUIT
300mm GAS MAIN
N O R T H S T R E E T L I N E
2·00m
675mm R.C.P.
2·80m
ASPHALTIC PAVEMENT (RIGID) (150mm THICK) 675mm R.C.P.
3·50m
T.T.C. TRACKS
STREET
DEPTH OF COVER = 1·66m
B.T. CONDUIT
300mm WATER MAIN
S O U T H S T R E E T L I N E
DUNDAS
300mm V.P. SEWER (PLAN NO. C-87)
375mm V.P. STORM SEWER (PLAN NO. C-275)
NOTE.
EXISTING MANHOLES 'B' AND 'C' AND EXISTING 300mm V.P. SEWER ON THE LINE OF CONSTRUCTION TO BE REMOVED COMPLETELY. ALL COMBINED AND SANITARY DRAINS TO BE CONNECTED TO NEW COMBINED SEWER.
LANE
300mm V.P. SEWER (PLAN NO. C-87)
525mm V.P. STORM SEWER (PLAN NO C-275)
300mm V.P. SEWER (PLAN NO. LA-662)
T.H.E.S. CONDUIT
700mm x 1050mm E.S.B SEWER (PLAN NO. D-12)
600mm R.C.P. STORM SEWER (PLAN NO. D-268)

NOTE.
CONTRACTOR TO ADJUST DRAIN CONNECTIONS ON NORTH SIDE OF CHELSEA AVENUE BETWEEN MANHOLES NOS. 1 and 3 AS REQUIRED.

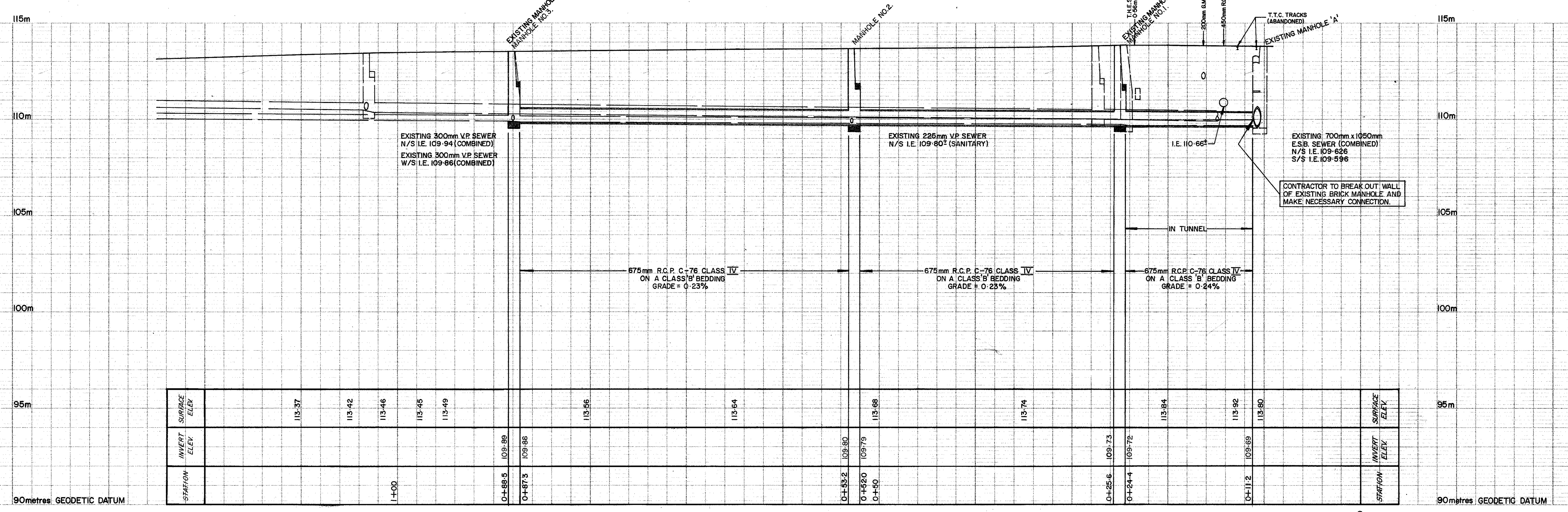
ALTERNATE PRECAST MANHOLES		
M. H. NO.	DIAMETER	DWG. NO.
1	1.20 m	322
2	1.20 m	322
3	1.20 m	322

FOR DETAILS OF MANHOLES NOS. 1,2 and 3 SEE DRAWINGS NOS. 325 and 328. (MINIMUM 1·8m HEADROOM.

NOTE.
ABANDONED T.T.C. TRACK ALLOWANCE CONSISTS OF RAILS ON WOOD TIES SET IN CONCRETE ON A 225mm CONCRETE FOUNDATION SLAB. TOP OF RAIL TO UNDERSIDE OF SLAB = 600mm±. TRACK ALLOWANCE HAS BEEN SURFACED OVER WITH ASPHALT.

MAXIMUM TRENCH WIDTHS		
SIZE OF PIPE	DEPTH	
	1.20 m to 4.5 m	4.5 m to 6.00 m
300 mm	1.25 m	1.30 m
375 mm	1.25 m	1.45 m
450 mm	1.25 m	1.50 m
525 mm	1.35 m	1.60 m
600 mm	1.45 m	1.70 m
675 mm	1.55 m	1.80 m
750 mm	1.60 m	1.85 m
825 mm	1.70 m	1.95 m
900 mm	1.80 m	2.05 m

CHELSEA AVENUE
COMBINED SEWER



115m
110m
105m
100m
95m
90metres GEODETIC DATUM
EXISTING MANHOLE 'C' MANHOLE NO.3
MANHOLE NO.2
T.H.E.S. CONDUIT
EXISTING MANHOLE 'B' MANHOLE NO.1
T.T.C. TRACKS (ABANDONED)
EXISTING MANHOLE 'A'
EXISTING 300mm V.P. SEWER N/S I.E. 109·94 (COMBINED)
EXISTING 300mm V.P. SEWER W/S I.E. 109·86 (COMBINED)
EXISTING 225mm V.P. SEWER N/S I.E. 109·80± (SANITARY)
I.E. 110·66±
EXISTING 700mm x 1050mm E.S.B. SEWER (COMBINED) N/S I.E. 109·626 S/S I.E. 109·596
CONTRACTOR TO BREAK OUT WALL OF EXISTING BRICK MANHOLE AND MAKE NECESSARY CONNECTION.
IN TUNNEL
675mm R.C.P. C-76 CLASS IV ON A CLASS 'B' BEDDING GRADE = 0·23%
675mm R.C.P. C-76 CLASS IV ON A CLASS 'B' BEDDING GRADE = 0·23%
675mm R.C.P. C-76 CLASS IV ON A CLASS 'B' BEDDING GRADE = 0·24%
SURFACE ELEV. 113·37 113·42 113·46 113·45 113·49 113·56 113·64 113·68 113·74 113·84 113·92 113·80
INVERT ELEV. 109·89 109·88 109·80 109·79 109·73 109·72 109·69
STATION 1+00 0+88·5 0+87·3 0+53·2 0+52·0 0+50 0+25·6 0+24·4 0+11·2 0+00

WORK COMMENCED
WORK COMPLETED
FINAL MEASUREMENT BOOK .... PAGE .... DATE ....
INSPECTOR
LAYOUT
SUPERVISING ENGINEER

GEODETIC BENCH MARK NO. 218 ELEVATION 114·759.
" " " " 1453 " 109·119.
LOOSE LEAF NOTES NO. 5900.

APPROVED BY
MINISTRY OF THE ENVIRONMENT
PROVINCE OF ONTARIO
APPROVAL NO. 3-1244-80-006
DATE November 17, 1980

CIVIL
R. M. BREMNER

CITY OF TORONTO
DEPARTMENT OF PUBLIC WORKS

COMBINED SEWER

CHELSEA AVENUE

FROM DUNDAS STREET WEST TO PRINCE RUPERT AVENUE

DRAWING NO. C-415	SCALES HOR. 1:200 VER. 1:100
for SENIOR DESIGN ENG.	DESIGN BY
SENIOR PROJECT ENG.	DRAWN BY G. KWACZEK A. J. DEARING
for DIRECTOR	CONTRACT NO.
COMMISSIONER B. M. Bremner	DATE AUGUST, 1980

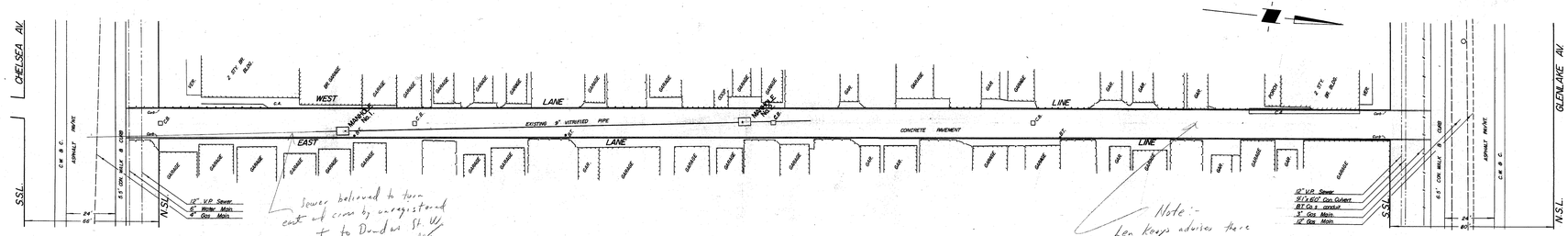
2'x5' = 10 s.f. = 0·93m²

C-415

C-231
C-415
C-72
C-139
D-12

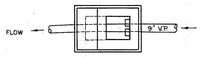
LANE 100' WEST OF DUNDAS STREET W.

176017 (2-WP)

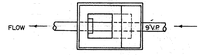


Sewer believed to turn east at corner by unregistered easement to Dundas St. W. location unknown
Feb. 4/81

Note:-
Len Keays advises there is now a 12" sewer south from Glenlake. Owners advise it was constructed by City (Dept Labour?) No record of such.
Feb. 4/81

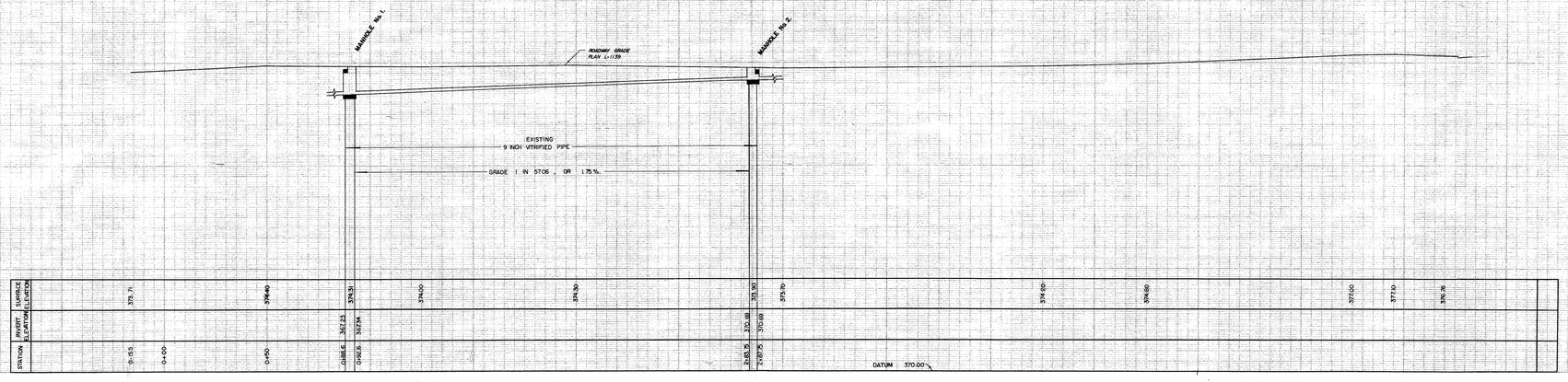


PLAN OF MANHOLE No. 1
SCALE 1/4" = 1'0"



PLAN OF MANHOLE No. 2
SCALE 1/4" = 1'0"

Date of construction is unknown.
Plan has been traced from 'Roadway plan L-1139.'
Sewer information taken from 'Field Book # 1094, page 52-55, 110.4, 1963.)



REVISION

CITY OF TORONTO
DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION

LANE 100' WEST OF DUNDAS STREET W.
CHELSEA AVE. TO GLENLAKE AVE.

DRAWN BY T.K.M. EXAMINED BY
CHECKED BY APPROVED DIRECTOR, ENGINEERING DIVISION
DATE MAY., 1963. SCALE HOR. 1" = 20' VERT. 1" = 10'
CONTRACT NO.
DRAWING NO. LA-703.

LA-703.

LANE 100 WEST OF DUNDAS ST. W.
CHELSEA AVE. TO GLENLAKE AVE.

Appendix E
Water Analysis

Hydrant Flow Test

Water Demand, Fire Demand, and Hazen-Williams Calculations

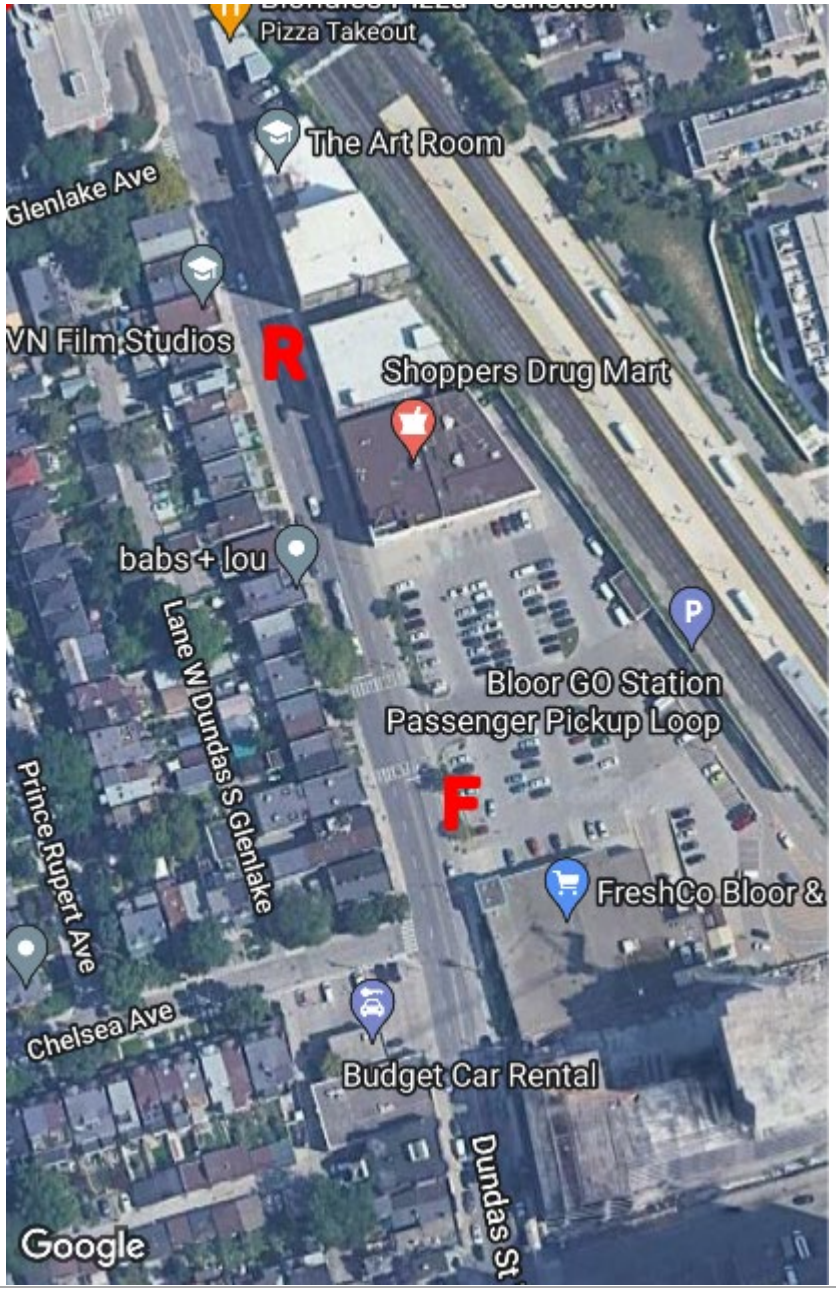
HYDRANT FLOW TESTING

NOTE: Hydrants tested according to NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants

Date of Testing	28 Oct 2022
Test ID	H2022-068
Project Number:	141003
Site Location / Address:	2400 Dundas Street West
Region / Municipality	Toronto
Hydrants Opened By:	Toronto
Tested by:	Daniel S

HYDRANT TEST LOCATION - RESIDUAL HYDRANT=R, FLOW HYDRANT=F (NORTH AT TOP)

.



Test Data

Time of Test	9:52 AM
Pipe Size (mm)	-
Flow Hydrant Test Location (description)	2411 Dundas st w
Residual Hydrant Test Location (description)	2454 Dundas st w
Static Pressure(PSIG)	51

Q1 Test Data (1 Orifice)

# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
1	2.5	18	712	49

QT Test Data (2 Orifices)

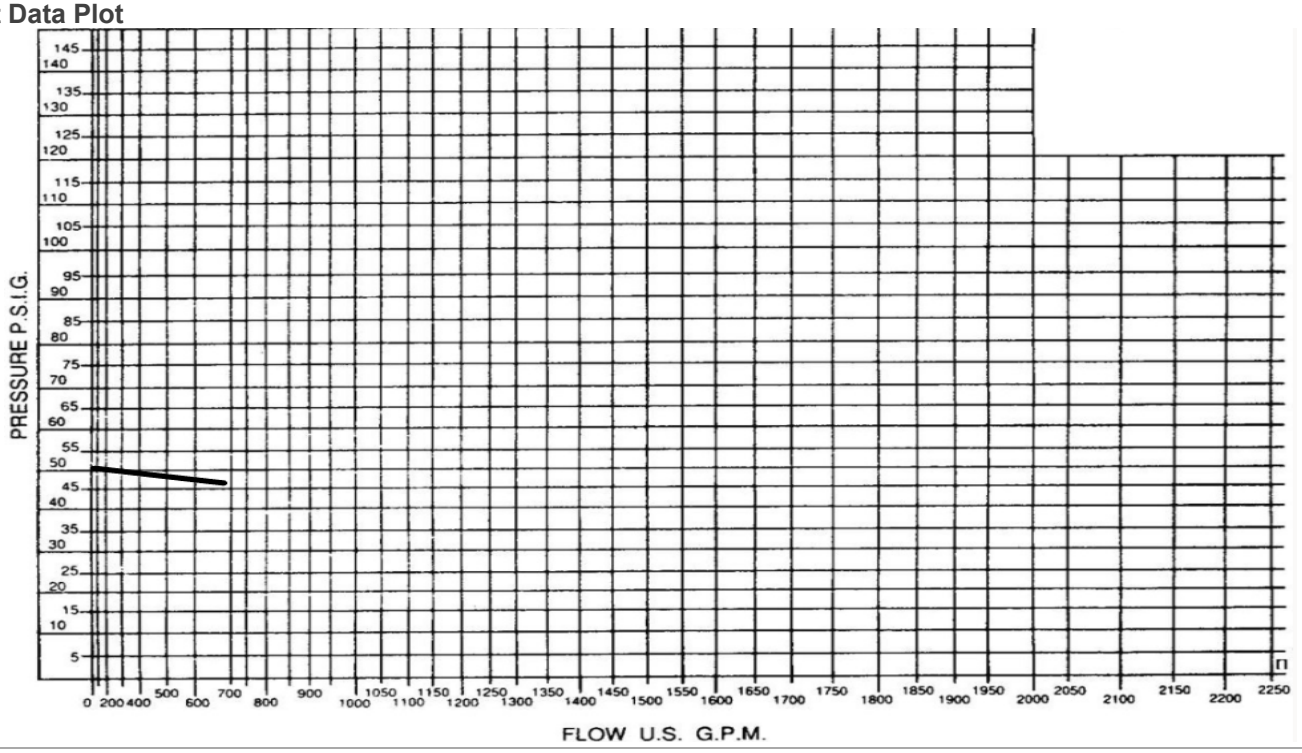
# OUTLETS	ORIFICE SIZE(IN)	PITOT PRESSURE(PSIG)	FLOW(USGPM)	RESIDUAL PRESSURE(PSIG)
2	2.5	4	671	46

Calculations

FORMULA: Q= 29.83 cd^2√p.....Where: c- coefficient of discharge (1 in smooth pipe)
..... d- pipe diameter (inches)
.....p- pitot reading (psig)

Q1 - 1 Orifice(s)	Q1= (29.83)(0.9)(2.5)^2 √18=712
QT - 2 Orifice(s)	QT= 2(29.83)(0.9)(2.5)^2 √4=671
Static Pressure(PSIG)	51

Test Data Plot



2400 Dundas Street W

Mixed-use development

IBI

DOMESTIC WATER DEMAND CALCULATIONS

Project Name: 2400 Dundas Street W
Project Number: 141003
Date: March 10, 2023
Designed By: Cassidy Goetz, P.Eng.

1. Based on the City of Toronto Standards and
2. OBC, Part 8 "Sewage Systems", OBC Table 8.2.1.3.A and 8.2.1.3.B
3. ADD = 190 L/cap/day for residential uses

Peaking Factors		
Land Use	Peak Hour	Maximum Day
Residential	2.50	1.30
Commercial	1.20	1.10

					(ADDxP.F.)	*(ADDxP.F.)*
	Units	Density	Population	ADD (L/s)	PHD (L/s)	MDD (L/s)
1 Bedroom	598 units	1.4 pp/unit	837	1.8	4.6	2.4
2 Bedroom	186 units	2.1 pp/unit	391	0.9	2.1	1.1
3 Bedroom	89 units	3.1 pp/unit	276	0.6	1.5	0.8
Totals =	**873 units**		**1,504**	**3.31**	**8.27**	**4.30**

					(ADDxP.F.)	*(ADDxP.F.)*
	Area	Density	Population	ADD (L/s)	PHD (L/s)	MDD (L/s)
Office	0 m2	3.3 pp/100m2	0	0.0	0.0	0.0
Retail	4672 m2	1.1 pp/100m2	51	0.1	0.1	0.1
Totals =	**4672 m2**		**51**	**0.11**	**0.14**	**0.12**

Population	ADD (L/s)	PHD (L/s)	MDD (L/s)
1,555	**3.42**	**8.40**	**4.42**

2400 Dundas Street W

Mixed-use development

FIRE FLOW DEMAND CALCULATIONS

IBI

Project Name: 2400 Dundas Street W
Project Number: 141003
Date: March 10, 2023
Designed By: Cassidy Goetz, P.Eng.

Based on the Water Supply for Public Fire Protecetion Manual, 1999 by the Fire Underwriters Survey

Step 1: Calculate Fire Flow (based on area)

Construction Coefficient =	0.6	
Largest Floor Area =	5,174	m2
Floor Above =	3,186	m2
Floor Below =	6,018	m2
Area =	7,475	m2
Fire Flow (F) =	**11,000**	L/min

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

F = required fire flow (L/min)
C = coefficient related to type of construction
0.6 for fire resistive (fully protected, 3-hr ratings)
0.8 for non combustable (i.e. unprotected metal buildings)
1.0 for ordinary construction
1.5 for wood frame construction
A = total floor area excluding basements 50% below grade

** If vertical openings are inadequately protected, consider two largest two largest adjoining floors plus 50% of each of any floors above up to eight floors.*

** If vertical openings are adequately protected (one hour rating), consider largest floor area + 25% of two immediately floors.*

Step 2: Adjustment for Building Occupancy (shall not be less than 2000 L/s)

Occupancy Adjustment =	-0.15	
F_1 = Fire Flow x Adjustment =	**9,350**	L/min

Non-Combust.	-25%	Free Burning	15%
Limited Comb.	-15%	Rapid Burning	25%
Combustable	No change		

Step 3: Adjust F1 for Fire Supression System

Sprinkler Adjustment =	50%	
$F_2 = F_1$ x Adjustment =	**4,675**	L/min

Automatic Sprinklers (monitored)	-50%
Adequatly Designed System	-30%

Step 4: Adjust F1 for Exposure / Proximity (shall not exceed 75%)

Proximity Adjustment =	55%	(max 75%)
$F_3 = F_1$ x Factor =	**5,143**	L/min

(2m, 22m, 12m, >45m)

Separation	Adjustment	Separation	Adjustment
0m to 3m	25%	20.1m to 30m	10%
3.1m to 10m	20%	30.1m to 45m	5%
10.1m to 20m	15%		

Step 5: Calculate Adjusted Fire Flow (shall not be less than 2000 L/min or greater than 45,000 L/min)

F_1 =	9,350	L/min
- F_2 =	4,675	L/min
+ F3 =	5,143	L/min
Fire Flow =	10,000	L/min
Fire Flow =	**166.7**	L/s
Total Demand (Fire Flow + MDD) =	**171.1**	L/s

$$\text{Fire Flow} = F_1 - F_2 + F_3$$

Checks:

Fire Flow greater than 2000 L/min

Fire Flow less than 45,000 L/min

MCW Consultants Ltd.

Queen's Quay Terminal
207 Queen's Quay West,
Suite 615
Toronto, Ontario M5J 1A7

Phone (416) 598-2920
Fax (416) 598-5394
Internet: www.mcw.com

March 6th, 2023

Attention: Executive Director, Engineering and Construction Services

c/o Manager, Development Engineering

cc: General Manager, Toronto Water
c/o Manager, Development Engineering
2400-2440 Dundas Street West – Toronto, Ontario
FORA Developments

Dear Sir or Madam,

This letter is to confirm that the above referenced building will be fully sprinklered and designed to meet NFPA 13 and all applicable codes and standards.

The water supply will be standard for both sprinkler system and fire standpipe system required and the sprinkler system and standpipe system will be fully monitored and supervised.

In the event that you require any additional information please do not hesitate to contact us.

Yours truly,

Agustin Olt
P.Eng (Mechanical)
aolt@mcw.com

giannone petricone associates

96 Spadina Avenue, Suite 900
Toronto, Canada M5V 2J6

gpaia.com
416 591 7788

9 March 2023

Engineering & Construction Services
City of Toronto

Metro Hall, 16th Floor.
55 John Street
Toronto, ON

To whom it may concern,

Reference: 2400-2440 Dundas St W, Toronto, ON

Please be advised that the above-referenced building will be constructed in compliance with the 2015 Ontario Building Code (OBC), and equipped with a Fire Protection System conforming to the NFPA 13 Standards for Installation of Sprinkler Systems and specifically:

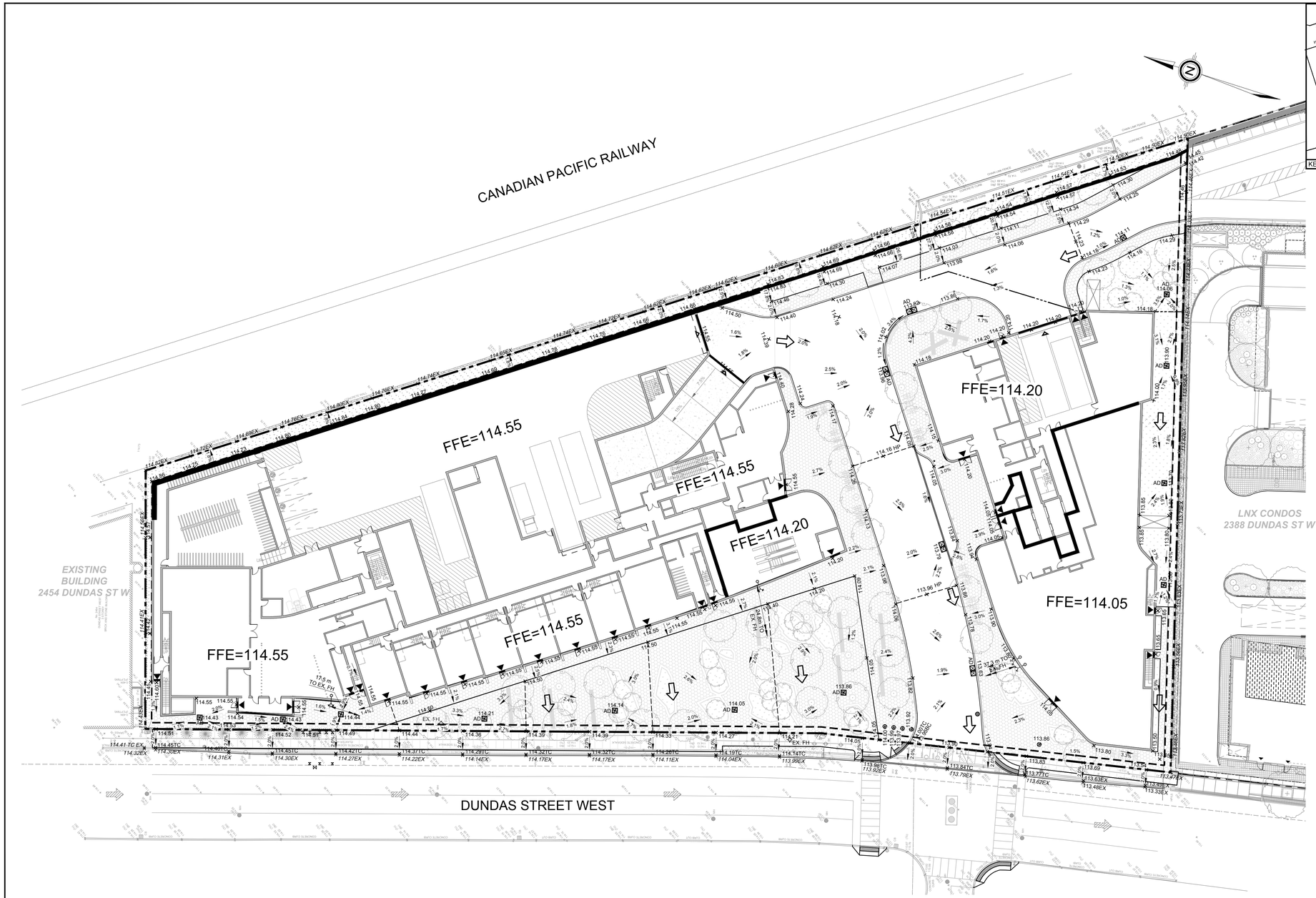
1. All structural members and floors will be of fire resistive construction per the Fire Underwriters Survey (FUS) 1999 with 2-hour ratings per the OBC.

2. All vertical openings and exterior vertical communications will be constructed with a 1-hour fire rating

Yours truly,

Carlo Odorico
Giannone Petricone Associates Inc. Architects
96 Spadina Avenue #900
Toronto, ON Canada M5V 2J6

Appendix F
Engineering Exhibits



KEY PLAN

CLIENT
FORA DEVELOPMENTS

2400-2440 DUNDAS STREET
WEST TORONTO, ON. M6P 1W9

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR FIRST SUBMISSION	MAR 10, 2023

LEGEND

- PROPERTY LINE
- PROPOSED GRADE ×149.50
- EXISTING GRADE ×*149.33EX*
- PROPOSED STORM MANHOLE
- PROPOSED AREA DRAIN
- PROPOSED DOUBLE AREA DRAIN
- PROPOSED SANITARY MANHOLE
- HIGH POINT RIDGE
- PROPOSED SWALE
- PROPOSED VALVE AND BOX M V&B
- PROPOSED SIAMESE CONNECTION
- PROPOSED GRADE (TOP OF CURB) ×149.65TC
- PROPOSED GRADE (BOTTOM OF CURB) ×149.50BC
- EXISTING STORM MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING CATCH BASIN
- EMERGENCY OVERLAND FLOW ROUTE
- EXISTING OVERLAND FLOW ROUTE

SEAL

IBI GROUP
Unit 300 – 8133 Warden Avenue
Markham ON L6G 1B3 Canada
tel 905 763 2322 fax 905 763 9983
ibigroup.com

PROJECT
MIXED-USE DEVELOPMENT

2400-2440 DUNDAS STREET WEST
TORONTO, ON. M6P 1W9

LIST OF EXHIBITS
SG-01 - SITE GRADING EXHIBIT
SS-01 - SITE SERVICING EXHIBIT

PROJECT NO: 141003	
DRAWN BY: JZ	CHECKED BY: JJ
PROJECT MGR: JJ	APPROVED BY: JJ

SITE PLAN INFORMATION
GIANNONE PETRICONE ASSOCIATES INC. ARCHITECTS
96 SPADINA AVE, SUITE 900
TORONTO, ON. M5V 2J6
PHONE: (416) 591-7788

SURVEYOR INFORMATION
KRCMAR SURVEYORS LTD.
1137 CENTRE STREET
THORNHILL ON L4J 3M6
PHONE: (905) 738-0093
WEBSITE: WWW.KRCMAR.CA

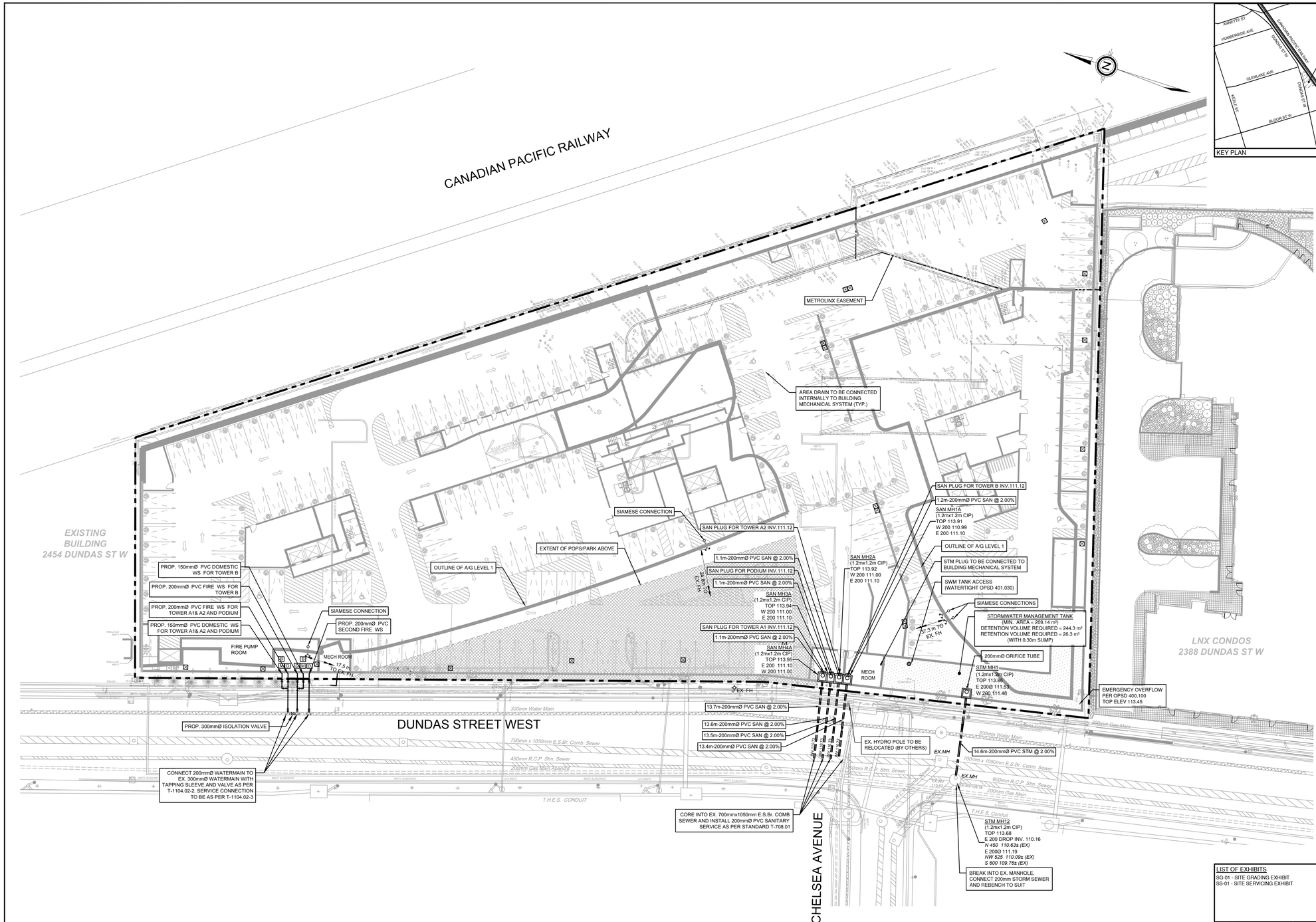
BENCHMARK INFORMATION:
ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE RELATED TO CITY OF TORONTO BENCH MARK NO. CT218, HAVING AN ELEVATION OF 114.759 METRES.

SCALE: 1:300 (5.0 0 5.0m 10.0m)

SHEET TITLE
SITE GRADING EXHIBIT

SHEET NUMBER	ISSUE
SG-01	01

File Location: J:\141003_2400Dundas\7.0_Production\7.03_Design\04_Civil\Sheets\141003-SHT-GRAD.dwg Last Saved: March 9, 2023 by Jasmine.Zhang Plotted: Thursday, March 9, 2023 3:50:09 PM by Jasmine.Zhang



KEY PLAN

CLIENT

FORA DEVELOPMENTS

2400-2440 DUNDAS STREET
WEST TORONTO, ON. M6P 1W9

ISSUES

No.	DESCRIPTION	DATE
1	ISSUED FOR FIRST SUBMISSION	MAR 10, 2023

LEGEND

- PROPERTY LINE
- PROPOSED AREA DRAIN — AD
- EXISTING CATCH BASIN
- PROPOSED VALVE AND BOX — V&B
- EXISTING FIRE HYDRANT — EX.FH
- PROPOSED SIAMESE CONNECTION
- PROPOSED STORM
- PROPOSED SANITARY
- PROPOSED WATER
- EXISTING STORM
- EXISTING SANITARY
- EXISTING WATER
- PROPOSED DOMESTIC WATER METER — M
- PROPOSED BACKFLOW PREVENTER — B
- PROPOSED DOUBLE CHECK DETECTOR ASSEMBLY — D
- DOORS

SEAL

IBI GROUP
Unit 300 – 8133 Warden Avenue
Markham ON L6G 1B3 Canada
tel 905 763 2322 fax 905 763 9983
ibigroup.com

PROJECT

MIXED-USE DEVELOPMENT

2400-2440 DUNDAS STREET WEST
TORONTO, ON. M6P 1W9

LIST OF EXHIBITS

SG-01 - SITE GRADING EXHIBIT
SS-01 - SITE SERVICING EXHIBIT

SITE PLAN INFORMATION

GIANNONE PETRICONE ASSOCIATES INC. ARCHITECTS
95 SPADINA AVE, SUITE 900
TORONTO, ON, M5V 2J6
PHONE: (416) 591-7788

SURVEYOR INFORMATION

KRCMAR SURVEYORS LTD.
1137 CENTRE STREET
THORNHILL ON L4J 3M6
PHONE: (905) 738-0053
WEBSITE: WWW.KRCMAR.CA

BENCHMARK INFORMATION:
ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE RELATED TO CITY OF TORONTO BENCH MARK NO. CT218, HAVING AN ELEVATION OF 114.709 METRES.

SCALE: 1:300 — 5.0 0 5.0m 10.0m

PROJECT NO: 141003

DRAWN BY:	CHECKED BY:
JZ	JJ
PROJECT MGR:	APPROVED BY:
JJ	JJ

SHEET TITLE

SITE SERVICING EXHIBIT

SHEET NUMBER: SS-01

ISSUE: 01

File Location: J:\141003_2400Dundas\7.0_Production\7.03_Design\04_Civil\Sheets\141003-SHT-SERV.dwg Last Saved: March 9, 2023, by Jasmine Zhang Plotted: Thursday, March 9, 2023 3:42:00 PM by Jasmine Zhang