Final Report
Functional Servicing Report

3400 Dufferin Street & 8 Jane Osler Boulevard, City of Toronto

Prepared for Dufferin – 401 Properties Limited & Collecdev Inc.
by IBI Group
IBI Group Project #139570
August 9, 2022

Document Control Page

CLIENT:	Dufferin – 401 Properties Limited & Collecdev Inc.
PROJECT NAME:	3400 Dufferin Street & 8 Jane Osler Boulevard, City of Toronto
REPORT TITLE:	Functional Servicing Report
IBI REFERENCE:	IBI Group Project #139570
VERSION:	1
DIGITAL MASTER:	139570 3400 Dufferin Street_City of Toronto - Internal Documents\6.0_Technical\6.04_Civil\03_Reports\Revision 1\FSR
ORIGINATOR:	Shirley Beaudoin, CAD Technologist, Land Engineering
REVIEWER:	Neil Short, Director, Sr. Practice Lead, Land Engineering
AUTHORIZATION:	Jason Jenkins, P.Eng., P.E., Associate Manager, Land Engineering
CIRCULATION LIST:	
HISTORY:	**Identification Date Description of Issued and/or Revision**
	FSR, August 09, 2022, 1st Submission (ZBA, SPA, & Plan of Subdivision)

AUTHORIZED FOR ISSUE BY:
IBI GROUP

Jason Jenkins, P.Eng., P.E.
Associate Manager
Land Engineering

Table of Contents

List of Tables

List of Figures

List of Drawings

Appendices

1 Introduction

1.1 Background

IBI Group Professional Services (Canada) Inc. (IBI Group) has been retained by Dufferin – 401 Properties Limited & Collecdev Inc. (the "Owner") to prepare a Functional Servicing Report (FSR) to support the Draft Plan of Subdivision, Zoning By-Law Amendment (ZBA), and Site Plan Application (SPA) processes for a proposed mixed-use development located at 3400 Dufferin Street & 8 Jane Osler Boulevard (the "Subject Site"), in the City of Toronto (the "City"). The purpose of this report is to provide a municipal servicing strategy for both sanitary discharge and water supply. More specifically, the report will present the following:

- 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.
- Identify sanitary servicing opportunities and constraints and evaluate the capacity of the receiving municipal sewer.
- 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 Dufferin Street and Jane Osler Boulevard;
- City of Toronto Public Utilities Coordinating Committee (TPUCC) mapping;
- Grading and Servicing plans for 3450 Dufferin Street prepared by Schaeffer & Associates Ltd. (Schaeffer's), dated July 2021;
- Dufferin Street Avenue Study Infrastructure Master Plan prepared by Fabian Papa and Partners, dated November 2014;
- Topographic Survey prepared by KRCMAR Surveyors Ltd., dated June 2022;
- Functional Road Design prepared by BA Group, dated July 2022; and,
- Architectural plans and site statistics prepared by gh3 Architects.

1.2 Existing Site Description

Located at 3400 Dufferin Street & 8 Jane Osler Boulevard in the City of Toronto at postal code M6A 2V1, the 1.668 ha subject site is bounded by Dufferin Street to the east, several single family dwellings and Jane Osler Boulevard to the south, an existing commercial building to the west, and 3450 Dufferin Street to the north which is currently under construction. Please see **Figure 1** following the report for an aerial view of the site.

It should be noted that a separate development application has been submitted by others for 3450 Dufferin Street which includes (2) new municipal road dedications immediately north of the subject site; Street A (North) and Street B (North). This will be discussed in greater detail in subsequent sections. Sample site plan drawings for the adjacent development application can be found in **Appendix A** for reference.

The site currently hosts an existing commercial building and an asphalt parking surface and is relatively flat with ground surface elevations ranging from 190.6 m to 189.2 m and is self-contained with a small external drainage area along the southern limit.

The subject site is located within Basement Flooding Study Area (BFA) #16 which was completed in 2012, and the Dufferin Street Avenue Study which was completed in 2014. Except copies of each study can be found within the appendices of this report.

1.3 Site Proposal

The proposed development includes the subdivision of the site into various blocks as follows:

- Block A: 1,825 m^2 municipal road to be dedicated to the City as a new 23 m public road (Street A) which shall align with Street A (North) at 3450 Dufferin Street and continue to Dufferin Street within Block F of the development.
- Block B: 4,046 m^2 mixed-use block consisting of a 29-storey building (Building A) with (2) levels of underground parking.
- Block C: 1,049 m^2 municipal road to be dedicated to the City as a new 18.5 m public road (Street B) which shall align with Street B (North) at 3450 Dufferin Street and connect to Street A within Block F of the development.
- Block D: 4,079 m^2 mixed-use block consisting of a 29-storey building (Building B) with (2) levels of underground parking.
- Block E: 1,811 m^2 mixed-use block consisting of a 10-storey building (Building C) with (2) levels of underground parking.
- Block F: 3,870 m^2 municipal road to be dedicated to the City as a new 23 m public road (Street A) which shall connect Street A (North) to Dufferin Street.

In summary, Blocks A, C, and F shall be dedicated to the City as new municipal rights-of-way (ROW), and Blocks B, D, and E shall be developed as mixed-use blocks. Sample architectural drawings and the functional road design can be found in **Appendix A** for reference.

1.4 Service Connections

While a development site can typically share a single storm service connection, individual sanitary and domestic services are required for each built form to satisfy City's servicing policy. Accordingly, each building shall be serviced independently.

Furthermore, the Ontario Building Code (OBC) requires two fire service connections separated by an isolation value for any building above 84 m in height. As Building A and Building B exceed this threshold, a secondary fire service will be required for each. The following represents the number of service connections for each development block:

- Block B (Building A): (1) storm, (1) sanitary, (2) fire, and (1) domestic service;
- Block D (Building B): (1) storm, (1) sanitary, (2) fire, and (1) domestic service; and,
- Block E (Building C): (1) storm, (1) sanitary, (1) fire, and (1) domestic service.

Site servicing requirements will be discussed in greater detail 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 in order to assess the capacity of the existing sanitary sewers.

2.2 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

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

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

2.3 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

3.1 Groundwater Quality

A hydrogeological assessment was carried out by DS Consultants Ltd (DS Consultants), dated July 22, 2022, to assess existing groundwater conditions. The following table is a summary of the observed groundwater quality parameters compared to the City's limits for discharge:

Table 3.1 Groundwater Quality Exceedances

PARAMETER	MEASURED READING (mg/L)	STORM BY-LAW CRITERIA (mg/L)	SANITARY BY-LAW CRITERIA (mg/L)
Total Suspended Solids (TSS)	431	15	350
Manganese	0.223	0.05	5
Chloroform	0.0026	0.002	0.04

Per the hydrogeological assessment, observed levels manganese and chloroform exceed the City's threshold for discharge to storm sewer but meet the City's threshold for discharge to sanitary sewer, while observed levels of TSS exceed the City's threshold for discharge to both storm and sanitary sewers. It is therefore recommended that all dewatering activities be discharged to the sanitary sewer system with pre-treatment for TSS. Please see **Appendix B** for an excerpt copy of the hydrogeological assessment.

3.2 Short-Term Groundwater Discharge

The anticipated average short-term groundwater discharge has been estimated by DS Consultants as shown in the table below. At the time of this report, a dewatering plan was not made available. It is therefore assumed that groundwater pumping will operate for 8 hours per day resulting in a corresponding maximum pumping rate as shown:

Table 3.2 Short-Term Groundwater Discharge

BUILDING	AVERAGE DISCHARGE	AVERAGE DISCHARGE	HOURS OF PUMPING	PEAK DISCHARGE	CONNECTION OUTLET	TREATMENT REQUIRED
Bldg A	61,600 L/day	0.71 L/s	8 Hours	2.14 L/s	Street A	TSS
Bldg B	61,900 L/day	0.72 L/s	8 Hours	2.15 L/s	Street A	TSS
Bldg C	32,600 L/day	0.38 L/s	8 Hours	1.13 L/s	Street A	TSS
TOTAL	156,100 L/day	1.81 L/s	--	5.42 L/s	--	--

As shown above, the total anticipated short-term pumping rate is **5.42 L/s**, which shall be directed to a proposed 250 mm sanitary sewer within Street A. The proposed sewer shall ultimately discharge to an existing 300 mm sanitary sewer within Bridgeland Avenue. As the post-development sanitary design flow to this sewer exceeds the anticipated short-term pumping rate, the post-development rate governs and will be used to assess downstream sewer capacity. This shall be further discussed in **Section 4**.

It should be noted that a Permit to Take Water (PTTW) application must be submitted to the Ministry of the Environment, Conservation and Parks (MECP) if dewatering rates exceed 50 m^3/day.

3.3 Long-Term Groundwater Discharge

Due to the potential of a significant long-term drawdown, the subject site will not have a traditional weeping tile system, but rather be designed as water-tight without the need for a foundation drain connection to the municipal sewer system. The appropriate confirmation letters from the owner, mechanical consultant, and structural consultant can be found in **Appendix B** for reference.

4 Sanitary Drainage System

4.1 Existing Sanitary Drainage System

Per the City's record information, local sanitary infrastructure consists of a 250 mm sanitary sewer within Jane Osler Boulevard which flows in a westerly direction. Please refer to the City plan and profile drawings which can be found in **Appendix A**.

As previously mentioned, (2) new municipal roadways are proposed to the north as part of the Schaeffer's development application at 3450 Dufferin Street which will host 300 mm sanitary sewers that flow in a northerly direction. It should be noted that the proposed municipal sewers within the Schaeffer's development have been sized to accommodate sanitary flows from the subject site, however due to an increase in density, these sewers have been assessed as part of the downstream sanitary sewer capacity analysis. Please refer to the downstream sewer capacity analysis which can be found in **Appendix C.** Furthermore, please refer to the Schaeffer's servicing plan which can be found in **Appendix A.**

4.2 Existing Sanitary Flows

The site currently hosts an existing commercial building. The resulting pre-development population is 34. The existing peak sanitary flow is calculated as follows:

$$Q_{\text{Pre-Dev.}} = \left(\frac{250\ \text{L/c·d} \cdot 34\ \text{pers}}{86400\ \text{s / day}}\right) + (0.26\ \text{L/s·ha} \cdot 1.668\ \text{ha}) = \mathbf{0.5\ L/s}$$

4.3 Post-Development Populations

The following post-development populations will be used to size each service connection:

Table 4.1 Post-Development Populations

BUILDING A			
	UNITS / AREA (m^2)	DENSITY	POP.
1 Bedroom	219	1.4	307
2 Bedroom	129	2.1	271
3 Bedroom	40	3.1	124
		TOTAL	702

BUILDING B			
	UNITS / AREA (m^2)	DENSITY	POP.
1 Bedroom	224	1.4	314
2 Bedroom	109	2.1	229
3 Bedroom	38	3.1	118
Retail	1,079	1.1	12
		TOTAL	672

BUILDING C			
	UNITS / AREA (m^2)	DENSITY	POP.
1 Bedroom	47	1.4	66
2 Bedroom	20	2.1	42
3 Bedroom	8	3.1	25
Retail	289	1.1	3
		TOTAL	136

4.4 Post-Development Sanitary Design Flow

Proposed sanitary services shall be sized to accommodate the post-development sanitary flow from each tower. Based on the criteria set in **Section 2.2** and the post-development populations, the corresponding post-development sanitary flow for each tower is calculated as follows:

Building A

$$Q_{\text{Building A}} = \left(\frac{450\ \text{L/c·d} \cdot 702\ \text{pers} \cdot 3.89}{86400\ \text{s / day}}\right) + (0.26\ \text{L/s·ha} \cdot 0.4045\ \text{ha}) = \mathbf{14.3\ L/s}$$

Building B

$$Q_{\text{Building B}} = \left(\frac{450\ \text{L/c·d} \cdot 672\ \text{pers} \cdot 3.90}{86400\ \text{s / day}}\right) + (0.26\ \text{L/s·ha} \cdot 0.4079\ \text{ha}) = \mathbf{13.8\ L/s}$$

Building C

$$Q_{\text{Building C}} = \left(\frac{450\ \text{L/c·d} \cdot 136\ \text{pers} \cdot 4.20}{86400\ \text{s / day}}\right) + (0.26\ \text{L/s·ha} \cdot 0.1811\ \text{ha}) = \mathbf{3.0\ L/s}$$

Overall Subdivision

$$Q_{\text{Subdivision}} = \left(\frac{450\ \text{L/c·d} \cdot 1{,}509\ \text{pers} \cdot 3.68}{86400\ \text{s / day}}\right) + (0.26\ \text{L/s·ha} \cdot 1.668\ \text{ha}) = \mathbf{29.3\ L/s}$$

Proposed sanitary sewers shall be sized to accommodate the post-development sanitary flow from each block. It is proposed that new 250 mm sanitary sewers be installed within Street A and be connected to the 300 mm sanitary sewer within Street A (North) which is proposed as part of the adjacent development at 3450 Dufferin Street. This shall be discussed further in the subsequent sections.

4.5 Sanitary Service Connections

As previously mentioned, it is proposed that a new sanitary service be installed for each tower. Each service connection will be installed at a 2.0% slope and will be connected to the proposed 250 mm sanitary sewer within Street A. Each service will require a control maintenance hole to be installed at the property line thus satisfying the City's Sewer Use By-Law. The calculated design flows, nominal full flow capacities, and corresponding residual capacities for all proposed sanitary services are summarized as follows:

Table 4.2 Sanitary Service Performance

BUILDING	FROM	TO	SIZE (mm)	PIPE SLOPE	PEAK FLOW (L/s)	CAPACITY (L/s)	PERCENT OF FULL FLOW
Building A	Cntrl MH1A	Street A	200	2.0%	14.3	48.4	29.6%
Building B	Cntrl MH2A	Street A	200	2.0%	13.8	48.4	28.5%
Building C	Cntrl MH3A	Street A	200	2.0%	3.0	48.4	6.2%

As shown above, each sanitary service will convey the post-development peak sanitary flow while operating at 29.6% or less of full flow capacity. Please see the detailed design sheet which can be found in **Appendix C**, and Drawings **SS-01** and **SS-02**.

4.6 Proposed Sanitary Sewers

It is proposed that new 250 mm sanitary sewers be installed within Street A and be connected to the 300 mm sanitary sewer within Street A (North) which is proposed as part of the adjacent development at 3450 Dufferin Street. The calculated design flows, nominal full flow capacities, and corresponding residual capacities for all proposed municipal sewers are summarized as follows:

Table 4.3 Sanitary Sewer Performance

BLOCK	FROM	TO	SIZE (mm)	PIPE SLOPE	PEAK FLOW (L/s)	CAPACITY (L/s)	PERCENT OF FULL FLOW
C + D + E + F	MH1A	MH2A	250	1.0%	16.5	62.0	26.6%
B + C + D + E + F	MH2A	MH3A	250	0.5%	29.3	43.9	66.8%
A + B + C + D + E + F	MH3A	MH4A	250	0.5%	29.3	43.9	66.8%
A + B + C + D + E + F	MH4A	EX. MH5A	250	0.5%	29.3	43.9	66.8%

As shown above, the proposed sanitary sewers can convey the peak sanitary discharge while operating at 66.8% (or less) of full flow capacity. Please see the detailed design sheet which can be found in **Appendix C** and Drawings **SS-01** and **SS-02**.

4.7 Downstream Sanitary Sewer Analysis

As the subdivision represents an increase in population and dry weather flow, it is required to check the capacity of the receiving sanitary sewer downstream from the subject site to the existing trunk sanitary sewer. The City's InfoWorks dynamic hydraulic model for BFA 16 was obtained from the City to assess the receiving municipal system. A detailed downstream analysis has been performed as a stand-alone technical memorandum. In the sanitary sewer capacity analysis, the following has been verified and incorporated in the model:

i) Verification the sewer analysis model correctly represents the sewer system, including any updates to the sewer analysis to reflect changes (i.e. sewer construction) since the model was initially prepared.

ii) The model has been updated to include all sanitary peak flow rates from groundwater being discharged to the municipal sanitary system from all active and recent development applications located within the affected sanitary sewershed.

iii) Best efforts have been made to include all peak flows from Private Water discharge agreements in the sanitary sewershed.

In summary, the existing sanitary sewers downstream of the proposed development site, are expected to experience critical surcharging under the May 12, 2000 rainfall event, however these pipe segments are located within the North Park Ravine area and are not expected to service adjacent properties. The minimum level of surcharging along these pipes is expected to be 0.32m, which is more than the minimum level of freeboard allowed under the Sewer Capacity Assessment Guidelines (July 2021) for areas that do not service adjacent lots.

It can therefore be concluded that the receiving downstream sanitary system has sufficient capacity and the subject site can be supported without upgrades. Please see **Appendix C** for the technical memorandum and detailed downstream analysis.

5 Water Supply System

5.1 Existing Water Infrastructure

The subject site is located within the City's Pressure District 5 (PD5), which is mainly supplied from Lawrence Avenue Pumping Station (PS) and the Keele Street Reservoir. Static pressure in the vicinity of the subject site (within PD5) is governed by the water level within the Keele Street Reservoir which has a Top Water Level (TWL) of 230 m and a Low Water Level (LWL of 224 m). Per the City's record information, local water infrastructure consists of a 300 mm watermain within Dufferin Street, a 150 mm watermain within Jane Osler Boulevard, and a 300 mm watermain within Bridgeland Avenue.

5.2 Field Testing

For the purpose of confirming general supply and water pressures in the vicinity of the site, Multi-day pressure monitoring including three hydrant flow tests were undertaken from June 17 to June 21, 2022. The field test locations are shown in **Appendix D.**

Three Tests (Tests 1 to 3) were performed on June 17, 2022. The system pressures at the three hydrant monitoring locations were recorded during the hydrant test period. A continuous pressure monitoring for over 4 days) of existing field conditions at the three hydrant locations (R1 at Bridgeland Avenue, R2 at Jane Osler Boulevard and and R3 at Dufferin Street).

The test results have been used for the model calibration. The findings are summarized as follows:

The static system pressures ranged from 43 psi to 65 psi (300 kPa to 450 kPa), corresponding to system head ranges from 220 m to 232 m. The tested flow ranged from 64 L/s to 112 L/s. The least pressure / system head dropped by approximately 2 m (3 psi) when the hydrant was flowing at 112 L/s (1551 usgpm) at Test 3 (at Dufferin Street) near the subject site.

5.3 Model Development

The WaterCAD hydraulic model was used to estimate the system pressures along the watermains for the proposed development conditions. Based on the background information and review of the hydrant test results (on May 10, 2022). The water supply for the area in the vicinity of the subject site will be from the Lawrence Avenue pumping station via 1200 mm / 900 mm watermain along Lawrence Avenue and Caledonia Road. A dummy pump was used in the model as the water supply boundary.

The watermain information and water consumptions in 2019 for the existing area in the vicinity of site have been provided by the City – See **Appendix D** for details. This information for the PD4 system was used as the base for the model development. **Appendix D** shows the model layout and the information for the supply boundary.

The simplified water distribution network system model was conducted to simulate the hydrant flow test results. C-factors along the existing pipelines in the vicinity of the site were refined. A watermain network analysis via a hydraulic model was performed to assess the available system head and pressure within the subject site under the proposed development.

A model analysis was performed to simulate the system pressures for the Tests 2 (on Jane Osler Boulevard) and Test 3 (on Dufferin Street) during hydrant test condition. The modelling outputs were compared with the fire flow test results (as shown in **Appendix D**). The system head/pressure difference between the field test measurements and the simulated results at each of the two hydrant test locations is around an average

of 1.5 m (approximately 14 kPa / 2 psi). The model result meets the general guideline for model calibration. The calibrated model was used to estimate the anticipated system pressure under the existing and proposed conditions.

5.4 Domestic Water Supply Demands

The Average Day Demand (ADD), Peak Hour Demand (PHD), and Max Day Demand (MDD) have been calculated using the criteria set in **Section 2.3**, and are summarized as follows:

Table 5.1 Domestic Water Demands

BUILDING	POPULATION	ADD (L/s)	PHD (L/s)	MDD (L/s)
Block B (Building A)	702	1.5	3.9	2.0
Block D (Building B)	672	1.5	3.7	1.9
Block E (Building C)	136	0.3	0.7	0.4
TOTAL	**1,510**	**3.3**	**8.3**	**4.5**

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 D** for the detailed calculations.

The water demand for the adjacent development north of the subject site has been included in the modelling analysis servicing plan which can be found in **Appendix A**.

5.5 Fire Supply Demands

The recommended fire flow demand for each building 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 all buildings will constructed using fire resistive materials, the effective floor area for each building is taken as the largest floor area plus 25 % of the two adjacent floors. The corresponding floor area and FUS factors will be applied as follows:

Table 5.2 Fire Underwriters Survey Factors

BUILDING	FLOOR AREA (m^2)	CONSTRUCTION COEFFICIENT	BUILDING OCCUPANCY	SPRINKLER ADJUSTMENT	PROXIMITY FACTOR
Building A	3,717	0.6 (resistive)	- 15% (limited)	- 30%	+ 40%
Building B	3,467	0.6 (resistive)	0%	- 30%	+ 35%
Building C	1,423	0.6 (resistive)	0%	- 30%	+ 40%

Using the effective floor area for each building and the appropriate FUS factors, the required fire flow for each building is calculated as shown in **Appendix D**. The fire supply line for each building will be designed based on the calculated fire flow + MDD, and is summarized as follows:

Table 5.3 Fire Flow Requirements

BUILDING	FIRE FLOW (L/min)	FIRE FLOW (L/s)	MDD (L/s)	FIRE + MDD (L/s)
Building A	7,000	117	5.0	122
Building B	8,000	133	5.0	138
Building C	6,000	100	5.0	105

Please see **Appendix D** for the detailed design calculations.

5.6 System Pressure Under Normal Operation

The estimated system heads/pressures for the proposed development under normal operation conditions (i.e., ADD, MDD, and PHD) are summarized below (also see **Appendix D** for model outputs).

Table 5.4 Residual Pressure Under Normal Operation

DESIGN CONDITION	SYSTEM HEAD (m)	SYSTEM PRESSURE (kPa)
Normal Operations (ADD, MDD, and PHD)	>342	>225

Based on the hydrant test results and as shown above, there are no significant pressure reductions with the proposed development under the normal operation conditions (ADD, MDD and PHD). The estimated system pressures within the subject site is greater than 342 kPa under proposed development conditions.

As shown above, the residual pressure at the building face (for each domestic water service) is above the minimum acceptable pressure of 40 psi (275 kPa) under PHD conditions. Please see **Appendix D** for the detailed design calculations.

5.7 System Pressure Under Fire Flow

The following table summarizes the residual pressure along the watermains near the subject site:

Table 5.5 Residual Pressure Under Fire + MDD Conditions

DESIGN CONDITION	SYSTEM HEAD (m)	SYSTEM PRESSURE (kPa)
Fire Flow + MDD (at Dufferin Street)	326	224
Fire flow + MDD (West Side of Street A)	319	223

As shown above, the system pressure under the MDD + fire flow demand is greater than 224 kPa (35 psi). The available fire flow at the locations within the subject site is approximately 280 L/s (at pressure 140 kPa) - see **Appendix D** for details. As shown above, the residual pressure is above the minimum acceptable pressure of 20 psi (140 kPa) under fire demand conditions (Fire + MDD). Please see **Appendix D** for the detailed design calculations.

5.8 Watermain Velocity

As shown in **Appendix D**, the maximum flow velocity along the watermains in the vicinity of the subject site is less than 1.0 m/s under normal operations and/or MDD + fire flow conditions, meets the City's watermain velocity requirements (less than 2 m/s under normal operations). The maximum head loss is 0.7 m/1000 m under the peak hour conditions, meets the City's watermain head loss requirements (maximum 2-5 m/1000 m).

5.9 System Pressure and Watermain Flow Comparison

A WaterCAD hydraulic model under the pre and post development was simulated, and the modelling outputs for the ADD, MDD, PHD and MDD + Fire Flow at two locations (at Dufferin Street near the subject site and the proposed far-end hydrant along Street A within the subject site) are presented in **Appendix D**. Simulation runs were performed under the pre- and post- subject site development. The modelling outputs and comparisons are shown in **Appendix D**.

As shown in **Appendix D** and **Table 5.6**, the system pressure reductions are within 5 kPa (less than 1 psi) at the junction nodes and the increased flow rates are less than 7 L/s (and velocity less than 0.1 m/s) along the watermains after the subject site development under the ADD, MDD and PHD conditions.

The system pressure reductions are within 6 kPa (less than 1 psi) at the junction nodes and the increased flow rates are less than 13 L/s (and velocity less than 0.2 m/s) along the watermains after the subject site development under MDD plus fire flow along Dufferin Street.

Table 5.6 System Pressure Reduction and Watermain Flow Increase under Post Development

DESIGN CONDITION	SYSTEM PRESSURE REDUCTION		PIPE FLOW / VELOCITY INCREASE*	
	kPa	Psi	FLOW RATE (L/s)	VELOCITY (m/s)
ADD, MDD and PHD	<5	<1	<7	0.1
MDD + Fire (at Dufferin Street)	<6	<1	<13	0.2

* The modelling results indicates that the flow / velocity is slightly reduced for some of the watermains, after installation of the looped 300mm watermain within the subject site and the north adjacent development.

5.10 Proposed Watermain Connections

As previously mentioned, (2) new municipal roadways are proposed to the north. Street A (North) is proposed to host a 300 mm watermain to be connected to an existing 300 mm watermain within Bridgeland Avenue. Street B (North) is proposed to host a 300 mm watermain to be connected to the 300 mm watermain within Street A (North). Please refer to the adjacent development servicing plan which can be found in **Appendix A**.

New Municipal Road

It is proposed that a new 300 mm watermain be installed within the new municipal roadway. The new watermain will connect to the existing 300 mm watermain within Dufferin Street with a cut-in-tee, and will be looped to the 300 mm watermains within Street A and Street B of the adjacent development.

North and South Blocks

To service the development blocks, a new 200 mm fire service is proposed for each building (Buildings A, B, and C) to be connected to the proposed watermain within Street A. A separate 150 mm domestic service will tee off from the fire line within the municipal right-of-way. 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.

As previously mentioned, the OBC requires two fire services separated by an isolation valve to be installed for any building above 84 m. As Buildings A and B exceed this threshold, an additional fires service is proposed to be connected to the proposed watermain within Street B.

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. As all three buildings (Buildings A, B, and C) exceed this threshold, a second siamese connection for each building will be required. All siamese connections shall be placed within 45 m of a hydrant.

Please see **SS-01**, and **SS-02** for the location of all existing and proposed water infrastructure.

5.11 Hydrant Coverage

Existing fire hydrant in the vicinity of the subject site include a hydrant on the north side of Jane Osler Boulevard and a hydrant on the east side of Dufferin Street. Furthermore, new municipal hydrants are proposed as part of the adjacent development application on the east side of Street A (North) and the east side of Street B (North).

New municipal hydrants shall be placed on the north side of Street A in order to satisfy City requirements, and will be strategically placed within 45 m of all development block siamese connections to satisfy the City's requirements for fire protection. Please see Drawings **SS-01**, and **SS-02** for the location of all existing and proposed water infrastructure.

6 Conclusions and Recommendations

Sanitary Sewers
The existing sanitary sewers downstream of the proposed development site, are expected to operate within an acceptable level of service as outlined in the City's Sewer Capacity Assessment Guidelines (2021). Accordingly, the subject site can proceed without upgrades to the receiving municipal sewer network.

Water Supply
The proposed 300 mm watermain within the new municipal road, and the adjacent existing watermain network has sufficient capacity to support the proposed fire and domestic water demands for the proposed development without improvements to the system.

The system pressure near the subject site is approximately 380 kPa (50 psi) under normal operation, which is within the City's suggested system operational pressure ranges between 275 kPa and 700 kPa.

A sufficient fire flow supply capacity and available system pressure (not less than 140 kPa) can be maintained at the hydrants within the subject site under the fire flow conditions. A minimum fire flow 200 L/s (at 140kPa) can be provided at the hydrant locations.

Summary
In summary, it can be concluded that the Zoning By-Law Amendment, Site Plan Application, and Plan of Subdivision can be supported from a municipal site servicing perspective.

CLIENT: DUFFERIN - 401 PROPERTIES LIMITED & COLLECDEV INC.	PROJECT NAME: 3400 DUFFERIN STREET & 8 JANE OSLER BOULEVARD		
	SCALE: NTS	DATE: 2022-06-20	FIGURE NAME: AERIAL PLAN
	PROJECT ENG: JMJ	DRAWN BY: SB	FIGURE NO.: FIG.1
	CHECKED BY: JMJ	APPROVED BY: JMJ	REVISION: 1
	PROJECT NO: 139570		

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

Appendix A
Background Information

Plan and Profile Drawings (City of Toronto)

TPUCC Mapping (City of Toronto)

Topographic Survey (KRCMR)

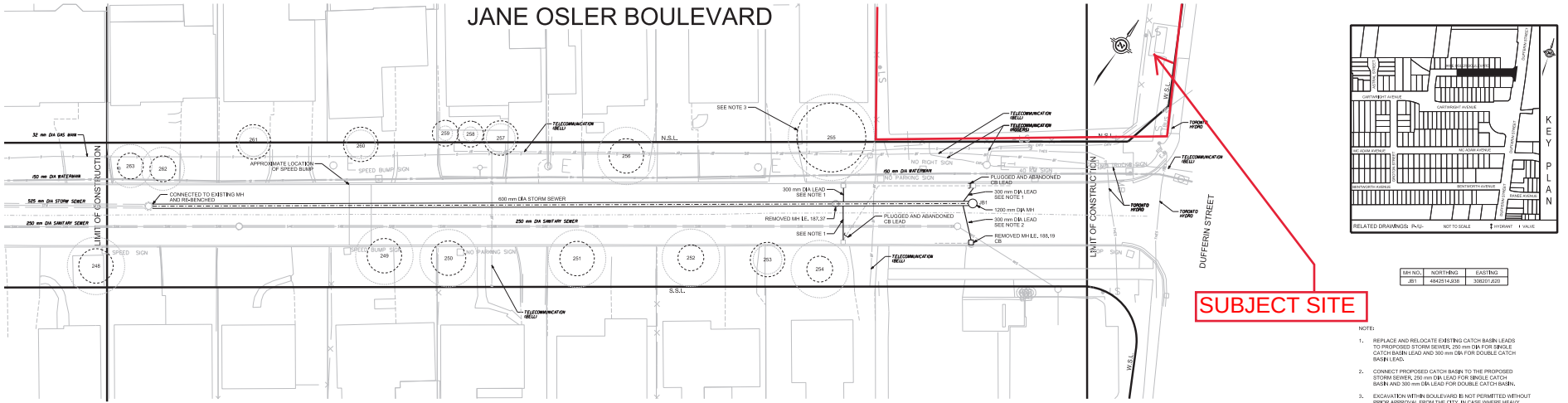
3450 Dufferin Site Grading and Servicing Plans (Schaeffer's)

Sample Architectural Drawings (gh3)

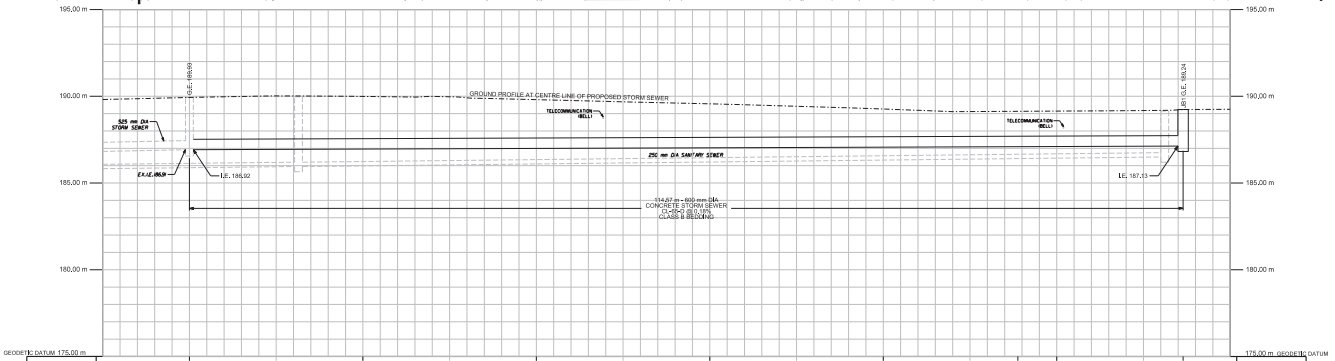
Functional Road Design (BA Group)

Subsurface Utility Engineering Study (Urban X)

JANE OSLER BOULEVARD



MH NO.	NORTHING	EASTING
JB1	4842514.938	308201.820



NOTE:

1. REPLACE AND RELOCATE EXISTING CATCH BASIN LEADS TO PROPOSED STORM SEWER, 250 mm DIA FOR SINGLE CATCH BASIN LEAD AND 300 mm DIA FOR DOUBLE CATCH BASIN LEAD.
2. CONNECT PROPOSED CATCH BASIN TO THE PROPOSED STORM SEWER, 250 mm DIA LEAD FOR SINGLE CATCH BASIN AND 300 mm DIA LEAD FOR DOUBLE CATCH BASIN.
3. EXCAVATION WITHIN BOULEVARD IS NOT PERMITTED WITHOUT PRIOR APPROVAL FROM THE CITY, IN CASE WHERE HEAVY EQUIPMENT HAS TO ENCROACH SOFT SURFACE BETWEEN CURB AND THE EXISTING TREE, THE TREE PROTECTION ZONE (TPZ) HAS TO BE PROTECTED WITH STEEL PLATING AND MULCH AGAINST SOIL COMPACTION AND ROOT DAMAGE. TREE TRUNK TO BE PROTECTED WITH TRUNK FENCE, SEE SPECIFICATIONS FOR DETAILS.
4. ANY SPEED BUMPS THAT ARE IMPACTED DURING CONSTRUCTION MUST BE REINSTATED TO EXISTING OR BETTER CONDITIONS.

AS-BUILT DRAWING

CH2MHILL CONSULTANTS

NOTE: ORIGINAL SEAL BY M. PARENTE DATED 05-27-2014

DIGITAL INFORMATION		
SURVEY(2013)	y13274svy.dgn	
DESIGN	y13274stm.dgn, y13274stmprf.dgn, y13274sec.dgn	
UTILITY	y13274ugs.dgn	
MAPPING	y13274top.dgn	
STREETLINE	y13274sll.dgn	

No.	DATE	REVISIONS	INITIAL	SIGNED
1	07-20-2015	AS-BUILT DRAWING PREPARED BY CH2M HILL CANADA LTD. USING DATA PROVIDED BY THE CITY. STORM SEWERS CONSTRUCTED IN 2015.		

TORONTO Engineering and Construction Services

TED BOWERING, P. ENG. ACTING DIRECTOR WATER INFRASTRUCTURE MANAGEMENT

NANCY BONHAM, P. ENG ACTING DIRECTOR ENGINEERING AND CONSTRUCTION SERVICES CAPITAL WORKS DELIVERY

JANE OSLER BOULEVARD

FROM WEST OF DUFFERIN STREET

STORM SEWER SEWER RE-CONSTRUCTION

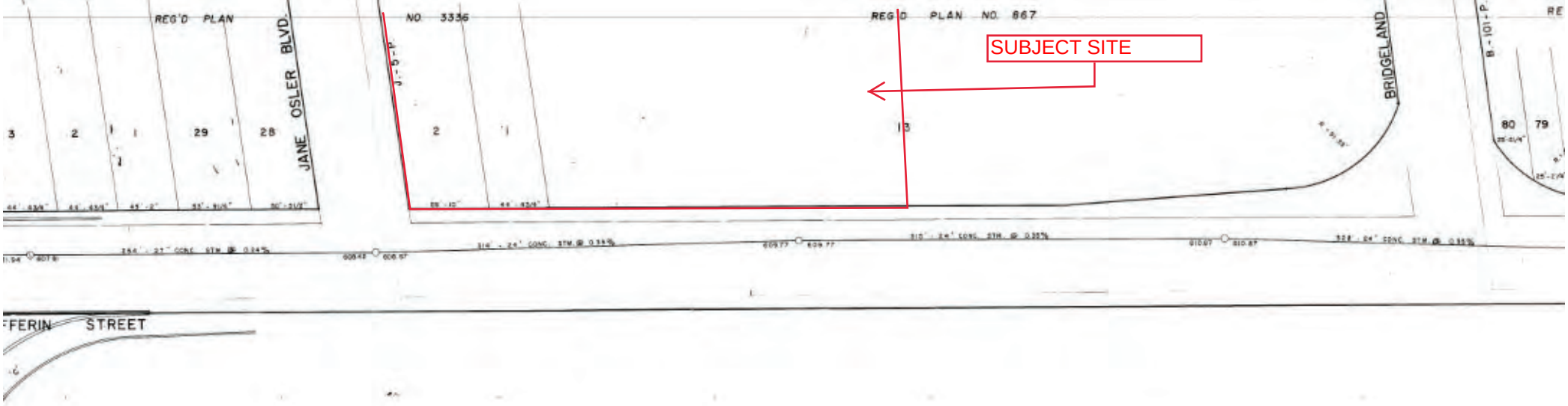
DESIGN	P.K.	DRAWN	A.G.	CHECKED	M.P.
SCALE:	HORIZONTAL 1:200 VERTICAL 1:100				
DATE:	FEBRUARY 13, 2014				

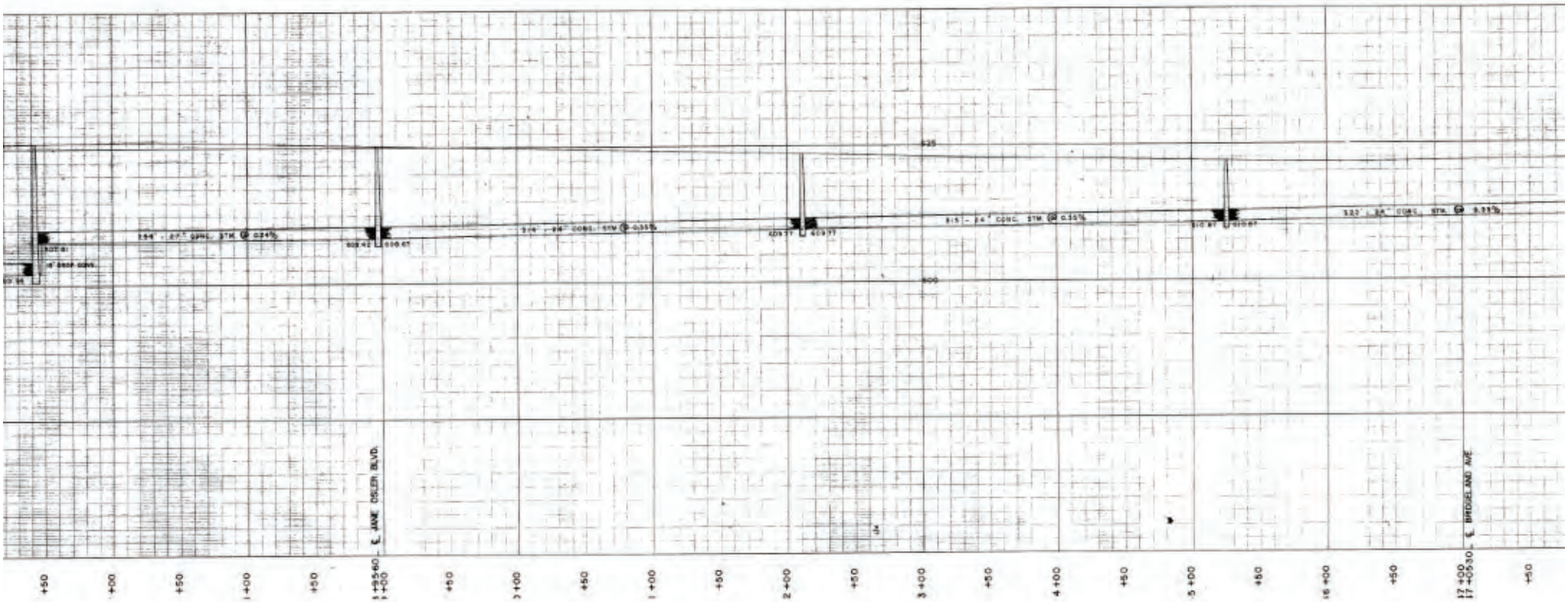
CONTRACT No. 14FS-06WP

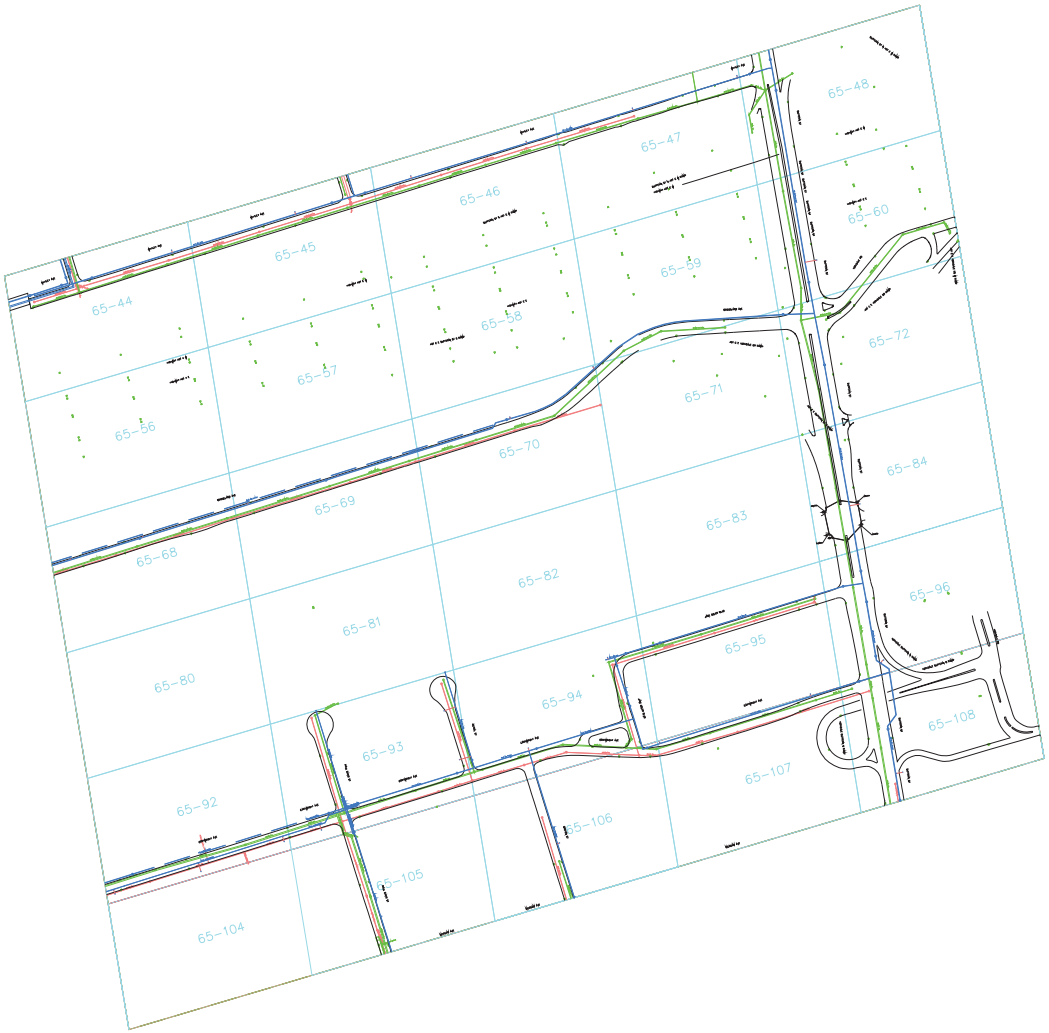
DRAWING NUMBER U-5907-001

SHEET 10 OF 13

Mo.Day.Yr SEP.11.03


REG'D PLAN
NO. 3336
REG'D PLAN NO. 867
SUBJECT SITE
JANE OSLER BLVD.
BRIDGELAND
FERIN STREET
3
2
29
28
2
1
13
80
79


E. JANE OSLER BLVD.
E. BRIDGELAND AVE.



CUMAP (CITY UTILITY MAPPING)

DATA SETS

WATER MAIN
STORM SEWER
SANITARY SEWER
COMBINED SEWER

RELEASE AND INDEMNIFICATION AGREEMENT
FOR THE USE OF CITY OF TORONTO DIGITAL SEWER \ WATER MAPPING

In consideration of the City of Toronto, hereinafter called the City, providing the above data (the "Data") to CompanyName, (the "Applicant"), the Applicant hereby releases, remises and forever discharges the City, its successors and assigns from and of all manner of actions, causes of actions, debts, claims and demands whatsoever which against the said City, its successors or assigns the Applicant ever had or which the Applicant's heirs, executors, administrators or assigns or any of them hereinafter can, shall or may have for or by reason of the use or otherwise of the Data provided by the City to the Applicant and the Applicant will from time to time hereafter well and truly defend, save harmless and fully indemnify the City, its successors and assigns from and against all claims and demands which may be brought against or made upon the City, its successors or assigns and against all loss, cost and damage which the City, its successors or assigns may sustain, suffer or be put to in any way incidental to providing the Data to the Applicant.

The Data is protected by copyright of which the City is the sole owner. The applicant acknowledges and agrees that the Applicant is granted only a non-exclusive, restricted license to use the Data for the Applicant's own educational purposes. Neither the Applicant nor any of its Representatives may reproduce, modify or alter the Data by any means for any purpose other than the Applicant's own educational purposes without the prior written consent of the City. Except as expressly permitted herein, the Data, or any portion of the Data, shall not be sold, licensed or otherwise transferred by the Applicant or any of its Representatives to any third parties either voluntarily or by operation of law. This agreement may not be assigned by the Applicant without the prior written consent of the City, which shall not be unreasonably withheld.

The Applicant acknowledges and agrees that the City makes no warranties with respect to the Data provided under this agreement as to content, completeness, accuracy, merchantable quality, or fitness for a particular purpose, express or implied, or arising by law or by statute, or by usage of trade or course of dealing. The entire risk as to the results and performance of the City's data is assumed by the Applicant and the City, its successors and assigns shall have no liability for reliance placed upon the Data by the Applicant or any other person or entity.

PLAN OF SURVEY
SHOWING TOPOGRAPHICAL INFORMATION OF

PART OF LOTS 13 AND 14 REGISTERED PLAN 867

AND

LOT 12 AND PART OF LOTS 1 AND 2 REGISTERED PLAN 3336

CITY OF TORONTO
(FORMERLY CITY OF NORTH YORK)

SCALE 1:250

0 5 10 15 20 25m

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 BEARINGS DERIVED FROM HORIZONTAL CONTROL MONUMENTS No. 020018240A4 AND No. 020197401J , 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)(1997)).

DISTANCES SHOWN HEREON ARE GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999990.

INTEGRATION DATA

SPECIFIED CONTROL POINTS

MONUMENT ID.	PUBLISHED VALUES (NAD 27 1974 ADJUSTMENT, MTM ZONE 10)	CALCULATED VALUES (NAD 83 CORS(1997), MTM ZONE 10)
HCM #20018240A4	N: 4 842 684.391 E: 307 909.122	N: 4 842 906.400 E: 307 924.836
HCM #20197401J	N: 4 842 418.578 E: 308 269.397	N: 4 842 640.600 E: 308 285.116

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

POINT	NORTHING	EASTING
1	4 842 753.01	308 240.16
2	4 842 695.91	308 056.31
3	4 842 805.89	308 038.89
4	4 842 861.00	308 215.83
5	4 842 826.56	308 227.36

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. 1231965181R HAVING AN ELEVATION OF 190.109 METRES. (CGVD-1928:1978)

LEGEND

- (M) DENOTES SURVEY MONUMENT FOUND
- □ DENOTES SURVEY MONUMENT PLANTED
- HCM DENOTES HORIZONTAL CONTROL MONUMENT
- SIB DENOTES STANDARD IRON BAR
- SSIB DENOTES SHORT STANDARD IRON BAR
- IB DENOTES IRON BAR
- RIB DENOTES ROUND IRON BAR
- IB DENOTES IRON BAR
- IP DENOTES IRON PIPE
- CC DENOTES CUT CROSS
- (M) DENOTES MEASURED
- (S) DENOTES SET
- (OU) DENOTES ORIGIN UNKNOWN
- (WI) DENOTES WITNESS
- (RP) DENOTES REGISTERED PLAN 3336
- (P1) DENOTES PLAN 66R-15356
- (P2) DENOTES PLAN 66R-15356
- (P3) DENOTES PLAN 66R-30644
- (P4) DENOTES PLAN 66R-30272
- (P4) DENOTES PLAN BY SPEIGHT, VAN NOSTRAND, WARD AND ANDERSON, O.L.S. DATED SEPTEMBER 22, 1956.
- (P5) DENOTES BOUNDARY AND TOPOGRAPHICAL SURVEY BY D.R. BLACK SURVEYING LTD., O.L.S. DATED NOVEMBER 14, 1985.
- (P6) DENOTES PLAN OF SURVEY BY SPEIGHT, VAN NOSTRAND, ANDERSON AND CURRIE, O.L.S. DATED JANUARY 31, 1966.
- (P7) DENOTES PLAN 64R-1620
- (BA) DENOTES BEARING AS PER
- (1370) DENOTES KRCMAR SURVEYORS LTD. O.L.S.
- (JCB) DENOTES J.C. BEATON, O.L.S.
- (DFP) DENOTES DONEVAN FLEISCHMANN PETRICH LTD., O.L.S.
- (HW) DENOTES HAROLD WHEELER & ASSOCIATES, O.L.S.
- (Tc) DENOTES TOP OF CURB
- (Bc) DENOTES BOTTOM OF CURB
- (Tw) DENOTES TOP OF WALL
- (Bw) DENOTES BOTTOM OF WALL
- DENOTES EXISTING GRADE ELEVATION
- A/C DENOTES AIR CONDITIONER
- BPED DENOTES BELL PEDESTAL
- BMH DENOTES BELL MANHOLE
- BP DENOTES BELL POLE
- BOL DENOTES BOLLARD
- DENOTES CATCH BASIN
- DENOTES CONIFEROUS TREE WITH TRUNK DIAMETER
- DENOTES DECIDUOUS TREE WITH TRUNK DIAMETER
- DENOTES DOWN GUY ANCHOR
- FH DENOTES FIRE HYDRANT
- DENOTES GAS METER
- GV DENOTES GAS VALVE
- HH DENOTES HYDRO HAND WELL
- HMH DENOTES HYDRO MANHOLE
- HP DENOTES HYDRO POLE
- HPLS DENOTES HYDRO POLE WITH LAMP STANDAR
- LP DENOTES LAMP POST (PRIVATE)
- LS DENOTES LAMP STANDARD
- DENOTES MANHOLE
- SIGN DENOTES SIGN
- TL DENOTES TRAFFIC LIGHT
- TV DENOTES CABLE TV PEDESTAL
- WV DENOTES WATER VALVE
- BF DENOTES BOARD FENCE
- BPR DENOTES BRICK PILLAR
- CBL DENOTES CONCRETE BLOCK
- CLF DENOTES CHAIN LINK FENCE
- CONC DENOTES CONCRETE
- CPAD DENOTES CONCRETE PAD
- CPL DENOTES CONCRETE PLANTER(RAISED)
- CRW DENOTES CONCRETE RETAINING WALL
- CSW DENOTES CONCRETE SIDEWALK
- EOA DENOTES EDGE OF ASPHALT
- ILB DENOTES INTERLOCKING BRICK
- MF DENOTES METAL FENCE
- SPK DENOTES SPIKE
- SRW DENOTES STONE RETAINING WALL
- SILL DENOTES DOOR SILL
- WF DENOTES WROUGHT IRON FENCE
- DENOTES FENCE
- DENOTES GUARD RAIL
- DENOTES BELL SERVICE (OVERHEAD)
- DENOTES HYDRO SERVICE (OVERHEAD)

ALL BUILDING TIES TAKEN TO BRICK UNLESS NOTED OTHERWISE.

ALL FOUND BARS ARE BY KRCMAR SURVEYORS LTD., O.L.S. (1370) UNLESS NOTED OTHERWISE

TOTAL SITE AREA= 1.6680 ha

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 TO EASEMENT AS IN INST. NY629544.
5. SUBJECT TO EASEMENT AS IN INST. NY476059.
6. SUBJECT TO EASEMENT AS IN INST. AT5114265 OVER, PARTS 7, 8, 9, 10, 11 AND 12, PLAN 66R-30644.
7. TOGETHER WITH A RIGHT-OF-WAY AS IN INST. NY546335 OVER PART 2, PLAN 65R-30644.
8. TOGETHER WITH EASEMENT AS IN INST. AT5114260 OVER PART 6, PLAN 65R-30644.
9. LAND COMPRISES ALL OF PIN 10236-0025(LT).

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 LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 21st DAY OF JUNE, 2022

DATE June 22, 2022

E.N. RAMSAROOP
ONTARIO LAND SURVEYOR

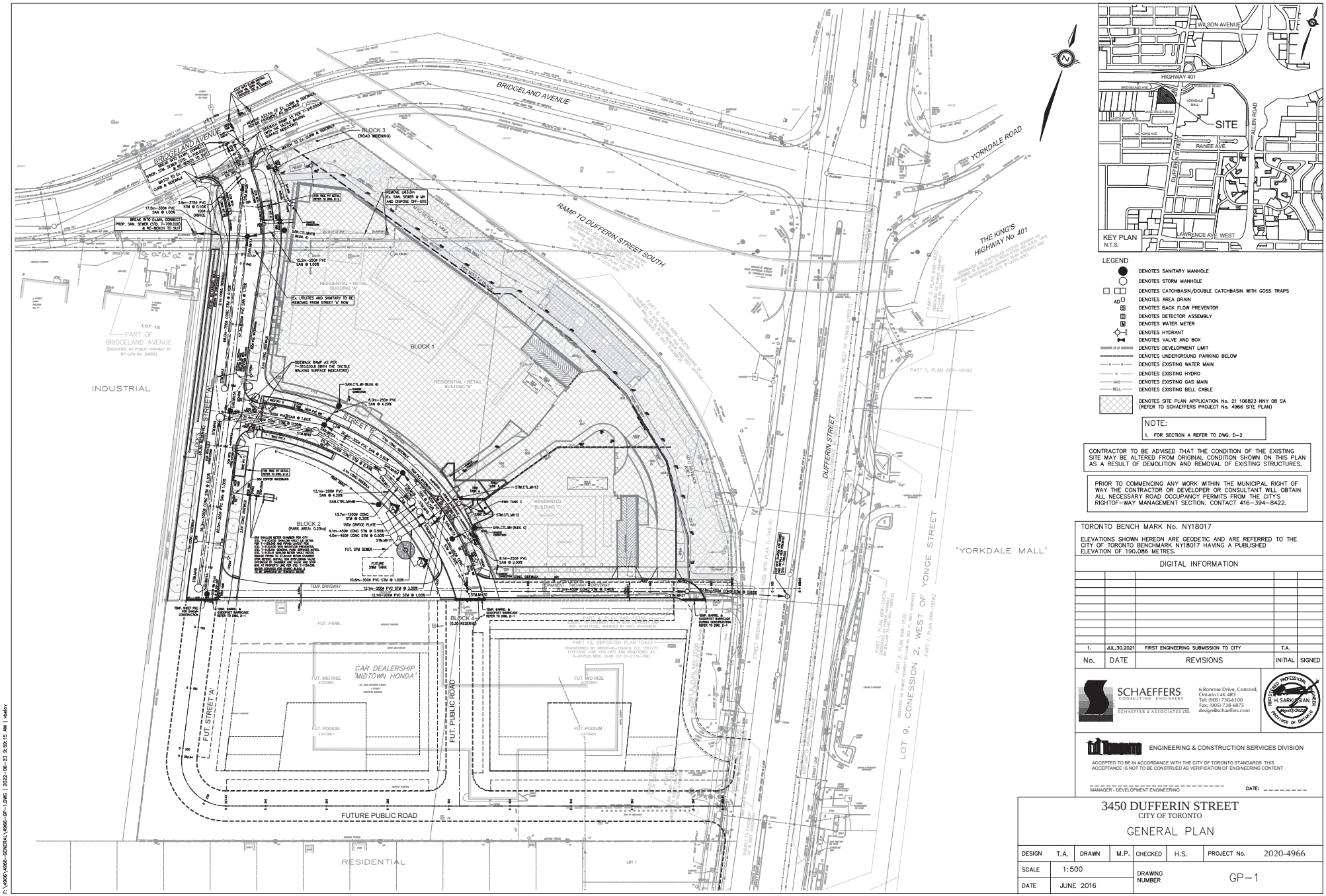
THIS PLAN OF SURVEY RELATES TO AOLS PLAN SUBMISSION FORM NUMBER V-26206

MUNICIPAL ADDRESS: No. 3400 DUFFERIN STREET, TORONTO					
FIELD: G.L.	DRAWN: S.D.	CHECKED: S.R.R.	JOB NO: 208160		D-101
DWG NAME: 21-412870	PLOT INFO:	00:49 22-Jun-2022	WORK ORDER NO:		36581

1137 Centre Street Thornhill ON L4J 3M6 905.738.8053 F 905.738.8211 www.krcmar.ca

PLAN AVAILABLE AT www.ProtectYourBoundaries.ca

KRCMAR



LEGEND

- DENOTES SANITARY MANHOLE
- DENOTES STORM MANHOLE
- DENOTES CATCHBASIN/DOUBLE CATCHBASIN WITH GOSS TRAPS
- AD DENOTES AREA DRAIN
- DENOTES BACK FLOW PREVENTOR
- DENOTES DETECTOR ASSEMBLY
- DENOTES WATER METER
- DENOTES HYDRANT
- DENOTES VALVE AND BOX
- DENOTES DEVELOPMENT LIMIT
- DENOTES UNDERGROUND PARKING BELOW
- DENOTES EXISTING WATER MAIN
- DENOTES EXISTING HYDRO
- GAS DENOTES EXISTING GAS MAIN
- BELL DENOTES EXISTING BELL CABLE
- DENOTES SITE PLAN APPLICATION No. 21 106823 NNY 08 SA (REFER TO SCHAEFFERS PROJECT No. 4966 SITE PLAN)

NOTE:
1. FOR SECTION A REFER TO DWG. D-2

CONTRACTOR TO BE ADVISED THAT THE CONDITION OF THE EXISTING SITE MAY BE ALTERED FROM ORIGINAL CONDITION SHOWN ON THIS PLAN AS A RESULT OF DEMOLITION AND REMOVAL OF EXISTING STRUCTURES.

PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL RIGHT OF WAY THE CONTRACTOR OR DEVELOPER OR CONSULTANT WILL OBTAIN ALL NECESSARY ROAD OCCUPANCY PERMITS FROM THE CITY'S RIGHTOF-WAY MANAGEMENT SECTION. CONTACT 416-394-8422.

TORONTO BENCH MARK No. NY18017

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO THE CITY OF TORONTO BENCHMARK NY18017 HAVING A PUBLISHED ELEVATION OF 190.086 METRES.

DIGITAL INFORMATION

No.	DATE	REVISIONS	INITIAL	SIGNED
1.	JUL.30.2021	FIRST ENGINEERING SUBMISSION TO CITY	T.A.	

SCHAEFFERS CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
6 Ronrose Drive, Concord, Ontario L4K 4R3
Tel: (905) 738-6100
Fax: (905) 738-6875
design@schaeffers.com
H.SARKISSIAN 90403 REGISTERED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

ENGINEERING & CONSTRUCTION SERVICES DIVISION

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

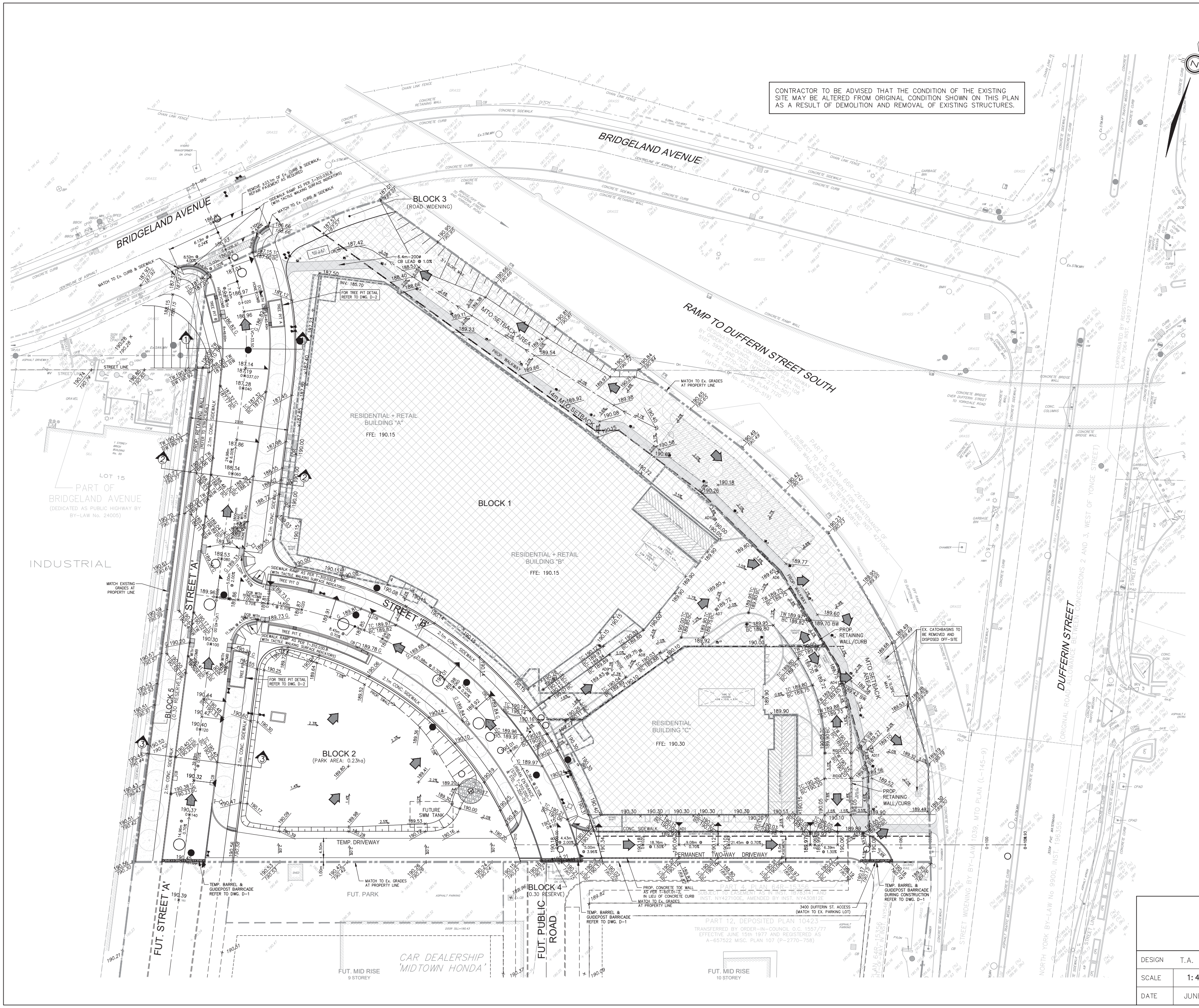
MANAGER - DEVELOPMENT ENGINEERING DATE:

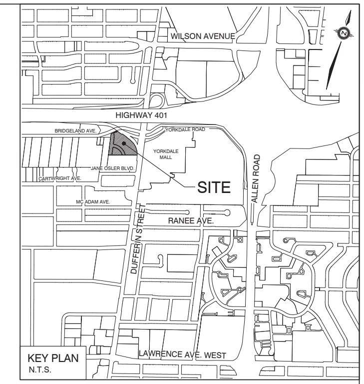
3450 DUFFERIN STREET
CITY OF TORONTO

GENERAL PLAN

DESIGN	T.A.	DRAWN	M.P.	CHECKED	H.S.	PROJECT No.	2020-4966
SCALE	1:500					DRAWING NUMBER	GP-1
DATE	JUNE 2016						

F:\4966\4966-GENERAL\4966-GP-1.DWG | 2022-06-23, 9:59:15 AM | rbelov





KEY PLAN
N.T.S.

CONTRACTOR TO BE ADVISED THAT THE CONDITION OF THE EXISTING SITE MAY BE ALTERED FROM ORIGINAL CONDITION SHOWN ON THIS PLAN AS A RESULT OF DEMOLITION AND REMOVAL OF EXISTING STRUCTURES.

LEGEND

- DENOTES SANITARY MANHOLE
- DENOTES STORM MANHOLE
- DENOTES CATCHBASIN/DOUBLE CATCHBASIN WITH GOSS TRAPS
- AD DENOTES AREA DRAIN
- DENOTES HYDRANT
- DENOTES VALVE AND BOX
- DENOTES WATER METER AND BACKFLOW PREVENTER
- DENOTES PROPERTY LINE
- DENOTES OVERLAND FLOW ARROW
- 131.48 DENOTES PROPOSED ELEVATION
- 131.48 TC DENOTES PROPOSED TOP OF CURB
- 131.48 BC DENOTES PROPOSED BOTTOM OF CURB
- 131.48 G DENOTES PROPOSED GUTTER
- 131.48 TW DENOTES PROPOSED TOP OF RETAINING WALL
- 131.48 BW DENOTES PROPOSED BOTTOM OF RETAINING WALL
- 130.29 DENOTES EXISTING ELEVATION
- DENOTES SURFACE PONDING
- DENOTES SITE PLAN APPLICATION No. 21 106823 NNY 08 SA (REFER TO SCHAEFFERS PROJECT No. 4966 SITE PLAN)

NOTE:
1. FOR SECTIONS 1 TO 3 REFER TO DWG. SEC-1

PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL RIGHT OF WAY THE CONTRACTOR OR DEVELOPER OR CONSULTANT WILL OBTAIN ALL NECESSARY ROAD OCCUPANCY PERMITS FROM THE CITY'S RIGHTOF-WAY MANAGEMENT SECTION. CONTACT 416-394-8422.

TORONTO BENCH MARK No. NY18017

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO THE CITY OF TORONTO BENCHMARK NY18017 HAVING A PUBLISHED ELEVATION OF 190.086 METRES.

DIGITAL INFORMATION

No.	DATE	REVISIONS	INITIAL	SIGNED
1.	JUL.30.2021	FIRST ENGINEERING SUBMISSION TO CITY	T.A.	

SCHAEFFERS
CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
6 Ronrose Drive, Concord, Ontario L4K 4R3
Tel: (905) 738-6100
Fax: (905) 738-6875
design@schaeffers.com

REGISTERED PROFESSIONAL ENGINEER H. SARKISSIAN PROVINCE OF ONTARIO

TORONTO ENGINEERING & CONSTRUCTION SERVICES DIVISION

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

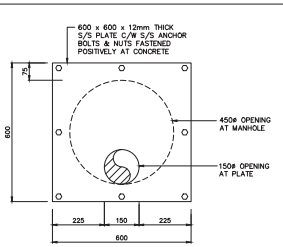
MANAGER - DEVELOPMENT ENGINEERING DATE:

3450 DUFFERIN STREET
CITY OF TORONTO

GRADING PLAN

DESIGN	T.A.	DRAWN	M.P.	CHECKED	H.S.	PROJECT No.	2020-4966
SCALE	1:400			DRAWING NUMBER		GR-1	
DATE	JUNE 2016						

F:\4966\4966-GRADING\4966-GR-1.DWG | 2022-06-23 9:08:14 AM | vbelov



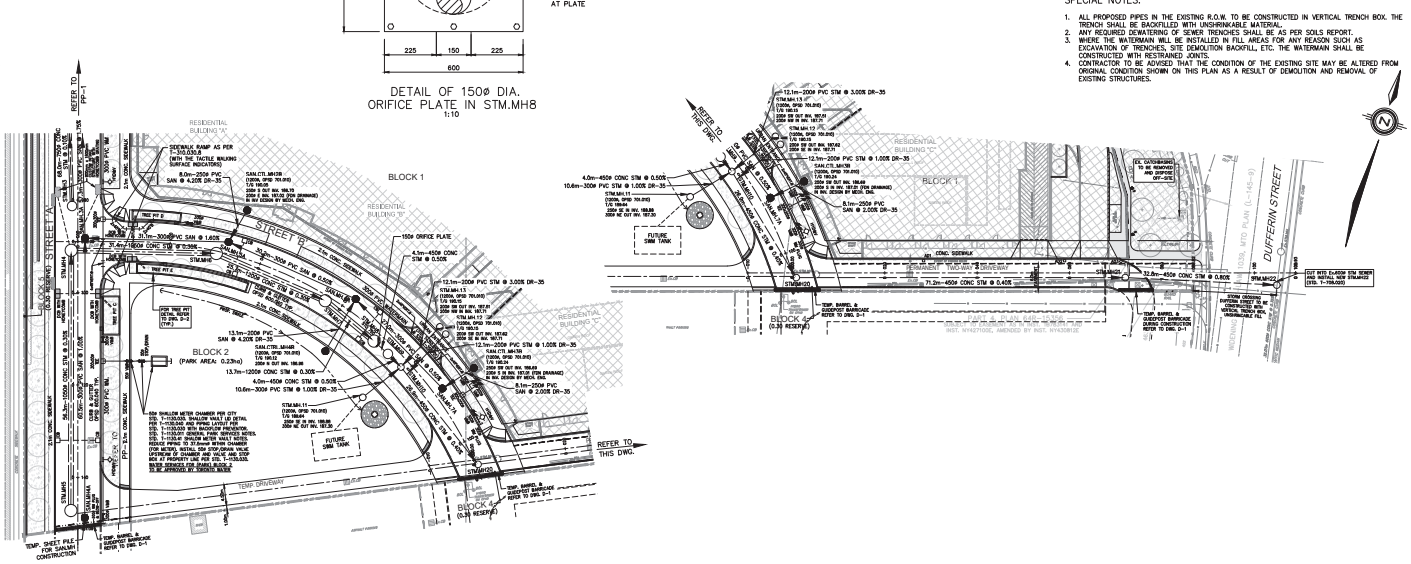
DETAIL OF 150ø DIA. ORIFICE PLATE IN STM.MH8
1:10

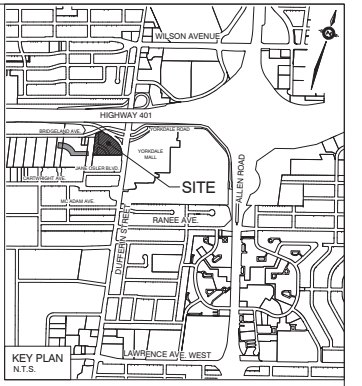
NOTES:

1. FOR GENERAL NOTES REFER TO DWG. No. GN-1.
2. THE LOCATION OF ALL UNDERGROUND AND ABOVEGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON CONTRACT DRAWINGS, AND WHERE SHOWN THE ACCURACY OF THE LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. PRIOR TO COMMENCING THE CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITIES OF DAMAGE.
3. ANY CONFLICTS WITH EXISTING SERVICES AND/OR UTILITIES SHALL BE REPORTED TO THE ENGINEER FOR REVIEW AND ADVICE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. INFORMATION REGARDING ANY EXISTING SERVICES AND/OR UTILITIES SHOWN ON THIS DRAWING ARE FURNISHED AS THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL INTERPRET THIS INFORMATION AS HE SEES FIT WITH THE UNDERSTANDING THAT THE OWNER, ENGINEER AND CITY DISCLAIM ALL RESPONSIBILITY FOR ITS ACCURACY AND/OR SUFFICIENCY.
5. THE CONTRACTOR SHALL PROVIDE DETAILS TO SUPPORT THE EX. SERVICES AND/OR UTILITIES FOR ENGINEER'S APPROVAL PRIOR TO THE START OF CONSTRUCTION.

SPECIAL NOTES:

1. ALL PROPOSED PIPES IN THE EXISTING R.O.W. TO BE CONSTRUCTED IN VERTICAL TRENCH BOX. THE TRENCH SHALL BE BACKFILLED WITH UNSHRINKABLE MATERIAL.
2. ANY REQUIRED DEWATERING OF SEWER TRENCHES SHALL BE AS PER SOILS REPORT.
3. WHERE THE WATERMAIN WILL BE INSTALLED IN FILL AREAS FOR ANY REASON SUCH AS EXCAVATION OF TRENCHES, SITE DEMOLITION BACKFILL ETC. THE WATERMAIN SHALL BE CONSTRUCTED WITH RESTRAINED JOINTS.
4. CONTRACTOR TO BE ADVISED THAT THE CONDITION OF THE EXISTING SITE MAY BE ALTERED FROM ORIGINAL CONDITION SHOWN ON THIS PLAN AS A RESULT OF DEMOLITION AND REMOVAL OF EXISTING STRUCTURES.





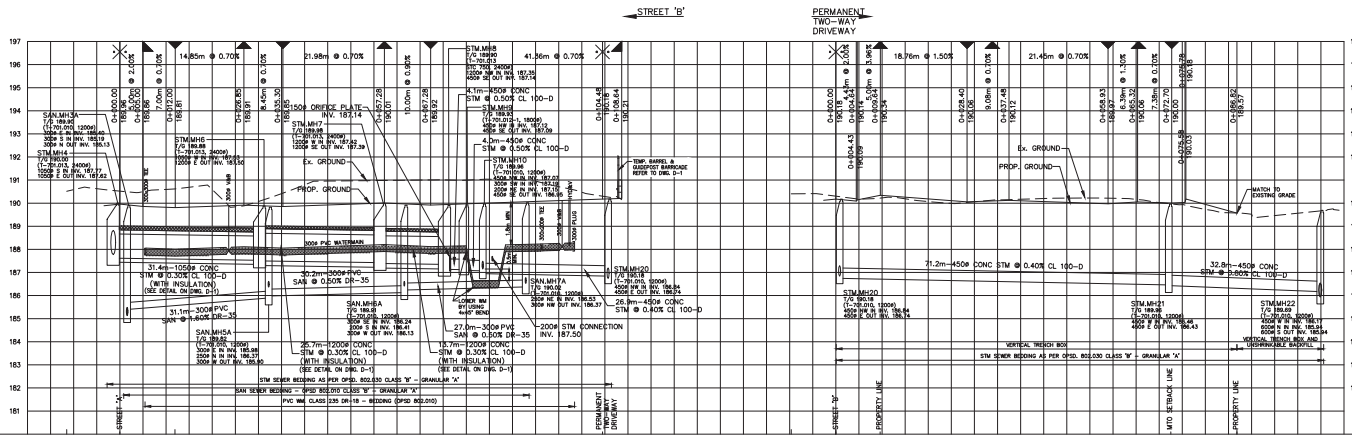
LEGEND

- DENOTES SANITARY MANHOLE
- DENOTES STORM MANHOLE
- DENOTES CATCHBASIN/DOUBLE CATCHBASIN WITH GOSS TRAPS
- DENOTES HYDRANT
- DENOTES VALVE AND BOX
- DENOTES DEVELOPMENT LIMIT
- DENOTES UNDERGROUND PARKING BELOW
- DENOTES EXISTING WATER MAIN
- DENOTES EXISTING HYDRO
- DENOTES EXISTING GAS MAIN
- DENOTES EXISTING BELL CABLE
- DENOTES SITE PLAN APPLICATION No. 21 106823 NNY 08 SA (REFER TO SCHAEFFERS PROJECT No. 4966 SITE PLAN)

PAVEMENT MAKE-UP FOR STREET 'B' (LOCAL) AND PERMANENT TWO-WAY DRIVEWAY & TEMP. DRIVEWAY

40mm HMA SURFACE COURSE, TS 1151 SP 12.5
60mm HMA BINDER COURSE, TS 1151 SP 19.0
150mm GRANULAR BASE COURSE, TS 1010 GRANULAR 'A'
150mm GRANULAR SUBBASE COURSE, TS 1010 GRANULAR 'B' - TYPE II

PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL RIGHT OF WAY THE CONTRACTOR OR DEVELOPER OR CONSULTANT WILL OBTAIN ALL NECESSARY ROAD OCCUPANCY PERMITS FROM THE CITY'S RIGHTOF-WAY MANAGEMENT SECTION. CONTACT 416-394-8422.



GEODETIC DATUM																					GEODETIC DATUM
PROPOSED/EXISITING ELEVATION	189.96 189.96	189.87 189.87	189.89 189.89	189.96 189.96	190.01 190.01	190.15 190.15						190.18 190.18	190.18 190.18	190.10 190.10	189.99 189.99						PROPOSED/EXISITING ELEVATION
CHAINAGE	0+020.00	0+020.00	0+040.00	0+060.00	0+080.00	0+100.00	0+120.00					0+000.00	0+020.00	0+040.00	0+060.00	0+080.00	0+100.00				CHAINAGE

TORONTO BENCH MARK No. NY18017

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO THE CITY OF TORONTO BENCHMARK NY18017 HAVING A PUBLISHED ELEVATION OF 190.086 METRES.

DIGITAL INFORMATION

No.	DATE	REVISIONS	INITIAL	SIGNED
1.	JUL.30.2021	FIRST ENGINEERING SUBMISSION TO CITY	T.A.	

SCHAEFFERS CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
6 Ronrose Drive, Concord, Ontario L4K 4R3
Tel: (905) 738-6100
Fax: (905) 738-6875
design@schaeffers.com
H.SARKISSIAN
100135
PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

ENGINEERING & CONSTRUCTION SERVICES DIVISION

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

MANAGER - DEVELOPMENT ENGINEERING DATE:

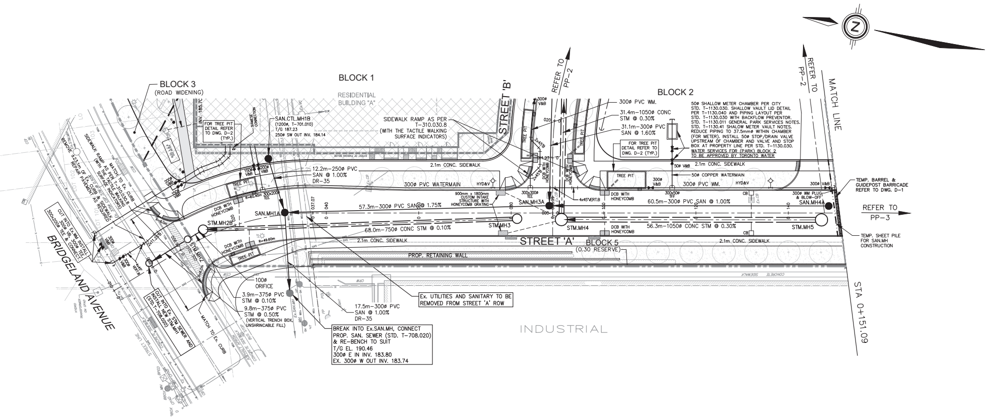
3450 DUFFERIN STREET
CITY OF TORONTO

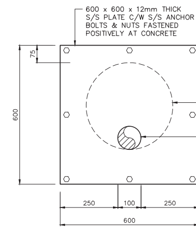
STREET B
STA. 0+000.000 TO STA. 0+108.640

PERMANENT DRIVEWAY
STA. 0+000.000 TO STA. 0+086.530

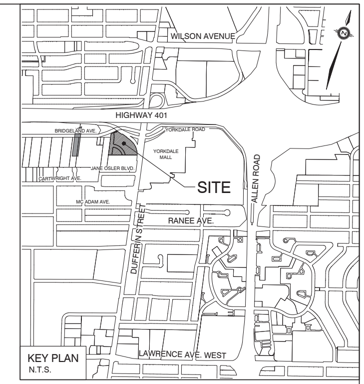
DESIGN	T.A.	DRAWN	M.P.	CHECKED	H.S.	PROJECT No.	2020-4966
SCALE	H 1:500 V 1:100			DRAWING NUMBER	PP-2		
DATE	JUNE 2016						

F:\4966\4966-PLAN-PROFILES\4966-PP-2.DWG | 2022-06-23 9:50:39 AM | vhelev





DETAIL OF 100ø DIA.
ORIFICE PLATE IN STM.MH2B
1:10



KEY PLAN
N.T.S.

NOTES:

1. FOR GENERAL NOTES REFER TO DWG. No. GN–1.
2. THE LOCATION OF ALL UNDERGROUND AND ABOVEGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON CONTRACT DRAWINGS, AND WHERE SHOWN THE ACCURACY OF THE LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. PRIOR TO COMMENCING THE CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND ELEVATION OF SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITIES OF DAMAGE.
3. ANY CONFLICTS WITH EXISTING SERVICES AND/OR UTILITIES SHALL BE REPORTED TO THE ENGINEER FOR REVIEW AND ADVICE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. INFORMATION REGARDING ANY EXISTING SERVICES AND/OR UTILITIES SHOWN ON THIS DRAWING ARE FURNISHED AS THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL INTERPRET THIS INFORMATION AS HE SEES FIT WITH THE UNDERSTANDING THAT THE OWNER, ENGINEER AND CITY DISCLAIM ALL RESPONSIBILITY FOR ITS ACCURACY AND/OR SUFFICIENCY.
5. THE CONTRACTOR SHALL PROVIDE DETAILS TO SUPPORT THE EX. SERVICES AND/OR UTILITIES FOR ENGINEER'S APPROVAL PRIOR TO THE START OF CONSTRUCTION.

SPECIAL NOTES:

1. ALL PROPOSED PIPES IN THE EXISTING R.O.W. TO BE CONSTRUCTED IN VERTICAL TRENCH BOX. THE TRENCH SHALL BE BACKFILLED WITH UNSHRINKABLE MATERIAL.
2. ANY REQUIRED DEWATERING OF SEWER TRENCHES SHALL BE AS PER SOILS REPORT.
3. WHERE THE WATERMAIN WILL BE INSTALLED IN FILL AREAS FOR ANY REASON SUCH AS EXCAVATION OF TRENCHES, SITE DEMOLITION BACKFILL, ETC. THE WATERMAIN SHALL BE CONSTRUCTED WITH RESTRAINED JOINTS.
4. CONTRACTOR TO BE ADVISED THAT THE CONDITION OF THE EXISTING SITE MAY BE ALTERED FROM ORIGINAL CONDITION SHOWN ON THIS PLAN AS A RESULT OF DEMOLITION AND REMOVAL OF EXISTING STRUCTURES.

LEGEND

- DENOTES SANITARY MANHOLE
- DENOTES STORM MANHOLE
- DENOTES CATCHBASIN/DOUBLE CATCHBASIN WITH GOSS TRAPS
- DENOTES HYDRANT
- DENOTES VALVE AND BOX
- DENOTES DEVELOPMENT LIMIT
- DENOTES UNDERGROUND PARKING BELOW
- DENOTES EXISTING WATER MAIN
- DENOTES EXISTING HYDRO
- DENOTES EXISTING GAS MAIN
- DENOTES EXISTING BELL CABLE
- DENOTES SITE PLAN APPLICATION No. 21 106823 NNY 08 SA (REFER TO SCHAEFFERS PROJECT No. 4966 SITE PLAN)

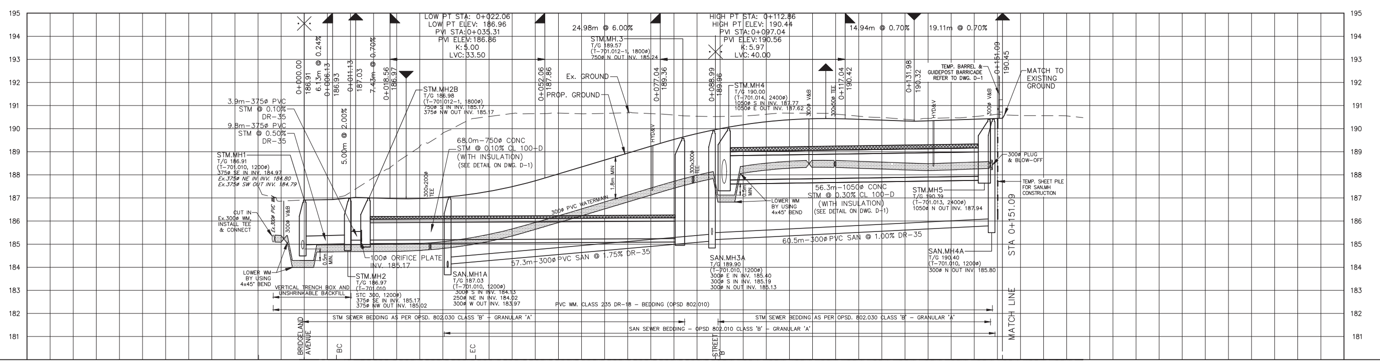
PAVEMENT MAKE–UP FOR STREET 'A' (COLLECTOR)

40mm HMA SURFACE COURSE, TS 1151 SP 12.5
70mm HMA BINDER COURSE, TS 1151 SP 19.0
150mm GRANULAR BASE COURSE, TS 1010 GRANULAR 'A'
150mm GRANULAR SUBBASE COURSE, TS 1010 GRANULAR 'B' – TYPE II

PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL RIGHT OF WAY THE CONTRACTOR OR DEVELOPER OR CONSULTANT WILL OBTAIN ALL NECESSARY ROAD OCCUPANCY PERMITS FROM THE CITY'S RIGHTOF–WAY MANAGEMENT SECTION. CONTACT 416–394–8422.

TORONTO BENCH MARK No. NY18017

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO THE CITY OF TORONTO BENCHMARK NY18017 HAVING A PUBLISHED ELEVATION OF 190.086 METRES.



GEODETIC DATUM									
PROPOSED/EXISITING ELEVATION	186.91 / 186.91	186.97 / 188.54	187.28 / 190.52	188.34 / 190.64	189.53 / 190.59	190.30 / 190.62	190.40 / 190.54	190.37 / 190.47	190.39 / 190.56
CHAINAGE	0+000.00	0+020.00	0+040.00	0+060.00	0+080.00	0+100.00	0+120.00	0+140.00	0+160.00

DIGITAL INFORMATION

No.	DATE	REVISIONS	INITIAL	SIGNED
1.	JUL.30.2021	FIRST ENGINEERING SUBMISSION TO CITY	T.A.	

SCHAEFFERS CONSULTING ENGINEERS
SCHAEFFER & ASSOCIATES LTD.
6 Ronrose Drive, Concord, Ontario L4K 4R3
Tel: (905) 738-6100
Fax: (905) 738-6875
design@schaeffers.com

REGISTERED PROFESSIONAL ENGINEER H.SARKISSIAN May.03/2022 PROVINCE OF ONTARIO

TORONTO ENGINEERING & CONSTRUCTION SERVICES DIVISION

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

MANAGER - DEVELOPMENT ENGINEERING DATE:

3450 DUFFERIN STREET
CITY OF TORONTO
STREET A
STA. 0+000.000 TO STA. 0+151.090

DESIGN	T.A.	DRAWN	M.P.	CHECKED	H.S.	PROJECT No.	2020-4966
SCALE	H 1:500 V 1:100	DRAWING NUMBER	PP-1				
DATE	JUNE 2016						

F:\4966\4966-PLAN-PROFILES\4966-PP-1.DWG | 2022-06-23 9:51:38 AM | vbelov

3400 DUFFERIN STREET

APPLICATION FOR ZONING BY-LAW AMENDMENT

PROJECT TEAM

DEVELOPER
Collecdev
20 Eglinton Ave W. Suite 1700
Toronto ON, M4R 1K8
T: 416-640-4000
collecdev.com

ARCHITECTURAL & LANDSCAPE ARCHITECTURE
gh3*
T: 416.915.1791
gh3.ca

PLANNING & URBAN DESIGN
Bousfields
T: 416.947.9744
bousfields.ca

CIVIL ENGINEERING
IBI GROUP
T: 905.763.2322
ibigroup.com

WIND & ARBORIST
SLR Consulting
T: 226.706.8080
slrconsulting.com

TRANSPORTATION
BA GROUP
T: 416.961.7110
bagroup.com

STRUCTURAL
TBD

MECHANICAL & ELECTRICAL
TBD

ARCHITECTURAL SHEET LIST

Sheet	Drawing Name	Current Revision
A000 PROJECT INFORMATION		
A000	COVER SHEET	
A001	STATISTICS	
A100 SITE		
A100	CONTEXT PLAN	
A101	SURVEY	
A102	ROOF PLAN	
A103	GROUND FLOOR SITE PLAN	
A105	LEVEL P1 FLOOR PLAN	
A200 PLANS		
A200	LEVEL 1 FLOOR PLAN	
A201	LEVEL 2 FLOOR PLAN	
A202	LEVEL 3 FLOOR PLAN	
A203	LEVEL 4 FLOOR PLAN	
A204	LEVEL 5 FLOOR PLAN	
A205	LEVEL 6 FLOOR PLAN	
A206	LEVEL 7 FLOOR PLAN	
A208	LEVEL 9 FLOOR PLAN	
A209	LEVEL 10 FLOOR PLAN	
A210	LEVEL 11-29 FLOOR PLAN	
A300 ELEVATIONS		
A300	SITE ELEVATIONS	
A301	SITE ELEVATIONS	
A302	BUILDING A ELEVATIONS	
A303	BUILDING B ELEVATIONS	
A304	BUILDING C ELEVATIONS	
A400 SECTIONS		
A400	SITE SECTIONS	
A401	SITE SECTIONS	
A402	SITE SECTIONS	
A500 MASSING VIEW		
A500	MASSING VIEW	
L100 PLANS		
L101	LANDSCAPE PLAN	1
L102	LANDSCAPE ROOF PLANS	
L103	PLANTING & SOIL VOLUME PLAN	1
L400 DETAILS		
L401	LANDSCAPE DETAILS	
L402	LANDSCAPE DETAILS	
L403	COT TYP DETAILS	

Rev. Date Issued

COLLECDEV

gh3
gh3*
55 OSSINGTON AVE, SUITE 100
Toronto, ON, Canada M6J 2Y9
416 915 1791

COLLECDEV
3400 DUFFERIN STREET

TORONTO

Project North True North

SCALE
PROJECT NO. 202211
ISSUE DATE -

COVER SHEET

A000

1.0 SUMMARY

GROSS SITE AREA: 16,680m²
TOTAL GFA: 60,811 m²
FSI: 3.65
NEW RESIDENTIAL UNITS: 834

PART B - BUILDING A
SITE AREA: 4,046 m²
GFA: 27,947 m²
FSI: 6.9
NEW RESIDENTIAL UNITS: 388

PART D - BUILDING B
SITE AREA: 4,079 m²
GFA: 26,971 m²
FSI: 6.6
NEW RESIDENTIAL UNITS: 371

PART C - BUILDING C
SITE AREA: 1,811 m²
GFA: 5,805 m²
FSI: 3.1
NEW RESIDENTIAL UNITS: 75

2.0 BUILDING HEIGHTS

3.0 FLOOR AREA

*GFA calculated per Area Plans, A1001 - A1003

2.2 FLOOR AREA

Level	# of Levels	CSA			GFA								Amenity	
		GCA/Level (m²)	Total CSA (m²)	CSA (sf)	Residential GCA (m2)	Residential GCA (sf)	Loading GCA (m2)	Parking GCA (m2)	GFA Deductions (m2)	GFA (SF)	GFA (m2)	Residential GFA (m2)	Non-Resi / Retail GFA (m2)	Leasable (m2)	Indoor Amenity (m2)	Outdoor Amenity (m2)
BELOW GRADE																
P2	1	8659 m²	8659 m²	93201 SF	8659 m²	93201 SF	0 m²	8659 m²	8536 m²	1320 SF	123 m²	123 m²	0 m²	0 m²	0 m²	0 m²
P1	1	8518 m²	8518 m²	91683 SF	8518 m²	91683 SF	0 m²	8518 m²	8352 m²	1786 SF	166 m²	166 m²	0 m²	0 m²	0 m²	0 m²
BELOW GRADE TOTAL		[1]	**17176 m²**	**184884 SF**	**17176 m²**	**184884 SF**	**0 m²**	**17176 m²**	**16888 m²**	**3106 SF**	**289 m²**	**289 m²**	**0 m²**	**0 m²**	**0 m²**	**0 m²**
BUILDING A																
Level 1	1	2530 m²	2440 m²	26260 SF	2440 m²	26260 SF	345 m²	0 m²	717 m²	18537 SF	1722 m²	1722 m²	0 m²	1084 m²	89 m²	0 m²
Level 2	1	2478 m²	2170 m²	23355 SF	2170 m²	23355 SF	0 m²	0 m²	95 m²	22331 SF	2075 m²	2075 m²	0 m²	1878 m²	0 m²	0 m²
Level 3	1	2478 m²	2170 m²	23355 SF	2170 m²	23355 SF	0 m²	0 m²	261 m²	20551 SF	1909 m²	1909 m²	0 m²	1878 m²	0 m²	0 m²
Level 4	1	2478 m²	2170 m²	23355 SF	2170 m²	23355 SF	0 m²	0 m²	95 m²	22331 SF	2075 m²	2075 m²	0 m²	1878 m²	0 m²	0 m²
Level 5	1	2274 m²	2057 m²	22144 SF	2057 m²	22144 SF	0 m²	0 m²	80 m²	21287 SF	1978 m²	1978 m²	0 m²	1782 m²	0 m²	0 m²
Level 6	1	2289 m²	2073 m²	22313 SF	2073 m²	22313 SF	0 m²	0 m²	95 m²	21287 SF	1978 m²	1978 m²	0 m²	1782 m²	0 m²	0 m²
Level 7	1	1312 m²	1254 m²	13499 SF	1254 m²	13499 SF	0 m²	0 m²	312 m²	10136 SF	942 m²	942 m²	0 m²	857 m²	277 m²	0 m²
Level 8	1	1034 m²	986 m²	10611 SF	986 m²	10611 SF	0 m²	0 m²	296 m²	7421 SF	689 m²	689 m²	0 m²	601 m²	227 m²	224 m²
Level 9	1	794 m²	746 m²	8035 SF	746 m²	8035 SF	0 m²	0 m²	50 m²	7495 SF	696 m²	696 m²	0 m²	701 m²	0 m²	0 m²
Level 10	1	794 m²	746 m²	8035 SF	746 m²	8035 SF	0 m²	0 m²	93 m²	7035 SF	654 m²	654 m²	0 m²	701 m²	0 m²	0 m²
Level 11-29	19	794 m²	14183 m²	152664 SF	14183 m²	152664 SF	0 m²	0 m²	953 m²	142408 SF	13230 m²	13230 m²	0 m²	13327 m²	0 m²	0 m²
BUILDING A TOTAL		[2]	**30995 m²**	**333627 SF**	**30995 m²**	**333627 SF**	**345 m²**	**0 m²**	**3048 m²**	**300821 SF**	**27947 m²**	**27947 m²**	**0 m²**	**26469 m²**	**593 m²**	**224 m²**
BUILDING B																
Level 1	1	2342 m²	2342 m²	25208 SF	1131 m²	12179 SF	359 m²	0 m²	672 m²	17978 SF	1670 m²	593 m²	1077 m²	1286 m²	134 m²	0 m²
Level 2	1	1693 m²	1558 m²	16772 SF	1558 m²	16772 SF	0 m²	0 m²	99 m²	15705 SF	1459 m²	1459 m²	0 m²	1427 m²	0 m²	0 m²
Level 3	1	2218 m²	1970 m²	21205 SF	1970 m²	21205 SF	0 m²	0 m²	94 m²	20191 SF	1876 m²	1876 m²	0 m²	2093 m²	0 m²	0 m²
Level 4	1	2374 m²	2126 m²	22882 SF	2126 m²	22882 SF	0 m²	0 m²	94 m²	21688 SF	2032 m²	2032 m²	0 m²	2093 m²	0 m²	0 m²
Level 5	1	2155 m²	1977 m²	21281 SF	1977 m²	21281 SF	0 m²	0 m²	94 m²	20268 SF	1883 m²	1883 m²	0 m²	1873 m²	0 m²	0 m²
Level 6	1	2155 m²	1977 m²	21281 SF	1977 m²	21281 SF	0 m²	0 m²	94 m²	20268 SF	1883 m²	1883 m²	0 m²	1873 m²	0 m²	0 m²
Level 7	1	1322 m²	1265 m²	13612 SF	977 m²	10519 SF	0 m²	0 m²	367 m²	9665 SF	898 m²	898 m²	0 m²	857 m²	287 m²	540 m²
Level 8	1	1034 m²	986 m²	10611 SF	759 m²	8173 SF	0 m²	0 m²	355 m²	6793 SF	631 m²	631 m²	0 m²	648 m²	227 m²	231 m²
Level 9	1	794 m²	747 m²	8036 SF	747 m²	8036 SF	0 m²	0 m²	49 m²	7504 SF	697 m²	697 m²	0 m²	702 m²	0 m²	0 m²
Level 10	1	794 m²	747 m²	8036 SF	747 m²	8036 SF	0 m²	0 m²	49 m²	7504 SF	697 m²	697 m²	0 m²	702 m²	0 m²	0 m²
Level 11-29	19	794 m²	14184 m²	152677 SF	14184 m²	152677 SF	0 m²	0 m²	939 m²	142567 SF	13245 m²	13245 m²	0 m²	13331 m²	0 m²	0 m²
BUILDING B TOTAL		[1]	**29878 m²**	**321609 SF**	**28153 m²**	**303039 SF**	**359 m²**	**0 m²**	**2907 m²**	**290311 SF**	**26971 m²**	**25894 m²**	**1077 m²**	**26886 m²**	**647 m²**	**770 m²**
BUILDING C																
Level 1	1	1035 m²	1035 m²	11145 SF	244 m²	2624 SF	446 m²	0 m²	610 m²	4578 SF	425 m²	137 m²	288 m²	288 m²	0 m²	504 m²
Level 2	1	973 m²	973 m²	10477 SF	973 m²	10477 SF	0 m²	0 m²	42 m²	10023 SF	931 m²	931 m²	0 m²	786 m²	59 m²	0 m²
Level 3	1	973 m²	973 m²	10477 SF	973 m²	10477 SF	0 m²	0 m²	42 m²	10023 SF	931 m²	931 m²	0 m²	786 m²	59 m²	0 m²
Level 4	1	826 m²	826 m²	8894 SF	759 m²	8168 SF	0 m²	0 m²	110 m²	7714 SF	717 m²	717 m²	0 m²	668 m²	67 m²	0 m²
Level 5	1	826 m²	826 m²	8894 SF	759 m²	8168 SF	0 m²	0 m²	110 m²	7714 SF	717 m²	717 m²	0 m²	668 m²	67 m²	0 m²
Level 6	1	826 m²	826 m²	8894 SF	759 m²	8168 SF	0 m²	0 m²	110 m²	7714 SF	717 m²	717 m²	0 m²	668 m²	67 m²	0 m²
Level 7	1	618 m²	473 m²	5088 SF	348 m²	3742 SF	0 m²	0 m²	167 m²	3291 SF	306 m²	306 m²	0 m²	419 m²	125 m²	0 m²
Level 8	1	473 m²	473 m²	5088 SF	473 m²	5088 SF	0 m²	0 m²	42 m²	4637 SF	431 m²	431 m²	0 m²	398 m²	0 m²	0 m²
Level 9	1	473 m²	473 m²	5088 SF	473 m²	5088 SF	0 m²	0 m²	42 m²	4637 SF	431 m²	431 m²	0 m²	398 m²	0 m²	0 m²
Level 10	1	170 m²	170 m²	1826 SF	0 m²	0 SF	0 m²	0 m²	170 m²	0 SF	0 m²	0 m²	0 m²	0 m²	0 m²	0 m²
BUILDING C TOTAL			**7049 m²**	**75871 SF**	**5760 m²**	**61998 SF**	**446 m²**	**0 m²**	**1444 m²**	**60332 SF**	**5605 m²**	**5317 m²**	**288 m²**	**5081 m²**	**446 m²**	**504 m²**
GRAND TOTAL		**61301 m²**	**85097 m²**	**915962 SF**	**82864 m²**	**883548 SF**	**1149 m²**	**17176 m²**	**24286 m²**	**654569 SF**	**60811 m²**	**59447 m²**	**1365 m²**	**59436 m²**	**1686 m²**	**1498 m²**

2.3 RESIDENTIAL UNITS

Level	UNIT COUNT					Total Units/Floor	Total Units
	1B	1B + D	2B	2B + D	3B		
BELOW GRADE							
P2	0	0	0	0	0	0	0
P1	0	0	0	0	0	0	0
BELOW GRADE TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**
BUILDING A							
Level 1	5	4	7	0	2	18	18
Level 2	7	7	11	0	3	28	28
Level 3	7	7	11	0	3	28	28
Level 4	8	6	11	0	3	28	28
Level 5	8	6	10	0	3	27	27
Level 6	6	6	12	0	3	27	27
Level 7	0	8	2	0	2	12	12
Level 8	0	8	2	0	0	10	10
Level 9	0	6	2	1	1	10	10
Level 10	0	6	2	1	1	10	10
Level 11-29	0	114	38	19	19	10	190
BUILDING A TOTAL	**41**	**178**	**108**	**21**	**40**	**208**	**388**
BUILDING B							
Level 1	3	1	0	0	0	4	4
Level 2	9	5	4	0	3	21	21
Level 3	10	6	9	0	4	29	29
Level 4	11	5	9	0	4	29	29
Level 5	12	4	10	0	2	28	28
Level 6	12	4	10	0	2	28	28
Level 7	0	8	2	0	2	12	12
Level 8	0	8	2	0	0	10	10
Level 9	0	6	2	1	1	10	10
Level 10	0	6	2	1	1	10	10
Level 11-29	0	114	38	19	19	10	190
BUILDING B TOTAL	**57**	**167**	**88**	**21**	**38**	**191**	**371**
BUILDING C							
Level 1	0	0	0	0	0	0	0
Level 2	0	9	3	0	1	13	13
Level 3	0	9	3	0	1	13	13
Level 4	0	7	3	0	1	11	11
Level 5	0	7	3	0	1	11	11
Level 6	0	7	3	0	1	11	11
Level 7	0	2	1	0	1	4	4
Level 8	0	3	2	0	1	6	6
Level 9	0	3	2	0	1	6	6
Level 10	0	0	0	0	0	0	0
BUILDING C TOTAL	**0**	**47**	**20**	**0**	**8**	**75**	**75**
GRAND TOTAL	**98**	**392**	**216**	**42**	**86**	**474**	**834**

4.0 AMENITY

4.1 AMENITY

Total Units	Amenity			
	Outdoor	Outdoor / Unit	Indoor	Indoor / Unit
BUILDING A				
388	224 m²		593 m²	
BUILDING B				
373	770 m²		647 m²	
BUILDING C				
75	504 m²		446 m²	

5.0 PARKING

5.1 CAR PARKING

Level	Residential Car Parking			Visitor Car Parking			Total Car Parking
	Regular	BF	Total	Regular	BF	Total	
BUILDING A							
P1	74	0	74	0	0	0	74
P2	95	0	95	0	0	0	95
	169	**0**	**169**	**0**	**0**	**0**	**169**
BUILDING B							
P1	69	0	69	0	0	0	69
P2	91	0	91	0	0	0	91
	160	**0**	**160**	**0**	**0**	**0**	**160**
BUILDING C							
P1	20	0	20	0	0	0	20
P2	26	0	26	0	0	0	26
	46	**0**	**46**	**0**	**0**	**0**	**46**
TOTAL	**375**	**0**	**375**	**0**	**0**	**0**	**375**

5.2 BICYCLE PARKING

Level	Bicycle Parking		Total Bicycle Parking
	Long-Term	Short-Term	
BUILDING A			
P1	162	0	162
Level 1	122	28	150
	284	**28**	**312**
BUILDING B			
P1	136	0	136
Level 1	104	28	132
	240	**28**	**268**
BUILDING C			
Level 1	52	0	52
	52	**0**	**52**
GRAND TOTAL	**576**	**56**	**632**

Bicycle Parking Rates

- 0.9 Long-Term Parking Spaces per Unit
- 0.1 Short-term Parking spaces per Unit

6.0 STORAGE

7.0 LOADING

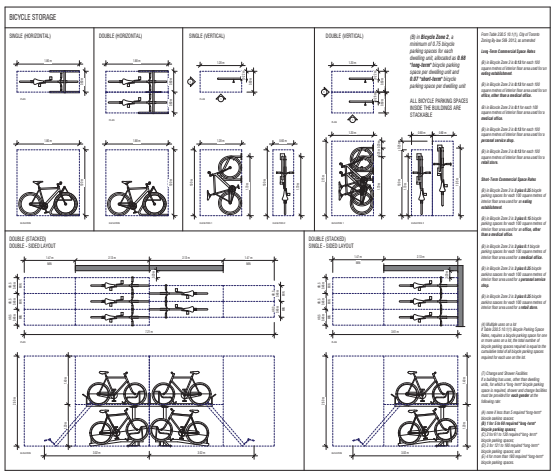
7.1 LOADING

Count	Type
BUILDING C	
1	TYPE B LOADING
BUILDING B	
1	TYPE B LOADING
1	TYPE B LOADING
BUILDING A	
1	TYPE B LOADING
1	TYPE B LOADING

8.0 WASTE

8.1 WASTE STORAGE AREA

Level	Area	Custom Area Type
BUILDING C		
Level 1	58 m²	**BUILDING C**
BELOW GRADE		
P1	240 m²	**BELOW GRADE**
	298 m²	



Toronto Green Standard Version 4.0 Tier 1

General Project Description	
SITE AREA	
TOTAL GROSS FLOOR AREA	
RESIDENTIAL	
RETAIL	
COMMERCIAL	
TOTAL NUMBER OF RESIDENTIAL UNITS	

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

Automobile Infrastructure	Required	Proposed	Percentage
NUMBER OF PARKING SPACES			
NUMBER OF EV PARKING SPACES (RESIDENTIAL)			
NUMBER OF EV PARKING SPACES (NON-RESIDENTIAL)			
Cycle Infrastructure	**Required**	**Proposed**	**Percentage**
NUMBER OF LONG-TERM BICYCLE PARKING SPACES (ALL-USES)			
NUMBER OF LONG-TERM BICYCLE PARKING LOCATED ON:			
A) FIRST STORY OF BUILDING			
B) SECOND STOREY OF BUILDING			
C) FIRST LEVEL BELOW-GROUND			
D) SECOND LEVEL BELOW-GROUND (ALSO INDICATE % OF NET AREA OF LEVEL OCCUPIED BY BICYCLE PARKING)			
E) OTHER LEVELS BELOW-GROUND (ALSO INDICATE % OF NET AREA OF LEVEL OCCUPIED BY BICYCLE PARKING)			
NUMBER OF SHORT-TERM BICYCLE PARKING SPACES			
NUMBER OF SHORT-TERM BICYCLE PARKING SPACES (NON-RESIDENTIAL)			
Tree Canopy	**Required**	**Proposed**	**Percentage**
TOTAL SOIL VOLUME (40% OF THE SITE AREA / 66m2 X 30m3)			
SOIL VOLUME PROVIDED WITHIN THE SITE AREA (m3)			
SOIL VOLUME PROVIDED WITHIN THE PUBLIC BOULEVARD (m3)			

Section 2: For Site Plan Control Applications

Cycle Infrastructure	Required	Proposed	Percentage
NUMBER OF SHORT-TERM BICYCLE PARKING SPACES (ALL USES) AT GRADE OR ON FIRST LEVEL BELOW GRADE			
NUMBER OF PUBLICLY ACCESSIBLE BICYCLE PARKING SPACE			
NUMBER OF ENERGIZED OUTLETS FOR ELECTRIC BICYCLES			
Tree Canopy	**Required**	**Proposed**	**Percentage**
TOTAL SITE AREA (m2)			
TOTAL SOIL VOLUME (40% OF THE SITE AREA / 66m2 X 30m3)			
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**	**Percentage**
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))			
A) HIGH-ALBEDO USRFACE MATERIAL			
B) OPEN-GRID PAVEMENT			
C) SHADE FROM TREE CANOPY			
D) SHADE FROM HIGH-ALBEDO STRUCTURES			
E) SHADE FROM ENERGY GENERATION STRUCTURES			
TOTAL NUMBER OF PLANTS			
TOTAL NUMBER OF NATIVE PLATNS AND % OF TOTAL PLANTS			
AVAILABLE ROOF SPACE (m2)			
AVAILABLE ROOF SPACE PROVIDED AS GREEN ROOF (m2)			
AVAILABLE ROOF SPACE PROVIDED AS COOL ROOF (m2)			
AVAILABLE ROOF SPACE PROVIDED AS SOLAR PANELS (m2)			
BIRD COLLISION DETERRENCE	**Required**	**Proposed**	**Percentage**
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:			
A) VISUAL MARKERS			
B) NON-REFLECTIVE GLASS			
C) BUILDING INTEGRATED STRUCTURES			

gh3
gh3®
55 OSSINGTON AVE, SUITE 100
Toronto, ON, Canada M6J 2Y9
416 915 1791

COLLECDEV
3400 DUFFERIN STREET

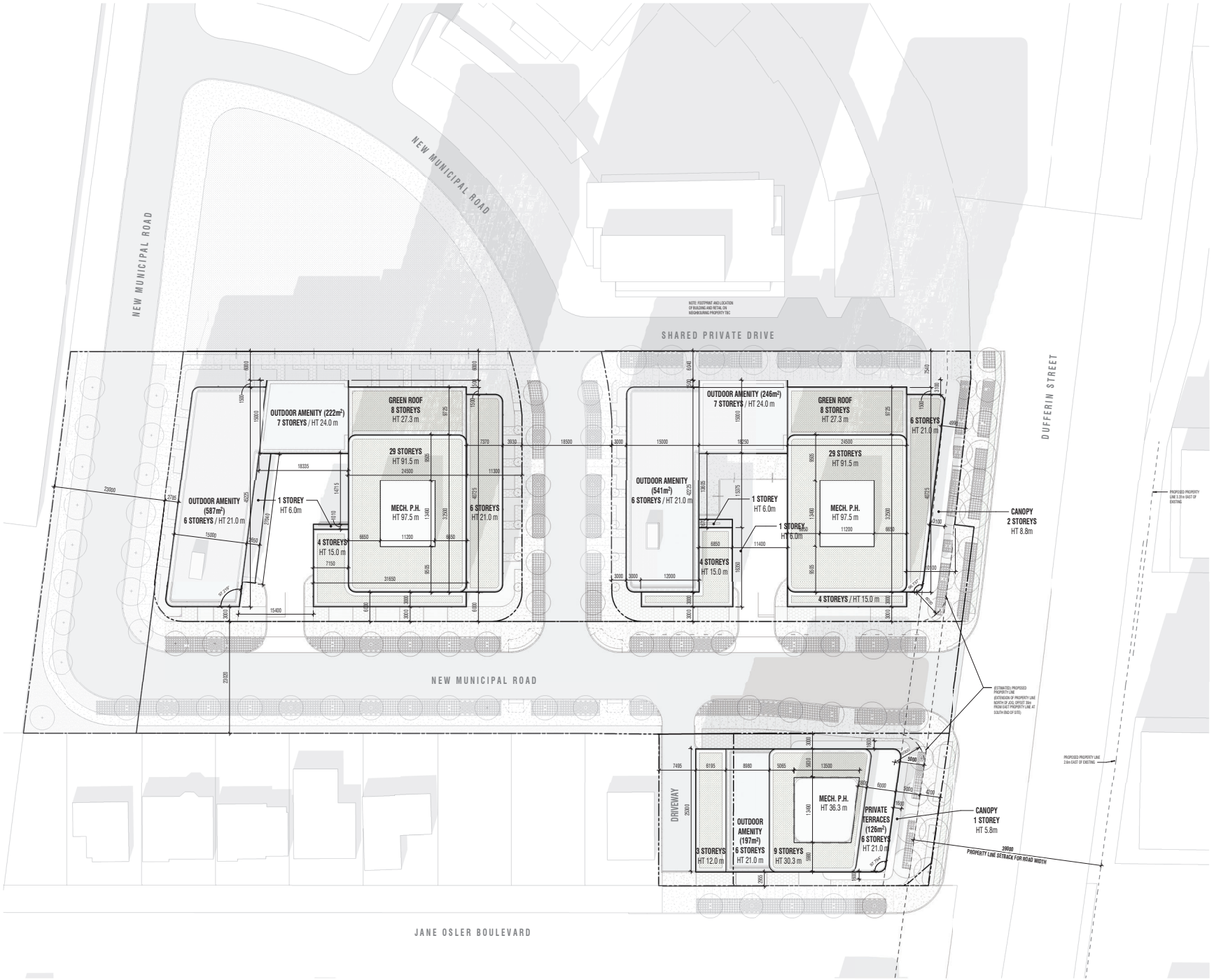
TORONTO

Project North | True North

SCALE As indicated
PROJECT NO. 202211
ISSUE DATE -

STATISTICS

A001



GREEN ROOF STATISTICS - BUILDING A

Available Roof Space Calculation	Required	Provided
Gross Floor Area, as defined in Green Roof Bylaw(m2)		*
Total Roof Area		2470
Area of Residential Private Terraces (m2)		-
Rooftop Outdoor Amenity Space, if in a Residential Building (m2)		587 + 222 = 809
Area of Renewable Energy Devices (m2)		-
Tower (uRoof Area with floor plate less than 750 (m2)		1661
Total Available Roof Space (m2)		
Green Roof Coverage		
Coverage of Available Roof Space (m2)	868	1068
Coverage of Available Roof Space (%)	63%	67%

GREEN ROOF STATISTICS - BUILDING B

Available Roof Space Calculation	Required	Provided
Gross Floor Area, as defined in Green Roof Bylaw(m2)		*
Total Roof Area		2425
Area of Residential Private Terraces (m2)		-
Rooftop Outdoor Amenity Space, if in a Residential Building (m2)		541 + 246 = 787
Area of Renewable Energy Devices (m2)		-
Tower (uRoof Area with floor plate less than 750 (m2)		-
Total Available Roof Space (m2)		1638
Green Roof Coverage		
Coverage of Available Roof Space (m2)	985	1026
Coverage of Available Roof Space (%)	60%	63%

GREEN ROOF STATISTICS - BUILDING C

Available Roof Space Calculation	Required	Provided
Gross Floor Area, as defined in Green Roof Bylaw(m2)		*
Total Roof Area		1334
Area of Residential Private Terraces (m2)		126
Rooftop Outdoor Amenity Space, if in a Residential Building (m2)		197
Area of Renewable Energy Devices (m2)		-
Tower (uRoof Area with floor plate less than 750 (m2)		-
Total Available Roof Space (m2)		711
Green Roof Coverage		
Coverage of Available Roof Space (m2)	213	360
Coverage of Available Roof Space (%)	30%	51%

Rev. Date Issued

COLLECDEV

gh3
gh3*
55 OSSINGTON AVE, SUITE 100
Toronto, ON, Canada M6J 2Y9
416 915 1791

COLLECDEV
3400 DUFFERIN STREET

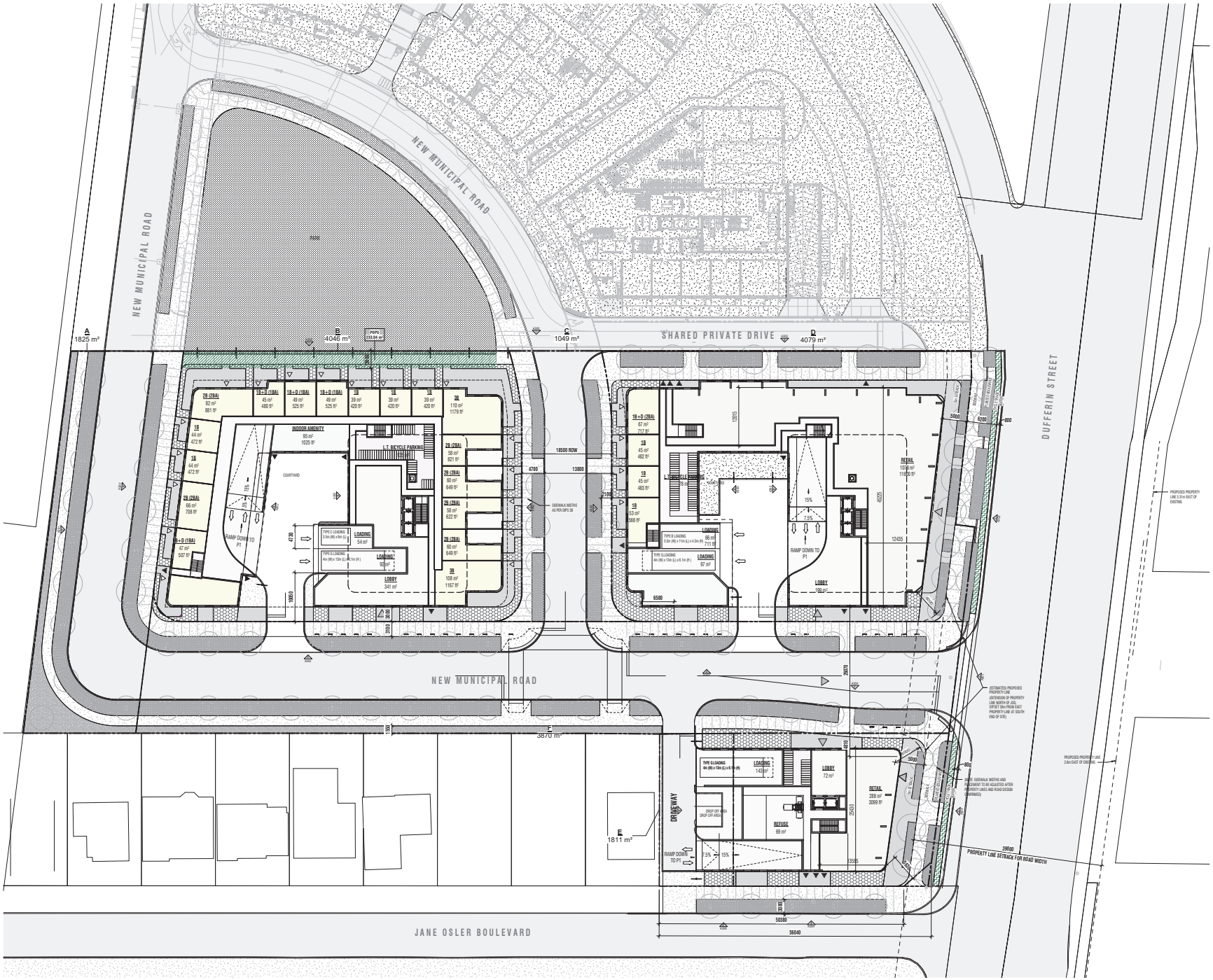
TORONTO

Project North True North

SCALE As indicated
PROJECT NO. 202211
ISSUE DATE -

ROOF PLAN

A102



SITE PLAN LEGEND

- PROPOSED ELEVATION
- EXISTING ELEVATION
- AREA DRAINAGE
- STORM WATER
- CATCH BASIN
- PROPERTY LINE
- SETBACK
- FIRE TRUCK ROUTE
- PARKING STRUCTURE BELOW
- DESIGNATED P.O.P.S. AREA
- RESIDENTIAL
- RESIDENTIAL LOBBY
- RESIDENTIAL INDOOR AMENITY
- COMMERCIAL
- BICYCLE STORAGE
- MAIN RES ENTRANCE
- RES ENTRANCE
- NON-RES ENTRANCE
- EXIT
- VEHICULAR ENTRANCE/EXIT
- FIRE HYDRANT
- SIAMESE CONNECTION
- STREET LIGHT
- PEDESTRIAN LIGHT
- BOLLARD LIGHT
- BOLLARDS
- BICYCLE SHARING STATION
- BIKE RING
- PROPOSED CANOPY TREE
- EXISTING TREE
- EXISTING TREE TO BE PROTECTED
- PROPOSED UNDERSTOREY TREE
- GRASSES AND SHRUBS
- HIGH-ALBEDO PAVERS SRI VALUE : 29 OR BETTER
- CONCRETE PAVING SRI VALUE : 29 OR BETTER
- CONCRETE PAVING SRI VALUE : 29 OR BETTER
- BICYCLE LANE
- SOD
- BLACK MULCH
- RUBBERIZED PAVING
- WOOD DECKING SRI VALUE : 29 OR BETTER
- ARTIFICIAL TURF GRASS / DOG RELIEF AREA

REFER TO LANDSCAPE PLAN FOR HARDSCAPE AND PLANTING DETAILS

NOTES

- A TRAINED ON-SITE STAFF MEMBER MUST BE AVAILABLE TO MANOEUVRE BINS FOR THE COLLECTION DRIVER AND ALSO ACT AS A FLAGMAN WHEN THE TRUCK IS REVERSING. IN THE EVENT THE ON-SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME THE CITY COLLECTION VEHICLES ARRIVAL AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
- TYPE G LOADING 6.1m MINIMUM VERTICAL CLEARANCE, MINIMUM 200mm THICK REINFORCED CONCRETE SLAB IN LOADING SPACE AND STAGING AREA. FLOOR GRADE NOT TO EXCEED +-2%
- THE OVERHEAD DOOR ADJACENT TO THE TYPE G LOADING AREA WILL BE OPEN UPON THE ARRIVAL OF THE TRUCK TO ALLOW IT TO REVERSE FORM THE TYPE G LOADING AREA ENABLING IT TO EXIT THE SITE IN A FORWARD MOTION.
- A WARNING SYSTEM IS TO BE PROVIDED TO CAUTION MOTORISTS LEAVING THE PARKING GARAGE OF HEAVY VEHICLES WHEN LOADING SYSTEM TO INCLUDE LIGHTS AND SIGNS.
- ALL ACCESS DRIVEWAYS TO BE USED BY THE COLLECTION VEHICLE TO HAVE A MAXIMUM GRADIENT OF 8%, HAVE A MINIMUM VERTICAL CLEARANCE OF 4.4 METERS THROUGHOUT, A MINIMUM WIDTH OF 4.5 METERS THROUGHOUT AND BE 6 METERS WIDE AT POINT OF INGRESS AND EGRESS.
- PROPOSED ACCESS ROUTE FOR WASTE COLLECTION VEHICLE TO HAVE MINIMUM 4.4M VERTICAL CLEARANCE THROUGHOUT AND DESIGNED TO SAFELY SUPPORT 35,000 KG.
- STRUCTURAL ENGINEER TO DESIGN AREA TO CONFORM AS FOLLOWS: (A) DESIGN CODE - ONTARIO BUILDING CODE (B) DESIGN LOAD - CITY BULK LIFT VEHICLE IN ADDITION TO BUILDING CODE REQUIREMENTS (C) IMPACT FACTOR -0% FOR MAX. VEHICULAR SPEEDS TO 15KM/H AND 30% FOR HIGHER SPEEDS
- NON-RESIDENTIAL COMPONENT WILL ONLY SCHEDULE USE OF THE TYPE G LOADING SPACE ON DIFFERENT DAYS FROM THE COLLECTION DAYS OF THE RESIDENTIAL COMPONENT TO ENSURE THAT THE TYPE G LOADING SPACE WILL BE VACANT FOR CITY WASTE COLLECTION.
- 4.4M ACCESS ROUTE MIN. 6m WIDE WITH 5m HEIGHT CLEARANCE, CHANGE IN GRADIENT NOT MORE THAN 8% IN 15m, LOAD SUPPORT SUFFICIENT FOR EQUIPMENT. SURFACE TO BE ACCESSIBLE IN ALL CLIMATIC CONDITION FOR ALL TRUCK DIAGRAM MOVEMENT REFER TO TRAFFIC CONSULTANT REPORT - PATH SHOWN FOR CONTEXT
- FIRE ACCESS ROUTE MIN. 6m WIDE WITH 5m HEIGHT CLEARANCE, CHANGE IN GRADIENT NOT MORE THAN 8% IN 15m, LOAD SUPPORT SUFFICIENT FOR EQUIPMENT. SURFACE TO BE ACCESSIBLE IN ALL CLIMATIC CONDITION FOR ALL TRUCK DIAGRAM MOVEMENT REFER TO TRAFFIC CONSULTANT REPORT - PATH SHOWN FOR CONTEXT
- BE ADVISED THAT SHOULD ANY PARTY INCLUDING THE OWNER OR ANY SUBSEQUENT OWNER , APPLY FOR MORE THAN ONE CONDOMINIUM CORPORATION ENCOMPASSING ANY OR ALL OF THIS DEVELOPMENT OR MAKE AN APPLICATION THAT RESULTS IN A LAND DIVISION, STAFF MAY REQUIRE LEGAL ASSURANCES, INCLUDING BUT NOT LIMITED TO EASEMENTS, WITH RESPECT TO THE APPROVED SERVICES. SUCH ASSURANCES WILL BE DETERMINED AT THE TIME OF APPLICATION FOR CONDOMINIUM APPROVAL
- VENTILATION GRATING TO HAVE A POROSITY OF LESS THAN 20mm X 20mm OR 40mm X 10mm

Rev. Date Issued

COLLECDEV

gh3
gh3®
55 OSSINGTON AVE, SUITE 100
Toronto, ON, Canada M6J 2Y9
416 915 1791

COLLECDEV
3400 DUFFERIN STREET

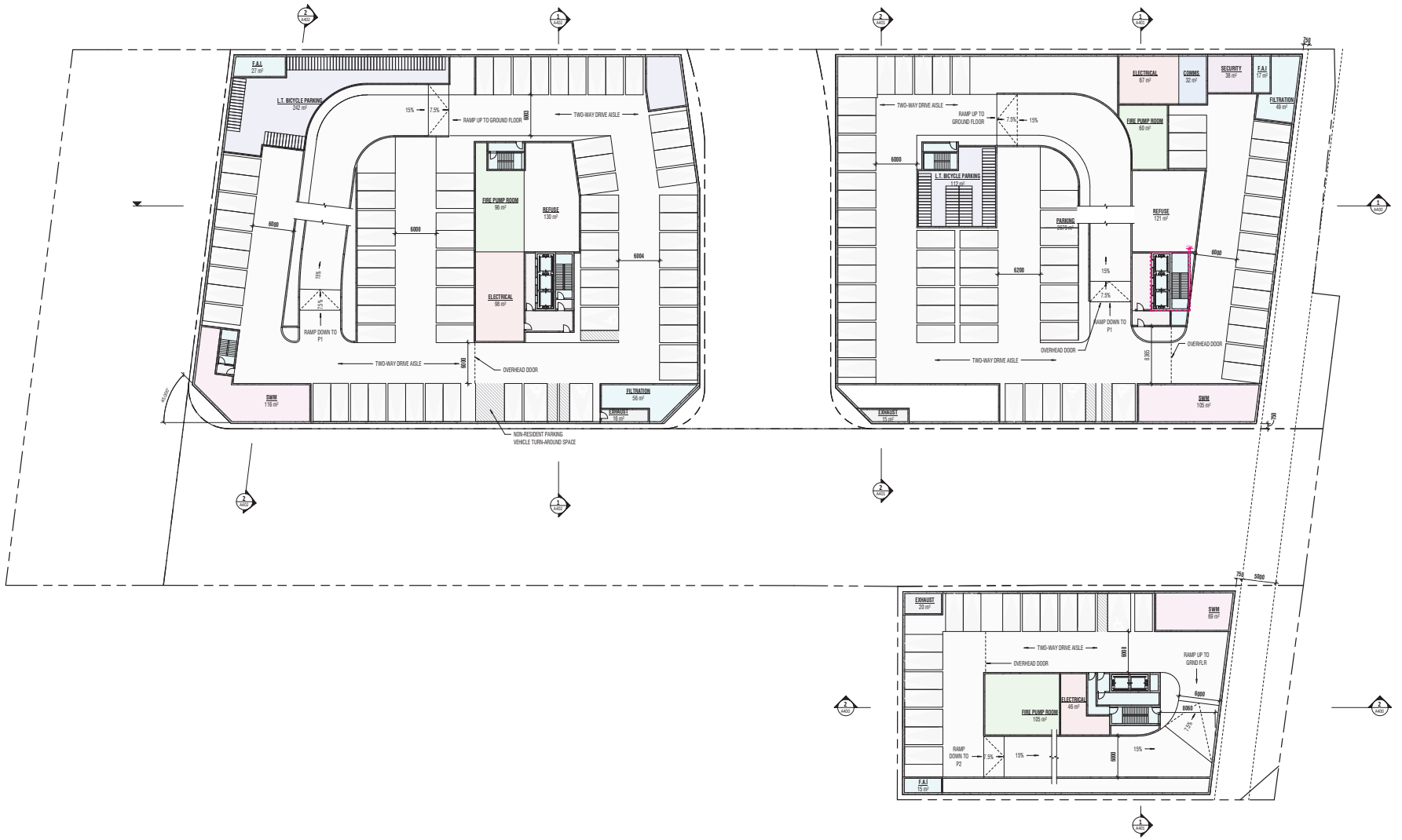
TORONTO

Project North True North

SCALE As indicated
PROJECT NO. 202211
ISSUE DATE -

GROUND FLOOR SITE PLAN

A103



5.1 CAR PARKING

Level	Residential Car Parking			Visitor Car Parking			Total Car Parking
	Regular	BF	Total	Regular	BF	Total	
P1	0	0	0	0	2	2	2
	0	**0**	**0**	**0**	**2**	**2**	**2**
BUILDING A							
P1	36	3	39	32	1	33	72
P2	89	13	102	0	0	0	102
	125	**16**	**141**	**32**	**1**	**33**	**174**
BUILDING B							
P1	60	0	60	0	0	0	60
P2	85	0	85	0	0	0	85
	145	**0**	**145**	**0**	**0**	**0**	**145**
BUILDING C							
P1	15	0	15	0	0	0	15
P2	24	0	24	0	0	0	24
	39	**0**	**39**	**0**	**0**	**0**	**39**
TOTAL	**309**	**16**	**325**	**32**	**3**	**35**	**360**

Rev. Date Issued

COLLECDEV

gh3
gh3*
55 OSSINGTON AVE, SUITE 100
Toronto, ON, Canada M6J 2Y9
416 915 1791

COLLECDEV
3400 DUFFERIN STREET

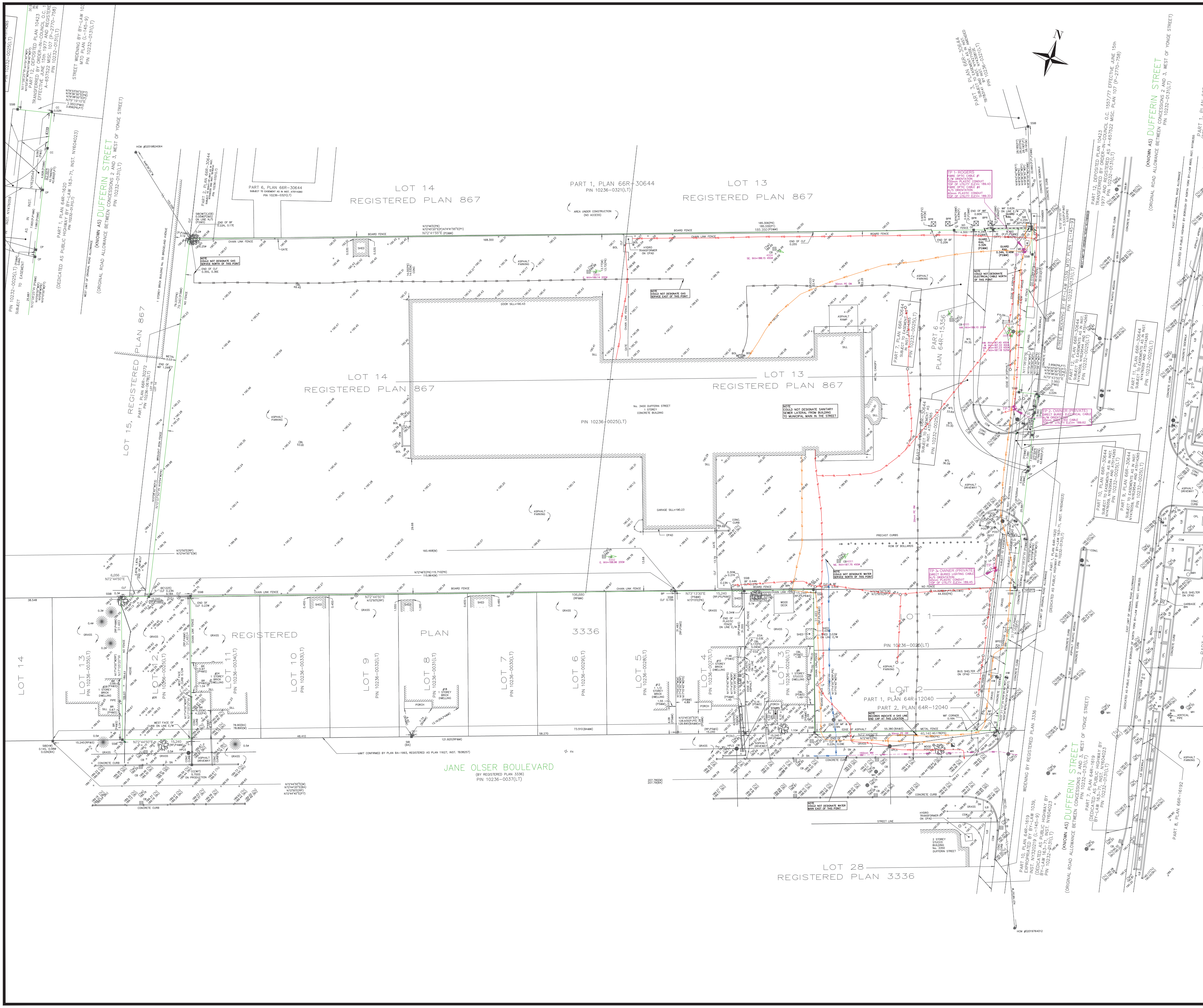
TORONTO

Project North True North

SCALE 1 : 200
PROJECT NO. 202211
ISSUE DATE -

LEVEL P1 FLOOR PLAN

A105



URBAN X - SUBSURFACE UTILITY ENGINEERING

GENERAL NOTES:

1. URBAN X SUE QL-B & A FIELD INVESTIGATION WAS PERFORMED IN JULY 2022. UTILITIES THAT WERE INSTALLED FOLLOWING OUR INVESTIGATION WILL NOT BE SHOWN, CONSIDERATION SHOULD BE GIVEN TO UPDATING THIS PLAN PRIOR TO FINAL DESIGN AND CONSTRUCTION.
2. THE LIMITS OF THE SUE INVESTIGATION ARE DEFINED ON THE DRAWING BY THE LIMITS OF THE SUE DATA.
3. FIELD VERIFICATION OF UTILITIES WAS COMPLETED USING CONVENTIONAL ELECTROMAGNETIC UTILITY LOCATING EQUIPMENT.
4. EMPTY CONDUITS, LATERALS TO DWELLINGS/BUILDINGS, ABANDONED UTILITIES AND OTHER UNLOCATABLE UTILITIES MAY NOT BE SHOWN ON THE DRAWING.
5. URBAN X EXERCISED INDUSTRY-STANDARD BEST PRACTICES TO DEFINE POSSIBLE UNDOCUMENTED UTILITIES BUT IS NOT RESPONSIBLE FOR FINDING ALL UNDOCUMENTED UTILITIES.
6. THE BASE PLAN WAS PROVIDED BY THE CLIENT; URBAN X IS NOT RESPONSIBLE FOR THE ACCURACY OF SURFACE FEATURES DEPICTED ON THE BASE PLAN.
7. ALL INFERENCES OF SUE QL-D DATA AS SHOWN WERE RENDERED ON A BEST-EFFORT BASIS FROM SECURED UTILITY RECORDS. WE CANNOT WARRANT THE PRECISE POSITION OR EXTENT OF ANY SUCH DATA NOR THE INCLUSIVENESS AND/OR CURRENCY OF ANY SUCH INFORMATION.
8. DEPICTED UTILITY DIMENSION AND/OR UTILITY COMPOSITION INFORMATION WAS SOURCED FROM UTILITY RECORDS INFORMATION SUPPLIED BY OTHERS.
9. THIS INFORMATION IS INTENDED FOR DESIGN PURPOSES ONLY, NOT EXCAVATION.
10. IF ANY INFERRED UTILITY AS DEPICTED ON THIS DRAWING APPEARS TO BE IN CONFLICT WITH THE USER'S PROPOSED DESIGN, IT IS RECOMMENDED THAT SUE QL 'A' TEST PITS ARE ADVANCED TARGETING ANY AND ALL SUCH UTILITIES TO CONFIRM THE NATURE AND PRECISE SPATIAL LOCATION OF ANY INFERRED UTILITY CONFLICT.

SUE QUALITY LEVEL DESCRIPTION AND LINETYPE DEPICTION

THE UTILITY DATA DEPICTED ON THIS DRAWING WERE ACQUIRED IN ACCORDANCE TO ASCE STANDARDS 38-02. THE INFORMATION IS SHOWN BY ATTRIBUTED QUALITY LEVELS WHICH ARE DEFINED AS FOLLOWS:

QUALITY LEVEL "D" - INFORMATION DERIVED FROM OBTAINED UTILITY RECORDS. ALL SEWERS ARE QL-D UNLESS OTHERWISE NOTED.

LINETYPE :

QUALITY LEVEL "C" - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO THE SECURED QUALITY LEVEL "D" INFORMATION.

LINETYPE:

QUALITY LEVEL"B" - INFORMATION OBTAINED VIA THE APPLICATION OF APPROPRIATE GEOPHYSICAL TECHNIQUES TO INFER THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF DESIGNATED UTILITIES. ALL NON SEWER UTILITIES ARE QL-B UNLESS OTHERWISE NOTED.

LINETYPE:

QUALITY LEVEL "A" - INFORMATION OBTAINED BY ACTUAL PHYSICAL EXPOSURE OF TARGETED UTILITIES AND SUBSEQUENT MEASUREMENT OF THE EXPOSED PRECISE HORIZONTAL AND VERTICAL POSITION.

TP 1

UNDERGROUND UTILITY CODES AND COLOUR

GAS	GAS MAIN
GS	GAS SERVICE
WM	WATER MAIN
WS	WATER SERVICE
HYD	HYDRO (Public)
E	ELECTRICAL (Private)
SL	STREET LIGHT
TV	CABLE TV
BT	BELL
RFO	ROGERS FIBRE OPTIC
STM	STORM
SAN	SANITARY
	UTILITY CONTINUATION
	DIRECTION OF FLOW

SUBSURFACE UTILITY ENGINEERING STUDY

at

3400 DUFFERIN STREET
TORONTO, ONTARIO

FOR: IBI PROFESSIONAL SERVICES

DATE: JULY 28, 2022 | **CHECKED BY: RB/ET**

PROJECT #: 139570 | **SCALE: 1 : 250**

URBAN X

2620 Bristol Circle, Suite 300, Oakville, ON L6H 6Z7
T: 1-844-7URBANX (1-844-787-2269)

UTILITY LOCATES ARE REQUIRED PRIOR TO ANY EXCAVATION ACTIVITY

REVISIONS

DATE	REVISION	INITIALS
22/07/19	FOR CLIENT REVIEW	JS
22/07/28	TEST PITS 1 - 3 ADDED	JS

Form Information

Form Name:	**06. V2 Urban-X QL-A Form**
Submitter Name:	Mike (4167952891)
Submission Date:	Jul 28, 2022 11:04:52 AM EDT

Project Information

Project Name:	3400 Dufferin
Project Number:	139570
Project Team:	Mike Heifetz

Test Pit Information

Test Pit No.:	1
Excavation Date:	Jul 28, 2022
Excavation Location:	3400 Dufferin St.

Location Map -Choose Satellite Image

Exposed Utility Information

Target Utility:	FOC
Assumed Owner:	Rogers
Target SUE Quality Level:	QL-B
Measured Depth to Utility Top (m)	0.78
Estimated Pipe Diameter (mm)	100
Inferred Material from Surface Observation	Plastic
Exposed Utility Count	1
Additional Utilities Found ?	Yes
Exposed Utility:	FOC
Assumed Owner:	Rogers
Target SUE Quality Level:	QL-B
Measured Depth to Utility Top (m)	0.88
Estimated Pipe Diameter (mm)	60
Inferred Material from Surface Observation	Plastic
Exposed Utility Count	1

Excavation Information

Surface Type:	Natural Ground
Final Hole Depth (m):	1.15
Final Hole Width (m):	0.4
Final Hole Length (m):	0.8
Notes:	Bigger hole due to locate being slightly off.

Test Pit Photos:

Overview of TP Location

Detail of TP Location

Downhole Looking North

Downhole Looking East

Team Members:

Measured By:	Mike Heifetz
GPS By:	Mike Heifetz

Form Information

Form Name:	**06. V2 Urban-X QL-A Form**
Submitter Name:	Mike (4167952891)
Submission Date:	Jul 28, 2022 11:05:10 AM EDT

Project Information

Project Name:	3400 Dufferin
Project Number:	139570
Project Team:	Mike Heifetz

Test Pit Information

Test Pit No.:	2
Excavation Date:	Jul 28, 2022
Excavation Location:	3400 Dufferin St.

Location Map -Choose Satellite Image

Exposed Utility Information

Target Utility:	EL
Assumed Owner:	Private
Target SUE Quality Level:	QL-B
Measured Depth to Utility Top (m)	0.40
Estimated Pipe Diameter (mm)	20
Inferred Material from Surface Observation	Direct Buried Insulated Cable
Square	No
Exposed Utility Count	1
Additional Utilities Found ?	No

Excavation Information

Surface Type:	Natural Ground
Final Hole Depth (m):	0.5
Final Hole Width (m):	0.3
Final Hole Length (m):	0.3

Test Pit Photos:

Overview of TP Location

Detail of TP Location

Downhole Looking North

Downhole Looking East

Team Members:

Measured By:	Mike Heifetz
GPS By:	Mike Heifetz

Form Information

Form Name:	**06. V2 Urban-X QL-A Form**
Submitter Name:	Mike (4167952891)
Submission Date:	Jul 28, 2022 11:05:41 AM EDT

Project Information

Project Name:	3400 Dufferin
Project Number:	139570
Project Team:	Mike Heifetz

Test Pit Information

Test Pit No.:	3
Excavation Date:	Jul 28, 2022
Excavation Location:	3400 Dufferin St.

Location Map -Choose Satellite Image

Exposed Utility Information

Target Utility:	SL
Assumed Owner:	Private
Target SUE Quality Level:	QL-B
Measured Depth to Utility Top (m)	0.66
Estimated Pipe Diameter (mm)	40
Inferred Material from Surface Observation	Plastic
Square	No
Exposed Utility Count	1
Additional Utilities Found ?	No

Excavation Information

Surface Type:	Asphalt
Pavement Thickness (mm):	80
Final Hole Depth (m):	0.8
Final Hole Width (m):	0.35
Final Hole Length (m):	0.35

Test Pit Photos:

Overview of TP Location

Detail of TP Location

Downhole Looking North

Downhole Looking East

Team Members:

Measured By:	Mike Heifetz
GPS By:	Mike Heifetz

Appendix B
Groundwater

Excerpt Hydrogeological Assessment (DS Consultants)

Groundwater Servicing Summary Form

Watertight Structure Confirmation Letters

Hydrogeological Investigation

Proposed Residential Buildings
3400 Dufferin Street
Toronto, ON

Prepared For:

Collecdev Inc.

Project No.: 22-217-100
Date: July 22, 2022

DS CONSULTANTS LTD.
6221 Highway 7, Unit 16
Vaughan, Ontario, L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

22-217-100 **July 22, 2022**

Attn: Fernando Valenzuela
Collecdev Inc.
20 Eglinton Ave. W., Suite 1700
Toronto, ON
M4R 1K8

Via email: fv@collecdev.com

RE: Hydrogeological Investigation – 3400 Dufferin Street, Toronto, ON.

DS Consultants Limited (DS) was retained by Collecdev Inc. to complete a hydrogeological investigation for the proposed development located at 3400 Dufferin Street in Toronto (Site). The Site is an approximate 16,700 m^2 (4.12 Acre) parcel of land situated southwest of Highway 401 and Dufferin Street and is currently occupied by Honda dealership. It is understood that the new development consists of building two (2) twenty-nine (29) storey buildings (Building A and B) and a ten (10) storey building (Building C) with separated two (2) levels of underground parking (P2).

The average ground elevation at the site is at about 190.13 meters above sea level (masl). Based on the architectural drawings, the finished floor elevation of P2 for the proposed development is at 8 meters below the existing ground surface (mbgs). The assumed maximum excavation depth of P2 considering the footings and elevator shaft would be approximately 10 mbgs or elevation 180.13 masl.

This hydrogeological investigation includes an overview of the existing geological and hydrogeological conditions at the Site and the surrounding area, an assessment of the hydrogeological constraints, impacts of the proposed development on the local groundwater, and provides an estimation of construction dewatering and permanent drainage requirements during the proposed development phase.

The hydrogeological investigation report has been prepared in general accordance with the Ontario Water Resource Act (OWRA), the Ontario Water Taking Regulation (O.Reg.387/04), and the City of Toronto Sewers By-law (Toronto Municipal Code, Chapter 681, Sewers). If needed, the results of this investigation can be used in support of an application for a Category 3 Permit to Take Water (PTTW) or an Environmental Activity Sector Registry (EASR) for construction dewatering from the Ministry of the Environment Conservation and Parks (MECP). The hydrogeological report may also be used to support Site Plan Approvals (SPA) and discharge permitting (short and long term) from the City of Toronto. Based on the results of this investigation, the following conclusions and recommendations are presented:

1. As part of the hydrogeological investigation, DS completed a search of the MECP water well records (WWRs) database. Based on the MECP WWR search, there are eighty-five (85) water wells within 500 meters of the site. All wells were noted as monitoring well or unknown. There are no groundwater users expected within the study area, and therefore no impacts to water supply wells are anticipated.

2. Between June 14 to 22, 2022, DS drilled five (5) boreholes (BH22-1 through BH22-5) and equipped all drilled boreholes with monitoring wells at the site as part of the concurrent geotechnical, hydrogeological and environmental investigations. The boreholes were advanced to a depth ranging from 18.4 to 30.8 mbgs. Monitoring wells were screened to depths ranging from 1.6 to 19.8 mbgs.

3. The surficial geology at the site is characterized as Till deposits and consist of stone-poor sandy silt to silty sand-textured till on Paleozoic terrain deposits. The overburden geology at the site generally consisted of silty clay to clayey silt (Till) deposits, sandy silt, upper sand, lower silt, clayey silt and lower sand to silty sand.

4. Groundwater levels were measured in all available wells on July 6th, 2022, by DS staff. The shallow groundwater levels ranged from 1.7 to 5.5 mbgs or elevation 184.61 to 188.5 masl and the deep groundwater level found at the depth of 10.41 mbgs or elevation 180.09 masl. The flow direction in the study area is inferred to be westerly towards Black Creek which ultimately discharges into Lake Ontario.

5. A total of five (5) Single Well Response Tests (slug tests) were completed by DS on July 6th, 2022, to estimate hydraulic conductivity (k) for the representative geological units in which the wells were screened. Hydraulic conductivity (k) values were calculated using the Hvorslev method using the AquiferTest® Software. The k-values ranged between 9.98 x 10^{-9} to 1.03 x 10^{-6} m/s.

6. To assess the suitability for discharge of groundwater to the City of Toronto's Sanitary/Storm Sewers, one (1) unfiltered groundwater sample was collected from monitoring well BH22-5. The reported analytical results indicated that no parameters were in exceedance of the Toronto's Storm Sewer Discharge By-Law criteria except Total Suspended Solid (TSS), Manganese and Chloroform. All parameters met the City's Sanitary Sewer Discharge By-Law criteria except for TSS. Therefore, water cannot be discharged to the City's storm and sanitary sewers without treatment. Treatment should comply with the water quality limits set in Table 1 for sanitary and combined sewers and Table 2 for storm sewers before any discharge.

7. The total estimated daily dewatering rate of short-term construction dewatering for the proposed development would be 61,600 L/day (61.6 m^3/day) for Building A, 61,900 L/day (61.9 m^3/day) for Building B and 32,600 L/day (32.6 m^3/day) for Building C. This estimated value incorporates a safety factor of x2 and a theoretical 10 mm storm event into the open excavation during construction.

8. Following the construction of the underground structure, long-term groundwater flow to the underfloor drainage system for the building will be a function of the upward flux and drainage along the foundation wall. Based on the assumed design, depth to water and given k-value, the estimated permanent theoretical flow would expect to be less than 1,000 L/day (1 m^3/day) for each building. For design purposes, it can be assumed that a maximum of 5,000 L/day (5 m^3/day) will be needed to be pumped into the sewer system to manage any unforeseen groundwater issues in the future. The City of Toronto's foundation drainage policy and guidelines effective as of January 1, 2022, should be considered during the design for on-site management of foundation drainage or permanent

drainage in future. As mentioned in the policy, on-site management options for foundation drains/permanent drainage may include but are not limited to, waterproofing the buildings, modifying building design to avoid intersection with the maximum anticipated groundwater level, and/or above-ground discharge and infiltration from sump pumps.

9. Since the expected design dewatering rate for the unsealed excavation for building A and B is between the MECP water taking limit of 50,000 and 400,000 L/day, an EASR application is required to be submitted to the MECP for short-term dewatering prior to construction. For Building C, since the expected dewatering rate is below the MECP water taking limit of 50,000 L/day, an EASR is not required to be submitted to the MECP for short-term dewatering. Based on current groundwater conditions, permanent groundwater flow or permanent drainage is expected to be less than the water-taking limit of 50,000 L/day. Therefore, a PTTW is not required on a permanent basis.

10. Once a groundwater dewatering system is set up at the Site, daily and weekly monitoring should be implemented to assess the groundwater conditions such as water levels, measurement of discharge flow, discharge water quality and any adverse impacts as a result of dewatering.

11. A groundwater level monitoring program has been implemented at the Site on a bi-weekly basis for three (3) months to document the pre-construction groundwater conditions and assess seasonal groundwater fluctuations. To meet the City of Toronto's requirements, the monitoring program includes all monitoring wells and a total of six (6) water level measurements.

12. There are structures and utilities within the maximum predicted zone of influence (ZOI) about 43 meters for Building A and B and 31 meters for Building C when considering an unsealed excavation. Since the proposed construction is anticipated to be constructed within the low permeable sandy silt to clayey silt till deposits, an effect of settlement due to dewatering would be negligible within the predicted zone of influence.

13. In conformance with Regulation 903 of the Ontario Water Resources Act, the decommissioning of any dewatering system and monitoring wells should be carried out by a licensed contractor under the supervision of a licensed water well technician.

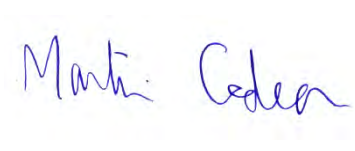
Should you have any questions regarding these findings, please contact the undersigned.

DS Consultants Ltd.

Prepared By:

Meysam Jafari, M.Sc., P.Geo.
Project Manager

Reviewed By:



Martin Gedeon, M.Sc., P.Geo.
Senior Hydrogeologist

Table of Contents

FIGURES

APPENDICES:

3.3.3 Hydraulic Conductivity

A total of five (5) Single Well Response Tests (slug tests) were completed by DS on July 6, 2022 to estimate hydraulic conductivity (k) for the representative geological units in which the wells were screened. SWRTs were completed by performing a rising head test (slug test) with the use of Waterra® tubing to 'instantaneously' remove water from the well. A data logger was placed at the bottom of the wells to accurately measure the change in the hydraulic head versus time. Hydraulic conductivity (k) values were calculated using the Hvorslev method using the AquiferTest® Software. The semi-log plots for normalized drawdown versus time are provided in **Appendix B.** The k-values ranged between 9.98 x 10^{-9} to 1.03 x 10^{-6} m/s. **Table 3-2** presents the Hydraulic Conductivity (k) values for the representative geological units.

Table 3-2: Summary of Hydraulic Conductivity (k) Test Results

Well ID	Screened Interval (mbgs)	Screened Formation	K-value (m/s)	Geomean value
BH22-1	16.8-19.8	sandy silt/sand	1.35 x 10^{-8}	5.82 x 10^{-8}
BH22-2	12.3-15.3	silty clay/clayey silt	1.03 x 10^{-6}	
BH22-3	1.7-4.7	Silty clay till	6.05 x 10^{-8}	
BH22-4	1.5-4.5	Silty clay till	9.98 x 10^{-9}	
BH22-5	6.2-9.2	silty clay/clayey silt	7.94 x 10^{-8}	

3.3.4 Groundwater Quality

To assess the suitability for discharge of groundwater to the City of Toronto's Sanitary/Storm Sewers, one (1) unfiltered groundwater sample was collected from monitoring well BH22-5 on July 6th, 2022. The samples were placed in pre-cleaned laboratory supplied vials and/or bottles provided with analytical test group-specific preservatives, as required. Dedicated nitrile gloves were used during sample handling. The groundwater samples were submitted to SGS Laboratories in Mississauga, Ontario. SGS is certified by the Canadian Association of Laboratory Accreditation Inc. (CALA) and the Canadian Standard Association (CSA). The analytical results were compared to the City of Toronto's Table 1 Limits for Sanitary and Combined Sewer Discharge, and Table 2 Limits for Storm Sewer Discharge. The reported analytical results indicated that no parameters were in exceedance of the Toronto's Storm Sewer Discharge By-Law criteria except Total Suspended Solid (TSS), Manganese and Chloroform. All parameters met the City's Sanitary Sewer Discharge By-Law criteria except for TSS. Therefore, water cannot be discharged to the City's storm and sanitary sewers without treatment. Treatment is needed to comply with the water quality limits set in Table 1 for sanitary and combined sewers and Table 2 for storm sewers before any discharge. **Table 3-3** presents a summary of the exceeded parameters, and the certificates of analyses are provided in **Appendix D.**

Table 3-3: Parameters in Groundwater Exceeding City of Toronto Sewer Use By-law 100-2016

Parameter	Unit	Toronto Sanitary By-Law Criteria	Toronto Storm By-Law Criteria	BH22-5
Total Suspended Solid (TSS)	mg/L	350	15	**431**
Manganese	mg/L	5	0.05	0.223
Chloroform	mg/L	0.04	0.002	0.0026
Bold- Exceeds Sanitary Sewer Use by Law Criteria				

Underlined- Exceeds Storm Sewer Use by Law Criteria

4.0 CONSTRUCTION DEWATERING

The proposed residential development will include the construction of two (2) twenty-nine (29) storey buildings (Building A and B) and a ten (10) storey building (Building C) with separated two (2) levels of underground parking (P2). Based on the architectural drawings the finished floor elevation of P2 for the proposed development is at 8 meters below the existing ground surface (mbgs). The assumed finished floor elevation of P2 considering the footing and elevator shaft would be approximately 10 mbgs or elevation 180.13 masl. For construction dewatering purposes, the groundwater level should be lowered at least one (1) m below the footings and elevator shaft elevation at about 179.13 masl. The unsealed construction excavation method for each separated block (Building) with excavation dimensions of 70 m long and 58 m wide for Building A, 74 m long and 55 m wide for Building B and 58 m long and 31 m wide for building C were considered for the proposed development. Since the proposed underground structure will be below the groundwater table, dewatering will be required during the excavation of overburden material.

4.1 Estimation of Flow Rate - Unsealed Excavation

This section calculates the estimated dewatering required during the construction of the proposed building based on the geomean k-value, the highest groundwater elevations at the site using the steady-state flow equation for unsealed excavation as follows. The estimated flow rates for the proposed buildings are summarised in Table 4-1.

$$Q_R = K\,x\frac{H^2 - h^2}{0.733}\,x\,Log\,(R_0/r_e)$$

$$r_e = \left(\frac{(a\,x\,b)}{\pi}\right)^{0.5}$$

$$R_0 = (r_e + 3000)(H - h)(k^{0.5})$$

Table: 4-1 Estimation of Flow Rate (Short-term Discharge) - Unsealed Excavation

Parameters	Building A	Building B	Building C
	P2 Level	P2 Level	P2 Level
K -Hydraulic conductivity(geomean) (m/s)	5.82 x 10^{-8}	5.82 x 10^{-8}	5.82 x 10^{-8}
H-Distance from water level to the bottom of an aquifer (m)	11.22	11.22	11.22
h -Depth of water in the well while pumping (m)	1	1	1
a- length of excavation (m)	70	74	58
b- Width of excavation (m)	58	55	31
r_e–equivalent radius, where a and b excavation dimensions (m)	36	36	24
R_o- Radius of the cone of depression	43	43	31
Estimated Flow Rate- L/day (without safety factor)	10,500	10,600	7,300

4.2 Estimation of Flow Rate- Storm Water Consideration

During construction, additional removal of stormwater from precipitation into the open excavation will be required. The estimated flow rate is based on the excavation dimensions for the phase of development and a theoretical 10 mm precipitation event in 24 hours. The total estimated dewatering that might be needed as a result of a 10 mm precipitation event for would be approximately 40,600 L/day for building A, 40,700 L/day for Building B and 18,000 L/day for Building C.

4.3 Total Estimation of Flow Rate (Short-Term/ Temporary Discharge)

Considering the unsealed excavation method, the recommended pumping rate for building A, would be approximately 61,600 L/day, for Building B would be 61,900 L/day and for Building C would be 32,600 L/day. These values incorporate a safety factor of x2 and account for stormwater as a result of a 10 mm precipitation event. The recommended flow rates for the proposed buildings are summarised in Table 4-2.

Table 4-2: Total Construction Dewatering (Short-term Discharge) - Unsealed Excavation

Building	Flow Rate Q- without a safety factor (L/day)	Flow Rate Q- with a safety factor x2 (L/day)	Storm water (@ 10 mm/24 hrs.) (L/day)	Designed Flow Rate Or Total Flow Rate (L/day)
Building A	10,500	21,000	40,600	61,600
Building B	10,600	21,200	40,700	61,900
Building C	7,300	14,600	18,000	32,600

It is expected that the initial dewatering rate will be higher to remove groundwater within the overburden formation. The dewatering rates are expected to decrease once the target water level is achieved in the excavation footprint as groundwater will have been removed locally from storage resulting in lower seepage rates into the excavation. The maximum flow calculation is intended to provide a conservative value to account for unforeseeable conditions that may arise during construction.

4.4 Permanent Drainage (Long-term Discharge)

Following the construction of the underground structure, long-term groundwater flow to the underfloor drainage system for the building will be a function of the upward flux and drainage along the foundation wall. Based on the assumed design, depth to water and given k-value, the estimated permanent theoretical flow would expect to be less than 1000 L/day (1 m^3/day) for each building. For design purposes, it can be assumed that a maximum of 5,000 L/day (5 m^3/day) will be needed to be pumped into the sewer system to manage any unforeseen groundwater issues in the future. The City of Toronto's foundation drainage policy and guidelines effective as of January 1, 2022, should be considered during the design for on-site management of foundation drainage or permanent drainage in future. As mentioned in the policy, on-site management options for foundation drains/permanent drainage may include but are not limited to, waterproofing the foundation, modifying building design to avoid intersection with the maximum anticipated groundwater level, and/or above-ground discharge and infiltration from sump pumps.

C:\0Sharon\22-217-100 Hydro, 3400 Dufferin Street, Toronto\1-QGIS\HydroG\Figure 3 – Borehole and Monitoring Well Locations.qgs Jul-19 00:25

Legend

- Approx Property Boundary
- Monitoring Well
- Cross Section

DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: HYDROGEOLOGICAL INVESTIGATION
3400 Dufferin St., Toronto, ON

Title: **BOREHOLE AND MONITORING WELL LOCATIONS**

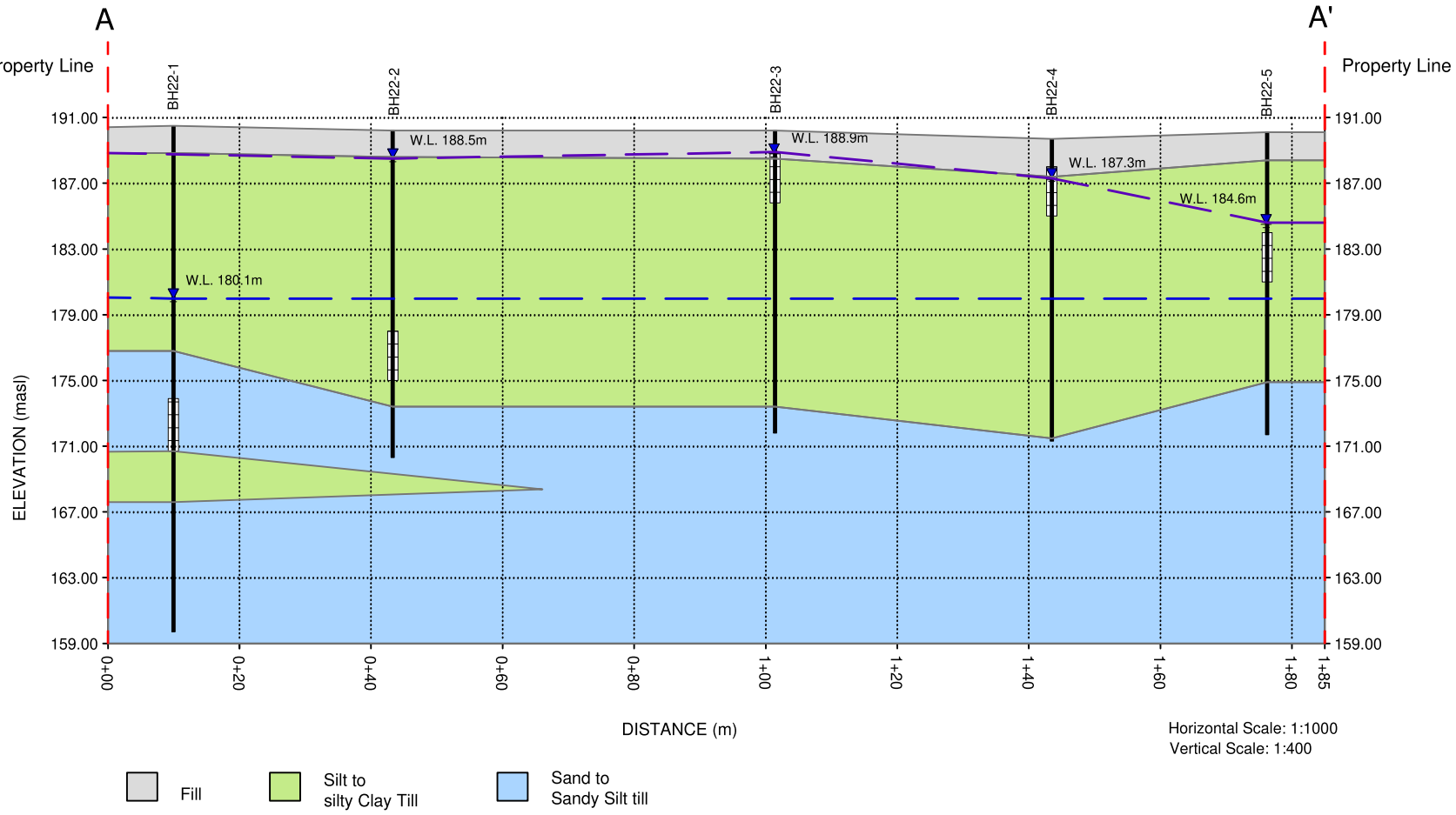
N

Client: COLLECDEV INC.

Size:	Approved By:	Drawn By:	Date:
8.5 x 11	M.J	S.Y	July 2022
Rev: 0	Scale: As Shown	Project No.: 22-217-100	Figure No.: 3

Image/Map Source: *Google Satellite Image*

Path:c:\0sharon\22-217-100 hydro, 3400 dufferin street, toronto\7-misc\cad\geological cross section 22-217.dwg



DS CONSULTANTS LTD.
6221 Highway 7, UNIT 16
Vaughan, Ontario L4H 0K8
Telephone: (905) 264-9393
www.dsconsultants.ca

Project: HYDROGEOLOGICAL INVESTIGATION
3400 Dufferin St., Toronto, ON

Title: **GEOLOGICAL CROSS SECTION A-A'**

Client:	Size:	Approved By:	Drawn By:	Date:
COLLECDEV INC.	8.5 x 11	M.J	S.Y	July 2022
	Rev.	Scale: As Shown	Project No: 22-217-100	Figure No. 4

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:	August 2022	Cover Page	
Title of Servicing Report:	Functional Servicing Report	Cover Page	
Name of Consulting Firm that prepared Servicing Report:	IBI Group	Cover Page	
Site Address	3400 Dufferin Street & 8 Jane Osler Boulevard Toronto, Ontario	1	
Postal Code	M6A 2V1	1	
Property Owner (identified on planning request for comments memo)	Dufferin - 401 Properties Limited & CollecDev Inc.	1	
Proposed description of the project (ex. number of point towers, number of podiums, etc.)	Three (10) to (29) storey buildings above three below-grade parking facilities	2	
Land Use (ex. commercial, residential, mixed, industrial, institutional) as defined by the Planning Act	Mixed	2	
Number of below grade levels	Building A: 2 levels Building B: 2 levels Building C: 2 levels	2	

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.	N/A	N/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	4	
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?	Street A / Bridgeland Avenue	4	
What is the diameter of the receiving sewer?	250 mm (Street A) / 300 mm (Bridgeland Avenue)	4	
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	9	
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	125.1 L/sec N/A	SWM Report Page 5	

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	Building A: Avg=0.71 L/s; Peak=2.14 L/s (8 hrs pumping) Building B: Avg=0.72 L/s; Peak=2.15 L/s (8 hrs pumping) Building C: Avg=0.38 L/s; Peak=1.13 L/s (8 hrs pumping) 5.42 L/sec	4	
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	16.53 L/sec	Appendix C	
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.	4	
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	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**

TORONTO

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.	Appendix B	

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, P.Eng., P.E.
Print Name

Professional Engineer who completed the report summary: _____ August 2022
Signature Date & Stamp

Schedule A: Template Letter from Mechanical Consultant confirming peak groundwater flow rate

[Mechanical Consultant Company Letterhead]
[Company Name]
[Company Address and Contact Information]

[Date]
Attention: Executive Director, Engineering and Construction Services
c/o Manager, Development Engineering
[ADDRESS]

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

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

July 26, 2022

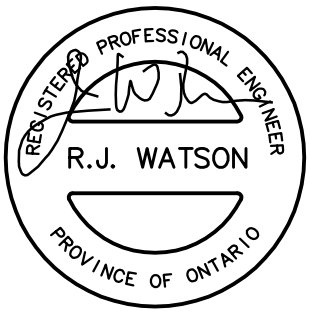
Attention: Executive Director, Engineering and Construction Services
c/o Manager, Development Engineering
Metro Hall, 55 John Street, 16th Floor, Toronto, Ontario, M5V 3C6

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

Re: 3400 Dufferin Street, Toronto, ON M6A 2V1
Raft Foundation – Water-tight Design
Our Project No. 22240

Dear Sir or Madam,

I, Jeff Watson, P. Eng., confirm that all buildings on the subject lands of 3400 Dufferin Street, 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.



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

Smith + Andersen
1100 – 100 Sheppard Ave. East, Toronto ON, M2N 6N5
416 487 8151 f 416 487 9104 smithandandersen.com

2022-07-27

Attention: Executive Director, Engineering and Construction Services
c/o Manager, Development Engineering
5100 Yonge Street, 4th floor.
Toronto, Ontario, M2N 5V7

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

RE: 3400 DUFFERIN STREET, TORONTO, ONTARIO
S+A PROJECT # 22XXX.000.M.001
GROUND WATER DISCHARGE STRATEGY

The proposed development at 3400 Dufferin Street will consist of a new development which will be designed by the Structural Engineer to be watertight.

Smith + Andersen confirm that it is our understanding that the building on the subject lands at 3400 Dufferin Street will be constructed without any 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 any 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.

A Private Water Drainage System as an emergency back up system is not permitted, and has not been included in this proposal.

Smith + Andersen have read and understood the basis of the proposed building structure and the owner is aware of the associated risks.

Smith + Andersen

Liam Atlin P.Eng., LEED AP
Principal
22XXX.000.m.001.l001 - Ground Water Strategy (3400 Dufferin Street - Watertight)

DUFFERIN-401 PROPERTIES LTD.

9144 Yonge Street, Richmond Hill, ON, L4C 7A1
Tel: (905) 763 3688 Fax: (905) 763 2188

August 4th, 2022

Attention: Chief Engineer and Executive Director, Engineering and Construction Services
c/o Manager, Development Engineering

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

Re: 3400 Dufferin St. and 8 Jane Osler Blvd, Toronto, ON

Dear Sir or Madam,

I, **Robert Stein,** confirm and undertake that I will construct and maintain all building(s) on the subject lands **3400 Dufferin St and 8 Jane Osler Blvd** 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.

I, **Robert Stein**, 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

Sincerely,

Robert Stein

CEO

rstein@plazaautogroup.com