EDENSHAW QUEEN DEVELOPMENTS LIMITED

# 88 PARK STREET EAST
## FUNCTIONAL SERVICING REPORT

JUNE 12, 2023

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## FUNCTIONAL SERVICING REPORT

### EDENSHAW QUEEN DEVELOPMENTS LIMITED

FUNCTIONAL SERVICING REPORT

PROJECT NO.: 211-12423
DATE: JUNE 12, 2023

WSP CANADA INCORPORATED
100 COMMERCE VALLEY DRIVE WEST
THORNHILL, ON
L3T 0A1

T: +1 905 668-3022
F: +1 905 668-9443
WSP.COM

# SIGNATURES

PREPARED BY

Mark Anthony Del Gobbo, EIT
Designer, Land Development

REVIEWED BY


Mark Mitchell, P.Eng., PMP
Senior Project Engineer, Land Development

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# 1 INTRODUCTION

## 1.1 INTRODUCTION

WSP Canada Inc. (herein called WSP) has been retained to prepare a Functional Servicing Report to assess the servicing requirements relating to the proposed development at 88 Park Street East in the City of Mississauga (herein referred to as the Site). This report provides the conceptual framework for water distribution, sanitary sewage, and storm drainage for the development of the Site. A Stormwater Management Report outlining the proposed stormwater quality and quantity controls on the Site has been prepared under a separate cover, also by WSP.

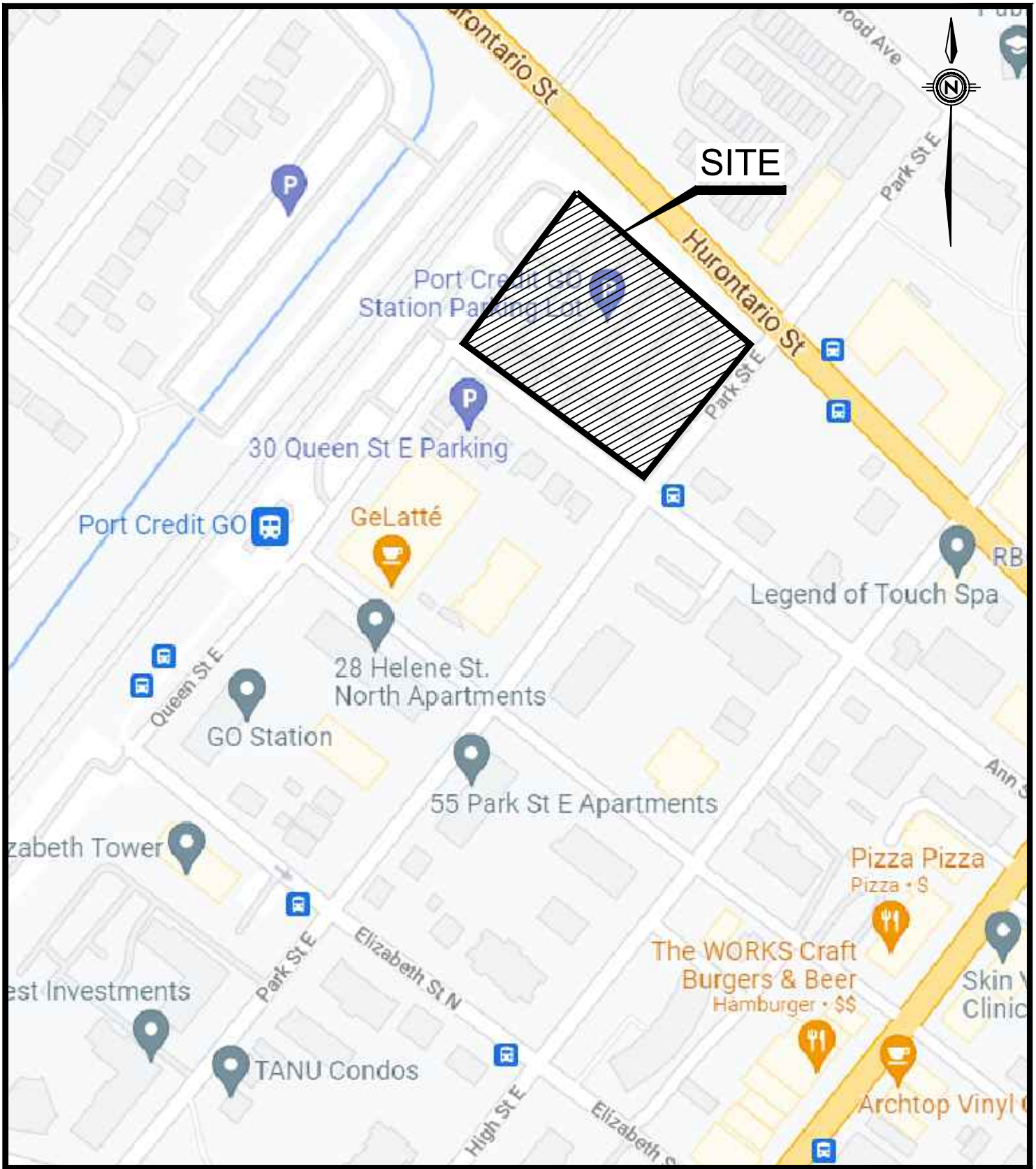
In preparing this report, WSP staff have reviewed and secured available City of Mississauga and Region of Peel Plan and Profile Drawings, as well as the architectural site plans prepared by Core Architects and a survey prepared by R. Avis Surveying Inc.

## 1.2 SITE DESCRIPTION

The Site is a 0.73 ha parcel of land located on the North side of Park Street, between Ann Street and Hurontario Street. In the predevelopment condition, the Site is occupied by a parking lot. Immediately East of the Site is an LRT station, fronting onto Hurontario Street, which is currently under construction.

The proposed site development includes one 40-storey residential condominium building with an estimated 616 residential units and commercial space on the ground floor and one 42-storey residential condominium building with an estimated 713 residential units and commercial space on the ground floor and third and fourth floors. The proposed development also includes 4 floors of below grade parking, covering the entire site.

The Site will be serviced by local municipal sewers and watermains within the adjoining municipal right-of-ways. Any existing service connections within the Site will be decommissioned per Region of Peel and City of Mississauga Standards at the owner's cost. The proposed service connections will be extended to the underground parking foundation wall and coordinated with the building design team during detailed design. Refer to Figure 1.1 for the Location Map, Figure 1.2 for the Pre-development Site Condition and Figure 1.3 for an illustration of the Proposed Development Plan.




CLIENT

EDENSHAW QUEEN DEVELOPMENTS LIMITED

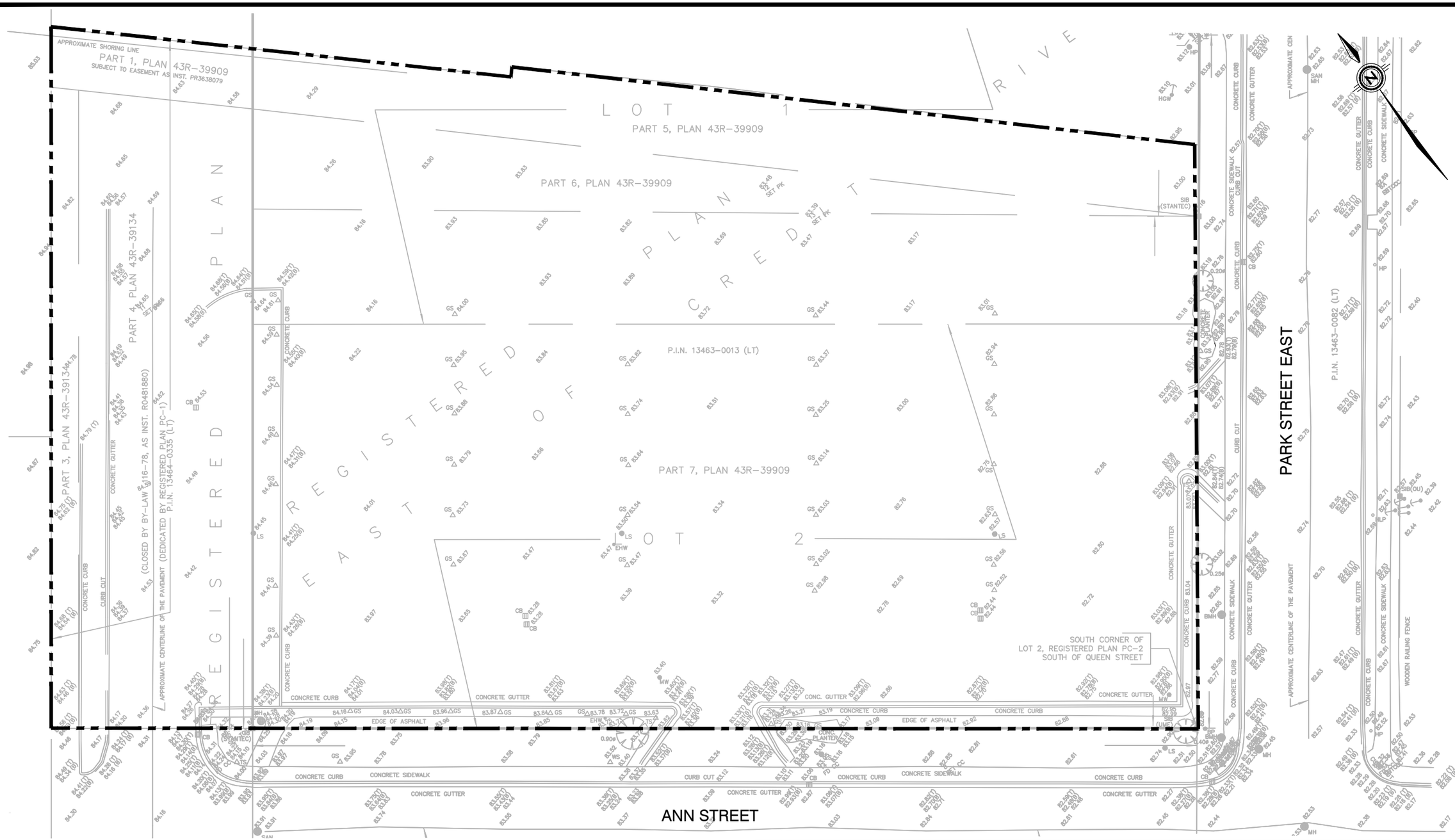
TITLE

88 PARK STREET EAST

# LOCATION PLAN


701 Rossland Rd. E, Suite 201 Whitby, ON Canada L1N 8Y9
t: 905.668.3022 www.wsp.ca


| | | | |
|---|---|---|---|
| Checked | M.M. | Drawn | 10/12 Cad |
| Date | MAY 2023 | Proj. No. | 211-12423 |
| Scale | NTS | Figure No. | 1.1 |




## LEGEND

PROPERTY LINE

CLIENT

EDENSHAW QUEEN DEVELOPMENTS LIMITED

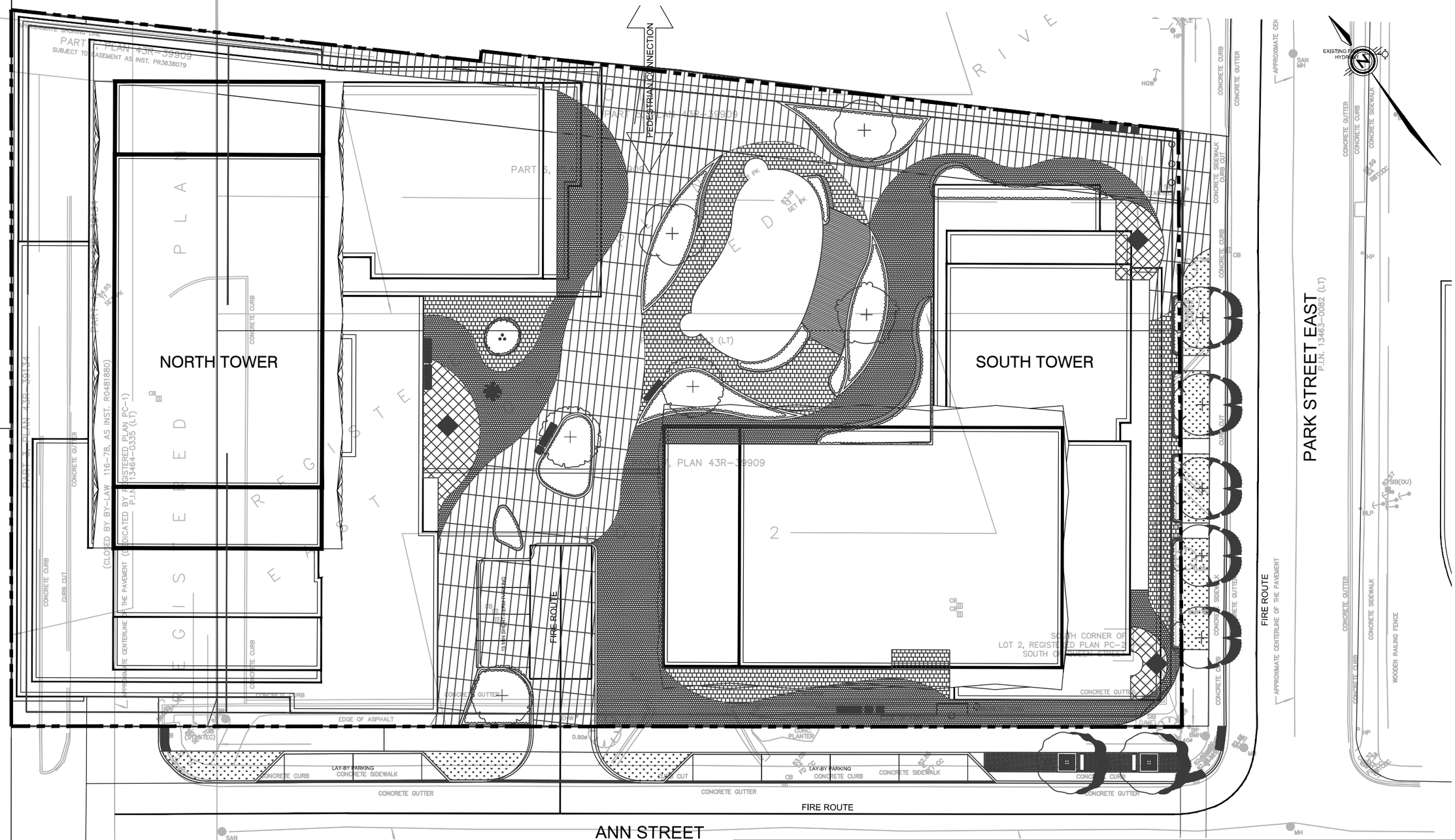
TITLE

88 Park Street East

# PRE-DEVELOPMENT PLAN

wsp

| | | | |
|---|---|---|---|
| Checked | M.M. | Drawn | 10/12 Cad |
| Date | MAY 2023 | Proj. No. | 211-12423 |
| Scale | 1:400 | Figure No. | 1.2 |




## LEGEND

PROPERTY LINE

CLIENT
EDENSHAW QUEEN DEVELOPMENTS LIMITED

TITLE
88 Park Street East

# PROPOSED DEVELOPMENT PLAN

wsp

| | | | |
|---|---|---|---|
| Checked | M.M. | Drawn | 10/12 Cad |
| Date | MAY 2023 | Proj. No. | 211-12423 |
| Scale | 1:400 | Figure No. | 1.3 |

# 2 WATER SUPPLY AND APPURTENANCES

## 2.1 EXISTING CONDITIONS

Locally, there is a 200mm diameter watermain on Ann Street, and a 300mm diameter watermain on Park Street East.

## 2.2 WATER SUPPLY

It is proposed that the development be serviced by the 200mm diameter watermain on Ann Street, shown in Appendix C, as per the Region of Peel watermain design criteria. It is proposed to provide one 150mm diameter domestic connection to service the entire development (including both towers). The domestic connection is proposed to branch off a proposed 200 mm diameter fire service connection. Due to the height of the proposed buildings (over 84 m), two fire protection services are proposed for the site. The proposed connections will include valves and boxes at the property line. In addition, a water meter and a backflow preventer will be installed on the domestic line in the mechanical room within the building, in accordance with the Region of Peel standards. The mechanical room will need to be accessible by the Region and provide remote read-out locations for the Region's use in reading the meters. In addition, a check valve in a chamber, per Region of Peel standards, will be provided on the fire lines immediately outside the foundation wall and inside the property line. Refer to Appendix C for proposed water servicing layout.

The estimated domestic water demand has been calculated using the Region of Peel Watermain Design Criteria and the site statistics provided by the architect. The Region of Peel Watermain Design Criteria also note that some new developments can generate higher water demands during the first years of occupancy. Therefore, domestic water demands have been calculated for both the long term and the short term. For detailed calculations, as well as the Region's Connection Multi Use Demand Table, see Appendix B.

| | **Long Term** | **Short Term** |
|---|---|---|
| Average Water Consumption Rate | 280 litres/person/day | 409 litres/person/day |
| Residential Apartment Units | 1329 units | 1329 units |
| Office/Retail GFA | 4594m$^2$ | 4594m$^2$ |
| Total Residential Equivalent Population | 2561 people | 2561 people |
| Average Water Demand | 8.30 L/s | 12.09 L/s |
| Max Day Water Demand | 16.56 L/s | 24.19 L/s |
| Peak Hour Water Demand | 24.91 L/s | 36.28 L/s |

The estimated fire flow has been calculated using the recommendations of the Fire Underwriters Survey. Two sets of calculations were completed: one for the North Tower and one for the South Tower. The FUS requirement for the North Tower is ~1,381 USGPM and the FUS requirement for the South Tower is ~1,572 USGPM. The overall site requirement is taken as the greater of the two buildings and is therefore ~1,572 USGPM. The results of these calculations are included in Appendix A.

The Site is located within the vicinity of three (3) fire hydrants. One is located near the Southwest corner of Ann Street and Queen Street East intersection, one is located near the Northwest corner of Ann Street and Park Street East intersection, and one is located near the Southwest corner of Park Street East and Hurontario Street intersection. The proposed water servicing and hydrant locations are shown in Appendix C.

## 2.3 HYDRANT FLOW TEST

The maximum estimated fire flow demand for the proposed development is 1,572 USGPM. A hydrant flow test for the Site was completed on Park Street East. The hydrant flow test conducted shows a flow of ~9,700 USGPM could be achieved while maintaining a water pressure of 20psi. The test shows that fire flow available exceeds the fire demand calculated above. Therefore, we can conclude that the existing watermains adjacent to the site are adequate to support the domestic and fire water demand of the proposed development and no watermain upgrades are required to support the proposed development. Please refer to Appendix A for hydrant flow test results and fire flow calculations.

# 3 SANITARY SEWAGE SYSTEM

## 3.1 EXISTING CONDITIONS

Locally, there is a 250 mm diameter sanitary sewer on Ann Street and a 250 mm diameter sanitary sewer on Park Street East. The Ann Street sewer flows Southeast to the Park Street East sewer, the Park Street East sewer flows Southwest to the Helene Street North sewer, which flows Southeast along Helene Street to the trunk sewer on Lakeshore Road East.

## 3.2 DESIGN PARAMETERS

The theoretical peak sanitary flows have been calculated using the following factors based on direction from the Region of Peel for the 22 Ann Street development and Region of Peel Sanitary Sewer Design Criteria, July 2009, Modified March 2017 Rev 0.9 (CS).

- 50 ppl/ha (Single Family > 10m frontage)
- 70 ppl/ha (Single Family < 10m frontage)
- 70 ppl/ha (Semi-Detached)
- 175 ppl/ha (Row Dwellings)
- 475 ppl/ha (Apartments)
- 1.68 people per apartment (1 bedroom)
- 2.54 people per apartment (2 bedrooms or more)
- 302.8 L/cap/day average day flow generation rate
- Peaking Factor – Harmon Peaking Factor
- Infiltration = 0.0002$m^3$/s/ha

## 3.3 EXISTING FLOW TO SANITARY SEWER

Based on the design criteria noted above, it is estimated that in the pre-development condition, the site discharged an average of 0.12 L/s to the sanitary sewer system in the form of infiltration. There are no existing sanitary connections to the sewer from the Site. Refer to Appendix B for detailed pre-development sanitary flow rate calculations.

## 3.4 POST DEVELOPMENT SANITARY SEWER FLOW

An estimate of the post-development sanitary sewage flows to the downstream sanitary sewer system has been calculated based on the Region of Peel Sanitary Sewer Design Criteria and the preliminary site statistics provided by the architect. A summary of the calculations can be found below;

| | **North Tower** | **South Tower** | **Whole Site** |
|---|---|---|---|
| Sanitary Demand Rate | 302.8 litres/person/day | 302.8 litres/person/day | 302.8 litres/person/day |
| Total Population<br>(Residential + Office/Retail) | 1356 people | 1207 people | 2561 people |
| Avg. Residential Flow | 4.75 L/s | 4.23 L/s | 8.98 L/s |
| Infiltration | No infiltration<br>(Entire site UG Parking) | No infiltration<br>(Entire site UG Parking) | No infiltration<br>(Entire site UG Parking) |
| Average Sanitary Flow | 4.75 L/s | 4.23 L/s | 8.98 L/s |
| Peaking Factor | Residential: Harmon Peaking Factor (3.71) | Residential: Harmon Peaking Factor (3.75) | Residential: Harmon Peaking Factor (3.51) |
| Peak Sanitary Flow | 17.63 L/s | 15.85 L/s | 31.41 L/s |
| **Net Sanitary Flow Increase in Peak Sanitary Flow from Site to Sanitary Sewer System** | | | **= 31.29 L/s**<br>(31.41 L/s - 0.12 L/s) |

Refer to Appendix B for site statistics and detailed pre- and post-development flow calculations as well as the Region's Connection Multi Use Demand Table.

## 3.5 SANITARY SERVICE

It is proposed to service the site with two separate 200 mm diameter PVC sanitary services, one for the North building and one for the South building. The South building's service will be connected to the existing 250 mm sanitary sewer on Park Street East and the North building's service will be connected to the existing 250 mm sewer on Anne Street. In both cases, a manhole at the point of connection, and a control manhole immediately inside the property line and outside the underground parking structure will be included.

The internal sanitary sewer system within the parking structure will be designed by the mechanical engineer. Proposed sanitary sewers within the private site will be designed to meet the Ontario Building Code. The sanitary service connections

to the Site within the existing municipal road allowance will conform to the Region of Peel Standards. Refer to Appendix C for proposed sanitary servicing layout and sanitary design sheets.

# STORM DRAINAGE

## 3.6 STORMWATER MANAGEMENT REPORT

A Stormwater Management Report for this development has been prepared under a separate cover. It identifies the stormwater quantity and quality controls under which the Site will operate. The Low Impact Development practice that will be implemented is currently under review and may include a water reuse system (flushing toilets) and other non-potable water reuse methods in the non-residential areas of the building, as detailed in the Stormwater Management Report.

## 3.7 EXISTING CONDITIONS

The existing storm sewer in the vicinity of the site is a 300mm diameter storm sewer on Ann Street. There is no existing storm sewer on Park St. fronting the site.

## 3.8 PROPOSED DEVELOPMENT

The proposed development covers the majority of the Site and as noted, includes a 40-storey residential building, a 42-storey residential building and below grade parking. All storm flows from the Site will be captured and directed to a stormwater storage tank. The tank will be sized to reduce the 100-year post-development flows to the 2-year pre-development levels. The tank will have an access hatch which is accessible from the surface which will also double as an emergency overflow. In addition, the development will provide an OGS unit to treat the site storm runoff to meet the City of Mississauga sewer-use by-law. For detailed stormwater management calculations, refer to Appendix A in the separate Stormwater Management Report prepared by WSP.

## 3.9 GRADING

### *3.9.1 EXISTING CONDITIONS*

WSP reviewed the topographical survey prepared by R. Avis Surveying Inc. to determine the existing drainage patterns. Our review indicated that the site primarily drains Southwest to existing catch basins within the site. Overland flows at the parking lot entrances and the boulevards drain towards Ann St. to the West and Park St E to the South. Table 3.3 in the Stormwater Management Report demonstrates that the site meets the allowable release rates in post-development conditions. See Section 3.1 of the Stormwater Management Report for more details.

### *3.9.2 PROPOSED CONDITIONS*

The Ann Street and Park Street East boulevards, adjacent to the proposed development, will be regraded to a 2.0% cross fall towards the roads, while maintaining the existing bottom of curb elevations. The existing elevations along the Northwest and Northeast property lines promote the overland drainage away from the proposed development and, therefore, will not require any changes to the grading design. Refer to Appendix D for the preliminary proposed grading plan.

## 3.10 MINOR STORM DRAINAGE SYSTEM

All storm flows, up to a 100-year event, will be captured on-site and directed to the stormwater cistern. The stormwater management cistern has been designed to control the 100-year storm event to the 2-year predevelopment release rate. By implementing these stormwater management controls, the development of the Site will ensure that all storm events greater than the 2-year storm event will reduce the storm flows from the site to the existing municipal sewer system.

It is proposed to provide a new 250 mm diameter storm connection that will connect to the existing 300 mm diameter storm sewer on Ann Street. The pipes will be connected springline to springline. A control manhole is proposed to be placed immediately inside the property line. The control manhole and cistern will be accessible at grade outside the building. The water in the cistern and groundwater from the sump pit will be pumped to the control manhole where it will travel through the proposed gravity sewer to the existing municipal storm sewer. The total rate of the pumped groundwater and cistern will be less than the allowable rate, as outlined in the Stormwater Management Report.

The new storm connection within the Ann Street right-of-way will be designed to the standards and specifications of the City of Mississauga. The new on-site storm sewers, which will be located within the parking garage, will be designed by a mechanical engineer to meet the standards of the Ontario Building Code. Refer to Appendix C for the proposed storm sewer layout.

## 3.11 MAJOR STORM DRAINAGE SYSTEM

The storm flows will be collected by on site area drains connected to an internal storm drainage system and directed into the stormwater storage tank. The flow will be controlled by a flow control device and released to the City's storm sewer at the controlled release rate. In case of system failure, the system has been designed to have an emergency overflow access to the surface. Since all storm flows up to 100-year storm events will be reduced to the 2-year pre-development levels, the existing storm sewer system will not be adversely affected by the post-development condition.

# 4 CONCLUSIONS

## 4.1 WATER

The proposed water servicing for the Site will include a 150 mm diameter domestic water connection branching off a 200 mm diameter fire water connection as well as a second 200 mm fire water connection. The water service connections will be made to the existing 200 mm watermain on Park Street East. A hydrant flow test has been conducted to verify that the existing watermain has adequate capacity to support the domestic and fire protection water demands of the proposed development.

## 4.2 SANITARY

The proposed sanitary servicing for the site will include one 200 mm diameter sanitary service connecting to the existing 250 mm diameter sanitary sewer on Park Street East, and a second 200 mm diameter sanitary service connecting to the existing 250 mm diameter sanitary sewer on Park Street East. Both will include a control manhole inside the property line and a new manhole on the municipal sewer. The estimated average sanitary flow generation from the site is 8.84 L/s and the estimated peak sanitary flow generation from the site is 30.87L/s.

## 4.3 STORM

The proposed storm servicing for the site will include a 250 mm diameter storm service connecting to the existing 300 mm diameter storm sewer on Anne Street. On-site, there is a proposed stormwater cistern which will provide quantity control and a proposed OGS unit to provide quality control. The proposed development will capture and control all storm runoff from the Site (up to the 100-year storm event) and control the runoff to the 2-year predevelopment flow rate. By implementing these stormwater management controls, the development of the site will ensure that all storm events greater than the 2-year storm event will reduce the storm flows from the site to the existing municipal sewer system. Further details of the Site's stormwater management are provided in the Stormwater Management Report, also prepared by WSP.

# APPENDIX

# A FUS CALCULATIONS & HYDRANT FLOW TEST RESULTS

# APPENDIX A

## FIRE FLOW CALCULATIONS
### SOUTH TOWER

**Project:** **88 Park St. E Mississauga**
**Job No.:** **211-12423**

**Fire flow required for a given area based on Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection (1999)**

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

where

F = Fire flow in Litres per minute (Lpm)
C = coefficient related to the type of construction
A = total floor area in square metres

**Calculations per FUS**

**1.** *Estimate of Fire Flow*
C = 0.6 for fire resistive construction
A = 2132.75 m2 (largest GFA plus 25% of GFA for two immediately adjoining floors)

F = 6,096 Lpm

**2.** *Occupancy Reduction*
15% reduction for "Non-Combustible" Occupancy

15% reduction of 6096 Lpm = 914 Lpm
F = 6096 - 914 = 5,182 Lpm

**3.** *Sprinkler Reduction*
30% reduction for NFPA Sprinkler System

30% reduction of 5182 Lpm = 1,555 Lpm
F = 5182 - 1555 = 3,627 Lpm

**4.** *Separation Charge*

| Face | Distance (m) | Charge | | | | |
|---|---|---|---|---|---|---|
| West Side | 21 | 10% | | | | |
| East Side | 16 | 15% | | | | |
| North Side | 22 | 10% | | | | |
| South Side | 25 | 10% | | | | |
| | Total | 45% | of | 5,182 | = | 2,332 Lpm |

F = 3627 + 2332
F = 5,959 Lpm (2,000 Lpm < F < 45,000 Lpm; OK)
F = 1,572 US GPM
F = 99 L/s

**Notes**

# APPENDIX A

## FIRE FLOW CALCULATIONS
### NORTH TOWER

**Project:** **88 Park St. E Mississauga**
**Job No.:** **211-12423**

**Fire flow required for a given area based on Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection (1999)**

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

where

F = Fire flow in Litres per minute (Lpm)
C = coefficient related to the type of construction
A = total floor area in square metres

**Calculations per FUS**

**1.** *Estimate of Fire Flow*
C = 0.6 for fire resistive construction
A = 1644.75 m2 (largest GFA plus 25% of GFA for two immediately adjoining floors)

F = 5,353 Lpm

**2.** *Occupancy Reduction*
15% reduction for "Non-Combustible" Occupancy

15% reduction of 5353 Lpm = 803 Lpm
F = 5353 - 803 = 4,550 Lpm

**3.** *Sprinkler Reduction*
30% reduction for NFPA Sprinkler System

30% reduction of 4550 Lpm = 1,365 Lpm
F = 4550 - 1365 = 3,185 Lpm

**4.** *Separation Charge*

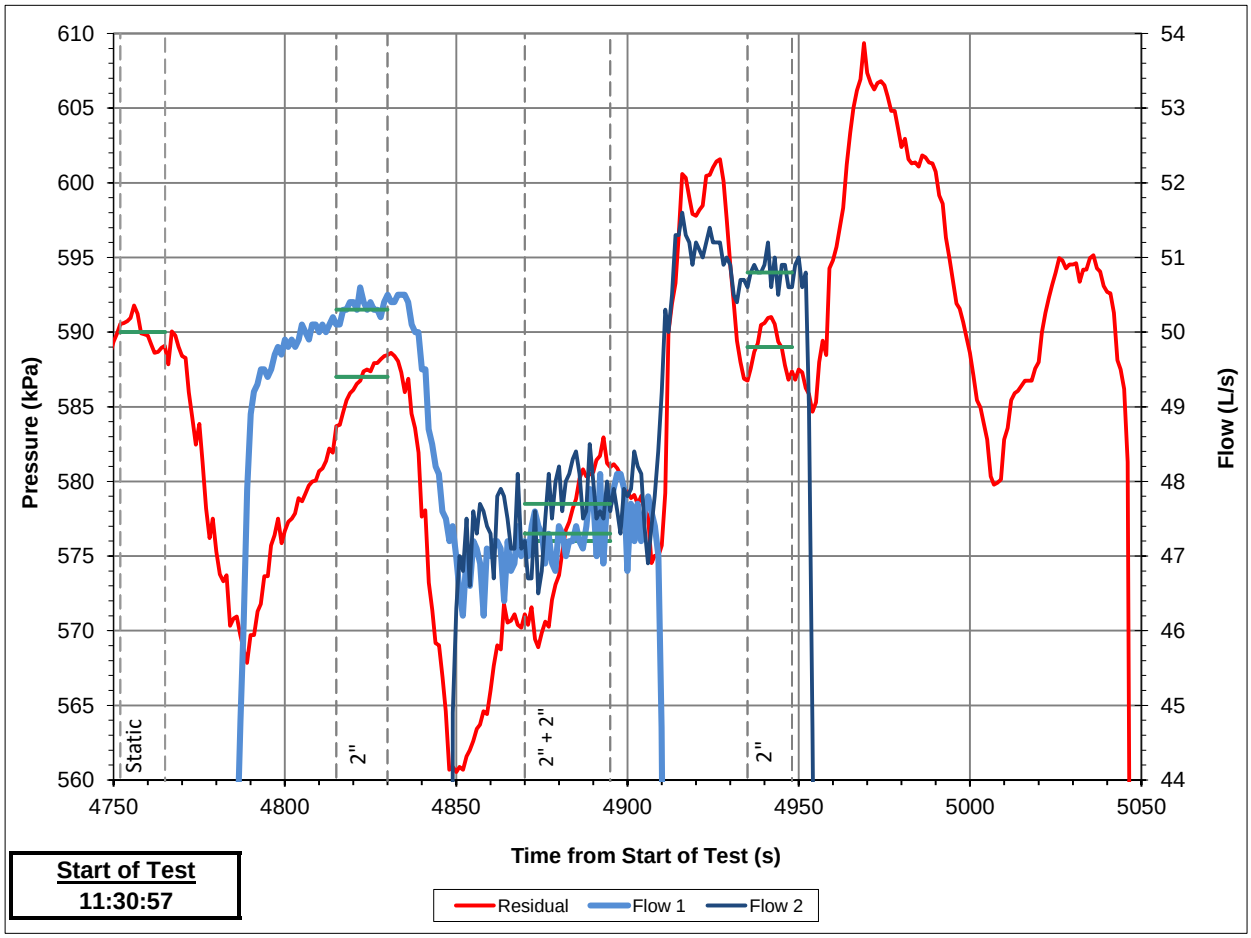
| Face | Distance (m) | Charge |
|---|---|---|
| West Side | 19 | 15% |
| East Side | 9 | 20% |
| North Side | 118 | 0% |
| South Side | 22 | 10% |
| | Total | 45% |

of 4,550 = 2,048 Lpm

F = 3185 + 2048
F = 5,233 Lpm (2,000 Lpm < F < 45,000 Lpm; OK)
F = 1,381 US GPM
F = 87 L/s

**Notes**

# Test 1 - 78 Park Street




**Start of Test**
**11:30:57**

| Subject Watermain Details | | | |
|---|---|---|---|
| **Diameter:** | 300 mm | **Material:** | PVC |
| **Area:** | 0.071 m2 | | |

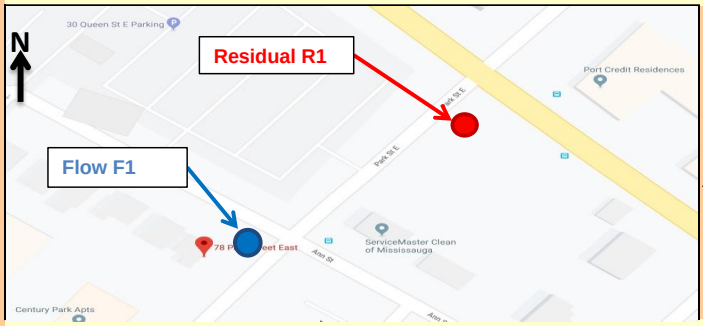
| Subject Hydrant & Valve Details | |
|---|---|
| **Residual:** | R1 |
| **Flow Hydrant:** | F1 |

**TABLE A: TESTED PRESSURES AND FLOWS**

| Point | Time | | Residual | | Flow Hydrant (F1) | | | | Total Flow | | Velocity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | S3 on Residual: | | Port 1 (S1) | | Port 2 (S2) | | | | |
| | Start | Finish | (kPa) | (psi) | (L/s) | (GPM) | (L/s) | (GPM) | (L/s) | (GPM) | (m/s) |
| **Static** | 4752 | 4765 | 590 | 85.6 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **2"** | 4815 | 4830 | 587 | 85.1 | 50.3 | 797 | 0.0 | 0 | 50.3 | 797 | 0.7 |
| **2"** | 4935 | 4948 | 589 | 85.4 | 0.0 | 0 | 50.8 | 805 | 50.8 | 805 | 0.7 |
| **1" + 2"** | | | 0 | 0.0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **2" + 2"** | 4870 | 4895 | 576 | 83.5 | 47.3 | 750 | 47.7 | 756 | 95.0 | 1506 | 1.3 |

# 78 Park Street
## HYDRANT FLOW TEST RESULTS

| | | | | | |
|---|---|---|---|---|---|
| Date: | 13-Jun-19 | Time: | 11:30 (hh/mm) | Municipality | City of Mississauga |
| | | | | Operator: | n.a |
| Tested By: | Jovan, Sen | | | Test No: | 1 |



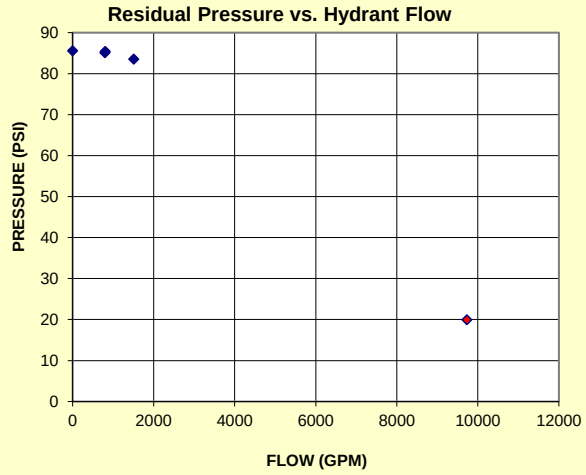

Conditions before Test (STATIC)

| | | |
|---|---|---|
| Residual Hydrant: | 85.6 psi | 590 kPa |
| Hydrant that will Flow: | 85.6 psi | 590 kPa |
| Δ pressure: | 0.0 psi | 0 kPa |
| Elevation Difference: (Flow El. - Residual El.) | 0.0 ft | 0.0 m |

Test Notes:

| TEST | | TEST FLOW | | RESIDUAL PRESSURE (psi) | | Minimum Residual $P_r$ (psi) | Fire Flow at Minimum Residual, $Q_r$ (USGPM) | Fire Flow at Minimum Residual, $Q_r$ (L/s) | 2% Pressure Drop Achieved? |
|---|---|---|---|---|---|---|---|---|---|
| Port Size (in) | Nozzle Pressure (psi) | (USGPM) | (L/s) | Monitoring Hydrant | Flow Hydrant (Corrected) * | | | | |
| STATIC | n/a | 0 | 0 | 85.6 | 85.6 | | | | |
| Single Port Tests | | | | | | | | | |
| 2 | 26.1 | 797.0 | 50.3 | 85.1 | 85.1 | 20 | 11440 | 722 | NO |
| 2 | 26.6 | 805.0 | 50.8 | 85.4 | 85.4 | 20 | 19919 | 1257 | NO |
| Two Port Test | | | | | | | | | |
| 1 | | | | | | 20 | | | |
| 2 | | | | | | | | | |
| Two Port Test | | | | | | | | | |
| 2 | 23.1 | 750.0 | 47.3 | 83.5 | 83.5 | 20 | 9727 | 614 | YES |
| 2 | 23.5 | 756.0 | 47.7 | | | | | | |

* Pressure correction is equal to the elevation difference. Column 2 (and Table A) show the nozzle pressure while flowing.




| Results | | | |
|---|---|---|---|
| Static Pressure | | Flow at 20 psi (140kPa)* | |
| (psi) | (kPa) | (gpm) | (L/s) |
| 85.6 | 590 | 9700 | 612 |

* Results carried to nearest 50 gpm or 100 gpm if over 1000 gpm

| Hydrant Classification as per NFPA 291 | | | |
|---|---|---|---|
| Class | AA | Color | BLUE |

| Water Discharged During Test: | 11700 L |
|---|---|

Rounded up to closest 100L

DISCLAIMER FOR FIRE FLOW TESTS

While WSP makes every effort to ensure that the information contained herein is accurate and up to date, WSP is not responsible for unintended or incorrect use of the data and information described and/or contained herein. The user must make his/her own determination as to its accuracy and suitability. The information is representative for a dynamic water system that may change over time.

APPENDIX

# B DOMESTIC WATER DEMAND AND SANITARY FLOW CALCULATIONS

# APPENDIX B
# 88 Park Street E
# Pre-Development Site Statistics

**Residential Units**

| Unit Type | Area (ha) | Pop Density (ppl/ha) | Population |
|---|---|---|---|
| Parking Lot | 0.59 | 0 | 0 |

**Note:** Population calculated per Region of Peel Sanitary Sewer Design Criteria Section 2.1.

**Pre-Development Sanitary Flow**

| | | |
|---|---|---|
| Res Population = | 0 | |
| Avg Res Flow = | 0.00 | L/s (assumes 302.8L/cap/d) |
| Res Peak Factor = | 4.50 | (Harmon Formula) |
| Peak Res Flow = | 0.00 | L/s |
| Infiltration = | 0.12 | L/s |
| Total Avg San Flow = | **0.12** | **L/s** |
| Total Peak San Flow = | **0.12** | **L/s** |

**Pre-Development Water Demand**

| | | |
|---|---|---|
| Res Population = | 0 | |
| Avg Res Demand = | 0.00 | L/s (assumes 280L/cap/d) |
| Max Day Factor = | 2.00 | |
| Max Day Flow = | **0.00** | **L/s** |
| Peak Hour Factor = | 3.00 | |
| Peak Hour Flow = | **0.00** | **L/s** |

# APPENDIX B
# 88 Park Street E
# Post-Development Statistics- North Tower

**Residential Units**

| Unit Type | Quantity | Pop Density** | Population |
|---|---|---|---|
| **1 Bedroom*** | 550 | **1.68** | 924 |
| **2 Bedrooms or more** | 163 | **2.54** | 415 |
| **Total** | **713** | | **1339** |

*including 1 bedroom plus den **as per direction from Region of Peel on 22 Ann Street development

**Office/Retail Units**

| | | |
|---|---|---|
| Total Retail/Office Area = | 3294 | $m^2$ |
| | 0.3294 | ha |
| Comm. Population Density = | 50 | persons/ha (R.O.P. Sani Design Criteria) |
| Total Comm. Population = | 17 | persons |

**Post-Development Sanitary Flow**

| | | |
|---|---|---|
| Total Population = | 1356 | (Residential + Commercial) |
| Avg Flow = | 4.75 | L/s (assumes 302.8L/cap/d) |
| Peak Factor = | 3.71 | (Harmon Formula) |
| Peak Flow = | 17.63 | L/s |
| Total Avg San Flow = | **4.75** | **L/s** |
| Total Peak San Flow = | **17.63** | **L/s** |

**Post-Development Water Demand - Short Term**

| | Residential | Commercial | Total | |
|---|---|---|---|---|
| Population = | 1339 | 17 | 1356 | |
| Consumption Rate = | 409 | 300 | --- | |
| Avg Demand = | 6.34 | 0.06 | 6.40 | L/s |
| Max Day Factor = | 2.00 | 2.00 | --- | |
| Max Day Flow = | 12.68 | 0.12 | 12.80 | L/s |
| Peak Hour Factor = | 3.00 | 3.00 | --- | |
| Peak Hour Flow = | **19.02** | **0.18** | **19.19** | **L/s** |
| Fire Flow = | 90 | 90 | 90 | L/s |
| Maximum Day + Fire Flow = | **102.68** | **90.12** | **102.80** | **L/s** |

**Post-Development Water Demand - Long Term**

| | Residential | Commercial | Total | |
|---|---|---|---|---|
| Population = | 1339 | 17 | 1356 | |
| Consumption Rate = | 280 | 300 | --- | |
| Avg Demand = | 4.34 | 0.06 | 4.40 | L/s |
| Max Day Factor = | 2.00 | 1.40 | --- | |
| Max Day Flow = | 8.68 | 0.08 | 8.76 | L/s |
| Peak Hour Factor = | 3.00 | 3.00 | --- | |
| Peak Hour Flow = | **13.02** | **0.18** | **13.20** | **L/s** |
| Fire Flow = | 90 | 90 | 90 | L/s |
| Maximum Day + Fire Flow = | **98.68** | **90.08** | **98.76** | **L/s** |

# APPENDIX B
# 88 Park St. E
# Post-Development Statistics- South Tower

**Residential Units**

| Unit Type | Quantity | Pop Density** | Population |
|---|---|---|---|
| **1 Bedroom*** | 425 | **1.68** | 714 |
| **2 Bedroom** | 191 | **2.54** | 486 |
| **Total** | **616** | | **1200** |

*including 1 bedroom plus den
**as per direction from Region of Peel on 22 Ann Street development

**Office/Retail Units**

| | | |
|---|---|---|
| Total Retail/Office Area = | 1300 | $m^2$ |
| | 0.1300 | ha |
| Comm. Population Density = | 50 | persons/ha (R.O.P. Sani Design Criteria) |
| Total Comm. Population = | 7 | persons |

**Post-Development Sanitary Flow**

| | | |
|---|---|---|
| Total Population = | 1207 | (Residential + Commercial) |
| Avg Flow = | 4.23 | L/s (assumes 302.8L/cap/d) |
| Peak Factor = | 3.75 | (Harmon Formula) |
| Peak Flow = | 15.85 | L/s |
| Total Avg San Flow = | **4.23** | **L/s** |
| Total Peak San Flow = | **15.85** | **L/s** |

**Post-Development Water Demand - Short Term**

| | Residential | Commercial | Total | |
|---|---|---|---|---|
| Population = | 1200 | 7 | 1207 | |
| Consumption Rate = | 409 | 300 | --- | |
| Avg Demand = | 5.68 | 0.02 | 5.70 | L/s |
| Max Day Factor = | 2.00 | 2.00 | --- | |
| Max Day Flow = | 11.36 | 0.05 | 11.41 | L/s |
| Peak Hour Factor = | 3.00 | 3.00 | --- | |
| Peak Hour Flow = | **17.04** | **0.07** | **17.11** | **L/s** |
| Fire Flow = | 102 | 102 | 102 | L/s |
| Maximum Day + Fire Flow = | **113.36** | **102.05** | **113.41** | **L/s** |

**Post-Development Water Demand - Long Term**

| | Residential | Commercial | Total | |
|---|---|---|---|---|
| Population = | 1200 | 7 | 1207 | |
| Consumption Rate = | 280 | 300 | --- | |
| Avg Demand = | 3.89 | 0.02 | 3.91 | L/s |
| Max Day Factor = | 2.00 | 1.40 | --- | |
| Max Day Flow = | 7.78 | 0.03 | 7.81 | L/s |
| Peak Hour Factor = | 3.00 | 3.00 | --- | |
| Peak Hour Flow = | **11.67** | **0.07** | **11.74** | **L/s** |
| Fire Flow = | 102 | 102 | 102 | L/s |
| Maximum Day + Fire Flow = | **109.78** | **102.03** | **109.81** | **L/s** |

# APPENDIX B
# 88 Park St. E
# Post-Development Site Statistics

**Residential Units**

| Unit Type | Quantity | Pop Density** | Population |
|---|---|---|---|
| **1 Bedroom*** | 975 | **1.68** | 1638 |
| **2 Bedroom** | 354 | **2.54** | 900 |
| **Total** | **1329** | | **2538** |

*including 1 bedroom plus den
**as per direction from Region of Peel on 22 Ann Street development

**Office/Retail Units**

| | | |
|---|---|---|
| Total Retail/Office Area = | 4594 | $m^2$ |
| | 0.4594 | ha |
| Comm. Population Density = | 50 | persons/ha (R.O.P. Sani Design Criteria) |
| Total Comm. Population = | 23 | persons |

**Post-Development Sanitary Flow**

| | | |
|---|---|---|
| Total Population = | 2561 | (Residential + Commercial) |
| Avg Flow = | 8.98 | L/s (assumes 302.8L/cap/d) |
| Peak Factor = | 3.50 | (Harmon Formula) |
| Peak Flow = | 31.41 | L/s |
| Total Avg San Flow = | **8.98** | **L/s** |
| Total Peak San Flow = | **31.41** | **L/s** |

**Post-Development Water Demand - Short Term**

| | Residential | Commercial | Total | |
|---|---|---|---|---|
| Population = | 2538 | 23 | 2561 | |
| Consumption Rate = | 409 | 300 | --- | |
| Avg Demand = | 12.01 | 0.08 | 12.09 | L/s |
| Max Day Factor = | 2.00 | 2.00 | --- | |
| Max Day Flow = | 24.03 | 0.16 | 24.19 | L/s |
| Peak Hour Factor = | 3.00 | 3.00 | --- | |
| Peak Hour Flow = | **36.04** | **0.24** | **36.28** | **L/s** |
| Fire Flow = | 102 | 102 | 102 | L/s |
| Maximum Day + Fire Flow = | **126.03** | **102.16** | **126.19** | **L/s** |

**Post-Development Water Demand - Long Term**

| | Residential | Commercial | Total | |
|---|---|---|---|---|
| Population = | 2538 | 23 | 2561 | |
| Consumption Rate = | 280 | 300 | --- | |
| Avg Demand = | 8.23 | 0.08 | 8.30 | L/s |
| Max Day Factor = | 2.00 | 1.40 | --- | |
| Max Day Flow = | 16.45 | 0.11 | 16.56 | L/s |
| Peak Hour Factor = | 3.00 | 3.00 | --- | |
| Peak Hour Flow = | **24.68** | **0.24** | **24.91** | **L/s** |
| Fire Flow = | 102 | 102 | 102 | L/s |
| Maximum Day + Fire Flow = | **118.45** | **102.11** | **118.56** | **L/s** |

# Connection Multi Use Demand Table

**WATER CONNECTION**

| | | | | |
|---|---|---|---|---|
| **Connection point** [3] | | | | |
| 300mm Watermain on Anne Street between Queen Street East and Park Street East | | | | |
| **Pressure zone of connection point** | | | 1 | |
| **Total equivalent population to be serviced** [1] | | | 2561 persons | |
| **Total lands to be serviced** | | | 0.73ha | |
| **Hydrant flow test** | | | | |
| | Hydrant flow test location | | | |
| | 78 Park Street East, Mississauga | | | |
| | | Pressure (kPa) | Flow (in l/s) | Time |
| | Minimum water pressure | 140 | 612 | |
| | Maximum water pressure | 590 | 0 | |

| No. | Water demands | | | |
|---|---|---|---|---|
| | | Demand (in l/s) | | |
| | Demand type | Use 1 [5] | Use 2 [5] | Total |
| 1 | Average day flow | 12.01 | 0.08 | 12.09 |
| 2 | Maximum day flow | 24.03 | 0.16 | 24.19 |
| 3 | Peak hour flow | 36.04 | 0.24 | 36.28 |
| 4 | Fire flow [2] | 102 | 102 | 102 |
| **Analysis** | | Residential | Office/Retail | |
| 5 | Maximum day plus fire flow | 126.03 | 102.16 | 126.19 |

**WASTEWATER CONNECTION**

| | | | | Total |
|---|---|---|---|---|
| | | North Tower | South Tower | |
| **Total equivalent population to be serviced** [1] | | 1356 | 1207 | 2561 |
| **Total lands to be serviced** | | N/A | N/A | 0.73ha |
| 6 | Wastewater sewer effluent (in l/s) | 4.40 | 3.91 | 8.30 |

**Connection point** [4] North Tower: 250mm Sanitary Sewer on Anne Street. South Tower: 250mm Sanitary Sewer on Park Street East.

[1] The calculations should be based on the development estimated population (employment and/or residential).

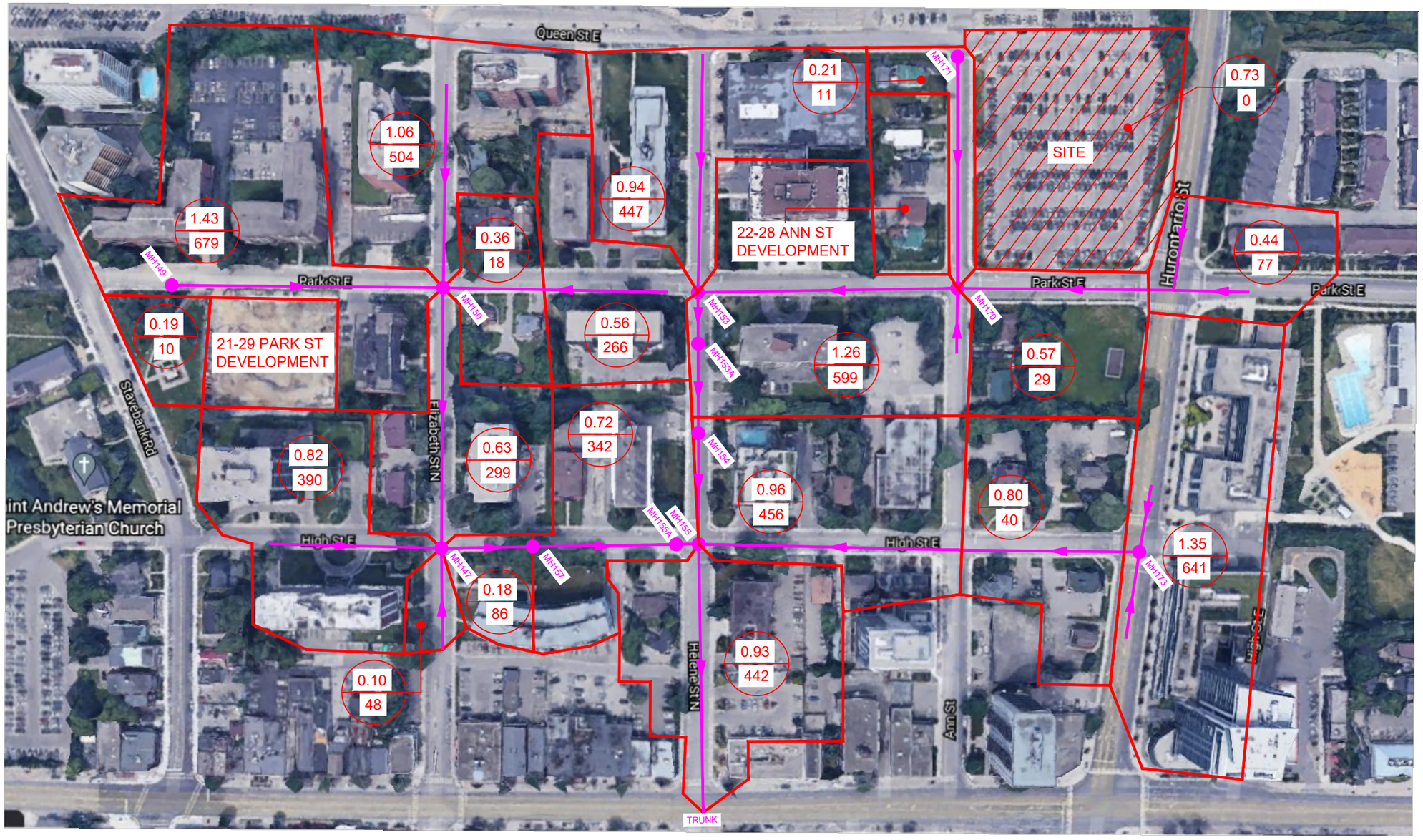
[2] Please reference the Fire Underwriters Survey Document

[3] Please specify the connection point ID

[4] Please specify the connection point (wastewater line or manhole ID)
Also, the "total equivalent popopulation to be serviced" and the "total lands to be serviced" should reference the connection point. (The FSR should contain one copy of Site Servicing Plan)

[5] Please complete as many uses are necessary for the development. (Please specify the use)

Please include the graphs associated with the hydrant flow test information table
Please provide Professional Engineer's signature and stamp on the demand table
All required calculations must be submitted with the demand table submission.




EXISTING SANITARY SEWER

SANITARY SEWER DRAINAGE BOUNDARY

0.93 / 442 — DRAINAGE AREA (IN HA) / ESTIMATED POPULATION IN DRAINAGE AREA

CLIENT
EDENSHAW DEVELOPMENTS LIMITED

TITLE
88 PARK STREET EAST

# SANITARY SEWER DRAINAGE PLAN

wsp

| | | | |
|---|---|---|---|
| Checked | M.M. | Drawn | 10/12 Cad |
| Date | JUNE 2023 | Proj. No. | 211-12423 |
| Scale | NTS | Figure No. | SAN-1 |

# THE REGIONAL MUNICIPALITY OF PEEL
## SANITARY DESIGN CHART
## 88 PARK ST E - CITY OF MISSISAUGA
## PRE-DEVELOPMENT CONDITION

**CONSULTANT:** WSP CANADA GROUP INC

*** DESIGN FLOWS AS PER REGION OF PEEL SANITARY SEWER DESIGN FLOW**

**DATE:** DEC 2021

**DESIGNED BY:** MD

**DRAINAGE AREA PLAN NO.:**

**Manning's n= 0.013**

**CHECKED BY:** MM

| LOCATION | FROM MH | TO MH | AREA (ha) | AREA DENSITY (ppha) | POP. | CUMM. AREA (ha) | CUMM. POP. | DESIGN SEWAGE FLOW (L/sec) | Peaking Factor | PEAK SEWAGE FLOW (L/sec) | INFILTRATION FLOW * 0.200 (L/sec/ha) | TOTAL FLOW (L/sec) | LENGTH (m) | GRADIENT (%) | PIPE SIZE (mm) | CAPACITY (L/sec) | % FULL | VELOCITY FULL (m/sec) | VELOCITY ACTUAL (m/sec) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21-29 Park St Development | | | --- | --- | 559 | | | | | | | | | | | | | | |
| | | | 0.19 | 50 | 10 | | | | | | | | | | | | | | |
| | | | 1.43 | 475 | 679 | | | | | | | | | | | | | | |
| Park St E | 149 | 150 | 1.62 | --- | 1248 | 1.62 | 1248 | 4.37 | 3.74 | 16.3 | 0.3 | 16.6 | --- | --- | --- | --- | --- | --- | --- |
| Elizabeth St | North | 150 | 1.06 | 475 | 504 | 1.06 | 504 | 1.8 | 3.97 | 7.0 | 0.2 | 7.2 | --- | --- | --- | --- | --- | --- | --- |
| | | | 0.36 | 50 | 18 | | | | | | | | | | | | | | |
| | | | 0.56 | 475 | 266 | | | | | | | | | | | | | | |
| Park St E | East | 150 | 0.92 | --- | 284 | 0.92 | 284 | 1.0 | 4.09 | 4.1 | 0.2 | 4.3 | --- | --- | --- | --- | --- | --- | --- |
| Elizabeth St | 150 | 147 | 0.63 | 475 | 299 | 4.23 | 2335 | 8.2 | 3.53 | 28.9 | 0.8 | 29.7 | --- | --- | --- | --- | --- | --- | --- |
| Elizabeth St North | South | 147 | 0.10 | 475 | 48 | 0.10 | 48 | 0.2 | 4.32 | 0.7 | 0.0 | 0.7 | --- | --- | --- | --- | --- | --- | --- |
| High Street E | West | 147 | 0.82 | 475 | 390 | 0.82 | 390 | 1.4 | 4.03 | 5.5 | 0.2 | 5.7 | --- | --- | --- | --- | --- | --- | --- |
| High St E | 147 | 157 | 0.18 | 475 | 86 | 5.33 | 2857 | 10.0 | 3.46 | 34.6 | 1.1 | 35.7 | --- | --- | --- | --- | --- | --- | --- |
| High St E | 157 | 155A | 0.72 | 475 | 342 | 6.05 | 3199 | 11.2 | 3.42 | 38.3 | 1.2 | 39.5 | --- | --- | --- | --- | --- | --- | --- |
| High St E | 155A | 155 | 0.00 | 0 | 0 | 6.05 | 3199 | 11.2 | 3.42 | 38.3 | 1.2 | 39.5 | --- | --- | --- | --- | --- | --- | --- |
| | | | 0.44 | 175 | 77 | | | | | | | | | | | | | | |
| Park St E | East | 170 | 0.57 | 50 | 29 | 1.01 | 106 | 0.4 | 4.24 | 1.6 | 0.2 | 1.8 | 75.5 | 0.71 | 250 | 49.9 | 3.54% | 1.0 | 0.00 |
| ANN St | 171 | 170 | 0.26 | 50 | 13 | 0.21 | 13 | 0.0 | 4.40 | 0.2 | 0.0 | 0.2 | 104.0 | 1.14 | 250 | 63.4 | 0.38% | 1.29 | 0.39 |
| 22-28 Ann St. Development | | 170 | 0.21 | --- | 684 | 0.26 | 684 | 2.4 | 3.90 | 9.3 | 0.1 | 9.4 | 10.7 | 2.00 | 250 | 84.1 | 11.18% | 1.71 | 0.00 |
| Park St E | 170 | 153 | 1.26 | 475 | 599 | 2.74 | 1401 | 4.9 | 3.70 | 18.2 | 0.5 | 18.7 | 119.6 | 0.68 | 250 | 49.0 | 38.13% | 1.00 | 0.94 |
| Helene St N | North | 153 | 0.94 | 475 | 447 | 0.94 | 447 | 1.6 | 4.00 | 6.3 | 0.2 | 6.5 | --- | --- | --- | --- | --- | --- | --- |
| Helene St N | 153 | 153A | 0.00 | 0 | 0 | 3.68 | 1848 | 6.5 | 3.61 | 23.4 | 0.7 | 24.1 | 23.9 | 4.67 | 250 | 128.5 | 18.75% | 2.62 | 1.96 |
| Helene St N | 153A | 154 | 0.00 | 0 | 0 | 3.68 | 1848 | 6.5 | 3.61 | 23.4 | 0.7 | 24.1 | 42.0 | 4.67 | 250 | 128.5 | 18.75% | 2.62 | 1.96 |
| Helene St N | 154 | 155 | 0.00 | 0 | 0 | 3.68 | 1848 | 6.5 | 3.61 | 23.4 | 0.7 | 24.1 | 55.0 | 0.50 | 250 | 42.0 | 57.31% | 0.86 | 0.89 |
| | | | 1.35 | 475 | 641 | | | | | | | | | | | | | | |
| | | | 0.80 | 50 | 40 | | | | | | | | | | | | | | |
| High St E | East | 155 | 0.96 | 475 | 456 | 3.11 | 1137 | 4.0 | 3.76 | 15.0 | 0.6 | 15.6 | --- | --- | --- | --- | --- | --- | --- |
| Helene St N | 155 | Lakeshore | 0.93 | 475 | 442 | 13.77 | 6626 | 23.2 | 3.13 | 72.7 | 2.8 | 75.5 | 125.8 | 0.30 | 450 | 156.2 | 48.35% | 0.98 | 0.97 |

**NOTE:** (1) - Grey rows are not receiving sewers and flows are unchanged by the proposed development.

# THE REGIONAL MUNICIPALITY OF PEEL
# SANITARY DESIGN CHART
# 88 PARK ST E - CITY OF MISSISSAUGA
# POST-DEVELOPMENT CONDITION

**CONSULTANT:**

**WSP CANADA GROUP INC**

*** DESIGN FLOWS AS PER REGION OF**

**PEEL SANITARY SEWER DESIGN FLOW**

**DATE:** MAY 2023

**DESIGNED BY:** MD

**DRAINAGE AREA PLAN NO.:**

**Manning's n= 0.013**

**CHECKED BY:** MM

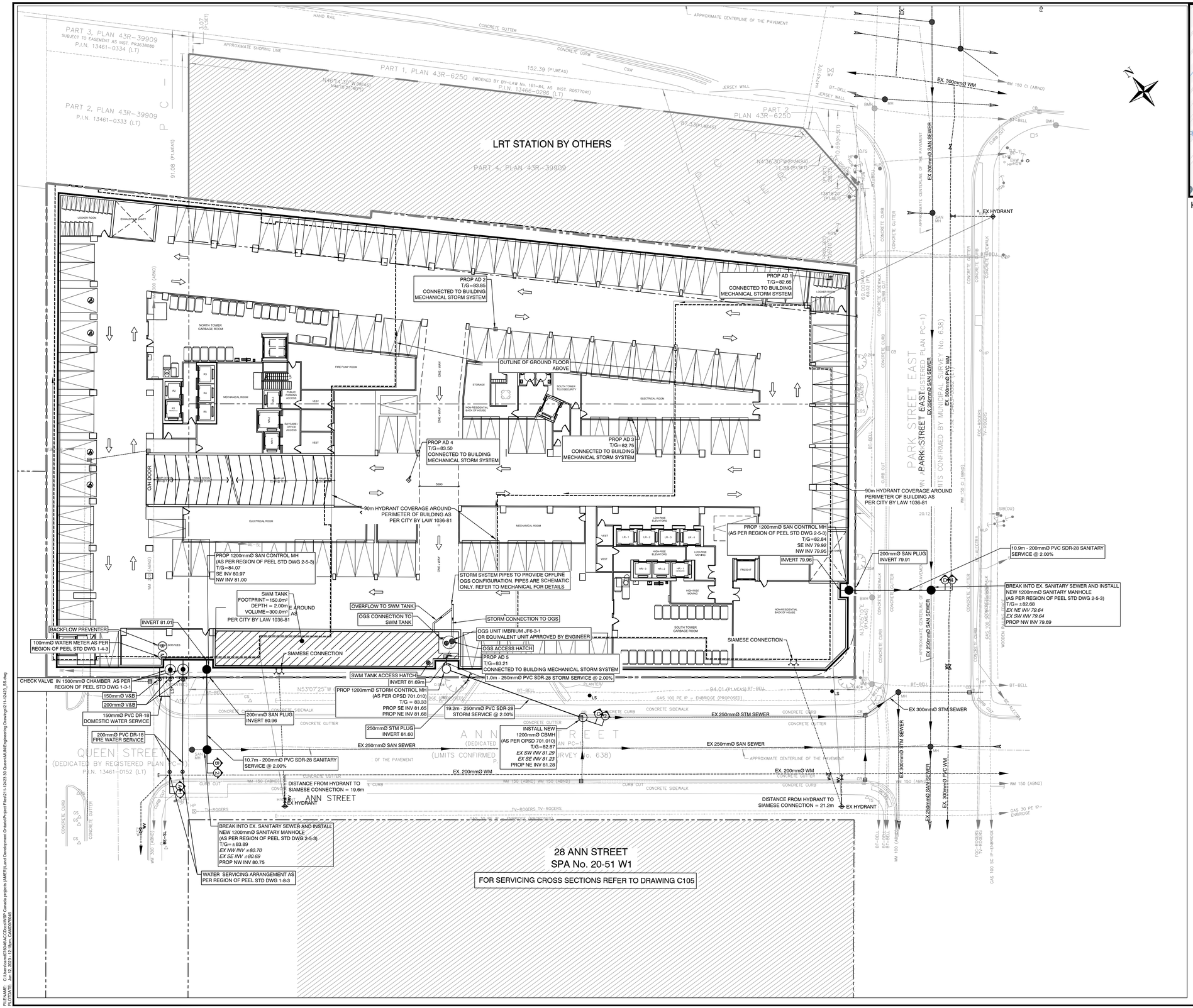
| LOCATION | FROM MH | TO MH | AREA (ha) | AREA DENSITY (ppha) | POP. | CUMM. AREA (ha) | CUMM. POP. | DESIGN SEWAGE FLOW (L/sec) | Peaking Factor | PEAK SEWAGE FLOW (L/sec) | INFILTRATION FLOW * 0.200 (L/sec/ha) | TOTAL FLOW (L/sec) | LENGTH (m) | GRADIENT (%) | PIPE SIZE (mm) | CAPACITY (L/sec) | %FULL | VELOCITY FULL (m/sec) | VELOCITY ACTUAL (m/sec) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | |
| 21-29 Park St Development | | | --- | --- | 559 | | | | | | | | | | | | | | |
| | | | 0.19 | 50 | 10 | | | | | | | | | | | | | | |
| | | | 1.43 | 475 | 679 | | | | | | | | | | | | | | |
| Park St E | 149 | 150 | 1.62 | --- | 1248 | 1.62 | 1248 | 4.37 | 3.74 | 16.3 | 0.3 | 16.6 | 113.5 | 2.00 | 250 | 84.1 | 19.74% | 1.71 | 1.30 |
| | | | | | | | | | | | | | | | | | | | |
| Elizabeth St | North | 150 | 1.06 | 475 | 504 | 1.06 | 504 | 1.8 | 3.97 | 7.0 | 0.2 | 7.2 | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | | | |
| | | | 0.36 | 50 | 18 | | | | | | | | | | | | | | |
| | | | 0.56 | 475 | 266 | | | | | | | | | | | | | | |
| Park St E | East | 150 | 0.92 | --- | 284 | 0.92 | 284 | 1.0 | 4.09 | 4.1 | 0.2 | 4.3 | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | | | |
| Elizabeth St | 150 | 147 | 0.63 | 475 | 299 | 4.23 | 2335 | 8.2 | 3.53 | 28.9 | 0.8 | 29.7 | 123.0 | 0.50 | 250 | 42.0 | 70.75% | 0.86 | 0.93 |
| | | | | | | | | | | | | | | | | | | | |
| Elizabeth St North | South | 147 | 0.10 | 475 | 48 | 0.10 | 48 | 0.2 | 4.32 | 0.7 | 0.0 | 0.7 | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | | | |
| High Street E | West | 147 | 0.82 | 475 | 390 | 0.82 | 390 | 1.4 | 4.03 | 5.5 | 0.2 | 5.7 | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | | | |
| High St E | 147 | 157 | 0.18 | 475 | 86 | 5.33 | 2857 | 10.0 | 3.46 | 34.6 | 1.1 | 35.7 | 40.0 | 0.30 | 375 | 96.0 | 37.19% | 0.87 | 0.81 |
| High St E | 157 | 155A | 0.72 | 475 | 342 | 6.05 | 3199 | 11.2 | 3.42 | 38.3 | 1.2 | 39.5 | 70.0 | 0.47 | 375 | 120.2 | 32.89% | 1.09 | 0.96 |
| High St E | 155A | 155 | 0.00 | 0 | 0 | 6.05 | 3199 | 11.2 | 3.42 | 38.3 | 1.2 | 39.5 | 13.0 | 0.47 | 375 | 120.2 | 32.89% | 1.09 | 0.96 |
| | | | | | | | | | | | | | | | | | | | |
| **PROPOSED DEVELOPMENT** | | PLUG | --- | --- | **1207**(1) | | | | | | | | | | | | | | |
| **SITE** | PLUG | CONTROL MH | --- | --- | **---** | 0.00 | 1207 | 4.2 | 3.75 | 15.8 | 0.0 | 15.8 | 1.0 | 2.00 | 200 | 46.4 | 34.06% | 1.48 | 1.31 |
| **SERVICE CONNECTION** | CONTROL MH | E | --- | --- | **---** | 0.00 | 1207 | 4.2 | 3.75 | 15.8 | 0.0 | 15.8 | 10.7 | 2.00 | 200 | 46.4 | 34.06% | 1.48 | 1.31 |
| | | | 0.44 | 175 | 77 | | | | | | | | | | | | | | |
| Park St E | E | 170 | 0.57 | 50 | 29 | 1.01 | 1313 | 4.6 | 3.72 | 17.1 | 0.2 | 17.3 | 75.5 | 0.71 | 250 | 49.9 | 34.68% | 1.0 | 0.93 |
| | | | | | | | | | | | | | | | | | | | |
| **PROPOSED DEVELOPMENT** | | PLUG | --- | --- | **1356**(1) | | | | | | | | | | | | | | |
| **SITE** | PLUG | CONTROL MH | --- | --- | **---** | 0.00 | 1356 | 4.8 | 3.71 | 17.6 | 0.0 | 17.6 | 1.0 | 2.00 | 200 | 46.4 | 37.94% | 1.48 | 1.39 |
| **SERVICE CONNECTION** | CONTROL MH | E | --- | --- | **---** | 0.00 | 1356 | 4.8 | 3.71 | 17.6 | 0.0 | 17.6 | 10.7 | 2.00 | 200 | 46.4 | 37.94% | 1.48 | 1.39 |
| | | | | | | | | | | | | | | | | | | | |
| Ann St | 171 | 170 | 0.21 | 50 | 11 | 0.21 | 1367 | 4.8 | 3.71 | 17.8 | 0.0 | 17.8 | 104.0 | 1.14 | 250 | 63.4 | 28.10% | 1.29 | 1.10 |
| | | | | | | | | | | | | | | | | | | | |
| 22-28 Ann St. Development | CONTROL MH | 170 | 0.26 | --- | 684 | 0.26 | 684 | 2.4 | 3.90 | 9.3 | 0.1 | 9.4 | 10.7 | 2.00 | 250 | 84.1 | 11.18% | 1.71 | 1.08 |
| | | | | | | | | | | | | | | | | | | | |
| Park St E | 170 | 153 | 1.26 | 475 | 599 | 2.74 | 3962 | 13.9 | 3.34 | 46.3 | 0.5 | 46.8 | 119.6 | 0.68 | 250 | 49.0 | 95.44% | 1.00 | 1.16 |
| | | | | | | | | | | | | | | | | | | | |
| Helene St N | North | 153 | 0.94 | 475 | 447 | 0.94 | 447 | 1.6 | 4.00 | 6.3 | 0.2 | 6.5 | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | | | |
| Helene St N | 153 | 153A | 0.00 | 0 | 0 | 3.68 | 4408 | 15.4 | 3.30 | 50.9 | 0.7 | 51.6 | 23.9 | 4.67 | 250 | 128.5 | 40.15% | 2.62 | 2.46 |
| Helene St N | 153A | 154 | 0.00 | 0 | 0 | 3.68 | 4408 | 15.4 | 3.30 | 50.9 | 0.7 | 51.6 | 42.0 | 4.67 | 250 | 128.5 | 40.15% | 2.62 | 2.46 |
| Helene St N | 154 | 155 | 0.00 | 0 | 0 | 3.68 | 4408 | 15.4 | 3.30 | 50.9 | 0.7 | 51.6 | 55.0 | 0.50 | 250 | 42.0 | 122.71% | 0.86 | 0.99 |
| | | | | | | | | | | | | | | | | | | | |
| | | | 1.35 | 475 | 641 | | | | | | | | | | | | | | |
| | | | 0.80 | 50 | 40 | | | | | | | | | | | | | | |
| High St E | East | 155 | 0.96 | 475 | 456 | 3.11 | 1137 | 4.0 | 3.76 | 15.0 | 0.6 | 15.6 | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | | | |
| Helene St N | 155 | Lakeshore | 0.93 | 475 | 442 | 13.77 | 9186 | 32.2 | 2.99 | 96.3 | 2.8 | 99.1 | 125.8 | 0.30 | 450 | 156.2 | 63.46% | 0.98 | 1.04 |
| | | | | | | | | | | | | | | | | | | | |

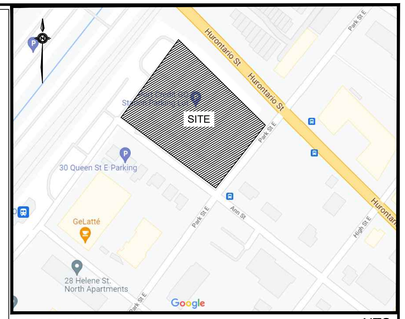
**NOTE:** (1) - For population of proposed development see Appendix B Post-Development Site Statistics

(2) - Grey rows are not receiving sewers and flows are unchanged by the proposed development.

# APPENDIX

# C PRELIMINARY SITE SERVICING PLAN




KEY PLAN NTS

## LEGEND

- PROPOSED SANITARY SEWER AND MANHOLE
- PROPOSED STORM SEWER AND MANHOLE
- PROPOSED WATERMAIN PIPE
- PROPOSED SHUT OFF VALVE
- DETECTOR CHECK VALVE AND CHAMBER
- EXISTING SANITARY SEWER AND MANHOLE
- EXISTING STORM SEWER AND MANHOLE
- EXISTING WATERMAIN
- EXISTING GAS MAIN
- EXISTING BELL LINE
- PROPERTY LINE

ELEVATION NOTE:
ELEVATION ARE REFERRED TO CANADIAN GEODETIC VERTICAL DATUM-1928, AND WERE DERIVED FROM THE CITY OF MISSISSAUGA BENCHMARK NO. 379, HAVING A PUBLISHED ELEVATION OF 82.771 METRES.

ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.

PIPE SIZES ARE IN MILLIMETRES.

| No. | REVISIONS | BY | DATE | APPR. |
|---|---|---|---|---|
| 2 | REISSUED FOR ZBA & OPA | M.M. | JUNE 12, 2023 | |
| 1 | ISSUED FOR ZBA & OPA | A.K. | FEB. 04, 2022 | |

ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED

CLIENT
EDENSHAW QUEEN DEVELOPMENTS LIMITED

MUNICIPALITY
MISSISSAUGA Transportation and Works

PROJECT TITLE
88 PARK STREET EAST
PORT CREDIT, ON

SHEET TITLE
SITE SERVICING PLAN

CONSULTANT
wsp

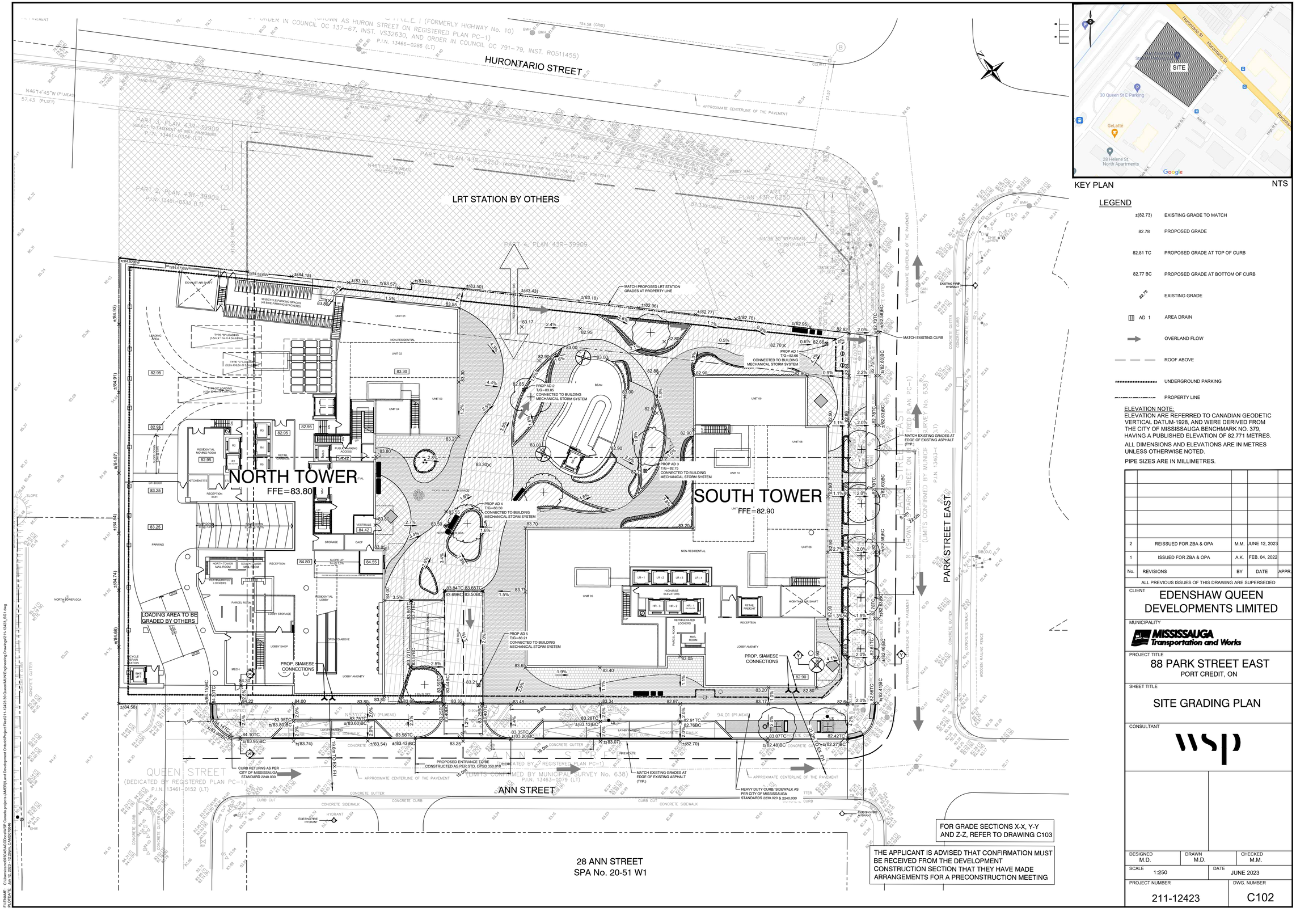
| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| M.D. | M.D. | M.M. |

SCALE 1:250 DATE JUNE 2023

PROJECT NUMBER 211-12423 DWG. NUMBER C104

FILENAME: C:\Users\md078\DATA\CDocs\WSP Canada projects (AMER)\Land Development Ontario\Project Files\211-12423 St Queen\MUNI\Engineering Drawings\211-12423_SS.dwg
PLOTTED: Jun 22, 2023 - 3:54pm - mdelos

# D PRELIMINARY SITE GRADING PLAN







KEY PLAN NTS

## LEGEND

| | |
|---|---|
| ±(82.73) | EXISTING GRADE TO MATCH |
| 82.78 | PROPOSED GRADE |
| 82.81 TC | PROPOSED GRADE AT TOP OF CURB |
| 82.77 BC | PROPOSED GRADE AT BOTTOM OF CURB |
| 82.75 | EXISTING GRADE |
| AD 1 | AREA DRAIN |
| | OVERLAND FLOW |
| | ROOF ABOVE |
| | UNDERGROUND PARKING |
| | PROPERTY LINE |

ELEVATION NOTE:
ELEVATION ARE REFERRED TO CANADIAN GEODETIC VERTICAL DATUM-1928, AND WERE DERIVED FROM THE CITY OF MISSISSAUGA BENCHMARK NO. 379, HAVING A PUBLISHED ELEVATION OF 82.771 METRES.

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PIPE SIZES ARE IN MILLIMETRES.

FOR GRADE SECTIONS X-X, Y-Y AND Z-Z, REFER TO DRAWING C103

THE APPLICANT IS ADVISED THAT CONFIRMATION MUST BE RECEIVED FROM THE DEVELOPMENT CONSTRUCTION SECTION THAT THEY HAVE MADE ARRANGEMENTS FOR A PRECONSTRUCTION MEETING

| No. | REVISIONS | BY | DATE | APPR. |
|---|---|---|---|---|
| 2 | REISSUED FOR ZBA & OPA | M.M. | JUNE 12, 2023 | |
| 1 | ISSUED FOR ZBA & OPA | A.K. | FEB. 04, 2022 | |

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PROJECT TITLE
88 PARK STREET EAST
PORT CREDIT, ON

SHEET TITLE
SITE GRADING PLAN

CONSULTANT
wsp

| DESIGNED | DRAWN | CHECKED |
|---|---|---|
| M.D. | M.D. | M.M. |

SCALE 1:250 DATE JUNE 2023

PROJECT NUMBER 211-12423

DWG. NUMBER C102

FILENAME: C:\Users\cmd070048\ACCDocs\WSP Canada projects (AMER)\Land Development Ontario\Project Files\211-12423 30 Queen\MUN\Engineering Drawings\211-12423_SG1.dwg
PLOTTING: Jun 12, 2023 - 12:29pm by CAMERON.DEMONTE