EDENSHAW FAIRVIEW DEVELOPMENTS LIMITED

1 FAIRVIEW ROAD EAST

FUNCTIONAL SERVICING REPORT

DECEMBER 20, 2019

1 FAIRVIEW ROAD EAST

FUNCTIONAL SERVICING REPORT

EDENSHAW FAIRVIEW DEVELOPMENTS LIMITED

FUNCTIONAL SERVICING REPORT

PROJECT NO.: 19M-01759
DATE: DECEMBER 20, 2019

WSP CANADA GROUP LIMITED
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1 INTRODUCTION

1.1 INTRODUCTION

WSP Canada Group Limited (herein called WSP) has been retained to prepare a Functional Servicing Report to assess the servicing requirements relating to the proposed development at 1 Fairview Road East in the City of Mississauga. This report provides the conceptual framework for water distribution, sanitary sewage, and storm drainage for the development of this site. A Stormwater Management Report outlining the proposed stormwater quality and quantity controls on this site has been prepared under a separate cover, also by WSP Canada Group Limited.

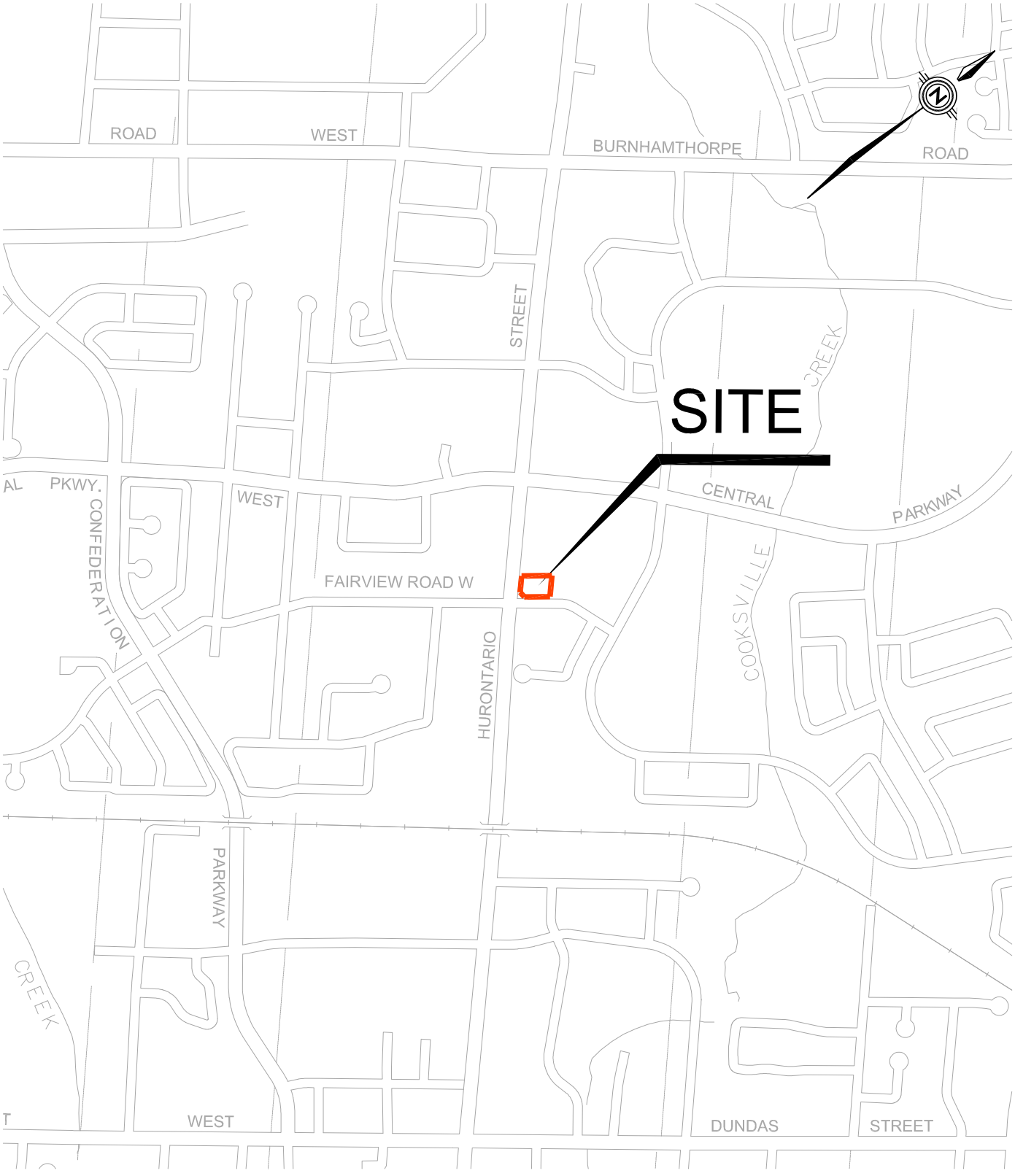
In preparing this report, WSP staff reviewed and secured available City of Mississauga and Region of Peel Plan and Profile Drawings, as well as the architectural site plans prepared by Core Architects, a survey prepared by Tarasick McMillan Kubicki Limited, and SUE investigation by T2 Utility Engineers.

1.2 SITE DESCRIPTION

The site is a 0.29 ha parcel of land located at the north corner of Hurontario Street and Fairview Road East, with the municipal address 1 Fairview Road East. The site is a generally rectangular parcel of land bounded by Hurontario Street to the southwest and Fairview Road East to the southeast. Along the northwest perimeter, the site borders a property occupied by a private park and apartment building, and to the northeast the site fronts a laneway shared with the adjacent apartment building.

There are no existing structures on the site, and the site is presently occupied by grass and small trees. The proposed site development includes a 36-storey residential condominium building and 6 floors of below grade parking, covering the entire site.

The site will be serviced by existing local municipal sewers and watermains within the adjoining municipal right-of-ways. 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 FAIRVIEW DEVELOPMENTS LIMITED

TITLE

1 FAIRVIEW ROAD EAST

LOCATION PLAN

100 Commerce Valley Dr. West, Thornhill, ON Canada L3T 0A1
t: 905.882.1100 f: 905.882.0055 www.wsp.com

Checked	J.G.	Drawn	10/12 Cad
Date	DEC 2019	Proj. No.	19M-01759
Scale	NTS	Figure No.	1

FILENAME: X:\DIV10\19M-01759 Edenshaw Hurontario & Fairview\Mun\FSR\19M-01759_FIG-1.dwg
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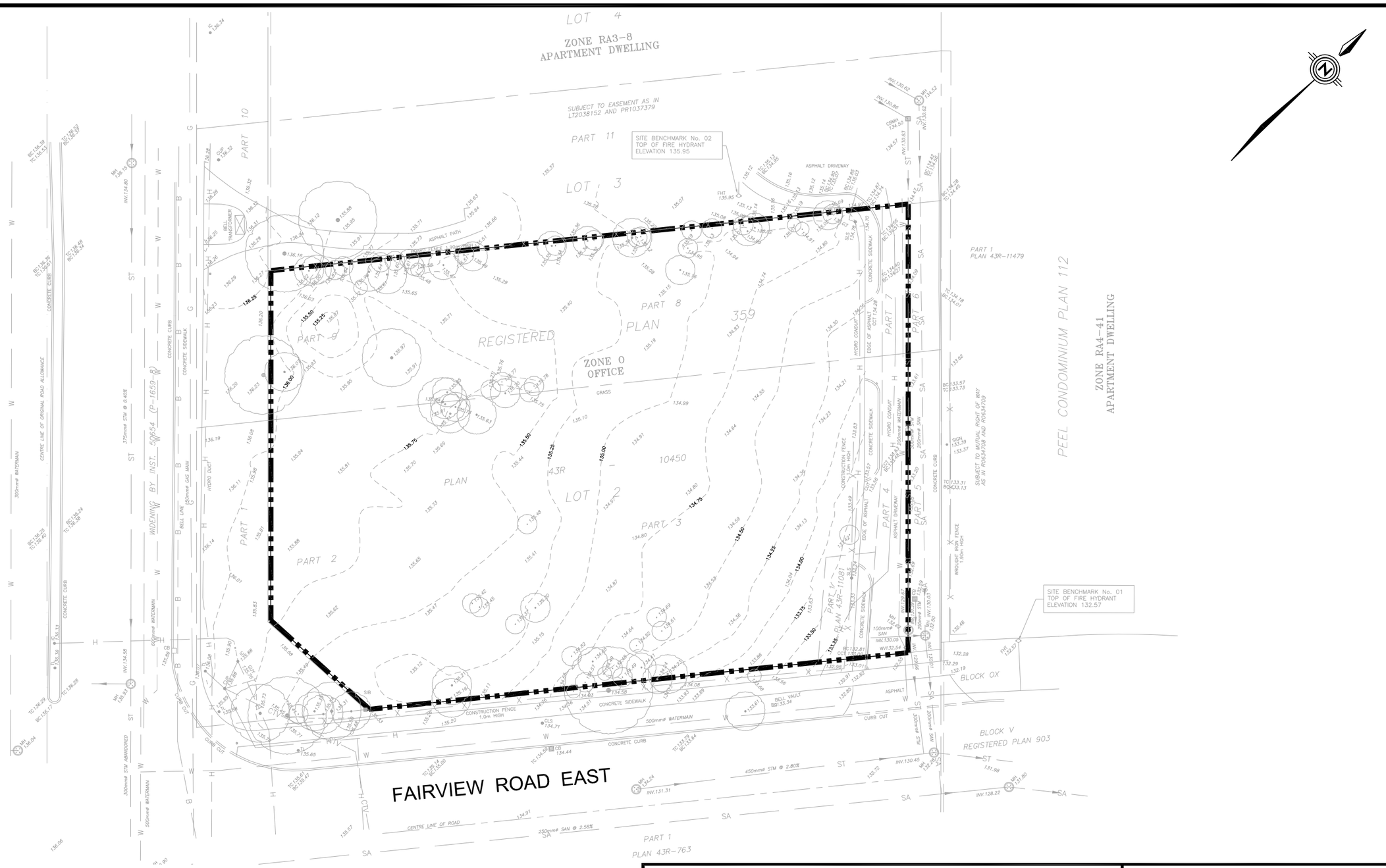

LEGEND

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TITLE
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PRE- DEVELOPMENT PLAN

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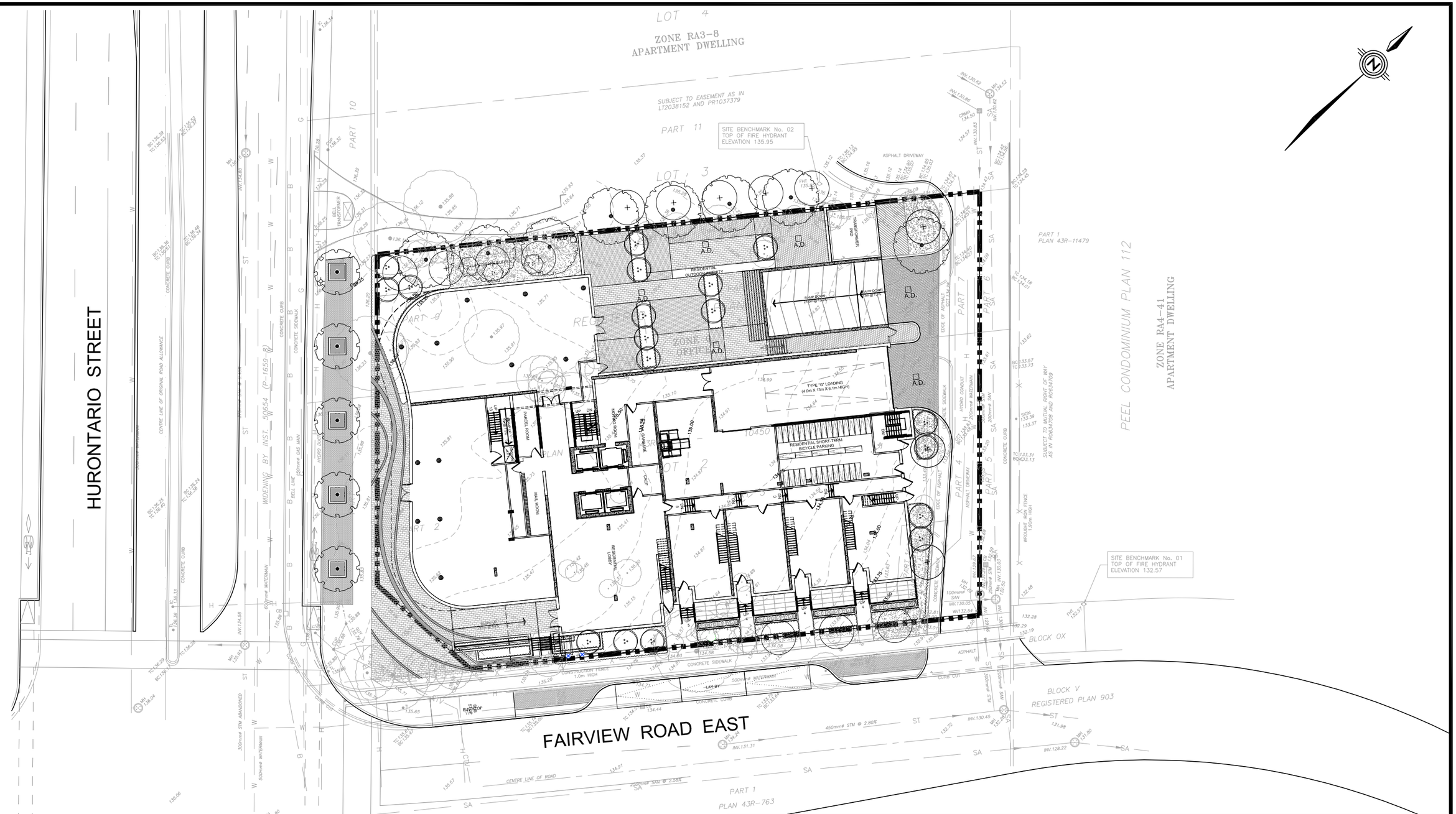

LEGEND

LIMIT OF PROPERTY

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1 FAIRVIEW ROAD EAST

PROPOSED DEVELOPMENT PLAN

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PLOTDATE: Dec 20, 2019 - 11:39am, GlebenJ

2 WATER SUPPLY AND APPURTENANCES

2.1 EXISTING CONDITIONS

Locally, there is a 500 mm diameter watermain on Fairview Road East, and a 500 mm diameter watermain along the east side of the Hurontario Street right-of-way. There is an additional 300mm watermain on Hurontario Street near the west edge of the right-of-way. A 200mm diameter watermain exists in the laneway east of the site to service the apartment building at 15 Fairview Road East.

2.2 WATER SUPPLY

In accordance with Region of Peel Standards, a 300 mm diameter watermain is required to service high density residential. There are sufficiently large watermains available on both Fairview Road East and Hurontario Street to connect to. To minimize traffic impact during construction, it is proposed to connect to the 500mm diameter watermain along Fairview Road East. The proposed water connection will be provided per Region of Peel Standard Drawing 1-8-3, consisting of a 150 mm diameter domestic connection branching off a proposed 200 mm diameter fire service connection, and will include valve and boxes at the property line. In addition, a water meter and a back flow 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 line. Refer Figure 2.1 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 development 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, see Appendix B;

	Long Term	Short Term
Average Water Consumption Rate (Long Term)	280 litres/person/day	409 litres/person/day
Residential Apartment Units	460 units	460 units
Office/Retail GFA	270m^2	270m^2
Total Residential Equivalent Population	1244 people	1244 people
Average Water Demand	4.0 L/s	5.9 L/s
Max Day Water Demand	8.0 L/s	11.8 L/s
Peak Hour Water Demand	12.1 L/s	17.6 L/s

The estimated fire flow has been calculated using the recommendations of the Fire Underwriters Survey. The fire flow calculation indicates that the recommended fire flow for this proposed development is ~4,746 L/min (~1,252 US GPM). The results of these calculations are included in Appendix A.

Currently, there are three (3) existing hydrants in the vicinity of the proposed development. One is located on Hurontario Street, near the west corner of the site. Another hydrant is located near the east corner of the site, just east of the laneway entrance from Fairview Road East. These two hydrants provide sufficient fire coverage for the site own their own, however there is also a third hydrant located near the north corner of site within the park area of the adjacent apartment building. A hydrant flow test will be completed to ensure adequate flow is available to satisfy demand, and the results of the hydrant flow test will be provided under a separate cover once available. The proposed water servicing and existing hydrant locations are shown on Figure 2.1.

HURONTARIO STREET

EX. 300Ø WATERMAIN

EX. 600Ø WATERMAIN

EX. HYDRANT

EX. HYDRANT

EX. 200Ø WATERMAIN

EX. 500Ø WATERMAIN

FAIRVIEW ROAD EAST

SITE BENCHMARK No. 02
TOP OF FIRE HYDRANT
ELEVATION 135.95

SITE BENCHMARK No. 01
TOP OF FIRE HYDRANT
ELEVATION 132.57

BACKFLOW PREVENTOR
WATER METER AS PER REGION
OF PEEL STD DWG 1-4-3

DETECTOR CHECK VALVE IN
1500mmØ CHAMBER AS PER
REGION OF PEEL STD DWG 1-3-1

1500 DOMESTIC
WATERMAIN

200Ø FIRE
WATERMAIN

CONNECT TO EX.
500Ø WATERMAIN.
WATER SERVICE
CONNECTION PER
REGION OF PEEL STD
DWG 1-8-3.

ZONE RA3-8
APARTMENT DWELLING

ZONE RA4-41
APARTMENT DWELLING

PEEL CONDOMINIUM PLAN 112

LOT 4

LOT 3

LOT 2

PART 1
PLAN 43R-11479

PART 1
PLAN 43R-763

BLOCK V
REGISTERED PLAN 903

BLOCK OX

LEGEND

- LIMIT OF PROPERTY
- EX. WATERMAIN
- PROP. W/M CONNECTION
- PROP. VALVE & CHAMBER
- PROP. VALVE & BOX

CLIENT
EDENSHAW FAIRVIEW DEVELOPMENTS LIMITED

TITLE
1 FAIRVIEW ROAD EAST

WATER SERVICING PLAN

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Scale 1: 400	Figure No. 2.1

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3 SANITARY SEWAGE SYSTEM

3.1 EXISTING CONDITIONS

Locally, there is a 250 mm diameter sanitary sewer on Fairview Road East and a 250 mm dimeter sanitary sewer on the southwest side of the Hurontario Street right-of-way. The sewer along Fairview Road East flows east to connect to the sewer along Mississauga Valley Boulevard, and further downstream collects flows from Voltarie Crescent and connects to a 1200 mm diameter trunk sewer parallel to Cooksville Creek through an easement.

3.2 DESIGN PARAMETERS

The theoretical peak sanitary flows have been calculated using the following factors taken from the 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)
- 2.7 persons per apartment unit for proposed developments with populations greater than 475 persons/hectare
- 302.8 L/cap/day average day flow generation rate
- Peaking Factor – Harmon Peaking Factor
- Infiltration = 0.0002m^3/s/ha

3.3 EXISTING FLOW TO SANITARY SEWER

The existing site is not occupied and is currently not generating any sanitary flows. However, the sanitary sewer along Fairview Road East would have been designed to accommodate flows from the site. The original design sheet for the sanitary sewer is unavailable, however based on the design criteria noted above, the sewer would have been designed to accommodate at least a minimum density of 50 persons/hectare, equivalent to a population of 15 persons for the site. The pre-development average flow accounted for in the sewer is estimated to be 0.11 L/s and a peak flow of 0.28 L/s, including infiltration. 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;

Sanitary Demand Rate	302.8 litres/person/day
Total Population (Residential + Office/Retail)	1244 people
Avg. Residential Flow	4.4 L/s
Infiltration	No infiltration (Entire site UG Parking)
Average Sanitary Flow from Site	4.4 L/s
Peaking Factor	Residential: Harmon Peaking Factor (3.73)
Peak Sanitary Flow from Site	16.3 L/s
Net Sanitary Flow Increase in Peak Sanitary Flow from Site to Sanitary Sewer System	**16.0 L/s (16.3 L/s – 0.3 L/s)**

Refer Appendix B for site statistics and detailed pre- and post-development flow calculations.

3.5 DOWNSTREAM SANITARY SEWER CAPACITY ANALYSIS

WSP has prepared a pre- and post-development downstream sanitary sewer analysis. The analysis includes calculations for the wet weather flow condition, where an infiltration (0.20 L/s/ha) has been added to the calculated sanitary flow. The sanitary flow for the sewershed was calculated using the Region of Peel Sanitary Sewer Design Criteria as outlined in Section 3.2. The sanitary generation from the site outlined in Section 3.4 was applied to the pre-development analysis to form the analysis of the post-development conditions. See Appendix C for the Sanitary Sewer Design Sheets. To facilitate this analysis, a Sanitary Sewer Drainage Area Plan has been created and is in Appendix C.

In the post development condition, the analysis demonstrates that the existing municipal sewer system has adequate capacity to support the addition of 16.0 L/s of flow from the proposed development without surcharging in any leg.

Consequently, WSP Group concludes that the existing municipal sewer can accept the flow from the proposed site and no external sewer improvements are required.

3.6 SANITARY SERVICE

It is proposed to service the site with a 150 mm diameter PVC sanitary service connected to the existing 250 mm sanitary sewer on Fairview Road East. A control manhole will be placed immediately inside the property line and outside the underground parking structure.

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 Ontario Plumbing Code Standards. The sanitary service connection to the site within the existing municipal road allowance will be designed to the Region of Peel Standards. Refer to Figure 3.1 for proposed sanitary servicing layout.

HURONTARIO STREET

FAIRVIEW ROAD EAST

LOT 4
ZONE RA3-8
APARTMENT DWELLING

PART 11

SITE BENCHMARK No. 02
TOP OF FIRE HYDRANT
ELEVATION 135.95

LOT 3

PART 10

PART 9

REGISTERED PLAN 903

LOT 2

PART 2

PART 1
PLAN 43R-11479

PART 7

PART 6

PART 5

PART 4

PART 1
PLAN 43R-763

BLOCK OX

BLOCK V
REGISTERED PLAN 903

PEEL CONDOMINIUM PLAN 112

ZONE RA4-41
APARTMENT DWELLING

SITE BENCHMARK No. 01
TOP OF FIRE HYDRANT
ELEVATION 132.57

EX. 200Ø SAN SEWER

EX. 250Ø SAN SEWER

SAN CONTROL MH
INV. 130.17

14.9m - 150Ø PVC SAN @ 2.0%

TEE CONNECTION TO EX. 250Ø SAN. PER
REGION OF PEEL STD DWG 2-4-3
INV. 129.77

LEGEND

- LIMIT OF PROPERTY
- SA — EX. SAN SEWER
- PROP. SAN CONNECTION

CLIENT
EDENSHAW FAIRVIEW DEVELOPMENTS LIMITED

TITLE
1 FAIRVIEW ROAD EAST

SANITARY SERVICING PLAN

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4 STORM DRAINAGE

4.1 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 this site will operate.

4.2 EXISTING CONDITIONS

The existing storm infrastructure in the vicinity of the site is a 450mm diameter storm sewer on Fairview Road East, and a 375mm diameter storm sewer along Hurontario Street. The site presently drains to the storm sewer along Fairview Road East and flows east to connect to the sewer along Mississauga Valley Boulevard. Further downstream, the sewer collects flows from Voltarie Crescent and discharges directly to Cooksville Creek through an easement via a 1200mm diameter trunk sewer and concrete headwall.

4.3 PROPOSED DEVELOPMENT

The proposed development covers the majority of the site and as noted, includes a 36-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 post-development flows to pre-development levels for all storm events, up to a maximum discharge rate equal to the 10-year pre-development flow, which is what municipal storm sewers are designed to accommodate in the City of Mississauga. The tank will have an access hatch which is accessible from the surface which will also double as an emergency overflow. For detailed storage and storm flow calculations, refer to separate Stormwater Management Report prepared by WSP.

4.4 GRADING

4.4.1 EXISTING CONDITIONS

WSP reviewed the topographical survey prepared Tarasick McMillan Kubicki Limited to determine the existing drainage patterns. Our review indicated that the site primarily drains east to Park Street East. The site partially drains to the laneway along the northeast edge of the site, and partially drains overland to Fairview Road East along the southeast edge of the site. There is no existing stormwater conveyance infrastructure on-site, and all drainage currently drains overland until it is captured by catchbasins along Fairview Road East or the adjacent laneway.

4.4.2 PROPOSED CONDITIONS

The Hurontario Street and Fairview Road East boulevards, as well as the site frontage along the laneway 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 property line shall be maintained.

Refer to Figure 4.2 for the preliminary proposed grading.

4.5 MINOR STORM DRAINAGE SYSTEM

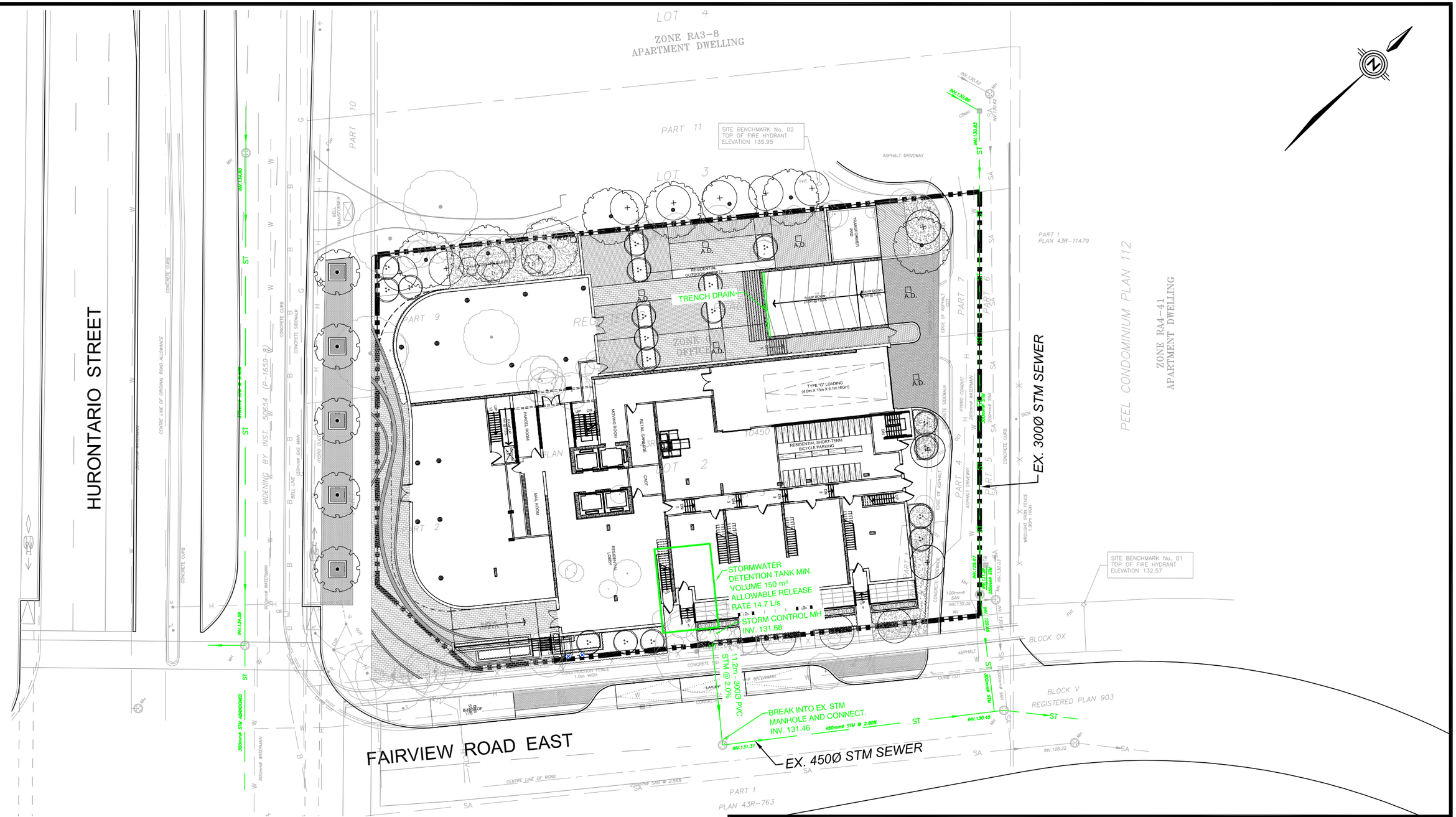
The storm flows will be directed to the stormwater cistern and controlled to an allowable release rate, as specified in the Stormwater Management Report.

It is proposed to provide a new 200 mm diameter storm connection that will connect to an existing manhole on Fairview Road East which is the most upstream manhole of the existing 450 mm diameter storm sewer on Fairview Road East. 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 new storm connection within the Fairview Road East 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 Figure 4.1 for the proposed storm sewer layout.

4.6 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 pre-development levels, the existing storm sewer system will not be adversely affected by the post-development condition.



LEGEND

- LIMIT OF PROPERTY
- ST — EX. STORM SEWER
- PROP. STORM CONNECTION

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STORM SERVICING PLAN

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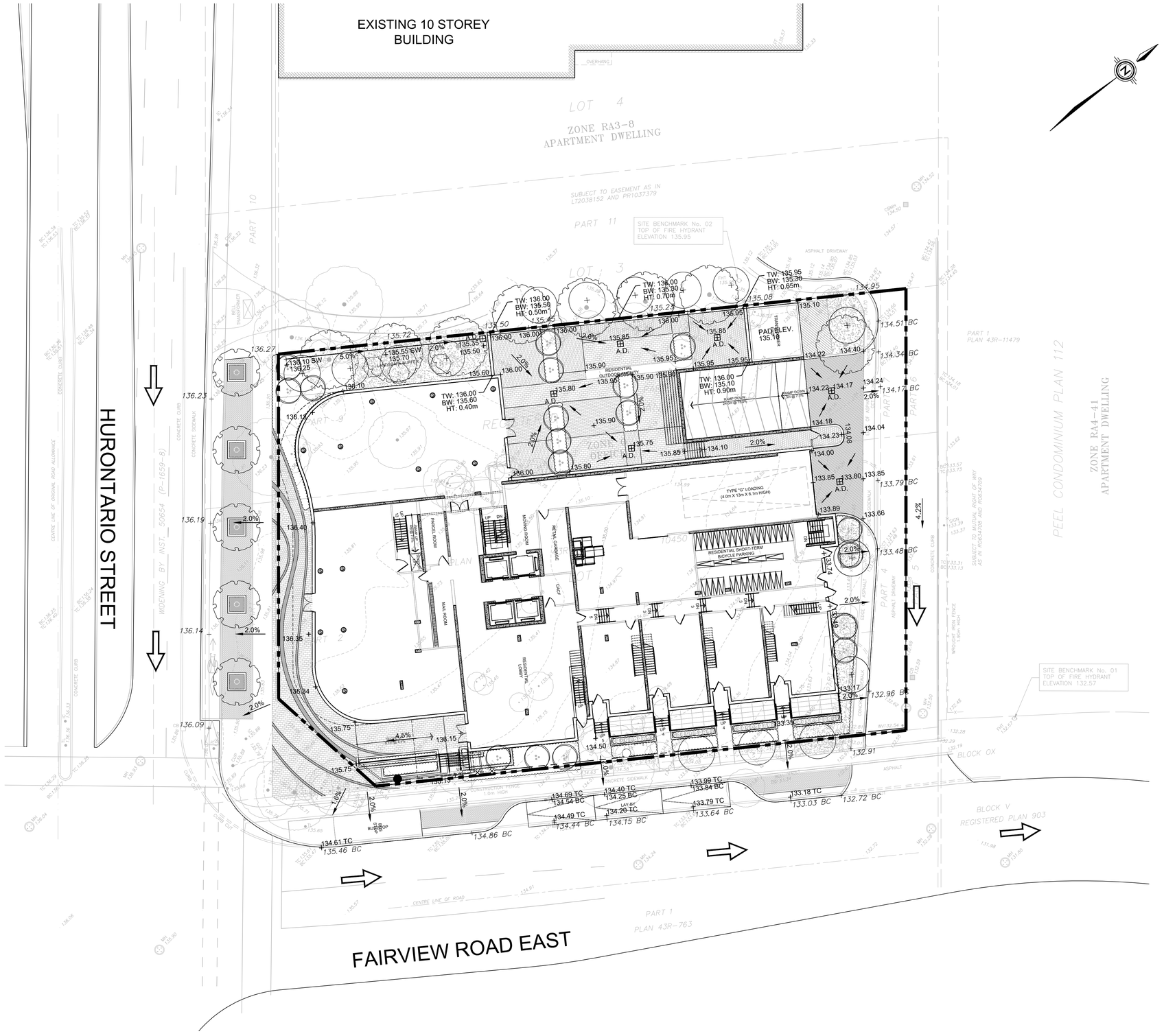

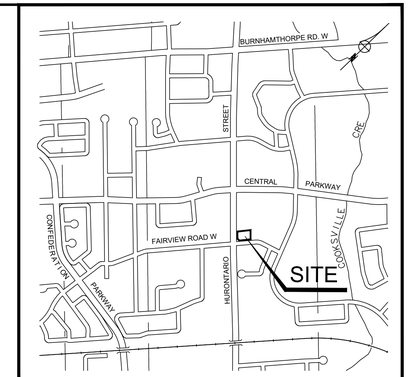

KEY PLAN NTS

LEGEND

161.86	EXISTING ELEVATION
154.36	PROPOSED ELEVATION
	OVERLAND FLOW
	SANITARY MANHOLE
	STORM MANHOLE
CB	CATCHBASIN
VAB	VALVE AND BOX
H&V	HYDRANT AND VALVE
	LIMIT OF PROPERTY
	BARRIER CURB PER OPSD 600.110
	DEPRESSED CURB PER CITY STANDARD 2230.020

EXISTING ELEVATIONS FROM SURVEY PREPARED BY TARASICK McMILLAN KUBICKI LIMITED DATED MARCH 12, 2015

APPROXIMATE LOCATION OF UNDERGROUND SERVICES SHOWN PER SURVEY PREPARED BY TARASICK McMILLAN KUBICKI LIMITED DATED MARCH 12, 2015

ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.

PIPE SIZES ARE IN MILLIMETRES.

No.	REVISIONS	BY	DATE
1	SUBMITTED FOR REZONING APPLICATION	A.W.	DEC 20/19

ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED

CONSULTANT

wsp

CLIENT

EDENSHAW FAIRVIEW DEVELOPMENTS LIMITED

Region of Peel working with you

MUNICIPALITY

MISSISSAUGA

1 FAIRVIEW ROAD EAST SITE GRADING PLAN

43R-XXXXX

SCALE	1:200	DESIGN J.G.	19M-01759
DRAWN BY	CAD 10/12	CHECKED A.W.	PLAN NUMBER
DATE	DEC 2019	SHEET OF	SG1

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PLOTDATE Dec 20, 2019 - 12:15pm (Graham)

5 CONCLUSIONS

5.1 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. The water service connections will be made to the existing 500 mm watermain on Fairview Road East. A hydrant flow test will be conducted to verify that the existing watermain has adequate capacity to support the proposed development, and results will be provided once available.

5.2 SANITARY

The proposed sanitary servicing for the site will include a 150 mm diameter sanitary service connecting to the existing 250 mm diameter sanitary sewer on Fairview Road East. The downstream sanitary sewer capacity analysis demonstrates that the existing sanitary sewer system has adequate capacity to accept the estimated post-development flows from the development without surcharging in any leg.

5.3 STORM

Minor and major storm drainage for the proposed development will be collected by the internal site drainage system and directed into the stormwater storage tank. The flow will be controlled to the allowable flow levels and discharge to an existing storm manhole on Fairview Road East at the upstream end of the existing 450mm diameter storm sewer via a proposed 200 mm diameter storm service connection. The storm sewer system will not be adversely affected by the post-development condition as the total rate of stormwater released from this site will be equal or less than the pre-development condition.

A separate Stormwater Management Report has been prepared to address requirements concerning stormwater management.

APPENDIX

A FUS CALCULATIONS

APPENDIX A

FIRE FLOW CALCULATIONS

Project: **1 Fairview Road East**
Job No.: **19M-01759**

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 = 2208 m2 (largest GFA plus 25% of GFA for two immediately adjoining floors)

F = 6,203 Lpm

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

15% reduction of 6203 Lpm = 930 Lpm
F = 6203 - 930 = 5,273 Lpm

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

30% reduction of 5273 Lpm = 1,582 Lpm
F = 5273 - 1582 = 3,691 Lpm

4. *Separation Charge*

Face	Distance (m)	Charge
West Side	50	0%
East Side	50	0%
North Side	28	10%
South Side	30	10%
	Total	20%

of 5,273 = 1,055 Lpm

F = 3691 + 1055
F = 4,746 Lpm (2,000 Lpm < F < 45,000 Lpm; OK)
F = 1,252 US GPM
F = 79 L/s

Notes

APPENDIX

B DOMESTIC WATER DEMAND AND SANITARY FLOW CALCULATIONS

APPENDIX B
1 Fairview Road East
Pre-Development Site Statistics

Residential Units

Unit Type	Area (ha)	Pop Density (ppl/ha)	Population
SF Homes	0.29	50	15

Note: The current site is unoccupied, but the existing sewer design would account for at least a minimum population density of 50 persons per hectare per Region of Peel Sanitary Sewer Design Criteria Section 2.1.

Pre-Development Sanitary Flow

Res Population =	15	
Avg Res Flow =	0.05	L/s (assumes 302.8L/cap/d)
Res Peak Factor =	4.40	(Harmon Formula)
Peak Res Flow =	0.22	L/s
Infiltration =	0.06	L/s
Total Avg San Flow =	**0.11**	**L/s**
Total Peak San Flow =	**0.28**	**L/s**

Pre-Development Water Demand

Res Population =	15	
Avg Res Demand =	0.05	L/s (assumes 280L/cap/d)
Max Day Factor =	2.00	
Max Day Flow =	**0.09**	**L/s**
Peak Hour Factor =	3.00	
Peak Hour Flow =	**0.14**	**L/s**

APPENDIX B
1 Fairview Road East
Post-Development Site Statistics

Residential Units

Unit Type	Quantity	Pop Density	Population
1 Bedroom	310	**2.7**	837
2 Bedroom	150	**2.7**	405
3 Bedroom	0	**2.7**	0
Total	460		1242

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

Office/Retail Units

Total Retail/Office Area =	270	m^2
	0.0270	ha
Comm. Population Density =	50	persons/ha (R.O.P. Sani Design Criteria)
Total Comm. Population =	2	persons

Post-Development Sanitary Flow

Total Population =	1244	(Residential + Commercial)
Avg Flow =	4.36	L/s (assumes 302.8L/cap/d)
Peak Factor =	3.74	(Harmon Formula)
Peak Flow =	16.29	L/s
Total Avg San Flow =	**4.36**	**L/s**
Total Peak San Flow =	**16.29**	**L/s**

Post-Development Water Demand - Short Term

	Residential	Commercial	Total	
Population =	1242	2	1244	
Consumption Rate =	409	300	---	
Avg Demand =	5.88	0.01	5.89	L/s
Max Day Factor =	2.00	2.00	---	
Max Day Flow =	11.76	0.01	11.77	L/s
Peak Hour Factor =	3.00	3.00	---	
Peak Hour Flow =	**17.64**	**0.02**	**17.66**	**L/s**
Fire Flow =	79	79	79	L/s
Maximum Day + Fire Flow =	**90.76**	**79.01**	**90.77**	**L/s**

Post-Development Water Demand - Long Term

	Residential	Commercial	Total	
Population =	1242	2	1244	
Consumption Rate =	280	300	---	
Avg Demand =	4.03	0.01	4.03	L/s
Max Day Factor =	2.00	1.40	---	
Max Day Flow =	8.05	0.01	8.06	L/s
Peak Hour Factor =	3.00	3.00	---	
Peak Hour Flow =	**12.08**	**0.02**	**12.10**	**L/s**
Fire Flow =	79	79	79	L/s
Maximum Day + Fire Flow =	**87.05**	**79.01**	**87.06**	**L/s**

APPENDIX

C SANITARY SEWER DRAINAGE PLANS AND DESIGN SHEETS

LEGEND

EXISTING SANITARY SEWER

SANITARY SEWER DRAINAGE BOUNDARY

0.1 — DRAINAGE AREA (HA)

50 — ESTIMATED POPULATION

CLIENT
EDENSHAW FAIRVIEW DEVELOPMENTS LIMITED

TITLE
1 FAIRVIEW ROAD EAST

SANITARY DRAINAGE PLAN

wsp
100 Commerce Valley Dr. West, Thornhill, ON Canada L3T 0A1
t: 905.882.1100 f: 905.882.0055 www.wsp.com

Checked J.G.	Drawn 10/12 Cad
Date DEC 2019	Proj. No. 19M-01759
Scale 1:4000	FIgure No.

FILENAME: X:\DIV\10\19M-01759 Edenshaw Hurontario & FairviewMun\FSR\19M-01759_Sanitary Plan.dwg
PLOTDATE: Dec 13, 2019 - 6:13pm, GlebenJ

THE REGIONAL MUNICIPALITY OF PEEL
SANITARY DESIGN CHART
1 FAIRVIEW ROAD EAST - CITY OF MISSISSAUGA
PRE-DEVELOPMENT CONDITION

CONSULTANT:
WSP CANADA GROUP LIMITED

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

DATE: DEC 2019
DESIGNED BY: JG
CHECKED BY: AW

DRAINAGE AREA PLAN NO.:

Manning's n= 0.013

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)
Mississauga Valley Boulevard	56A	57A	5.31	475	2522	5.31	2522	8.84	3.51	31.0	1.1	32.1	61.0	1.80	300	129.7	24.74%	1.84	1.52
	57A	58A	1.72	70	120	7.03	2643	9.26	3.49	32.3	1.4	33.7	89.0	0.50	300	68.4	49.29%	0.97	0.96
	58A	62A	3.00	50	150	10.03	2793	9.79	3.47	33.9	2.0	35.9	91.0	0.50	300	68.4	52.50%	0.97	0.99
SITE (3383 Hurontario Street)		*59A-1*	*0.29*	*50*	*15*	*0.29*	*15*												
Fairview Road	59A-1	59A	3.68	475	1748	3.97	1763	6.2	3.63	22.4	0.8	23.2	87.0	2.58	250	95.5	24.29%	1.95	1.60
	59A	60A	0.45	70	32	4.42	1794	6.3	3.62	22.8	0.9	23.7	32.0	6.00	250	145.7	16.24%	2.97	2.11
	60A	61A	0.43	50	22	4.85	1816	6.4	3.62	23.0	1.0	24.0	57.0	6.00	250	145.7	16.47%	2.97	2.11
	61A	62A	2.62	70	183	7.47	1999	7.0	3.59	25.1	1.5	26.6	55.0	6.00	250	145.7	18.27%	2.97	2.20
Mississauga Valley Boulevard	62A	63A	1.22	70	85	18.72	4877	17.1	3.26	55.6	3.7	59.4	80.0	0.50	375	124.0	47.89%	1.12	1.11
	63A	64A	1.92	70	134	20.64	5011	17.6	3.24	57.0	4.1	61.1	60.0	0.37	375	106.6	57.29%	0.97	1.00
	64A	65A	1.83	70	128	22.47	5139	18.0	3.23	58.2	4.5	62.7	59.0	0.61	375	136.9	45.82%	1.24	1.22
	65A	66A	1.68	70	118	24.15	5257	18.4	3.22	59.4	4.8	64.2	63.0	0.50	375	124.0	51.82%	1.12	1.14
	66A	67A	1.58	70	111	25.73	5368	18.8	3.22	60.5	5.1	65.6	68.0	2.20	375	260.1	25.24%	2.35	0.00
Voltarie Crescent	67A	68A	2.85	70	200	28.58	5567	19.5	3.20	62.5	5.7	68.2	87.0	1.00	375	175.3	38.89%	1.59	1.49
	68A	69A	1.07	70	75	29.65	5642	19.8	3.20	63.2	5.9	69.1	71.0	0.80	375	156.8	44.08%	1.42	1.36
	69A	70A	0.86	70	60	30.51	5702	20.0	3.19	63.8	6.1	69.9	91.0	0.80	375	156.8	44.56%	1.42	1.38
	70A	70B	0.98	70	69	31.49	5771	20.2	3.19	64.5	6.3	70.7	78.0	0.60	375	135.8	52.09%	1.23	1.25
	70B	75A	0.58	70	41	32.07	5811	20.4	3.18	64.8	6.4	71.3	14.0	0.60	375	135.8	52.47%	1.23	1.25
Mississauga Valley Boulevard	71A	72A	1.75	70	123	1.75	123	0.43	4.22	1.8	0.4	2.2	64.0	1.88	250	81.5	2.70%	1.66	0.68
	72A	73A	1.90	50	95	3.65	218	0.76	4.13	3.2	0.7	3.9	67.0	1.98	250	83.7	4.66%	1.70	0.00
	73A	74A	2.24	50	112	5.89	330	1.15	4.06	4.7	1.2	5.9	67.0	1.60	250	75.2	7.84%	1.53	0.00
Voltarie Crescent	74A	75A	0.36	70	25	6.25	355	1.24	4.05	5.0	1.3	6.3	76.0	0.62	250	46.8	13.45%	0.95	0.00
Easement	75A	76A	0.30	70	21	38.62	6187	21.7	3.16	68.5	7.7	76.2	61.5	1.25	375	196.0	38.87%	1.77	0.00
	76A	Ex Trunk	---	---	0	38.62	6187	21.7	3.16	68.5	7.7	76.2	40.0	0.50	375	124.0	61.46%	1.12	1.19

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

THE REGIONAL MUNICIPALITY OF PEEL
SANITARY DESIGN CHART
1 FAIRVIEW ROAD EAST - CITY OF MISSISSAUGA
POST-DEVELOPMENT CONDITION

CONSULTANT:
WSP CANADA GROUP LIMITED

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

DATE: DEC 2019
DESIGNED BY: JG
CHECKED BY: AW

DRAINAGE AREA PLAN NO.:

Manning's n= 0.013

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)
Mississauga Valley Boulevard	56A	57A	5.31	475	2522	5.31	2522	8.84	3.51	31.0	1.1	32.1	61.0	1.80	300	129.7	24.74%	1.84	1.52
	57A	58A	1.72	70	120	7.03	2643	9.26	3.49	32.3	1.4	33.7	89.0	0.50	300	68.4	49.29%	0.97	0.96
	58A	62A	3.00	50	150	10.03	2793	9.79	3.47	33.9	2.0	35.9	91.0	0.50	300	68.4	52.50%	0.97	0.99
SITE (3383 Hurontario Street)		59A-1	0.29		**1243**	**0.29**	**1243**												
Fairview Road	59A-1	59A	3.68	475	1748	3.97	2991	10.5	3.44	36.1	0.8	36.9	87.0	2.58	250	95.5	38.62%	1.95	1.83
	59A	60A	0.45	70	32	4.42	3023	10.6	3.44	36.4	0.9	37.3	32.0	6.00	250	145.7	25.62%	2.97	2.49
	60A	61A	0.43	50	22	4.85	3044	10.7	3.44	36.7	1.0	37.6	57.0	6.00	250	145.7	25.84%	2.97	2.49
	61A	62A	2.62	70	183	7.47	3227	11.3	3.42	38.6	1.5	40.1	55.0	6.00	250	145.7	27.54%	2.97	2.52
Mississauga Valley Boulevard	62A	63A	1.22	70	85	18.72	6105	21.4	3.16	67.7	3.7	71.4	80.0	0.50	375	124.0	57.62%	1.12	1.18
	63A	64A	1.92	70	134	20.64	6240	21.9	3.15	69.0	4.1	73.1	60.0	0.37	375	106.6	68.55%	0.97	1.04
	64A	65A	1.83	70	128	22.47	6368	22.3	3.15	70.2	4.5	74.7	59.0	0.61	375	136.9	54.56%	1.24	1.28
	65A	66A	1.68	70	118	24.15	6486	22.7	3.14	71.3	4.8	76.2	63.0	0.50	375	124.0	61.44%	1.12	1.19
	66A	67A	1.58	70	111	25.73	6596	23.1	3.13	72.4	5.1	77.5	68.0	2.20	375	260.1	29.82%	2.35	0.00
Voltarie Crescent	67A	68A	2.85	70	200	28.58	6796	23.8	3.12	74.3	5.7	80.0	87.0	1.00	375	175.3	45.63%	1.59	1.56
	68A	69A	1.07	70	75	29.65	6871	24.1	3.11	75.0	5.9	80.9	71.0	0.80	375	156.8	51.60%	1.42	1.45
	69A	70A	0.86	70	60	30.51	6931	24.3	3.11	75.6	6.1	81.7	91.0	0.80	375	156.8	52.07%	1.42	1.45
	70A	70B	0.98	70	69	31.49	6999	24.5	3.11	76.2	6.3	82.5	78.0	0.60	375	135.8	60.75%	1.23	1.30
	70B	75A	0.58	70	41	32.07	7040	24.7	3.10	76.6	6.4	83.0	14.0	0.60	375	135.8	61.12%	1.23	1.30
Mississauga Valley Boulevard	71A	72A	1.75	70	123	1.75	123	0.43	4.22	1.8	0.4	2.2	64.0	1.88	250	81.5	2.70%	1.66	0.68
	72A	73A	1.90	50	95	3.65	218	0.76	4.13	3.2	0.7	3.9	67.0	1.98	250	83.7	4.66%	1.70	0.00
	73A	74A	2.24	50	112	5.89	330	1.15	4.06	4.7	1.2	5.9	67.0	1.60	250	75.2	7.84%	1.53	0.00
Voltarie Crescent	74A	75A	0.36	70	25	6.25	355	1.24	4.05	5.0	1.3	6.3	76.0	0.62	250	46.8	13.45%	0.95	0.00
Easement	75A	76A	0.30	70	21	38.62	7416	26.0	3.08	80.1	7.7	87.8	61.5	1.25	375	196.0	44.81%	1.77	0.00
	76A	Ex Trunk	---	---	0	38.62	7416	26.0	3.08	80.1	7.7	87.8	40.0	0.50	375	124.0	70.84%	1.12	1.22

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