#### 1785 BLOOR HOLDINGS INC

### FUNCTIONAL SERVICING REPORT 1785 BLOOR STREET, MISSISSAUGA

**DECEMBER 15, 2023** 







## FUNCTIONAL SERVICING REPORT 1785 BLOOR STREET, MISSISSAUGA

1785 BLOOR HOLDINGS INC

**FUNCTIONAL SERVICING REPORT** 

PROJECT NO.: 211-10685 DATE: DECEMBER 15, 2023

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#### 1 INTRODUCTION

#### 1.1 BACKGROUND

WSP Canada Inc. (WSP) has been retained by 1785 Bloor Holdings Inc. to prepare a Functional Servicing Report in support of an Official Plan Amendment and Zoning By-law Amendment Application, to assess the servicing requirements relating to the proposed development at 1785 Bloor Street, Mississauga Ontario. This report provides the conceptual framework for water distribution, sanitary sewage, storm drainage for the development of this Site, prior to the detailed design being undertaken. A Stormwater Management Report outlining the proposed Stormwater quality and quantity controls on this Site has been prepared under a separate cover by WSP Canada Inc.

The Site will be serviced by existing local municipal sewers and/or existing connections and watermains within adjoining municipal rights-of-way. Service connections will be extended to the proposed Site and coordinated with the building design team.

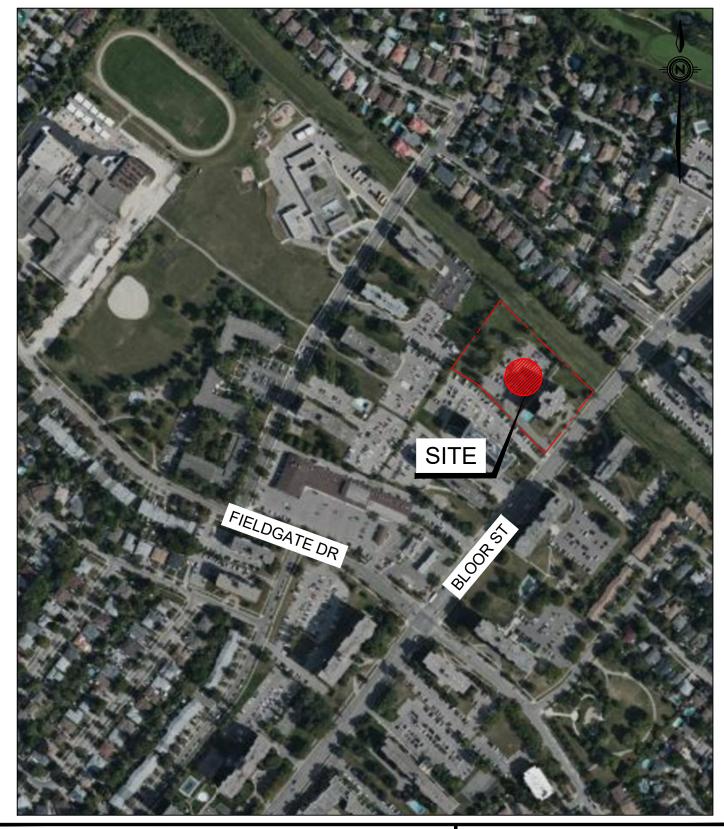
In preparing this report, WSP staff secured and reviewed available City of Mississauga and Region of Peel PUCC drawings, and Plan and Profile Drawings. In addition, WSP has used the latest architectural plans prepared by OneSpace Architects, dated September 12, 2023, and the Site Survey Plan prepared by R-PE Surveying Ltd. dated May 6, 2021.

#### 1.2 SITE DESCRIPTION

The development Site is located on the north side of Bloor Steet between Bridgewood Dr and Fieldgate Dr. The total existing Site area of 1.20 ha is currently occupied by an existing 10-storey residential building with a GFA of approximately 7,100 m² and a surface parking lot. The internal Site topography is generally flat with a downhill gradient from the west to the east of approximately 3.0m. There is an existing HydroOne corridor to the east of the site as well as a 9.14m wide easement in favour of the Region of Peel for overland flow drainage.

The proposed development will consist of a 14-storey residential building with two (2) level of underground parking. The building will have residential units of various sizes and types with the total GFA of approximately 24,500m<sup>2</sup>. The new development includes 234 units thus the site density will increase from the existing 76 units to 310 residential units total.

Please refer to **Figure 1** for the Location Map, **Figure 2** for the Pre-Development Plan and **Figure 3** for an illustration of the Proposed Development.



CLIENT

1785 BLOOR HOLDINGS INC.

TITLE

1785 BLOOR STREET, MISSISSAUGA, ON

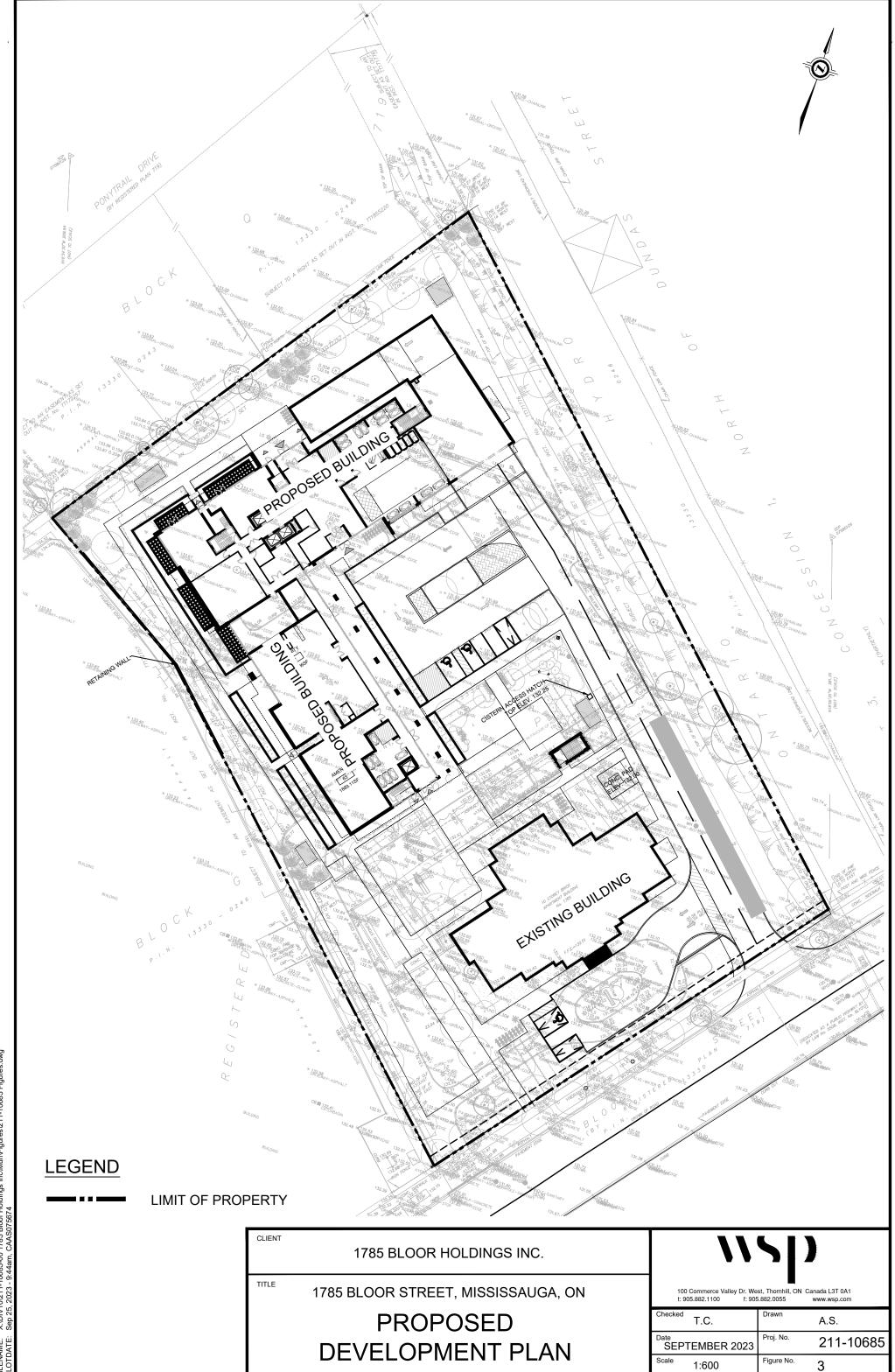
LOCATION PLAN



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Checked T.C.	Drawn A.S.
Date SEPTEMBER 2023	Proj. No. 211-10685
Scale NTS	Figure No. 1





FILENAME: X:\DIV10\211-10685-00 1785 Bloor Holdings Inc\Mun\Figures\211-10685 Figures.dwg PLOTDATE: Sep 25, 2023 - 9:44am, CAAS075674

## 2 WATER SUPPLY & APPURTENANCES

#### 2.1 EXISTING CONDITIONS

WSP has obtained record drawings from the City of Mississauga and Region of Peel for the area adjacent to the Site. A sub-surface utility investigation was also carried out by UrbanX dated March 4, 2022. The existing municipal watermains that are adjacent to the property are as follows:

- > 300mm diameter cast iron watermain within the north boulevard of Bloor Street; and
- An existing domestic water service connection to the existing 10-storey apartment building on the east side of the site, entering the building at the east side. The service connection size is currently unknown but assumed to be 75mm diameter.

There is one (1) existing hydrant located along the site frontage.

#### 2.2 WATER DEMANDS

#### 2.2.1 DOMESTIC WATER DEMANDS

The following table summarizes the design criteria and domestic water demand calculations prepared for the proposed development using the Region of Peel Design Criteria of Sewers and Watermains:

**Table 2.1 - Estimated Domestic Water Demand** 

Design Criteria and Demands	Existing Building	Proposed Building
Residential Water Demand Rate	280 litres/person/day	280 litres/person/day
Peaking Factors	Residential: Max. Day = 2.00, Peak Hour = 3.00	Residential: Max. Day = 2.00, Peak Hour = 3.00
Total Residential Units	76	234
Population Density	2.7 ppu	1.6 ppu for units <750 sq.ft., 3.0 ppu for units > 750 sq.ft)
Total Residential Population	205 people	605 people
Average Water Demand from Site	0.67 L/s	1.96 L/s
Peak Water Demand from Site	Max. Day = 1.33 L/s, Peak Hour = 2.00 L/s	Max. Day = 3.92 L/s, Peak Hour = 5.89 L/s

The proposed population density is based on the 2020 DC Study. The estimated average day domestic flow in the existing condition is 0.67 L/s and peak hour demand is 2.00 L/s. The estimated average day domestic flow for the proposed building is 1.96 L/s and peak hour demand is 5.89 L/s. Detailed pre-and post-development calculations are included in **Appendix A**.

#### 2.2.2 FIRE WATER DEMANDS

The estimated fire flow for the building has been calculated using the recommendations of the Fire Underwriters Survey as 10,978 L/min (2,896 US GPM, or 183 L/s) given the building type, construction type and proximity to other buildings. The detailed calculations are included in **Appendix B**.

A hydrant flow test has been carried out on the hydrant adjacent to the site and the results included in Appendix B. The results indicate a static pressure of 59.9 psi and an available fire flow of 246 L/s at 20 psi. As such, there is adequate flow for fire protection of this proposed building. Given the distance of the municipal hydrant to the building, an additional private hydrant is proposed within 45m of the new building's siamese connection.

#### 2.2.3 WATER SERVICING AND APPURTENANCES

Due to the introduction of the stormwater management chamber in the southeast corner of the site, the existing water service to the existing 10-storey building must be relocated. A new 75mm domestic connection will be provided from Bloor Street per Region Standard Drawing 1-7-1, tying into the existing connection at the building.

The water service for the proposed 14-storey building will be in accordance with Region Standard Drawing 1-8-3 with a detector check valve in chamber at the property line and private hydrant on the fire servicing line, through the underground parking garage, within 45m of the building's Siamese connection. Refer to the Preliminary Site Servicing Plan in **Appendix E**.

#### **3 SANITARY SEWAGE SYSTEM**

#### 3.1 EXISTING SEWER SYSTEM

Based on the record drawings from the City of Mississauga and Region of Peel as well as the Subsurface utility investigation by UrbanX, the existing municipal sanitary sewers adjacent to the property are as follows:

- 375mm diameter concrete sanitary sewer, approximately 5.0m deep, within the centre of Bloor Street; and
- An existing sanitary connection to the existing 10-storey apartment building at approximately the mid-point of the building. This existing sanitary service will remain to service the existing building and a new property line manhole installed in order to bring the service into compliance with current standards.

#### 3.1.1 EXISTING SEWAGE FLOWS

An estimate of the pre-development sanitary sewage flows from the existing building to the Bloor Street sanitary sewer has been calculated using the Region of Peel Design Criteria as **3.22 L/s**. Detailed calculations of the pre-development flows are included in **Appendix C**.

#### 3.2 POST-DEVELOPMENT SEWAGE FLOW

The proposed development will connect to the existing 375mm sanitary sewer on Bloor Street, on the west side of the Site connecting to existing Peel Maintenance Hole 1788936. The proposed connection is a 200mm sanitary pipe with a property line manhole in accordance with Peel Standard Drawing 1-8-3. Proposed sanitary plumbing within the proposed parking structure will be designed by the Site Mechanical Consultant to meet Ontario Plumbing Code Standards. Refer to the **Preliminary Site Servicing Plan** in **Appendix E** for the proposed servicing strategy. An estimate of the post-development sanitary sewage flows from the Site summarized in **Table 3.1**, based on the Site statistics and Region of Peel Design Criteria for Sanitary Sewers.

The proposed development will consist of 234 residential units. Theoretical estimated peak sanitary flows for the existing and proposed buildings are 3.22 L/s and 8.58 L/s, respectively for a total site flow of 11.80 L/s. Detailed pre-and post-development calculations for the Site are included in **Appendix C**.

**Table 3.1 - Estimated Sanitary Flow** 

Design Criteria		
	Existing Building	Proposed Building
Sanitary Demand Rate	302.8 litres/person/day	302.8 litres/person/day
	(STD. 2-9-2)	(STD. 2-9-2)
Total Residential Population	205 people	605 people
Average Residential Flow	0.719 L/s	2.122 L/s
Harmon Peaking Factor	M = 4.14	M = 3.93
Peak Residential Flow	2.980 L/s	8.338 L/s
Infiltration Flow	0.240 L/s	0.240 L/s
Peak Sanitary Flow (Peak Residential	3.22 L/s	8.58 L/s
Flow + Infiltration Rate)		

#### **4 STORM SEWAGE SYSTEM**

#### 4.1 STORMWATER MANAGEMENT REPORT

A Stormwater Management Report for this development has been prepared under a separate cover by WSP Canada Inc. The Report is in compliance with the City of Mississauga's Stormwater Management Criteria and provides water retention, water quality and water quantity controls on a site-wide basis.

#### 4.2 EXISTING CONDITIONS

Based on the record drawings from the City of Mississauga and Region of Peel as well as the Subsurface utility investigation by UrbanX, the existing municipal storm sewers adjacent to the property are as follows:

- ▶ 1375mm diameter concrete storm sewer, approximately 4.0m deep, within the centre of Bloor Street:
- A 9.14m wide overland flow easement on the east side of the site in favour of the Region of Peel; and
- An existing 500mm diameter (based on SUE Investigation by UrbanX) storm connection from the site to the existing 1375mm diameter trunk sewer within Bloor Street. The existing site storm sewer captures both the existing building roof drainage and at-grade impervious drainage from the driveway and parking lot. Softscape areas to the north and east generally sheet drain towards the overland flow easement.

#### 4.3 PROPOSED DEVELOPMENT

The proposed development will consist of a new 14-storey residential building with 234 residential units of various sizes and types along with two (2) levels of underground parking to the north of the existing building which is remaining.

Storm drainage from all at-grade surfaces are collected in the on-site storm sewer system and directed through a water quality unit prior to discharge to the stormwater detention tank. The new building roof drainage will be captured in a water re-use tank within P1, and overflow to the site stormwater detention tank. The flow from the tank will be controlled to pre-development levels, as described in the Stormwater Management Report, submitted under separate cover.

#### 4.4 MINOR STORM DRAINAGE SYSTEM

All on-site storm sewers will be designed for a 10-year storm event in accordance with City of Mississauga standards. Refer to the **Preliminary Site Servicing Plan** provided in **Appendix E** for the storm sewer layout, and **Appendix D** for the Storm Drainage Plan and Storm Sewer Design Sheet.

#### 4.5 MAJOR STORM DRAINAGE SYSTEM

The major storm system is a conveyance system for flows in excess of the minor system flows. Generally, the 100yr event is captured and controlled within the stormwater management tank. For flows in excess of the 100yr event, the grading design will be prepared such that the surface (i.e. roadway and lot areas) grades will direct surface drainage away from the buildings to the approved outlet. The proposed grading of the subject site will ensure that existing grade elevations will be met along the property limits. For major storm events exceeding the 100-year storm and the capacity of the cistern, overland flow will spill to the adjacent easement or Bloor Street West. Refer to the **Preliminary Grading Plan** in **Appendix E** for the zoning-level grading design.

#### **4.6 GROUNDWATER**

A hydrogeological investigation prepared under separate cover was caried out by Pinchin Ltd. in March 2022. It assessed the groundwater conditions, soil characteristics, dewatering requirements and tested for the presence of groundwater contamination.

The City of Mississauga requires that all groundwater be discharged to the storm sewer system. The long term (permanent) groundwater flow rate (with a safety factor of 2) is 70,000 L/day which is equivalent to 0.8 L/s. The groundwater will be piped to the proposed cistern; as such, 0.8 L/s has been added as a base flow to the SWM cistern node in the HydroCAD model. Refer to the SWM Report under separate cover. Note that a groundwater treatment system designed by others will be required. The Hydrogeological consultant has confirmed that the required groundwater treatment is achievable and can be maintained throughout the life of the building. Further details of the treatment system will be provided at the SPA stage.

#### 5 CONCLUSION

#### 5.1 WATER SERVICING

The existing water service connection for the existing building will be relocated, and is intended to remain independent from the new service connection for the new 14-storey building. The proposed population density is based on the 2020 DC Study. The estimated average day domestic flow in the existing condition is 0.67 L/s and peak hour demand is 2.00 L/s. The estimated average day domestic flow for the proposed building is 2.00 L/s and peak hour demand is 6.00 L/s. The estimated fire flow for the building has been calculated using the recommendations of the Fire Underwriters Survey as 10,978 L/min (2,896 US GPM, or 183 L/s) given the building type, construction type and proximity to other buildings. A hydrant flow test has been carried out on the hydrant adjacent to the site indicating a static pressure of 59.9 psi and an available fire flow of 246 L/s at 20 psi. As such, there is adequate flow for fire protection of this proposed building. Given the distance of the municipal hydrant to the building, an additional private hydrant is proposed within 45m of the new building's siamese connection.

#### 5.2 SANITARY SERVICING

The existing sanitary service connection for the existing building is intended to remain, independent of the new 200mm diameter sanitary service connection for the new building to the existing 375mm sanitary sewer on Bloor Street and brought into compliance with current standards with a new property line manhole. The proposed connection will have a property line manhole in accordance with Peel Standard Drawing 1-8-3. The proposed development will consist of and additional 234 residential units. Theoretical estimated peak sanitary flows for the existing and proposed buildings are 3.22 L/s and 8.58 L/s, respectively for a total site flow of 11.80 L/s.

#### 5.3 STORM SERVICING

Storm drainage from all at-grade surfaces are collected in the site storm sewer system and directed through a water quality unit prior to discharge to the stormwater detention tank. The new building roof drainage will be captured in a water re-use tank within P1, and overflow to the stormwater detention tank that will control the outlet flow from the site to pre-development levels in accordance with the Stormwater Management Report. The existing 500mm diameter service connection from the site (per the SUE Investigation by UrbanX) to the existing 1375mm storm sewer in Bloor Street will be maintained.

## **APPENDIX**

# DOMESTIC WATER DEMAND

#### **APPENDIX A**

#### THEORETICAL DOMESTIC WATER DEMAND CALCULATIONS

PRE-DEVELOPMENT

Project: 1785 Bloor St Job No.: 211-10685

#### **Existing Development**

Unit Ty	pe	Unit Quantity	Area of Site (ha)	Persons Per Hectare	Total Population	Average Da Dema (280 L/c	and <sup>2</sup>	Maximum Day Demand Peaking Factor <sup>3</sup>	Maximum Day Demand (L/s)	Maximum Hour Demand Peaking Factor <sup>4</sup>	Peak Hour Demand (L/s)
						(L/s)	(m³/day)				
Residen	tial	76	1.20	171	205	0.67	57.46	2.00	1.33	3.00	2.00

Note 1: Population Densities per Region of Peel Public Works Design Criteria Manual

2.7 ppu assumed - to get the population as proposed population is greater than 475 p/ha

Note 2: Average Day Domestic Demand per Region of Peel Public Works Watermain Design Criteria, June 2010, page 4

For Residential 280 L/cap/day

Note 3 & 4: Maximum Demand Peaking Factors per Region of Peel Public Works Watermain Design Criteria, June 2010, page 4

Maximum Day Demand Factor = 2.0 and Peak Hour Demand Factor = 3.0

#### **APPENDIX A**

#### THEORETICAL DOMESTIC WATER DEMAND CALCULATIONS

POST-DEVELOPMENT

Project: 1785 Bloor St Job No.: 211-10685

#### **Proposed Development**

	Unit Type	Proposed Unit Quantity	Area of Site (ha)	Persons Per Hectare	Total Population		Average Daily Water Demand <sup>2</sup> (280 L/cap/d)		num Day mand aking Day Demand D (L/s) P		Peak Hour Demand (L/s)
						(L/s)	(m³/day)	Factor <sup>3</sup>	(L/S)	Peaking Factor⁴	(L/S)
Ī	Residential	234	1.20	195	605	1.96	169.51	2.00	3.92	3.00	5.89

Note 1: Existing Population Densities per Region of Peel Public Works Design Criteria Manual (2.7 PPU)

Proposed Population Densities based on 2020 DC Study (1.6 PPU for units <750 sq.ft., 3.0 PPU for units > 750 sq.ft)

Note 2: Average Day Domestic Demand per Region of Peel Public Works Watermain Design Criteria, June 2010, page 4 280 L/cap/day

Note 3 & 4: Maximum Demand Peaking Factors per Region of Peel Public Works Watermain Design Criteria, June 2010, page 4

Maximum Day Demand Factor = 2.0 and Peak Hour Demand Factor = 3.0

#### Unit Breakdown

Unit Type	# Units	PPU	Population	Size
1 BR	69	1.6	110.4	<750sq.ft.
2 BR	125	3	375	>750sq.ft.
3 BR	40	3	120	>750sq.ft.
Total	234		605	

Note 5: Development Statistics provided by OneSpace on September 19, 2023.

## **APPENDIX**

B FUS CALCULATIONS AND HYDRANT FLOW TEST RESULTS

#### PROPOSED FIRE FLOW CALCULATIONS

Project: 1785 Bloor Street

Job No.: 211-10685

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

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

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 = 1.0 for ordinary construction

A = 3074  $m^2$  (largest GFA plus 25% of GFA for two immediately adjoining floors)

$$F(f) = 12,197 Lpm$$

2. Occupancy Reduction

25% reduction based on being of low hazard occupancy.

$$F(occ) = 3,049 Lpm$$

3. Sprinkler Reduction

0% reduction for NFPA Sprinkler System

$$F(spr) = 0 Lpm$$

**4.** Separation Charge

Face	Distance (m)	Charge
N Side	80	0%
E Side	50	0%
S Side	15	15%
W Side	40	5%
	Total	20%

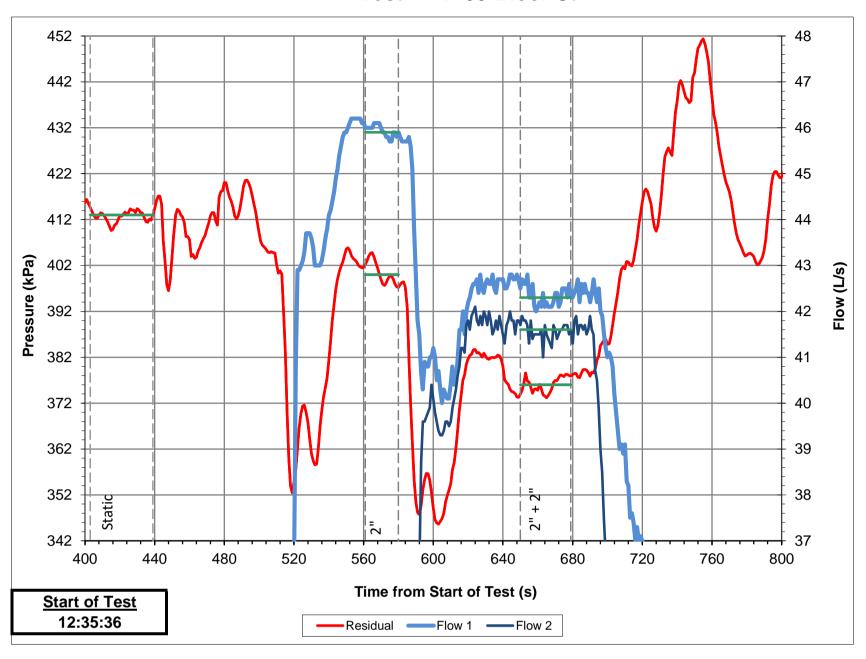
FUS Limits Separation Charge to 75% Maximum: F(sep) = 9,148 ==> 1,830

F = F(f) - F(occ) - F(spr) + F(sep) = 10,978 Lpm (F > 2,000 Lpm; OK)

F = 2,896 US GPM F = 0.1830 cubic m/s

F = 183 L/s

**Test 1 - 1785 Bloor St** 

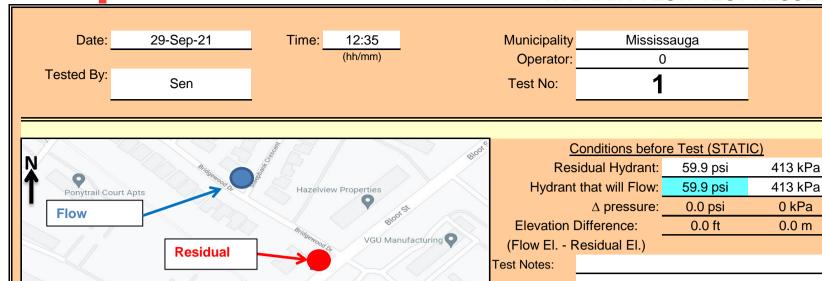


**TABLE A: TESTED PRESSURES AND FLOWS** 

	Time		Residual		Flow Hydrant ()				Total Flow		Velocity
Point			on Residual Hydra		Port	Port 1 (S1)		Port 2 (S2)		1 Otal Flow	
	Start	Finish	(kPa)	(psi)	(L/s)	(GPM)	(L/s)	(GPM)	(L/s)	(GPM)	(m/s)
Static	403	439	413	59.9	0.0	0	0.0	0	0.0	0	0.0
2"	561	580	400	58.0	45.9	728	0.0	0	45.9	728	0.6
2"			0	0.0	0.0	0	0.0	0	0.0	0	0.0
1" + 2"			0	0.0	0.0	0	0.0	0	0.0	0	0.0
2" + 2"	650	679	376	54.5	42.3	670	41.6	659	83.9	1330	1.2

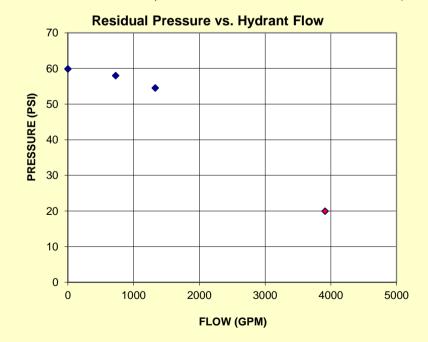


#### 1785 Bloor St **HYDRANT FLOW TEST RESULTS**



TEST	Γ	TEST	FLOW	RESIDUAL P	RESIDUAL PRESSURE (psi)		Fire Flow at	Fire Flow at			
Port Size (in)	Nozzle Pressure (psi)	(USGPM)	(L/s)	Monitoring Hydrant	Flow Hydrant (Corrected) *	Minimum Residual P <sub>r</sub> (psi)	Minimum Residual, Q <sub>r</sub> (USGPM)	Minimum Residual, Q <sub>r</sub> (L/s)	9% Pressure Drop Achieved?		
STATIC	n/a	0	0	59.9	59.9						
Single Port Tests											
2	21.8	728.0	45.9	58.0	58.0	20	3768	238	NO		
2						20					
Two Port Test											
1						20					
2						20					
Two Port Test											
2	17.8	659.0	41.6	54.5	54.5	20	3913	247	YES		
2	18.4	670.0	42.3	54.5	5	20	3913	241	123		

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



1785 Bloor St, Mississauga, ON L4X...

Masjid Adam

Results									
Static P	ressure	Flow at 20 psi (140kPa)							
(psi)	(kPa)	(gpm)	(L/s)						
59.9	413	3900 246							

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:	14800 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.

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## **APPENDIX**

SANITARY SEWERAGE CALCULATIONS,

#### APPENDIX C 1785 BLOOR STREET

#### **Pre-Development Sanitary Demands**

#### **Residential Units**

Unit Type	Quantity	Lot Area	Person/ha	Population
		(hectares)		
Residential Building	76	1.2021	171	205
			Total	205

#### **Sanitary Flow**

Res Population = 205

Avg Day Res Flow = 0.719 L/s (assumes 302.8 L/cap/d) - STD.DWG(2-9-2)

Res Peak Factor = 4.14 (Harmon Formula)

Peak Res Flow = 2.980 L/s Infiltration Flow = 0.240 L/s

Total Peak San Flow = 3.22 L/s

#### Notes

1. Existing Unit PPU follow previous criteria of 2.7 ppu.

#### APPENDIX C 1785 BLOOR STREET Post-Development Sanitary Demand

#### **Residential Units**

Unit Type	Proposed # Units	Lot Area	Person/ha	Population
		(hectares)		
Residential Building	234	1.2021	504	605

#### **Sanitary Flow**

Res Population = 605

Avg Day Res Flow = 2.122 L/s (assumes 302.8 L/cap/d)

Res Peak Factor = 3.93 (Harmon Formula)

Peak Res Flow = 8.338 L/s Infiltration Flow = 0.240 L/s

Total Peak San Flow =	8.58 L/s

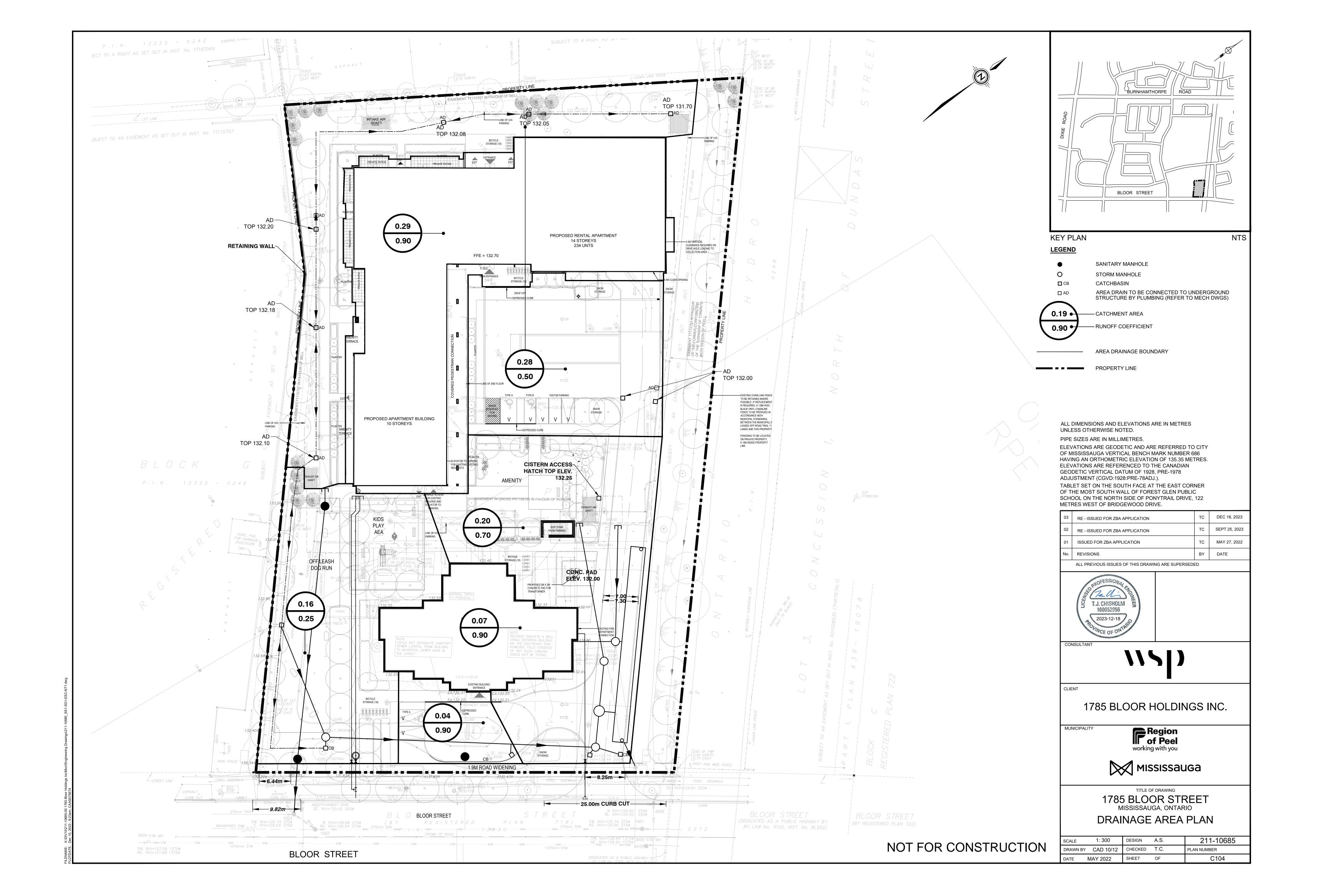
Unit Type	# Units	PPU	Population
1 BR	69	1.6	110.4
2 BR	125	3	375
3 BR	40	3	120
	234		605

#### Notes

- 1. The proposed unit types are 1 BR (<750 sq.ft), 2 and 3 BR (> 750 sq.ft). Populations of 1.6 ppu for <750 sq.ft, and 3.0 ppu for > 750 sq.ft. have been used.
- 2. Development Statistics provided by OneSpace on September 19, 2023

## **APPENDIX**

STORM SEWER
DRAINAGE PLANS AND
DESIGN SHEETS



DEVELOPMENT	1785 Bloor St
	·

WSP Canada Inc

MISSISSAUGA
Transportation and Works

SHEET	1	of	1
DESIGNED BY		AS	

CHECKED BY

TC

MAJOR DRAINAGE AREA

CONSULTANT

Proposed Condition

STORM DRAINAGE DESIGN CHART FOR CIRCULAR DRAINS FLOWING FULL

	FOR CIRCULAR URAINS FLOWING FULL																							
LOCATION OF SITE	From Upstream	To Downstream	Adjacent Contributary Area	Total Contributary Area	Runoff Coefficient	Area Times Runoff Coefficient	Accumulated Area Times Runoff Coefficient for Section	Time of Concentration at Upstream End of Section	Flow Time within Section	Time of Concentration at Downstream End of Section	Intensity of Rainfall (10 Year Event)	Quantity of Accomodat Section	Quantity of ROOF Flow to be Accomodated in Section	TOTAL Quantity of Flow to be Accomodated in Section	Type of Pipe	Manning's Roughness Coefficient	Slope	Nominal Diameter	Length of Section	Velocity of Flow with Pipe Flowing Full	Capacity of Pipe Flowing Full	SURCHARGED?	% FREE	Time of Flow in Section
	MH#	MH#	A (ba)	ΣA	С	A*C	ΣA*C	tc <sub>i</sub>	tc <sub>f</sub>	tc=tc <sub>f</sub> + tc <sub>i</sub>	i <sub>10</sub>	$Q = {^{AiC}}/{_{360}}$ $(m^3/s)$	, 3, ,	. 3		n	s (%)	D (mm)	L (m)	V (m/s)	Q (m <sup>3</sup> /s)		(m)	t = L/ <sub>V*60</sub> (min)
	CB1 (west) and CB2		(ha)	(ha)				(min)	(min)	(min)	(mm / hr)	(m²/s)	(m <sup>3</sup> /s)	(m <sup>3</sup> / s)			(76)	(mm)	(m)	(m/s)	(m <sup>-</sup> /s)		(m)	(min)
Site	(mid)	STM MH1	0.20	0.20	0.39	0.08	0.08	15.00	0.66	15.66	99.17	0.021		0.021	PVC	0.013	1.00	300	54.0	1.368	0.097		77.78%	0.658
	CB3 (east)	STM MH1	0.20	0.20	0.70	0.14	0.14	15.00	0.05	15.05	99.17	0.039		0.039	PVC	0.013	2.00	250	5.0	1.713	0.084		54.14%	0.049
	STM MH1	OGS-MH2	0.00	0.40	0.00	0.00	0.22	15.66	0.05	15.71	96.64	0.059		0.059	PVC	0.013	2.00	300	6.0	1.935	0.137		57.21%	0.052
Existing Building	BLDG	STM MH4	0.07	0.07	0.90	0.06					99.17			0.017		0.013	1.00			1.211	0.059		70.82%	
Proposed Building Roof/re-use overflow	PLUG	STM MH4	0.27	0.27	0.90	0.24		15.00			99.17	0.067		0.067	PVC	0.013	2.00	300			0.137		51.05%	
	STM MH4	SWM TANK	0.00	0.34	0.00	0.00	0.31	15.20	0.00	15.20	98.39	0.084		0.084	PVC	0.013	2.00	300	0.5	1.935	0.137		38.85%	0.004
Proposed Building at-grade	PLUG	STM MH3	0.30	0.30	0.50	0.15	0.15	15.00	0.24	15.24	99.17	0.041		0.041	PVC	0.013	2.00	300	28.0	1.935	0.137		69.79%	0.241
r roposed Building at-grade	STM MH3	OGS-MH2	0.00	0.30	0.00	0.00				15.31	98.22			0.041	PVC	0.013	2.00	300			0.137		70.07%	0.073
	OGS-MH2	SWM TANK	0.00	0.70	0.00	0.00		15.71			96.45			0.099		0.013		375			0.248		60.24%	
CONTROLLED FLOW	SWM TANK	MH3003	0.00	1.04	0.90	0.00	0.67	15.73	0.06	15.79	96.39	0.040		0.044	PVC	0.013	1.00	300	5.0	1.368	0.097		55.02%	0.061
	MH3003	TRUNK	0.00	1.04	0.90	0.00	0.67	15.79	0.14	15.93	96.17	0.040		0.044	CONC	0.013	1.00	450	15.2	1.793	0.285		84.74%	0.141
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Notes

1. One Space - Site Plan dated September 13, 2023

WSP Canada Inc

## **APPENDIX**

# PRELIMINARY SITE SERVICING PLAN AND GRADING PLAN

#### SEDIMENT CONTROL MEASURES

- A. PROTECT ALL EXPOSED SURFACES AND CONTROL ALL RUNOFF DURING CONSTRUCTION.
- B. PROTECT ALL CATCH BASINS, MAINTENANCE HOLES AND PIPE ENDS FROM SEDIMENT INTRUSION WITH GEOTEXTILE (TERRAFIX 270R).
- C. PREVENT WIND-BLOWN DUST.

#### D. KEEP ALL SUMPS CLEAN DURING CONSTRUCTION.

- E. ALL OF THE ABOVE NOTES AND ANY SEDIMENT AND EROSION CONTROL MEASURES ARE AT A MINIMUM TO BE IN ACCORDANCE WITH THE ONTARIO MINISTRY OF NATURAL RESOURCES GUIDELINES ON EROSION AND SEDIMENT CONTROL FOR URBAN CONSTRUCTION SITES.
- F. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY MEASURES TO CONTROL SILT FROM ENTERING THE STORM DRAINAGE SYSTEM TO THE SPECIFICATIONS OUTLINED IN THE GUIDELINES ON EROSION AND SEDIMENT CONTROL FOR URBAN CONSTRUCTION SITES PREPARED BY THE ONTARIO MINISTRY OF NATURAL RESOURCES. THESE MEASURES ARE TO BE INSTALLED PRIOR TO COMMENCING ANY CONSTRUCTION FOR THIS PROJECT, AND ARE TO REMAIN IN PLACE UNTIL CONSTRUCTION HAS BEEN COMPLETED TO THE SATISFACTION OF THE CITY ENGINEER
- G. ALL WORK SHALL MEET AT A MINIMUM, STANDARDS AND SPECIFICATIONS OF THE CITY OF MISSISSAUGA.
- BASIS IF DIRECTED BY THE CITY OR THE ENGINEER. ANY TRACKING OF DELETERIOUS MATERIALS ALONG ANY ROADS/DRIVEWAYS AND OR OTHER PROPERTIES ASIDE FROM THE SITE SHALL BE MITIGATED IMMEDIATELY.

H. THE CONTRACTOR IS RESPONSIBLE FOR CLEANUP OF MUDTRACKING ON A DAILY BASIS OR ON A MORE FREQUENT

- I. SILTATION CONTROL BARRIERS SHALL BE INSTALLED AS PER DETAILS.
- J. ALL SILTATION CONTROL MEASURES SHALL BE CLEANED AND MAINTAINED WEEKLY (AS MINIMUM) AND AFTER EACH RAINFALL AS DIRECTED AND TO THE SATISFACTION OF THE CITY OF MISSISSAUGA AND THE ENGINEER.
- K. ADDITIONAL SILT CONTROL LOCATIONS MAY BE REQUIRED AS DETERMINED BY THE CITY OF MISSISSAUGA.
- L. IF BUILDING ACTIVITY DOES NOT COMMENCE WITHIN 45 DAYS AFTER CONSTRUCTION IS COMPLETED. ARRANGEMENTS SHALL BE MADE TO SEED ANY STRIPPED AREAS AND TOPSOIL STOCKPILES THAT ARE NOT COVERED BY VEGETATION AND MAINTAIN THEM UNTIL GROUND COVER IS ESTABLISHED.
- M. SEDIMENTATION CONTROL MEASURES SHALL BE KEPT IN PLACE UNTIL SATISFACTORY GROUND COVER HAS BEEN ESTABLISHED AND ALL BUILDING ACTIVITY HAS BEEN COMPLETED.

- A. ALL SERVICES SHALL BE INSTALLED AND TESTED TO THE CURRENT ONTARIO BUILDING CODE, CITY OF MISSISSAUGA STANDARDS (CITY STD.), REGION OF PEEL STANDARDS (REGION STD.), ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD), AND ONTARIO PROVINCIAL STANDARD STANDARD SPECIFICATIONS (OPSS), UNLESS OTHERWISE SPECIFIED AND TO THE SATISFACTION OF THE CITY OF MISSISSAUGA, THE CIVIL ENGINEER, AND THE GEOTECHNICAL ENGINEER.
- B. THE POSITION OF EXISTING POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND ABOVEGROUND UTILITIES, STRUCTURES AND APPURTENANCES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SATISFY HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, SHALL ADEQUATELY SUPPORT THEM, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM DURING THE COURSE OF CONSTRUCTION. ANY RELOCATION OF EXISTING UTILITIES REQUIRED BY THE DEVELOPMENT OF SUBJECT LANDS IS TO BE UNDERTAKEN AT THE CONTRACTOR'S EXPENSE.
- C. THE CONTRACTOR MUST NOTIFY ALL EXISTING UTILITY COMPANY OFFICIALS FIVE (5) BUSINESS DAYS PRIOR TO START OF CONSTRUCTION AND HAVE ALL EXISTING UTILITIES AND SERVICES LOCATED IN THE FIELD OR EXPOSED PRIOR TO THE START OF CON-STRUCTION, INCLUDING BUT NOT LIMITED TO HYDRO, BELL, CABLE TV AND GAS LINES.
- D. ALL TRENCHING TO BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS. REFER TO GEOTECHNICAL REPORT FOR EXCAVATION RECOMMENDATIONS.
- E. ALL TRENCHES SHALL BE BACKFILLED IN ACCORDANCE WITH THE SITE GEOTECHNICAL REPORT AND UNSHRINKABLE FILL IN THE RIGHT-OF-WAY.
- F. ALL DISTURBED AREAS OUTSIDE OF THE PROPOSED GRADING LIMITS TO BE RESTORED TO ORIGINAL CONDITION. THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITY ONLY TO WITHIN THE LIMITS OF THE CONSTRUTION SHOWN.
- G. ALL DIMENSIONS AND ELEVATIONS IN METRES, PIPE SIZES IN MILLIMETRES. H. CONTRACTOR SHALL SATISFY HIMSELF OF ALL GEOTECHNICAL INFORMATION AND RECOMMENDATIONS. BOREHOLE
- LOGS & GEOTECHNICAL REPORT. INDICATED THAT GROUNDWATER MAY BE ENCOUNTERED ON SITE. IF NECESSARY, A DEWATERING SYSTEM MAY BE REQUIRED DURING CONSTRUCTION OF UNDERGROUND SERVICES.
- I. CONSTRUCTION VEHICLES ENTERING/EXITING THE SITE SHALL BE VIA CONFEDERATION PARKWAY UNLESS
- J. THE TOPSOIL WITHIN THE LIMITS OF CONSTRUCTION SHALL BE STRIPPED AND REMOVED FROM SITE. CONTRACTOR MAY REUSE TOPSOIL FOR SITE-LANDSCAPING PURPOSES IF THE CONTRACTOR PROVIDES TEST RESULTS WHICH ILLUSTRATE THE TOPSOIL MEETS LANDSCAPE SPECIFICATIONS.
- K. EACH AND EVERY FOOTING BASE MUST BE FIELD REVIEWED AND ACCEPTED IN WRITING BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE. THIS FIELD REVIEW IS REQUIRED UNDER SECTION 4.2.2.3 OF THE ONTARIO
- L. ALTERNATIVE MATERIALS MAY BE ACCEPTABLE, PROVIDED APPROVAL HAS FIRST BEEN OBTAINED FROM THE
- M. NO BLASTING IS PERMITTED.
- N. CONTRACTOR TO EXPOSE AND VERIFY LOCATION, ELEVATION, AND SIZE OF EXISTING PIPES, IF THERE ARE ANY DISCREPANCIES CONTRACTOR IS TO NOTIFY THE ENGINEER 48 HOURS PRIOR TO CONSTRUCTION.
- O. MAINTAIN TRAFFIC ON MUNICIPAL ROADS AT ALL TIMES. ALL EXISTING SERVICES ARE TO REMAIN IN SERVICE AT ALL TIMES DURING CONSTRUCTION (UNLESS OTHERWISE NOTED)
- P. AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION FOR SERVICES WITHIN A MUNICIPAL RIGHT-OF-WAY
- AND/OR MUNICIPAL EASEMENTS THE CONTRACTOR IS TO OBTAIN A PERMIT OF APPROVED WORK FROM THE CITY. Q. CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE CONTRACTOR FOR PLANTING BED LOCATIONS AND CORRESPONDING SUBGRADE ELEVATIONS.
- R. ALL SITE LAYOUT INFORMATION, INCLUDING BUILDING DIMENSIONS, SETBACKS, CURBS, DEPRESSED CURB LOCATIONS, SIDEWALKS, PARKING AND LANDSCAPE FEATURES MUST BE REFERENCED FROM THE ARCHITECT'S
- S. ALL SURFACE DRAINAGE WILL BE SELF-CONTAINED , COLLECTED AND DISCHARGED AT A LOCATION TO BE APPROVED
- PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. T. ALL EXCESS EXCAVATED MATERIAL WILL BE REMOVED FROM THE SITE.
- U. THE EXISTING DRAINAGE PATTERN WILL BE MAINTAINED EXCEPT WHERE NOTED.
- V. THE APPLICANT WILL BE REQUIRED TO CONTACT ALL UTILITY COMPANIES TO OBTAIN ALL REQUIRED LOCATES PRIOR TO THE INSTALLATION OF HOARDING WITHIN THE MUNICIPAL RIGHT OF WAY.
- W. THE APPLICANT WILL BE RESPONSIBLE FOR THE COST OF ANY UTILITY RELOCATIONS NECESSITATED BY THE SITE
- X. PRIOR TO CONSTRUCTION TAKING PLACE, ALL REQUIRED HOARDING IN ACCORDANCE WITH THE ONTARIO OCCUPATIONAL HEALTH & SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS MUST BE ERECTED AND THEN MAINTAINED THROUGHOUT ALL PHASES OF CONSTRUCTION.
- Y. SHOULD ANY WORKS BE REQUIRED WITHIN THE MUNICIPAL RIGHT OF WAY, A ROAD OCCUPANCY PERMIT WILL BE REQUIRED. PUCC APPROVAL WILL BE REQUIRED. FOR FURTHER INFORMATION, PLEASE CONTACT THE PUCC / PERMIT
- TECHNOLOGIST, LOCATED AT 3185 MAVIS ROAD. Z. ALL SURFACE DRAINAGE WILL BE SELF CONTAINED, COLLECTED AND DISCHARGED AT A LOCATION TO BE APPROVED
- PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. AA. THE PORTIONS OF THE DRIVEWAY WITHIN THE MUNICIPAL BOULEVARD WILL BE PAVED BY THE APPLICANT
- AB. AT THE ENTRANCES TO THE SITE. THE MUNICIPAL CURB AND SIDEWALK WILL BE CONTINUOUS THROUGH THE
- DRIVEWAY AND A CURB DEPRESSION WILL BE PROVIDED FOR EACH ENTRANCE. AC. ALL PROPOSED CURBING WITHIN THE MUNICIPAL BOULEVARD AREA FOR THE SITE IS TO SUIT AS FOLLOWS.
- FOR ALL SINGLE FAMILY RESIDENTIAL PROPERTIES INCLUDING ON STREET TOWNHOUSES, ALL CURBING IS TO STOP AT THE PROPERTY LIMIT OR THE BACK OF THE MUNICIPAL SIDEWALK, WHICHEVER IS APPLICABLE, OR
- FOR ALL OTHER PROPOSALS INCLUDING INDUSTRIAL, COMMERCIAL AND CONDOMINIUM DEVELOPMENTS, ALL ENTRANCES TO THE SITE ARE TO BE IN ACCORDANCE WITH OPSD 350.010.
- AD. ALL EXCESS EXCAVATED MATERIAL WILL BE REMOVED FROM THE SITE.
- AE. THE EXISTING DRAINAGE PATTERN WILL BE MAINTAINED EXCEPT WHERE NOTED.
- AF. THE APPLICANT WILL BE REQUIRED TO CONTACT ALL UTILITY COMPANIES TO OBTAIN ALL REQUIRED LOCATES PRIOR TO THE INSTALLATION OF HOARDING WITHIN THE MUNICIPAL RIGHT OF WAY.
- AG. THE APPLICANT WILL BE RESPONSIBLE FOR THE COST OF ANY UTILITY RELOCATIONS NECESSITATED BY THE SITE
- AH. PRIOR TO CONSTRUCTION TAKING PLACE, ALL REQUIRED HOARDING IN ACCORDANCE WITH THE ONTARIO OCCUPATIONAL HEALTH & SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS MUST BE ERECTED AND THEN MAINTAINED THROUGHOUT ALL PHASES OF CONSTRUCTION
- AI. SHOULD ANY WORKS BE REQUIRED WITHIN THE MUNICIPAL RIGHT OF WAY. A ROAD OCCUPANCY PERMIT WILL BE REQUIRED. PUCC APPROVAL WILL BE REQUIRED. FOR FURTHER INFORMATION, PLEASE CONTACT THE PUCC/PERMIT TECHNOLOGIST, LOCATED AT 3185 MAVIS ROAD."

- A. ALL WATERMAIN AND WATERMAIN APPURTENANCE CONSTRUCTION, INSTALLATION AND TESTING SHALL CONFORM TO THE CURRENT REGION STANDARDS AND SPECIFICATIONS, MINISTRY OF ENVIRONMENT (MOE) GUIDELINES, NFPA 24 AND AS
- B. FITTINGS TO BE CAST OR DUCTILE IRON IN CONFORMANCE WITH AWWA/C110. OR PVC IN CONFORMANCE WITH CSA B137.3 C. WHERE WATERMAINS CROSS OVER OTHER UTILITIES, A MINIMUM 0.30m CLEARANCE SHALL BE MAINTAINED; WHERE
- WATERMAINS CROSS UNDER OTHER UTILITIES. A MINIMUM 0.50m CLEARANCE SHALL BE MAINTAINED. WHILE STILL MAINTAINING A MINIMUM DEPTH OF COVER AT ALL TIMES. WHERE VERTICAL SEPARATION CANNOT BE MAINTAINED, THE SEWER SHALL BE CONSTRUCTED OF MATERIAL AND WITH JOINTS THAT ARE EQUIVALENT TO WATERMAIN STANDARDS OF CONSTRUCTION AND SHALL BE PRESSURE TESTED TO ENSURE WATER TIGHTNESS.
- D. WATERMAINS SHALL BE INSTALLED WITH A MINIMUM COVER OF 1.7m FROM FINAL GRADE TO OBVERT OF PIPE.
- E. LATERAL SEPARATION OF WATERMAINS TO STORM OR SANITARY SEWERS TO BE 2.5 m (CLEAR)
- F. WATERMAIN BEDDING AND COVER SHALL CONFORM TO REGION STANDARD. AT CROSSINGS, CONTRACTOR TO ADEQUATELY SUPPORT PIPE WITH

#### GRANULAR BEDDING OR CONCRETE AS REQUIRED.

- G. WATERMAIN JOINTS SHALL BE RESTRAINED BY CONCRETE THUST BLOCKS AND MECHANICAL RESTRAINTS. CONCRETE THRUST BLOCKS TO BE PROVIDED AT ALL BENDS, TEES, HYDRANTS, PLUGS, ETC. THRUST BLOCK AND MECHANICAL RESTRAINTS INSTALLATION AND AREA PER REGION STD. 1-3-3A, 1-5-4, 1-5-5, 1-5-6, 1-5-7
- H. PIPE JOINT DEFLECTION SHOULD BE USED WHEREVER POSSIBLE TO MINIMIZE THE USE OF BENDS. WHEREVER IT IS NECESSARY TO DEFLECT FROM A STRAIGHT LINE, EITHER IN THE VERTICAL OR HORIZONTAL PLANE, THE AMOUNT OF DEFLECTION SHALL BE A MAXIMUM 70% OF THE MANUFACTURER'S RECOMMENDATIONS. DEFLECTION IN THE BARREL IS
- CONTRACTOR TO MEASURE AND PROVIDE NON-TYPICAL ANGLE BENDS AS REQUIRED.
- J. CONTRACTOR TO USE MAXIMUM 45° BENDS WHERE WATERMAIN CROSSES UNDER SEWERS.
- K. ALL DIRECT BURIED VALVES AND FITTINGS TO HAVE ANODES, IN ACCORDANCE WITH ASTM 418.1, TO BE INSTALLED ON ALTERNATING BOLTS. REFER TO REGION STD. FOR APPROVED MATERIALS. ALL VALVES AND FITTINGS TO BE SUPPLIED WITH STAINLESS STEEL NUTS AND BOLTS. ALL FITTINGS AND VALVES TO BE WRAPPED IN DENSO TAPE. ALL WATERMAIN TEES SUPPLYING FIRE HYDRANTS SHALL BE ANCHOR TEES AND SHALL HAVE THE HYDRANT ISOLATION VALVE ANCHORED
- L. ALL WELD CONNECTIONS TO BE COATED WITH "TC MASTIC" OR APPROVED EQUIVALENT.
- M. FOR TRENCH BACKFILL REFER TO STORM SEWER NOTES (G,H,I) N. TRACER WIRE SHALL BE INSTALLED WITH PVC PIPE IN ACCORDANCE WITH REGION STANDARDS. IT SHALL BE 12 GAUGE TW75, TWU75 OR RW90XLPE COATED COPPER. THE TRACER WIRE SHALL ALSO BE CONNECTED TO THE CATHODIC PROTECTION SYSTEM. THE TRACER WIRE IS TO BE BROUGHT TO THE SURFACE AT EVERY HYDRANT AND VALVE BOX/CHAMBER. CONTRACTOR TO WRAP TRACER WIRE AROUND HYDRANT BELOW THE SAFETY FLANGE.
- O. THE INSPECTOR MAY TEST THE TRACING WIRE FOR CONTINUITY. IF THE TRACER WIRE IS NOT CONTINUOUS FROM VALVE TO VALVE, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPLACE OR REPAIR THE WIRE
- P. ALL WATER CUSTOMERS SUPPLIED BY A WATERMAIN TO BE SHUT DOWN SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 24 HOURS IN ADVANCE OF THE SHUT DOWN OR AS REQUIRED BY THE REGION

#### REGION OF PEEL STANDARD WATERMAIN NOTES

TESTING AND CHLORINATING FROM EXISTING SYSTEMS

- A. ALL MATERIALS AND CONSTRUCTION METHODS MUST CONFORM TO THE CURRENT PEEL PUBLIC WORKS STANDARDS AND
- B. ALL WATERMAINS FROM 100mm TO 300mm DIAMETER, INCLUSIVE, SHALL BE PVC PIPE CLASS 150. ALL WATERMAINS UP TO

100mm AND LARGER. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE END, THE SAME SIZE AS THE LINE. THEY MUST

- AND INCLUDING 50mm DIAMETER SHALL BE TYPE 'K' COPPER C. ALL WATERMAINS AND WATER SERVICES TO HAVE MINIMUM 1.7m COVER WITH A MINIMUM HORIZONTAL SEPARATION OF
- D. PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING MUST BE PROVIDED WITH AT LEAST A 50mm OUTLET ON
- BE HOSED OR PIPED TO ALLOW THE WATER TO DRAIN ONTO A PARKING LOT OR DOWN A DRAIN. ON FIRE LINES, FLUSHING OUTLET TO BE 100mm DIAMETER MIN. ON A HYDRANT
- E. ALL CURB STOPS TO BE 3.0m OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED. F. HYDRANTS AND VALVE SET TO REGION STANDARD 1-6-1 DIMENSION A AND B, 0.7m AND 0.9m AND TO HAVE PUMPER
- G. WATERMAINS TO BE INSTALLED TO GRADES AS SHOWN ON APPROVED SITEPLAN. COPY OF GRADE SHEET MUST BE
- SUPPLIED TO INSPECTOR PRIOR TO COMMENCEMENT OF WORK, WHERE REQUESTED BY INSPECTOR. H. WATERMAINS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 0.30m OVER/0.50m UNDER SEWERS AND ALL OTHER
- UTILITIES WHEN CROSSING. ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE
- PRIVATE FIRE HYDRANTS SHALL BE FLOW TESTED AND COLOR CODED IN CONFORMANCE WITH THE REGION OF PEEL
- K. WATERMAIN BEDDING TO BE LIMESTONE SCREENING UP TO 150mm ABOVE THE TOP OF THE PIPE AS PER REGION STANDARD 1-5-1 AND BACKFILL TO BE COMPACTED ALL TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
- ALL LIVE TAPPING AND OPERATION OF REGION WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE OPERATIONS AND MAINTENANCE DIVISION
- M. LOCATION OF ALL EXISTING UTILITIES IN THE FIELD TO BE ESTABLISHED BY THE CONTRACTOR
- N. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATES. EXPOSING, SUPPORTING AND PROTECTING OF ALL UNDERGROUND AND OVERHEAD UTILITIES AND STRUCTURES EXISTING AT THE TIME OF CONSTRUCTION IN THE AREA OF HIS WORK. WHETHER SHOWN ON THE PLANS OR NOT, AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FORM
- O. THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE TO GIVE 72 HOURS WRITTEN NOTICE TO UTILITIES PRIOR TO CROSSING SUCH UTILITIES, FOR THE PURPOSE OF INSPECTION BY THE CONCERNED UTILITY. THIS INSPECTION WILL BE FOR THE DURATION OF THE CONSTRUCTION, WITH THE CONTRACTOR RESPONSIBLE FOR ALL COSTS ARISING FROM SUCH INSPECTION

#### SANITARY SEWERS AND MANHOLES

- A. ALL SANITARY SEWERS AND APPURTENANCES SHALL CONFORM TO THE CURRENT CITY AND REGIONAL STANDARDS, AND
- B. PVC PIPES ARE AN ACCEPTABLE ALTERNATIVE UP TO 375 mm DIA. PIPE TO SDR-35 AND CONFORM TO CSA-B182.2,3 (STIFFNESS 320KPA OR GREATER)
- C. ALL SEWER BEDDING AND COVER MATERIAL TO BE INSTALLED IN ACCORDANCE WITH 802.010 (FLEXIBLE PIPE), 802.030 (RIGID PIPE - TYPE 1 OR 2 SOIL), 802.031 (RIGID PIPE - TYPE 3 SOIL) AND 802.032 (RIGID PIPE - TYPE 4 SOIL), AND TO BE COMPACTED GRANULAR 'A' TO A MINIMUM OF 95% MPMDD OR OTHER MATERIAL APPROVED BY CITY, REGION AND GEOTECHNICAL CONSULTANT AT CROSSINGS CONTRACTOR TO ADEQUATELY SUPPORT PIPE WITH GRANULAR BEDDING OR CONCRETE AS REQUIRED. PVC PIPE WILL REQUIRE SPECIAL CONSTRUCTION PROCEDURES AS PER CITY AND REGIONAL SPECIFICATIONS. WHERE SAND OR SILT SUBGRADE IS ENCOUNTERED, CONTRACTOR TO SEPARATE THE BEDDING MATERIAL FROM THE SUBGRADE USING A SUITABLE GEOTEXTILE.
- WHERE TRENCH WIDTHS ARE OVER-EXCAVATED, CONTRACTOR TO INCREASE STRUCTURAL CAPACITY OF SEWER BEDDING AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE REQUIREMENTS OF THE GEOTECHNICAL ENGINEER.
- WHERE TRENCH BACKFILL CONSISTS OF SUITABLE EXCAVATED NATIVE MATERIAL (WITHIN OPTIMUM OR 2 PERCENT GREATER THAN OPTIMUM), THE BACKFILL IS TO BE PLACED IN MAXIMUM 150mm LIFTS AND COMPACTED TO A MINIMUM OF
- F. ALL STRUCTURES WITHIN ROADWAYS SHALL BE INSTALLED BY VERTICAL TRENCH WITH UNSHRINKABLE FILL BACKFILL TO
- G. APPROVED NATIVE MATERIAL OR GRANULAR BACKFILL AS SPECIFIED BY THE GEOTECHNICAL CONSULTANT SHALL BE INSTALLED ON ALL PIPES PER OPSD 802.010, 802.013, 802.030 802.033
- H. PRECAST MANHOLES AND FITTINGS SHALL CONFORM TO CSA-A257.4-M.

SPECIFICATIONS AND MINISTRY OF ENVIRONMENT (MOE) GUIDELINES.

- I. SANITARY MANHOLES PER OPSD 701.010 (1200 mm DIAMETER). MANHOLE COMPONENTS IN ACCORDANCE WITH OPSD 701.030. FRAME AND COVER PER OPSD 401.01 (CLOSED COVER). FIRST JOINT CONCRETE ENCASED IF CONCRETE, OR FLEXIBLE JOINT IF PVC USED.
- J. BENCHING PER OPSD 701.021, UNLESS OTHERWISE SPECIFIED.
- K. PROVIDE CCTV CAMERA INSPECTION OF SEWERS AFTER COMPLETION OF WORK AND FLUSHING OF LINES.

- A. ALL SURFACE FEATURES NOT DESIGNATED AS TO BE REMOVED INCLUDING BUT NOT LIMITED TO CURBS, LANDSCAPING, PAVEMENT, PAVEMENT MARKING AND SIDEWALKS BUT ARE DISTURBED, DAMAGED OR REMOVED DURING THE CONTRACTOR'S ACTIVITIES SHALL BE REINSTATED TO ITS ORIGINAL CONDITIONS AT NO EXTRA COST.
- B. ALL EXISTING FEATURES THAT ARE TO REMAIN, ie. MANHOLE LIDS, CATCHBASINS, VALVE CHAMBER LIDS, VALVE BOXES, ETC. SHALL BE ADJUSTED TO SUIT THE FINISHED ELEVATIONS AS REQUIRED.

#### COMPACTION REQUIREMENTS

- A. ENGINEERED FILL TO BE COMPACTED TO NOT LESS THAN 98% SPMDD UNDER THE FULL TIME SUPERVISION OF THE
- B. PRIOR TO CONSTRUCTING THE PAVEMENTS, ALL SERVICE TRENCHES MUST BE COMPACTED TO AT LEAST 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD). BACKFILL UNDER SIDEWALKS AND BUILDINGS TO BE COMPACTED TO 98%
- C. THE SUBGRADE SHOULD BE PROPERLY SHAPED AND CROWNED. PROOF-ROLL TO IDENTIFY SOFT OR SPONGY SUBGRADE AREAS AND TO BE SUB-EXCAVATED AND PROPERLY REPLACED WITH SUITABLE APPROVED BACKFILL COMPACTED TO 98%
- SPMDD AS DIRECTED BY THE GEOTECHNICAL ENGINEER. D. GRANULAR BASE MATERIAL SHALL BE COMPACTED TO 100% SPMD
- E. SUB-BASE MATERIAL SHALL BE COMPACTED TO 100% SPMDD.
- F. THE ASPHALT CONCRETE MUST BE COMPACTED TO AT LEAST 96% MARSHALL DENSITY PER OPSS 310.

#### PAVEMENT AND SURFACE WORKS

- A. NATIVE SUBGRADE SHALL HAVE A CROSSFALL OF 2% AND THE MATERIAL SHALL BE APPROVED BY THE GEOTECHNICAL
- B. PAVEMENT SUBGRADE SHALL BE COMPACTED TO AT LEAST 98% SPMDD AND PROOF ROLLED WITH A LOADED TANDEM TRUCK, AREA EXHIBITING MORE THAN 20mm DEFLECTION SHOULD HAVE THE TOP 300mm REMOVED AND REPLACED WITH APPROVED DRIER MATERIALS. SUBGRADE SHALL BE PLACED IN LIFTS NOT EXCEEDING 200mm IN THICKNESS. ANY MATERIAL THAT HAS MOISTURE CONTENT HIGHER THAN 3% OF ITS OPTIMUM MOISTURE CONTENT SHALL BE DRIED OUT. THE GRANULAR BASE AND SUB-BASE LAYERS SHOULD BE COMPACTED TO 100% OF THEIR SPMDD. UNSTABLE AREAS MAY REQUIRE SUB-EXCAVATION AND RE-COMPACTION OR INCREASED THICKNESS OF GRANULAR SUB-BASE, AS DIRECTED BY
- C. THE SUITABILITY AND COMPACTION OF ALL EXISTING AND FILL MATERIALS SHALL BE CONFIRMED BY A GEOTECHNICAL
- ENGINEER PRIOR TO PLACEMENT OF PAVEMENT BASE COURSE MATERIAL. D. PAVEMENT STRUCTURE (UNLESS OTHERWISE DIRECTED BY GEOTECHNICAL CONSULTANT):
- 250 mm OPSS GRANULAR 'B' 200 mm OPSS GRANULAR 'A'

THE GEOTECHNICAL ENGINEER

- 65 mm OPSS HL8 40 mm OPSS HL3
- E. ALL DISTURBED PAVEMENT ON ADJACENT ROADS SHALL BE RESTORED TO EXISTING DEPTHS AND TYPES OF MATERIALS
- OR BETTER UPON COMPLETION OF PAVEMENT WORKS.
- F. CONCRETE CURB AND GUTTER SHALL BE AS PER OPSD 600.040 G. PAVEMENT MARKINGS TO BE APPLIED AFTER BASE ASPHALT IF TOP ASPHALT IS NOT SCHEDULED TO FOLLOW WITHIN 24 HOURS AND BASE ASPHALT PAVEMENT SURFACES ARE TO BE USED BY THE PUBLIC. AFTER TOP ASPHALT, PAVEMENT
- MARKING WITH DOUBLE COAT.
- H. THE PORTIONS OF DRIVEWAY WITHIN THE MUNICIPAL BOULEVARD WILL BE PAVED BY THE APPLICANT. I. AT THE ENTRANCES TO THE SITE, THE MUNICIPAL CURB AND SIDEWALK WILL BE CONTINUOUS THROUGH THE DRIVEWAY
- AND A CURB DEPRESSION WILL BE PROVIDED FOR EACH ENTRANCE. J. ALL PROPOSED CURBING WITHIN THE MUNICIPAL BOULEVARD AREA FOR THE SITE IS TO SUIT AS FOLLOWS:
- i) FOR ALL SINGLE FAMILY RESIDENTIAL PROPERTIES INCLUDING ON STREET TOWNHOUSES, ALL CURBING IS TO STOP AT THE PROPERTY LIMIT OR THE BACK OF THE MUNICIPAL SIDEWALK, WHICHEVER IS APPLICABLE, OR ii) FOR ALL OTHER PROPOSALS INCLUDING INDUSTRIAL, COMMERCIAL, AND CONDOMINIUM DEVELOPMENTS, ALL

#### PERMITS AND APPROVALS

THE FOLLOWING APPROVALS ARE REQUIRED PRIOR TO COMMENCING CONSTRUCTION. OWNER HAS APPLIED FOR THE FOLLOWING PERMITS/APPROVALS: SITE PLAN APPROVAL (OR CLEARANCE LETTER FROM CITY), BUILDING PERMIT, AND

#### SERVICE PERMIT (REGION) CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL OTHER NECESSARY PERMITS.

THEM ON DEMAND BY THE MUNICIPALITY, CONSULTANT, OWNER OR APPROVING AUTHORITY.

ENTRANCES TO THE SITE ARE TO BE IN ACCORDANCE WITH OPSD 350.010

THE CONTRACTOR SHALL NOT COMMENCE WORK IN ANY AREA REQUIRING A PERMIT UNTIL THE CONTRACTOR POSSESSES A COPY OF A PERMIT, TOGETHER WITH ANY AND ALL CONDITIONS, DRAWINGS AND SKETCHES ATTACHED TO THE PERMIT. THE CONTRACTOR SHALL KEEP A COPY OF ALL PERMITS AND ATTACHMENTS ON SITE AT ALL TIMES AND SHALL PRODUCE

#### DRAWING LIST

INAMING LIST	
DTES	C100
TE SERVICING PLAN	C101
TE GRADING PLAN	C102
ROSION AND SEDIMENTATION CONTROL PLAN	C103
RAINAGE AREA PLAN	C104
ROSS-SECTIONS	C105

ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.

PIPE SIZES ARE IN MILLIMETRES. ELEVATIONS ARE GEODETIC AND ARE REFERRED TO CITY OF MISSISSAUGA VERTICAL BENCH MARK NUMBER 686 HAVING AN ORTHOMETRIC ELEVATION OF 135.35 METRES. ELEVATIONS ARE REFERENCED TO THE CANADIAN GEODETIC VERTICAL DATUM OF 1928, PRE-1978

ADJUSTMENT (CGVD:1928:PRE-78ADJ.). TABLET SET ON THE SOUTH FACE AT THE EAST CORNER OF THE MOST SOUTH WALL OF FOREST GLEN PUBLIC SCHOOL ON THE NORTH SIDE OF PONYTRAIL DRIVE, 122 METRES WEST OF BRIDGEWOOD DRIVE.

03	RE - ISSUED FOR ZBA APPLICATION	TC	DEC 18, 2023
02	RE - ISSUED FOR ZBA APPLICATION	TC	SEPT 25, 2023
01	ISSUED FOR ZBA APPLICATION	TC	MAY 27, 2022
No	REVISIONS	RV	DATE

ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED



CONSULTANT

CLIENT

1785 BLOOR HOLDINGS INC.

MUNICIPALITY





1785 BLOOR STREET MISSISSAUGA. ONTARIO NOTES

N/A DESIGN A.S. 211-10685 SCALE RAWN BY CAD 10/12 CHECKED T.C. PLAN NUMBER C100 MAY 2022 SHEET

NOT FOR CONSTRUCTION

