

**FUNCTIONAL SERVICING REPORT
BARBERTOWN HOUSE
MISSISSAUGA ROAD
PROPOSED TOWNHOUSE DEVELOPMENT
CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEEL**

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Our File No: 215-M72
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1.0 INTRODUCTION

The purpose of this report is to define the existing municipal services to the subject parcel of land and the proposed servicing in support of the proposed twenty-six (26) unit townhouse residential development and single Heritage building (Barber House).

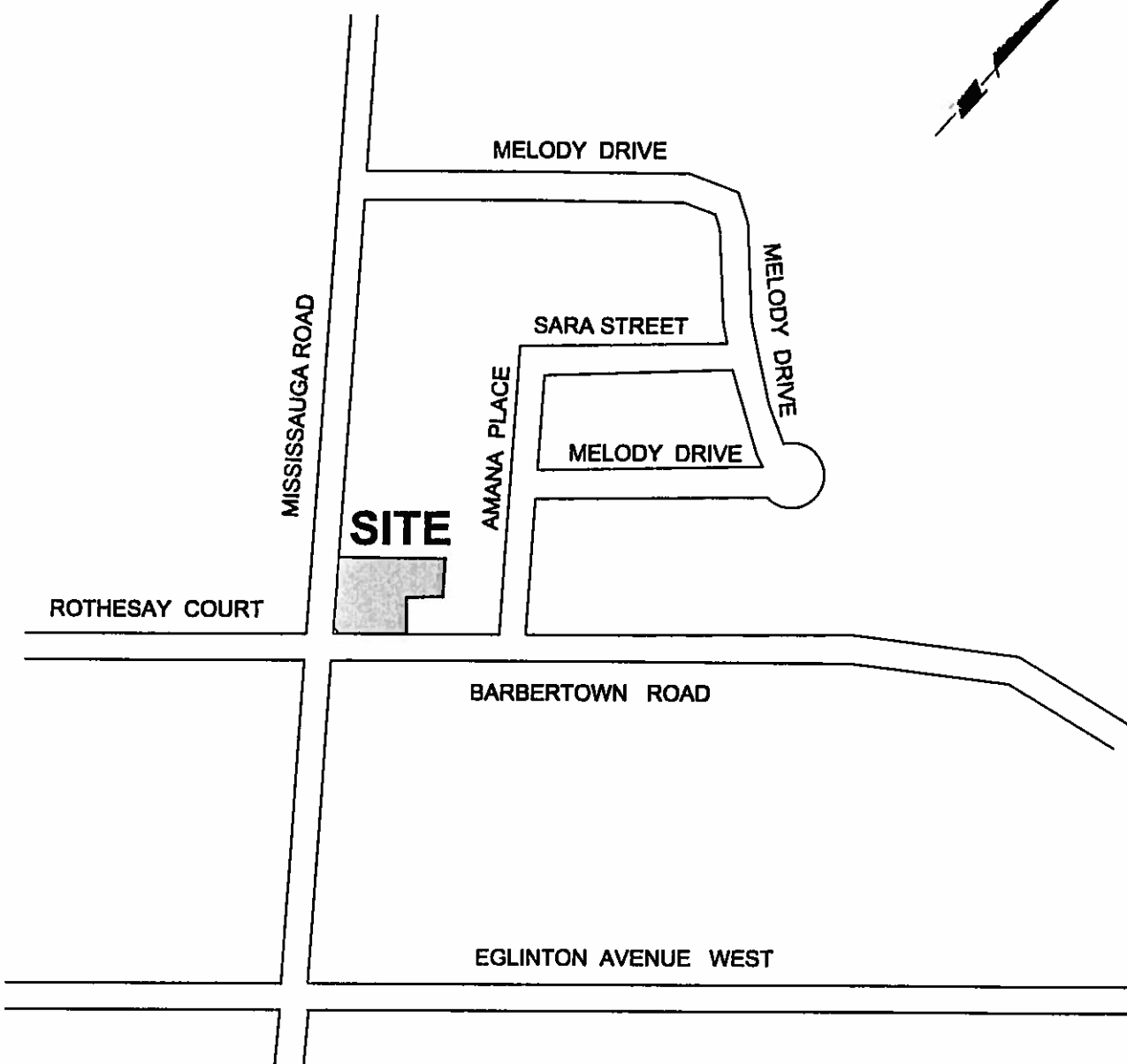
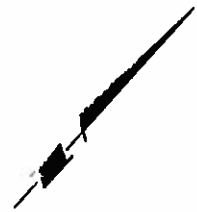
The proposed development is part of Streetsville Planning District located on east side of Mississauga Road, north of Barbertown Road.

The site is part of Lot 1, Conc. 4 W.H.S.

The proposed development is surrounded by existing residential single family homes to the north and east. Mississauga Road is on the west side of the subject lands.

Refer to Figure 1 Key Plan.

It is intended that this functional servicing report will result in approval in principal, of the design proposal by the City of Mississauga, Regional Municipality of Peel and any other relevant authorities.



BARBER HOUSE



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KEY PLAN

PROJECT No.	215-M72
DATE -	MARCH 2016
SCALE -	N.T.S.
DRAWN BY -	M.B.

FIGURE
No. 1

2.0 SITE AREA INFORMATION

The subject site is part of Lot 1, Conc. 4 W.H.S. in the City of Mississauga and Regional Municipality of Peel.

The subject site is located on the east side of Mississauga Road, north of Barbertown Road. This site is part of the Streetsville Planning District.

The proposed development consists of approximately 0.516Ha (1.27 ac.)

The majority of the site is relatively flat in topography with gentle slope towards the southwest with grade differential of approximately 1.0m. The site is a heritage building used for a restaurant. The restaurant building is to remain.

3.0 TRANSPORTATION SYSTEM

The site is in a good location to be serviced by existing local roads. Mississauga Road will provide good access north and south to Eglinton Avenue and Britannia Road. The existing road system will provide good access to major highways, such as Highway No. 401.

The access to the site will be via proposed single driveway to Mississauga Road. Nine (9) townhouses fronting Barbertown Road will be provided with individual driveways to municipal road. Barbertown North Boulevard will be reconstructed with proper curb and gutter to City of Mississauga municipal standards.

4.0 STORM SEWER SYSTEM

The proposed development will be serviced by the existing 450mm diameter storm sewer on Barbertown Road.

Currently the site drains through a 450mm storm traversing the site. Small portion of rear yard lots to the north contribute to site drainage. The existing 450mm diameter storm is located within a municipal storm easement.

We are proposing to relocate the existing storm sewer and realign municipal easement to allow and fit configuration of the new development.

Due to limited depth of the storm, no connections will be provided to individual units. All basement weeping tiles will be sump pumped to surface and all sump pumps to be equipped with back flow preventors.

The existing 450mm diameter storm sewer along Barbertown Road has the capacity to accommodate the storm drainage runoff from the proposed development.

A 300mm storm sewer connection will be provided for the proposed redevelopment. Internal storm sewer system has been designed to pick up runoff from the subject site as shown on the attached concept site grading and servicing plan. Final design detail will be completed prior to issuance of building permit.

Roof downspouts will discharge onto surface via splash pad and directed to the rear of the site where ever possible. Overland flow route noted on plan. Refer to Dwg. No. 215-M72 (in envelope)

SUBDIVISION : BARBER HOUSE
 MAJOR DRAINAGE : _____
 AREA : Z-38
 CITY FILE : _____
 CONSULTANT : SKIRA & ASSOCIATES LTD.

CITY OF MISSISSAUGA

STORM SEWER DESIGN CHART

SHEET No. 1 of 1
 PROJECT No. : 215-M72
 DESIGNED BY : M.B.
 DATE : May - '16

$I_{(10YR)} = 1010 / (T_c + 4.6)^{0.78}$
 MANNING'S ROUGHNESS COEFF. $n = 0.013$

LOCATION	FROM MH	TO MH	AREA	RUNOFF COEFF.		ACCUM. AREA	ACCUM. AaxCa	Tc	INTENSITY	EXPECTED FLOW	TYPE OF PIPE	LENGTH	SLOPE	PIPE SIZE NOMINAL	CAPACITY	VELOCITY	TIME OF FLOW	VELOCITY	VELOCITY ACTUAL	INVERT ELEV		
	MH#	MH#	Aa ha	Ca	AaxCa	A=ΣAa ha	C=ΣAaxCa	min	I mm/hr	Q m³/s		L m	S %	D mm	Q m³/s	V m/s	min	n = 0.009 m/s		UPPER	LOWER	
EXTERNAL AREA	HW	1	0.27	0.45	0.12	0.27	0.12	15.00	99.17	0.033	PVC	2.5	1.16	450	0.320	1.95	0.01	2.82			MH	MH
PROP. STM EASEMENT	1	2	0.05	0.65	0.03	0.32	0.15	15.01	99.13	0.041	PVC	24.0	0.50	300	0.071	0.98	0.28	1.41				
PROP. STM EASEMENT	2	3	0.04	0.65	0.03	0.36	0.18	15.29	98.04	0.049	PVC	26.0	0.50	300	0.071	0.98	0.31	1.41				
PROP. RESIDENTIAL	4	3	0.21	0.65	0.14	0.21	0.14	15.00	99.17	0.039	PVC	54.0	0.50	300	0.071	0.98	0.64	1.41				
PROP. STM EASEMENT	3	EX. 1	0.05	0.65	0.03	0.62	0.35	15.93	95.64	0.093	PVC	18.0	0.50	375	0.129	1.13	0.16	1.64				
EXTERNAL AREA	TO	5	0.07	0.45	0.03	0.07	0.03															
EX. STORM EASEMENT	5	EX. 1	0.12	0.65	0.08	0.19	0.11	15.00	99.17	0.030	PVC	9.5	1.16	450	0.320	1.95	0.06	2.82				
EX. STORM EASEMENT	EX.1	HW	0.03	0.65	0.02	0.84	0.48	18.09	95.07	0.127	PVC	38.0	0.50	450	0.210	1.28	0.32	1.85				
EX. RESIDENTIAL AREA	HW	EX.2	0.26	0.45	0.12	1.10	0.80	16.41	93.94	0.157	PVC	17.5	4.30	450	0.616	3.76	0.05	5.42				
BARBERTOWN ROAD	EX.2	EX.1	0.23	0.45	0.10	1.33	0.10															
BARBERTOWN ROAD	EX.2	EX.1	0.08	0.65	0.04	1.39	0.74	16.73	92.83	0.191	PVC	55.0	0.56	450	0.222	1.36	0.47	1.96				
BARBERTOWN ROAD	EX.1	EX.10	0.34	0.65	0.22	1.73	0.96	17.20	91.27	0.243	PVC	41.5	4.72	450	0.645	3.93	0.12	5.68				

5.0 SANITARY SEWER SYSTEM

The proposed development will be serviced to the existing 250mm sanitary sewer on Mississauga Road.

Municipal 250mm diameter sanitary sewer will be required along the Barbertown Road ease of Mississauga Road to provide outlet for the nine (9) townhouses fronting right-of-way. Connections will be provided for each unit to the property line. The proposed sanitary sewer will have sufficient depth for gravity flow from proposed dwellings.

The internal seventeen (17) units will be serviced a new proposed 200mm diameter sanitary sewer (connection) construction along private condo road. Individual connections will be provided to each unit from the main sanitary sewer line. Barber House will be converted to 4 residential units, part of condo complex and provided separate connections to each unit. Refer to Dwg. No. 215-M72 Concept Servicing.

The sewage flows from the proposed development were established as follows:

Residential Semi Detached Development:

$$- \quad 30 \text{ Units} \times 3.5 \text{ P.P.U.} = 105.0 \text{ population}$$

$$\text{Peak Factor} = 1 + \frac{14}{4 + P^{0.5}}$$

Where P = population in thousands

$$= 1 + \frac{14}{4 + 0.105^{0.5}}$$

$$= 1 + 3.23 = 4.23 \quad (\text{Max.} = 4.0)$$

Residential Population – 105

Expected peak flow = $302.8 \times 105 \times 4.0$ (peak factor) = 127176 L/days (1.47 L/s)

Expected Peak Flow = 1.47 L/s

Total Expected Maximum Flow = 0.367 l/s

6.0 WATER DISTRIBUTION SYSTEM

The proposed development will be serviced to the existing watermain on Mississauga Road and Barbertown Road. The existing 400mm and 150mm watermain will provide sufficient water supply to service the residential development. Fire protection will be of the existing hydrant on Mississauga Road and Barbertown Road.

Refer to Dwg. No. 215-M72

Individual townhouse residences will be supplied with a 25mm connection of the existing 150mm watermain on Barbertown Road. Propsoed 150mm watermain will be constructed along private condo road. Any existing water service will be removed and capped at the main.

Water Demand Calculations

A. Proposed Unit – 30 townhouses

$$\begin{aligned}\text{Total Expected Peak Flow Rate} &= (280 \times 30 \times 3.0) \\ &= 25200.0 \text{ L/day} = 0.29 \text{ L/s}\end{aligned}$$

Refer to hydrant flow test report attached herein.

Water Demand Calculation

Fire Hydrant Flow Required based on Fire underwriters survey 1999 using formula:

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

C = Construction co-efficient combustible 1.5

A = Total Floor Area of Building – largest building considered excluding basement

$$F = 220 \times 1.5 \times \sqrt{1204} = 11450 \text{ L/min} = 109.84 \text{ L/s}$$

1. Combustible material - no change

$$\text{Total Peak Flow} = 109.84 \text{ l/s} + 0.29 \text{ l/s} = 110.13 \text{ l/s}$$

$$\begin{aligned}\text{Total Expected Maximum Daily Flow} &= 280 \times 30 \times 2.0 \\ &= 16800 \text{ L/day} = 0.194 \text{ l/s}\end{aligned}$$

$$\text{Site Average Flow} = 280 \times 30 = 8400 \text{ L/day} = 0.097 \text{ L/s}$$

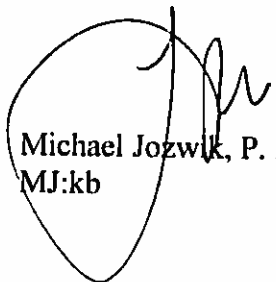
6.0 SUMMARY

Our findings reveal that the proposed townhouse residential development can be fully serviced to the existing available and proposed services on Mississauga Road and Barbertown Road.

We respectively submit this report with the intention of obtaining approval in principal of the recommendations herein, which will be implemented in detail design during engineering submission, site plan process and building permits.

Yours truly,

SKIRA & ASSOCIATES LTD.


Michael Jozwik, P. Eng.
MJ:kb



NOTE: Limitation of Report

This report was prepared by **Skira & Associates Ltd.** for **City Park Homes** for review and approvals by government agencies only.

In light of the information available at the time of preparation of this report, any use by a **Third Party** of this report are solely the responsibility of such **Third Party** and **Skira & Associates Ltd.** accepts no responsibility for any damages, if any, suffered by the **Third Party**.