STORMWATER MANAGEMENT AND FUNCTIONAL SERVICING REPORT

PROPOSED TOWNHOUSE DEVELOPMENT

2463-2469 MIMOSA ROW
FOXMAR LTD.

CITY OF MISSISSAUGA
REGIONAL MUNICIPALITY OF PEEL

FILE NO. 220-M130

APRIL 05, 2023

SKIRA & ASSOCIATES LTD.
CONSULTING ENGINEERS

3464 Semenyk Court, Suite 100
Mississauga, Ontario L5C 4P8
(905) 276-5100
info@skiraconsult.ca

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF DRAWINGS

APPENDICES

1.0 INTRODUCTION

Skira & Associates Ltd. has been retained by Foxmar Development Ltd. to investigate and prepare a Functional Servicing Report (FSR) in support of an Official Plan Amendment and Zoning By-law Amendment for a proposed residential townhouse development at 2463-2469 Mimosa Row, in the City of Mississauga, Region of Peel.

The purpose of this report is to define the existing municipal services to the subject parcel of land and the proposed servicing details in support of the proposed residential townhouse development.

It is intended this FSR will result in 'approval in principal' of the design proposal by the City of Mississauga, Regional Municipality of Peel and any other relevant authorities. Detailed design will be provided during the Site Plan Application process.

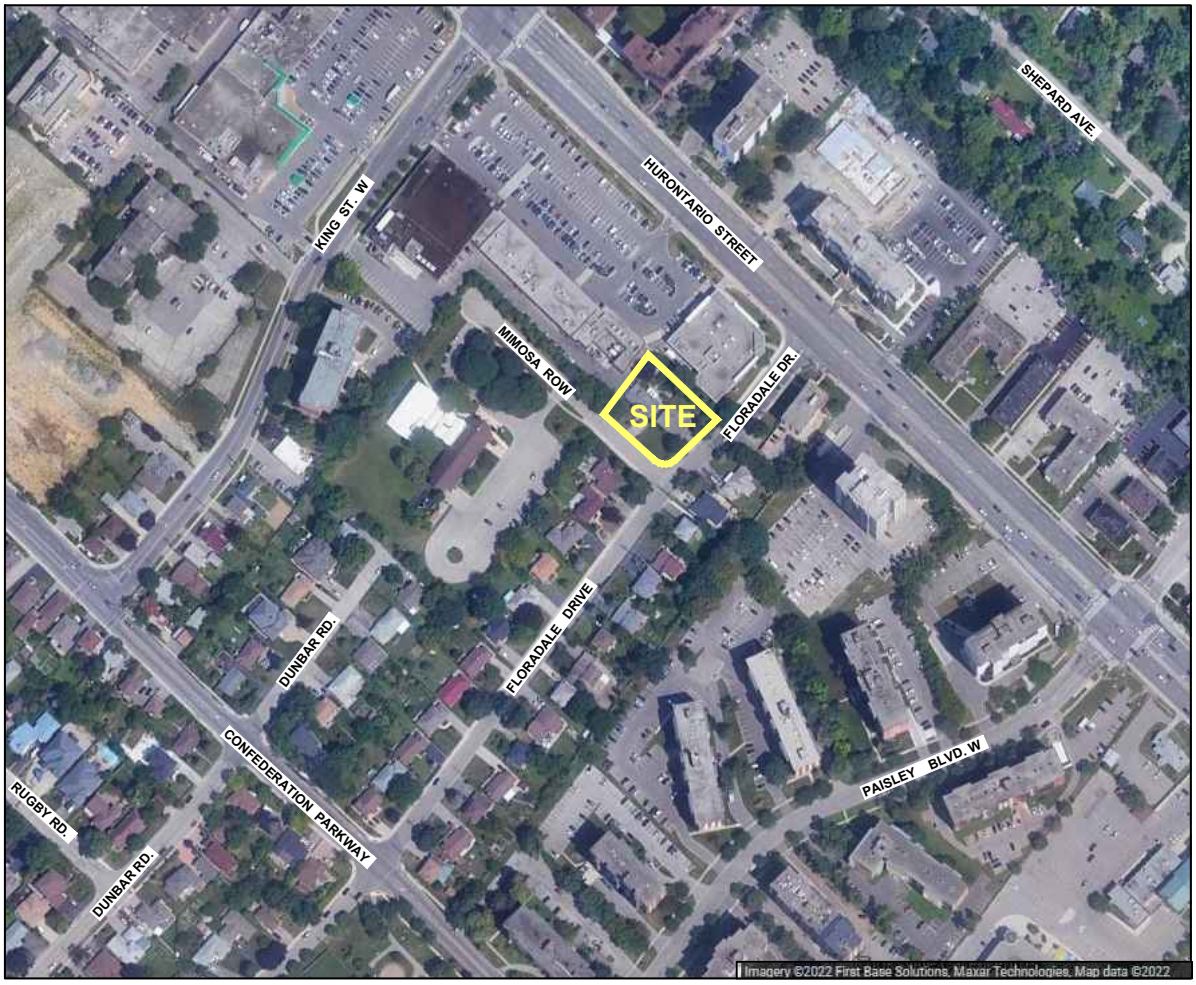
2.0 SITE AREA INFORMATION

The subject site is part of Lots 1 and 2, Registered Plan 500, City of Mississauga, Regional Municipality of Peel, and covers an area of approximately 0.14 Ha.

The subject site is bounded by Mimosa Row to the west, Floradale Drive to the south, and commercial properties to the north and east. Refer to ***Figure 1 Key Plan.***

Currently, the site is comprised of two existing single-family residential homes fronting Mimosa Row. The existing buildings will be demolished prior to the start of construction.

The proposed residential development will consist of six (6) 3-storey townhouse units with basement.



SKIRA & ASSOCIATES LTD.
CONSULTING ENGINEERS
3464 Semenyk Court, Suite 100, Mississauga, Ontario L5C 4P8
Tel. (905) 276-5100 Fax. (905) 270-1936 Email - info@skiraconsult.ca

KEY PLAN

PROJECT No. 220-M130	**FIGURE No. 1**
DATE - MARCH 2022	
SCALE - N.T.S. / DRAWN BY - D.M.	

3.0 SITE ACCESS

The site is in a good location to be serviced by existing major arterial roads, Hurontario Street, Confederation Parkway and Queensway West.

Currently, the existing house at 2469 has a driveway off Mimosa Row, while the existing house at 2463 has a driveway off Floradale Drive. The existing driveways and curb depressions will be removed. The boulevard will be reinstated with topsoil and sod to the satisfaction of the city, and curb depressions replaced with concrete curb and gutter as per OPSD 600.040.

Each unit of the proposed townhouse block will be provided with a 3.0m wide driveway off Mimosa Row. Refer to ***Dwg. 220-M130-2 Site Grading Plan***.

4.0 WATER DISTRIBUTION SYSTEM

According to available records, there is an existing 150mm diameter watermain on Mimosa Row and an existing 200mm diameter watermain on Floradale Drive.

Currently, the existing house at 2469 has an existing 20mm water service to the existing 150mm diameter watermain on Mimosa Row. The existing house at 2463 has an existing 20mm water service to the existing 200mm diameter watermain on Floradale Drive. The water services will be disconnected as per Region of Peel standards.

The proposed townhouse units will be provided with new individual 25mm water service connections to the existing 150mm watermain on Mimosa Row.

The existing watermain will provide sufficient water supply to service the residential homes. The existing hydrant on Mimosa Row will provide fire coverage for the townhouse block. Refer to ***Dwg. 220-M130-1 Site Servicing Plan***.

Water Demand Calculations

The estimated domestic water demand from the development was calculated as follows:

Proposed population – 6 x 3.5 (townhouse) = 21

Site Average Flow = 280 Litres/capita/day
= 280 x 21
= 5,880 L/day = 0.068 L/s

Total Expected Peak Flow Rate = Site Average Flow x Peak Hour Factor
= 5,880 x 3.0
= 17,640 L/day = 0.204 L/s

Total Expected Maximum Daily Flow = Site Average Flow x Maximum Day Factor
= 5,880 x 2.0
= 11,760 L/day = 0.136 L/s

Based on Fire Underwriter Survey 1999, the fire flow is calculated on the total floor area:

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

Where, C = coefficient of ordinary construction, 1.0
A = total floor area (including all storeys, but excluding basements), 1,796m^2
F = fire flow in L/min

F = 220 x 1.0 x √1,796
= 9,323 L/min ≈ 9,000 L/min
= **155.4 L/s**

A decrease can be applied for occupancy having a low contents fire hazard:

F = 9,000 L/min – 25% = 6,750 L/min

The neighbouring properties have a 6.0m – 30.0m separation. A charge of 60% is applied for the exposures:

F = 6,750 L/min x 60% = 4,050 L/min

Therefore:

F = 6,750 + 4,050
= 10,800 L/min ≈ 11,000 L/min = **183.33 L/s**

Maximum Peak Flow = 0.204 (Res.) + 183.33 (Fire)
= **183.5 L/s**

Maximum Daily Flow = **0.136 L/s**

5.0 SANITARY DRAINAGE SYSTEM

According to available records, there is an existing 250mm diameter sanitary sewer on Mimosa Row connecting to an existing 300mm diameter sanitary sewer on Floradale Drive.

Currently, the existing house at 2469 has an existing 125mm sanitary connection to the existing 250mm diameter sanitary sewer on Mimosa Row. The existing house at 2463 has an existing 125mm sanitary connection to the existing 300mm diameter sanitary sewer on Floradale Drive. The sanitary connections will be disconnected as per Region of Peel standards.

The proposed townhouse units will be provided with new 125mm sanitary connections to the existing 250mm diameter sanitary sewer on Mimosa Row.

The proposed tentative basement floor elevation is approximately 105.80m. The proposed sanitary connection invert elevations are approximately 104.45m – 104.70m at the property line. Based on these inverts and the tentative finished floor elevation, each home will have sufficient depth to be serviced by gravity flow. Refer to ***Dwg. 220-M130-1 Site Servicing Plan.***

Refer to ***Figure 2 Sanitary Drainage Plan*** and ***Appendix A*** for the Sanitary Sewer Design Chart.

Sanitary Flow Calculations

The average flow from the development to the 250mm sanitary sewer on Mimosa Row:

Proposed population – 6 x 3.5 (townhouse) = 21 persons

Average Daily Flow = 302.8 L/cap/day x 21
= 6,358.8 L/day
= 0.074 L/s

Peak Factor $= 1 + \frac{14}{4 + P^{0.5}}$ Where, P = population in thousands

$= 1 + \frac{14}{4 + 0.021^{0.5}}$

= 1 + 3.38
= 4.38 Maximum Peak Factor is 4.0.

Peak Flow Rate = Average Daily Flow x Peak Factor
= 6,358.8 x 4.0
= 25,435.2 L/day
= **0.294 L/s**

LOT 16 CONCESSION 1 SOUTH OF DUNDAS STREET

PIN 13354-0030

EX. ASPHALT

EX. SAN MH 73A
TOP 107.62
S 104.29

EX. SAN OBV.104.48
EX. SAN INV. 104.23
PROP. SAN INV. 104.50

PROP. 10.5m – 125ø SAN P.V.C. SDR 28 @ 2.00% INV. @ S/L 104.71

UNUSED EXISTING SANITARY SERVICE CONNECTION TO BE DISCONNECTED AS PER REGION OF PEEL STANDARDS.

EX. 125mm SAN. CONN. **TO BE ABANDONED**

EX. SAN OBV.104.36
EX. SAN INV. 104.11
PROP. SAN INV. 104.35

PROP. 10.5m – 125ø SAN P.V.C. SDR 28 @ 2.00% INV. @ S/L 104.56

EX. 125mm SAN. CONN.

EX. SAN OBV.104.25
EX. SAN INV. 104.00
PROP. SAN INV. 104.25

PROP. 10.5m – 125ø SAN P.V.C. SDR 28 @ 2.00% INV. @ S/L 104.46

0.11
5

PIN 13354-0079

(BY REGISTERED PLAN 500)

MIMOSA ROW

EX. 49.2m – 250mm SAN. VITRIFIED CLAY @ 0.98%

APPROXIMATE CENTRELINE OF PAVEMENT

EX. SAN MH 72A
TOP 107.06
N 103.81
W 103.61
E 103.56

EX. 61.7m – 300mmø SAN. VITRIFIED CLAY @ 0.28%

(BY REGISTERED PLAN 500)
PIN 13354-0066

FLORADALE DRIVE

EX. 125mm SAN. CONN. **TO BE ABANDONED**

UNUSED EXISTING SANITARY SERVICE CONNECTION TO BE DISCONNECTED AS PER REGION OF PEEL STANDARDS.

APPROXIMATE CENTRELINE OF PAVEMENT

EX. FRAME SHED **TO BE REMOVED**

EX. FRAME SHED **TO BE REMOVED**

EX. FRAME SHED **TO BE REMOVED**

EX. 1 STOREY DWELLING
BRICK & STUCCO
No. 2469
FFE= 108.20
TO BE REMOVED

EX. SOLARIUM **TO BE REMOVED**

UNIT 1

UNIT 2

UNIT 3

0.19
21

PIN 13354-0058

LOT 2

EX. ALUMINUM SHED **TO BE REMOVED**

UNIT 4

UNIT 5

3-STOREY TOWNHOMES WITH BASEMENT

F.FL = 108.55
F.BSMT= 105.80

EX. 1 STOREY BRICK DWELLING
No. 2463
FFE= 108.20
TO BE REMOVED

UNIT 6

EX. 1 STOREY VINYL CLAD ADDITION **TO BE REMOVED**

REGISTERED PLAN

LOT 1

PIN 13354-0059

BLOCK B

PIN 13354-0149

SUBJECT TO AN EASEMENT AS IN INST. No. LT204164
PART 1 PLAN 43R-33162

EX. 1 STOREY BRICK BUILDING No. 2470

LEGEND

- EXISTING SANITARY SEWER
- PROPOSED SANITARY CONNECTION
- EXISTING SANITARY MANHOLE
- PROPOSED DRAINAGE AREA BOUNDARY
- EXISTING DRAINAGE AREA BOUNDARY
- 3.19 / 12 — AREA (HECTARES) / POPULATION
- LIMIT OF PROPERTY

FOXMAR LTD.

SKIRA & ASSOCIATES LTD.
CONSULTING ENGINEERS
3464 Semenyk Court, Suite 100, Mississauga, Ontario L5C 4P8
Tel. (905) 276-5100 Fax. (905) 270-1936 Email - info@skiraconsult.ca

SANITARY DRAINAGE

PROJECT No. 220-M130

DATE - MARCH 2022

SCALE - 1 : 250

DRAWN BY - D.M.

FIGURE No. 2

6.0 STORM DRAINAGE SYSTEM

According to available records, there is an existing 675mm diameter storm sewer on Mimosa Row connecting to an existing 900mm diameter storm sewer on Floradale Drive.

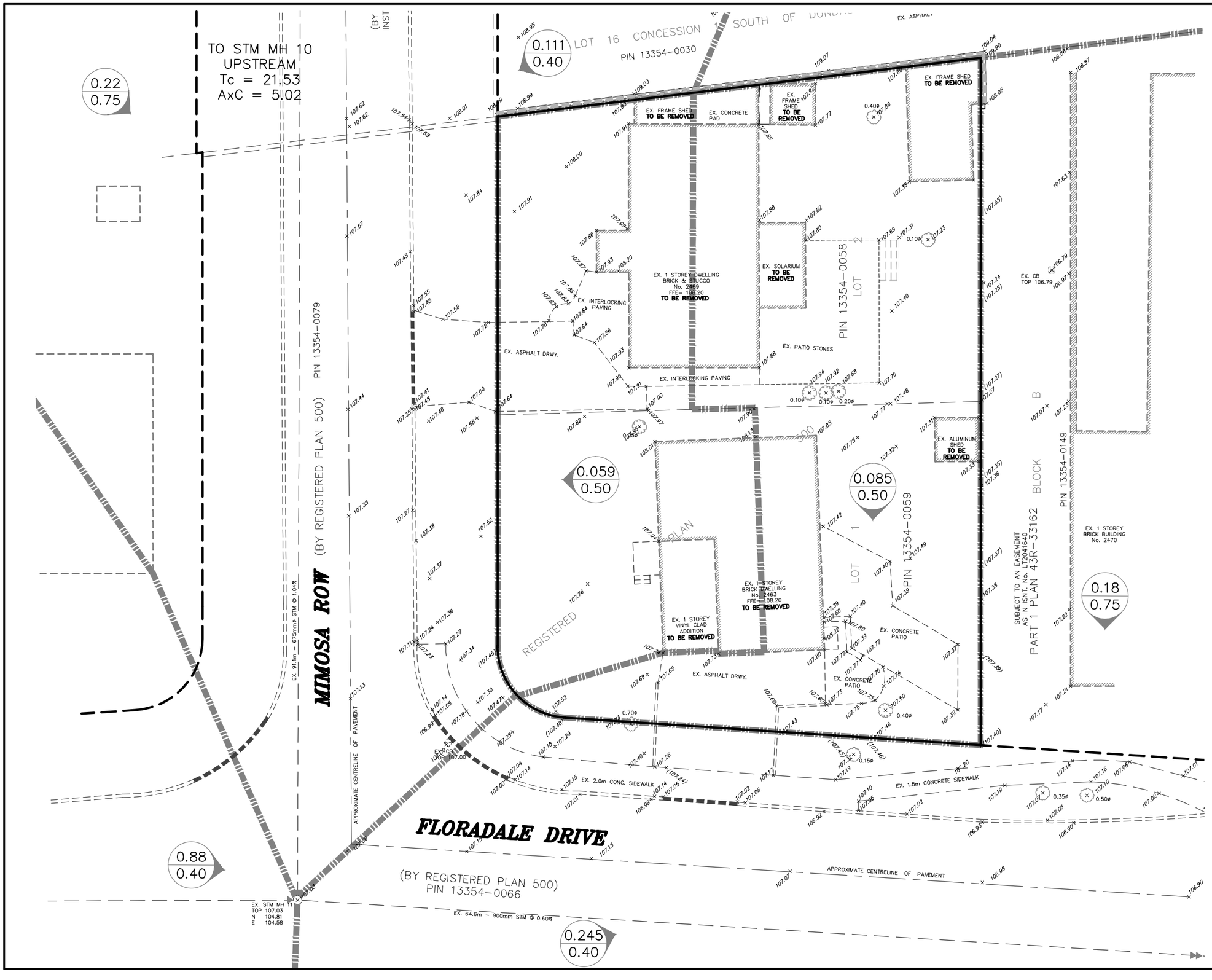
Currently, an area of 0.059Ha from the site drains towards Mimosa Row and an area of 0.085Ha drains towards Floradale Drive. Refer to ***Figure 3 Existing Storm Drainage Plan.***

For the proposed development, roof downspouts will discharge onto surface via splash pad and directed towards the proposed side and back yard swales.

A rear yard catchbasin and a 250mm diameter storm sewer will be provided to capture drainage and will be connected to the existing 900mm diameter storm sewer on Floradale Drive. A 3.0m municipal storm sewer easement will be required for access and maintenance of the catchbasin and storm sewer.

Each unit will be provided with a sump pump to pump basement weeping tiles to surface. Basements will be constructed a minimum 1.0m above the groundwater level.

Refer to ***Figure 4 Proposed Storm Drainage Plan*** and ***Appendix B*** for the existing storm sewer drainage record and Storm Sewer Design Chart.



LEGEND

- EXISTING STORM SEWER
- EXISING STORM MANHOLE
- EXISTING DRAINAGE AREA BOUNDARY
- 0.36 / 0.70 — AREA (HECTARES) / RUN-OFF COEFFICIENT
- LIMIT OF PROPERTY

FOXMAR LTD.

SKIRA & ASSOCIATES LTD.
CONSULTING ENGINEERS
3464 Semenyk Court, Suite 100, Mississauga, Ontario L5C 4P8
Tel. (905) 276-5100 Fax. (905) 270-1936 Email - info@skiraconsult.ca

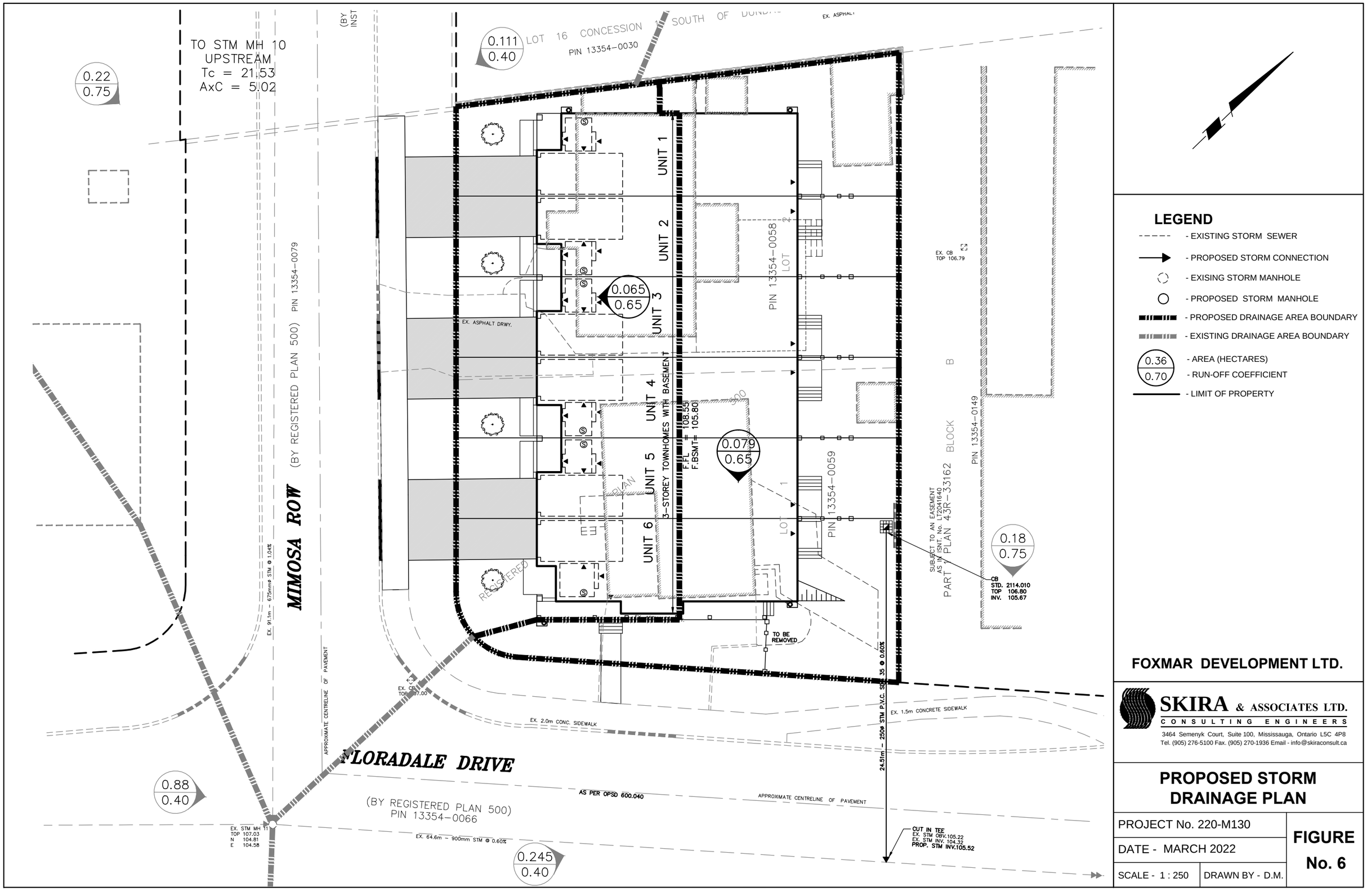
EXISTING STORM DRAINAGE PLAN

PROJECT No. 220-M130

DATE - MARCH 2022

SCALE - 1 : 250 | DRAWN BY - D.M.

FIGURE No. 3



LEGEND

- EXISTING STORM SEWER
- PROPOSED STORM CONNECTION
- EXISING STORM MANHOLE
- PROPOSED STORM MANHOLE
- PROPOSED DRAINAGE AREA BOUNDARY
- EXISTING DRAINAGE AREA BOUNDARY
- 0.36 / 0.70 — AREA (HECTARES) / RUN-OFF COEFFICIENT
- LIMIT OF PROPERTY

FOXMAR DEVELOPMENT LTD.

SKIRA & ASSOCIATES LTD.
CONSULTING ENGINEERS
3464 Semenyk Court, Suite 100, Mississauga, Ontario L5C 4P8
Tel. (905) 276-5100 Fax. (905) 270-1936 Email - info@skiraconsult.ca

PROPOSED STORM DRAINAGE PLAN

PROJECT No. 220-M130	FIGURE No. 6
DATE - MARCH 2022	
SCALE - 1 : 250	DRAWN BY - D.M.

7.0 SUMARY

Our findings reveal the proposed residential townhouse development of six (6) 3-storey townhouse units with basement can be fully serviced to the existing available services on Mimosa Row and Floradale Drive. The findings of this report are global and are related to the servicing functionality of this application. These findings by no means are final and are not to replace the detailed review of this application.

The conclusion is as follows:

- Each unit will be provided with individual driveways to Mimosa Row.
- Each unit will be serviced by individual proposed **25mm diameter** water service connections to the existing 150mm diameter watermain on Mimosa Row.
- Each unit will be serviced by individual proposed **125mm diameter** sanitary connections to the existing 250mm diameter sanitary sewer on Mimosa Row.
- A **250mm diameter** storm sewer will be provided to drain the proposed side yard and backyard swales and connected to the existing 900mm diameter storm sewer on Floradale Drive. A 3.0m municipal storm sewer easement will be required for access and maintenance of the catchbasin and storm sewer.
- Roof downspouts will discharge onto surface via splash pad and directed towards the proposed side and back yard swales.
- Basement weeping tiles for each unit will be provided with sump pumps and pumped to surface.

We respectively submit this report with the intention of obtaining approval in principal of the recommendations herein, and trust the information provided meets with the requirements. The report's recommendations will be implemented in detail design during the site plan and building permit process.

Yours truly,

SKIRA & ASSOCIATES LTD.

Roman T. Kerkuszk, P. Eng.

NOTE: ***Limitation of Report***

*This report was prepared by **Skira & Associates Ltd.** for **Foxmar Ltd.** for review and approval by government agencies only.*

*In light of the information available at the time of preparation of this report, any use by a T**hird 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***

Appendix A
Sanitary Sewer Design Chart

SUBDIVISION : **2463-2469 Mimosa Row**

REGION FILE:

CONSULTANT : **SKIRA & ASSOCIATES LTD.**

REGION OF PEEL

SANITARY SEWER DESIGN CHART

SHEET No. 1 of 1

PROJECT No. : 220-M130

DESIGNED BY : D.M.

DATE : Mar - '22

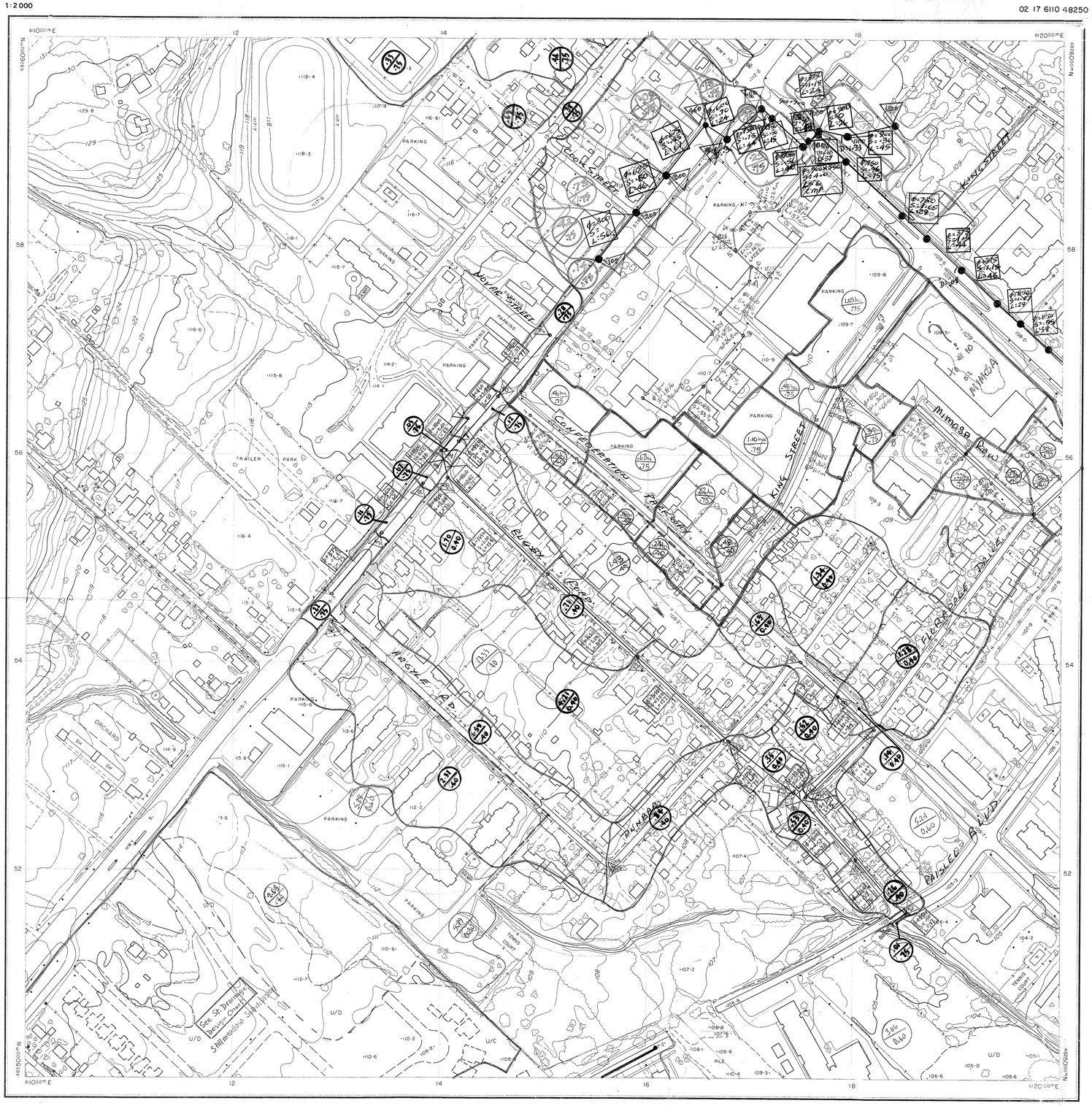
LOCATION	FROM MH	TO MH	AREA **Aa**	DENSITY	POP. **Pp**	ACCUM. AREA A=∑Aa	ACCUM. POP. P=∑Pp	SEWAGE FLOW	INFILT. FLOW	TOTAL FLOW Q_{ACT}	TYPE OF PIPE	LENGTH **L**	SLOPE **S**	PIPE SIZE NOMINAL **D**	CAPACITY n=0.013 Q_D	VELOCITY n=0.013 **V**	VELOCITY ACTUAL **Va**	INVERT ELEV. UPPER	INVERT ELEV. LOWER
	MH#	MH#	ha	ppu		ha		m^3/s	m^3/s	m^3/s		m	%	mm	m^3/s	m^3/s	m^3/s	MH	MH
MIMOSA ROW / SITE	73A	72A	0.19	3.5	21														
			0.11	4.15	5	0.30	26	0.013	0.0001	**0.013**	CONC	49.2	0.98	250	**0.061**	1.21			

Appendix B

Existing Storm Sewer Drainage Record &
Storm Sewer Design Chart

1:2 000

02 17 6110 48250



Scale 1:2 000

100 Metres 0 100 200 Metres

Contour Interval 0.5 metres

Sheet

02 17 6110 48250

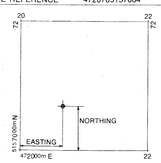
LEGEND

- Horizontal Control Point — △ 2 027 76 0001
- Vertical Control point, with Elevation — ⊙ 359·15
- Bench Mark — ↑ BM 350·07 6 027 76 0001
- Photo Centre — +10
- Railroad
  - Narrow Gauge
  - Abandoned
  - Street Car Line
  - Tunnel
  - Turntable
- Road, Hard Surface, with Median
  - Loose Surface
  - Driveway
  - Farm Lane, Cart Track, Wagon Road
  - Footpath, Trail
- Building, Garage, Shed, with Property Division
  - Under Construction, Foundation — U/C
  - Ruins — RUIN
- River, Stream, Canal
  - Approximate Alignment
  - Disappearing
  - Split
  - Flow Arrow
- Shoreline, Lake — L
  - Approximate Alignment
- Flooded Land — FL
- Marsh — M
- Swamp — SW
- Ditch, Drain (with culvert)
- Airport Runway
- Area Outline, eg. Auto Wrecker, Cemetery, Nursery, Pile — A
- Area Outline, eg. Under Development, Orchard, Park — A
- Beacon — ⊙ RADIO
- Billboard, Bleachers
- Bridge, Footbridge
- Chimney
- Cliff, Cut and Fill — CON CR
- Conveyor, Crane (Moveable)
- Crib — □ CB
- Culvert — C V
- Dam, Beaver Dam — D BD
- Dike — D
- Falls — F F
- Fence — X
- Fire Tower, Flag Pole — □ F/T ○ F/P
- Gate, Guard Rail
- Golf Bunker, Green, Tee — B
- Hedge — H H
- Locks — L/A REF
- Logged Area, Reforested Area
- Monument, Shrine, Fountain etc. — ○ MON □
- Parking Area, Hard and Loose Surface — PARKING
- Pipeline — P
- Pit
- Pole, Light Standard, Flood Light
- Power Transmission Line, with Poles, with Pylons
- Rapids — R
- Reservoir — RES
- Rock, Rock Outcrop
- Scrub — SC
- Sidewalk
- Sign, Overhead
- Steps
- Tower, Wind Pump — ⊠ W/P
- Tree
- Wall — W W
- Wooded Area
- Contour, Index — 50
  - Intermediate
  - Depression
- Spot Elevation, Water Level — 101·5 W/L 97·1

ONTARIO GRID REFERENCE

The grid lines form part of the Ontario Grid and are at 200 metre intervals. To give a reference defining the position of a point to within 1 metre proceed as follows:

EXAMPLE:	
EASTING	
Take west edge of 200 metre square in which the point lies and read the figures opposite this line on the north or south margin.	4720
Estimate millimetres from the same grid line to the point and multiply by 2.	70
	472070
NORTHING	
Take south edge of 200 metre square in which the point lies and read the figures opposite this line on the east or west margin.	51570
Estimate millimetres from the same grid line to the point and multiply by 2.	64
	5157064
1 METRE REFERENCE	4720705157064



GENERAL INFORMATION

North American Datum 1927.

Universal Transverse Mercator (6°) projection.

Zone 17. Central meridan of this sheet 81°W.

The approximate geographical position for the centre of this sheet is 43° 35' N

Full grid values in meters are given at the sheet corners.

Grid interval on this sheet 200 metres.

Full details of the grid are published separately and may be obtained from the Surveys and Mapping Branch, Ministry of Natural Resources, Province of Onta

Contour interval 0.5 metres.

Note: one grid square on this map represents 4 hectares on the ground.

Map base produced in 1977 from photography flown in April 1977

INDEX TO ADJOINING SHEETS

CITY OF MISSISSAUGA
1974
ENGINEERING, WORKS AND BUILDING DEPARTMENT

SUBDIVISION : **2463-2469 Mimosa Row**

MAJOR DRAINAGE AREA:

REGION FILE:

CONSULTANT : **SKIRA & ASSOCIATES LTD.**

CITY OF MISSISSAUGA

STORM SEWER DESIGN CHART

SHEET No. 1 of 1

PROJECT No. : 220-M130

DESIGNED BY : D.M.

DATE : Mar - '22

$I_{(10YR)} = 1010/(Tc+4.6)^{0.78}$

MANNING'S ROUGHNESS COEFF. n = 0.013

LOCATION	FROM MH	TO MH	AREA Aa	RUNOFF COEFF. Ca	AaxCa	ACCUM. AREA A=∑Aa	ACCUM. AaxCa C=∑AaxCa	Tc	INTENSITY I	EXPECTED FLOW Q=I·A·C / 360	TYPE OF PIPE	LENGTH L	SLOPE S	PIPE SIZE NOMINAL D	CAPACITY n=0.013 e	VELOCITY n=0.013 V	TIME OF FLOW T = L / V x 60	VELOCITY n = 0.009	% FULL	INVERT ELEV. UPPER	INVERT ELEV. LOWER
	MH#	MH#	ha			ha		min	mm/hr	m^3/s		m	%	mm	m^3/s	m/s	min	m/s		MH	MH
PRE DEVELOPMENT																					
EXTERNAL DRAINAGE	TO	10				7.16	5.02	21.53	79.24	**1.105**	CONC	65.8	0.51	750	**0.829**	1.82	0.60	2.63	133.2%		
MIMOSA ROW	10	11	0.22	0.75	0.17																
SITE			0.059	0.50	0.03																
			0.111	0.40	0.04	7.55	5.26	22.13	77.85	**1.137**	CONC	91.1	1.04	675	**0.895**	2.42	0.63	3.50	127.1%		
EXTERNAL DRAINAGE	TO	11	0.88	0.40	0.35	0.88	0.35														
FLORADALE RD.	11	12	0.245	0.40	0.10																
SITE			0.085	0.50	0.04																
			0.18	0.75	0.14	8.94	5.89	22.76	76.45	**1.251**	CONC	64.6	0.60	900	**1.461**	2.23	0.48	3.22	85.6%		
POST DEVELOPMENT																					
EXTERNAL DRAINAGE	TO	10				7.16	5.02	21.53	79.24	**1.105**	CONC	65.8	0.51	750	**0.829**	1.82	0.60	2.63	133.2%		
MIMOSA ROW	10	11	0.22	0.75	0.17																
SITE			0.065	0.65	0.04																
			0.111	0.40	0.04	7.56	5.27	22.13	77.85	**1.140**	CONC	91.1	1.04	675	**0.895**	2.42	0.63	3.50	127.3%		
EXTERNAL DRAINAGE	TO	11	0.88	0.40	0.35	0.88	0.35														
FLORADALE RD.	11	12	0.245	0.40	0.10																
SITE			0.079	0.65	0.05																
			0.18	0.75	0.14	8.94	5.91	22.76	76.45	**1.255**	CONC	64.6	0.60	900	**1.461**	2.23	0.48	3.22	85.9%		