

FUNCTIONAL SERVICING REPORT

3025 RIVARD AVENUE APARTMENT DEVELOPMENT

Windsor, Ontario

14 October 2025



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TABLE OF CONTENTS

1.0 INTRODUCTION 2

2.0 MUNICIPAL SERVICING 2

 2.1 Existing Conditions 2

 2.2 Sanitary Servicing 3

 2.3 Storm Servicing 3

 2.4 Watermains 4

3.0 SUMMARY 5

APPENDIX A 6

APPENDIX B 7

1.0 INTRODUCTION:

RC Spencer Associates Inc. was retained by Raymax Construction Ltd. (Azar) to complete a Functional Servicing Report in support of a two-storey apartment building including 8 dwelling units and an associated 9-space parking area. The proposed Concept Site Plan has been attached as Appendix A.

The subject site is approximately 0.15 hectares in size. This includes the existing 3025 Rivard Avenue property as well as an addition parcel from 3303 Rivard Avenue (see Figure 1 below).

This report addresses the proposed servicing of sanitary, storm and water in relation to the proposed apartment development.



Figure 1 – Site Location

2.0 MUNICIPAL SERVICING:

2.1 Existing Conditions

The existing 3025 Rivard Avenue property is a vacant parcel of land maintained as landscaped open space. The small parcel addition from 3303 Rivard Avenue is also vacant land maintained as landscaped open space.

2.2 Sanitary Servicing

The proposed sanitary flow for this development will be directed to the existing 300mm diameter asbestos cement sanitary sewer along Rivard Avenue (see [Figure 2](#) below). The connection to the existing sewer shall be completed using a cut-in tee. The proposed sanitary flow for this development will be calculated using City of Windsor guidelines.

2.3 Storm Servicing

The proposed storm flow for this development will outlet into the existing 750mm diameter concrete storm sewer fronting the property along Rivard Avenue (see [Figure 2](#) below).

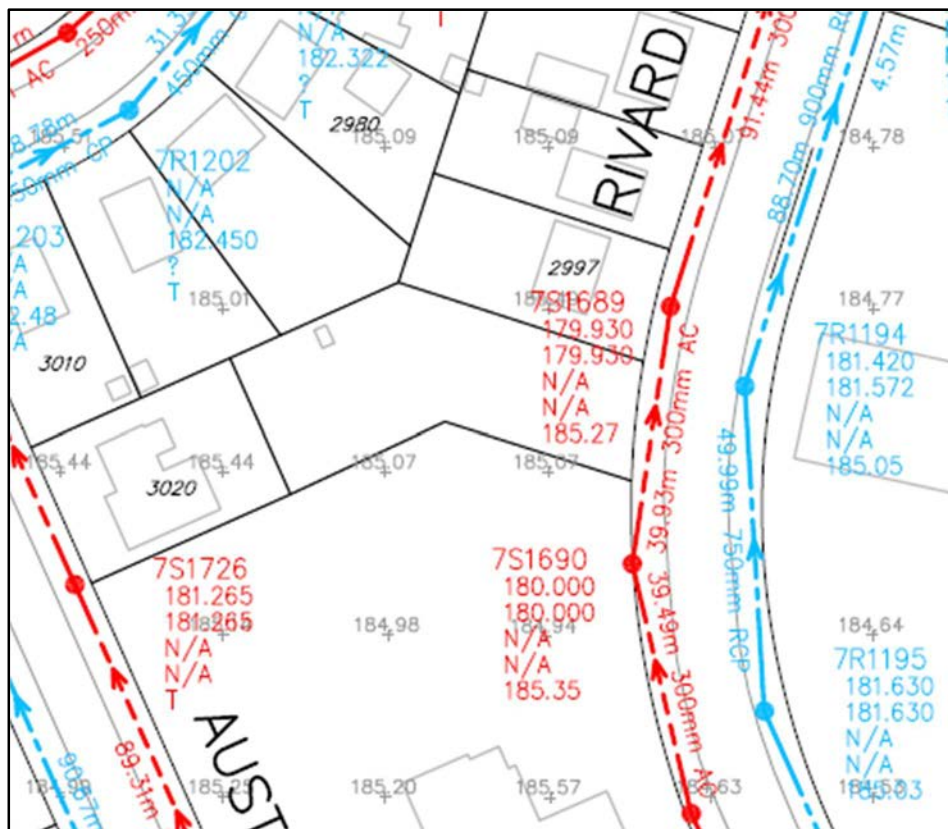


Figure 2 – Excerpt from City of Windsor Sewer Atlas Map O8

The allowable release rate for this site has been calculated using pre-developed conditions for the 5-year storm event using the *Windsor/Essex Region Stormwater Management Standards Manual* (Dec 2018). The allowable release rate for this property shall be 0.006 m³/s (6 L/s) as outlined in the storm calculations included in [Appendix B](#).

This restriction will be achieved by installing an outlet control device before connecting to the storm sewer on Rivard Avenue. Site storage for the 100-year storm event will be provided on the surface of the parking lot and in grassed swales as required.

2.4 Watermains

A new water service will be tapped off the existing 300mm diameter cast iron watermain running along Rivard Avenue to service the proposed development (see [Figure 3](#) below). An existing fire hydrant fronting the neighbouring property at 2997 Rivard Avenue is capable of providing adequate fire protection for the proposed apartment development.

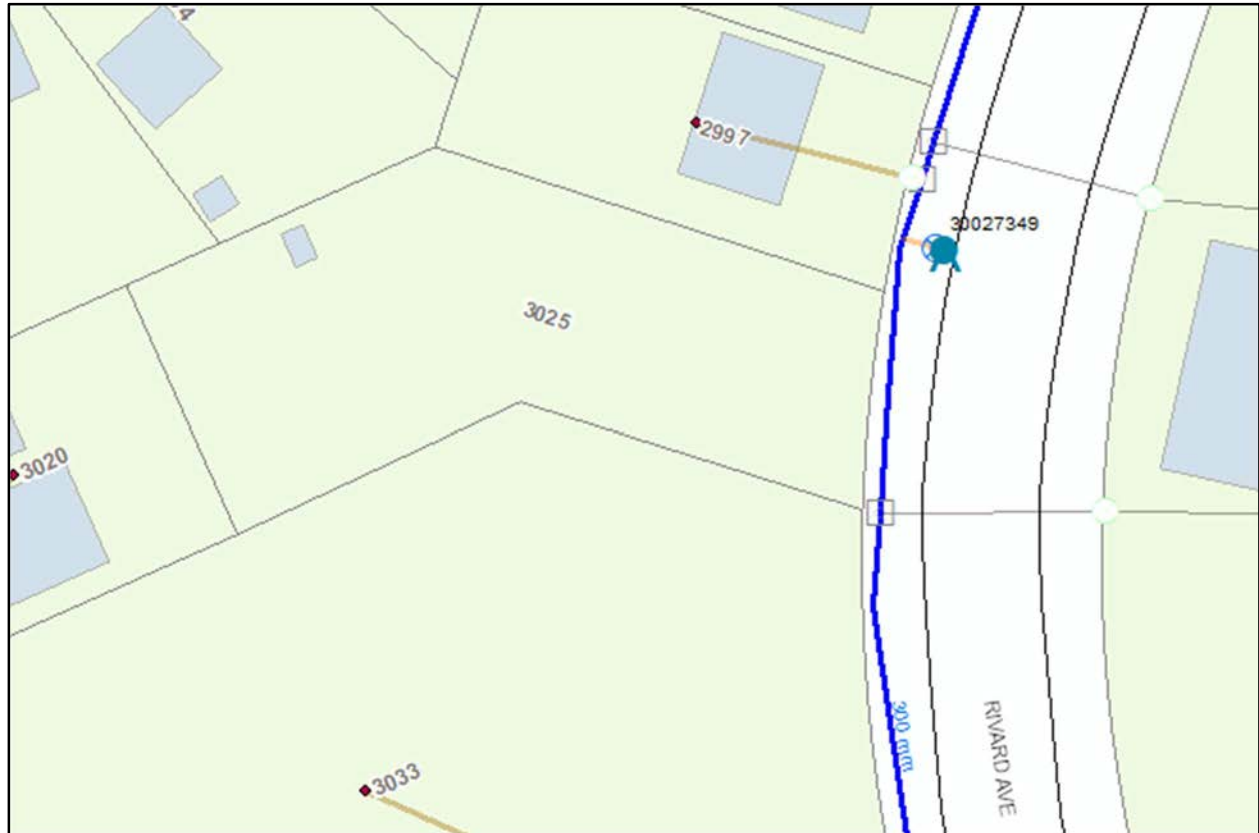


Figure 3 – Watermain As-Built Mapping from ENWIN Utilities Ltd.

3.0 SUMMARY

The main findings of this functional servicing report for the proposed residential apartment development of 3025 Rivard Avenue are as follows:

1. Sanitary flow for this development will be directed to the existing 300mm diameter asbestos cement sanitary sewer along Rivard Avenue.
2. Storm flow for this development will outlet into the existing 750mm diameter concrete storm sewer fronting the property along Rivard Avenue.
3. The 100-year storm event will be restricted to 5-year pre-development flows by installing an outlet control device. Site storage for the major storm event will be provided on the surface of the parking lot and in grassed swales as required.
4. Water supply for the proposed development will be provided by tapping the existing 300mm diameter cast iron watermain running along Rivard Avenue. Additional site fire protection is not required.

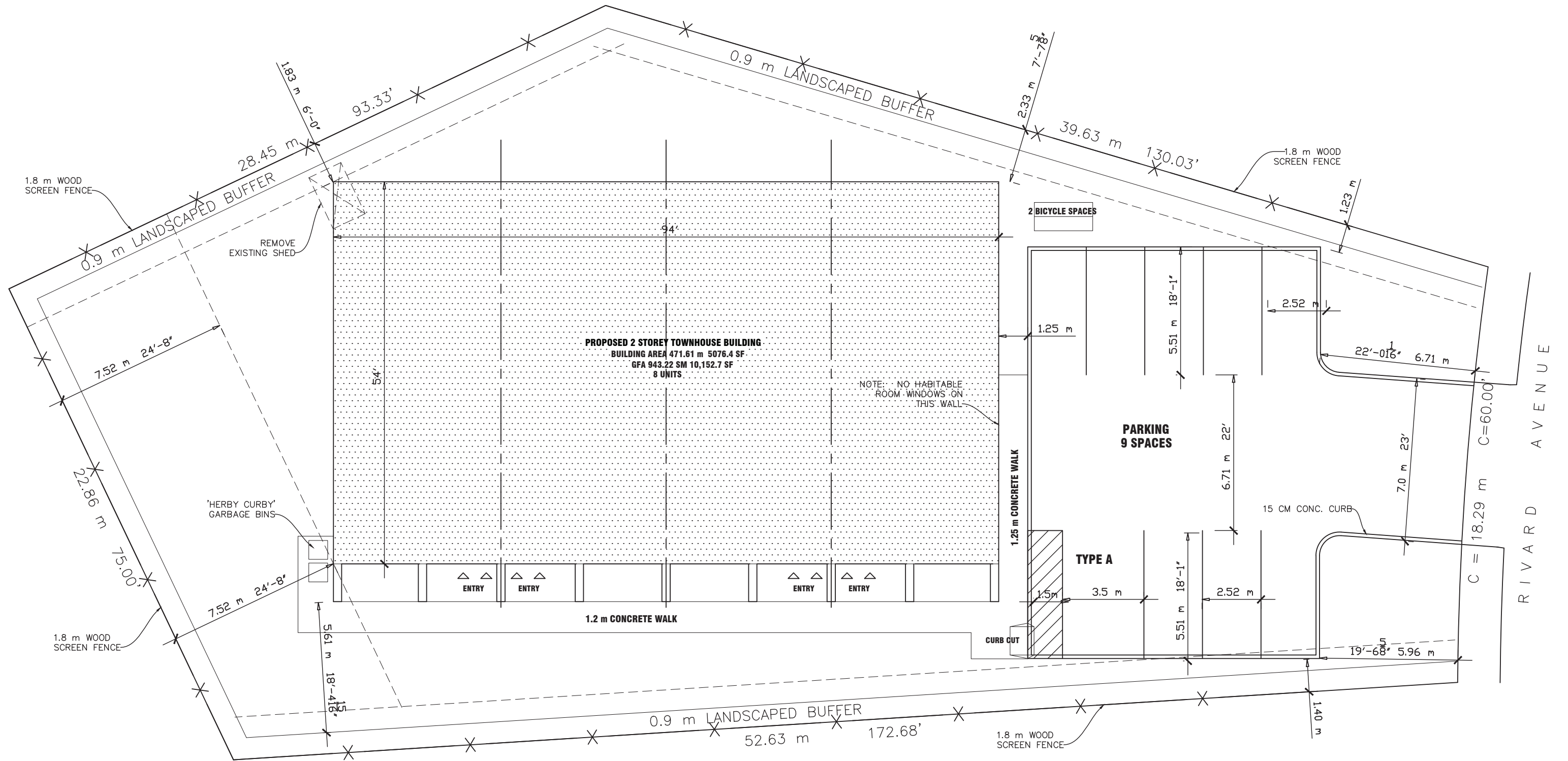
All of which is respectfully submitted,

RC Spencer Associates Inc.



APPENDIX A

CONCEPT SITE PLAN



NOTE: ALL LIGHTING SHALL BE
FULL CUT-OFF TYPE

ZONING DATA
MULTI-RESIDENTIAL
ZONING ---
EXISTING USES ON SITE VACANT

ITEM	REQUIRED/ALLOWED	PROPOSED/PROVIDED
LOT FRONTAGE	--	18.29 m
BUILDING AREA		471.61 sm
LOT AREA	--	1493.34 sm
REAR YARD		7.52m (24'-8 1/2")
BUILDING HEIGHT		7.53 m (2 STOREYS)
BUILDING COVERAGE	--	518.15 sm
LOT COVERAGE	--	34.70 %
SIDE YARD		1.83 m
LOADING SPACES	NOT REQUIRED	N/A
PARKING SPACES	10 SPACES	9 SPACES
ACCESSIBLE SPACES	1 SPACE	1 SPACE
BICYCLE SPACES	0	2

CONCEPT SITE PLAN - E

RIVARD 8 UNIT TOWNHOUSE DEVELOPMENT
3025 RIVARD AVENUE

JULY 7, 2025

APPENDIX B

ALLOWABLE RELEASE RATE CALCULATION

STORM WATER DETENTION CALCULATIONS

(1:5 YEAR STORM)

$$I = \frac{125.9}{(T+8.8)^{0.838}}$$

T = Time in min.

I = Intensity (cm/hr)

$$Q = Aci/36$$

$$Q = \text{m}^3/\text{sec}$$

$$i = \text{cm/hr}$$

$$\text{Total Area} = 0.151 \text{ Ha}$$

Existing Conditions:

$$\text{Grassed Area} = 0.151 \text{ Ha} \implies c = 0.20$$

$$\text{Impervious Area} = 0.000 \text{ Ha} \implies c = 0.95$$

$$AC_{\text{TOTAL}} = 0.151 \times 0.20 = 0.030$$

$$t_c = 23.77 \text{ min.} \implies i = 6.80 \text{ cm/hr}$$

$$Q_R = Q_{\text{EX}} = 0.030 \times 6.80 / 36 = 0.006 \text{ m}^3/\text{sec}$$

PRE-DEVELOPED TIME OF CONCENTRATION

$$\text{Time of Concentration} = T_{\text{SHEET}} + T_{\text{SHALLOW}} + T_{\text{CONCENTRATED}}$$

$$T_{\text{SHEET}} = \frac{6.92 L^{0.6} n^{0.6}}{I^{0.4} S^{0.3}}$$

L	=	65	=	overland flow length (m)
n	=	0.15	=	Manning's roughness coefficient
I	=	68.0	=	rainfall rate (mm/hr)
S	=	0.0056	=	average slope (m/m)

$$T_{\text{SHEET}} = 23.77 \text{ min}$$

$$T_{\text{SHALLOW}} = 0.00 \text{ min}$$

$$T_{\text{CONCENTRATED}} = 0.00 \text{ min}$$

$$\text{Time of Concentration} = 23.77 \text{ min}$$