

October 26, 2023
32565-23

Mezcon Construction Ltd.
5524 Watson Road North
Guelph, ON
N1H 6J1

Attention: Zachary Fischer

**Re: Functional Servicing and Stormwater Management Brief
Proposed Severance and Rezoning
#35 and #41 Janefield Avenue
Lot 4 and Part of Lot 5, Registered Plan 435
City of Guelph**

1.0 Introduction

Van Harten is pleased to submit this Functional Servicing and Stormwater Management Brief in support of the proposed severance of the above-referenced site located on the west side of Janefield Avenue south of Mason Court.

Figure 1 illustrates the site in the context of the neighbourhood. The property is bounded by additional lands owned by the applicant to the north, semi-detached units fronting on Mason Court to the west, Janefield Avenue to the east and existing single-family residential to the south.

The project involves lot line adjustments and severances to create four (4) properties. The existing dwellings at #35 and #41 Janefield Avenue are proposed to be demolished and 4 new semi-detached dwellings each with a rear yard detached accessory dwelling are proposed. A portion of #35 Janefield Avenue is to be merged with the parcel to the north with the remainder forming part of this application. The purpose of this report is to discuss site servicing details and stormwater runoff characteristics of the property.

2.0 Existing Conditions

The subject properties form an approximate 0.186 hectare parcel containing two single family dwellings and ancillary structures with driveway access to Janefield Avenue. Each property is currently serviced with municipal water and sanitary services from Janefield Avenue.

Existing drainage is split. The fronts of the properties drain towards Janefield Avenue while the rear of the properties drain in a southerly direction towards #49 Janefield Avenue. The property accepts external drainage from the properties to the north and west. There are no records of any storm connections to the subject properties.

3.0 Proposed Conditions

All existing structures are proposed to be demolished. A portion of the property at #35 Janefield is proposed to be merged with property to the north with remainder being part of this application. This FSR has been scoped to the north limit of Parcel 1.

The proposed development concept is to use lot line adjustments and severances to create four (4) properties. Four semi-detached units, each with a detached rear yard accessory dwelling unit, are proposed with driveway access to Janefield Avenue.

All properties are to be provided with municipal storm, sanitary and water service connections.

4.0 Stormwater Management

4.1 Storm Servicing

Parcels 1 and 2 are proposed to have individual storm, sanitary and water service connections per City of Guelph Standard 3-55. Parcels 3 and 4 are proposed to have double storm and sanitary connections per City of Guelph Standard 3-56. Building sump pumps are to be connected to the storm sewer per City of Guelph Standard 3-75. Each lateral from the main will be 150mm in diameter connecting to the existing 300mm concrete storm sewer on Janefield Avenue. Material specifications for the storm laterals will be per City of Guelph Standard SS-100.

4.2 Existing Drainage Patterns

An existing condition drainage plan has been prepared (Figure 2). Drainage is predominantly via sheet flow to #49 Janefield Avenue or Janefield Avenue. Total topographic relief across the property is approximately 0.5m.

Two catchments were identified (Table 1). Roof delineation under existing conditions was based on field observations of roof design and downspout locations; impervious areas under existing conditions are based on the surveyed data collected in September 2023.

Only drainage from the subject property was considered; external drainage areas from adjacent private properties were excluded from the analysis.

The property accepts external drainage from #41 Janefield to the north and the rear yards of the properties fronting on Mason Court. While this drainage was not included in the calculations, this drainage path is to be maintained with the proposed construction.

Table 1: Existing Drainage Areas

Catchment	General Drainage Direction	Area (sq.m.)	Composite Runoff Coefficient	% Imperviousness
1	#49 Janefield	1,024.7	0.397	20.3%
2	Janefield Avenue ROW	839.2	0.595	47.8%

Notes:

1. Units – sq.m. = square metres
2. Impervious areas delineated based on September 2023 survey
3. Composite runoff coefficient calculated based on a value 0.25 for landscape areas and 0.9 for impervious areas.

4.3 Proposed Drainage Patterns

A proposed drainage plan has been prepared (Figure 3). All drainage is proposed to be directed to the Janefield Avenue right-of-way. An approximate 1,024.7 m² area is proposed to be redirected.

Table 2: Proposed Drainage Areas

Catchment	General Drainage Direction	Area (sq.m.)	Composite Runoff Coefficient	% Imperviousness
101	#49 Janefield	0	-	-
201	Janefield Avenue ROW	1,218.9	0.531	39.0%

Notes:

1. Units – sq.m. = square metres
2. Lot imperviousness based on Grading & Servicing Plan prepared by Van Harten Surveying Inc.
3. Composite runoff coefficient calculated based on a value 0.25 for landscape areas and 0.9 for impervious areas.

Building sump pumps are proposed to be connected to the municipal storm sewer per City of Guelph Standard 3-75. Downspouts are to discharge to a splashpad at grade.

4.4 Peak Flow Calculation

Peak flows under existing and proposed conditions were calculated using the Rational Method with City of Guelph IDF parameters and a 10-minute time of concentration (Attachment B).

Table 3: 5-year calculated peak flows (Rational Method)

	Calculated Peak Flow (LPS)	
	Existing	Proposed
To 49 Janefield	12.5	0
To Janefield Avenue ROW	15.3	33.7
Property	27.8	33.7

Notes:

1. Units – LPS = litres per second
2. Existing conditions based per Table 1. Proposed conditions per Table 2.

Table 4: 100-year calculated peak flows (Rational Method)

	Calculated Peak Flow (LPS)	
	Existing	Proposed
To 49 Janefield	22.4	0
To Janefield Avenue ROW	27.5	60.5
Property	49.9	60.5

Notes:

1. Units – LPS = litres per second
2. Existing conditions per Table 1. Proposed conditions per Table 2.

As illustrated in Tables 3 and 4, the overall peak flow rate from the site is expected to increase as a result of the proposed development, the flow rate to adjacent private property will be reduced through redirection of drainage areas to the street.

5.0 Sanitary Servicing

Existing sanitary laterals to #35 and #41 Janefield Avenue are to be decommissioned per City of Guelph requirements.

New sanitary laterals will be installed per the prepared Servicing Design and City of Guelph standards 3-55 (Parcels 1 and 2) and 3-56 (Parcel 3 and 4). Each lateral from the main will be 100 mm in diameter. Sanitary laterals are to connect to the existing 300mm sanitary sewer on Janefield Avenue. Material specifications for the sanitary laterals will be per City of Guelph Standard SS-100. Accessory dwelling units are to be serviced from the primary unit.

6.0 Water Servicing

Per City of Guelph records there is an existing 150mm diameter watermain on Janefield Avenue.

The existing water services to #35 and #41 Janefield are to be decommissioned per City of Guelph requirements including removal of the existing service and curbstop, and capping of the service at the main.

It is proposed to connect each property to the existing municipal system with a minimum 25mm water service constructed in general conformance with City of Guelph standards and specifications. Four services are proposed to be connected to the existing 150mm watermain on Janefield Avenue. Accessory dwelling units are to be serviced from the primary unit.

7.0 Erosion and Sediment Control

As illustrated on the Grading Plan, a temporary sediment control fence is to be installed surrounding the proposed development during construction to minimize the potential of sediment runoff from the site onto neighbouring properties and the road allowance. Temporary erosion and sediment controls may be removed once the construction of the proposed dwellings and

landscaping has been completed and once grass growth has been re-established over the disturbed areas.

It is noted that the erosion and sediment control plan is a dynamic plan, and alteration and addition to these measures may be necessary to respond to site conditions during construction. Additional sediment and erosion control devices and structures should be kept on-site at all times.

8.0 Closure

The completed stormwater and servicing brief is specific to the subject property based on our knowledge of the proposed development. Please contact our office if you have any questions or require further consultation.

Van Harten Surveying Inc.



Kristine Campbell, P.Eng.
Engineer



Encl. Attachment A – Figures
Encl. Attachment B – Stormwater Modelling

ATTACHMENT A
FIGURES



NOTES:

1. IMAGE SOURCE: CITY OF GUELPH MAPPING
2. IMAGE PLACEMENT IS APPROXIMATE AND NOT ORTHORECTIFIED



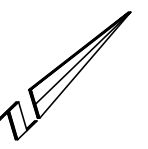
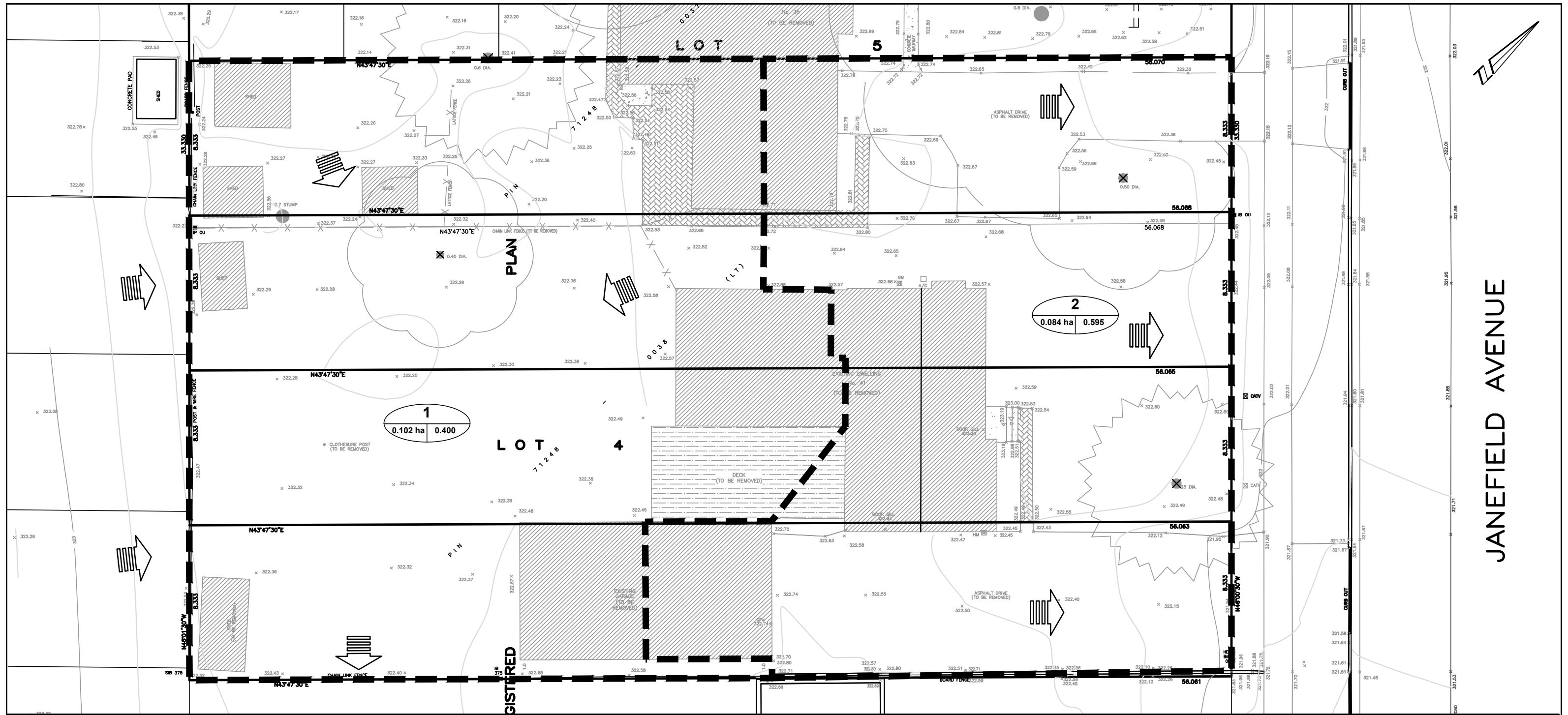
Van Harten
LAND SURVEYORS and ENGINEERS

Elmira
Ph: 519-669-5070

Guelph
Ph: 519-821-2763

Orangeville
Ph: 519-940-4110

FIGURE 1
SITE LOCATION

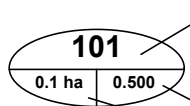


JANEFIELD AVENUE

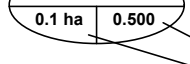
LEGEND



MAJOR STORM OVERLAND FLOW ROUTE



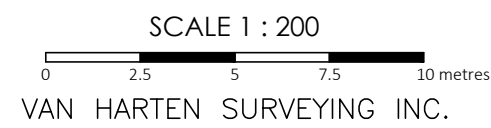
CATCHMENT ID



COMPOSITE RUNOFF COEFFICIENT CATCHMENT AREA (HECTARES)



DRAINAGE BOUNDARY



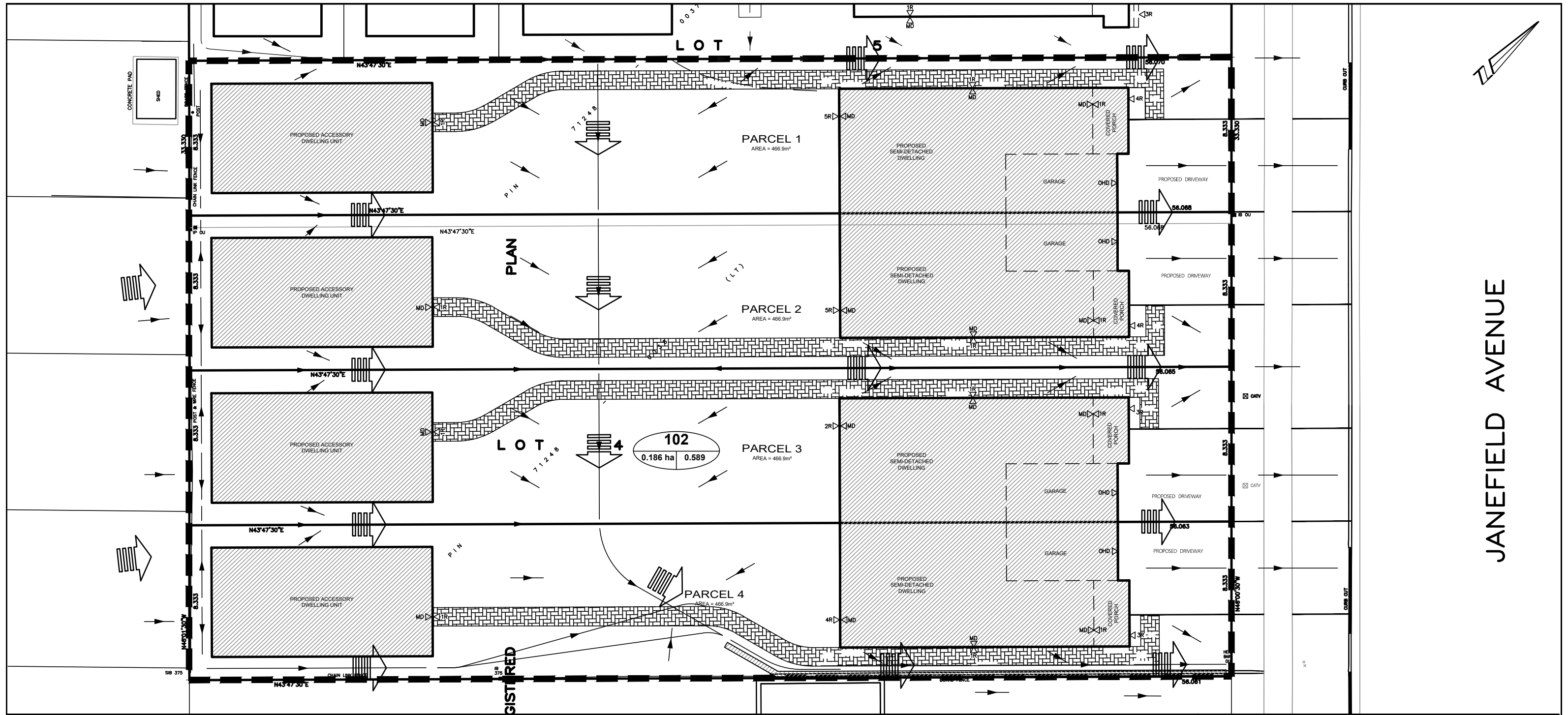
PROJECT No. 32565-23



Elmira Ph: 519-669-5070	Guelph Ph: 519-821-2763	Orangeville Ph: 519-940-4110
----------------------------	----------------------------	---------------------------------


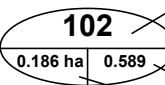
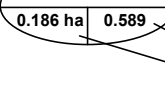


www.vanharten.com info@vanharten.com

**FIGURE 2
EXISTING CONDITION**



JANEFIELD AVENUE

LEGEND

-  MAJOR STORM OVERLAND FLOW ROUTE
-  CATCHMENT ID
-  COMPOSITE RUNOFF COEFFICIENT
-  CATCHMENT AREA (HECTARES)
-  DRAINAGE BOUNDARY

SCALE 1 : 200
 0 2.5 5 7.5 10 metres
 VAN HARTEN SURVEYING INC.

PROJECT No. 32565-23



Elmira Ph: 519-669-5070	Guelph Ph: 519-821-2763	Orangeville Ph: 519-940-4110
----------------------------	----------------------------	---------------------------------

www.vanharten.com info@vanharten.com

**FIGURE 3
 PROPOSED CONDITION**



ATTACHMENT B
STORMWATER CALCULATIONS

RATIONAL METHOD CALCULATIONS

October 25, 2023

32566-23

Mezcon Construction Ltd.

35 and 41 Janefield, City of Guelph

5 Year Storm Design					
35 and 41 Janefield Avenue					
Catchment	Flow Characteristics				
	Area (m ²)	Runoff Coefficient	Time of Conc. (min)	Intensity (mm/hr)	Flow (LPS)
1	1,024.7	0.397	10.00	109.68	12.5
2	839.2	0.595	10.00	109.68	15.3
201	1,863.9	0.589	10.00	109.68	33.7

100 Year Storm Design					
35 and 41 Janefield Avenue					
Catchment	Flow Characteristics				
	Area (m ²)	Runoff Coefficient	Time of Conc. (min)	Intensity (mm/hr)	Flow (LPS)
1	1,024.7	0.397	10.00	196.54	22.4
2	839.2	0.595	10.00	196.54	27.5
201	1,863.9	0.589	10.00	196.54	60.5

5 Year Storm IDF Values
A= 1593
B= 11
C= 0.8789
Intensity= $A/(t+B)^C$
Q= kCiA
k= 0.0028

100 Year Storm IDF Values
A= 4688
B= 17
C= 0.9624
Intensity= $A/(t+B)^C$
Q= kCiA
k= 0.0028

RATIONAL METHOD CALCULATIONS

October 25, 2023

32566-23

Mezcon Construction Ltd.

35 and 41 Janefield, City of Guelph

Existing Condition

Catchment		1	
	Area	C	AC
Building	202.128	0.9	181.9152
Asphalt		0.9	0
Concrete	29.119	0.9	26.2071
Deck		0.9	0
Landscape	793.426	0.25	198.3565
TOTAL	1024.673	0.396691	406.4788
% imperviousness			20.3%

Catchment		2	
	Area	C	AC
Building	137.636	0.9	123.8724
Asphalt	292.282	0.9	263.0538
Concrete	15.3831	0.9	13.84479
Deck		0.9	0
Landscape	393.8919	0.25	98.47298
TOTAL	839.193	0.59491	499.244
% imperviousness			47.8%

Proposed Condition

Catchment		102	
	Area	C	AC
Building	689.315	0.9	620.3835
Asphalt	117.859	0.9	106.0731
Concrete	165.96	0.9	149.364
Deck		0.9	0
Landscape	890.732	0.25	222.683
TOTAL	1863.866	0.589368	1098.504
% imperviousness			47.0%