



Stantec Consulting Ltd.
100-300 Hagey Boulevard, Waterloo ON N2L 0A4

May 30, 2017
File: 1614-13363

Attention: Mr. Ryan Mallory
City of Guelph
1 Carden Street
Guelph, ON N1H 3A1

Dear Mr. Mallory,

Reference: 71 Wyndham Street South
Safe Access
Guelph, ON

INTRODUCTION

The subject property is approximately 0.38 ha in size, and is bounded to the north by Wyndham Street South, to the east by an existing commercial building, to the south by the Speed River, and to the west by an existing apartment building.

The conceptual site plan for the proposed development is a 14-story, 140 unit residential building with one level of underground parking and 3 levels of above ground parking. All parking is contained within the building envelope and is not exposed.

This report outlines how the proposed development can be accessed during flood events.

CRITERIA

The site is within the City of Guelph's (the City) Special Policy Area (SPA) and as such is governed by the SPA requirements for safe access. Within the SPA, the City, the Grand River Conservation Authority (GRCA), and the Province of Ontario have agreed to accept a higher flood risk than normal. According to Amendment 48 to the City's Official Plan, the criteria for accessing a residential site within the SPA is:

- Access is available to the site at an elevation no lower than one metre below the safe access level

Safe access for a site is defined as locations where, during the regulatory flood:

- The flow velocity does not exceed 1.0 m/s;
- The product of depth and velocity does not exceed 0.4 m²/s; and
- The depth of flooding along access routes to residential units does not exceed 0.8 m.

The existing floodplain model was obtained from the GRCA for this area and water levels and velocities were extracted for three cross-sections that are near the site (23775, 23691, and 100484). Two of the cross-sections are on the Speed River and are upstream of the site, while the last cross-section is on the Eramosa River right before the confluence. The location of the cross sections can

Design with community in mind



May 30, 2017
Mr. Ryan Mallory
Page 2 of 3

**Reference: 71 Wyndham Street South
Safe Access
Guelph, ON**

be seen on Figure 1. The velocity, depth/velocity product, and depth of flooding was checked at all three cross sections. Cross section 23775 is upstream of the Wynham Street Bridge over the Speed River and although road profiles indicate that safe access may be possible, the model shows significant depths and velocities at this location due to limitations with in the model, making it impossible to show that safe access is achieved.

Looking at the regulatory flood elevation, road elevations, and velocity shows that despite being within the SPA the site meets the safe access criteria from the Official Plan. Table 1 shows the road elevations and safe access parameters for the roads on the access route that are in the floodplain.

Table 1: Safe Access Route Calculations

Street	Location	Road Elevation	Velocity	Water Depth	Velocity * Depth			
Wyndham St	At site	311.724	0.79 ¹	0.17	0.13			
	At Howitt	311.870		0.02	0.02			
Howitt St	0+000	311.415		0 ²	0.47	0.38		
	0+025	312.126	0 ²		0 ²	0 ²		
	0+050	313.273						
	0+075	313.622						
	0+100	313.342						
	0+125	313.355						
	0+150	313.357						
	Margaret St	0+000					313.097	
0+025		313.499						
0+050		313.788						
0+075		313.871						
¹ Velocity from GRCA model- average velocity of left overbank for cross section 23691								
² Road profile is no longer below the flood elevation								

Figure 2 shows the road profiles for Howitt and Margaret Streets.

SAFE ACCESS ROUTE

The safe access route for the site is to go northeast along Howitt Street to Margaret Street, proceed southeast on Margaret Street to Richardson Street, east along Richardson Street to Neeve Street, and southeast on Neeve Street. Howitt Street and approximately half of Margaret Street are within the floodplain and the SPA. As the site is near the confluence of the Speed and



May 30, 2017
Mr. Ryan Mallory
Page 3 of 3

**Reference: 71 Wyndham Street South
Safe Access
Guelph, ON**

Eromosa Rivers, the two floodplains interact within this area and care must be taken that travelers do not turn back into the floodplain. See Figure 1 for the site location and safe access route.

This route meets the safe access criteria for depth, velocity, and product of velocity and depth at all points that are under the regulatory flood elevation. Figure 2 shows the profiles for Howitt and Margaret with the regulatory flood elevation for comparison.

CONCLUSION

Based on the preceding, the following conclusions can be drawn:

- Despite being within the SPA area, safe access can be provided to the site
- Safe access to the site can be provided via Howitt and Margaret Streets
- Access may be possible via Wyndham Street, but the floodplain model would need to be updated to confirm this

We trust this meets your requirements at this time. Should you have any questions, please do not hesitate to contact the undersigned at your convenience.

STANTEC CONSULTING LTD.



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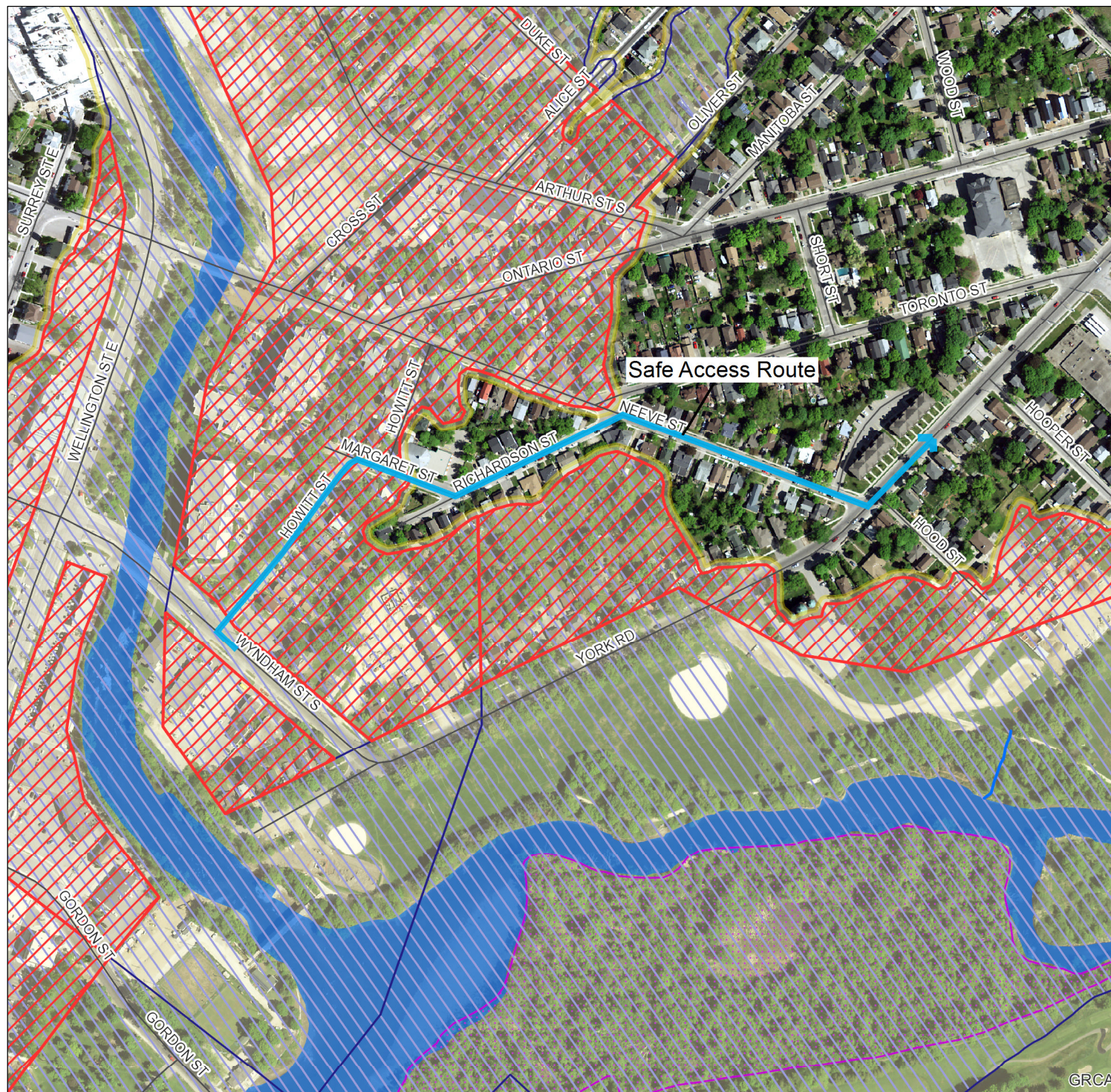
Attachment: Figure 1
Figure 2

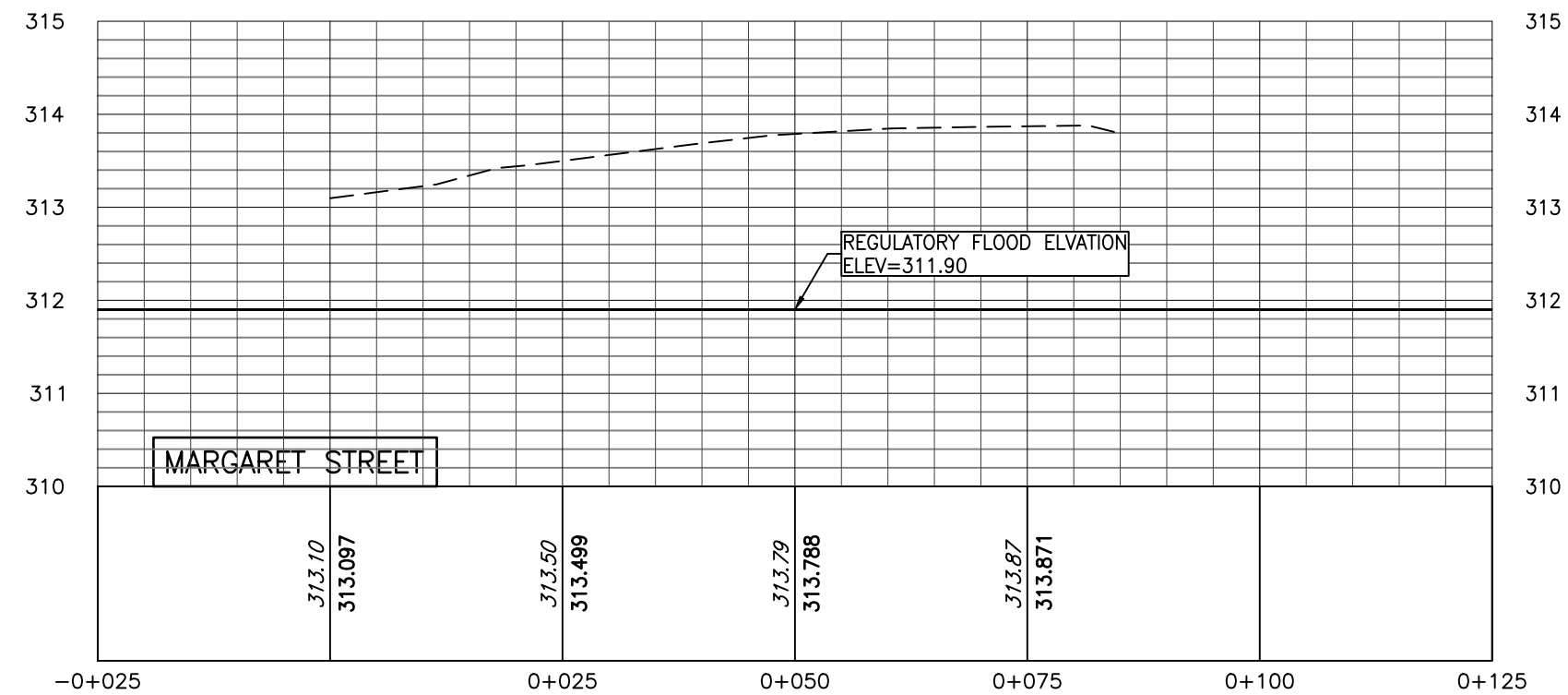
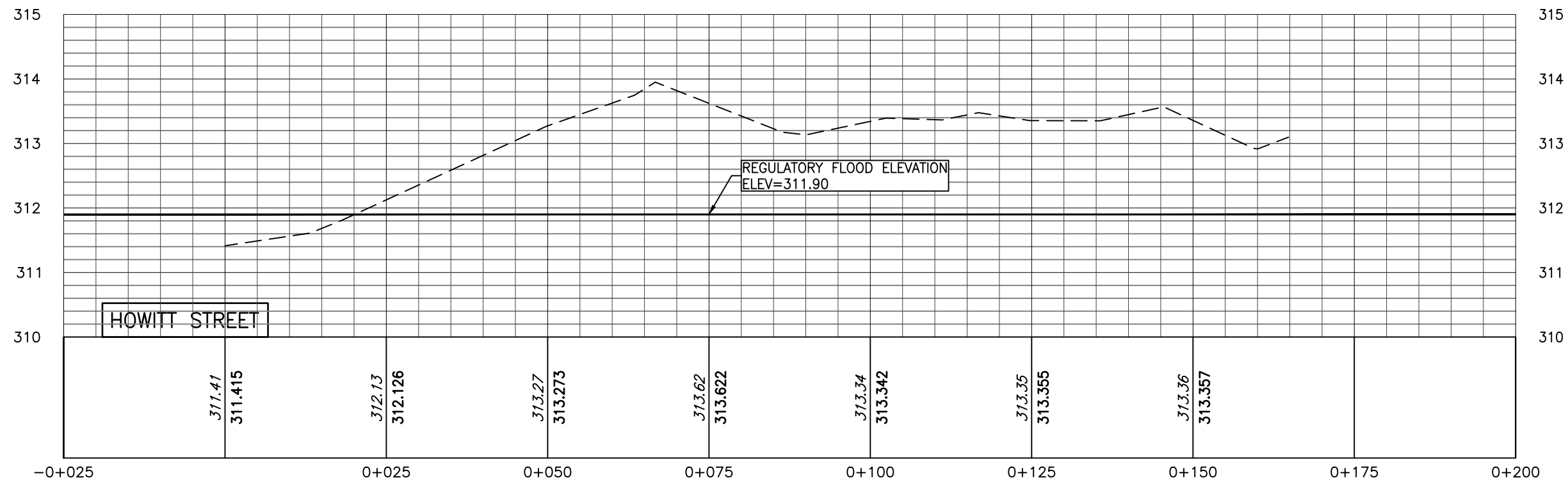


Safe Access Route- 71
Wyndham Street

Legend

- Regulated Watercourse (GRCA)
- Floodplain - Special Policy Area (GRCA)
 - Engineered
 - Estimated
 - Approximate
- Wetland (GRCA)
- Regulated Waterbody (GRCA)
- Regulation Limit (GRCA)





ORIGINAL SHEET - ANSI B

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Legend

Notes



Client/Project
TRICAR GROUP
71 WYNDHAM STREET

Figure No.

2.0

Title

ROAD PROFILES ALONG
SAFE ACCESS ROUTE