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MTE File No.: C46140-101

Grant Brouwer, Director of Building & Development
Town of St. Mary's
408 James Street South
St. Marys, ON N4X 1B6

RE: 665 James Street North Residential Development
Municipal Number: 665 James St. N, St Marys, Ontario N4X 1C9

MTE Consultants Inc. was retained by Randy Warkentin to complete the stormwater management review for a proposed residential apartment building to be constructed at 665 James Street North, in the Town of St Marys.

This letter addresses the stormwater management criteria required by the Town of St Marys and demonstrates how the proposed development meets the requirements for this site.

1.1 Development characteristics

Taking into account the proposed road widenings, the property has an area of 3,689m². Currently there is a commercial building on the site with an asphalt parking lot and a gravel driveway while the rest of the property is landscaped. It is proposed that the existing building and parking areas be demolished and a new multi-apartment building be constructed with an asphalt driveway and an asphalt parking lot.

1.2 Town of St Marys Stormwater Management Policy

As per the Town of St Marys Stormwater Management Policy document, dated 2007, the development falls under the 1st category of the document, mentioning:

The Stormwater Management Criteria is determined by the product of the property size in hectares and the average runoff coefficient of the property. The attached table contains the runoff coefficients for the Town of St. Marys.

1. *If the product is equal to, or less than 0.65:*

The subject property shall require a site plan including grading and drainage patterns. Best Engineering and Management Practices shall be implemented.

For the given development that product is clearly less than 0.65 since the lot area is 0.37ha and the runoff coefficient is approximately 0.76. Therefore, the product is roughly 0.28.

1.3 Proposed SWM design

Two catchbasins in the parking lot will drain the paved portion and direct stormwater from the majority of the property (3,497 m², including all the impervious surfaces) to the municipal sewer running along James St. The roof leader will connect to the one of the CBs through a storm pipe. The area will also include some grassed area as indicated in Table 1:

Table 1. Surface Cover of the Area Draining to Proposed Catchbasins

Surface	Area (m ²)
Lawn/Landscape	627
Gravel Areas	0
Asphalt/Concrete	1,831
Buildings	1,039
Total	3,497

From Table 1, the area contributing to the proposed storm service is approximately 82% impervious, roughly corresponding to a runoff coefficient of 0.77. Utilizing a Time of Concentration of 10 minutes, the peak flow from the contributing area during a 250 year storm event was determined as follows:

$$Q = 2.778 \times C \times i \times A = 2.778 \times 0.77 \times 182.5 \times 0.3497 = 136.5 \text{ L/s}$$

$$\text{Where } i = 2095.179 / (10 + 13.509)^{0.773} = 182.5 \text{ mm/hr}$$

A 300mm storm service is proposed for the property and will connect to the municipal storm sewer on James Street. The service is proposed to be installed with a slope of 1.0%, the full flow capacity of the service will be approximately 97 L/s under gravity flow conditions. Assuming water were to pond to the elevation of the proposed catchbasin grates, the effective slope of the pipe was calculated based on the length (34m) of the service, the catchbasin Elevation (328.50) and the obvert of the storm connection to the municipal sewer (327.10) to be:

$$(328.5 - 327.1) / 34 = 4.1\%$$

Given the size and effective slope of the pipe, the capacity of the surcharged pipe will be 196 L/s when water is ponded in the system to the elevation of the catchbasin grates. As the capacity of the surcharged pipe is expected to exceed the peak flow from a 250 year event is it assumed that no significant ponding will occur within the parking area.

The landscaped areas adjacent to the proposed building will drain to a swale that is proposed to be installed in the area between the south property line and the north edge of Glass St. The swale will direct runoff to the existing municipal catchbasins located in the southwest and southeast corners of the property.

1.4 Erosion & Sediment Control

Sediment and erosion controls will be provided for the proposed site as detailed on the engineering drawings C2.1 and C2.2. The contractor will be responsible for maintaining all sediment and erosion control measures until the site is stabilized. Should any materials be tracked off site, it will be the contractor's responsibility to clean the roadway or affected property as per standard construction practices.

1.5 Conclusions and Recommendations

In accordance with this letter's objectives, our analysis of the proposed development can be summarized as follows:

- i) The post development product of property's area and run-off coefficient will be less than the 0.65 and therefore no additional quantity or quality controls are required on site as per the Town's Stormwater management Policy.

It is recommended that:

- i) The site grading is constructed so as to conform to the grading concept as proposed on the enclosed engineering drawing C2.1; and
- ii) Erosion and sediment controls are to be installed and maintained as per drawing C2.1 and C2.2 to minimize the potential for sediment migration off site.

We trust the enclosed information is satisfactory. Please contact the undersigned if you have any questions

All of which is respectfully submitted,

MTE Consultants Inc.

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Design Engineer
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Attached:

- Drawing C2.1: Site Grading, Servicing & Erosion and Sediment Control Plan
- Drawing C2.2: Details & Notes