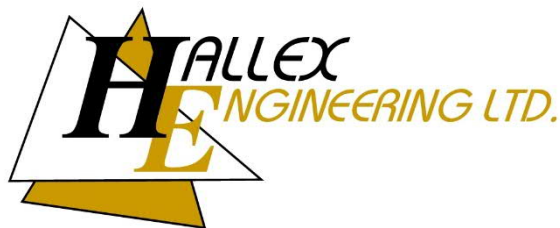

DOMINION ROAD TOWNHOUSE DEVELOPMENT
3303 DOMINION ROAD, FORT ERIE

FUNCTIONAL SERVICING DESIGN BRIEF
NEW SANITARY AND WATER SERVICES

REV 0 – February 24, 2023

PREPARED BY:



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1. INTRODUCTION

The proposed 13-unit Dominion Road townhouse development consists of the demolition of the existing buildings and the construction of two new townhouse blocks, an asphalt laneway & parking areas and grass areas. This development is located at 3303 Dominion Road, which is west of the Dominion Road and Charleston Drive intersection in the Town of Fort Erie, ON.

The purpose of the service assessment is to determine the functional sizing of the proposed sanitary and water services in addition to the post-development flows from the site to determine the impact on the existing municipal infrastructure.

2. EXISTING MUNICIPAL INFRASTRUCTURE

2.1 SANITARY SEWER

The existing site is currently serviced as it consisted of an existing dwelling, however the size and location of the existing sanitary lateral is unknown. The existing sanitary infrastructure at Dominion Road consists of a 200mm municipal PVC sanitary sewer which drains westerly towards Burleigh Road North.

2.2 WATERMAIN

The existing site is currently serviced as it consisted of an existing dwelling, however the size of the existing water service is unknown. The existing watermain infrastructure at Dominion Road consists of a 150mm municipal PVC watermain and a 400mm regional watermain.

3. SANITARY SEWER SYSTEM

Given the site is to be completely redeveloped for the proposed 13-unit Dominion Road townhouse development, all existing sanitary laterals are to be located, capped and abandoned as required at the municipal sanitary sewer. A new sanitary sewer shall be proposed from the site to the existing 200mm municipal PVC sanitary sewer at Dominion Road.

The building development is currently in the concept phase; therefore, the following assumptions based on the architectural drawings are made in carrying out the calculations:

- The 13-unit townhouse development consists of 13 three-bedroom townhouse units. Each townhouse is assumed to have a maximum of 2 persons per bedroom.
- The plumbing fixtures and the number of plumbing fixtures indicated in Exhibit #1 are assumed and may not represent the final building plumbing design.

The peak drainage rate for the proposed 13-unit Dominion Road townhouse development is determined to be 390.2 L/min based on the fixtures and fixture units shown in Exhibit #1 attached. Table 7.4.10.5 in the Ontario Building Code is used to determine probable peak drainage rates for the total fixture units. The wastewater generation for the proposed development is determined to be 21,450 L/day using Table 8.2.1.3A of the Ontario Building Code as shown in Exhibit #1, attached.

Based on the above, Hallex recommends a minimum 200mm diameter sanitary sewer @ 0.5% to be installed to convey sanitary flows from the site to the existing 200mm diameter municipal PVC sanitary sewer at Dominion Road. Each townhouse unit is recommended to be serviced with a 100mm diameter sanitary lateral @ 1.0% connection to the proposed 200mm sanitary sewer onsite.

4. WATER DISTRIBUTION SYSTEM

Given the site is to be completely redeveloped for the proposed 13-unit Dominion Road townhouse development, all existing water services are to be located, capped and abandoned as required at the municipal watermain. A new water service shall be proposed from the site to the existing 150mm diameter municipal PVC watermain at Dominion Road.

The building development is currently in the concept phase; therefore, the following assumptions based on the architectural drawings are made in carrying out the calculations:

- The plumbing fixtures and the number of plumbing fixtures indicated in Exhibit #2 are assumed and may not represent the final building plumbing design.
- Each townhouse block is assumed to be of wood-frame construction and will not have sprinklers installed throughout the building.

The domestic water demand for the proposed development is determined to be 329.6 L/min based on the fixtures and fixture units shown in Exhibit #2 attached. Table 7.4.10.5 in the Ontario Building Code is used to determine water demands for the total fixture units.

Using the calculations provided in the Fire Underwriters Survey – 1999 Water Supply for Public Fire Protection, the minimum water supply flow rate for fire protection is determined to be 12,000 L/min for Block A and 10,000 L/min for Block B based on the above assumptions as shown in Exhibit #3-4, attached. There are two existing municipal fire hydrants located near the site. The first is located adjacent to the northeast corner of the site on the southwest corner of the Dominion Road and Charleston Drive intersection. The second is approximately 70.4m west of the property on the southwest corner of the Dominion Road and Burleigh Road North intersection.

Based on the above, Hallex recommends a minimum 50mm diameter water service to be installed to provide water supply to the site from the existing 150mm diameter municipal PVC watermain at Dominion Road. Each

townhouse unit is recommended to be serviced with a 25mm diameter water service connection to the proposed 50mm water service onsite.

Additionally, each townhouse unit is proposed to be metered individually complete with a remote reader on the face of the building to monitor individual water usage.

5. CONCLUSION

The aforementioned calculations and recommendations for the sanitary and water services are based on the current design for the site as of writing this report. A final sealed report, complete with updates to the recommendations made in this report, may be required based on the final site design.

We trust this report meets your approval. Please contact the undersigned should you have any questions or comments.

Yours truly,
HALLEX ENGINEERING LTD



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Dominion Road Townhouses
Exhibit #1 - Wastewater Generation Rate & Peak Drainage Rate

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WASTEWATER GENERATION ASSESSMENT

Occupancy	# of Units	Development Statistics	Volume (Table 8.2.1.3. A / B)	Total Daily Volume	Notes
Apartments	13	6 persons	275 L/person	21450 L/day	
Total =				21450 L/day	

Therefore the total calculated sanitary flow from the site is determined to be 21450 L/day.

MAXIMUM PROBABLE DRAINAGE RATE

Fixture	# of Units	# of Plumbing Fixtures	Fixture Units (Table 7.4.9.3.)	Total Sanitary Fixture Units
Bathroom group with flush tank	13	3 fixtures	6 FUs	234 FUs
Sink (domestic)	13	1 fixture	1.5 FUs	19.5 FUs
Dishwasher (domestic)	13	1 fixture	1 FUs	13 FUs
Clothes washer (private, domestic)	13	1 fixture	1.5 FUs	19.5 FUs
Total =				286.0 FUs
Total Flow =				390.2 L/min

Therefore the total calculated peak drainage rate is determined to be 390.2L/min.



**Dominion Road Townhouses
Exhibit #2 - Water Demand**

2/24/2023
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DOMESTIC WATER SUPPLY

Fixture	# of Units	# of Plumbing Fixtures	Fixture Units (Table 7.6.3.2.A.)	Total Water Fixture Units
Bathroom group with flush tank	13	3 fixtures	3.6 FUs	140.4 FUs
Sink (domestic)	13	1 fixture	2 FUs	26 FUs
Dishwasher (domestic)	13	1 fixture	1.4 FUs	18.2 FUs
Clothes washer (private, domestic)	13	1 fixture	1.4 FUs	18.2 FUs
Total =				202.8 FUs
Total Flow =				329.6 L/min

Therefore the maximum domestic water demand is determined to be 329.6 L/min.

