SDMM 60 YEARS 1958-2018

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December 18, 2019

Halifax Water
450 Cowie Hill Road
Halifax, NS

From: Rachael Kyte, P.Eng.

File No. 1-1-370 (34834)

Re: Residential Building, Civics 3343, 3331 and 3325 Westerwald Street, Halifax, NS – Sanitary Lateral Size Confirmation

Project Summary:

	Residential (Multi-Unit)
Building	90 Units
Value from client	

References:

1. Halifax Water (HW) Design & Construction Specifications (2018 Edition), Section 4.2.2:
   - $Q = [1.25 \times (a \times M)] + b$ Where;
     Q = Sanitary sewer flow.
     1.25 = Safety factor.
     a = Average dry weather flow.
     M = Peaking factor using Harmon Formula; $M = 1 + [14 / (4 + P^{0.5})]$
     b = Long-term infiltration/inflow allowance.
     P = Population in thousands
   - Multi-Unit Dwelling Population: 2.25 people per unit
   - Infiltration allowance: 0.28 $L/ha_{gross}/s$

Calculation Summary:

Population Estimate (P)

Reference: P: HW Section 4.2.1 Residential (Multi-Unit): 2.25 people per unit

P = 2.25 people per unit x 90 Units **= 203 people (or 0.203)**

Dry Weather Flow (a)

Reference:

HW Section 4.2.2: Residential: 300 L/day per person

a residential = 300 L/day per person x 203 people= **60,900 L/day (or 0.70 L/s)**

Infiltration (b)

Reference:

HW Section 4.2.2: Infiltration allowance: 0.28 $L/ha_{gross}/s$

Lot Area = 0.31 ha

b: 0.28 $L/ha_{gross}/s$ x 0.31 ha = **0.09 L/s**

Peaking Factor (M)

$M = 1 + [14 / (4 + P^{0.5})]$

$M = 1 + [14 / (4 + (0.203)^{0.5})]$ = **4.14**

Sanitary Sewer Flow (Q)

$Q = [1.25 \times (a \times M)] + b$

$Q = [1.25 \times (0.70\ L/s \times 4.14)] + 0.09\ L/s$ = **3.71 L/s**

Sanitary Lateral Size Confirmation:

A 200 mm diameter PVC lateral at 2.00% slope has a capacity of 60 L/s. With Q = 3.71 L/s, the proposed lateral will have sufficient flow capacity. For additional information or discussion regarding these findings please contact the undersigned.

Regards,

Servant, Dunbrack, McKenzie & MacDonald Ltd.

R. Kyte

Rachael Kyte, P.Eng.
Project Engineer

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