60 SDMM YEARS 1958-2018

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December 16, 2019

Halifax Water
450 Cowie Hill Road
Halifax, NS

From: Ray Landry, P.Eng. File No. 1-4-160 (34817)

Re: Hanwell Building, Block CL, Hanwell Drive, Middle Sackville, NS – Sanitary Lateral Size Confirmation

Project Summary:

	Residential (Multi-Unit)
Building	51 Units
Values 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
   - Residential Average Dry Weather Flow: 300 L/day per person
   - Multi-Unit Dwelling Population: 2.25 people per unit
   - Infiltration allowance: 0.28 $L/ha_{gross}/s$

Calculation Summary:

Population Estimate (P)

Reference:

P_1 HW Section 4.2.1 Residential (Multi-Unit): 2.25 people per unit

P = 2.25 people per unit x 51 Units = 115 people

P = **115 people (or 0.115)**

Dry Weather Flow (a)

Reference:

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

a = 300 L/day per person x 115 people = **34,500 L/day (or 0.40 L/s)**

Infiltration (b)

Reference:

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

Lot Area = 5,380 m^2 = 0.54 ha

b: 0.28 $L/ha_{gross}/s$ x 0.54 ha = **0.15 L/s**

Peaking Factor (M)

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

$M = 1 + [14 / (4 + (0.115)^{0.5})]$ = **4.22**

Sanitary Sewer Flow (Q)

Q = [1.25 x (a x M)] + b

Q = [1.25 x (0.40 L/s x 4.22)] + 0.15 L/s = **2.26 L/s**

Sanitary Lateral Size Confirmation:

A 200 mm diameter PVC lateral at 2.0 % slope has a capacity of 67 L/s. With Q = 2.26 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.

[redacted]

Ray Landry, P.Eng.
Project Engineer
Z:\SDMM\34000-34999\34800\34817\Design\sanitary\34817 Sanitary Flow Confirmation.docx

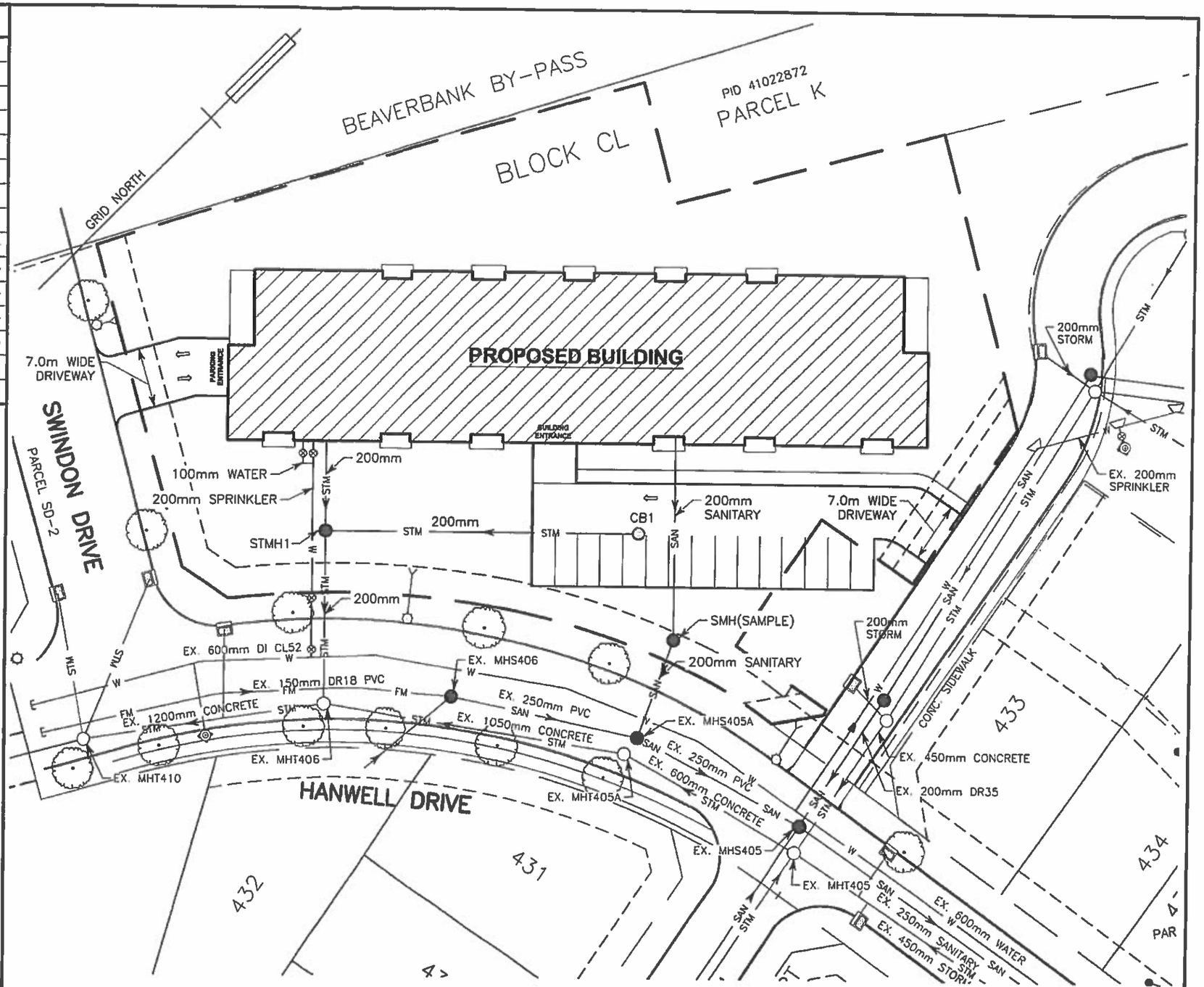
LEGEND

EXISTING		PROPOSED
⊗/⊗BF	CURB STOP/GATE/BUTTERFLY VALVE	⊗/⊗BF
	FIRE HYDRANT	
	SIAMESE SPRINKLER CONNECTION	
	CATCH BASIN/PIT	
	POWER POLE/LIGHT POLE	
	TREE	
	STREET SIGN	
GAS GAS GAS	GAS LINE	GAS GAS GAS
W	WATER MAIN/SERVICE	W
SAN	SANITARY MANHOLE & PIPE	SAN
STM	STORM MANHOLE & PIPE	STM
SAN/STM	COMBINED SEWER	SAN/STM
	PROPERTY LINE/BOUNDARY	
	BUILDING	

NOTES

1. EXISTING WATER, STORM & SANITARY SEWER, AND GAS UNDERGROUND PIPING BASED ON HW & HERITAGE GAS GIS DATA AND RECORDS. CONTRACTOR TO VERIFY EXACT LOCATIONS AND ELEVATIONS IN THE FIELD.
2. PROPERTY BOUNDARIES HAVE BEEN COMPILED FROM VARIOUS SOURCES AND ARE SUBJECT TO SURVEY.
3. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH NOVA SCOTIA REGULATIONS AND HRM BY-LAWS, HALIFAX WATER DESIGN AND CONSTRUCTION SPECIFICATIONS (LATEST EDITION) AND HRM MUNICIPAL SERVICE SYSTEM GUIDELINES "RED BOOK" (LATEST EDITION).
4. CONTRACTOR TO HAVE SERVICES LOCATED IN THE FIELD PRIOR TO DIGGING.
5. CONTRACTOR TO REMOVE EXISTING LATERALS TO THE MAIN AND REMOVE OLD VALVES.

REGISTERED PROFESSIONAL ENGINEER
DATE Dec 16/19
[redacted]
6647
PROVINCE OF NOVA SCOTIA



SDMM	36 OLAND CRESCENT BAYERS LAKE BUSINESS PARK HALIFAX, NOVA SCOTIA OFFICE: (902) 455-1537 FAX: (902) 455-8479	HANWELL BUILDING SERVICING SCHEMATIC HANWELL DRIVE, MIDDLE SACKVILLE	Project No.: 1-13-49 (34817) Scale: 1:500 Date: 16 Dec 2019		WM FARES ARCHITECTS	C1