PROPOSED RESIDENTIAL RE-ZONING

1368 LABRIE AVENUE

PART OF LOT 25 CONCESSION 2 (OTTAWA FRONT)

(GEOGRAPHIC TOWNSHIP OF GLOUCESTER)

CITY OF OTTAWA

SERVICING AND STORMWATER MANAGEMENT REPORT

REPORT No. (R-820-131)

T.L. MAK ENGINEERING CONSULTANTS LTD.

MAY 2021

REFERENCE FILE NUMBER 820-131

Introduction

The developer of the residential property under consideration is proposing to re-zone the site from IL2 to TD1 designation in order to permit residential construction of a 6-storey residential apartment building with an underground garage. The apartment building will contain (11) 1-bedroom units, (11) 1-bedroom + den units and (23) 2-bedroom units for a total of 45 units. Each floor covers an area of 591.0 m^2 to 712.0 m^2 (6,361.0 $ft.^2$ to 7,664.0 $ft.^2$) for an appropriate gross floor area of 3,985.0 m^2 (42,894.0 $ft.^2$).

The said property is located on the west side of Labrie Avenue, north of Kenaston Street and south of Cyrville Road. Lot area size for re-zoning is ±1,394.0 m^2 (0.14 ha.).

In addition to the residential apartment building proposed on this site, other development features of the site as depicted on the architect's site plan are: vehicular entrance way and access lane along the south limit of the property to direct vehicles in and out of the building's underground parking areas, interlock pavers for pedestrian access to the front entrance and north side entrances, soft landscaping, etc. to meet City of Ottawa requirements for urban development. Refer to **Appendix A** for site plan details.

Existing Site Conditions

Presently, a 2-storey vinyl sided building occupies the site centrally. Additionally a separate 1-storey vinyl sided detached building and asphalt driveway are found to be situated south of the existing main building. Existing graveled area is currently found along the north side of the lot. At the rear of the property this portion of the site is also asphalt/gravel covered. A Google image and aerial photography of these current pre-development conditions of the site is provided in **Appendix A** of this report for reference.

From available City of Ottawa engineering plans, it would appear that existing services of this building are serviced from the Labrie Avenue sanitary sewer and watermain. Terrain of the lot is gently sloping from west to east (back to front) at an appropriate average gradient of ±2.4% over a distance of ±55.0 m. Refer to **Appendix A** for topographical survey details completed by Annis O'Sullivan Vollebekk Ltd. for existing site conditions.

Existing underground municipal services are available for development along the Labrie Avenue road right of way. Consisting of the following main sizes, a 200mm dia. watermain and a 250mm dia. sanitary sewer. Currently, stormwater in this area are drained onto the City road right of way and available ditches. See **Appendix B** for details of City of Ottawa watermain and sanitary sewer main along this portion of Labrie Avenue.

SERVICING

A. Water Supply

The planned building at 1368 Labrie Avenue will be located within Pressure Zone 1E. It is planned to be a 6-storey residential apartment building with an underground parking. The apartment building will contain (11) 1-bedroom units, (11) 1-bedroom + den units, and (23) 2-bedroom units, for a total of 45 units. Each floor covers an area of 591.0 m^2 to 712.0 m^2 (6,361.0 $ft.^2$ to 7,664.0 $ft.^2$), for a gross floor area of 3,985.0 m^2 (42,894 $ft.^2$). The building is to be serviced by the 200mm diameter watermain along Labrie Avenue.

The ground elevation on the property in question is approximately 73 m, as obtained from the attached **Site Plan** shown in **Appendix C**.

Demand Projections

The domestic demands were calculated using the City of Ottawa's Water Design Guidelines, where the residential consumption rate of 350 L/cap/d was used to estimate average day demands (AVDY). Maximum day (MXDY) demands were calculated by multiplying AVDY demands by a factor of 2.5. Peak hour (PKHR) demands were calculated by multiplying MXDY by a factor of 2.2. Persons per unit (PPU) for each unit were estimated based on the City of Ottawa's Water Design Guidelines. **Table 1** shows the estimated domestic demands of the proposed building.

Table 1: Estimated Domestic Demand

Unit Type	Unit Count	PPU	Consumption Rate (L/c/d)	AVDY		MXDY		PKHR	
				L/d	L/s	L/d	L/s	L/d	L/s
Apartment, 1-Bedroom	11	1.4	350	5,390	0.06	13,475	0.16	29,645	0.34
Apartment, 2-Bedroom	23	2.1		16,905	0.20	42,263	0.49	92,978	1.08
Apartment, 1-Bedroom + den	11	1.4		5,390	0.06	13,475	0.16	29,645	0.34
Total	***45***			***27,685***	***0.32***	***69,213***	***0.80***	***152,268***	***1.76***

The fire flow required was determined following the Fire Underwriter Survey (FUS) method and is provided in the attached worksheet in **Appendix C**. The planned building was classified as being of ordinary construction, as it will have natural stone, brick or metal cladding. The underground parking will be more than 50.0% below grade. As per the Ontario Building Code (OBC), a sprinkler system will be required for this apartment building. The sprinkler system is considered to be fully automated, connected to a centralized system (standard water supply) and fully supervised. Additionally, as the height of the building will be 6 storeys, it is considered that vertical separation will be provided for every 3rd storey. The resulting total required fire flow is 8,000 L/min (133 L/s) for a duration of 2.0 hours.

Details are provided in the attached FUS Fire Flow Calculations in **Appendix C**. Figure 1 as shown in **Appendix C** provides separation distances from adjacent buildings. The proposed Site Plan attached was used to determine distances from the proposed building to the property lines.

In summary, the estimated water demands for the proposed building are as follows:

- AVDY = 27,685 L/d (0.32 L/s);
- MXDY = 69,213 L/d (0.80 L/s);
- PKHR = 152,268 L/d (1.76 L/s); and,
- Fire Flow = 8,000 L/min (133 L/s).

Boundary Conditions

The hydraulic gradeline (HGL) boundary conditions for 1368 Labrie Avenue, as presented in **Table 2**, were provided by the City on April 29, 2021 (see attached **Water Boundary Conditions Email** in **Appendix C**):

Table 2: Boundary Conditions

Demand Scenario	Head (m)
Minimum HGL (Peak Hour)	110.2
Maximum HGL (Average Day)	117.9
Maximum Day + Fire Flow (133 L/s)	107.7

Hydraulic Analysis

Peak Hour & Average Day

During peak hour demands, the resulting minimum hydraulic gradeline of 110.2 m corresponds to a peak hour pressure of 365 kPa (53 psi). This value is above the minimum pressure objective of 276 kPa (40 psi) for residential buildings up to two storeys. The peak hour pressure exceeds this objective and is therefore considered acceptable. Given that this apartment building consists of a total of 6 storeys, further consideration will be needed to service the higher floors. The proponent will need to consider providing an internal booster pump or designing the

internal plumbing to reduce headlosses and ensure adequate pressure on the higher floors. This will have to be reviewed and designed by the building's mechanical/plumbing designer.
During average day demands, the resulting maximum hydraulic gradeline of 117.9 m corresponds to a maximum pressure of 440 kPa (64 psi). This value is less than the maximum pressure objective of 552 kPa (80 psi) and therefore considered acceptable.

Supporting hydraulic calculations are attached in **Appendix C**.

Maximum Day + Fire Flow

A maximum day plus fire flow hydraulic gradeline of 107.7 m corresponds to a residual pressure of 340 kPa (49 psi) at this location and is well above the minimum residual pressure requirements of 140 kPa (20 psi).

The combined hydrant flow coverage for the building was estimated based on Table 1 of Appendix I of the City of Ottawa Technical Bulletin ISTB-2018-02 and a desktop review (i.e., Google Street View) to identify hydrant class. A Class AA hydrant is located 92.0 m from the site, with a capacity of up to 3,785 L/min. A second hydrant is located 67.0 m from the site; based on the boundary condition provided (residual pressure of 49 psi for a fire flow of 133 L/s), it is assumed that this hydrant is also a Class AA hydrant, with a capacity of up to 5,678 L/min. The hydrant's capacity will need to be confirmed by the City. Based on our assumptions, the combined hydrant flow coverage for 1368 Labrie Avenue is therefore 9,463 L/min, which is above the FUS required fire flow (RFF) of 8,000 L/min.

Hydrant coverage and classes are illustrated in **Figure 2** attached in **Appendix C**. A breakdown of available hydrant flow is summarized in **Table 3**.

Table 3: Fire Hydrant Coverage

Building	Calculated FUS Fire Flow Demand (L/min)	Fire Hydrants					Combined Hydrant Flow Coverage (L/min)
		Hydrant Class	Within 76 m		Between 76 m and 122 m		
			Quantity	Contrib. to RFF	Quantity	Contrib. to RFF	
1368 Labrie Ave	8,000	AA	1*	5,678	1	3,785	9,463
		A					
		B					
		C					
** Assumed hydrant class based on boundary condition*							

Conclusions

In conclusion, based on the boundary conditions provided, the watermain along Labrie Avenue provides adequate fire flow capacity as per the Fire Underwriters Survey. Based on our assumptions as noted, the combined hydrant flow coverage should be above the required fire flow, nevertheless hydrant capacity will need to be confirmed by the City.

Anticipated pressures at the property line during basic day and peak hour demand conditions are within the pressure objectives as per the City of Ottawa's Drinking Water Design Guidelines. However, to meet the internal pressure requirements of the higher floors (i.e., floors 5 and 6), the proponent will need to consider providing an internal booster pump or designing the internal plumbing to reduce headlosses and ensure adequate pressure on the higher floors.

B. Sanitary Flow

The peak sanitary flow for the six (6)-storey residential apartment building totaling (11) 1-bedroom apartments, (11) 1-bedroom + den unit apartments and (23) 2-bedroom apartments is estimated at 1.07 L/s with an infiltration rate of 0.04 L/s. Refer to **Appendix D** regarding sanitary flow calculations. This will enter the existing 250mm diameter Labrie Avenue sanitary sewer from the site via the proposed 150mm diameter PVC building sanitary lateral from the apartment building.

The existing peak sanitary flow of the site for the existing single detached dwelling unit is Q = 0.09 L/s with an infiltration rate of 0.04 L/s. The net increase in flow from this proposed development therefore is 0.98 L/s which is not expected to negatively impact the existing 250mm diameter Labrie Avenue sanitary sewer.

Waste water from the Labrie Avenue 250mm diameter sanitary sewer fronting this lot then in turn flow north to the Cyrville Road sanitary sewer then southward and outlets into the existing 675mm diameter sanitary collector sewer crossing Hwy. 417.

C. Storm Flow

Proposed Grading and Storm Water Management

Based on review of the Architectural site plan proposed for this site, the proposed six (6)-storey building occupies approximately 45.0% of the lot with a 5.0m building set back from the Labrie Avenue front property line. As the property is relatively flat with mildly slope gradient towards the street, however, an underground parking level with driving aisles are proposed for this site.

These results in retaining walls required throughout most of the site and where stormwater management (SWM) design is incorporated also.

Grading design with proposed gradient to meet City's requirements are proposed. Labrie Avenue currently does not have an underground storm sewer for drainage therefore on-site stormwater management consisting of roof top storage, asphalt laneway surface ponding and underground stormwater holding tank(s) in the building with pumping chamber is proposed to attenuate post development storm water flow off-site to the 5-year pre-development level.

From storm drainage criteria set by the staff at the City of Ottawa's Engineering Department for this drainage area, the allowable post development runoff release rate shall not exceed the five (5)-year pre-development conditions. The allowable pre-development runoff coefficient is the lesser of the calculated "C" existing value = 0.8 or C = 0.5 maximum. If the uncontrolled stormwater runoff exceeds the specified requirements, then on-site stormwater management (SWM) control measures are necessary. The post development runoff coefficient for this site is estimated at C = 0.81, which exceeds the pre-development allowable C = 0.5 criteria for the Labrie Avenue roadway ditch without on-site SWM control. Therefore, SWM measures are required. Refer to the attached Drainage Area Plan (Figure A) as detailed in **Appendix E**.

The storm water management calculations that follow will detail the extent of on-site SWM control to be implemented and the storage volume required on-site to attain the appropriate runoff release that will conform to the City's established drainage criteria.

Site Data

1. <u>Development Property Area</u>

Post-Development Site Area Characteristics

Development Lot Area	=	1,393.85 m^2
Roof Surface Area	=	592.39 m^2
Asphalt Area	=	416.57 m^2
Interlock Paver/Concrete Area	=	237.69 m^2
Grass Area	=	147.20 m^2

$$C = \frac{(592.39 \times 0.9) + (416.57 \times 0.9) + (237.69 \times 0.8) + (147.20 \times 0.2)}{1{,}393.85}$$

$$C = \frac{1{,}127.66}{1{,}393.85}$$

$$C = 0.809$$

Say "C" $= 0.81$

Therefore, the average post-development "C" for this site is 0.81.

2. Controlled Area Data

Roof Surface Area	=	592.39 m^2
Asphalt Area	=	391.31 m^2
Interlock Paver/Concrete Area	=	121.07 m^2
Grass Area	=	113.52 m^2
Total Stormwater Controlled Area	=	1,218.29 m^2

$$C = \frac{(592.39 \times 0.9) + (113.52 \times 0.2) + (391.31 \times 0.9) + (121.07 \times 0.8)}{1{,}218.29}$$

$$C = \frac{1{,}004.89}{1{,}218.29}$$

$$C = 0.825$$

Say "C" $= 0.83$

Therefore, the post-development "C" for the controlled stormwater drainage area of the site is 0.83.

3. Uncontrolled Area Data

Asphalt Area	=	25.26 m^2
Grass Area	=	33.68 m^2
Interlock Paver/Concrete Area	=	116.62 m^2
Total Stormwater Uncontrolled Area	=	175.56 m^2

$$C = \frac{(116.62 \times 0.8) + (33.68 \times 0.2) + (25.26 \times 0.9)}{175.56}$$

$$C = \frac{122.766}{175.56}$$

$C = 0.699$

Say "C" $= 0.70$

Therefore, the post-development "C" for the uncontrolled stormwater drainage area of the site is 0.70.

The tributary area consisting of approximately 175.56 square meters will be outletting off-site uncontrolled for the residential apartment building site.

The SWM area to be controlled is 1,218.29 m^2. Refer to the attached "Drainage Area Plan" in Figure A for details.

The site SWM storage area excluding the rooftop area that is to be controlled on-site with asphalt laneway surface ponding area and in-ground stormwater holding tank(s) below the lower parking level of the building is 1,218.29 m^2 – 592.39 m^2 = 625.90 m^2 or 0.0626 ha.

Pre-Development Flow Estimation

Maximum allowable off-site flow: five (5)-year storm

Pre-Development Site Area Characteristics

Development Lot Area	=	1,393.85 m^2
Roof Surface Area	=	158.65 m^2
Asphalt Area	=	263.07 m^2
Interlock Paver/Concrete Area	=	28.11 m^2
Grass Area	=	63.57 m^2
Gravel Area	=	880.45 m^2

$$C = \frac{(158.65 \times 0.9) + (880.45 \times 0.8) + (63.57 \times 0.2) + (28.11 \times 0.8) + (263.07 \times 0.9)}{1{,}393.85}$$

$$C = \frac{1{,}119.11}{1{,}393.85}$$

$$C = 0.803$$

Use $C_{pre} = 0.5$ maximum allowable for redevelopment

T_c = D/V where D = 55.0 m, ΔH = 1.32 m, S = 2.4%, and V = 3.1 feet/second = 0.95 m/s
Therefore,

$$T_c = \frac{55.0m}{0.95m/s}$$

T_c = 0.97 minutes
Use T_c = 10 minutes
I_5 = 104.4 mm/hr [City of Ottawa, five (5)-year storm]

Using the Rationale Method

Q = 2.78 (0.5) (104.4) (0.14)

Q = 20.32 L/s

Because 175.56 square meters are drained uncontrolled off-site, the **net** allowable stormwater discharge for this site to the existing Labrie Avenue road right of way is Q = {2.78 (0.5) (104.4) (0.14) – [2.78 (0.70) (178.6) (0.0176)]} = 20.32 L/s – 6.12 L/s = 14.20 L/s.

Therefore, the net allowable flow off-site for storm event up to the 100-Year return period is estimated at 14.20 L/s.

The estimated pre-development flow to the existing Labrie Avenue road right of way during the five (5)-year and 100-year storm event from this site is as follows:

Where, T_c = 10 min.

Q_{5pre} = 2.78 (0.8) (104.2) (0.14)
= 32.44 L/s

Q_{100pre} = 2.78 (1.0) (178.6) (0.14)
= 69.51 L/s

Stormwater Management Analysis

The net allowable flow rate of 14.20 L/s for on-site stormwater management (SWM) detention volume storage will be used for this SWM analysis. Runoff greater than the allowable release rate will be stored on-site.

Proposed stormwater attenuation for this site is to incorporate flat rooftop storage on top of the 6th floor, surface ponding within the asphalt laneway of the site and also holding tank storage with pumps in the building located below the underground parking garage.

From the rooftop of the 6th floor, it is proposed that three (3) flat rooftop areas of the residential building (Roof Area #1, #2, and #3) will each incorporate a controlled roof drain to provide on-site stormwater detention. Discharged of the (3) controlled roof drains will be via roof downspout to a concrete splash pad located at the front of property and surface drain onto the Labrie Avenue roadway ditches.

Within the asphalt laneway area, grading is designed to provide stormwater surface ponding storage for on-site stormwater management (SWM) attenuation. An inlet control device (ICD) is proposed to be installed in CB/MH#4 to regulate a flow release rate of 4.0 L/s which will then be outletted to the building holding tank and pumping system.

Also, underground holding tank(s) are proposed which will store stormwater from the asphalt ramp area and landscaped areas along the north side of the lot where flow is then directed to the holding tank(s) and then pumped up to discharged onto the front surface of the site which is graded to direct stormwater to the Labrie Avenue road right of way.

Each of the proposed rooftop storage areas will incorporate (1) roof drain control (Roof Drain #1, #2, and #3) to control flow off-site. The specified standard roof drain flow rate is 0.95 L/s (15.0 US gal/min.) under a head of 150mm.

Roof Area #1 = 186.68 m^2
Roof Area #2 = 204.71 m^2
Roof Area #3 = 201.0 m^2

Total controlled roof area at the 6th storey rooftop = 592.39 m^2.

Area #4 is in reference to the surface ponding area within the site of the stormwater controlled area which is approximately 258.89 m^2 (0.0259 ha.) in size.

Area #5 is in reference to the remainder of the stormwater controlled site which is 367.01 m^2 and consist of asphalt ramp area of 198.56 m^2 and the landscaped areas situated above the underground parking garage at 168.45 m^2 in size.

For in-ground holding tank sizing, the allowable discharged of Area #5 (remainder of the controlled area) is [14.20 L/s – (3 x 0.95 L/s) – 4.0 L/s] = 7.35 L/s which is the pumping rate from the pumps of the pumping chamber and holding tank excluding the incoming controlled flow rate of 4.0 L/s from CB/MH#4.

The post-development inflow rate during the (5)-year and 100-year storm for the rooftop areas, asphalt laneway surface ponding, and in-ground holding tank can now be calculated as follows:

Design Discharged Computation

1. Flat Rooftop Areas

To Calculate Roof Storage Requirements

The proposed flat roof of the apartment building on the property will incorporate three (3) roof drains to control flow off-site for this development property. The roof drain flow rate proposed is at 0.95 L/s (15.0 U.S. gal./min.) for Roof Drain #1, Roof Drain #2 and Roof Drain #3. The specified roof drain is the Watts "Adjustable Accutrol Weir" (Model # RD-100-A-ADJ) with weir opening in the 1/4 exposed position, which will allow a flow of 0.95 L/s under a head of 150 mm water above the drain for Roof Drain #1, Roof Drain #2, and Roof Drain #3. Therefore, the stormwater flow that can be controlled from this rooftop and outletted off-site is (3 x 0.95 L/s) = 2.85 L/s. Refer to the Proposed Stormwater Management Plan Dwg. 820-131 SWM-1 for roof drain details.

C = 0.9 will be used for sizing roof storage volume in this case.

Inflow rate (Q_A) = 2.78 CIA, where C = 0.9, A = surface area of roof, I = mm/hr

For Roof Area 1, Q_{A1} = 2.78 CIA

Five (5)-Year Event

C_5 = 0.90
A = 186.68 m^2
I = mm/hr
Q_1 = 2.78 (0.90) (0.0187 ha.) I = 0.0468 I

100-Year Event

$C_{100} = 1.0$
$A = 186.68\ m^2$
$I = mm/hr$
$Q_2 = 2.78\ (1.0)\ (0.0187\ ha.)\ I = 0.052\ I$

<u>For Roof Area 2, $Q_{A2} = 2.78\ CIA$</u>

Five (5)-Year Event

$C_5 = 0.90$
$A = 204.71\ m^2$
$I = mm/hr$
$Q_2 = 2.78\ (0.90)\ (0.0205\ ha.)\ I = 0.0513\ I$

100-Year Event

$C_{100} = 1.0$
$A = 204.71\ m^2$
$I = mm/hr$
$Q_2 = 2.78\ (1.0)\ (0.0205\ ha.)\ I = 0.057\ I$

<u>For Roof Area 3, $Q_{A3} = 2.78\ CIA$</u>

Five (5)-Year Event

$C_5 = 0.90$
$A = 201.0\ m^2$
$I = mm/hr$
$Q_3 = 2.78\ (0.90)\ (0.0201\ ha.)\ I = 0.0503\ I$

100-Year Event

$C_{100} = 1.0$
$A = 201.0\ m^2$
$I = mm/hr$
$Q_3 = 2.78\ (1.0)\ (0.0201\ ha.)\ I = 0.0559\ I$

Table B summarizes the post-development design flows from the building roof top area as well as the type of roof drains, the maximum anticipated ponding depths, storage volumes required, and storage volumes provided for the five (5)-year and 100-year design events.

Table B: Design Flow and Roof Drain Table

Roof Drain ID & Drainage Area (ha)	Number of Roof Drains	Watts Roof Drain Model ID (Weir Opening)	Controlled Flow per Drain (L/s)		Approximate Ponding Depth Above Drains (m)		Storage Volume Required (m^3)		Max. Storage Available (m^3)
			5 YR	100 YR	5 YR	100 YR	5 YR	100 YR	
RD-1 (0.0187 ha)	1	RD-100-A-ADJ (1/4 OPENING EXPOSED)	0.87	0.95	0.12	0.15	2.97	7.13	8.36
RD-2 (0.0205 ha)	1	RD-100-A-ADJ (1/4 OPENING EXPOSED)	0.87	0.95	0.12	0.15	3.42	8.09	9.67
RD-3 (0.0201 ha)	1	RD-100-A-ADJ (1/4 OPENING EXPOSED)	0.87	0.95	0.12	0.15	3.31	7.86	9.42
Total Roof (0.0593 ha)	3	-	**2.61**	**2.85**	-	-	**9.70**	**23.08**	**27.45**

2. <u>Asphalt Laneway Surface Building Area</u>

The Rational Method was used to estimate peak flows.

Q = 2.78 CIA

Inflow rate Q_{ACTUAL} for this site is:

Five (5)-year event C_5 = 0.9 (average "C" value of this controlled area at Area #4)

A = 0.0259 ha. (258.89 m^2)

Inflow rate $(Q_A)_5$ = 2.78 CIA
= 2.78 (0.9) (0.0259) I
= 0.0648 I   I = mm/hr

The inflow rate for the controlled site tributary Area #4 can be calculated as follows:

Q_5 = 0.0648 I

100-year event C_{100} = 1.0 (average "C" value of this controlled area at Area #4)

Where,

$$C_{100} = \frac{(258.89 \times 0.9 \times 1.25)}{258.89}$$

$$C_{100} = \frac{291.25}{258.89}$$

$C_{100} = 1.125$

Say "C_{100}" $= 1.0$

Inflow rate $(Q_A)_{100}$	=	2.78 CIA	
	=	2.78 (1.0) (0.0259) I	
	=	0.072 I	I = mm/hr

3. <u>To Calculate Storage for Landscape Area and Asphalt Ramp (Area #5)</u>

Underground stormwater holding tank storage system (Tributary Area #5)

<u>5-Year Event</u>

C_5 = Tributary Area No. 5

Area Characteristics

Asphalt Area	=	168.56 m^2
Concrete Area	=	84.37 m^2
Grass Area	=	114.08 m^2
Total Area	=	367.01 m^2

Where $C_5 = \frac{(168.56 \times 0.9) + (84.37 \times 0.8) + (114.08 \times 0.2)}{367.01}$

$C_5 = \frac{242.016}{367.01}$

$C_5 = 0.659$

Say "C_5" $= 0.66$

A = 0.0367 ha.

Inflow rate $(Q_A)_5$	=	2.78 CIA
	=	2.78 (0.66) (0.0367) I

$= \quad 0.0674\ I \qquad I = mm/hr$

The inflow rate for the controlled site tributary Area #5 can be calculated as follows:

$Q_5 = 0.0674\ I$

<u>100-Year Event</u>

C_{100} = Tributary Area No. 5

Where,

$$C_{100} = \frac{(168.56 \times 1.0) + (84.37 \times 1.0) + (114.08 \times 0.2 \times 1.25)}{367.01}$$

$$C_{100} = \frac{281.45}{367.01}$$

$$C_{100} = 0.767$$

Say "C_{100}" $= 0.77$

Inflow rate $(Q_A)_{100} = 2.78\ CIA$
$= 2.78\ (0.77)\ (0.0367)\ I$
$= 0.0786\ I \qquad I = mm/hr$

This can now be used to determine the storage volume of Area #4 and Area #5 for the site using the Modified Rational Method.

Actual flow Q_{ACTUAL} is calculated as:

$Q = 2.78\ CIA$

Q_{STORED} is calculated as:

$Q_S = Q_A - Q_{ALLOW}$

Summary results of the calculated inflow and the required storage volume of the building's flat rooftop, asphalt laneway surface ponding and underground holding tank(s) to store the 5-year and 100-year storm events are shown in Tables 1A to 10A inclusive.

EROSION AND SEDIMENT CONTROL

The contractor shall implement Best Management Practices to provide for protection of the receiving storm sewer during construction activities. These practices are required to ensure no sediment and/or associated pollutants are released to the receiving watercourse. These practices include installation of a "siltsack" catch basin sediment control device or equal in catch basins as recommended by manufacturer on-site and off-site within the Labrie Avenue road right of way adjacent to this property. Siltsack shall be inspected every 2 to 3 weeks and after every major storm. The deposits will be disposed of as per the requirements of the contract.

CONCLUSION

For this proposed six-storey residential apartment building site on ±0.14 hectare parcel of land, the maximum post-development allowable flow off-site is 20.32 L/s. Based on the site grading proposed, 6.12 L/s of flow will be drained uncontrolled off-site and therefore the net allowable rate of 14.2 L/s for storms up to the 100-year event will be controlled and released from the proposed development site.

In order to control the 5 year stormwater release rate off-site to a net allowable rate of 14.2 L/s, a site storage volume of approximately 12.0 m^3 (min.) is required during the 5 year event. We estimate that approximately 9.70 m^3 (min.) of rooftop storage, 1.65 m^3 (min.) of asphalt laneway surface storage and 0.65 m^3 (min.) storage volume from the holding tank(s) for the remainder of the controlled landscaped areas and asphalt ramp area are necessary to attenuate the 5 year storm event.

Based on the proposed Storm Water Management Design Plan as shown (on Dwg. No. 820-131, SWM-1), the available flat rooftop storage is 14.14 m^3 from the (3) flat roof areas #1, #2 and #3.

During the <u>5 year storm event</u> for Roof Area #1, the ponding depth on this rooftop is estimated at 120 mm at the drain and 0 mm at the roof perimeter assuming a 1.0% (min.) roof pitch to the drain. The rooftop storage available is 4.67 m^3 which is greater than the required volume of 2.97 m^3.

For Roof Area #2, the ponding depth on this rooftop is estimated at 120 mm at the drain and 0 mm at the roof perimeter assuming a 1.3% (min.) roof pitch to the drain. The rooftop storage available is 4.82 m^3 which is greater than the required volume of 3.42 m^3.

For Roof Area #3, the ponding depth on this rooftop is estimated at 120 mm at the drain and 0 mm at the roof perimeter assuming a 1.3% (min.) roof pitch to the drain. The rooftop storage available is 4.65 m^3 which is greater than the required volume of 3.31 m^3.

The asphalt laneway surface ponding area at CB/MH#4 will provide an available storage volume of 2.85 m^3 which is greater than the required volume of 1.65 m^3 at the 5-year HWL = 72.51 m. The specified inlet control device (ICD) Hydrovex Model No. 50-VHV-1 or equal is proposed to be installed at the outlet of CB/MH#4 in the 200mm diameter storm pipe (outlet pipe) with Q = 4.0 L/s under a head of 2.06 m to regulate flow into the holding tank(s) in the building.

As for the remaining storage volume of 0.65 m^3 (min.) required from the remainder of the controlled landscaped and asphalt ramp area, it is proposed that the underground concrete holding tank(s) be provided with an effective storage of 0.66 m^3. In total the 5 year available site storage volume is 17.65 m^3 which is greater than the required storage volume of 12.0 m^3. Pump out rate from the holding tank/storage tank configuration is at 11.35 L/s where the holding tank(s) are upstream of and connected in series with the pumping chamber/holding tank.

During the <u>100 year storm event</u>, in order to control the 100 year stormwater release rate off-site to a net allowable rate of 14.2 L/s, a site storage volume of approximately 32.75 m^3 (min.) is required during the 100 year event. We estimate that approximately 23.08 m^3 (min.) of rooftop storage 5.66 m^3 (min.) of asphalt laneway surface storage and 4.01 m^3 (min.) storage volume from the holding tank(s) for the remainder of the controlled landscape and asphalt ramp area are necessary to attenuate the 100 year storm event.

Based on the proposed Stormwater Management Design Plan as shown (on Dwg. No. 820-131, SWM-1), the available flat rooftop storage is 27.45 m^3 from the (3) flat roof areas #1, #2 and #3.

For Roof Area #1, the ponding depth on this rooftop is estimated at 150 mm at the drain and 0 mm above the roof perimeter assuming a 1.0% (min.) roof pitch to the drain. The rooftop storage available is 8.36 m^3 which is greater than the required volume of 7.13 m^3.

For Roof Area #2, the ponding depth on this rooftop is estimated at 150 mm at the drain and 0 mm above the roof perimeter assuming a 1.3% (min.) roof pitch to the drain. The rooftop storage available is 9.67 m^3 which is greater than the required volume of 8.09 m^3.

For Roof Area #3, the ponding depth on this rooftop is estimated at 150 mm at the drain and 0 mm above the roof perimeter assuming a 1.3% (min.) roof pitch to the drain. The rooftop storage available is 9.42 m^3 which is greater than the required volume of 7.86 m^3.

The asphalt laneway surface ponding area at CB/MH#4 will provide an available storage volume of 5.79 m^3 which is greater than the required volume of 5.66 m^3 at the 100-year HWL = 72.55m. The specified inlet control device (ICD) Hydrovex Model No. 50-VHV-1 or equal is proposed to be installed at the outlet of CB/MH#4 in the 200mm diameter storm pipe (outlet pipe) with Q = 4.0 L/s under a head of 2.06 m to regulate flow into the holding tank(s) in the building.

As for the remaining storage volume of 4.01 m^3 (min.) required from the remainder of the uncontrolled rooftop and asphalt ramp, it is proposed that the underground concrete holding tank(s) be provided with a minimum effective storage volume of 2.0 x 5.29 m^3 = 10.58 m^3 (min.). We would recommend a holding tank with an effective volume of (2.1 m x 2.1 m x 1.2 m = 5.29 m^3) be connected to a holding tank/pumping chamber the same size as the holding tank (2.1 m x 2.1 m x 1.2 m = 5.29 m^3) which houses the duplex pumps set at a pump out rate of 11.35 L/s. The total available storage volume from the (2) tanks is 10.58 m^3. In total the 100 year available storage volume is 43.82 m^3 which is greater than the required storage volume of 32.75 m^3. (See **Appendix F** for storage volume calculation details.)

It is recommended that (6) roof scuppers be installed at the perimeter height of the 6th floor rooftop for emergency overflow purposes in case of blockage from debris build up at the roof drain as shown on Dwg. No. 820-131, G-1 and Dwg. No. 820-131, SWM-1 for details.

Therefore by grading the site to the proposed grades and installing the proposed controlled (3) roof drains and concrete storage and holding tank/pumping chamber as detailed in this report and shown on the Proposed Site Servicing and Grading Plan Dwg. No. 820-131, G-1 and proposed Stormwater Management Plan Dwg. No. 820-131, SWM-1, the designed stormwater storage volume available will be able to attenuate flow from this site to a maximum allowable rate of 20.32 L/s and net allowable release rate of 14.2 L/s to the Labrie Avenue road right of way. The pump out rate from the underground holding tank/pumping chamber is 11.35 L/s with pumps (duplex) to be designed by the owner’s mechanical engineer.

A backup pumping chamber and pumping system are recommended to discharge and outlet to street level at a different location in case of emergencies or problems from the main pump(s) and chamber located at underground parking level P1.

In comparison to the 5-year pre-development flow of 32.4 L/s and 100-year pre-development flow of 69.51 L/s, the maximum post-development allowable flow is 20.32 L/s and with SWM attenuation proposed to be incorporated at the site these measures will reduce the stormwater flow off-site to approximately 30.0% of its current 100-year pre-development flow level.

PREPARED BY T.L. MAK ENGINEERING CONSULTANTS LTD.

TONY L. MAK, P. ENG.

PROPOSED 1368 LABRIE AVENUE RESIDENTIAL DEVELOPMENT SITE

TABLE 1A

FIVE (5)-YEAR EVENT

REQUIRED BUILDING ROOF AREA 1 STORAGE VOLUME

t_c **TIME** (minutes)	**I** **5-YEAR** (mm/hr)	**Q** **ACTUAL** (L/s)	**Q** **ALLOW** (L/s)	**Q** **STORED** (L/s)	**VOLUME** **STORED** (m^3)
5	141.20	6.61	0.87	5.74	1.72
10	104.20	4.88	0.87	4.01	2.41
15	83.50	3.91	0.87	3.04	2.74
20	70.30	3.29	0.87	2.42	2.90
25	60.90	2.85	0.87	1.98	2.97
30	53.93	2.52	0.87	1.65	2.97
35	48.50	2.27	0.87	1.40	2.94
40	44.20	2.07	0.87	1.20	2.88

Therefore, the required storage volume is 2.97 m^3.

PROPOSED 1368 LABRIE AVENUE RESIDENTIAL DEVELOPMENT SITE

TABLE 2A

FIVE (5)-YEAR EVENT

REQUIRED BUILDING ROOF AREA 2 STORAGE VOLUME

t_c **TIME** (minutes)	**I 5-YEAR** (mm/hr)	**Q ACTUAL** (L/s)	**Q ALLOW** (L/s)	**Q STORED** (L/s)	**VOLUME STORED** (m^3)
5	141.20	7.24	0.87	6.37	1.91
10	104.20	5.35	0.87	4.48	2.69
15	83.50	4.28	0.87	3.41	3.07
20	70.30	3.61	0.87	2.74	3.29
25	60.90	3.12	0.87	2.25	3.38
30	53.93	2.77	0.87	1.90	3.42
35	48.50	2.49	0.87	1.62	3.40
40	44.20	2.27	0.87	1.40	3.36

Therefore, the required storage volume is 3.42 m^3.

PROPOSED 1368 LABRIE AVENUE RESIDENTIAL DEVELOPMENT SITE

TABLE 3A

FIVE (5)-YEAR EVENT

REQUIRED BUILDING ROOF AREA 3 STORAGE VOLUME

t_c **TIME** (minutes)	**I** **5-YEAR** (mm/hr)	**Q** **ACTUAL** (L/s)	**Q** **ALLOW** (L/s)	**Q** **STORED** (L/s)	**VOLUME** **STORED** (m^3)
5	141.20	7.10	0.87	6.23	1.87
10	104.20	5.24	0.87	4.37	2.62
15	83.50	4.20	0.87	3.33	3.00
20	70.30	3.54	0.87	2.67	3.20
25	60.90	3.06	0.87	2.19	3.29
30	53.93	2.71	0.87	1.84	3.31
35	48.50	2.44	0.87	1.57	3.30
40	44.20	2.22	0.87	1.35	3.24

Therefore, the required storage volume is 3.31 m^3.

PROPOSED 1368 LABRIE AVENUE RESIDENTIAL DEVELOPMENT SITE

TABLE 4A

FIVE (5)-YEAR EVENT

ASPHALT LANEWAY SURFACE REQUIRED STORAGE VOLUME

A = 258.89 m^2 C_5 = 0.9 average

t_c **TIME** (minutes)	**I 5-YEAR** (mm/hr)	**Q ACTUAL** (L/s)	**Q ALLOW** (L/s)	**Q STORED** (L/s)	**VOLUME STORED** (m^3)
5	141.20	9.15	4.0	5.15	1.55
10	104.20	6.75	4.0	2.75	1.65
15	83.50	5.41	4.0	1.41	1.27
20	70.30	4.56	4.0	0.56	0.67

Therefore, the required surface storage volume is 1.65 m^3.

PROPOSED 1368 LABRIE AVENUE RESIDENTIAL DEVELOPMENT SITE

TABLE 5A

FIVE (5)-YEAR EVENT

UNDERGROUND STORM WATER STORAGE TANK SYSTEM
REQUIRED STORAGE VOLUME

$A = 367.01\ m^2$ $C_5 = 0.66$

t_c **TIME** (minutes)	**I** **5-YEAR** (mm/hr)	**Q** **ACTUAL** (L/s)	**Q** **ALLOW** (L/s)	**Q** **STORED** (L/s)	**VOLUME** **STORED** (m^3)
5	141.20	9.52	7.35	2.17	0.65
10	104.20	7.02	7.35	0	0

Therefore, the required storage volume is 0.65 m^3.

PROPOSED 1368 LABRIE AVENUE RESIDENTIAL DEVELOPMENT SITE

TABLE 6A

100-YEAR EVENT

REQUIRED BUILDING ROOF AREA 1 STORAGE VOLUME

t_c **TIME** (minutes)	**I 100-YEAR** (mm/hr)	**Q ACTUAL** (L/s)	**Q ALLOW** (L/s)	**Q STORED** (L/s)	**VOLUME STORED** (m^3)
10	178.6	9.29	0.95	8.34	5.00
15	142.9	7.43	0.95	6.48	5.83
20	120.0	6.24	0.95	5.29	6.35
25	103.9	5.40	0.95	4.45	6.68
30	91.90	4.78	0.95	3.83	6.89
35	82.60	4.30	0.95	3.35	7.04
40	75.10	3.91	0.95	2.96	7.10
45	69.10	3.59	0.95	2.64	7.13
50	63.90	3.32	0.95	2.37	7.11
55	59.62	3.10	0.95	2.15	7.10

Therefore, the required storage volume is 7.13 m^3.

PROPOSED 1368 LABRIE AVENUE RESIDENTIAL DEVELOPMENT SITE

TABLE 7A

100-YEAR EVENT

REQUIRED BUILDING ROOF AREA 2 STORAGE VOLUME

t_c **TIME** (minutes)	**I 100-YEAR** (mm/hr)	**Q ACTUAL** (L/s)	**Q ALLOW** (L/s)	**Q STORED** (L/s)	**VOLUME STORED** (m^3)
10	178.6	10.18	0.95	9.23	5.54
15	142.9	8.15	0.95	7.20	6.48
20	120.0	6.84	0.95	5.89	7.07
25	103.9	5.92	0.95	4.97	7.46
30	91.90	5.23	0.95	4.28	7.70
35	82.60	4.71	0.95	3.76	7.90
40	75.10	4.28	0.95	3.33	7.99
45	69.10	3.94	0.95	2.99	8.07
50	63.90	3.64	0.95	2.69	8.08
55	59.62	3.40	0.95	2.45	<u>8.09</u>
60	55.90	3.19	0.95	2.24	8.06

Therefore, the required storage volume is 8.09 m^3.

PROPOSED 1368 LABRIE AVENUE RESIDENTIAL DEVELOPMENT SITE

TABLE 8A

100-YEAR EVENT

REQUIRED BUILDING ROOF AREA 3 STORAGE VOLUME

t_c **TIME** (minutes)	**I 100-YEAR** (mm/hr)	**Q ACTUAL** (L/s)	**Q ALLOW** (L/s)	**Q STORED** (L/s)	**VOLUME STORED** (m^3)
10	178.6	9.98	0.95	9.03	5.42
15	142.9	7.99	0.95	7.04	6.34
20	120.0	6.71	0.95	5.76	6.91
25	103.9	5.81	0.95	4.86	7.29
30	91.90	5.13	0.95	4.18	7.52
35	82.60	4.62	0.95	3.67	7.71
40	75.10	4.20	0.95	3.25	7.80
45	69.10	3.86	0.95	2.91	7.86
50	63.90	3.57	0.95	2.62	7.86
55	59.62	3.33	0.95	2.38	7.85
60	55.90	3.13	0.95	2.18	7.848
65	52.65	2.94	0.95	1.99	7.76

Therefore, the required storage volume is 7.86 m^3.

PROPOSED 1368 LABRIE AVENUE RESIDENTIAL DEVELOPMENT SITE

TABLE 9A

100-YEAR EVENT

ASPHALT LANEWAY SURFACE REQUIRED STORAGE VOLUME

A = 258.89 m^2 C_5 = 1.0 average

t_c TIME (minutes)	**I 100-YEAR** (mm/hr)	**Q ACTUAL** (L/s)	**Q ALLOW** (L/s)	**Q STORED** (L/s)	**VOLUME STORED** (m^3)
10	178.6	12.86	4.0	8.86	5.32
15	142.9	10.29	4.0	6.29	5.66
20	120.0	8.64	4.0	4.64	5.57
25	103.9	7.48	4.0	3.48	5.22
30	91.9	6.62	4.0	2.62	4.72

Therefore, the required surface storage volume is 5.66 m^3.

PROPOSED 1368 LABRIE AVENUE RESIDENTIAL DEVELOPMENT SITE

TABLE 10A

100-YEAR EVENT

ASPHALT LANEWAY SURFACE REQUIRED STORAGE VOLUME

$A = 258.89\ m^2$ $C_{100} = 0.77$

t_c TIME (minutes)	**I 100-YEAR** (mm/hr)	**Q ACTUAL** (L/s)	**Q ALLOW** (L/s)	**Q STORED** (L/s)	**VOLUME STORED** (m^3)
5	242.8	19.09	7.35	11.74	3.52
10	178.6	14.04	7.35	6.69	4.01
15	142.9	11.23	7.35	3.88	3.49
20	120.0	9.43	7.35	2.08	2.50
25	103.9	8.16	7.35	0	0

Therefore, the required storage volume is 4.01 m^3.

PROPOSED RESIDENTIAL RE-ZONING

1368 LABRIE AVENUE

PART OF LOT 25 CONCESSION 2 (OTTAWA FRONT)

(GEOGRAPHIC TOWNSHIP OF GLOUCESTER)

CITY OF OTTAWA

APPENDIX A

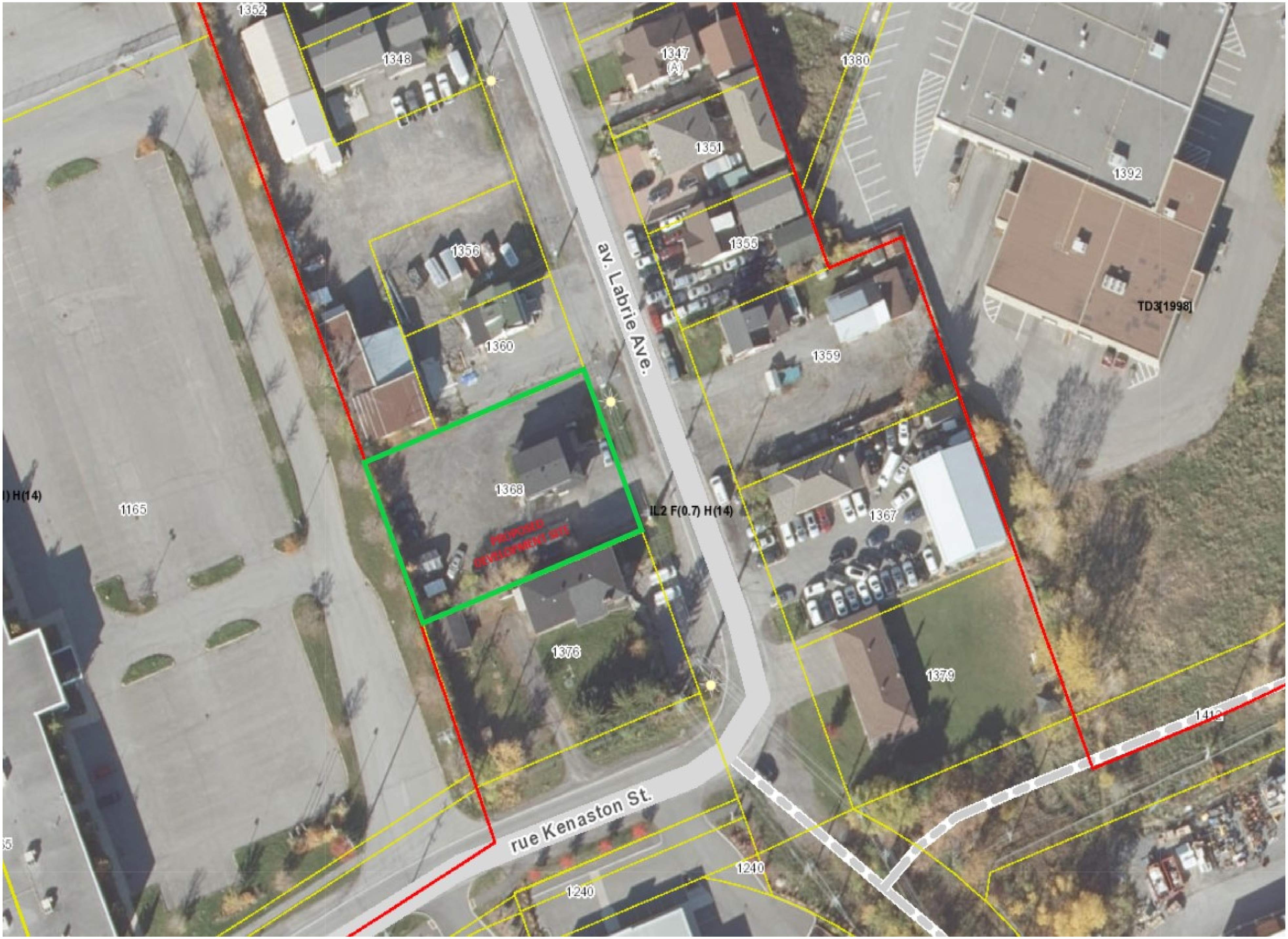
GOOGLE IMAGE (2020)

AERIAL PHOTOGRAPHY (2019) – GEOOTTTAWA

AND

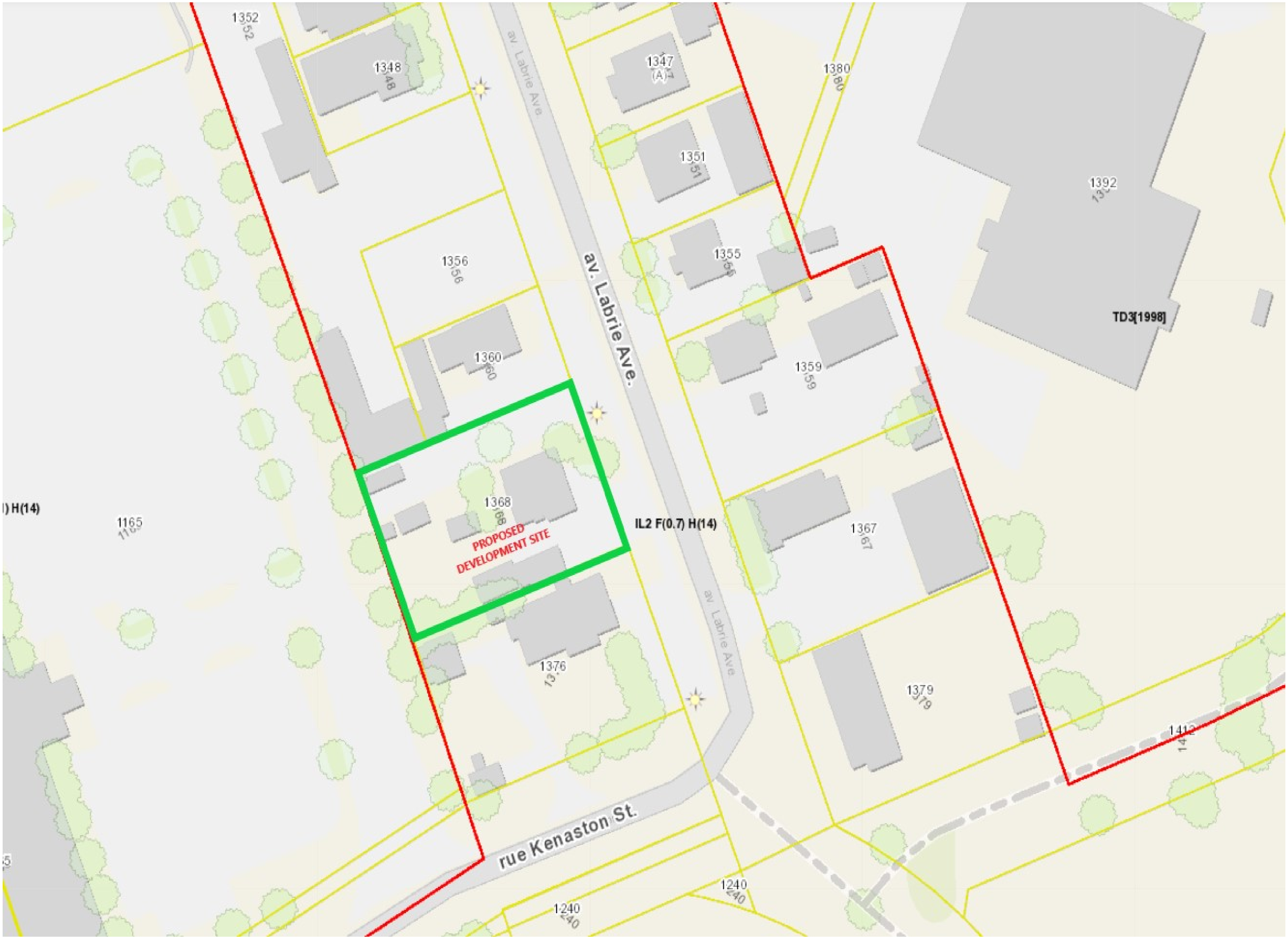
TOPOGRAPHICAL SURVEY

2020



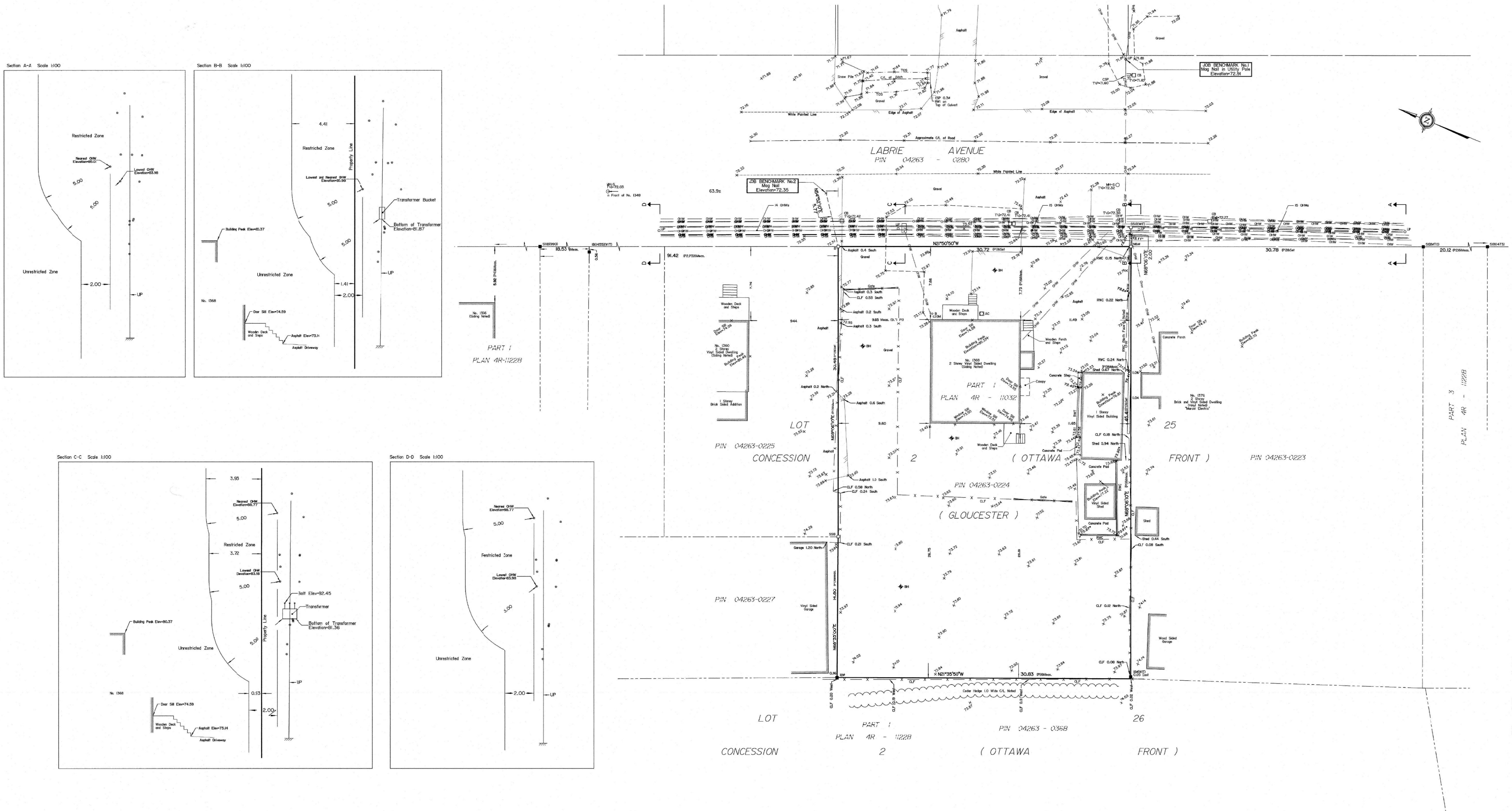
1352
1348
1347
(A)
1380
1351
1392
1356
1355
TD3[1998]
av. Labrie Ave.
1360
1359
1368
1165
IL2 F(0.7) H(14)
1367
PROPOSED
DEVELOPMENT SITE
1376
1379
1412
rue Kenaston St.
1240
1240

2019



av. Labrie Ave.
av. Labrie Ave
av. Labrie Ave
rue Kenaston St.
PROPOSED DEVELOPMENT SITE
IL2 F(0.7) H(14)
TD3[1998]
1352
1348
1347 (A)
1380
1351
1392
1356
1355
1360
1359
1368
1165
1367
1376
1379
1412
1240
1240

2019



SURVEYOR'S REAL PROPERTY REPORT

PART 1 Plan of

PART OF LOT 25
CONCESSION 2 (OTTAWA FRONT)
GEOGRAPHIC TOWNSHIP OF GLOUCESTER
CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 150

6 4.5 3.0 1.5 0 3 6 Metres

Metric

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act and the Surveyors Act and the regulations made under them.
2. The survey was completed on the 2nd day of December, 2020.

Dec. 7th, 2020
Date

Richard R. Gauthier
Ontario Land Surveyor

PART 2
THIS PLAN MUST BE READ IN CONJUNCTION WITH SURVEY REPORT DATED: Dec. 7th, 2020

ANNIS, O'SULLIVAN, VOLLEBEKK LTD. grants to C. Guzman ("The Client"), their solicitors, mortgagees, and other related parties, permission to use original, signed, sealed copies of the Surveyor's Real Property Report in transactions involving The Client.

Notes & Legend

	Denotes	
—□—	▪	Survey Monument Planted
—■—	▪	Survey Monument Found
SIB	▪	Standard Iron Bar
SSIB	▪	Short Standard Iron Bar
IB	▪	Iron Bar
IBø	▪	Round Iron Bar
IP	▪	Iron Pipe
N&W	▪	Nail and Washer
(WT)	▪	Witness
Meas.	▪	Measured
(AOG)	▪	Annis, O'Sullivan, Vollebekk Ltd.
(P1)	▪	Plan 4R-11032
(P2)	▪	Plan 4R-11228
(P3)	▪	Plan 5R-14336
(P4)	▪	(AOG) Plan dated November 5, 1992
○ MH-S	▪	Maintenance Hole (Sanitary)
— OHW —	▪	Overhead Wires
□ CB	▪	Catch Basin
CSP	▪	Corrugated Steel Pipe
BH	▪	Borehole
GM	▪	Gas Meter
T/G	▪	Top of Grate
T/P	▪	Top of Pipe
TOS	▪	Top of Slope
	▪	Bollard
△S	▪	Sign
RWI	▪	Interlock Retaining Wall
RWC	▪	Concrete Retaining Wall
RWT	▪	Timber Retaining Wall
CLF	▪	Chain Link Fence
	▪	Gate
UP	▪	Utility Pole
AC	▪	Air Conditioner
ø	▪	Diameter
	▪	Location of Elevations
	▪	Top of Retaining Wall Elevation
C/L	▪	Centerline
	▪	Property Line

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2141885
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29 (3).

ELEVATION NOTES

1. Elevations shown are geodetic and are referred to the CGVD28 geodetic datum.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Bearings are grid, derived from Can-Net 2016 Real Time Network GPS observations, and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

For comparison purposes, a rotation of 0°41'50" counter clockwise was applied to bearings on plans P1 and P2.

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors

Job No. 21149-20 Guzman P\L125 Con2 OF GL T FI | AR

PROPOSED RESIDENTIAL RE-ZONING

1368 LABRIE AVENUE

PART OF LOT 25 CONCESSION 2 (OTTAWA FRONT)

(GEOGRAPHIC TOWNSHIP OF GLOUCESTER)

CITY OF OTTAWA

APPENDIX B

LABRIE AVENUE

CITY OF OTTAWA

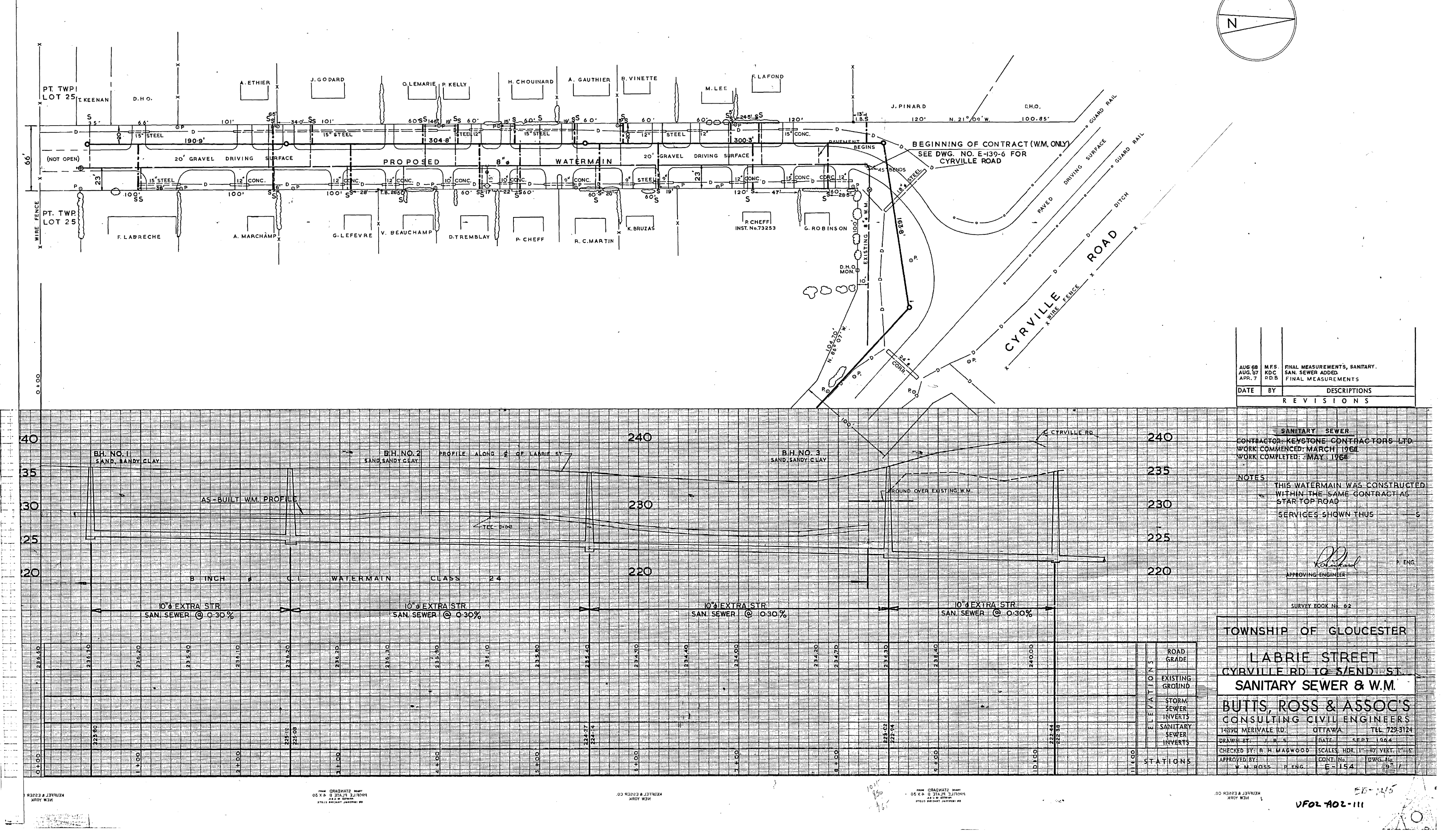
UCC AND

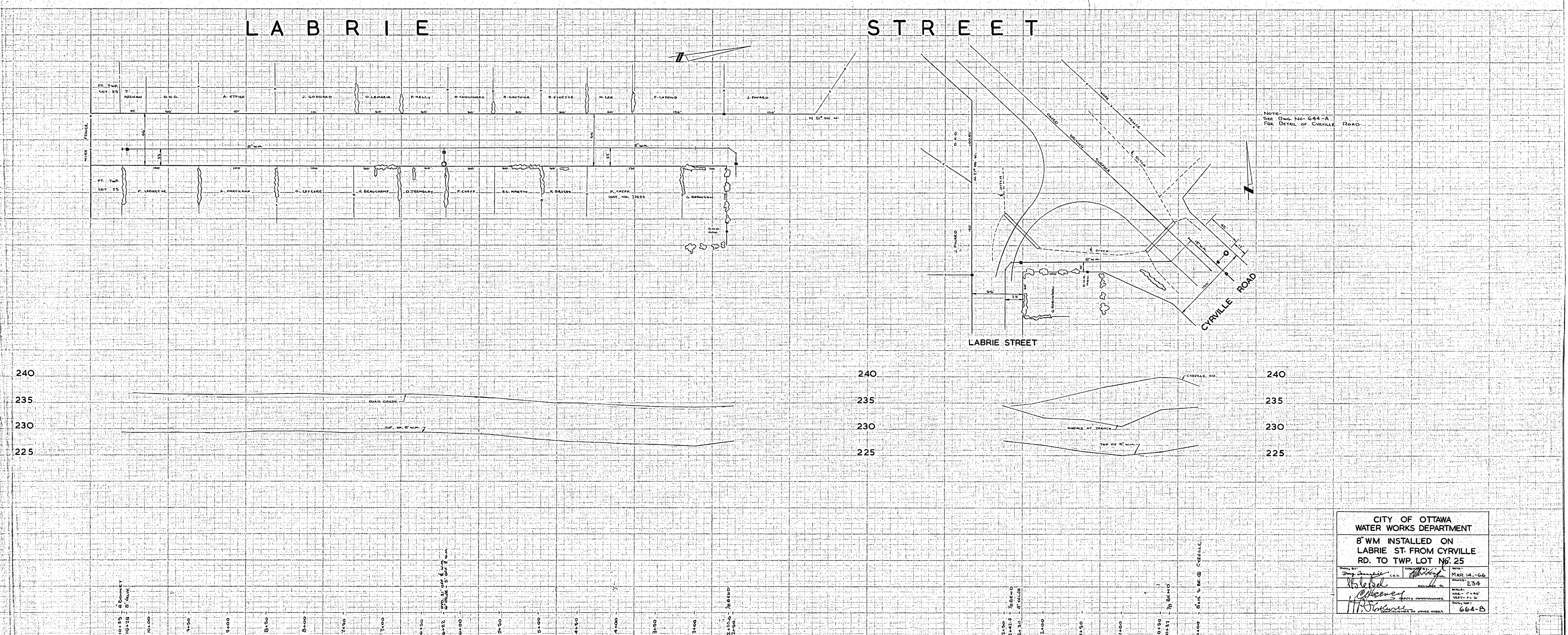
PLAN AND PROFILE “AS-BUILT”

WATERMAIN AND SEWERS

DRAWINGS

LABRIE STREET





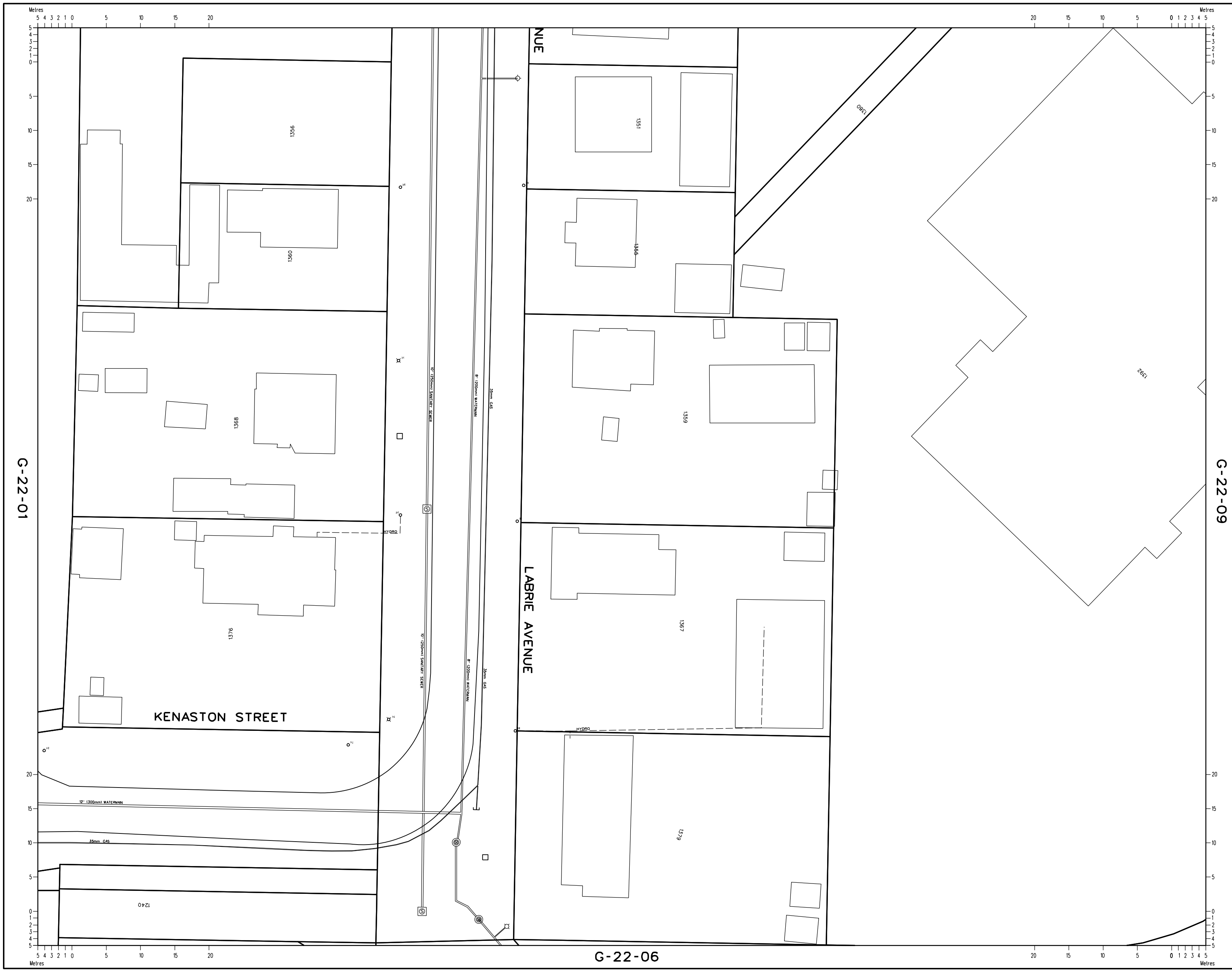
CITY OF OTTAWA
WATER WORKS DEPARTMENT

8" WM INSTALLED ON
LABRIE ST. FROM CYRVILLE
RD. TO TWP. LOT No. 25

DWN. BY - C.E.T.	CHECKED BY - P. ENG.	DATE - MAR. 14, -66
ENGINEER i/c		BOOKS - 234
DEPUTY COMMISSIONER		SCALE - HOR. - 1" = 40' VERT. - 1" = 6'
COMMISSIONER OF WATER WORKS		DWG. NO. - 664-B

6302

3709 B



REVISIONS / RÉVISIONS	DATE	BY
HYDRO,BELL,ENBRIDGE,ROGERS, CITY SEWER, WATER, TRAFFIC, SL COMPILED/DIGITIZED FROM UTILITY/CITY DATA	APR 2015	KJ

LEGEND

- Water Valve, Valve Chamber, Fire Hydrant
- Sewer Manhole, Catch Basin Manhole
- Catch Basin / Drainage, Wing Wall, Head Wall
- Pole, Pole w/ light, Decorative, Lawn Light
- Power Supply, Panel, Pedestal, Transformer, Tower, Regulator
- Amp, Hand Hole, Vault, Gas Valve
- OC Transpo: Bus Shelter-No Power, Energized, Isolated
- Streetscape: Planter Box, Grate Square, Eng. Soil
- Traffic Connect Box / Disconnect Box, SL Disconnect
- R.L Hand Hole, R.L. Camera
- Scada: Hand Hole, Monitoring Panel
- Reducer
- Pipe, Duct, Conduit, Lateral
- Culvert
- Abandoned
- Capped
- Buried Cable
- Property Line
- Install Year (2015)

TELECOM GLOSSARY

A....Allstream	P....Primus
AT....Atria	P2P....Canadian P2P Fibre
B....Bell	R....Rogers
BH....Birch Hill	S....Sprint
F....Fibre Noir	SL....Street Lighting
G....Globility	T....Traffic
GT....Group Telecom	TO....Telecom Ottawa
H....Hydro Ottawa	TU....Telus
H1....Hydro One	V....Videotron
L / L3....Level 3	Z....Zayo

GLOSSARY - OTHER

DD....Dept. of Defence	PED....Pedestal (owner unknown)
MH....Manhole (owner unknown)	PW....Public Works
O/OC....OCTranspo	UP....Utility Pole (owner unknown)
SCD....Scada	

CAUTION/ATTENTION

Although utility locations are established using the best available information, they cannot be guaranteed.
Property lines were compiled from plans and documents recorded in the Land Registry System and are for Indexing purposes only.

Bien que l'emplacement des services publics soient établis en utilisant la meilleure information disponible, ils ne peuvent pas être garantis.
Des lignes de propriété ont été compilées en utilisant des plans et des documents enregistrés dans le système de cadastre et sont pour l'indexation seulement.

Ottawa

Right of Way, Heritage, and Urban Design Services /
Gestionnaire, Services des emprises, du patrimoine, et du design urbain
Planning, Infrastructure and Economic Development Department /
Direction generale de la planification, de l'infrastructure et du developpement economique
100 Constellation Cres., 6th Floor East / 6ème Étage Est, Ottawa, ON K2G 6J8

OTTAWA UTILITY COORDINATING COMMITTEE
CENTRAL REGISTRY

COMITÉ DE COORDINATION DES SERVICES PUBLICS D'OTTAWA
ENREGISTREMENT CENTRAL

PRODUCED BY: GIS & DATA MANAGEMENT BRANCH
INFORMATION CENTRE UNIT

SCALE: 1 : 250

SHEET NUMBER
G-22-05C

PROPOSED RESIDENTIAL RE-ZONING

1368 LABRIE AVENUE

PART OF LOT 25 CONCESSION 2 (OTTAWA FRONT)

(GEOGRAPHIC TOWNSHIP OF GLOUCESTER)

CITY OF OTTAWA

APPENDIX C

- **SITE PLAN**
- **FUS FIRE FLOW CALCULATIONS**
- **FIGURE 1 – FUS EXPOSURE DISTANCES**
- **CITY OF OTTAWA WATER DATA BOUNDARY CONDITIONS**
- **SUPPORTING HYDRAULIC CALCULATIONS**
- **GEOOTTAWA MAP 2020 (CONFIRMING HYDRANT SPACING)**

SITE PLAN

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

Application for Zoning By-Law Amendment 2021-04-02

LIST OF ARCHITECTURAL DRAWINGS

NO.	DRAWING'S NAME
A-1	COVER PAGE
A-2	EXISTING SITE
A-3	SITE MAP & LOCATION
A-4	SITE PLAN & BUILDING DATE
A-5	GROUND FLOOR PLAN
A-6	SECOND FLOOR PLAN
A-7	THIRD FLOOR PLAN
A-8	FOURTH FLOOR PLAN
A-9	FIFTH FLOOR PLAN
A-10	SIXTH FLOOR PLAN
A-11	ROOF PLAN
A-12	BASEMENT FLOOR PLAN
A-13	BUILDING ELEVATIONS
A-14	BUILDING LONGITUDINAL SECTION
A-15	BUILDING CROSS-SECTION
A-16	UNIT'S INTERIOR VIEWS

- Horizontal Metal Siding at 5th & 6th Floors
- Projected Floor Slabs and Balconies (Cantilevers)
- Metal Sun-control Projection
- Timber Laminated Glass Guard Rail at Balconies
- Fibre Glass windows by Cascadia
- Face Brick Veneer Cladding from 2nd to 4th Floors
- Natural Stone by Shouldice Designer Stone @ 1st floor

1 / A-1 PERSPECTIVE VIEW FROM SOUTH EAST CORNER

Preliminary Concept View. Building Features, landscaping, and art work shown on this drawing are presented for illustration and Presentation study only, refer to Floor Plans, Elevations and Building Sections for exact materials' measure, shape and texture.

* THIS DRAWING IS THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. * DO NOT SCALE DRAWINGS, CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND REPORT TO THE ARCHITECT ANY DISCREPANCIES. * THIS DRAWING IS NOT VALID UNLESS SIGNED AND DATED BY THE ARCHITECT. * THIS DRAWING IS NOT VALID FOR CONSTRUCTION UNLESS STAMPED * FOR CONSTRUCTION *.
* FOR OTHER DISCIPLINE'S INFORMATION, REFER TO CONSULTANTS DRAWINGS. IN CASE OF DISCREPANCY, CONSULTANT ENGINEER'S DRAWINGS SHALL SUPERSEDE THIS DRAWING.
* REFER TO MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS AND CATALOGUES FOR WINDOWS/DOORS ROUGH OPENINGS. * THE ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY PRODUCT, MATERIAL, SYSTEM OR ASSEMBLY DESCRIBED HEREIN. * CONTRACTOR TO COORDINATE AND READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER CONSULTANT' DRAWINGS AND SHALL SUBMIT SHOP DRAWINGS AND/OR SAMPLES TO OWNER FOR APPROVAL PRIOR TO ORDERING, INSTALLING OR CONSTRUCTING.

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

CARINA GUZMAN, INFINITE REAL ESTATE OTTAWA, ON

COVER PAGE

FOR ARCHITECTURAL DISCIPLINE ONLY
ONTARIO ASSOCIATION OF ARCHITECTS
2021-04-02
SAM MORGAN
LICENCE 5065
REZONING APPLICATION 2021-04-02

Project # 200907
Date 2021-04-02
Scale AS SHOWN
A-1
For: Zoning By-Law Amendment

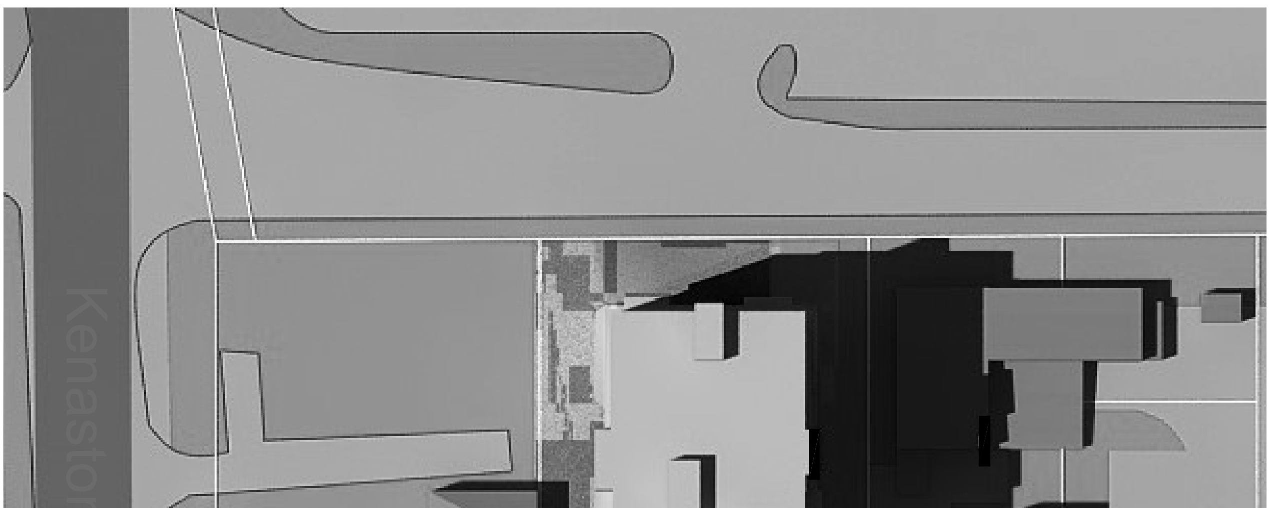
Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

1
A-2
EXISTING SITE
SCALE: N.T.S.

* THIS DRAWING IS THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. * DO NOT SCALE DRAWINGS, CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND REPORT TO THE ARCHITECT ANY DISCREPANCIES. * THIS DRAWING IS NOT VALID UNLESS SIGNED AND DATED BY THE ARCHITECT. * THIS DRAWING IS NOT VALID FOR CONSTRUCTION UNLESS STAMPED * FOR CONSTRUCTION *. * FOR OTHER DISCIPLINE'S INFORMATION, REFER TO CONSULTANTS DRAWINGS. IN CASE OF DISCREPANCY, CONSULTANT ENGINEER'S DRAWINGS SHALL SUPERSEDE THIS DRAWING. * REFER TO MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS AND CATALOGUES FOR WINDOWS/DOORS ROUGH OPENINGS. * THE ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY PRODUCT, MATERIAL, SYSTEM OR ASSEMBLY DESCRIBED HEREIN. * CONTRACTOR TO COORDINATE AND READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER CONSULTANT' DRAWINGS AND SHALL SUBMIT SHOP DRAWINGS AND/OR SAMPLES TO OWNER FOR APPROVAL PRIOR TO ORDERING, INSTALLING OR CONSTRUCTING.	NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON CARINA GUZMAN, INFINITE REAL ESTATE OTTAWA, ON EXISTING SITE	FOR ARCHITECTURAL DISCIPLINE ONLY ONTARIO ASSOCIATION OF ARCHITECTS SAM MORGAN LICENCE 5065 2021-04-02 REZONING APPLICATION 2021-04-02	Project # 200907 Date 2021-04-02 Scale AS SHOWN A-2 For: Zoning By-Law Amendment	Sam Morgan Architect 9 Cowling Crescent Ajax, Ontario L1S 2Z6 416.889.7083 sammorganarchitect@gmail.com www.smorganarch.com Certificate of Practice: 4323

1
A-3
SITE MAP
SCALE: 1 : 200 metric

2
A-3
SITE LOCATION
SCALE: 1 : 400 metric

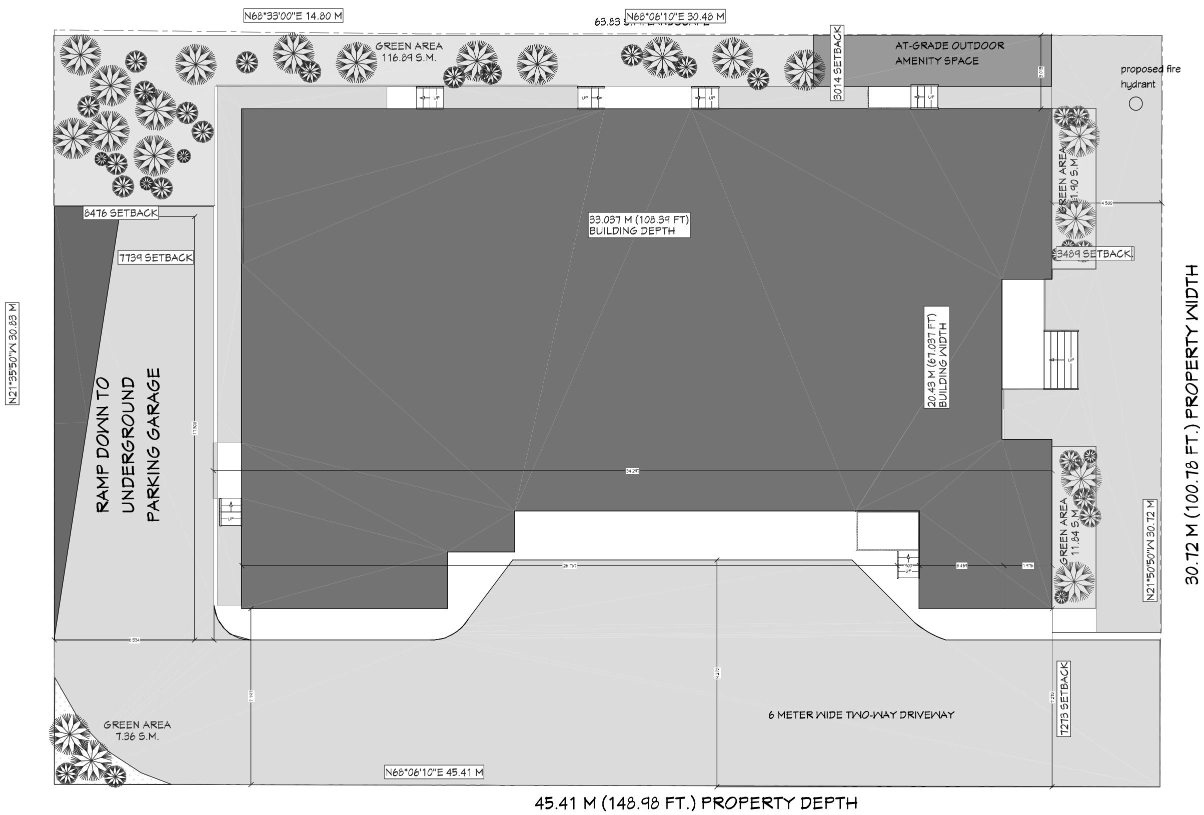


* THIS DRAWING IS THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. * DO NOT SCALE DRAWINGS, CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND REPORT TO THE ARCHITECT ANY DISCREPANCIES. * THIS DRAWING IS NOT VALID UNLESS SIGNED AND DATED BY THE ARCHITECT. * THIS DRAWING IS NOT VALID FOR CONSTRUCTION UNLESS STAMPED " FOR CONSTRUCTION ". * FOR OTHER DISCIPLINE'S INFORMATION, REFER TO CONSULTANTS DRAWINGS, IN CASE OF DISCREPANCY, CONSULTANT ENGINEER'S DRAWINGS SHALL SUPERSEDE THIS DRAWING. * REFER TO MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS AND CATALOGUES FOR WINDOWS/DOORS ROUGH OPENINGS. * THE ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY PRODUCT, MATERIAL, SYSTEM OR ASSEMBLY DESCRIBED HEREIN. * CONTRACTOR TO COORDINATE AND READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER CONSULTANT' DRAWINGS AND SHALL SUBMIT SHOP DRAWINGS AND/OR SAMPLES TO OWNER FOR APPROVAL PRIOR TO ORDERING, INSTALLING OR CONSTRUCTING.	NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON CARINA GUZMAN, INFINITE REAL ESTATE OTTAWA, ON SITE LOCATION	ONTARIO ASSOCIATION OF ARCHITECTS FOR ARCHITECTURAL DISCIPLINE ONLY SAM MORGAN LICENCE 5065 2021-04-02 REZONING APPLICATION 2021-04-02	Project # 200907 Date 2021-04-02 Scale AS SHOWN A-3 For: Zoning By-Law Amendment

Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

TRUE NORTH
CONSTRUCTION NORTH

EVERY REASONABLE EFFORT HAS BEEN MADE TO ENSURE THAT THE INFORMATION APPEARING IN THIS DRAWING IS ACCURATE AND CURRENT. WE BELIEVE THE INFORMATION TO BE RELIABLE, HOWEVER, SAM MORGAN ARCHITECT ASSUMES NO RESPONSIBILITY OR LIABILITY DUE TO ERRORS OR OMISSIONS.



HARD LANDSCAPE	138.78 SM
AT GRADE AMENITY	20.00 SM
SOFT LANDSCAPE	120.63 SM
ROAD / DRIVEWAY/ PARKING / RAMP	440.04 SM
BUILDING FOOTPRINT	591.09 SM

LOT AREA	1393.80 S.M.
FRONT SETBACK	4.500 M
RIGHT-SIDE (NORTH) SETBACK	3.015 M
LEFT-SIDE (SOUTH) SETBACK	7.273 M
REAR (WEST) SETBACK	7.739 M
BUILDING FOOTPRINT	621.43 S.M. (including Decks and stairs)
GROUND FLOOR AREA	590.74 S.M.
SECOND FLOOR AREA	697.60 S.M.
THIRD FLOOR AREA	712.21 S.M.
FOURTH FLOOR AREA	712.21 S.M.
FIFTH FLOOR AREA	636.12 S.M.
SIX FLOOR AREA	636.12 S.M.
ROOF AREA Usable Space	554.43 S.M.
GROSS FLOOR AREA	3,985 S.M. (42,894 S.F.) 280% of Lot Area
UNDERGROUND PARKING INCLUDING 2 BARRIER-FREE	31 CAR PARKING SPACES
BICYCLE STORAGE AT GRADE FOR	31 BIKES
STORAGE LOCKERS FOR	28 UNITS
ONE BEDROOM UNITS	17 UNITS (INCLUDING 6 BARRIER-FREE)
TWO BEDROOMS' UNITS	25UNITS
ONE BEDROOM + DEN	6 UNITS
TOTAL NUMBER OF UNITS	45 UNITS
BUILDING HEIGHT	19.00 M TO ROOF FLOOR LVL 22.00 M TO TOP OF STAIRS/ ELEV. MACHINE ROOM
SOFT LANDSCAPE AREA	127.99 S.M.
HARD LANDSCAPE AREA	138.78 S.M.
AT-GRADE AMENITY SPACE	20.00 S.M.
DRIVEWAY/PARKING/RAMP	440.04 S.M.

UNITS' SCHEDULE

FLOOR	1 BEDROOM	1 BEDROOM + DEN	2 BEDROOMS	TOTAL UNITS/FLOOR
FIRST FLOOR	1	1	3	5
SECOND FLOOR	2	2	4	8
THIRD FLOOR	2	2	4	8
FOURTH FLOOR	2	2	4	8
FIFTH FLOOR	2	2	4	8
SIX FLOOR	2	2	4	8
TOTAL	11	11	23	45

Site information taken from Land Survey plan prepared by Annis, O'Sullivan, Vollebekk Ltd, Ontario Land Surveyor dated December 02, 2020 for Part 1 Plan, part of lot 25, concession 2 (Ottawa Front) Geographic Township of Gloucester, City of Ottawa.

Land surveyor contact information: 14 Concourse Gate, Suite 500, Nepean, ON K2E 7S6, 613-727-0800, nepean@aovltd.com

1 / A-4 SITE PLAN AND BUILDING DATA

SCALE: 1 : 200 metric

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

CARINA GUZMAN, INFINITE REAL ESTATE OTTAWA, ON

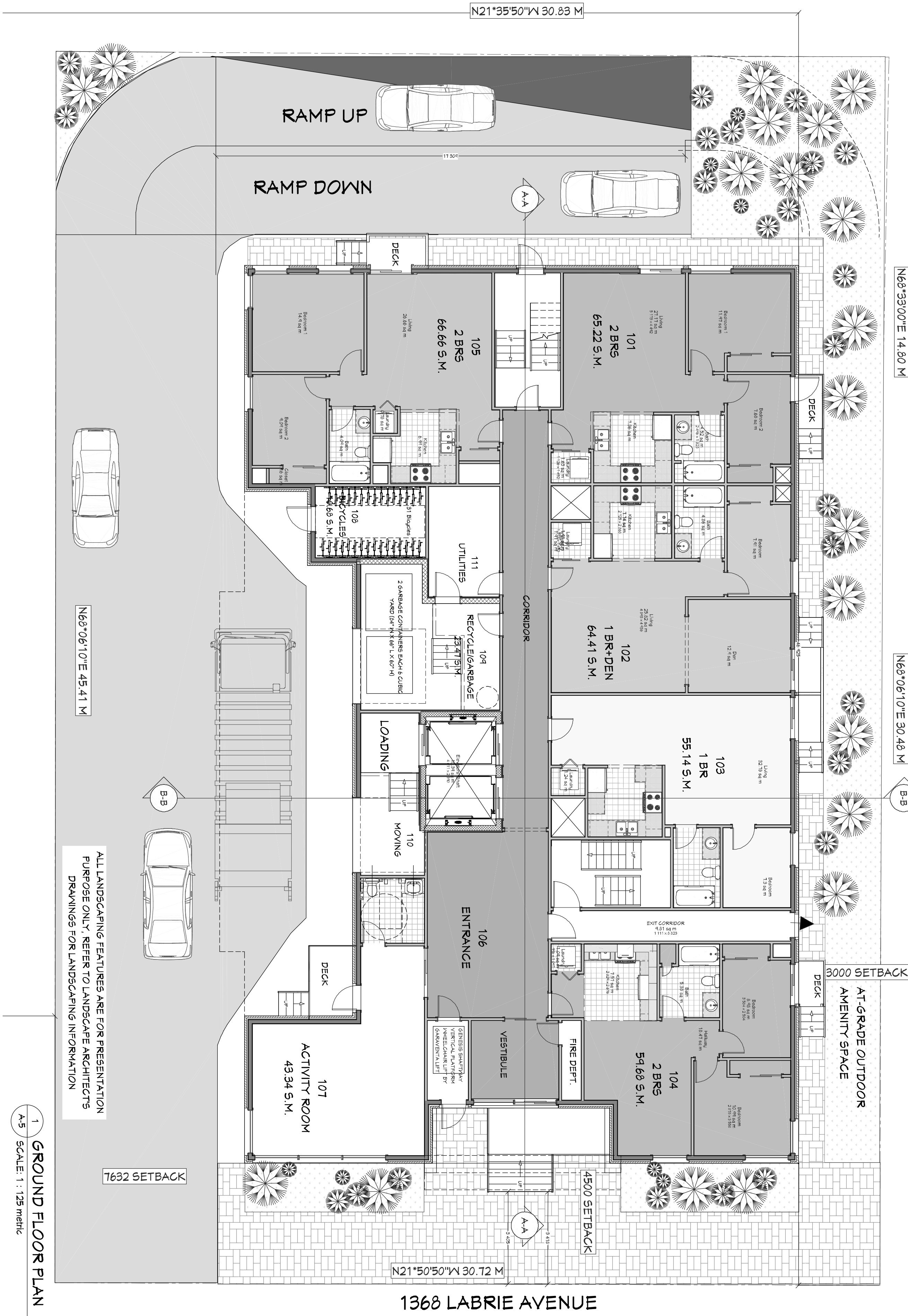
SITE PLAN AND BUILDING DATA

FOR ARCHITECTURAL DISCIPLINE ONLY
ONTARIO ASSOCIATION OF ARCHITECTS
2021-04-02
SAM MORGAN
LICENCE 5065
REZONING APPLICATION 2021-04-02

Project # 200907
Date 2021-04-02
Scale AS SHOWN
A-4
For: Zoning By-Law Amendment

Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

CONSTRUCTION NORTH
TRUE NORTH



1368 LABRIE AVENUE

1 GROUND FLOOR PLAN
A-5 SCALE: 1 : 125 metric

* THIS DRAWING IS THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. * DO NOT SCALE DRAWINGS, CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND REPORT TO THE ARCHITECT ANY DISCREPANCIES. * THIS DRAWING IS NOT VALID UNLESS SIGNED AND DATED BY THE ARCHITECT. * THIS DRAWING IS NOT VALID FOR CONSTRUCTION UNLESS STAMPED " FOR CONSTRUCTION ".
* FOR OTHER DISCIPLINE'S INFORMATION, REFER TO CONSULTANTS DRAWINGS, IN CASE OF DISCREPANCY, CONSULTANT ENGINEER'S DRAWINGS SHALL SUPERSEDE THIS DRAWING.
* REFER TO MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS AND CATALOGUES FOR WINDOWS/DOORS ROUGH OPENINGS. * THE ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY PRODUCT, MATERIAL, SYSTEM OR ASSEMBLY DESCRIBED HEREIN. * CONTRACTOR TO COORDINATE AND READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER CONSULTANT' DRAWINGS AND SHALL SUBMIT SHOP DRAWINGS AND/OR SAMPLES TO OWNER FOR APPROVAL PRIOR TO ORDERING, INSTALLING OR CONSTRUCTING.

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

CARINA GUZMAN, INFINITE REAL ESTATE OTTAWA, ON

GROUND FLOOR PLAN

FOR ARCHITECTURAL DISCIPLINE ONLY
ONTARIO ASSOCIATION OF ARCHITECTS
SAM MORGAN
LICENCE 5065
2021-04-02
REZONING APPLICATION 2021-04-02

Project # 200907
Date 2021-04-02
Scale AS SHOWN
A-5
For: Zoning By-Law Amendment

Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

TRUE NORTH
CONSTRUCTION NORTH

EVERY REASONABLE EFFORT HAS BEEN MADE TO ENSURE THAT THE INFORMATION APPEARING IN THIS DRAWING IS ACCURATE AND CURRENT. WE BELIEVE THE INFORMATION TO BE RELIABLE, HOWEVER, SAM MORGAN ARCHITECT ASSUMES NO RESPONSIBILITY OR LIABILITY DUE TO ERRORS OR OMISSIONS.

* THIS DRAWING IS THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. * DO NOT SCALE DRAWINGS, CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND REPORT TO THE ARCHITECT ANY DISCREPANCIES. * THIS DRAWING IS NOT VALID UNLESS SIGNED AND DATED BY THE ARCHITECT. * THIS DRAWING IS NOT VALID FOR CONSTRUCTION UNLESS STAMPED " FOR CONSTRUCTION ".
* FOR OTHER DISCIPLINE'S INFORMATION, REFER TO CONSULTANTS DRAWINGS, IN CASE OF DISCREPANCY, CONSULTANT ENGINEER'S DRAWINGS SHALL SUPERSEDE THIS DRAWING.
* REFER TO MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS AND CATALOGUES FOR WINDOWS/DOORS ROUGH OPENINGS. * THE ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY PRODUCT, MATERIAL, SYSTEM OR ASSEMBLY DESCRIBED HEREIN. * CONTRACTOR TO COORDINATE AND READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER CONSULTANT' DRAWINGS AND SHALL SUBMIT SHOP DRAWINGS AND/OR SAMPLES TO OWNER FOR APPROVAL PRIOR TO ORDERING, INSTALLING OR CONSTRUCTING.

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

CARINA GUZMAN, INFINITE REAL ESTATE
OTTAWA, ON

SECOND FLOOR PLAN

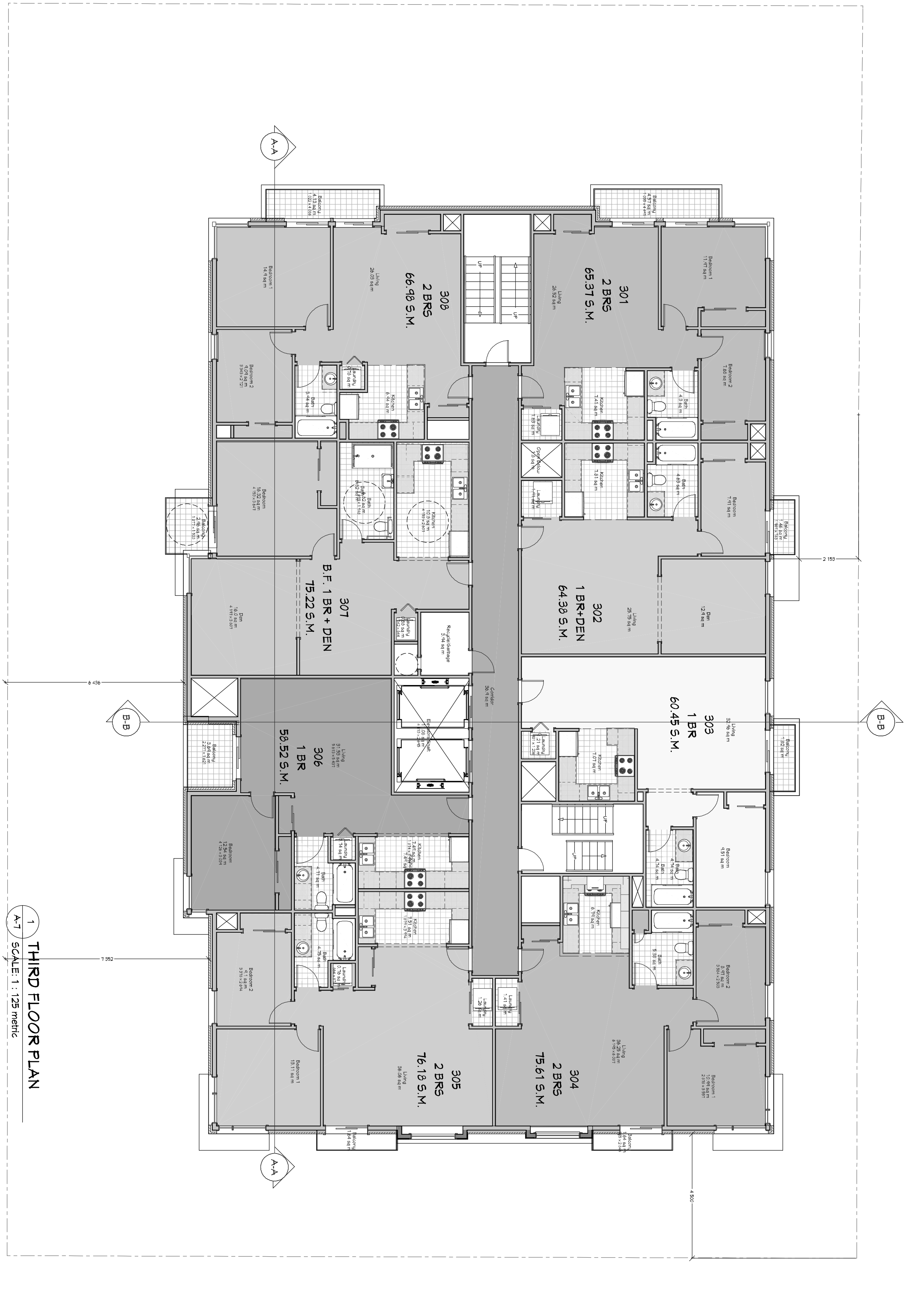
FOR ARCHITECTURAL DISCIPLINE ONLY
ONTARIO ASSOCIATION OF ARCHITECTS
SAM MORGAN
LICENCE 5065
2021-04-02
REZONING APPLICATION 2021-04-02

Project # 200907
Date 2021-04-02
Scale AS SHOWN
A-6
For: Zoning By-Law Amendment

Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

TRUE NORTH
CONSTRUCTION NORTH

EVERY REASONABLE EFFORT HAS BEEN MADE TO ENSURE THAT THE INFORMATION APPEARING IN THIS DRAWING IS ACCURATE AND CURRENT. WE BELIEVE THE INFORMATION TO BE RELIABLE, HOWEVER, SAM MORGAN ARCHITECT ASSUMES NO RESPONSIBILITY OR LIABILITY DUE TO ERRORS OR OMISSIONS.

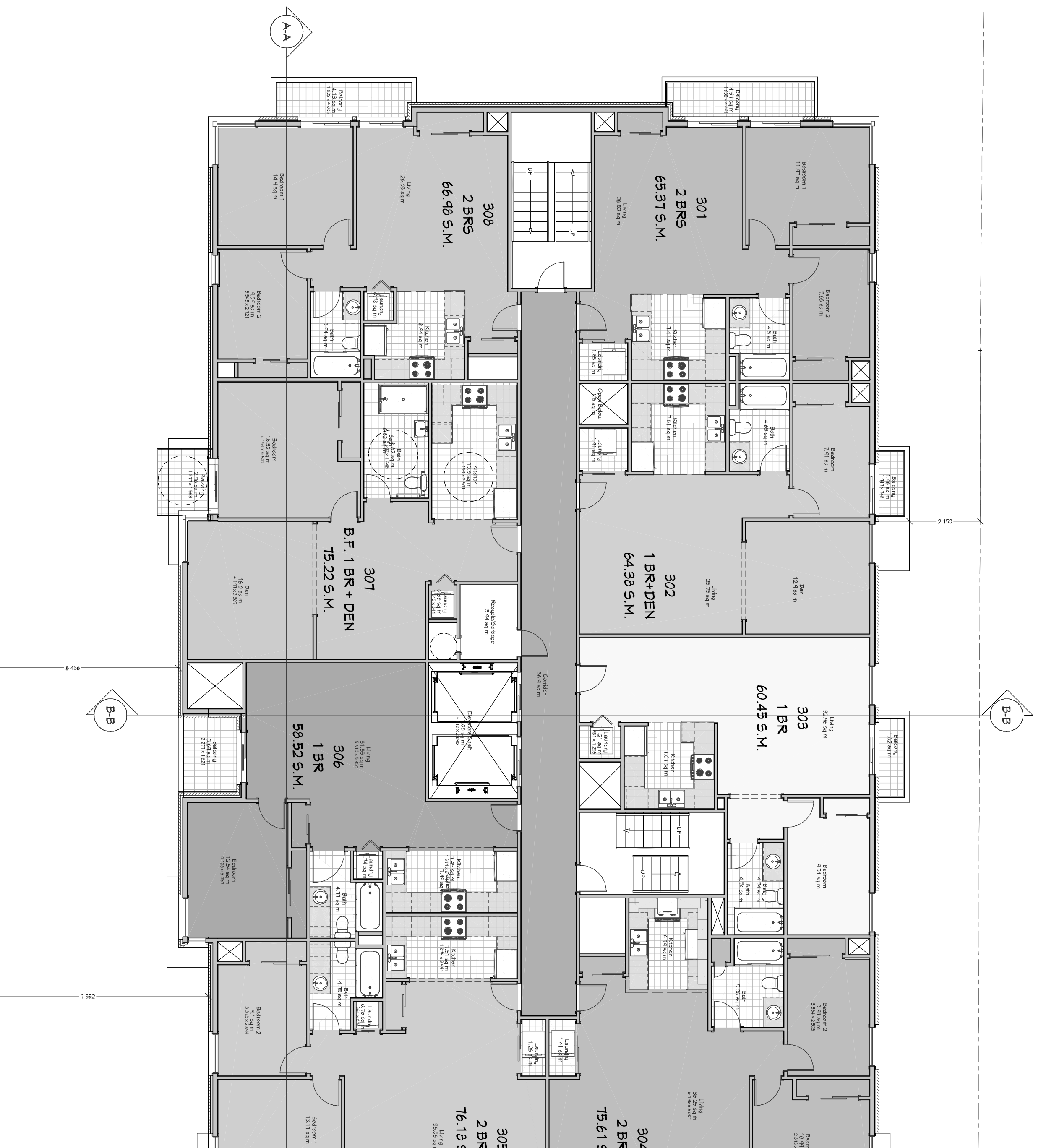


* THIS DRAWING IS THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. * DO NOT SCALE DRAWINGS, CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND REPORT TO THE ARCHITECT ANY DISCREPANCIES. * THIS DRAWING IS NOT VALID UNLESS SIGNED AND DATED BY THE ARCHITECT. * THIS DRAWING IS NOT VALID FOR CONSTRUCTION UNLESS STAMPED " FOR CONSTRUCTION ". * FOR OTHER DISCIPLINE'S INFORMATION, REFER TO CONSULTANTS DRAWINGS, IN CASE OF DISCREPANCY, CONSULTANT ENGINEER'S DRAWINGS SHALL SUPERSEDE THIS DRAWING. * REFER TO MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS AND CATALOGUES FOR WINDOWS/DOORS ROUGH OPENINGS. * THE ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY PRODUCT, MATERIAL, SYSTEM OR ASSEMBLY DESCRIBED HEREIN. * CONTRACTOR TO COORDINATE AND READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER CONSULTANT' DRAWINGS AND SHALL SUBMIT SHOP DRAWINGS AND/OR SAMPLES TO OWNER FOR APPROVAL PRIOR TO ORDERING, INSTALLING OR CONSTRUCTING.	NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON CARINA GUZMAN, INFINITE REAL ESTATE OTTAWA, ON THIRD FLOOR PLAN	FOR ARCHITECTURAL DISCIPLINE ONLY ONTARIO ASSOCIATION OF ARCHITECTS SAM MORGAN LICENCE 5065 2021-04-02 REZONING APPLICATION 2021-04-02	Project # 200907 Date 2021-04-02 Scale AS SHOWN A-7 For: Zoning By-Law Amendment

Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

TRUE NORTH
CONSTRUCTION NORTH

EVERY REASONABLE EFFORT HAS BEEN MADE TO ENSURE THAT THE INFORMATION APPEARING IN THIS DRAWING IS ACCURATE AND CURRENT. WE BELIEVE THE INFORMATION TO BE RELIABLE, HOWEVER, SAM MORGAN ARCHITECT ASSUMES NO RESPONSIBILITY OR LIABILITY DUE TO ERRORS OR OMISSIONS.



1 A-8 FOURTH FLOOR PLAN
SCALE: 1 : 125 metric

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

CARINA GUZMAN, INFINITE REAL ESTATE
OTTAWA, ON

FOURTH FLOOR PLAN

FOR ARCHITECTURAL DISCIPLINE ONLY
ONTARIO ASSOCIATION OF ARCHITECTS
SAM MORGAN
LICENCE 5065
2021-04-02
REZONING APPLICATION 2021-04-02

Project #	200907
Date	2021-04-02
Scale	AS SHOWN
A-8	For: Zoning By-Law Amendment

Sam Morgan
Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

TRUE NORTH
CONSTRUCTION NORTH

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

CARINA GUZMAN, INFINITE REAL ESTATE
OTTAWA, ON

FIFTH FLOOR PLAN

FOR ARCHITECTURAL DISCIPLINE ONLY
ONTARIO ASSOCIATION OF ARCHITECTS
SAM MORGAN
LICENCE 5065
2021-04-02
REZONING APPLICATION 2021-04-02

Project #	200907
Date	2021-04-02
Scale	AS SHOWN
A-9	
For: Zoning By-Law Amendment	

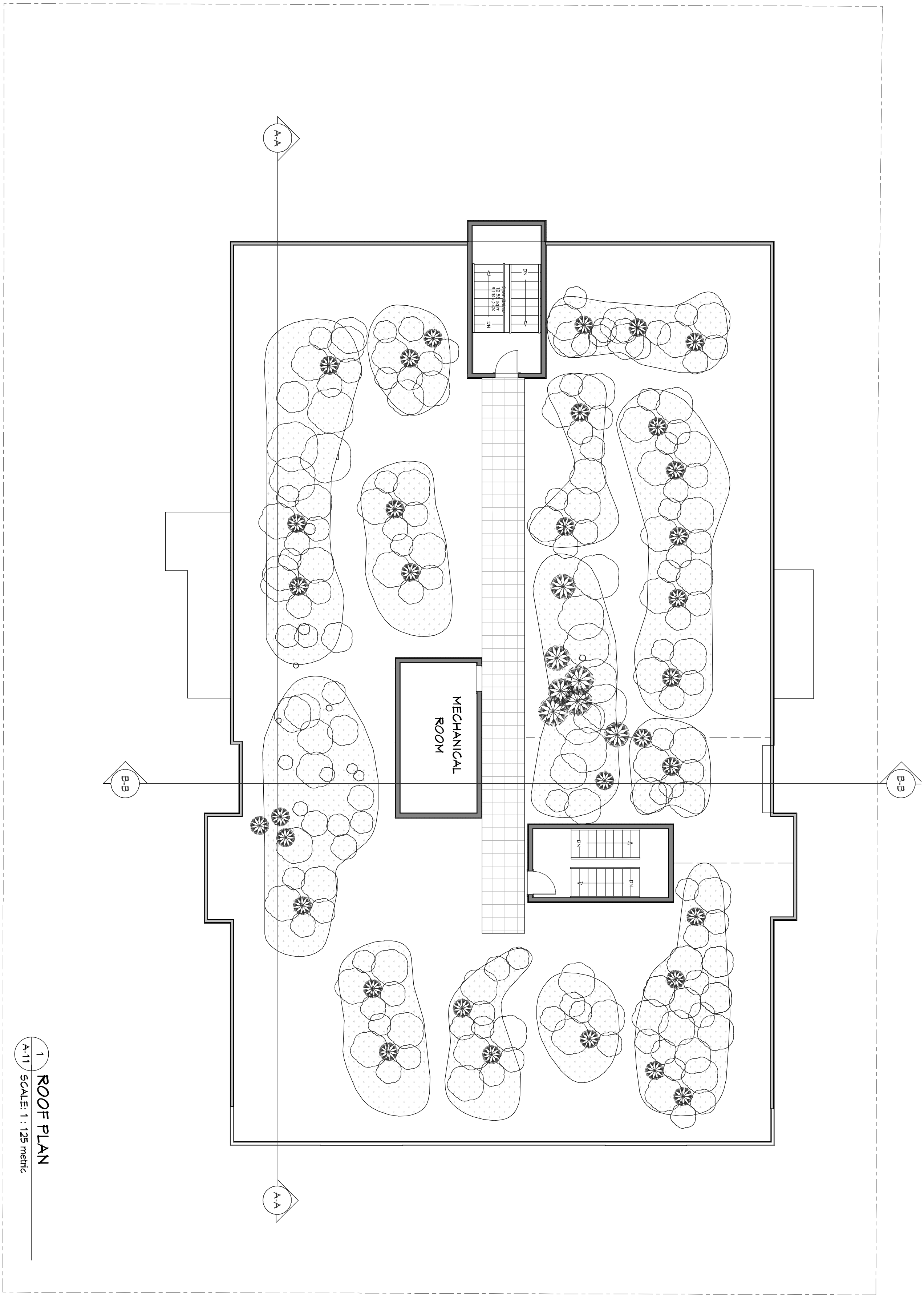
Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

TRUE NORTH
CONSTRUCTION NORTH

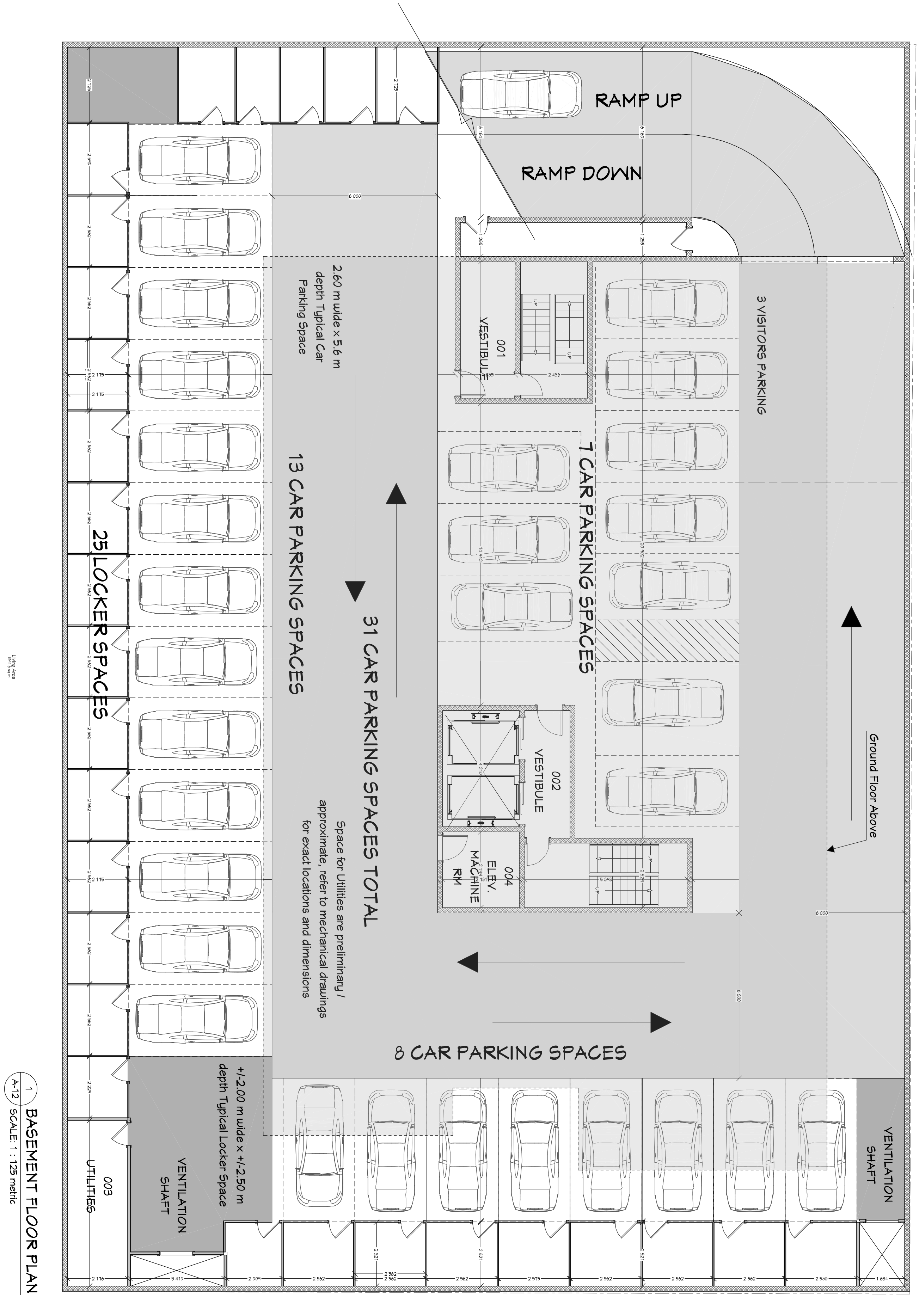
* THIS DRAWING IS THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. * DO NOT SCALE DRAWINGS, CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND REPORT TO THE ARCHITECT ANY DISCREPANCIES. * THIS DRAWING IS NOT VALID UNLESS SIGNED AND DATED BY THE ARCHITECT. * THIS DRAWING IS NOT VALID FOR CONSTRUCTION UNLESS STAMPED " FOR CONSTRUCTION ". * FOR OTHER DISCIPLINE'S INFORMATION, REFER TO CONSULTANTS DRAWINGS, IN CASE OF DISCREPANCY, CONSULTANT ENGINEER'S DRAWINGS SHALL SUPERSEDE THIS DRAWING. * REFER TO MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS AND CATALOGUES FOR WINDOWS/DOORS ROUGH OPENINGS. * THE ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY PRODUCT, MATERIAL, SYSTEM OR ASSEMBLY DESCRIBED HEREIN. * CONTRACTOR TO COORDINATE AND READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER CONSULTANT' DRAWINGS AND SHALL SUBMIT SHOP DRAWINGS AND/OR SAMPLES TO OWNER FOR APPROVAL PRIOR TO ORDERING, INSTALLING OR CONSTRUCTING.	NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON CARINA GUZMAN, INFINITE REAL ESTATE OTTAWA, ON SIXTH FLOOR PLAN	FOR ARCHITECTURAL DISCIPLINE ONLY ONTARIO ASSOCIATION OF ARCHITECTS SAM MORGAN LICENCE 5065 2021-04-02 REZONING APPLICATION 2021-04-02	Project # 200907 Date 2021-04-02 Scale AS SHOWN A-10 For: Zoning By-Law Amendment

Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

TRUE NORTH
CONSTRUCTION NORTH



* THIS DRAWING IS THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. * DO NOT SCALE DRAWINGS, CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND REPORT TO THE ARCHITECT ANY DISCREPANCIES. * THIS DRAWING IS NOT VALID UNLESS SIGNED AND DATED BY THE ARCHITECT. * THIS DRAWING IS NOT VALID FOR CONSTRUCTION UNLESS STAMPED " FOR CONSTRUCTION ". * FOR OTHER DISCIPLINE'S INFORMATION, REFER TO CONSULTANTS DRAWINGS, IN CASE OF DISCREPANCY, CONSULTANT ENGINEER'S DRAWINGS SHALL SUPERSEDE THIS DRAWING. * REFER TO MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS AND CATALOGUES FOR WINDOWS/DOORS ROUGH OPENINGS. * THE ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY PRODUCT, MATERIAL, SYSTEM OR ASSEMBLY DESCRIBED HEREIN. * CONTRACTOR TO COORDINATE AND READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER CONSULTANT' DRAWINGS AND SHALL SUBMIT SHOP DRAWINGS AND/OR SAMPLES TO OWNER FOR APPROVAL PRIOR TO ORDERING, INSTALLING OR CONSTRUCTING.	NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON CARINA GUZMAN, INFINITE REAL ESTATE OTTAWA, ON ROOF PLAN	FOR ARCHITECTURAL DISCIPLINE ONLY ONTARIO ASSOCIATION OF ARCHITECTS SAM MORGAN LICENCE 5065 2021-04-02 REZONING APPLICATION 2021-04-02	Project # 200907 Date 2021-04-02 Scale AS SHOWN A-11 For: Zoning By-Law Amendment	Sam Morgan Architect 9 Cowling Crescent Ajax, Ontario L1S 2Z6 416.889.7083 sammorganarchitect@gmail.com www.smorganarch.com Certificate of Practice: 4323 TRUE NORTH CONSTRUCTION NORTH



NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

CARINA GUZMAN, INFINITE REAL ESTATE
OTTAWA, ON

BASEMENT FLOOR PLAN

FOR ARCHITECTURAL DISCIPLINE ONLY
ONTARIO ASSOCIATION OF ARCHITECTS
SAM MORGAN
LICENCE 5065
2021-04-02
REZONING APPLICATION 2021-04-02

Project # 200907
Date 2021-04-02
Scale AS SHOWN
A-12
For: Zoning By-Law Amendment

Sam Morgan
Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

TRUE NORTH
CONSTRUCTION NORTH

* THIS DRAWING IS THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. * DO NOT SCALE DRAWINGS, CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND REPORT TO THE ARCHITECT ANY DISCREPANCIES. * THIS DRAWING IS NOT VALID UNLESS SIGNED AND DATED BY THE ARCHITECT. * THIS DRAWING IS NOT VALID FOR CONSTRUCTION UNLESS STAMPED " FOR CONSTRUCTION ".
* FOR OTHER DISCIPLINE'S INFORMATION, REFER TO CONSULTANTS DRAWINGS, IN CASE OF DISCREPANCY, CONSULTANT ENGINEER'S DRAWINGS SHALL SUPERSEDE THIS DRAWING.
* REFER TO MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS AND CATALOGUES FOR WINDOWS/DOORS ROUGH OPENINGS. * THE ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY PRODUCT, MATERIAL, SYSTEM OR ASSEMBLY DESCRIBED HEREIN. * CONTRACTOR TO COORDINATE AND READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER CONSULTANT' DRAWINGS AND SHALL SUBMIT SHOP DRAWINGS AND/OR SAMPLES TO OWNER FOR APPROVAL PRIOR TO ORDERING, INSTALLING OR CONSTRUCTING.

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

CARINA GUZMAN, INFINITE REAL ESTATE
OTTAWA, ON

ELEVATIONS

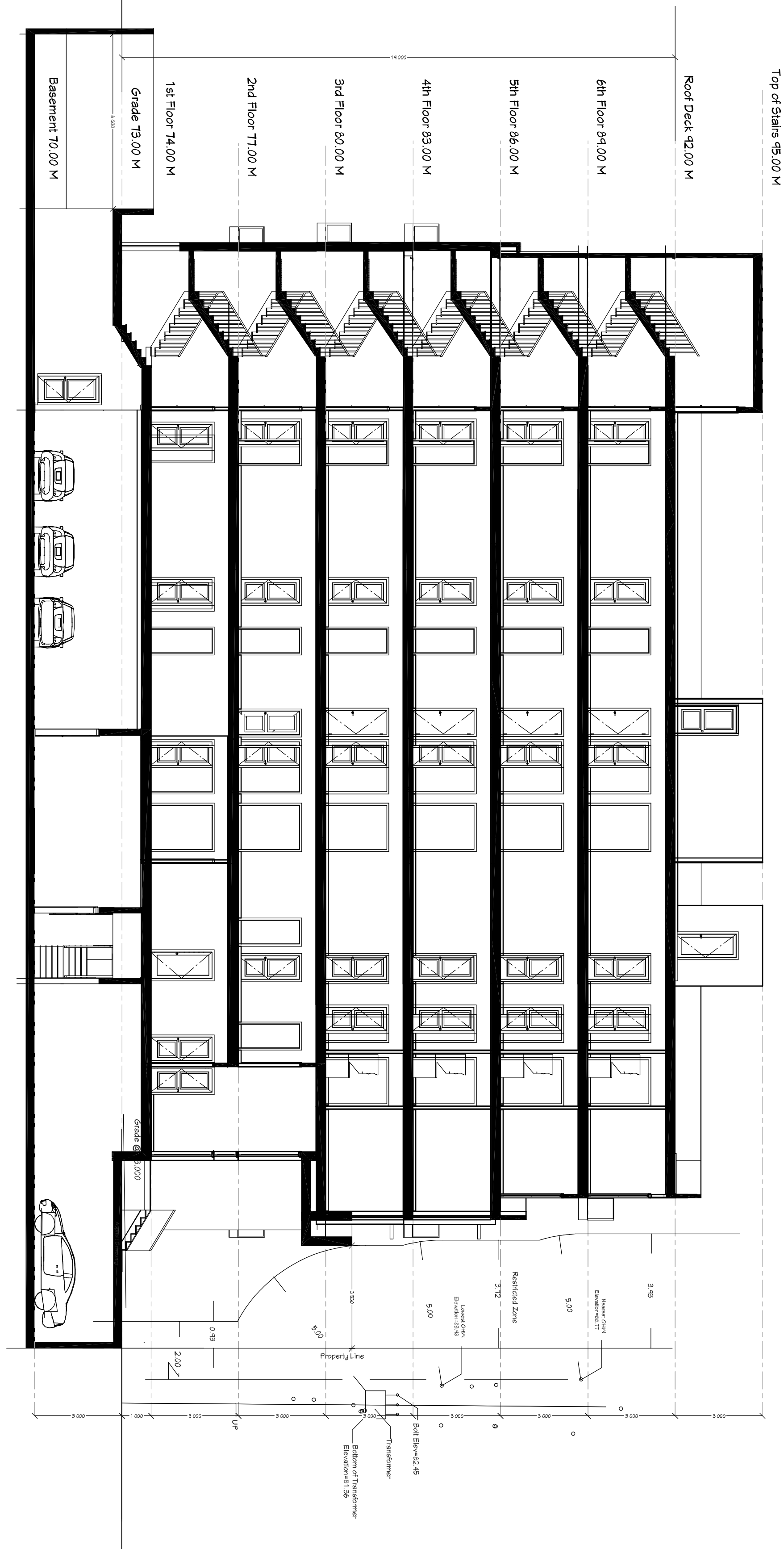
FOR ARCHITECTURAL DISCIPLINE ONLY
ONTARIO ASSOCIATION OF ARCHITECTS
SAM MORGAN
LICENCE 5065
2021-04-02
REZONING APPLICATION 2021-04-02

Project # 200907
Date 2021-04-02
Scale AS SHOWN

A-13

For: Zoning By-Law Amendment

Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323



1 A-14 BUILDING LONGITUDINAL-SECTION EAST-WEST FACING NORTH
SCALE: 1 : 150 metric

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

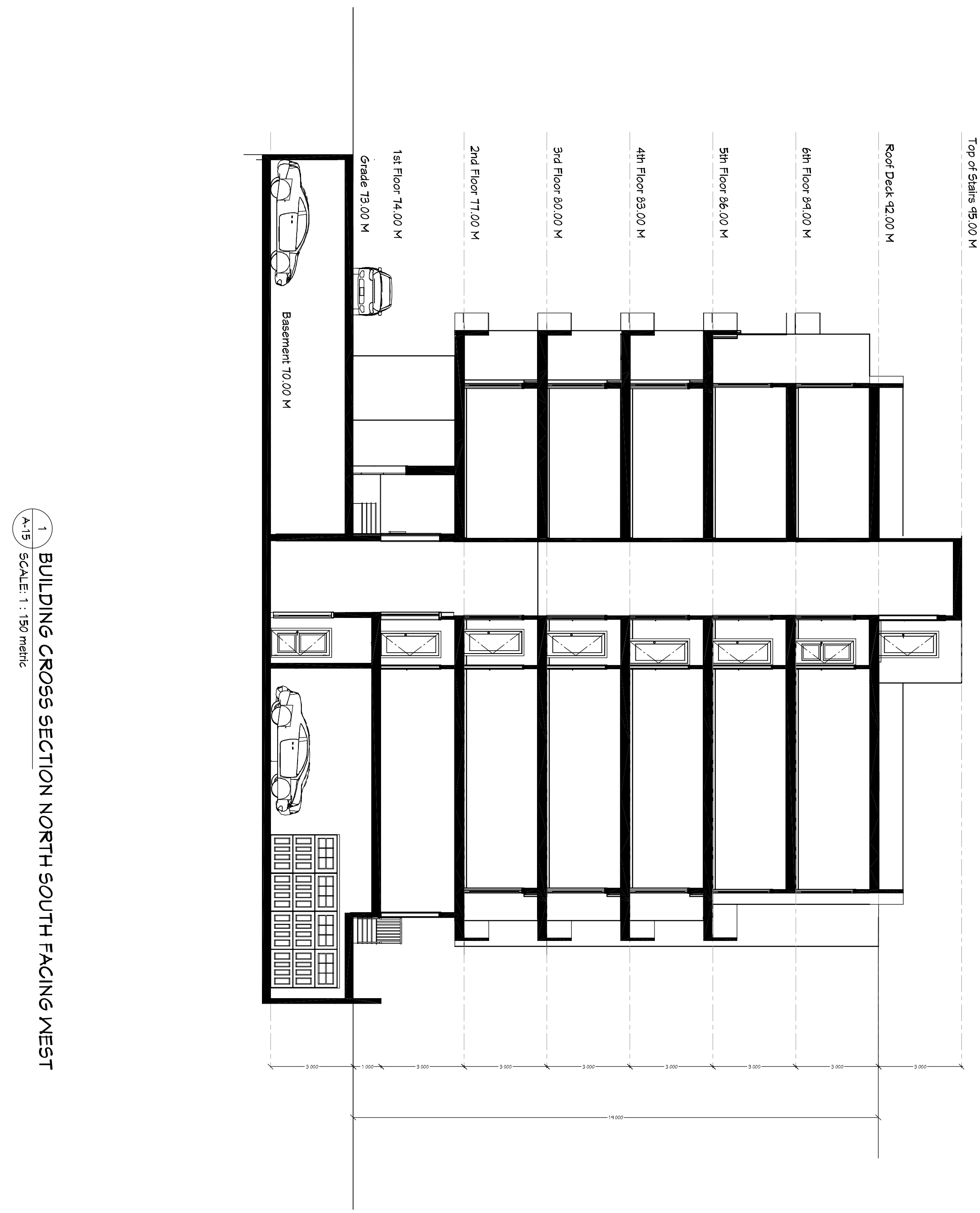
CARINA GUZMAN, INFINITE REAL ESTATE
OTTAWA, ON

BUILDING LONGITUDINAL SECTION

FOR ARCHITECTURAL DISCIPLINE ONLY
ONTARIO ASSOCIATION OF ARCHITECTS
SAM MORGAN
LICENCE 5065
2021-04-02
REZONING APPLICATION 2021-04-02

Project #	200907
Date	2021-04-02
Scale	AS SHOWN
A-14	
For: Zoning By-Law Amendment	

Sam Morgan
Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323



BUILDING CROSS SECTION NORTH SOUTH FACING WEST

SCALE: 1 : 150 metric

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

CARINA GUZMAN, INFINITE REAL ESTATE OTTAWA, ON

BUILDING CROSS-SECTION

FOR ARCHITECTURAL DISCIPLINE ONLY
ONTARIO ASSOCIATION OF ARCHITECTS
SAM MORGAN
LICENCE 5065
2021-04-02
REZONING APPLICATION 2021-04-02

Project # 200907
Date 2021-04-02
Scale AS SHOWN
A-15
For: Zoning By-Law Amendment

Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

1
A-16

INTERIOR VIEWS

SCALE: N.T.S.

* THIS DRAWING IS THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. * DO NOT SCALE DRAWINGS, CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE PROCEEDING WITH THE WORK AND REPORT TO THE ARCHITECT ANY DISCREPANCIES. * THIS DRAWING IS NOT VALID UNLESS SIGNED AND DATED BY THE ARCHITECT. * THIS DRAWING IS NOT VALID FOR CONSTRUCTION UNLESS STAMPED " FOR CONSTRUCTION ".
* FOR OTHER DISCIPLINE'S INFORMATION, REFER TO CONSULTANTS DRAWINGS, IN CASE OF DISCREPANCY, CONSULTANT ENGINEER'S DRAWINGS SHALL SUPERSEDE THIS DRAWING.
* REFER TO MANUFACTURER'S SPECIFICATIONS, INSTRUCTIONS AND CATALOGUES FOR WINDOWS/DOORS ROUGH OPENINGS. * THE ARCHITECT ACCEPT NO RESPONSIBILITY FOR THE PERFORMANCE OF ANY PRODUCT, MATERIAL, SYSTEM OR ASSEMBLY DESCRIBED HEREIN. * CONTRACTOR TO COORDINATE AND READ THIS DRAWING IN CONJUNCTION WITH ALL OTHER CONSULTANT' DRAWINGS AND SHALL SUBMIT SHOP DRAWINGS AND/OR SAMPLES TO OWNER FOR APPROVAL PRIOR TO ORDERING, INSTALLING OR CONSTRUCTING.

NEW 6-STOREY MULTI-RESIDENTIAL UNITS' BUILDING 1368 LABRIE AVENUE, BEACON HILL-CYREVILLE, OTTAWA, ON

CARINA GUZMAN, INFINITE REAL ESTATE
OTTAWA, ON

INTERIOR VIEWS

FOR ARCHITECTURAL DISCIPLINE ONLY

ONTARIO ASSOCIATION OF ARCHITECTS
SAM MORGAN
LICENCE 5065
2021-04-02

REZONING APPLICATION 2021-04-02

Project # 200907
Date 2021-04-02
Scale AS SHOWN

A-16

For: Zoning By-Law Amendment

Sam Morgan Architect
9 Cowling Crescent
Ajax, Ontario L1S 2Z6
416.889.7083
sammorganarchitect@gmail.com
www.smorganarch.com
Certificate of Practice: 4323

FUS FIRE FLOW CALCULATION

FUS Fire Flow Calculation

Calculations based on: "*Water Supply for Public Fire Protection*" by Fire Underwriters' Survey, 1999

Stantec Project #: 163401084
Project Name: 1368 Labrie Ave
Date: April 20, 2021
Data inputted by: Christène Razafimaharo, M.Sc., EIT
Data reviewed by: Kevin Alemany, M.A.Sc., P.Eng.

Fire Flow Calculation #: 1
Building Type/Description/Name: Residential

Notes:
Planned brick, stone and metal cladding/siding.
Basement (underground parking) is more than 50% below grade.
Sprinklers required as per OBC for apartment buildings.
Vertical separation every 3 storeys, as per OBC.

Table A: Fire Underwriters Survey Determination of Required Fire Flow - Long Method

Step	Task	Term	Options	Multiplier Associated with Option	Choose:	Value Used	Unit	Total Fire Flow (L/min)
		Framing Material						
1	Choose Frame Used for Construction of Unit	Coefficient related to type of construction (C)	Wood Frame	1.5	Ordinary construction	1	m	
			Ordinary construction	1				
			Non-combustible construction	0.8				
			Fire resistive construction (< 2 hrs)	0.7				
			Fire resistive construction (> 2 hrs)	0.6				
		Floor Space Area						
2	Choose Type of Housing (if TH, Enter Number of Units Per TH Block)	Type of Housing	Single Family	1	Other (Comm, Ind, Apt etc.)	45	Units	
			Townhouse - indicate # of units	1				
			Other (Comm, Ind, Apt etc.)	45				
2.2	# of Storeys	Number of Floors/Storeys in the Unit (do not include basement if 50% below grade); if number of floors > 3, vertical fire separation required every 3 storeys:			6	3	Storeys	
3	Enter Ground Floor Area of One Unit	Average Floor Area (A) based on design with one hour rating for vertical openings and exterior vertical communications:			664 Square Metres (m2)	1,993	Area in Square Meters (m^2)	
4	Obtain Required Fire Flow without Reductions	Required Fire Flow (without reductions or increases per FUS) (F = 220 * C * √A) Round to nearest 1,000 L/min						10,000
5	Apply Factors Affecting Burning	**Reductions/Increases Due to Factors Affecting Burning**						
5.1	Choose Combustibility of Building Contents	Occupancy content hazard reduction or surcharge	Non-combustible	-0.25	Limited combustible	-0.15	N/A	8,500
			Limited combustible	-0.15				
			Combustible	0				
			Free burning	0.15				
			Rapid burning	0.25				
5.2	Choose Reduction Due to Presence of Sprinklers	Sprinkler reduction	Adequate Sprinkler conforms to NFPA13	-0.3	Adequate Sprinkler conforms to NFPA13	-0.3	N/A	-2,550
			None	0				
		Water Supply Credit	Water supply is standard for sprinkler and fire dept. hose line	-0.1	Water supply is standard for sprinkler and fire dept. hose line	-0.1	N/A	-850
			Water supply is not standard or N/A	0				
		Sprinkler Supervision Credit	Sprinkler system is fully supervised	-0.1	Sprinkler system is fully supervised	-0.1	N/A	-850
			Sprinkler not fully supervised or N/A	0				
5.3	Choose Separation Distance Between Units	Exposure Distance Between Units	North Side	3.1 to 10.0m	0.2	0.45	m	3,825
			East Side	30.1 to 45.0m	0.05			
			South Side	3.1 to 10.0m	0.2			
			West Side	45.1m or greater	0			
6	Obtain Required Fire Flow, Duration & Volume	*Total Required Fire Flow, rounded to nearest 1,000 L/min, with max/min limits applied:*						8,000
		Total Required Fire Flow (above) in L/s:						133
		Required Duration of Fire Flow (hrs)						2.00
		Required Volume of Fire Flow (m^3)						960

FIGURE 1 – FUS EXPOSURE DISTANCES

Figure 1: FUS Exposure Distances (Property Line to Adjacent Buildings)

Source: geoOttawa 2020; *Contains information licensed under the Open Government Licence – City of Ottawa.*

WATER BOUNDARY CONDITIONS

Razafimaharo, Christene

From: TL MaK <tlmakecl@bellnet.ca>
Sent: Friday, April 30, 2021 10:31 AM
To: Alemany, Kevin
Cc: Razafimaharo, Christene
Subject: RE: 1368 Labrie: Latest Arch Drawings
Attachments: 1368 Labrie April 2021.pdf

Hi Kevin,

Attached please find water boundary conditions received on April 29, 2021 from the City of Ottawa regarding 1368 Labrie Avenue.

Could you please proceed with your calculations at your earliest convenience for our serviceability report preparation.

Let us know if you have any questions or comments.

Regards,

Tony Mak

T.L. Mak Engineering Consultants Ltd.
1455 Youville Drive, Suite 218
Ottawa, ON. K1C 6Z7
Tel. 613-837-5516 | Fax: 613-837-5277
E-mail: tlmakecl@bellnet.ca

From: Mashaie, Sara [mailto:sara.mashaie@ottawa.ca]
Sent: April 29, 2021 4:14 PM
To: TL MaK
Subject: RE: 1368 Labrie: Latest Arch Drawings

Hi Tony,

As requested, please find the boundary conditions.

Regards,

Sara

The following are boundary conditions, HGL, for hydraulic analysis at 1368 Labrie (zone 1E) assumed to be connected to the 203 mm on Labrie Ave (see attached PDF for location).

Minimum HGL = 110.2 m

Maximum HGL = 117.9 m

Max Day + Fire Flow (133 L/s) = 107.7 m

These are for current conditions and are based on computer model simulation.

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: TL MaK <tlmakecl@bellnet.ca>
Sent: April 28, 2021 11:43 AM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Subject: RE: 1368 Labrie: Latest Arch Drawings

Hi Sara,

Thank you for taking care of this matter for us.

Regards,

Tony Mak

T.L. Mak Engineering Consultants Ltd.
1455 Youville Drive, Suite 218
Ottawa, ON. K1C 6Z7
Tel. 613-837-5516 | Fax: 613-837-5277
E-mail: tlmakecl@bellnet.ca

From: Mashaie, Sara [mailto:sara.mashaie@ottawa.ca]
Sent: April 28, 2021 10:00 AM
To: TL MaK
Subject: RE: 1368 Labrie: Latest Arch Drawings

Hi Tony,

Thank you - I have forwarded your request to our water modelling team. Please note a response time of 2 to 3 weeks.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: TL MaK <tlmakecl@bellnet.ca>
Sent: April 27, 2021 12:30 PM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Subject: 1368 Labrie: Latest Arch Drawings

Hi Sara,

We are the Civil Engineers for this project. Presently we are requesting the City for water boundary conditions for our project at 1368 Labrie Avenue.

The planned building at 1368 Labrie Ave will be located within Pressure Zone 1E. It is planned to be a 6-storey residential apartment building with an underground parking. The apartment building will contain 11 1-bedroom units, 11 1-bedroom + den units, and 23 2-bedroom units, for a total of 45 units. Each floor covers an area of 591 to 712 m^2 (6,361 to 7,664 ft^2), for a gross floor area of 3,985 m^2 (42,894 ft^2). The building is to be serviced by the 200 mm diameter watermain along Labrie Ave.

The domestic demands were calculated using the City of Ottawa's Water Design Guidelines, where the residential consumption rate of 350 L/cap/d was used to estimate average day demands (AVDY). Maximum day (MXDY) demands were calculated by multiplying AVDY demands by a factor of 2.5. Peak hour (PKHR) demands were calculated by multiplying MXDY by a factor of 2.2. Persons per unit (PPU) for each unit were estimated based on the City of Ottawa's Water Design Guidelines. **Table 1** shows the estimated domestic demands of the planned building.

Table 1: Estimated Domestic Demand

Unit Type	Unit Count	PPU	Consumption Rate (L/c/d)	AVDY		MXDY		PKHR	
				L/d	L/s	L/d	L/s	L/d	L/s
Apartment, 1-Bedroom	11	1.4	350	5,390	0.06	13,475	0.16	29,645	0.34
Apartment, 2-Bedroom	23	2.1		16,905	0.20	42,263	0.49	92,978	1.08
Apartment, 1-Bedroom + den	11	1.4		5,390	0.06	13,475	0.16	29,645	0.34
Total	***45***			***27,685***	***0.32***	***69,213***	***0.80***	***152,268***	***1.76***

The fire flow required was determined following the Fire Underwriter Survey (FUS) method and is provided in the attached worksheet. The planned building was classified as being of ordinary construction, as it will have natural stone, brick or metal cladding. The underground parking will be more than 50% below grade. As per the Ontario Building Code (OBC), a sprinkler system will be required for this apartment building. The sprinkler system is considered to be fully automated, connected to a centralized system (standard water supply) and fully supervised. Additionally, as the height of the building will be 6 storeys, it is considered that vertical separation will be provided for every 3rd storey. The resulting total required fire flow is 8,000 L/min (133 L/s) for a duration of 2.00 hours.

In summary:

- AVDY = 27,685 L/d (0.32 L/s);
- MXDY = 69,213 L/d (0.80 L/s);
- PKHR = 152,268 L/d (1.76 L/s); and,
- Fire Flow = 8,000 L/min (133 L/s).

The City is requested to provide boundary conditions for the Average Day, Maximum Day, Peak Hour and Fire Flow conditions indicated above.

Thank you for your prompt attention to this matter. Please forward the boundary conditions as soon as possible.

Thank you,

Tony Mak

T.L. Mak Engineering Consultants Ltd.
1455 Youville Drive, Suite 218
Ottawa, ON. K1C 6Z7
Tel. 613-837-5516 | Fax: 613-837-5277
E-mail: tlmakecl@bellnet.ca

'

'

'

This e-mail originates from the City of Ottawa e-mail system. Any distribution, use or copying of this e-mail or the information it contains by other than the intended recipient(s) is unauthorized. Thank you.

Le présent courriel a été expédié par le système de courriels de la Ville d'Ottawa. Toute distribution, utilisation ou reproduction du courriel ou des renseignements qui s'y trouvent par une personne autre que son destinataire prévu est interdite. Je vous remercie de votre collaboration.

'

Boundary Condition for 1368 Labrie

SUPPORTING HYDRAULIC CALCULATIONS

Supporting Hydraulic Calculations

Stantec Project #:	163401084
Project Name:	1368 Labrie Ave
Date:	May 3, 2021
Data inputted by:	Christène Razafimaharo, M.Sc., EIT
Data reviewed by:	Kevin Alemany, M.A.Sc., P.Eng.

Boundary Conditions provided by the City:

Scenario 1: Peak Hour (Min HGL): 110.2 m;

Scenario 2: Average Day (Max HGL): 117.9 m; and

Scenario 3: Maximum Day plus Fire Flow: 107.7 m.

Sample Calculations

HGL (m) = hp + hz *(1)*

where: hp = Pressure Head (m); and hz = Elevation Head (m), estimated from topography.

For Scenario 1, we have:

HGL(m) = 110.2 and hz (m) = 73.

Rearranging Equation 1, we can calculate the Pressure Head (hp) as follow:

hp (m) = HGL - hz

∴ hp = 110.2 - 73.0 m = 37.2 m.

To convert from Pressure Head (m) to a pressure value (kPa), the following equation can be used:

P (kPa) = (ρ * g * hp) / 1000 *(2)*

where: ρ = density of water = 1000 kg/m^3; and g = gravitational acceleration = 9.81 m/s^2.

Using Equation 2, we can calculate the Pressure (P) as follow:

P (kPa) = (1000 * 9.81 * 37.2) / 1000

∴ P = 365 kPa.

Considering that 1 kPa = 0.145 psi, the pressure under Scenario 1 is equal to:

P = 53 psi.

Applying the same procedures, the pressures under Scenario 2 and Scenario 3 are calculated as follows:

Scenario 2: P = 64 psi; and Scenario 3: P = 49 psi.

To summarize:

Scenario 1: Minimum Pressure under Peak Hour Demand: 365 kPa (53 psi)
Scenario 2: Maximum Pressure under Average Day Demand: 440 kPa (64 psi)
Scenario 3: Minimum Pressure under Maximum Day + Fire Flow Demand: 340 kPa (49 psi)

FIGURE 2 – HYDRANT SPACING

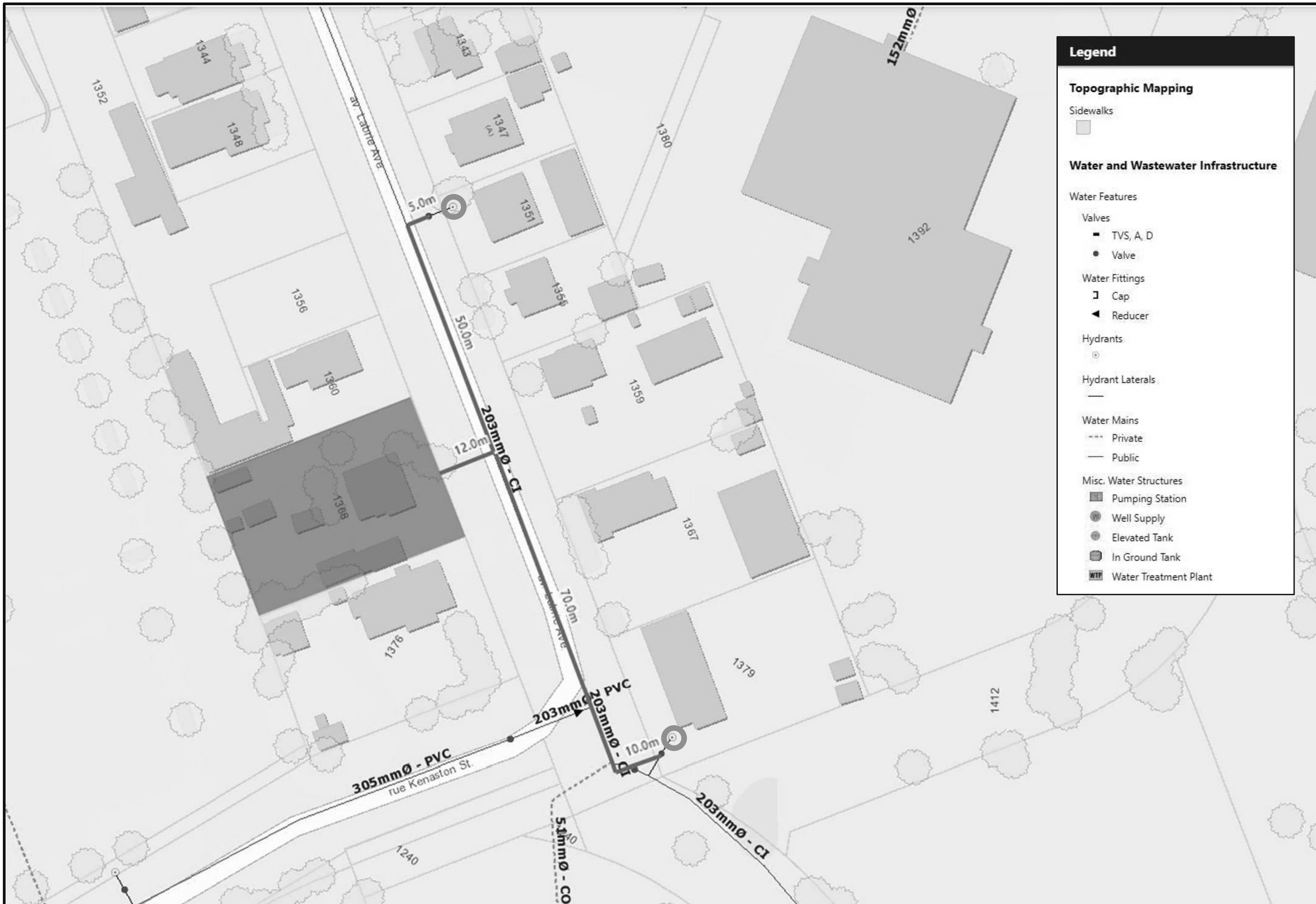


Figure 2: Hydrant Spacing

Source: geoOttawa 2020; *Contains information licensed under the Open Government Licence – City of Ottawa.*

PROPOSED RESIDENTIAL RE-ZONING

1368 LABRIE AVENUE

PART OF LOT 25 CONCESSION 2 (OTTAWA FRONT)

(GEOGRAPHIC TOWNSHIP OF GLOUCESTER)

CITY OF OTTAWA

APPENDIX D

SANITARY SEWER DESIGN SHEET

SHEET 1 OF 1

SANITARY SEWER DESIGN SHEET

RESIDENTIAL DENSITY
2 BEDROOM - 2.1 PPU
1 BEDROOM - 1.4 PPU

q = average daily per capita flow (280 L/cap. d)
I = unit of peak extraneous flow (0.28 L/ha. s)
M = peaking factor 4.0 (MAX.)
Q (p) = peak population flow (L/s)
Q (i) = peak extraneous flow (L/s)
Q (d) = peak design flow

$M = 1 + \frac{14}{4 + \sqrt{P}}$ where P population in 1000's

$Q(p) = \frac{PqM}{86.4}$ (L/s)

$Q(i) = IA$ (L/s) where A = area in hectares

$Q(d) = Q(p) + Q(i)$ (L/s)

LOCATION			INDIVIDUAL		CUMULATIVE		Peaking factor	Pop. flow	Peak extraneous flow	Peak design flow	PROPOSED SEWER						
STREET	FROM	TO	Pop.	Area A (hectares)	Pop.	Area A (hectares)	M	Q(p) (L/s)	Q(i) (L/s)	Q(d) (L/s)	Length (m)	Pipe size (mm)	Type of pipe	Grade %	Capacity (L/s) n = 0.013	Full flow velocity (m/s)	Actual velocity at Q(d)
1368 LABRIE AVENUE	SITE	EX. 250Ø SAN. SWR.	79.1	0.14	79.1	0.14	4.0	1.03	0.04	1.07	12.0	150	PVC	1.0 (min)	19.8	1.12	

LICENSED PROFESSIONAL ENGINEER
05/27/21
TONY L.M. MAK
PROVINCE OF ONTARIO

(File # 820-131)

DESIGN TLM	PROJECT 1368 LABRIE AVENUE	SHEET No.
CHECKED TLM	PROPOSED SIX STOREY APARTMENT	1 of 1
DATE MAY, 2021	BUILDING LOT DEVELOPMENT - OTTAWA	

PROPOSED RESIDENTIAL RE-ZONING

1368 LABRIE AVENUE

PART OF LOT 25 CONCESSION 2 (OTTAWA FRONT)

(GEOGRAPHIC TOWNSHIP OF GLOUCESTER)

CITY OF OTTAWA

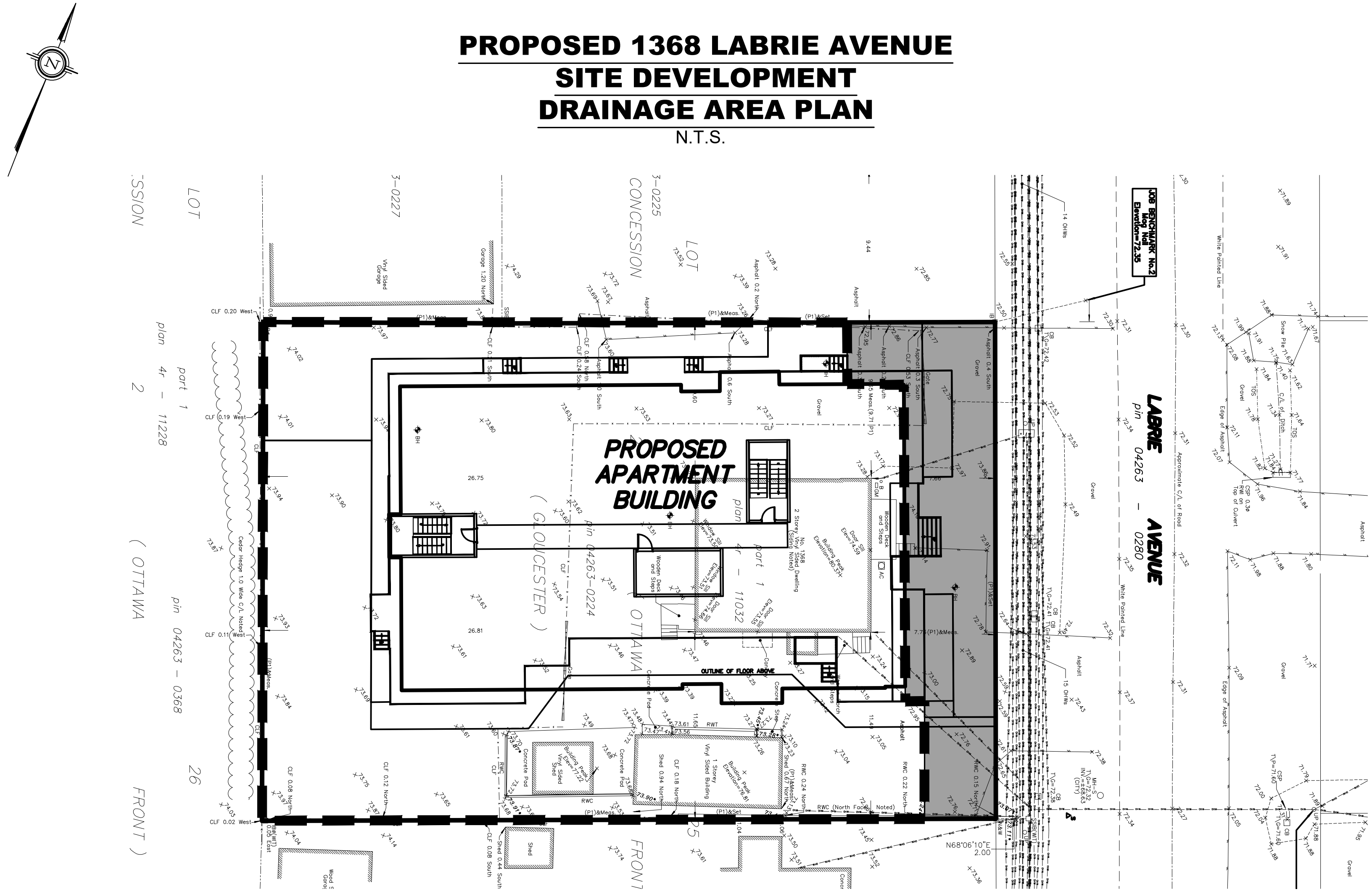
APPENDIX E

STORM DRAINAGE AREA PLAN

FIGURE A

PROPOSED 1368 LABRIE AVENUE
SITE DEVELOPMENT
DRAINAGE AREA PLAN

N.T.S.



LEGEND

LIMIT OF CONTROLLED STORM
DRAINAGE AREA = 1,218.29 SQ. M

UNCONTROLLED STORM
DRAINAGE AREA = 175.56 SQ. M

TOTAL AREA = 1,393.85 SQ. M

POST-DEVELOPMENT SITE
AVERAGE "C" = 0.81

T.L. MAK ENGINEERING CONSULTANTS LTD.
CONSULTING ENGINEERS

PROJECT No.	DATE	DRAWING No.
820-131	MARCH 2021	FIGURE A

PROPOSED RESIDENTIAL RE-ZONING

1368 LABRIE AVENUE

PART OF LOT 25 CONCESSION 2 (OTTAWA FRONT)

(GEOGRAPHIC TOWNSHIP OF GLOUCESTER)

CITY OF OTTAWA

APPENDIX F

DETAILED CALCULATIONS

FOR THE 5-YEAR AND 100-YEAR

AVAILABLE STORAGE VOLUME

AVAILABLE STORAGE VOLUME CALCULATIONS

A.) 5 Year Event

1.) Roof Storage at Flat Roof Building of 6^{th} Floor

The flat Roof Area #1, Roof Area #2 and Roof Area #3 will be used for stormwater detention. Each roof area will be drained by a controlled drain designed for a release rate of 15 U.S. gal/min. or 0.95 L/s.

a.) Roof Storage Area #1

- Available flat roof area for storage = 173.18 m^2 @ roof slope of 1.0% (min.) or 120 mm of water height above the roof drain, therefore, the available roof area will store a volume as shown below using the reservoir volume equation.

$$= \frac{0.12\text{ m }(105.52 + 4\,(32.04) + 0)}{6} \qquad = \frac{(0.12)\,(233.68)}{6}$$

$$= \underline{4.67\text{ m}^3}$$

The available Roof Area #1 storage volume of 4.67 m^3 > required 5 year storage volume of 2.97 m^3 from Table 1A.

b.) Roof Storage Area #2

- Available flat roof area for storage = 181.17 m^2 @ roof slope of 1.3% (min.) or 120 mm of water height above the roof drain, therefore, the available roof area will store a volume as shown below using the reservoir volume equation.

$$= \frac{0.12\text{ m }(110.75 + 4\,(32.58) + 0)}{6} \qquad = \frac{(0.12)\,(241.07)}{6}$$

$$= \underline{4.82\text{ m}^3}$$

The available Roof Area #2 storage volume of 4.82 m^3 > required 5 year storage volume of 3.42 m^3 from Table 2A.

c.) Roof Storage Area #3

- Available flat roof area for storage = 193.73 m^2 @ roof slope of 1.3% (min.) or 120 mm of water height above the roof drain, therefore, the available roof area will store a volume as shown below using the reservoir volume equation.

$$= \frac{0.12\text{ m }(122.50 + 4\,(27.49) + 0)}{6} \qquad = \frac{(0.12)\,(232.46)}{6}$$

$= \underline{4.65\ m^3}$

The available Roof Area #3 storage volume of 4.65 m^3 > required 5 year storage volume of 3.31 m^3 from Table 3A.

Therefore ponding depth at the drain location is approximately 0.12 m (120 mm) and the 5 year level is estimated not to reach the roof perimeter of the building.

2.) Asphalt Laneway Surface Storage Volume

- Assume 5-year HWL = 72.51 m (see Proposed Stormwater Management Design Plan Dwg. No. 820-131, SWM-1 with the ponding limit shown).

CB/MH#4

Available Storage Volume

$$= \frac{0.12\text{ m }(69.73 + 4\,(18.15) + 0)}{6} \qquad = \frac{(0.12)\,(142.33)}{6}$$

$= \underline{2.85\ m^3}$

Therefore, available asphalt laneway surface storage volume = 2.85 m^3 > required (min.) volume of 1.65 m^3 from Table 4A.

3.) Stormwater Holding Tank Structure

In the building, a holding tank structure with an effective (min.) storage volume of the following is required for the 5 year event.

V = L x W x H
= 2.1 m x 2.1 m x 0.15 m
= 0.66 m^3 > required volume of 0.65 m^3.

Final tank sizing and configuration is proposed and shown on page (xi) in this **Appendix F**.

Hence Roof Area #1, Roof Area #2 and Roof Area #3 of the proposed residential building flat rooftop storage above the 6^{th} floor is adequate to store the minimum required 5 year storm event volume of 9.70 m^3 given it can store up to 14.14 m^3. At the estimated 5-year HWL = 72.51 m, the available asphalt laneway surface volume is at 2.85 m^3 > 1.65 m^3 (min.) from Table 4A. The building underground holding tank volume is 0.66 m^3 (assuming a tank size of 2.1 m long by 2.1 m wide at a depth of 0.15 m) which is greater than the required 0.65 m^3 from Table 5A. Total site storage available for the 5 year event is 17.65 m^3 which is greater than the minimum required volume of 12.0 m^3.

AVAILABLE STORAGE VOLUME CALCULATIONS

B.) 100 Year Event

1.) Roof Storage at Flat Roof Building of 6th Floor

The flat Roof Area #1, Roof Area #2 and Roof Area #3 will be used for stormwater detention. Each roof area will be drained by a controlled drain designed for a release rate of 15 U.S. gal/min. or 0.95 L/s.

a.) Roof Storage Area #1

- Available flat roof area for storage = 173.18 m^2 @ roof slope of 1.0% (min.) or 150 mm of fall from roof perimeter to roof drain, therefore, the available roof area will store a volume as shown below using the reservoir volume equation.

$$= \frac{0.15\ m\ (173.18 + 4\ (40.31) + 0)}{6} \qquad = \frac{(0.15)\ (334.42)}{6}$$

$$= \underline{8.36\ m^3}$$

The available Roof Area #1 storage volume of 8.36 m^3 > required 100 year storage volume of 7.13 m^3 from Table 6A.

b.) Roof Storage Area #2

- Available flat roof area for storage = 181.17 m^2 @ roof slope of 1.3% (min.) or 150 mm of fall from roof perimeter to roof drain, therefore, the available roof area will store a volume as shown below using the reservoir volume equation.

$$= \frac{0.15\ m\ (181.17 + 4\ (51.42) + 0)}{6} \qquad = \frac{(0.15)\ (386.85)}{6}$$

$$= \underline{9.67\ m^3}$$

The available Roof Area #2 storage volume of 9.67 m^3 > required 100 year storage volume of 8.09 m^3 from Table 7A.

c.) Roof Storage Area #3

- Available flat roof area for storage = 193.73 m^2 @ roof slope of 1.3% (min.) or 150 mm of fall from roof perimeter to roof drain, therefore, the available roof area will store a volume as shown below using the reservoir volume equation.

$= \frac{0.15\ m\ (193.73 + 4\ (45.79) + 0)}{6} \qquad = \frac{(0.15)\ (376.89)}{6}$

$= \underline{9.42\ m^3}$

The available Roof Area #3 storage volume of 9.42 m^3 > required 100 year storage volume of 7.86 m^3 from Table 8A.

Therefore ponding depth at the drain location is approximately 0.15 m (150 mm) and at the perimeter of the flat roof area is 0 mm above the roof perimeter surface. Accordingly it is recommended that (6) roof scuppers be installed at the perimeter height of the rooftop for emergency overflow purposes in case of blockage from debris build up at the roof drain.

2.) Asphalt Laneway Surface Storage Volume

- Assume 100-year HWL = 72.55 m (see Proposed Stormwater Management Design Plan Dwg. No. 820-131, SWM-1 with the ponding limit shown).

CB/MH#4

Available Storage Volume

$= \frac{0.16\ m\ (106.08 + 4\ (27.72) + 0)}{6} \qquad = \frac{(0.16)\ (216.96)}{6}$

$= \underline{5.79\ m^3}$

Therefore, available asphalt laneway surface storage volume = 5.79 m^3 > required (min.) volume of 5.66 m^3 from Table 9A.

3.) Stormwater Holding Tank Structure

In the building, a holding tank structure with an effective (min.) storage volume of the following is required for the 100 year event.

$V_{(min.)} = L \times W \times H$
$= 2.1\ m \times 2.1\ m \times 1.2\ m$
$= 5.29\ m^3$

It is recommended that the storage volume (2.0 x 5.29 m^3 = 10.58 m^3) be provided to attenuate the stormwater flow up to the 100 year event from the landscaped area north of the bulding and above the garage and from the asphalt down ramp to the garage. From Table 10A, the required storage volume (min.) is 4.01 m^3.

One possible configuration would be to install a holding tank connected to a holding tank/pumping chamber in series that houses the duplex pumps set at pump out rate of 11.35 L/s (4.0 L/s + 7.35 L/s). The effective storage volume of the storage tank is 5.29 m^3 and combining together with a second holding tank with effective storage volume of 5.29 m^3 totals to 10.58 m^3 to attenuate the storm flows up to the 100 year event with a safety factor two times the required volume included in the design.

Hence Roof Area #1, Roof Area #2 and Roof Area #3 of the proposed multi-unit building flat rooftop storage is adequate to store the minimum required 100 year storm event volume of 23.08 m^3 given it can store up to 27.45 m^3. At the estimated 100-year HWL = 72.55 m, the available asphalt laneway surface volume is at 5.79 m^3 > 5.66 m^3 (min.). The proposed underground holding tank volume recommended is at 10.58 m^3 which is greater than the required 4.01 m^3 from Table 10A. Total site storage available is 43.82 m^3 which is greater than the minimum required volume of 32.75 m^3.