# THREE STOREY RESIDENTIAL APARTMENT BUILDING SITE

PATR OF LOT B

**CONCESSION 11** 

**GEOGRAPHIC TOWNSHIP OF CUMBERLAND** 

**1670 TENTH LINE ROAD** 

**CITY OF OTTAWA** 

APPLICATION FILE No.: D07-12-25-0118

**SERVICEABILITY REPORT** 

**REPORT No. R-825-8A (REV. #1)** 

OCTOBER 2025

T.L. MAK ENGINEERING CONSULTANTS LTD.

**JULY 2025** 

**REFERENCE FILE NUMBER 825-8** 

# Introduction

The developer of this property is proposing to redevelop the existing residential lot described as Part of Lot B Concession 11 Geographic Township of Cumberland City of Ottawa by constructing a three (3) storey residential apartment building plus a basement consisting of thirty (30)-units, including twelve (2)-bedroom units, nine (1)-bedroom and den units, seven (1)-bedroom units and two (2) bachelor units.

The municipal address of this property is referenced as 1670 Tenth Line Road and it is located in the City Ward (1 - Orleans East-Cumberland). The site is situated on the west side of Tenth Line Road, south of Amiens Street and north of Charlemagne Boulevard, see site plan and legal survey plan in Appendix A for details.

The area of this property is ±0.1858 hectares. In addition to the three (3) storey residential building, the other development features will comprise of an interlock paver access to the front entrance plus an interlock paver access along both north and south side yard with access to the waste storage, bike racks and access to the parking lot at the rear of the building including landscaped areas throughout the site, etc., to meet the City of Ottawa's site plan requirements.

A site geotechnical report was prepared by the owner's soils engineer Paterson Group entitled "Geotechnical Investigation – Proposed Residential Development" 1670 Tenth Line Road (Report No. PG7562-1) dated June 16, 2025 for this proposed development property.

This serviceability report will provide the City of Ottawa with our serviceability brief to address the proposed servicing scheme for this site.

# **Existing Site Conditions and Servicing**

This property is presently occupied by a one (1) storey brick dwelling in which the house is located near the front of the lot with asphalt driveway. At the rear of the site, there is a 1 ½ - storey siding building which fronts Duvernay Drive and is connected to the municipal roadway by a gravel driveway. For additional details of the site's pre-development conditions, refer to the coloured Google Image (2021) and aerial photography from (GeoOttawa 2022) in Appendix B.

Approximately 40.0% of this site is currently permeable surface covered and consisting of grass/landscaped areas with the remaining areas being roof area, gravel laneway, concrete steps and deck. Currently, most of the landscape areas are concentrated at the north half of lot and along the north side yard.

The topography of the land is found to be graded primarily for split drainage of the lot, approximately one half to the east and outletting to Tenth Line Road and the remaining half to Duvernay Drive. The overall existing gradient of the property is sloping approximately 0.7 %.

The existing house water and sanitary service lateral currently servicing the existing dwelling at 1670 Tenth Line Road will be removed. The existing water services shall be blanked at the main and the existing house laterals shall be capped at the front property line for re-development of this lot.

As for the availability of underground municipal services, there are existing municipal services along Duvernay Drive that fronts this property consist of a 450mm diameter storm sewer, a 250mm diameter sanitary sewer, and a 200mm diameter watermain for development of this site. Refer to the City of Ottawa Duvernay Drive UCC drawing and As-Built plan and profile drawing included in Appendix C for details. No water and sewer lateral services are proposed to connect into the existing Tenth Line Road municipal mains.

Because the site will be connecting to and outletting into the separated Duvernay Drive storm sewer located within the Duvernay Drive road right of way in the City of Ottawa, therefore, the approval exemption under Ontario Regulations 525/98 would apply since storm water discharges from this site will outlet flow into a downstream storm sewer. Thus, an Environmental Compliance Approval (ECA) application will not be required to be submitted to the Ministry.

# **Proposed Residential Apartment Building Site**

There are vehicle access and parking proposed for this site. Interlock pavers are proposed at the front and along both north and south side of the new building for pedestrian access to the rear parking lot, waste disposal and bicycle parking located at the west accessory part of the building.

#### A. Water Supply

The proposed building located within Pressure Zone 2E at 1670 Tenth Line Road is a 3-storey residential multi-unit building, with a basement. The building contains thirty (30) total units, including twelve (12) 2-bedroom units, nine (9) 1-bedroom and den units, seven (7) 1-bedroom units, and two (2) bachelor units. Each floor covers an average area of around 613 m², for a gross floor area of 1,859 m² (excluding the basement).

The building is to be serviced by the 200 mm diameter watermain along Duvernay Drive. The ground elevation along Duvernay Drive is approximately 87.9 m.

# **Demand Projections**

The domestic demands were calculated using the City of Ottawa's Water Design Guidelines, where the residential consumption rate of 280 L/cap/d was used to estimate average day demands (AVDY). Persons per unit (PPU) for each unit were estimated based on the City of Ottawa's Water Design Guidelines.

Maximum day (MXDY) demands were calculated by multiplying AVDY demands by a factor of 2.5. Peak hour (PKHR) demands were calculated by multiplying AVDY by a factor of 2.2. Table 1 shows the estimated domestic demands of the proposed building.

As per the IWSTB-2024-05, the fire protection requirements on private property in urban areas are covered in Section A-3.2.5.7 of the Ontario Building Code (OBC), following the Office of the Fire Marshall (OFM) method. The proposed building will be of wood frame construction (combustible construction), with fire resistance ratings that are assumed to meet the criteria listed Section 3.2.2 of OBC. It is understood that the building will be without sprinklers. The resulting required fire flow is 6,300 L/min (105 L/s) for a duration of 50 minutes. Details are provided in the attached **Fire Flow Calculations** (See Appendix D). Furthermore, **Figure 1** found in Appendix D provides separation distances for the OFM calculations. The proposed **Site Plan** attached in Appendix D was used to determine distances from the proposed building to the property lines.

**Table 1: Estimated Domestic Demand** 

Unit Type	Unit Count	PPU	Consumption	AVDY		MXDY		PKHR	
Onit Type				L/d	L/s	L/d	L/s	L/d	L/s
Apartment, Bachelor / Studio	2	1.4	280	784	0.01	1,960	0.02	4,312	0.05
Apartment, 1- Bedroom	7	1.4	280	2,744	0.03	6,860	0.08	15,092	0.17
Apartment, 1- Bedroom + Den	9	1.4	280	3,528	0.04	8,820	0.10	19,404	0.22
Apartment, 2- Bedroom	12	2.1	280	7,056	0.08	17,640	0.20	38,808	0.45
Total	30	aliin — 2		14,112	0.16	35,280	0.41	77,616	0.90

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

- AVDY = 14,112 L/d (0.16 L/s)
- MXDY = 35,280 L/d (0.41 L/s);
- PKHR = 77,616 L/d (0.90 L/s); and,
- Fire Flow = 6,300 L/min (105L/s)

# **Boundary Conditions**

The hydraulic gradeline (HGL) boundary conditions for 1670 Tenth Line Road, as presented in **Table 2**, were provided by the City on June 20, 2025 (see attached **Water Boundary Conditions** in Appendix D).

**Table 2: Boundary Conditions** 

<b>Demand Scenario</b>	Head (m)		
Minimum HGL (Peak Hour)	127.8		
Maximum HGL (Average Day)	130.2		
Maximum Day + Fire Flow	120.0		

# **Hydraulic Analysis**

# Peak Hour & Average Day

During peak hour demands, the resulting minimum hydraulic gradeline of 127.8 m corresponds to a peak hour pressure of 391 kPa (57 psi). This value is above the minimum pressure objective of 276 kPa (40 psi) for residential buildings up to two storeys. Adding 5 psi per floor above two (2) stories, to account for headloss due to elevation and pipe losses, a minimum pressure of 310 kPa (45 psi) would be required for the third floor. The peak hour pressure at ground level is above this objective and therefore considered acceptable.

During average day demands, the resulting maximum hydraulic gradeline of 130.2 m corresponds to a maximum pressure of 415 kPa (60psi). 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 D.

# Maximum Day + Fire Flow

A maximum day plus fire flow (6,300 L/min) hydraulic gradeline of 120.0 m corresponds to a residual pressure of 315 kPa (46 psi) at this location, which is above the minimal residual pressure requirement of 140 kPa (20 psi).

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 confirm hydrant class, five (5) hydrants are located in the vicinity of the proposed building. Two (2) hydrants are Class AA hydrants is within 75 m, both with a capacity contribution of up to 5,700 L/min. Three (3) other Class AA hydrants are within 150 m from the site, both with a capacity contribution of up to 3,800 L/min. The

combined hydrant flow coverage for 1670 Tenth Line Road is therefore 22,800 L/min, which is above the RFF obtained from the OFM (6,300 L/min) method.

The hydrant coverage is illustrated in Figure 2 attached in Appendix D. A breakdown of the hydrant coverage is summarized in Table 3 below.

**Table 3: Fire Hydrant Coverage** 

Building	Fire Flow Demand (L/min)	Fire Hydrants						
		Demand Hydrant	Within 75 m		Between 76 m and 150 m		Hydrant	
			Quantity	Contribution to RFF	Quantity	Contribution to RFF	Flow Coverage (L/min)	
1670 Tenth Line Road	6,300	AA	2	5,700	3	3,800	22,800	
		Α						
		В						
		С						

### **Water Service Line Sizing**

A review of the service line sizing for the proposed building at 1670 Tenth Line Road was carried out. Based on the National Plumbing Code, a 50mm (2-inch) diameter service line with 2-inch interior piping over a length of approximately 45 meters can supply up to 359 fixture units. The estimated total fixture load for the building is in the range of 280 to 340 fixture units, based on assumed quantities of plumbing fixtures such as the number of bathrooms, dishwashers, and washing machines. Therefore, the proposed service line sizing is considered adequate, contingent on the use of 2-inch interior piping in the building.

In conclusion, based on the boundary condition provided, the local watermain network along Duvernay Drive provides adequate fire flow capacity, as per the Office of the Fire Marshall (OFM) method, to the proposed development at 1670 Tenth Line Road. Resulting pressures during anticipated demand flows meet the pressure objectives during average and peak demand conditions, as per the City of Ottawa's Drinking Water Design Guidelines.

#### **B.** Sanitary Flow

The peak sanitary flow for the 30 units, which comprise of twelve (2)-bedroom, nine (1)-bedroom and den, seven (1)-bedroom and two bachelor apartment units, is estimated at Q = 0.66 L/s with an infiltration rate of 0.06 L/s. Refer to Appendix E sheet 1 of 1 regarding sanitary flow calculations. This flow will enter the existing 250mm diameter sanitary sewer on Duvernay Drive via the proposed 150 mm diameter PVC sanitary service lateral from the three (3)-storey residential apartment building.

The existing peak sanitary flow of the site for single detached dwelling unit is Q = 0.10 L/s with an infiltration rate of 0.06 L/s. The net increase in flow from this proposed development is 0.56 L/s which is not expected to negatively impact the existing 250mm dia. sanitary sewer.

Waste water from the Duvernay Drive 250mm dia. sanitary sewer then in turn outlets south and westward along Des Epinettes Avenue and into the existing downstream 375mm dia. concrete sanitary collector sewer located along the St. George Street corridor.

#### C. Storm Flow

The storm-water outlet for the proposed development property will be the existing 450mm diameter concrete storm sewer located on Duvernay Drive. Stormwater attenuation on site will be accomplished by means of rooftop storage with controlled roof drains and parking lot surface areas with a controlled ICD in CB/MH#1 that together will regulate flow off site.

The building foundation weeping-tile drainage system shall have its own separate pipe for gravity flow where weeping-tile water is outletted via a 150mm diameter storm pipe to the existing 450mm diameter Duvernay Drive storm sewer. The storm-water outlet for the rooftop water from roof drains will be a separately designated proposed 150mm diameter PVC pipe that will also be outletted directly into the existing 450mm diameter storm sewer. The 150mm dia. roof water drain pipe will "wye" into the 150mm dia. weeping tile storm lateral on private property and outlet to the existing Duvernay Drive storm sewer.

Four (4) roof drains are proposed for this apartment building to restrict flow at a rate of 0.95 L/s each or  $4 \times 0.95 \text{ L/s} = 3.80 \text{ L/s}$  into the Duvernay Drive storm sewer. The remainder of the site allowable release rate from ICD in CB/MH#1 is 19.84 L/s. The calculated net allowable controlled release rate from this site is estimated at 23.64 L/s.

Based on the residential site plan from the owner's architect, the average post-development runoff coefficient is estimated at C = 0.80 and A = 0.1858 hectares.

An estimation of the pre-development flow condition was carried out using the criteria accepted by the City of Ottawa. If post-development C valve exceeds the lesser of the  $C_{pre} = 0.61$  or  $C_{allow} = 0.5$  (max) then SWM is required. So from our calculations, the  $C_{allow} = 0.5$  value will be used at  $t_c = 10$  minutes for pre-development allowable flow calculation off-site.

The pre-development calculated flow rate into the 375mm dia. storm sewer for this residential area is the lesser of either the five (5)-year storm event where  $C_{allow} = 0.5$  (max.) runoff value or the average  $C_{pre}$  value which is 0.61 using  $t_c = 10$  minutes. Because this site  $C_{post} = 0.80$  and  $C_{allow} = 0.5$  then SWM measures are required.

Therefore, based on our calculation, on-site retention is required for this proposed development site, because the site post-development C value of 0.80 is greater than the  $C_{\text{allow}} = 0.5$ .

The storage volume for the five (5)-year and up to the 100-year storm event will be stored by means of flat rooftop at the top of the 3-storey apartment building and also utilizing the asphalt parking lot surface areas located at the west half of the site. Also refer to the site storm drainage report (Report No. R-825-8) for further details.

# Conclusion

At this proposed residential site and to develop this lot to house a 30 unit apartment building on a 0.1858 ha. parcel of land, the estimated total allowable flow off-site is calculated at 26.91 L/s based on City of Ottawa Drainage and Stormwater Management (SWM) criteria of 5-Year pre-development flow at C<sub>allow</sub> = 0.50. For on-site SWM attenuation, the flat roof top of the proposed apartment building will be utilized and (4) controlled roof drains are incorporated each with a controlled release rate of 0.95 L/s (15.0 U.S. gal/min.). The controlled flow from the flat roof totals to 3.80 L/s for the post development condition. The parking lot surface areas will be regulated with an ICD in CB/MH#1 using (Hydrovex Model 125-VHV-2) or equal to allow a release rate of 19.84 L/s under a head of 2.34m. The total controlled flow rate off-site is therefore 23.64 L/s. Uncontrolled flow rate off-site is estimated at 3.27 L/s at the 100-Year event.

During the 5-Year storm event for the flat rooftop storage, the ponding depth on this rooftop is estimated at 110 mm at Drain No. 1, 2, 3 and 4 and 0 mm at the roof perimeter assuming a 1.7% (min.) roof pitch to the drains. The rooftop storage available at Roof Area No. 1 is  $3.19 \, \text{m}^3$ , Roof Area No. 2 is  $3.19 \, \text{m}^3$ , Roof Area No. 3 is  $3.19 \, \text{m}^3$  and Roof Area No. 4 is  $2.96 \, \text{m}^3$  for a total of  $12.53 \, \text{m}^3$  which is greater than the required volume of  $10.04 \, \text{m}^3$ .

As for the remaining storage volume of 3.85 m<sup>3</sup> (min.) required from the site development area for the 5-Year storm event, the estimated H.W.L. of 87.91 m will provide a total available asphalt surface storage volume of 4.83 m<sup>3</sup>. In total, the 5-Year available site storage volume (roof and parking lot) is approximately 17.36 m<sup>3</sup> which is greater than the required site storage volume of 13.88 m<sup>3</sup>. See Appendix "E" for details.

In reference to the 100-Year event under post-development conditions in this report, the "C" runoff coefficient factors has been built into the (100-Year + 20.0%) allowance for City to review the volumes and corresponding elevations under the storm stress test event. Therefore, our 100-Year event is the 100-Year + 20.0%.

In order to control the 100-Year stormwater release rate off-site to an allowable rate of 26.91 L/s, a calculated site storage volume of approximately 39.76 m³ (min.) is required during the 100-Year event. We estimate that the required storage volume of 23.84 m³ (min.) of rooftop storage and 15.92 m³ (min.) from the site asphalt parking lot surface area are necessary to attenuate the 100-Year storm event. See Table No. 6 to 10 inclusive.

During the 100-year storm event for the flat rooftop storage, the ponding depth on this rooftop is estimated at 150 mm at Drain No. 1, 2, 3 and 4 and 0 mm at the roof perimeter assuming a 1.7% (min.) roof pitch to the drains. The rooftop storage available at Roof Area No. 1 is  $7.70 \, \text{m}^3$ , Roof Area No. 2 is  $7.70 \, \text{m}^3$ , Roof Area No. 3 is  $7.70 \, \text{m}^3$  and Roof Area No. 4 is  $7.54 \, \text{m}^3$  for a total of  $30.64 \, \text{m}^3$  which is greater than the required volume of  $23.84 \, \text{m}^3$ .

As for the remaining storage volume of 15.92 m³ (min.) required from the asphalt parking area for the 100-Year storm event, the estimated H.W.L. of 87.96 m will provide a total available asphalt surface storage volume of 16.24 m³. In total, the 100-Year available site storage volume (roof and parking lot) is 46.88 m³ which is greater than the required site storage volume of 39.76 m³. See Appendix "E" for details. The estimated 100-Year + 20.0% storm event HWL of 87.96m is 0.15m below lowest finished grade at the building at 88.11m.

Therefore, by means of flat building rooftop storage, grading the site to the proposed grades and constructing the proposed parking lot area and drainage system as shown on the Proposed Site Grading and Servicing Plan (Dwg. No. 825-8, G-1), the desirable 5-Year and 100-Year storm event attenuation volume of 17.36 m<sup>3</sup> and 46.88 m<sup>3</sup> respectively will be available on-site.

In order to control the release flow rate off-site from the controlled drainage areas of the lot, an inlet control device (ICD) will be installed at the outlet of CB/MH#1 in the 250 mm diameter storm pipe (outlet pipe) with Q = 19.84 L/s under a head of 2.34 m. A rooftop drain with a release rate of 0.95 L/s (under a maximum head of 150 mm) will be installed at Roof Drain #1, #2, #3 and #4 of the proposed residential apartment building flat rooftop as depicted on (Dwg. No. 825-8, G-1). The 5-Year and 100-Year flow off-site is restricted to 26.91 L/s.

An inlet control device (ICD) will be installed at the outlet of CB/MH#1 in the 250 mm diameter storm pipe (outlet pipe) with Q = 19.84 L/s under a head of 2.34 m. The ICD type recommended is a Hydrovex Regulator (125-VHV-2) or equivalent. See Appendix "C" for ICD details.

The building weeping tile drainage will outlet via its separate 150 mm diameter PVC storm lateral. The roof drains will be outletted also via a separate 150 mm diameter PVC storm lateral from the residential apartment building which "wye" into the proposed 150 mm dia. weeping tile storm lateral, where upon both laterals are outletting to the existing Duvernay Drive 450 mm diameter storm sewer with only one (1) connection. The City of Ottawa recommends that pressurized drain pipe material be used in the building for the roof drain leader pipe in the

event of surcharging in the City storm sewer system. Refer to the proposed site grading and servicing plan (Dwg. No. 825-8, G-1) for details.

To achieve a minimum of 80 percent TSS removal, a Stormceptor structure (Model EFO-4) is proposed to be installed for the site development of this property. This Stormceptor structure shall be located downstream of the proposed CB/MH#1, which houses the site's inlet control device (ICD). Based on the Stormceptor system that is proposed for this site, size of the lot, and impervious ratio, a greater than 80 percent TSS removal is estimated for all rainfall events including large storms. (See Appendix "D" for details).

# **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 Duvernay Drive and Tenth Line Road road right of way adjacent to this property. Siltsack shall be inspected every 2 to 3 weeks and after major storm. The deposits will be disposed of as per the requirements of the contract. See Dwg. #825-8 ESC-1 for details.

Refer to Appendix F for the summary of the Development Servicing Study Checklist that is applicable to this development.

The pre-consultation feedback from the application PC 2024-0516 is included in this report for reference. See Appendix G, Page 9, for engineering details.

PREPARED BY T.L. MAK ENGINEERING CONSULTANTS LTD.

TONY L. MAK, P.ENG

# THREE STOREY RESIDENTIAL APARTMENT BUILDING SITE

PATR OF LOT B

**CONCESSION 11** 

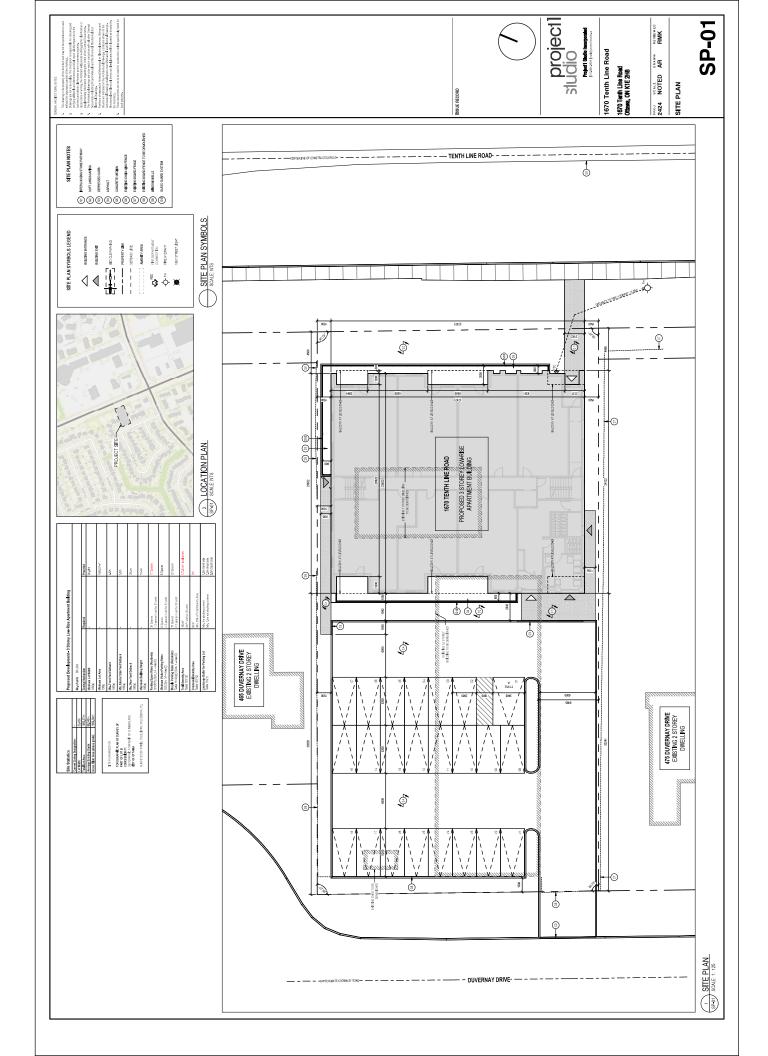
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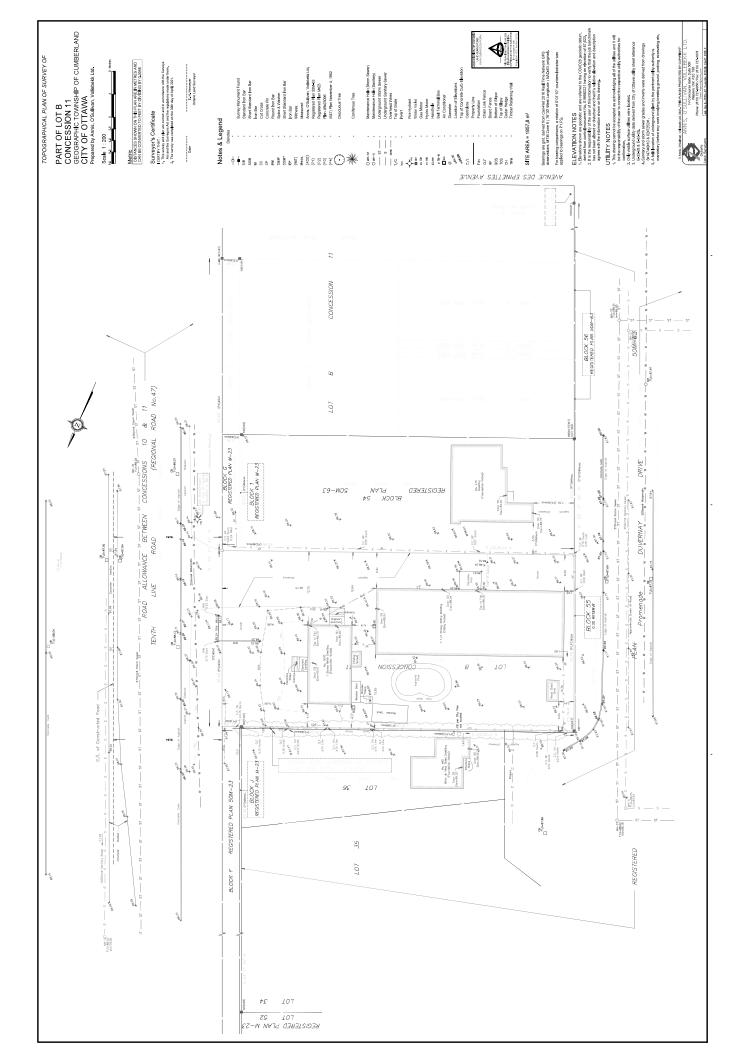
**1670 TENTH LINE ROAD** 

**CITY OF OTTAWA** 

APPENDIX A

SITE PLAN AND LEGAL SURVEY PLAN





# THREE STOREY RESIDENTIAL APARTMENT BUILDING SITE

PATR OF LOT B

**CONCESSION 11** 

# GEOGRAPHIC TOWNSHIP OF CUMBERLAND

**1670 TENTH LINE ROAD** 

**CITY OF OTTAWA** 

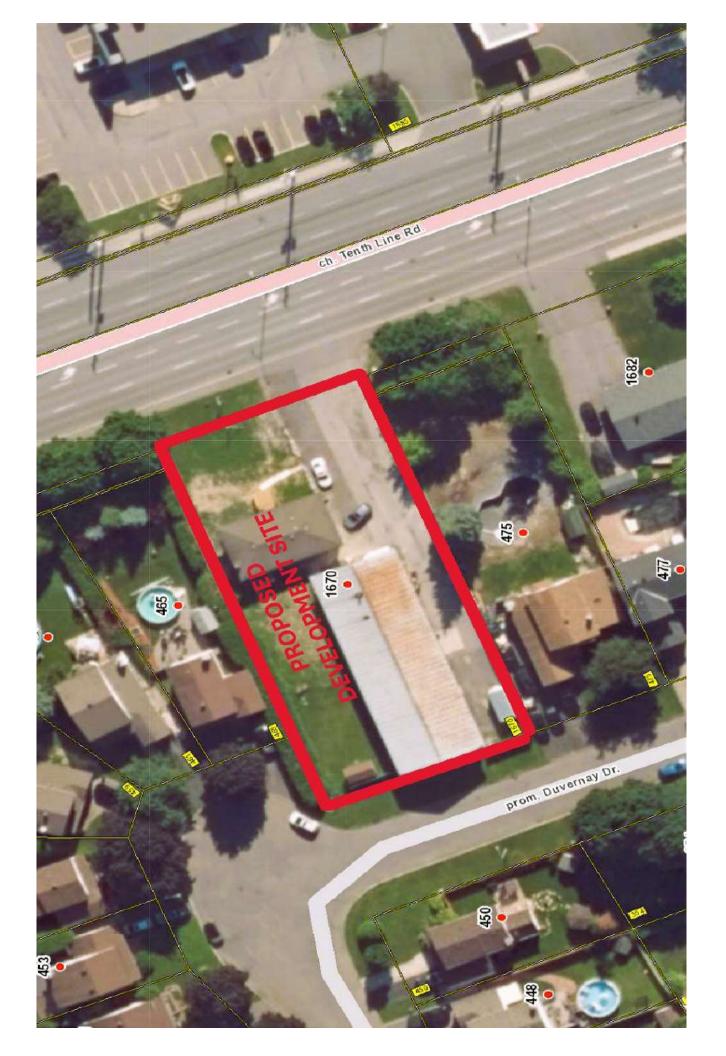
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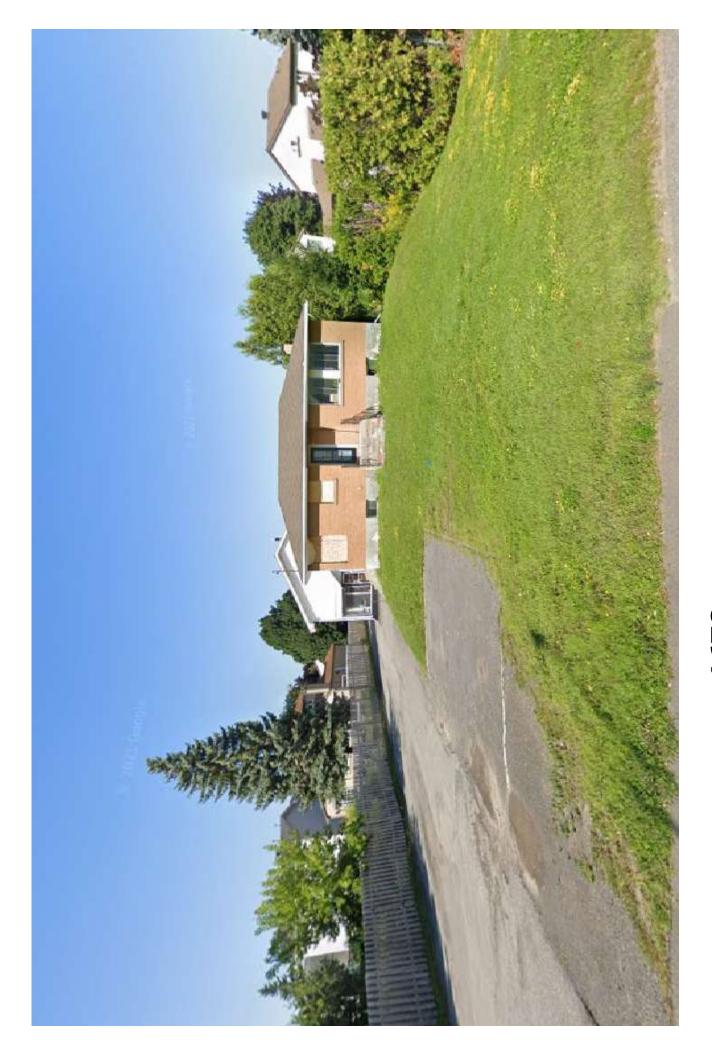
SITE PRE-DEVELOPMENT CONDITION

**GOOGLE IMAGE (2021)** 

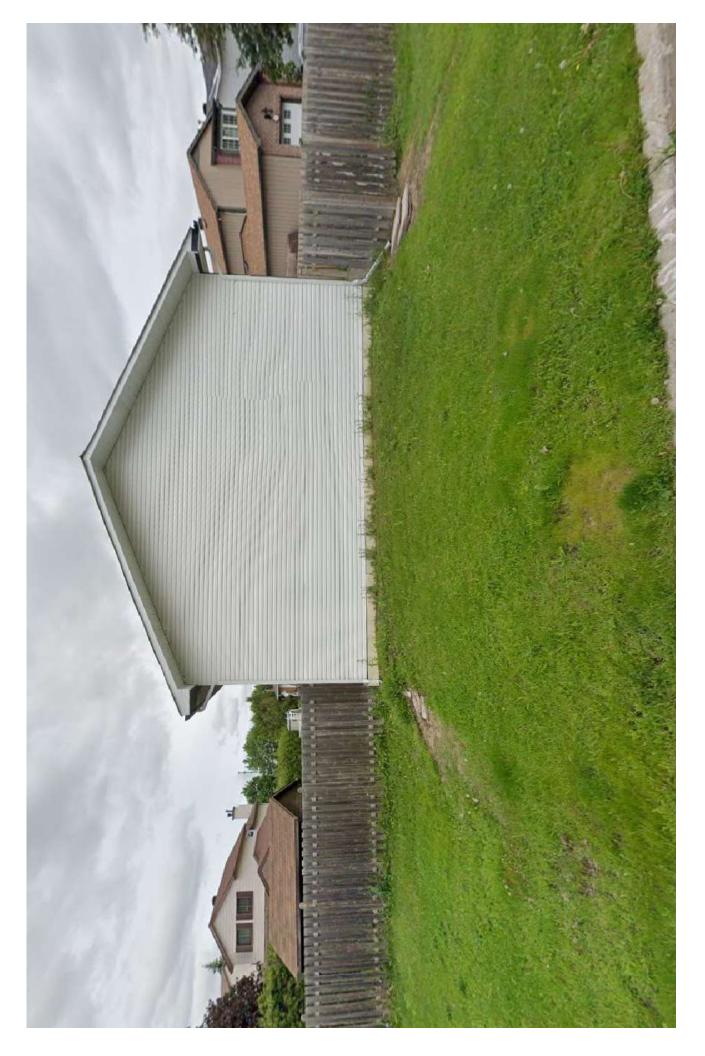
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**AERIAL PHOTOGRAPHY 2022 (GEOOTTAWA)** 





# 1670 TENTH LINE ROAD



# FRONTING DUVERNAY DRIVE

# THREE STOREY RESIDENTIAL APARTMENT BUILDING SITE

PATR OF LOT B

**CONCESSION 11** 

# **GEOGRAPHIC TOWNSHIP OF CUMBERLAND**

**1670 TENTH LINE ROAD** 

**CITY OF OTTAWA** 

APPENDIX C

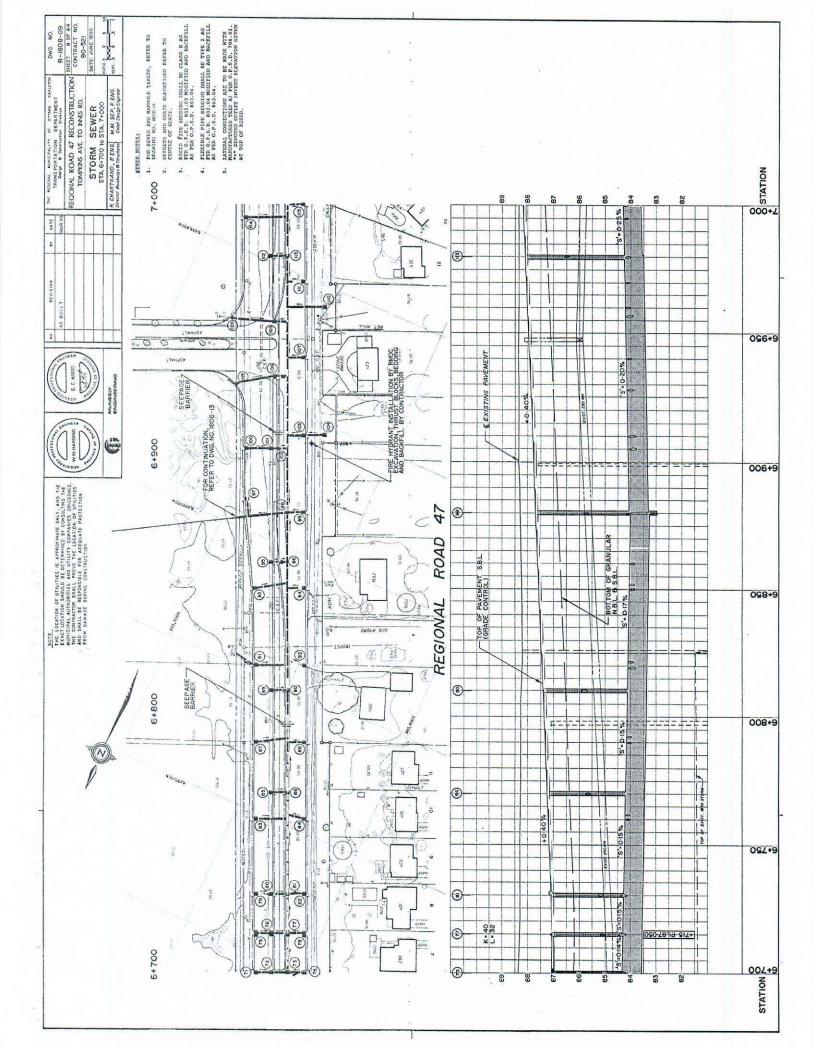
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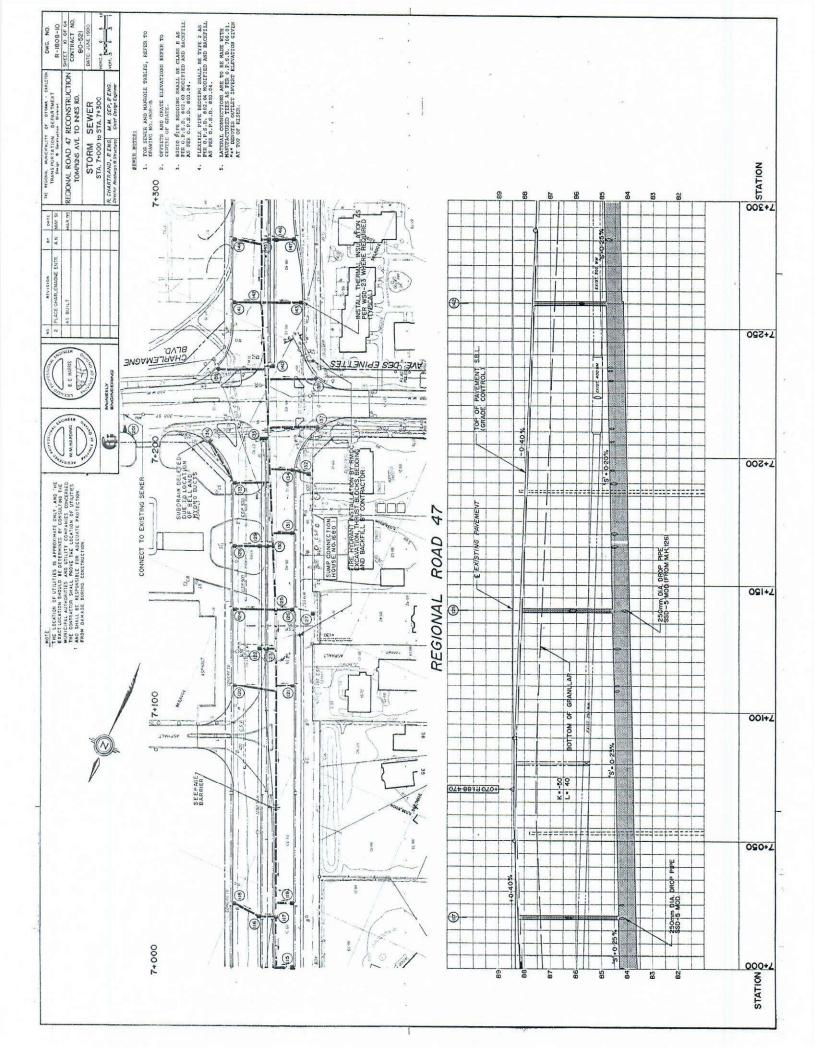
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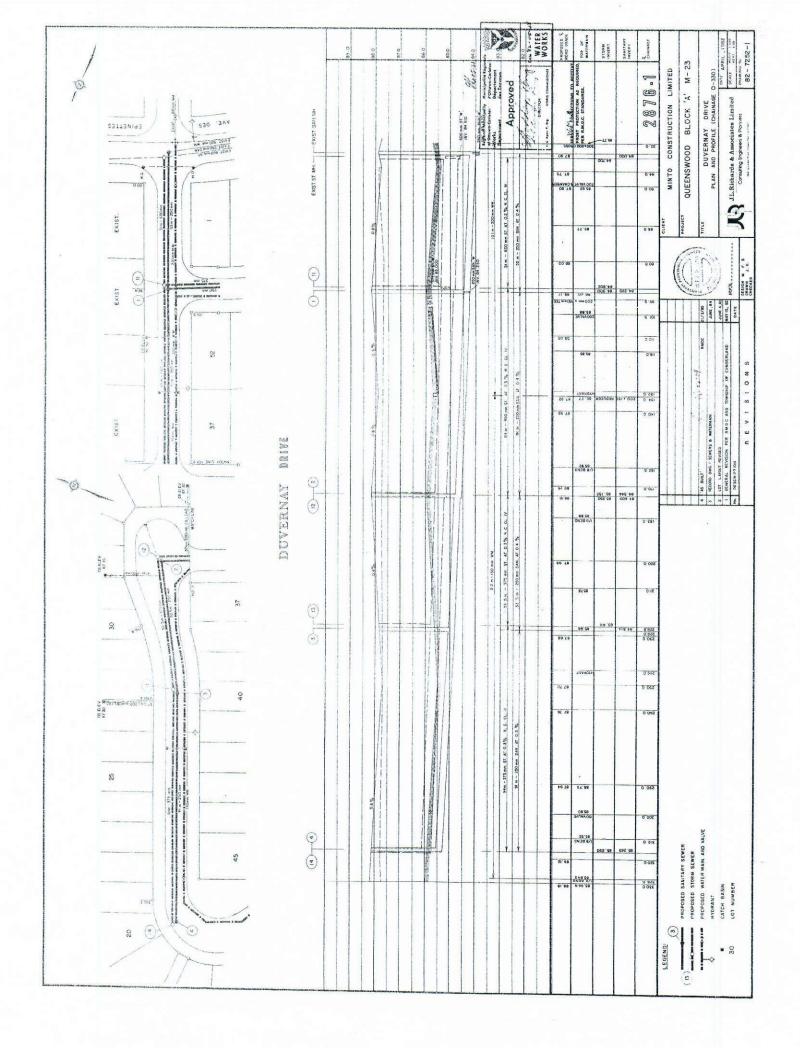
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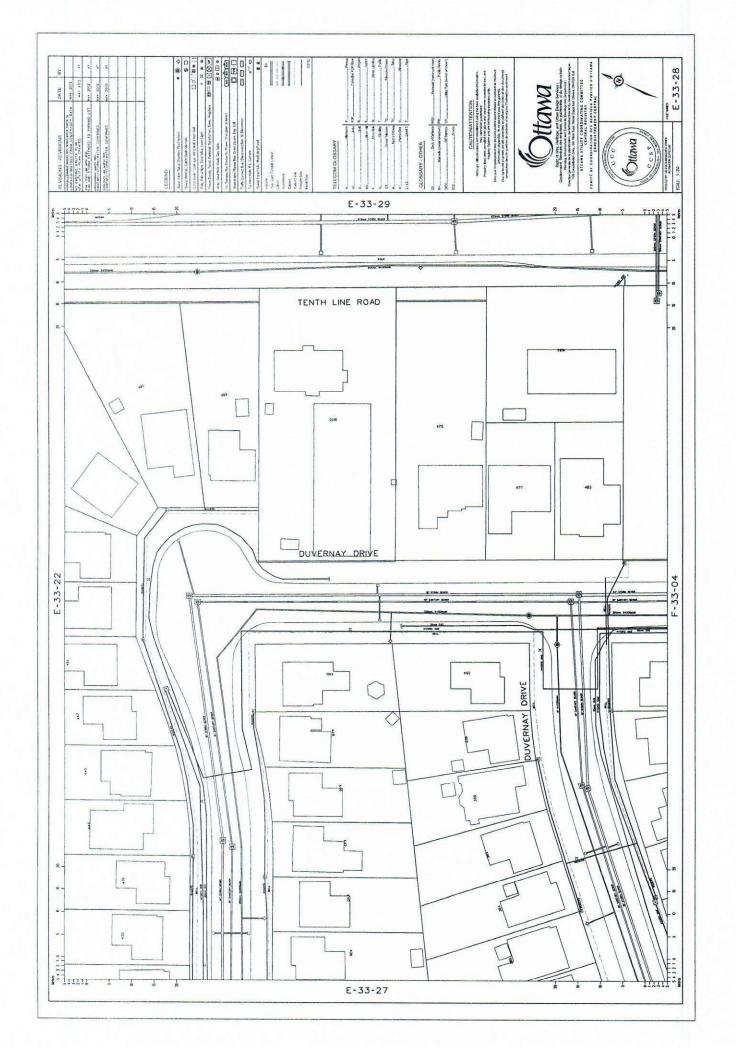
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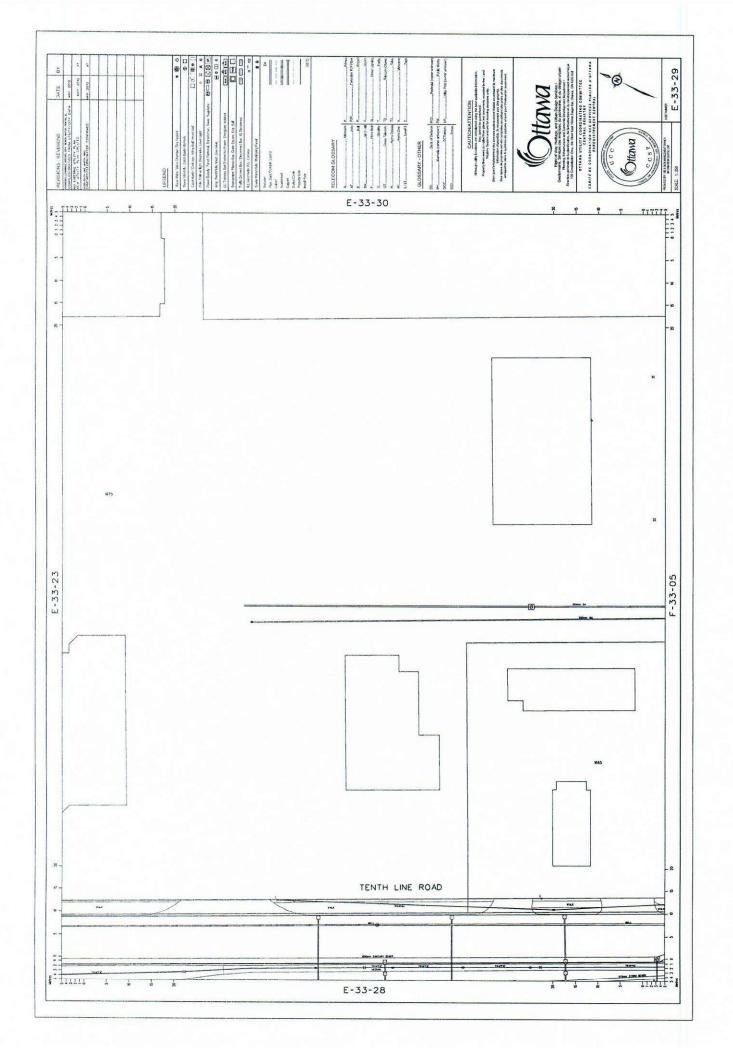
**UCC DRAWINGS** 











# THREE STOREY RESIDENTIAL APARTMENT BUILDING SITE

# PATR OF LOT B

# **CONCESSION 11**

# GEOGRAPHIC TOWNSHIP OF CUMBERLAND

**1670 TENTH LINE ROAD** 

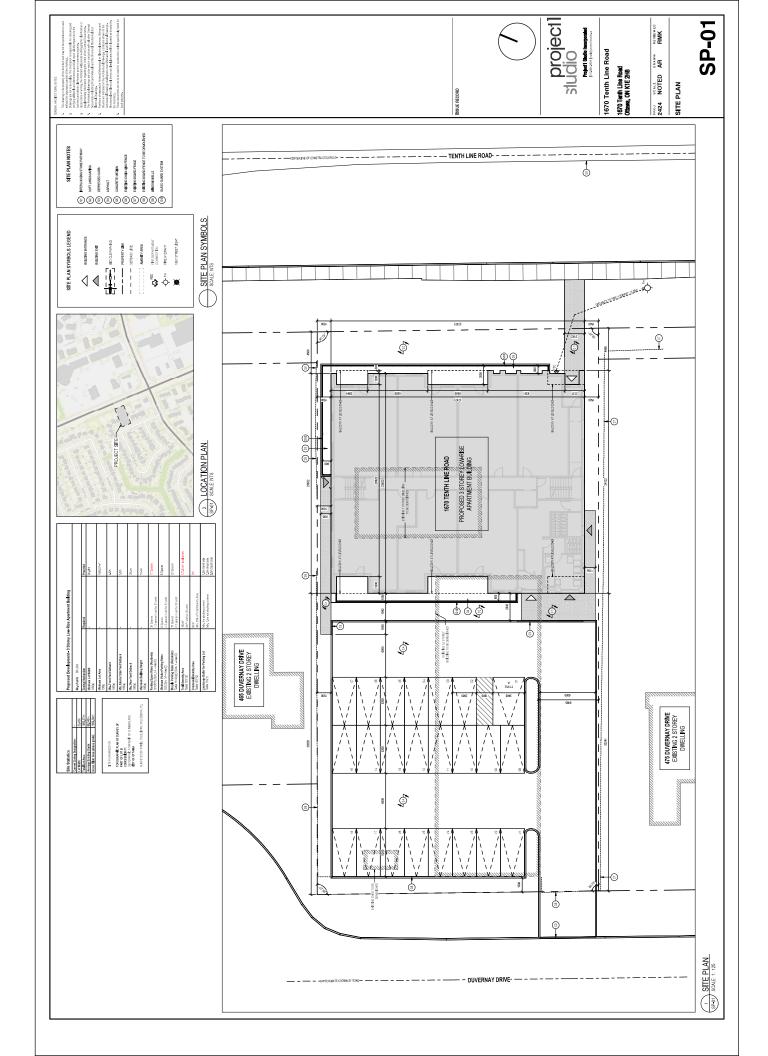
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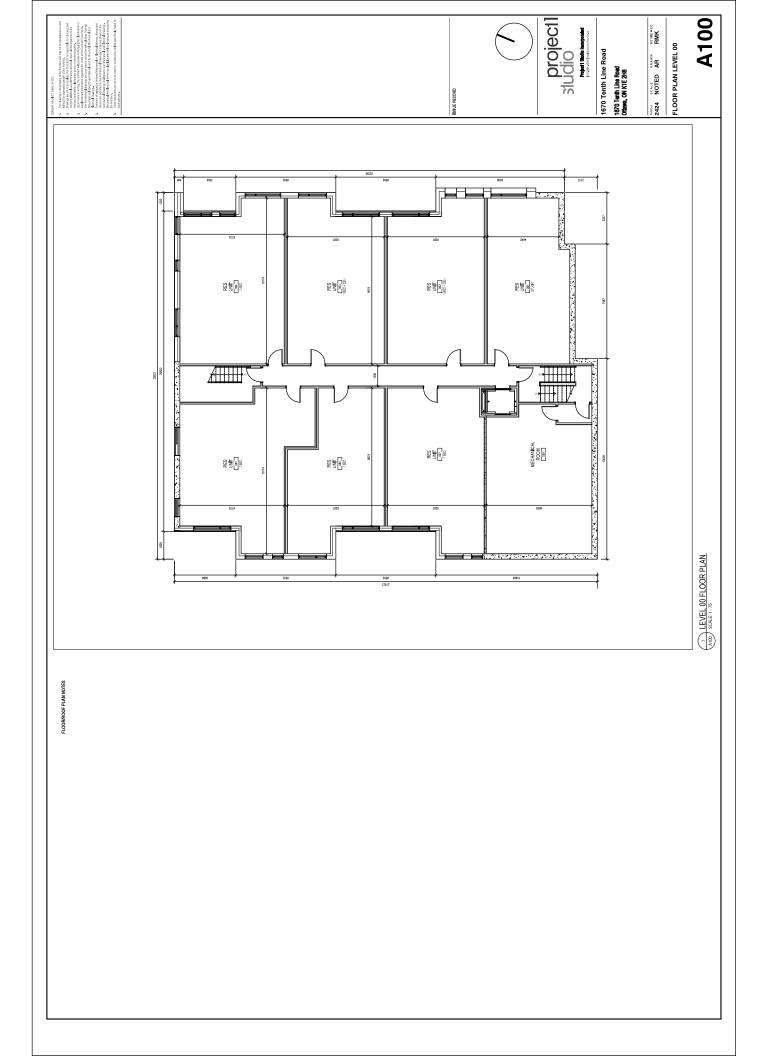
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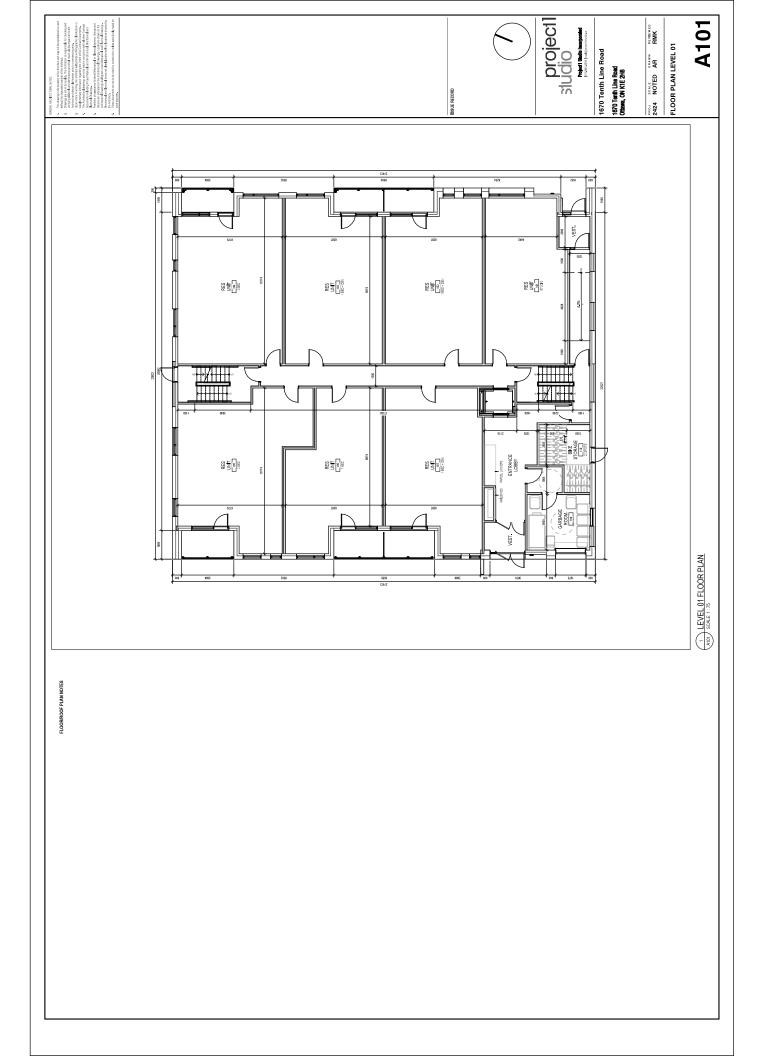
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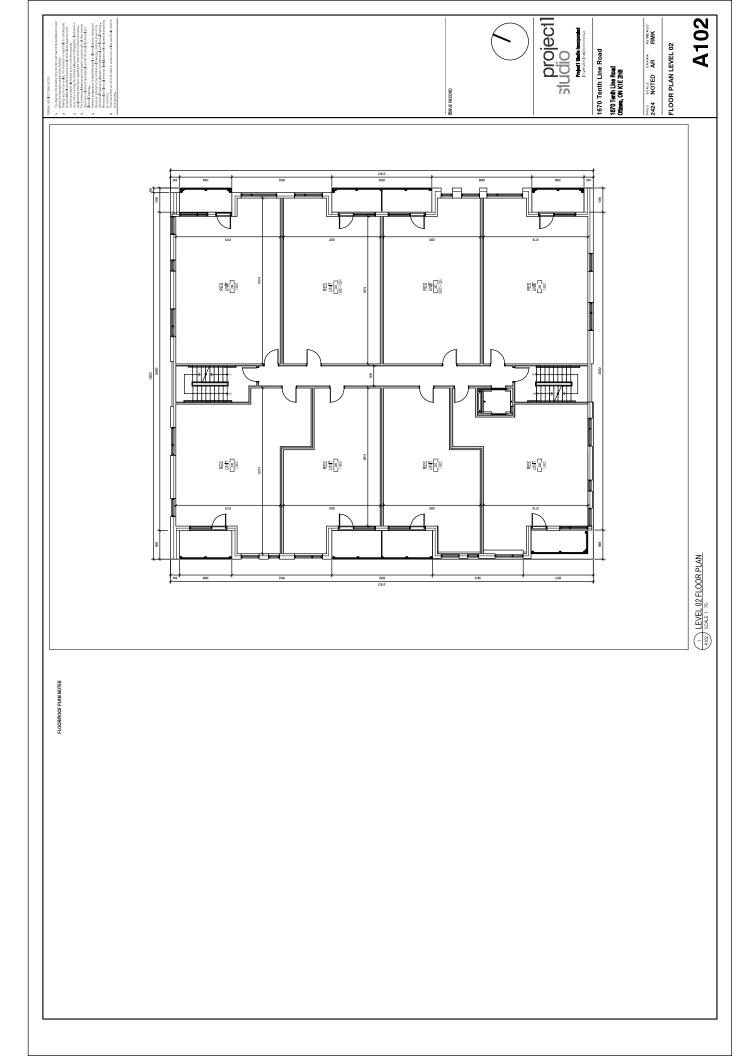
- SITE PLAN AND ARCHITECTURAL DRAWINGS
- WATER BOUNDARY CONDITIONS
- FIRE FLOW CALCULATIONS
- OFM EXPOSURE DISTANCES FIGURE 1
- SUPPORTING HYDRAULIC CALCULATIONS
- HYDRANT SPACING FIGURE 2

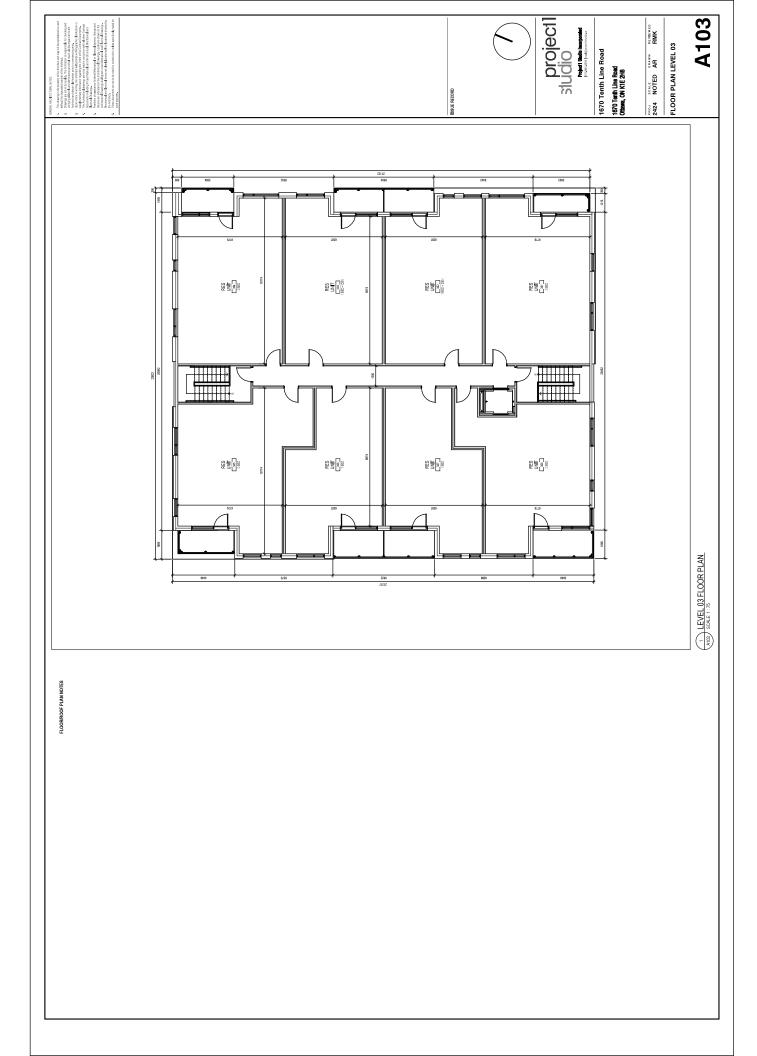
ATTACHMENT 1 : SITE PLAN AND ARCHITECTURAL DRAWINGS

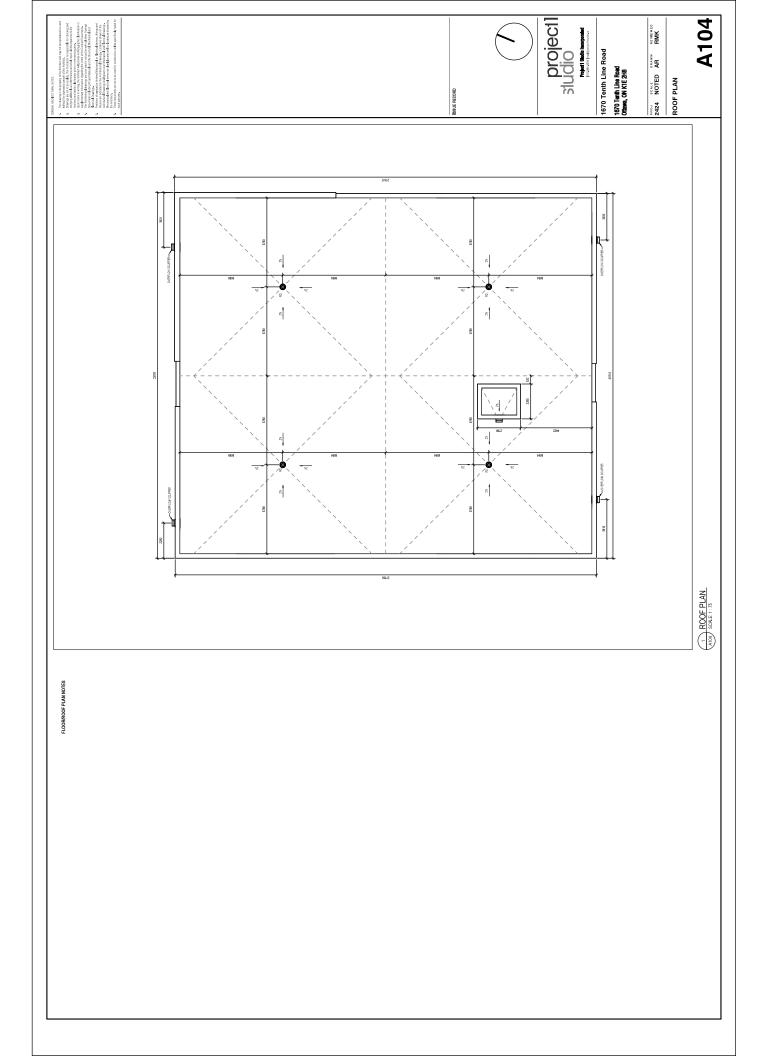


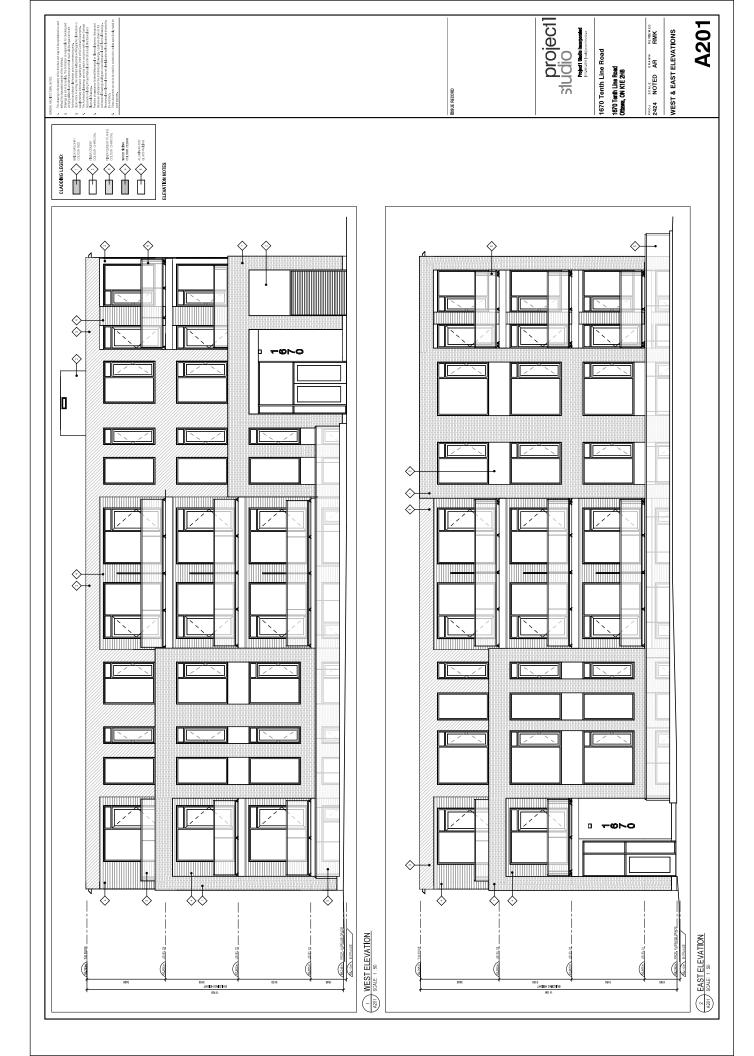


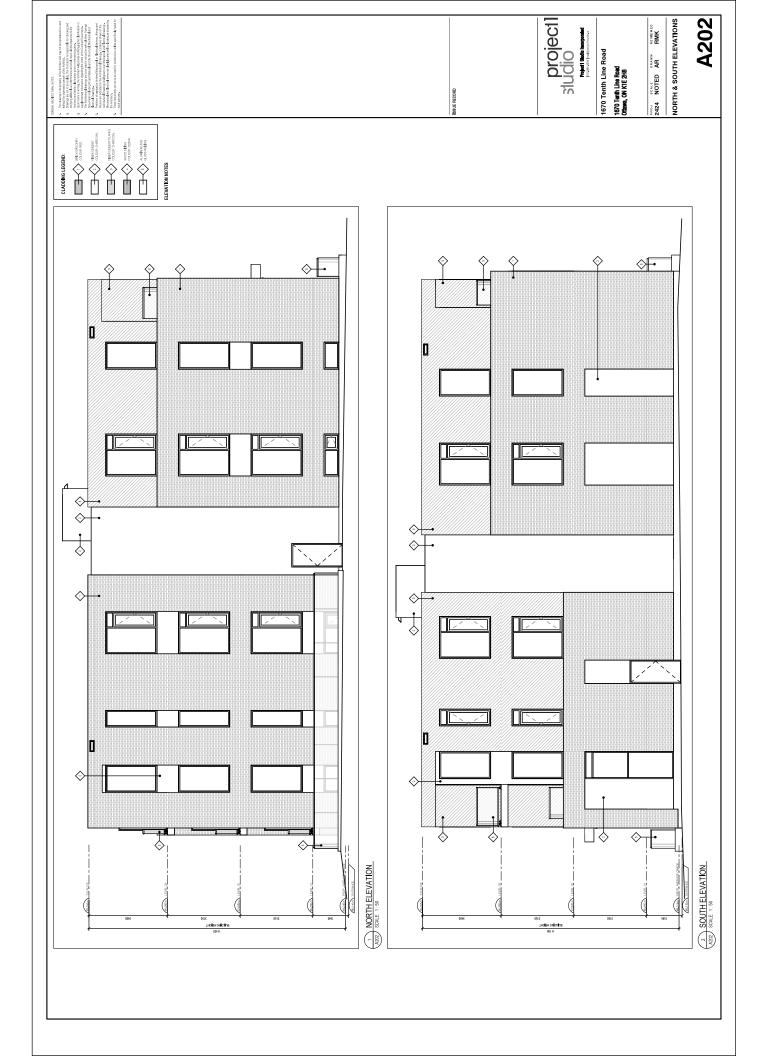












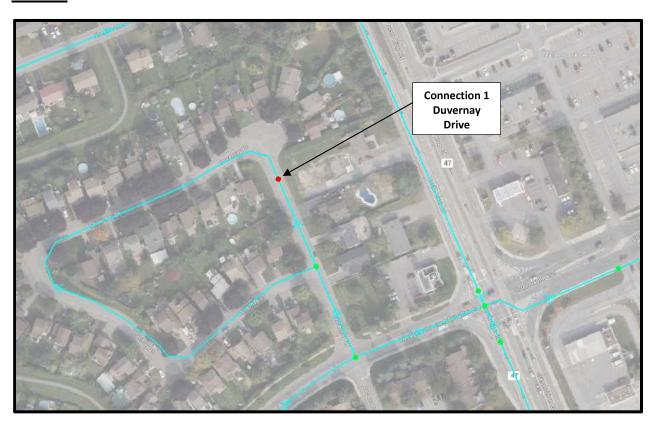
**ATTACHMENT 2: WATER BOUNDARY CONDITIONS** 

# Boundary Conditions 1670 Tenth Line Road

# **Provided Information**

Scenario	Demand			
Scenario	L/min	L/s		
Average Daily Demand	10	0.16		
Maximum Daily Demand	25	0.41		
Peak Hour	55	0.91		
Fire Flow Demand #1	6,300	105.00		

# **Location**



#### **Results**

#### **Connection 1-Duvernay Drive**

Demand Scenario	Head (m)	Pressure <sup>1</sup> (psi)
Maximum HGL	130.2	60.1
Peak Hour	127.8	56.7
Max Day plus Fire Flow #1	120.0	45.6

<sup>&</sup>lt;sup>1</sup> Ground Elevation = 87.9 m

#### **Notes**

1. The IWSD has recently updated their water modelling software. Any significant difference between previously received BC results and newly received BC results could be attributed to this update.

#### 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. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

# **ATTACHMENT 3: FIRE FLOW CALCULATIONS**



#### **OFM Fire Flow Calculation**

Calculations based on Fire Protection Water Supply Guideline for Part 3 in the Ontario Building Code by the Office of the Fire Marshal (OFM 1999)

Data inputted b Hamidreza Mohabbat MASc., El Data reviewed t Alexandre Mineault-G, P Eng.

Stantec Project #: 163401084 Project Name: 1670 Tenth Line Road Servicing Analysis

Date: 6/16/2025 Fire Flow Calculation #: 1

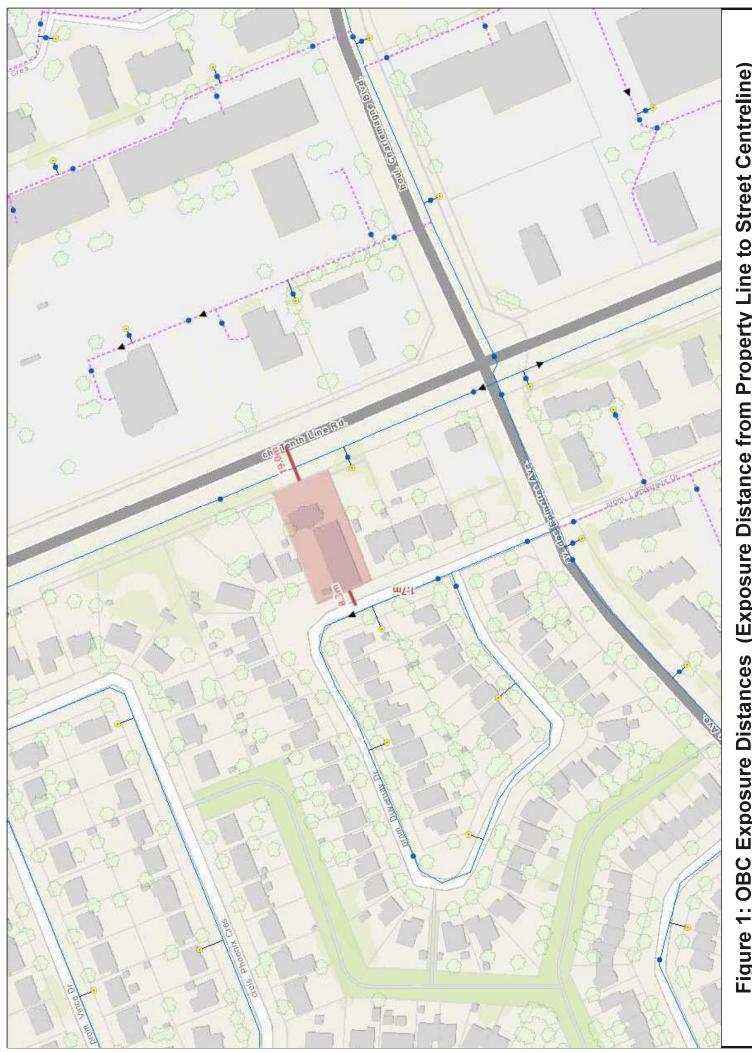
Description: Residential

The required fire flow is calculated using the Ontario Building Code (OBC). The building details are extracted from the Proposed Site Plan submitted by the Project Studio. The apartment building is planned to comprise a total of 30 units with an average total gross area of approx. 613 Notes: square meter per floor. Additionally, the building is constructed with wood and per OBC it was selected as Type IV, with a residential occupancy or Classification C. Per proposed plans, the total height of the building was calculated at 12.0 m. The exposure distances were calculated based on

			site plans and GeoOttawa webpage.		•				
		Office of the	ne Fire Marshal Determination of Required	Fire Protection	Water Suppl	у			
Step	Task	Notes		Multiplier Ass Opti		Value Used			
1			General Building Deta	ıils					
1.1	Enter Number of Storeys		Number of Floors/Storeys in the Un	it (incl. basement):	4	4	Storeys		
1.2	_	Type of Housing	Single Family Townhouse - indicate # of units Other (Comm, Ind, Apt etc.)	30		30	Units		
1.3	Block) Choose Presence of		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Sprinklers?	None	None	N/A		
1.4	Sprinklers Choose Presence of Firewalls		Fir	None	N/A				
1.5	Choose Presence of Stand-Pipe System		S	None	N/A				
2			Determining Water Supply Co						
				Construction					
			Non-combustible construction + fire separations + fire- resistance ratings in accordance with Section 3.2.2 of OBC Non-combustible construction + fire separations + no						
2.1	Choose Type of Construction	Type of Construction	fire-resistance rating Combustible construction + fire separations + fire- resistance ratings in accordance with Section	Type III	Type III	N/A	N/A		
			3.2.2 of OBC  Combustible construction + fire separations + no fire-	Type IV					
			resistance rating	Classification					
	Choose Classification Occupancy Classificatio (OBC)		A-2, B-1, B-2, B-3, C, D	18		A-2, B-1, B-2, B-3, C, D			
2.2			A-4, F-3	22					
			A-1, A-3 E, F-2	25 31	С		N/A		
		(000)	F-1	41					
2.3	Water Supply Coefficient (K)		Water Supply Coefficient K			18	N/A		
3			Determining Building Vol	ume V					
			Floor	Space Area					
3.1	Enter Ground Floor Area of One Unit		Average Floor Area (A)		613 Square Metres (m2)	613	Area in Square Meter (m²)		
			Build	ling Height					
	5 40 00 00			Bottom Elevation :	86.4	-			
3.2	Building Height (h)			Meters (m					
			Top Elevation : Weters (m)						
3.3	Building Volume (V)		Bui <b>l</b> ding Vo <b>l</b> ume V = A * h		, í	7,360	Volume in Meters Cub (m³)		
4			Determining Spatial Coeffi North Side						
			Property Line to Street Centreline (Street Facing)  Total Exposure Distance	1.5 0 1.5	0.50				
	Choose Exposure	Exposure Distance from	Property Line to Street Centreline (Street Facing)	4.5 19.0	0.00				
4.1	Distances from Building to Property Line	Building to Property Line	Total Exposure Distance  South Side  Property Line to Street Centreline (Street Facing)	23.5 1.5 0	0,50	1.00	Distance in Meters (n		
		in Meters (m)	Total Exposure Distance West Side	1.5 32.2					
	Total Spatial Coefficient		Property Line to Street Centreline (Street Facing) Total Exposure Distance	8.3 40.5	0.00				
4.2	(S <sub>tol</sub> )		Total Spatial Coefficient $S_{tot} = 1 + \Sigma$ Determining Required Minimum Supply of		Flow	2.00	N/A		
5			Minimum Supply of Water, rounde			005.000			
	Obtain Required Fire		***			· · · · · · · · · · · · · · · · · · ·			
5.1	Volume, Flow &	Required Minimum Water Supply Flow Rate (L/min)					,		
	Duration	Required Minimum Water Supply Flow Rate (L/s					*		
		Required Minimum Duration of Fire Flow (min)					50 min		

Date: February 2021

**ATTACHMENT 4 : FIGURE 1 – OFM EXPOSURE DISTANCES** 



Source: geoOttawa 2021; Contains information licensed under the Open Government Licence - City of Ottawa. Figure 1: OBC Exposure Distances (Exposure Distance from Property Line to Street Centreline)

**ATTACHMENT 5: SUPPORTING HYDRAULIC CALCULATIONS** 



#### Supporting Hydraulic Calculations

Stantec Project #: 163401084

Project Name: 1670 Tenth Line Road

Date: June 24, 2025

Data inputted by: Melissa Nelson, P.Eng.

Data reviewed by: Alexandre Mineault-Guitard, P.Eng.

#### Boundary Conditions provided by the City:

Scenario 1: Peak Hour (Min HGL): 127.8 m;

Scenario 2: Average Day (Max HGL): 130.2 m; and

Scenario 3: Maximum Day plus Fire Flow: 120.0 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) = 127.8 and hz (m) = 87.9.

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

hp (m) = HGL - hz∴ hp = 127.8 - 87.9 m = 39.9 m.

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

P (kPa) = (p \* g \* hp) / 1000 (2)

where:  $\rho$  = density of water = 1000 kg/m<sup>3</sup>; and g = gravitational acceleration = 9.81 m/s<sup>2</sup>.

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

P (kPa) = (1000 \* 9.81 \* 39.9) / 1000 $\therefore$  P = 391 kPa.

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

P = 57 psi.

Applying the same procedures, the pressures under Scenario 2 and Scenario 3 are calculated as follows: Scenario 2: P = 60 psi; and Scenario 3: P = 46 psi.

#### To summarize:

Scenario 1: Minimum Pressure under Peak Hour Demand: 391 kPa (57 psi)

Scenario 2: Maximum Pressure under Average Day Demand: 415 kPa (60 psi)

Scenario 3: Minimum Pressure under Maximum Day + Fire Flow Demand: 315 kPa (46 psi)

**ATTACHMENT 6: FIGURE 2 - HYDRANT SPACING** 

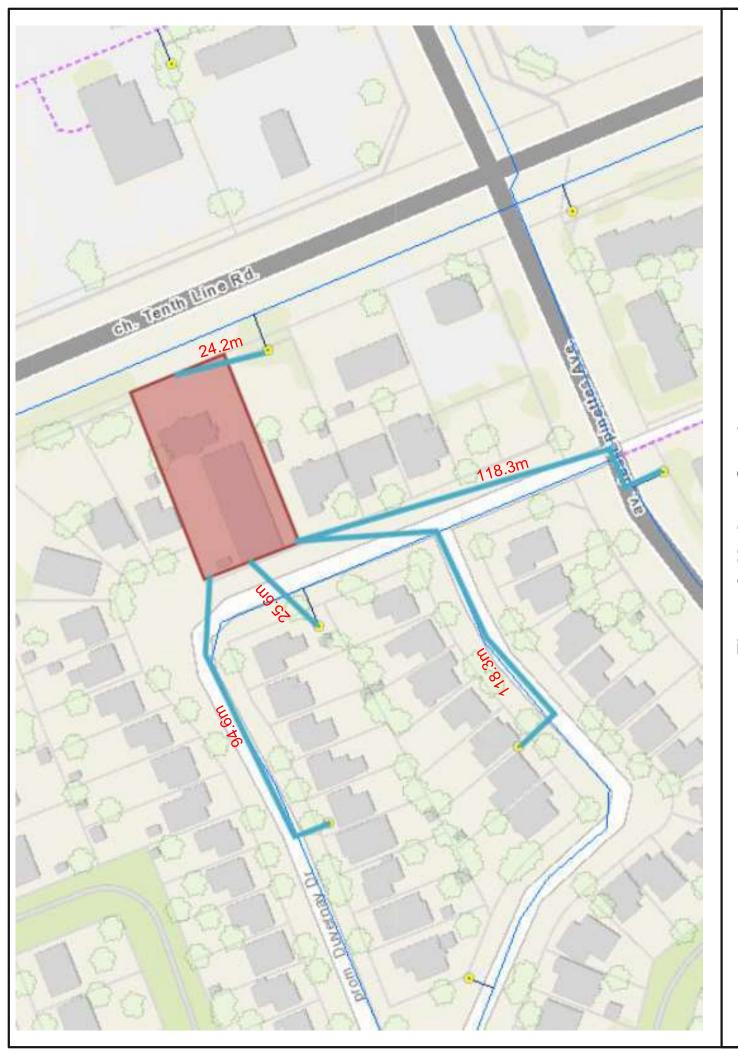


Figure 2: Hydrant Spacing

Source: geoOttawa 2021; Contains information licensed under the Open Government Licence - City of Ottawa.

#### **PROPOSED**

## THREE STOREY RESIDENTIAL APARTMENT BUILDING SITE

PATR OF LOT B

**CONCESSION 11** 

# GEOGRAPHIC TOWNSHIP OF CUMBERLAND

**1670 TENTH LINE ROAD** 

**CITY OF OTTAWA** 

**APPENDIX E** 

**CITY OF OTTAWA** 

**SANITARY SEWER DESIGN SHEET** 

SHEET No. 1 OF 1

	s.000.s	Actual velocity al		SHEET NO.
•	population in 1000's	Full flow velocity (m/s)		TH
		Type Grade CapacityFull flow of % (L/a) velocity pipe	8.6	SOAD
	$Q(p) = \frac{14}{4 \cdot \sqrt{p}} \times \begin{cases} \text{where p} \\ Q(p) = \frac{pqM}{86.4} \text{ (L/s)} \\ Q(l) = IA \text{ (L/s) where A} \\ Q(d) = Q(p) + Q(l) \text{ (L/s)} \end{cases}$	OSED Grade	(min)	SY A
	$O(p) = \frac{14}{4 \cdot \sqrt{p}} \times \sqrt{wh}$ $O(p) = \frac{PqM}{86.4} (1.1s)$ $O(1) = 1A (1.1s) w1$ $O(d) = O(p) + O(1)$	PROP Type ol pipe		1至2
	(a) 0 (b) 0 (c) 0 (d) 0 (d) 0 (e) 0	Pips size (mm)	95	THREE
SHEET		Lengih (m)	43.0	170
	*	Peak design How Q(d) (L/s)	19	PROJECT
DESIGN	4 ppu	Peak sxtraneous (low Q(i) (L/s)	90.00	
	777	Pop. 110 w O(p) (1./s)	9,0	EE E
SEWER	BEDROOM BEDROOM RACHELOR	Peaking lactor M	3.65	DESIGN CHECKED
	2 BEDIZO BEDIZO BACHEL	ATIVE A	0.186	DESIGN
ARY		UMUI	1 20 元	
SANIT		< 00	981-0	22.6
	ap, d) a. \$)	INDIVIDUAL Area Pop. hectar	7.02	# 83 J. L. W.
	1 110w (250,1/cs 110w (251,1/h; w (1/s)	01	SCALLES OF THE STATE OF THE STA	<u> </u>
	average daily per capita flow (250L/cap, d) a unit of peak extransous flow (251/ha. s) a peaking lactor (p) = peak population flow (L/s) (i) = peak extransous flow (L/s) (d) = peak design flow	LOCATION	SITE FESSION TI-M: MAK	
	q = average daily per capita flow (28 I = unit of peak extraneous flow (28 M = peaking lactor Q (p) = peak population flow (L/s) Q (s) = peak extraneous flow (L/s) Q (d) = peak design flow	STREET	LINE ROAD LINE R	

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## **PROPOSED**

# THREE STOREY RESIDENTIAL APARTMENT BUILDING SITE

PATR OF LOT B

**CONCESSION 11** 

# **GEOGRAPHIC TOWNSHIP OF CUMBERLAND**

**1670 TENTH LINE ROAD** 

**CITY OF OTTAWA** 

#### APPENDIX F

**DEVELOPMENT SERVICING STUDY CHECKLIST SUMMARY** 





# Servicing study guidelines for development applications

# 4. Development Servicing Study Checklist

The following section describes the checklist of the required content of servicing studies. It is expected that the proponent will address each one of the following items for the study to be deemed complete and ready for review by City of Ottawa Infrastructure Approvals staff.

The level of required detail in the Servicing Study will increase depending on the type of application. For example, for Official Plan amendments and re-zoning applications, the main issues will be to determine the capacity requirements for the proposed change in land use and confirm this against the existing capacity constraint, and to define the solutions, phasing of works and the financing of works to address the capacity constraint. For subdivisions and site plans, the above will be required with additional detailed information supporting the servicing within the development boundary.

#### 4.1 General Content

Executive Summary (for larger reports only).

×	Date and revision number of the report.
×	Location map and plan showing municipal address, boundary, and layout of proposed development.
×	Plan showing the site and location of all existing services.
	Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.
	Summary of Pre-consultation Meetings with City and other approval agencies.
	Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.
×	Statement of objectives and servicing criteria.
×	Identification of existing and proposed infrastructure available in the immediate area.
	Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).
	Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.
	Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.
	Proposed phasing of the development, if applicable.

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- ☑ Reference to geotechnical studies and recommendations concerning servicing.
- All preliminary and formal site plan submissions should have the following information:
  - Metric scale
  - North arrow (including construction North)
  - ∘ Key plan
  - Name and contact information of applicant and property owner
  - Property limits including bearings and dimensions
  - Existing and proposed structures and parking areas
  - Easements, road widening and rights-of-way
  - Adjacent street names

## 4.2 Development Servicing Report: Water

Ц	Confirm consistency with Master Servicing Study, if available
×	Availability of public infrastructure to service proposed development
×	Identification of system constraints
×	Identify boundary conditions
×	Confirmation of adequate domestic supply and pressure
×	Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.
×	Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.
	Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design
	Address reliability requirements such as appropriate location of shut-off valves
×	Check on the necessity of a pressure zone boundary modification.
×	Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient

water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range





×	Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.
	Description of off-site required feedermains, booster pumping stations, and other water infrastructure tha will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.
×	Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.
×	Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.
	4.3 Development Servicing Report: Wastewater
×	Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).
	Confirm consistency with Master Servicing Study and/or justifications for deviations.
	Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.
×	Description of existing sanitary sewer available for discharge of wastewater from proposed development.
	Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)
×	Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.
	Description of proposed sewer network including sewers, pumping stations, and forcemains.
	Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).
	Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.
	Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.
	Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.
	Special considerations such as contamination, corrosive environment etc.





## 4.4 Development Servicing Report: Stormwater Checklist

ഥ	drain, right-of-way, watercourse, or private property)
	Analysis of available capacity in existing public infrastructure.
×	A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.
×	Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.
	Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.
×	Description of the stormwater management concept with facility locations and descriptions with references and supporting information.
	Set-back from private sewage disposal systems.
	Watercourse and hazard lands setbacks.
	Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.
	Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.
×	Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).
	Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.
×	Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.
	Any proposed diversion of drainage catchment areas from one outlet to another.
×	Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.
	If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100 year return period storm event.
	Identification of potential impacts to receiving watercourses
	Identification of municipal drains and related approval requirements.
×	Descriptions of how the conveyance and storage capacity will be achieved for the development.
×	100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.

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	Inclusion of hydraulic analysis including hydraulic grade line elevations.
×	Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.
	Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.
	Identification of fill constraints related to floodplain and geotechnical investigation.
	4.5 Approval and Permit Requirements: Checklist
	The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development as well as the relevant issues affecting each approval. The approval and permitting shall include but not be limited to the following:
	Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.
	Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.
	Changes to Municipal Drains.
	Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)
	4.6 Conclusion Checklist
×	Clearly stated conclusions and recommendations
	Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.
×	All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario

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#### **PROPOSED**

## THREE STOREY RESIDENTIAL APARTMENT BUILDING SITE

PATR OF LOT B

**CONCESSION 11** 

# **GEOGRAPHIC TOWNSHIP OF CUMBERLAND**

**1670 TENTH LINE ROAD** 

**CITY OF OTTAWA** 

**APPENDIX G** 

PRE-CONSULTATION FEEDBACK

**FROM** 

**APPLICATION PC 2024-0516** 



File No.: PC2024-0516

January 24, 2025

Connor Gallagher
Triami Developments & Investments Inc.
Via email: connor@tripine.ca

# Subject: Pre-Consultation: Meeting Feedback Proposed Zong By-law Amendment & Site Plan Control Application – 1670 Tenth Line Road

# **Contents**

Subject: Pre-Consultation: Meeting Feedback	1
Proposed Zong By-law Amendment & Site Plan Control Application – 1670 Ten Road	
Pre-Consultation Preliminary Assessment	2
Summary of the Proposal	3
Next Steps	5
Supporting Information and Material Requirements	5
Consultation with Technical Agencies	5
Planning	5
Comments:	5
Urban Design	8
Comments:	8
Submission Requirements	8
Engineering	9
Noise	13
Comments:	13



Transportation	13
Comments:	13
Environment	16
Forestry	16
Comments:	16
Parkland	19
Other	20
High Performance Development Standards	20
Affordable Housing Community Improvement Plan	20
Submission Requirements and Fees	21
Concluding Remarks	21
Attachments	21

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on December 18, 2024.

**Pre-Consultation Preliminary Assessment** 

1 🗆	2 □	3 🗵	4 🗆	5 □

One (1) indicates that considerable major revisions are required while five (5) suggests that the proposal appears to meet the City's key land use policies and guidelines. This assessment is purely advisory and does not consider technical aspects of the proposal or in any way guarantee application approval.



# Summary of the Proposal

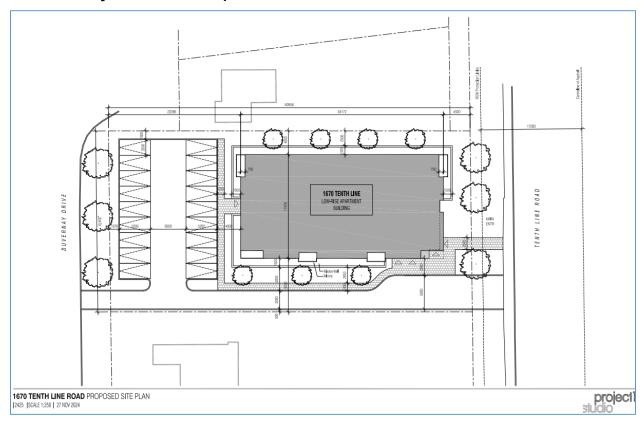


Figure 1: Proposed Site Plan

The Applicant is proposing to construct a low-rise apartment (3-storeys), with 30 units and a parking lot with 18 spaces adjacent to Duvernay Drive. A bicycle storage area is proposed inside the building, garbage will also be located inside the building.

1070 Tellill Ell	ne - Area Calcula	uona							
	AREA BY	FLOOR				ι	JNIT MATRIX		
Floor	Gross Bu	ilding Area	Leasable Area		Studio	1 Bed	1 Bed + Den	2 Bed +	Tota
	m2	sq ft	sq ft						
Level 00	555	5,976	4,833			2	2	3	7
Level 01	572	6,159	4,831			2	2	3	7
Level 02	575	6,184	5,616			2	2	4	8
Level 03	575	6,184	5,616			2	2	4	8
TOTAL	2,276	24,503	20,895	85%	0	8	8	14	30
			_		0%	27%	27%	47%	

Figure 2: Capture of proposals' area calculations.





Figure 3: Rendering West View - Fronting onto Tenth Line Road



Figure 4: Rending looking South



# **Next Steps**

- 1. A review of the proposal and materials submitted for the above-noted preconsultation has been undertaken.
- 2. As of June 6, 2024, planning pre-consultations are no longer mandatory as per the Province of Ontario's Bill 185. If the applicant chooses to proceed with further pre-consultation, please complete a Phase 3 Pre-consultation Application Form and submit it together with draft studies <a href="mailto:planningcirculations@ottawa.ca">planningcirculations@ottawa.ca</a>.
- 3. In your subsequent pre-consultation submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed must be included with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.

# Supporting Information and Material Requirements

The attached **Study and Plan Identification Lists** outlines the information and material that has been identified, during this phase of pre-consultation, as either <u>required</u> (R) or <u>advised</u> (A) as part of a future complete application submission.

The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on <a href="Ottawa.ca">Ottawa.ca</a>. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.

# Consultation with Technical Agencies

You are encouraged to consult with technical agencies early in the development process and throughout the development of your project concept. A list of technical agencies and their contact information is enclosed.

# **Planning**

Lucy Ramirez, Planner | <u>Lucy.Ramirez@ottawa.ca</u>

## **Comments:**

#### Official Plan

1. Per the Official Plan (2022) the subject property is designated Suburban Minor Corridor, (Schedule A and B8).



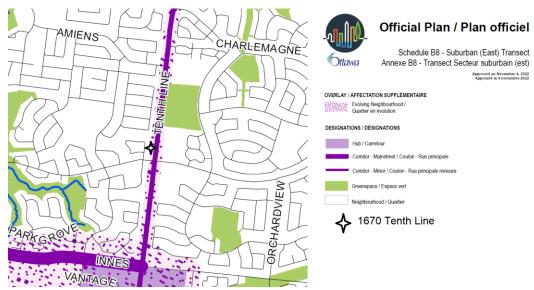


Figure 5: Capture of Schedule B8 with the approximate location of the proposed site.

- a) Per Policy 5.4.1(2)(b)
  - 2) The Suburban Transect is generally characterized by Low- to Middensity development. Development shall be:
    - b) Low-rise along Minor Corridors, however the following policy direction applies:
      - i) Mid-rise buildings, between 5 to 7 storeys, may be considered through a rezoning without an amendment to the Plan;
      - ii) Mid-rise buildings above 7 storeys may be permitted through an area-specific policy or secondary plan; and
      - iii) High-rise buildings may be permitted through a secondary plan.
    - c) Mid-rise along Mainstreet Corridors, however the following additional direction applies;
      - i. Generally not less than 2 storeys;
      - ii. Where the lot fabric can provide a suitable transition to abutting Low-rise areas, Highrise development may be permitted
      - iii. The stepback requirements fronting the street for buildings shall be proportionate to the width of the abutting right of way, and consistent with the objectives in the urban design section on Mid-rise and High-rise built form in Subsection 4.6.6, Policies 7), 8) and 9); and



- iv. The Zoning By-law may restrict buildings to a Low-rise category on lots which are too small to accommodate an appropriate height transition
- b) Per Policy 6.2.1 (4)
  - 4) Unless otherwise indicated in an approved secondary plan, the following applies to development of lands with frontage on both a Corridor and a parallel street or side street:
    - a) Development shall address the Corridor as directed by the general policies governing Mainstreet Corridors Minor Corridors, particularly where large parcels or consolidations of multiple smaller parcels are to be redeveloped; and
    - b) Vehicular access shall generally be provided from the parallel street or side street.

#### 2. 30 cm Reserves

- a. You will need to lift the 30 cm reserve abutting Duvernay Drive
- b. Staff will request a 30 cm reserve abutting Tenth Line Road to prohibit vehicular access from Tenth Line Road.

#### 3. Design Guidelines

• <u>Urban Design Guidelines for Low-rise Infill Housing [ PDF 1.418 MB (link is external)</u>

#### 4. Parking requirements

As noted in the pre-application consultation meeting, we've been given direction that the policies in the Official Plan should continue to form the primary basis for evaluating development applications. Changes may occur to the draft Zoning Bylaw and Zoning Map during the next few months. The current Zoning By-law 2008-250 remains in effect until Council approves the new Zoning By-law, which is targeted to occur by December 2025. The provisions in the draft are subject to change and the policies in the Official Plan should form the primary basis for evaluating development applications until the new Zoning By-law comes into effect.

You may want to reference the ZBLA adopted by City Council on <u>July 13 2016</u> (item 11), where the minimum parking requirements were reduced in the Zoning Bylaw. In this area (Area X on Schedule 1A) no off-street parking is required for the first 12 dwelling units of a residential use building. Likewise, no visitor parking is required for the 12-dwelling unit on a lot. These changes were done in part to enable and



encourage more car-free households to find housing in areas well served by **transit** and near mainstreets. These changes also enable more affordable housing and are a recognition that development on small lots is generally not compatible with surface parking. I will vary the resident parking, I am not supportive of varying visitor parking.

#### 5. Easements

If applicable, provide a list of the easements required to facilitate the development and an accompanying reference plan showing all the Parts subject to easements.

6. Did you explore the AM10 subzone with a height limit of 13.5 metres?

The purpose of the AM zone is to accommodate a broad range of uses including retail, service commercial, offices, residential and institutional uses in mixed-use buildings or side by side in separate buildings. AM10 is a subzone with zoning provisions that encourage active street frontages

Feel free to contact Lucy Ramirez, Planner, for follow-up questions

# **Urban Design**

Christopher Moise, Architect | Urban Designer | Planner | Christopher.Moise@ottawa.ca

### **Comments:**

- 7. The following element of the preliminary design are of concern:
  - Screening of the parking lot to the rear abutting the residential neighbourhood. Provide a minimum 3m buffer on the property to provide landscaping
  - b. Window Wells surrounding the building. Perhaps larger area could be provided to allow usable amenity area to basement units.
  - c. Remove the drive aisle to Tenth Line at Planning's request.
- 8. Street trees should be provided along the abutting Right-of-ways (ROW)s.
- 9. Please provide landscaping around the below grade unit/window wells to provide transition to surrounding properties and privacy for residents.

# **Submission Requirements**

10. An Urban Design Brief is required. Please see attached customized Terms of Reference to guide the preparation of the submission.



- a. The Urban Design Brief should be structured by generally following the headings highlighted under Section 3 – Contents of these Terms of Reference.
- 11. Additional drawings and studies are required as shown on the SPIL. Please follow the terms of reference ( <u>Planning application submission information and materials | City of Ottawa</u>) to prepare these drawings and studies. These include:
  - a. Landscape plan.
  - b. Elevations.

Feel free to contact Christopher Moise, Architect | Urban Designer | Planner, for follow-up questions.

# Engineering

Alex Polyak, Project Manager | Alex.Polyak@ottawa.ca

#### **Comments:**

#### Water

- 12. Watermain looping is recommended for 50 or more dwellings to avoid creating a vulnerable service area. District Metering Area (DMA) Chamber(s) are required for private developments serviced by a connection 150 mm or larger or when there are two or more private connections to the public watermain. Refer to the City of Ottawa Water Distribution Guidelines.
- 13. A water boundary condition request must be made to determine the availability of the public water supply to support the proposed development. Water Boundary condition requests must be submitted to the City Infrastructure Project Manager by the civil design engineer or consultant prior to first application submission and must include the following information:

i.	The location of the service connection to the City watermain (provide a
	map);
ii.	Type of development, and required fire flow;

iii.	Average daily demand: l/s;		
iv.	Maximum daily demand:l/s;		
٧.	Maximum hourly daily demand:	l/s:	

viii. Supporting calculations for all demands listed above



18. Type of development:

- 14. Demonstrate adequate hydrant coverage for fire protection. Please review Technical Bulletin ISTB-2018-02, Appendix I Table 1 maximum flow to be considered from a given hydrant.
- 15. Watermain looping is recommended for 50 or more dwellings to avoid creating a vulnerable service area. District Metering Area (DMA) Chamber(s) are required for private developments serviced by a connection 150 mm or larger or when there are two or more private connections to the public watermain. Refer to the City of Ottawa Water Distribution Guidelines.
- 16. Please be advised that capacity of the existing system will be determined after Water Boundary conditions are requested. Water Boundary condition requests must be submitted to the City Project Manager, Development Review by the civil design engineer or consultant prior to submission and include the following information:
- 17. The location of the service and the expected water demand of the proposed development shown on a plan, figure, or map;

•
19. Average daily demand: l/s;
20. Maximum daily demand:l/s;
21. Maximum hourly daily demand: l/s;
22. Required fire flow and completed FUS Design Declaration if applicable;

- 23. Supporting Calculations for all demands listed above and required fire flow as per Ontario Building Code or Fire Underwriter Surveys (See technical Bulletin ISTB-2021-03;
- 24. Watermain system analysis demonstrating adequate pressure as per section 4.2.2 of the Water Distribution Guidelines;
- 25. Demonstrate adequate hydrant coverage for fire protection. Please review Technical Bulletin ISTB-2018-02, Appendix I Table 1 maximum flow to be considered from a given hydrant;
- 26. Show proposed emergency route (to be satisfactory to Fire Services).
- 27. Perimeter metering likely required. Water metering department will be circulated the concept plan for an opportunity to provide preliminary feedback on metering requirements.



## **Sanitary Sewers**

- 28. The submission should indicate whether the intention is to re-use the existing site's services, or to provide new services. If the intention is to re-use the existing services, the submission should demonstrate serviceability and that there is adequate capacity to support the development. CCTV is to be provided to demonstrate that the services are in adequate condition for re-use. New services should ideally be grouped in a common trench to minimize the number of road cuts.
- 29. Provide pre and post CCTV of the sanitary trunk sewer as per City Standard CCTV spec S.P. F-4090.
- 30. A monitoring maintenance hole shall be required just inside the property line for all non-residential and multi residential buildings connections from a private sewer to a public sewer. See the sewer use by-law for details.
- 31. Sewer connections shall be made above the springline of the sewermain as per:
  - a. Std Dwg S11.1 for flexible main sewers connections made using approved tee or wye fittings.
  - b. Std Dwg S11 (For rigid main sewers) lateral must be less that 50% the diameter of the sewermain.
  - c. Std Dwg S11.2 (for rigid main sewers using bell end insert method) for larger diameter laterals where manufactured inserts are not available; lateral must be less that 50% the diameter of the sewermain.
- 32. A maintenance hole is required to be installed over the public sewer where private sewer connection to the public sewer exceeds 50% of the public sewer diameter. If a maintenance hole is proposed to be installed over existing City infrastructure, clearly indicate on the design drawings the applicable Standard City Drawing. For example, S12.1 or doghouse structure / S12.2, etc.
- 15. Please provide sanitary flow analysis as early as possible to the City Project Manager so that the City's Asset Management Branch can determine if there is adequate residual capacity in the receiving and downstream wastewater system to accommodate the proposed development.



## **Stormwater Management**

- 16. The Stormwater Management Criteria, for the subject site, is to be based on the following:
  - a. Application of the IDF information derived from the Meteorological Services of Canada rainfall data, taken from the MacDonald Cartier Airport, collected 1966 to 1997.
  - b. Based on sewer age, the allowable release rate is to be based on the 5-year design storm. Flows to the storm sewer in excess of the 5-year storm release rate, up to and including the 100-year storm event, must be detained on site.
  - c. The pre-development runoff coefficient shall be the lower of the existing coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).
  - d. A calculated time of concentration (cannot be less than 10 minutes).
    - e. Storm sewer outlets should not be submerged.
    - f. Quality control criteria. Enhanced level of protection (80% TSS removal) for suspended solids removal.
    - g. If an Oil/Grit Separator is required/proposed, the OGS unit sizing shall be as per ISO 14034 Environmental Technology Verification
    - All post development flows shall be directed towards the street. No drainage to neighbouring properties will be accepted.
    - Ponding depth of 350mm is permissible for the 100-year storm event. At the 100-year ponding elevation, overflow drainage must spill to the City Right-of-Way. The 100-year Spill elevation must be 300mm lower than any building opening or ramp.

# **Grading and Drainage**

- 17. Consider grading entrances with maximum 5% slopes for pedestrian access.
- 18. Reduce the reliance on retaining walls as much as possible by incorporating grading transitions between adjacent properties.

#### **Additional Notes**

19. For any proposed exterior light fixtures, please provide certification from a licensed professional engineer confirming lighting has been designed only using fixtures that meet the criteria for full cut-off classification as recognized by the



Illuminating Engineering Society of North America and result in minimal light spillage onto adjacent properties (maximum allowable spillage is 0.5 fc). Additionally, include in the submission the location of the fixtures, fixture type (make, model, part number and mounting height.

- 20. Sensitive Marine Clay (SMC) is widely found across Ottawa- geotechnical reports should include Atterberg Limits, consolidation testing, sensitivity values, and vane shear test. Refer to City of Ottawa Geotechnical and Slope Stability Guidelines.
- 21. The proposed driveway overlaps with the existing catchbasin at the front of the drive aisle on Duvernay.

## Drawings, Plans, and GeoOttawa

- 22. Plans are to be submitted on standard A1 size (594mm x 841mm) sheets, utilizing an appropriate Metric scale (1:200, 1:250, 1:300, 1:400, or 1:500).
- 23. Record drawings and utility plans are available for purchase from the City (Contact the City's Information Centre by email at <a href="mailto:lnformationCentre@ottawa.ca">lnformationCentre@ottawa.ca</a> or by phone at (613) 580-2424 x.44455.

Feel free to contact Alex Polyak, Infrastructure Project Manager, for follow-up questions.

# Noise

Josiane Gervais, Transportation Project Manager | <u>Josiane.Gervais@ottawa.ca</u>

## **Comments:**

- 33. Noise Impact Studies required for the following:
  - a. Road, as the site is within proximity to Tenth Line Road.
  - b. Stationary, due to the proximity to neighboring exposed mechanical equipment and/or if there will be any exposed mechanical equipment due to the proximity to neighboring noise sensitive land uses.

Feel free to contact Josiane Gervais, TPM, for follow-up questions.

# Transportation

Josiane Gervais, Transportation Project Manager | Josiane.Gervais@ottawa.ca

# **Comments:**

34. Vehicular access onto Tenth Line Road is not supported.



#### 35. Follow Transportation Impact Assessment Guidelines:

- a. Revise Screening For following the removal of the proposed access onto Tenth Line Rd. As an access will not be provided, a TIA will no longer be triggered.
- b. Complete and submit the <u>Transportation Demand Management Measures</u>
  <u>Checklist</u> and the <u>Transportation Demand Management Supportive</u>
  <u>Development Design and Infrastructure Checklist</u> in support of the application.
- c. Should the applicant wish to continue to pursue access onto Tenth Line Rd, a reduced-scope Transportation Impact Assessment will be required. Please submit the Scoping/Forecasting report to <a href="mailto:josiane.gervais@ottawa.ca">josiane.gervais@ottawa.ca</a> at your earliest convenience, or as part of the Phase 2 pre-con package. The applicant is responsible to submit the Scoping Report prior to application and must allow for a 14 day circulation period. The Strategy Report must be submitted with the formal submission to deem complete. The applicant is strongly encouraged to submit the Strategy Report to the TPM prior to formal submission and allow for a 14 day circulation period.

#### 36. ROW Protection:

- a. Ensure that the development proposal complies with the Right-of-Way protection requirements of the Official Plan's <u>Schedule C16</u>.
- b. There is ROW protection along Tenth Line that is noted as 'unequal'. Note that the centerline must be determined by legal survey (you may reach out to the City Surveyor's office). Note that the centerline of the road is not equivalent to the centerline of asphalt as shown on the site plan. There have been numerous iterations of ROW protection along this corridor and the roadway has been widened. ROW protection must match the protection along the west side of the corridor. ROW protection is to be measured as 3m from the current property line.
- c. Any requests for exceptions to ROW protection requirements must be discussed with Transportation Planning and concurrence provided by Transportation Planning management.
- d. ROW must be unincumbered and conveyed at no cost to the City. Note that conveyance of the ROW will be required prior to registration of the SP



agreement. Additional information on the conveyance process can be provided upon request.

37. As the site proposed is residential, AODA legislation applies for all areas accessible to the public (i.e. outdoor pathways, parking, etc.).

#### 38. On site plan:

- Reinstate curb across closed access to Tenth Line Road to full height, as per City Standards.
- b. Ensure site access meets the City's Private Approach Bylaw.
- c. Show all details of the roads abutting the site; include such items as pavement markings, signage, accesses, on-street parking, and/or sidewalks.
- d. Turning movement diagrams required for all accesses showing the largest vehicle to access/egress the site.
- e. As required, provide turning movement diagrams required for internal movements (loading areas, garbage).
- f. Show all curb radii measurements; ensure that all curb radii are reduced as much as possible and fall within TAC guidelines (Figure 8.5.1).
- g. Show dimensions for site elements (i.e. lane/aisle widths, access width and throat length, parking stalls, sidewalks, pedestrian pathways, etc.)
- h. Provide sidewalk along Duvernay frontage.
- i. Sidewalk is to be continuous across access as per City Specification 7.1.
- j. Parking stalls at the end of dead-end parking aisles require adequate turning around space.
- k. Provide pedestrian connection to Tenth Line Road sidewalk.

Feel free to contact Josiane Gervais, Transportation Project Manager, for follow-up questions.



# **Environment**

Kim MacDonald, Environmental Planner | kim.macdonald3@ottawa.ca

#### **Comments:**

- 39. An EIS is not a requirement, but please submit a TCR. Should any Species at Risk be encountered or suspected, please ensure due diligence with SAR legislation.
- 40. Additional tree plantings are recommended as per Section 4.8.2 of the Official Plan. 40 % urban forest cover is a long-term goal to be achieved via the OP policies which may help with climate resiliency, environmental concerns, and human health and well-being. Any introduced plants and trees should be native species. Please submit a Lanscape Plan.
- 41. Low Impact Development (LID) for stormwater management (SWM) is recommended where feasible.
- 42. Please take the time to familiarize yourself with the City of Ottawa Bird-Safe Design Guidelines early in the development process to ensure feasible mitigation measures where relevant.

Feel free to contact Kim MacDonald, Environmental Planner, for follow-up questions.

# Forestry

Hayley Murray, Forester – Planning | <u>Hayley.Murray@ottawa.ca</u>

## **Comments:**

- 43. A Tree Conservation Report and Landscape Plan are submission requirements.
- 44. The Planning Forester appreciates the conceptual plan showing trees along both street frontages. These areas are the best opportunities for meaningful contributions to the urban canopy cover. There are no overhead wire restrictions on either side so planting the largest canopy trees in these areas is expected.
- 45. If sensitive marine clay soils are present, the recommendations of the Geotechnical Report must align with the proposed zoning setbacks. The geotechnical consultant must also address in their report what the implications are for tree planting setbacks if the trees along Duverney Drive are separated from the building by a parking lot.
- 46. Incorporate trees along the southern property boundary since the drive isle is being reduced to provide access only off of Duvernay Drive.



- 47. A reduction in the landscape buffer is generally not supported. Please provide justification for why this is necessary, and development of the site relies on it.
- 48. Address in the TCR what tree protection measures are necessary to impact the adjacently owned trees.
- 49. Tree Conservation Report requirements. The following Tree Conservation Report (TCR) requirements have been adapted from the Schedule E of the Urban Tree Protection Guidelines for more information on these requirements please contact <a href="mailto:hayley.murray@ottawa.ca">hayley.murray@ottawa.ca</a>
  - A Tree Conservation Report (TCR) must be supplied for review along with the suite of other plans/reports required by the City
  - b. Any tree 10 cm in diameter or greater and City-owned trees of any diameter requires a tree permit issued under the Tree Protection Bylaw (Bylaw 2020 – 340); the permit will be based on an approved TCR and made available at or near plan approval.
  - c. The TCR must contain 2 separate plans/maps:
  - d. Plan/Map 1 show existing conditions with tree cover information.
  - e. Plan/Map 2 show proposed development with tree cover information.
  - f. The TCR must list all trees on site, as well as off-site trees if the CRZ (critical root zone) extends into the developed area, by species, diameter, and health condition. Please note that averages can be used if there are forested areas.
  - g. Please identify trees by ownership private onsite, private on adjoining site, city owned, co-owned (trees on a property line)
  - h. If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained.
  - i. The removal of trees on a property line will require the permission of both property owners.
  - j. All retained trees must be shown, and all retained trees within the area impacted by the development process must be protected as per City guidelines available at Tree Protection Specification or by searching Ottawa.ca



- k. The City encourages the retention of healthy trees; if possible, please seek opportunities for retention of trees that will contribute to the design/function of the site.
- Removal of a City tree is not permitted unless justified. If justified, monetary compensation for the value of the tree must be paid before a tree removal permit is issued.
- 50. Landscape Plan (LP) requirements.

Landscape Plan Terms of Reference must be adhered to for all tree planting: Click Here. For more information on these requirements please contact hayley.murray@ottawa.ca

- 51. Additional Elements for Tree Planting in the Right of Way:
  - a. Please ensure any retained trees are shown on the LP
  - Sensitive Marine Clay Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines.
  - c. Soil Volume Please demonstrate as per the Landscape Plan Terms of Reference that the available soil volumes for new plantings will meet or exceed the minimum soil volumes requested.
  - d. The city requests that consideration be given to planting native species wherever there is a high probability of survival to maturity.
  - e. Efforts shall be made to provide as much future canopy cover as possible at a site level, through tree planting and tree retention. The Landscape Plan shall show/document that the proposed tree planting and retention will contribute to the City's overall canopy cover over time. Please provide a projection of the future canopy cover for the site to 40 years

#### 52. Minimum Setbacks

- a. Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.
- b. Maintain 2.5m from curb
- c. Coniferous species require a minimum 4.5m setback from curb, sidewalk, or MUP/cycle track/pathway.
- d. Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing, except where otherwise approved in naturalization / afforestation areas.



e. Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

#### 53. Tree specifications

- Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.
- Maximize the use of large deciduous species wherever possible to maximize future canopy coverage.
- c. Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and if possible, include watering and warranty as described in the specification.
- d. No root barriers, dead-man anchor systems, or planters are permitted.
- e. No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)
- Hard surface planting
  - a. If there are hard surface plantings, a planting detail must be provided.
  - b. Curb style planters are highly recommended.
  - c. No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.
- 54. Trees are to be planted at grade.

Feel free to contact Hayley Murray, Planning Forester, for follow-up questions.

# **Parkland**

Jessica Button, Planner – Parks and Facilities Planning | <u>Jessica.Button@ottawa.ca</u> Comments:

- 55. Parkland dedication will be requested in the form of cash-in-lieu of parkland dedication.
  - a. Parkland Dedication By-law No. 2022-280

Feel free to contact Jessica Button, Parks Planner, for follow-up questions.



# Other

# **High Performance Development Standards**

- 56. The High Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design and will be applicable to Site Plan Control and Plan of Subdivision applications.
  - a. The HPDS was passed by Council on April 13, 2022, but is not in effect at this time, as Council has referred the 2023 HPDS Update Report back to staff with the direction to bring forward an updated report to Committee at a later date. The timing of an updated report to Committee is unknown at this time, and updates will be shared when they are available.
  - b. Please refer to the HPDS information at ottawa.ca/HPDS for more information.

# **Affordable Housing Community Improvement Plan**

- 57. Under the Affordable Housing Community Improvement Plan, a Tax Increment Equivalent Grant (TIEG) program was created to incentivize the development of affordable rental units. It provides a yearly fixed grant for 20 years. The grant helps offset the revenue loss housing providers experience when incorporating affordable units in their developments.
  - a. To be eligible for the TIEG program you must meet the following criteria:
    - i. the greater of five units OR 15 per cent of the total number of units within the development must be made affordable
    - ii. provide a minimum of 15 per cent of each unit type in the development as affordable
    - iii. enter into an agreement with the city to ensure the units maintain affordable for a minimum period of 20 years at or below the city-wide average market rent for the entire housing stock based on building form and unit type, as defined by the Canada Mortgage and Housing Corporation
    - iv. must apply after a formal Site Plan Control submission, or Building Permit submission for projects not requiring Site Plan Control, and prior to Occupancy Permit issuance



b. Please refer to the TIEG information at <u>Affordable housing community</u> <u>improvement plan</u> / <u>Plan d'améliorations communautaires pour le logement abordable</u> for more details or contact the TIEG coordinator via email at affordablehousingcip@ottawa.ca.

# Submission Requirements and Fees

- 1. The applications required are
  - a. Major Zoning By-law Amendment
  - b. Site Plan Control Complex

Additional information regarding fees related to planning applications can be found here.

- 2. The attached **Study and Plan Identification List** outlines the information and material that has been identified as either required (R) or advised (A) as part of a future complete application submission.
  - The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on <a href="Ottawa.ca">Ottawa.ca</a>. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.
- 3. <u>All</u> of the above comments or issues should be addressed to ensure the effectiveness of the application submission review.

# **Concluding Remarks**

All of the above comments or issues should be addressed in a subsequent submission to ensure the effectiveness of the application submission review.

Should there be any questions, please do not hesitate to contact myself or the contact identified for the above areas / disciplines.

Regards,

Lucy Ramirez

# **Attachments**

Attachment 1. ZBLA Study and Plan Identification List (SPIL)

Attachment 2. SPC Study and Plan Identification List (SPIL)

Attachment 3. Site Plan Control List of Technical Agencies to Consult



Attachment 4. Urban Design Brief

Attachment 5. Supplementary Development Information

Attachment 6. High Performance Development Standards (HPDS) Overview for Applicants

Attachment 7. High Performance Checklist

Attachment 8. Site Plan Checklist - City of Ottawa Accessible Design Standards

C.C.

Alex Polyak

**Christopher Moise** 

Connor Gallagher

Hayley Murray

Jamie Rathwell

Jessica Button

Jessica D'Aoust

Josiane Gervais

Katie Turk

Kim MacDonald

Rafic Fadel