PROPOSED

THREE-STOREY RESIDENTIAL APARTMENT BUILDING SITE

PART OF LOTS 32 AND 33

CONCESSION 5 (RIDEAU FRONT)

4000 OLD RICHMOND ROAD

CITY OF OTTAWA

SERVICEABILITY REPORT

REPORT R-819-106A

T.L. MAK ENGINEERING CONSULTANTS LTD.

DECEMBER 2024

REFERENCE FILE NUMBER 819-106

Table of Contents

Introduction

The developer of this site (Jami Omar Mosque) is proposing to redevelop the existing residential vacant lot described as Part of Lots 32 and 33 Concession 5 (Rideau Front) in the City of Ottawa by constructing a (3)-storey residential apartment building consisting of forty-nine (49) residential units, including three (3) 2-bedroom units, twenty-six (26) 1-bedroom units and twenty (20) studio/bachelor units. There is one (1) underground parking level proposed in this building.

The municipal address of the property is referenced as 4000 Old Richmond Road and it is located in the City Ward (Ward 8 – College). The proposed development property is situated on the east side of Old Richmond Road, south of Seyton Drive and north of Sanibel Private. See site plan and legal survey plan in Appendix A for details.

A site geotechnical report was prepared by the owner's soils engineer EXP entitled "Geotechnical Investigation – Proposed Building Additions" – 4000 Old Richmond Road, 572 Moodie Drive (Project No. OTT-00260904-AO dated September 4, 2020) for this proposed development property.

T.L. Mak Engineering Consultants Ltd. has been retained to provide a "Servicing Report" for this site as a supplement to the site re-zoning application process.

Existing Site Conditions and Servicing

The property under consideration is presently vacant with a temporary gravel area on-site which is currently used for vehicular parking. Approximately 55% of the existing site is currently grass surface covered and with about 45% gravel area. For additional details of the site's pre-development conditions, refer to the coloured Google Image and aerial photography from (GeoOttawa 2019) in Appendix B.

The existing topography of the land is found to be draining from front to rear or west to east across the site. The existing gradient of the lot is sloping at an approximate average gradient of 1.6%.

As for the availability of underground municipal services, there are existing municipal services along Old Richmond Road in front of this property consisting of a 750 mm diameter storm sewer, a 250 mm diameter sanitary sewer, and a 300 mm diameter watermain for development of this property. Refer to the City of Ottawa Old Richmond Road UCC and As-Built plan and profile drawings included in Appendix C for details.

Proposed Residential Apartment Building Site

A three (3)-storey residential apartment building consisting of (49) residential units is proposed for development at this property. Vehicle access to one level of underground parking is available for this site via an access laneway at the southeast corner of the site to the vehicle parking spaces and bicycle parking area. A secondary vehicle access to this building at the main floor level is located at the rear or east side of the building. A hard surface pathway is proposed at the front and along the north side of the lot for pedestrian access to the front doors and north side doors. An amenity area is also provided in the rear yard.

A. Water Supply

The proposed building is located within Pressure Zone 2W, on the lot occupying the intersection of Old Richmond Road and Moodie Drive.

The proposed building at 4000 Old Richmond Road is a new 3-storey apartment building, with an underground parking. The building contains twenty (20) bachelor units, twenty-six (26) 1-bedroom units, and three (3) 2-bedroom units. The average gross floor area is 1,444 m^2/floor, for a total building area of 4,333 m^2 (excluding the underground parking). See Site Plan details attached in Appendix D.

The building is to be serviced by a connection to the existing 200 mm diameter watermain extending from the 300 mm diameter watermain at the intersection of Old Richmond Road and Seyton Drive. This watermain currently serves the adjacent property (Jami Omar Mosque at 3990 Old Richmond Road). To adequately service both properties, a new connection to the City's network is required. This involves installing a new 200 mm diameter watermain that connects the existing 305 mm diameter watermain along Old Richmond Road, north of Seyton Drive, to the existing watermain servicing the Jami Omar Mosque, east of the existing isolation valve along that watermain.

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). The serviced population is less than 500 people, hence, the Maximum day (MXDY) and Peak Hour demands were calculated using peaking factors values suggested by the MECP. As such, Maximum day (MXDY) were calculated by multiplying AVDY demands by a factor of 7.9. Peak hour (PKHR) demands were calculated by multiplying AVDY by a factor of 11.9. 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 at 4000 Old Richmond Rd

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, Bachelor	20	1.4	280	7,840	0.09	61,858	0.72	93,178	1.08
Apartment, 1-Bedroom	26	1.4		10,192	0.12	80,415	0.93	121,132	1.40
Apartment, 2-Bedroom	3	2.1		1,764	0.02	13,918	0.16	20,965	0.24
Total	***49***			***19,796***	***0.23***	***156,190***	***1.81***	***235,275***	***2.72***

The required fire flow was determined following the Fire Underwriter Survey (FUS) method and is provided in the attached worksheet in Appendix D. The proposed building at 4000 Old Richmond Rd will be non-combustible construction and will not have sprinklers. The underground parking is assumed to be more than 50% below ground level. The resulting total required FUS fire flow is 12,000 L/min (200 L/s) for a duration of 2.5 hours. Details are provided in the attached **FUS Fire Flow Calculation** in Appendix D. **Figure 1** in Appendix D 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:

- AVDY = 19,796 L/d (0.23 L/s)
- MXDY = 156,190 L/d (1.81 L/s);
- PKHR = 235,275 L/d (2.72 L/s); and,
- Fire Flow = 12,000 L/min (200 L/s)

Boundary Conditions

The hydraulic gradeline (HGL) boundary conditions for 4000 Old Richmond Road, as presented in **Table 2**, were provided by the City on December 12, 2024 (see attached **Water Boundary Conditions Email** in Appendix D).

Table 2: Boundary Conditions for 4000 Old Richmond Road

Demand Scenario	Head (m)
Minimum HGL (Peak Hour)	126.8
Maximum HGL (Average Day)	132.1
Maximum Day + Fire Flow (217 L/s)	123.8

Hydraulic Analysis

Peak Hour & Average Day

During peak hour demands, the resulting minimum hydraulic gradeline of 126.8 m corresponds to a peak hour pressure of 263 kPa (38 psi). This value is 13 kPa (2 psi) below the minimum pressure objective of 276 kPa (40 psi) for residential buildings up to two storeys. It is recommended that the service line be oversized to reduce the headloss entering the building, and therefore meet the minimum pressure objective. Adding 5 psi per floor above two stories, a minimum pressure of approximately 310 kPa (45 psi) would be required for the third floor to provide and equivalent pressure to 40 psi on the second floor. The 5 psi per floor value is determined by accounting for additional elevation head and additional pipe headloss required to reach each additional floor. The proponent will have to consider providing internal booster pumping to ensure adequate pressure throughout the building.

During average day demands, the resulting maximum hydraulic gradeline of 132.1 m corresponds to a maximum pressure of 315 kPa (46 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 D.

Maximum Day + Fire Flow

A maximum day plus fire flow hydraulic gradeline of 123.8 m corresponds to a residual pressure of 233 kPa (34 psi) at this location and is above the minimum residual pressure requirements 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, the combined hydrant flow coverage for the building is estimated to be 13,300 L/min (refer to **Table 3**), which exceeds the FUS required fire flow (RFF) of 12,000 L/min. Hydrant coverage and classes are illustrated in **Figure 2** attached in Appendix D.

Table 3: Fire Hydrant Coverage

Building	Calculated FUS Fire Flow Demand (L/min)	Fire Hydrants					Combined Hydrant Flow Coverage (L/min)
		Hydrant Class	Within 75 m		Between 75 m and 150 m		
			Quantity	Contrib. to RFF	Quantity	Contrib. to RFF	
4000 Old Richmond Rd	12,000	AA	1	5,700	2	3,800	13,300
		A					
		B					
		C					

Conclusions

Based on the boundary conditions provided, the local watermain network in the vicinity of the proposed building at 4000 Old Richmond Road provides adequate fire flow capacity, as per the Fire Underwriters Survey (FUS) method. Anticipated pressures during basic day demand conditions are within the pressure objectives as per the City of Ottawa's Drinking Water Design Guidelines. However, during peak hour demand conditions, the minimum pressure is below the required pressure. To meet the minimum pressure requirements, the proponent will need to consider providing an internal booster.

Furthermore, a new connection to the City's network is required to adequately service both the 4000 and 3990 Old Richmond Road properties. This involves installing a new 200 mm diameter watermain that connects the existing 305 mm diameter watermain along Old Richmond Road, north of Seyton Drive, to the existing 200 mm diameter watermain servicing the Jani Omar Mosque (3990 Old Richmond Road), east of the existing isolation valve. The proposed building at 4000 Old Richmond Rd will be serviced via a connection to the existing 200 mm diameter watermain. See Proposed Site Servicing Layout Plan (Dwg. No. 819-106 S-1) for details.

B. Sanitary Flow

The peak sanitary flow for the 49 units, which comprise of three (3) 2-bedroom units, twenty-six (26) 1-bedroom units and twenty (20) studio/bachelor units, is estimated at Q = 0.87 L/s with an infiltration rate of 0.08 L/s. Refer to Appendix E sheet 1 of 1 regarding sanitary flow calculations. This flow will enter the existing 250 mm diameter sanitary sewer on Old Richmond Road via the proposed 150 mm diameter PVC sanitary service lateral from the three (3)-storey residential apartment building. At this site, a water sampling inspection chamber (per City of Ottawa standard detail S18.1) is proposed at the front property line for City's inspection use.

The existing peak sanitary flow of the site for the existing vacant lot is Q = 0.08 L/s with an infiltration rate of 0.08 L/s. The net increase in flow from this proposed development is 0.79 L/s which is not expected to negatively impact the existing 250 mm dia. sanitary sewer.

Waste water from the Old Richmond Road 250 mm dia. sanitary sewer then in turn outlets north into the existing downstream 525 mm dia. PVC sanitary collector sewer located along Moodie Drive which further outlets north to the 900 mm dia. sanitary collector sewer that crosses HWY 417.

C. Storm Flow

The storm-water outlet for the proposed development property will be the existing 750 mm diameter concrete storm sewer located on Old Richmond Road. Stormwater attenuation on site

will be accomplished by means of rooftop storage with controlled roof drains that 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 150 mm diameter storm pipe to the existing 750 mm diameter storm sewer. The storm-water outlet for the rooftop water from roof drains will also be a separately designated proposed 150 mm diameter PVC pipe that will be outletted directly into the existing 750mm diameter storm sewer.

Three (3) roof drains are proposed for this apartment building to restrict flow to a total controlled flow of 5.05 L/s under the 100-Year storm event into the Old Richmond Road storm sewer. The maximum calculated allowable flow rate off-site is 23.94 L/s and the net allowable controlled release rate from this site is estimated at 3.19 L/s.

Based on the residential site plan from the owner's architect, the average post-development runoff coefficient is estimated at C = 0.78 and A = 0.2428 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} = 0.46 or C_{allow} = 0.5 (max) then SWM is required. So from our calculations, the C_{pre} = 0.46 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 existing 750 mm dia. storm sewer for this proposed development property is the lesser of either the two (2)-Year storm event where C_{allow} = 0.5 (max.) runoff value or the average C_{pre} value which is 0.46 using t_c = 10 minutes. Because this site C_{post} = 0.78 and C_{pre} = 0.46 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 0.78 is greater than the C_{pre} = 0.46.

The storage volume for the two (2)-Year and up to the 100-year storm event will be stored by means of flat rooftop at the top of the 3-storey residential apartment building. Also refer to the site storm drainage report (Report No. R-819-106) for further details.

Conclusion

At this proposed residential building site and to develop this lot to house a (3)-storey 49-unit apartment building on a 0.2428 ha. parcel of land, the estimated allowable flow off-site is calculated at 23.94 L/s based on City of Ottawa Drainage and Stormwater Management (SWM) criteria of 2-Year pre-development flow at C_{pre} = 0.46. For on-site SWM attenuation, the flat rooftop of the proposed residential building will be utilized and (3) controlled roof drains are

incorporated with a controlled maximum release rate of (1.89 L/s or 30.0 U.S. gal/min.) for Roof Drain #1, for Roof Drain #2 (1.58 L/s or 25.0 U.S. gal/min.), and for Roof Drain #3 (1.58 L/s or 25.0 U.S. gal/min.). The controlled flow from this site totals to 3.86 L/s for the 2-Year post development condition and 5.05 L/s for the 100-Year post development condition. The uncontrolled 2-Year post development flow from the remainder of the site is estimated at 7.86 L/s and 20.75 L/s for the 100-Year event respectively.

During the 2-Year storm event for the flat rooftop storage, the ponding depth on this rooftop is estimated at 110 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 at Roof Area #1 is 8.60 m^3, Roof Area #2 is 9.92 m^3, and Roof Area #3 is 11.33 m^3 for a total of 29.85 m^3 which is greater than the required volume of 24.31 m^3.

During the 100-Year storm event for the flat rooftop storage, the ponding depth on this rooftop is estimated at 152 mm (6 inches) at the drain and 0 mm at the roof perimeter assuming a 1.0% (min.) roof pitch to the drain. The rooftop storage available at Roof Area #1 is 22.96 m^3, Roof Area #2 is 25.98 m^3, and Roof Area #3 is 30.44 m^3 for a total of 79.38 m^3 which is greater than the required volume of 77.83 m^3.

Therefore by means of flat building rooftop storage and grading the site to the proposed grades as shown on the Proposed Site Grading and Servicing Plan (Dwg. No. 819-106, G-1) and Proposed Stormwater Management Plan (Dwg. No. 819-106, SWM-1), the desirable 2-Year and 100-Year storm event detention volume of 29.85 m^3 and 79.38 m^3 respectively will be available on-site. Refer to Appendix E in the Storm Drainage Report for detailed calculations of available storage volume.

In comparing the pre-development flow of the current site conditions to the post development flow, the SWM regulated flow plus uncontrolled flow from the proposed site under the post development conditions at the 2-Year event = 11.72 L/s (3.86 L/s + 7.86 L/s) and the 100-Year event = 25.80 L/s (5.05 L/s + 20.75 L/s) where both of the post development flow events are less than current pre-development flow estimate for the site at 2-Year $_{pre}$ = 23.94 L/s and 100-Year $_{pre}$ = 69.92 L/s. Therefore with this proposed development, stormwater flow is improved from that of the existing condition.

The building weeping tile drainage will outlet via its separate 150mm diameter PVC storm lateral. The roof drains will be outletted also via a separate 150mm PVC storm lateral, whereupon both laterals are connected directly to the existing Old Richmond Road 750mm diameter storm sewer. 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 grading and servicing plan Dwg. No. 819-106 G-1 for details.

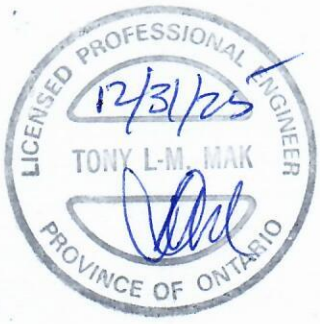
Erosion and Sediment Control

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 Old Richmond 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. Additionally, silt sacs shall be placed on all storm sewer maintenance hole openings and ditch inlets during construction. A mud mat is proposed to be installed at the construction site access at the front and rear of the property in order to protect the public road right-of-way from potential construction traffic damages. See Dwg. #819-106 ESC-1 for details.

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

PREPARED BY T.L. MAK ENGINEERING CONSULTANTS LTD.

TONY L. MAK, P.ENG



PROPOSED

THREE-STOREY RESIDENTIAL APARTMENT BUILDING SITE

PART OF LOTS 32 AND 33

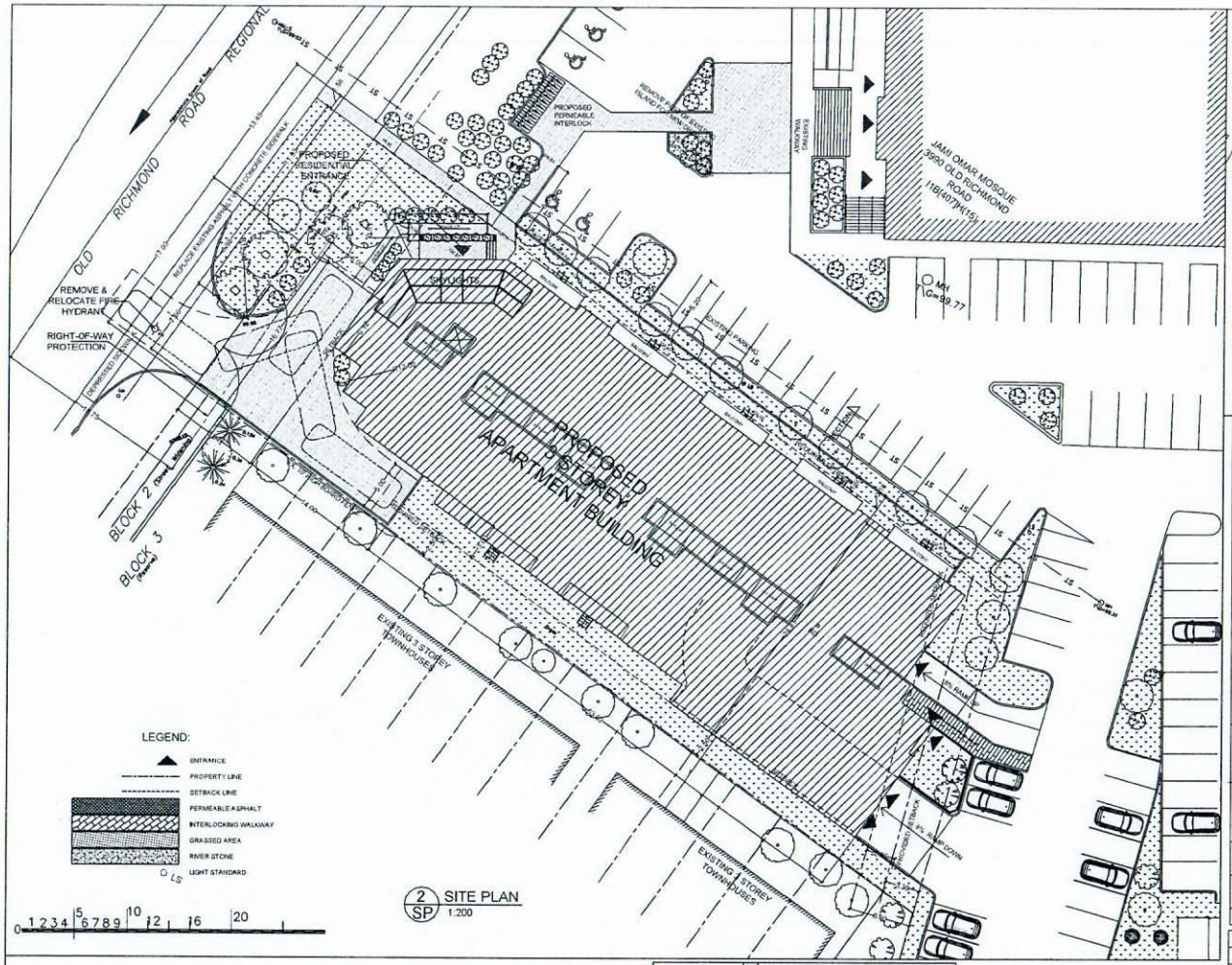
CONCESSION 5 (RIDEAU FRONT)

4000 OLD RICHMOND ROAD

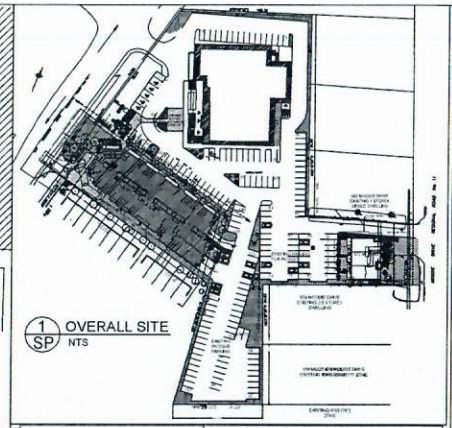
CITY OF OTTAWA

APPENDIX A

SITE PLAN AND LEGAL SURVEY PLAN



2 SP SITE PLAN
1:200

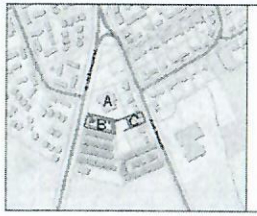


1 SP OVERALL SITE
NTS

	R4Z ZONING	
	4000 OLD RICHMOND RD SUPPORTIVE RESIDENTIAL FACILITY 49 UNITS	
	REQUIREMENT	PROPOSED
LOT WIDTH	18 M	30.37 M
LOT AREA	450 M²	2,396 M²
FRONT YARD SETBACK end note 5	3 M	8.64 M
REAR YARD SETBACK end note 6	THE MINIMUM REQUIRED REAR YARD SETBACK IS 6 METRES.	3.39 M RELIEF REQUESTED
INTERIOR SIDE YARD SETBACK end note 8	1.5 M (FOR HEIGHT LESS THAN 11 M), 3 M FOR HEIGHT GREATER THAN 11). OTHERWISE 6M	2.5 M
CORNER SIDE YARD SETBACK	N/A	N/A
MAXIMUM HEIGHT AVERAGE GRADE (100.1 NW+99.97SW+100.16SE+99.68SW)/4=99.98	14.5 M	12 M
PERMITTED PROJECTIONS INTO REQUIRED YARDS - BALCONIES, MAX. PROJECTION	2 METRES, BUT NO CLOSER THAN 1 METRE FROM ANY LOT LINE	0.21 M
PERMITTED PROJECTIONS INTO REQUIRED YARDS - CANOPIES AND AWNINGS	A DISTANCE EQUAL TO ½ THE DEPTH OF A FRONT, REAR OR CORNER SIDE YARD BUT NOT CLOSER THAN 0.6 M TO A LOT LINE.	2.43 M
AMENITY AREA	6 M² PER DWELLING UNIT = 6 X 49 = 294 m² COMMUNAL AMENITY AREA = A MINIMUM OF 50% OF THE REQUIRED TOTAL AMENITY AREA	353 M² INCLUDING BALCONIES AND 177.25 SQ.M COMMUNAL (NORTH SIDE AND REAR = 65% REQ'D COMMUNAL)
SOFT LANDSCAPING, Schedule 342, Section 139(1)	40% OF FRONT YARD, 2,640 SQ.FT. X 4 = 1,136 SQ.FT. = 40%	1,426 SQ.FT. = 50%
LANDSCAPING, Section 161(8)	30% OF LOT AREA	825.5 SQ.M. / 2,396=26% RELIEF REQUESTED
LANDSCAPE BUFFER		NA

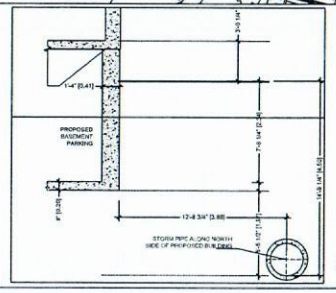
PARKING REQUIREMENTS				
BUILDING	CATEGORY	RATE	REQUIRED	PROPOSED
EXISTING MOSQUE			165 REQUIRED (FROM PREVIOUS) & PROVIDED	
			5 ACCESSIBLE PARKING INCLUDED	
RESIDENTIAL AREA C Suburban Schedule 1A to Zoning By-law no. 2008-250	GENERAL	1.2 PER DWELLING	1.2 X 49 =58.8 OR 59	10 GROUND FLOOR 32 BASEMENT LEVEL 42 TOTAL
from Accessibility Design Standards	ACCESSIBLE PARKING	3	2	2 included above +
	VISITOR PARKING	0.2/UNIT	9.8	10 INCLUDED ABOVE
	TOTAL		71	42 TOTAL
	BICYCLE PARKING	.5 PER UNIT	25	26 + 10 new ones on Mosque property

UNIT TYPE / FLOOR	TWO BEDROOM UNIT	ONE BEDROOM UNIT	BACHELOR UNIT	LIVING AREA
1ST FLOOR	1	6	4	646.9 m²/ 6963.5 ft²
2ND FLOOR	1	10	8	1105.8 m²/ 11902.7 ft²
3RD FLOOR	1	10	8	1105.8 m²/ 11902.7 ft²
TOTAL 49	3	26	20	2858.5 m²/ 30768.9 ft²
BARRIER FREE	0	4	3	



A. Jami Omar Mosque 3990 Old Richmond Rd
B. 4000 Old Richmond Rd
C. 572 Moodie Dr.

0 SP LOCATION MAP
Scale: NTS



3 SP SECTION AT GARAGE
Scale: 1:50

client:
JAMIATUL MUSLEMEEN OF OTTAWA CARLETON
3990 OLD RICHMOND ROAD

project:
PROPOSED RESIDENTIAL BUILDING
4000 OLD RICHMOND ROAD

SUSAN D. SMITH ARCHITECT
941 MERIVALE RD
OTTAWA, ON. K1Z 6A1
613.722.5327
s.smith@sdsarch.ca

NO.	REVISION	DATE
10		
09		
08		
07		
06		
05	ISSUED FOR REVIEW	07/11/2024
04	ISSUED FOR REVIEW	08/21/2023
03	ISSUED FOR ZONING AMENDMENT	03/08/2022
02	ISSUED FOR COORDINATION	11/05/2021
01	ISSUED FOR PRELIMINARY DESIGN REVIEW	10/22/2020

NOTE
1. All dimensions are to be checked onsite. Discrepancies or ambiguities should be reported prior to work on site or ordering materials.
2. All work to comply with Ontario Building Code.
3. All dimensions include thickness of gypsum board on stud walls.
4. Drawings to be read in conjuction with structural drawings.

PROJECT TITLE
ZONING AMENDMENT
4000 OLD RICHMOND ROAD

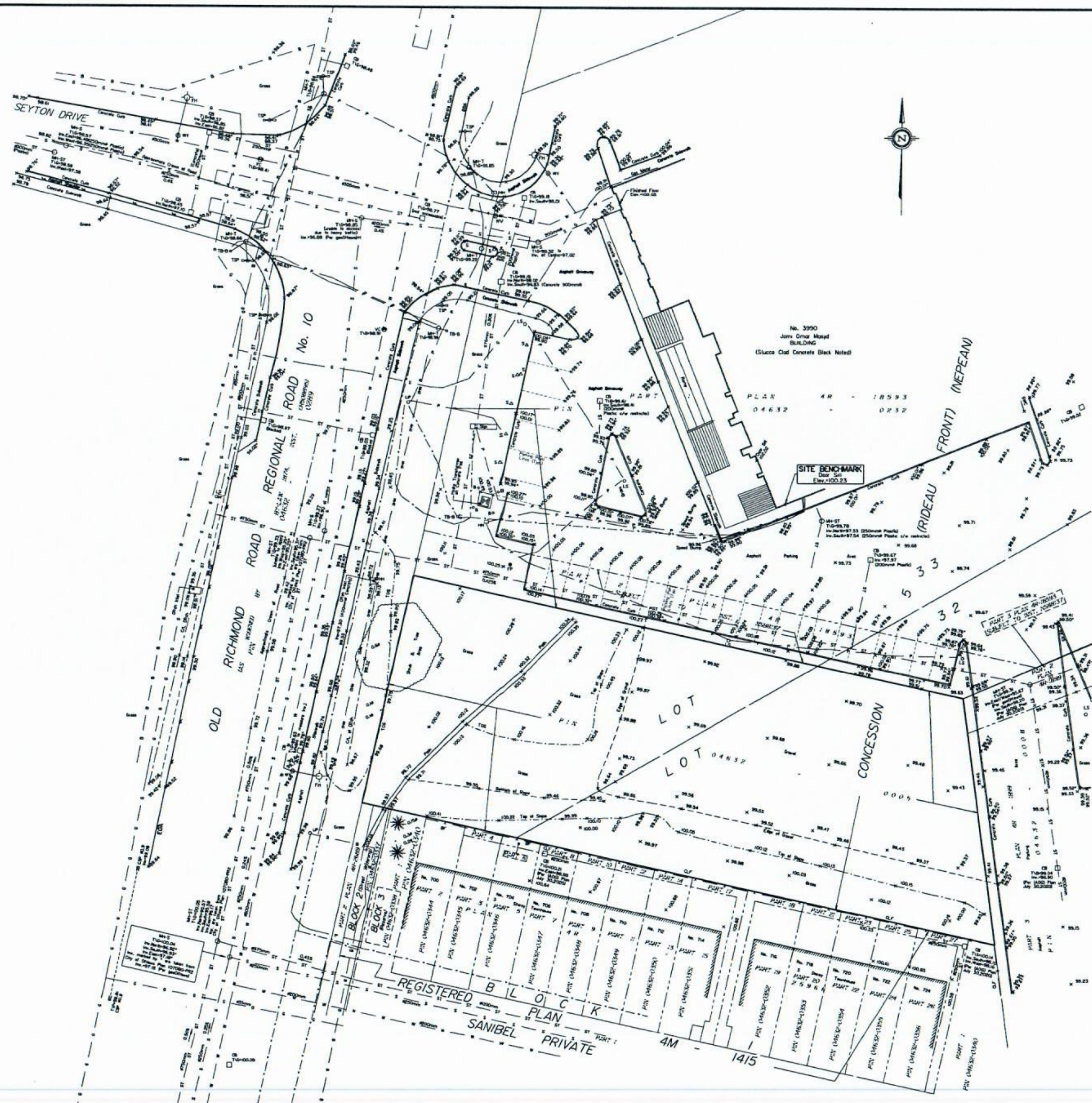
DRAWING TITLE
SITE PLAN
ZONING INFORMATION

PROJECT START DATE	DRAWN BY:
APRIL, 2019	ZK & SS
AS NOTED	JOB No.: 1917
REVIEWED BY:	SHEET No.

SP

007-12-21-0234

#18728



TOPOGRAPHICAL SKETCH OF THE INTERSECTION OF OLD RICHMOND ROAD AND SEYTON DRIVE

Prepared by Annis, O'Sullivan, Vollebekk Ltd.
Field work completed: November 19, 2024
REVISION NOTE: Inverts added January 6, 2025

Scale 1 : 250

10 7.5 5.0 2.5 0 5 10 Metres

Metric

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

Caution

This is NOT a Plan of Survey and shall not be used except for the purpose indicated in the title block.

Boundary information compiled from Plan 4R-18593 and Registered Plan 4M-1415.

Notes & Legend

	Denotes	
(AOG)	-	Annis, O'Sullivan, Vollebekk Ltd.
MH-ST	-	Maintenance Hole (Storm Sewer)
MH-S	-	Maintenance Hole (Sanitary)
MH-T	-	Maintenance Hole (Traffic)
MH-H	-	Maintenance Hole (Hydro)
VC	-	Valve Chamber (Watermain)
ST	-	Underground Storm Sewer
S	-	Underground Sanitary Sewer
W	-	Underground Water
P	-	Underground Power
G	-	Underground Gas
B	-	Underground Bell
OHW	-	Overhead Wires
T	-	Underground Traffic Loop
R	-	Underground Rogers Telecommunications
UP	-	Utility Pole
LS	-	Light Standard
CB	-	Catch Basin
DI	-	Ditch Inlet
CSP	-	Corrugated Steel Pipe
FH	-	Fire Hydrant
WV	-	Water Valve
Inv.	-	Invert
T/G	-	Top of Grate
GM	-	Gas Meter
HH	-	Handhole
TB-B	-	Bell Terminal Box
TB-T	-	Traffic Terminal Box
TSP	-	Traffic Signal Post
B	-	Bollard
S	-	Sign
EOA	-	Edge of Asphalt
Ø	-	Diameter
× 100.00	-	Location of Elevations
× 100.00 TC	-	Top of Concrete Curb Elevation
C/L	-	Centreline
	-	Property Line
•	-	Deciduous Tree
✱	-	Coniferous Tree
CLF	-	Chain Link Fence
BF	-	Board Fence

ELEVATION NOTES

1. Elevations shown are geodetic and are derived from Vertical Control Monument No. 0191680051A having an elevation of 117.89 metres (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. Underground services taken from City of Ottawa utility sheet N-G-26 and N-G-27 and as marked on ground by DeepView Locates on November 20, 2024.
4. Sanitary and storm sewer inverts are measured by DeepView Locates on November 20, 2024 unless otherwise noted.
5. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

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

Job No. 24280-24 Masjid Pt.L32,33 Con5 (RF) NP Sk 03

PROPOSED

THREE-STOREY RESIDENTIAL APARTMENT BUILDING SITE

PART OF LOTS 32 AND 33

CONCESSION 5 (RIDEAU FRONT)

4000 OLD RICHMOND ROAD

CITY OF OTTAWA

APPENDIX B

SITE PRE-DEVELOPMENT CONDITION

GOOGLE IMAGE (2019)

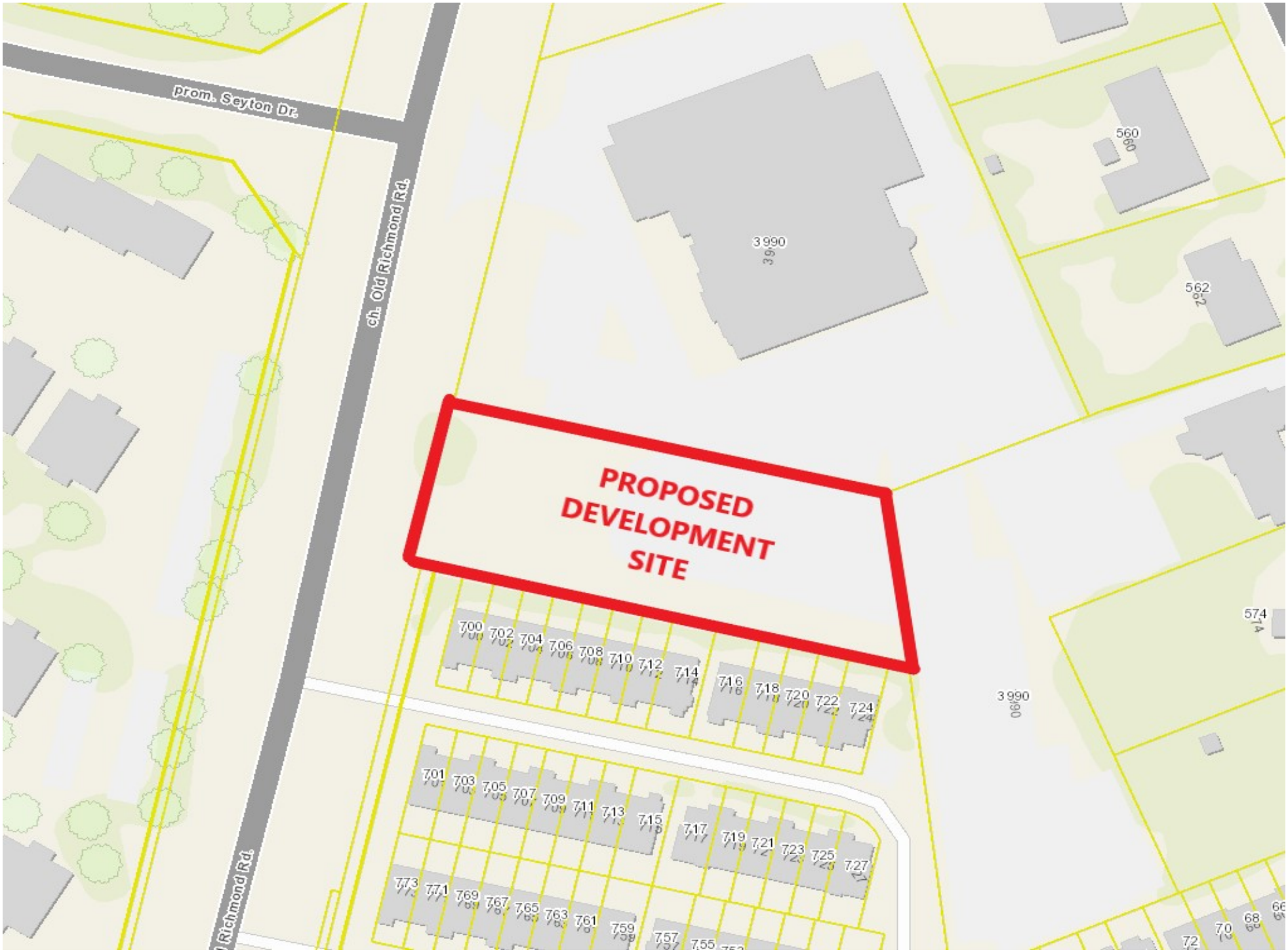
AND

AERIAL PHOTOGRAPHY 2019 (GEOOTTAWA)

2019


prom. Seyton Dr.
ch. Old Richmond Rd.
ch. Old Richmond Rd.
prom. Moodie Dr.
PROPOSED DEVELOPMENT SITE
privé Sanibel Priv.
privé Songbird Priv.
3990
3990
560
562
574
578
68
700 702 704 706 708 710 712 714 716 718 720 722 724
701 703 705 707 709 711 713 715 717 719 721 723 725 727
773 771 769 767 765 763 761 759 757 755 753 751 749 747 745
50 52 54 56 58 60 62 64 66 68 70 72 74 76 78
131 123 57 55

2019


prom. Seyton Dr.
ch. Old Richmond Rd.
Old Richmond Rd.
PROPOSED
DEVELOPMENT
SITE
3 990
560
562
574
700 702 704 706 708 710 712 714
716 718 720 722 724
701 703 705 707 709 711 713 715
717 719 721 723 725 727
773 771 769 767 765 763 761 759
757 755

2019

PROPOSED

THREE-STOREY RESIDENTIAL APARTMENT BUILDING SITE

PART OF LOTS 32 AND 33

CONCESSION 5 (RIDEAU FRONT)

4000 OLD RICHMOND ROAD

CITY OF OTTAWA

APPENDIX C

4000 OLD RICHMOND ROAD

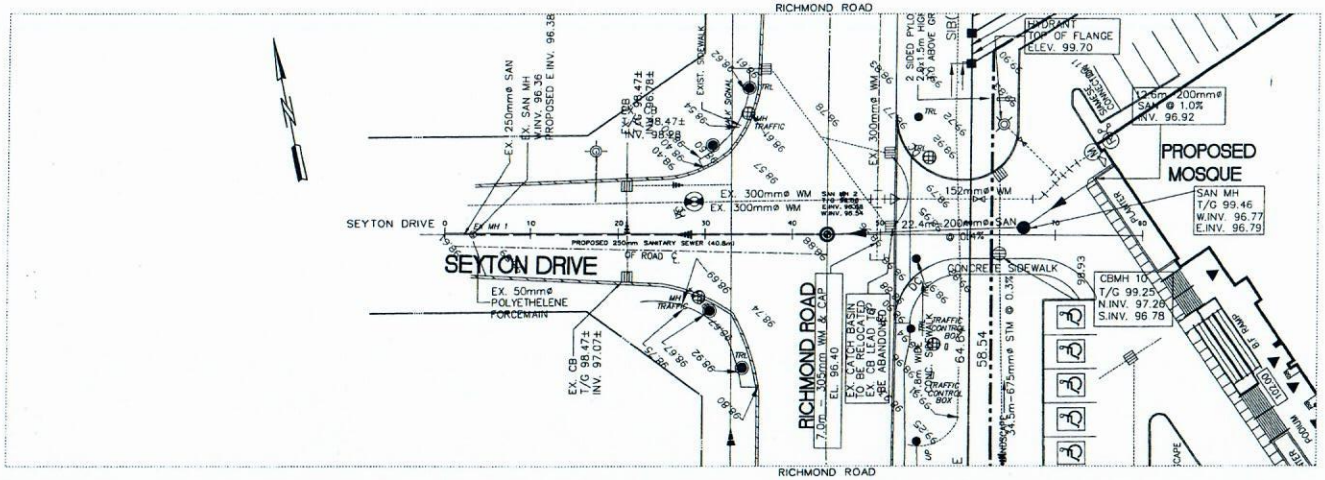
CITY OF OTTAWA

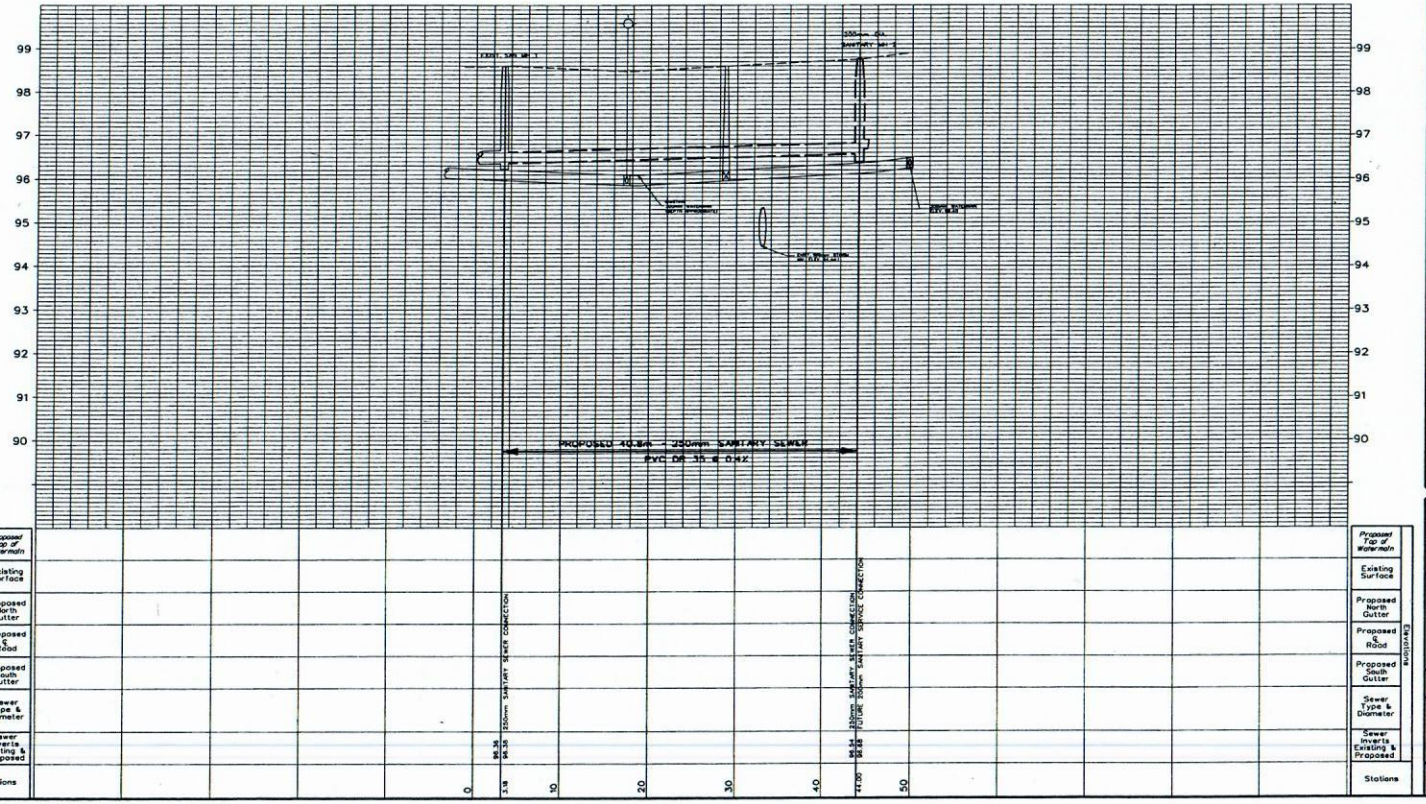
PLAN AND PROFILE

AND

UCC DRAWINGS

SEYTON DRIVE





Revisions:

No.	Date	Description	Drawn By	Approved By
3	NOV. 2005	REVISED PER CITY OF OTTAWA COMMENTS	MF	PDR
2	SEPT. 2005	REVISED BUILDING LOCATION	MF	PDR
1	NOV. 2004	ISSUED FOR APPROVAL	MF	PDR

Design:

Designed By K. ADAMS, E.I.T.	Date	Checked By P.D. REEVE, P.ENG	Date
Survey Detail By	Date	Field Checked By	Date
Drafting By M. FASSBENDER	Date	Checked By	Date

LICENSED PROFESSIONAL ENGINEER P. D. REEVE PROVINCE OF ONTARIO

Construction Services Manager

Final Measurements:

Construction Type		Inspector	
Work Commenced		Project Manager	
Work Completed		Field Book #	
Contractor		Date	
Drafting Revisions	Date	Checked By	

Tender Notes:

1. Soil information shown is not guaranteed and contractors are advised to collect additional soils information as deemed necessary.
2. Soil information taken from : TROW ASSOCIATES
3. Date of television inspection :
4. This plan supercedes (in whole or in part) plan #
5. While illustrations and utilities shown are taken from the best available information, they cannot be guaranteed.
6. The contractor is requested to check with all utility companies.

Review by Infrastructure Approvals Division
Date 2006/10/30
Drawing # 14032

J.L.Richards & Associates Limited
Consulting Engineers, Architects & Planners
864 LADY ELLEN PLACE, OTTAWA, CANADA K1Z 5M2
J.L.R.- 19787-03

Watermain Notes:

1. All watermain materials and construction methods shall be in accordance with the latest edition of the City of Ottawa Standard Specifications and Standard Drawings.

Legal Survey Notes:

Boundary information shown hereon has been compiled and calculated from Teranet data and not based on an actual survey.

Distances shown to survey monuments are for reference purposes only, survey monuments may not define property boundaries.

THIS IS NOT A PLAN OF SURVEY

This plan was compiled from plans and documents recorded in the Land Registry System and has been prepared for property mapping purposes only.

Ottawa

Public Works and Services Department
Construction Services Development
110 LAURIER AVENUE WEST, OTTAWA, ONTARIO. K1P 1J1

Rosemarie Leclair, General Manager	Richard Hewitt, P.Eng., Branch Director

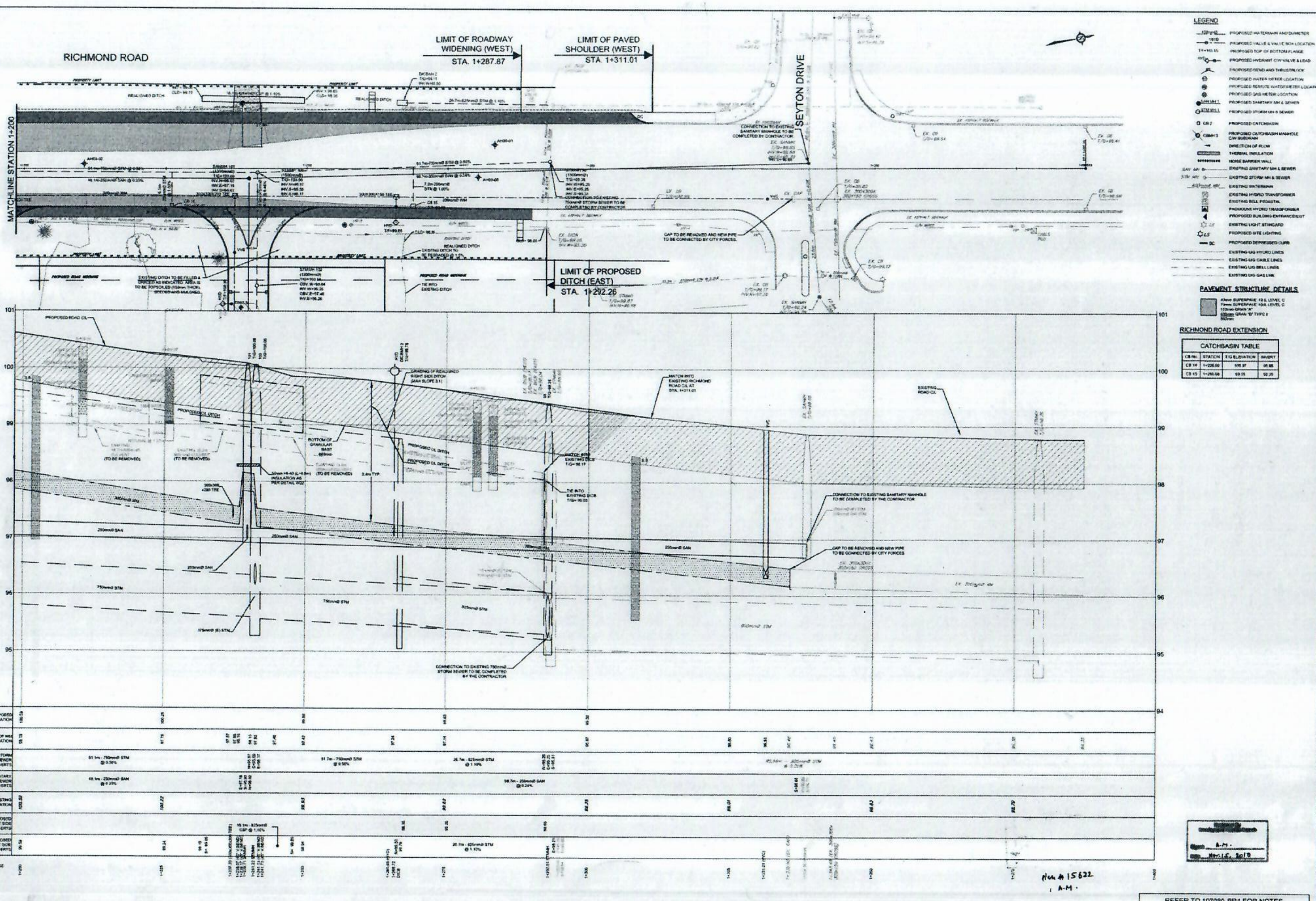
SEYTON DRIVE
PLAN AND PROFILE
STA. 0.00 TO 50.00

Contract No!	Survey Books	Scale: HOR. 1:250 VERT. 1:50	Plan No. 19787-03 Sheet 1 of 1

Filename: 19787-03.DGN

14032

D07-12-08-0272



Plan # 15622
A.M.

REFER TO 107080-PR1 FOR NOTES

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	DATE	BY
10.	ISSUED FOR CONSTRUCTION	OCT 6/10	MSP
9.	ISSUED FOR CONTRACT EXECUTION	SEP 15/10	MSP
8.	ISSUED FOR MOE APPROVAL	AUG 25/10	MSP
7.	ISSUED FOR SITE PLAN APPROVAL	AUG 23/10	MSP
6.	REISSUED FOR CITY APPROVAL	JUN 29/10	MSP
5.	REISSUED FOR TENDER	JUN 7/10	MSP
4.	ISSUED FOR FINAL APPROVAL	JAN 4/10	MSP
3.	ISSUED FOR TENDER	DEC 17/09	MSP
2.	ISSUED AS PER CITY COMMENTS	AUG 26/09	MSP
1.	ISSUED FOR SITE PLAN SUBMISSION	–	MSP

NOVATECH ENGINEERING CONSULTANTS LTD.
ENGINEERS & PLANNERS

DESIGN: CV | CHECKED: MSP | DRAWN: CV | CHECKED: MSP | APPROVED: JGR

SCALE 1:250 HORIZONTAL, 1:25 VERTICAL

CITY OF OTTAWA
4016 and 4022 RICHMOND ROAD

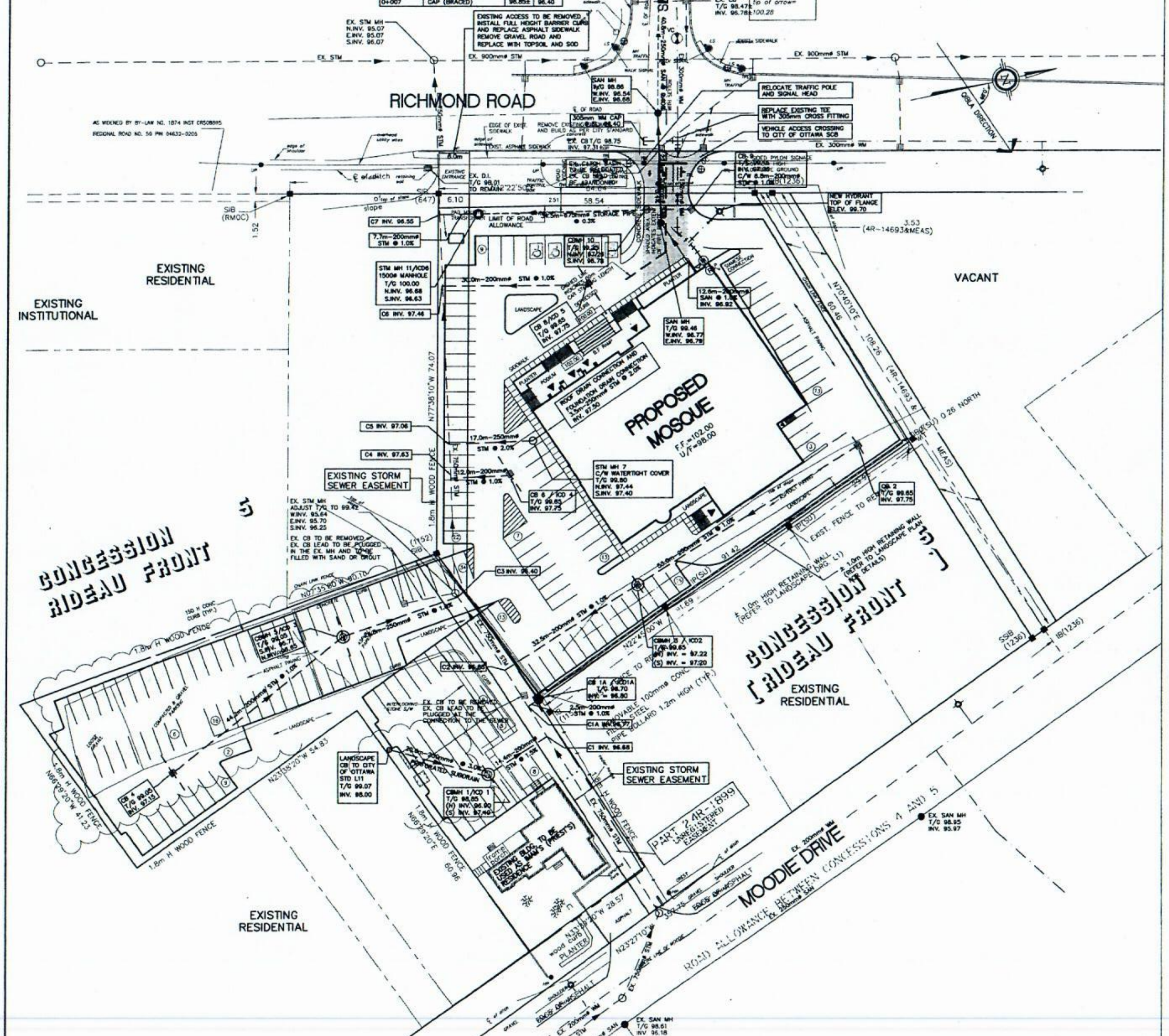
RICHMOND ROAD EXTENSION
PROFILE STA.1+200 TO 1+387.13

107080-PR2

15622

NOTE: ALL WM TO BE CONSTRUCTED @ 2.4m BELOW FINAL GRADE UNLESS OTHERWISE SPECIFIED BELOW

305mmø WATERMAIN TABLE (SOUTH) PVC DR-18 CL.150			
STATION ALONG WM	DETAIL	FINISHED GRADE	TOP OF WM
0+000	305mm CROSS	98.80±	96.70±
0+002.3	22.5° VERT. BEND	98.82±	96.70±
0+003	22.5° VERT. BEND	98.82±	96.40
0+004	SEWER CROSSING	98.82±	96.40
0+007	CAP (BRACED)	98.85±	96.40



NOTE: ALL WM TO BE CONSTRUCTED @ 2.4m BELOW FINAL GRADE UNLESS OTHERWISE SPECIFIED BELOW

152mmø WATERMAIN TABLE (EAST) PVC DR-18 CL.150			
STATION ALONG WM	DETAIL	FINISHED GRADE	TOP OF WM
0+039.35±	305mm CROSS	98.88±	96.78±
0+042.00	305x152 REDUCER	98.88±	96.78±
0+051.0	152mm VALVE AND BOX	99.12±	96.72
0+052.8	P/L	99.18±	96.78
0+057.9	45° BEND	99.38±	96.98
0+061.1	HYDRANT, VALVE & VB	99.47±	97.07
0+062.2	11.25° BEND	99.52±	97.12
0+066.0	BLDG	99.65±	97.25

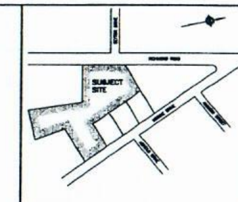
NOTES

1. AT ALL CONNECTION POINTS, REINSTATE SURFACES TO EXISTING CONDITION OR BETTER.
- ASPHALT RESTORATION SHALL BE IN ACCORDANCE WITH OPSS-310 AND CITY OF OTTAWA STANDARD DETAIL DRAWING R10.
- THICKNESS OF GRANULARS AND ASPHALT LAYERS SHALL MATCH EXISTING
- BOULEVARDS SHALL BE REINSTATED WITH 100mm TOPSOIL AND SOD
2. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL SERVICES AND UTILITIES PRIOR TO CONSTRUCTION, PROTECT AND ASSUME RESPONSIBILITY FOR ALL UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
3. FILTER CLOTH TO BE PLACED UNDER ALL CATCHBASIN AND MANHOLE COVERS FOR TEMPORARY SEDIMENT CONTROL DURING CONSTRUCTION.
4. SILT FENCE PER OPSD 219.110. SILT FENCE TO BE ERECTED ALONG ALL PROPERTY BOUNDARIES PRIOR TO ANY CONSTRUCTION AT THE SITE.
5. -SAN & STORM SEWERS EQUAL OR LESS THAN 375mmø SHALL BE PVC DR-35, STORM SEWERS ABOVE 375mmø TO BE 100-D R.C.
-STORM & SANITARY SERVICE LATERALS TO BUILDING TO BE PVC OR 28
-WATERMAIN SHALL BE PVC DR-18
-ALL STORM & SANITARY MANHOLES LOCATED WITHIN PONDING AREAS TO HAVE SOLID AND SEALED COVERS
6. ALL MANHOLES TO BE 1220ø UNLESS OTHERWISE NOTED.
7. ALL MATERIALS AND CONSTRUCTION METHODS TO BE PER THE NEW CITY OF OTTAWA STANDARDS & SPECIFICATIONS.
8. CONTRACTOR TO ENSURE THAT EXCAVATION FOR THE INSTALLATION OF SERVICING ALONG OR IN PROXIMITY OF A BUILDING OR A STRUCTURE IS CONTAINED WITHIN THE CONFINES OF A TRENCH BOX WIDTH AND THAT CONFLICTS WITH ANY FUTURE FOOTINGS/FOUNDATIONS ARE AVOIDED. TRENCH TO BE BACKFILLED WITH SELECT SUBGRADE MATERIAL COMPACTED TO 100% SPD TO 1.0m BELOW EXISTING GRADE FOR FULL TRENCH WIDTH OF DISTURBED AREA.
9. REFER TO THE ARCHITECTURAL SITE PLAN BY KHALIL U. SYED ARCHITECT DRAWING A1 FOR SITE LAYOUT. FOR DETAILED GRADING INFORMATION REFER TO THE GRADING PLAN G1 , PREPARED BY J.L.RICHARDS AND ASSOCIATES LIMITED. FOR THE PLAN AND PROFILE OF SEYTON DRIVE OUTLET SEWER REFER TO DRAWING 19787-03 , PREPARED BY J.L.RICHARDS AND ASSOCIATES LIMITED. FOR STORMWATER MANAGEMENT REFER TO J.L.RICHARDS AND ASSOCIATES LIMITED. REPORT AND ACCOMPANING DRAWINGS EC-1 , PC-1 , D-ST1 AND SWM1. FOR LANDSCAPE DETAILS REFER TO DRAWING L1 , PREPARED BY DOUGLAS ASSOCIATES LANDSCAPE ARCHITECTS LTD. TOPOGRAPHIC AND LEGAL SURVEY BY PAUL RIDDELL LTD. SITE IS PART OF LOTS 32 AND 33 , CONCESSION 5 (RIDEAU FRONT) , PLAN 4R-18593.
10. SERVICES TO BE TERMINATED 2.0m FROM BUILDING WALL (TYPICAL)
11. TWO (2) - 3m LONG x 100mmø PERFORATED SUBDRAINS WRAPED IN FILTER CLOTH SHALL BE INSTALLED AT EACH CB AND CBMH.
12. WATERTIGHT COVERS TO BE AS PER OPSD 401.030
13. CONNECTION TO EXISTING CONCRETE STORM SEWER TO BE WITH UROPLAST SADDLES, TO OPSD 1006.010 , VERTICAL RISERS ALSO TO OPSD 1006.010 AS REQUIRED.
14. SITE BENCH MARK : FIRE HYDRANT TIP OF ARROW SEYTON DRIVE AT RICHMOND ROAD ELEVATION 100.28
15. LIGHT DUTY ROADS AND PARKING AREA PAVEMENT STRUCTURE
300mm GRANULAR 'B' ,
150mm GRANULAR 'A'
85mm ASPHALTIC CONCRETE

HEAVY DUTY PAVEMENT STRUCTURE FIRE ROUTE ACCESS
450mm GRANULAR 'B' ,
150mm GRANULAR 'A'
100mm ASPHALTIC CONCRETE

ICD TABLE						
ICD No.	PIPE ø (mm)	INVERT	MAXIMUM WATER LEVEL (m)	Qr (L/S)	HYDROVEX MODEL No.	IPEX
CB 1/ICD 1	200	96.90	99.15	11.0	100 VHV-1	N/A
CB 1A/ICD 1A	200	96.80	99.15	9.0	100 VHV-1	N/A
CB 3/ICD 2	200	97.20	99.85	3.0	50 VHV-1	N/A
CBMH 5/ICD 3	250	96.65	99.35	3.5	50 VHV-1	N/A
CB 6/ICD 4	200	97.75	99.85	3.0	50 VHV-1	N/A
CB 8/ICD 5	200	97.75	99.85	21.5	N/A	TYPE A
STMMH 11/ICD6	675	96.63	99.25	14.0	100 VHV-1	N/A

Reviewed by
Infrastructure Approvals Division
Signature: Guy Bourgon
Date: 2006/05/30
Planning #14032



KEY MAP

N.T.S.

LEGEND

- WATERMAIN, VALVE BOX, VALVE CHAMBER & HYDRANT
- SANITARY SEWER & MANHOLE
- STORM SEWER MANHOLE
- CATCH BASIN, CB LEAD & MIN. 3m SUBDRAIN ON EITHER SIDE
- PROPOSED 100mm ø UNLESS OTHERWISE NOTED PERFORATED SUBDRAIN IN FILTER SOCK IN LANDSCAPED AREA
- CATCH BASIN C/W AN ICD IN DOWNSTREAM LEAD, FRAME & COVERS PER OPSD 400.010 (REFER TO ICD TABLE FOR DETAILS)
- CATCH BASIN MANHOLE C/W AN ICD IN DOWNSTREAM LEAD, FRAME & COVERS PER OPSD 400.010 (REFER TO ICD TABLE FOR DETAILS)
- SILT FENCE
- HEAVY DUTY PAVEMENT STRUCTURE FIRE ROUTE ACCESS
- (M) WATER SERVICE METER
- (R) REMOTE WATER SERVICE METER
- (G) GAS METERS/GROUP LOCATION
- FF 102.00 FINISHED FLOOR ELEVATION
- U/F 98.00 UNDERSIDE OF FOOTING ELEVATION
- HP BP HYDRO POLE, BELL POLE
- SIAMESE CONNECTION

NO.	REVISION	DATE
6	REVISED PER CITY OF OTTAWA COMMENTS	NOV/07/05
5	REVISED PER CITY OF OTTAWA COMMENTS	OCT./05

NO.	ISSUE	DATE
4	REVISED BUILDING LOCATION	SEPT./05
3	REVISED PER CITY OF OTTAWA COMMENTS	APRIL/05
2	REVISED ORIFICE DIAMETER ICD 6	NOV. 16/04
1	FOR SITE PLAN APPLICATION	NOV. 16/04

LICENSED PROFESSIONAL ENGINEER
P. D. REEVE
7-Nov-2005
PROVINCE OF ONTARIO

J.L.Richards
ENGINEERS·ARCHITECTS·PLANNERS

J.L. Richards & Associates Limited
864 Lady Ellen Place
Ottawa, ON Canada
K1Z 5M2
Tel: 613 728 3571
Fax: 613 728 6012

PROJECT:

PROPOSED MOSQUE

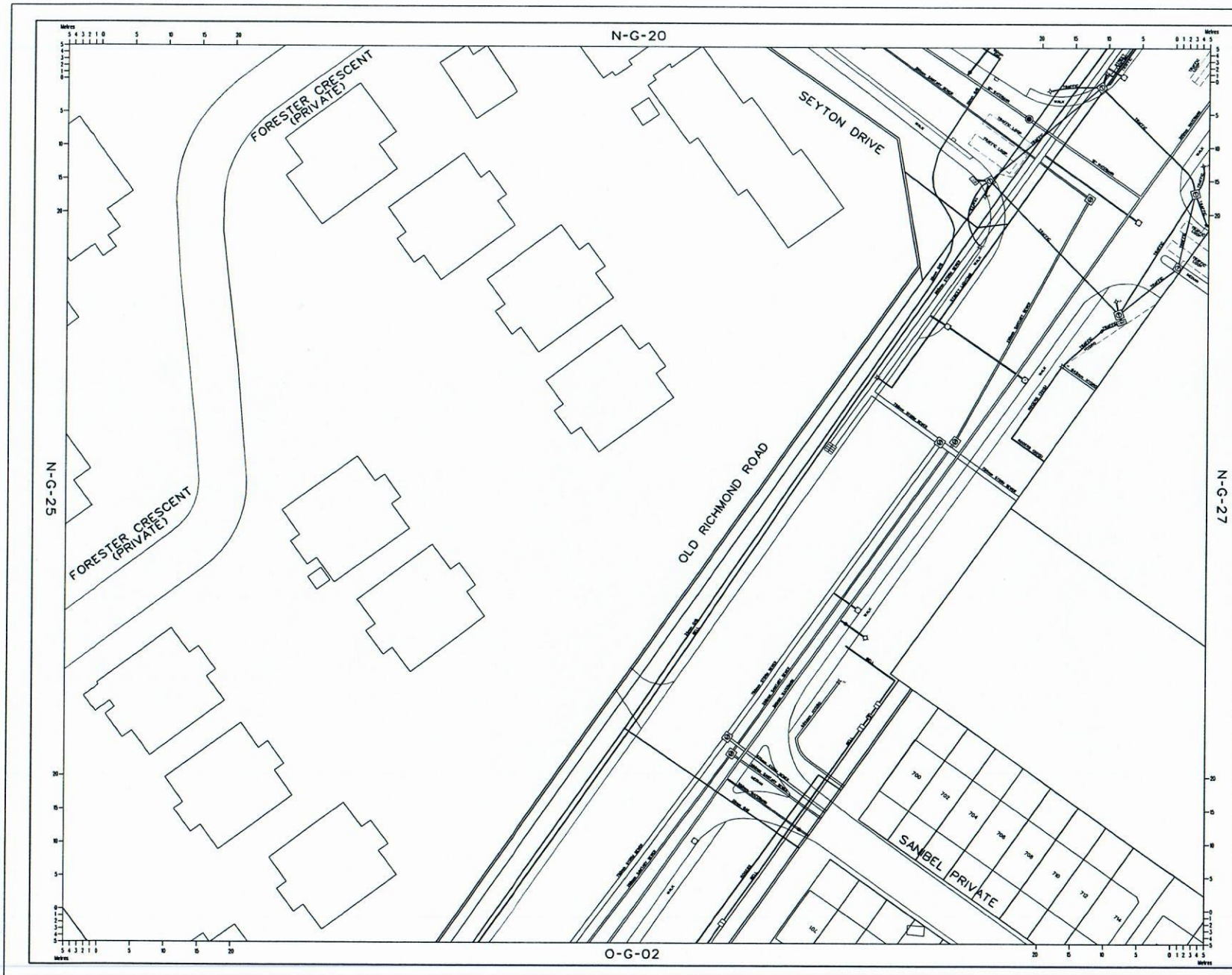
572 MOODIE DRIVE

DRAWING: V:\19787-01.PR\19787-01 C S1.dwg

SITE SERVICING PLAN

DESIGN:	DL	REVISION NO.:	
DRAWN:	TS	DRAWING NO.:	S1
CHECKED:	PDR		
DATE:	NOVEMBER, 2004		
SCALE:	1:400	JOB NO.:	19787-01

14032



REVISIONS / RÉVISIONS	DATE	BY
SANITARY, STORM & WATER VERIFIED	JUNE 2014	BR
SANITARY, STORM & WATER VERIFIED	JUNE 2014	BR
SANITARY, STORM & WATER VERIFIED	JUNE 2014	BR
CHARTER VERIFIED ON OLD RICHMOND	JUNE 2014	BR
COMPILED/DIGITIZED FROM UTILITY/CITY DATA	JUNE 2014	BR
ROGERS - 19M OF CONDUIT INSTALLED	SEPT 2021	RZ

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-An Power, Energized, Isolated
Streetscape; Planter Box, Grate Square, Eng. Suit
Traffic Connect Box / Disconnect Box, SL Disconnect
Red Light Hand Hole, Red Light Camera
Suedic Hand Hole, Monitoring Panel
Reducer
Pipe, Duct, Conduit, Lateral
Culvert
Ditch
Abandoned
Copper
Buried Cable
Property Line
Install Year (2015)

TELECOM GLOSSARY

A	Allstream	P	Primus
AT	Aldo	P2P	Canadian P2P Fibre
B	Bell	R	Rogers
BH	Birch Hill	S	Sprint
F	Fibre Nuli	SL	Street Lighting
G	Globility	T	Traffic
GT	Group Telecom	TO	Telecom Ottawa
H	Hydro Ottawa	TU	Telus
HI	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	Sciola		

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 training purposes only.

Bien que l'emplacement des services publics soient établis en utilisant le 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'information 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 générale de la planification, de l'infrastructure et du développement économique
100 Constellation Cres., 6th Floor East / 6ème Etage Est, Ottawa, ON K2G 6J8

OTTAWA UTILITY COORDINATING COMMITTEE
CENTRAL REGISTRY
COMITÉ DE COORDINATION DES SERVICES PUBLICS D'OTTAWA
ENREGISTREMENT CENTRAL

UCC Ottawa CCSP

PRODUCED BY: GIS DATA MANAGEMENT BRANCH / INFORMATION CENTRE UNIT

SCALE: 1:250

SHEET NUMBER
N-G-26

PROPOSED

THREE-STOREY RESIDENTIAL APARTMENT BUILDING SITE

PART OF LOTS 32 AND 33

CONCESSION 5 (RIDEAU FRONT)

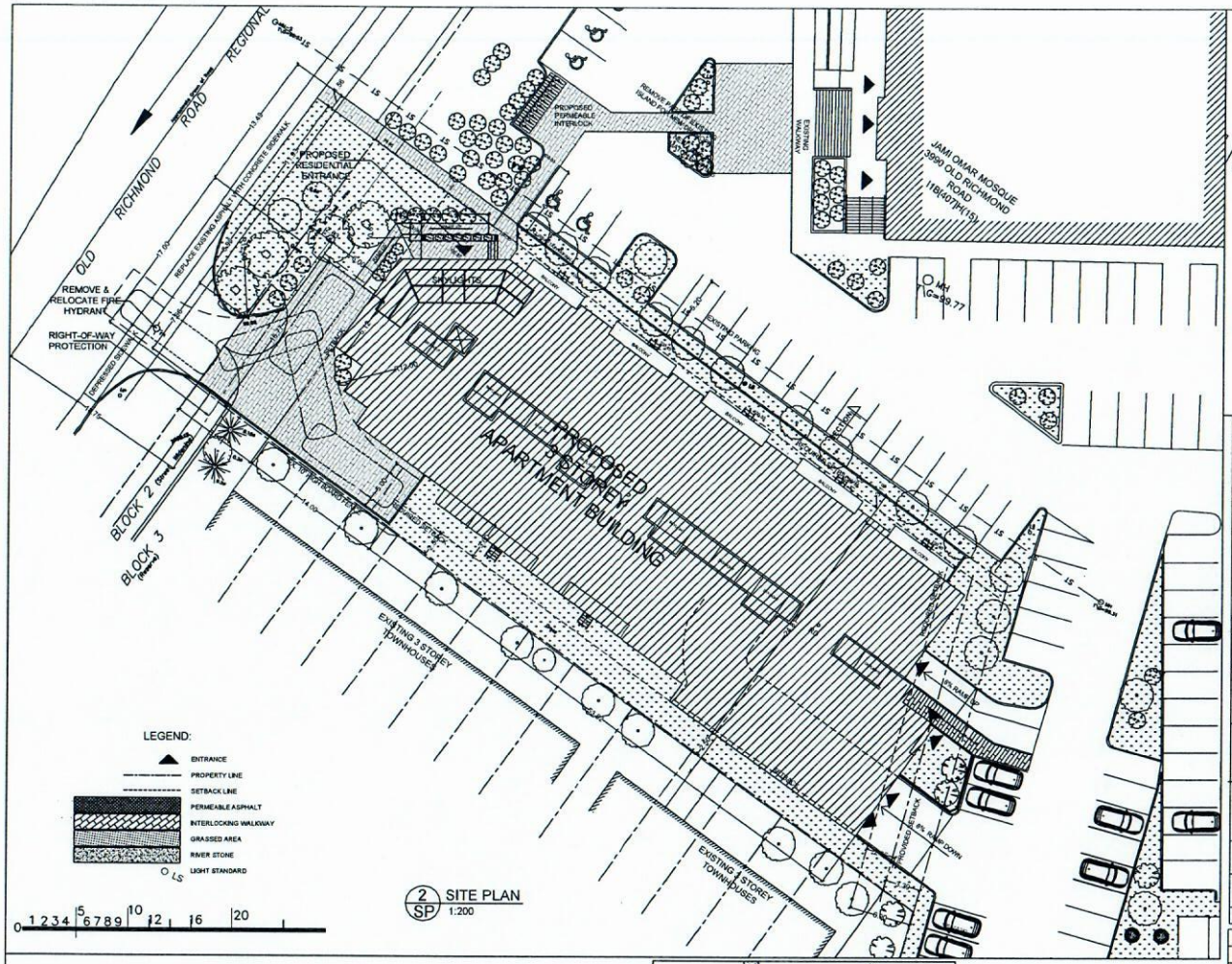
4000 OLD RICHMOND ROAD

CITY OF OTTAWA

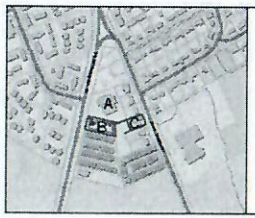
APPENDIX D

- SITE PLAN
- WATER BOUNDARY CONDITIONS E-MAIL
- FIRE FLOW CALCULATION
- FUS EXPOSURE DISTANCES (FIGURE 1)
- SUPPORTING HYDRAULIC CALCULATIONS
- HYDRANT SPACING (FIGURE 2)

ATTACHMENT 1: SITE PLAN

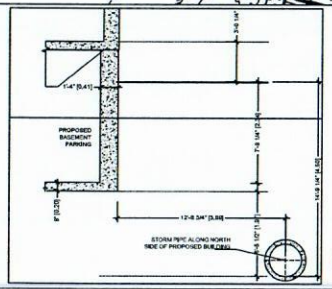


2 SP SITE PLAN
1:200

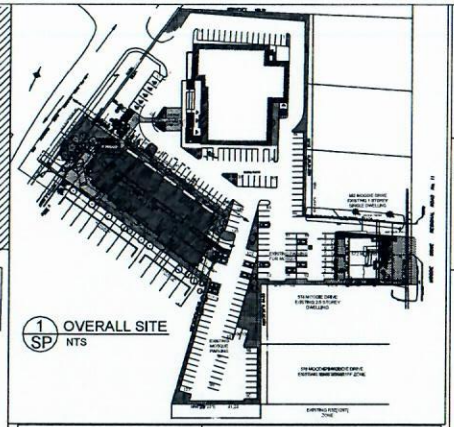


A. Jami Omar Mosque 3990 Old Richmond Rd
B. 4000 Old Richmond Rd
C. 572 Moodie Dr.

0 SP LOCATION MAP
Scale: NTS



3 SP SECTION AT GARAGE
Scale: 1:50



1 SP OVERALL SITE
NTS

	R4Z ZONING	
	4000 OLD RICHMOND RD SUPPORTIVE RESIDENTIAL FACILITY 49 UNITS	
	REQUIREMENT	PROPOSED
LOT WIDTH	18 M	30.37 M
LOT AREA	450 M²	2,396 M²
FRONT YARD SETBACK end note 5	3 M	8.64 M
REAR YARD SETBACK end note 6	THE MINIMUM REQUIRED REAR YARD SETBACK IS 6 METRES.	3.39 M RELIEF REQUESTED
INTERIOR SIDE YARD SETBACK end note 8	1.5 M (FOR HEIGHT LESS THAN 11 M), 3 M FOR HEIGHT GREATER THAN 11), OTHERWISE 6M	2.5 M
CORNER SIDE YARD SETBACK	N/A	N/A
MAXIMUM HEIGHT AVERAGE GRADE (100.11NW+99.97SW+100.16SE+99.66SW)/4=99.98	14.5 M	12 M
PERMITTED PROJECTIONS INTO REQUIRED YARDS - BALCONIES, MAX. PROJECTION	2 METRES, BUT NO CLOSER THAN 1 METRE FROM ANY LOT LINE	0.21 M
PERMITTED PROJECTIONS INTO REQUIRED YARDS - CANOPIES AND AWNINGS	A DISTANCE EQUAL TO ½ THE DEPTH OF A FRONT, REAR OR CORNER SIDE YARD BUT NOT CLOSER THAN 0.6 M TO A LOT LINE.	2.43 M
AMENITY AREA	6 M² PER DWELLING UNIT = 6 X 49 = 294 m² COMMUNAL AMENITY AREA + A MINIMUM OF 50% OF THE REQUIRED TOTAL AMENITY AREA	353 M² INCLUDING BALCONIES AND 177.25 SQ.M COMMUNAL (NORTH SIDE AND REAR = 65% REQ'D COMMUNAL)
SOFT LANDSCAPING, Schedule 342, Section 139(1)	40% OF FRONT YARD, 2,840 SQ.FT. X.4 = 1,136 SQ.FT. = 40%	1,420 SQ.FT. = 50%
LANDSCAPING, Section 161(8)	30% OF LOT AREA	625.5 SQ.M. / 2,396=26% RELIEF REQUESTED
LANDSCAPE BUFFER		NA

PARKING REQUIREMENTS				
BUILDING	CATEGORY	RATE	REQUIRED	PROPOSED
EXISTING MOSQUE		165 REQUIRED (FROM PREVIOUS) & PROVIDED		
		5 ACCESSIBLE PARKING INCLUDED		
RESIDENTIAL AREA C: Suburban Schedule 1A to Zoning By-law no. 2008-250	GENERAL	1.2 PER DWELLING	1.2 X 49 =58.8 OR 59	10 GROUND FLOOR 32 BASEMENT LEVEL 42 TOTAL
from: Accessibility Design Standards	ACCESSIBLE PARKING	3	2	2 included above +
	VISITOR PARKING	0.2/UNIT	9.8	10 INCLUDED ABOVE
	TOTAL		71	42 TOTAL
	BICYCLE PARKING	.5 PER UNIT	25	25 + 10 new ones on Mosque property

UNIT TYPE / FLOOR	TWO BEDROOM UNIT	ONE BEDROOM UNIT	BACHELOR UNIT	LIVING AREA
1ST FLOOR	1	6	4	646.9 m²/ 6963.5 ft²
2ND FLOOR	1	10	8	1105.8 m²/ 11902.7 ft²
3RD FLOOR	1	10	8	1105.8 m²/ 11902.7 ft²
TOTAL 49	3	26	20	2858.5 m²/ 30768.9 ft²
BARRIER FREE	0	4	3	

client:
JAMIATUL MUSLEMEEN OF OTTAWA CARLETON
3990 OLD RICHMOND ROAD

project:
PROPOSED RESIDENTIAL BUILDING
4000 OLD RICHMOND ROAD

SUSAN D. SMITH ARCHITECT
941 MERIVALE RD,
OTTAWA, ON, K1Z 6A1
613.722.5327
s.smith@sdsarch.ca

NO.	REVISION	DATE
10		
09		
08		
07		
06		
05	ISSUED FOR REVIEW	07/11/2024
04	ISSUED FOR REVIEW	08/21/2023
03	ISSUED FOR ZONING AMENDMENT	03/08/2023
02	ISSUED FOR COORDINATION	11/05/2021
01	ISSUED FOR PRELIMINARY DESIGN REVIEW	10/12/2020

NOTE:
1. All dimensions are to be checked onsite. Discrepancies or ambiguities should be reported prior to work on site or ordering materials.
2. All work to comply with Ontario Building Code.
3. All dimensions include thickness of gypsum board on stud walls.
4. Drawings to be read in conjuction with structural drawings.

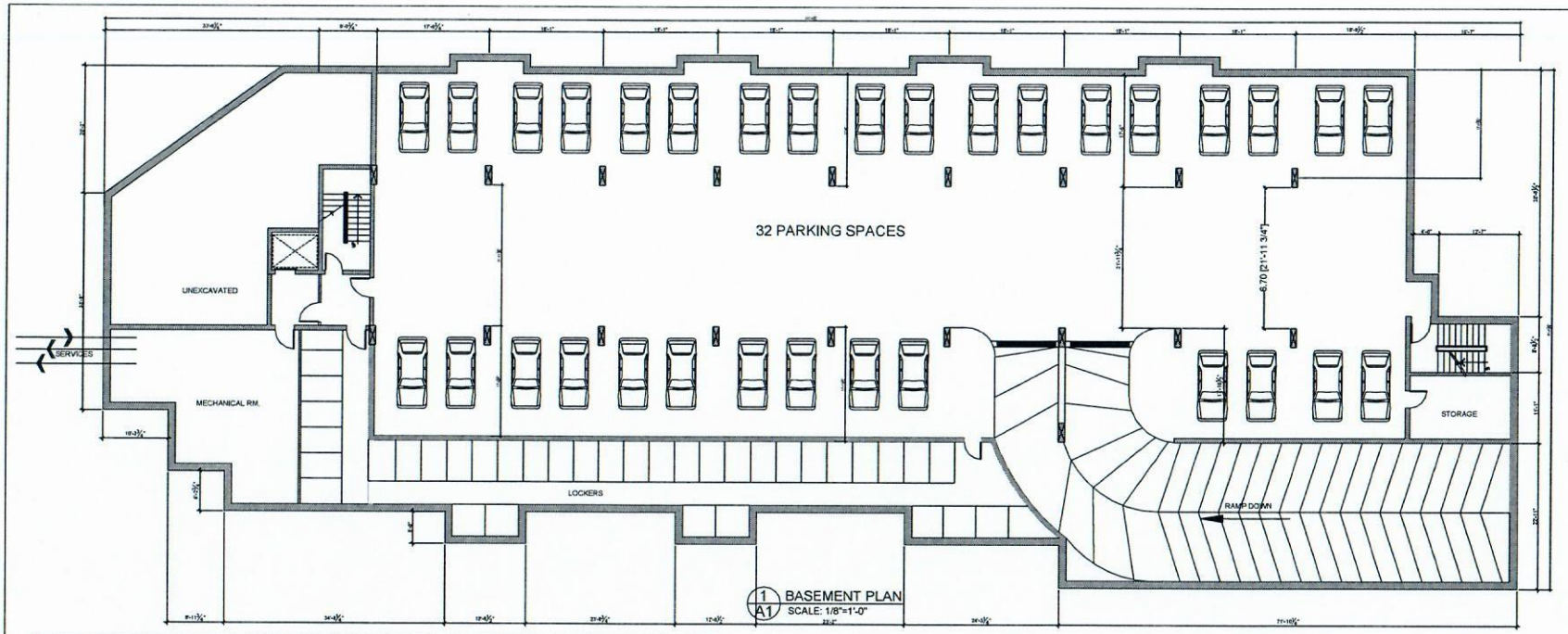
PROJECT TITLE:
ZONING AMENDMENT
4000 OLD RICHMOND ROAD

DRAWING TITLE:
SITE PLAN
ZONING INFORMATION

PROJECT START DATE:	DRAWN BY:
APRIL, 2019	ZK & SS
AS NOTED	JOB No.: 1917
REVIEWED BY:	SHEET No.: SP

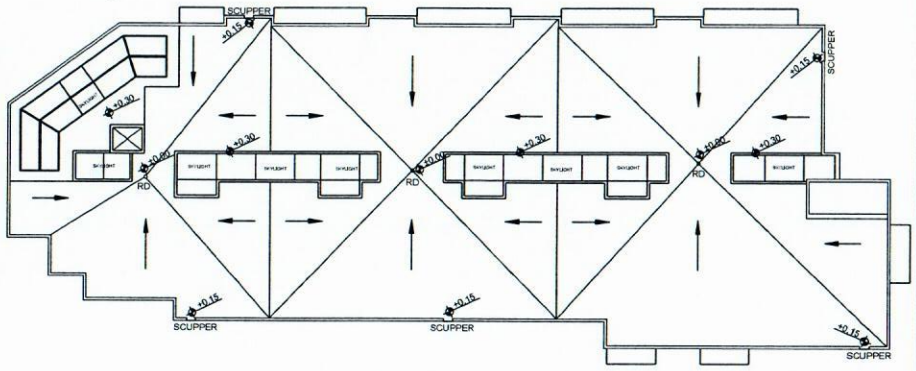
007-12-21-0234

#18728



1 / A1 BASEMENT PLAN
SCALE: 1/8"=1'-0"

ITEM	ONTARIO BUILDING CODE DATA MATRIX - PART 3 PRELIMINARY		OBC Reference
1	Project Description:	New Supportive Residential Facility	
2	Major Occupancy(s):	Group C	3.1.2.1.(1)
3	Building Area (m²):	1,444.3 m² (15,546.6 ft²,)	1.1.3.2
4	Gross Area (living area)	2,858.5 m² (30,769 sq.ft.)	1.1.3.2
5	Number of Storeys:	3 Above grade 1 Below grade	1.1.3.2 & 3.2.1.1
6	Height of Building (m):	11.4m (37'-4 1/4")	
7	Number of Streets/Access Routes:	2 Street	
8	Building Classification:	Group C, non-combustible Construction	
9	Sprinkler System Proposed:	NO	3.2.2.44 & 3.2.1.5
10	Standpipe Required:	NO	3.2.9.1
11	Fire Alarm Required:	Yes	3.2.4
12	Water Service/Supply is Adequate:	To Be Confirmed	3.2.5.7.
13	High Building:	No	3.2.6
14	Permitted Construction:	Noncombustible	3.2.2.44
	Actual Construction:	Noncombustible	
15	Mezzanine(s) Area m²:	no	3.2.1.1.(3)-(8)
16	Occupant Load:	Total Occupant Load = 104 people	3.1.1.6 & 3.1.17
17	Barrier-free Design:		3.8.2.1.(5)
18	Hazardous Substances:	No	3.3.1.2.(1) & 3.3.1.19(1)
19	Required Fire Resistance Rating (FRR):	Horizontal Assemblies FRR:	3.2.2.44 & 3.2.1.4
		Floors = 1 hr	
		Roof = 1 hr hr	
		FRR of Supporting Members:	
		Floors = 1 hr	
		Roof = 1 hr	



1 / A1 ROOF PLAN
SCALE: 1/16"=1'-0"

client
JAMIATUL MUSLEMEEN OF OTTAWA CARLETON
3990 OLD RICHMOND ROAD

project
PROPOSED RESIDENTIAL BUILDING
4000 OLD RICHMOND ROAD

NO.	REVISION	DATE
06	ISSUED FOR BUILDING PERMIT	
05	ISSUED FOR REVIEW	10/17/2024
04	ISSUED FOR REVIEW	01/24/2024
03	ISSUED FOR ZONING AMENDMENT	03/08/2022
02	ISSUED FOR COORDINATION	11/05/2021
01	ISSUED FOR PRELIMINARY DESIGN REVIEW	10/22/2020

NOTE:
1. All dimensions are to be checked onsite. Discrepancies or ambiguities should be reported prior to work on site or ordering materials.
2. All work to comply with Ontario Building Code.
3. All dimensions include thickness of gypsum board on stud walls.
4. Drawings to be read in conjuction with structural drawings.

SUSAN D. SMITH ARCHITECT
941 MERIVALE RD.
OTTAWA, ON. K1Z 6A1
613.722.5327
s.smith@sdsarch.ca

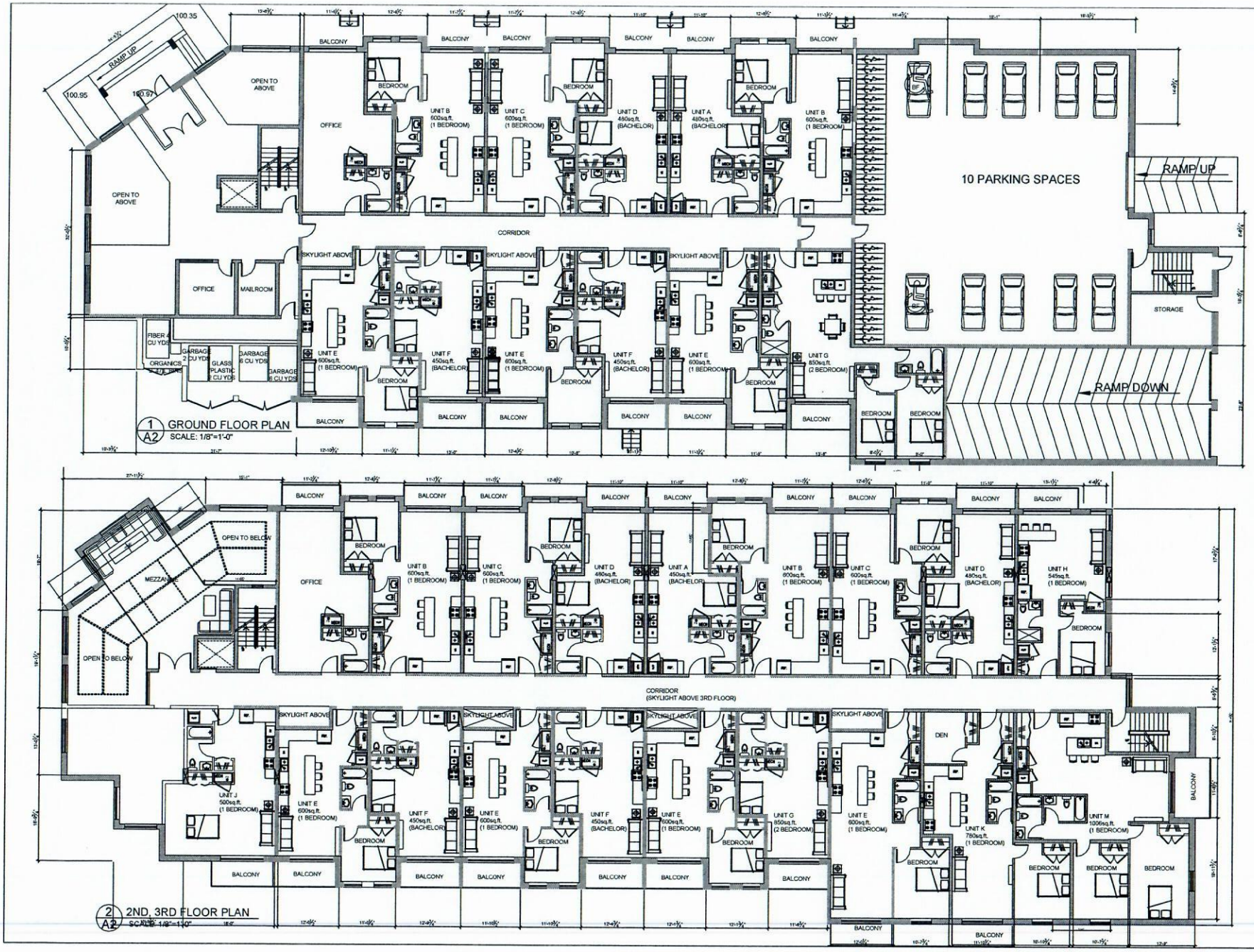
PROJECT TITLE:
ZONING AMENDMENT
4000 OLD RICHMOND ROAD

DRAWING TITLE:
FLOOR PLANS
CODE MATRIX

PROJECT START DATE:	DRAWN BY:
APRIL, 2019	ZK & SS
AS NOTED	JOB No.: 1917
REVIEWED BY:	SHEET No.: A1

D07-12-21-0234

#18728



client
JAMIATUL MUSLEMEEN OF OTTAWA CARLETON
3990 OLD RICHMOND ROAD

project
PROPOSED RESIDENTIAL BUILDING
4000 OLD RICHMOND ROAD

NO.	REVISION	DATE
10		
09		
08		
07		
06	ISSUED FOR BUILDING PERMIT	
05	ISSUED FOR REVIEW	19/12/2024
04	ISSUED FOR REVIEW	01/28/2024
03	ISSUED FOR ZONING AMENDMENT	03/08/2022
02	ISSUED FOR COORDINATION	11/05/2021
01	ISSUED FOR PRELIMINARY DESIGN REVIEW	10/22/2020

NOTE:
1. All dimensions are to be checked onsite. Discrepancies or ambiguities should be reported prior to work on site or ordering materials.
2. All work to comply with Ontario Building Code.
3. All dimensions include thickness of gypsum board on stud walls.
4. Drawings to be read in conjuction with structural drawings.

SUSAN D. SMITH ARCHITECT
941 MERIVALE RD,
OTTAWA, ON, K1Z 6A1
613.722.5327
s.smith@sdsarch.ca

PROJECT TITLE:
ZONING AMENDMENT
4000 OLD RICHMOND ROAD

DRAWING TITLE:
FLOOR PLANS

PROJECT START DATE:	DRAWN BY:
APRIL, 2019	ZK & SS
AS NOTED	JOB No. 1917
REVIEWED BY:	SHEET No. A2

ATTACHMENT 2: WATER BOUNDARY CONDITIONS E-MAIL

Mineault-Guitard, Alexandre

From: Chetrar, Anton <anton.chetrar@ottawa.ca>
Sent: Thursday, December 12, 2024 2:07 PM
To: TL MaK
Cc: Schaeffer, Gabrielle; 'Malam, Anver'; Mineault-Guitard, Alexandre; 'Susan Smith'
Subject: RE: 4000 Old Richmond Road - Water Boundary Conditions Request
Attachments: 3999-4000 Old Richmond Road REVISED December 2024.pdf

Good afternoon Tony,

The following are boundary conditions, HGL, for hydraulic analysis at 3999-4000 Old Richmond Road (zone 2W2C) assumed to be connected via dual connection with a separation valve in between to the 305mm watermain on Old Richmond (see attached PDF for location).

Minimum HGL: 126.8 m
Maximum HGL: 132.1 m
Max Day + Fire Flow (200 L/s): 123.8 m

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

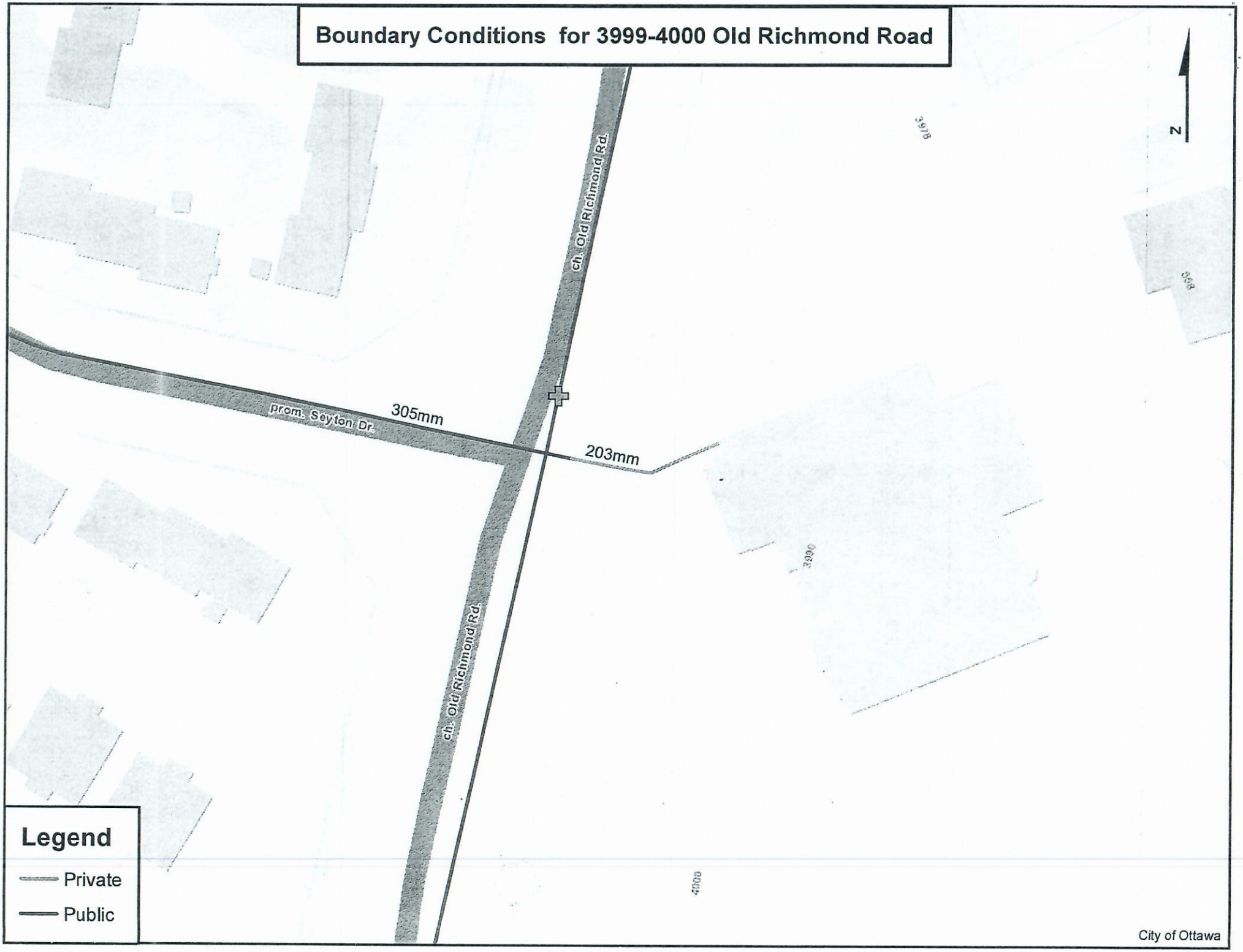
Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation 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.

Let me know if you have any questions.

Regards,
Anton Chetrar | P. Eng
Project Manager, Infrastructure - Gestionnaire de projet, Projets d'infrastructure
Development Review All Wards (DRAW) | Direction de l'examen des projets d'aménagement -Tous les quartiers (EPATQ)
Planning, Development and Building Services Department (PDBS) and Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB)
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West |110 avenue Laurier Ouest
Ottawa, ON K1P 1J1
Tel.|Tél. 613.580.2424 ext.60865
anton.chetrar@ottawa.ca

From: TL MaK <tlmakecl@bellnet.ca>
Sent: December 10, 2024 10:43 AM
To: Chetrar, Anton <anton.chetrar@ottawa.ca>

Boundary Conditions for 3999-4000 Old Richmond Road



ATTACHMENT 3: FIRE FLOW CALCULATIONS

FUS Fire Flow Calculation Sheet - 2020 FUS Guidelines

Stantec Project #: 163401084
Project Name: 4000 Old Richmond Rd
Date: 12/13/2024
Fire Flow Calculation #: 1
Description:

Data inputted by: Hamidreza Mohabbat MASc.
Data reviewed by: Alexandre Mineault-Guitard M.A.Sc., ing., P.Eng.

Notes: *49 Total Residential Units. 3 storeys, assumed basement more than 50% below grade. Assumed non-combustible construction (all structural elements, including loadbearing walls, columns, arches, floors and roofs are constructed with a minimum 1-hour fire resistance rating). Building setbacks per latest site plan (dated 2024/10/17).*

Step	Task	Notes									Value Used	Req'd Fire Flow (L/min)
1	Determine Type of Construction	Type II - Noncombustible Construction / Type IV-A - Mass Timber Construction									0.8	-
2	Determine Effective Floor Area	Sum of Two Largest Floors + 50% of Eight Additional Floors					Vertical Openings Protected?				NO	-
		1444	1444	1444							3,611	-
3	Determine Required Fire Flow	($F = 220 \times C \times A^{1/2}$). Round to nearest 1000 L/min									-	11,000
4	Determine Occupancy Charge	Limited Combustible									-15%	9,350
5	Determine Sprinkler Reduction	None									0%	0
		Non-Standard Water Supply or N/A									0%	
		Not Fully Supervised or N/A									0%	
		% Coverage of Sprinkler System									0%	
5A	Determine Bylaw Requirement	Community bylaw requiring all building that may be built within 30m of subject building to be fully sprinkler protected									NO	-
6	Determine Increase for Exposures (Max. 75%)	Direction	Exposure Distance (m)	Exposed Length (m)	Exposed Height (Stories)	Length-Height Factor (m x stories)	Construction of Adjacent Wall	Firewall / Sprinklered ?			-	-
		Front	> 30	15	2	21-41	Type V	NO			0%	2,805
		Right	20.1 to 30	42	3	> 100	Type V	NO			10%	
		Rear	> 30	9	2	0-20	Type V	NO			0%	
		Left	3.1 to 10	70	2	> 100	Type V	NO			20%	
7	Determine Final Required Fire Flow	**Total Required Fire Flow in L/min, Rounded to Nearest 1000L/min**										**12,000**
		Total Required Fire Flow in L/s										**200**
		Required Duration of Fire Flow (hrs)										**2.50**
		Required Volume of Fire Flow (m^3)										**1,800**

ATTACHMENT 4: FIGURE 1 – FUS EXPOSURE DISTANCES

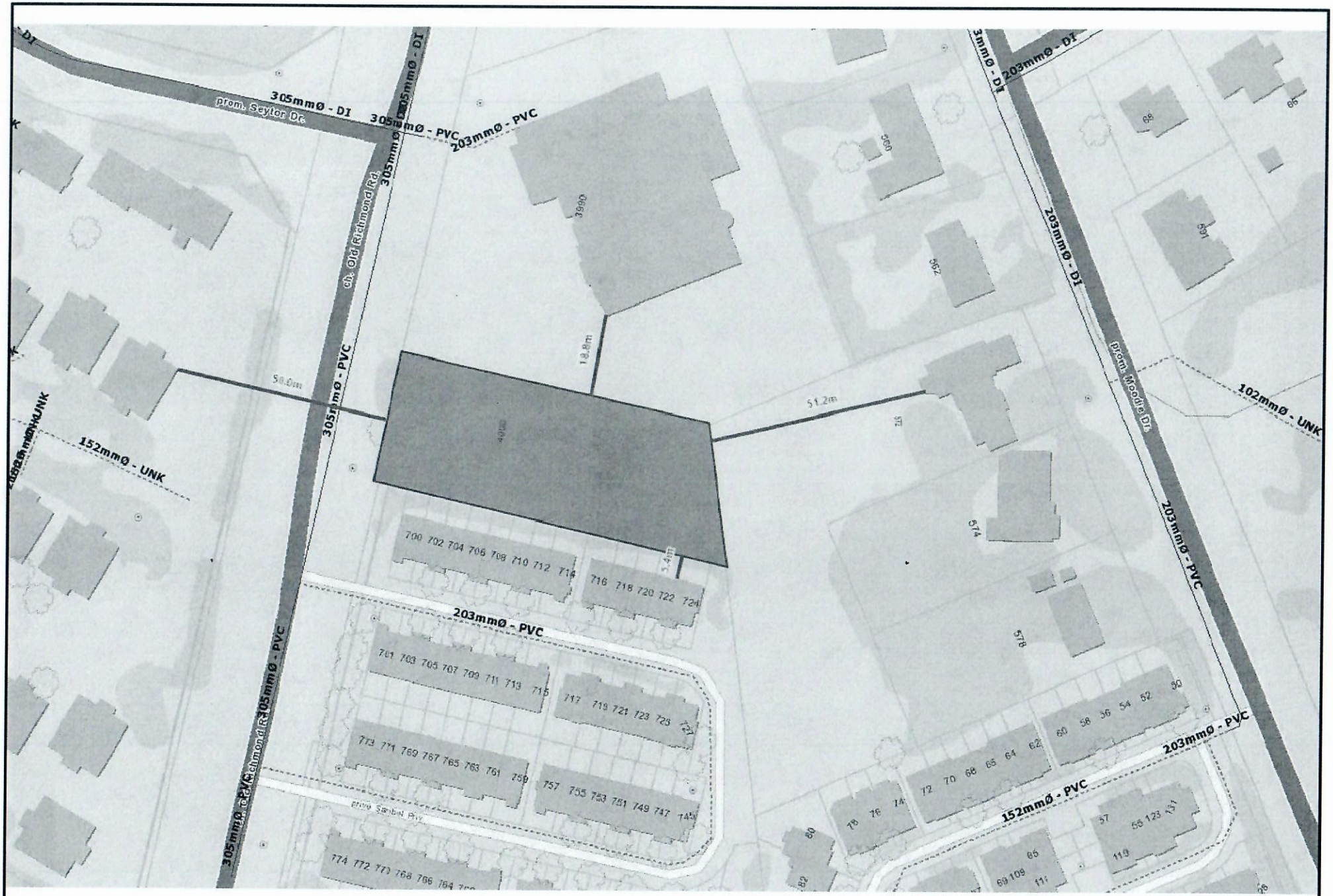


Figure 1: FUS Exposure Distances (Property Line to Adjacent Buildings)

Source: geoOttawa 2024; *Contains information licensed under the Open Government Licence – City of Ottawa.*

ATTACHMENT 5: SUPPORTING HYDRAULIC CALCULATIONS

Stantec

Supporting Hydraulic Calculations

Stantec Project #: 163401084
Project Name: 4000 Richmond Road
Date: December 13, 2024
Data inputted by: Alexandre Mineault-Guitard, P.Eng., ing.
Data reviewed by: Kevin Alemany, M.A.Sc., P.Eng.

Boundary Conditions provided by the City:

Scenario 1: Peak Hour (Min HGL): 126.8 m;
Scenario 2: Average Day (Max HGL): 132.1 m; and
Scenario 3: Maximum Day plus Fire Flow: 123.8 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) = 126.8 and hz (m) = 100.

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

$hp\ (m) = HGL - hz$

∴ hp = 126.8 - 100.0 m = 26.8 m.

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

$P\ (kPa) = (\rho * g * hp) / 1000$ *(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 Head (hp) as follow:

P (kPa) = (1000 * 9.81 * 26.8) / 1000

∴ P = 263 kPa.

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

P = 38 psi.

Applying the same procedures, the pressures under Scenario 2 and Scenario 3 are calculated as follows:
Scenario 2: P = 46 psi; and Scenario 3: P = 34 psi.

To summarize:

Scenario 1: Minimum Pressure under Peak Hour Demand: 263 kPa (38 psi)
Scenario 2: Maximum Pressure under Average Day Demand: 315 kPa (46 psi)
Scenario 3: Minimum Pressure under Maximum Day + Fire Flow Demand: 233 kPa (34 psi)

ATTACHMENT 6: FIGURE 2 – HYDRANT SPACING

Figure 2: Hydrant Spacing

Source: geoOttawa 2024; *Contains information licensed under the Open Government License – City of Ottawa.*

PROPOSED

THREE-STOREY RESIDENTIAL APARTMENT BUILDING SITE

PART OF LOTS 32 AND 33

CONCESSION 5 (RIDEAU FRONT)

4000 OLD RICHMOND ROAD

CITY OF OTTAWA

APPENDIX E

CITY OF OTTAWA

SANITARY SEWER DESIGN SHEET

SHEET No. 1 OF 1

SANITARY SEWER DESIGN SHEET

q = average daily per capita flow (280 L/cap. d)
I = unit of peak extraneous flow (0.23 L/ha. s)
M = peaking factor
Q (p) = peak population flow (L/s)
Q (i) = peak extraneous flow (L/s)
Q (d) = peak design flow

DENSITY
- BACHELOR = 1:4
- 1 BEDROOM = 1:4
- 2 BEDROOM = 2:1

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

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

K = 0.8

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

Q(d) = Q(p) + Q(I) (L/s)

LOCATION			INDIVIDUAL		CUMULATIVE		Peaking factor M	Pop. flow Q(p) (L/s)	Peak extraneous flow Q(i) (L/s)	Peak design flow Q(d) (L/s)	PROPOSED SEWER						
STREET	FROM	TO	Pop.	Area A (hectares)	Pop.	Area A (hectares)					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)
4000 OLD RICHMOND ROAD	SITE	EX. 250ϕ SANITARY SEWER	70.7	0.2824	70.7	0.2824	3.43	0.79	0.06	0.87	22.0	150	PVC	1% (min)	19.8	1.12	

LICENCED PROFESSIONAL ENGINEER
12/31/24
TONY L-M. MAK
PROVINCE OF ONTARIO

	DESIGN TLM	PROJECT 4000 OLD RICHMOND ROAD	SHEET No.
(FILE # 819-106)	CHECKED TLM	PROPOSED THREE (3) STOREY	1 of 1
	DATE December 2024	RESIDENTIAL APT. BUILDING SITE	

PROPOSED

THREE-STOREY RESIDENTIAL APARTMENT BUILDING SITE

PART OF LOTS 32 AND 33

CONCESSION 5 (RIDEAU FRONT)

4000 OLD RICHMOND 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.

☒ 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

☐ 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 that 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

- ☒ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal 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.

- ☐ 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