

Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

700 Long Point Circle
Ottawa, Ontario K1T 4E9

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ADEQUACY OF SERVICING MEMO

12 ROSS AVENUE
OTTAWA, ONTARIO

REPORT NO. 26025

JULY 29, 2026

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1.0 INTRODUCTION

This memo has been prepared in support of a Zoning By-Law Amendment application for a proposed 6-unit residential development at 12 Ross Avenue in Ottawa. The proposed property will be severed into three parcels. On Part 1 (about 158 m² in area) the proposed development will consist of Semi-Detached Building A with three 3-bedroom units. On Part 2 (about 159 m²) will be Semi-Detached B with two 1-bedroom units and one 2-bedroom unit. The current 2-unit dwelling will be located on Part 3 (about 174 m²) and shall remain. This memo outlines the proposed servicing and connection points and addresses available capacities and/or constraints.

2.0 WATER SERVICING

2.1 WATER SUPPLY FOR FIREFIGHTING

There is an existing municipal Class AA fire hydrant located in the Scott Street ROW directly in front of the subject property. It is less than 15 m unobstructed distance to all proposed lower floor entrances which is less than the maximum 90 m required by the Ontario Building Code (OBC) for Part 3 buildings. However, the proposed building is not Part 3 building; therefore, either way, a private onsite hydrant is not required.

When calculating the required fire flow on private property in urban areas, the OBC method is to be used. Using the OBC method, the required fire flow is calculated to be 2,700 L/min (45 L/s). Refer to calculations in Appendix A.

The boundary conditions in the existing 200 mm Scott Street municipal watermain provided by the City of Ottawa at the subject property indicate a hydraulic grade line (HGL) of 109.7 m for the 45 L/s fire flow. Refer to Appendix A. This HGL calculates to 464 kPa (67 psi). Since the pressure is above the OBC's minimum required pressure of 140 kPa (20 psi), there is an adequate water supply for firefighting from the existing municipal water distribution system.

The aggregate flow of all contributing fire hydrants within 150 m of the building shall not be less than the required fire flow. The existing municipal Class AA fire hydrant discussed above can contribute 5,700 L/min (95 L/s), which is greater than the required fire flow of 2,700 L/min (45 L/s).

2.2 DOMESTIC WATER SUPPLY

Using the City of Ottawa Water Design Guidelines for consumption rates (for 1-bedroom and 3-bedroom apartment units) and peaking factors, the average daily demand for the 6-unit development is calculated to be 0.05 L/s, the maximum daily demand is calculated to be 0.5 L/s and the maximum hourly demand is calculated to be 0.7 L/s. Refer to calculations in Appendix A.

The boundary conditions in the 200 mm Scott Street municipal watermain provided by the City of Ottawa at the subject property indicate a minimum HGL of 109.0 m and a maximum HGL of 114.7 m. Refer to Appendix A. Based on these boundary conditions, the water pressure at the water meters is calculated to vary between 460 kPa (67 psi) and 516 kPa (75 psi). This is an acceptable range for the proposed development.

A 38 mm water service is proposed for proposed Semi-Detached Building A and 25 mm for Semi-Detached Building B. Refer to calculations in Appendix A.

3.0 SANITARY SERVICING

Using the City of Ottawa Sewer Design Guidelines for the flow rates (for 1-bedroom and 3-bedroom apartment units) and peaking factors, the post-development sanitary flow rate for Semi-Detached Building

A is 0.10 L/s and 0.07 L/s Semi-Detached Building B, for a total of 0.17 L/s for the 6-unit development. A 135 mm sanitary sewer service connection at a 1% slope (21.54 L/s capacity) is proposed to service each semi-detached building. The proposed sanitary sewer services will connect to the existing 250 mm Scott Street municipal sanitary sewer, which at 0.55% slope has a capacity of 44.1 L/s. Refer to calculations in Appendix B. The post development 0.17 L/s increase in flow is expected to have an acceptable impact on the Scott Street municipal sanitary sewer.

4.0 STORMWATER MANAGEMENT

Using the City of Ottawa's Quick Stormwater Management Tool, a storage volume of 3,785 L (3.785 m³) and a maximum allowable release rate of 1.35 L/s for roof top storage are required. The Rational and Modified Rational Methods are used to calculate the post-development flow rates and corresponding storage volumes. Refer to Appendix C.

Each of three roof drains are to be adjustable flow control type roof which will restrict the flow of stormwater and cause it to pond on the roof. Specifically, roof drains are to be Watts RD-100-A-ADJ with Watts Adjustable Accutrol Weir in the fully closed position, each releasing 0.32 L/s (5 USgpm).

	100-Year Event
Quick Stormwater Management Tool Maximum Release Rate Requirement	1.35 L/s
Maximum Release Rate	0.95 L/s
Maximum Depth at Roof Drain	147 mm
Quick Stormwater Management Tool Storage Volume Requirement	3.875 m ³
Maximum Volume Stored	4.77 m ³

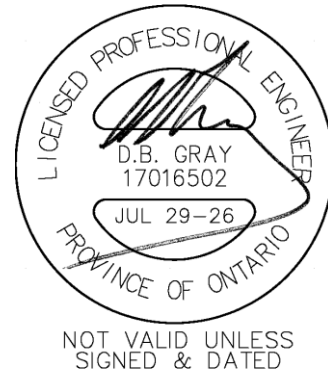
The maximum post-development release rate from the three roof drains during the 100-year event for the is calculated to be 0.95 L/s, which is about 30% less than the maximum allowable release rate calculated by the City of Ottawa's Quick Stormwater Management Tool. To achieve the maximum post-development release rate, a maximum storage volume of 4.77 m³ is required and provided during the 100-year event, which is about 26% greater than the storage volume required as calculated by the City of Ottawa's Quick Stormwater Management Tool.

5.0 CONCLUSION

1. A private onsite hydrant is not required.
2. There is an adequate water supply for firefighting from the existing municipal water distribution system.
3. The existing municipal Class AA fire hydrant can contribute 5,700 L/min (95 L/s), which is greater than the required fire flow of 2,700 L/min (45 L/s).
4. The water pressure is calculated to vary between 460 kPa (67 psi) and 516 kPa (75 psi); an acceptable range for the proposed development
5. The post development increase in sanitary flow is 0.17 L/s and is expected to have an acceptable impact on the Scott Street municipal sanitary sewer.

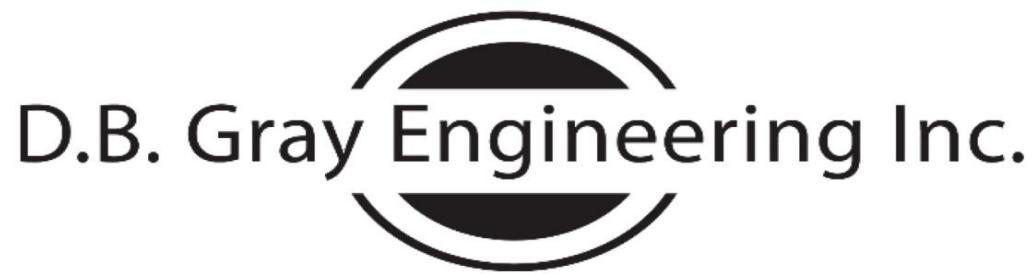
6. During the 100-year event the maximum post-development release rate from the proposed flow control roof is calculated to be about 30% less than the maximum allowable release rate calculated by the City of Ottawa's Quick Stormwater Management Tool. To achieve this release rate, a maximum storage volume of 4.77 m³ is required and provided, which is about 26% greater than the storage volume required as calculated by the City of Ottawa's Quick Stormwater Management Tool.

Prepared by D.B. Gray Engineering Inc.



APPENDIX A

WATER SERVICING



Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

700 Long Point Circle
Ottawa, Ontario K1T 4E9

613-425-8044
d.gray@dbgrayengineering.com

June 19, 2026

12 Ross Ave
Proposed Semi
Ottawa, Ontario

FIRE FLOW CALCULATIONS OBC Method

Q = Required water supply in litres
= KVS_{Total}

K = Water supply coefficient as per OBC A-3.2.5.7. Table 1
= 23 Group C Occupancy, Building is of combustible construction
with fire separations without fire resistance ratings.

V = Building volume in cubic meters

	Floor Area (sq.m)	Height (m)	Volume (cu.m)
3rd Floor:	121	3.2	387
2nd Floor:	140	3.1	434
1st Floor:	137	3.1	425
Basement	137	2.75	377
			1,623

S_{Total} = Total of spatial coefficients from exposure distances
= $1.0 + S_{Side\ 1} + S_{Side\ 2} + S_{Side\ 3} + S_{Side\ 4}$

	Spatial Coefficient	Exposure Distance (m)	
$S_{Side\ 1}$	0.0	15	(to Scott St centerline)
$S_{Side\ 2}$	0.5	4.9	(to West property line)
$S_{Side\ 3}$	0.5	0.8	(to South Property line)
$S_{Side\ 4}$	0.0	12.5	(to Ross Ave centerline)
S_{Total}	2.0	Need not exceed 2.0	

Q = 74,642 L
= 2,700 L/min as per OBC A-3.2.5.7. Table 2
= 45 L/s

45 L/s Fire Flow HGL: 109.7 m

Grade Elevation at Fire Hydrant: 62.4 m

Static Pressure at Fire Hydrant: 47.3 m 464 kPa 67 psi

Existing 2-Storey Dwelling

Ottawa, Ontario

FIRE FLOW CALCULATIONS

OBC Method

Q = Required water supply in litres
= KVS_{Total}

K = Water supply coefficient as per OBC A-3.2.5.7. Table 1
= 23 Group C Occupancy, Building is of combustible construction
with fire separations without fire resistance ratings.

V = Building volume in cubic meters

	Floor Area (sq.m)	Height (m)	Volume (cu.m)
2nd Floor:	73	2.4	175
1st Floor:	73	2.7	197
Basement	67	2.4	161
			533

S_{Total} = Total of spatial coefficients from exposure distances
= $1.0 + S_{Side\ 1} + S_{Side\ 2} + S_{Side\ 3} + S_{Side\ 4}$

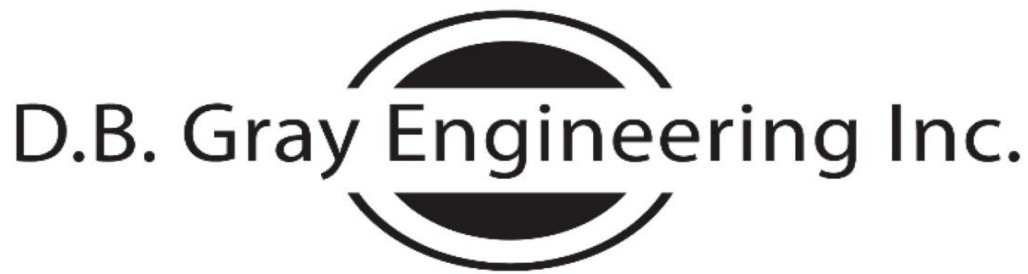
	Spatial Coefficient	Exposure Distance (m)	
$S_{Side\ 1}$	0.5	0.3	(to South Property line)
$S_{Side\ 2}$	0.5	3.8	(to West property line)
$S_{Side\ 3}$	0.5	1.2	(to North Property line)
$S_{Side\ 4}$	0.0	16	(to Ross Ave centerline)
S_{Total}	2.5	Need not exceed 2.0	

Q = 24,523 L
= 2,700 L/min as per OBC A-3.2.5.7. Table 2
= 45 L/s

45 L/s Fire Flow HGL: 109.7 m

Grade Elevation at Fire Hydrant: 62.4 m

Static Pressure at Fire Hydrant: 47.3 m 464 kPa 67 psi



Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

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June 19, 2026

12 Ross Avenue
Residential Development
Ottawa, Ontario

WATER DEMAND CALCULATIONS

	Number of Units	Persons per Unit	Population
Single Family:	0	3.4	0
Townhouse:	0	2.7	0
Duplex:	0	2.3	0
1 Bedroom:	2	1.4	2.8
2 Bedroom:	0	2.1	0
3 Bedroom:	4	3.1	12.4
Average:	0	1.8	0
Total:	6		15.2

Residential Average Daily Demand: 280 L/capita/day
3.0 L/min 0.05 L/s 0.8 USgpm

Residential Maximum Daily Demand: 9.5 (Peaking factor for a population of 19.8 interpolated from MOE Design Guidelines for Drinking Water Systems Table 3-3)
28.1 L/min 0.5 L/s 7.4 USgpm

Residential Maximum Hourly Demand: 14.3 (Peaking factor for a population of 19.8 interpolated from MOE Design Guidelines for Drinking Water Systems Table 3-3)
42.3 L/min 0.7 L/s 11.2 USgpm

Elevation of Water Meter: 62.06 m
Basement Floor Elevation: 61.16 m

Minimum HGL: 109.0 m
Static Pressure at Water Meter: 46.9 m 460 kPa 67 psi

Maximum HGL: 114.7 m
Static Pressure at Water Meter: 52.6 m 516 kPa 75 psi



Douglas Gray <d.gray@dbgrayengineering.com>

FW: 12 Ross Ave - Civil Requirements

1 message

Abdulkarim, Yasser <yasser.abdulkarim@ottawa.ca>
To: Laurent Brosseau <l.brosseau@dbgrayengineering.com>
Cc: Douglas Gray <d.gray@dbgrayengineering.com>

Wed, Jun 17, 2026 at 12:43 PM

Hi Laurent,

The following are boundary conditions, HGL, for hydraulic analysis at [12 Ross Avenue](#) (zone 1W) assumed to be connected via the 203 mm watermain on Scott Street (see attached PDF for location).

Minimum HGL = 109.0 m

Maximum HGL = 114.7 m

Max Day + Fire Flow (45.0 L/s) = 109.7 m

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

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

Regards,

Yasser Abdulkarim, EIT

Project Manager | Gestionnaire de projet

Development Review All Wards (DRAW) | Direction de l'examen des projets d'aménagement - Tous les quartiers (EPATQ)

Planning, Development and Building Services Department (PDBS) | 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](#)

613.580.2424 ext.12848 , yasser.abdulkarim@ottawa.ca

From: Laurent Brosseau <l.brosseau@dbgrayengineering.com>

Sent: June 01, 2026 4:16 PM

To: Abdulkarim, Yasser <yasser.abdulkarim@ottawa.ca>

Cc: Douglas Gray <d.gray@dbgrayengineering.com>

Subject: Re: 12 Ross Ave - Civil Requirements

CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.

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Hi Yasser,

The attachments glitched, see attached now.

Laurent Brosseau

D.B. Gray Engineering Inc.

[700 Long Point Circle](#)

Ottawa, Ontario **K1T 4E9**

613-425-8044

On Mon, Jun 1, 2026 at 4:10 PM Laurent Brosseau <l.brosseau@dbgrayengineering.com> wrote:

Hi Yasser,

Please provide the boundary conditions for this project. We have calculated the following expected demands.

Average daily demand: 0.1 L/s.

Maximum daily demand: 0.6 L/s.

Maximum hourly daily demand: 0.9 L/s

Fire Flow demand: 45 L/s

Thank you

Laurent Brosseau

D.B. Gray Engineering Inc.
700 Long Point Circle
Ottawa, Ontario K1T 4E9
613-425-8044

On Fri, May 22, 2026 at 8:58 AM Abdulkarim, Yasser <yasser.abdulkarim@ottawa.ca> wrote:

Hi Dough,

Following up on our meeting discussion. Water boundary condition request will be required including fire flow as typical. Please forward request to myself.

Regards,

Yasser Abdulkarim, EIT

Project Manager | Gestionnaire de projet

Development Review All Wards (DRAW) | Direction de l'examen des projets d'aménagement - Tous les quartiers (EPATQ)

Planning, Development and Building Services Department (PDBS) | 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](#)

613.580.2424 ext.12848 , yasser.abdulkarim@ottawa.ca

Classified as City of Ottawa - Internal / Ville d'Ottawa - classé interne

From: Laurent Brosseau <l.brosseau@dbgrayengineering.com>

Sent: May 19, 2026 10:51 AM

To: Abdulkarim, Yasser <yasser.abdulkarim@ottawa.ca>

Cc: Douglas Gray <d.gray@dbgrayengineering.com>; James Colizza <JC@colizzabruni.com>; Connor da Costa <cd@citymakerhomes.ca>; Evan Kettler <ek@colizzabruni.com>

Subject: Re: [12 Ross Ave](#) - Civil Requirements

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Hi Yasser,

Thanks for the invite. It looks like this is for 1:30-2:30 am. I suspect this is supposed to be pm?

Thank you

Laurent Brosseau

D.B. Gray Engineering Inc.
700 Long Point Circle
Ottawa, Ontario K1T 4E9
613-425-8044

On Tue, May 19, 2026 at 10:45 AM Abdulkarim, Yasser <yasser.abdulkarim@ottawa.ca> wrote:

Microsoft Teams meeting

Join: <https://teams.microsoft.com/meet/235195950879977?p=0BtNOeck0MUP7o2V2o>

Meeting ID: 235 195 950 879 977

Passcode: U7rv7mF7

[Need help?](#) | [System reference](#)

Dial in by phone

+1 613-319-1080,,179837653# Canada, Ottawa

[Find a local number](#)

Phone conference ID: 179 837 653#

Join on a video conferencing device

Tenant key: teams@vc.ottawa.ca

Video ID: 113 446 685 8

[More info](#)

For organizers: [Meeting options](#) | [Reset dial-in PIN](#)

From: Laurent Brosseau <l.brosseau@dbgrayengineering.com>

Sent: May 19, 2026 10:29 AM

To: Abdulkarim, Yasser <yasser.abdulkarim@ottawa.ca>

Cc: Douglas Gray <d.gray@dbgrayengineering.com>; James Colizza <JC@colizzabruni.com>; Connor da Costa <cd@citymakerhomes.ca>; Evan Kettler <ek@colizzabruni.com>

Subject: 12 Ross Ave - Civil Requirements

CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.

ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.

Hi Yasser,

We would like to meet to confirm the civil requirements for this project. We are currently available Wednesday from 1 to 3 pm and Thursday morning.

Please let us know your availability.

Thank you

Laurent Brosseau

D.B. Gray Engineering Inc.

[700 Long Point Circle](#)

Ottawa, Ontario [K1T 4E9](#)

613-425-8044

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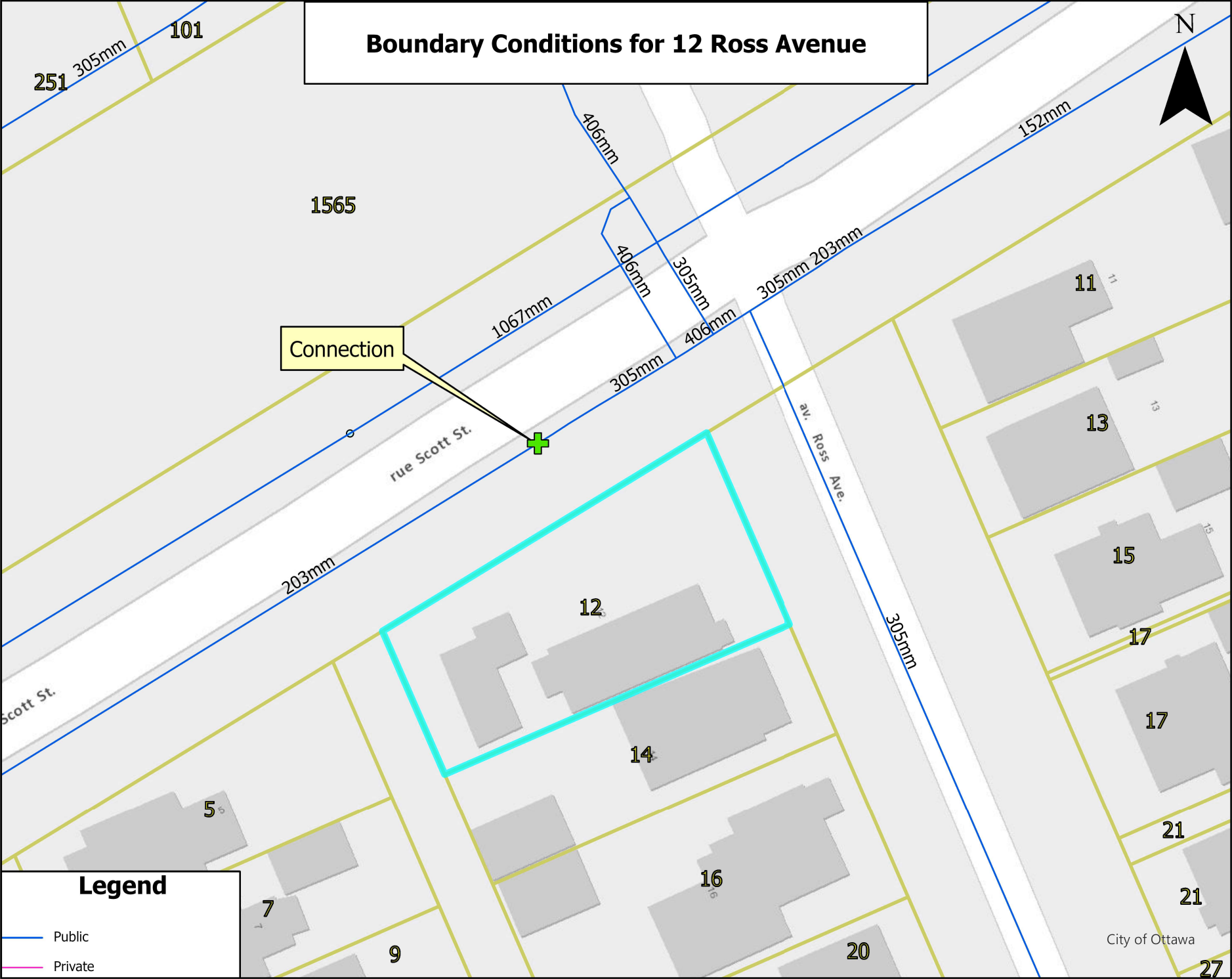
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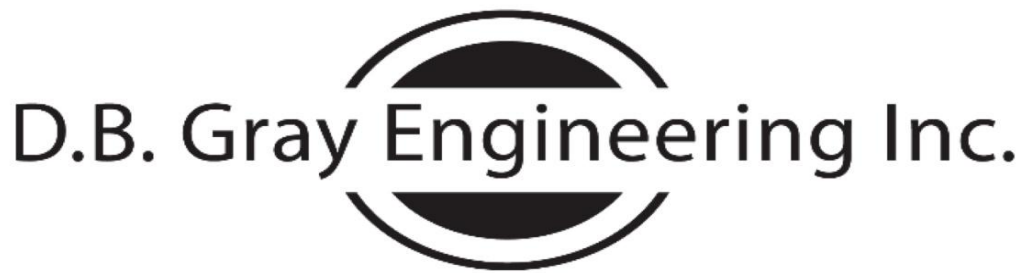
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12 Ross Avenue June 2026.pdf
1106K





Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

700 Long Point Circle
Ottawa, Ontario K1T 4E9

613-425-8044
d.gray@dbgrayengineering.com

June 4, 2026

12 Ross Ave

Ottawa, Ontario

OBC 7.6.3.2. PRIVATE USE HYDRAULIC LOAD

3-Unit Semi-Detached A

	Number	Fixture	
		Units	Combined
Bathroom group with 6 LPF flush tank ⁽³⁾ :	6	3.6	21.6
Clothes washer, 3.5 kg:	3	1.4	4.2
Hose bibb, ½":	2	2.5	5
Sink, kitchen, domestic, 8.3 L/min or less:	3	1.4	4.2
Total:			35

Nominal Size as per OBC Table 7.6.3.4.: 1¼ in

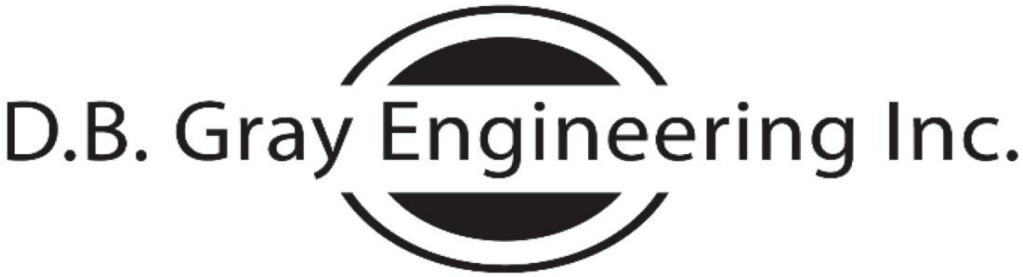
3-Unit Semi-Detached B

	Number	Fixture	
		Units	Combined
Bathroom group with 6 LPF flush tank ⁽³⁾ :	4	3.6	14.4
Clothes washer, 3.5 kg:	3	1.4	4.2
Hose bibb, ½":	2	2.5	5
Sink, kitchen, domestic, 8.3 L/min or less:	3	1.4	4.2
Total:			27.8

Nominal Size as per OBC Table 7.6.3.4.: 1 in

APPENDIX B

SANITARY SERVICING



SANITARY SEWER CALCULATIC

Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains
700 Long Point Circle
Ottawa, Ontario K1T 4E9

613-425-8044
d.gray@dbgrayengineering.com

Project: 12 Ross Ave
Ottawa, Ontario
Date: July 28, 2026

Residential Average Daily Flow: 280 L/capita/day
Commercial Average Daily Flow: 28,000 L/ha/day
Institutional Average Daily Flow: 28,000 L/ha/day
Light Industrial Average Daily Flow: 35,000 L/ha/day
Heavy Industrial Average Daily Flow: 55,000 L/ha/day

Infiltration Allowance: 0.33 L/s/ha

Residential Peaking Factor: Harmon Formula
Harmon Formula Correction Factor: 0.8
Commercial Peaking Factor: 1.5
Institutional Peaking Factor: 1.5
Industrial Peaking Factor: Ministry of the Environment

Manning's Roughness Coefficient: 0.013

Location		Residential													Commercial				Infiltration			Q Total Flow Rate (L/s)	Sewer Data							
		Individual									Cumulative				Individual	Cumulative			Individual	Cumulative			Length (m)	Nominal Diameter (mm)	Actual Diameter (mm)	Slope (%)	Velocity (m/s)	Q _{FULL} Capacity (L/s)	Q / Q _{FULL}	
		Single Family	Semi Detached	Duplex	Apartment (1 Bed)	Apartment (2 Bed)	Apartment (3 Bed)	Apartment (Average)	Area (ha)	Population	Area (ha)	Population	Peaking Factor	Flow Rate (L/s)	Area (ha)	Area (ha)	Peaking Factor	Flow Rate (L/s)	Area (ha)	Area (ha)	Flow Rate (L/s)									
		ppu = 3.4	ppu = 2.7	ppu = 2.3	ppu = 1.4	ppu = 2.1	ppu = 3.1	ppu = 1.8																						
Building A	250 SAN Scott St						3			9.3		9.3	3.2	0.10					0.0158	0.0158	0.01	0.10		135	135	1.00	0.80	11.50	0.9%	
Building B	250 SAN Scott St				2		1			5.9		5.9	3.2	0.06					0.0159	0.0159	0.01	0.07		135	135	1.00	0.80	11.50	0.6%	
																					TOTAL	0.17								
																					EXISTING MUNICIPAL SANITARY SEWER SCOTT ST									
																								250	250	0.55	0.90	44.10		

APPENDIX C

STORMWATER MANAGEMENT

Proposed Site Details

Lot Area (m²)

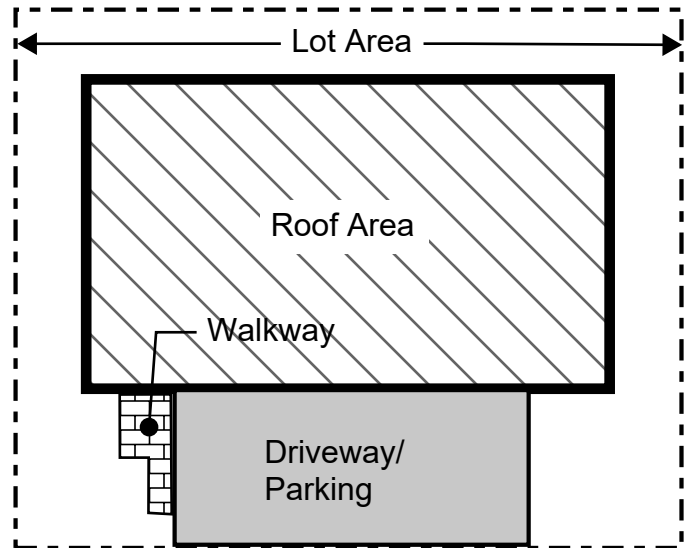
The lot area is calculated based on property boundaries shown on GeoOttawa or a Legal Plan.
GeoOttawa: <https://maps.ottawa.ca/geooottawa/>

Roof Area (m²)	Driveway/Parking Area (m²)	Walkway Area (m²)
--------------------------------------	--	---

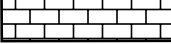
Driveway/Parking and Walkway areas include all hard landscaping, defined as non-vegetative surfaces such as brick, pavers, rock, stone, concrete, tile, and wood. The roof area of a site is calculated by measuring the plan view area of all roofs on the property and is equivalent to the area of the building footprint.

Is this site subject to on-site stormwater management?

If "Yes", proceed to the On-Site Stormwater Management Requirements section below.



Legend:

	Roof Area
	Driveway/Parking Area
	Walkway Area
	Lot Area

On-Site Stormwater Management Requirements

On-site Stormwater Storage Volume Requirement (L)	Overall Site Release Rate Requirement (L/s)
--	--

The required stormwater storage and discharge methods must be clearly identified on the submitted Site Grading and Servicing Plan, and match the requirements of this tool and demonstrate how the storage and site release rate requirements are being achieved.

**Underground Storage
Configuration Option:**

**Rooftop Storage
Configuration Option:**

*Designers are required to demonstrate how storage volume is achieved on their submitted plan. A SWM brief shall be provided if other measures, such as at-grade solutions, infiltration measures or a combination thereof, are proposed.

12 Ross Avenue
Ottawa, Ontario

100-YEAR EVENT				
Drainage Area	Quick Stormwater Management Tool Release Rate Requirement (L/s)	Maximum Release Rate (L/s)	Quick Stormwater Management Tool Volume Requirement (cu.m)	Maximum Volume Stored (cu.m)
AREA I (Roof)	-	0.32	-	2.05
AREA II (Terrace Roof)	-	0.32	-	0.36
AREA III (Roof A)	-	0.32	-	2.36
TOTAL	1.35	0.95	3.785	4.77

STORMWATER MANAGEMENT CALCULATIONS

Modified Rational Method

100-YEAR EVENT

DRAINAGE AREA I (Roof B)

(100-YEAR EVENT)

Total Catchment Area:	56	sq.m	C	1.00
No. of Roof Drains:	1			
Adjustable Wier Opening:	0	Fully Closed		
Depth at Roof Drains:	147	mm		
Maximum Release Rate:	0.32	L/s	Pond Area:	42 sq.m
			Maximum Volume Stored:	2.05 cu.m
			Maximum Volume Required:	2.05 cu.m

Time (min)	i (mm/hr)	2.78AiC (L/s)	Release Rate (L/s)	Stored Rate (L/s)	Required Storage Volume (cu.m)
10	179	2.78	0.32	2.46	1.48
15	143	2.22	0.32	1.91	1.72
20	120	1.87	0.32	1.55	1.86
25	104	1.62	0.32	1.30	1.95
30	92	1.43	0.32	1.11	2.01
35	83	1.29	0.32	0.97	2.04
40	75	1.17	0.32	0.85	2.05
45	69	1.07	0.32	0.76	2.05
50	64	1.00	0.32	0.68	2.04
55	60	0.93	0.32	0.61	2.02
60	56	0.87	0.32	0.55	2.00
65	53	0.82	0.32	0.50	1.97
70	50	0.78	0.32	0.46	1.93
75	47	0.74	0.32	0.42	1.89
80	45	0.70	0.32	0.38	1.85
85	43	0.67	0.32	0.35	1.80
90	41	0.64	0.32	0.32	1.75
95	39	0.61	0.32	0.30	1.70
100	38	0.59	0.32	0.27	1.65
105	36	0.57	0.32	0.25	1.59
110	35	0.55	0.32	0.23	1.54
115	34	0.53	0.32	0.21	1.48
120	33	0.51	0.32	0.20	1.42
125	32	0.50	0.32	0.18	1.35
130	31	0.48	0.32	0.17	1.29
135	30	0.47	0.32	0.15	1.23
140	29	0.45	0.32	0.14	1.16
145	28	0.44	0.32	0.13	1.10
150	28	0.43	0.32	0.11	1.03
180	24	0.37	0.32	0.06	0.61
210	21	0.33	0.32	0.01	0.17
240	19	0.30	0.30	0.00	0.00
270	17	0.27	0.27	0.00	0.00
300	16	0.25	0.25	0.00	0.00

DRAINAGE AREA II (Terrace Roof)

(100-YEAR EVENT)

Total Catchment Area:			18	sq.m	C 1.00
No. of Roof Drains:	1				
Adjustable Wier Opening:	0	Fully Closed			
Depth at Roof Drains:	113	mm			
Maximum Release Rate:	0.32	L/s	Pond Area:	10	sq.m
			Maximum Volume Stored:	0.36	cu.m
			Maximum Volume Required:	0.36	cu.m

Time (min)	i (mm/hr)	2.78AiC (L/s)	Release Rate (L/s)	Stored Rate (L/s)	Required Storage Volume (cu.m)
10	179	0.89	0.32	0.58	0.35
15	143	0.72	0.32	0.40	0.36
20	120	0.60	0.32	0.28	0.34
25	104	0.52	0.32	0.20	0.31
30	92	0.46	0.32	0.14	0.26
35	83	0.41	0.32	0.10	0.21
40	75	0.38	0.32	0.06	0.15
45	69	0.35	0.32	0.03	0.08
50	64	0.32	0.32	0.00	0.01
55	60	0.30	0.30	0.00	0.00
60	56	0.28	0.28	0.00	0.00
65	53	0.26	0.26	0.00	0.00
70	50	0.25	0.25	0.00	0.00
75	47	0.24	0.24	0.00	0.00
80	45	0.23	0.23	0.00	0.00
85	43	0.21	0.21	0.00	0.00
90	41	0.21	0.21	0.00	0.00
95	39	0.20	0.20	0.00	0.00
100	38	0.19	0.19	0.00	0.00
105	36	0.18	0.18	0.00	0.00
110	35	0.18	0.18	0.00	0.00
115	34	0.17	0.17	0.00	0.00
120	33	0.16	0.16	0.00	0.00
125	32	0.16	0.16	0.00	0.00
130	31	0.15	0.15	0.00	0.00
135	30	0.15	0.15	0.00	0.00
140	29	0.15	0.15	0.00	0.00
145	28	0.14	0.14	0.00	0.00
150	28	0.14	0.14	0.00	0.00
180	24	0.12	0.12	0.00	0.00
210	21	0.11	0.11	0.00	0.00
240	19	0.10	0.10	0.00	0.00
270	17	0.09	0.09	0.00	0.00
300	16	0.08	0.08	0.00	0.00

DRAINAGE AREA III (Roof A)

(100-YEAR EVENT)

Total Catchment Area:			62	sq.m	C 1.00
No. of Roof Drains:	1				
Adjustable Wier Opening:	0	Fully Closed			
Depth at Roof Drains:	143	mm			
Maximum Release Rate:	0.32	L/s	Pond Area:	49	sq.m
			Maximum Volume Stored:	2.36	cu.m
			Maximum Volume Required:	2.36	cu.m

Time (min)	i (mm/hr)	2.78AiC (L/s)	Release Rate (L/s)	Stored Rate (L/s)	Required Storage Volume (cu.m)
10	179	3.08	0.32	2.76	1.66
15	143	2.46	0.32	2.15	1.93
20	120	2.07	0.32	1.75	2.10
25	104	1.79	0.32	1.47	2.21
30	92	1.58	0.32	1.27	2.28
35	83	1.42	0.32	1.11	2.33
40	75	1.30	0.32	0.98	2.35
45	69	1.19	0.32	0.87	2.36
50	64	1.10	0.32	0.79	2.36
55	60	1.03	0.32	0.71	2.35
60	56	0.96	0.32	0.65	2.33
65	53	0.91	0.32	0.59	2.31
70	50	0.86	0.32	0.54	2.28
75	47	0.81	0.32	0.50	2.25
80	45	0.78	0.32	0.46	2.21
85	43	0.74	0.32	0.42	2.17
90	41	0.71	0.32	0.39	2.12
95	39	0.68	0.32	0.36	2.08
100	38	0.65	0.32	0.34	2.03
105	36	0.63	0.32	0.31	1.98
110	35	0.61	0.32	0.29	1.92
115	34	0.59	0.32	0.27	1.87
120	33	0.57	0.32	0.25	1.81
125	32	0.55	0.32	0.23	1.75
130	31	0.53	0.32	0.22	1.69
135	30	0.52	0.32	0.20	1.63
140	29	0.50	0.32	0.19	1.57
145	28	0.49	0.32	0.17	1.51
150	28	0.48	0.32	0.16	1.44
180	24	0.41	0.32	0.10	1.04
210	21	0.36	0.32	0.05	0.62
240	19	0.33	0.32	0.01	0.17
270	17	0.30	0.30	0.00	0.00
300	16	0.27	0.27	0.00	0.00

APPENDIX D

SITE PLAN & ROOF PLAN

SCOTT STREET

EXISTING BICYCLE LANE

ABUTTING LOT CORNER
SIDE YARD SETBACK IS
1.48M PER LOT 833
REGISTERED PLAN M-52ABUTTING LOT CORNER
SIDE YARD SETBACK IS
2.07M PER LOT 833
REGISTERED PLAN M-52

EXISTING BICYCLE LANE

G. METERS

BUS STOP

14' - 9" [4.50]

EXISTING BENCH

LINE OF CANOPY ABOVE

SUNSHEN GARDEN

8' - 8" [2.64]

UNIT 2

VERANDA

WASTEBIN STORAGE UNDER VERANDA

9' - 10" [3.00]

UNIT 1

1' - 1 1/2" [0.34]

PROBABLE U/G STORM

Ø 0.4

17' - 0 1/2" [5.20]

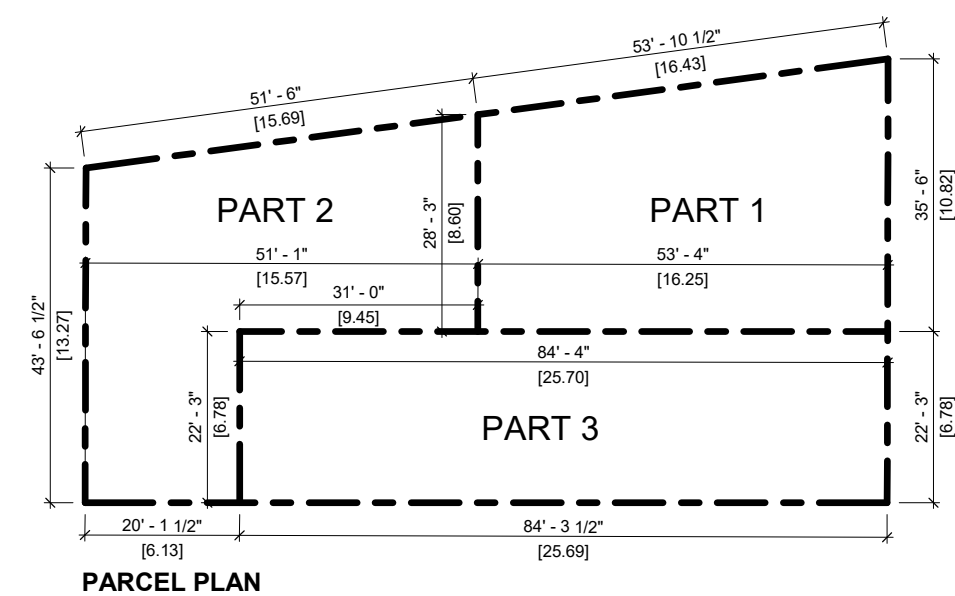
PARKING 5.2M X 2.6M

U.P.

ROSS AVENUE

PART 2
PROPOSED SEMI B
UNITS 4, 5, & 6
3 STOREYS
F.F. = +/- 63.91PART 1
PROPOSED SEMI A
UNITS 1, 2, & 3
3 STOREYS
F.F. = +/- 63.91PART 3
12 ROSS
EXISTING 2-STOREY
DWELLING
F.F. = 63.581 SITE PLAN
SP1 1/8" = 1'-0"

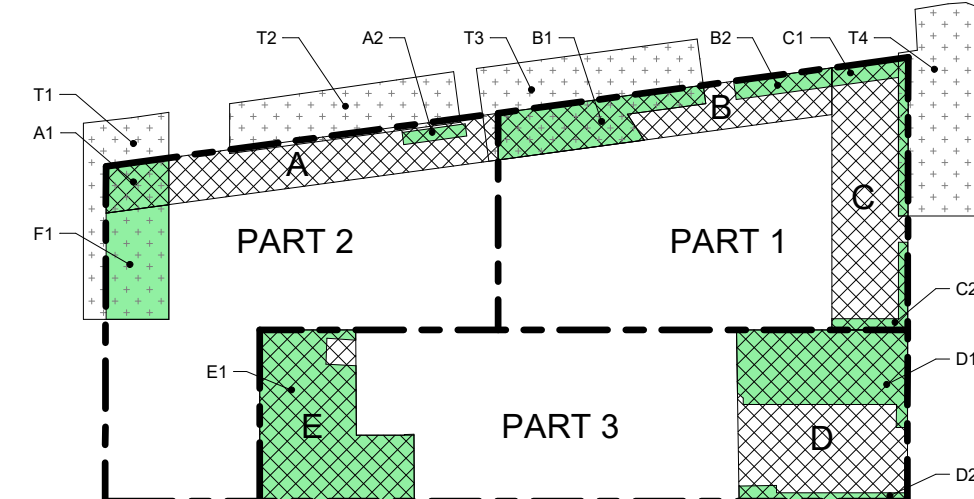
DEVELOPMENT INFO



PROPERTY PARCELS	
TOTAL SITE AREA	491.1 SQ.M
PART 1 AREA	157.9 SQ.M
PART 2 AREA	158.9 SQ.M
PART 1 + 2 AREA	316.8 SQ.M
PART 3 AREA	174.3 SQ.M

TREE PLANTING				
REGION	AREA	SOIL VOLUME	TREE SIZE	QUANTITY
T1	27.1 SQ.M	54.2 M³	LARGE	1
T2	18.1 SQ.M	36.2 M³	LARGE	1
T3	29.5 SQ.M	59 M³	LARGE	1
T4	30.3 SQ.M	60.6 M³	MEDIUM	2

* SOIL VOLUME BASED ON 2M DEPTH AS PER GEOTECHNICAL MEMO



SOFT LANDSCAPING PLAN

SOFT LANDSCAPING AREAS	
REGION	AREA
A	28.9 SQ.M
A1	4.6 SQ.M
A2	1.2 SQ.M
B	24.6 SQ.M
B1	12.2 SQ.M
B2	2.8 SQ.M
C	32 SQ.M
C1	4.4 SQ.M
C2	2.5 SQ.M
D	45.6 SQ.M
D1	20.3 SQ.M
D2	2.6 SQ.M
E	31.9 SQ.M
E1	30.8 SQ.M
F1	10.9 SQ.M

UNIT TYPE & AREAS	
SEMI DETACHED A	AREA
UNIT 1 - 3BD.	84.51 SQ.M / 909.65 SQFT
UNIT 2 - 3BD.	85.82 SQ.M / 923.76 SQFT
UNIT 3 - 3BD.	129.60 SQ.M / 1395.00 SQFT
SEMI DETACHED B	AREA
UNIT 4 - 1BD.	51.95 SQ.M / 559.18 SQFT
UNIT 5 - 1BD.	52.96 SQ.M / 570.05 SQFT
UNIT 6 - 3BD.	106.09 SQ.M / 1141.93 SQFT
GROSS FLOOR AREA (BUILDABLE)	
AREA	
ABOVE GRADE	372.15 SQ.M / 4005.78 SQFT
BELOW GRADE	138.78 SQ.M / 1493.81 SQFT
PARKING	
QUANTITY	
NEW CONSTRUCTION	3
EXISTING DUPLEX	1

* UNIT AREAS MEASURED TO OUTSIDE FACE OF FRAMING AND CENTER OF PARTI WALLS

GENERAL NOTES
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY ERRORS AND OMISSIONS TO THE ARCHITECT. ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS. DO NOT SCALE DRAWINGS. THESE DRAWINGS MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF COLIZZA BRUNI ARCHITECTURE INCORPORATED. COPYRIGHT RESERVED.

NO.	REV DATE	REV DESCRIPTION
01	26/04/07	FOR CLIENT REVIEW
03	26/04/15	FOR COORDINATION
04	26/05/04	FOR COORDINATION
05	26/05/14	FOR COORDINATION
06	26/05/27	FOR COORDINATION
07	26/06/04	FOR COORDINATION

GENERAL NOTES:
1. OUTLINE OF EXISTING GARAGE & CANOPY TO BE REMOVED.
2. RESERVED.
3. PROPOSED 3M WIDE DRIVEWAY ON CITY RIGHT-OF-WAY.
4. EXISTING GUY WIRE.
5. PARKING SPACE - EXISTING DUPLEX.
6. RESERVED.
7. LINE OF CANOPY ABOVE.
8. LINE OF LANDING ABOVE.
9. LINE OF VOLUME ABOVE - VOLUME IS 4' (1.22M) TALLER THAN REST OF BUILDING.
10. EXISTING HEDGE TO BE REPLACED - MAX HEIGHT 1M.
11. LINE OF CANTILEVERED VOLUME ABOVE.LEGEND:
EXISTING ROADWAY
EXISTING WALKING PATH
EXISTING BICYCLE PATH
EXISTING TWSI
TURF
EXISTING STRUCTURE
EXISTING SIGN
SETBACK LINE
PROPERTY LINE
CITY RIGHT-OF-WAY (ASPHALT)
EXISTING TREE
PROPOSED TREE
EXISTING HEDGE
PROPOSED PLANTING BEDCOLIZZA BRUNI
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EK
DATE
26/05/27
PROJECT NO.
010-25

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