522 Cambridge Street South, Ottawa, ON

Client:
522 Cambridge Ltd.

Project Number:
OTT-25015974-A0

Application Stage:
Site Plan Control

EXP Services Inc.
100-2650 Queensview Drive
Ottawa, ON K2B 8H6

Date Submitted:

April 30, 2026

522 Cambridge Street South, Ottawa, ON

Type of Document:
Stormwater Management & Site Servicing Report

Client:
522 Cambridge Ltd.

Project Number:
OTT-25015974-A0

Application Stage:
Site Plan Control

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Date Submitted:

April 30, 2026

Legal Notification

This report was prepared by **EXP** Services Inc. for the account of the Client (522 Cambridge Ltd.). Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. **EXP** Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this project.

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List of Appendices

1 Introduction

EXP Services Inc. (EXP) was retained by 522 Cambridge Ltd. to provide site grading, servicing and Stormwater Management report for the proposed four (4) storey, nineteen (19) unit residential apartment building located at 522 Cambridge Street South in the City of Ottawa.

The property is approximately 0.06 hectare in area and is bound by Cambridge Street South to the east, existing residential development to the north, south, and west of the project site. Refer to **Figure A1** in **Appendix A** for the site location.

This Stormwater Management & Site Servicing Report will address the Servicing requirements for the proposed development including the domestic and fire water, sanitary and storm servicing. The report will also cover the stormwater management requirements and the proposed methods to meet those requirements.

2 Existing Conditions

The subject property is currently occupied by a one (1) storey single family residential unit. Under existing conditions, the site is serviced by existing 450 mm diameter combined sewer conveying sanitary flows and 203 mm diameter watermain providing domestic water supply. The topography of the site slopes from the rear towards Cambridge Street South which drains to the north.

- Existing municipal infrastructure within the Cambridge Street South right of way:
    - Combined Sewer:
        - 450 mm diameter combined sewer as noted on the As-built drawing provided by the City of Ottawa (See **Appendix F**).
    - Water
        - 203 mm diameter watermain
    - Other
        - Gas
        - Rogers
        - Hydro

3 References

Various documents were referred to in preparing the current report including:

Sewer Design Guidelines, Fourth Edition, Document SDG004, December 2025, City of Ottawa.

Ottawa Design Guidelines – Water Distribution, December 2025, City of Ottawa.

Stormwater Management Planning and Design Manual, Ontario Ministry of the Environment and Climate Change, March 2003 (SMPDM).

Design Guidelines for Drinking-Water Systems, Ontario Ministry of the Environment and Climate Change, 2008 (GDWS).

Fire Underwriters Survey, Water Supply for Public Fire Protection (FUS), 2020.

Ontario Building Code 2012, Ministry of Municipal Affairs and Housing.

Geotechnical Investigation Report prepared by EXP Services Inc, Dated October 6, 2025.

4 Watermain Design

4.1 Required Fire Flow

The fire flow demand calculations were prepared based on the Ontario Building Code (OBC 2012) criteria. The following inputs were considered based on the response and documentation received from the Architect (Included in **Appendix B**).

- Wood Frame Construction - Combustible
- Limited Combustible Building Contents
- Adequate Sprinkler Conforms to NFPA13
- Standard Water Supply for Fire Department Hose Line and for Sprinkler System
- Fully Supervised Sprinkler System
- Exposures Measured from satellite imagery

The required fire flow calculated per OBC 2012 was 105 L/s (6,300 L/min). Refer to **Table B2** in **Appendix B** for detailed fire flow demand calculations.

4.2 Water Service Design

The domestic water demands for the proposed apartment building were calculated per the City of Ottawa Water Design Guidelines (December 8, 2025).

The following inputs were used for water demand calculations:

- Residential demands = 280 L/person/day
- 1.4 persons per 1-bedroom apartment
- 2.1 persons per 2-bedroom apartment
- Max. Day Peaking Factor (Residential) = 9.39
- Peak Hour Peaking Factor (Residential) = 14.13

Residential peaking factors were taken from MOECC Table 3-3. Refer to **Table B1** in **Appendix B** for detailed calculations. The proposed building's domestic demands were calculated as follows.

Water Demands:

Average daily demand = 0.11 L/s

Maximum daily demand = 1.00 L/s

Maximum hourly daily demand = 1.51 L/s

The estimated average daily demand of the proposed development is less than 50 m^3/day. Therefore, one – 100 mm diameter PVC water service is proposed for domestic and sprinkler demands. The proposed water service is to be connected to the existing 203 mm diameter municipal watermain on Cambridge Street South. Refer to Site Servicing Drawing (C100) – included in **Appendix F**.

4.3 Pressure Check

The City of Ottawa provided boundary conditions based on the domestic and fire flow demands as shown in the table below:

Scenario	Demand	
	L/min	L/s
Average Daily Demand	6.60	0.11
Maximum Daily Demand	60.00	1.00
Peak Hour	90.6	1.51
Fire Flow Demand	6,300	105

The boundary conditions provided by the City are as follows:

203 mm Municipal Watermain on Cambridge Street South.		
Demand Scenario	**Head (m)**	**Pressure[1] (psi)**
Min HGL	107.4	42.7
Max HGL	114.6	52.9
Max Day plus Fire Flow	105.6	40.1
[1] Ground Elevation =	77.40	m

Based on the above noted boundary conditions, estimated residual pressure at the building basement FFE during domestic demands will range between 44.7 psi to 55.0 psi. The pressure boosting measures might be required to serve upper units which will be evaluated and proposed by the mechanical engineer.

Typical sprinkler demands for a building of this size is ±35 L/sec. Proposed 100 mm dia. water service can supply the sprinkler demands with ±3.22 psi pressure loss. Anticipated residual pressure at the building basement FFE during sprinkler demands will be ±40 psi. Mechanical engineer will have to propose pressure boosting measures for the sprinkler system, as necessary.

The residual pressure in the municipal watermain along Cambridge Street South during max Day + Fire Flow demand was noted as 40.1 which is more than the minimum required pressure of 20 psi.

Based on the above noted analysis, the existing water supply system and the proposed services will have adequate capacity to meet the domestic, and fire demands for the proposed building. Refer to **Table B3** in **Appendix B** for detailed pressure calculations and correspondence with the City of Ottawa indicating boundary conditions.

4.4 Review of Hydrant Spacing

A review of the hydrant spacing was completed to ensure compliance with Appendix I of Technical Bulletin ISTB-2018-02. As per Section 3 of Appendix I, hydrants within 150 meters were reviewed to assess the total possible contribution of flow from these contributing hydrants. For each hydrant, the distance along a fire route was measured and assigned contributing flows. A review of the available fire hydrants within 150 m distance along the fire route from the building was carried out which is summarized in the table below.

Table 4-1: Summary of Nearby Municipal Hydrants

Hydrant #	Location	City / Private	Color Code	Distance from the Building (m)	Fire Flow Contribution for Class AA Hydrant (L/min)
366029H108	Clemow Avenue	City	Blue	13	5,700
366029H191	MaClean Street	City	Blue	63	5,700
366029H180	Carling Avenue	City	Blue	71	5,700
				Total:	17,100

As noted in the table above, there are three (3) existing municipal fire hydrants along a fire route providing accessible fire flow of 17,100 L/min. This is well above the required fire flow of 6,300 L/min. Refer to **Figure A2** in **Appendix A** for the hydrant location plan.

Based on the boundary conditions received from the city and review of the available municipal hydrants as noted above, the proposed development can be serviced for the required fire flow.

5 Sanitary Sewer Design

5.1 Peak Design Flow

The anticipated peak sanitary flows from the site have been calculated as per the City of Ottawa Sewer Design Guidelines December 2025).

The following inputs were used for sanitary demand calculations:

- Residential Avg. Daily Sewage Flow = 280 L/person/day
- 1.4 persons per 1-bedroom apartment
- 2.1 persons per 2-bedroom apartment
- Peaking Factor (Residential) per Harmon equation (K=0.8) = 3.68
- Peak Extraneous flow =0.33 l/s/ha
- Site area = 0.06 ha

The anticipated peak sanitary flows (including infiltration) for the proposed development were calculated to be **0.412 L/s**. The proposed 150 mm diameter PVC sanitary service at 2.0% slope having a full flow capacity of 17.5 L/sec will be connected to the existing municipal 450 mm dia. combined sewer on Cambridge Street South. A monitoring hole will be provided at the property line on the proposed building sanitary service.

Basement units and elevator pit will be pumped while the above ground units will discharge into the proposed building sanitary service lateral via gravity.

Refer to drawing C100 - Site Servicing plan in **Appendix F** and the sanitary sewer design sheet **Table C1** in **Appendix C** for further details.

6 Stormwater Management

6.1 Storm Design Criteria

The storm sewer system and stormwater management for the proposed development were designed in conformance with the City of Ottawa Sewer Design Guidelines (December 2025). The stormwater servicing design criteria stipulated in the Pre-Consultation meeting feedback form provided by the City of Ottawa for the proposed development are as follows:

- Control 100-year post-development runoff to 2-year pre-development levels with maximum pre-development runoff coefficient of 0.40 or the actual existing site runoff coefficient, whichever is less.
- Time of concentration of min 10 mins.
- Storm sewer outlets should not be submerged.
- Foundation drainage (weeping tile system) is to be independently connected to sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention.
- No onsite water quality control treatment is required.

See the Pre-Consultation meeting feedback form provided by the City of Ottawa in **Appendix E.**

6.2 Pre-Development Conditions

The 0.06-hectare site at 522 Cambridge Street South is currently developed and occupied by a single family residential dwelling and a metal shed which are to be demolished prior to construction of the proposed development. The topography of the site slopes from the rear towards Cambridge Street South which drains northerly. The calculated time of concentration under pre-development conditions was 3.35 minutes, therefore, a standard minimum time of concentration of 10 minutes was used.

Runoff coefficient for hard surfaces such as building roof, asphalt, concrete were taken as 0.90, for semi-pervious surfaces such as gravel were considered as 0.80 and for soft landscaped surfaces were considered as 0.20. The average runoff coefficient for the site was calculated using the area weighted method in excel. The existing land cover areas were taken from the topographical plan of survey. The pre-development weighted average runoff coefficient was calculated as **0.42**.

The pre-development peak runoff rates for the site were calculated for the 2, 5, and 100-year storm events to be **5.4 L/s**, **7.4 L/s**, and **15.8 L/s,** respectively.

In accordance with the criteria provided by the city, a pre-development weighted average runoff coefficient of **0.40** should be used as it is less than the calculated coefficient of **0.42**. Therefore, pre-development peak runoff rates for the site with average runoff coefficient of 0.5 were calculated for the 2, 5, and 100-year storm events to be **5.2 L/s**, **7.1 L/s**, and **15.1 L/s** respectively.

See **Table D1-D4** in **Appendix D**.

6.3 Allowable Release Rate

Per the stormwater management criteria noted above, the allowable release rates for the proposed development for the 100-year storm is restricted to 2-year pre-development levels. However, during the email correspondences with the city staff, it was noted to control post-development release rates to the pre-development levels during each storm event with maximum allowable runoff coefficient of 0.40. Correspondence with the staff is attached to the report in **Appendix D.**

The allowable peak post development flow rate for the proposed development is summarized as follows:

- 2-year: 5.2 L/s
- 5-year: 7.1 L/s
- 100-year: 15.1 L/s

See **Table D4** in **Appendix D**.

6.4 Post-Development Conditions

The post-development weighted average runoff coefficient is calculated as **0.78** which is greater than the pre-development average runoff coefficient due to additional paved surface and building areas added to the site as part of the proposed development. Therefore, the post-development flowrates are required to control to pre-development levels.

Under post-development conditions the site is considered as three catchments. Catchment PR-1 corresponds to the roof of the proposed building. Roof catchment is controlled by a total of 6 roof drains which will collectively release stormwater from the rooftop at 1.89 L/s. Runoff generated on the rooftops will be attenuated by flow control weirs mounted on the roof drains with adequate storage provided for the 100-year storm event. Scuppers are provided that will discharge to the ground surface if roof drains are plugged or overwhelmed by exceptional rainfall events in excess of the 100-year storm. The controlled runoff from the building roof during 2-year, 5-year and the 100-year storm events is restricted to 1.89 L/s.

Catchment POS-1, and POS-2 correspond to the remainder of the site which will flow uncontrolled to the combined sewer and Cambridge Street South Right of Way, respectively. Catchment POS-1 will capture flow from the building perimeter to the south, east & west and will be conveyed via proposed storm sewer system which will be connected to the municipal combine sewer located on Cambridge Street South. Catchment POS-2 will flow uncontrolled via overland on Cambridge Street South without being captured by the proposed storm sewer system.

Uncontrolled release rate from rest of the site under post-development conditions are calculated as 3.6 L/sec, 4.88 L/sec and 10.46 L/sec during 2-year, 5-year and 100-year storm events, respectively.

Therefore, the total post development stormwater release rates from the proposed development during 2-year, 5-year and 100-year storm events are calculated as 5.49 L/sec, 6.77 L/sec and 12.35 L/sec, respectively. The flow rate for the 2-year storm event is increased by 0.28 L/s which is negligible and therefore, no negative impacts are anticipated on the downstream infrastructures.

Refer to **Table D5** and **Table D6** in **Appendix D** for post-development average runoff coefficient calculations and post-development stormwater discharge rates calculations.

6.4.1 Storage Requirements

Storage is provided in roof catchment PR-1, such that the combined roof discharge is kept as minimum as possible to restrict post-development release rates to the pre-development levels and is calculated to be 1.89 L/s.

Surface ponding volumes over roof drains were determined by the conic volume method. Roof ponding depths must be less than or equal to 150 mm during a 100-year storm event.

Maximum calculated ponding depth during 100-year storm event in roof area PR-1 is 147 mm.

No ground surface storage is provided.

Refer to **Table D7 to Table D13** in **Appendix D** for detailed roof drain control and storage calculations.

6.4.2 Flow Controlled Roof Drains Sizing

Roof catchments PR-1 corresponds the area of the building rooftop. A total of 6 roof drains is proposed to control the flow from the building roof. Roof drains in each roof area will be equipped with WATTS Accutrol single weir RD1 roof drain with flow control weir set at closed position. The drains were specified based on the required storage volume and associated head of water during 100-year storm event.

See the discharge characteristics published by the manufacturer in **Appendix D.** Detailed drain sizing calculations are shown in **Tables D7-D9** in **Appendix D.** For 5-year and 100-year ponding limits refer to drawing C500 in **Appendix F.** Flow rates, storage requirements, and ponding depths are summarize below in **Section 6.4.3**.

6.4.3 Summary of SWM Storage Requirements

The stormwater management storage volume requirements were determined by allowable flow rate from the proposed roof drain. The allowable flow rate of 1.89 L/s resulted in a required storage volume of 12.54 m³ for the 100-year storm. The maximum available storage on the building rooftop was calculated to be 14 m³ meeting the quantity control requirements for the site.

Area No	Area (ha)	C_{AVG100}	100-Year Release Rate (Controlled) (L/s)	100-Year Ponding Depth (mm)	100-Year Storage Requirement (m^3)	Max Storage Provided (m^3)	ICD Control
PR-1	0.0338	1.00	**1.89**	147	**12.54**	14	RD1 Watts Roof Drains - Closed position

*__Bold__ flows are controlled.

6.5 Storm Sewer Design

The proposed paved area will be conveyed via proposed storm sewer system sized for 100-year storm. Stormwater from the rear side of the building will be captured by proposed area drain located throughout the site.

Storm sewer from the building roof drains will discharge into 150mm dia. Storm service lateral. The 150 mm diameter pipe at 2.0% slope has a full flow capacity of 23.5 L/s.

Remainder of the site will be serviced by 150mm dia. Storm sewers at 1.5% slope. The onsite storm sewers and storm service lateral for the building roof drains will be connected to storm monitoring manhole (STMMH01) within the property. A single 200mm dia. Storm sewer at 1.0% slope will be connected from STMMH01 to municipal combined sewer on Cabridge Street S, having full flow capacity of 33.2 L/sec.

Building foundation and under slab drainage system will be pumped. A separate 150 mm diameter storm service lateral will be connected to the existing combined sewer located on Cambridge Street South at 2.0% slope.

Refer to **Table D14** in **Appendix D** for 100-year storm sewer design sheet.

Drains from the proposed window wells will be connected to the proposed STMMH1 independently of building foundation drain underfloor drainage system.

6.6 Emergency Flow routes

Roof catchment PR-1 is proposed with scuppers at an elevation of 150 mm above the roof drains, that will spill to ground surface during an overflow event. Catchment POS-1 is conveyed via proposed storm sewer system sized for 100-year storm. In the event of storm greater than 100-year or storm sewer system surcharges, stormwater will be conveyed via emergency flow route located along the northern property line and conveyed towards Cambridge Street South. Catchment POS-2 will flow uncontrolled and discharged to the Cambridge Street South Right of Way by means of surface drainage.

7 Erosion and Sediment Control

During all construction activities, erosion and sedimentation shall be controlled by the following techniques:

- Extent of exposed soils shall be limited at any given time;
- Exposed areas shall be re-vegetated as soon as possible;
- Minimize the area to be cleared and disruption of adjacent areas;
- Siltsack or approved equivalent shall be installed inside all catch basins, catch basin manholes, and storm manholes as identified on the erosion and sediment control plan;
- Visual inspection shall be completed daily on sediment control barriers and any damage will be repaired immediately. Care will be taken to prevent damage during construction operations;
- In some cases, barriers may be removed temporarily to accommodate the construction operations. The affected barriers will be reinstated at night when construction is completed;
- Sediment control devices will be cleaned of accumulated silt as required. The deposits will be disposed of as per the requirements of the contract;
- During construction, if the engineer believes that additional prevention methods are required to control erosion and sedimentation, the contractor will install additional silt fences or other methods as required to the satisfaction of the engineer; and,
- Construction and maintenance requirements for erosion and sediment controls are to comply with Ontario Provincial Standard Specification (OPSS) 805.

8 Conclusions

This report addresses the site servicing and stormwater management requirements for the site plan control application for the proposed development. Based on the analysis provided in this report, the conclusions are as follows:

- The proposed apartment building will be serviced by a 100 mm diameter water service connection, which will adequately service the proposed development for the domestic and fire flow demands. Additionally, water boundary conditions from the City suggests sufficient flow and pressure availability in the 203 mm diameter municipal watermain on Cambridge Street South for domestic and fire demands.
- The proposed buildings sanitary demand will be serviced by a 150 mm diameter sanitary pipe. No capacity constraints were noted in the existing 450mm diameter municipal combined sewer on Cambridge Street South by the City. A monitoring manhole is provided within the property. Sanitary service will be complete with backflow prevention.
- Stormwater Management criteria for the proposed development will be achieved by restricting the post-development stormwater discharge rates from the site to the pre-development flow rates with a runoff coefficient of 0.40.
- Required on-site SWM storage volumes will be achieved using surface storage on the building roof. Flow attenuation will be achieved by the flow-controlled roof drains. Overflow scuppers are provided and will discharge to ground surface.
- Foundation drain will be serviced by 150 mm diameter service laterals discharging into existing combined sewer. A 200 mm dimeter storm service lateral discharging the runoff from project site by connecting storm manhole STMMH 1 to the existing combine sewer on Cambridge Street South. Window wells will be indirectly connected to STMMH 01. Foundation and under slab drains will be pumped.
- No stormwater quality controls are proposed.
- Temporary erosion and sediment control measures for the subject site have been identified.

Appendix A – Figures

Figure A1 – Site Location Plan

Figure A2 – Hydrant Location Plan

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DESIGN	N/A
DRAWN	NP
DATE	---
FILE NO	OTT-25015974-A0

522 CAMBRIDGE STREET S

SITE LOCATION PLAN

SCALE: N.T.S

SKETCH NO: FIG A1

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Last Saved:4/16/2026 4:14:16 PM
References: XREF - SITE PLAN.dwg; XREF - TOPO.dwg; XREF - AS-BUILT.dwg; A2-106.dwg
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DESIGN	N/A
DRAWN	NP
DATE	---
FILE NO	OTT-25015974-A0

522 CAMBRIDGE STREET S

HYDRANT LOCATION PLAN

SCALE: N.T.S
SKETCH NO: FIG A2

EXP Services Inc.
522 Cambridge Ltd.
522 Cambridge Street South, Ottawa, ON
OTT-25015974-A0
April 30, 2026

Appendix B – Water Servicing

Table B1 - Water Demand Chart

Table B2 - OBC Fire Flow Demand Calculations

Table B3 - Estimated Water Pressure at Proposed Building FFE

Correspondence from Architect Re Fire Flow Requirements

Water Boundary Conditions from the City

TABLE B-1: Water Demand Chart

Location: 522 CAMBRIDGE STREET SOUTH
Project No: 25015974-A0
Designed by: A. Johnson
Checked By: A. Jariwala
Date Revised: April 2026

Water Consumption
Residential = **280** L/cap/day

Population Densities

Single Family	person/unit	3.4
Semi-Detached	person/unit	2.7
Duplex	person/unit	2.3
Townhome (Row)	person/unit	2.7
Bachelor Apartment	person/unit	1.4
1 Bedroom Apartment	person/unit	1.4
2 Bedroom Apartment	person/unit	2.1
3 Bedroom Apartment	person/unit	3.1
4 Bedroom Apartment	person/unit	4.1
Avg. Apartment	person/unit	1.8

Proposed Buildings	No. of Residential Units										Total Persons (pop)	Residential Demands in (L/sec)					Total Demands (L/sec)		
	Singles/Semis/Towns				Apartments							Avg. Day Demand (L/day)	Peaking Factors (x Avg Day)		Max Day Demand (L/day)	Peak Hour Demand (L/day)	Avg Day (L/s)	Max Day (L/s)	Max Hour (L/s)
	Single Family	Semi-Detached	Duplex	Townhome	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom	Avg Apt.			Max Day	Peak Hour					
Appartment Building					2	8	9				32.9	9,212	9.39	14.13	86,490	130,195	0.107	1.001	1.507
Total =					2	8	9				32.9	9,212			86,490	130,195	0.11	1.00	1.51

PEAKING FACTORS FROM MOECC TABLE 3-3 (Peaking Factors for Water Systems Servicing Fewer Than 500 persons)

Dwelling Units Serviced	Equiv Pop	Night Min Factor	Maximum Day Factor	Peak Hour Factor
10	30	0.10	9.50	14.30
50	150	0.10	4.90	7.40
100	300	0.20	3.60	5.40
150	450	0.30	3.00	4.50
167	500	0.40	2.90	4.30

TABLE B2: FIRE FLOW REQURIEMENTS BASED ON ONTARIO BUILDING CODE
PROJECT: OTT-25015974-A0
Building: 522 CAMBRIDGE STREET SOUTH

3. Buildings Requiring On-Site Water Supply
   (a) Except for sprinklered buildings and as required by Items 3(c) and 3(e), buildings should have a supply of water available for firefighting purposes not less than the quantity derived from the following formula:

$$Q = K \cdot V \cdot S_{tot}$$

where

Q = minimum supply of water in litres

K = water supply coefficient from Table 1

V = total building volume in cubic metres

S_{tot} = total of spatial coefficient values from property line exposures on all sides as obtained from the formula:

$$S_{tot} = 1.0 + [S_{side1} + S_{side2} + S_{side3} + \text{... etc.})]$$

where

S_{side} values are established from Figure 1, as modified by Items 3(d) and 3(f), and

S_{tot} need not exceed 2.0.

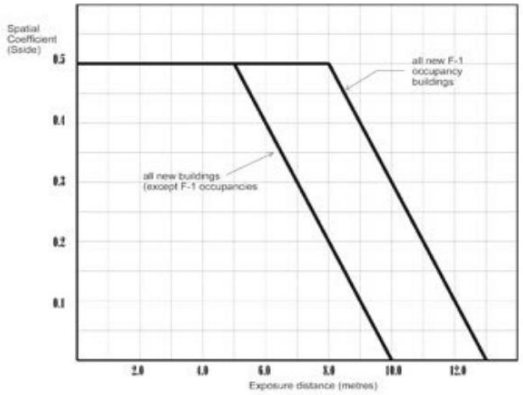


Figure 1
Spatial Coefficient vs Exposure Distance

Table 1

Water Supply Coefficient - K

Type of Construction	Classification by Group or Division in Accordance with Table 3.1.2.1. of the Building Code				
	A-2 B-1 B-2 B-3 C D	A-4 F-3	A-1 A-3	E F-2	F-1
Building is of noncombustible construction with fire separations and fire-resistance ratings provided in accordance with Subsection 3.2.2., including loadbearing walls, columns and arches.	10	12	14	17	23
Building is of noncombustible construction or of heavy timber construction conforming to Article 3.1.4.6. Floor assemblies are fire separations but with no fire-resistance rating. Roof assemblies, mezzanines, loadbearing walls, columns and arches do not have a fire-resistance rating.	16	19	22	27	37
Building is of combustible construction with fire separations and fire-resistance ratings provided in accordance with Subsection 3.2.2., including loadbearing walls, columns and arches. Noncombustible construction may be used in lieu of fire-resistance rating where permitted in Subsection 3.2.2.	18	22	25	31	41
Building is of combustible construction. Floor assemblies are fire separations but with no fire-resistance rating. Roof assemblies, mezzanines, loadbearing walls, columns and arches do not have a fire-resistance rating.	23	28	32	39	53
Column 1	2	3	4	5	6

	Direction				
	North	East	South	West	
Distance	1.60	26.55	0.00	0.00	Stot
S	0.5	0	0.5	0.5	2.5

Q	226722.845
K	23
V	3943.006
Stot	2.5

RFF	6300	L/min
	105	L/sec

	AREA (SQ.M.)	HEIGHT (M)	VOLUME (CU.M.)
LEVEL 01	206.26	3.5	721.91
LEVEL 02	264.39	3.2	846.048
LEVEL 03	264.39	3.2	846.048
LEVEL 04	264.39	3.5	925.365
Basement	208.15	2.9	603.635
			3943.006

Table 2

Part 3 Buildings under the Building Code	Required Minimum Water Supply Flow Rate, L/min
One-storey building with building area not exceeding 600 m²	1 800
All other buildings	2 700 (if Q ≤ 108 000 L)(1) 3 600 (if Q > 108 000 L and ≤ 135 000 L)(1) 4 500 (if Q > 135 000 L and ≤ 162 000 L)(1) 5 400 (if Q > 162 000 L and ≤ 190 000 L)(1) 6 300 (if Q > 190 000 L and ≤ 270 000 L)(1) 9 000 (if Q > 270 000 L)(1)

TABLE B3
ESTIMATED WATER PRESSURE AT PROPOSED BUILDING

Description	From	To	Demand (L/sec)	Pipe Length (m)	Pipe Dia (mm)	Dia (m)	Q (m^3/sec)	Area (m^2)	C	Vel (m/s)	Slope of HGL (m/m)	Head Loss (m)	Elev From (m)	Elev To (m)	*Elev Diff (m)	Pressure From kPa	(psi)	Pressure To kPa	(psi)	Pressure Drop (psi)
Avg Day Conditions																				
Single 100mm water service	Main	Building	0.11	13 m	100	0.100	0.00011	0.00785398	110	0.014	0.000006	8E-05	77.40	75.94	1.5	364.9	(52.9)	379.3	(55.0)	-2.08
Max Day Conditions																				
Single 100mm water service	Main	Building	1.000	13 m	100	0.100	0.001	0.00785398	110	0.1273	0.000364	0.0049	77.40	75.94	1.5	294.3	(42.7)	308.6	(44.8)	-2.07
Peak Hour Conditons																				
Single 100mm water service	Main	Building	1.510	13 m	100	0.100	0.00151	0.00785398	110	0.1923	0.000781	0.0105	77.40	75.94	1.5	294.3	(42.7)	308.5	(44.7)	-2.06
Max Day plus Sprinkler Demands																				
Single 100mm water service	Main	Building	36.00	13 m	100	0.100	0.036	0.00785398	110	4.5837	0.277746	3.7218	77.40	75.94	1.5	294.3	(42.7)	272.1	(39.5)	3.22

Water Demand Info

Average Demand =	0.11	L/sec
Max Day Demand =	1.00	L/sec
Peak Hr Demand =	1.51	L/sec
Fireflow Requriement =	150	L/sec
Max Day Plus FF Demand =	151.0	L/sec
Assumed Sprinkler Demand=	35.0	L/sec

Pipe Lengths

From watermain to building =	13.4 m
Hazen Williams C Factor for Friction Loss in Pipe, C=	110

Boundary Conditon

	Min HGL	Max HGL	Max Day + Fire Flow	
HGL (m)	107.4	114.6	105.6	<----- (From City of Ottawa at connnection point)
Approx Ground Elev (m) =	77.40	77.4	77.40	
Approx Bld Basement FF Elev (m) =	75.94	75.94	75.94	
Pressure (m) =	30	37.2	28.2	
Pressure (Pa) =	294,300	364,932	276,642	
Pressure (psi) =	42.7	52.9	40.1	

Nikhil Parmar

From: Jonathan Huska <jonathan@linebox.ca>
Sent: Wednesday, April 1, 2026 10:17 AM
To: Alexander Johnson
Cc: Aaditya Jariwala; Nikhil Parmar; Luis Josué; Erick Torres; Marc-Alexander Shank; Paul Chartrand
Subject: Re: 522 Cambridge - Water Sanitary and Fire Flow Demands
Attachments: A0-801.dwg; A0-801.pdf

Apologies—there was an error in the bike parking counts. Please find the corrected site plan attached.

Jonathan Huska
Intermediate Technologist, BIM Lead

613.216.2609 x104
705.698.9195
Ottawa - Toronto - Montreal

On Wed, Apr 1, 2026 at 10:07 AM Jonathan Huska <jonathan@linebox.ca> wrote:

> Good morning,
>
> 1. What will be the building construction type per FUS 2020:
>   a. Wood Frame (where all structural elements are made of wood)
>   b. Ordinary construction (structural elements are wood but the exterior walls are masonry)
>   c. Non-combustible construction (all structural elements are constructed with non-combustible material with min. 1-hour fire rating)
>   d. Fire resistive construction (all structural elements have min. 2-hour fire rating)
>
> Answer:

Based on the current drawings, the proposed building will primarily use wood-frame construction, incorporating a combination of metal siding and masonry veneer. Exterior side yard walls are required to be constructed as non-combustible assemblies (1 Hour) (metal or CMU) in accordance with Table 3.2.3.7, as the area of unprotected openings remains below 10%.

This is subject to final confirmation through structural engineering coordination. This response is issued for review and coordination with InHarmony as part of the ongoing design development process.

2. Will the internal and external openings (horizontal and vertical) be protected per NBC?

   Answer:

   Openings located within the side yard setbacks or front and rear should not require sprinklering and will be designed within the allowable limits for unprotected openings under the OBC.

   Interior glazing and openings will remain unsprinklered. Fire-rated assemblies will be provided where required by code, and glazing will not be introduced in locations that would exceed allowable unprotected opening limits.

3. Provide GFA of each floor and floor heights.

   Answer:

   Refer to the updated Site Plan package for current gross floor area calculations. Refer to the attached elevation for floor-to-floor heights.

4. Confirm the building occupancy group and division per OBC.

   Answer:

   3.2.2.52. Group C, up to 4 Storeys, Sprinklered.

5. Confirm any internal fire walls with min. 2-hour fire rating.

   Answer:

   To be confirmed through coordination with Mechanical and Fire Protection design. At this stage, a 2-hour fire separation is anticipated for rooftop mechanical enclosures and basement storage areas, subject to final program and classification.

6. Confirm if the building will be equipped with a fully automatic and supervised sprinkler system conforming to NFPA 13.

   Answer:

   The building will be fully sprinklered in accordance with NFPA 13 requirements.

7. Confirm suite types i.e. Bachelor, 1-bedroom, 2-bedroom, etc. and total expected occupancy.

Answer:

Refer to the updated Site Plan for the current unit breakdown.

8. Basement of the building will be min. 50% below ground. This will be confirmed once we coordinate the FFE and basement floor levels.

   Answer:

   Acknowledged. This will be confirmed during coordination of finished floor elevations and finalized grading design strategy.

9. Can you please provide CAD delineating roof drainage areas, drain locations, penthouses, parapets and overflow scuppers. We aren't there yet but we will need this information to complete our stormwater management design.

   Answer:

   A coordinated roof drainage plan will be provided following finalization of unit layouts. Drain locations will be coordinated with architectural planning, with preference given to locating plumbing stacks within low-impact areas such as closets to optimize acoustic separation and efficiency of services distribution. We can issue a preliminary drainage layout shortly that will be designed solely based on roof area not units below, and will be subject to revision once finalized unit layouts are complete.

Please let me know if you require any further clarification.

I have CC'd the InHarmony team on this as well if they would like to add anything further.

Kind regards,

Jonathan Huska
Intermediate Technologist, BIM Lead

613.216.2609 x104

705.698.9195

Ottawa - Toronto - Montreal

On Tue, Mar 31, 2026 at 4:39 PM Alexander Johnson <Alexander.Johnson@exp.com> wrote:

> Thank you Jonathan,

An additional request. Can you please provide CAD delineating roof drainage areas, drain locations, penthouses, parapets and overflow scuppers. We aren't there yet but we will need this information to complete our stormwater management design.

Thanks,

Alex

Alexander Johnson, E.I.T.
EXP | Engineering Designer
t : +1.613.688.1899, 63222 | e : alexander.johnson@exp.com

From: Jonathan Huska <jonathan@linebox.ca>
Sent: Tuesday, March 31, 2026 4:32 PM
To: Alexander Johnson <Alexander.Johnson@exp.com>
Cc: Aaditya Jariwala <Aaditya.Jariwala@exp.com>; Nikhil Parmar <nikhil.parmar@exp.com>
Subject: Re: 522 Cambridge - Water Sanitary and Fire Flow Demands

Hi Alexander,

Thanks for the breakdown and questions, I will try to get you the answers by tomorrow EOD.

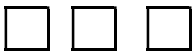
Thanks,

Jonathan Huska
Intermediate Technologist, BIM Lead


613.216.2609 x104


705.698.9195


Ottawa - Toronto - Montreal



On Tue, Mar 31, 2026 at 12:49 PM Alexander Johnson <Alexander.Johnson@exp.com> wrote:

> Hello Johnathan,
>
> I am assisting Aaditya with this project. We need some additional information to determine the domestic water demands, sanitary demands, and required fire flow. Please provide comment on the items below. We would like to submit boundary conditions request to the City by the end of this week and need this information to proceed.
>
> 1. What will be the building construction type per FUS 2020:
>
>   - Wood Frame (where all structural elements are made of wood)
>
>   - Ordinary construction (structural elements are wood but the exterior walls are masonry)
>
>   - Non-combustible construction (all structural elements are constructed with non-combustible material with min. 1-hour fire rating)
>
>   - Fire resistive construction (all structural elements have min. 2-hour fire rating)
>
> 2. Will the internal and external openings (horizontal and vertical) be protected per NBC?
> 3. Provide GFA of each floor and floor heights.
> 4. Confirm the building occupancy group and division per OBC.
> 5. Confirm any internal fire walls with min. 2-hour fire rating.
> 6. Confirm if the building will be equipped with a fully automatic and supervised sprinkler system conforming to NFPA 13.
> 7. Confirm suite types i.e.. Bachelor, 1- bedroom, 2-bedroom, etc. and total expected occupancy.
> 8. Basement of the building will be min. 50% below ground. This will be confirmed once we coordinate the FFE and basement floor levels.
>
> Thanks,
>
> Alex

Alexander Johnson, E.I.T.
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t : +1.613.688.1899, 63222 | e : alexander.johnson@exp.com
2650 Queensview Drive
Suite 100
Ottawa, ON K2B 8H6
CANADA

Nikhil Parmar

From: Azimi, Farbod <farbod.azimi@ottawa.ca>
Sent: Friday, April 10, 2026 2:44 PM
To: Alexander Johnson
Cc: Aaditya Jariwala; Nikhil Parmar; Wu, John; Jhamb, Nishant
Subject: RE: 522 Cambridge Street South - File No.: PC2026-0020 - Boundary Conditions Request
Attachments: 522 Cambridge Street South April 2026.pdf; 2601_522 Cambridge St S_LB_Site Plan.pdf; 522 Cambridge Street S - Correspondence with Architect Re FUS parameters.pdf; 2026-04-06 - 522 CAMBRIDGE ST S - WAT-SAN-RFF - WORKSHEETS AND SKETCHES.pdf

Good afternoon, Alexander,

The following are boundary conditions, HGL, for hydraulic analysis at 522 Cambridge Street South (zone 1W) assumed to be connected via the 203 mm watermain on Cambridge Street South (see attached PDF for location).

Minimum HGL = 107.4 m
Maximum HGL = 114.6 m
MaxDay + FireFlow (105 L/s) = 105.6 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. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

Regarding the sanitary sewer connection, the City's Asset Management team has confirmed that there are no capacity concerns with the proposed peak Sanitary flows.

For the Storm connection, SWM will be required to control the 100-yr post development flows to a 2-yr predevelopment level using existing C (max =0.4).

Kind regards,

From: Alexander Johnson <Alexander.Johnson@exp.com>
Sent: Monday, April 6, 2026 10:52 AM
To: Wu, John <John.Wu@ottawa.ca>; Azimi, Farbod <farbod.azimi@ottawa.ca>
Cc: aaditya.jariwala <aaditya.jariwala@exp.com>; Nikhil Parmar <nikhil.parmar@exp.com>
Subject: 522 Cambridge Street South - File No.: PC2026-0020 - Boundary Conditions Request

Hello John/Farbod,

EXP has been retained by the proponent of a 4-storey, 19-unit apartment building located at 522 Cambridge Street South - **File No.: PC2026-0020**

Proposed water service connection is shown on the attached sketch. I kindly request that you provide water boundary conditions based on the estimated demands summarized below:

Water Demands:
Avg. Day: **0.11** L/sec
Max. Day Demands: **1.00** L/sec
Peak Hourly Demands: **1.51** L/sec
RFF per OBC: **105** L/s

Additionally requesting confirmation of capacity in the existing **450mm** diameter combined sewer on Cambridge Street South adjacent to the subject property.

Sanitary Demands:
Sanitary Demands (incl. Infiltration): **0.412** L/sec

Supporting calculations and boundary condition request location plan are attached to this email.

Thank you

Alexander Johnson, P.Eng.
EXP | Engineering Designer
t : +1.613.688.1899, 63222 | e : alexander.johnson@exp.com
2650 Queensview Drive
Suite 100
Ottawa, ON K2B 8H6
CANADA

EXP Services Inc.
522 Cambridge Ltd.
522 Cambridge Street South, Ottawa, ON
OTT-25015974-A0
April 30, 2026

Appendix C – Sanitary Sewer Design Sheet

C1 - Sanitary Sewer Design Sheet

TABLE C1 : SANITARY DEMAND CHART

LOCATION				RESEDENTIAL AREAS AND POPULAITONS												INFILTRATION				SEWER DATA						
					NUMBER OF UNITS							POPULATION				AREA (ha)										
Street	U/S MH	D/S MH	Desc	Area (ha)	Singles	Semis	Towns	1-Bed Apt.	2-Bed Apt.	3-Bed Apt.	4-Bed Apt.	INDIV	ACCU	Peak Factor	Peak Flow (L/sec)	INDIV	ACCU	INFILT FLOW (L/s)	TOTAL FLOW (L/s)	Nom Dia (mm)	Actual Dia (mm)	Slope (%)	Length (m)	Capacity (L/sec)	Q/Q_{CAP} (%)	Full Velocity (m/s)
Cambridge	BLDG	SANMH1		0.0610				10	9			32.9	32.9	3.68	0.392	0.061	0.061	0.020	***0.412***	150	155.00	2.00	6.54	23.5	1.8%	1.7
	SANMH1	CAMBRIDGE		-				-	-			-	-	-	-	-	-	-	***0.412***	150	155.00	1.00	10.60	16.6	2.5%	1.2
				0.061				**10**	**9**			**33**				**0.061**										

Residential Avg. Daily Flow, q (L/p/day) = 280
Residential Correction Factor, K = 0.80
Manning N = 0.013
Peak extraneous flow, I (L/s/ha) = 0.33

Peak Population Flow, (L/sec) = P*q*M/86.4
Peak Extraneous Flow, (L/sec) = I*Ac
Residential Peaking Factor, M = 1 + (14/(4+P^0.5)) * K
A_c = Cumulative Area (hectares)
P = Population (thousands)
Sewer Capacity, Qcap (L/sec) = 1/N $S^{1/2}$ $R^{2/3}$ A_c
(Manning's Equation)

Unti Type	Persons/Unit
Singles	3.0
Semi-Detached	2.7
Townhomes	2.7
Single Apt. Unit	1.4
2-bed Apt. Unit	2.1
3-bed Apt. Unit	3.1
4-bed Apt. Unit	3.8

Designed:	Project:
Nikhil Parmar E.I.T.	OTT-25015974-A0
Checked:	Location:
A. Jariwala, P.Eng.	522 CAMBRIDGE STREET SOUTH, Ottawa, ON
File Reference:	Page No:
OTT-25015974-A0 - Sanitary - SAN Design Sheet.xlsx	**1 of 1**

Appendix D – Stormwater Management Design Sheet

Table D1 - Calculation of Average Runoff Coefficients for Pre-Development Conditions

Table D2 - Calculation of Catchment Time of Concentration for Pre-Development Conditions

Table D3 - Calculation of Peak Runoff for Pre-Development Conditions

Table D4 - Calculation of Allowable Release Rate With C=0.40

Table D5 - Average Runoff Coefficients for Post-Development Conditions

Table D6 - Summary of Post-Development Peak Flows (Uncontrolled and Controlled)

Table D7 - 2-Year, 5-Year & 100-Year Roof Drains Design Sheet - Using Flow Controlled Roof Drains

Table D8 - Storage Volumes Roof Area #PR-1A (2 Year, 5 Year And 100 Year Storms) (MRM)

Table D9 - Storage Volumes Roof Area #PR-1B (2 Year, 5 Year And 100 Year Storms) (MRM)

Table D10 - Storage Volumes Roof Area #PR-1C (2 Year, 5 Year And 100 Year Storms) (MRM)

Table D11 - Storage Volumes Roof Area #PR-1D (2 Year, 5 Year And 100 Year Storms) (MRM)

Table D12 - Storage Volumes Roof Area # PR-1E (2 Year, 5 Year And 100 Year Storms) (MRM)

Table D13 - Storage Volumes Roof Area # PR-1F (2 Year, 5 Year And 100 Year Storms) (MRM)

Table D14 - 100-Year Storm Sewer Calculation Sheet

Corr with the City for SWM Controls

Watts Adjustable Flow Control for Roof Dains Tech Sheet

ADS Nyloplast Tech Sheet

TABLE D1
CALCULATION OF AVERAGE RUNOFF COEFFICIENTS FOR PRE-DEVELOPMENT CONDITIONS

Area No.	Roof Areas		Mixed Gravel Concret & Broken Asphalt		Grass		Reserved		Reserved		Sum AC	Total Area (m^2)	C_{AVG}
	C=0.90		C=0.80		C=0.20								
	Area (m^2)	A * C	Area (m^2)	A * C	Area (m^2)	A * C	Area (m^2)	A * C	Area (m^2)	A * C			
E1 (SITE)	123.76	111.4	75.94	60.8	409.93	82.0					**254.1**	**609.63**	**0.42**

TABLE D2
CALCULATION OF CATCHMENT TIME OF CONCENTRATION FOR PRE-DEVELOPMENT CONDITIONS

Catchment No.	Area (ha)	High Elev (m)	Low Elev (m)	Flow Path Length (m)	Indiv Slope	Avg. C	Time of Conc. Tc (mins)	Description
E1 (SITE)	0.0610	77.90	77.47	44.2	1.0	0.42	3.35	10 minutes

Notes
1) For Catchments with Runoff Coefficient less than C=0.40, Time of Concentration Based on Federal Aviation Formula (Airport Method), from MTO Drainage Manual Equation 8.16, where: $T_C = 3.26 * (1.1-C) * L^{0.5} / S_W^{0.33}$
2) For Catchments with Runoff Coefficient greater than C=0.40, Time of Concentration Based on Bransby Williams Equation, from MTO Drainage Manual Equation 8.15, where: $T_C = 0.057 * L / (S_W^{0.2} * A^{0.1})$
3) The standard minimium Time of Concentraion of 10 minutes was used, rather then the calaculted time, since calcualted time was less than 10 minutes.

TABLE D3
CALCULATION OF PEAK RUNOFF FOR PRE-DEVELOPMENT CONDITIONS

Area No	Outlet Location	Area (ha)	Time of Conc, Tc (min)	Storm = 2 yr			Storm = 5 yr			Storm = 100 yr		
				I_2 (mm/hr)	Cavg	Q_2 (L/sec)	I_5 (mm/hr)	Cavg	Q_5 (L/sec)	I_{100} (mm/hr)	Cavg	Q_{100} (L/sec)
E1 (SITE)	OFFSITE	0.0610	10	76.81	0.42	**5.4**	104.19	0.42	**7.4**	178.56	0.52	**15.8**

Notes
1) Intensity, $I = 732.951/(Tc+6.199)^{0.810}$ (2-year)
2) Intensity, $I = 998.071/(Tc+6.053)^{0.814}$ (5-year)
3) Intensity, $I = 1735.688/(Tc+6.014)^{0.820}$ (100-year)
4) Cavg for 100-year is increased by 25% to a maximum of 1.0
5) The standard minimium Time of Concentraion of 10 minutes was used, rather then the calaculted time, since calcualted time was less than 10 minutes.

TABLE D4
CALCULATION OF ALLOWABLE RELEASE RATE WITH C=0.4

Area No	Outlet Location	Area (ha)	Time of Conc, Tc (min)	Storm = 2 yr			Storm = 5 yr			Storm = 100 yr		
				I_2 (mm/hr)	Cavg	Q_2 (L/sec)	I_5 (mm/hr)	Cavg	Q_5 (L/sec)	I_{100} (mm/hr)	Cavg	Q_{100} (L/sec)
E1 (SITE)	OFFSITE	0.0610	10	76.81	0.40	**5.2**	104.19	0.40	**7.1**	178.56	0.50	**15.1**

Notes
1) Intensity, $I = 732.951/(Tc+6.199)^{0.810}$ (2-year)
2) Intensity, $I = 998.071/(Tc+6.053)^{0.814}$ (5-year)
3) Intensity, $I = 1735.688/(Tc+6.014)^{0.820}$ (100-year)
4) Cavg for 100-year is increased by 25% to a maximum of 1.0
5) The standard minimium Time of Concentraion of 10 minutes was used, rather then the calaculted time, since calcualted time was less than 10 minutes.
6) The calculated pre-development runoff coefficient is greater than the allowable runoff coefficient of 0.40, as such a maximum runoff coefficient of 0.40 is used to determine the flows.

TABLE D5
AVERAGE RUNOFF COEFFICIENTS FOR POST-DEVELOPMENT CONDITIONS

Area No.	Roof Areas		Concrete/Asphalt		Grass		River Stone		Pavers		Sum AC	Total Area (m^2)	C_{AVG}	Comment
	C=0.90		C=0.90		C=0.20		C=0.20		C=0.70					
	Area (m^2)	A * C	Area (m^2)	A * C	Area (m^2)	A * C	Area (m^2)	A * C	Area (m^2)	A * C				
POS-1	9.81	8.8	107.87	97.1	38.66	7.7	51.14	10.2			123.9	207.48	0.60	Ground surface
PR-1	339.00	305.1									305.1	339.00	0.90	Rear Roof
POS-2			45.70	41.1	17.48	3.5					44.6	63.18	0.71	Front Roof
											473.6	**609.66**	**0.78**	

TABLE D6
SUMMARY OF POST-DEVELOPMENT PEAK FLOWS (Uncontrolled and controlled)

Area No	Area (ha)	Time of Conc, Tc (min)	Storm = 2 yr				Storm = 5 yr				Storm = 100 yr				ICD
			C_{AVG}	I_2 (mm/hr)	Q (L/sec)	Q_{CAP} (L/sec)	C_{AVG}	I_5 (mm/hr)	Q (L/sec)	Q_{CAP} (L/sec)	C_{AVG}	I_{100} (mm/hr)	Q (L/sec)	Q_{CAP} (L/sec)	
POS-1	0.0207	10	0.60	76.81	2.64	2.64	0.60	104.19	3.59	3.59	0.75	178.56	7.69	7.69	**N/A**
PR-1	0.0339	10	0.90	76.81	6.51	**(1.89)**	0.90	104.19	8.84	**(1.89)**	1.00	178.56	16.83	**(1.89)**	**WATTS ACCUTROL RD1 WEIR - CLOSED**
POS-2	0.0063	10	0.71	76.81	0.95	0.95	0.71	104.19	1.29	1.29	0.88	178.56	2.77	2.77	**N/A**
Post-Dev Site	**0.0610**				10.11	**(5.49)**			13.72	**(6.77)**			27.28	**(12.35)**	
Pre-Dev Site (C=0.4)						5.21				7.1				15.1	

Notes

1) Intensity, I = 732.951/(Tc+6.199) $^{0.810}$ (2-year)

2) Intensity, I = 998.071/(Tc+6.053) $^{0.814}$ (5-year)

3) Intensity, I = 1735.688/(Tc+6.014) $^{0.820}$ (100-year)

4) Cavg for 100-year is increased by 25% to a maximum of 1.0

5) Time of Concentration, Tc = ***10 mins***

5) Controlled release rate (Q_{CAP}) is denoted by **(1.03)**

Table D7: 2-year, 5-year & 100-year Roof Drains Design Sheet - Using Flow Controlled Roof Drains

Project: OTT-25015974-A0
Location: 522 Cambridge Street W
Date: April 2026

Area #	Roof Drain Type	No Drains per Area	No of Weirs per Drain	Weir Position	Runoff Coeff (Cavg)		Drainage Area		2-year Event						5-year Event						100-year Event						Storage Required *(MRM)*			Maximium Storage Provided at Spill Elevation					
					2-year & 5-year	100-year	m^2	ha	Runoff Rate (L/sec)	2yr Ponding Depth (mm)	Roof Drain Capacity Per Weir (gpm)	Roof Drain Capacity Per Drain per weir (gpm)	Roof Drain Capacity Per Drain (L/sec)	Total Flow From Roof Drains (L/sec)	Runoff Rate (L/sec)	5yr Ponding Depth (mm)	Roof Drain Capacity Per Weir (gpm)	Roof Drain Capacity Per Drain per weir (gpm)	Roof Drain Capacity Per Drain (L/sec)	Total Flow From Roof Drains (L/sec)	Runoff Rate (L/sec)	100yr Ponding Depth (mm)	Roof Drain Capacity Per Weir (gpm)	Roof Drain Capacity Per Drain per weir (gpm)	Roof Drain Capacity Per Drain (L/sec)	Total Flow From Roof Drains (L/sec)	2-year (m^3)	5-year (m^3)	100-year (m^3)	Area Available for Storage (m^2)	Max Prism Depth (mm)	Max Prisim Volume (m^3)	% Volume Used for Ponding		
																																2-year	5-year	100-year
PR-1A	RD1	1	1	2-Closed	0.90	1.00	64.31	0.0064	1.236	92	5.0	5.0	0.315	0.315	1.677	113	5.0	5.0	0.315	0.315	3.192	145	5.0	5.0	0.315	0.315	0.63	1.17	2.48	54.7	150	2.7	23%	43%	91%
PR-1B	RD1	1	1	2-Closed	0.90	1.00	48.42	0.0048	0.930	86	5.0	5.0	0.315	0.315	1.262	107	5.0	5.0	0.315	0.315	2.404	140	5.0	5.0	0.315	0.315	0.39	0.76	1.67	41.2	150	2.1	19%	37%	81%
PR-1C	RD1	1	1	2-Closed	0.90	1.00	48.81	0.0049	0.938	86	5.0	5.0	0.315	0.315	1.272	108	5.0	5.0	0.315	0.315	2.423	140	5.0	5.0	0.315	0.315	0.39	0.77	1.69	41.5	150	2.1	19%	37%	81%
PR-1D	RD1	1	1	2-Closed	0.90	1.00	40.24	0.0040	0.773	88	5.0	5.0	0.315	0.315	1.049	112	5.0	5.0	0.315	0.315	1.997	147	5.0	5.0	0.315	0.315	0.28	0.56	1.28	27.0	150	1.4	20%	42%	95%
PR-1E	RD1	1	1	2-Closed	0.90	1.00	67.78	0.0068	1.303	93	5.0	5.0	0.315	0.315	1.767	114	5.0	5.0	0.315	0.315	3.365	146	5.0	5.0	0.315	0.315	0.68	1.26	2.67	57.6	150	2.9	24%	44%	93%
PR-1F	RD1	1	1	2-Closed	0.90	1.00	69.09	0.0069	1.328	93	5.0	5.0	0.315	0.315	1.801	114	5.0	5.0	0.315	0.315	3.430	147	5.0	5.0	0.315	0.315	0.70	1.30	2.74	58.7	150	2.9	24%	44%	93%
Totals							**338.7**	**0.0339**	**6.51**		**30.00**		**1.89**	**1.89**	**0.00**		**30.00**		**1.89**	**1.89**	**16.81**		**30.00**		**1.89**	**1.89**	**3.07**	**5.81**	**12.54**	**281**		**14.0**			
Min										**86**						**107**						**140**													
Max										**93**						**114**						**147**													

Runoff Based on the Following:

Storm Frequency (years) =	2	5	100
Time of Conc (mins) =	10	10	10
Storm Intensity (mm/hr) =	76.8	104.2	178.6

Roof Drains have Following Flow Rates per weir: WATTS Flow Controlled Drain

Weir Position	Flow (gpm) per depth							Max Flow Rate per Weir @150mm (L/s)
	0	25	50	75	100	125	150	
	0	0.025	0.05	0.075	0.1	0.125	0.15	
1-None	0	0	0	0	0	0	0	0.000
2-Closed	0	5	5	5	5	5	5	0.315
3-1/4 open	0	5	10	11	13	14	15	0.946
4-1/2 open	0	5	10	12	15	18	20	1.262
5-3/4 open	0	5	10	14	18	21	25	1.577
6-Full	0	5	10	15	20	25	30	1.890

Roof Drain Types

Drain Type =	RD1	RD2	RD3
Max Overflow Depth (mm)	150 mm	150 mm	150 mm
Flow Controlled (Yes/No)	Yes	Yes	Yes
Ponding	Yes	Yes	Yes
Weir Desc	Accutrol	Accutrol	Accutrol
No. Weirs	1	2	3

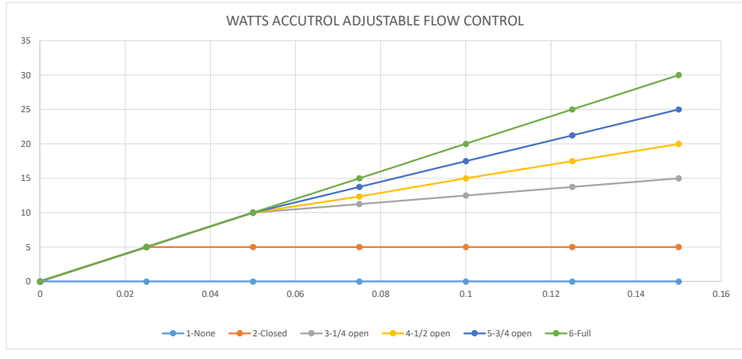

Table D8 Storage Volumes Roof Area #PR-1A (2 Year, 5 Year and 100 Year Storms) (MRM)

C_{AVG} = 0.90 (dimensionless)
C_{100} = 1.00
Time Interval = 5 (mins)
Drainage Area = 0.00643 (hectares)

	Release Rate = 0.315 (L/sec) Return Period = 2 (years) IDF Parameters, A = 732.951, B = 0.810 (I = A/(T_c+C), C = 6.199					Release Rate = 0.3155 (L/sec) Return Period = 5 (years) IDF Parameters, A = 998.071, B = 0.814 (I = A/(T_c+C), C = 6.053					Release Rate = 0.3155 (L/sec) Return Period = 100 (years) IDF Parameters, A = 1735.69, B = 0.820 (I = A/(T_c+C), C = 6.014				
Duration (min)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)
0	167.2	2.7	0.32	2.4	0.00	230.5	4.1	0.315	3.8	0.00	398.6	7.1	0.3	6.8	0.00
5	103.6	1.7	0.32	1.4	0.41	141.2	2.5	0.315	2.2	0.66	242.7	4.3	0.3	4.0	1.21
10	76.8	1.2	0.32	0.9	0.55	104.2	1.9	0.315	1.5	0.93	178.6	3.2	0.3	2.9	1.73
15	61.8	1.0	0.32	0.7	0.61	83.6	1.5	0.315	1.2	1.06	142.9	2.6	0.3	2.2	2.02
20	52.0	0.8	0.32	0.5	0.63	70.3	1.3	0.315	0.9	1.13	120.0	2.1	0.3	1.8	2.19
25	45.2	0.7	0.32	0.4	0.62	60.9	1.1	0.315	0.8	1.16	103.8	1.9	0.3	1.5	2.31
30	40.0	0.6	0.32	0.3	0.59	53.9	1.0	0.315	0.6	1.17	91.9	1.6	0.3	1.3	2.39
35	36.1	0.6	0.32	0.3	0.56	48.5	0.9	0.315	0.6	1.16	82.6	1.5	0.3	1.2	2.44
40	32.9	0.5	0.32	0.2	0.51	44.2	0.8	0.315	0.5	1.14	75.1	1.3	0.3	1.0	2.47
45	30.2	0.5	0.32	0.2	0.46	40.6	0.7	0.315	0.4	1.11	69.1	1.2	0.3	0.9	2.48
50	28.0	0.5	0.32	0.1	0.41	37.7	0.7	0.315	0.4	1.07	64.0	1.1	0.3	0.8	2.48
55	26.2	0.4	0.32	0.1	0.35	35.1	0.6	0.315	0.3	1.03	59.6	1.1	0.3	0.8	2.48
60	24.6	0.4	0.32	0.1	0.29	32.9	0.6	0.315	0.3	0.98	55.9	1.0	0.3	0.7	2.46
65	23.2	0.4	0.32	0.1	0.22	31.0	0.6	0.315	0.2	0.93	52.6	0.9	0.3	0.6	2.44
70	21.9	0.4	0.32	0.0	0.16	29.4	0.5	0.315	0.2	0.88	49.8	0.9	0.3	0.6	2.41
75	20.8	0.3	0.32	0.0	0.09	27.9	0.5	0.315	0.2	0.82	47.3	0.8	0.3	0.5	2.38
80	19.8	0.3	0.32	0.0	0.02	26.6	0.5	0.315	0.2	0.77	45.0	0.8	0.3	0.5	2.35
85	18.9	0.3	0.32	0.0	-0.05	25.4	0.5	0.315	0.1	0.70	43.0	0.8	0.3	0.5	2.31
90	18.1	0.3	0.32	0.0	-0.13	24.3	0.4	0.315	0.1	0.64	41.1	0.7	0.3	0.4	2.27
95	17.4	0.3	0.32	0.0	-0.20	23.3	0.4	0.315	0.1	0.58	39.4	0.7	0.3	0.4	2.22
100	16.7	0.3	0.32	0.0	-0.28	22.4	0.4	0.315	0.1	0.51	37.9	0.7	0.3	0.4	2.17
105	16.1	0.3	0.32	-0.1	-0.35	21.6	0.4	0.315	0.1	0.44	36.5	0.7	0.3	0.3	2.12
110	15.6	0.3	0.32	-0.1	-0.43	20.8	0.4	0.315	0.1	0.37	35.2	0.6	0.3	0.3	2.07
115	15.0	0.2	0.32	-0.1	-0.51	20.1	0.4	0.315	0.0	0.31	34.0	0.6	0.3	0.3	2.02
120	14.6	0.2	0.32	-0.1	-0.58	19.5	0.3	0.315	0.0	0.23	32.9	0.6	0.3	0.3	1.96
Max =					**0.63**					**1.17**					**2.48**

Notes

1) Peak flow is equal to the product of 2.78 x C x I x A
2) Rainfall Intensity, $I = A/(Tc+C)^B$
3) Release Rate = Min (Release Rate, Peak Flow)
4) Storage Rate = Peak Flow - Release Rate
5) Storage = Duration x Storage Rate
6) Maximium Storage = Max Storage Over Duration

Table D9 Storage Volumes Roof Area #PR-1B (2 Year, 5 Year and 100 Year Storms) (MRM)

C_{AVG} = 0.90 (dimensionless)
C_{100} = 1.00
Time Interval = 5 (mins)
Drainage Area = 0.00484 (hectares)

	Release Rate = 0.315 (L/sec)					Release Rate = 0.3155 (L/sec)					Release Rate = 0.3155 (L/sec)				
	Return Period = 2 (years)					Return Period = 5 (years)					Return Period = 100 (years)				
	IDF Parameters, A = 732.951, B = 0.810					IDF Parameters, A = 998.071, B = 0.814					IDF Parameters, A = 1735.69, B = 0.820				
	($I = A/(T_c+C)$, C = 6.199					($I = A/(T_c+C)$, C = 6.053					($I = A/(T_c+C)$, C = 6.014				
Duration (min)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)
0	167.2	2.0	0.32	1.7	0.00	230.5	3.1	0.315	2.8	0.00	398.6	5.4	0.3	5.1	0.00
5	103.6	1.3	0.32	0.9	0.28	141.2	1.9	0.315	1.6	0.48	242.7	3.3	0.3	3.0	0.89
10	76.8	0.9	0.32	0.6	0.37	104.2	1.4	0.315	1.1	0.65	178.6	2.4	0.3	2.1	1.25
15	61.8	0.7	0.32	0.4	0.39	83.6	1.1	0.315	0.8	0.73	142.9	1.9	0.3	1.6	1.45
20	52.0	0.6	0.32	0.3	0.38	70.3	0.9	0.315	0.6	0.76	120.0	1.6	0.3	1.3	1.56
25	45.2	0.5	0.32	0.2	0.35	60.9	0.8	0.315	0.5	0.76	103.8	1.4	0.3	1.1	1.62
30	40.0	0.5	0.32	0.2	0.31	53.9	0.7	0.315	0.4	0.74	91.9	1.2	0.3	0.9	1.66
35	36.1	0.4	0.32	0.1	0.25	48.5	0.7	0.315	0.3	0.71	82.6	1.1	0.3	0.8	1.67
40	32.9	0.4	0.32	0.1	0.20	44.2	0.6	0.315	0.3	0.67	75.1	1.0	0.3	0.7	1.67
45	30.2	0.4	0.32	0.1	0.14	40.6	0.5	0.315	0.2	0.62	69.1	0.9	0.3	0.6	1.66
50	28.0	0.3	0.32	0.0	0.07	37.7	0.5	0.315	0.2	0.57	64.0	0.9	0.3	0.5	1.64
55	26.2	0.3	0.32	0.0	0.01	35.1	0.5	0.315	0.2	0.52	59.6	0.8	0.3	0.5	1.61
60	24.6	0.3	0.32	0.0	-0.06	32.9	0.4	0.315	0.1	0.46	55.9	0.8	0.3	0.4	1.57
65	23.2	0.3	0.32	0.0	-0.14	31.0	0.4	0.315	0.1	0.40	52.6	0.7	0.3	0.4	1.53
70	21.9	0.3	0.32	0.0	-0.21	29.4	0.4	0.315	0.1	0.34	49.8	0.7	0.3	0.4	1.49
75	20.8	0.3	0.32	-0.1	-0.28	27.9	0.4	0.315	0.1	0.27	47.3	0.6	0.3	0.3	1.44
80	19.8	0.2	0.32	-0.1	-0.36	26.6	0.4	0.315	0.0	0.20	45.0	0.6	0.3	0.3	1.39
85	18.9	0.2	0.32	-0.1	-0.44	25.4	0.3	0.315	0.0	0.13	43.0	0.6	0.3	0.3	1.34
90	18.1	0.2	0.32	-0.1	-0.52	24.3	0.3	0.315	0.0	0.06	41.1	0.6	0.3	0.2	1.28
95	17.4	0.2	0.32	-0.1	-0.60	23.3	0.3	0.315	0.0	-0.01	39.4	0.5	0.3	0.2	1.23
100	16.7	0.2	0.32	-0.1	-0.68	22.4	0.3	0.315	0.0	-0.08	37.9	0.5	0.3	0.2	1.17
105	16.1	0.2	0.32	-0.1	-0.76	21.6	0.3	0.315	0.0	-0.16	36.5	0.5	0.3	0.2	1.11
110	15.6	0.2	0.32	-0.1	-0.84	20.8	0.3	0.315	0.0	-0.23	35.2	0.5	0.3	0.2	1.05
115	15.0	0.2	0.32	-0.1	-0.92	20.1	0.3	0.315	0.0	-0.31	34.0	0.5	0.3	0.1	0.98
120	14.6	0.2	0.32	-0.1	-1.00	19.5	0.3	0.315	-0.1	-0.38	32.9	0.4	0.3	0.1	0.92
Max =					**0.39**					**0.76**					**1.67**

Notes

1) Peak flow is equal to the product of 2.78 x C x I x A
2) Rainfall Intensity, $I = A/(Tc+C)^B$
3) Release Rate = Min (Release Rate, Peak Flow)
4) Storage Rate = Peak Flow - Release Rate
5) Storage = Duration x Storage Rate
6) Maximium Storage = Max Storage Over Duration

Table D10 Storage Volumes Roof Area #PR-1C (2 Year, 5 Year and 100 Year Storms) (MRM)

C_{AVG} = 0.90 (dimmensionless)
C_{100} = 1.00
Time Interval = 5 (mins)
Drainage Area = 0.00488 (hectares)

	Release Rate = 0.315 (L/sec) Return Period = 2 (years) IDF Parameters, A = 732.951, B = 0.810 (I = A/(T_c+C), C = 6.199					Release Rate = 0.3155 (L/sec) Return Period = 5 (years) IDF Parameters, A = 998.071, B = 0.814 (I = A/(T_c+C), C = 6.053					Release Rate = 0.3155 (L/sec) Return Period = 100 (years) IDF Parameters, A = 1735.69, B = 0.820 (I = A/(T_c+C), C = 6.014				
Duration (min)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)
0	167.2	2.0	0.32	1.7	0.00	230.5	3.1	0.315	2.8	0.00	398.6	5.4	0.3	5.1	0.00
5	103.6	1.3	0.32	0.9	0.28	141.2	1.9	0.315	1.6	0.48	242.7	3.3	0.3	3.0	0.89
10	76.8	0.9	0.32	0.6	0.37	104.2	1.4	0.315	1.1	0.66	178.6	2.4	0.3	2.1	1.26
15	61.8	0.8	0.32	0.4	0.39	83.6	1.1	0.315	0.8	0.74	142.9	1.9	0.3	1.6	1.46
20	52.0	0.6	0.32	0.3	0.38	70.3	1.0	0.315	0.6	0.77	120.0	1.6	0.3	1.3	1.57
25	45.2	0.6	0.32	0.2	0.35	60.9	0.8	0.315	0.5	0.77	103.8	1.4	0.3	1.1	1.64
30	40.0	0.5	0.32	0.2	0.31	53.9	0.7	0.315	0.4	0.75	91.9	1.2	0.3	0.9	1.68
35	36.1	0.4	0.32	0.1	0.26	48.5	0.7	0.315	0.3	0.72	82.6	1.1	0.3	0.8	1.69
40	32.9	0.4	0.32	0.1	0.21	44.2	0.6	0.315	0.3	0.68	75.1	1.0	0.3	0.7	1.69
45	30.2	0.4	0.32	0.1	0.15	40.6	0.6	0.315	0.2	0.64	69.1	0.9	0.3	0.6	1.68
50	28.0	0.3	0.32	0.0	0.08	37.7	0.5	0.315	0.2	0.59	64.0	0.9	0.3	0.6	1.66
55	26.2	0.3	0.32	0.0	0.01	35.1	0.5	0.315	0.2	0.53	59.6	0.8	0.3	0.5	1.63
60	24.6	0.3	0.32	0.0	-0.06	32.9	0.4	0.315	0.1	0.47	55.9	0.8	0.3	0.4	1.59
65	23.2	0.3	0.32	0.0	-0.13	31.0	0.4	0.315	0.1	0.41	52.6	0.7	0.3	0.4	1.56
70	21.9	0.3	0.32	0.0	-0.20	29.4	0.4	0.315	0.1	0.35	49.8	0.7	0.3	0.4	1.51
75	20.8	0.3	0.32	-0.1	-0.28	27.9	0.4	0.315	0.1	0.28	47.3	0.6	0.3	0.3	1.47
80	19.8	0.2	0.32	-0.1	-0.35	26.6	0.4	0.315	0.0	0.22	45.0	0.6	0.3	0.3	1.42
85	18.9	0.2	0.32	-0.1	-0.43	25.4	0.3	0.315	0.0	0.15	43.0	0.6	0.3	0.3	1.36
90	18.1	0.2	0.32	-0.1	-0.51	24.3	0.3	0.315	0.0	0.08	41.1	0.6	0.3	0.2	1.31
95	17.4	0.2	0.32	-0.1	-0.59	23.3	0.3	0.315	0.0	0.00	39.4	0.5	0.3	0.2	1.25
100	16.7	0.2	0.32	-0.1	-0.67	22.4	0.3	0.315	0.0	-0.07	37.9	0.5	0.3	0.2	1.19
105	16.1	0.2	0.32	-0.1	-0.75	21.6	0.3	0.315	0.0	-0.14	36.5	0.5	0.3	0.2	1.13
110	15.6	0.2	0.32	-0.1	-0.83	20.8	0.3	0.315	0.0	-0.22	35.2	0.5	0.3	0.2	1.07
115	15.0	0.2	0.32	-0.1	-0.91	20.1	0.3	0.315	0.0	-0.29	34.0	0.5	0.3	0.1	1.01
120	14.6	0.2	0.32	-0.1	-0.99	19.5	0.3	0.315	-0.1	-0.37	32.9	0.4	0.3	0.1	0.94
Max =					**0.39**					**0.77**					**1.69**

Notes

1) Peak flow is equal to the product of 2.78 x C x I x A
2) Rainfall Intensity, $I = A/(Tc+C)^B$
3) Release Rate = Min (Release Rate, Peak Flow)
4) Storage Rate = Peak Flow - Release Rate
5) Storage = Duration x Storage Rate
6) Maximium Storage = Max Storage Over Duration

Table D11 Storage Volumes Roof Area #PR-1D (2 Year, 5 Year and 100 Year Storms) (MRM)

C_{AVG} = 0.90 (dimensionless)
C_{100} = 1.00
Time Interval = 5 (mins)
Drainage Area = 0.00402 (hectares)

	Release Rate = 0.315 (L/sec) Return Period = 2 (years) IDF Parameters, A = 732.951, B = 0.810 (I = A/(T_c+C), C = 6.199					Release Rate = 0.3155 (L/sec) Return Period = 5 (years) IDF Parameters, A = 998.071, B = 0.814 (I = A/(T_c+C), C = 6.053					Release Rate = 0.3155 (L/sec) Return Period = 100 (years) IDF Parameters, A = 1735.69, B = 0.820 (I = A/(T_c+C), C = 6.014				
Duration (min)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)
0	167.2	1.7	0.32	1.4	0.00	230.5	2.6	0.315	2.3	0.00	398.6	4.5	0.3	4.1	0.00
5	103.6	1.0	0.32	0.7	0.22	141.2	1.6	0.315	1.3	0.38	242.7	2.7	0.3	2.4	0.72
10	76.8	0.8	0.32	0.5	0.27	104.2	1.2	0.315	0.9	0.51	178.6	2.0	0.3	1.7	1.01
15	61.8	0.6	0.32	0.3	0.28	83.6	0.9	0.315	0.6	0.56	142.9	1.6	0.3	1.3	1.15
20	52.0	0.5	0.32	0.2	0.25	70.3	0.8	0.315	0.5	0.56	120.0	1.3	0.3	1.0	1.23
25	45.2	0.5	0.32	0.1	0.21	60.9	0.7	0.315	0.4	0.55	103.8	1.2	0.3	0.8	1.27
30	40.0	0.4	0.32	0.1	0.16	53.9	0.6	0.315	0.3	0.52	91.9	1.0	0.3	0.7	1.28
35	36.1	0.4	0.32	0.0	0.10	48.5	0.5	0.315	0.2	0.48	82.6	0.9	0.3	0.6	1.28
40	32.9	0.3	0.32	0.0	0.04	44.2	0.5	0.315	0.2	0.43	75.1	0.8	0.3	0.5	1.26
45	30.2	0.3	0.32	0.0	-0.03	40.6	0.5	0.315	0.1	0.38	69.1	0.8	0.3	0.5	1.23
50	28.0	0.3	0.32	0.0	-0.10	37.7	0.4	0.315	0.1	0.32	64.0	0.7	0.3	0.4	1.20
55	26.2	0.3	0.32	-0.1	-0.17	35.1	0.4	0.315	0.1	0.26	59.6	0.7	0.3	0.4	1.16
60	24.6	0.2	0.32	-0.1	-0.25	32.9	0.4	0.315	0.1	0.19	55.9	0.6	0.3	0.3	1.12
65	23.2	0.2	0.32	-0.1	-0.32	31.0	0.3	0.315	0.0	0.12	52.6	0.6	0.3	0.3	1.07
70	21.9	0.2	0.32	-0.1	-0.40	29.4	0.3	0.315	0.0	0.06	49.8	0.6	0.3	0.2	1.01
75	20.8	0.2	0.32	-0.1	-0.48	27.9	0.3	0.315	0.0	-0.02	47.3	0.5	0.3	0.2	0.96
80	19.8	0.2	0.32	-0.1	-0.56	26.6	0.3	0.315	0.0	-0.09	45.0	0.5	0.3	0.2	0.90
85	18.9	0.2	0.32	-0.1	-0.64	25.4	0.3	0.315	0.0	-0.16	43.0	0.5	0.3	0.2	0.84
90	18.1	0.2	0.32	-0.1	-0.72	24.3	0.3	0.315	0.0	-0.24	41.1	0.5	0.3	0.1	0.78
95	17.4	0.2	0.32	-0.1	-0.80	23.3	0.3	0.315	-0.1	-0.31	39.4	0.4	0.3	0.1	0.72
100	16.7	0.2	0.32	-0.1	-0.88	22.4	0.3	0.315	-0.1	-0.39	37.9	0.4	0.3	0.1	0.65
105	16.1	0.2	0.32	-0.2	-0.96	21.6	0.2	0.315	-0.1	-0.47	36.5	0.4	0.3	0.1	0.58
110	15.6	0.2	0.32	-0.2	-1.05	20.8	0.2	0.315	-0.1	-0.54	35.2	0.4	0.3	0.1	0.52
115	15.0	0.2	0.32	-0.2	-1.13	20.1	0.2	0.315	-0.1	-0.62	34.0	0.4	0.3	0.1	0.45
120	14.6	0.1	0.32	-0.2	-1.22	19.5	0.2	0.315	-0.1	-0.70	32.9	0.4	0.3	0.1	0.38
Max =					**0.28**					**0.56**					**1.28**

Notes

1) Peak flow is equal to the product of 2.78 x C x I x A
2) Rainfall Intensity, $I = A/(Tc+C)^B$
3) Release Rate = Min (Release Rate, Peak Flow)
4) Storage Rate = Peak Flow - Release Rate
5) Storage = Duration x Storage Rate
6) Maximium Storage = Max Storage Over Duration

Table D12 Storage Volumes Roof Area #PR-1E (2 Year, 5 Year and 100 Year Storms) (MRM)

C_{AVG} = 0.90 (dimensionless)
C_{100} = 1.00
Time Interval = 5 (mins)
Drainage Area = 0.00678 (hectares)

	Release Rate = 0.315 (L/sec) Return Period = 2 (years) IDF Parameters, A = 732.951, B = 0.810 (I = A/(T_c+C), C = 6.199					Release Rate = 0.3155 (L/sec) Return Period = 5 (years) IDF Parameters, A = 998.071, B = 0.814 (I = A/(T_c+C), C = 6.053					Release Rate = 0.3155 (L/sec) Return Period = 100 (years) IDF Parameters, A = 1735.69, B = 0.820 (I = A/(T_c+C), C = 6.014				
Duration (min)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)
0	167.2	2.8	0.32	2.5	0.00	230.5	4.3	0.315	4.0	0.00	398.6	7.5	0.3	7.2	0.00
5	103.6	1.8	0.32	1.4	0.43	141.2	2.7	0.315	2.3	0.70	242.7	4.6	0.3	4.3	1.28
10	76.8	1.3	0.32	1.0	0.59	104.2	2.0	0.315	1.6	0.99	178.6	3.4	0.3	3.0	1.83
15	61.8	1.0	0.32	0.7	0.66	83.6	1.6	0.315	1.3	1.13	142.9	2.7	0.3	2.4	2.14
20	52.0	0.9	0.32	0.6	0.68	70.3	1.3	0.315	1.0	1.21	120.0	2.3	0.3	1.9	2.33
25	45.2	0.8	0.32	0.5	0.68	60.9	1.1	0.315	0.8	1.25	103.8	2.0	0.3	1.6	2.46
30	40.0	0.7	0.32	0.4	0.65	53.9	1.0	0.315	0.7	1.26	91.9	1.7	0.3	1.4	2.55
35	36.1	0.6	0.32	0.3	0.62	48.5	0.9	0.315	0.6	1.26	82.6	1.6	0.3	1.2	2.61
40	32.9	0.6	0.32	0.2	0.58	44.2	0.8	0.315	0.5	1.24	75.1	1.4	0.3	1.1	2.64
45	30.2	0.5	0.32	0.2	0.53	40.6	0.8	0.315	0.5	1.22	69.1	1.3	0.3	1.0	2.66
50	28.0	0.5	0.32	0.2	0.48	37.7	0.7	0.315	0.4	1.18	64.0	1.2	0.3	0.9	2.67
55	26.2	0.4	0.32	0.1	0.42	35.1	0.7	0.315	0.3	1.14	59.6	1.1	0.3	0.8	2.67
60	24.6	0.4	0.32	0.1	0.36	32.9	0.6	0.315	0.3	1.10	55.9	1.1	0.3	0.7	2.66
65	23.2	0.4	0.32	0.1	0.30	31.0	0.6	0.315	0.3	1.05	52.6	1.0	0.3	0.7	2.64
70	21.9	0.4	0.32	0.1	0.24	29.4	0.6	0.315	0.2	1.00	49.8	0.9	0.3	0.6	2.62
75	20.8	0.4	0.32	0.0	0.17	27.9	0.5	0.315	0.2	0.95	47.3	0.9	0.3	0.6	2.59
80	19.8	0.3	0.32	0.0	0.10	26.6	0.5	0.315	0.2	0.89	45.0	0.8	0.3	0.5	2.56
85	18.9	0.3	0.32	0.0	0.03	25.4	0.5	0.315	0.2	0.83	43.0	0.8	0.3	0.5	2.52
90	18.1	0.3	0.32	0.0	-0.04	24.3	0.5	0.315	0.1	0.77	41.1	0.8	0.3	0.5	2.48
95	17.4	0.3	0.32	0.0	-0.11	23.3	0.4	0.315	0.1	0.71	39.4	0.7	0.3	0.4	2.44
100	16.7	0.3	0.32	0.0	-0.19	22.4	0.4	0.315	0.1	0.64	37.9	0.7	0.3	0.4	2.39
105	16.1	0.3	0.32	0.0	-0.26	21.6	0.4	0.315	0.1	0.57	36.5	0.7	0.3	0.4	2.35
110	15.6	0.3	0.32	-0.1	-0.34	20.8	0.4	0.315	0.1	0.51	35.2	0.7	0.3	0.3	2.30
115	15.0	0.3	0.32	-0.1	-0.42	20.1	0.4	0.315	0.1	0.44	34.0	0.6	0.3	0.3	2.24
120	14.6	0.2	0.32	-0.1	-0.49	19.5	0.4	0.315	0.1	0.37	32.9	0.6	0.3	0.3	2.19
Max =					**0.68**					**1.26**					**2.67**

Notes

1) Peak flow is equal to the product of 2.78 x C x I x A
2) Rainfall Intensity, $I = A/(Tc+C)^B$
3) Release Rate = Min (Release Rate, Peak Flow)
4) Storage Rate = Peak Flow - Release Rate
5) Storage = Duration x Storage Rate
6) Maximium Storage = Max Storage Over Duration

Table D13 Storage Volumes Roof Area #PR-1F (2 Year, 5 Year and 100 Year Storms) (MRM)

C_{AVG} = 0.90 (dimmensionless)
C_{100} = 1.00
Time Interval = 5 (mins)
Drainage Area = 0.00691 (hectares)

	Release Rate = 0.315 (L/sec)					Release Rate = 0.3155 (L/sec)					Release Rate = 0.3155 (L/sec)				
	Return Period = 2 (years)					Return Period = 5 (years)					Return Period = 100 (years)				
	IDF Parameters, A = 732.951, B = 0.810					IDF Parameters, A = 998.071, B = 0.814					IDF Parameters, A = 1735.69, B = 0.820				
	($I = A/(T_c+C)$, C = 6.199					($I = A/(T_c+C)$, C = 6.053					($I = A/(T_c+C)$, C = 6.014				
Duration (min)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)	Rainfall Intensity, I (mm/hr)	Peak Flow (L/sec)	Release Rate (L/sec)	Storage Rate (L/sec)	Storage (m^3)
0	167.2	2.9	0.32	2.6	0.00	230.5	4.4	0.315	4.1	0.00	398.6	7.7	0.3	7.3	0.00
5	103.6	1.8	0.32	1.5	0.44	141.2	2.7	0.315	2.4	0.72	242.7	4.7	0.3	4.3	1.30
10	76.8	1.3	0.32	1.0	0.61	104.2	2.0	0.315	1.7	1.01	178.6	3.4	0.3	3.1	1.87
15	61.8	1.1	0.32	0.8	0.68	83.6	1.6	0.315	1.3	1.16	142.9	2.7	0.3	2.4	2.19
20	52.0	0.9	0.32	0.6	0.70	70.3	1.3	0.315	1.0	1.24	120.0	2.3	0.3	2.0	2.39
25	45.2	0.8	0.32	0.5	0.70	60.9	1.2	0.315	0.9	1.28	103.8	2.0	0.3	1.7	2.52
30	40.0	0.7	0.32	0.4	0.68	53.9	1.0	0.315	0.7	1.30	91.9	1.8	0.3	1.4	2.61
35	36.1	0.6	0.32	0.3	0.65	48.5	0.9	0.315	0.6	1.29	82.6	1.6	0.3	1.3	2.67
40	32.9	0.6	0.32	0.3	0.61	44.2	0.8	0.315	0.5	1.28	75.1	1.4	0.3	1.1	2.71
45	30.2	0.5	0.32	0.2	0.56	40.6	0.8	0.315	0.5	1.26	69.1	1.3	0.3	1.0	2.73
50	28.0	0.5	0.32	0.2	0.51	37.7	0.7	0.315	0.4	1.22	64.0	1.2	0.3	0.9	2.74
55	26.2	0.5	0.32	0.1	0.45	35.1	0.7	0.315	0.4	1.19	59.6	1.1	0.3	0.8	2.74
60	24.6	0.4	0.32	0.1	0.39	32.9	0.6	0.315	0.3	1.14	55.9	1.1	0.3	0.8	2.73
65	23.2	0.4	0.32	0.1	0.33	31.0	0.6	0.315	0.3	1.10	52.6	1.0	0.3	0.7	2.71
70	21.9	0.4	0.32	0.1	0.27	29.4	0.6	0.315	0.2	1.04	49.8	1.0	0.3	0.6	2.69
75	20.8	0.4	0.32	0.0	0.20	27.9	0.5	0.315	0.2	0.99	47.3	0.9	0.3	0.6	2.66
80	19.8	0.3	0.32	0.0	0.13	26.6	0.5	0.315	0.2	0.93	45.0	0.9	0.3	0.5	2.63
85	18.9	0.3	0.32	0.0	0.06	25.4	0.5	0.315	0.2	0.88	43.0	0.8	0.3	0.5	2.60
90	18.1	0.3	0.32	0.0	-0.01	24.3	0.5	0.315	0.2	0.82	41.1	0.8	0.3	0.5	2.56
95	17.4	0.3	0.32	0.0	-0.08	23.3	0.4	0.315	0.1	0.75	39.4	0.8	0.3	0.4	2.52
100	16.7	0.3	0.32	0.0	-0.16	22.4	0.4	0.315	0.1	0.69	37.9	0.7	0.3	0.4	2.48
105	16.1	0.3	0.32	0.0	-0.23	21.6	0.4	0.315	0.1	0.62	36.5	0.7	0.3	0.4	2.43
110	15.6	0.3	0.32	0.0	-0.31	20.8	0.4	0.315	0.1	0.56	35.2	0.7	0.3	0.4	2.38
115	15.0	0.3	0.32	-0.1	-0.38	20.1	0.4	0.315	0.1	0.49	34.0	0.7	0.3	0.3	2.33
120	14.6	0.3	0.32	-0.1	-0.46	19.5	0.4	0.315	0.1	0.42	32.9	0.6	0.3	0.3	2.28
Max =					**0.70**					**1.30**					**2.74**

Notes

1) Peak flow is equal to the product of 2.78 x C x I x A
2) Rainfall Intensity, $I = A/(Tc+C)^B$
3) Release Rate = Min (Release Rate, Peak Flow)
4) Storage Rate = Peak Flow - Release Rate
5) Storage = Duration x Storage Rate
6) Maximium Storage = Max Storage Over Duration

Table D14 - 100-YEAR STORM SEWER DESIGN SHEET

Return Period Storm =	**100**	(5-years, 100-years)
Default Inlet Time=	10	(minutes)
Manning Coefficient =	0.013	(dimensionless)

LOCATION			AREA (hectares)				FLOW (UNRESTRICTED - RATIONAL METHOD)							SEWER DATA									
Location	From Node	To Node	Area No.	Area (ha)	∑ Area (ha)	Average R	Indiv. 2.78*A*R	Accum. 2.78*A*R	Tc (mins)	I (mm/h)	Indiv. Flow (L/sec)	Return Period	Q (L/sec)	Dia (mm) Actual	Dia (mm) Nominal	Type	Slope (%)	Length (m)	Capacity (L/sec)	Velocity (m/s)		Time in Pipe, Tt (min)	Hydraulic Ratios	
																				Vf	Va		Qa/Qf	Va/Vf
522 Cambridge Street S	AD1	AD2	POS-1	0.021	0.021	0.75	0.043	0.043	10.00	178.56	7.69	100.00	7.69	155	150	PVC	1.50	8.83	20.4	1.06	0.75	0.20	0.38	0.71
	AD2	AD3	POS-1		0.021			0.04	10.20	176.78		100.00	7.61	155	150	PVC	1.50	5.34	20.4	1.06	0.75	0.12	0.37	0.71
	AD3	AD4	POS-1		0.021			0.04	10.32	175.72		100.00	7.56	155	150	PVC	1.50	33.97	20.4	1.06	0.75	0.76	0.37	0.71
	AD4	STMMH1	POS-1		0.021	0.90		0.04	10.96	170.27		100.00	7.33	155	150	PVC	1.50	8.85	20.4	1.06	0.75	0.20	0.36	0.71
	BLD ROOF	STMMH1	PR-1	0.0339	0.055	0.90	0.08	0.04	10.00	178.56	15.14	100.00	**1.89**	155	150	PVC	2.00	7.42	23.5	1.22	0.63	0.20	0.08	0.52
	STMMH1	MUNI COMB. SEWER			0.055			0.09	11.35	167.10	-	100.00	9.22	201	200	PVC	1.00	10.30	33.2	1.04	0.73	0.23	0.28	0.70

Definitions:
Q = 2.78*AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Watershed Area (hectares)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficients (dimensionless)

Notes:

		5yr	100yr
Ottawa Rainfall Intensity Values:	a =	998.071	1735.69
From Sewer Desing Guidelines,	b=	0.814	0.820
December 2025	c =	6.053	6.014

Designed: **Nikhil Parmar E.I.T.**	Project: **522 Cambridge Street South**	
Checked: **Aaditya Jariwala, M.Eng, P.Eng.**	Location: **Ottawa, Ontario**	
Dwg Reference: **C100**	File Ref: **OTT-25015974-A0 - SWM DESIGN SHEETS.xlsx**	Sheet No: **1 of 1**

Nikhil Parmar

From: Azimi, Farbod <farbod.azimi@ottawa.ca>
Sent: Wednesday, April 22, 2026 3:25 PM
To: Aaditya Jariwala
Cc: Nikhil Parmar; Wu, John; Jhamb, Nishant; Alexander Johnson; Hughes, Brett
Subject: RE: 522 Cambridge Street South - File No.: PC2026-0020 - Boundary Conditions Request
Attachments: 2601_522 Cambridge St S_LB_Site Plan.pdf

Hi Aaditya,

Thank you for your email, we certainly appreciate the difficulty with conforming to the City's typical SWM Quantity Control design criteria for infill projects with limited space and large impermeable areas.

The City's quantity control criteria require SWM to control the 100-yr post development flows to a 2-yr predevelopment level using existing C (max =0.4); However, if you can demonstrate a reduction in the post-development discharge rates (controlled and uncontrolled cumulative) compared to the pre-development discharge rates for the 2yr, 5yr, and 100yr storm events, we can support this proposal. Please ensure this is clearly detailed in the SWM Report submission.

In addition, the 20 mm orifice size is too small. The minimum allowable size for an ICD is 75 mm, or alternatively, a vortex flow regulator may be used. Pumping at a discharge rate of 3.1 L/s is also an acceptable option.

Kind regards,

From: Aaditya Jariwala <Aaditya.Jariwala@exp.com>
Sent: Tuesday, April 21, 2026 12:00 PM
To: Azimi, Farbod <farbod.azimi@ottawa.ca>
Cc: Nikhil Parmar <nikhil.parmar@exp.com>; Wu, John <John.Wu@ottawa.ca>; Jhamb, Nishant <nishant.jhamb@ottawa.ca>; Alexander Johnson <alexander.johnson@exp.com>
Subject: RE: 522 Cambridge Street South - File No.: PC2026-0020 - Boundary Conditions Request

Hi Farbod,

We have performed some preliminary stormwater management calculations based on the comments highlighted in your email below, also captured in the phase-1 feedback form.
2-year pre-development flowrate with 0.4 runoff coefficient results in allowable release rate of 5.2 L/sec. In post development, most of the site area is taken up by the new building. We are proposing flow-controlled roof drains. This will result in max. controlled flow rate from the building roof of 1.89 L/sec. Therefore, the remaining side yards, front yard and backyard has to be controlled to 3.1 L/sec. With underground storage, this allowable release rate drops by 50%, down to 1.6 L/sec, resulting in a 20mm orifice. We propose to let the remaining site drain uncontrolled towards the City ROW. Which will be 10.46 L/sec during 100-year storm event. The new building roof will still be controlled to 1.89 L/sec. Due to site constraints, capturing the stormwater into the onsite sewer system and controlling it poses a challenge. Additionally, the orifice size is extremely small, poses clogging risk.

Please advise,

Aaditya Jariwala, M.Eng, P.Eng.
EXP | Project Manager
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exp.com | legal disclaimer
keep it green, read from the screen

From: Azimi, Farbod <farbod.azimi@ottawa.ca>
Sent: Friday, April 10, 2026 2:44 PM
To: Alexander Johnson <Alexander.Johnson@exp.com>
Cc: Aaditya Jariwala <Aaditya.Jariwala@exp.com>; Nikhil Parmar <nikhil.parmar@exp.com>; Wu, John <John.Wu@ottawa.ca>; Jhamb, Nishant <nishant.jhamb@ottawa.ca>
Subject: RE: 522 Cambridge Street South - File No.: PC2026-0020 - Boundary Conditions Request

Good afternoon, Alexander,

The following are boundary conditions, HGL, for hydraulic analysis at 522 Cambridge Street South (zone 1W) assumed to be connected via the 203 mm watermain on Cambridge Street South (see attached PDF for location).

Minimum HGL = 107.4 m
Maximum HGL = 114.6 m
MaxDay + FireFlow (105 L/s) = 105.6 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. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

Regarding the sanitary sewer connection, the City's Asset Management team has confirmed that there are no capacity concerns with the proposed peak Sanitary flows.

For the Storm connection, SWM will be required to control the 100-yr post development flows to a 2-yr predevelopment level using existing C (max =0.4).

Kind regards,

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

From: Alexander Johnson <Alexander.Johnson@exp.com>
Sent: Monday, April 6, 2026 10:52 AM
To: Wu, John <John.Wu@ottawa.ca>; Azimi, Farbod <farbod.azimi@ottawa.ca>
Cc: aaditya.jariwala <aaditya.jariwala@exp.com>; Nikhil Parmar <nikhil.parmar@exp.com>
Subject: 522 Cambridge Street South - File No.: PC2026-0020 - Boundary Conditions Request

Hello John/Farbod,

EXP has been retained by the proponent of a 4-storey, 19-unit apartment building located at 522 Cambridge Street South - **File No.: PC2026-0020**

Proposed water service connection is shown on the attached sketch. I kindly request that you provide water boundary conditions based on the estimated demands summarized below:

Water Demands:
Avg. Day: **0.11** L/sec
Max. Day Demands: **1.00** L/sec
Peak Hourly Demands: **1.51** L/sec
RFF per OBC: **105** L/s

Additionally requesting confirmation of capacity in the existing **450mm** diameter combined sewer on Cambridge Street South adjacent to the subject property.

Sanitary Demands:
Sanitary Demands (incl. Infiltration): **0.412** L/sec

Supporting calculations and boundary condition request location plan are attached to this email.

Thank you

Alexander Johnson, P.Eng.
EXP | Engineering Designer
t : +1.613.688.1899, 63222 | e : alexander.johnson@exp.com
2650 Queensview Drive
Suite 100
Ottawa, ON K2B 8H6
CANADA

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

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WATTS®	Adjustable Accutrol Weir Tag: _____	Adjustable Flow Control for Roof Drains

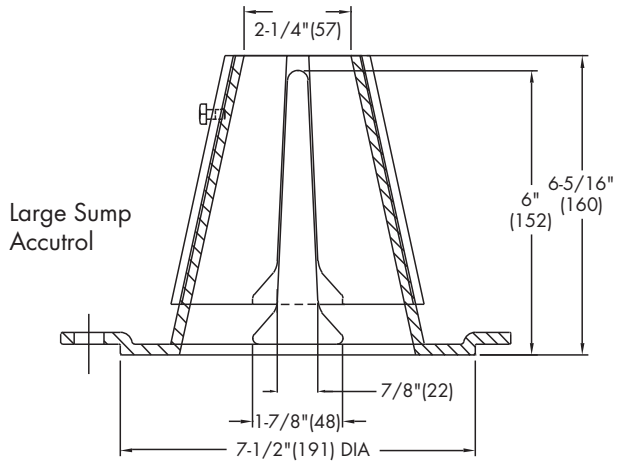
ADJUSTABLE ACCUTROL (for Large Sump Roof Drains only)

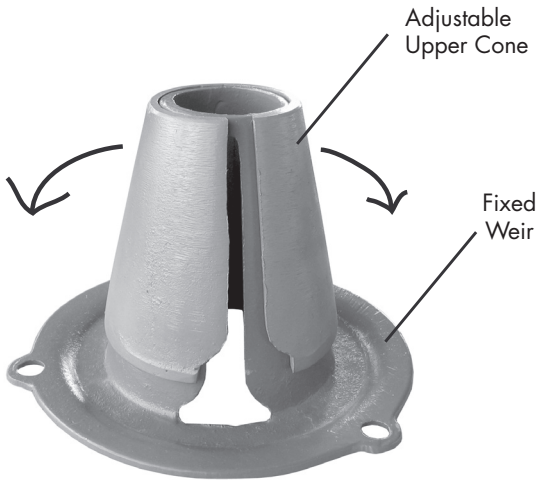
For more flexibility in controlling flow with heads deeper than 2", Watts Drainage offers the Adjustable Accutrol. The Adjustable Accutrol Weir is designed with a single parabolic opening that can be covered to restrict flow above 2" of head to less than 5 gpm per inch, up to 6" of head. To adjust the flow rate for depths over 2" of head, set the slot in the adjustable upper cone according to the flow rate required. Refer to Table 1 below.
Note: Flow rates are directly proportional to the amount of weir opening that is exposed.

EXAMPLE:

For example, if the adjustable upper cone is set to cover 1/2 of the weir opening, flow rates above 2"of head will be restricted to 2-1/2 gpm per inch of head.

Therefore, at 3"of head, the flow rate through the Accutrol Weir that has 1/2 the slot exposed will be:
[5 gpm (per inch of head) x 2 inches of head] + 2-1/2 gpm (for the third inch of head) = 12-1/2 gpm.





1/2 Weir Opening Exposed Shown Above

TABLE 1. Adjustable Accutrol Flow Rate Settings

Weir Opening Exposed	1"	2"	3"	4"	5"	6"
	Flow Rate (gallons per minute)					
Fully Exposed	5	10	15	20	25	30
3/4	5	10	13.75	17.5	21.25	25
1/2	5	10	12.5	15	17.5	20
1/4	5	10	11.25	12.5	13.75	15
Closed	5	5	5	5	5	5

Job Name _____ Contractor _____

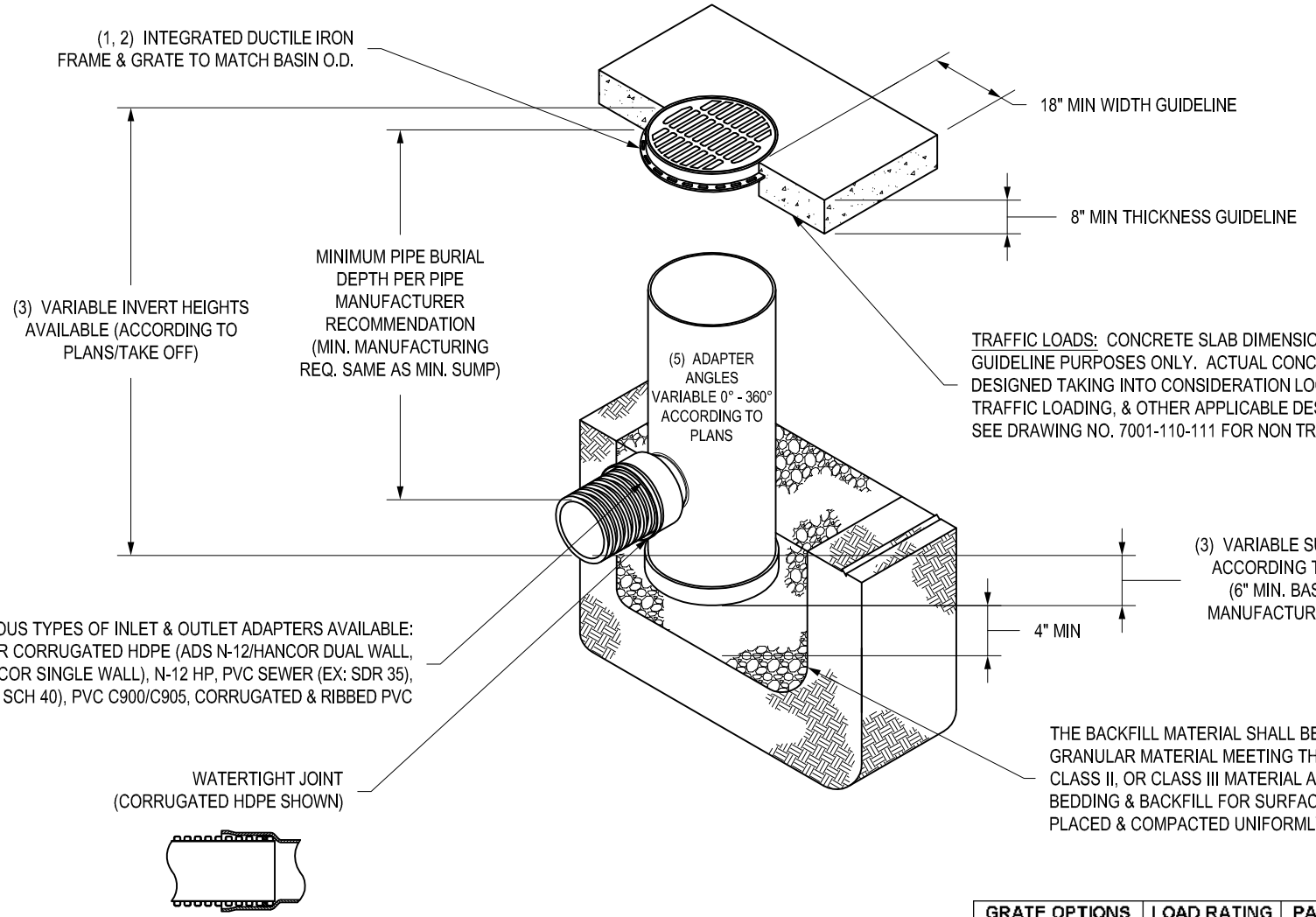
Job Location _____ Contractor's P.O. No. _____

Engineer _____ Representative _____

WATTS®
A Watts Water Technologies Company

USA: Tel: (800) 338-2581 • Fax: (828) 248-3929 • Watts.com
Canada: Tel: (905) 332-4090 • Fax: (905) 332-7068 • Watts.ca
Latin America: Tel: (52) 81-1001-8600 • Fax: (52) 81-8000-7091 • Watts.com

NYLOPLAST 24" DRAIN BASIN: 2824AG _ _X



GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	2499CGP	7001-110-216
STANDARD	MEETS H-20	2499CGS	7001-110-217
SOLID COVER	MEETS H-20	2499CGC	7001-110-218
DOME	N/A	2499CGD	7001-110-219
DROP IN GRATE	LIGHT DUTY	2401DI	7001-110-075

1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP & PVC SEWER.
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

DRAWN BY EBC	MATERIAL	ADS Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com
DATE 04-03-06			
REVISED BY NMH	PROJECT NO./NAME	TITLE	24 IN DRAIN BASIN QUICK SPEC INSTALLATION DETAIL
DATE 03-14-16			
DWG SIZE A	SCALE 1:40 SHEET 1 OF 1	DWG NO. 7001-110-192	REV E

EXP Services Inc.
522 Cambridge Ltd.
522 Cambridge Street South, Ottawa, ON
OTT-25015974-A0
April 30, 2026

Appendix E – Additional Information

Pre-Consultation: Meeting Feedback

File No.: PC2026-0020

March 19, 2026

Peter Hume/Alison Clarke
CAMBRIDGE
Via email: alison@tsgdi.ca

Subject: Pre-Consultation: Meeting Feedback
Proposed Site Plan Control Application – 522 Cambridge Street South

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on March 3, 2026.

Pre-Consultation Preliminary Assessment

Next Steps

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. For your next submission, please submit the required Application Form, together with the necessary studies and/or plans to planningcirculations@ottawa.ca, copy (cc:) to the file lead and planning support.

2. In your subsequent pre-consultation or application submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed is requested with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.

3. Please note, if your development proposal changes significantly in scope, design, or density it is recommended that a subsequent pre-consultation application be submitted.

Supporting Information and Material Requirements

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

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

Consultation with Technical Agencies

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

Planning

Comments:

1. Policy Overview:
    a. Downtown Core Transect – Schedule A
        a. The Downtown Core Transect has a number of policies pertaining to motor vehicle parking.
    b. Neighbourhood Designation – Schedule B1
    c. Evolving Neighbourhood Overlay – Scheudle B1
2. Zoning:
    a. 2008-250 Zoning By-law: Residential Fourth Density Zone, Subzone UD (R4UD)
    b. 2026-50 Zoning By-law: Neighbourhood Fourth Density, Subzone B (N4B)
    c. Please note that the current Zoning By-law 2008-250 remains in effect until the new Zoning By-law is enacted by Council and all appeals have been resolved. For provisions in the new Zoning By-law that are under appeal, the related provisions in the current Zoning By-law 2008-250 will remain in effect with **the most restrictive provisions from both by-laws applying**.

       Please refer to the landing page for *New Zoning By-law Final Draft (By-law No. 2026-50) | City of Ottawa* to review the new zones and zone codes. A full list of zone codes is found in Section 134, Table 134B.
3. Lot Geometry:
    a. Frontage on Cambridge Street South approximately 15.96 metres.
    b. Lot depth of approximately 38.7 metres.
    c. Lot area of approximately 608.8 square metres.

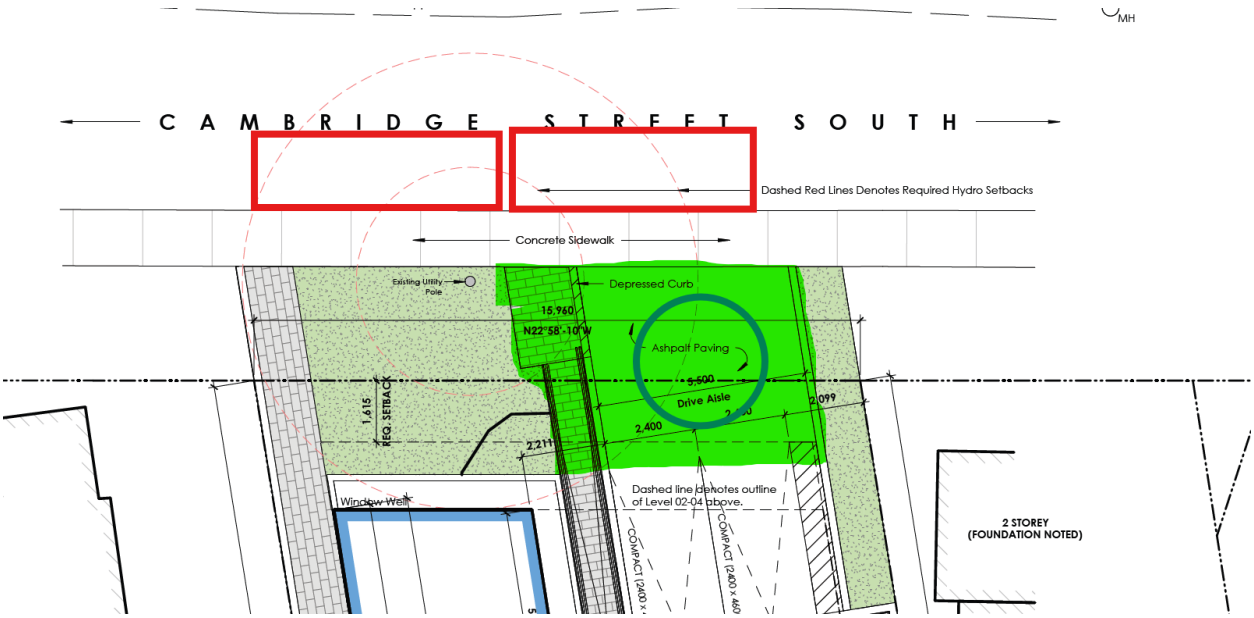
4. Staff have concerns with the provisions of vehicular parking being provided within the front yard with respect to the policies of the Official Plan:

    a. The intent of Section 5.1.1 of the Official Plan is to maintain and enhance an urban pattern of built form, site design and mix of uses.

        a. The intent of Section 5.1.2 of the Official Plan is to prioritze walking, cycling and transit within, and to and from, the Downtown Core. Section 5.1.2 Policy 3) a) of states that “Motor vehicle parking shall not be required in new development, other than visitor parking for large-scale residential development”

        b. Further, Section 5.1.2 Policy 3) c) states that “Where new development includes parking as an accessory use, such parking shall be located underground or, if within the principal building, never at grade along the frontage of any public street”

5. Staff encourage the applicant to reconsider the parking scheme in future submissions. Please consider the removal of the proposed parking and instead enhance the curb space allotted on Cambridge Street South which would be able to accommodate the two parking spaces proposed. See image below.



6. The removal of on site parking would also allow for the proposed development to provide more soil volume for street trees, expand soft landscaping in the front yard, and provide for street-level front facing entrances that better address the sidewalk.

7. Please consider the internalization of the bicycle parking and waste areas, and please incorporate a 1:1 ratio of bicycle parking spaces per dwelling unit to support the community as a 15-minute neighbourhood, and to supplement the lack of vehicular parking on-site. The removal of the vehicle parking within the front yard may allow for greater GFA within the building to host these facilities indoors. Further, the internalization of these elements would address a number of guidelines and policies supporting the strengthening of the urban tree canopy, provision of greenspace and soft landscaping, and will provide for a more functional rear yard for residents to utilize. Please note that Zoning By-law 2026-50 stipulates bicycle parking rates in Table 613B and requires a ratio of 1:1 Long-term spaces per dwelling unit.

8. Due to the southern interior lot line's irregular geometry, the proposed development would require zoning relief to address the reduced interior side yard setback.

9. To determine conformity with Zoning By-law 2008-250 please include the following in future site plan submission:

    a. The front yard setbacks of the abutting lots so Staff may determine the front yard setback in accordance with Section 123.

    b. The dimensions of the front yard so Staff may determine the minimum required aggregated soft landscaping in accordance with Section 139.

10. To determine conformity with Zoning By-law 2026-50 please include the following in future site plan submission:

    a. Height of the rooftop amenity area to determine conformity with Section 203 – Projections Above the Hieight Limit (3)(n).

    b. Waste storage area dimensions, in area, as to determine conformity with Section 217.

11. To determine conformity with both Zoning By-laws please include the following in future site plan submission:

    a. Unit count, regarding amenity area calculations and parking rates.

        a. The unit breakdown differs between the site plan amenity area calculation (18 units) and the floor plan unit breakdown (19 units).

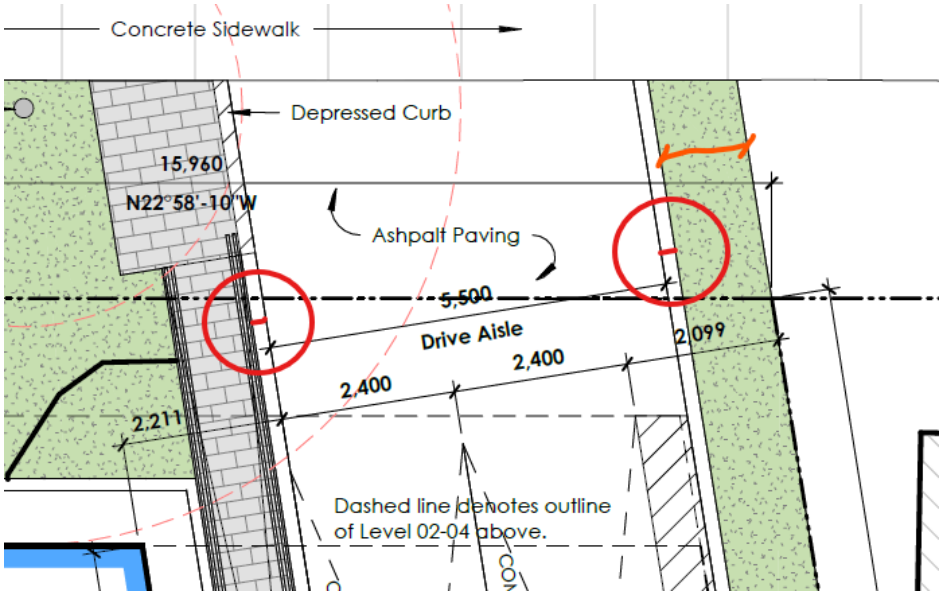
    b. Dimensions of the walkway and location of permanent fixtures or landscaping to ensure conformity with Section 604(4), Section 606 of Zoning By-law 2026-50 and Section 161(15) of Zoning By-law 2008-250.

a. Please note the intent of the zoning by-law is to prohibit illigal parking in front yards by way of a hard surface abutting the driveway.

b. Further, the dimensions of the walkway are important for accessibilty purposes and further elaborated in Section 161(15).

c. Dimention of the southern interior lot line abutting the driveway, as shown in orange below.

d. Dimensions of the driveway, including the areas outlined in red below.



12. Staff appreciate the intensification in the Downtown Core Transect and further appreciate the unit mix, including nine two-bedroom units. Staff would appreciate the addition of larger dwelling units as outlined in Section 3.2 of the Official Plan and expanded on in Section 708 (2) of the 2026-50 Zoning By-law.

13. Please add a note on the snow management strategy to future site plan submissions.

14. Please add the requirements as per the Site Plan Terms of Reference such as a north arrow to future site plan submissions.

15. Section 37 requirements / Community Benefits Charge

    a. The former Section 37 regime has been replaced with a "Community Benefits Charge", By-law No. 2022-307, of 4% of the land value. This charge will be required for ALL buildings that are 5 or more storeys and 10 or more units and will be required at the time of building permit unless the development is subject to an existing registered Section 37 agreement. Questions regarding this change can be directed to Connie.Gleason@ottawa.ca and aziz.khalil@ottawa.ca.

Urban Design

Comments:

16. Low-Rise Residential Infill Guidelines apply and must be addressed in the design. Please be aware that the City is finalizing updated NEW Urban Design Guidelines for Low-Rise Infill Housing | Engage Ottawa guidelines and are targeting the end of April for implementation.

17. The building entrance must be more prominent and visible from the street.

18. Please remove at least one of the front parking spaces to reduce the curb cut provided.

19. Ensure that the existing 2-3 storey form of neighbouring buildings is reflected in the architecture of the building.

20. Limit projecting balconies due to the tight site conditions.

21. Look for opportunity to locate garbage and bicycle parking interior to the building to improve site amenity.

Feel free to contact Lisa Stern, Urban Planner III, for follow-up questions.

Engineering

Comments:

    a. Application of the IDF information derived from the Meteorological Services of Canada rainfall data, taken from the MacDonald Cartier Airport, collected 1966 to 1997.

    b. For separated sewer systems built up until 2016, the design of the storm sewers were based on a 5-year storm; storm systems after such time are, generally, based on a 2-year level-of-service.

c. In separated areas, the pre-development runoff shall be the lower of the existing coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).

d. For a combined sewer system, the maximum C = 0.4 or the pre-development C value, whichever is less. In the absence of other information, the allowable release rate shall be based on a 2-year storm event.

e. A calculated time of concentration (cannot be less than 10 minutes).

f. Flows to the storm sewer in excess of the 2-year storm release rate, up to and including the 100-year storm event, must be detained on site.

g. Storm sewer outlets should not be submerged.

h. The quantity control criteria: 100-year post-development to 2-year pre-development with a maximum pre-development runoff c = 0.4 or the actual existing site runoff coefficient, whichever is less.

i. No onsite quality control treatment is required.

22. Deep Services (Storm, Sanitary and/or Water Supply)

a. Provide existing servicing information and the recommended location for the proposed connections. Services should ideally be grouped in a common trench to minimize the number of road cuts.

b. Connections to trunk sewers and easement sewers are typically not permitted.

c. Provide information on the monitoring manhole requirements – should be located in an accessible location on private property near the property line (ie. Not in a parking area).

d. Review provision of a high-level sewer.

e. Sewer connections to be made above the springline of the sewermain as per:

i. Std Dwg S11.1 for flexible main sewers – connections made using approved tee or wye fittings.

ii. Std Dwg S11 (For rigid main sewers) – lateral must be less that 50% the diameter of the sewermain,

iii. Std Dwg S11.2 (for rigid main sewers using bell end insert method) – for larger diameter laterals where manufactured inserts are not

available; lateral must be less that 50% the diameter of the sewermain,

iv. Connections to manholes permitted when the connection is to rigid main sewers where the lateral exceeds 50% the diameter of the sewermain. – Connect obvert to obvert with the outlet pipe unless pipes are a similar size.

23. An MECP Environmental Compliance Approval **Municipal/Private Sewage Works** may be required for the proposed development. A Ministry contact has been provided below but please work with City staff on the need (or not) of an application.

    Please review the requirements of the ESAR requirements prior to preparing the servicing and storm water management report:

    https://www.ontario.ca/page/environmental-activity-and-sector-registry

    a. Patrick Lalonde at (613) 521-3450 or Patrick.Lalonde@ontario.ca

24. Water

    a. Water Boundary condition requests must include the location of the service (map or plan with connection location(s) indicated) and the expected loads required by the proposed development, including calculations. Please provide the following information:

        a. Location of service

        b. Type of development

        c. The amount of fire flow required (per OBC, FUS is required if OBC method determines that the required fire flow is greater than 9000L/min). Both the OBC and FUS calculations are required to be included if OBC determines that the fire flow is greater than 9000L/min.

        d. Average daily demand: ___ l/s.

        e. Maximum daily demand: ___l/s.

        f. Maximum hourly daily demand: ___ l/s.

25. Sewer (sanitary and storm)

    a. Sanitary sewer capacity, please provide the new Sanitary sewer discharge and we confirm if sanitary sewer main has the capacity.

b. Sanitary sewer monitoring maintenance hole is required to be installed at the property line (on the private side of the property) as per City of Ottawa Sewer-Use By-Law 2003-514 (14) *Monitoring Devices*.

26. Stormwater

a. Underground Storage: Please note that the Modified Rational Method for storage computation in the Sewer Design Guidelines was originally intended to be used for above ground storage (i.e. parking lot) where the change in head over the orifice varied from 1.5 m to 1.2 m (assuming a 1.2 m deep CB and a max ponding depth of 0.3 m). This change in head was small and hence the release rate fluctuated little, therefore there was no need to use an average release rate.

   When underground storage is used, the release rate fluctuates from a maximum peak flow based on maximum head down to a release rate of zero. This difference is large and has a significant impact on storage requirements. **We therefore require that an average release rate equal to 50% of the peak allowable rate shall be applied to estimate the required volume. Alternatively, the consultant may choose to use a submersible pump in the design to ensure a constant release rate.**

   In the event that there is a disagreement from the designer regarding the required storage, The City will require that the designer demonstrate their rationale utilizing dynamic modelling, that will then be reviewed by City modellers in the Water Resources Group.

   Provide information on type of underground storage system including product name and model, number of chambers, chamber configuration, confirm invert of chamber system, top of chamber system, required cover over system and details, interior bottom slope (for self-cleansing), chart of storage values, length, width and height, capacity, entry ports (maintenance) etc. UG storage to provide actual 2- and 100-year event storage requirements.

   In regard to all proposed UG storage, ground water levels (and in particular HGW levels) will need to be reviewed to ensure that the proposed system does not become surcharged and thereby ineffective.

   Modeling can be provided to ensure capacity for both storm and sanitary sewers for the proposed development by City's Water Distribution Dept. – Modeling Group, through PM and upon request.

b. **If rooftop control** and storage is proposed as part of the SWM solutions sufficient details (Cl. 8.3.8.4) shall be discussed and document in the report and on the plans. Roof drains are to be connected downstream of any incorporated ICDs within the SWM system and not to the foundation drain system. Provide a **Roof Drain Plan** as part of the submission.

c. Please note that the minimum orifice dia. for a plug style **ICD is 83mm and the minimum flow rate from a vortex ICD is 6 L/s** in order to reduce the likelihood of plugging.
d. Document how any foundation drainage system will be integrated into the servicing design and show the positive outlet on the plan. Foundation drainage is to be independently connected to sewer main unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention. **It is recommended that the foundation drainage system be drained by a sump pump connection to the storm sewer to minimize risk of basement flooding as it will provide the best protection from the uncontrolled sewer system compared to relying on the backwater valve.**

27. Grading

Post-development site grading shall match existing property line grades to minimize disruption to the adjacent residential properties. A **topographical plan of survey** shall be provided as part of the submission and a note provided on the plans.

28. Fire-fighting flow rate(s)

a. Please review Technical Bulletin ISTB-2018-02, maximum fire flow hydrant capacity is provided in Section 3 Table 1 of Appendix I. A hydrant coverage figure shall be provided and demonstrate there is adequate fire protection for the proposal.

b. [Fire flow demand requirements shall be based on **ISTB-2021-03**]

c. Exposure separation distances shall be defined on a figure to support the FUS calculation and required fore flow (RFF).

d. **Hydrant capacity shall be assessed to demonstrate the RFF can be achieved**. Please identify which hydrants are being considered to meet the RFF on a fire hydrant coverage plan as part of the boundary conditions request.

29. Geotechnical (including, where applicable, detailed sensitive marine clay investigation)

Please ensure that the geotechnical report speaks to the protection of adjacent structures and analyzes the impact of excavation and settlement on adjacent structure namely the existing retaining wall in the rear yard, as well as the adjacent foundations.

A Geotechnical Study/Investigation shall be prepared in support of this development proposal.

Reducing the groundwater level in this area can lead to potential damages to surrounding structures due to excessive differential settlements of the ground. The impact of groundwater lowering on adjacent properties needs to be discussed and investigated to ensure there will be no short term and long-term damages associated with lowering the groundwater in this area.

Geotechnical Study shall be consistent with the Geotechnical Investigation and Reporting Guidelines for Development Applications. See the Studies Plans and Identification List for more information.

If Sensitive marine clay soils are present in this area that are susceptible to soil shrinkage that can lead to foundation and building damages. All six (6) conditions listed in the Tree Planting in Sensitive Marine Clay Soils-2017 Guidelines are required to be satisfied. Note that if the plasticity index of the soil is determined to be less than 40% a minimum separation between a street tree and the proposed building foundations of 4.5m will need to be achieved. A memorandum addressing the Tree in Clay Soil Guidelines prepared by a geotechnical engineer is required to be provided to the City.

https://ottawa.ca/en/city-hall/planning-and-development/community-plans-and-design-guidelines/design-and-planning/completed-guidelines/tree-planting-sensitive-marine-clay-soils-2017-guidelines

30. Slope stability

    A report addressing the stability of slopes, prepared by a qualified geotechnical engineer licensed in the Province of Ontario, should be provided wherever a site has slopes (existing or proposed) steeper than 5 horizontal to 1 vertical (i.e., 11 degree inclination from horizontal) and/or more than 2 metres in height.

31. Retaining Walls

    Retaining walls over 1.0m in height must be designed and sealed by a structural P.Eng. A stamped engineering report, stating that retaining wall is designed with factor of safety ≥1.5 against global instability is required. Successive walls are considered as a single wall if the spacing is less than 1.5 m between the two walls, or the grading is greater than 5% between the two walls.

32. CCTV sewer inspection

    CCTV sewer inspection required for pre and post construction conditions to ensure no damage to City Assets surrounding site.

33. Snow Storage

Any portion of the subject property which is intended to be used for permanent or temporary snow storage shall be as shown on the approved site plan and grading plan. Snow storage shall not interfere with approved grading and drainage patters or servicing. Snow storage areas shall be setback from the property lines, foundations, fencing or landscaping a minimum of 1.5m. Snow storage areas shall not occupy driveways, aisles, required parking spaces or any portion of a road allowance. If snow is to be removed from the site please indicate this on the plan(s).

34. Road Reinstatement

Where servicing involves three or more service trenches, either a full road width or full lane width 40 mm asphalt overlay will be required, as per amended Road Activity By- Law 2003-445 and City Standard Detail Drawing R10. The amount of overlay will depend on condition of roadway and width of roadway(s).

35. Exterior Site Lighting

The following will be added as a condition of approval:

Any proposed light fixtures (both pole-mounted and wall mounted) must be part of the approved Site Plan. All external light fixtures must meet the criteria for Full Cut-off Classification as recognized by the Illuminating Engineering Society of North America (IESNA or IES) and must result in minimal light spillage onto adjacent properties (as a guideline, 0.5 fc is normally the maximum allowable spillage). In order to satisfy these criteria, the please provide the City with a **Certification (Statement) Letter** from an acceptable professional engineer stating that the design is compliant.

36. Environmental Site Assessment

    A Phase I ESA is required to be completed in accordance with Ontario Regulation 153/04 in support of this development proposal to determine the potential for site contamination. Depending on the Phase I recommendations a Phase II ESA may be required.

    The Phase I ESA shall provide all the required Environmental Source Information as required by O. Reg. 153/04. ERIS records are available to public at a reasonable cost and need to be included in the ESA report to comply with O.Reg. 153/04 and the Official Plan. The City will not be in a position to approve the Phase I ESA without the inclusion of the ERIS reports.

    Official Plan Section 4.8.4:

    https://ottawa.ca/en/city-hall/planning-and-development/official-plan-and-master-plans/official-plan/volume-1-official-plan/section-4-review-development-applications#4-8-protection-health-and-safety

Feel free to contact Amy Whelan P.Eng, Project Manager, for follow-up questions.

Noise

Comments:

37. A Transportation Noise Assessment is required as the subject development is located within 100m proximity of Carling Avenue and existing Arterial Road.

Feel free to contact Amy Whelan P.Eng, Project Manager, for follow-up questions.

Transportation

Comments:

38. Right-of-way protection.

    a. See Schedule C16 of the Official Plan.

    b. Any requests for exceptions to ROW protection requirements must be discussed with Transportation Planning and concurrence provided by Transportation Planning management.

39. The Screening Form has indicated that no TIA Triggers have been met. This development would not generate sufficient traffic to warrant a TIA report. The consultant is to address how they plan to enable and encourage travel by sustainable modes (i.e., to make walking, cycling, transit, carpooling and telework more convenient, accessible, safe, and comfortable). Please complete the City of Ottawa's *TDM Measures Checklist*.

40. Cambridge Street S is classified as a Local Road. There is no additional protected ROW limits identified in the OP.

41. The city's right-of-way limits are to be labelled on the drawings.

42. The consultant should review the sight distance to the access and any obstructions that may hinder the view of the driver.

43. The Owner acknowledges and agrees that all private accesses to Roads shall comply with the City's Private Approach By-Law being By-Law No. 2003-447 as amended https://ottawa.ca/en/living-ottawa/laws-licences-and-permits/laws/law-z/private-approach-law-no-2003-447 or as approved through the Site Plan control process.

44. No private approach shall be constructed within 0.3 metres of any adjacent property measured at the highway line, and at the curb line or roadway edge.

45. No private approach intended for two-way vehicular traffic shall exceed 9.0 metres in width at the roadway edge, and in no case shall the width exceed 50% of the frontage on which the approach or approaches are located.

46. The concrete sidewalks should be 2.0 metres in width and be continuous and depressed through the proposed accesses

47. The closure of an existing private approach shall reinstate the sidewalk, shoulder, curb, and boulevard to City standards.

48. All underground and above ground building footprints and permanent walls need to be shown on the plan to confirm that any permanent structure does not extend either above or below into the road right-of-way protection limits.

49. Permanent structures such as curbing, stairs, retaining walls, and underground parking foundation also bicycle parking racks are not to extend into the City's right-of-way limits.

50. Bicycle parking spaces are required as per Section 111 of the Ottawa Comprehensive Zoning By-law. Bicycle parking spaces should be in safe, secure places near main entrances and preferably protected from the weather.

51. The Owner shall be required to enter into maintenance and liability agreement for all pavers, plant and landscaping material placed in the City right-of-way and the Owner shall assume all maintenance and replacement responsibilities in perpetuity.

Feel free to contact Wally Dubyk, Transportation Project Manager, for follow-up questions.

Environment

Comments:

52. There are no triggers for an Environmental Impact Study.

53. Please consider if there are features that can be added reduce the urban heat island effect (see OP 10.3). For example, this impact can be reduced by adding large canopy trees, green rooves or vegetation walls, or incorporating building with low heat absorbing materials.

Feel free to contact Matthew Hayley, Environmental Planner, for follow-up questions.

Forestry

Comments:

54. A Tree Conservation Report is required & should provide protection recommendations for existing hedges, & trees that can be retained on & bordering the site. Particular attention should be paid to maintaining screening along the North, West, and South property lines surrounding the existing rear yard.

55. Landscape Plan are required, showing tree planting on site following development. At least 30 m^3 soil volume should be provided to support one large-growing tree in the rear yard, and additional tree planting opportunities should be explored in the frontage. Small or medium-sized trees should be planted in front of the building along Cambridge to enhance the streetscape.

56. The following Tree Conservation Report (TCR) guidelines have been adapted from the Schedule E of the Tree Protection By-law – for more information on these requirements please contact julian.alvarez-barkham@ottawa.ca.

    a. A Tree Conservation Report (TCR) must be supplied for review along with the suite of other plans/reports required by the City.

        a. An approved TCR is a requirement of Site Plan approval.

    b. Any removal of privately-owned trees 10cm or larger in diameter within the urban area, or city-owned trees of any diameter requires a tree permit issued under the Tree Protection Bylaw (Bylaw 2020 – 340); the permit will be based on an approved TCR and made available at or near plan approval.

    c. The TCR must contain 2 separate plans:

        a. Plan/Map 1 - show existing conditions with tree cover information.

b. Plan/Map 2 - show proposed development with tree cover information.

d. The TCR must list all trees on site, as well as off-site trees if the CRZ (critical root zone) extends into the developed area, by species, diameter, and health condition.

    a. For ease of review, the Planning Forester suggests that all trees be numbered and referenced in an inventory table.

e. Please identify trees by ownership – private onsite, private on adjoining site, city owned, co-owned (trees on a property line)

f. If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained.

    a. Compensation may be required for the removal of city owned trees.

g. The removal of trees on a property line will require the permission of both property owners.

h. All retained trees must be shown, and all retained trees within the area impacted by the development process must be protected as per City guidelines available on the Tree Protection Specification or by searching Ottawa.ca.

    a. The location of tree protection fencing must be shown on the plan.

    b. Show the critical root zone of the retained trees.

i. As per the Official Plan §4.8.2, the retention of healthy trees must be prioritized wherever possible. Please seek opportunities for retention of trees that will contribute to the design and function of the site.

57. The following Landscape Plan (LP) guidelines have been adapted from Schedule E of the Tree Protection By-law – for more information on these requirements please contact julian.alvarez-barkham@ottawa.ca.

    a. Please ensure any retained trees are shown on the LP.

    b. Minimum Setbacks

        i. Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.

        ii. Maintain 2.5m from curb.

        iii. Coniferous species require a minimum 4.5m setback from curb, sidewalk, or MUP/cycle track/pathway.

iv. Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing, except where otherwise approved in naturalization / afforestation areas.

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

b. Tree specifications

i. Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.

ii. Maximize the use of large deciduous species wherever possible to maximize future canopy coverage.

c. Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and if possible, include watering and warranty as described in the specification.

d. No root barriers, dead-man anchor systems, or planters are permitted.

e. No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

f. Hard surface planting

i. If there are hard surface plantings, a planting detail must be provided.

ii. Curb style planter design is highly recommended.

iii. No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.

c. Trees are to be planted at grade.

d. Soil Volume - Please demonstrate as per the **Landscape Plan Terms of Reference** that the available soil volumes for new plantings will meet or exceed the following:

Tree Type/Size	Single Tree Soil Volume (m^3)	Multiple Tree Soil Volume (m^3/tree)
Ornamental	15	9
Columnar	15	9
Small	20	12
Medium	25	15
Large	30	18
Conifer	25	15

   i. It is strongly suggested that the proposed species list include a column listing the available soil volume.

e. Sensitive Marine Clay - Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines.

f. The City requests that consideration be given to planting native species wherever there is a high probability of survival to maturity.

g. Efforts shall be made to provide as much future canopy cover as possible at a site level, through tree planting and tree retention. The Landscape Plan shall show/document that the proposed tree planting and retention will contribute to the City's overall canopy cover over time. **Please provide a projection of the future canopy cover for the site to 40 years.**

Feel free to contact Julian Alvarez-Barkham, Forester, for follow-up questions.

Parkland

Comments:

58. The amount of required parkland conveyance will be in the form of Cash-in-Lieu of Parkland and is to be calculated at Building Permit as per the City of Ottawa Parkland Dedication By-law No.2022-280 (or as amended):

    a. For cash-in-lieu of conveyance of parkland (residential > 18 units/net ha):

        a. one hectare per 1,000 net residential units but shall not exceed a maximum of 10% of the gross land area where less than or equal to five hectares.

    b. For conveyance of parkland, cash-in-lieu of conveyance parkland, or combination thereof:

        a. 5% of the gross land area (residential ≤ 18 units/net ha).

Preliminary Parkland Dedication Calculation:

59. The following information will be required at building permit to confirm and calculate the parkland conveyance:

    a. Gross land area, in square meters

    b. Number of residential units proposed/existing

    c. Gross floor area of proposed residential development

    d. Gross floor area of proposed/existing commercial development

    e. The proportion of commercial/residential development proposed on site.

60. Please note, if the proposed unit count, land use changes or gross floor area changes, then the parkland dedication requirement will be re-evaluated accordingly.

61. CREO will provide the parkland appraisal fee as referenced in Schedule “B” of the site plan agreement and at the expense of the Owner.

Feel free to contact Lousie Cerveny, Parks Planner, for follow-up questions.

Other

62. The High Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design and will be applicable to Site Plan Control and Plan of Subdivision applications.

a. The HPDS was passed by Council on April 13, 2022, but is not in effect at this time, as Council has referred the 2023 HPDS Update Report back to staff with the direction to bring forward an updated report to Committee at a later date. The timing of an updated report to Committee is unknown at this time, and updates will be shared when they are available.

b. Please refer to the HPDS information at ottawa.ca/HPDS for more information.

63. Under the Affordable Housing Community Improvement Plan, a Tax Increment Equivalent Grant (TIEG) program was created to incentivize the development of affordable rental units. It provides a yearly fixed grant for 20 years. The grant helps offset the revenue loss housing providers experience when incorporating affordable units in their developments.

    a. To be eligible for the TIEG program you must meet the following criteria:

        a. the greater of five units OR 15 per cent of the total number of units within the development must be made affordable

        b. provide a minimum of 15 per cent of each unit type in the development as affordable

        c. enter into an agreement with the city to ensure the units maintain affordable for a minimum period of 20 years at or below the city-wide average market rent for the entire housing stock based on building form and unit type, as defined by the Canada Mortgage and Housing Corporation

        d. must apply after a formal Site Plan Control submission, or Building Permit submission for projects not requiring Site Plan Control, and prior to Occupancy Permit issuance

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

Submission Requirements and Fees

1. A Site Plan Control – Complex, and Minor Variance or Minor Zoning By-law Amendment will be required for the future development. If parking is found not to conform to Official Plan policy, an Official Plan Amendment may also be required.

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

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

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

Yours Truly,

Jean-Charles Renaud, Planner III

Encl. ADS Site Plan Checklist
HPDS Example Checklist
HPDS Overview for Applicants
Studies and Plans Identification List
Supplementary Development Information

c.c. Jack Smith, Planner II
Spencer Mulvaney, Planner I
Farbod Azimi, Infrastructure Project Manager
John Wu, Infrastructure Project Manager
Louise Cerveny, Parks Planner II
Lisa Stern, Urban Design Planner III
Matthew Hayley, Environmental Planner III
Julian Alvarez-Barkham, Planner Forester
Sue Stefko - suestefko@hotmail.com

Appendix F – Drawings

Topographical Survey

Architectural Plans

C000 – Notes & Details

C001 – Existing Conditions and Removals Plan

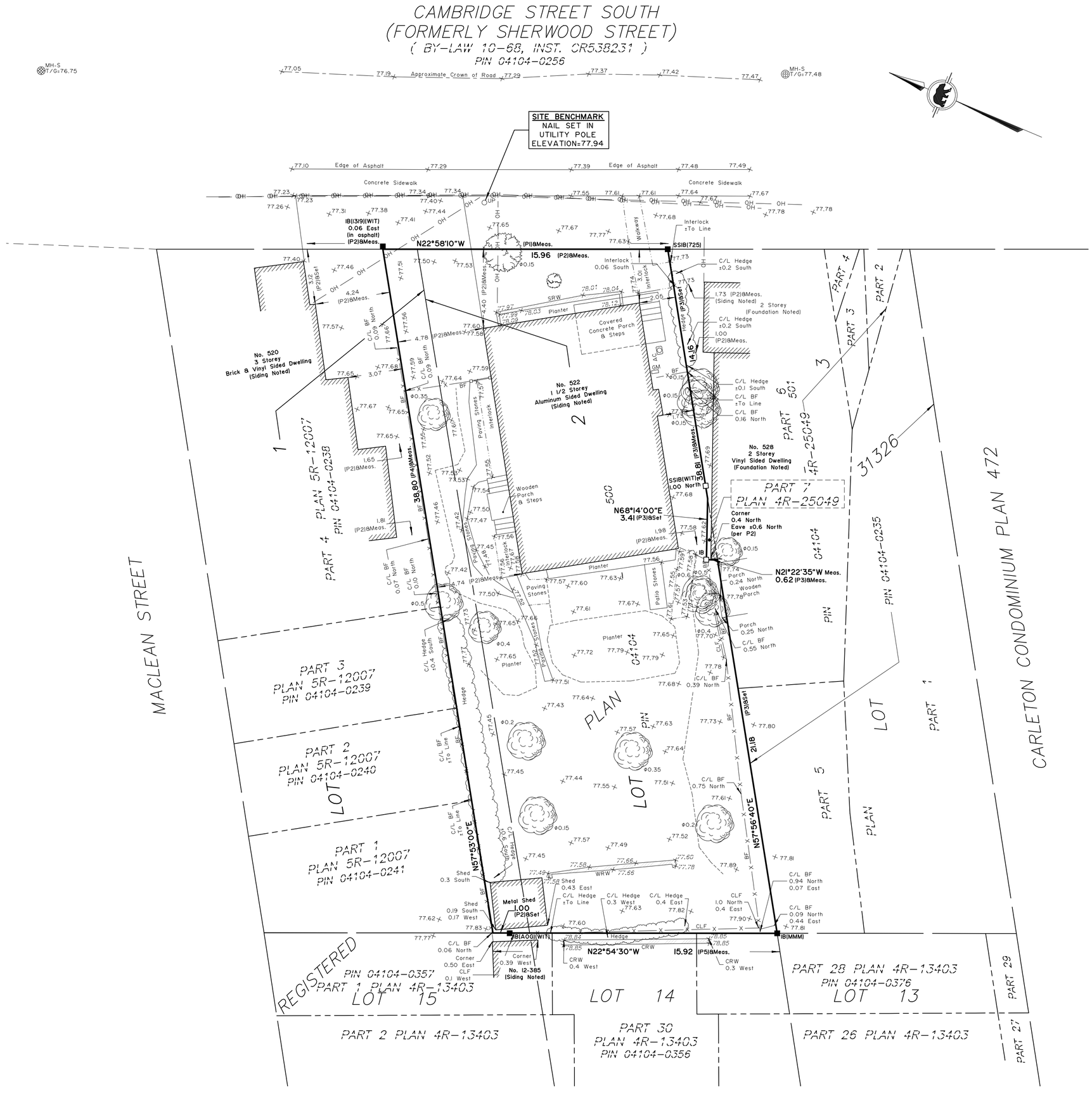
C100 – Site Servicing Plan

C200 – Site Grading Plan

C300 – Erosion and Sediment Control Plan

C400 – Pre-development Catchment Plan

C500 – Post-Development Site Catchments



TOPOGRAPHIC PLAN OF SURVEY OF

LOT 2 AND PART OF LOT 1 REGISTERED PLAN 31326 CITY OF OTTAWA

MONUMENT-URSO SURVEYING LTD.

SCALE 1 : 150

6 4.5 3 1.5 0 3 6

METRIC

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

SURVEYOR'S CERTIFICATE

I CERTIFY THAT :

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON THE 4TH DAY OF SEPTEMBER, 2025.

SEPTEMBER 25th, 2025
DATE

COEL STOREY
ONTARIO LAND SURVEYOR

LEGEND

■	DENOTES	FOUND SURVEY MONUMENT
□	"	PLANTED SURVEY MONUMENT
IB	"	IRON BAR
SIB	"	STANDARD IRON BAR
SSIB	"	SHORT STANDARD IRON BAR
(WIT)	"	WITNESS
ACC.	"	ACCEPTED
MEAS.	"	MEASURED
(1476)	"	MONUMENT-URSO SURVEYING LTD.
(P1)	"	REGISTERED PLAN 31326
(P2)	"	PLAN BY (AOG) DATED JULY 25, 2024
(P3)	"	PLAN 4R-25049
(P4)	"	PLAN 5R-12007
(P5)	"	PLAN 4R-13403
CRW	"	CONCRETE RETAINING WALL
WRW	"	WOOD RETAINING WALL
AC	"	AIR CONDITIONER
GM	"	GAS METER
MH	"	MAINTENANCE HOLE - UNIDENTIFIED
MH-S	"	MAINTENANCE HOLE - SANITARY
—OH—	"	OVERHEAD WIRES
	"	DECIDUOUS TREE
	"	CONIFEROUS TREE
	"	SHRUB
CLF	"	CHAIN-LINK FENCE
BF	"	BOARD FENCE
C/L	"	CENTRELINE

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-109948

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR IN ACCORDANCE WITH REGULATION 1026, Section 29(3).

BEARING NOTES

BEARINGS ARE MTM GRID, DERIVED FROM CAN-NET GPS OBSERVATIONS AND ARE REFERRED TO THE CENTRAL MERIDIAN 76°30' WEST LONGITUDE OF MTM ZONE 9 NAD83 (CSRS)(2010.0).

FOR BEARING COMPARISONS A ROTATION OF 00°23'10" CLOCKWISE WAS APPLIED TO PLAN P1 AND A ROTATION OF 00°17'10" COUNTER-CLOCKWISE WAS APPLIED TO PLANS P3, P4 & P5 TO CONVERT TO GRID BEARINGS.

UTILITY NOTE

THIS DRAWING DOES NOT SERVE AS A COMPREHENSIVE CONFIRMATION OF ALL UTILITIES PRESENT. IT IS THE USERS RESPONSIBILITY TO CONTACT THE RELEVANT UTILITY AUTHORITIES FOR VERIFICATION.

ONLY UTILITIES VISIBLE ON THE SURFACE HAVE BEEN IDENTIFIED PRIOR TO ANY ACTIVITIES SUCH AS DIGGING, IT IS MANDATORY TO OBTAIN A FIELD LOCATION OF UNDERGROUND UTILITIES FROM THE APPROPRIATE AUTHORITY.

ELEVATION NOTE

ELEVATIONS ARE GEODETIC AND REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM (CGVD28:78) BY DIRECT MEASUREMENT TO A REAL TIME NETWORK.

THE USER OF THIS INFORMATION BEARS THE RESPONSIBILITY TO CONFIRM THAT THE JOB BENCHMARK REMAINS UNALTERED AND UNDISTURBED, AND THAT ITS RELATIVE HEIGHT AND DESCRIPTION ALIGN WITH THE DETAILS PRESENTED IN THIS PLAN.

Monument-Urso Surveying Ltd.
Ontario Land Surveyors | Canada Land Surveyors
1755 WOODWARD DRIVE, SUITE 200 TEL: (613) 800-1583
OTTAWA, ON K2C 0P9
536 'C' FOURTH LINE EAST TEL: (705) 254-7851
SAULT STE. MARIE ON, P6A 6J8 FAX: (705) 254-5571

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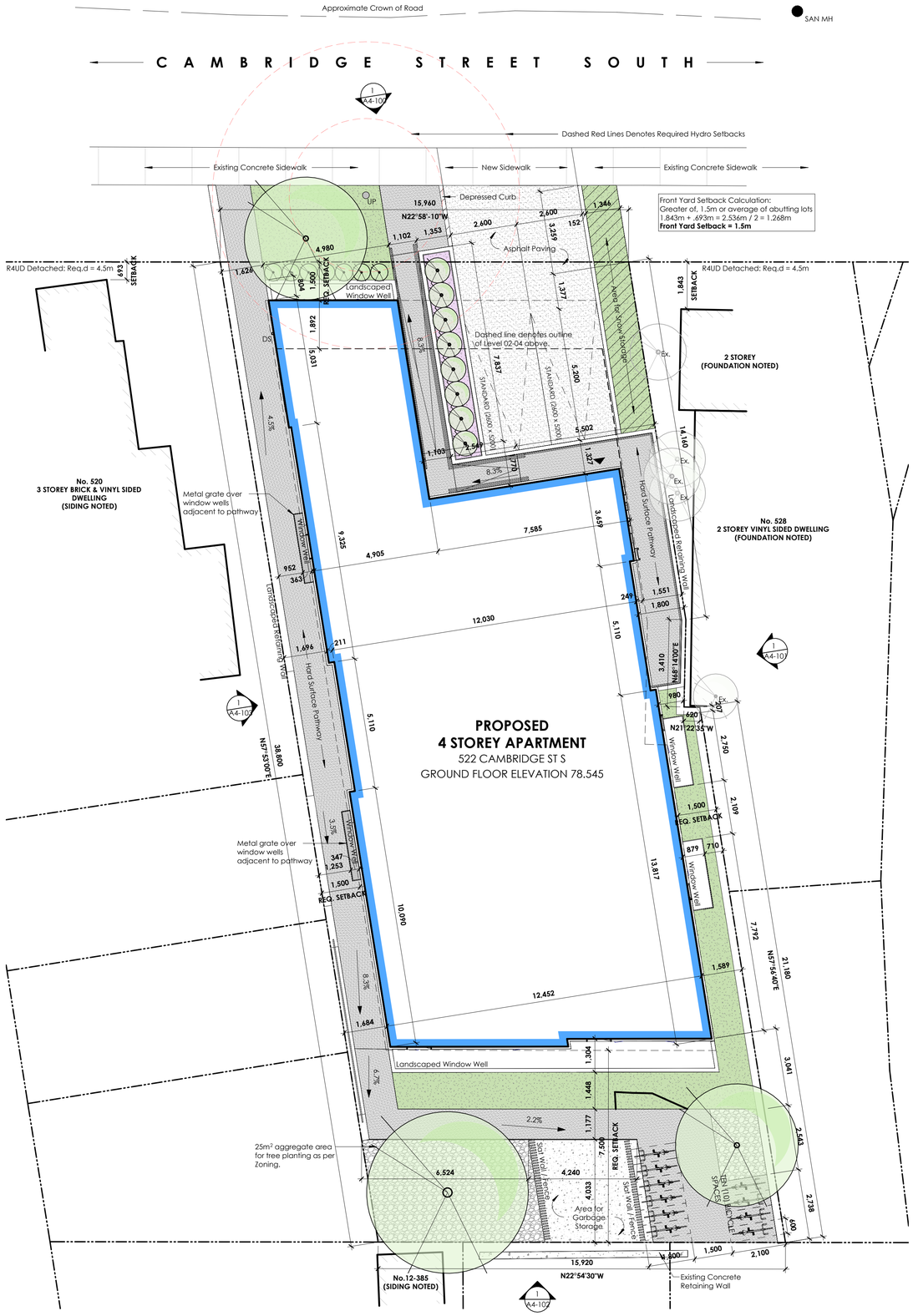

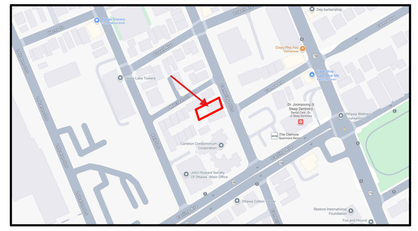

KEY PLAN

ZONING MATRIX

ITEM	FIELD	DATA	
01	LEGAL DESCRIPTION	LEGAL DESCRIPTION: LOT 2 AND PART OF LOT 1 REGISTERED PLAN 31326 CITY OF OTTAWA	
02	CURRENT ZONING PERMITED USES	R4-UD - RESIDENTIAL FOURTH DENSITY ZONE	
03	LOT AREA	609.62 m²	
04	LOT FRONTAGE	15.92 m	
05	BUILDING AREA	349.49 m²	
06	BUILDING SETBACKS	FRONT YARD: 1.615 m *(Front Yard Setback Reductions (Section 123) City of Ottawa Zoning By-law 2008-250)* INT. SIDE YARD: 1.5 m REAR YARD: 7.5 m	
07	AMENITY SPACE	REQUIRED: 6m² /UNIT: 19 UNITS X 6m² = 114m² 50% COMMUNAL AMENITY AREA = 57m² **TOTAL AMENITY: 369.05 m²**	
08	BUILDING HEIGHT	MAXIMUM HEIGHT = 14.5 m (4 STOREY MAX.) PROVIDED = 14 m	
09	LOADING ZONE	NONE REQUIRED	
10	VEHICLE PARKING	REQUIRED: NONE **TOTAL: NONE**	PROPOSED: **TOTAL: 2**
11	BICYCLE PARKING	REQUIRED: 0.5 per DWELLING UNIT (19 x 0.5 = 9.5) **TOTAL: 10 SPACES**	PROPOSED: **TOTAL: 10**
12	SOFT LANDSCAPING REQUIREMENTS	REQUIRED: **50% OF REAR YARD** REAR YARD AREA = 122.53 m² **20% OF FRONT YARD** FRONT YARD AREA = 88.32 m²	PROPOSED: **56.44%** AREA = 69.16 m² **31.08%** AREA = 27.45 m²
12	TOTAL LANDSCAPED AREA	REQUIRED: 30% OF LOT AREA (609.92 x 0.30) **TOTAL: 182.89 m²**	PROPOSED: **TOTAL: 369.05 m²**
13	FRONT FACADE	PERCENTAGE OF WINDOWS: REQUIRED: MIN. 25% OF FRONT FACADE (223.13 x 0.25) **TOTAL: 55.78 m²** RECESSED FRONT EXTERIOR WALL: REQUIRED: MIN. 20% OF FRONT FACADE MIN. 0.6 m SETBACK (223.13 x 0.20) **TOTAL: 44.63 m²**	PROPOSED: **36.53%** **TOTAL: 81.51 m²** PROPOSED: **90.33% >0.6 m** **TOTAL: 201.56 m²**

GENERAL NOTES:

UNLESS OTHERWISE NOTED:

DOCUMENT COORDINATION:
- THIS SITE PLAN AND ASSOCIATED SITE DEMOLITION PLAN ARE TO BE READ IN CONJUNCTION WITH ALL RELATED DRAWINGS, INCLUDING LANDSCAPE, CIVIL, STRUCTURAL, MECHANICAL, AND ELECTRICAL PACKAGES, AS WELL AS SPECIFICATIONS.
- ANY DISCREPANCIES BETWEEN DRAWINGS MUST BE REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH WORK.

EXISTING ELEMENTS:
- ALL CONSTRUCTED ELEMENTS INDICATED TO REMAIN MUST BE PROTECTED THROUGHOUT THE CONSTRUCTION PROCESS.
- PROTECTION MEASURES, INCLUDING FENCING, HOARDING, OR BARRIERS, SHALL BE IMPLEMENTED TO SAFEGUARD EXISTING STRUCTURES, UTILITIES, AND LANDSCAPED AREAS.

SIGNAGE AND MARKINGS:
- PARKING SIGNAGE, WAYFINDING ELEMENTS, AND ANY SURFACE MARKINGS DISPLACED DURING CONSTRUCTION MUST BE REINSTATED TO MATCH ORIGINAL LOCATIONS, UNLESS OTHERWISE DIRECTED.
- TEMPORARY SIGNAGE OR MARKINGS SHALL BE PROVIDED DURING CONSTRUCTION TO MAINTAIN PUBLIC SAFETY AND WAYFINDING CLARITY.

SIDEWALKS, CURBS, AND SURFACES:
- SIDEWALKS, CURBS, OR OTHER MUNICIPAL INFRASTRUCTURE AFFECTED BY CONSTRUCTION ACTIVITY SHALL BE RESTORED TO MATCH EXISTING CONDITIONS OR AS SPECIFIED BY MUNICIPAL STANDARDS.
- ANY PRIVATE DRIVEWAYS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REINSTATED AS PER THE APPROVED SITE PLAN AND MUNICIPAL REQUIREMENTS.

SOIL EROSION AND SEDIMENT CONTROL:
- EROSION AND SEDIMENT CONTROL MEASURES, AS PER MUNICIPAL AND CONSERVATION AUTHORITY STANDARDS, MUST BE IN PLACE BEFORE COMMENCEMENT OF ANY SITE WORK AND MAINTAINED UNTIL PROJECT COMPLETION.

UTILITIES AND SERVICES:
- CONTRACTOR MUST CONFIRM THE LOCATION OF ALL EXISTING UTILITIES, INCLUDING UNDERGROUND AND OVERHEAD SERVICES, BEFORE COMMENCING WORK.
- ANY DAMAGE TO UTILITIES CAUSED BY CONSTRUCTION MUST BE REPORTED AND REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE RESPECTIVE AUTHORITY OR UTILITY PROVIDER.

ACCESSIBILITY (2024 OBC COMPLIANCE):
- ALL SIDEWALKS, PEDESTRIAN PATHWAYS, AND PARKING AREAS MUST CONFORM TO THE ACCESSIBILITY REQUIREMENTS OUTLINED IN THE 2024 ONTARIO BUILDING CODE.
- TEMPORARY PROVISIONS MUST ENSURE ACCESSIBLE ROUTES ARE MAINTAINED DURING CONSTRUCTION.

SAFETY AND SITE ACCESS:
- SITE ACCESS FOR EMERGENCY VEHICLES MUST BE MAINTAINED AT ALL TIMES.
- ADEQUATE SAFETY MEASURES, INCLUDING HOARDING, SIGNAGE, AND BARRIERS, MUST BE IMPLEMENTED TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL AS PER THE OBC AND OCCUPATIONAL HEALTH AND SAFETY ACT (OHSA).

ENVIRONMENTAL AND ARCHAEOLOGICAL PROTECTIONS:
- ANY ENVIRONMENTALLY SENSITIVE AREAS IDENTIFIED ON-SITE MUST REMAIN UNDISTURBED UNLESS APPROVED BY THE GOVERNING AUTHORITY.
- SHOULD ANY ARTIFACTS OR MATERIALS OF POTENTIAL ARCHAEOLOGICAL SIGNIFICANCE BE ENCOUNTERED, ALL WORK IN THE VICINITY MUST CEASE, AND THE APPROPRIATE AUTHORITIES MUST BE NOTIFIED.

PERMITS AND INSPECTIONS:
- ALL WORK MUST COMPLY WITH APPLICABLE MUNICIPAL PERMITS AND APPROVALS.
- THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING ALL REQUIRED INSPECTION

LEGAL DESCRIPTION:
LOT 2 AND PART OF LOT 1
REGISTERED PLAN 31326
CITY OF OTTAWA

SURVEY REFERENCE:
TECHNICAL INFORMATION GATHERED FROM SURVEY PREPARED BY CERTIFIED LAND SURVEYOR: MONUMENT-URSO SURVEYING LTD.
DATE: SEPTEMBER 25, 2025
FILE # 25-0420 S22
PLANNER CONTACT INFORMATION:
NAME: COEL STOREY
TEL: 613.800.1583

SITE PLAN LEGEND

CB	CATCH BASIN
SAN MH	SANITARY MAN HOLE
	BUILDING ENTRANCE
UP	EXISTING UTILITY POLE
FH	FIRE HYDRANT
	DENOTES NEW TREE, REFER TO LANDSCAPE
EX.	DENOTES EXISTING TREE TO REMAIN, REFER TO LANDSCAPE
	DENOTES NEW HARD SURFACE PATHWAY REFER TO LANDSCAPE
	DENOTES NEW GRASS / SOD REFER TO LANDSCAPE
	DENOTES NEW FLOWERS BED / PLANTERS REFER TO LANDSCAPE
	DENOTES AGGREGATE AREA FOR TREE PLANTING.
	DENOTES CONCRETE PAD. REFER TO LANDSCAPE.
	DENOTES ASPHALT PAVING, REFER TO LANDSCAPE.
	DENOTES BOUNDARY OF NEW BUILDING.

VEHICLE PARKING PROVIDED

TYPE	COUNT
STANDARD (2600x5200)	2
TOTAL	**2**

BICYCLE PARKING PROVIDED

TYPE	COUNT
EXTERIOR	10
TOTAL	**10**

RESIDENTIAL SUITE TYPES

UNIT TYPE	COUNT
1 BEDROOM	7
1 BEDROOM (BARRIER FREE)	1
2 BEDROOM	8
2 BEDROOM (BARRIER FREE)	1
STUDIO	1
STUDIO (BARRIER FREE)	1
TOTAL	**19**

15% OF UNITS TO BE BARRIER FREE AS PER OBC 3.8.2.1 (5)

GROSS FLOOR AREA (CITY OF OTTAWA)

LEVEL	AREA (m²)
BASEMENT (B1)	208.15 m²
LEVEL 01	206.26 m²
LEVEL 02	264.39 m²
LEVEL 03	264.39 m²
LEVEL 04	264.39 m²
TOTAL	**1,207.57 m²**

InHarmony DEVELOPMENTS
client | client

ENTUITIVE
structural engineers | ingénieur structure

QUASAR
MEP engineers | ingénieur MEP

exp.
civil engineers | ingénieur civil

JAMES B. LENNOX & ASSOCIATES INC.
LANDSCAPE ARCHITECTS
3332 CARLING AVE. OTTAWA, ONTARIO K2H 5A8
Tel. (613) 722-5168 Fax. 1(866) 343-3942
landscape architect | architecte paysagiste

nord du projet project north
nord actuel true north

0 ISSUED FOR SITE PLAN CONTROL 2026-04-24
no revisions date

stamp | timbre

ONTARIO ASSOCIATION OF ARCHITECTS
ANDREW REEVES LICENCE 6464

architect | architecte
linebox STUDIO

general notes | note générale
1. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT.
2. DO NOT SCALE THE DRAWINGS.
3. NOT FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

project title
522 CAMBRIDGE ST SOUTH
PROPOSED APARTMENT DWELLING, LOW RISE
522 CAMBRIDGE ST S | OTTAWA, ON | K1S 4J3

drawing title | titre du dessin
SITE PLAN - PROPOSED

project number | numero du projet	**2601**
drawn | dessiné	**JH / PC**
checked | verifié	**JAP / AR**
date | date	**JANUARY 13, 2026**
scale | échelle	**As indicated**

0 m 2 m 4 m

A0-801

XXX-XX-XX-XXXX

#xxxxx

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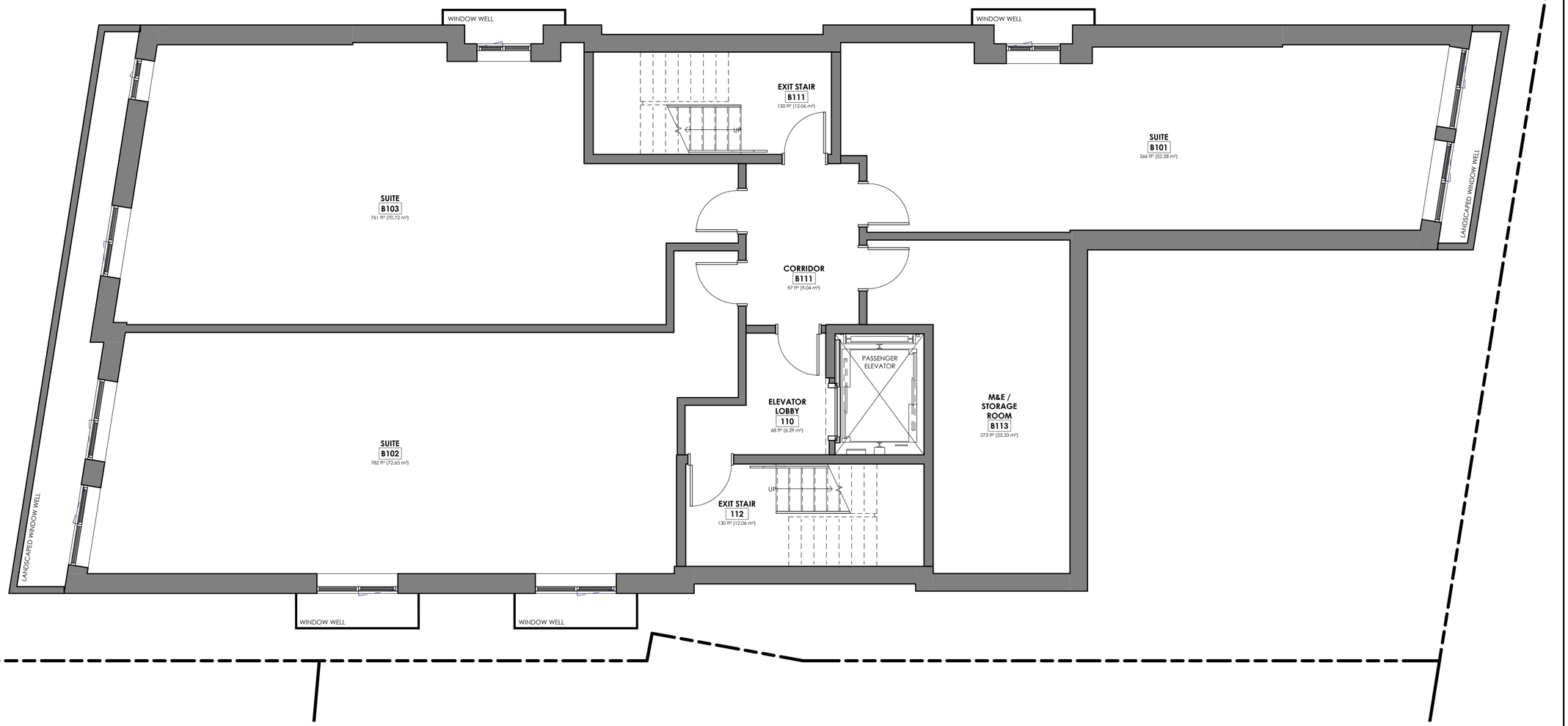

1 A2-100 BASEMENT - FLOOR PLAN
1 : 50
A0-202

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InHarmony
DEVELOPMENTS
client | client

ENTUITIVE
structural engineers | ingénieur structure

QUASAR
MEP engineers | ingénieur MEP

exp.
civil engineers | ingénieur civil

JAMES B. LENNOX & ASSOCIATES INC.
LANDSCAPE ARCHITECTS
3332 CARLING AVE, OTTAWA, ONTARIO K2H 5A8
Tel. (613) 722-5168 Fax. 1(866) 343-3942
landscape architect | architecte paysagiste

nord du projet
project north

nord actuel
true north

no	revisions	date
0	ISSUED FOR SITE PLAN CONTROL	2026-04-24

stamp | timbre

ONTARIO ASSOCIATION OF ARCHITECTS
ANDREW REEVES
LICENCE
6464

architect | architecte
linebox
STUDIO

general notes | note générale

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2. DO NOT SCALE THE DRAWINGS.
3. NOT FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

project title

522 CAMBRIDGE ST SOUTH

PROPOSED APARTMENT DWELLING, LOW RISE
522 CAMBRIDGE ST S | OTTAWA, ON | K1S 4J3

drawing title | titre du dessin

FLOOR PLAN - B1 (BASEMENT)

project number | numero du projet	**2601**
drawn | dessiné	**JH / PC**
checked | verifié	**JAP / AR**
date | date	**JANUARY 13, 2026**
scale | échelle	**1 : 50**

0 m 1 m 2 m

A2-100

XXX-XX-XX-XXXX

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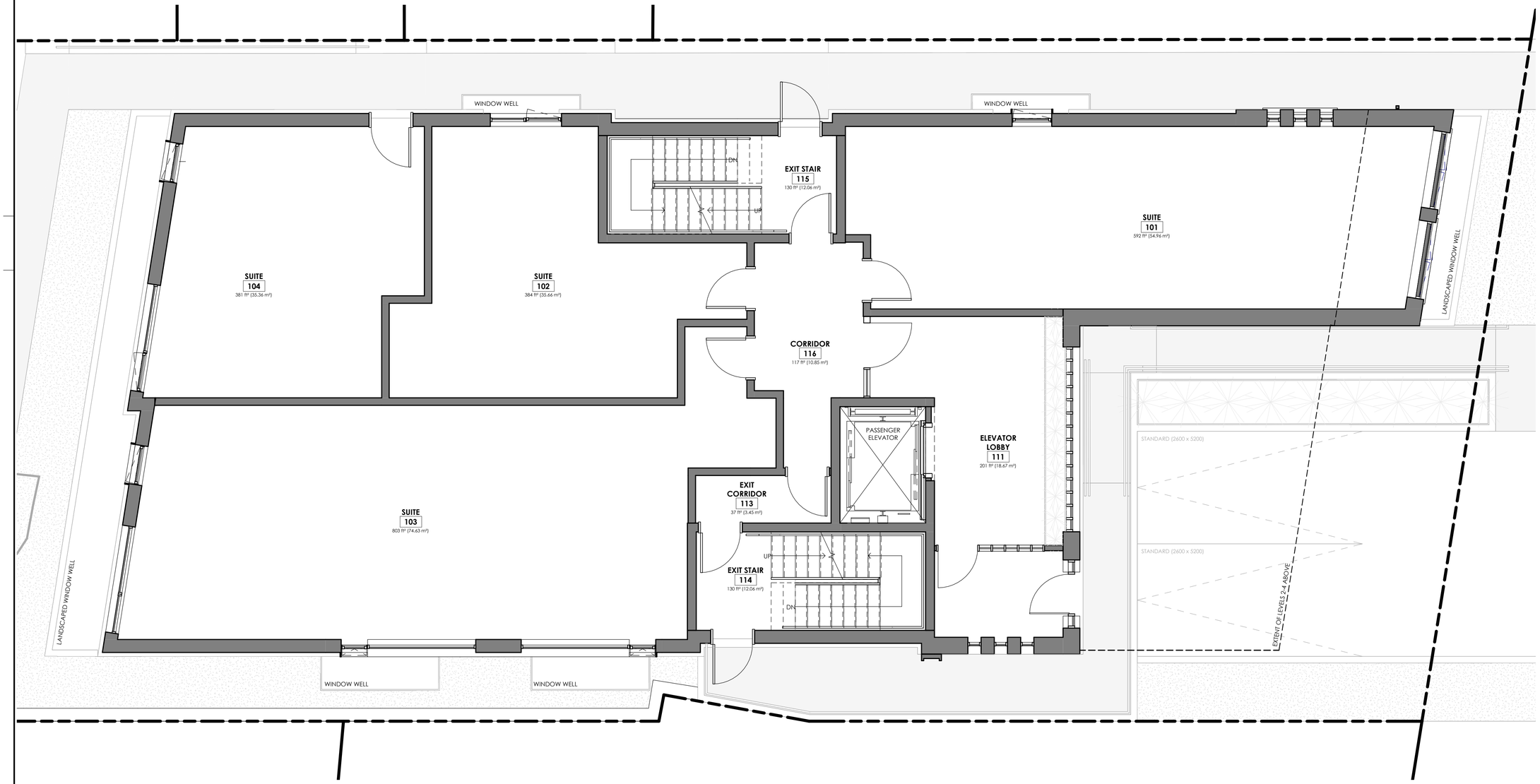

1 A2-101 LEVEL 01 - FLOOR PLAN
1 : 50
A0-202

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InHarmony
DEVELOPMENTS
client | client

ENTUITIVE
structural engineers | ingénieur structure

QUASAR
MEP engineers | ingénieur MEP

exp.
civil engineers | ingénieur civil

JAMES B. LENNOX & ASSOCIATES INC.
LANDSCAPE ARCHITECTS
3332 CARLING AVE, OTTAWA, ONTARIO K2H 5A8
Tel. (613) 722-5168 Fax. 1(866) 343-3942
landscape architect | architecte paysagiste

nord du projet
project north

nord actuel
true north

no	revisions	date
0	ISSUED FOR SITE PLAN CONTROL	2026-04-24

stamp | timbre

ONTARIO ASSOCIATION OF ARCHITECTS
ANDREW REEVES
LICENCE
6464

architect | architecte
linebox
STUDIO

general notes | note générale

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project title

522 CAMBRIDGE ST SOUTH

PROPOSED APARTMENT DWELLING, LOW RISE
522 CAMBRIDGE ST S | OTTAWA, ON | K1S 4J3

drawing title | titre du dessin

FLOOR PLAN - LEVEL 01

project number | numero du projet	**2601**
drawn | dessiné	**JH / PC**
checked | verifié	**JAP / AR**
date | date	**JANUARY 13, 2026**
scale | échelle	**1 : 50**

0 m 1 m 2 m

A2-101

XXX-XX-XX-XXXX

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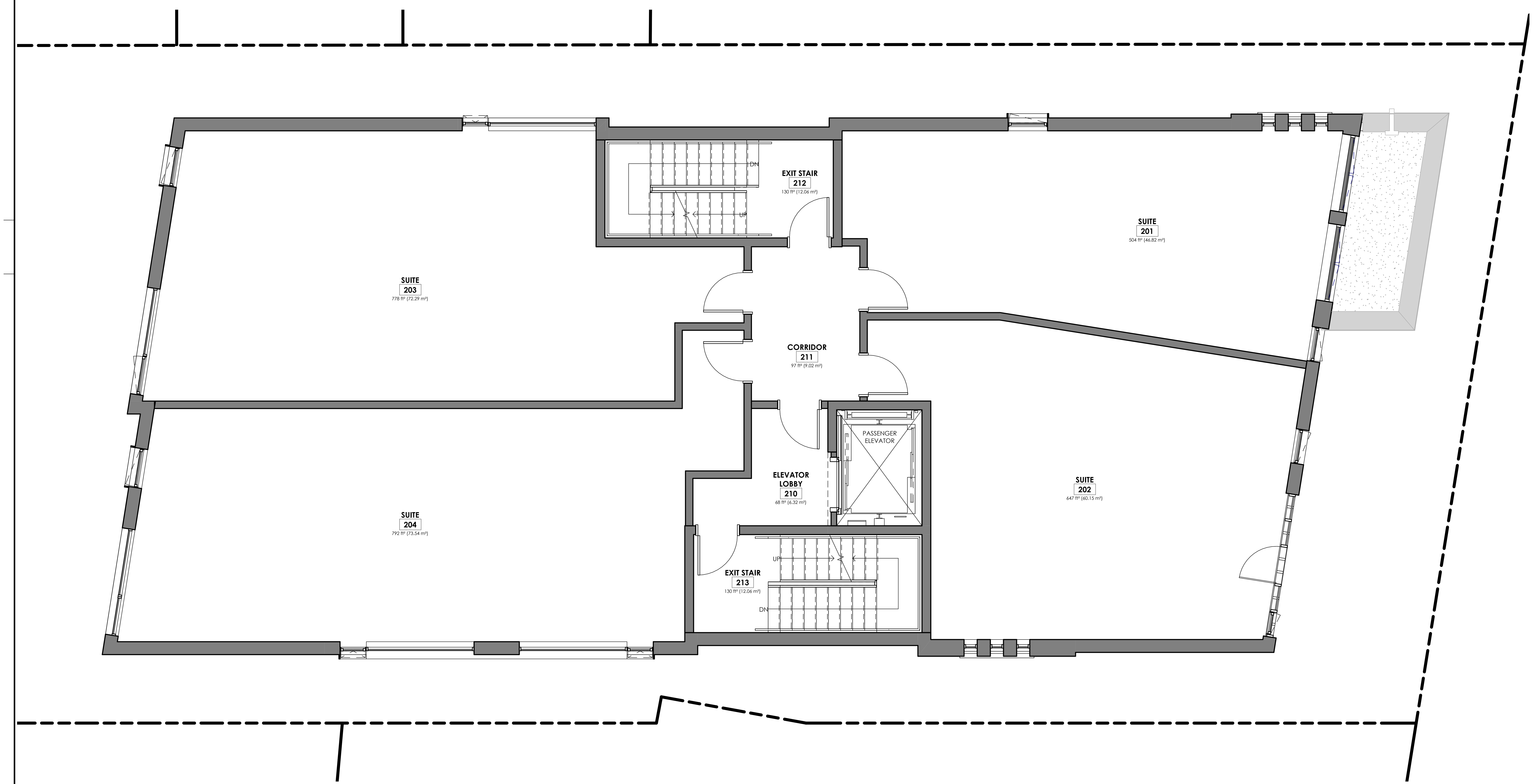

1 A2-102 LEVEL 02 TO 04 (TYPICAL) - FLOOR PLAN
1 : 50
A0-202

InHarmony DEVELOPMENTS
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ENTUITIVE
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civil engineers | ingénieur civil

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landscape architect | architecte paysagiste

nord du projet / project north
nord actuel / true north

no	revisions	date
0	ISSUED FOR SITE PLAN CONTROL	2026-04-24

stamp | timbre

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522 CAMBRIDGE ST SOUTH

PROPOSED APARTMENT DWELLING, LOW RISE
522 CAMBRIDGE ST S | OTTAWA, ON | K1S 4J3

drawing title | titre du dessin

FLOOR PLAN - LEVEL 02 TO 04 (TYPICAL)

project number | numero du projet	2601
drawn | dessiné	JH / PC
checked | verifié	JAP / AR
date | date	JANUARY 13, 2026
scale | échelle	1 : 50

0 m 1 m 2 m

A2-102

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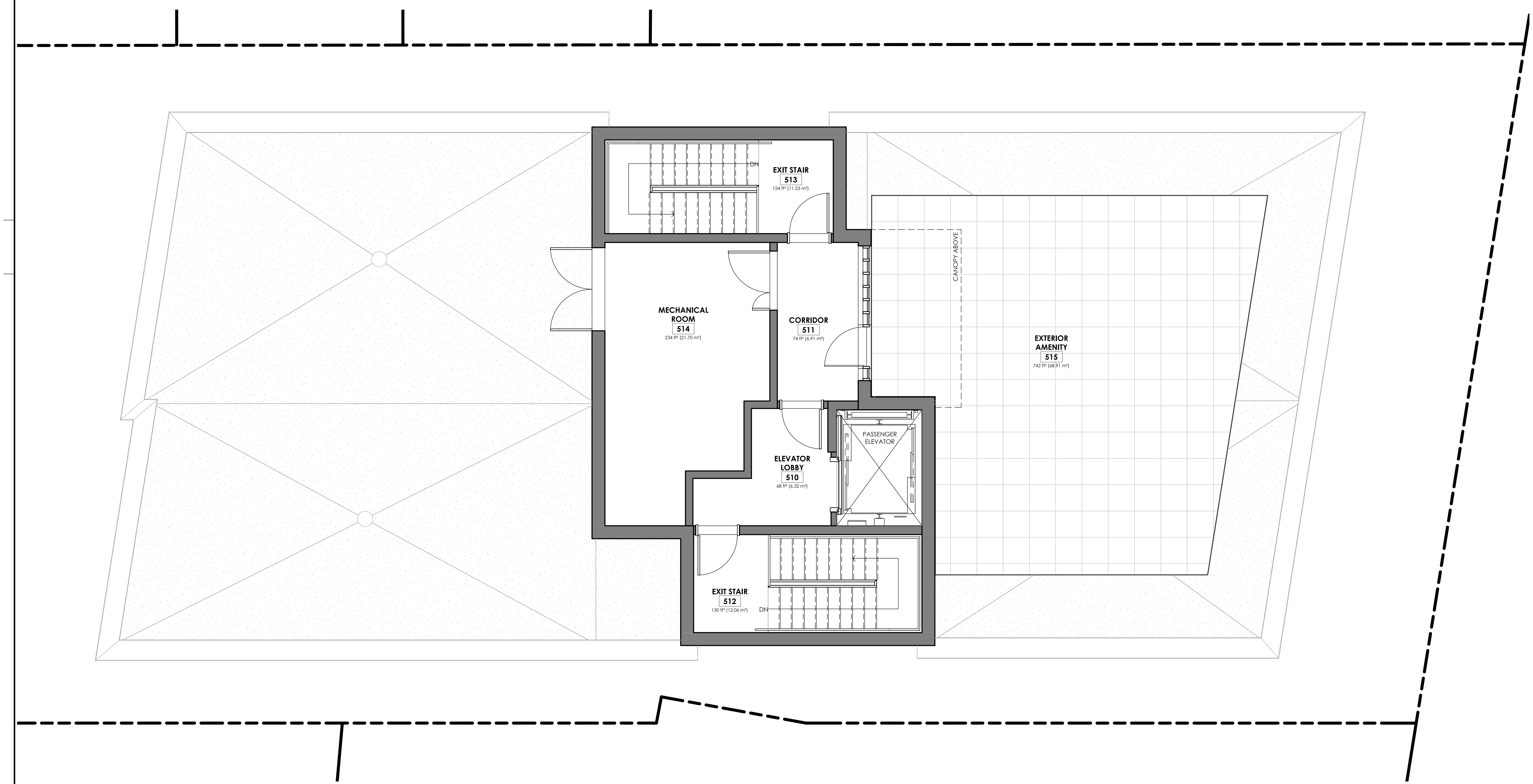

1 A2-105 LEVEL 05 (ROOF TOP) - FLOOR PLAN
1 : 50
A0-202

InHarmony DEVELOPMENTS
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nord du projet / project north
nord actuel / true north

no	revisions	date
0	ISSUED FOR SITE PLAN CONTROL	2026-04-24

stamp | timbre

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PROPOSED APARTMENT DWELLING, LOW RISE
522 CAMBRIDGE ST S | OTTAWA, ON | K1S 4J3

drawing title | titre du dessin

FLOOR PLAN - LEVEL 05 (ROOFTOP)

project number | numero du projet	2601
drawn | dessiné	JH / PC
checked | verifié	JAP / AR
date | date	JANUARY 13, 2026
scale | échelle	1 : 50

0 m 1 m 2 m

A2-105

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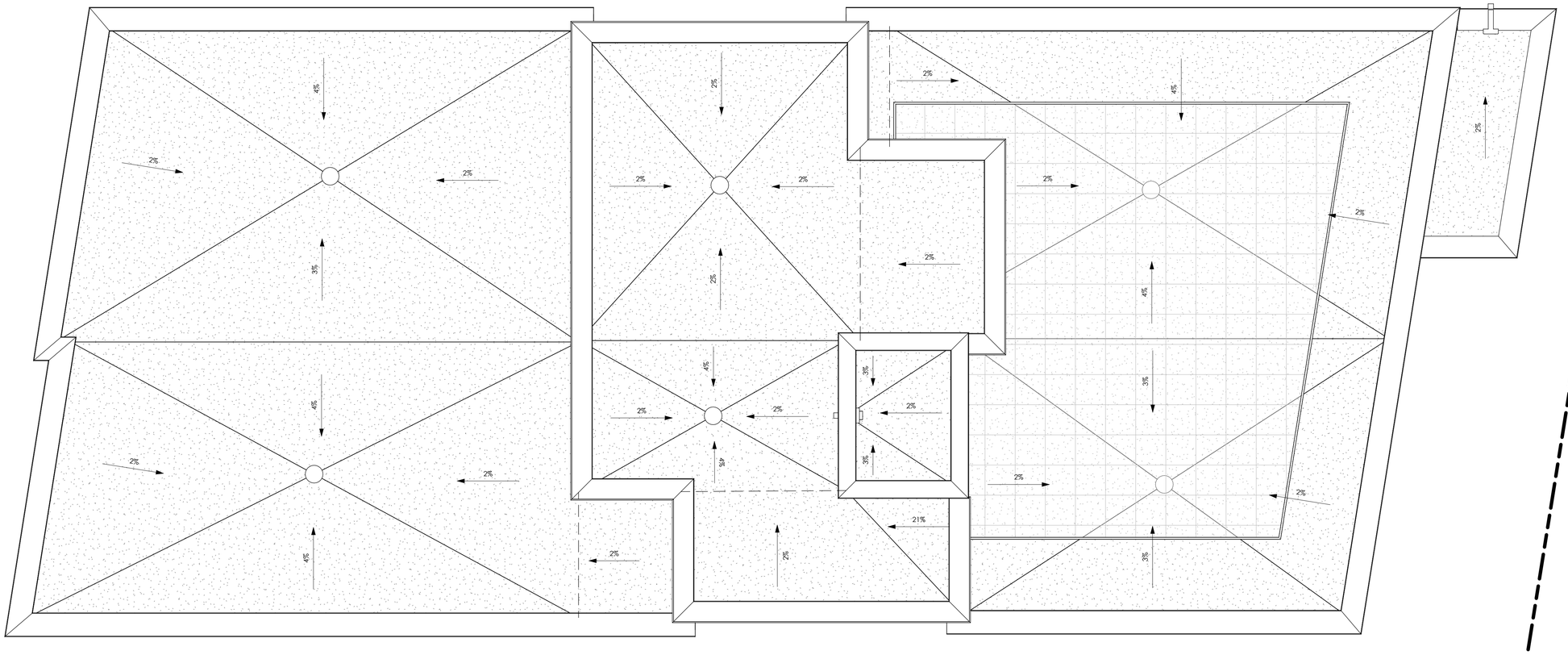

1 A2-106 ROOF PLAN
1 : 50
A4-100

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DEVELOPMENTS
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project north

nord actuel
true north

no	revisions	date
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522 CAMBRIDGE ST S | OTTAWA, ON | K1S 4J3

drawing title | titre du dessin

ROOF PLAN

project number | numero du projet	**2601**
drawn | dessiné	**JH / PC**
checked | verifié	**JAP / AR**
date | date	**JANUARY 13, 2026**
scale | échelle	**1 : 50**

0 m 1 m 2 m

A2-106

XXX-XX-XX-XXXX

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1 / A4-100 EAST (CAMBRIDGE ST S) ELEVATION
1 : 50
A0-801

MATERIAL LEGEND

TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION
1	CLAY BRICK MASONRY (HORIZONTAL) SIZE: TBD. MODEL: TBD. COLOUR: TBD.	4	VERTICAL METAL SIDING (TYPE 2) SIZE: TBD. MODEL: TBD. COLOUR: TBD.	7	ARCHITECTURAL METAL WINDOW SHROUD 26 GAUGE, COLOUR TBD.	10	COLOURED GLASS (VANCEVA PVB INTERLAYER), COLOUR TBD, DOUBLE GLAZED, LOW E COATING.	13	METAL PARAPET CAP FLASHING, 26 GAUGE, BLACK FINISH	16	MAIN ENTRANCE	19	GLASS GUARD / JULIET BALCONY
2	CLAY BRICK MASONRY (VERTICAL STACK) SIZE: TBD. MODEL: TBD. COLOUR: TBD.	5	HORIZONTAL METAL SIDING SIZE: TBD. MODEL: TBD. COLOUR: TBD.	8	CLEAR GLASS (WINDOW), FRAME COLOUR TBD, DOUBLE GLAZED, LOW E COATING	11	METAL SIGNAGE BY OWNER. POWER REQUIRED, REFER TO ELECTRICAL DWGS.	14	ARCHITECTURAL METAL SOFFIT & FACSIA COLOUR: TBD.	17	BARRIER FREE RAMP FROM GRADE TO ENTRANCE LEVEL	20	PRECAST CONCRETE SILL
3	VERTICAL METAL SIDING (TYPE 1) SIZE: TBD. MODEL: TBD. COLOUR: TBD.	6	FLAT PANEL METAL SIDING MODEL: TBD. COLOUR: TBD.	9	CLEAR GLASS (CURTAIN WALL), FRAME COLOUR TBD, DOUBLE GLAZED, LOW E COATING	12	SCUPPER, METAL DOWNSPOUT.	15	CONCRETE FOUNDATION WALL / PARGING COLOUR: TBD.	18	METAL & GLASS RAILING / GUARD	21	PLANTER, REFER TO LANDSCAPE.

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3. ALL GRADES SHOWN ARE PRELIMINARY AND ARE SUBJECT TO GRADE BASED ON FINAL GRADING PLAN.
4. ALL FOOTINGS TO EXTEND TO UNDISTURBED SOIL (TYPICAL).
5. FINAL EXTERIOR COLOURS TO BE CONFIRMED/COORDINATED WITH CONTRACTOR, OWNER & ARCHITECT.

InHarmony DEVELOPMENTS
client | client

ENTUITIVE
structural engineers | ingénieur structure

QUASAR
MEP engineers | ingénieur MEP

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civil engineers | ingénieur civil

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landscape architect | architecte paysagiste

no	revisions	date
0	ISSUED FOR SITE PLAN CONTROL	2026-04-24

stamp | timbre

ONTARIO ASSOCIATION OF ARCHITECTS
ANDREW REEVES
LICENCE
6464

architect | architecte
linebox STUDIO

general notes | note générale

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project title

522 CAMBRIDGE ST SOUTH

PROPOSED APARTMENT DWELLING, LOW RISE
522 CAMBRIDGE ST S | OTTAWA, ON | K1S 4J3

drawing title | titre du dessin

EAST (CAMBRIDGE ST S) ELEVATION

project number | numero du projet	**2601**
drawn | dessiné	**JH / PC**
checked | verifié	**JAP / AR**
date | date	**JANUARY 13, 2026**
scale | échelle	**As indicated**

0 m 1 m 2 m

A4-100

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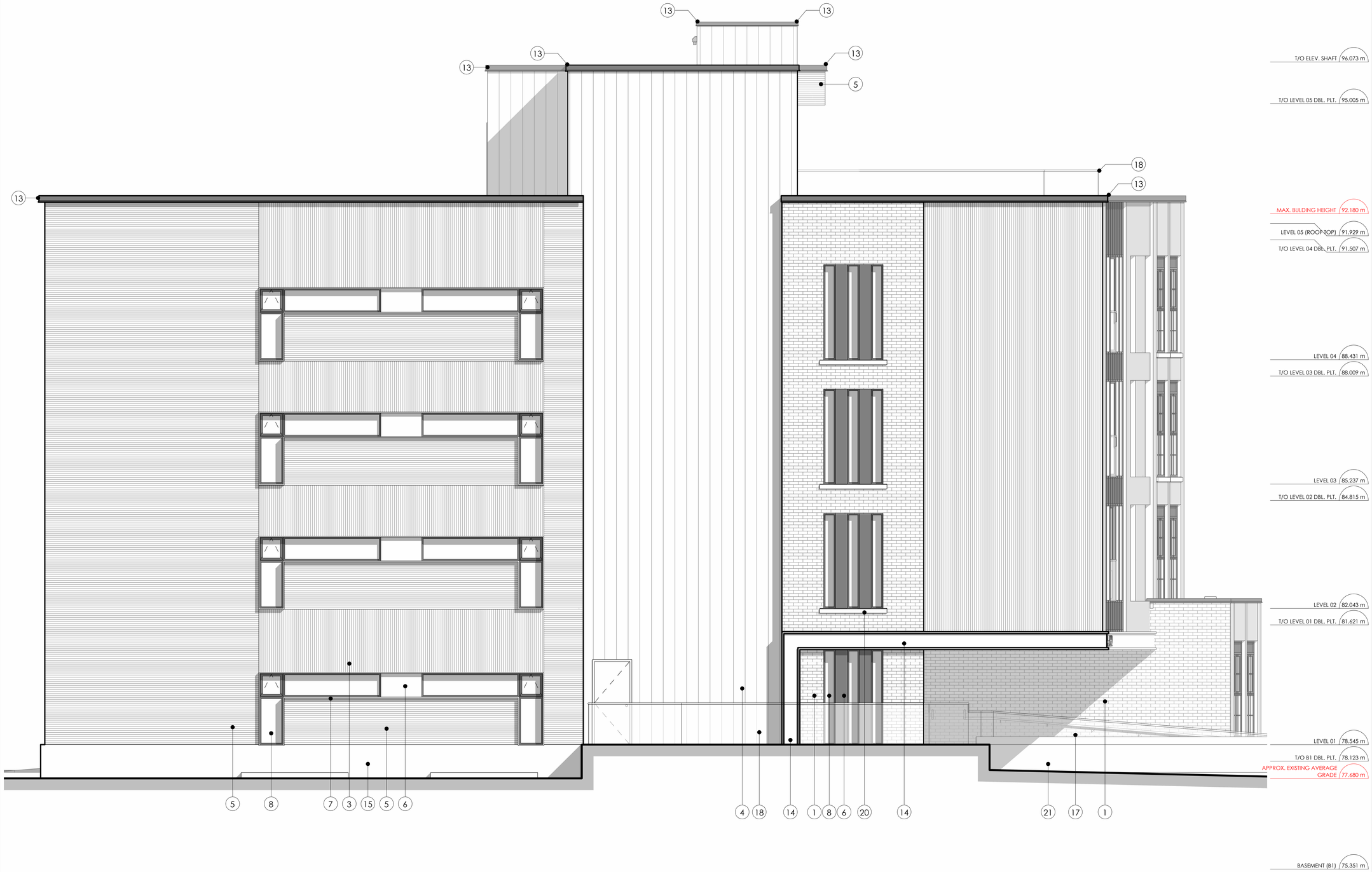

1 / A4-101 SOUTH ELEVATION
1 : 50
A0-801

MATERIAL LEGEND

TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION
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landscape architect | architecte paysagiste

0 ISSUED FOR SITE PLAN CONTROL 2026-04-24
no revisions date

stamp | timbre
ONTARIO ASSOCIATION OF ARCHITECTS
ANDREW REEVES LICENCE 6464

architect | architecte
linebox STUDIO

general notes | note générale
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project title
522 CAMBRIDGE ST SOUTH
PROPOSED APARTMENT DWELLING, LOW RISE
522 CAMBRIDGE ST S | OTTAWA, ON | K1S 4J3

drawing title | titre du dessin
SOUTH ELEVATION

project number | numero du projet	**2601**
drawn | dessiné	**JH / PC**
checked | verifié	**JAP / AR**
date | date	**JANUARY 13, 2026**
scale | échelle	**As indicated**

0 m 1 m 2 m

A4-101

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T/O ELEV. SHAFT 96.073 m

T/O LEVEL 05 DBL. PLT. 95.005 m

MAX. BULDING HEIGHT 92.180 m

LEVEL 05 (ROOFTOP) 91.929 m

T/O LEVEL 04 DBL. PLT. 91.507 m

LEVEL 04 88.431 m

T/O LEVEL 03 DBL. PLT. 88.009 m

LEVEL 03 85.237 m

T/O LEVEL 02 DBL. PLT. 84.815 m

LEVEL 02 82.043 m

T/O LEVEL 01 DBL. PLT. 81.621 m

LEVEL 01 78.545 m

T/O B1 DBL. PLT. 78.123 m

APPROX. EXISTING AVERAGE GRADE 77.680 m

BASEMENT (B1) 75.351 m

1 / A4-102 WEST ELEVATION
1 : 50
A0-801

MATERIAL LEGEND

TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION
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PROPOSED APARTMENT DWELLING, LOW RISE
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drawing title | titre du dessin
WEST ELEVATION

project number | numero du projet	**2601**
drawn | dessiné	**JH / PC**
checked | verifié	**JAP / AR**
date | date	**JANUARY 13, 2026**
scale | échelle	**As indicated**

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A4-102

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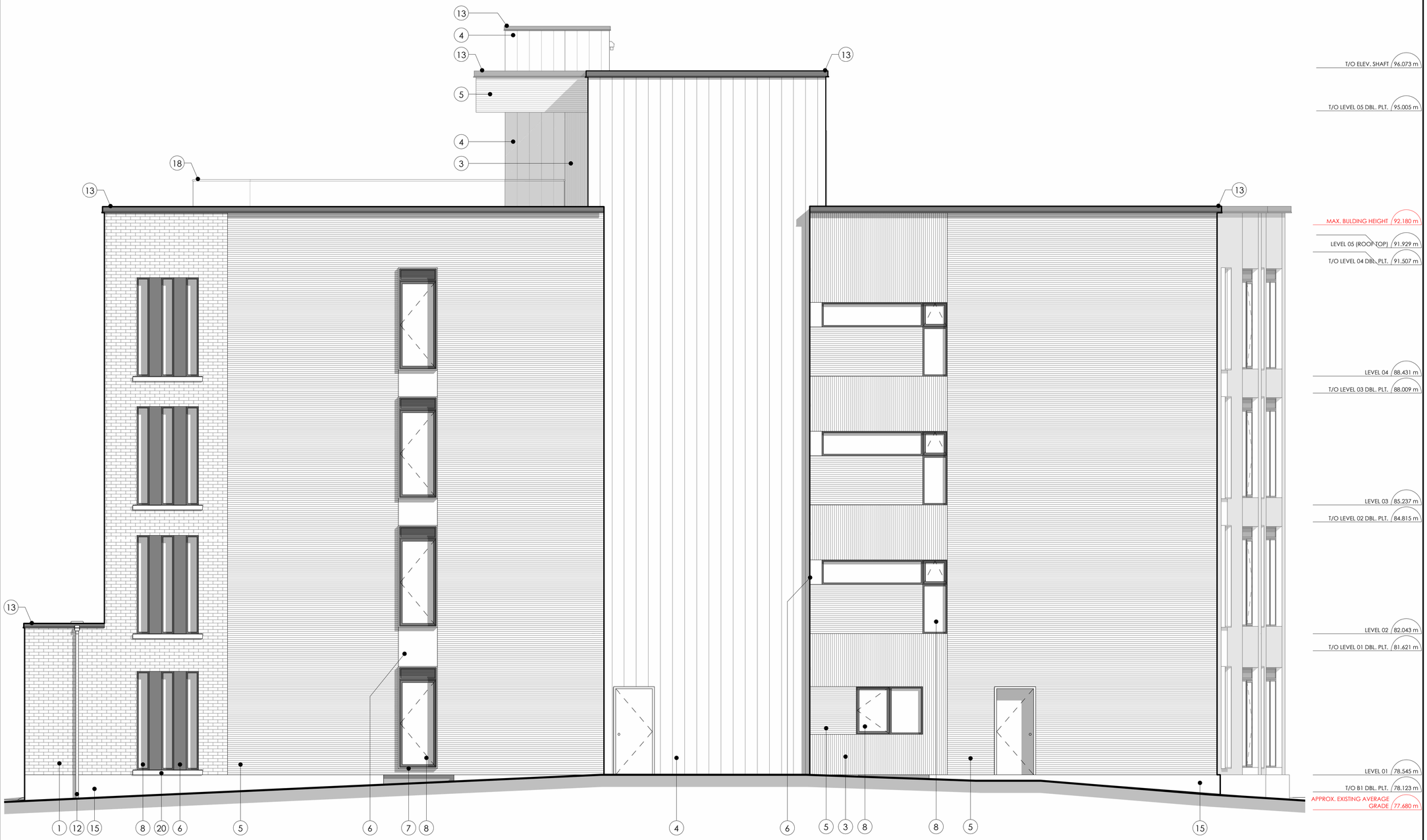

1 / A4-103 NORTH ELEVATION
1 : 50
A0-801

MATERIAL LEGEND

TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION
1	CLAY BRICK MASONRY (HORIZONTAL) SIZE: TBD. MODEL: TBD. COLOUR: TBD.	4	VERTICAL METAL SIDING (TYPE 2) SIZE: TBD. MODEL: TBD. COLOUR: TBD.	7	ARCHITECTURAL METAL WINDOW SHROUD 26 GAUGE, COLOUR TBD.	10	COLOURED GLASS (VANCEVA PVB INTERLAYER), COLOUR TBD, DOUBLE GLAZED, LOW E COATING.	13	METAL PARAPET CAP FLASHING, 26 GAUGE, BLACK FINISH	16	MAIN ENTRANCE	19	GLASS GUARD / JULIET BALCONY
2	CLAY BRICK MASONRY (VERTICAL STACK) SIZE: TBD. MODEL: TBD. COLOUR: TBD.	5	HORIZONTAL METAL SIDING SIZE: TBD. MODEL: TBD. COLOUR: TBD.	8	CLEAR GLASS (WINDOW), FRAME COLOUR TBD, DOUBLE GLAZED, LOW E COATING	11	METAL SIGNAGE BY OWNER, POWER REQUIRED, REFER TO ELECTRICAL DWGS.	14	ARCHITECTURAL METAL SOFFIT & FACSIA COLOUR: TBD.	17	BARRIER FREE RAMP FROM GRADE TO ENTRANCE LEVEL	20	PRECAST CONCRETE SILL
3	VERTICAL METAL SIDING (TYPE 1) SIZE: TBD. MODEL: TBD. COLOUR: TBD.	6	FLAT PANEL METAL SIDING MODEL: TBD. COLOUR: TBD.	9	CLEAR GLASS (CURTAIN WALL), FRAME COLOUR TBD, DOUBLE GLAZED, LOW E COATING	12	SCUPPER, METAL DOWNSPOUT.	15	CONCRETE FOUNDATION WALL / PARGING COLOUR: TBD.	18	METAL & GLASS RAILING / GUARD	21	PLANTER, REFER TO LANDSCAPE.

GENERAL NOTES:

1. ALL WINDOWS WITH SILLS LOCATED MORE THAN 1800 MM ABOVE THE EXTERIOR FINISHED GRADE SHALL BE DESIGNED TO PREVENT FALLS AND ACT AS A GUARD, IN ACCORDANCE WITH OBC ARTICLE 4.1.5.14. THE SEALED GLASS UNITS SHALL BE CAPABLE OF RESISTING A 0.5 KN APPLIED LOAD OVER A 100 X 100 MM AREA WITHOUT FAILURE. WINDOW FASTENING AND ANCHORAGE METHODS SHALL COMPLY WITH OBC SENTENCES 4.1.5.14 (1) AND (4). THE MANUFACTURER'S PROPRIETARY INSTALLATION SYSTEM SHALL ENSURE THAT THE FRAME ASSEMBLY ACTS AS A GUARD AND THAT THE JAMBS ARE SECURELY ANCHORED TO THE WALL STRUCTURE, CAPABLE OF WITHSTANDING THE APPLIED LOADS DESCRIBED ABOVE.UNLESS OTHERWISE NOTED, EXTERIOR ALUMINUM COMPONENTS SHALL HAVE A FACTORY-APPLIED ACRYNOR AAMA-2604 FINISH, SELECTED FROM THE MANUFACTURER'S STANDARD COLOUR CHART. COLOUR: TBD (STANDARD UNLESS OTHERWISE DIRECTED BY THE ARCHITECT).
2. OPERABLE WINDOWS TO HAVE A MECHANISM CAPABLE OF CONTROLLING THE FREE SWINGING OR SLIDING OF THE OPENABLE PART OF THE WINDOW SO AS TO LIMIT ANY CLEAR UNOBSTRUCTED OPENING TO A SIZE THAT WILL PREVENT THE PASSAGE OF A SPHERE HAVING A DIAMETER MORE THAN 100mm, OR BE PRETECTED BY A GUARD NO LESS THAN 1070mm.
3. ALL GRADES SHOWN ARE PRELIMINARY AND ARE SUBJECT TO GRADE BASED ON FINAL GRADING PLAN.
4. ALL FOOTINGS TO EXTEND TO UNDISTURBED SOIL (TYPICAL).
5. FINAL EXTERIOR COLOURS TO BE CONFIRMED/COORDINATED WITH CONTRACTOR, OWNER & ARCHITECT.

InHarmony DEVELOPMENTS
client | client

ENTUITIVE
structural engineers | ingénieur structure

QUASAR
MEP engineers | ingénieur MEP

exp.
civil engineers | ingénieur civil

JAMES B. LENNOX & ASSOCIATES INC.
LANDSCAPE ARCHITECTS
3332 CARLING AVE. OTTAWA, ONTARIO K2H 5A8
Tel. (613) 722-5168 Fax. 1(866) 343-3942
landscape architect | architecte paysagiste

no	revisions	date
0	ISSUED FOR SITE PLAN CONTROL	2026-04-24

stamp | timbre

ONTARIO ASSOCIATION OF ARCHITECTS
ANDREW REEVES
LICENCE
6464

architect | architecte
linebox STUDIO

general notes | note générale

1. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT.
2. DO NOT SCALE THE DRAWINGS.
3. NOT FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

project title

522 CAMBRIDGE ST SOUTH

PROPOSED APARTMENT DWELLING, LOW RISE
522 CAMBRIDGE ST S | OTTAWA, ON | K1S 4J3

drawing title | titre du dessin

NORTH ELEVATION

project number | numero du projet	**2601**
drawn | dessiné	**JH / PC**
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date | date	**JANUARY 13, 2026**
scale | échelle	**As indicated**

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A4-103

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GENERAL NOTES:

1. ALL WORKS AND MATERIALS SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS), WHERE APPLICABLE.
2. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE LOCATION AND STATUS OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION OF PLANT AND EQUIPMENT FROM DAMAGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY SERVICES OR UTILITIES DISTURBED DURING CONSTRUCTION, TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
3. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING SERVICES PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL CONFIRM LOCATIONS AND ELEVATIONS OF EXISTING SERVICES AND STRUCTURES TO BE CONNECTED TO AND EXISTING SERVICES THAT MAY BE DAMAGED OR CAUSE CONFLICTS PRIOR TO CONSTRUCTION OF ANY NEW SEWER, WATER AND/OR STORM WATER WORKS. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES, INTERPRETATIONS, CHANGES AND ADDITIONS TO THESE DRAWINGS MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER, WHEN NOTED AND BEFORE PROCEEDING WITH CONSTRUCTION WORKS. DO NOT CONTINUE CONSTRUCTION IN AREAS WHERE DISCREPANCIES APPEAR UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED.
4. ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED. ALL DRAWINGS SHOULD NOT BE SCALED BY THE CONTRACTOR. ANY MISSING OR QUESTIONABLE DIMENSIONS ARE TO BE CONFIRMED WITH THE ENGINEER IN WRITING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION RELATED PERMITS REQUIRED AND BEAR COST OF THE SAME.
6. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS", THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE CONSTRUCTOR AS DEFINED IN THE ACT.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION, BACKFILL AND REINSTATEMENT OF ALL AREAS DISTURBED DURING CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER, THE CITY OF OTTAWA AND THE AUTHORITY HAVING JURISDICTION.
8. ANY AREAS BEYOND THE LIMIT OF THE SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AT THE CONTRACTOR'S EXPENSE.
9. THE CONTRACTOR SHALL COMPLY WITH THE CITY OF OTTAWA REQUIREMENTS FOR TRAFFIC CONTROL WHEN WORKING ON CITY STREETS. ALL CONSTRUCTION SIGNAGE MUST CONFORM TO THE M.T.O. BOOK 7 AND T.A.C MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST AMENDMENT).
10. THE SUPPORT OF ALL UTILITIES WITHIN THE CONSTRUCTION AREA SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
11. THERE WILL BE NO SUBSTITUTION OF MATERIALS UNLESS WRITTEN APPROVAL BY THE ENGINEER HAS BEEN OBTAINED.
12. EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE.
13. THE SITE LAYOUT IS THE RESPONSIBILITY OF THE CONTRACTOR. AS-BUILT SITE SERVICING & GRADING DRAWINGS SHALL BE MAINTAINED ON SITE BY THE CONTRACTOR.
14. THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL BEDDING OR ADDITIONAL STRENGTH PIPE IF THE MAXIMUM TRENCH WIDTH, AS SPECIFIED BY OPSD, IS EXCEEDED.
15. ALL NECESSARY CLEARING AND GRUBBING SHALL BE COMPLETED AY THE CONTRACTOR. REVIEW WITH ENGINEER AND THE CITY OF OTTAWA PRIOR TO ANY TREE CUTTING.
16. ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A NEAT AND STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT.
17. FOR GEOTECHNICAL INFORMATION REFER TO GEOTECHNICAL INVESTIGATION REPORT PREPARED BY EXP. SERVICES INC, DATED APRIL 20, 2026 [DRAFT].
18. THE CONTRACTOR SHALL APPRAISE HIS/HER SELF OF ALL SURFACE AND SUBSURFACE CONDITIONS TO BE ENCOUNTERED AND SHALL CARRY OUT THEIR OWN TEST PITS AS REQUIRED TO MAKE THEIR OWN INDEPENDENT ASSESSMENT OF GROUND CONDITIONS. THE CONTRACTOR SHALL NOT MAKE ANY CLAIM FOR ANY EXTRA COST DUE TO ANY SUCH GROUND CONDITIONS VARYING FROM THOSE ANTICIPATED BY THE CONTRACTOR.
19. DO NOT CONSTRUCT USING DRAWINGS THAT ARE NOT MARKED "ISSUED FOR CONSTRUCTION".

    FOR TOPOGRAPHICAL INFORMATION REFER TO PLAN PREPARED BY MONUMENT-URSO SURVEYING LTD DATED SEPTEMBER 25, 2025.
20. CIVIL DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, LANDSCAPE AND LEGAL DRAWINGS.

SANITARY SEWER NOTES

1. ALL SANITARY SEWER MATERIALS AND INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
2. ALL SANITARY SEWERS SHALL BE PVC SDR 35, IPEX "RING-TITE" (OR EQUIVALENT), AS PER CSA STANDARD 8182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE NOTED.
3. SANITARY SEWER TRENCH AND BEDDING SHALL BE AS PER CITY OF OTTAWA STD. S6 AND S7, CLASS 'B BEDDING UNLESS OTHERWISE NOTED.
4. ALL SANITARY LATERALS ARE TO BE PVC SDR 28, IPEX "RING-TITE" (OR EQUIVALENT), ANY COLOR EXCEPT WHITE AND MARKED WITH A 5OMM X 100MM WOODEN MARKER, EXTENDING FROM THE INVERT TO 1.0 M ABOVE GRADE PAINTED RED.
5. SEWER BEDDING AS PER CITY STANDARD S6 & S7. GRANULAR 'A' BEDDING TO BE INCREASED TO 300MM WHERE SEWERS ARE BELOW THE GROUNDWATER TABLE.
6. SANITARY SEWER MANHOLES SHALL BE BENCHED AS PER OPSD 701.021. SANITARY MANHOLE FRAME AND COVERS SHALL BE AS PER CITY OF OTTAWA STD. S24 AND S25. SAFETY PLATFORMS SHALL BE AS PER OPSD 404.02. DROP STRUCTURES SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA SPECIFICATIONS AND OPSD 1003.01.
7. THE CONTRACTOR SHALL CONDUCT INFILTRATION/EXFILTRATION (AS PER CURRENT OPSS) TESTING ON ALL NEWLY INSTALLED SANITARY SEWERS. THE TEST SHALL BE PERFORMED IMMEDIATELY AFTER SEWER INSTALLATION AND VIEWED BY THE ENGINEER.
8. THE CONTRACTOR SHALL CONDUCT CCTV INSPECTION OF ALL NEWLY INSTALLED SANITARY SEWERS AND EXISTING SEWERS CONNECTED TO. THE TEST SHALL BE PERFORMED IMMEDIATELY AFTER SEWERS INSTALLED.
9. ALL SERVICE CONNECTIONS TO BE CONSTRUCTED AS PER CITY STANDARD S11 & S11.1.
10. THE CONTRACTOR SHALL CONSTRUCT FLEXIBLE SANITARY SEWERS IN ACCORDANCE WITH OPSD 802.010 AND 802.013. DURING CONSTRUCTION, THE CONTRACTOR SHALL PROTECT THE PIPES FROM HEAVY CONSTRUCTION EQUIPMENT. BEDDING AND BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% SPMDD.
11. ALL SANITARY BUILDING DRAINS TO BE EQUIPPED WITH SANITARY BACKWATER VALVES INSTALLED PER CITY OF OTTAWA STANDARD DRAWING S14.1.
12. WITHIN THE FROST ZONE, THE BACKFILL IN THE SERVICE TRENCHES SHOULD MATCH THE SOIL ON SIDES TO MINIMIZE DIFFERENTIAL FROST HEAVING IN THE SUBGRADE.
13. MINIMUM SOIL COVER TO BE 2.1m TO PROTECT SEWERS FROM FROST DAMAGE. IN AREAS WHERE ADEQUATE FROST COVER CANNOT BE ACHIEVED, EQUIVALENT THERMAL INSULATION TO BE INSTALLED ON ALL THREE SIDES AS PER CITY OF OTTAWA STD. S35.

STORM SEWER NOTES

1. ALL STORM SEWER MATERIALS AND INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
2. ALL REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.2 (LATEST AMENDMENT). ALL NON-REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.L (LATEST AMENDMENT). PIPE SHALL BE JOINTED WITH STD. RUBBER GASKETS AS PER CSA A257.3 (LATEST AMENDMENT).
3. ALL PVC STORM SEWERS ARE TO BE SDR 35 APPROVED PER C.S.A. 8182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
4. THE CONTRACTOR SHALL CONSTRUCT FLEXIBLE STORM SEWERS IN ACCORDANCE WITH OPSD 802.010 AND 802.013. RIGID STORM PIPE SHALL BE CONSTRUCTED IN ACCORDANCE WITH OPSD 802.030. DURING CONSTRUCTION THE CONTRACTOR SHALL PROTECT THE PIPES FROM HEAVY CONSTRUCTION EQUIPMENT. BEDDING AND BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% SPMDD.
5. SEWER BEDDING AS PER CITY STANDARD S6 & S7.
6. ALL STORM LATERALS SHALL BE PVC SDR 28, WHITE IN COLOR AND MARKED WITH A 50mm X I00mm WOODEN MARKER EXTENDING FROM THE INVERT TO 1.0M ABOVE GRADE PAINTED GREEN.
7. ALL SERVICE CONNECTIONS TO BE CONSTRUCTED AS PER CITY STANDARD S11 & S11.1.
8. WITHIN THE FROST ZONE, THE BACKFILL IN THE SERVICE TRENCHES SHOULD MATCH THE SOIL ON SIDES TO MINIMIZE DIFFERENTIAL FROST HEAVING IN THE SUBGRADE.
9. MINIMUM SOIL COVER TO BE 2.1m TO PROTECT SEWERS FROM FROST DAMAGE. IN AREAS WHERE ADEQUATE FROST COVER CANNOT BE ACHIEVED, EQUIVALENT THERMAL INSULATION TO BE INSTALLED ON ALL THREE SIDES AS PER CITY OF OTTAWA STD. S35.
10. FOUNDATION DRAIN SERVICE LATERAL TO BE EQUIPPED WITH APPROVED BACKWATER VALVE AS PER CITY OF OTTAWA STD.S14.
11. STORM MANHOLE FRAME AND COVERS SHALL BE AS PER CITY OF OTTAWA STD. S24, S24.1 AND S25.
12. SAFETY PLATFORMS SHALL BE IN ACCORDANCE WITH OPSD 404.02.
13. DROP STRUCTURES SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA SPECIFICATIONS AND OPSD 1003.01.
14. STORM SEWER MANHOLES SERVING LOCAL SEWERS LESS THAN 900mm SHALL BE CONSTRUCTED WITH A 300mm SUMP. FOR STORM SEWERS 900mm AND OVER USE BENCHING IN ACCORDANCE WITH OPSD 701 .021.
15. THE STORM SEWER CLASSES HAVE BEEN DESIGNED BASED ON BEDDING CONDITIONS SPECIFIED. WHERE THE SPECIFIED TRENCH WIDTH IS EXCEEDED, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADDITIONAL BEDDING, A DIFFERENT TYPE OF BEDDING OR A HIGHER PIPE STRENGTH AT HIS OWN EXPENSE AND SHALL ALSO BE RESPONSIBLE FOR EXTRA TEMPORARY AND/OR PERMANENT REPAIRS MADE NECESSARY BY THE WIDENED TRENCH.
16. THE CONTRACTOR SHALL CONDUCT CCTV INSPECTION OF ALL NEWLY INSTALLED STORM SEWERS AND EXISTING SEWERS CONNECTED TO. THE TEST SHALL BE PERFORMED IMMEDIATELY AFTER THE SEWERS ARE INSTALLED.

WATERMAIN NOTES

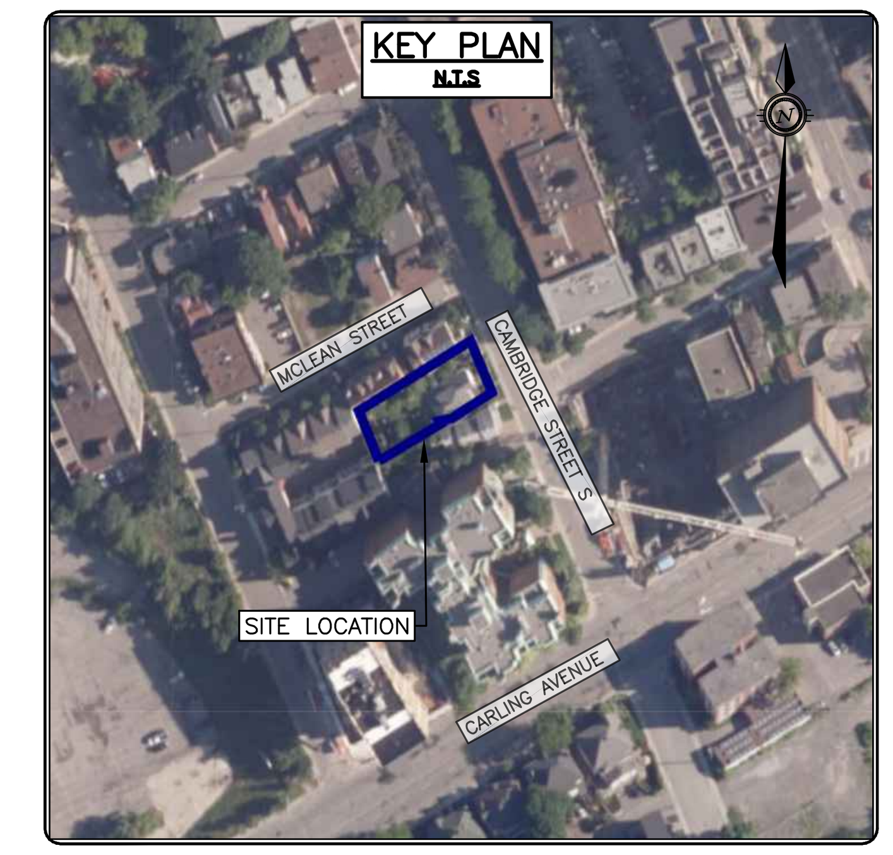
1. ALL WATERMAIN MATERIALS AND INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
2. NO WORK SHALL COMMENCE UNLESS A CITY WATER WORKS INSPECTOR IS ON SITE. WATERMAIN CONNECTIONS BY CITY OF OTTAWA FORCES WITH ALL EXCAVATION BACKFILL AND ROAD REINSTATEMENT BY CONTRACTOR.
3. ALL PVC WATERMAINS SHALL BE EQUAL TO AWWA C-900 CLASS 150, SDR 18, OR APPROVED EQUAL.
4. WATERMAINS TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W17, UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY PROJECT GEOTECHNICAL ENGINEER.
5. ALL PVC WATERMAINS SHALL BE INSTALLED WITH A 10 GAUGE STRANDED COPPER TWU OR RWU TRACER WIRE IN ACCORDANCE WITH CITY OF OTTAWA STD. W36.
6. WATER SERVICES SHALL BE MARKED WITH A "50mm X 100mm", EXTENDING FROM THE INVERT TO 1.0m ABOVE GRADE PAINTED BLUE. STAND POSTS/SHUT-OFFS SHALL BE INSTALLED AT THE PROPERTY LINE.
7. CATHODIC PROTECTION IS REQUIRED ON ALL METALLIC FITTINGS AS PER CITY OF OTTAWA STD. W40 AND W42.
8. VALVE BOXES SHALL BE INSTALLED AS PER CITY OF OTTAWA DETAIL W24.
9. ALL WATERMAINS TO BE INSTALLED AT MINIMUM COVER OF 2.4m. WHERE MINIMUM FROST COVER CAN NOT BE ACHIEVED, PROVIDE RIGID INSULATION ON ALL THREE SIDES AS PER CITY OF OTTAWA STD. W22.
10. THRUST BLOCKS AND RESTRAINT AS PER CITY OF OTTAWA DWGS: W25.3 AND W25.4, W25.5 AND W25.6.
11. IF WATERMAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.
12. DISINFECTION AND TESTING OF WATERMAIN TO BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARDS.
13. WATER METERS TO BE INSTALLED AS PER W30 FOR WATER SERVICES.
14. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CAPS, PLUGS AND BLOW-OFFS AND NOZZLES REQUIRED FOR TESTING AND DISINFECTION OF THE WATERMAN.
15. WATERMAINS CROSSING ABOVE OR BELOW SEWERS TO BE INSTALLED AS PER CITY STED. W25 AND W25.2.
16. WHERE THE SEPARATION BETWEEN SERVICES AND MANHOLES IS LESS THAN 1.2m, WATER SERVICES ARE TO BE INSULATED AS PER CITY OF OTTAWA STD. W23.
17. AS PER CITY GUIDELINE, THE MINIMUM VERTICAL CLEARANCE BETWEEN WATERMAIN AND SEWER / UTILITY IS 0.50m FOR CROSSING OVER THE SEWER, AS PER CITY STD W25.2. FOR CROSSING UNDER SEWER, THE MINIMUM VERTICAL CLEARANCE IS 0.50m AS PER CITY STD. W25. FOR CROSSING UNDER SEWER, ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS IS REQUIRED TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING. THE LENGTH OF WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.

ROADWAY SPECIFICATIONS

1. ALL TOPSOIL AND ORGANIC MATERIAL SHALL BE STRIPPED WITHIN THE ROAD ALLOWANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. CONCRETE CURB SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. SC.1.1(BARRIER CURB) AS NOTED. PROVISION SHALL BE MADE FOR CURB DEPRESSIONS AT SIDEWALKS AND DRIVEWAYS.
3. PAVEMENT REINSTATEMENT FOR SERVICE AND UTILITY CUTS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. R10 AND OPSD 509.010, OPSS 310.
4. GRANULAR "A" SHALL BE PLACED TO A MINIMUM THICKNESS OF 300mm AROUND ALL STRUCTURES WITHIN PAVEMENT AREA.
5. ALL GRANULAR FOR ROADS SHALL BE COMPACTED TO A MINIMUM OF 98% STANDARD PROCTOR DENSITY.
6. ASPHALT WEAR COURSE SHALL NOT BE PLACED UNTIL THE VIDEO INSPECTION OF SEWERS & NECESSARY REPAIRS HAVE BEEN CARRIED OUT TO THE SATISFACTION OF THE ENGINEER.
7. SUB- EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'B' COMPACTED IN MAXIMUM 300mm LIFTS.

GENERAL NOTES FOR GRADING

1. IT SHALL BE THE BUILDER'S RESPONSIBILITY TO ENSURE THAT GRADING AROUND HYDRANTS, TRANSFORMERS, AND UTILITY PEDESTALS, ETC., MEET CURRENT CITY OF OTTAWA, HYDRO AND UTILITY COMPANY REQUIREMENTS.
2. ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS AND WITHOUT LOW POINTS EXCEPT WHERE APPROVED SWALE OR CATCH BASIN OUTLETS ARE PROVIDED.
3. CONTRACTOR TO ADJUST EXISTING CATCH BASINS, MANHOLES, FIRE HYDRANTS, VALVE CHAMBERS AND VALVE BOXES TO FINAL GRADE AS REQUIRED.
4. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING FOUNDATIONS OF ADJACENT BUILDINGS DURING EXCAVATION AND CONSTRUCTION PERIOD.
5. GRADING IN GRASSED AREAS WILL BE BETWEEN 2% TO 7%. GRADES IN EXCESS OF 7% WILL REQUIRE A MAXIMUM 3:1 TERRACING.



CAUTION
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.

JOB BENCH MARK
NAIL SET IN UTILITY POLE LOCATED ADJACENT TO THE SIDEWALK ALONG EASTERN PROPERTY LINE AT ELEVATION=77.94
NORTHING=5029350.4849 EASTING=367313.2131

TOPOGRAPHIC INFORMATION
LOT2 AND PART OF LOT1 REGISTERED PLAN 31326, CITY OF OTTAWA.
TOPOGRAPHIC INFORMATION PROVIDED BY MONUMENT–URSO SURVEYING LTD. DATED SEPTEMBER 25, 2025.
SITE GRID SYSTEM MTM NAD 83, ZONE 9,

REV	REVISION DESCRIPTION	DATE	BY	APPD	REV	REVISION DESCRIPTION	DATE	BY	APPD
					1	ISSUED FOR SPA	01/05/26	NP	AKJ

SCALE

NORTH

DESIGNED BY

REVIEWED BY
LICENSED PROFESSIONAL ENGINEER
A. K. JARIWALA
100562090
2026/05/01
PROVINCE OF ONTARIO

CLIENT
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BASEPLAN NP
DESIGN NP
CHECKED AKJ
CAD NP
PROJECT MANAGER AKJ
APPROVED AKJ

PROJECT
RESIDENTIAL DEVELOPMENT
522 CAMBRIDGE STREET SOUTH
OTTAWA, ONTARIO.

TITLE
NOTES AND DETAILS

PROJECT No. OTT–25015974–A0
SURVEY MUS
DATE 2025–12–01
DRAWING No. C000

D07-??-??-????

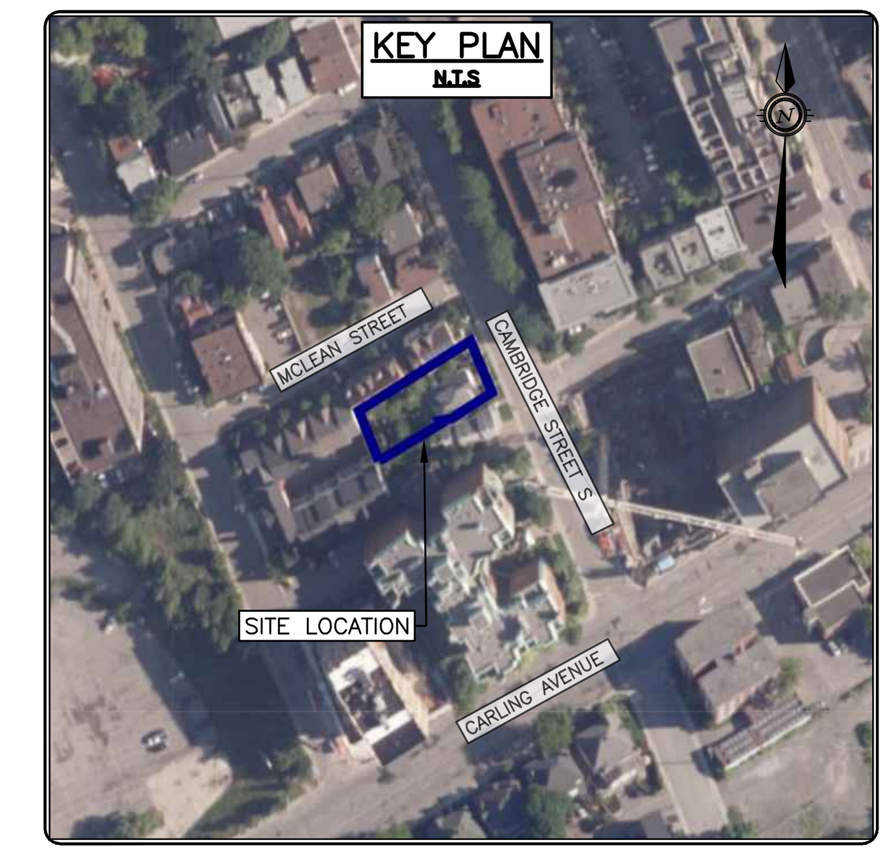
#?????

NOTES:

1. THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE LOCATION AND STATUS OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION OF PLANT AND EQUIPMENT FROM DAMAGE UNTIL SUCH TIME AS THE SERVICE PROVIDER HAS CONFIRMED IN WRITING THE SERVICE IS ABANDONED AND CAN BE REMOVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY SERVICES OR UTILITIES DISTURBED DURING CONSTRUCTION, TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.

2. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING SERVICES PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL CONFIRM LOCATIONS AND ELEVATIONS OF EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES, INTERPRETATIONS, CHANGES AND ADDITIONS TO THESE DRAWINGS MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER, WHEN NOTED AND BEFORE PROCEEDING WITH CONSTRUCTION WORKS. DO NOT CONTINUE CONSTRUCTION IN AREAS WHERE DISCREPANCIES APPEAR UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED.

KEY PLAN
N.T.S



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References: XREF - SITE PLAN.dwg; XREF - TOPO.dwg; A2-106.dwg

CAUTION
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.

JOB BENCH MARK
NAIL SET IN UTILITY POLE LOCATED ADJACENT TO THE SIDEWALK ALONG EASTERN PROPERTY LINE AT ELEVATION=77.94
NORTHING=5029350.4849 EASTING=367313.2131

TOPOGRAPHIC INFORMATION
LOT2 AND PART OF LOT1 REGISTERED PLAN 31326, CITY OF OTTAWA.
TOPOGRAPHIC INFORMATION PROVIDED BY MONUMENT–URSO SURVEYING LTD. DATED SEPTEMBER 25, 2025.
SITE GRID SYSTEM MTM NAD 83, ZONE 9,

REV	REVISION DESCRIPTION	DATE	BY	APPD

REV	REVISION DESCRIPTION	DATE	BY	APPD
1	ISSUED FOR SPA	01/05/26	NP	AKJ

SCALE
0 1m 2m 4m
HORIZONTAL 1:100

NORTH

DESIGNED BY

REVIEWED BY
LICENSED PROFESSIONAL ENGINEER
A. K. JARIWALA
100562090
2026/05/01
PROVINCE OF ONTARIO

CLIENT
522 CAMBRIDGE LTD.
187 CHEMIN OLD CHELSEA, SUITE 101
CHELSEA, QC. J9B 1J3
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• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

BASEPLAN	NP
DESIGN	NP
CHECKED	AKJ
CAD	NP
PROJECT MANAGER	AKJ
APPROVED	AKJ

PROJECT
RESIDENTIAL DEVELOPMENT
522 CAMBRIDGE STREET SOUTH
OTTAWA, ONTARIO.

TITLE
EXISTING CONDITIONS AND REMOVALS PLAN

PROJECT No.	OTT–25015974–A0
SURVEY	MUS
DATE	2025–12–01
DRAWING No.	C001

D07-??-??-????

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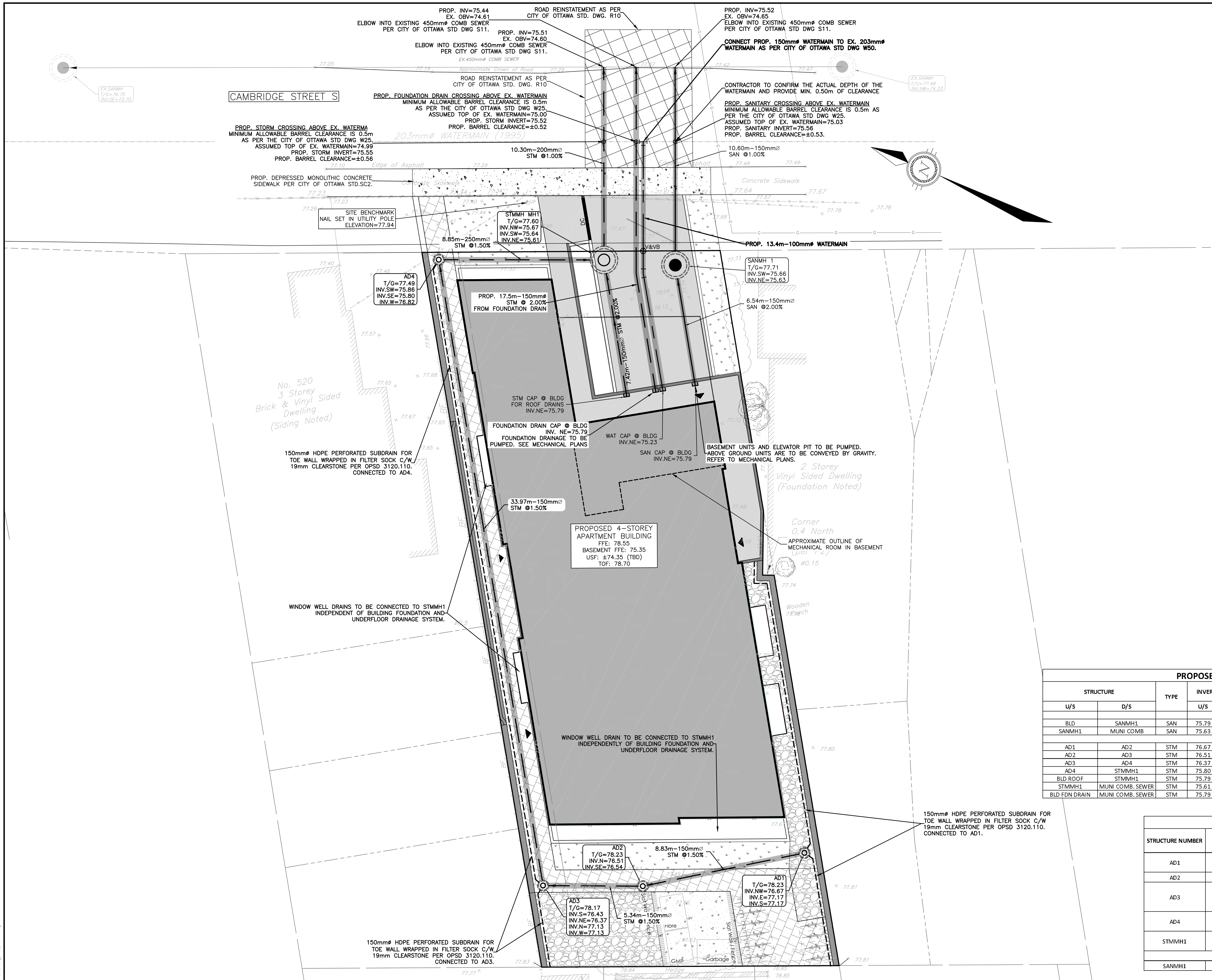

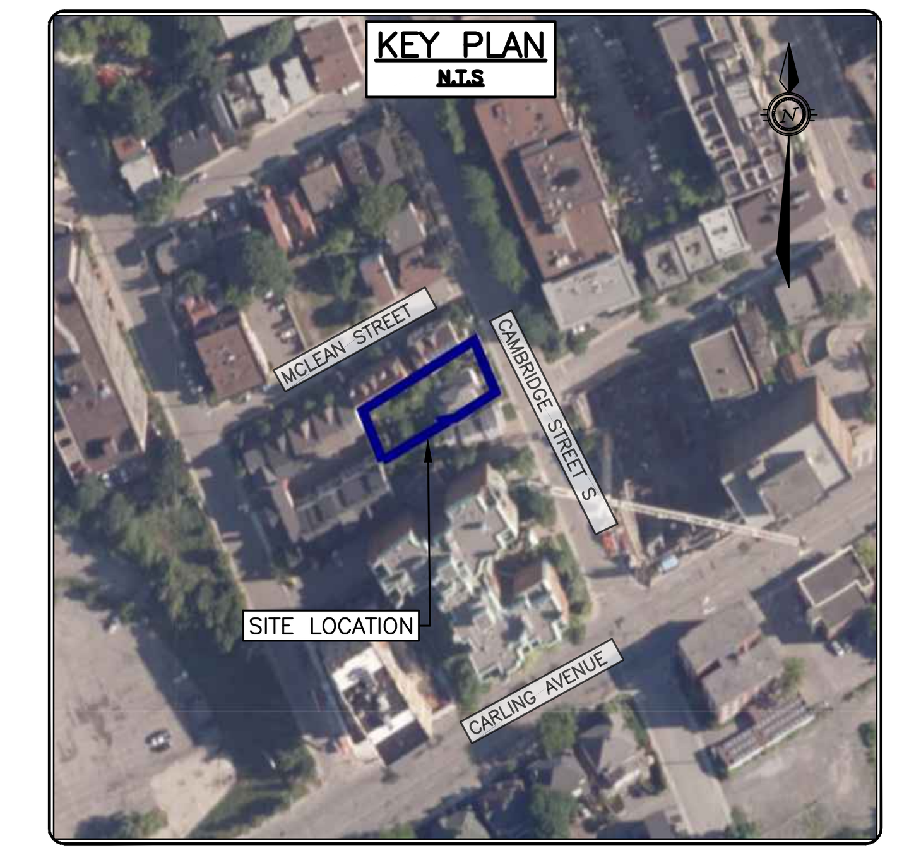

LEGEND

- PROPERTY LINE
- EX. ROAD CENTERLINE
- EX. UTILITY POLE
- EX. WATER VALVE
- EX. COMBINED SEWER MANHOLE
- EX. COMBINED SEWER
- EX. WATERMAIN
- PROP. STORM SEWER
- PROP. SANITARY SEWER
- PROP. WATERMAIN
- PROP. CATCHBASIN/AREA DRAIN
- PROP. VALVE & VALEBOX
- RD PROP. ROOF DRAIN
- PROP. STORM/SANITARY MANHOLE
- 100mm THICK HI-60 RIGID INSULATION ON ALL THREE SIDES PER CITY OF OTTAWA STD S35 FOR SEWERS AND W22 FOR WATERMAIN
- PROP. GRASS/SOFT LANDSCAPING AS PER LANDSCAPE PLAN
- PROP. CLEAR STONE
- PROP. CONCRETE SURFACE
- PROP. ASPHALT

PROPOSED SEWER TABLE

STRUCTURE		TYPE	INVERT ELEV (m)		NOMINAL DIA (mm)	LENGTH	MATERIAL	CLASS	SLOPE (%)
U/S	D/S		U/S	D/S					
BLD	SANMH1	SAN	75.79	75.66	150	6.54	PVC	SC40	2.00%
SANMH1	MUNI COMB	SAN	75.63	75.52	150	10.6	PVC	SDR 35	1.00%
AD1	AD2	STM	76.67	76.54	150	8.83	PVC	SDR 35	1.50%
AD2	AD3	STM	76.51	76.43	150	5.34	PVC	SDR 35	1.50%
AD3	AD4	STM	76.37	75.86	150	33.97	PVC	SDR 35	1.50%
AD4	STMMH1	STM	75.80	75.67	150	8.85	PVC	SDR 35	1.50%
BLD ROOF	STMMH1	STM	75.79	75.64	150	7.42	PVC	SDR 28	2.00%
STMMH1	MUNI COMB. SEWER	STM	75.61	75.51	200	10.3	PVC	SDR 35	1.00%
BLD FDN DRAIN	MUNI COMB. SEWER	STM	75.79	75.44	150	17.5	PVC	SC40	2.00%

STRUCTURE TABLE

STRUCTURE NUMBER	TYPE	LID ELEVATION (m)	INVERT IN (m)	DIA (mm)	INVERT OUT (m)	DIA (mm)	STRUCTURE			
							SIZE	REFERENCE	FRAME	COVER
AD1	STM	78.23	77.17	150	76.16	150	600mmø	ADS Nyloplast Drain Basin c/w D.I. Frame and Cover		
			77.17	150						
AD2	STM	78.23	76.54	150	76.51	150	600mmø	ADS Nyloplast Drain Basin c/w D.I. Frame and Cover		
AD3	STM	78.17	76.43	150	76.37	150	600mmø	ADS Nyloplast Drain Basin c/w D.I. Frame and Cover		
			77.13	150						
			77.13	150						
AD4	STM	77.49	75.86	150	75.8	150	600mmø	ADS Nyloplast Drain Basin c/w D.I. Frame and Cover		
			76.82	150						
STMMH1	STM	77.60	75.67	150	75.61	200	1200mmø	OPSD 701.010	S25	S24.1
			75.65	150						
SANMH1	SAN	77.71	75.66	150	75.63	150	1200mmø	OPSD 701.010	S25	S24

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JOB BENCH MARK
NAIL SET IN UTILITY POLE LOCATED ADJACENT TO THE SIDEWALK ALONG EASTERN PROPERTY LINE AT ELEVATION=77.94
NORTHING=5029350.4849 EASTING=367313.2131

TOPOGRAPHIC INFORMATION
LOT2 AND PART OF LOT1 REGISTERED PLAN 31326, CITY OF OTTAWA.
TOPOGRAPHIC INFORMATION PROVIDED BY MONUMENT-URSO SURVEYING LTD. DATED SEPTEMBER 25, 2025.
SITE GRID SYSTEM MTM NAD 83, ZONE 9,

REV	REVISION DESCRIPTION	DATE	BY	APPD	REV	REVISION DESCRIPTION	DATE	BY	APPD
					1	ISSUED FOR SPA	01/05/26	NP	AKJ

SCALE
0 1m 2m 4m
HORIZONTAL 1:100

NORTH

DESIGNED BY

REVIEWED BY
LICENSED PROFESSIONAL ENGINEER
A. K. JARIWALA
100562090
2026/05/01
PROVINCE OF ONTARIO

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BASEPLAN NP
DESIGN NP
CHECKED AKJ
CAD NP
PROJECT MANAGER AKJ
APPROVED AKJ

PROJECT
RESIDENTIAL DEVELOPMENT
522 CAMBRIDGE STREET SOUTH
OTTAWA, ONTARIO.

TITLE
SITE SERVICING PLAN

PROJECT No. OTT-25015974-A0
SURVEY MUS
DATE 2025-12-01
DRAWING No. C100

D07-??-??-????

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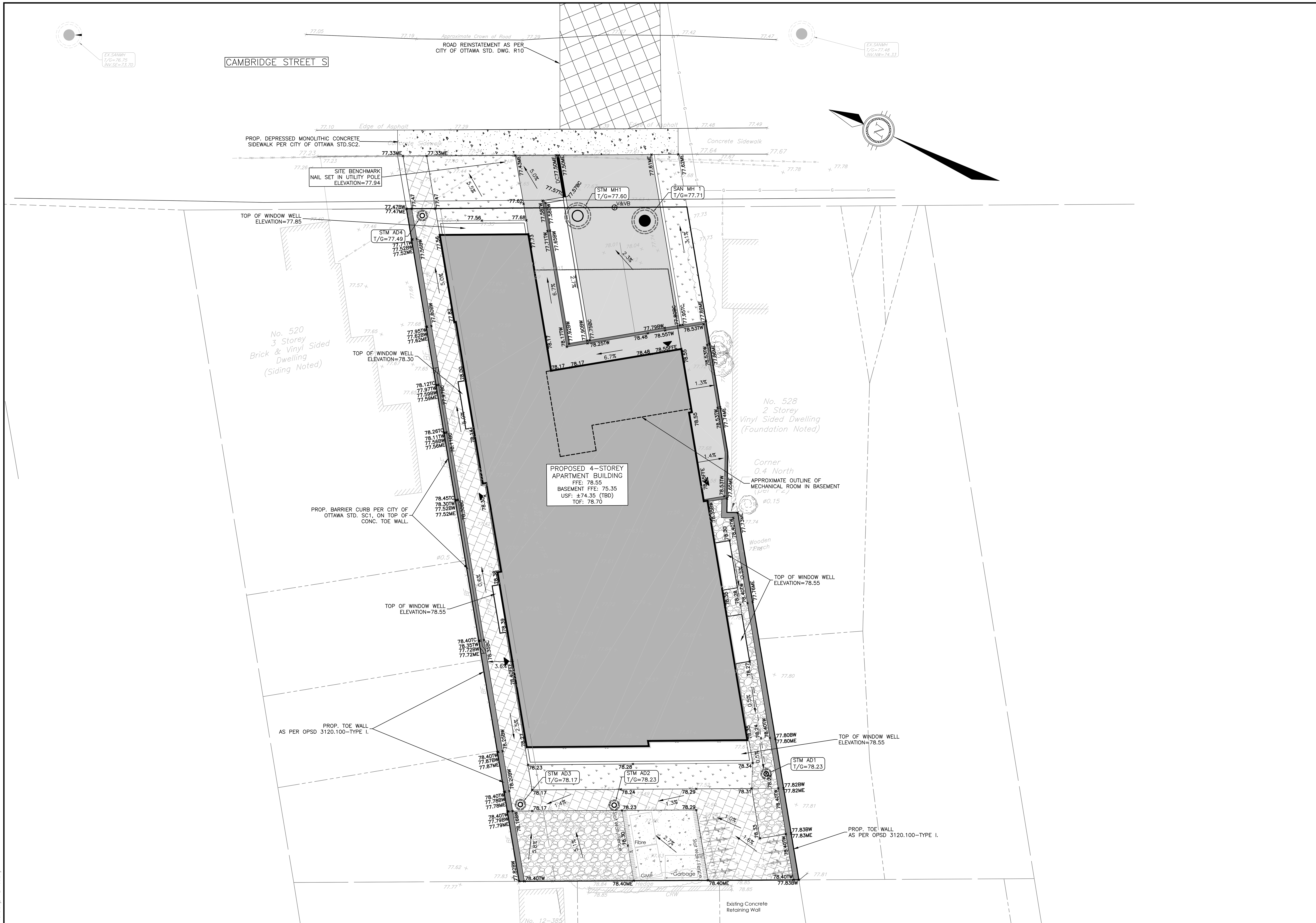

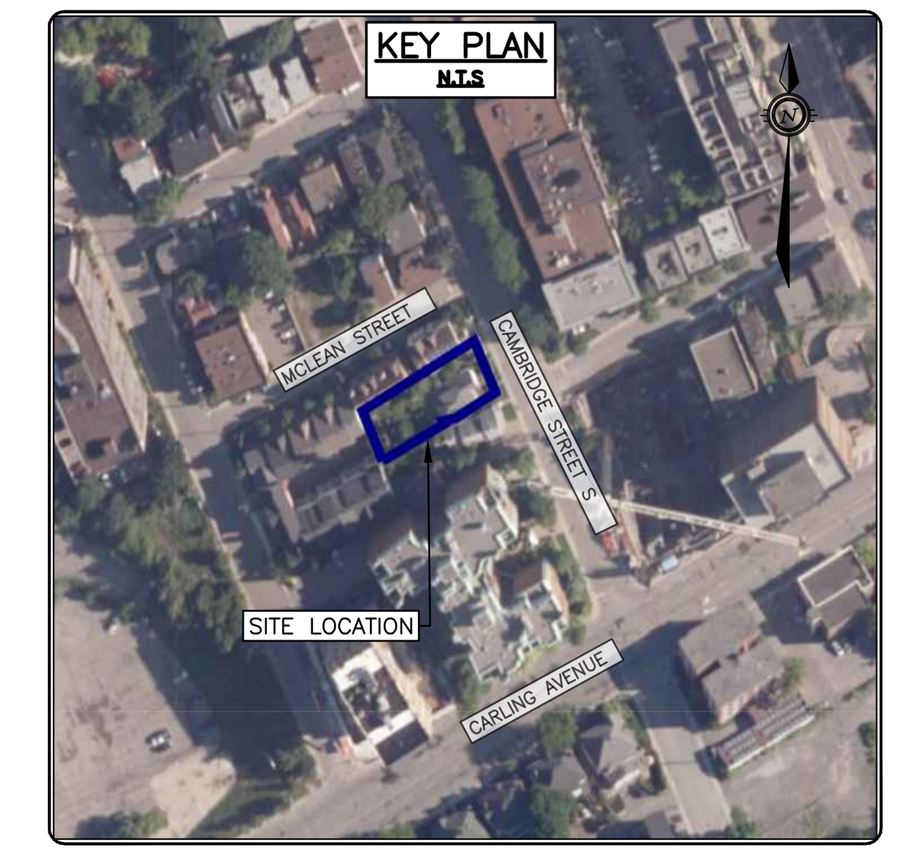

LEGEND

- PROPERTY LINE
- EX. ROAD CENTERLINE
- EX. UTILITY POLE
- EX. WATER VALVE
- EX. COMBINED SEWER MANHOLE
- EX. ELEVATION
- 2.0% PROP. GRADE (%)
- 92.39 PROP. ELEVATION
- 92.39TC PROP. ELEVATION (TOP OF CURB)
- 92.39BC PROP. ELEVATION (BOTTOM OF CURB)
- 92.39ME PROP. ELEVATION (MATCH EX. ELEV.)
- 66.37FFE PROP. FINISHED FLOOR ELEVATION
- 66.37TW PROP. TOP OF RETAINING WALL ELEV.
- 66.37BW PROP. BOTTOM OF RETAINING WALL ELEV.
- PROP. BARRIER CURB
- DC PROP. DEPRESSED CURB
- PROP. STORM/SANITARY MANHOLE
- RD PROP. ROOF DRAIN
- PROP. GRASS/SOFT LANDSCAPING AS PER LANDSCAPE PLAN
- PROP. CLEAR STONE
- PROP. CONCRETE SURFACE
- PROP. ASPHALT
- PROP. TOE WALL AS PER O.P.S.D. 3120.100-TYPE I

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JOB BENCH MARK

NAIL SET IN UTILITY POLE LOCATED ADJACENT TO THE SIDEWALK ALONG EASTERN PROPERTY LINE AT ELEVATION=77.94
NORTHING=5029350.4849 EASTING=367313.2131

TOPOGRAPHIC INFORMATION

LOT2 AND PART OF LOT1 REGISTERED PLAN 31326, CITY OF OTTAWA.
TOPOGRAPHIC INFORMATION PROVIDED BY MONUMENT-URSO SURVEYING LTD. DATED SEPTEMBER 25, 2025.
SITE GRID SYSTEM MTM NAD 83, ZONE 9,

REV	REVISION DESCRIPTION	DATE	BY	APPD
1	ISSUED FOR SPA	01/05/26	NP	AKJ

SCALE: 0 1m 2m 4m HORIZONTAL 1:100

NORTH

DESIGNED BY

REVIEWED BY: LICENSED PROFESSIONAL ENGINEER A. K. JARIWALA 100562090 2026/05/01 PROVINCE OF ONTARIO

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• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

BASEPLAN: NP
DESIGN: NP
CHECKED: AKJ
CAD: NP
PROJECT MANAGER: AKJ
APPROVED: AKJ

PROJECT: RESIDENTIAL DEVELOPMENT
522 CAMBRIDGE STREET SOUTH
OTTAWA, ONTARIO.

TITLE: SITE GRADING PLAN

PROJECT No.: OTT-25015974-A0
SURVEY: MUS
DATE: 2025-12-01
DRAWING No.: C200

D07-??-??-????

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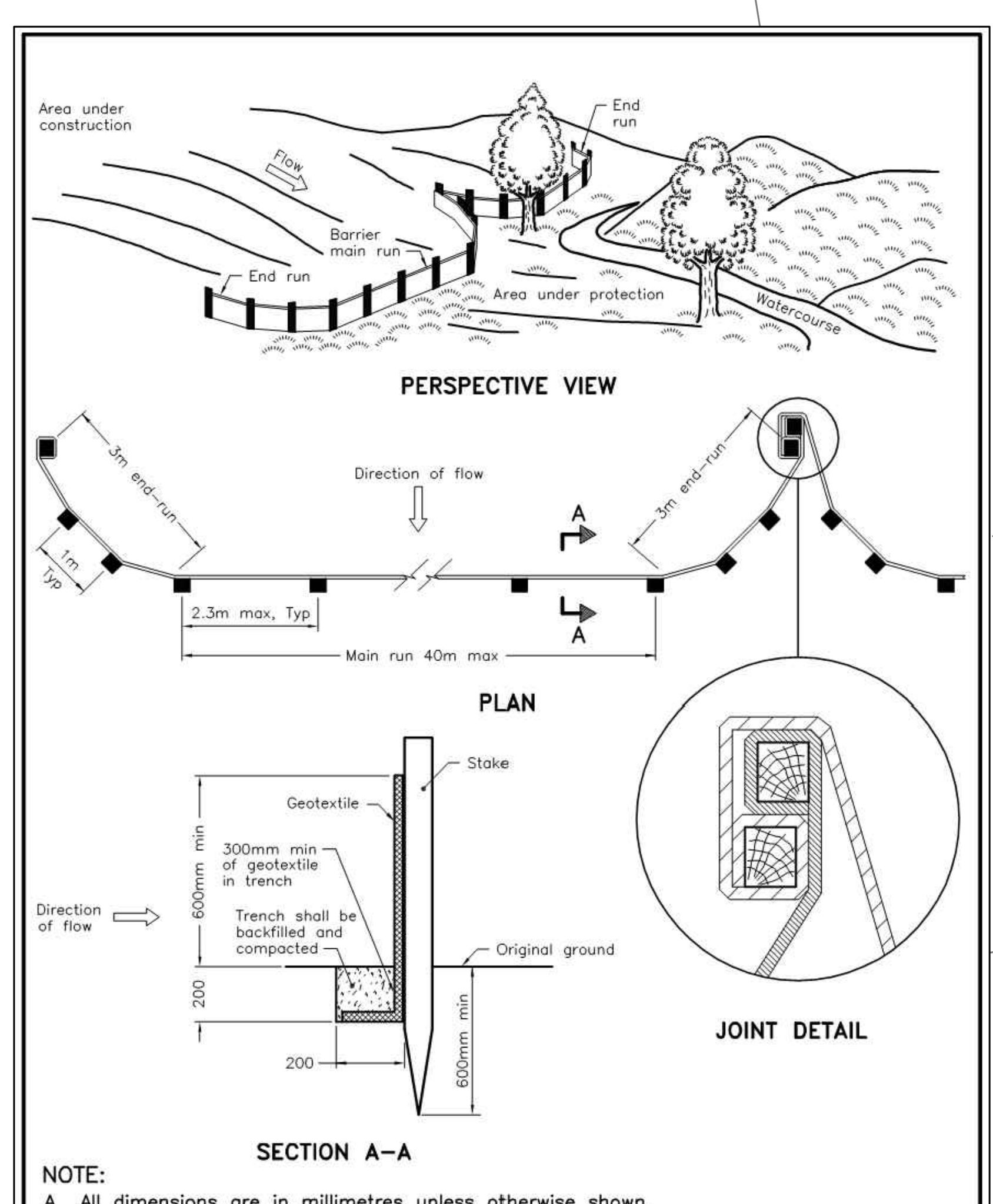


NOTE:

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
LIGHT-DUTY SILT FENCE BARRIER	OPSD 219.110	

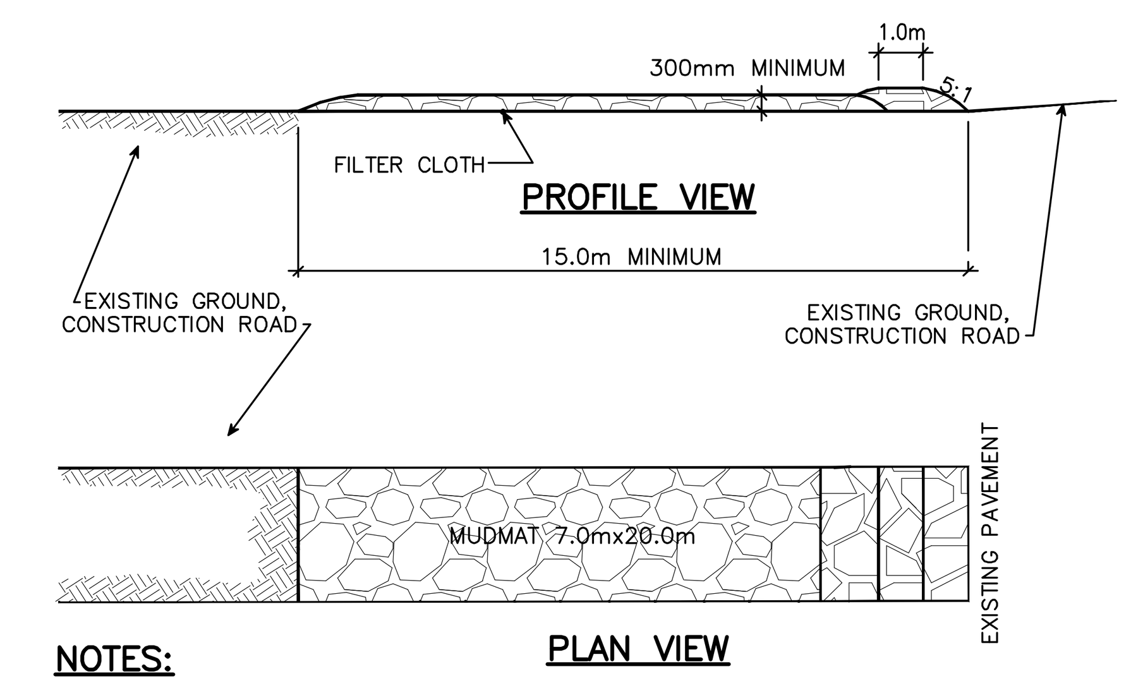
NOTES:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO WOOD POSTS WITH WIRE TIES OR STAPLES.
2. POSTS TO BE SPACED AT 2.3 METRES CENTRE TO CENTRE.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY A MINIMUM OF 500mm.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. WOOD POSTS TO BE HARDWOOD TYPE (50mm x 50mm).
6. GEOTEXTILE TO BE EMBEDDED 200mm INTO GROUND.
7. GEOTEXTILE TO CONFORM TO OPSS 805 STANDARDS.
8. SILT FENCE MUST BE INSTALLED BEFORE COMMENCEMENT OF CONSTRUCTION AND IN ACCORDANCE WITH DETAIL. SILT FENCE CAN BE REMOVED AFTER LANDSCAPING IS COMPLETE.
9. SEDIMENTS MUST BE CLEARED AWAY WHEN THEY REACH HALF THE HEIGHT OF THE FENCE.

EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION.

DURING ALL CONSTRUCTION ACTIVITIES, EROSION AND SEDIMENTATION SHALL BE CONTROLLED BY THE FOLLOWING TECHNIQUES:

1. LIMITING THE EXTENT OF EXPOSED SOILS AT ANY GIVEN TIME.
2. REVEGETATION OF EXPOSED AREAS AS SOON AS POSSIBLE.
3. MINIMIZATION OF AREA TO BE CLEARED AND DISRUPTION TO ADJACENT AREAS.
4. INSTALLATION OF FILTER CLOTH BETWEEN FRAME AND COVER ON ALL PROPOSED CATCH BASINS AND CATCH BASIN MANHOLES.
5. A SILT FENCE TO BE INSTALLED 0.3m INSIDE THE SITE PROPERTY LINE TO LOCATIONS SHOWN ON THIS DRAWING.
6. A VISUAL INSPECTION SHALL BE COMPLETED DAILY ON SEDIMENT CONTROL BARRIERS AND ANY DAMAGE REPAIRED IMMEDIATELY. CARE WILL BE TAKEN TO PREVENT DAMAGE DURING CONSTRUCTION OPERATIONS.
7. IN SOME CASES SOME BARRIERS MAY BE REMOVED TEMPORARILY TO ACCOMODATE THE CONSTRUCTION OPERATIONS. THE AFFECTED BARRIERS WILL BE REINSTATED AT NIGHT WHEN CONSTRUCTION IS COMPLETED.
8. THE SEDIMENT CONTROL DEVICES WILL BE CLEANED OF ACCUMULATED SILT AS REQUIRED. THE DEPOSITS WILL BE DISPOSED OF AS PER THE REQUIREMENTS OF THE CONTRACT.
9. DURING THE COURSE OF CONSTRUCTION IF THE ENGINEER BELIEVES THAT ADDITIONAL PREVENTION METHODS ARE REQUIRED TO CONTROL EROSION AND SEDIMENTATION, THE CONTRACTOR WILL INSTALL ADDITONAL SILT FENCES OR OTHER METHODS AS REQUIRED TO THE SATISFACTION OF THE ENGINEER.
10. CONSTRUCTION AND MAINTENANCE REQUIRMENTS FOR EROSION AND SEDIMENT CONTROLS TO COMPLY WITH ONTARIO PROVINCIAL STANDARD SPECIFICATION (OPSS) OPSS 805, AND CITY OF OTTAWA SPECIFICATIONS.
11. SEDIMENT AND EROSION CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR CONSERVATION AUTHORITY.

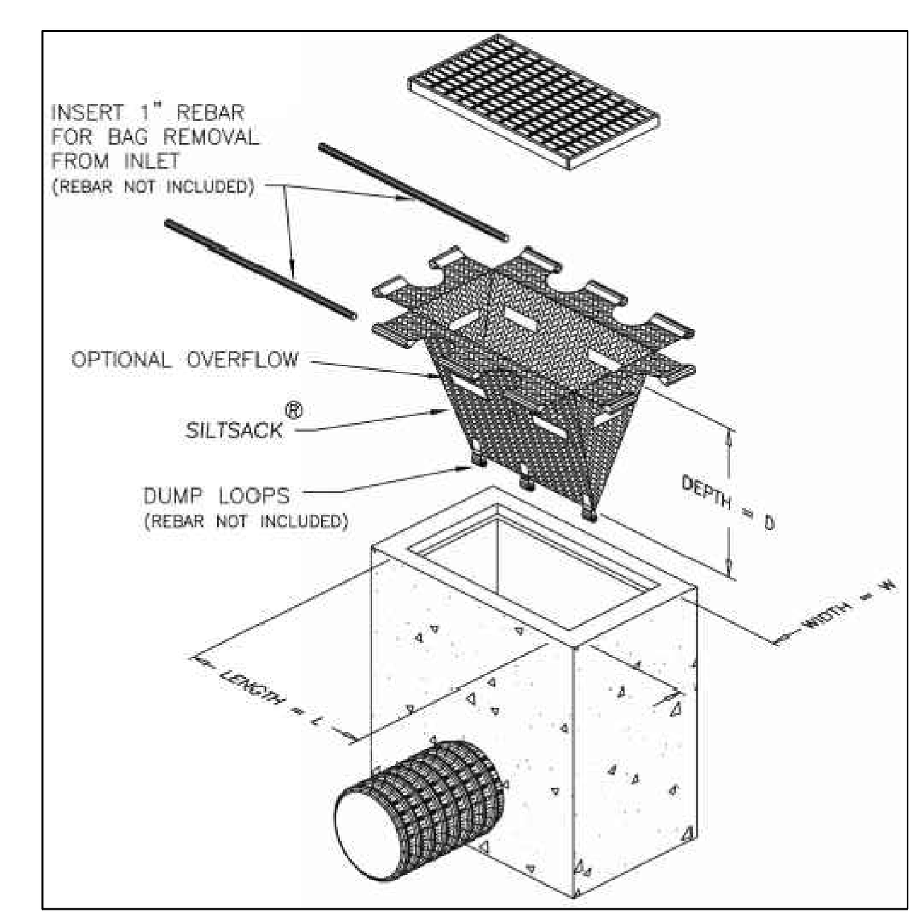


NOTES:

1. STONE – USE CLEAR CRUSHED 100mm STONE.
2. LENGTH – AS REQUIRED BUT NOT LESS THAN 15.0m.
3. THICKNESS – NOT LESS THAN 300mm.
4. WIDTH – 7.0m MINIMUM, NOT LESS THAN THE WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT–OF–WAY. THIS MAY REQUIRED PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED OR TRACKED ONTO THE PUBLIC RIGHT–OF–WAY MUST BE REMOVED IMMEDIATELY.
7. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

MUD MAT DETAIL

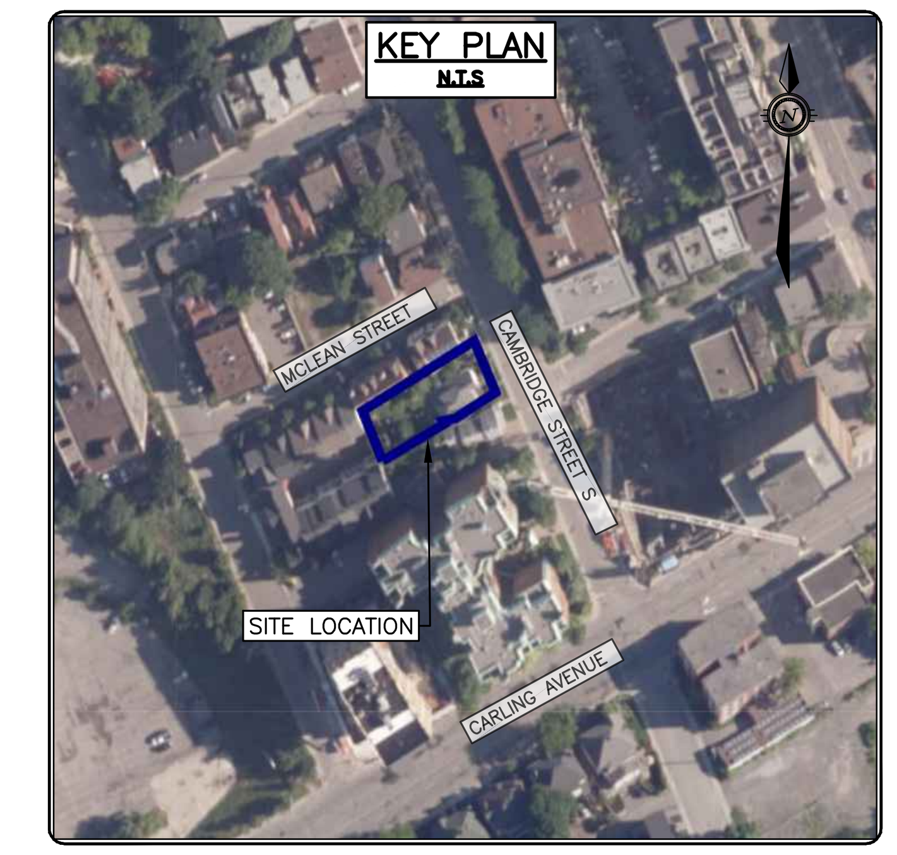
N.T.S

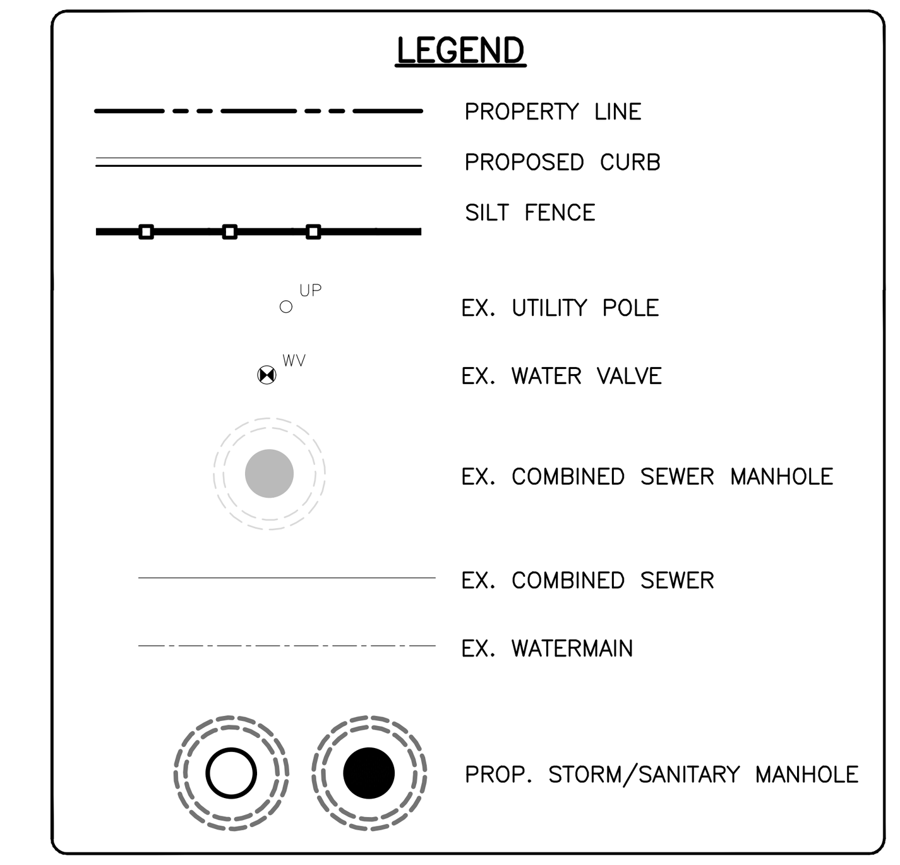


PROVIDE FILTER BAGS AS SHOWN (GEO–SYNTHETICS MANUFACTURER OR APPROVED EQUIVALENT)

FILTER BAG DETAIL

N.T.S





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JOB BENCH MARK

NAIL SET IN UTILITY POLE LOCATED ADJACENT TO THE SIDEWALK ALONG EASTERN PROPERTY LINE AT ELEVATION=77.94
NORTHING=5029350.4849 EASTING=367313.2131

TOPOGRAPHIC INFORMATION

LOT2 AND PART OF LOT1 REGISTERED PLAN 31326, CITY OF OTTAWA.

TOPOGRAPHIC INFORMATION PROVIDED BY MONUMENT–URSO SURVEYING LTD. DATED SEPTEMBER 25, 2025.
SITE GRID SYSTEM MTM NAD 83, ZONE 9,

REV	REVISION DESCRIPTION	DATE	BY	APPD
1	ISSUED FOR SPA	01/05/26	NP	AKJ

SCALE: 0 1m 2m 4m HORIZONTAL 1:100

NORTH

DESIGNED BY

REVIEWED BY: LICENSED PROFESSIONAL ENGINEER A. K. JARIWALA 100562090 2026/05/01 PROVINCE OF ONTARIO

CLIENT: 522 CAMBRIDGE LTD.
187 CHEMIN OLD CHELSEA, SUITE 101
CHELSEA, QC. J9B 1J3
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• INDUSTRIAL • INFRASTRUCTURE • SUSTAINABILITY •

BASEPLAN	NP
DESIGN	NP
CHECKED	AKJ
CAD	NP
PROJECT MANAGER	AKJ
APPROVED	AKJ

PROJECT: RESIDENTIAL DEVELOPMENT
522 CAMBRIDGE STREET SOUTH
OTTAWA, ONTARIO.

TITLE: EROSION AND SEDIMENT CONTROL PLAN

PROJECT No.	OTT–25015974–A0
SURVEY	MUS
DATE	2025–12–01
DRAWING No.	C300

DO7-??-??-????

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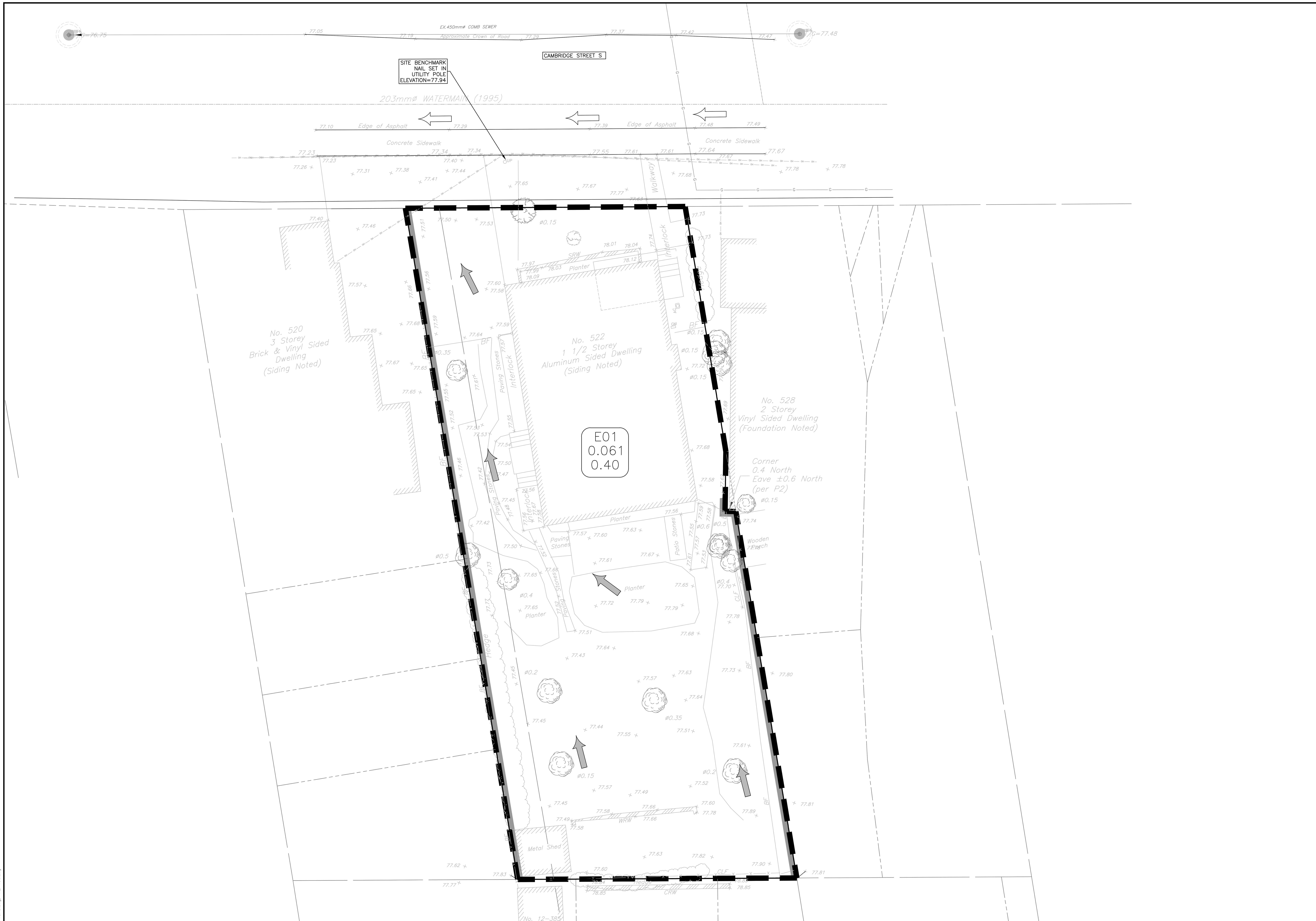

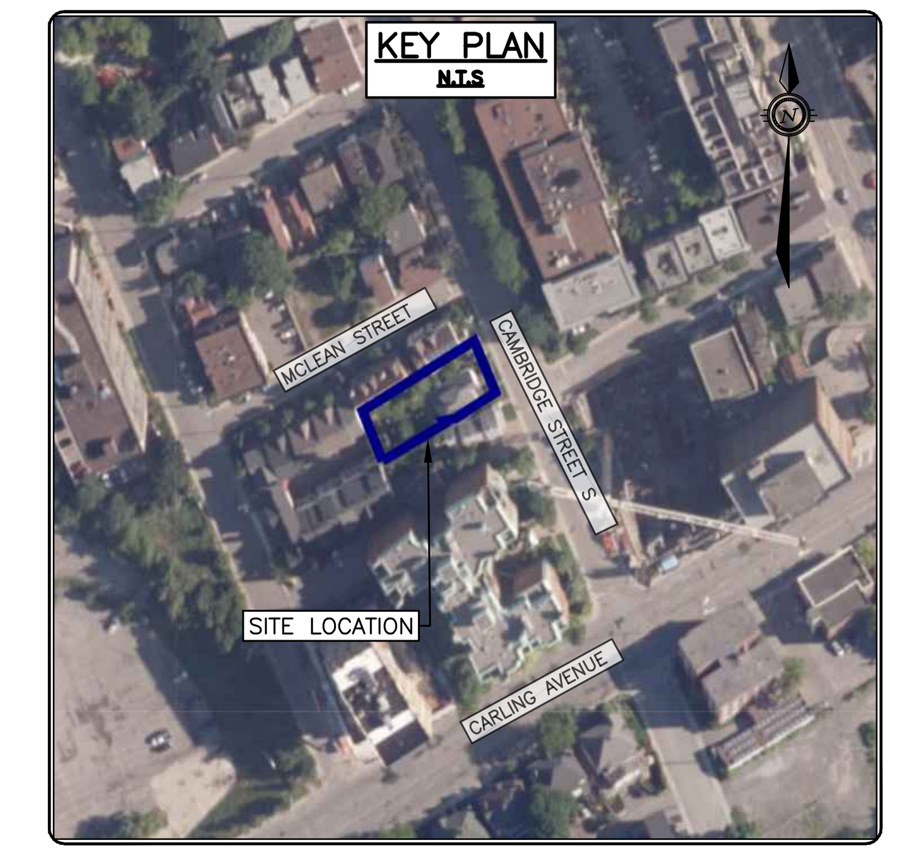

LEGEND

- PROPERTY LINE
- ONSITE OVERLAND FLOW ROUTE
- EXTERNAL OVERLAND FLOW ROUTE
- S01 / 0.184 / 0.79 — AREA NO, AREA IN HECTARES, RUNOFF COEFFICIENT
- CATCHMENT AREA

CAUTION

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JOB BENCH MARK JBM▲

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NORTHING=5029350.4849 EASTING=367313.2131

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TOPOGRAPHIC INFORMATION PROVIDED BY MONUMENT–URSO SURVEYING LTD. DATED SEPTEMBER 25, 2025.
SITE GRID SYSTEM MTM NAD 83, ZONE 9,

REV	REVISION DESCRIPTION	DATE	BY	APPD	REV	REVISION DESCRIPTION	DATE	BY	APPD
					1	ISSUED FOR SPA	01/05/26	NP	AKJ

SCALE: 0 1m 2m 4m HORIZONTAL 1:100

NORTH

DESIGNED BY

REVIEWED BY: LICENSED PROFESSIONAL ENGINEER A. K. JARIWALA 100562090 2026/05/01 PROVINCE OF ONTARIO

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BASEPLAN: NP
DESIGN: NP
CHECKED: AKJ
CAD: NP
PROJECT MANAGER: AKJ
APPROVED: AKJ

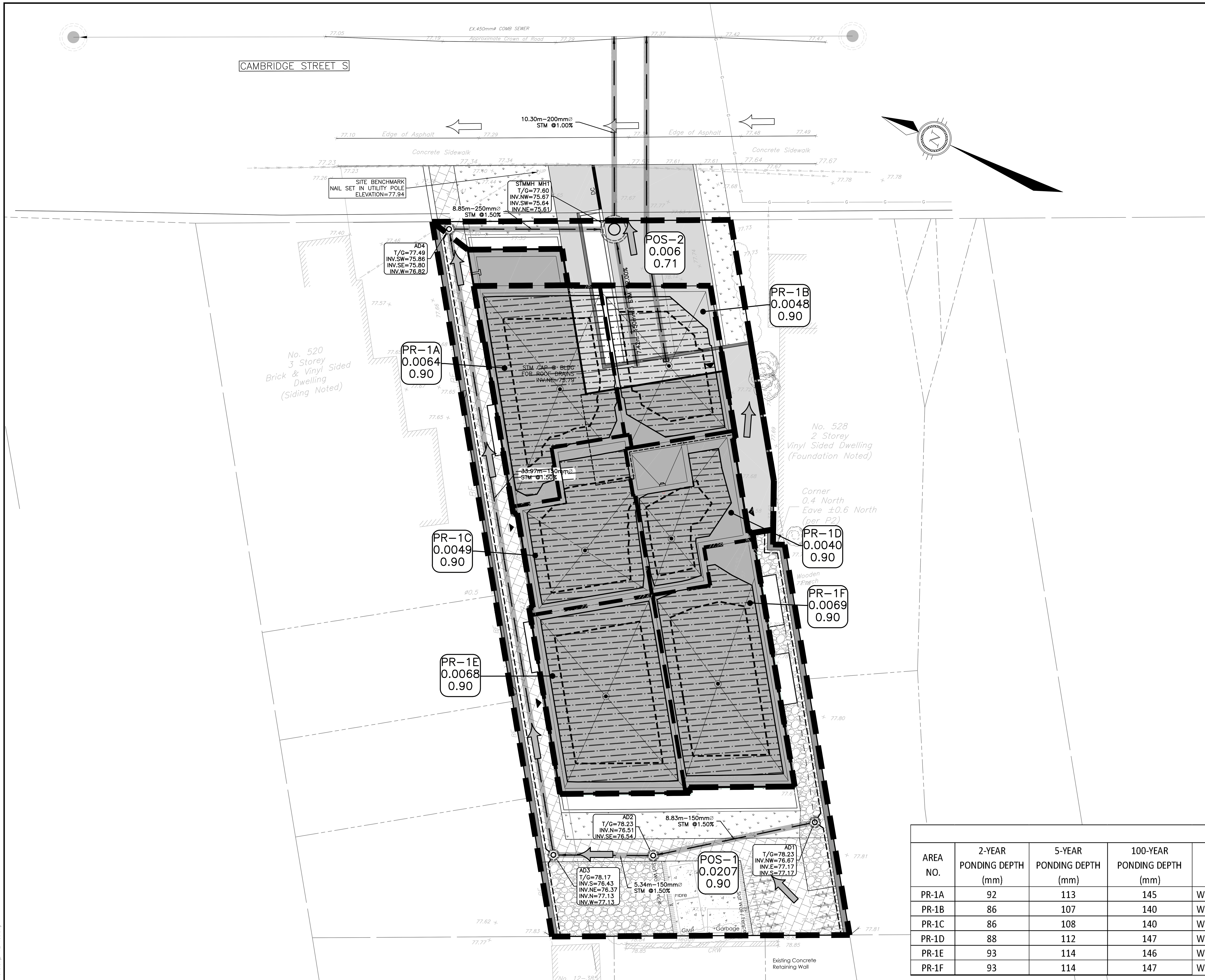
PROJECT: RESIDENTIAL DEVELOPMENT
522 CAMBRIDGE STREET SOUTH
OTTAWA, ONTARIO.

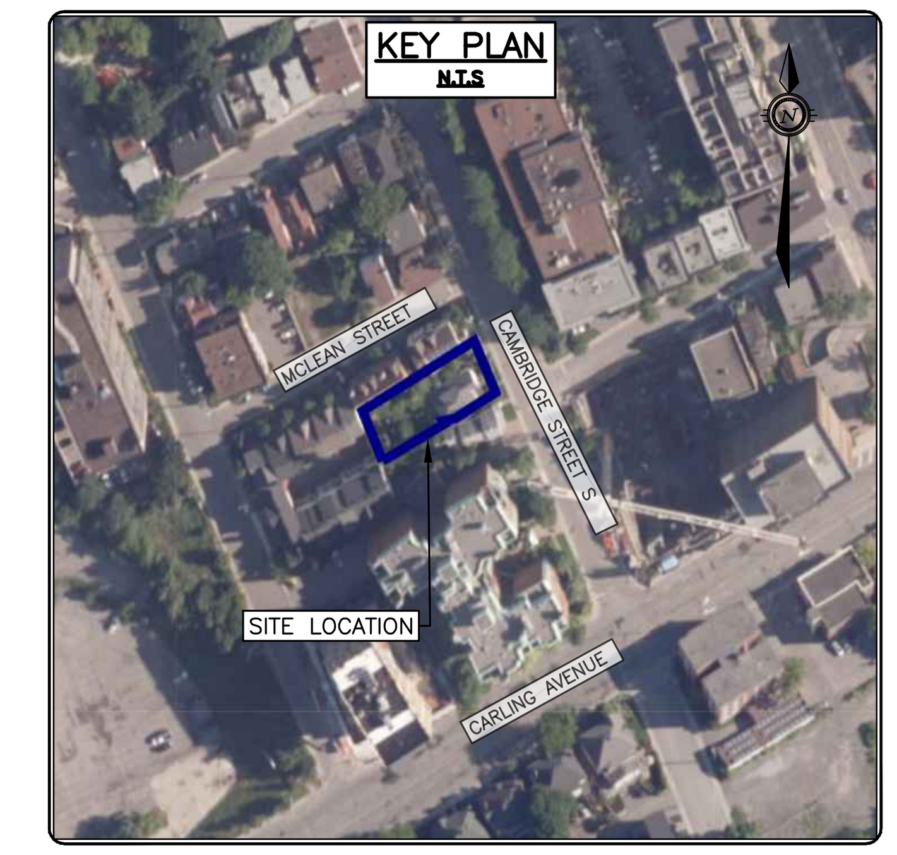
TITLE: PRE–DEVELOPMENT CATCHMENTS

PROJECT No. OTT–25015974–A0
SURVEY: MUS
DATE: 2025–12–01
DRAWING No. C400

D07-??-??-????

#?????





LEGEND

	PROPERTY LINE
	ONSITE OVERLAND FLOW ROUTE
	EXTERNAL OVERLAND FLOW ROUTE
S01 0.184 0.79	AREA NO. AREA IN HECTARES RUNOFF COEFFICIENT
	CATCHMENT AREA
	5–YEAR PONDING LIMIT
	100–YEAR PONDING LIMIT

ROOF PONDING TABLE

AREA NO.	2-YEAR PONDING DEPTH (mm)	5-YEAR PONDING DEPTH (mm)	100-YEAR PONDING DEPTH (mm)	WEIR TYPE	NO. OF ROOF DRAINS	NO. OF WEIRS PER ROOF DRAIN	ROOF DRAIN TYPE	WEIR POSITION
PR-1A	92	113	145	WATTS Accutrol Adjustable Flow Control	1	1	RD1	CLOSED
PR-1B	86	107	140	WATTS Accutrol Adjustable Flow Control	1	1	RD1	CLOSED
PR-1C	86	108	140	WATTS Accutrol Adjustable Flow Control	1	1	RD1	CLOSED
PR-1D	88	112	147	WATTS Accutrol Adjustable Flow Control	1	1	RD1	CLOSED
PR-1E	93	114	146	WATTS Accutrol Adjustable Flow Control	1	1	RD1	CLOSED
PR-1F	93	114	147	WATTS Accutrol Adjustable Flow Control	1	1	RD1	CLOSED

CAUTION
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.

JOB BENCH MARK JBM
NAIL SET IN UTILITY POLE LOCATED ADJACENT TO THE SIDEWALK ALONG EASTERN PROPERTY LINE AT ELEVATION=77.94
NORTHING=5029350.4849 EASTING=367313.2131

TOPOGRAPHIC INFORMATION
LOT2 AND PART OF LOT1 REGISTERED PLAN 31326, CITY OF OTTAWA.
TOPOGRAPHIC INFORMATION PROVIDED BY MONUMENT–URSO SURVEYING LTD. DATED SEPTEMBER 25, 2025.
SITE GRID SYSTEM MTM NAD 83, ZONE 9,

REV	REVISION DESCRIPTION	DATE	BY	APPD
1	ISSUED FOR SPA	01/05/26	NP	AKJ

SCALE: HORIZONTAL 1:100

DESIGNED BY

REVIEWED BY: LICENSED PROFESSIONAL ENGINEER A. K. JARIWALA 100562090 2026/05/01 PROVINCE OF ONTARIO

CLIENT: 522 CAMBRIDGE LTD.
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CHELSEA, QC. J9B 1J3
613.???.????

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BASEPLAN NP | DESIGN NP | CHECKED AKJ | CAD NP | PROJECT MANAGER AKJ | APPROVED AKJ

PROJECT: RESIDENTIAL DEVELOPMENT
522 CAMBRIDGE STREET SOUTH
OTTAWA, ONTARIO.

TITLE: POST–DEVELOPMENT CATCHMENTS

PROJECT No. OTT–25015974–A0
SURVEY MUS
DATE 2025–12–01
DRAWING No. C500

DO7-??-??-????

#?????