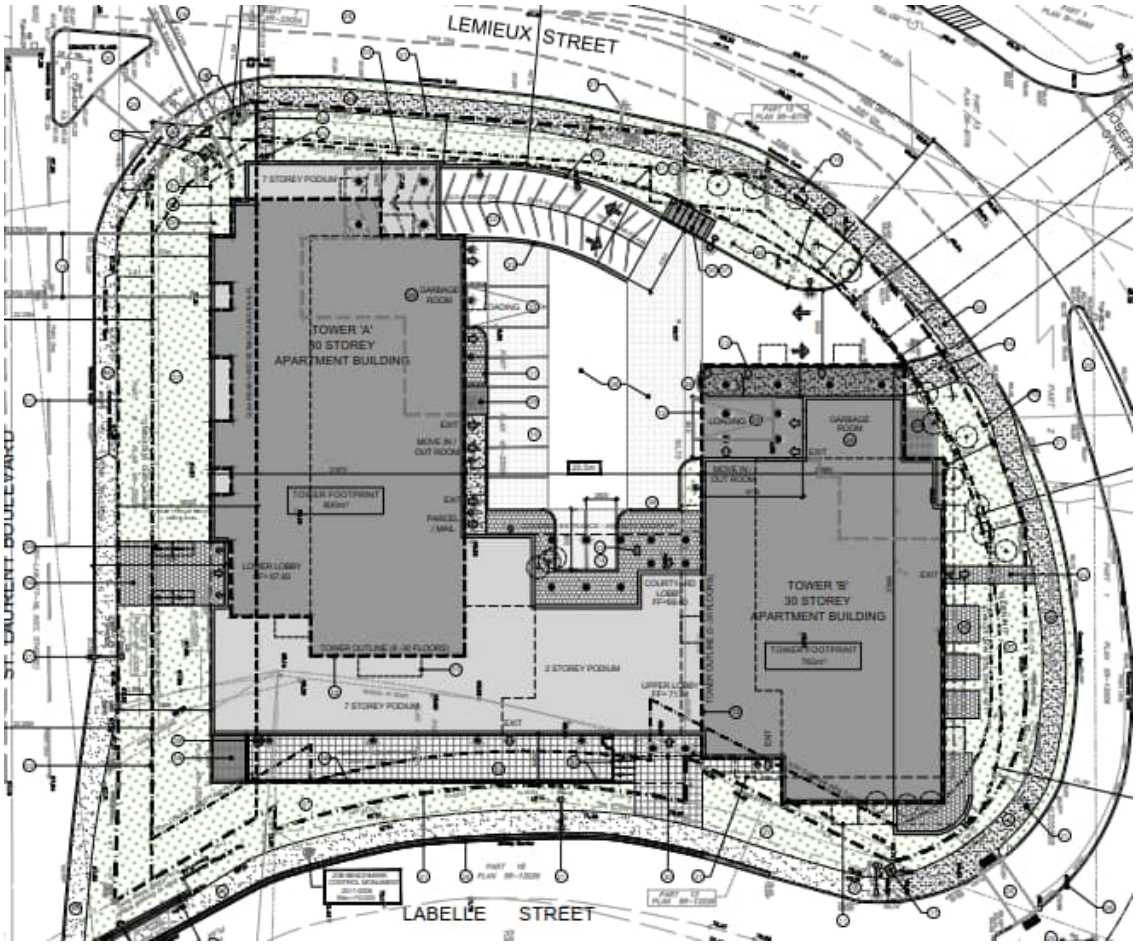
SERVICING & STORMWATER MANAGEMENT REPORT
1209 ST. LAURENT BOULEVARD, OTTAWA



Project No.: CCO-22-1215

City File No.: D07-12-22-0089

Prepared for:

1209 St. Laurent Limited Partnership.
900-2000 Peel Street,
Montreal, QC H3A 2W5.

Prepared by:

McIntosh Perry Consulting Engineers Ltd.
115 Walgreen Road
Carp, ON K0A 1L0

Rev 1: December 14, 2022

McINTOSH PERRY

TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

1.0 PROJECT DESCRIPTION

1.1 Purpose

McIntosh Perry (MP) has been retained by 1209 St. Laurent Limited Partnership. to prepare this Servicing and Stormwater Management Report in support of the Site Plan Control application for the proposed 30-storey residential buildings, located at 1209 St. Laurent Boulevard within the City of Ottawa.

The main purpose of this report is to present a servicing design for the development in accordance with the recommendations and guidelines provided by the City of Ottawa (City), the Rideau Valley Conservation Authority (RVCA), and the Ministry of the Environment, Conservation and Parks (MECP). This report will address the water, sanitary and storm sewer servicing for the development, ensuring that existing and available services will adequately service the proposed development.

This report should be read in conjunction with the following drawings:

- CCO-22-1215, C101 – Site Grading and Drainage Plan, and
- CCO-22-1215, C102 – Site Servicing Plan.
- CCO-22-1215, PRE – Pre-Development Drainage Area Plan (Appendix E)
- CCO-22-1215, POST – Post-Development Drainage Area Plan (Appendix F)

1.2 Site Description

The property is located at 1209 St. Laurent Boulevard. It is described as Plan 4R-33004 and Plan 5R-9619, Part of Lots 4 and 14, Concession 2 (Ottawa Front), Ward 11 Beacon Hill-Cyrville, City of Ottawa. The land in question covers approximately 0.43 ha and is bounded by St. Laurent Boulevard, Lemieux Street and an existing ramp accessing St. Laurent Boulevard. The development area for the proposed works is approximately 0.43 ha. The site is zoned for Transit Oriented Development (TD3). See Site Location Plan in Appendix 'A' for more details.

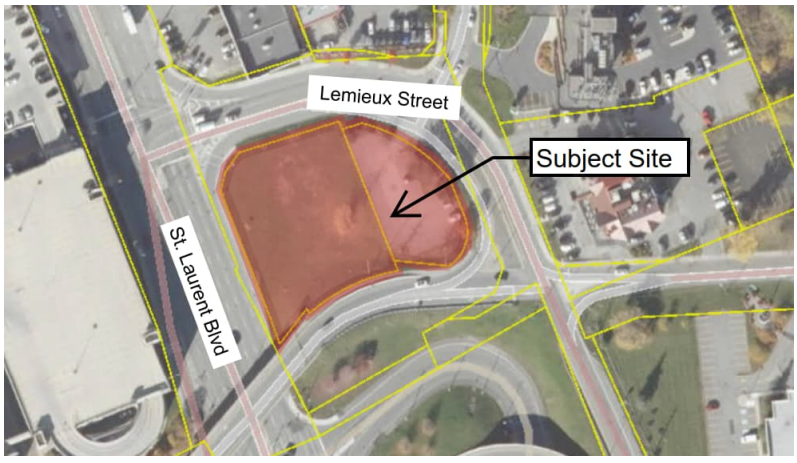


Figure 1: Site Map

1.3 Proposed Development and Statistics

The proposed development consists of two 30-storey residential towers, tower A, complete with a 7-storey podium along St. Laurent Boulevard and a 2-storey podium link to tower B. Visitor parking and drive aisles will be provided through an internal courtyard. Underground parking will be provided for residents and visitors with site access extending from Lemieux Street. Further details are provided in the Site Plan provided by Roderick Lahey Architects. Refer to Appendix B.

1.4 Existing Conditions and Infrastructure

The existing site is currently undeveloped with a small parking lot fronting Lemieux Street. The existing site has no sanitary or water services, however, stormwater from the parking lot is captured by an existing catchbasin on site. Stormwater from the remainder of the site travels overland to the City right of ways where it is captured by existing municipal catchbasins.

Sewer and watermain mapping collected from the City of Ottawa indicate that the following services exist across the property frontages within the adjacent municipal rights-of-way(s):

- St. Laurent Boulevard
    - 406mm diameter unlined cast iron watermain
    - 762mm diameter transmission watermain
    - 525mm diameter concrete sanitary sewer, tributary to the Cyrville Road Collector
    - 600mm diameter concrete storm sewer, tributary to the Rideau River with approximately 2.4 Km to the outlet, and
    - 400-450mm diameter concrete storm sewer, tributary to the Rideau River
- Lemieux Street
    - 203mm diameter unlined cast iron watermain
    - 250mm diameter asbestos concrete sanitary sewer, tributary to the Cyrville Road Collector, and a
    - 300mm diameter concrete storm sewer, tributary to the Rideau River with approximately 2.4 Km to the outlet

1.5 Approvals

The proposed development is subject to the City of Ottawa site plan control process. Site plan control requires the City to review, provided concurrence and approve the engineering design package. Permits to construct can be requested once the City has issued a site plan agreement.

An Environmental Compliance Approval (ECA) through the Ministry of Environment, Conservation and Parks (MECP) is not anticipated to be required for the development since the development is contained within a single parcel of land, is not within a combined sewershed, and does not propose

industrial sewage. As a result, the stormwater management system meets the exemption requirements under O.Reg 525/90..

2.0 BACKROUND STUDIES, STANDARDS, AND REFRENCES

2.1 Background Reports / Reference Information

Background studies that have been completed for the proposed site include City of Ottawa as-built drawings, a topographical survey, a geotechnical report and a Phase I & II Environmental Site Assessment (ESA).

As-built drawings of existing services within the vicinity of the proposed site were reviewed in order to determine accurate servicing and stormwater management schemes for the site.

A topographic survey of the site (Job No. 21851-21) was completed by Annis, O'Sullivan, Vollebekk LTD., dated March 10, 2022.

The following reports have previously been completed and are available under separate cover:

- Geotechnical Investigation completed by Paterson Group, dated December 12, 2022.
- Phase One Environmental Site Assessment completed by GHD Group, dated January 10, 2022.
- Phase Two Environmental Site Assessment completed by GHD Group, dated January 11, 2022.

2.2 Applicable Guidelines and Standards

City of Ottawa:

- Ottawa Sewer Design Guidelines, City of Ottawa, SDG002, October 2012. (Ottawa Sewer Guidelines)
  - Technical Bulletin ISTB-2014-01 City of Ottawa, February 2014. (ISTB-2014-01)
  - Technical Bulletin PIEDTB-2016-01 City of Ottawa, September 2016. (PIEDTB-2016-01)
  - Technical Bulletin ISTB-2018-01 City of Ottawa, January 2018. (ISTB-2018-01)
  - Technical Bulletin ISTB-2018-03 City of Ottawa, March 2018. (ISTB-2018-03)
  - Technical Bulletin ISTB-2019-01 City of Ottawa, January 2019. (ISTB-2019-01)
  - Technical Bulletin ISTB-2019-02 City of Ottawa, February 2019. (ISTB-2019-02)
- Ottawa Design Guidelines – Water Distribution City of Ottawa, July 2010. (Ottawa Water Guidelines)
  - Technical Bulletin ISD-2010-2 City of Ottawa, December 15, 2010. (ISD-2010-2)
  - Technical Bulletin ISDTB-2014-02 City of Ottawa, May 2014. (ISDTB-2014-02)
  - Technical Bulletin ISTB-2018-02 City of Ottawa, March 2018. (ISTB-2018-02)

Ministry of Environment, Conservation and Parks:

- Stormwater Planning and Design Manual, Ministry of the Environment, March 2003. (MECP Stormwater Design Manual)
- Design Guidelines for Sewage Works, Ministry of the Environment, 2008. (MECP Sewer Design Guidelines)

Other:

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

3.0 PRE-CONSULTATION SUMMARY

A pre-consultation meeting was conducted on August 11, 2021 regarding the proposed site. Specific design parameters to be incorporated within this design include the following:

- Pre-development and post-development flows shall be calculated using a time of concentration (Tc) of 10 minutes.
- Control post-development flows to the pre-development flows with a combined C value of 0.50.
- Coordination with the RVCA is required to confirm quality control requirements.

The notes from the City of Ottawa can be found in Appendix 'B'.

4.0 WATERMAIN

4.1 Existing Watermain

The site is located within the 1E pressure zone, as per the Water Distribution System mapping included in Appendix C. There is an existing 203mm diameter UCI watermain within Lemieux Street. The watermain provides servicing to the municipal fire hydrant along the North side of Lemieux Street.

4.2 Proposed Watermain

Two new 150mm diameter PVC water services are proposed to service the development complete with water valves located at the property line. The water services are proposed to be serviced by the existing 203 mm diameter watermain within Lemieux Street. The services are designed to have a minimum of 2.4m cover. Refer to drawing C102 for a detailed servicing layout.

The Fire Underwriters Survey 2020 (FUS) method was utilized to determine the required fire flow for the site. The 'C' factor (type of construction) for the FUS calculation was determined to be 0.8 (non-combustible type). The total floor area ('A' value) for the FUS calculation was determined to be 5,214.0 m^2. The results of the calculations yielded a required fire flow of 7,000 L/min. The detailed calculations for the FUS can be found in Appendix 'C'.

The water demands for the proposed building have been calculated to adhere to the Ottawa Design Guidelines – Water Distribution manual and can be found in Appendix 'C'. The results have been summarized in Table 1, below. In accordance with Section 4.3.1 of the guidelines, service areas with a basic day demand greater than 50 m^3/day require a dual connection to the municipal system. The basic day demand for the development is estimated to be 304 m^3/day, therefore a dual connection is required.

Table 1: Water Supply Design Criteria and Water Demands

Site Area	0.143 ha
Residential	280 L/person/day
1 Bedroom Apartment	1.4 persons/unit
2 Bedroom Apartment	2.1 persons/unit
Bachelor Apartment	1.4 persons/unit
Maximum Daily Peaking Factor	2.5 x avg day
Maximum Hour Peaking Factor	5.5 x max day
Average Day Demand (L/s)	3.52
Maximum Daily Demand (L/s)	8.80
Peak Hourly Demand (L/s)	19.36
FUS Fire Flow Requirement (L/s)	116.66 (7,000 L/min)

The City provided the estimated water pressures at both for the average day scenario, peak hour scenario and the max day plus fire flow scenario for the demands indicated by the correspondence

in Appendix C. The resulting pressures for the boundary conditions results are shown in Table 2, below.

Table 2: Boundary Conditions Results

Scenario	Proposed Demands (L/s)	Connection HGL (m H_2O)* / kPa
Average Day Demand	3.52	51.2 / 501.9
Maximum Daily + Fire Flow Demand	125.47	43.1 / 422.4
Peak Hourly Demand	19.36	42.9 / 420.5
* Adjusted for an estimated ground elevation of 67.34m above the connection point.		

The normal operating pressure range is anticipated to be 421 kPa to 502 kPa and will not be less than 275 kPa (40 psi) or exceed 689 kPa (100 psi).

To confirm the adequacy of fire flow to protect the proposed development, public fire hydrants within 150 m of the proposed building were analysed per City of Ottawa ISTB 2018-02 Appendix I Table 1. Based on City guidelines (ISTB-2018-02), the existing hydrants can provide adequate fire protection to the proposed development. The results are summarized in Table 3, below.

Table 3: Fire Protection Confirmation

Building	Fire Flow Demand (L/min.)	Fire Hydrant(s) within 75m	Fire Hydrant(s) within 150m	Combined Fire Flow (L/min.)
1209 St. Laurent Boulevard	7,000 (FUS)	3	3	28,500

5.0 SANITARY DESIGN

5.1 Existing Sanitary Sewer

There is an existing 525mm diameter concrete sanitary sewer within St. Laurent Boulevard.

5.2 Proposed Sanitary Sewer

A new 200 mm diameter gravity sanitary is proposed be connected to the existing 525 mm diameter sanitary sewer at the existing sanitary manhole (MHSA00412) within St. Laurent Boulevard. As no permanent structures are permitted in the 8 m setback along St. Laurent Boulevard it is anticipated monitoring would occur at MHSA00412. Refer to drawing C102 for a detailed servicing layout.

The peak design flows for the proposed building were calculated using criteria from the Ottawa Sewer Guidelines and are summarized in Table 4, below. Based on the unit occupancy statistics provided by the architect, the proposed site development will generate a flow of 11.54 L/s. See Appendix 'D' of this report for more details.

Table 4: Sanitary Design Criteria

Design Parameter	Value
Site Area	0.43 ha
Residential	280 L/person/day
1 Bedroom Apartment	1.4 persons/unit
2 Bedroom Apartment	2.1 persons/unit
Bachelor Apartment	1.4 persons/unit
Residential Peaking Factor	3.22
Extraneous Flow Allowance	0.33 L/s/ha

Table 5, below, summarizes the estimated wastewater flow from the proposed development. Refer to Appendix D for detailed calculations.

Table 5: Summary of Estimated Sanitary Flow

Design Parameter	Total Flow (L/s)
Total Estimated Average Dry Weather Flow	3.61
Total Estimated Peak Dry Weather Flow	11.42
Total Estimated Peak Wet Weather Flow	11.54

The proposed 200 mm diameter gravity sanitary service will be installed with a minimum full flow target velocity (cleansing velocity) of 0.6 m/s and a full flow velocity of not more than 3.0 m/s. The capacity of the service lateral is 33.74 L/s at a proposed slope of 1.00%. Due to the complexity of the downstream network, the City will need to advise of any downstream constraints. See Appendix 'D' of this report for more details.

6.0 STORM SEWER DESIGN

6.1 Existing Storm Sewers

Water runoff from the site is currently tributary to the Rideau River within the Lower Rideau sub-watershed. The subject property is currently serviced by a catch basin on the east side of the site and municipal catch basins within St. Laurent Boulevard. There is an existing 600mm diameter storm sewer within St. Laurent Boulevard that is available to service the site.

6.2 Proposed Storm Sewers

A new 250 mm storm service will be extended from the existing 600 mm diameter storm sewer within St Laurent Boulevard. The sewer system will provide attenuation for the roof area and drive aisle/entrance area by an internal cistern complete with a Tempest MHF-A ICD or an approved equivalent. A cistern detail prepared by the Mechanical Engineer is available in Appendix G.

Foundation drainage is proposed to be conveyed without flow attenuation via the 250 mm diameter storm service downstream of any cistern controls.

See CCO-22-1215 - POST include in Appendix F of this report for more details. The Stormwater Management design for the subject property will be outlined in Section 7.0 of this report.

7.0 PROPOSED STORMWATER MANAGEMENT

7.1 Design Criteria and Methodology

Stormwater management for the proposed site will be maintained through the use of an internal cistern and will collect runoff from the at-grade areas within the site. The flow will be directed to the existing 600 mm diameter storm sewer within St. Laurent Boulevard.

In summary, the following design criteria have been employed in developing the stormwater management design for the site as directed by the RVCA and City:

Quality Control

- Based on the distance to the downstream storm outlet being over 2 Km, the RVCA does not require on-site water quality treatment. Refer to Appendix B for correspondence with the RVCA.

Quantity Control

- Pre-development and post-development flows shall be calculated using a time of concentration (Tc) of 10 minutes.
- Control post-development flows to the pre-development flows with a combined C value of 0.50.

Based on further coordination with City staff, the stormwater management criteria for the site are to control post-development flows to the pre-development 5-year storm event with a maximum runoff coefficient of 0.50. Refer to Appendix B.

7.2 Runoff Calculations

Runoff calculations presented in this report are derived using the Rational Method, given as:

$$Q = 2.78CIA \quad (L/s)$$

Where C = Runoff coefficient
I = Rainfall intensity in mm/hr (City of Ottawa IDF curves)
A = Drainage area in hectares

It is recognized that the Rational Method tends to overestimate runoff rates. As a result, the conservative calculation of runoff ensures that any SWM facility sized using this method is expected to function as intended.

The following coefficients were used to develop an average C for each area:

Roofs/Concrete/Asphalt	0.90
Gravel	0.60
Undeveloped and Grass	0.20

As per the City of Ottawa - Sewer Design Guidelines, the 5-year balanced 'C' value must be increased by 25% for a 100-year storm event to a maximum of 1.0.

As per the pre-consultation meeting with the City of Ottawa the time of concentration (Tc) used for pre-development shall be calculated using a Tc of 10 minutes and post-development flows shall be calculated using a Tc of 10 minutes.

7.3 Pre-Development Drainage

It has been assumed that the site contains no stormwater management controls for flow attenuation. The estimated pre-development peak flows for the 5, and 100-year events are summarized below in Table 6. See CCO-22-1215 - PRE in Appendix E and Appendix G for calculations.

Table 6: Pre-Development Runoff Summary

Drainage Area	Area (ha)	Q (L/s)	
		5-Year	100-Year
A1	0.428	45.52	91.17

7.4 Post-Development Drainage

The proposed site drainage limits are demonstrated on the Post-Development Drainage Area Plan. See CCO-22-1215 - POST in Appendix 'F' of this report for more details. Based on the quantity control criteria discussed in section 7.1, post development drainage is to be limited to a maximum release rate of 45.52 L/S. A summary of the Post-Development Runoff Calculations can be found below.

Table 7: Post-Development Runoff Summary

Drainage Area	Area (ha)	5-year Peak Flow (L/s)	100-year Peak Flow (L/s)	100-year Storage Required (m^3)	100-year Storage Available (m^3)
B1	0.295	9.41	18.19	103.86	103.86
B2	0.133	13.60	27.33	-	-
Total	0.428	23.01	45.52	103.86	103.86

Runoff for area B1 will be collected by roof drains (uncontrolled) and surface drains and conveyed to the internal cistern. The 103.86 m3 internal cistern is anticipated to convey stormwater to the outlet at a maximum flow rate of 13.60 L/s and 27.33 L/s for the 5 and 100-year storms, respectively. Flows in excess of the 100-year storm event will need to be directed towards St. Laurent Boulevard via a cistern overflow. A cistern detail provided by the Mechanical Engineer and complete storm calculations are included in Appendix G.

Foundation drainage is proposed to be conveyed without flow attenuation via the 250 mm storm service, downstream of cistern controls.

8.0 EROSION AND SEDIMENT CONTROL

8.1 Temporary Measures

Before construction begins, temporary silt fence, straw bale or rock flow check dams will be installed at all natural runoff outlets from the property. It is crucial that these controls be maintained throughout construction and inspection of sediment and erosion control will be facilitated by the Contractor or Contract Administration staff throughout the construction period.

Silt fences will be installed where shown on the final engineering plans, specifically along the downstream property limits. The Contractor, at their discretion or at the instruction of the City, Conservation Authority or the Contract Administrator shall increase the quantity of sediment and erosion controls on-site to ensure that the site is operating as intended and no additional sediment finds its way off site. The rock flow, straw bale & silt fence check dams and barriers shall be inspected weekly and after rainfall events. Care shall be taken to properly remove sediment from the fences and check dams as required. Fibre roll barriers are to be installed at all existing curb inlet catchbasins and filter fabric is to be placed under the grates of all existing catchbasins and manholes along the frontage of the site and any new structures immediately upon installation. The measures for the existing/proposed structures is to be removed only after all areas have been paved. Care shall be taken at the removal stage to ensure that any silt that has accumulated is properly handled and disposed of. Removal of silt fences without prior removal of the sediments shall not be permitted.

Although not anticipated, work through winter months shall be closely monitored for erosion along sloped areas. Should erosion be noted, the Contractor shall be alerted and shall take all necessary steps to rectify the situation. Should the Contractor's efforts fail at remediating the eroded areas, the Contractor shall contact the City and/or Conservation Authority to review the site conditions and determine the appropriate course of action. As the ground begins to thaw, the Contractor shall place silt fencing at all required locations as soon as ground conditions warrant. Please see the Site Grading, Drainage and Sediment & Erosion Control Plan for additional details regarding the temporary measures to be installed and their appropriate OPSD references.

8.2 Permanent Measures

Rip-rap will be placed at all locations that have the potential for concentrated flow. It is crucial that the Contractor ensure that the geotextile is keyed in properly to ensure runoff does not undermine the rip rapped area. Additional rip rap is to be placed at erosion prone locations as identified by the Contractor / Contract Administrator / City or Conservation Authority.

It is expected that the Contractor will promptly ensure that all disturbed areas receive topsoil and seed/sod and that grass be established as soon as possible. Any areas of excess fill shall be removed or levelled as soon as possible and must be located a sufficient distance from any watercourse to ensure that no sediment is washed out into the watercourse. As the vegetation growth within the

site provides a key component to the control of sediment for the site, it must be properly maintained once established. Once the construction is complete, it will be up to the landowner to maintain the vegetation and ensure that the vegetation is not overgrown or impeded by foreign objects.

9.0 SUMMARY

- 30-storey residential towers are proposed be constructed at 1209 St. Laurent Boulevard.
- Two 150 mm diameter water services are proposed to be connected to the existing 200 mm diameter within Lemieux Street.
- A new 200 mm diameter sanitary service is proposed to service the development via the 525 mm diameter sanitary sewer within St. Laurent Boulevard tributary to the Cyrville Road collector.
- A new 250 mm storm service for rooftop, surface, and foundation drainage is proposed to service the development. The storm service will connect to the 600mm diameter storm sewer within St. Laurent Boulevard, tributary to the Ottawa River approximately 2.4 Km downstream.
- Storage for the 5- through 100-year storm events will be provided through internal cistern attenuation.
- The RVCA does not have any specific quality control requirements for the site.

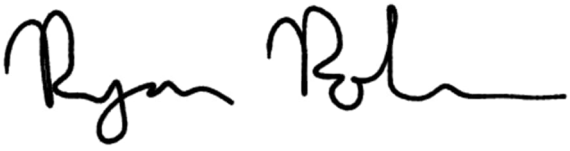
10.0 RECOMMENDATION

Based on the information presented in this report, we recommend that City of Ottawa approve this Servicing and Stormwater Management Report in support of the proposed development at 1209 St.Laurent Boulevard

This report is respectfully being submitted for approval.

Regards,

McIntosh Perry Consulting Engineers Ltd.



Robert D. Freel, P.Eng.
Senior Project Manager, Land Development
T: 613.714.6174
E: r.freel@mcintoshperry.com

Ryan R. Robineau, E.I.T.
Civil Engineering Technologist, Land Development
T: 613.714.6611
E: r.robineau@mcintoshperry.com

11.0 STATEMENT OF LIMITATIONS

This report was produced for the exclusive use of 1209 St. Laurent Limited Partnership. The purpose of the report is to assess the existing stormwater management system and provide recommendations and designs for the post-construction scenario that are in compliance with the guidelines and standards from the Ministry of the Environment, Conservation and Parks, City of Ottawa and local approval agencies. McIntosh Perry reviewed the site information and background documents listed in Section 2.0 of this report. While the previous data was reviewed by McIntosh Perry and site visits were performed, no field verification/measures of any information were conducted.

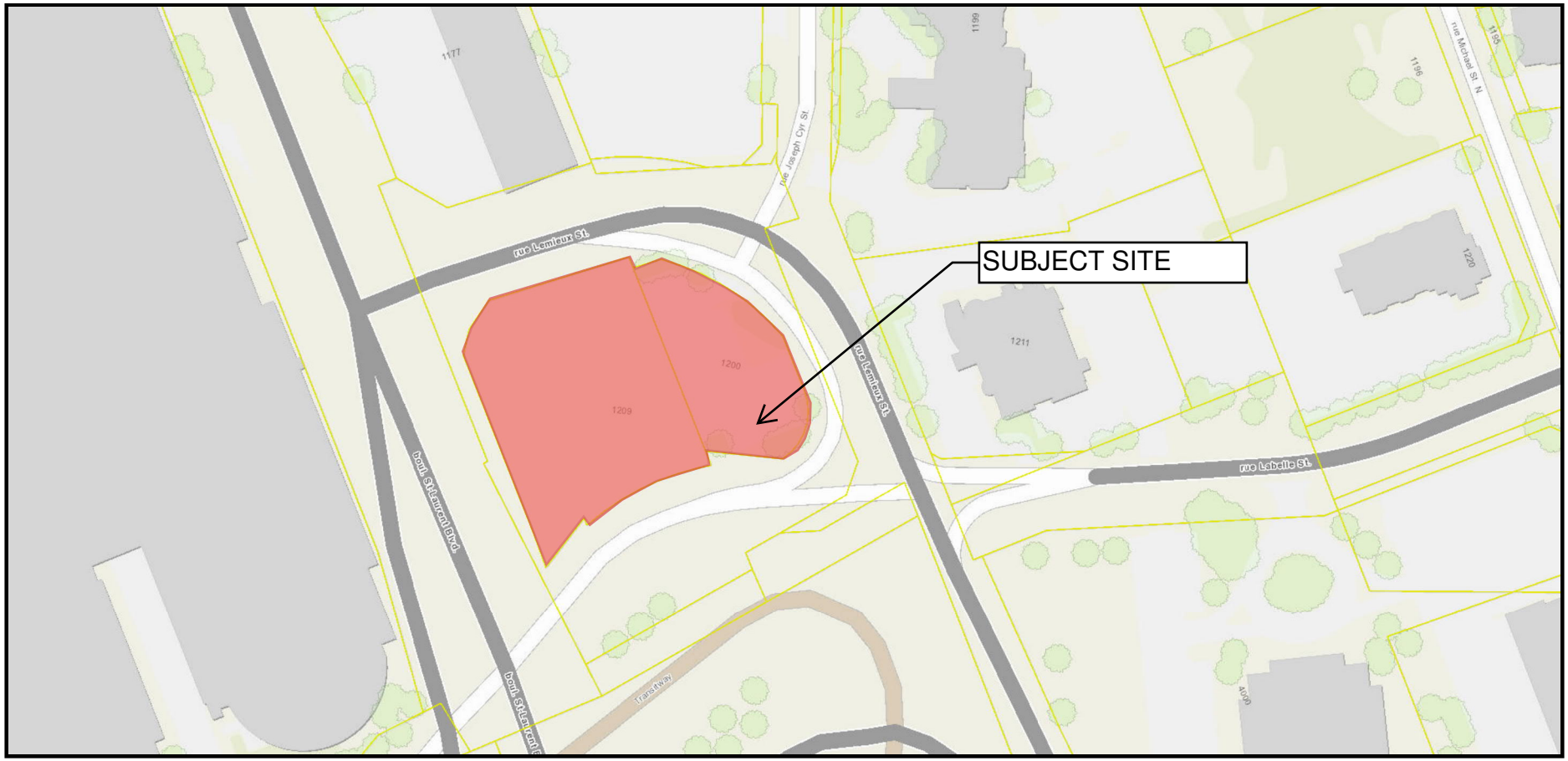
Any use of this review by a third party, or any reliance on decisions made based on it, without a reliance report is the responsibility of such third parties. McIntosh Perry accepts no responsibility for damages, if any, suffered by any third party as a result of decisions or actions made based on this review.

The findings, conclusions and/or recommendations of this report are only valid as of the date of this report. No assurance is made regarding any changes in conditions subsequent to this date. If additional information is discovered or becomes available at a future date, McIntosh Perry should be requested to re-evaluate the conclusions presented in this report, and provide amendments, if required.

APPENDIX A
SITE LOCATION PLAN

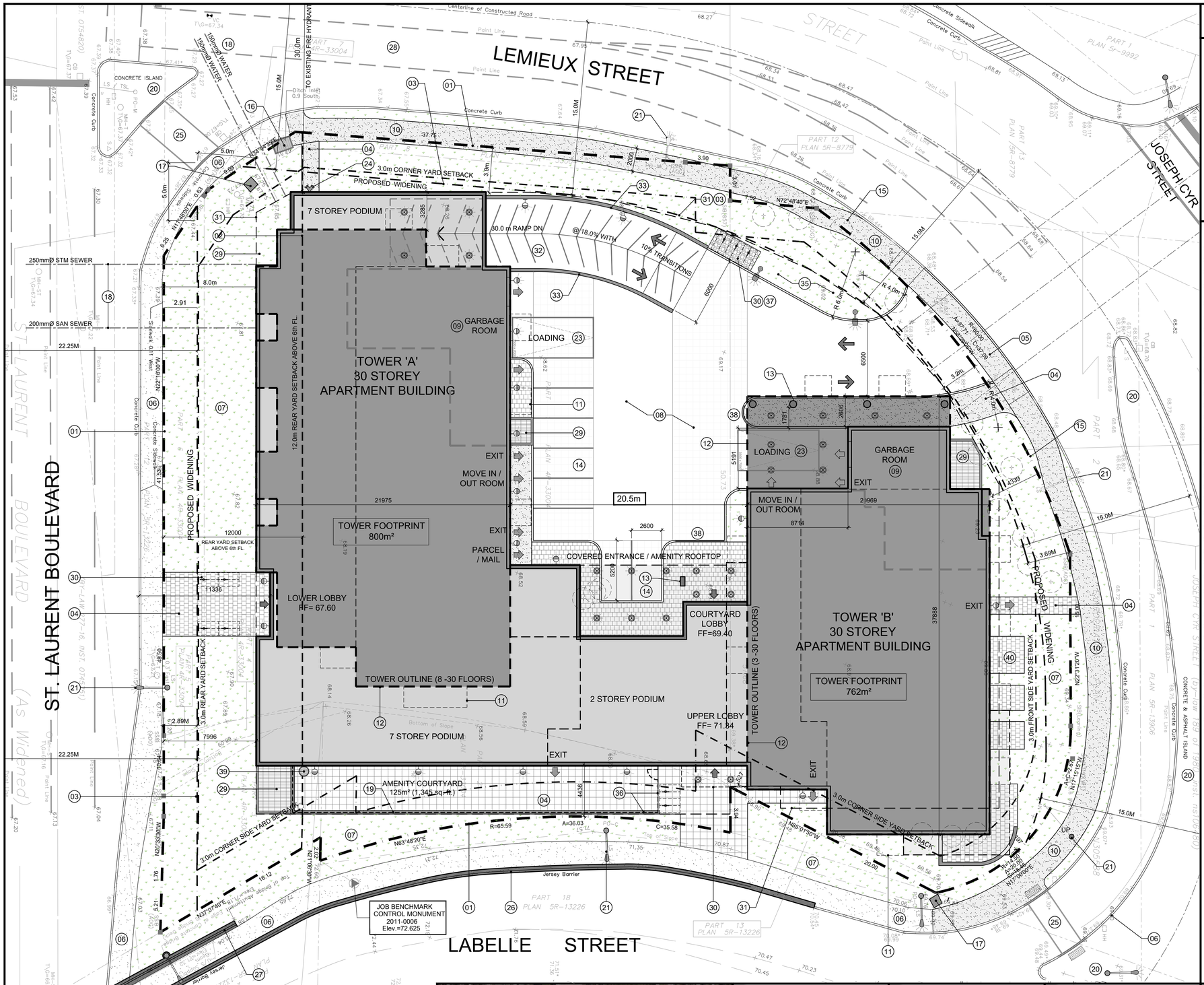
McINTOSH PERRY

LOCATION PLAN:
1209 ST. LAURENT BOULEVARD



APPENDIX B
CITY OF OTTAWA PRE-CONSULTATION NOTES

McINTOSH PERRY



1
SP-1
SITE PLAN
SCALE 1:150

0m 2.5 5 7.5 10
SCALE 1:150

PROJECT INFORMATION

Zoning By-law 2008-250 Consolidation TD3

SITE AREA 0.428 ha. 4,279.77 sq. m
31,398 sq. ft

ZONING	REQUIRED	PROVIDED
BUILDING HEIGHT	30 STOREY'S / 90.0m	30 STOREY'S / 95.0m
GRADE (GEODETIC ELEVATION - ASL)	69.20m ASL	69.20m ASL
ALLOWABLE PROJECTION - AMENITY LEVEL	0.0m	4.6m
DENSITY - MINIMUM 350 units/hectare	122 UNITS	276 UNITS
TOWER SEPARATION	24.0m	20.5m
FRONT YARD SETBACK	3.0m	0.0m
CORNER YARD SETBACK (North - Lemieux / South - Labelle)	3.0m / 3.0m	3.0m / 0.0m
REAR YARD SETBACK (GROUND TO 5th FLOOR)	0.0m	8.0m
REAR YARD SETBACK (ABOVE 6th STOREY)	12.0m	8.0m
PUBLIC STREET SETBACK FOR BUILDINGS WITHIN 10m OF A LOT LINE AT EITHER 2nd through 7th FLOOR	2.5m	0.0m
AMENITY AREA - TOTAL PER UNIT	6.0m²	7.0m²
AMENITY AREA - 50% COMMUNAL PER UNIT	3.0m²	3.2m²
AMENITY AREA - 2.0% OF LOT EXTERIOR AT GRADE COMMUNAL	85.6m²	125.0m²
VEHICLE PARKING - RESIDENTIAL (AREA 'Z' - MIN. 0 / MAX. 1.75 PER UNIT)	NOT REQUIRED	299
VEHICLE PARKING - VISITOR ONLY (MAX. 30 PER BUILDING AFTER 12 UNITS)	60	60
BICYCLE PARKING - RESIDENTIAL - 0.5 PER UNIT	322	658
AISLE & DRIVEWAY MINIMUM / MAXIMUM WIDTH	6.0m / 6.7m	6.0m
ACTIVE STREET FRONTAGE FOR St. LAURENT (50% OF LOT WIDTH)	29.26m L	49.0m L

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

(00)	INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
◇00	INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
⬡00	INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
(000)	INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.

00 A000 A000
DETAIL NUMBER
TITLE
SCALE
DETAIL REFERENCE PAGE
DETAIL CROSS REFERENCE PAGE

DRAWING NOTES

① PROPERTY LINE
② BUILDING SETBACKS
③ PROPOSED ROAD WIDENING
④ HARD SURFACE PAVING, SEE LANDSCAPE PLAN FOR PATTERN AND TYPE
⑤ DEPRESSED CURB AND SIDEWALK TO CITY STANDARDS, SEE CIVIL
⑥ EXISTING STREET CURB AND SIDEWALK
⑦ SOFT LANDSCAPING, SEE LANDSCAPE PLAN
⑧ ASPHALT DRIVING SURFACE / PARKING LOT WITH BARRIER CURB
⑨ INTERNAL GARBAGE ROOM
⑩ 2.0m WIDE CONCRETE SIDEWALK
⑪ OUTLINE OF PRIVATE BALCONY ABOVE
⑫ OUTLINE OF TOWER ABOVE
⑬ STRUCTURAL SUPPORT FOR BUILDING ABOVE
⑭ SURFACE PARKING SPACE 2.6 X 5.2 M
⑮ EXISTING TREE TO BE REMOVED
⑯ EXISTING STORM GRATE
⑰ EXISTING UTILITY KIOSK
⑱ PROPOSED SERVICES
⑲ RETAINING WALL, SEE CIVIL FOR HEIGHT
⑳ EXISTING CONCRETE / ASPHALT ISLAND
㉑ EXISTING UTILITY / LIGHT POLE
㉒ 1.2 X 1.8 CONCRETE PAD FOR GAS EQUIPMENT (GAS BLOW OFF)
㉓ 3.5 x 7.0m LOADING SPACE
㉔ SIAMESE CONNECTION
㉕ EXISTING CROSSWALK WITH DEPRESSED CURBS
㉖ EXISTING CONCRETE JERSEY BARRIER
㉗ EXISTING CONCRETE OVERPASS GUARDRAIL WITH METAL PIPE RAILING
㉘ EXISTING FIRE HYDRANT
㉙ INTAKE / EXHAUST GRILL
㉚ BICYCLE PARKING SPACE WITH RACK
㉛ OUTLINE OF BELOW GRADE PARKING DECK
㉜ HEATED GARAGE RAMP WITH TRENCH DRAIN
㉝ CONCRETE RETAINING WALL WITH GUARD RAILING
㉞ RELOCATE UTILITY / LIGHT POLE AS NEEDED
㉟ TEMPORARY SNOW STORAGE
㊱ PRIVACY FENCE
㊲ WASHED PEA-STONE SURFACE
㊳ DEPRESSED CURB
㊴ ACCESS TO INTERNAL CISTERN
㊵ AT GRADE PRIVATE PATIOS

SITE PLAN SYMBOLS

▦	CONCRETE UNIT PAVERS SURFACE
▒	PROPOSED CONCRETE SURFACE
▨	SOFT LANDSCAPING
⬚	BIKE RACK
⇅	TWO WAY VEHICLE CIRCULATION
➡	MAIN ENTRANCE
⇨	UNIT BALCONY DOOR / FIRE EXIT
▬ ▬ ▬	PROPERTY LINE
— — —	PROPOSED WIDENING
◌	EXISTING TREE TO BE REMOVED

GROSS BUILDING FLOOR AREA

(OTTAWA ZONING DEFINITION)

BELOW GRADE PARKING LEVEL		0.0 sq. m. 000 sq. ft.
GROUND FLOOR		199.6 sq. m. 2,149 sq. ft.
2nd FLOOR - TOWER 'A'		694.6 sq. m. 7,477 sq. ft.
2nd FLOOR - TOWER 'B'		485.5 sq. m. 5,226 sq. ft.
3rd - 7th FLOOR - TOWER 'A'	5 x 864.9 sq. m. 5 x 9,310 sq. ft.	4,324.6 sq. m. 46,550 sq. ft.
3rd - 7th FLOOR - TOWER 'B'	5 x 644.8 sq. m. 5 x 6,941 sq. ft.	3,224.2 sq. m. 34,705 sq. ft.
8th FLOOR - TOWER 'A'		600.9 sq. m. 6,468 sq. ft.
8th FLOOR - TOWER 'B'		587.3 sq. m. 6,322 sq. ft.
9th - 20th FLOOR - TOWER 'A'	12 x 622.8 sq. m. 12 x 6,704 sq. ft.	7,473.8 sq. m. 80,448 sq. ft.
21th - 30th FLOOR - TOWER 'A'	10 x 628.6 sq. m. 10 x 6,766 sq. ft.	6,285.8 sq. m. 67,660 sq. ft.
9th - 30th FLOOR - TOWER 'B'	22 x 587.3 sq. m. 22 x 6,322 sq. ft.	12,921.3 sq. m. 139,084 sq. ft.
TOTAL AREA ABOVE GRADE		36,797.9 sq. m. 396,089 sq. ft.

UNIT STATISTICS

	TOWER A	TOWER B	TOTAL
STUDIO	15	18	33
1 BEDROOM UNIT	184	164	348
2 BEDROOM UNIT	136	127	263
TOTAL	335	309	644

CAR PARKING

REQUIRED

VISITOR - TOWER A	- 0.1 PER UNIT AFTER 12 UNITS	30
VISITOR - TOWER B	- 0.1 PER UNIT AFTER 12 UNITS	30
TOTAL		60

MAXIMUM PARKING AS PER TABLE 103 = 1.75 PER UNIT 1,175

PROVIDED

RESIDENCE	- 0.46 PER UNIT (644 UNITS)	299
VISITOR	- 0.093 PER UNIT (644 UNITS)	60
TOTAL		359

STANDARD PARKING SPACE	2.6m X 5.2m
SMALL CAR PARKING SPACE	2.4m X 4.6m
LOADING SPACE	3.5m X 7.0m

BICYCLE PARKING

REQUIRED	- 0.5 PER UNIT (644 UNITS)	322
PROVIDED	INTERIOR	646
	EXTERIOR	14

AMENITY AREA

GRADE EXTERIOR - COMMUNAL	125.0 sq. m.
1st FLOOR INTERIOR - COMMUNAL	546.0 sq. m.
2nd FLOOR INTERIOR - COMMUNAL	467.0 sq. m.
2nd FLOOR TERRACE - COMMUNAL	114.0 sq. m.
31th FLOOR INTERIOR - COMMUNAL	245.0 sq. m.
31th FLOOR TERRACE - COMMUNAL	548.0 sq. m.
BALCONIES / TERRACE - PRIVATE	2,500 sq. m.
TOTAL	4,545.0 sq. m.
TOTAL COMMUNAL	2,045.0 sq. m.

REQUIRED (644 UNITS X 6 m²) = 3,864 sq. m.
REQUIRED COMMUNAL @ 50% = 1,932 sq. m.

SITE COVERAGE

BUILDING FOOTPRINT	46.3%	1,979.5 sq. m.
DRIVING SURFACE	17.9%	766.4 sq. m.
LANDSCAPE AREA	35.8%	1,533.9 sq. m.
TOTAL	100.0%	4,279.77 sq. m

REFUGE REQUIREMENT (644 UNITS)

GARBAGE	- 0.11 PER UNIT	71 YARDS
RECYCLING GMP	- 0.018 PER UNIT	12 YARDS
RECYCLING FIBER	- 0.038 PER UNIT	25 YARDS
COMPOST	- 240L PER 50 UNITS	7

No.	DESCRIPTION	DATE
8	ISSUED FOR SPC ROUND 1 CITY COMMENT	Dec __, 22
7	REVISED AS PER OWNER REQUEST	Nov 11, 22
6	ISSUED FOR GENERAL UPDATES	July 12, 22
5	ISSUED FOR SPC APPLICATION	May 20, 22
4	ISSUED FOR OWNER / CONSULTANT REVIEW	May 18, 22
3	ISSUED FOR OWNER / CONSULTANT REVIEW	May 13, 22
2	ISSUED FOR OWNER / CONSULTANT REVIEW	Apr. 27, 22
1	ISSUED FOR DESIGN CONCEPT	Apr. 12, 22

REVISIONS:

ARCHITECT SEAL:
RODERICK I. LAHEY
LICENCE
4375
SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT:
FENGATE Asset Management
Canderel

ARCHITECT:
RODERICKLAHEY
ARCHITECT INC
56 Beech Street, Ottawa, Ontario K1S 3J6
t.613.724.9932 f.613.724.1209 www.rodericklahey.ca

PROJECT TITLE:
1209 St LAURENT BLVD.
OTTAWA ONTARIO

SHEET TITLE:
SITE PLAN

DRAWN: RV
CHECKED: R.I.
SCALE: 1:150
SHEET No. SP-1
PROJECT No. 2203

D07-12-22-0089

TRANSPORTATION ENGINEER
CGH TRANSPORTATION INC.
13 Markham Avenue
Ottawa, ON K2G 3Z1
Tel: (343) 999-9117
Email:Christopher.Gordon@CGHTransportation.com

GEOTECHNICAL ENGINEER

LANDSCAPE ARCHITECT
Gino J. Aiello Landscape Architect
110 Didsbury Road Unit 9,
Ottawa, Ontario K2E 0C2
Tel: (613) 852-1343
Cell: (613)
Email: gino@giala.com

LEGAL DESCRIPTION
PLAN OF SURVEY OF
PART OF LOTS 4 and 14
REGISTERED PLAN 23
CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

PROJECT DEVELOPER
Canderel
900 - 2000 Peel Street ,
Montreal Qu, H3A 2W5
Tel.: (514) 940-1420
E-Mail: mbelanger@canderel.com

WIND / NOISE ENGINEER
Gradient Wind Engineering
127 Walgreen Road,
Ottawa, ON, Canada K0A 1L0
Tel: (613) 836-0934
Cell: (613) 226-5273
Email: joshua.foster@gradientwind.com

SURVEYOR
Annis O'Sullivan Vollebekk Ltd.
Ontario Land Surveyors
14 Concourse Gate, Suite 500,
Nepean, Ontario K2E 7S6
Tel: (613) 727-0850
Fax: (613) 727-1079
Email: ____@aovltd.com

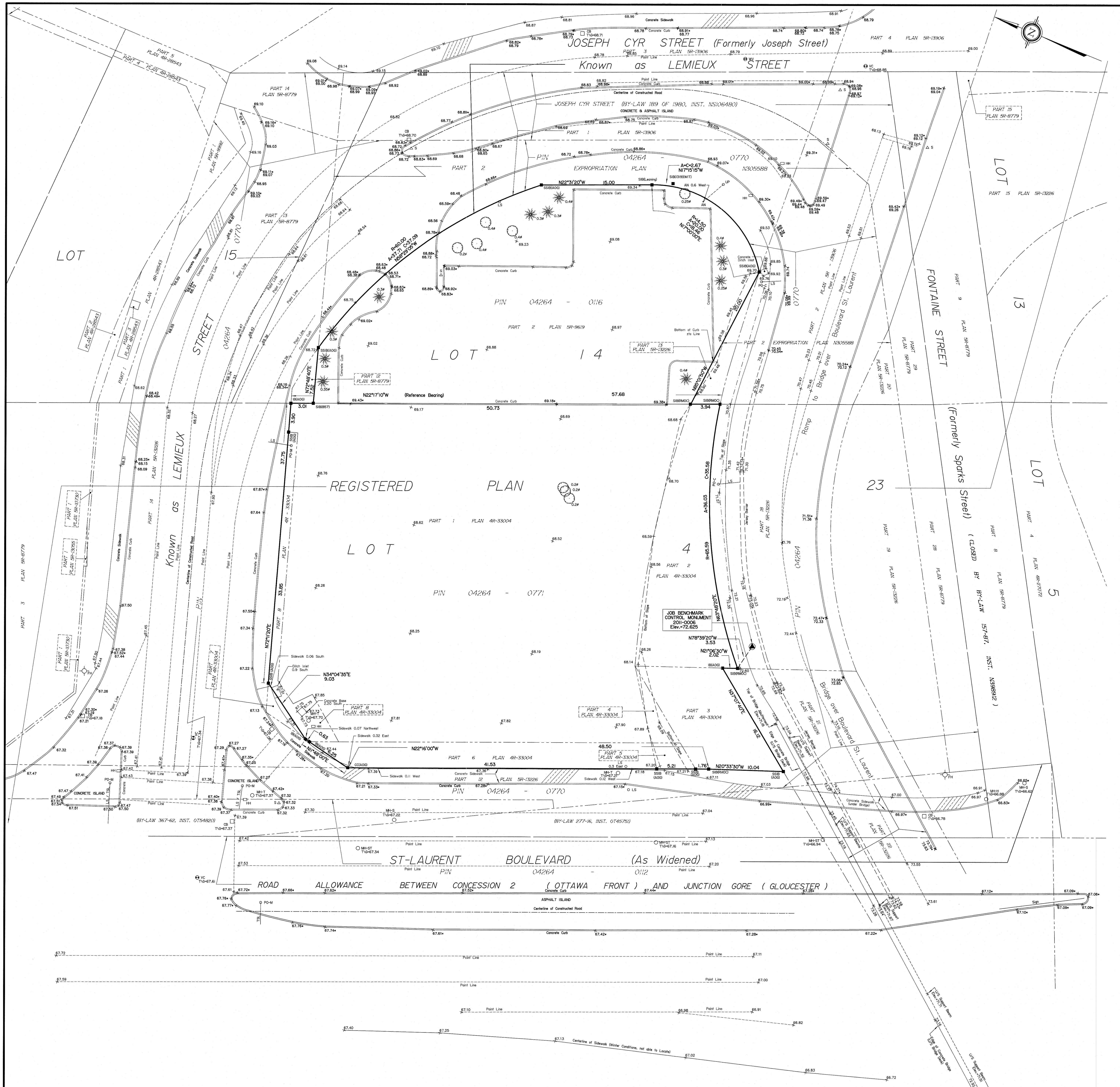
CIVIL ENGINEER
McINTOSH PERRY
115 Walgreen Road
Ottawa, ON K0A 1L0
Tel: (613) 836-2184
Fax: (613) 836-3742
Email: r.freel@mcintoshperry.com

URBAN PLANNER
Fotenn Consultants Inc.
396 Cooper Street, Suite 300
Ottawa, ON Canada, K2P 2H7
Tel.: (613) 730-5709
Fax: (613) 730-1136
E-Mail: black@fotenn.com

PROJECT DEVELOPER
FENGATE Asset. Management
TD North Tower
77 King Street West, Suite 3410
Toronto, Ontario, M5K 1H1
Tel.: (647) 966-5021
Cell: (647) ________
E-Mail: andrew.konev@fengate.com

PAPER SIZE: ISO Full Bleed B1 (707.00 X 1000.00 MM) PLOT DATE: Friday, December 09, 2022 PLOT SCALE: 1:1 PEN STYLE: 0-RLA-MASTER-100%.ctb F:\2022\2203 - 1209 St Laurent\01 Design Development\01 Site Plan\2203 SP-1 Site Plan.dwg

Plan No.: #18763



PLAN OF SURVEY OF
PART OF LOTS 4 and 14
REGISTERED PLAN 23
CITY OF OTTAWA
Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 250

10 7.5 5.0 2.5 0 5 10 Metres

Metric

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

Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act and the Surveyors Act and the regulations made under them.
2. The survey was completed on the 7th day of March, 2022.

March 10, 2022
Date

A. J. Broxham
Andrew J. Broxham
Ontario Land Surveyor

Notes & Legend

	Denotes	
—□—	"	Survey Monument Planted
—■—	"	Survey Monument Found
SIB	"	Standard Iron Bar
SSIB	"	Short Standard Iron Bar
IB	"	Iron Bar
CC	"	Cut Cross
(WIT)	"	Witness
Meas.	"	Measured
(AOG)	"	Annis, O'Sullivan, Vollebekk Ltd.
(P1)	"	(AOG) Plan dated August 18, 2021
○ MH-ST	"	Maintenance Hole (Storm Sewer)
○ MH-S	"	Maintenance Hole (Sanitary)
○ MH-T	"	Maintenance Hole (Traffic)
○ MH-H	"	Maintenance Hole (Hydro)
⊖ VC	"	Valve Chamber (Watermain)
○ UP	"	Utility Pole
+ AN	"	Anchor
○ LS	"	Light Standard
□ CB	"	Catch Basin
⊡ DI	"	Ditch Inlet
○ FH	"	Fire Hydrant
Inv.	"	Invert
T/G	"	Top of Grate
△ S	"	Sign
○ PO-M	"	Metal Pole
○ PO-C	"	Concrete Pole
TSL	"	Traffic Light
□ HH	"	Handhole
C/L	"	Centreline
U/S	"	Underside
+ 65.00	"	Location of Elevations
+ 65.00*	"	Top of Concrete Curb / Jersey Barrier Elevation
(tree symbol)	"	Deciduous Tree
(tree symbol)	"	Coniferous Tree

All bearing and distances between found survey monuments are (P1)&Meas. unless otherwise noted.

Bearings are grid, derived from the easterly limit of Part 1 Plan 4R-33004 shown to be N22°17'10"W thereon and are referenced to MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

SITE AREA = 4280.7 m^2

ELEVATION NOTES

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

UTILITY NOTES

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

Topographic data was collected under Winter Conditions. Snow cover and ice preclude determining location and elevation of some topographical data that is otherwise visible.

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-22635

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29 (3).

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

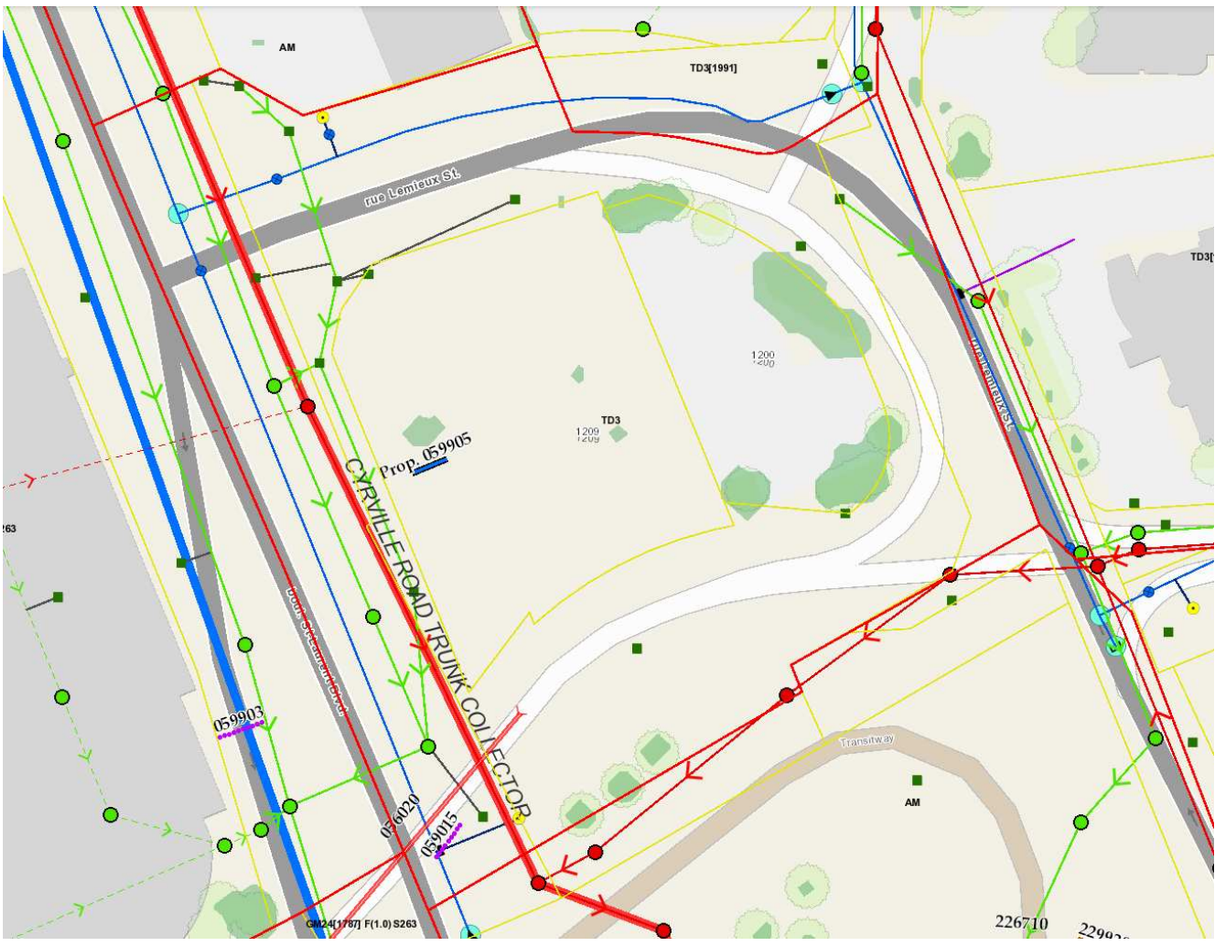
Job No. 21851-21 Canderel Pt Lt 4 PL 23 T F | ig

Site Plan Pre- Application Consultation Notes

Date: August 11, 2021
Site Location: 1209 St. Laurent Blvd. & 1200 Lemieux St.
Type of Development: ☒ **Residential (**☐ **townhomes,** ☐ **stacked,** ☐ **singles,** ☒ **apartments),** ☐ **Office Space,** ☒ **Commercial,** ☐ **Retail,** ☐ **Institutional,** ☐ **Industrial, Other:** N/A

Project Manager: Will Curry / Natasha Baird
Planner: Michael Boughton

Infrastructure



Water

Water District Plan No: 372-031
Existing public services:

- St-Laurent Blvd – 406mm UCI
- Lemieux St (North side of site) – 203mm UCI
- Lemieux St (East side of site) – 152mm CI

Boundary conditions:
Civil consultant must request boundary conditions from the City's assigned Project Manager prior to first submission.

- Water boundary condition requests must include the location of the service(s) and the expected loads required by the proposed developments. Please provide all the following information:
    - Location of service(s)
    - Type of development and the amount of fire flow required (as per FUS, 1999).
    - Average daily demand: ___ l/s.
    - Maximum daily demand: ___l/s.
    - Maximum hourly daily demand: ___ l/s.
- Fire protection (Fire demand, Hydrant Locations)

General comments

- At time of Site Plan Control, a water meter sizing questionnaire [water card] will have to be completed prior to receiving a water permit (water card will be provided post approval).
- Service areas with a basic demand greater than 50 m^3/day shall be connected with a minimum of two water services, separated by an isolation valve, to avoid creation of vulnerable service area.

Sanitary Sewer

Existing public services:

- St-Laurent Blvd – 525mm concrete trunk sewer, connection not permitted due to the surcharging.
- Lemieux St – 250mm asbestos concrete

Is a monitoring manhole required on private property? ☒ **Yes** ☐ **No**

General comments

- It was noted that the provision of sanitary services could provide a challenge for the site development. The sanitary connection should be taken from Lemieux Street. Any further questions concerning the servicing of the site should be directed to Will Curry.
- No direct sanitary service connection to the collector on St. Laurent Blvd. is permitted; an off-line MH and private sewer is permitted to connect.
- Any premise in which there is commercial or institutional food preparation shall install a grease and oil inceptor on all fixtures.
- The Environmental Site Assessment (ESA) may provide recommendations where site contamination may be present. The recommendations from the ESA need to be coordinated with the servicing report to ensure compliance with the Sewer Use By-Law.

Storm Sewer and Stormwater Management

Existing public services:

- St-Laurent Blvd – 400mm and 600mm trunk sewers both concrete
- Lemieux St – 300mm Concrete

General comments

- Design Criteria – The following site design criteria are provide for your consideration and action.
    - Coordination with the RVCA and Hydro Ottawa will be required.
    - Pre to post – Post C of .5
    - Pre tc 20; post tc 10
    - Onsite – design for 2-year or 5-year pipe and store up to 100-year on site.
    - No 2 year-ponding.
    - Permissible ponding of 350mm for 100-year event.
    - At 100-year ponding elevation, you must spill to City ROW.
    - Spill elevation must be 300mm lower than any building opening (includes ramps).
    - Require MHs just inside the property line. The site is required to accommodate the road drainage and the existing flow out-letting from the culverts towards the river.

Quality Control:

- Rideau Valley Conservation Authority to confirm quality control requirements.

Ministry of Environment, Conservation and Parks (MECP)

This site will require an ECA if sewers are servicing more than one parcel through transfer of review.

NOTE: Site Plan Approval, or Draft Approval, is required before any ECA application is sent.

General Service Design Comments

- The City of Ottawa requests that all new services be located within the existing service trench to minimize necessary road cuts.
- Monitoring manholes should be located within the property near the property line in an accessible location to City forces and free from obstruction (i.e. not a parking).

- Where service length is greater than 30 m between the building and the first maintenance hole / connection, a cleanout is required.
- Manholes are required for connections to sanitary or combined trunk sewers as per City of Ottawa Standards S13.
- The City of Ottawa Standard Detail Drawings should be referenced where possible for all work within the Public Right-of-Way.
- The upstream and downstream manhole top of grate and invert elevations are required for all new sewer connections.
- Services crossing the existing watermain or sewers need to clearly provide the obvert/invert elevations to demonstration minimum separation distances. A watermain crossing table may be provided.

Geotechnical and Slope Stability Analysis

- This development requires a geotechnical analysis and a slope stability analysis prior to the OPA to determine the developable lands. The site is adjacent to a waterway and is on sensitive clays with a slope. The City will require geotechnical information to ensure that the height and type of building supported by the OPA and ZA is satisfied.
- Provide an updated geotechnical report and slope stability analysis certified by a qualified engineer.
- Development shall comply to the current City of Ottawa Geotechnical Guideline: https://documents.ottawa.ca/sites/documents/files/documents/cap137602.pdf
- Development shall comply to the current City of Ottawa Slope Stability Guidelines for Development Applications: https://documents.ottawa.ca/sites/documents/files/documents/cap137604.pdf

Environmental Site Assessment

- As per the Official Plan, the environmental site assessment shall be completed as per Environmental Protection Act - O. Reg. 153/04, Part VII & VIII.
- Any reports older than 2 years shall be updated.

Other

At time of site plan control application, it will be required to verify if:

- Capital Works Projects will be within proximity to application.
- Watermain Frontage Fees are applicable.
- Minimum Drawing and File Requirements for all Plans - The following plans and drawing requirements apply.
- Plans are to be submitted on standard A1 size (594mm x 841mm) sheets, utilizing an appropriate metric scale (1:200, 1:250, 1:300, 1:400, or 1:500).
- With all submitted hard copies, provide individual PDF of the DWGs and for reports please provide one PDF file of the reports. All PDF documents are to be unlocked and flattened.
- No reports submitted are to be older than 5 years.
- Existing drawings are available from informationcentre@ottawa.ca.

References and Resources

- As per section 53 of the Professional Engineers Act, O. Reg 941/40, R.S.O. 1990, all documents prepared by engineers must be signed and dated on the seal.
- All required plans are to be submitted on standard A1 size sheets (594mm x 841mm) sheets, utilizing a reasonable and appropriate metric scale as per City of Ottawa Servicing and Grading Plan Requirements: title blocks are to be placed on the right of the sheets and not along the bottom. Engineering plans may be combined, but the Site Plans must be provided separately. Plans shall include the survey monument used to confirm datum. Information shall be provided to enable a non-surveyor to locate the survey monument presented by the consultant.

- All required plans & reports are to be provided in *.pdf format (at application submission and for any, and all, re-submissions)
- Please find relevant City of Ottawa Links to Preparing Studies and Plans below: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans#standards-policies-and-guidelines
- To request City of Ottawa plan(s) or report information please contact the City of Ottawa Information Centre:
  InformationCentre@ottawa.ca<mailto:InformationCentre@ottawa.ca>
  (613) 580-2424 ext. 44455
- geoOttawa
  http://maps.ottawa.ca/geoOttawa/

Ryan Robineau

From: Jamie Batchelor <jamie.batchelor@rvca.ca>
Sent: May 20, 2022 9:07 AM
To: Ryan Robineau
Subject: RE: 1200 & 1209 St Laurent Boulevard Quality Control Requirement

Good Morning Ryan,

Based on the distance to the downstream outlet being over 2km, the RVCA will not require additional on-site water quality treatment. We do recommend that you explore opportunities to incorporate LID measures into the stormwater management strategy for the site.

Jamie Batchelor, MCIP, RPP
Planner, ext. 1191
Jamie.batchelor@rvca.ca

Rideau Valley Conservation Authority

3889 Rideau Valley Drive
PO Box 599, Manotick ON K4M 1A5
T 613-692-3571 | 1-800-267-3504 F 613-692-0831 | www.rvca.ca

From: Ryan Robineau <r.robineau@mcintoshperry.com>
Sent: Tuesday, May 10, 2022 3:29 PM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Subject: 1200 & 1209 St Laurent Boulevard Quality Control Requirement

Good afternoon Jamie,

We wanted to touch base with you regarding a proposed development at 1200 & 1209 St Laurent Boulevard.

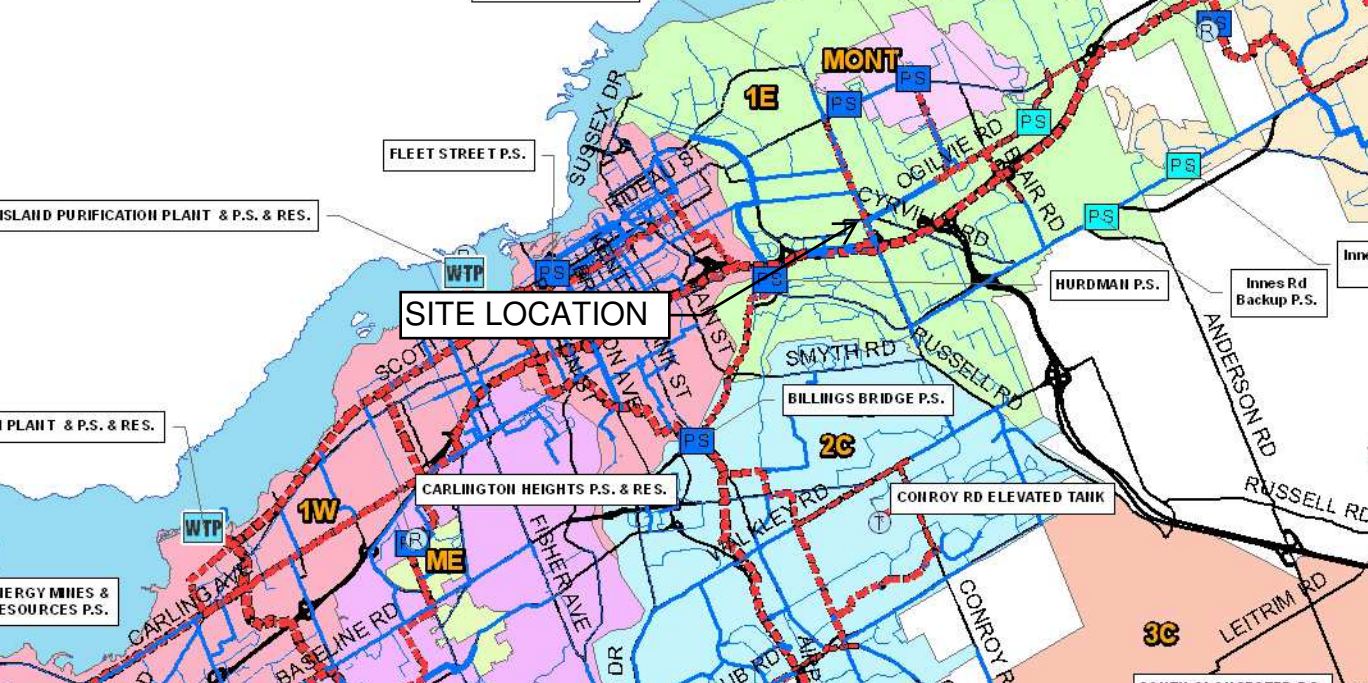
The development involves the construction of a 30-storey apartment building with above and underground parking. Drainage will be collected and conveyed to the 600mm dia storm sewer within St Laurent Boulevard. As shown by the attached figure, water travels approximately 2.14km to the Rideau River (Outlet ID #04334). It is anticipated that drainage will be collected by roof drains, catch basins and surface drains which will be connected to the internal mechanical system.

We would like to know what SWM requirements the RVCA would have for the site.

Please let me know if you have any questions.

APPENDIX C
WATERMAIN CALCULATIONS

McINTOSH PERRY


SITE LOCATION
FLEET STREET P.S.
ISLAND PURIFICATION PLANT & P.S. & RES.
I PLANT & P.S. & RES.
HERGY MINES & ESOURCES P.S.
WTP
WTP
MONT
1E
1W
2C
3C
ME
HURDMAN P.S.
Innes Rd Backup P.S.
BILLINGS BRIDGE P.S.
CARLINGTON HEIGHTS P.S. & RES.
CONROY RD ELEVATED TANK
SUSSEX DR
RIDEAU ST
SCOTT ST
BRONSON AVE
KENT ST
SMYTH RD
RUSSELL RD
ANDERSON RD
OGILVIE RD
CYRVILLE RD
MAIN ST
WALKLEY RD
FISHER AVE
CARLING AVE
BASELINE RD
CONROY RD
LEITRIM RD
PS
PR
R
T

McINTOSH PERRY

CCO-22-1215 - 1209 St. Laurent Blvd - Total - Water Demands

Project:	1209 St. Laurent Blvd - Total
Project No.:	CCO-22-1215
Designed By:	AJG
Checked By:	RDF
Date:	December 12, 2022
Site Area:	0.43 gross ha

Residential	NUMBER OF UNITS		UNIT RATE	
Single Family		homes	3.4	persons/unit
Semi-detached		homes	2.7	persons/unit
Townhouse		homes	2.7	persons/unit
Bachelor Apartment	33	units	1.4	persons/unit
1 Bedroom Apartment	348	units	1.4	persons/unit
2 Bedroom Apartment	263	units	2.1	persons/unit
3 Bedroom Apartment	0	units	3.1	persons/unit
Average Apartment		units	1.8	persons/unit
Total Population	1086	persons		
Commercial		m2		
Industrial - Light		m2		
Industrial - Heavy		m2		

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS	
Residential	280	L/c/d	
Industrial - Light	35,000	L/gross ha/d	
Industrial - Heavy	55,000	L/gross ha/d	
Shopping Centres	2,500	L/(1000m² /d	
Hospital	900	L/(bed/day)	
Schools	70	L/(Student/d)	
Trailer Park with no Hook-Ups	340	L/(space/d)	
Trailer Park with Hook-Ups	800	L/(space/d)	
Campgrounds	225	L/(campsite/d)	
Mobile Home Parks	1,000	L/(Space/d)	
Motels	150	L/(bed-space/d)	
Hotels	225	L/(bed-space/d)	
Tourist Commercial	28,000	L/gross ha/d	
Other Commercial	28,000	L/gross ha/d	
AVERAGE DAILY DEMAND	Residential	3.52	L/s
	Commerical/Industrial/Institutional	0.00	L/s

115 Walgreen Road, R.R.3. Carp, ON K0A 1L0 | T. 613-836-2184 | F. 613-836-3742
info@mcintoshperry.com | www.mcintoshperry.com

MAXIMUM DAILY DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	2.5	x avg. day	L/c/d
Industrial	1.5	x avg. day	L/gross ha/d
Commercial	1.5	x avg. day	L/gross ha/d
Institutional	1.5	x avg. day	L/gross ha/d
MAXIMUM DAILY DEMAND	Residential	8.80	L/s
	Commerical/Industrial/Institutional	0.00	L/s

MAXIMUM HOUR DEMAND

DEMAND TYPE	AMOUNT		UNITS
Residential	5.5	x avg. day	L/c/d
Industrial	1.8	x max. day	L/gross ha/d
Commercial	1.8	x max. day	L/gross ha/d
Institutional	1.8	x max. day	L/gross ha/d
MAXIMUM HOUR DEMAND	Residential	19.36	L/s
	Commerical/Industrial/Institutional	0.00	L/s

WATER DEMAND DESIGN FLOWS PER UNIT COUNT
CITY OF OTTAWA - WATER DISTRIBUTION GUIDELINES, JULY 2010

AVERAGE DAILY DEMAND	3.52	L/s
MAXIMUM DAILY DEMAND	8.80	L/s
MAXIMUM HOUR DEMAND	19.36	L/s

McINTOSH PERRY

CCO-22-1215 - 1209 St. Laurent Blvd - Fire Underwriters Survey

Project:	1209 St. Laurent Blvd
Project No.:	CCO-22-1215
Designed By:	AJG
Checked By:	RDF
Date:	December 12, 2022

From the Fire Underwriters Survey (2020)

From Part II – Guide for Determination of Required Fire Flow Copyright I.S.O.:
Updated per City of Ottawa Technical Bulletin ISTB-2018-02

A. BASE REQUIREMENT (Rounded to the nearest 1000 L/min)

F = 220 x C x √A Where:

F = Required fire flow in liters per minute
C = Coefficient related to the type of construction.
A = The total floor area in square meters (including all storey's, but excluding basements at least 50 percent below grade) in the building being considered.

Construction Type: Non-Combustible Construction

C 0.8 A 35,712.8 m^2

Total Floor Area (per the 2020 FUS Page 20 - Total Effective Area) 5,214.0 m^2 * Unprotected Vertical Openings

Calculated Fire Flow	12,708.6 L/min
	13,000.0 L/min

B. REDUCTION FOR OCCUPANCY TYPE (No Rounding)

From note 2, Page 18 of the Fire Underwriter Survey:

Limited Combustible -15%

Fire Flow	11,050.0 L/min

C. REDUCTION FOR SPRINKLER TYPE (No Rounding)

Fully Supervised Sprinklered -50%

Reduction	-5,525.0 L/min

D. INCREASE FOR EXPOSURE (No Rounding)

	Separation Distance (m)	Cons. of Exposed Wall	Length Exposed Adjacent Wall (m)	Height (Stories)	Length-Height Factor	
Exposure 1	30.1 to 45	Ordinary (Unprotected)	20	1	20.0	5%
Exposure 2	>45	Wood frame	33.5	2	67.0	0%
Exposure 3	>45	Wood frame	27.1	14	379.4	0%
Exposure 4	30.1 to 45	Non-Combustible	232	2	464.0	5%
					% Increase*	10%

Increase*	1,105.0 L/min

E. Total Fire Flow (Rounded to the Nearest 1000 L/min)

Fire Flow	6,630.0 L/min
Fire Flow Required**	7,000.0 L/min

115 Walgreen Road, R.R.3. Carp, ON K0A 1L0 | T. 613-836-2184 | F. 613-836-3742
info@mcintoshperry.com | www.mcintoshperry.com

* In accordance with Part II, Section 4, the Increase for separation distance is not to exceed 75%
* * In accordance with Section 4 the Fire flow is not to exceed 45,000 L/min or be less than 2,000 L/min

115 Walgreen Road, R.R.3. Carp, ON K0A 1L0 | T. 613-836-2184 | F. 613-836-3742
info@mcintoshperry.com | www.mcintoshperry.com

McINTOSH PERRY

CCO-22-1215 - 1209 St. Laurent Blvd - Boundary Condition Unit Conversion

Project:	1209 St. Laurent Blvd
Project No.:	CCO-22-1215
Designed By:	AJG
Checked By:	RDF
Date:	December 12, 2022

Boundary Conditions Unit Conversion

LEMIEUX STREET

Scenario	Height (m)	Elevation (m)	m H_2O	PSI	kPa
Avg. DD	118.5	67.3	51.2	72.8	501.9
Fire Flow Of 116.67 L/s (7,000 L/min)	110.4	67.3	43.1	61.3	422.4
Peak Hour	110.2	67.3	42.9	61.0	420.5

115 Walgreen Road, R.R.3. Carp, ON K0A 1L0 | T. 613-836-2184 | F. 613-836-3742
info@mcintoshperry.com | www.mcintoshperry.com

From: Rasool, Rubina <Rubina.Rasool@ottawa.ca>
Sent: May 11, 2022 10:36 AM
To: Alison Gosling <a.gosling@mcintoshperry.com>
Subject: RE: 22-1215 - 1209 St. Laurent Blvd - Boundary Condition Request

Hi Alison,

Great timing, I just received the WBC.

I believe Natasha Baird was the PM for the pre-consult. I have forwarded your inquiry to her for response.

The following are boundary conditions, HGL, for hydraulic analysis at 1209 St-Laurent Boulevard (zone 1E) assumed to be a dual connection to the 203 mm on Lemieux Street (see attached PDF for location).

Minimum HGL: 110.2 m

Maximum HGL: 118.5 m

Max Day + Fire Flow (116.67 L/s): 110.4 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.

Rubina

Rubina Rasool, E.I.T.
Project Manager
Planning, Infrastructure and Economic Development Department - Services de la planification, de l'infrastructure et du développement économique
Development Review – East Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue Laurier Ouest. Ottawa (Ontario) K1P 1J1 rubina.rasool@ottawa.ca

From: Rasool, Rubina <Rubina.Rasool@ottawa.ca>
Sent: May 9, 2022 12:13 PM
To: Alison Gosling <a.gosling@mcintoshperry.com>
Subject: RE: 22-1215 - 1209 St. Laurent Blvd - Boundary Condition Request

Hi Alison,

I have received your request for water boundary conditions. Please allow for approximately 3 weeks due to staff shortages. Note that development applications can still be submitted pending water boundary condition requests to avoid delays.

Best,

Rubina

Rubina Rasool, E.I.T.
Project Manager
Planning, Infrastructure and Economic Development Department - Services de la planification, de l'infrastructure et du développement économique
Development Review – East Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue Laurier Ouest. Ottawa (Ontario) K1P 1J1 rubina.rasool@ottawa.ca

APPENDIX D
SANITARY CALCULATIONS

McINTOSH PERRY

McINTOSH PERRY

CCO-22-1215 - 1209 St. Laurent Blvd - Total - Sanitary Demands

Project:	1209 St. Laurent Blvd - Total
Project No.:	CCO-22-1215
Designed By:	AJG
Checked By:	RDF
Date:	Dec-22

Site Area	0.43	Gross ha	
Bachelor	33	1.40	Persons per unit
1 Bedroom	348	1.40	Persons per unit
2 Bedroom	263	2.10	Persons per unit
Total Population	1086	Persons	
Commercial Area		m^2	
Amenity Space	2045.00	m^2	

DESIGN PARAMETERS

Institutional/Commercial Peaking Facto	1	
Residential Peaking Factor	3.22	* Using Harmon Formula = 1+(14/(4+P^0.5))*0.8 where P = population in thousands, Harmon's Correction Factor = 0.8
Mannings coefficient (n)	0.013	
Demand (per capita)	280	L/day
Infiltration allowance	0.33	L/s/Ha

EXTRANEOUS FLOW ALLOWANCES

Infiltration / Inflow	Flow (L/s)
Dry	0.02
Wet	0.12
Total	0.14

AVERAGE DAILY DEMAND

DEMAND TYPE	AMOUNT	UNITS	POPULATION / AREA	Flow (L/s)
Residential	280	L/c/d	1086	3.52
Industrial - Light**	35,000	L/gross ha/d		0
Industrial - Heavy**	55,000	L/gross ha/d		0
Commercial	2,800	L/(1000m^2/d)	2045.00	0.07
Hospital	900	L/(bed/day)		0
Schools	70	L/(Student/d)		0
Trailer Parks no Hook-Ups	340	L/(space/d)		0
Trailer Park with Hook-Ups	800	L/(space/d)		0
Campgrounds	225	L/(campsite/d)		0
Mobile Home Parks	1,000	L/(Space/d)		0
Motels	150	L/(bed-space/d)		0
Hotels	225	L/(bed-space/d)		0
Office	75	L/7.0m^2/d		0
Tourist Commercial	28,000	L/gross ha/d		0
Other Commercial	28,000	L/gross ha/d		0

AVERAGE RESIDENTIAL FLOW	3.52	L/s
PEAK RESIDENTIAL FLOW	11.34	L/s
AVERAGE ICI FLOW	0.07	L/s
PEAK INSTITUTIONAL/ COMMERCIAL FLOW	0.07	L/s
PEAK INDUSTRIAL FLOW	0.00	L/s
TOTAL PEAK ICI FLOW	0.07	L/s

TOTAL SANITARY DEMAND

TOTAL ESTIMATED AVERAGE DRY WEATHER FLOW	3.61	L/s
TOTAL ESTIMATED PEAK DRY WEATHER FLOW	11.42	L/s
TOTAL ESTIMATED PEAK WET WEATHER FLOW	11.54	L/s

SANITARY SEWER DESIGN SHEET

PROJECT: 30 Storey Residential Building
LOCATION: 1209 St Laurent Blvd
CLIENT: Candrel Management Inc.

McINTOSH PERRY

LOCATION				RESIDENTIAL									ICI AREAS							INFILTRATION ALLOWANCE			FLOW	SEWER DATA						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
STREET	AREA ID	FROM MH	TO MH	UNIT TYPES				AREA (ha)	POPULATION		PEAK FACTOR	PEAK FLOW (L/s)	AREA (ha)						PEAK FLOW (L/s)	AREA (ha)		FLOW (L/s)	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	DIA (mm)	SLOPE (%)	VELOCITY (full) (m/s)	AVAILABLE CAPACITY	
				BAC	1-BED	2-BED	APT		IND	CUM			INSTITUTIONAL		AMENITY		INDUSTRIAL			IND	CUM								L/s	(%)
													IND	CUM	IND	CUM	IND	CUM											
St Laurent Blvd		BLDG	EX MH	33	348	263		0.43	1086	1086	3.22	11.33		0.00	0.20	0.20		0.00	0.07	0.43	0.43	0.14	11.54	34.22	14.24	200	1.00	1.055	22.68	66.28

Design Parameters:

Residential			ICI Areas			
						Peak Factor
BAC	1.4	p/p/u				
1-BED	1.4	p/p/u	INST	28,000	L/Ha/day	1.0
APT	2.1	p/p/u	AME	28,000	L/Ha/day	1.0
Other	60	p/p/Ha	IND	35,000	L/Ha/day	MOE Chart

Notes:
1. Mannings coefficient (n) = 0.013
2. Demand (per capita): 280 L/day
3. Infiltration allowance: 0.33 L/s/Ha
4. Residential Peaking Factor:
Harmon Formula = 1+(14/(4+P^0.5)*0.8)
where P = population in thousands

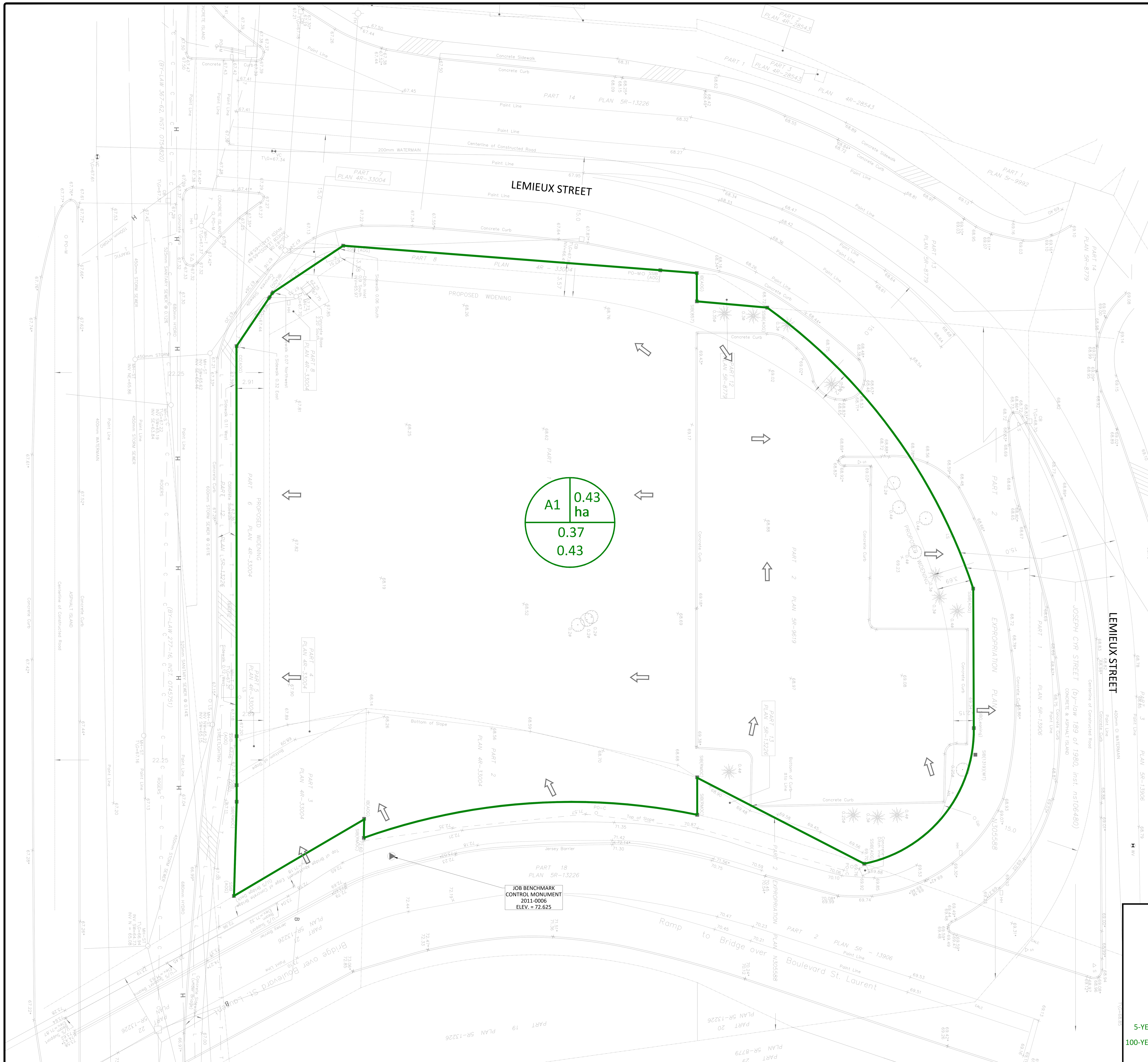
Designed: RRR
Checked: RDF
Project No.: CCO-22-1215

No.	Revision	Date

Sheet No:
1 of 1

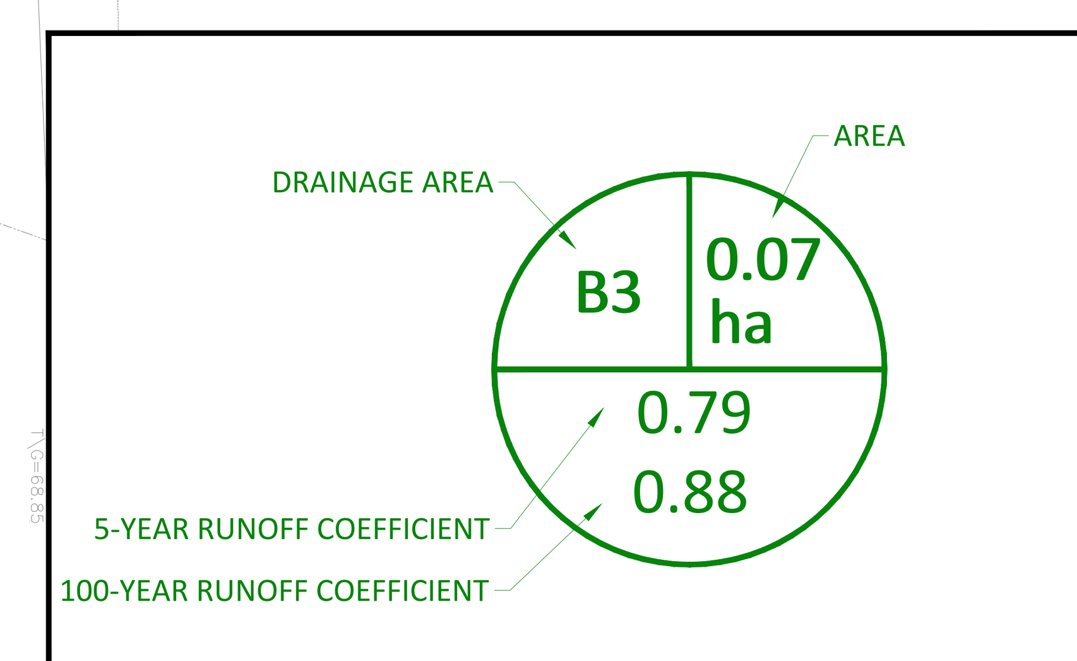
APPENDIX E
PRE-DEVELOPMENT DRAINAGE PLAN

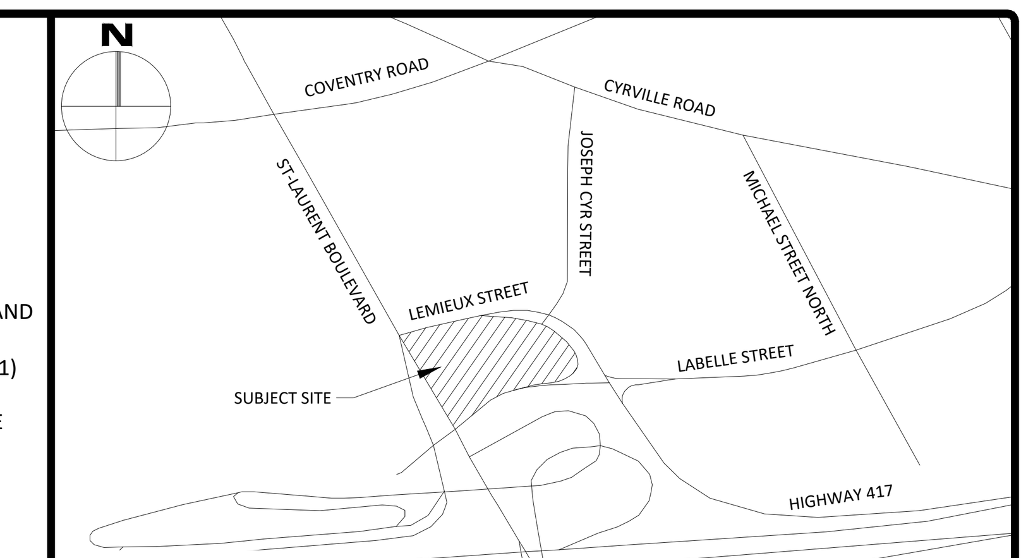
McINTOSH PERRY



GENERAL NOTES

1. THE ORIGINAL TOPOGRAPHY, GROUND ELEVATION AND SURVEY DATA SHOWN ARE SUPPLIED FOR INFORMATION PURPOSES ONLY, AND IMPLY NO GUARANTEE OF ACCURACY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION SHOWN.
2. THIS PLAN IS NOT A CADASTRAL SURVEY SHOWING LEGAL PROPERTY BOUNDARIES AND EASEMENTS. THE PROPERTY BOUNDARIES SHOWN HEREON HAVE BEEN DERIVED INFORMATION SUPPLIED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD. (JOB NO. 21851-21) AND CANNOT BE RELIED UPON TO BE ACCURATE OR COMPLETE. THE PRECISE LOCATION OF THE CURRENT PROPERTY BOUNDARIES AND EASEMENTS CAN ONLY BE DETERMINED BY AN UP-TO-DATE LAND TITLES SEARCH AND A SUBSEQUENT CADASTRAL SURVEY PERFORMED AND CERTIFIED BY AN ONTARIO LAND SURVEYOR.
3. THE CONTRACTOR IS TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY BEFORE COMMENCING CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT.
5. THE CONTRACTOR IS TO DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME ALL RESPONSIBILITY FOR EXISTING UTILITIES WHETHER OR NOT SHOWN ON THESE DRAWINGS. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
6. RESTORE ALL TRENCHES AND SURFACES OF PUBLIC ROAD ALLOWANCES TO CONDITION EQUAL OR BETTER THAN ORIGINAL CONDITION AND TO THE SATISFACTION OF THE CITY AUTHORITIES.
7. EXCAVATE AND DISPOSE OF ALL EXCESS EXCAVATED MATERIAL, SUCH AS ASPHALT, CURBING AND DEBRIS, OFF SITE AS DIRECTED BY THE ENGINEER AND THE CITY.
8. TOPSOIL TO BE STRIPPED AND STOCKPILED FOR REHABILITATION. CLEAN FILL TO BE PLACED IN FILL AREAS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
9. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING THE SUPPLY, INSTALLATION, AND REMOVAL OF ALL NECESSARY SIGNAGE, DELINEATORS, MARKERS AND BARRIERS.
11. DO NOT ALTER GRADING OF THE SITE WITHOUT PRIOR APPROVAL OF THE ENGINEER/CITY.
12. ALL ROADWAY, PARKING LOT, AND GRADING WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS. THE CONTRACTOR IS TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING.
13. CONTACT THE CITY FOR INSPECTION OF ROUGH GRADING OF PARKING LOTS, ROADWAYS AND LANDSCAPED AREAS PRIOR TO PLACEMENT OF ASPHALT AND TOPSOIL. ALL DEFICIENCIES NOTED SHALL BE RECTIFIED TO THE CITY'S SATISFACTION PRIOR TO PLACEMENT OF ANY ASPHALT, TOPSOIL, SEED & MULCH AND/OR SOD.
14. ALL DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION, IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
15. ELECTRICAL, GAS, TELEPHONE AND TELEVISION SERVICE LOCATIONS ARE SUBJECT TO THE INDIVIDUAL AGENCY:
    - ELECTRICAL SERVICE - HYDRO OTTAWA,
    - GAS SERVICE - ENBRIDGE,
    - TELEPHONE SERVICE - BELL CANADA,
    - TELEVISION SERVICE - ROGERS.
16. INSTALLATION TO BE IN ACCORDANCE WITH CURRENT CODES AND STANDARDS OF APPROVAL AGENCIES HYDRO ONE, BELL AND THE CITY.
17. CONTRACTOR TO ENSURE ALL APPLICABLE OPS SPECIFICATIONS ARE FOLLOWED DURING CONSTRUCTION
18. ALL PROPOSED CURB TO BE CONCRETE BARRIER CURB UNLESS OTHERWISE SPECIFIED.
19. THIS PLAN MUST BE READ IN CONJUNCTION WITH THE GEOTECHNICAL INVESTIGATION COMPLETED BY PATERSON GROUP, DATED DECEMBER 12, 2022.





LOCATION PLAN

LEGEND

BARRIER CURB & CURB DEPRESSION (DC)	SLOPING AT 3:1 UNLESS SPECIFIED
PROPOSED CONCRETE WALKWAY	PROPOSED ELEVATION / EXISTING ELEVATION (95.94 / 93.20)
STORM MANHOLE (MH#)	SWALE ELEVATION (95.94 (S))
CATCHBASIN, CURB INLET OR DITCH INLET (CB / CICB / DI)	TOP/BOTTOM WALL FACE ELEVATIONS (T/W100.50 B/W90.50)
	PROPOSED EMERGENCY OVERLAND FLOW ROUTE
SANITARY MANHOLE (MH#A)	EXISTING DRAINAGE PATTERN
PROPERTY LINE	HEAVY DUTY SILT FENCE BARRIER PER OPSD 219.130
WATER VALVE/CHAMBER	BUILDING ENTRANCE
FIRE HYDRANT	
PROPOSED WALL	PROPOSED GRASS
PROPOSED SIAMESE CONNECTION	PROPOSED PAVERS
	CENTRELINE OF SWALE

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

No.	Revisions	Date
2	ISSUED FOR REVIEW	DEC 14, 2022
1	ISSUED FOR REVIEW	MAY 20, 2022

Check and verify all dimensions before proceeding with the work — Do not scale drawings

SCALE 1 : 200 (0, 10, 20 Metres)

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A 1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

Stamp: LICENSED PROFESSIONAL ENGINEER R. D. FREEL 100163197 2022-12-14 22-1215 PROVINCE OF ONTARIO

Client:
1209 ST. LAURENT LTD PARTNERSHIP
900-2000 PEEL STREET
MONTREAL QC H3A 2W5

Project:
30 STOREY RESIDENTIAL BUILDING
1209 ST LAURENT BOULEVARD

Drawing Title:
PRE-DEVELOPMENT DRAINAGE PLAN

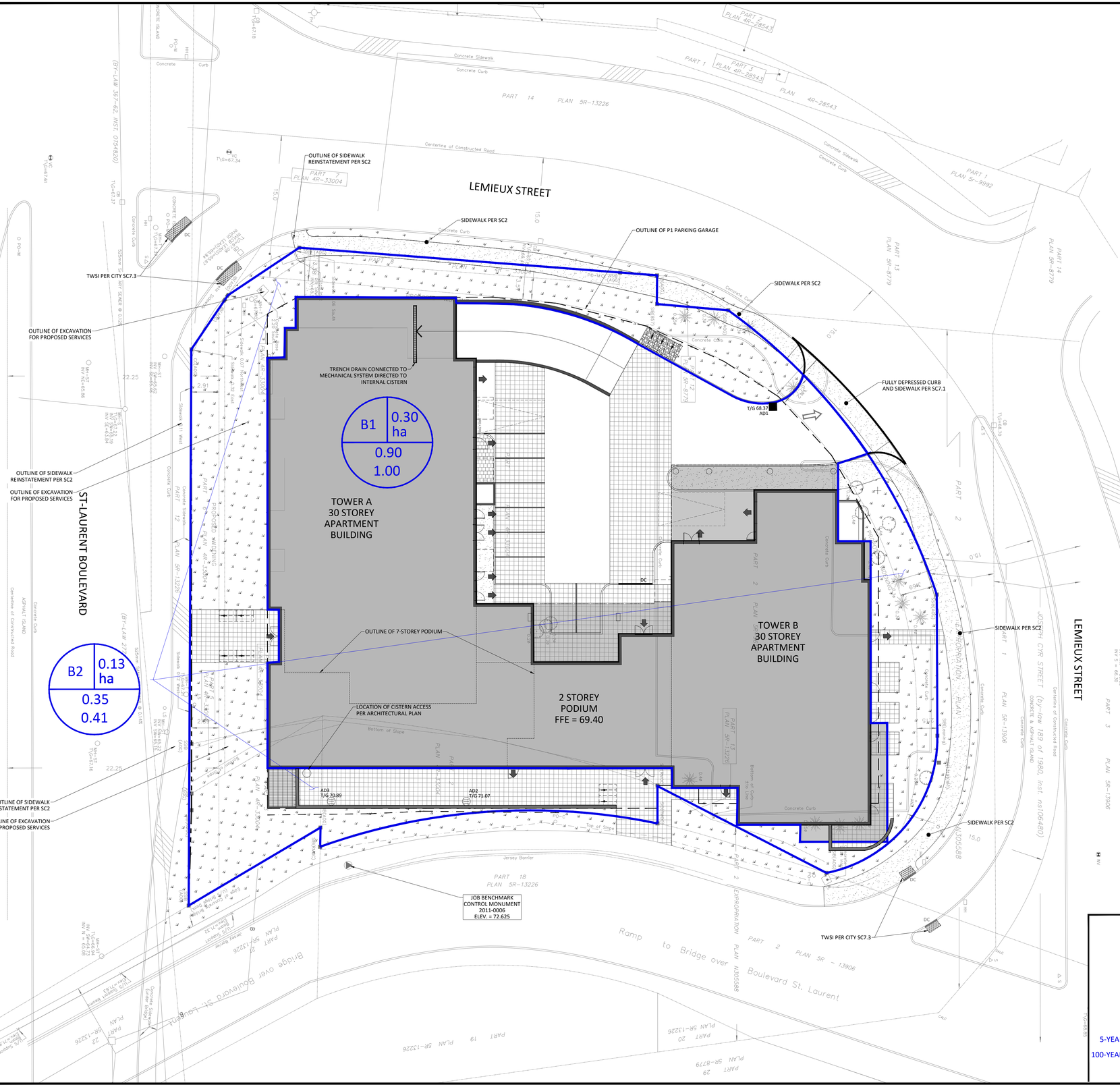
Scale:	1:200	Project Number:	CCO-22-1215
Drawn By:	RRR		
Checked By:	RDF	Drawing Number:	PRE
Designed By:	RDF		

D07-12-22-0089

18763

APPENDIX F
POST-DEVELOPMENT DRAINAGE PLAN

McINTOSH PERRY



GENERAL NOTES

1. THE ORIGINAL TOPOGRAPHY, GROUND ELEVATION AND SURVEY DATA SHOWN ARE SUPPLIED FOR INFORMATION PURPOSES ONLY, AND IMPLY NO GUARANTEE OF ACCURACY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION SHOWN.
2. THIS PLAN IS NOT A CADASTRAL SURVEY SHOWING LEGAL PROPERTY BOUNDARIES AND EASEMENTS. THE PROPERTY BOUNDARIES SHOWN HEREON HAVE BEEN DERIVED INFORMATION SUPPLIED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD. (JOB NO. 21851-21) AND CANNOT BE RELIED UPON TO BE ACCURATE OR COMPLETE. THE PRECISE LOCATION OF THE CURRENT PROPERTY BOUNDARIES AND EASEMENTS CAN ONLY BE DETERMINED BY AN UP-TO-DATE LAND TITLES SEARCH AND A SUBSEQUENT CADASTRAL SURVEY PERFORMED AND CERTIFIED BY AN ONTARIO LAND SURVEYOR.
3. THE CONTRACTOR IS TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY BEFORE COMMENCING CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT.
5. THE CONTRACTOR IS TO DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME ALL RESPONSIBILITY FOR EXISTING UTILITIES WHETHER OR NOT SHOWN ON THESE DRAWINGS. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
6. RESTORE ALL TRENCHES AND SURFACES OF PUBLIC ROAD ALLOWANCES TO CONDITION EQUAL OR BETTER THAN ORIGINAL CONDITION AND TO THE SATISFACTION OF THE CITY AUTHORITIES.
7. EXCAVATE AND DISPOSE OF ALL EXCESS EXCAVATED MATERIAL, SUCH AS ASPHALT, CURBING AND DEBRIS, OFF SITE AS DIRECTED BY THE ENGINEER AND THE CITY.
8. TOPSOIL TO BE STRIPPED AND STOCKPILED FOR REHABILITATION. CLEAN FILL TO BE PLACED IN FILL AREAS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
9. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING THE SUPPLY, INSTALLATION, AND REMOVAL OF ALL NECESSARY SIGNAGE, DELINEATORS, MARKERS AND BARRIERS.
11. DO NOT ALTER GRADING OF THE SITE WITHOUT PRIOR APPROVAL OF THE ENGINEER/CITY.
12. ALL ROADWAY, PARKING LOT, AND GRADING WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS. THE CONTRACTOR IS TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING.
13. CONTACT THE CITY FOR INSPECTION OF ROUGH GRADING OF PARKING LOTS, ROADWAYS AND LANDSCAPED AREAS PRIOR TO PLACEMENT OF ASPHALT AND TOPSOIL. ALL DEFICIENCIES NOTED SHALL BE RECTIFIED TO THE CITY'S SATISFACTION PRIOR TO PLACEMENT OF ANY ASPHALT, TOPSOIL, SEED & MULCH AND/OR SOD.
14. ALL DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION, IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
15. ELECTRICAL, GAS, TELEPHONE AND TELEVISION SERVICE LOCATIONS ARE SUBJECT TO THE INDIVIDUAL AGENCY:
    - ELECTRICAL SERVICE - HYDRO OTTAWA,
    - GAS SERVICE - ENBRIDGE,
    - TELEPHONE SERVICE - BELL CANADA,
    - TELEVISION SERVICE - ROGERS.
16. INSTALLATION TO BE IN ACCORDANCE WITH CURRENT CODES AND STANDARDS OF APPROVAL AGENCIES HYDRO ONE, BELL AND THE CITY.
17. CONTRACTOR TO ENSURE ALL APPLICABLE OPS SPECIFICATIONS ARE FOLLOWED DURING CONSTRUCTION
18. ALL PROPOSED CURB TO BE CONCRETE BARRIER CURB UNLESS OTHERWISE SPECIFIED.
19. THIS PLAN MUST BE READ IN CONJUNCTION WITH THE GEOTECHNICAL INVESTIGATION COMPLETED BY PATERSON GROUP, DATED DECEMBER 12, 2022.

LOCATION PLAN

LEGEND

DC	BARRIER CURB & CURB DEPRESSION		SLOPING AT 3:1 UNLESS SPECIFIED
	PROPOSED CONCRETE WALKWAY	95.94 93.20	PROPOSED ELEVATION EXISTING ELEVATION
○ MH#	STORM MANHOLE	95.94 (S)	SWALE ELEVATION
■ CB CICB DI	CATCHBASIN, CURB INLET OR DITCH INLET	T/W100.50 B/W90.50	TOP/BOTTOM WALL FACE ELEVATIONS
		⇨	PROPOSED EMERGENCY OVERLAND FLOW ROUTE
		⇨	EXISTING DRAINAGE PATTERN
● MH#A	SANITARY MANHOLE		HEAVY DUTY SILT FENCE BARRIER PER OPSD 219.130
— — —	PROPERTY LINE		BUILDING ENTRANCE
	WATER VALVE/CHAMBER		
●	FIRE HYDRANT		
▬	PROPOSED WALL		PROPOSED GRASS
	PROPOSED SIAMESE CONNECTION	▦	PROPOSED PAVERS
		— · —	CENTRELINE OF SWALE

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

No.	Revisions	Date
2	ISSUED FOR REVIEW	DEC 14, 2022
1	ISSUED FOR REVIEW	MAY 20, 2022

Check and verify all dimensions before proceeding with the work

Do not scale drawings

SCALE 1 : 200

0 10 20 Metres

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A 1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

Stamp:
R. D. FREEL
100163197
2022-12-14
22-1215

Client:
1209 ST. LAURENT LTD PARTNERSHIP
900-2000 PEEL STREET
MONTREAL QC H3A 2W5

Project:
30 STOREY RESIDENTIAL BUILDING
1209 ST LAURENT BOULEVARD

Drawing Title:
POST-DEVELOPMENT DRAINAGE PLAN

Scale: 1:200
Drawn By: FV
Checked By: RDF
Designed By: RDF
Project Number: CCO-22-1215
Drawing Number: POST

D07-12-22-0089

18763

FILENAME: U:\Ottawa\01 Project - Proposals\2022 Jobs\CCO\CCO-22-1215 - Canderel 1209 St. Laurent Blvd\12 - Drawings\CCO-22-1215_Presentation.dwg
LAST SAVED: Friday, December 16, 2022 LAST SAVED BY: r.robineau
LAST PLOTTED: Tuesday, December 20, 2022 CTB FILE USED: ----

APPENDIX G
STORMWATER MANAGEMENT CALCULATIONS

McINTOSH PERRY

CCO-22-1215 - 1209 St Laurent Boulevard - Runoff Calculations

Pre-Development Runoff Coefficient

Drainage Area	Area (ha)	Impervious Area (m^2)	C	Gravel Area (m^2)	C	Pervious Area (m^2)	C	C_{AVG} 2/5-Year	C_{AVG} 100-Year
A1	0.428	1,022.61	0.90	0.00	0.60	3,256.29	0.20	0.37	0.43

Pre-Development Runoff Calculations

Drainage Area	Area (ha)	C 2/5-Year	C 100-Year	Tc (min)	I (mm/hr)			Q (L/s)		
					2-Year	5-Year	100-Year	2-Year	5-Year	100-Year
A1	0.428	0.37	0.43	10	76.8	104.2	178.6	33.56	45.52	91.17
Total	0.428							33.56	45.52	91.17

Post-Development Runoff Coefficient

Drainage Area	Area (ha)	Impervious Area (m^2)	C	Gravel Area (m^2)	C	Pervious Area (m^2)	C	C_{AVG} 2/5-Year	C_{AVG} 100-Year	
B1	0.295	2,939.07	0.90	0.00	0.60	11.10	0.20	0.90	1.00	Controlled
B2	0.133	291.21	0.90	0.00	0.60	1,037.52	0.20	0.35	0.41	Uncontrolled

Post-Development Runoff Calculations

Drainage Area	Area (ha)	C 2/5-Year	C 100-Year	Tc (min)	I (mm/hr)			Q (L/s)		
					2-Year	5-Year	100-Year	2-Year	5-Year	100-Year
B1	0.295	0.90	1.00	10	76.8	104.2	178.6	56.5	76.68	146.03
B2	0.133	0.35	0.41	10	76.8	104.2	178.6	10.0	13.60	27.33
Total	0.428							66.55	90.29	173.36

Required Restricted Flow

Drainage Area	Area (ha)	C	Tc (min)	I (mm/hr)	Q (L/s)
				5-Year	5-Year
A1	0.428	0.37	10	104.2	45.52
Total	0.428				45.52

Post-Development Restricted Runoff Calculations

Drainage Area	Unrestricted Flow (L/s)			Restricted Flow (L/s)			Storage Required (m^3)			Storage Provided (m^3)		
	2-Year	5-Year	100-Year	2-Year	5-Year	100-Year	2-Year	5-Year	100-Year	2-Year	5-Year	100-Year
B1	56.53	76.68	146.03	6.93	9.41	18.19	41.43	55.46	103.86	41.43	55.46	103.86
B2	10.03	13.60	27.33	10.03	13.60	27.33						
Total	66.55	90.29	173.36	16.96	23.01	45.52	41.43	55.46	103.86	41.43	55.46	103.86

CCO-22-1215 - 1209 St Laurent Boulevard - Runoff Calculations

Storage Requirements for Area B1

2-Year Storm Event

Tc (min)	I (mm/hr)	Runoff (L/s) B1	Allowable Outflow (L/s)	Runoff to be Stored (L/s)	Storage Required (m^3)
40	32.9	24.19	6.93	17.26	41.42
41	32.3	23.77	6.93	16.84	41.43
42	31.8	23.37	6.93	16.44	41.43
43	31.2	22.99	6.93	16.06	41.42
44	30.7	22.61	6.93	15.68	41.41

Maximum Storage Required 2-year =	41.4 m^3

5-Year Storm Event

Tc (min)	I (mm/hr)	Runoff (L/s) B1	Allowable Outflow (L/s)	Runoff to be Stored (L/s)	Storage Required (m^3)
38	45.8	33.72	9.41	24.31	55.42
39	45.0	33.10	9.41	23.69	55.45
40	44.2	32.52	9.41	23.11	55.46
41	43.4	31.95	9.41	22.54	55.46
42	42.7	31.41	9.41	22.00	55.45

Maximum Storage Required 5-year =	55.5 m^3

100Year Storm Event

Tc (min)	I (mm/hr)	Runoff (L/s) B1	Allowable Outflow (L/s)	Runoff to be Stored (L/s)	Storage Required (m^3)
35	82.6	67.54	18.19	49.35	103.63
36	81.0	66.21	18.19	48.02	103.73
37	79.4	64.95	18.19	46.76	103.81
38	77.9	63.74	18.19	45.55	103.85
39	76.5	62.57	18.19	44.38	103.86
40	75.1	61.46	18.19	43.27	103.84
41	73.8	60.38	18.19	42.19	103.79
42	72.6	59.35	18.19	41.16	103.72

Maximum Storage Required 100-year =	103.9 m^3

2-Year Storm Event Storage Summary

Storage Available (m^3) = 41.4	*
Storage Required (m^3) = 41.4	

5-Year Storm Event Storage Summary

Storage Available (m^3) = 55.5	*
Storage Required (m^3) = 55.5	

100-Year Storm Event Storage Summary

Storage Available (m^3) = 103.9	*
Storage Required (m^3) = 103.9	

Time of Concentration Pre-Development

Drainage Area ID	Sheet Flow Distance (m)	Slope of Land (%)	Tc (min) (5-Year)	Tc (min) (100-Year)
A1	33	2.80	10	9

* Therefore, a Tc of 10 can be used

Tc= (3.26(1.1-c)L^0.5/S^0.33)

c= Balanced Runoff Coefficient

L= Length of Drainage Area

S= Average Slope of Watershed

STORM SEWER DESIGN SHEET

PROJECT: 30-Storey Apartment
LOCATION: 1209 St. Laurent
CLIENT: Canderel Management Inc.

McINTOSH PERRY

LOCATION				CONTRIBUTING AREA (ha)				RATIONAL DESIGN FLOW										SEWER DATA								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
STREET	AREA ID	FROM MH	TO MH	C-VALUE	AREA	INDIV AC	CUMUL AC	INLET (min)	TIME IN PIPE	TOTAL (min)	i (5) (mm/hr)	i (10) (mm/hr)	i (100) (mm/hr)	5yr PEAK FLOW (L/s)	10yr PEAK FLOW (L/s)	100yr PEAK FLOW (L/s)	FIXED FLOW (L/s)	DESIGN FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	PIPE SIZE (mm)			SLOPE (%)	VELOCITY (m/s)	AVAIL CAP (5yr)	
																					DIA	W	H			(L/s)	(%)
St. Laurent Boulevard	B1	BLDG	EX. MH	0.90	0.30	0.26	0.26	10.00	0.13	10.13	104.19	122.14	178.56	76.68				47.81	62.04	9.81	250			1.00	1.224	14.23	22.94%

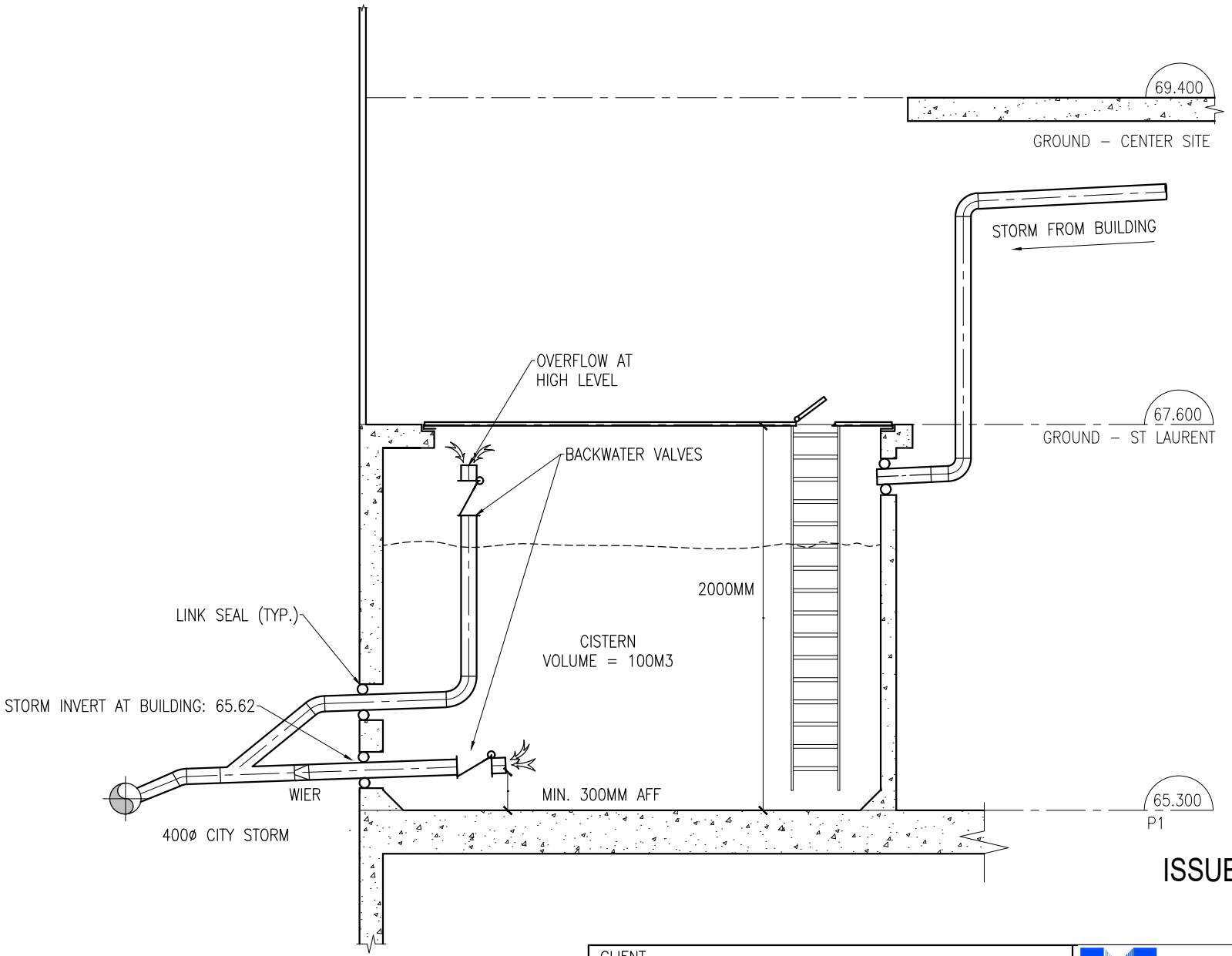
Definitions:
Q = 2.78CIA, where:
Q = Peak Flow in Litres per Second (L/s)
A = Area in Hectares (ha)
i = Rainfall intensity in millimeters per hour (mm/hr)
[i = 998.071 / (TC+6.053)^0.814] 5 YEAR
[i = 1174.184 / (TC+6.014)^0.816] 10 YEAR
[i = 1735.688 / (TC+6.014)^0.820] 100 YEAR

Notes:
1. Mannings coefficient (n) = 0.013

Designed: RRR
Checked: RDF
Project No.: CCO-22-1215

No.	Revision	Date
1.	Issued For Review	2022-05-20

Date: 2022-05-20
Sheet No: 1 of 1



ISSUED FOR SITE PLAN
2022-05-20

CLIENT
CANDEREL

TITLE
CISTERN SCHEMATIC

Goodkey Weedmark
Consulting Engineers
1688 Woodward Dr.
Ottawa Ontario
Canada K2C 3R8
613 727–5111 Voice
613 727–5115 Fax
www.gwal.com Web

DATE	REVISION	DRAWING
2022–05–20	–	M1

APPENDIX H
CITY OF OTTAWA DESIGN CHECKLIST

McINTOSH PERRY

City of Ottawa

4. Development Servicing Study Checklist

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

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

4.1 General Content

Criteria	Location (if applicable)
☐ Executive Summary (for larger reports only).	N/A
☐ Date and revision number of the report.	On Cover
☐ Location map and plan showing municipal address, boundary, and layout of proposed development.	Appendix E
☐ Plan showing the site and location of all existing services.	Site Servicing Plan (C102)
☐ Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.	1.1 Purpose 1.2 Site Description 6.0 Stormwater Management
☐ Summary of pre-consultation meetings with City and other approval agencies.	Appendix A
☐ Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.	1.1 Purpose 1.2 Site Description 6.0 Stormwater Management
☐ Statement of objectives and servicing criteria.	3.0 Pre-Consultation Summary

☐ Identification of existing and proposed infrastructure available in the immediate area.	N/A
☐ Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).	Site Grading, Drainage, Sediment & Erosion Control Plan (C101)
☐ Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.	Site Grading, Drainage, Sediment & Erosion Control Plan (C101)
☐ Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.	N/A
☐ Proposed phasing of the development, if applicable.	N/A
☐ Reference to geotechnical studies and recommendations concerning servicing.	Section 2.0 Backround Studies
☐ All preliminary and formal site plan submissions should have the following information: ○ Metric scale ○ North arrow (including construction North) ○ Key plan ○ Name and contact information of applicant and property owner ○ Property limits including bearings and dimensions ○ Existing and proposed structures and parking areas ○ Easements, road widening and rights-of-way ○ Adjacent street names	Site Grading, Drainage, Sediment & Erosion Control Plan (C101)

4.2 Development Servicing Report: Water

Criteria	Location (if applicable)
☐ Confirm consistency with Master Servicing Study, if available	N/A
☐ Availability of public infrastructure to service proposed development	N/A
☐ Identification of system constraints	N/A
☐ Identify boundary conditions	N/A
☐ Confirmation of adequate domestic supply and pressure	N/A
☐ Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.	Appendix B
☐ Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.	N/A
☐ Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design	N/A
☐ Address reliability requirements such as appropriate location of shut-off valves	N/A
☐ Check on the necessity of a pressure zone boundary modification.	N/A
☐ Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range	N/A

☐ Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.	N/A
☐ Description of off-site required feedermains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.	N/A
☐ Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	Appendix B
☐ Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.	N/A

4.3 Development Servicing Report: Wastewater

Criteria	Location (if applicable)
☐ Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).	N/A
☐ Confirm consistency with Master Servicing Study and/or justifications for deviations.	N/A
☐ Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.	N/A
☐ Description of existing sanitary sewer available for discharge of wastewater from proposed development.	Section 5.2 Sanitary Sewer

☐ Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)	N/A
☐ Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	N/A
☐ Description of proposed sewer network including sewers, pumping stations, and forcemains.	Section 5.2 Sanitary Sewer
☐ Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).	N/A
☐ Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	N/A
☐ Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	N/A
☐ Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	N/A
☐ Special considerations such as contamination, corrosive environment etc.	N/A

4.4 Development Servicing Report: Stormwater Checklist

Criteria	Location (if applicable)
☐ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)	Section 6.0 Stormwater Management
☐ Analysis of available capacity in existing public infrastructure.	N/A
☐ A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.	Pre & Post-Development Plans
☐ Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5-year event (dependent on the receiving sewer design) to 100-year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.	Section 6.0 Stormwater Management
☐ Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Section 6.0 Stormwater Management
☐ Description of the stormwater management concept with facility locations and descriptions with references and supporting information.	Section 6.0 Stormwater Management
☐ Set-back from private sewage disposal systems.	N/A
☐ Watercourse and hazard lands setbacks.	N/A
☐ Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.	N/A
☐ Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	N/A
☐ Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5-year return period) and major events (1:100-year return period).	Appendix F

☐ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	Site Grading, Drainage, Sediment & Erosion Control Plan
☐ Calculate pre-and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.	Section 6.0 Stormwater Management Appendix F
☐ Any proposed diversion of drainage catchment areas from one outlet to another.	Section 6.0 Stormwater Management
☐ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.	Section 6.0 Stormwater Management
☐ If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.	Appendix A
☐ Identification of potential impacts to receiving watercourses	N/A
☐ Identification of municipal drains and related approval requirements.	N/A
☐ Descriptions of how the conveyance and storage capacity will be achieved for the development.	Section 6.0 Stormwater Management
☐ 100-year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	Site Grading, Drainage, Sediment & Erosion Control Plan (C101)
☐ Inclusion of hydraulic analysis including hydraulic grade line elevations.	N/A

☐ Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.	Section 7.0 Sediment & Erosion Control
☐ Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.	N/A
☐ Identification of fill constraints related to floodplain and geotechnical investigation.	N/A

4.5 Approval and Permit Requirements: Checklist

The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development as well as the relevant issues affecting each approval. The approval and permitting shall include but not be limited to the following:

Criteria	Location (if applicable)
☐ Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.	N/A
☐ Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.	N/A
☐ Changes to Municipal Drains.	N/A
☐ Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)	N/A

4.6 Conclusion Checklist

Criteria	Location (if applicable)
☐ Clearly stated conclusions and recommendations	Section 8.0 Summary Section 9.0 Recommendations
☐ Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.	All are stamped
☐ All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario	All are stamped