Bertone Montreal Rod LP

Assessment of Adequacy of Public Services

1649 Montreal Road & 741 Blair Road

City of Ottawa, Ontario

CIMA+ file number: A001101
May 7, 2021

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1. Introduction

CIMA+ was retained by 10869279 Canada Inc. to prepare an Assessment of Adequacy of Public Services Report for the proposed construction of a 26-storey mixed-use (ground floor retail and 243 residential units) building located at 1649 Montreal Road and 741 Blair Road in Ottawa, Ontario.

The purpose of this assessment is to confirm that the proposed development can be adequately serviced by the existing municipal infrastructure (water, sanitary, and storm) surrounding the site. This assessment shall be used in support of a Zoning By-law Amendment (ZBLA) to allow for an increase in the number of building storeys prior to proceeding with Site Plan Control.

1.1 Site Description and Proposed Development

The site is located at the northeast quadrant of the intersection of Blair Road and Montreal Road (refer to **Figure 1** below). 1649 Montreal Road is currently comprised of a garage (vehicle repair shop and sales) with surface parking, while 741 Blair Road comprises of a single-family residential dwelling. The combined site area (1649 Montreal and 741 Blair) measures approximately 0.49 ha.

Generally, the site is bounded by private residential dwellings to the north, a church to the east, Montreal Road to the south, and Blair Road to the west.

Figure 1: Site Location - Plan View.

The proposed development is a 26-storey, mixed use residential and commercial tower with 243 residential units, expected to include approximately 454 residents, and three (3) underground parking levels comprising the entire site area. The commercial floor space on the ground floor measures approximately 770 m² and the amenity space measures approximately 120 m². Refer to **Figure 2** for a conceptual site plan of the proposed development (prepared by Roderick Lahey Architects Inc.).

Figure 2: Conceptual Site Plan.

1.2 Review of Available Background Documentation

The following design guidelines have been used to estimate the theoretical servicing requirements for the proposed development; while geoOttawa and the available utility drawings provided by the City of Ottawa Information Centre have been used to determine the existing municipal services fronting the site. Refer to **Appendix A** for available utility plans provided by the City.

- Ottawa Sewer Design Guidelines (October 2012), including
  - Technical Bulletins ISTB-2018-01.
- Ottawa Design Guidelines – Water Distribution (2010), including
  - Technical Bulletins ISTB-2018-02, ISDTB-2014-02 and ISD 2010-02.
- Ministry of the Environment Design Guidelines for Sewage Works (2008).
- Ministry of the Environment Stormwater Management Planning and Design Manual (2003).
- Ministry of the Environment Design Guidelines for Drinking-Water Systems (2008); and
- Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection (1999).

1.3 Existing Infrastructure

As identified using geoOttawa and the available Utility Record Drawings provided by the City of Ottawa Information Centre, the following municipal infrastructure is available within the right-of-way fronting the proposed development site (refer to **Appendix B** for Existing Conditions Plan).

Montreal Road

- 305 mm diameter DI watermain.
- 250 mm diameter Concrete sanitary sewer (**preferred sanitary connection point**).
- 600 mm diameter Concrete storm sewer.

Blair Road

- 305 mm diameter DI watermain (**preferred primary and secondary water connection points separated by a new isolation valve**).
- 250 mm diameter Concrete sanitary sewer.
- 525 mm diameter Concrete storm sewer (**preferred storm connection point**).

1.4 Consultation and Permits

In response to the pre-consultation requirements defined in the City's Development Servicing Study Checklist, the following agencies were consulted in support of the preparation of this report. The Development Servicing Study Checklist as well as all relevant correspondence with the consulted agencies can be found in **Appendix A**.

City of Ottawa

The City of Ottawa Information Centre was contacted to obtain any Reports, Studies, Engineering, and/or Utility Plans including sanitary sewer, storm sewer, watermain, gas, etc. within or adjacent to the site location. The available engineering plans and utility plans were provided. No existing reports or studies were available.

CIMA+ also contacted Sara Mashaie from the City of Ottawa's Planning, Infrastructure and Economic Development Department to obtain any site-specific servicing and stormwater management design criteria for the proposed development. The provided comments and criteria relevant to the Assessment of Adequacy of Public Services are referenced within the appropriate sections of this report, while the remaining requirements for design will be assessed and addressed at the detailed design stage (Site Plan Control).

Rideau Valley Conservation Authority (RVCA)

The subject site falls under the jurisdiction of the Rideau Valley Conservation Authority (RVCA). CIMA+ contacted Jamie Batchelor from the RVCA to identify any Natural Heritage/Hazards features that may impact the development as well as any Storm Water Management Criteria for the site and required approvals/permits. These criteria are addressed in *Section 4* of this Report.

Ministry of the Environment, Conservation and Parks (MECP)

CIMA+ has determined that the proposed development in question falls within the exemption requirements for an Environmental Compliance Approval (ECA) as per O.Reg. 525/98, section 3(a), and Ontario Water Resources Act section 53.6(c) when considering the following:

1. Currently comprised of two (2) parcels of land that are to be combined into one **(1) parcel**, the existing 0.49-ha site currently consists of a garage (vehicle repair shop and sales) which is zoned Arterial Mainstreet (AM10) and a single family home which is zoned Residential Third Density (R3K).
2. The proposed sewage works, and stormwater management facility will service a single parcel of land; and
3. The property does not discharge into a combined sewer and it will not be used for industrial purposes.

Christina Des Rochers of the local MECP district office has confirmed that the project meets the exemption requirement (refer to **Appendix A** for related correspondence).

2. Water Servicing

2.1 Water Supply Design Criteria

The design criteria for determining the water demand requirements for the proposed development follow the parameters outlined in the Ottawa Design Guidelines – Water Distribution (2010) and associated technical bulletins, as well as the MOE Design Guidelines for Drinking-Water Systems (2008). Namely, the following parameters have been used in determining the water demands:

Table 2-1: Water Supply Design Criteria

Design Criterion[1]	Residential Areas	Commercial Areas
Average Day Demand	350 L/capita/day	28,000 L/gross hectare/day
Maximum Daily Demand	3.0 × average daily demand[1]	1.5 × average daily demand
Maximum (Peak) Hour Demand	4.5 × average daily demand[1]	1.8 × maximum daily demand
Populations – 1 Bedroom Apartment	1.4 Persons Per Unit	N/A
Populations – 2 Bedroom Apartment	2.1 Persons Per Unit	N/A
Desired Operating Pressure under Normal Operating Conditions	50 to 70 psi	
Minimum Operating Pressure under Normal Operating Conditions	40 psi	
Maximum Operating Pressure under Normal Operating Conditions	80 psi	
Minimum Operating Pressure under Maximum Daily Demand + Fire Flow	20 psi	

[1] Note that residential peaking factors were selected from **Table 3-3** of the MECP Design Guidelines for Drinking-Water Systems for 0 to 500 persons.

In addition to those design criteria identified in **Table 2-1**, the following comments and criteria identified by the City as part of the pre-consultation must be considered in the water supply servicing strategy:

- The subject site is located within the MONT pressure zone.
- Residential buildings with a basic day demand greater than 50 m³/day (0.57 L/s) are required to be connected to a minimum of two (2) water services separated by an isolation valve to avoid a vulnerable service area. Thus, if the basic day demand for this site exceeds 50 m³/day there shall be a primary and secondary water service to Montreal Rd. and/or Blair Rd. to provide redundant supply, separation by an isolation valve to avoid a vulnerable service area.
- Fire flow demand requirements shall be based on the Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection 1999 and Technical Bulletin ISTB-2018-02.
- Exposure separation distances shall be defined on a figure to support the FUS calculation and required fire flow (RFF).
- Hydrant capacity shall be assessed if relying on any public hydrants to provide fire protection, particularly if high design fire flows are being proposed, to demonstrate the Required Fire Flow (RFF) can be achieved. Identification of which hydrants are being considered to meet the RFF on a fire hydrant coverage figure is required as part of the boundary conditions request.

2.2 Proposed Water Supply Servicing and Calculations

Water Demands

The water supply demands for the proposed development are presented in **Table 2-2** below. The demands were developed utilizing the development statistics (i.e., residential units and commercial floor area) provided by Roderick Lahey Architects Inc. and those design criteria identified in *Section 2.1*. Refer to **Appendix D** for detailed calculations.

Table 2-2: Water Demands

Demand Type	Average Daily Demand (L/s)	Maximum Daily Demand (L/s)	Maximum (Peak) Hour Demand (L/s)
Residential	1.84	5.52	8.28
Commercial	0.03	0.04	0.08
Total	**1.87**	**5.56**	**8.35**

Given the basic day demand exceeds 50 m³/day (or 0.57 L/s) a minimum of two (2) water service connections, separated by an isolation valve, are required to provide redundant supply, and avoid a vulnerable service area.

Proposed Water Supply Connection Point(s)

A primary and secondary service connection are proposed on Blair Road. A new isolation valve between the two connection points will be utilized to avoid a vulnerable service area. Refer to **Appendix C** for proposed connection points.

Required Fire Flow (RFF)

The required fire flow for the site was developed using the Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection 1999 and Technical Bulletin ISTB-2018-02. It was determined that an RFF of **5,000 L/min (83.33 L/s)** would be required to provide adequate protection.

It was assumed that multiple municipal hydrants would be required to meet the fire flow requirements and a fire hydrant coverage figure was prepared in support of the boundary conditions request from the City.

Refer to **Appendix D** for detailed calculations, including supporting figures for exposure distances and hydrant coverage.

Municipal Boundary Conditions

Using the proposed demands, required fire flow and supporting figures the City provided boundary conditions for hydraulic analysis for current conditions, based on computer model simulation. The boundary conditions are as follows:

Table 2-3: Watermain Boundary Conditions

Hydraulic Condition (HGL = Hydraulic Grade Line)	Boundary Condition (Head) (m)
	Blair Rd. 305 mm dia.
Minimum HGL	146.5
Maximum HGL	146.9
Maximum Day + Fire Flow	144.4

Hydraulic Analysis – Water Supply Adequacy

A hydraulic analysis was completed utilizing the boundary condition information provided by the City for the proposed development in order to confirm that there is adequate flow and pressure in the water distribution system to meet the required water demands. The following Table summarizes the available flow and pressure in the system under each demand scenario:

Table 2-4: Water Supply Adequacy - Hydraulic Analysis

Demand Type	Proposed Demand (L/s)	Available Flow/Pressure		Desired Flow/Pressure Objective	Flow/Pressure Objective Achieved?
		Design Operating Pressure (Relative Head) (m)	Design Operating Pressure (psi)		
Average Daily Demand	1.87	48.8	69	50 to 70 psi	Yes
Maximum Day Demand + Fire Flow	88.89	46.3	66	≥ 20 psi	Yes
Maximum (Peak) Hour Demand	8.35	48.4	69	50 to 70 psi	Yes

NOTES:

1. Required fire flow demand was calculated as **5,000 L/min (83.33 L/s)**.
2. The minimum HGL elevation at Connection Point on Blair is **146.5 m** and the maximum HGL elevation is **146.9 m**.
3. Boundary conditions for Connection to Blair Road assumes a ground elevation of 98.1 m.

2.3 Water Supply Summary and Conclusions

The water supply design for the proposed development follows the parameters outlined in the Ottawa Design Guidelines – Water Distribution (2010) and associated technical bulletins, as well as the MOE Design Guidelines for Drinking-Water Systems (2008).

There is adequate flow and pressure in the water distribution system to meet the required water demands for the proposed development.

3. Sanitary Servicing

3.1 Sanitary Servicing Design Criteria

The design criteria for determining the sanitary peak flow rates for the proposed development follow the parameters outlined in the City of Ottawa Sewer Design Guidelines, 2012 and City of Ottawa Technical Bulletin ISTB-2018-01. Namely, the following parameters have been used in determining the peak sanitary flow rates:

Table 3-1: Sanitary Peak Flow Determination Design Criteria

Design Criterion	Residential Areas	Commercial Areas
Base Flow	280 L/capita/day	28,000 L/gross hectare/day
Populations – 1 Bedroom Apartment	1.4 Persons Per Unit	N/A
Populations – 2 Bedroom Apartment	2.1 Persons Per Unit	N/A
Peaking Factor	Determined by Harmon Equation $P.F. = 1 + \left[\frac{1}{4 + \left(\frac{P}{1{,}000}\right)^{\frac{1}{2}}}\right] \times 0.8$ (P = population; P.F. = peaking factor) Maximum P.F. = 4.0 Minimum P.F. = 2.0	1.5 if Commercial Contribution > 20% 1.0 if Commercial Contribution < 20%
Dry Weather Infiltration Rate	0.05 L/s/effective gross hectare (for all areas)	
Wet Weather Infiltration	0.28 L/s/effective gross hectare (for all areas)	
Total Infiltration Allowance	0.33 L/s/effective gross hectare (for all areas)	

3.2 Proposed Sanitary Servicing and Calculations

Proposed Sanitary Peak Flows

The estimated peak flows from the proposed development based on the design criteria listed in **Table 3-1** are outlined in the following Table.

Table 3-2: Peak Sanitary Flows

Flow Type	Total Flow Rate (L/s)
Total Estimated Average Dry Weather Flow Rate	1.50
Total Estimate Peak Dry Weather Flow Rate	5.03
Total Estimate Peak Wet Weather Flow Rate	5.09

Refer to **Appendix E** for detailed calculations.

Proposed Sanitary Service Connection Point

The proposed sanitary service will connect to the existing 250 mm diameter Concrete sanitary sewer within the right-of-way of Montreal Road. Refer to **Appendix C** for proposed connection points.

3.3 Sanitary Servicing Summary and Conclusions

The sanitary servicing design for the proposed development conforms to the requirements of the City of Ottawa Sewer Design Guidelines, 2012, and Technical Bulletin ISTB-2018-01.

Peak wastewater demands were provided to the City, who confirmed that the sanitary system in the area is currently flooding and could not accept additional sanitary flow.

Due to this outcome, CIMA+ and representatives from 10869279 Canada Inc. and Bertone Development Corporation met with Eric Tousignant and Sara Mashaie of the City of Ottawa to discuss any alternatives. Mr. Tousignant advised that the flooding is due to excess extraneous flows from underground infiltration and in holes in maintenance hole covers. He suggested that these maintenance hole covers should be replaced with solid sealed maintenance hole covers as part of the development project, which was accepted by all parties involved. This is expected to offset the added sanitary flows from this development.

Therefore, the added wastewater demands to the City sanitary system has been confirmed. Refer to **Appendix E** for all related correspondence with the City.

4. Storm Servicing and Stormwater Management

4.1 Background

As previously mentioned, the subject site of 1649 Montreal Road currently occupies a garage (vehicle repair shop and sales) with surface parking. Based on available recent survey information the site is relatively steep and generally follows the gradient along Blair Road with a steep slope to the north and gentler to the south near Montreal Road. The gradient is from north to south with an approximate change in gradient of 1 m across the site. The site is approximately 41% impervious with no existing stormwater measures on site (i.e., catch basins, sewers, etc.) and it is thus assumed that there are no current stormwater management controls on site. As such storm runoff generally sheet flows and outlets to Montreal Road to the southwest, near the intersection with Blair. Refer to Pre-development Drainage Area Map in **Appendix F**.

The portion of the site located at 741 Blair Road occupies a single-family dwelling, with asphalt and gravel driveway, stone pathway, shed, and grassed lawn area. Again, it appears that there are no current stormwater management controls on site. Based on the available topographic information the direction of major overland flow is from north to south following Blair with a minimum elevation of 97.93 m at the lot limit with 1649 Montreal Road and a maximum elevation of 103.89 m at the northeast lot limit. Given there are no rear lot drainage features identified on geoOttawa it is expected that the outlet for this site area is to Blair Rd. at the driveway location.

Considering there are no current stormwater systems on site and that it is assumed that there are no flow attenuation controls the anticipated peak flows for the existing site are as follows (refer to **Appendix F**):

Table 4-1: Pre-Development Peak Release Flows – Existing Site

Storm Event	Release Flow (L/s)
5-year	66.4
100-year	142.9

Ultimately storm runoff from the site enters the municipal system along Blair Road and Montreal Road, and flows through the storm sewer on Blair south of Montreal. Stormwater ultimately discharges to Green's Creek approximately 3.3 km downstream from the site. Refer to **Appendix F** for sketch demonstrating the flow path to the ultimate outlet.

The site is located in an uncontrolled sewer system area (i.e., no inlet control devices) therefore the 100-year hydraulic grade line (HGL) can reach ground level. This will need to be taken into consideration in designing the underground storage elements.

4.2 Storm Servicing Strategy and Design Criteria

The design of the major and minor storm systems must ensure that the following criteria are upheld under post-development conditions, in keeping with the requirements of the City and the Rideau Valley Conservation Authority (refer to **Appendix A**).

- The allowable release rate for the site shall coincide with the 5-year storm event under pre-development conditions.
- The allowable release rate shall take into consideration any increase in uncontrolled runoff from the boulevard being converted to a hard surface (concrete, interlocking paving stone, etc.).
- The pre-development runoff coefficient (C) shall be a maximum equivalent 'C' of 0.50, or the actual existing site runoff coefficient, whichever is less.
- The pre-development Time of Concentration (Tc) shall be calculated using an appropriate method and must not be less than 10 minutes.
- A Tc of 10 minutes shall be used for all post-development calculations.
- Storm runoff in excess of the allowable 5-year pre-development release rate, up to and including the 100-year storm event, must be detained on site.
- Where an underground storage tank or cistern is proposed and calculated utilizing the Modified Rational Method an average release rate equal to 50% of the peak allowable rate shall be applied to estimate the required volume to account for fluctuating head and release rate.
- Given the receiving storm sewer is subject to surcharge, the hydraulic grade line under surcharged conditions must be considered in the design of underground retention.
- Overland flow will generally be directed to Montreal Road.
- In order to address concerns about roadway drainage spilling into the underground parking, the entrance to the underground parking will be a minimum of 300 mm higher than the spill point to the street.
- Given the scope of the driveway including turning circle, the RVCA would require onsite water quality control of 80% Total Suspended Solids (TSS) removal. Considering that rainwater from landscaping and rooftop drainage is considered to be clean for the purpose of protecting water

quality and aquatic habitat, the RVCA would not require any additional onsite water quality control measures for these areas specifically save and except best management practices.

- The RVCA is open to low impact development (LID) measures for providing water quality treatment.

4.3 Proposed Storm Servicing and Stormwater Management Design and Calculations

Proposed Storm Service Connection Point

Based on communications with the City, it is understood that the preferred and anticipated stormwater connection from the proposed development will discharge to the existing 525 mm concrete storm sewer on Blair Road. Refer to **Appendix C** for proposed connection points.

Pre-development (Allowable) Release Rates

The pre-development release rates are summarized in the following Table:

Table 4-2: Pre-development (Allowable) Release Rate (2-year event)

Catchment ID	Area (ha)	Runoff Coefficient (C)	Time of Concentration (Tc) (minutes)	Rainfall Intensity (mm/hr)	Release Rate (L/s)
Subject Site	0.488	0.47	10	104.19	**66.4**

The storm runoff under post-development conditions for the site area must be controlled to the allowable 2-year pre-development release rate of **66.4 L/s**, up to and including the 100-year storm event.

Post Development Flow Rates and Stormwater Quantity Control

The anticipated post-development flow rates and required storage when controlled to the allowable pre-development release rate are summarized in the following Table.

Table 4-3: Post-development Flow Rate and Storage Summary

Control Area	100-year Release Rate (L/s)	100-year Surface Storage Volume (m^3)
Building Roof Areas (A1)	51.0	54.5
Landscaped Area to Back (A2)	2.0	5.3
Landscaped Area fronting Blair (A3)	2.0	13.9
Landscaped Area fronting Montreal (A4)	7.6	3.7
Unattenuated Areas	3.8	-
Total	66.4	77.3

The total post development release rate takes into consideration the increase in uncontrolled runoff from the boulevard (unattenuated areas) being converted to a hard surface (concrete, interlocking paving stone, etc.). Thus, the remaining allowable release rate for the attenuated site area is **62.6 L/s**.

As demonstrated in **Table 4-3** an anticipated storage volume of **77.3 m^3** shall be required on-site via underground storage (internal cistern) to restrict stormwater discharge to the allowable release rate of **66.4 L/s**. Refer to **Appendix F** for detailed stormwater storage calculations.

The storm water tank will be equipped with backflow prevention as well as a pump to meet the SWM design intent and ensure the proposed private storm sewer system will not be overwhelmed in the event the 525 mm diameter storm sewer within Blair Road becomes surcharged.

Below ground storage requirements have been determined using the full flow rate considering a pump will be provided at the storm tank outlet to provide a consistent flow rate.

Actual storage volumes will be finalized at the detailed design stage considering the following factors:

- Further analysis will be completed at detailed design addressing the stage-storage relationship within the proposed cistern using a dynamic model.
- Hydraulic grade line (HGL) analysis along the existing municipal storm system during a surcharge event and the impacts on available storage within the cistern will be considered.
- Cistern details and information including detailed cross-section, HWLs, release rate, volume, location, size (dimensions), control device, emergency flow outlet and backflow protection, etc. An appropriate emergency overflow location will need to be determined and documented. Backup power supply will also be necessary if pump controlled.
- Opportunities for surface and/or roof retention will also be considered at the detailed design stage once grading restrictions, available ponding areas, roof drain locations, drain types and scupper locations have been addressed.

Stormwater Quality Control

Rainwater from landscaping and rooftop drainage is considered to be clean for the purpose of protecting water quality and aquatic habitat. Furthermore, no surface parking is proposed as part of the development, however a driveway including a turning circle is proposed.

Through consultation with the Rideau Valley Conservation Authority (RVCA) (refer to **Appendix A**) it was confirmed that they would require onsite water quality control of 80% TSS removal given the scope of the driveway including a turning circle. This is expected to be achieved via a "treatment train", combining raingardens, bioswales, and a mechanical separator before stormwater enters the underground tank. No additional on-site water quality treatment is required for rooftop or landscaped areas. RVCA also confirmed that they are open to LID measures for providing water quality treatment.

RVCA also mentioned that, while a water tank may provide some degree of TSS removal if a sufficient detention time is provided, it is unlikely it can achieve the water quality target without being equipped with filter media or splitter in the tank.

Raingardens and alternative low impact development measures will be considered to meet best management practices for quality control of surface runoff. An underground tank will also provide quality control via sedimentation and the removal of suspended solids during detention times.

4.4 Storm Servicing and Stormwater Management Summary and Conclusions

The storm servicing design for the proposed development conforms to the requirements of the City of Ottawa Sewer Design Guidelines, 2012, and associated Technical Bulletins.

An anticipated storage volume of **77.3 m³** shall be required on-site via underground storage tank to restrict stormwater discharge to the allowable release rate of **66.4 L/s**.

The RVCA confirmed that they would require onsite water quality control of 80% TSS removal given the scope of the driveway including a turning circle. This is expected to be achieved via a "treatment train", combining raingardens, bioswales, and a mechanical separator to treat contaminated stormwater.

Raingardens and alternative low impact development measures will be considered to meet best management practices for quality control of surface runoff.

5. Conclusion

The purpose of this assessment is to confirm that the proposed development can be adequately serviced using the existing municipal infrastructure (water, sanitary, and storm) surrounding the site. This assessment shall be used in support of a Zoning By-law Amendment (ZBLA) to allow for the construction of one (1) 26-storey residential tower with ground floor commercial space.

The important information and findings as a result of this assessment are as follows:

+ The proposed mixed-use commercial and residential building is expected to include 243 apartment units with a population of approximately 454 persons and have a total commercial area of approximately 890 m² (including commercial and amenity areas). There will be three (3) levels of underground parking spanning the majority of the site area.

- The proposed development falls within the exemption requirements for an Environmental Compliance Approval (ECA) as per O.Reg. 525/98, section 3(a), and Ontario Water Resources Act section 53.6(c).
- The anticipated water demands for the proposed site are **1.87 L/s** (average day), **88.89 L/s** (max day + fire flow), and **8.35 L/s** (peak hour). The boundary conditions received from the City of Ottawa indicate that the existing watermain network can provide the required water demands for the proposed site.
- The estimated sanitary flow for the proposed development is **1.50 L/s** (average dry weather), **5.03 L/s** (peak dry weather), and **5.09 L/s** (peak wet weather). The City of Ottawa has indicated that the existing sanitary sewer network near the proposed site is flooding due to excess extraneous flows form holes in maintenance hole covers and underground infiltration. As a result, the maintenance hole covers will be replaced with solid sealed covers as part of the development project to offset the added sanitary flow, which was satisfactory to the City.
- Storm runoff in excess of the allowable 5-year pre-development release rate, up to and including the 100-year storm event, will be detained on site via an internal cistern prior to being discharged to the municipal storm sewer system.
- The allowable stormwater release rate for the proposed site is **66.4 L/s**. It is expected that this will be achieved by means of underground retention (cistern) and surface storage. To achieve this release rate, a storage volume of **77.3 m³** is required on-site.
- The existing site is approximately 41% impervious with no existing stormwater measures on site (i.e., catch basins, sewers, etc.) and it is thus assumed that there are no current stormwater management controls on site. Thus, stormwater flows from the redeveloped site are anticipated to be considerably less than the stormwater flows from the existing site.
- The RVCA that they would require onsite water quality control of 80% TSS removal given the scope of the driveway including a turning area. This is expected to be achieved via a “treatment train”, combining raingardens, bioswales, and a mechanical separator to treat contaminated stormwater. Raingardens and alternative low impact development measures will be considered to meet best management practices for quality control of surface runoff.
- As a result of the conclusions drawn by the previous points, it is expected that the proposed development can be serviced by the existing municipal services network surrounding the site.

We trust this Assessment of Adequacy of Public Services Report is to your satisfaction. If you have any questions regarding this report, please do not hesitate to contact any of the signatories.

A

Appendix A
Pre-consultation Correspondence

Servicing Study Guidelines for Development Applications

4. Development Servicing Study Checklist

4.1 General Content

	Required Content	Reference Location
☐	Executive Summary (for larger reports only).	N/A
☑	Date and revision number of the report.	Cover Sheet
☑	Location map and plan showing municipal address, boundary, and layout of proposed development.	Report Figures
☑	Plan showing the site and location of all existing services.	Appendix B
☑	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	Section 1.1
☑	Summary of Pre-consultation Meetings with City and other approval agencies.	Section 1.4
☑	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.	Section 1.2 & 1.4
☑	Statement of objectives and servicing criteria.	Section 1.0, 2.1, 3.1 & 4.2
☑	Identification of existing and proposed infrastructure available in the immediate area.	Section 1.3 & Appendix B
☐	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).	N/A
☐	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.	N/A
☐	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.	N/A
☐	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.	N/A

4.2 Development Servicing Report: Water

	Required Content	Reference Location
☐	Confirm consistency with Master Servicing Study, if available	N/A
☑	Availability of public infrastructure to service proposed development	Section 1.3 & Appendix B
☑	Identification of system constraints	Section 2.1 & 2.2
☑	Identify boundary conditions	Section 2.2
☑	Confirmation of adequate domestic supply and pressure	Section 2.2 & 2.3
☑	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.	Section 2.2 & 2.3
☐	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	Section 2.2 & Appendix C
☐	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	Table 2-4
☐	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.	Section 2.3
☐	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

Required Content		Reference Location
☑	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).	Section 3.1
☐	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.	Section 3.3, Appendix A & Appendix E
☑	Description of existing sanitary sewer available for discharge of wastewater from proposed development	Section 1.3, 3.2 & Appendix B
☑	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)	Section 3.3
☑	Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	Section 3.2 & Appendix E
☑	Description of proposed sewer network including sewers, pumping stations, and forcemains.	Section 3.2
☐	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

Required Content		Reference Location
☑	Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)	Section 4.1
☑	Analysis of available capacity in existing public infrastructure.	Section 4.1
☑	A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.	Appendix C & F
☑	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 4.2
☑	Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Section 4.2
☑	Description of the stormwater management concept with facility locations and descriptions with references and supporting information.	Section 4.3, 4.4 & Appendix C
☐	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.	Appendix 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).	Section 4.3 & 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.	N/A
☑	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 4.1, 4.3 & Appendix F
☐	Any proposed diversion of drainage catchment areas from one outlet to another.	N/A
☐	Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.	N/A

☐	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.	N/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 4.3 and 4.4
☐	100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	N/A
☐	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.	N/A
☐	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

Required Content		Reference Location
☐	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

Required Content		Reference Location
☑	Clearly stated conclusions and recommendations	Section 5.0
☐	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.	N/A
☑	All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario	Cover Sheet

Jaymeson Adams

From: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Sent: April 16, 2021 7:36 AM
To: Jaymeson Adams
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request
Attachments: 21-0367-UCC-Blair-Montreal.dwg; 21-0367.xlsx

EXTERNAL EMAIL

Good morning Jaymeson,

Attached is the UCC information and work order for this request.

The City of Ottawa's Financial Services Branch will send out an invoice at the end of the month. The work orders will no longer be included with the invoice. Please retain the attached work order for your records.

For any additional information regarding this information, please contact the Information Centre.

Thank you and we appreciate your patience,
Nick Havelock
Geospatial Analytics Technology & Solutions, Information Centre:
Phone: 613-580-2424 Ext 44455
Email: informationcentre@ottawa.ca

CAUTION
The City of Ottawa assumes no liability for any of the attached plans or reports.
Such data is provided for reference only and the recipient accepts full responsibility for verifying the accuracy and completeness of the data. Utility locations are established using the best available information but is not guaranteed. All utility locations are to be verified in the field.

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 09, 2021 1:20 PM
To: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

Hi Nick,

Truly appreciated. Thank you for escalating.

I hope you enjoy your weekend and the beautiful weather.

Cheers,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Sent: April 9, 2021 1:17 PM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

EXTERNAL EMAIL

Hi Jaymeson,

I've sent this to my supervisor, we'll do our best to get you the information as soon as we can.

Thank you,
Nick Havelock
Geospatial Analytics Technology & Solutions, Information Centre:
Phone: 613-580-2424 Ext 44455
Email: informationcentre@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 09, 2021 1:13 PM
To: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Cc: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>; Tim Kennedy <tim.kennedy@cima.ca>
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

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

Hi Nick,

Thank you for the response, though it wasn't what I was hoping to hear.

The submission is due in three weeks' time so any expediting of the process would be much appreciated.

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Sent: April 9, 2021 1:11 PM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

EXTERNAL EMAIL

Good afternoon Jaymeson,

A UCC Technician replied with "hopefully by the end of next week". Unfortunately, this has been the longest UCC information queue we've had all year.

Thank you for your understanding,
Nick Havelock
Geospatial Analytics Technology & Solutions, Information Centre:
Phone: 613-580-2424 Ext 44455
Email: informationcentre@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 08, 2021 11:22 AM
To: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Cc: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>; Tim Kennedy <tim.kennedy@cima.ca>
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

Good morning Nick,

We haven't yet received the UCC information in CAD format yet. When can we expect to receive this?

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Sent: March 26, 2021 9:00 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

Good morning Jaymeson,

Attached are the plan and profile drawings for Blair and Montreal Roads. If there are no major updates to be applied to the UCC information in CAD format, you can expect this information next week.

Thank you,
Nick Havelock
Geospatial Analytics Technology & Solutions, Information Centre:
Phone: 613-580-2424 Ext 44455
Email: informationcentre@ottawa.ca

CAUTION
The City of Ottawa assumes no liability for any of the attached plans or reports.
Such data is provided for reference only and the recipient accepts full responsibility for verifying the accuracy and completeness of the data. Utility locations are established using the best available information but is not guaranteed. All utility locations are to be verified in the field.

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: March 26, 2021 8:15 AM
To: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Cc: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

Thank you for providing me these options.

Please proceed with Option 1 – UCC and engineering drawings not including the additional reports (using the estimate attached).

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Sent: March 25, 2021 1:45 PM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

EXTERNAL EMAIL

Hi Jaymeson,

Attached are the cover pages of the reports we have available for this area. Each report will cost an additional $34 while the site plan for 1648 Montreal Road is an additional $16.50. Attached is the revised estimate including the 3 attached reports as well as the site plan.

Please let us know if and how you would like to proceed.

Thank you,
Nick Havelock
Geospatial Analytics Technology & Solutions, Information Centre:
Phone: 613-580-2424 Ext 44455
Email: informationcentre@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: March 25, 2021 1:15 PM
To: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

How much would the additional information cost that is not in the estimate?

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Sent: March 25, 2021 11:46 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: RE: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

EXTERNAL EMAIL

Good morning Jaymeson,

Thank you for your request for infrastructure information,

Attached is the total estimate for this request. If you'd like to proceed, I will send the plan and profile drawings immediately (3 plans showing San, Storm and Watermain along Montreal and Blair as well as UCC information in CAD).

Not included on the estimate but available are: 1648 Montreal Road Development Site Plan, Noise Impact Study (Report), Geotechnical Investigations, and Soil Design Reports.

Thank you,
Nick Havelock
Geospatial Analytics Technology & Solutions, Information Centre:
Phone: 613-580-2424 Ext 44455
Email: informationcentre@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: March 25, 2021 10:40 AM
To: ISD Information Centre / Centre Information <informationcentre@ottawa.ca>
Cc: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: 21-0367 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - Information Request

We are working with a client on a servicing capacity assessment for zoning by-law amendment (ZBLA) at 1649 Montreal Rd. and 741 Blair Rd. (see attached key plan).

Our client is considering a service connection for the proposed development to Montreal and/or Blair. Could you please provide any additional background information for the existing services and utilities that may be present at these locations, including but not limited to watermain, storm, and sanitary sewer, gas, hydro, streetlighting, Bell, Rogers, etc. If you could provide a list of any information you have on file and the associated fees for obtaining these it would be much appreciated.

Also CAD of available utility plans would be preferable.

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

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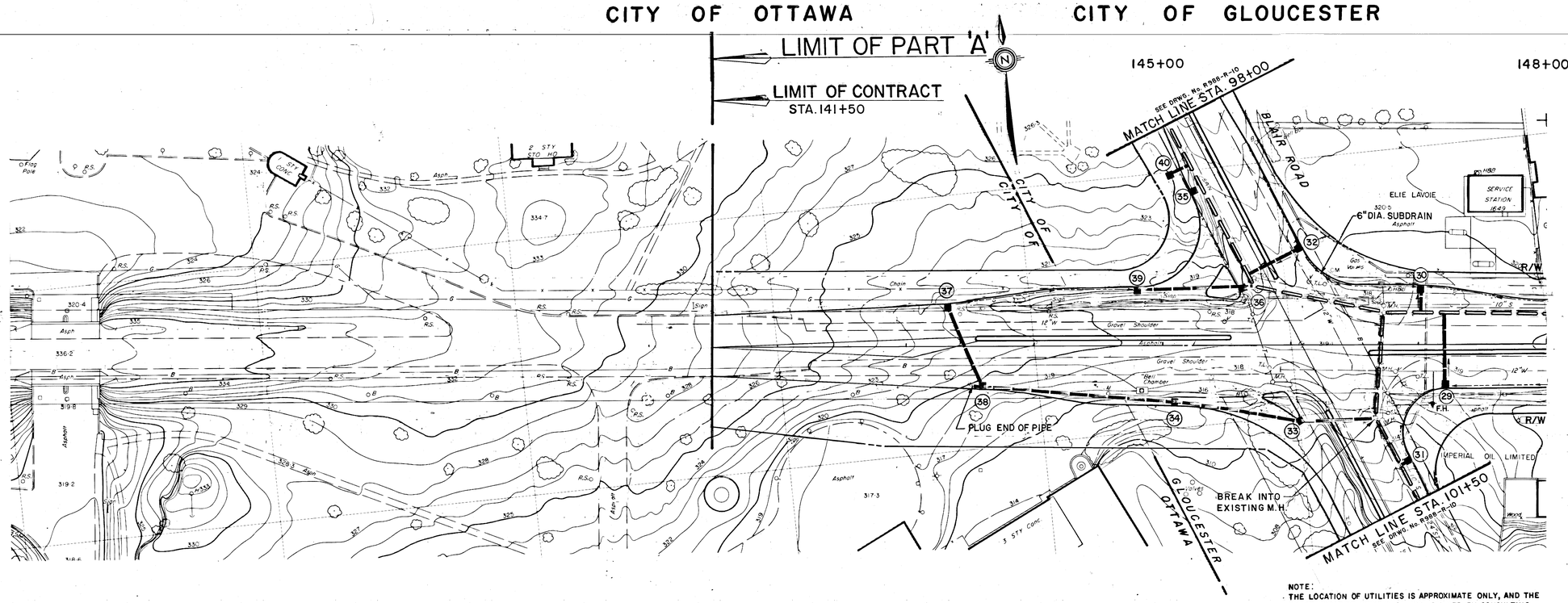
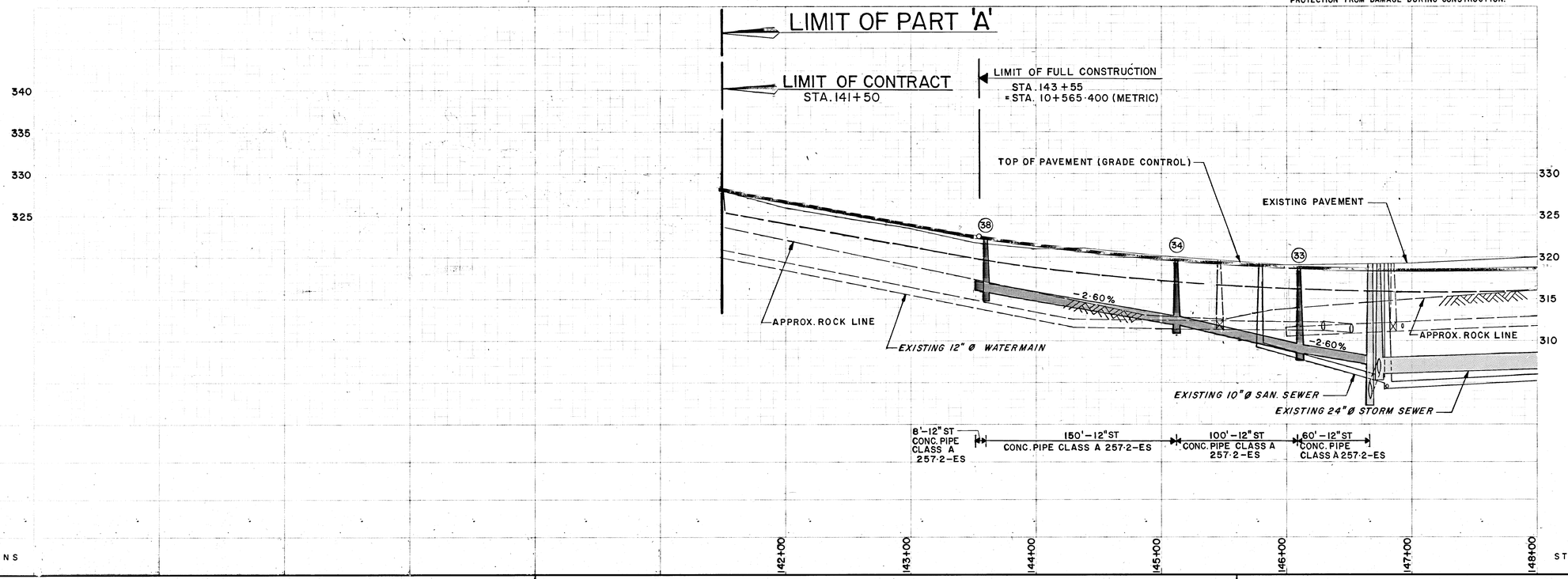
CITY OF OTTAWA

CITY OF GLOUCESTER



MONTREAL ROAD

NOTE:
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 SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE DURING CONSTRUCTION.



MANHOLE DATA

No.	Station	Offset (ft.)	Type Cover / Structure	Elevations Grade	Elevations Low Invert	Grate to Invert
33	100+50	30·0'RT	S-3.18 / J-3.14	318·36	309·22	9·14
34	145+10	45·0'RT	S-3.18 / J-3.14	319·34	311·82	7·52
36	99+40	23·0'RT	S-3.18 / J-3.14	318·59	313·92	4·67
38	143+60	33·0'RT	S-3.18 / J-3.14	320·52	315·72	4·80

SEWER DATA

Structure to Structure	Diameter (in.)	Type	Length (ft.)	Invert Elevations Upstream	Invert Elevations Downstream
CBMH 38 TO MH 34	12"	CONC.	150'	315·72	311·82
MH 34 TO MH 33	12"	CONC.	100'	311·82	309·92
MH 33 TO EXIST. MH	12"	CONC.	60'	309·22	307·66
MH 36 TO EXIST. MH	12"	CONC.	10'	313·92	312·50
STUB TO MH 38	12"	CONC.	8'	315·93	315·72

CATCHBASIN DATA

No.	Station	Offset (ft.)	Type Cover / Structure	Elevations Grade	Elevations Low Invert	Grate to Invert
29	147+20	33·0'RT	S-3.18 / J-3.9	317·90	313·65	4·25
30	147+00	45·0'LT	S-3.18 / J-3.9	317·95	312·70	5·25
31	101+20	33·0'LT	S-3.18 / J-3.9	315·10	310·00	5·10
32	99+50	33·0'LT	S-3.18 / J-3.9	318·50	313·90	4·60
35	98+50	21·0'RT	S-3.18 / J-3.9	320·67	315·67	5·00
37	143+30	32·0'LT	S-3.18 / J-3.9	312·19	316·47	5·72
39	144+30	45·0'LT	S-3.18 / J-3.9	319·32	314·32	5·00
40	98+35	32·0'RT	S-3.18 / J-3.9	317·5±	313·50	4·0±

CATCHBASIN LEAD DATA

Structure to Structure	Diameter (in.)	Type	Length (ft.)	Invert Elevations Upstream	Invert Elevations Downstream
CB 29 TO TRUNK	9"	CONC.	58'	313·65	308·00
CB 30 TO TRUNK	9"	CONC.	20'	312·70	312·30
CB 31 TO TRUNK	9"	CONC.	7'	310·00	306·20
CB 32 TO TRUNK	9"	CONC.	47'	313·90	312·00
CB 35 TO TRUNK	9"	CONC.	9'	315·67	311·05
CB 37 TO MH 38	9"	CONC.	75'	316·47	315·72
CB 39 TO MH 36	9"	CONC.	85'	314·32	313·47
CB 40 TO TRUNK	9"	CONC.	12'	313·50	314·00

NOTES:

1. LATERAL GRADES MAY BE ADJUSTED DUE TO POSSIBLE CONFLICT WITH EXISTING UNDERGROUND UTILITIES.
2. CATCHBASIN OFFSET DISTANCES REFER TO THE CENTRE OF THE GRATE.
3. GRATE ELEVATIONS REFER TO THE TOP OF GRATE AT THE CENTRE OF THE GRATE.
4. RUBBER GASKETS REQUIRED FOR ALL SEWER PIPE JOINTS.
5. MACHINE CUT LATERALS INTO EXISTING TRUNK STORM SEWERS.

McCORMICK RANKIN
CONSULTING ENGINEERS

REGISTERED PROFESSIONAL ENGINEER P. TURNER PROVINCE OF ONTARIO

REGISTERED PROFESSIONAL ENGINEER R. A. HUNTON PROVINCE OF ONTARIO

NO.	REVISION	BY	DATE

THE REGIONAL MUNICIPALITY OF OTTAWA—CARLETON
Transportation Department

MONTREAL ROAD

BLAIR ROAD TO BECKENHAM LANE

STORM SEWER

STA. 141+50 TO STA. 148+00

HORIZONTAL 0 10 20 40 60' / 0 3 6 9'
VERTICAL

Des: R.H.	Chkd: P.T.
Dwn: H.R.	Chkd: R.H.
Date: MARCH, 1986	
Scale: Horiz. 1" = 40' Vert. 1" = 8'	
CONTRACT NO. 78-504	DWG. NO. R988-R-7
	SHEET 7 OF 39

L. G. MORLEY
Director Design & Construction

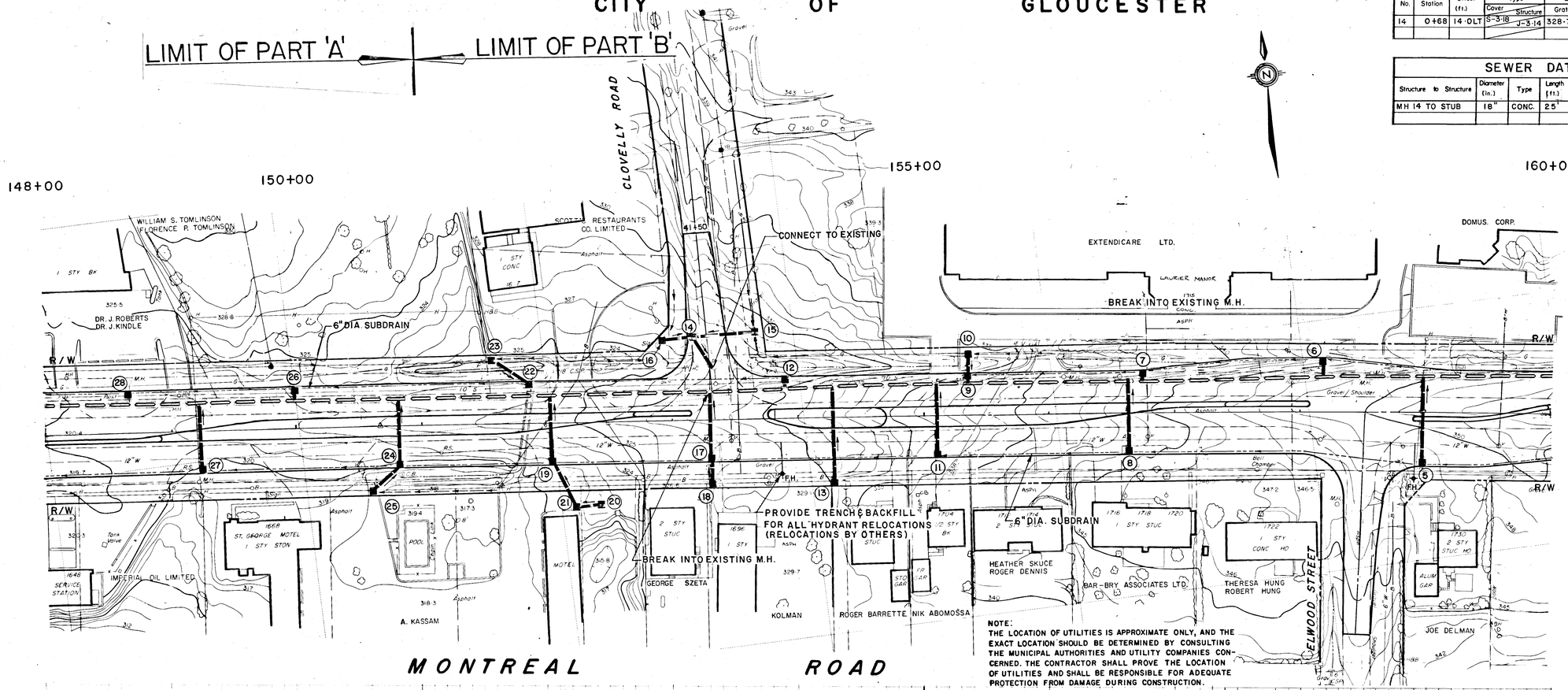
W.S. BEVERIDGE P. ENG.
Chief Design Engineer

10170

R-988-8

CITY OF GLOUCESTER

LIMIT OF PART 'A' | LIMIT OF PART 'B'



NOTE:
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 SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE DURING CONSTRUCTION.

MANHOLE DATA

No.	Station	Offset (ft.)	Type Cover	Type Structure	Elevations Grate	Elevations Low Invert	Grate to Invert
14	0+68	14·0 LT	S-3.18	J-3.14	328·70	319·00	9·80

SEWER DATA

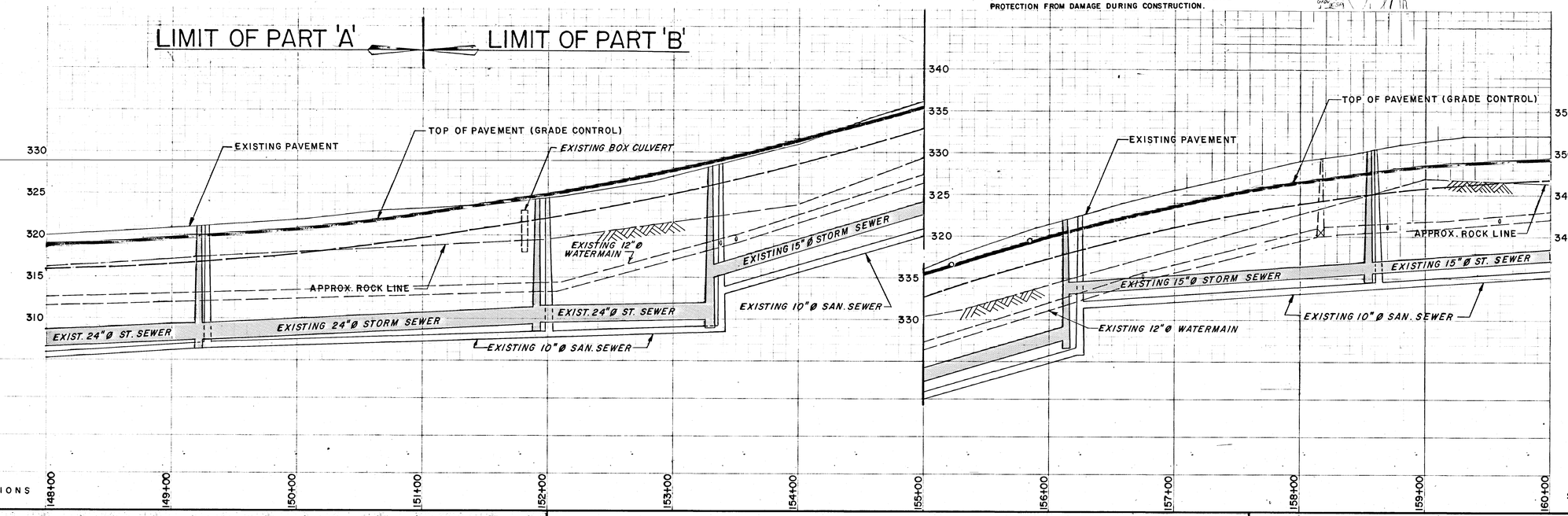
Structure to Structure	Diameter (in.)	Type	Length (ft.)	Invert Elevations Upstream	Invert Elevations Downstream
MH 14 TO STUB	18"	CONC.	25'	319·00	318·00

CATCHBASIN DATA

No.	Station	Offset (ft.)	Type Cover	Type Structure	Elevations Grate	Elevations Low Invert	Grate to Invert
5	158+97	45·0' RT	S-3.18	J-3.9	347·70	342·70	5·00
6	158+20	45·0' LT	S-3.18	J-3.9	346·44	339·40	7·04
7	156+75	33·0' LT	S-3.18	J-3.9	342·30	336·50	5·80
8	156+65	33·0' RT	S-3.18	J-3.9	341·98	335·21	6·77
9	155+35	33·0' LT	S-3.18	J-3.9	336·47	328·65	7·82
10	155+35	47·0' LT	S-3.18	J-3.9	336·8±	329·00	7·8±
11	155+10	33·0' RT	S-3.18	J-3.9	335·36	326·15	9·31
12	153+90	33·0' LT	S-3.18	J-3.9	329·82	322·40	8·00
13	154+30	50·0' RT	S-3.15	S-3.11	328·8±	325·80	3·0±
15	40+70	35·0' LT	403.01	J-3.5	327·5±	322·82	4·6±
16	40+55	65·0' LT	403.01	J-3.5	324·5±	319·95	4·5±
17	153+30	33·0' RT	S-3.18	J-3.9	328·30	320·10	8·15
18	153+30	50·0' RT	S-3.15	S-3.11	325·3±	320·50	4·8±
19	152+05	33·0' RT	S-3.18	J-3.9	324·46	318·43	6·03
22	151+90	33·0' LT	S-3.18	J-3.9	324·06	317·30	6·65
23	151+60	52·0' LT	403.01	J-3.5	320·0±	318·00	2·0±
24	150+83	33·0' RT	S-3.18	J-3.9	321·56	313·60	7·90
25	150+25	52·0' RT	S-3.18	J-3.9	317·8±	314·00	3·0±
26	150+00	33·0' LT	S-3.18	J-3.9	320·06	314·80	5·20
27	149+25	33·0' RT	S-3.18	J-3.9	319·07	314·25	4·75
28	148+68	33·0' LT	S-3.18	J-3.9	18·50	313·70	4·75
20	152+40	70·0' RT	S-3.15	S-3.11	324·7±	319·30	5·2±
21	152+20	70·0' RT	S-3.15	S-3.11	321·0±	319·00	2·0±

CATCHBASIN LEAD DATA

Structure to Structure	Diameter (in.)	Type	Length (ft.)	Invert Elevations Upstream	Invert Elevations Downstream
CB 5 TO TRUNK	9"	CONC.	75'	342·70	336·35
CB 6 TO TRUNK	9"	CONC.	13'	339·40	335·50
CB 7 TO TRUNK	9"	CONC.	10'	336·50	333·45
CB 8 TO TRUNK	9"	CONC.	63'	335·21	333·95
CB 9 TO TRUNK	9"	CONC.	4'	328·65	324·65
CB 10 TO CB 9	9"	CONC.	17'	329·00	328·65
CB 11 TO TRUNK	9"	CONC.	53'	326·15	323·50
CB 12 TO TRUNK	9"	CONC.	9'	322·40	317·90
CB 13 TO TRUNK	12"	CONC.	78'	325·80	320·50
CB 15 TO MH 14	12"	CONC.	51'	322·82	322·00
CB 16 TO MH 14	12"	CONC.	25'	319·95	319·25
CB 17 TO EXIST.MH	12"	CONC.	55'	321·10	319·00
CB 18 TO CB 17	9"	CONC.	20'	320·50	320·10
CB 19 TO TRUNK	12"	CONC.	57'	318·43	317·86
CB 22 TO EXIST. MH	12"	CONC.	10'	317·30	316·60
DI 23 TO CB 22	12"	CONC.	35'	318·00	317·30
CB 24 TO TRUNK	12"	CONC.	55'	313·60	312·50
DI 25 TO CB 24	12"	CONC.	30'	314·00	313·60
CB 26 TO TRUNK	9"	CONC.	10'	314·80	308·60
CB 27 TO TRUNK	9"	CONC.	55'	314·25	313·70
CB 28 TO TRUNK	9"	CONC.	10'	313·70	306·55
CB 20 TO CB 21	9"	CONC.	20'	319·50	319·25
CB 21 TO CB 19	12"	CONC.	40'	319·00	318·43



HORIZONTAL 0 10 20 40 60'
VERTICAL 0 3 6 9'

McCORMICK RANKIN
CONSULTING ENGINEERS

P. TURNER — REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO
R.A. HUNTON — REGISTERED PROFESSIONAL ENGINEER — PROVINCE OF ONTARIO

NO.	REVISION	BY	DATE
1	CLOVELLY ROAD REALIGNED	RH	MAR 31/86
2	CB ADJUSTMENT	RH	MAR 31/86

THE REGIONAL MUNICIPALITY OF
OTTAWA–CARLETON
Transportation Department

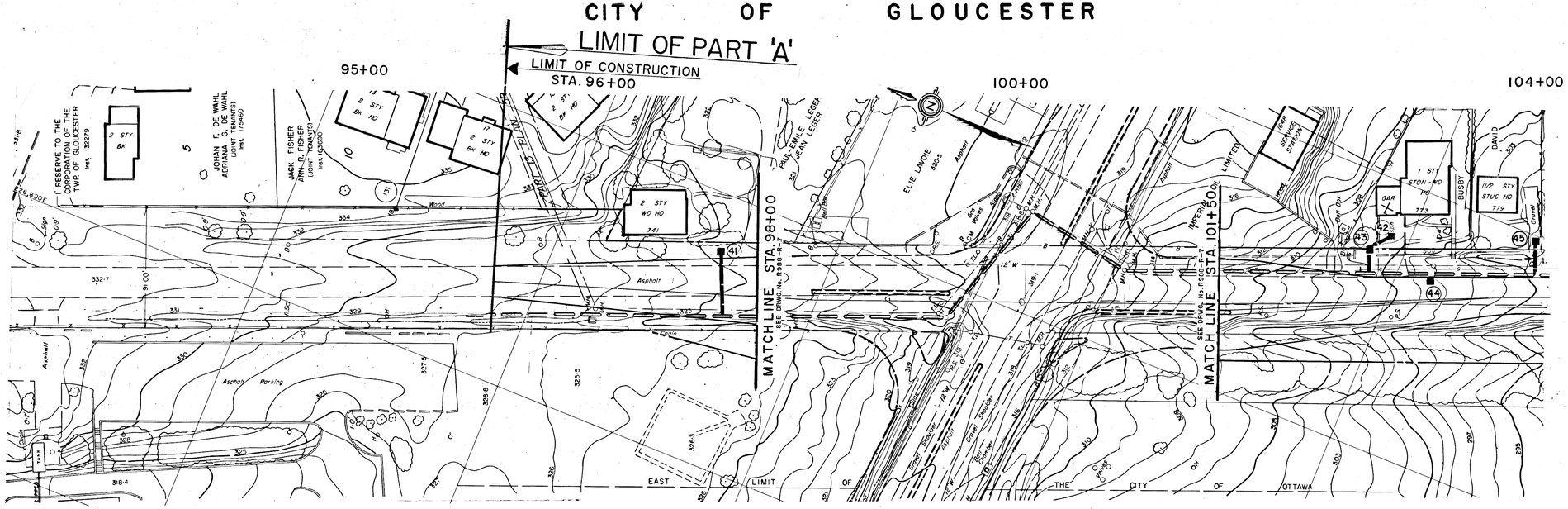
MONTREAL ROAD

BLAIR ROAD TO BECKENHAM LANE

STORM SEWER
STA. 148+00 TO STA. 160+00

Des: R. H.	Chkd: P.T.
Dwn: H. R.	Chkd: R.H.
Date: MARCH, 1986	
Scale: Horiz. 1"=40' Vert. 1"=6'	
CONTRACT NO. 78-504	

L. G. MORLEY
Director Design & Construction
W. S. BEVERIDGE P. ENG.
Chief Design Engineer
DWG. NO. R988-R-8
SHEET 8 OF 39



10170

R-988-10

No.	Station	Offset (ft.)	Type		Elevations		Grate to Invert
			Cover	Structure	Grate	Low Invert	
41	97+75	38·0'LT	S-3·18	J-3·9	321·5±	316·00	5·5±
42	102+80	55·0'LT	S-3·18	J-3·9	306·0±	302·00	4·0±
43	102+65	38·0'LT	S-3·18	J-3·9	306·0±	301·00	5·0±
44	103+10	14·0'LT	S-3·18	J-3·9	305·98	301·50	4·98
45	103+98	50·0'LT	S-3·15	S-3·11	300·5±	296·50	4·0±

Table: CATCHBASIN DATA

Structure to Structure	Diameter (in.)	Type	Length (ft.)	Invert Elevations	
				Upstream	Downstream
CB 41 TO TRUNK	12"	CONC.	50'	316·00	315·00
CB 42 TO CB 43	9"	CONC.	20'	302·00	301·80
CB 43 TO TRUNK	12"	CONC.	19'	301·00	297·65
CB 44 TO TRUNK	9"	CONC.	5'	301·50	298·40
CB 45 TO TRUNK	9"	CONC.	35'	296·50	293·50

Table: CATCHBASIN LEAD DATA

NOTE:
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 SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE DURING CONSTRUCTION.

McCORMICK RANKIN
CONSULTING ENGINEERS

P. TURNER

R. A. HUNTON

NO.	REVISION	BY	DATE
1	PROFILE ADJUSTMENT STA. 96+16	H. R.	APR. 22/86

THE REGIONAL MUNICIPALITY OF
OTTAWA—CARLETON
Transportation Department

MONTREAL ROAD
BLAIR ROAD TO BECKENHAM LANE

STORM SEWER
STA. 92+00 TO STA. 104+50

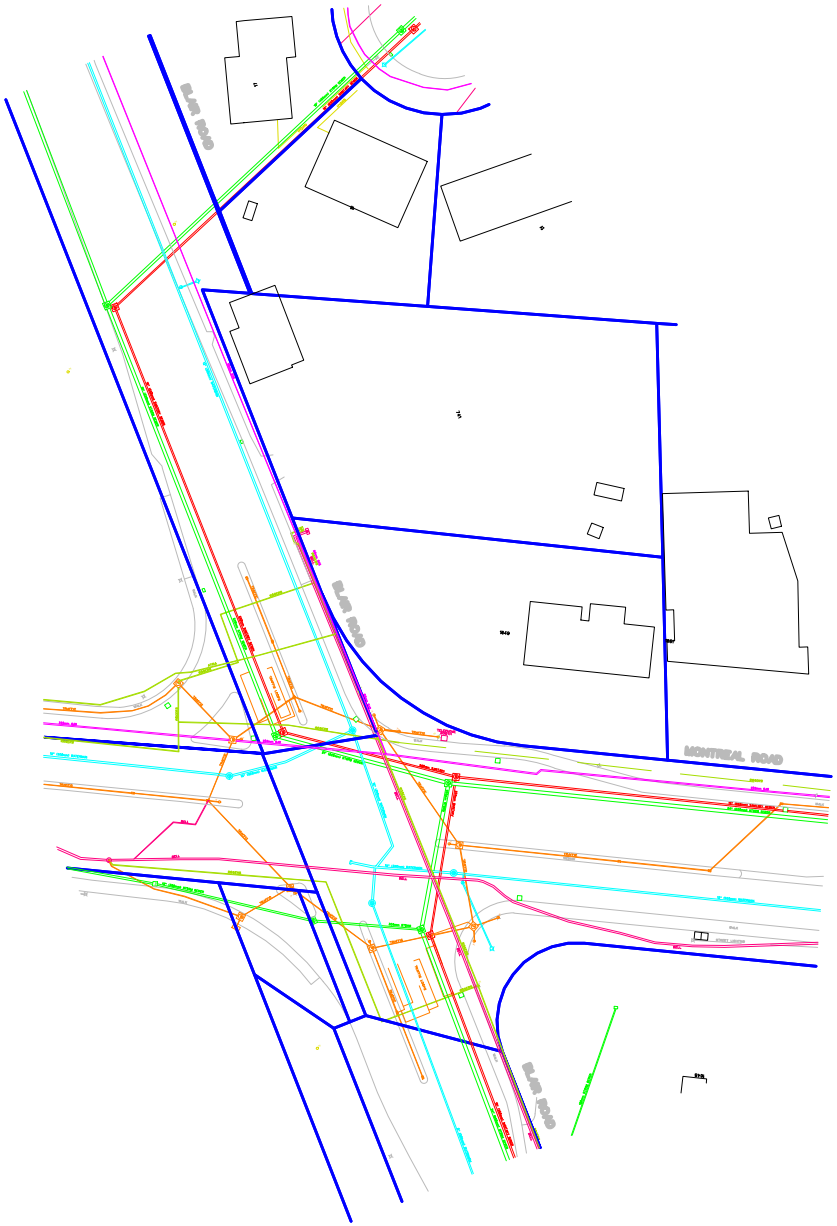
Des: R.H. Chkd: P.T.
Dwn: H.R. Chkd: R.H.
Date: MARCH, 1986
Scale: Horiz. 1" = 40'
Vert. 1" = 6'

L. G. MORLEY
Director Design & Construction

W. S. BEVERIDGE, P. ENG.
Chief Design Engineer

CONTRACT NO. 78-504

DWG. NO. R988-R-10
SHEET 10 OF 39



CAUTION/ATTENTION

Although utility locations are established using the best available information, they cannot be guaranteed. Property lines were compiled from plans and documents recorded in the Land Registry System and are for indexing purposes only.

Bien que l'emplacement des services publics soient établis en utilisant la meilleure information disponible, ils ne peuvent pas être garantis. Des lignes de propriété ont été compilées en utilisant des plans et des documents enregistrés dans le système de cadastre et sont pour l'indexation seulement.

LEGEND

Water Valve, Valve Chamber, Fire Hydrant

Sewer Manhole, Catch Basin Manhole

Catch Basin / Drainage, Wing Wall, Head Wall

Pole, Pole w/ light, Decorative, Lead Light

Power Supply, Panel, Pedestal, Transformer, Tower, Regulator

Prop. Hand Hole, Vault, Gas Valve

DC Tramps: Bus Shelter/Ads Power, Energized, Isolated

Streetscape: Planter Box, Gate Square, Eng. Soil

Traffic Control Box / Disconnect Box, SL Disconnect

R.L Hand Hole, R.L. Camera

Scada: Handhold, Monitoring Panel

Reduce

Pipe, Duct, Conduit, Lateral

Culvert

Abandoned

Capped

Buried Cable

Property Line

Install Year

TELECOM GLOSSARY

A	Allstream	P	Primus
AT	Aliant	RPR	Canadian RDR Fiber
B	Bell	R	Rogers
BH	Bell Int	S	Sprint
F	Fibre Net	SL	Street Lighting
O	Distrito	T	Traffic
GT	Group Telecom	TO	Telecon Ottawa
H	Hydro Ottawa	TU	Telus
HT	Hydro One	V	Videotron
I, I.T.	Level 3	Z	Zayo

GLOSSARY - OTHER

DD	Dept. of Defence	PED	Pedestal (owner unknown)
MH	Manhole (owner unknown)	PW	Public Works
OOC	OCTranspo	UP	Utility Pole (owner unknown)
SCD	Scada		

CAUTION/ATTENTION

Although utility locations are established using the best available information, they cannot be guaranteed. Property lines were compiled from plans and documents recorded in the Land Registry System and are for indexing purposes only.

Bien que l'emplacement des services publics soient établis en utilisant la meilleure information disponible, ils ne peuvent pas être garantis. Des lignes de propriété ont été compilées en utilisant des plans et des documents enregistrés dans le système de cadastre et sont pour l'indexation seulement.

Jaymeson Adams

From: Jamie Batchelor <jamie.batchelor@rvca.ca>
Sent: April 20, 2021 8:42 PM
To: Jaymeson Adams
Cc: Christian Lavoie-Lebel; Tim Kennedy
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - RVCA Pre-consult

EXTERNAL EMAIL

Hi Jaymeson,

There would be no natural heritage features or natural hazards that we have identified on this property which would preclude this application.

a. No additional on-site water quality treatment is required for rooftop or landscaped areas.
b. Given the scope of the drive way including a turning circle, we would require onsite water quality control of 80% TSS removal.
c. The RVCA is open to LID measures for providing water quality treatment.
d. While a water tank may provide some degree of TSS removal if a sufficient detention time is provided, it is unlikely it can achieve the water quality target without being equipped with filter media or splitter in the tank.
e.

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: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: Thursday, March 25, 2021 1:08 PM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Cc: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>; Tim Kennedy <Tim.Kennedy@cima.ca>
Subject: 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - RVCA Pre-consult

Hi Jamie,

We are working on a project in the City of Ottawa and I wanted to get your input on Natural Heritage/Hazards features that may impact the development as well as any Stormwater Management Criteria for the site and required approvals/permits.

The proposed development involves the construction of a twenty-six (26) storey mixed use commercial and residential development at 1649 Montreal Rd. and 741 Blair Rd. with underground parking and driveway to the front entrance.

A few specific items for your consideration as follows:

1. The stormwater collected from the site travels approximately 3.3 km to Green's Creek.
2. The development will connect to the existing 525 mm ø storm sewer within Blair Road and will discharge primarily rooftop stormwater as well as stormwater captured in the grassed yard, driveway, and ground-level terrace area.
    a. Will quality control for rooftop areas, yard, driveway, and/or terrace area be required?
    b. Considering parking will be underground, with limited exterior hard surface at the ground level would a mechanical separator still be required for hydrocarbon removal?
    c. Would the use of raingardens or alternative low impact development stormwater measures meet RVCA's requirements for enhanced quality control for this site?
    d. Should an internal/external storage tank be required and provided with detention time for settlement of suspended solids would this meet the requirement for enhanced quality control for this site?

I have attached a key plan with the site location (PDF document) as well as the ultimate flow path for the storm sewer (JPG document).

If you need anything further please let me know. Feel free to call me on the number in my signature box below if you would like to discuss.

Best regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

SERVICING MEMO

Date:	February 10, 2021
To / Destinataire	Shoma Murshid Planner, Development Review East
From / Expéditeur	Sara Mashaie, P.Eng. Project Manager, Infrastructure Approvals, Development Review East
Subject / Objet	**Pre-Application Consultation** **1649 Montreal Rd. & 741 Blair Rd.,** **Ward 11 – Beacon Hill-Cyrville** *Proposed high-rise building consisting of a mix of retail/commercial within the podium and residential units above* File No. PC2020-0344

Please note the following information regarding the engineering design submission for the above noted site:

****Note:** Some items may not be required as part of your submission and are for informational purposes.

1. The Servicing Study Guidelines for Development Applications are available at the following address: https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans#servicing-study-guidelines-development-applications

2. The following Engineering plans and reports are requested for the **Zoning By-Law Amendment** submission:

    a. Site Servicing Report

    b. Stormwater Management Report (can be combined with the Site Servicing Report)

    c. Geotechnical Report

3. The following Engineering plans and reports are requested for the **Site Plan Control** submission:

    a. Site Servicing Plan

b. Site Servicing Report

c. Stormwater Management Report (can be combined with the Site Servicing Report)

d. Grade Control and Drainage Plan

e. Erosion and Sediment Control Plan (can be combined with the Grade Control and Drainage Plan)

f. Geotechnical Report

4. 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 plans and reports, please provide an individual PDF format of the files.

5. Servicing and site works shall be in accordance with the following documents:

⇨ Ottawa Sewer Design Guidelines (October 2012)

⇨ Ottawa Design Guidelines – Water Distribution (2010)

⇨ Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa (2007)

⇨ City of Ottawa Slope Stability Guidelines for Development Applications (revised 2012)

⇨ City of Ottawa Environmental Noise Control Guidelines (January, 2016)

⇨ City of Ottawa Park and Pathway Development Manual (2012)

⇨ City of Ottawa Accessibility Design Standards (2012)

⇨ Ottawa Standard Tender Documents (latest version)

⇨ Ontario Provincial Standards for Roads & Public Works (2013)

6. Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email at InformationCentre@ottawa.ca or by phone at (613) 580-2424 x.44455).

7. The Stormwater Management Criteria, for the subject site, is to be based on the following:

   i. The 5-yr storm event using the IDF information derived from the Meteorological Services of Canada rainfall data, taken from the MacDonald Cartier Airport, collected 1966 to 1997.

   ii. For separated sewer system built pre-1970 the design of the storm sewers are based on a 2 year storm.

   iii. The pre-development runoff coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).

   iv. A calculated time of concentration (Cannot be less than 10 minutes).

   v. Flows to the storm sewer in excess of the 5-year storm release rate, up to and including the 100-year storm event, must be detained on site.

   vi. 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.

   Note: There may be area specific SWM Criteria that may apply. Check for any related SWM &/or Sub-watershed studies that may have been completed.

8. Deep Services (Storm, Sanitary & Water Supply)

   i. 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.

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

   iii. 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).

   iv. Review provision of a high-level sewer.

   v. Provide information on the type of connection permitted

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

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

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

c. Std Dwg S11.2 (for rigid main sewers using bell end insert method) – *for larger diameter laterals where manufactured inserts are not available; lateral must be less that 50% the diameter of the sewermain,*

d. 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.

e. No submerged outlet connections.

9. Water Boundary condition requests must include the location of the service and the expected loads required by the proposed development. Please provide the following information:

   i. Location of service

   ii. Type of development and the amount of fire flow required (as per FUS, 1999).

   iii. Average daily demand: ___ l/s.

   iv. Maximum daily demand: ___l/s.

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

10. All development application should be considered for an ECA by the MOECC.

    a. Consultant determines if an approval for sewage works under Section 53 of OWRA is required. Consultant determines what type of application is required and the City's project manager confirms. (If the consultant is not clear if an ECA is required, they will work with the City to determine what is required. If the consultant is still

unclear or there is a difference of opinion only then will they approach the MOECC).

b. The project will be either transfer of review (standard), transfer of review (additional), direct submission, or exempt as per O. Reg. 525/98.
c. Pre-consultation is not required if applying for standard works (schedule A of the Agreement) under Transfer Review.
d. Mandatory pre-consultation is required if applying for additional works (schedule A of the Agreement) under Transfer Review.
e. Pre-consultation with local District office of MOECC is recommended for direct submission.
f. Consultant completes an MOECC request form for a pre-consultation. Send request to moeccottawasewage@ontario.ca.

11. Phase 1 ESAs and Phase 2 ESAs must conform to clause 4.8.4 of the Official Plan that requires that development applications conform to Ontario Regulation 153/04.

Should you have any questions or require additional information, please contact me directly at (613) 580-2424, ext. 27885 or by email at sara.mashaie@ottawa.ca.

Jaymeson Adams

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 13, 2021 3:56 PM
To: Jaymeson Adams
Cc: Tim Kennedy; Christian Lavoie-Lebel; Murshid, Shoma; Baird, Natasha
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request
Attachments: 1649 Montreal Rd & 741 Blair Rd April 2021.pdf

EXTERNAL EMAIL

Hi Jaymeson,

Firstly, I wanted to inform you that the water boundary conditions were received this morning. For your reference, please see below and the attached.

On the wastewater level, I wanted to bring to your attention that our Infrastructure team provided a response with respect to your email dated April 1, 2021 concerning the capacity of the City's system to accommodate the wastewater flow for the proposed development. Based on the modeling review, they have informed us that the existing system is flooding. Should you wish to discuss the existing flooding and capacity in further detail, please contact Eric Tousignant, Senior Engineer (Infrastructure) at eric.tousignant@ottawa.ca.

The following are boundary conditions, HGL, for hydraulic analysis at 1649 Montreal Rd & 741 Blair Rd (zone MONT) assumed to be connected to the 305 mm on Blair Road (see attached PDF for location).

Minimum HGL = 146.5 m

Maximum HGL = 146.9 m

Max Day + Fire Flow (83.3 L/s) = 144.4 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.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet

Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 08, 2021 10:11 AM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Good morning Ms. Mashaie,

Thank you for confirming this. I appreciate the sense of urgency with this file.

Regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 8, 2021 10:09 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

EXTERNAL EMAIL

Hi Jaymeson,

Please note that the team will do their best to deliver, and I will provide the results to your attention as soon as received.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 08, 2021 9:24 AM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

I am just following up on the boundary conditions request below. I was wondering if we can still expect the results within the maximum 2 week timeframe.

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 1, 2021 9:19 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

EXTERNAL EMAIL

Hi Jaymeson,

Thank you - I have forwarded the request to our water modelling team. Please allow up to 2 weeks for a response.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: March 31, 2021 5:36 PM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

In addition, can you please confirm receipt of this request for boundary conditions?

The project schedule is very tight so any help in expediting the process would be greatly appreciated.

Thank you,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Jaymeson Adams
Sent: March 31, 2021 5:29 PM
To: sara.mashaie@ottawa.ca
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Hello Ms. Mashaie,

My name is Jaymeson Adams and I am the Design EIT working on this project.

We would like to kindly request boundary conditions for the proposed development at **1649 Montreal Road and 741 Blair Road**. Please find the proposed development information below and detailed calculations and associated figures attached including (1) Water Demand Calculations, (2) Fire Flow Calculations, (3) Figure 1 – Proposed Water Service Connection Locations, (4) Figure 2 – Exposure Separation Distances, (5) Figure 3 – Fire Hydrant Coverage, and (6) Architectural Concept Plans (for reference):

1. **Type of Development and Units:** The proposed development involves the construction of one (1) 26-storey mixed use building (residential and ground floor commercial space). There is a total of **243 residential units**. An underground 3-level parking garage extending the majority of the footprint of the site is also proposed (approximate garage footprint is shown on the attached Sketches).
2. **Site Address:** 1649 Montreal Road and 741 Blair Road
3. **Location of Services:** Please see attached Figure 1:
    a. Montreal Road – 305 mm diameter DI watermain.
    b. Blair Road – 305 mm diameter DI watermain.
4. **Average Daily Demand:** 1.87 L/s
5. **Maximum Daily Demand:** 5.56 L/s

6. **Peak Hour Demand:** 8.35 L/s
7. **Required Fire Flow (RFF):** 5,000 L/min

If you have any questions or concerns, please do not hesitate to contact me.

Best regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

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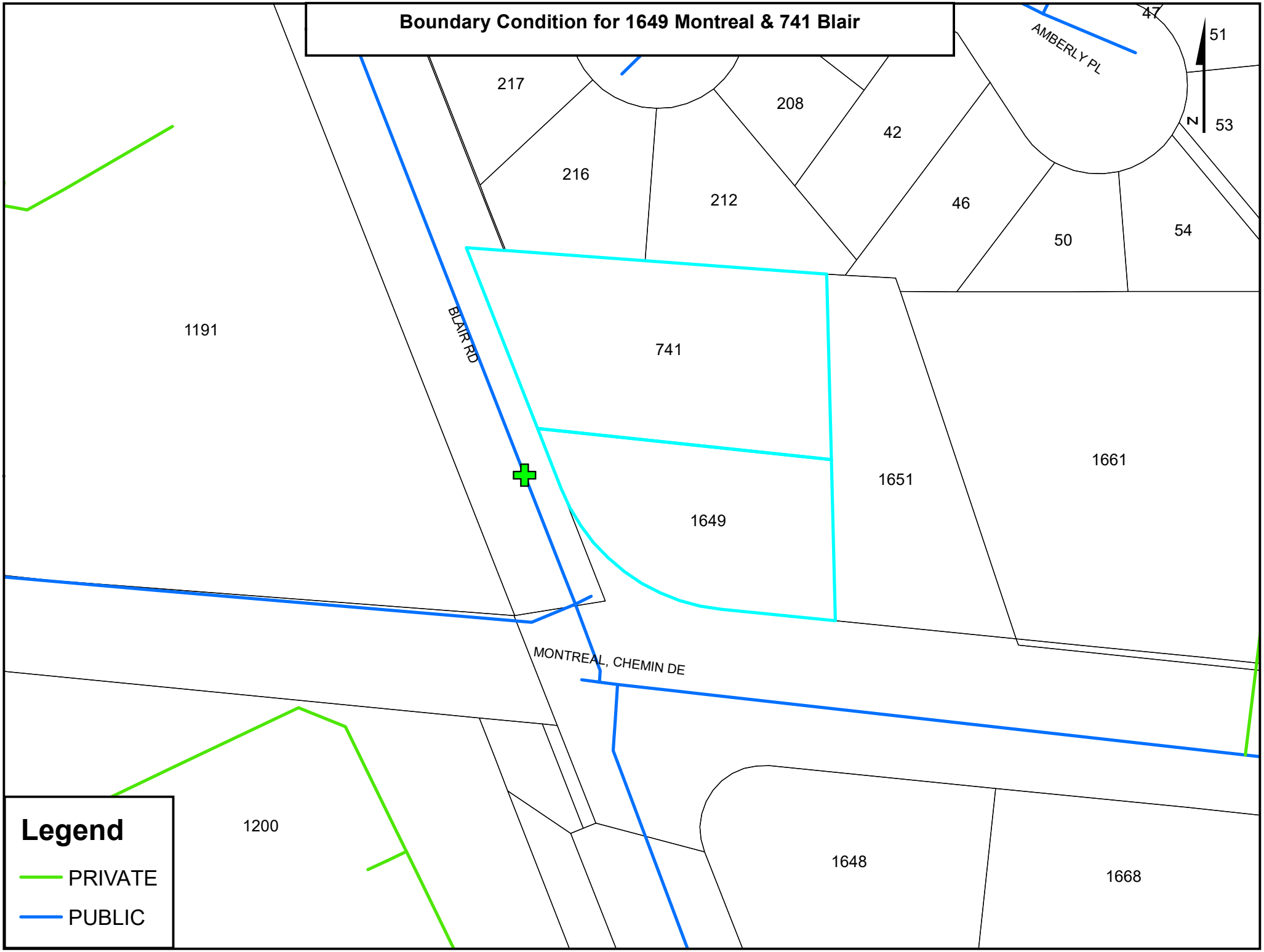

Boundary Condition for 1649 Montreal & 741 Blair
217
208
42
216
212
46
50
54
47
51
53
AMBERLY PL
N
1191
BLAIR RD
741
1649
1651
1661
MONTREAL, CHEMIN DE
1200
1648
1668
Legend
PRIVATE
PUBLIC

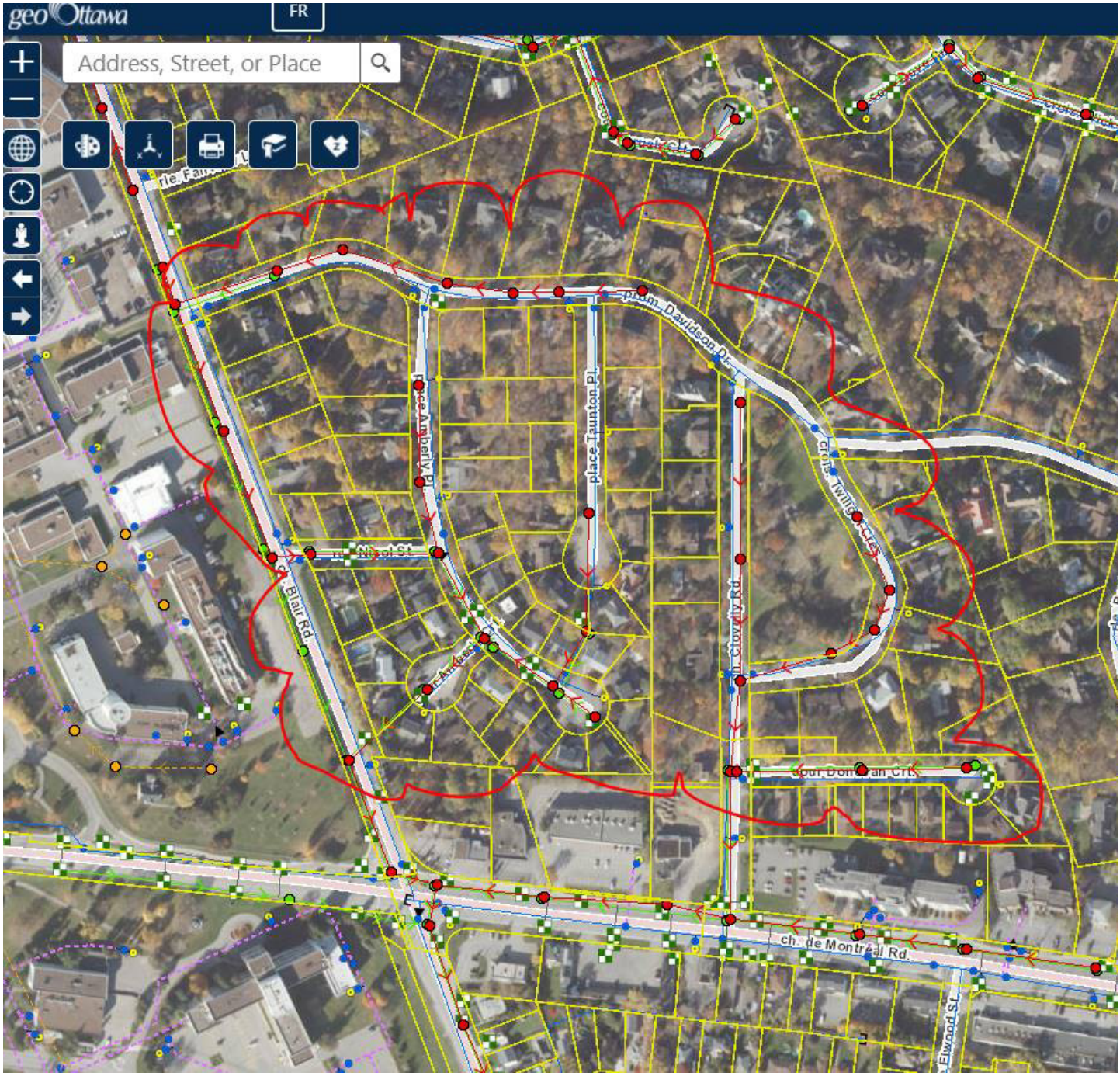
Jaymeson Adams

From: Christian Lavoie-Lebel
Sent: April 19, 2021 9:39 AM
To: Dominic Cleroux Cloutier
Cc: Roderick Lahey; Paul Black; Jaymeson Adams; martin Chénier
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request
Attachments: 1649 Montreal Rd & 741 Blair Rd April 2021.pdf

Good Morning,

We held a meeting this morning with the City of Ottawa modelling representative. The problem is caused by very high added flows associated to underground infiltration and surface storm water draining within the sanitary sewer due to multiple storm drainage existing problems.

The City as proposed a storm flow reduction alternative to compensate for the projects added sanitary flows. Replace existing Sanitary Manhole covers with solid sealed manhole covers (approx. 25 units) onto the illustrated area below sanitary networks. This alternative was agreed upon during the meeting and, unless advised otherwise, we will confirm that the client agrees to this within our Adequacy of Servicing report. This alternative will most likely cost around 12,000$.



Regards,

ÇA VA BIEN ALLER

Avis pour nos clients sur la COVID-19

CHRISTIAN LAVOIE-LEBEL, P.Eng, ing.
Partner / Senior Project Manager / Infrastructure

T 613-860-2462 ext. 6621 **M** 819-664-7920 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

420, boul. Maloney Est, bureau 201 Gatineau QC J8P 1E7 CANADA

From: Christian Lavoie-Lebel
Sent: April 14, 2021 11:32 AM
To: Dominic Cleroux Cloutier <dcloutier@bertone.ca>
Cc: Roderick Lahey <rlahey@rlaarchitecture.ca>; Paul Black <black@fotenn.com>; Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: FW: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Hi Dominic,

Just a heads-up that we received the following email from the City of Ottawa modelling team with regards to lack of existing sanitary sewer capacities for the connection sewer point of our project.

On the wastewater level, I wanted to bring to your attention that our Infrastructure team provided a response with respect to your email dated April 1, 2021 concerning the capacity of the City's system to accommodate the wastewater flow for the proposed development. Based on the modeling review, they have informed us that the existing system is flooding. Should you wish to discuss the existing flooding and capacity in further detail, please contact Eric Tousignant, Senior Engineer (Infrastructure) at eric.tousignant@ottawa.ca.

We will contact M. Tousignant ASAP and let you know what comes out of that conversation.

Regards,

ÇA VA BIEN ALLER

CHRISTIAN LAVOIE-LEBEL, P.Eng, ing.
Partner / Senior Project Manager / Infrastructure

T 613-860-2462 ext. 6621 **M** 819-664-7920 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA
420, boul. Maloney Est, bureau 201 Gatineau QC J8P 1E7 CANADA

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 13, 2021 3:56 PM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>; Murshid, Shoma <Shoma.Murshid@ottawa.ca>; Baird, Natasha <Natasha.Baird@ottawa.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

EXTERNAL EMAIL

Hi Jaymeson,

Firstly, I wanted to inform you that the water boundary conditions were received this morning. For your reference, please see below and the attached.

On the wastewater level, I wanted to bring to your attention that our Infrastructure team provided a response with respect to your email dated April 1, 2021 concerning the capacity of the City's system to accommodate the wastewater flow for the proposed development. Based on the modeling review, they have informed us that the existing system is flooding. Should you wish to discuss the existing flooding and capacity in further detail, please contact Eric Tousignant, Senior Engineer (Infrastructure) at eric.tousignant@ottawa.ca.

The following are boundary conditions, HGL, for hydraulic analysis at 1649 Montreal Rd & 741 Blair Rd (zone MONT) assumed to be connected to the 305 mm on Blair Road (see attached PDF for location).

Minimum HGL = 146.5 m

Maximum HGL = 146.9 m

Max Day + Fire Flow (83.3 L/s) = 144.4 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.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 08, 2021 10:11 AM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Good morning Ms. Mashaie,

Thank you for confirming this. I appreciate the sense of urgency with this file.

Regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 8, 2021 10:09 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>

Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

EXTERNAL EMAIL

Hi Jaymeson,

Please note that the team will do their best to deliver, and I will provide the results to your attention as soon as received.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 08, 2021 9:24 AM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

I am just following up on the boundary conditions request below. I was wondering if we can still expect the results within the maximum 2 week timeframe.

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 1, 2021 9:19 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

EXTERNAL EMAIL

Hi Jaymeson,

Thank you - I have forwarded the request to our water modelling team. Please allow up to 2 weeks for a response.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: March 31, 2021 5:36 PM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

In addition, can you please confirm receipt of this request for boundary conditions?

The project schedule is very tight so any help in expediting the process would be greatly appreciated.

Thank you,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Jaymeson Adams
Sent: March 31, 2021 5:29 PM
To: sara.mashaie@ottawa.ca
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Hello Ms. Mashaie,

My name is Jaymeson Adams and I am the Design EIT working on this project.

We would like to kindly request boundary conditions for the proposed development at **1649 Montreal Road and 741 Blair Road**. Please find the proposed development information below and detailed calculations and associated figures attached including (1) Water Demand Calculations, (2) Fire Flow Calculations, (3) Figure 1 – Proposed Water Service Connection Locations, (4) Figure 2 – Exposure Separation Distances, (5) Figure 3 – Fire Hydrant Coverage, and (6) Architectural Concept Plans (for reference):

1. **Type of Development and Units:** The proposed development involves the construction of one (1) 26-storey mixed use building (residential and ground floor commercial space). There is a total of **243 residential units**. An underground 3-level parking garage extending the majority of the footprint of the site is also proposed (approximate garage footprint is shown on the attached Sketches).

2. **Site Address:** 1649 Montreal Road and 741 Blair Road
3. **Location of Services:** Please see attached Figure 1:
    a. Montreal Road – 305 mm diameter DI watermain.
    b. Blair Road – 305 mm diameter DI watermain.
4. **Average Daily Demand:** 1.87 L/s
5. **Maximum Daily Demand:** 5.56 L/s
6. **Peak Hour Demand:** 8.35 L/s
7. **Required Fire Flow (RFF):** 5,000 L/min

If you have any questions or concerns, please do not hesitate to contact me.

Best regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

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'

'

Jaymeson Adams

From: Jaymeson Adams
Sent: April 21, 2021 11:16 AM
To: Mashaie, Sara
Cc: Christian Lavoie-Lebel
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Stormwater Management Criteria Confirmation

Thank you Ms. Mashaie.

I will confirm Point #3 with Mr. Tousignant.

Regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

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From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 21, 2021 10:51 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Stormwater Management Criteria Confirmation

EXTERNAL EMAIL

Hi Jaymeson,

Concerning points #1 and 2 below – confirmed.

Concerning point #3, please check in with Eric Tousignant.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

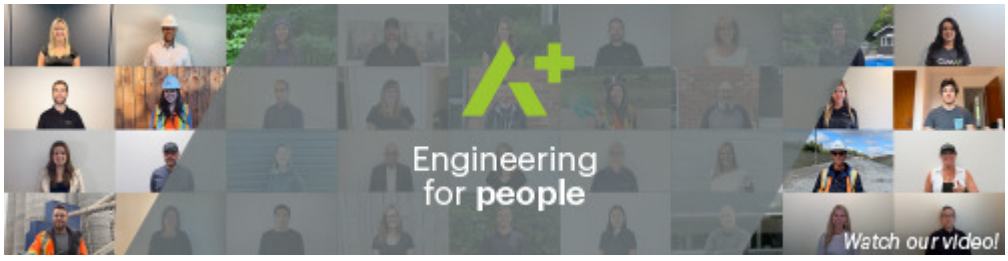
From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 20, 2021 4:12 PM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>; Tim Kennedy <tim.kennedy@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Stormwater Management Criteria Confirmation

shaie,

Just following up on my email below. Are you able to confirm these items?

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures



T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Jaymeson Adams
Sent: April 14, 2021 8:05 AM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>; Tim Kennedy <Tim.Kennedy@cima.ca>
Subject: 1649 Montreal Rd. and 741 Blair Rd. - Stormwater Management Criteria Confirmation

Good morning Ms. Mashaie,

Regarding the servicing memo from the City, dated 10 February 2021, I wanted to touch base and confirm the stormwater management criteria we are using for this site:

1. Per item 7.ii, "For separated sewer system built pre-1970 the design of the storm sewers are based on a 2 year storm." As the as-builts received by the ISD Information Centre are dated in March 1986, we are basing our design on the 5 year storm. Please confirm that you agree with this rationale.
2. Per item 7.v, "Flows to the storm sewer in excess of the 5-year storm release rate, up to and including the 100-year storm event, must be detained on site." We are using this criterion to evaluate storage requirements on the site. Please confirm that this is still correct.
3. Can you please confirm whether there are any surcharge issues in the storm system in the vicinity of our site that could affect our release rate/storage requirements?

We are also in coordination with the RVCA to determine if they have any site-specific criteria.

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

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110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

and delete it in its entirety.
AVERTISSEMENT CONCERNANT LA CONFIDENTIALITÉ Ce message est confidentiel. S'il ne vous est pas destiné, veuillez en informer l'émetteur immédiatement et le détruire intégralement.

'

'

Jaymeson Adams

From: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Sent: April 27, 2021 9:30 AM
To: Jaymeson Adams
Cc: Christian Lavoie-Lebel; Tim Kennedy; Mashaie, Sara
Subject: RE: A001101: Blair/Mtl Road - Storm Surcharge Issues Confirmation

EXTERNAL EMAIL

Good Morning Jaymeson

Yes, you can absolutely use that approach.

Eric

Eric Tousignant, P.Eng.
Senior Water Resources Engineer
Infrastructure Services
613-580-2424 ext 25129

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 27, 2021 9:12 AM
To: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Cc: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>; Tim Kennedy <tim.kennedy@cima.ca>; Mashaie, Sara <sara.mashaie@ottawa.ca>
Subject: RE: A001101: Blair/Mtl Road - Storm Surcharge Issues Confirmation

Hello Mr. Tousignant,

Thank you for providing the HGL info for the storm.

Because of the fact that the 100 year HGL is at the street level (surcharge condition), we are proposing to use a pump at the exit of the proposed underground tank that will pump stormwater at the allowable release rate. As I understand it this allows us to avoid using the half release rate rule, which lowers the required on-site storage volume.

Please let me know if you are in agreement with this approach. Call me if you want to discuss further.

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

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110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

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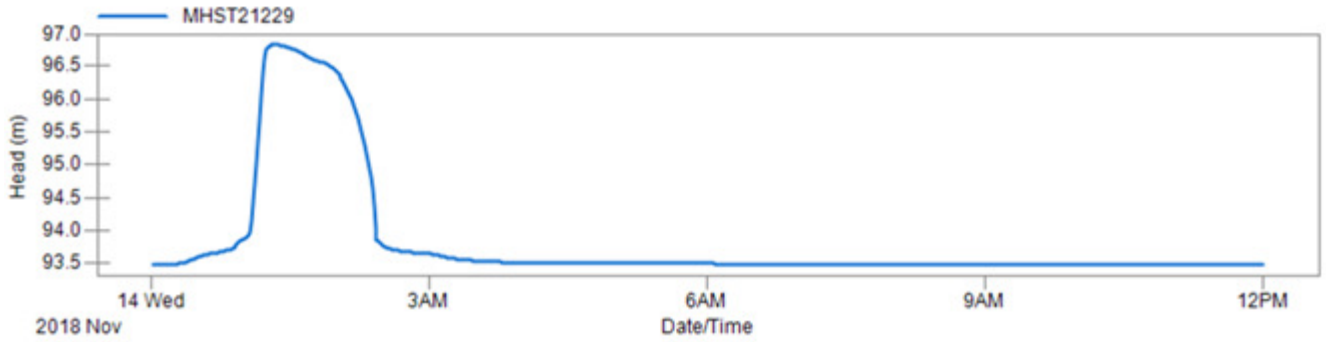
From: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Sent: April 21, 2021 2:50 PM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Cc: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: A001101: Blair/Mtl Road - Storm Surcharge Issues Confirmation

EXTERNAL EMAIL

Hi Jaymeson

This is an uncontrolled storm system (i.e. no inlet control devices) therefore the 100-year HGL can reach ground level. You will need to take this into consideration if you plan to use underground storage.

Below is the time series 100 year HGL at MH MHST21229



Data | Objectives | Error | Storage | Patterns | Edit | Derive | Audit | Events | Scatter | Duration | IDF

Objective functions for Head (m)

From 2018-Nov-13 11:25:03 PM to 2018-Nov-14 12:35:57 PM (13.18 hours)

	MHST21229
Maximum Head (m)	96.826
Minimum Head (m)	93.486
Mean Head (m)	93.823
Duration of Exceedances (h)	11.983
Duration of Deficits (h)	0
Number of Exceedances	1
Number of Deficits	0

Head (m) Exceedance: 0

Head (m) Deficit: 0

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 21, 2021 11:19 AM
To: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Cc: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: A001101: Blair/Mtl Road - Storm Surcharge Issues Confirmation

Hello Mr. Tousignant,

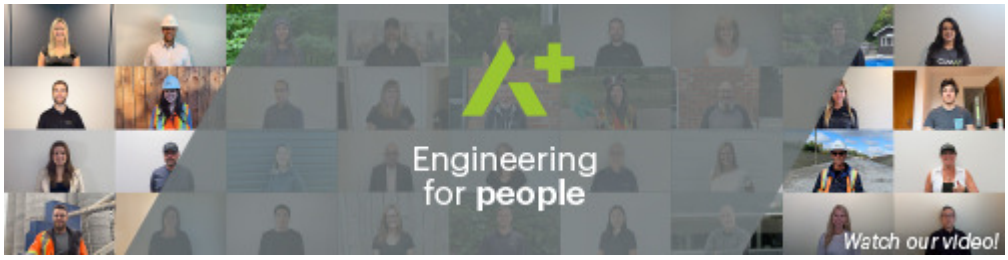
Thank you for meeting with us earlier in the week to discuss the sanitary issue.

I was hoping to have your response to another question pertaining to the storm system:

1. Can you please confirm whether there are any surcharge issues in the storm system in the vicinity of our site that could affect our release rate/storage requirements?

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures



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110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

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From: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Sent: April 15, 2021 2:08 PM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: RE: A001101: Blair/Mtl Road - Sanitary Flow Issues

COURRIEL EXTERNE

Thank you

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 15, 2021 2:08 PM
To: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Subject: RE: A001101: Blair/Mtl Road - Sanitary Flow Issues

Hi Mr. Tousignant,

I updated the meeting start time to 9:00 am.

Regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

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-----Original Appointment-----
From: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Sent: April 15, 2021 2:06 PM
To: Jaymeson Adams
Subject: Accepted: A001101: Blair/Mtl Road - Sanitary Flow Issues
When: April 19, 2021 8:30 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

EXTERNAL EMAIL

Hi Jaymeson

This meeting should not take much time. Can we move it to 9AM instead of 8:30. It can still finish at 10AM.

Thanks
Eric
'

'
'

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Jaymeson Adams

From: Rachel Irving-Beer <rirvingbeer@rlaarchitecture.ca>
Sent: March 29, 2021 11:38 AM
To: Christian Lavoie-Lebel
Cc: Tim Kennedy; Roderick Lahey; 'Christopher Gordon'; 'Michelle Lavictoire'; 'Chris Hall'; 'Paul Black'; 'Miguel Tremblay'; 'Timothy Beed'; 'Martin Chenier'; Jaymeson Adams
Subject: RE: 1649 Montreal Rd (Blair & Montreal)

EXTERNAL EMAIL

Hi Christian,

I just spoke with Rod regarding these question. Please see our reply below in red:

- Timeline will be approximately 6 weeks from obtaining final Site Plan, Legal Plan and Topo Survey (CADD) that will be used for Adequacy of Servicing submission. (Please confirm when the
  - Final meaning the building footprint, number of rooms/beds, any commercial or additional building areas will not change. The hard and soft services at the exterior of the building should also remain unchanged; We still need a final survey before we can call our drawings final for this submission. We have made some small changes to the building footprint to accommodate the proposed road widening limit, and I can send out a revised package with these changes this afternoon. The preliminary survey we received on Thursday indicates that our estimated site boundary lines are pretty close to accurate, but we can't confirm anything until we receive the survey.
  - We require these documents to be final as the sewer and water demands will be calculated based on this information and provided to the City for confirmation on capacity. It will take about a week to calculate the demands and then the City requires 10 business days to confirm capacities. If the site plan changes we need to redo these calculations and restart the process with the City (i.e. every site plan change (even small) can set us back three weeks in the process) Understood.
- Determining required fire flow (RFF):
  - Confirm building is of Fire Resistive Construction as follows: any structure that is considered fully protected, having at least 3-hour rated structural members and floors. For example, reinforced concrete or protected steel. Confirmed. Building will be concrete construction.
  - Confirm vertical openings are protected with a one-hour fire rating. Confirmed.
  - Confirm building is sprinklered, but system is not supervised (i.e. continuously monitored). Confirmed.
  - If any of the above are not correct further coordination will be required to confirm RFF. Understood.
  - A letter from the architect will be required as part of the submission confirming the above assumptions are correct as well as a few others such as contributing building areas, however this can be coordinated at a later date once we are into the calculations. Understood.
- Stormwater management storage requirements:
  - Will roof retention be considered? No.
  - If so over what area of the roof will storage be permitted? (i.e. entire area, partial area due to mechanical units, etc.)
  - Also if we know the number of proposed roof drains and locations that would be helpful. This hasn't been determined yet.

Thanks,

Rachel Irving-Beer *M.Arch*
Intern Architect

RLA Architecture
56 Beech Street,
Ottawa, Ontario K1S 3J6
Tel: 613.724.9932 x 225
Toll Free Tel: 1-888-724-9932 x225
rirvingbeer@rlaarchitecture.ca

rla/architecture
roderick lahey architect inc.

From: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Sent: March 29, 2021 10:52 AM
To: Rachel Irving-Beer <rirvingbeer@rlaarchitecture.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Roderick Lahey <rlahey@rlaarchitecture.ca>; 'Christopher Gordon' <christopher.gordon@cghtransportation.com>; 'Michelle Lavictoire' <m.lavictoire@bowfinenvironmental.ca>; 'Chris Hall' <cjhall@bellnet.ca>; 'Paul Black' <black@fotenn.com>; 'Miguel Tremblay' <tremblay@fotenn.com>; 'Timothy Beed' <beed@fotenn.com>; 'Martin Chenier' <mchenier@vuzeconstruction.com>; Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: RE: 1649 Montreal Rd (Blair & Montreal)

Hi,

Were we able to look at these questions to help us to develop the Adequacy of servicing report?

Thanks,

ÇA VA BIEN ALLER

CHRISTIAN LAVOIE-LEBEL, P.Eng, ing.
Partner / Senior Project Manager / Infrastructure

T 613-860-2462 ext. 6621 **M** 819-664-7920 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA
420, boul. Maloney Est, bureau 201 Gatineau QC J8P 1E7 CANADA

CIMA+

KINCENTRIC Best Employer CANADA 2019

From: Christian Lavoie-Lebel
Sent: March 24, 2021 4:27 PM
To: rirvingbeer@rlaarchitecture.ca
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; rlahey@rlaarchitecture.ca; Christopher Gordon <christopher.gordon@cghtransportation.com>; Michelle Lavictoire <m.lavictoire@bowfinenvironmental.ca>; Chris Hall <cjhall@bellnet.ca>; Paul Black <black@fotenn.com>; Miguel Tremblay <tremblay@fotenn.com>; Timothy Beed <beed@fotenn.com>; Martin Chenier <mchenier@vuzeconstruction.com>
Subject: RE: 1649 Montreal Rd (Blair & Montreal)

Hi,

Here are the questions that we would like you to go through and answer as much as possible to enable us to complete our adequacy of servicing report as detailed as possible.

If you have any questions

Regards,

ÇA VA BIEN ALLER

CHRISTIAN LAVOIE-LEBEL, P.Eng, ing.
Partner / Senior Project Manager / Infrastructure

T 613-860-2462 ext. 6621 **M** 819-664-7920 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA
420, boul. Maloney Est, bureau 201 Gatineau QC J8P 1E7 CANADA

From: Christian Lavoie-Lebel
Sent: March 17, 2021 7:42 AM
To: Martin Chenier <mchenier@vuzeconstruction.com>; rlahey@rlaarchitecture.ca; Christopher Gordon <christopher.gordon@cghtransportation.com>; Michelle Lavictoire <m.lavictoire@bowfinenvironmental.ca>; Chris Hall <cjhall@bellnet.ca>; Paul Black <black@fotenn.com>; Miguel Tremblay <tremblay@fotenn.com>; Timothy Beed <beed@fotenn.com>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>
Subject: RE: 1649 Montreal Rd (Blair & Montreal)

Hi Martin,

While we wait for the ACAD version of the Siteplan we have a couple of questions/comments that we would like to raise and have you or Rod answer or take note :

We will want to confirm the following items with you prior to starting design:

- Timeline will be approximately 6 weeks from obtaining final Site Plan, Legal Plan and Topo Survey (CADD) that will be used for Adequacy of Servicing submission. (Please confirm when the
  - Final meaning the building footprint, number of rooms/beds, any commercial or additional building areas will not change. The hard and soft services at the exterior of the building should also remain unchanged;
  - We require these documents to be final as the sewer and water demands will be calculated based on this information and provided to the City for confirmation on capacity. It will take about a week to calculate the demands and then the City requires 10 business days to confirm capacities. If the site plan changes we need to redo these calculations and restart the process with the City (i.e. every site plan change (even small) can set us back three weeks in the process).
- Determining required fire flow (RFF):
  - Confirm building is of Fire Resistive Construction as follows: any structure that is considered fully protected, having at least 3-hour rated structural members and floors. For example, reinforced concrete or protected steel.
  - Confirm vertical openings are protected with a one-hour fire rating.
  - Confirm building is sprinklered, but system is not supervised (i.e. continuously monitored).
  - If any of the above are not correct further coordination will be required to confirm RFF.
  - A letter from the architect will be required as part of the submission confirming the above assumptions are correct as well as a few others such as contributing building areas, however this can be coordinated at a later date once we are into the calculations.
- Stormwater management storage requirements:
  - Will roof retention be considered?
  - If so over what area of the roof will storage be permitted? (i.e. entire area, partial area due to mechanical units, etc.)
  - Also if we know the number of proposed roof drains and locations that would be helpful.

Thanks,

ÇA VA BIEN ALLER

CHRISTIAN LAVOIE-LEBEL, P.Eng, ing.
Partner / Senior Project Manager / Infrastructure

T 613-860-2462 ext. 6621 **M** 819-664-7920 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA
420, boul. Maloney Est, bureau 201 Gatineau QC J8P 1E7 CANADA

From: Martin Chenier <mchenier@vuzeconstruction.com>
Sent: March 12, 2021 7:05 AM
To: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>; Christopher Gordon <christopher.gordon@cghtransportation.com>; Michelle Lavictoire <m.lavictoire@bowfinenvironmental.ca>; Chris Hall <cjhall@bellnet.ca>; Paul Black <black@fotenn.com>; Miguel Tremblay <tremblay@fotenn.com>; Timothy Beed <beed@fotenn.com>
Subject: Fwd: 1649 Montreal Rd (Blair & Montreal)

EXTERNAL EMAIL

FYI. Layout mostly as well as units count. These will be confirmed shortly with the full package put it's the version we will be elaborating.
Full cad will be available shortly as well.

Thanks.

Begin forwarded message:

> **From:** Ashwani Kumar <akumar@rlaarchitecture.ca>
> **Date:** March 11, 2021 at 5:04:21 PM EST
> **To:** Martin Chenier <mchenier@vuzeconstruction.com>
> **Cc:** chenierm@live.ca, Roderick Lahey <rlahey@rlaarchitecture.ca>
> **Subject: RE: 1649 Montreal Rd (Blair & Montreal)**
>
> Hi Martin,
>
> Please review the attached site plan. The numbers in the Development Summary table are not final yet.
>
> Regards,
> Ashwani Kumar B.Arch, MCP, LEED® Green Associate
> Urban Designer
> RLA Architecture
> Tel: 613.724.9932 x 313
> Toll Free: 888.724.9932
>
> From: Martin Chenier <mchenier@vuzeconstruction.com>
> Sent: March 11, 2021 10:41 AM
> To: Ashwani Kumar <akumar@rlaarchitecture.ca>
> Cc: chenierm@live.ca
> Subject: Re: 1649 Montreal Rd (Blair & Montreal)
>
> [https://s3.amazonaws.com/staticmediafiles/media/sights/iron-icon-color.png]
> IRONSCALES couldn't recognize this email as this is the first time you received an email from this sender mchenier@vuzeconstruction.com<mailto:mchenier@vuzeconstruction.com>
>
> Hi Ashwani

Can you send me the parking levels please.

Thanks.

On Mar 10, 2021, at 5:14 PM, Ashwani Kumar <akumar@rlaarchitecture.ca<mailto:akumar@rlaarchitecture.ca>> wrote:

Hi Martin,

Please take a look at the attached site plan. I have highlighted a one-storey commercial space along Montreal Rd near the ramp. Please let me know if you would like to keep it or remove it.
Also, please share the official client/developer name to put on the site plan.
Thank you.

Regards,
Ashwani Kumar B.Arch, MCP, LEED® Green Associate
Urban Designer

RLA Architecture
56 Beech Street,
Ottawa, Ontario K1S 3J6
Tel: 613.724.9932 x 313
Toll Free: 888.724.9932
akumar@rlaarchitecture.ca<mailto:akumar@rlaarchitecture.ca>

<image001.jpg>

<2037 - SP-1 2021 03 10.pdf>

Jaymeson Adams

From: Des Rochers, Christina (MECP) <Christina.Desrochers@ontario.ca>
Sent: March 26, 2021 9:56 AM
To: Jaymeson Adams; Tim Kennedy; Christian Lavoie-Lebel
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - MECP Pre-consult
Attachments: ODO - Pre-Submission Consultation Request Fill-in Form-May 2017 v4r.docx

EXTERNAL EMAIL

Good morning,

Based on the information provided in your email below, the project appears to meet the exemption requirements of O. Reg. 525.

Going forward, please use the attached form for all pre-submission requests.

Regards.

Christina Des Rochers
Water Inspector | Inspectrice de l'eau
Drinking Water and Environnemental Compliance Division | Division de la conformité en matière d'eau potable et d'environnement
Ministry of the Environment, Conservation and Parks | Ministère de l'Environnement, de la Protection de la nature et des Parcs
Tel. 613-914-4973
Fax. 613-521-5437
Spills Action Centre | Centre d'intervention en cas de déversement 1-800-268-6060
Please consider the environment before printing this email note

---

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: March 25, 2021 2:17 PM
To: Eastern Ottawa (MECP) <Environment.Ottawa@ontario.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: 1649 Montreal Rd. and 741 Blair Rd. - Servicing Capacity Assessment - MECP Pre-consult

To whom it may concern,

We are currently performing an Adequacy of Public Services Report in support of a zoning by-law amendment (ZBLA) application for a proposed development located at 1649 Montreal Road and 741 Blair Road in Ottawa, Ontario (see attached key plan). The proposed development involves the construction of a 26-storey mixed use residential and commercial building. The subject site is located within the Cyrville Drain of the Ottawa River East subwatershed.

We have determined that the proposed development in question falls within the exemption requirements for an Environmental Compliance Approval (ECA) as per O.Reg. 525/98, section 3(a), and Ontario Water Resources Act section 53.6(c) when considering the following:

1. Currently comprised of two (2) parcels of land that are to be combined into one (1) parcel, the existing 0.49-ha site currently consists of a garage (vehicle repair shop and sales) which is zoned Arterial Mainstreet (AM10) and a single family home which is zoned Residential Third Density (R3K).
2. The proposed sewage works and stormwater management facility will service a single parcel of land.
3. The property does not discharge into a combined sewer and it will not be used for industrial purposes.

Would you be able to confirm our assumption that the proposed development is indeed exempt and no further pre-submission consultation is required.

Please feel free to contact me if you have any questions, need to discuss, or require further information.

Best regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

B

Appendix B
Existing Conditions Plan

374049, 5034452

TOPOGRAPHIC PLAN OF SURVEY OF

PART OF LOT 20
CONCESSION 1 (OTTAWA FRONT)
GEOGRAPHIC TOWNSHIP OF GLOUCESTER
CITY OF OTTAWA

FARLEY, SMITH & DENIS SURVEYING LTD. 2021

Scale 1: 250

0 2.5 5 7.5 10 12.5 15 20 25 metres

N

Metric Note
Distances and coordinates on this plan are in metres and can be converted to feet by dividing by 0.3048.

Distance Note
Distances shown on this plan are ground distances and can be converted to grid distances by multiplying by the combined scale factor of 0.99995.

Bearing Note
Bearings are grid, are referred to the northerly limit of Montreal Road having a bearing of N 83° 55' 50" W as shown on Plan 5R-2278 and are referred to the Central Meridian of MTM Zone 9 (76°30' West Longitude) Nad-83 (Original).

For bearing comparisons, a rotation of 0°35'50" counter-clockwise was applied to bearings on P3.

For bearing comparisons, a rotation of 0°36'20" counter-clockwise was applied to bearings on P4.

Elevation Notes
1. Elevations shown are geodetic and are referred to Geodetic Datum CGVD-1928 :1978. (See FSD File No. 687-20)
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

Utility Notes
1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. Underground utility data derived from City of Ottawa utility sheet reference: C-24-19, C-24-25, 6387p&p, 9703p&p03, 10170p&p1, 10170p8&p2 & PG08-304-A.
4. Sanitary and storm sewer grades and inverts were compiled from: City of Ottawa Utility Sheets.
5. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

Notes & Legend

Denotes

—□—	=	Survey Monument Planted
—■—	=	Survey Monument Found
SIB	=	Standard Iron Bar
SSIB	=	Short Standard Iron Bar
IB	=	Iron Bar
IBØ	=	Round Iron Bar
CP	=	Concrete Pin
(Wit)	=	Witness
Meas	=	Measured
(P1)	=	Plan 5R-4153
(P2)	=	Plan by (1287) dated May 26, 1986 (Job No. 236/86)
(P3)	=	Plan 5R-2278
(P4)	=	Registered Plan 863
(P5)	=	Plan 4R-3936
(P6)	=	Plan 5R-3440
(N1)	=	Notes by (1287) dated August 6, 1986
(D1)	=	Inst GL65177
(D2)	=	Inst GL63040
MH-ST	=	Maintenance Hole (Storm)
MH-S	=	Maintenance Hole (Sanitary)
MH-T	=	Maintenance Hole (Traffic)
VC	=	Valve Chamber (Watermain)
ST	=	Underground Storm Sewer
S	=	Underground Sanitary Sewer
W	=	Underground Water
P	=	Underground Power
G	=	Underground Gas
B	=	Underground Bell
TV	=	Underground Cable
OHW	=	Overhead Wires
	=	Utility Pole
AN	=	Anchor
LS	=	Light Standard
CB	=	Catch Basin
FH	=	Fire Hydrant
WV	=	Water Valve
GV	=	Gas Valve
GM	=	Gas Meter
TB	=	Bell Terminal Box
TSP	=	Traffic Signal Post
TSL	=	Traffic Light
B	=	Bollard
S	=	Sign
	=	Gate
TEL	=	Telephone Booth
Ø	=	Diameter
CLF	=	Chain Link Fence
BF	=	Board Fence
MF	=	Metal Fence
CRW	=	Concrete Retaining Wall
SRW	=	Stone Retaining Wall
Inv.	=	Invert
T/G	=	Top of Grate
U/Eave	=	Underside of Eave
Tp/Fdn	=	Top of Foundation
C/L	=	Centreline
+65.00	=	Location of Elevations
+65.00	=	Top of Concrete Curb/Retaining Wall Elevation
	=	Property Line
	=	Shrub
	=	Deciduous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.
	=	Coniferous Tree - The Symbol shown denotes location and trunk diameter only. Size of its' root system/overhead canopy may be smaller/larger than the symbol size depicted on this plan.

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 8th day of April, 2021.

Apr. 14/21
Date

Daniel Robinson
Ontario Land Surveyor

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-10933

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

TOPOGRAPHIC DATA WAS COLLECTED UNDER WINTER CONDITIONS. SNOW COVER AND ICE PRECLUDE DETERMINING LOCATION AND ELEVATION OF SOME TOPOGRAPHICAL DATA THAT IS OTHERWISE VISIBLE.

FILE No. : 147-21

FARLEY, SMITH & DENIS SURVEYING LTD.

ONTARIO LAND SURVEYORS
CANADA LAND SURVEYORS

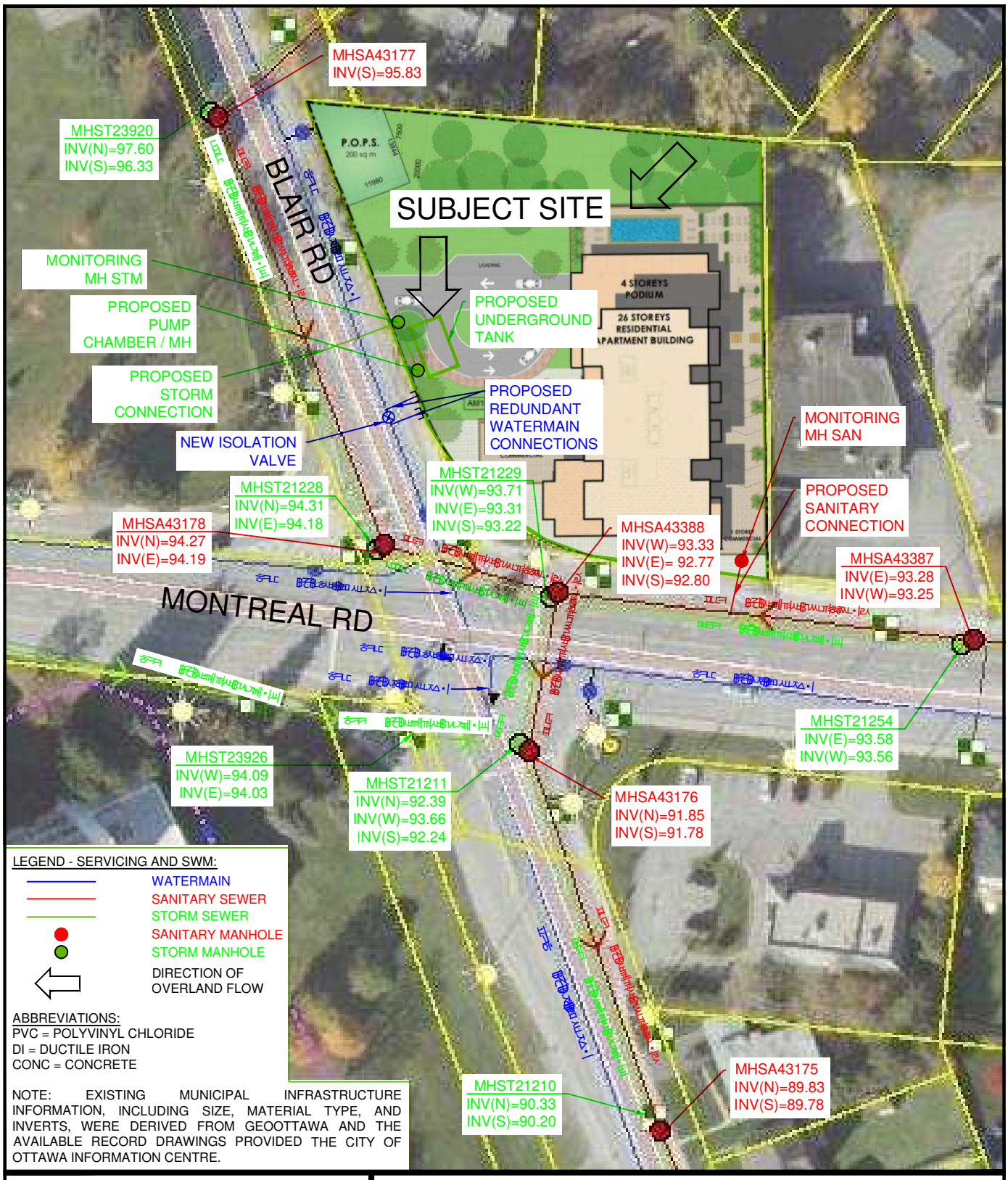
190 COLONNADE ROAD, OTTAWA, ONTARIO K2E 7J5
TEL. (613) 727-8226 FAX. (613) 727-1826

J:\2021\147-21_1649 Montreal Rd_741 Blair Rd_topo\Final\147-21_1649 Montreal Rd_Pt120 Con1_T_F.dwg

TQPO 24x36

C

Appendix C
Conceptual Site Servicing and Stormwater Management Plan



LEGEND - SERVICING AND SWM:

- WATERMAIN
- SANITARY SEWER
- STORM SEWER
- SANITARY MANHOLE
- STORM MANHOLE
- DIRECTION OF OVERLAND FLOW

ABBREVIATIONS:
PVC = POLYVINYL CHLORIDE
DI = DUCTILE IRON
CONC = CONCRETE

NOTE: EXISTING MUNICIPAL INFRASTRUCTURE INFORMATION, INCLUDING SIZE, MATERIAL TYPE, AND INVERTS, WERE DERIVED FROM GEOOTTAWA AND THE AVAILABLE RECORD DRAWINGS PROVIDED THE CITY OF OTTAWA INFORMATION CENTRE.

CIMA+
T: 613-580-2424
110-240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

CONCEPTUAL SITE SERVICING AND STORMWATER MANAGEMENT PLAN

DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE:	DATE:	PROJECT No:	SHEET No:	FIGURE No:
J. Adams	----	C. Lavoie-Lebel	NTS	2021/04/27	A001101	1 of 1	EXIST - 1

D

Appendix D
Water Supply Design Calculations

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

WATER CONSUMPTION CALCULATIONS

APPLICABLE DESIGN GUIDELINES:

1. Ottawa Design Guidelines - Water Distribution (2010)
2. City of Ottawa Technical Bulletin ISTB-2018-02, ISDTB-2014-02 and ISD-2010-02
3. MOE Design Guidelines for Drinking-Water Systems

RESIDENTIAL AND COMMERCIAL WATER DEMANDS:

RESIDENTIAL DESIGN CRITERIA:

Residential Average Day Demand:	350	L/c/day
Maximum Day Peaking Factor:	3.0	x Average Daily Demand
Maximum (Peak Hour) Peaking Factor:	4.5	x Average Daily Demand

EQUIVALENT POPULATION :

Unit Type	Number of Units	Persons Per Unit	Population
1-Bedroom Apartments	61	1.4	85
1-Bedroom + Den Apartments	18	1.4	25
2-Bedroom Apartments	113	2.1	237
2-Bedroom + Den Apartments	51	2.1	107
Total	**243**		**454**

Per Unit Populations:

Table 4.1 Per Unit Populations

Unit Type	Persons Per Unit
Single Family	3.4
Semi-detached	2.7
Duplex	2.3
Townhouse (row)	2.7
Apartments:	
Bachelor	1.4
1 Bedroom	1.4
2 Bedroom	2.1
3 Bedroom	3.1
Average Apt.	1.8

COMMERCIAL DESIGN CRITERIA:

Contributing Commercial Area:	0.089	gross ha (including commercial areas and amenity space)
Commercial Average Day Demand:	28,000	L/gross ha/d
Maximum Day Peaking Factor:	1.5	x Average Daily Demand
Maximum (Peak Hour) Peaking Factor:	1.8	x Maximum Daily Demand

WATER DEMANDS:

Demand Type	Average Daily Demand (L/s)	Maximum Daily Demand (L/s)	Maximum (Peak) Hour Demand (L/s)
Residential	1.84	5.52	8.28
Commercial	0.03	0.04	0.08
Total	**1.87**	**5.56**	**8.35**

NOTES:

1. Maximum Day and Maximum Hour residential peaking factors determined using Table 3-3 of the MOE Design Guidelines for Drinking-Water System for 0 to 500 persons.

2. Given basic day demand greater than 50 m³/day (0.57 L/s), two connections, separated by an isolation valve required. Furthermore given location on corner lot, City will not support the addition of an isolation valve on the main line, thus one connection to Montreal Road and one connection to Blair Road required.

Prepared by: Jaymeson Adams, EIT Date: 2021-03-31

Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-03-31
PEO# 100067842

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

FIRE FLOW ASSESSMENT

APPLICABLE DESIGN GUIDELINES:

1. Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection, 1999
2. Ottawa Design Guidelines - Water Distribution (2010) including Appendix H per ISTB-2018-02
3. City of Ottawa Technical Bulletin ISTB-2018-02
4. MOE Design Guidelines for Drinking-Water Systems

STEP A - DETERMINE THE TYPE OF CONSTRUCTION

Type of Construction	Coefficient (C)	Value Selected (C)
Fire-resistive Construction (> 3 hours)	**0.6**	**0.6**
Non-combustible Construction	0.8	
Ordinary Construction	1.0	
Wood Frame Construction	1.5	

STEP B - DETERMINE THE FLOOR AREA

Floor/Level	Floor Area Per Level (sq. ft.)	Floor Area Per Level (m^2)	Fire Resistive Building	Protected Openings (one hour rating)	Area of Structure Considered (m^2)
Gross Floor Area (GFA) Ground Level:	15,705	1,459	YES	YES	1,459
GFA Level 2:	13,864	1,288			322
GFA Level 3:	13,864	1,288			322
GFA Level 4:	13,864	1,288			-
GFA Level 5:	8,493	789			-
GFA Level 6:	8,493	789			-
GFA Level 7:	8,493	789			-
GFA Level 8:	8,493	789			-
GFA Level 9:	8,493	789			-
GFA Level 10:	8,493	789			-
GFA Level 11:	8,493	789			-
GFA Level 12:	8,493	789			-
GFA Level 13:	8,493	789			-
GFA Level 14:	8,493	789			-
GFA Level 15:	8,493	789			-
GFA Level 16:	8,493	789			-
GFA Level 17:	8,493	789			-
GFA Level 18:	8,493	789			-
GFA Level 19:	8,493	789			-
GFA Level 20:	8,493	789			-
GFA Level 21:	8,493	789			-
GFA Level 22:	8,493	789			-
GFA Level 23:	7,513	698			-
GFA Level 24:	7,513	698			-
GFA Level 25:	7,309	679			-
GFA Level 26:	7,309	679			-
TOTAL FLOOR AREA (A):	**239,809**	**22,279**			**2,103**

PROJECT NAME: 1649 Montreal Road & 741 Blair Road
Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER: A001101
CLIENT: 10869279 Canada Inc.
PROJECT STATUS: Preliminary Design (Assessment of Adequacy of Public Services)

FIRE FLOW ASSESSMENT

STEP C - DETERMINE THE HEIGHT IN STOREYS

Floor/Level	Number of Storeys	Percent of Floor Area Considered
Ground Level:	1	100%
Level 2:	1	25%
Level 3:	1	25%
Level 4:	1	-
Level 5:	1	-
Level 6:	1	-
Level 7:	1	-
Level 8:	1	-
Level 9:	1	-
Level 10:	1	-
Level 11:	1	-
Level 12:	1	-
Level 13:	1	-
Level 14:	1	-
Level 15:	1	-
Level 16:	1	-
Level 17:	1	-
Level 18:	1	-
Level 19:	1	-
Level 20:	1	-
Level 21:	1	-
Level 22:	1	-
Level 23:	1	-
Level 24:	1	-
Level 25:	1	-
Level 26:	1	-
HEIGHT IN STOREYS:	**26**	

STEP D - DETERMINE BASE FIRE FLOW (ROUND TO NEAREST 1,000 L/min)

$$F = 220C\sqrt{A}$$

Where:

F is the required fire flow in L/min
C is the coefficient related to the type of construction, and;
A is the total floor area of the building in m^2

Coefficient Related to Type of Construction (C) = **0.6**
Floor Area Considered (A) = **2,103 m^2**

REQUIRED (BASE) FIRE FLOW (F) =	**6000**	**L/min** (Rounded to Nearest 1,000 L/min)

STEP E - DETERMINE THE INCREASE OR DECREASE FOR OCCUPANCY AND APPLY TO STEP D (STEP D x STEP E, DO NOT ROUND)

Occupancy Class	Occupancy Factor	Value Selected (C)
Non-combustible	0.75	
Limited combustible	0.85	
Combustible	**1.00**	**1.00**
Free burning	1.15	
Rapid burning	1.25	

REQUIRED (BASE) FIRE FLOW (F) =	**6000**	**L/min** (Not rounded)

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

FIRE FLOW ASSESSMENT

STEP F - DETERMINE THE DECREASE, IF ANY, FOR AUTOMATIC SPRINKLER PROTECTION AND APPLY TO VALUE IN STEP D ABOVE (DO NOT ROUND)

Sprinkler System Design	Sprinkler Design Charge	Value Selected (C)	Total Charge
Automatic sprinkler system conforming to NFPA standards	-30%	Yes	-30%
Standard water supply	-10%	Yes	-10%
Fully supervised system	-10%	No	0%
TOTAL CHARGE FOR SPRINKLER SYSTEM			**-40%**

DECREASE FOR SPRINKLER PROTECTION =	**-2400**	**L/min** (Not rounded)

STEP G - DETERMINE THE TOTAL INCREASE FOR EXPOSURES AND APPLY TO VALUE IN STEP D ABOVE (DO NOT ROUND)

Façade	Separation Distance (m)	Length-height Factor of Exposed Wall (m-storeys)	Assumed Construction of Exposed Wall of Adjacent	Total Charge
North Façade	38.4	42	Wood Frame	5%
East Façade	8.7	30	Fire Resistive or Ordinary with Unprotected Openings	15%
South Façade	60.2	25	Fire Resistive or Ordinary with Unprotected Openings	0%
West Façade	193.2	34	Wood Frame	0%
TOTAL CHARGE FOR EXPOSURES				**20%**

INCREASE FOR EXPOSURES =	**1200**	**L/min** (Not rounded)

STEP H - DETERMINE FIRE FLOW INCLUDING ALL INCREASES AND REDUCTIONS ((STEP E + STEP F + STEP G, ROUND TO NEAREST 1,000 L/min)

TOTAL REQUIRED FIRE FLOW (RFF) =	**5000**	**L/min** (Rounded to Nearest 1,000 L/min)
	83.33	**L/s**
	1321	**USGPM**

NOTES/COMMENTS:

STEP A - DETERMINE THE TYPE OF CONSTRUCTION

1. No notes or comments

STEP B - DETERMINE THE FLOOR AREA

1. Assumed vertical openings and exterior vertical communications are properly protected (one hour rating), thus only the area of the largest floor plus 25% of each of the two immediately adjoining floors accounted for per Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection, 1999

STEP C - DETERMINE THE HEIGHT IN STOREYS

1. Three levels of underground parking not considered as they are at least 50% below grade (note F of Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection, 1999)

STEP D - DETERMINE BASE FIRE FLOW (ROUND TO NEAREST 1,000 L/min)

1. No notes or comments.

STEP E - DETERMINE THE INCREASE OR DECREASE FOR OCCUPANCY AND APPLY TO STEP D (STEP D x STEP E, DO NOT ROUND)

1. Occupancy selected assuming commercial establishment will fall under C-3 occupancy type.

STEP F - DETERMINE THE DECREASE, IF ANY, FOR AUTOMATIC SPRINKLER PROTECTION AND APPLY TO VALUE IN STEP D ABOVE (DO NOT ROUND)

1. Assumes sprinkler system will not be fully supervised.

STEP G - DETERMINE THE TOTAL INCREASE FOR EXPOSURES AND APPLY TO VALUE IN STEP D ABOVE (DO NOT ROUND)

1. No notes or comments.

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

FIRE FLOW ASSESSMENT

STEP H - DETERMINE FIRE FLOW INCLUDING ALL INCREASES AND REDUCTIONS ((STEP E + STEP F + STEP G, ROUND TO NEAREST 1,000 L/min)

1. No notes or comments.

Prepared by: Jaymeson Adams, EIT Date: 2021-03-31

Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-03-31
PEO# 100067842

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

HYDRAULIC ANALYSIS - WATER

APPLICABLE DESIGN GUIDELINES:

1. Ottawa Design Guidelines - Water Distribution (2010)
2. City of Ottawa Technical Bulletin ISDTB-2014-02 and ISD-2010-02
3. MOE Design Guidelines for Drinking-Water Systems

MUNICIPAL BOUNDARY CONDITIONS

HYDRAULIC BOUNDARY CONDITIONS (PROVIDED BY THE CITY OF OTTAWA):

Hydraulic Condition (HGL = Hydraulic Grade Line)	Boundary Condition (Head) (m)
	Blair Rd. 305 mm dia.
Minimum HGL	146.5
Maximum HGL	146.9
Maximum Day + Fire Flow	144.4

HYDRAULIC ANALYSIS - WATER SUPPLY ADEQUACY (FLOW AND PRESSURE)

DESIGN CRITERIA - WATERMAIN PRESSURE AND DEMAND OBJECTIVES:

Demand Type	Minimum Pressure (psi)	Desired Minimum Pressure (psi)	Desired Maximum Pressure (psi)	Maximum Pressure (psi)
Average Daily Demand	40.0	50.0	70.0	80.0
Maximum Daily Demand + Fire Flow	20.0			
Maximum (Peak) Hour Demand	40.0			

WATERMAIN PRESSURE AND DEMAND ANALYSIS SUMMARY - PROPOSED DEVELOPMENT:

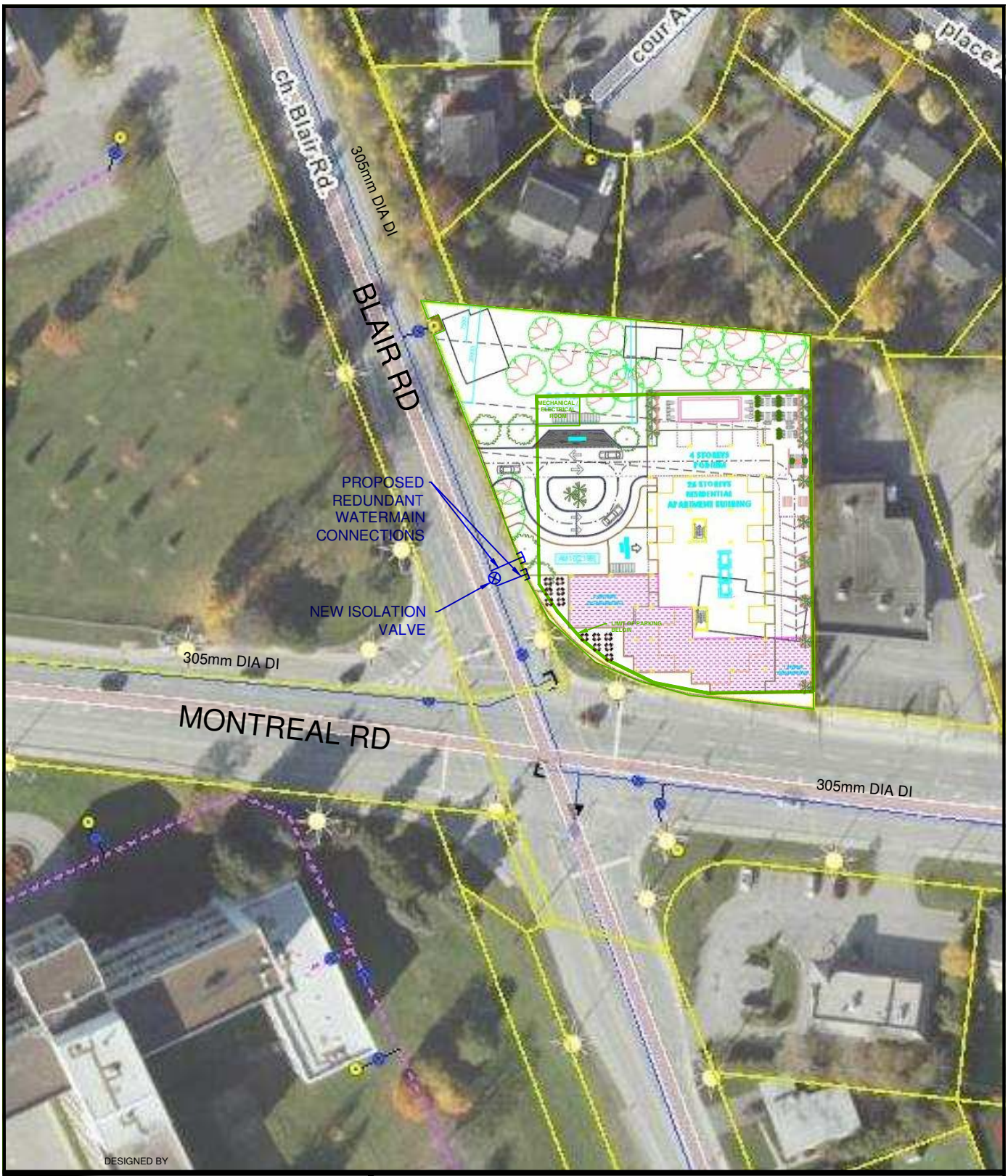
Demand Type	Proposed Demand (L/s)	Available Flow/Pressure		Flow/Pressure Objective Achieved?
		Design Operating Pressure[1] (Relative Head) (m)	Design Operating Pressure (psi)	
Average Daily Demand	1.87	48.8	69	YES
Maximum Daily Demand + Fire Flow	88.89	46.3	66	YES
Maximum (Peak) Hour Demand	8.35	48.4	69	YES

1. Assumed ground elevation for northern connection (m) = 98.1

NOTES:

Prepared by: Jaymeson Adams, EIT Date: 2021-04-13

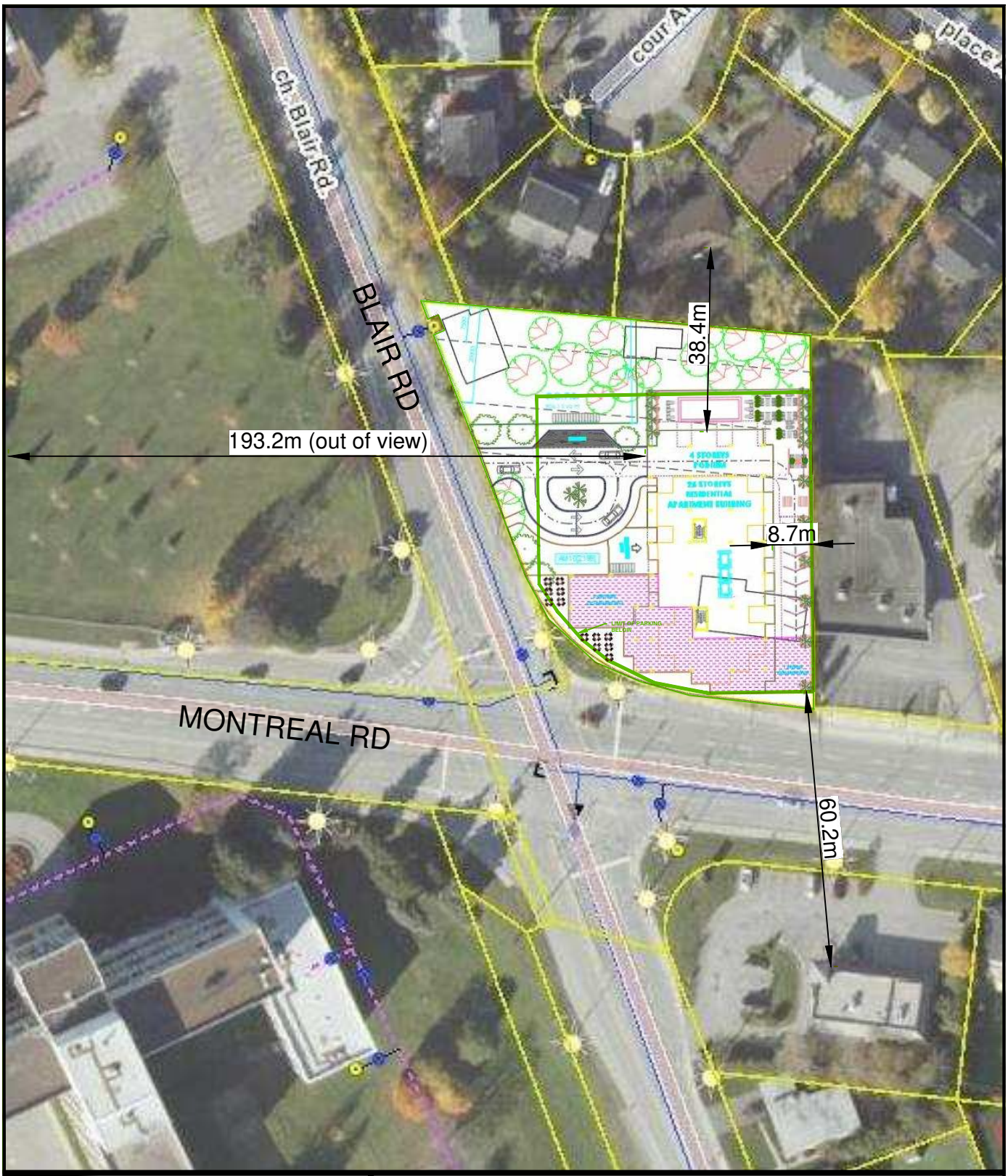
Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-04-30
PEO# 100067842



T: 613-860-2462
110-340 Catherine Street, Ottawa, ON K2P 2G9 CANADA

PROPOSED WATER SERVICE CONNECTION LOCATION(S)

DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE:	DATE:	PROJECT No:	SHEET No:	FIGURE No:
J. Adams	----	C. Lavoie-Lebel	NTS	2021/03/31	A001101	1 of 1	1

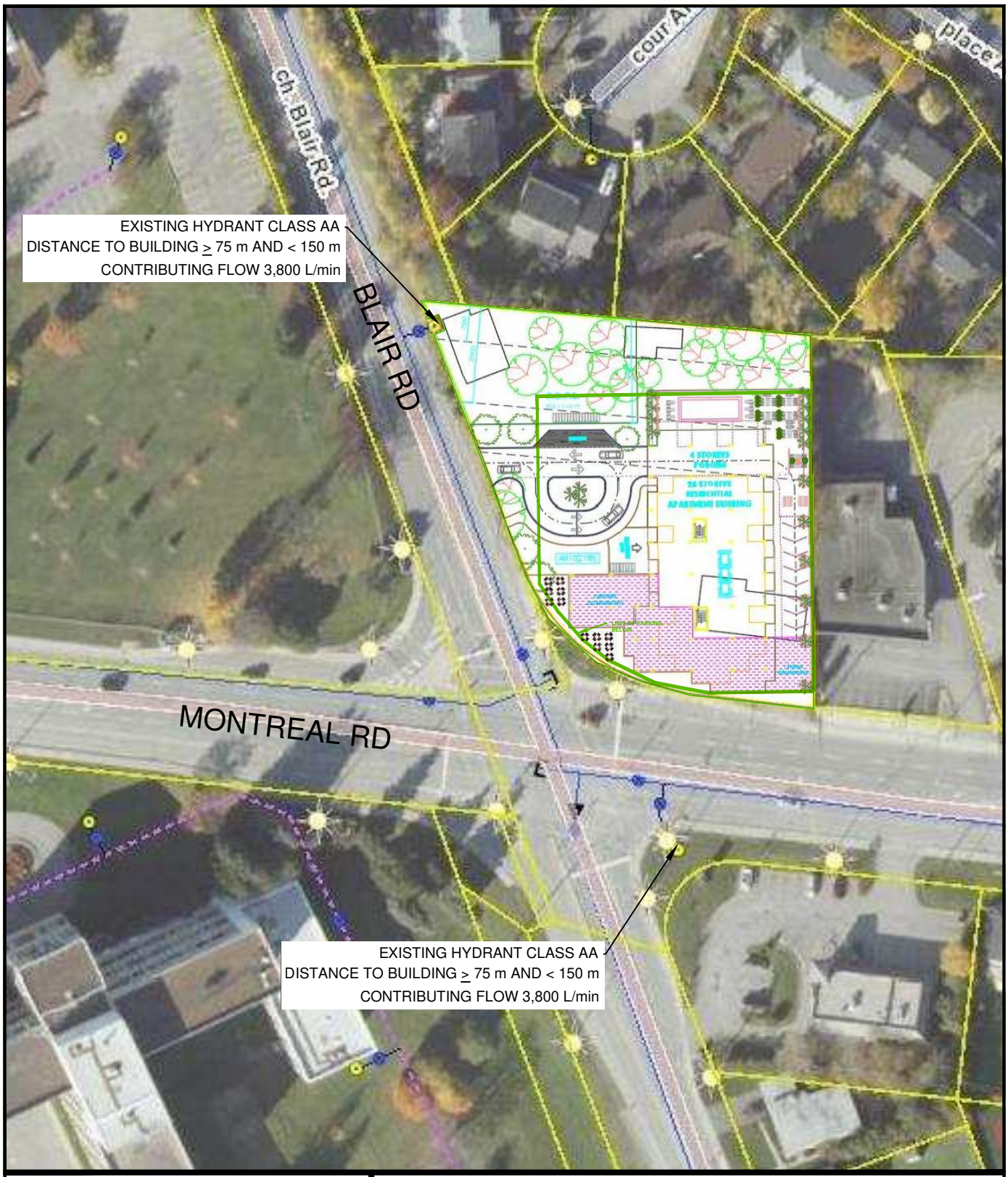


CIMA+

T: 613-580-2424
110-340 Catherine Street, Ottawa, ON K2P 2G9 CANADA

EXPOSURE SEPARATION DISTANCES

DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE:	DATE:	PROJECT No:	SHEET No:	FIGURE No:
J. Adams	----	C. Lavoie-Lebel	NTS	2021/03/31	A001101	1 of 1	2



T: 613-580-2424
110-340 Catherine Street, Ottawa, ON K2P 2G9 CANADA

FIRE HYDRANT COVERAGE

DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE:	DATE:	PROJECT No:	SHEET No:	FIGURE No:
J. Adams	----	C. Lavoie-Lebel	NTS	2021/03/31	A001101	1 of 1	3

Jaymeson Adams

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 13, 2021 3:56 PM
To: Jaymeson Adams
Cc: Tim Kennedy; Christian Lavoie-Lebel; Murshid, Shoma; Baird, Natasha
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request
Attachments: 1649 Montreal Rd & 741 Blair Rd April 2021.pdf

EXTERNAL EMAIL

Hi Jaymeson,

Firstly, I wanted to inform you that the water boundary conditions were received this morning. For your reference, please see below and the attached.

On the wastewater level, I wanted to bring to your attention that our Infrastructure team provided a response with respect to your email dated April 1, 2021 concerning the capacity of the City's system to accommodate the wastewater flow for the proposed development. Based on the modeling review, they have informed us that the existing system is flooding. Should you wish to discuss the existing flooding and capacity in further detail, please contact Eric Tousignant, Senior Engineer (Infrastructure) at eric.tousignant@ottawa.ca.

The following are boundary conditions, HGL, for hydraulic analysis at 1649 Montreal Rd & 741 Blair Rd (zone MONT) assumed to be connected to the 305 mm on Blair Road (see attached PDF for location).

Minimum HGL = 146.5 m

Maximum HGL = 146.9 m

Max Day + Fire Flow (83.3 L/s) = 144.4 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.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet

Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 08, 2021 10:11 AM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Good morning Ms. Mashaie,

Thank you for confirming this. I appreciate the sense of urgency with this file.

Regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 8, 2021 10:09 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

EXTERNAL EMAIL

Hi Jaymeson,

Please note that the team will do their best to deliver, and I will provide the results to your attention as soon as received.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 08, 2021 9:24 AM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

I am just following up on the boundary conditions request below. I was wondering if we can still expect the results within the maximum 2 week timeframe.

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 1, 2021 9:19 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

EXTERNAL EMAIL

Hi Jaymeson,

Thank you - I have forwarded the request to our water modelling team. Please allow up to 2 weeks for a response.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: March 31, 2021 5:36 PM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

In addition, can you please confirm receipt of this request for boundary conditions?

The project schedule is very tight so any help in expediting the process would be greatly appreciated.

Thank you,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Jaymeson Adams
Sent: March 31, 2021 5:29 PM
To: sara.mashaie@ottawa.ca
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Hello Ms. Mashaie,

My name is Jaymeson Adams and I am the Design EIT working on this project.

We would like to kindly request boundary conditions for the proposed development at **1649 Montreal Road and 741 Blair Road**. Please find the proposed development information below and detailed calculations and associated figures attached including (1) Water Demand Calculations, (2) Fire Flow Calculations, (3) Figure 1 – Proposed Water Service Connection Locations, (4) Figure 2 – Exposure Separation Distances, (5) Figure 3 – Fire Hydrant Coverage, and (6) Architectural Concept Plans (for reference):

1. **Type of Development and Units:** The proposed development involves the construction of one (1) 26-storey mixed use building (residential and ground floor commercial space). There is a total of **243 residential units**. An underground 3-level parking garage extending the majority of the footprint of the site is also proposed (approximate garage footprint is shown on the attached Sketches).
2. **Site Address:** 1649 Montreal Road and 741 Blair Road
3. **Location of Services:** Please see attached Figure 1:
    a. Montreal Road – 305 mm diameter DI watermain.
    b. Blair Road – 305 mm diameter DI watermain.
4. **Average Daily Demand:** 1.87 L/s
5. **Maximum Daily Demand:** 5.56 L/s

6. **Peak Hour Demand:** 8.35 L/s
7. **Required Fire Flow (RFF):** 5,000 L/min

If you have any questions or concerns, please do not hesitate to contact me.

Best regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

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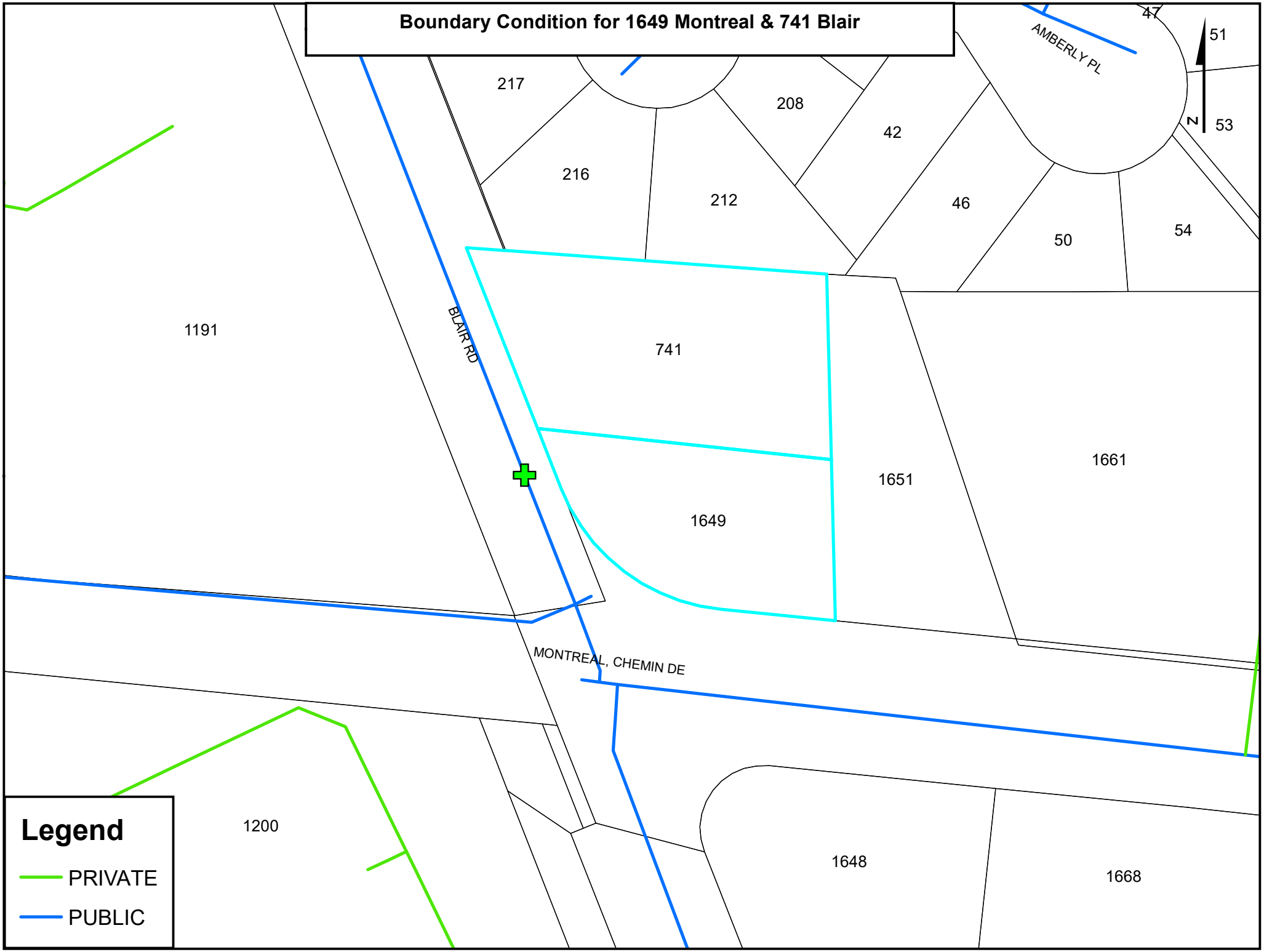
Boundary Condition for 1649 Montreal & 741 Blair
217
208
42
216
212
46
50
54
47
51
53
AMBERLY PL
N
1191
BLAIR RD
741
1649
1651
1661
MONTREAL, CHEMIN DE
1200
1648
1668
Legend
PRIVATE
PUBLIC

Jaymeson Adams

From: Rachel Irving-Beer <rirvingbeer@rlaarchitecture.ca>
Sent: March 29, 2021 11:38 AM
To: Christian Lavoie-Lebel
Cc: Tim Kennedy; Roderick Lahey; 'Christopher Gordon'; 'Michelle Lavictoire'; 'Chris Hall'; 'Paul Black'; 'Miguel Tremblay'; 'Timothy Beed'; 'Martin Chenier'; Jaymeson Adams
Subject: RE: 1649 Montreal Rd (Blair & Montreal)

EXTERNAL EMAIL

Hi Christian,

I just spoke with Rod regarding these question. Please see our reply below in red:

- Timeline will be approximately 6 weeks from obtaining final Site Plan, Legal Plan and Topo Survey (CADD) that will be used for Adequacy of Servicing submission. (Please confirm when the
  - Final meaning the building footprint, number of rooms/beds, any commercial or additional building areas will not change. The hard and soft services at the exterior of the building should also remain unchanged; We still need a final survey before we can call our drawings final for this submission. We have made some small changes to the building footprint to accommodate the proposed road widening limit, and I can send out a revised package with these changes this afternoon. The preliminary survey we received on Thursday indicates that our estimated site boundary lines are pretty close to accurate, but we can't confirm anything until we receive the survey.
  - We require these documents to be final as the sewer and water demands will be calculated based on this information and provided to the City for confirmation on capacity. It will take about a week to calculate the demands and then the City requires 10 business days to confirm capacities. If the site plan changes we need to redo these calculations and restart the process with the City (i.e. every site plan change (even small) can set us back three weeks in the process) Understood.
- Determining required fire flow (RFF):
  - Confirm building is of Fire Resistive Construction as follows: any structure that is considered fully protected, having at least 3-hour rated structural members and floors. For example, reinforced concrete or protected steel. Confirmed. Building will be concrete construction.
  - Confirm vertical openings are protected with a one-hour fire rating. Confirmed.
  - Confirm building is sprinklered, but system is not supervised (i.e. continuously monitored). Confirmed.
  - If any of the above are not correct further coordination will be required to confirm RFF. Understood.
  - A letter from the architect will be required as part of the submission confirming the above assumptions are correct as well as a few others such as contributing building areas, however this can be coordinated at a later date once we are into the calculations. Understood.
- Stormwater management storage requirements:
  - Will roof retention be considered? No.
  - If so over what area of the roof will storage be permitted? (i.e. entire area, partial area due to mechanical units, etc.)
  - Also if we know the number of proposed roof drains and locations that would be helpful. This hasn't been determined yet.

Thanks,

Rachel Irving-Beer *M.Arch*
Intern Architect

RLA Architecture
56 Beech Street,
Ottawa, Ontario K1S 3J6
Tel: 613.724.9932 x 225
Toll Free Tel: 1-888-724-9932 x225
rirvingbeer@rlaarchitecture.ca

rla/architecture
roderick lahey architect inc.

From: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Sent: March 29, 2021 10:52 AM
To: Rachel Irving-Beer <rirvingbeer@rlaarchitecture.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Roderick Lahey <rlahey@rlaarchitecture.ca>; 'Christopher Gordon' <christopher.gordon@cghtransportation.com>; 'Michelle Lavictoire' <m.lavictoire@bowfinenvironmental.ca>; 'Chris Hall' <cjhall@bellnet.ca>; 'Paul Black' <black@fotenn.com>; 'Miguel Tremblay' <tremblay@fotenn.com>; 'Timothy Beed' <beed@fotenn.com>; 'Martin Chenier' <mchenier@vuzeconstruction.com>; Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: RE: 1649 Montreal Rd (Blair & Montreal)

Hi,

Were we able to look at these questions to help us to develop the Adequacy of servicing report?

Thanks,

ÇA VA BIEN ALLER

CHRISTIAN LAVOIE-LEBEL, P.Eng, ing.
Partner / Senior Project Manager / Infrastructure

T 613-860-2462 ext. 6621 **M** 819-664-7920 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA
420, boul. Maloney Est, bureau 201 Gatineau QC J8P 1E7 CANADA

CIMA+

KINCENTRIC Best Employer CANADA 2019

From: Christian Lavoie-Lebel
Sent: March 24, 2021 4:27 PM
To: rirvingbeer@rlaarchitecture.ca
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; rlahey@rlaarchitecture.ca; Christopher Gordon <christopher.gordon@cghtransportation.com>; Michelle Lavictoire <m.lavictoire@bowfinenvironmental.ca>; Chris Hall <cjhall@bellnet.ca>; Paul Black <black@fotenn.com>; Miguel Tremblay <tremblay@fotenn.com>; Timothy Beed <beed@fotenn.com>; Martin Chenier <mchenier@vuzeconstruction.com>
Subject: RE: 1649 Montreal Rd (Blair & Montreal)

Hi,

Here are the questions that we would like you to go through and answer as much as possible to enable us to complete our adequacy of servicing report as detailed as possible.

If you have any questions

Regards,

ÇA VA BIEN ALLER

CHRISTIAN LAVOIE-LEBEL, P.Eng, ing.
Partner / Senior Project Manager / Infrastructure

T 613-860-2462 ext. 6621 **M** 819-664-7920 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA
420, boul. Maloney Est, bureau 201 Gatineau QC J8P 1E7 CANADA

From: Christian Lavoie-Lebel
Sent: March 17, 2021 7:42 AM
To: Martin Chenier <mchenier@vuzeconstruction.com>; rlahey@rlaarchitecture.ca; Christopher Gordon <christopher.gordon@cghtransportation.com>; Michelle Lavictoire <m.lavictoire@bowfinenvironmental.ca>; Chris Hall <cjhall@bellnet.ca>; Paul Black <black@fotenn.com>; Miguel Tremblay <tremblay@fotenn.com>; Timothy Beed <beed@fotenn.com>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>
Subject: RE: 1649 Montreal Rd (Blair & Montreal)

Hi Martin,

While we wait for the ACAD version of the Siteplan we have a couple of questions/comments that we would like to raise and have you or Rod answer or take note :

We will want to confirm the following items with you prior to starting design:

- Timeline will be approximately 6 weeks from obtaining final Site Plan, Legal Plan and Topo Survey (CADD) that will be used for Adequacy of Servicing submission. (Please confirm when the
  - Final meaning the building footprint, number of rooms/beds, any commercial or additional building areas will not change. The hard and soft services at the exterior of the building should also remain unchanged;
  - We require these documents to be final as the sewer and water demands will be calculated based on this information and provided to the City for confirmation on capacity. It will take about a week to calculate the demands and then the City requires 10 business days to confirm capacities. If the site plan changes we need to redo these calculations and restart the process with the City (i.e. every site plan change (even small) can set us back three weeks in the process).
- Determining required fire flow (RFF):
  - Confirm building is of Fire Resistive Construction as follows: any structure that is considered fully protected, having at least 3-hour rated structural members and floors. For example, reinforced concrete or protected steel.
  - Confirm vertical openings are protected with a one-hour fire rating.
  - Confirm building is sprinklered, but system is not supervised (i.e. continuously monitored).
  - If any of the above are not correct further coordination will be required to confirm RFF.
  - A letter from the architect will be required as part of the submission confirming the above assumptions are correct as well as a few others such as contributing building areas, however this can be coordinated at a later date once we are into the calculations.
- Stormwater management storage requirements:
  - Will roof retention be considered?
  - If so over what area of the roof will storage be permitted? (i.e. entire area, partial area due to mechanical units, etc.)
  - Also if we know the number of proposed roof drains and locations that would be helpful.

Thanks,

ÇA VA BIEN ALLER

CHRISTIAN LAVOIE-LEBEL, P.Eng, ing.
Partner / Senior Project Manager / Infrastructure

T 613-860-2462 ext. 6621 **M** 819-664-7920 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA
420, boul. Maloney Est, bureau 201 Gatineau QC J8P 1E7 CANADA

From: Martin Chenier <mchenier@vuzeconstruction.com>
Sent: March 12, 2021 7:05 AM
To: Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>; Christopher Gordon <christopher.gordon@cghtransportation.com>; Michelle Lavictoire <m.lavictoire@bowfinenvironmental.ca>; Chris Hall <cjhall@bellnet.ca>; Paul Black <black@fotenn.com>; Miguel Tremblay <tremblay@fotenn.com>; Timothy Beed <beed@fotenn.com>
Subject: Fwd: 1649 Montreal Rd (Blair & Montreal)

EXTERNAL EMAIL

FYI. Layout mostly as well as units count. These will be confirmed shortly with the full package put it's the version we will be elaborating.
Full cad will be available shortly as well.

Thanks.

Begin forwarded message:

> **From:** Ashwani Kumar <akumar@rlaarchitecture.ca>
> **Date:** March 11, 2021 at 5:04:21 PM EST
> **To:** Martin Chenier <mchenier@vuzeconstruction.com>
> **Cc:** chenierm@live.ca, Roderick Lahey <rlahey@rlaarchitecture.ca>
> **Subject: RE: 1649 Montreal Rd (Blair & Montreal)**
>
> Hi Martin,
>
> Please review the attached site plan. The numbers in the Development Summary table are not final yet.
>
> Regards,
> Ashwani Kumar B.Arch, MCP, LEED® Green Associate
> Urban Designer
> RLA Architecture
> Tel: 613.724.9932 x 313
> Toll Free: 888.724.9932
>
> From: Martin Chenier <mchenier@vuzeconstruction.com>
> Sent: March 11, 2021 10:41 AM
> To: Ashwani Kumar <akumar@rlaarchitecture.ca>
> Cc: chenierm@live.ca
> Subject: Re: 1649 Montreal Rd (Blair & Montreal)
>
> [https://s3.amazonaws.com/staticmediafiles/media/sights/iron-icon-color.png]
> IRONSCALES couldn't recognize this email as this is the first time you received an email from this sender mchenier@vuzeconstruction.com<mailto:mchenier@vuzeconstruction.com>
>
> Hi Ashwani

Can you send me the parking levels please.

Thanks.

On Mar 10, 2021, at 5:14 PM, Ashwani Kumar <akumar@rlaarchitecture.ca<mailto:akumar@rlaarchitecture.ca>> wrote:

Hi Martin,

Please take a look at the attached site plan. I have highlighted a one-storey commercial space along Montreal Rd near the ramp. Please let me know if you would like to keep it or remove it.
Also, please share the official client/developer name to put on the site plan.
Thank you.

Regards,
Ashwani Kumar B.Arch, MCP, LEED® Green Associate
Urban Designer

RLA Architecture
56 Beech Street,
Ottawa, Ontario K1S 3J6
Tel: 613.724.9932 x 313
Toll Free: 888.724.9932
akumar@rlaarchitecture.ca<mailto:akumar@rlaarchitecture.ca>

<image001.jpg>

<2037 - SP-1 2021 03 10.pdf>

E

Appendix E
Sanitary Servicing Design Calculations

PROJECT NAME:	1649 Montreal Road and 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

WASTEWATER PEAK FLOW DETERMINATION

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

2. City of Ottawa Technical Bulletin ISTB-2018-01

DOMESTIC CONTRIBUTIONS:

RESIDENTIAL DESIGN CRITERIA:

Residential Average Flow: (1) 280 L/c/day

Residential Peak Factor (P.F.): Harmon Equation (Min 2.0 and Max 4.0)

$$P.F. = 1 + \left(\frac{14}{4 + \left(\frac{P}{1000} \right)^{\frac{1}{2}}} \right) * K$$

where:
P=Population
K=Correction Factor =0.8

Per Unit Populations:

Table 4.2 Per Unit Populations

Unit Type	Persons Per Unit
Single Family	3.4
Semi-detached	2.7
Duplex	2.3
Townhouse (row)	2.7
Apartments:	
Bachelor	1.4
1 Bedroom	1.4
2 Bedroom	2.1
3 Bedroom	3.1
Average Apt.	1.8

AVERAGE FLOW - DOMESTIC:

Unit Type	Number of Units	Persons Per Unit	Population	Average Flow (L/s)
1-Bedroom Apartments	61	1.4	85	0.28
1-Bedroom + Den Apartments	18	1.4	25	0.08
2-Bedroom Apartments	113	2.1	237	0.77
2-Bedroom + Den Apartments	51	2.1	107	0.35
Total	243		454	**1.47**

PEAK FLOW - DOMESTIC:

Population: (2)	454	persons
Average Dry Weather Flow: (3) = (1) x (2)	1.47	L/s
Peaking Factor (P.F.): (4)	3.40	
Peak Domestic Flow: (5) = (3) x (4)	**5.00**	L/s

COMMERCIAL & INSTITUTIONAL CONTRIBUTIONS:

COMMERCIAL AND INSTITUTIONAL DESIGN CRITERIA:

Commercial Average Flow: (6)	28,000	L/gross ha/d	
Commercial Peak Factor:	1.5	if commercial contribution >20%, otherwise use	1.0

AVERAGE FLOW - COMMERCIAL:

Contributing Commercial Area: (7)	0.089	gross ha (including commercial space and amenity areas)
Average Dry Weather Flow: (8) = (6) x (7)	0.03	L/s

PEAK FLOW - COMMERCIAL:

Percent Commercial Area Contribution:	7%	(GFA/Commercial Floor Area)
Peaking Factor: (9)	1.00	
Peak Commercial Flow: (10) = (8) x (9)	**0.03**	L/s

EXTRANEOUS FLOW CONTRIBUTION - INFLOW AND INFILTRATION:

EXTRANEOUS DESIGN CRITERIA:

Dry Weather Infiltration:	0.05	L/s/effective gross ha (for all areas)
Wet Weather Infiltration:	0.28	L/s/effective gross ha (for all areas)

PEAK FLOW - EXTRANEOUS:

Effective Gross Area: (11)	0.20	ha
Total Infiltration Allowance: (12)	0.33	L/s/effective gross ha (for all areas)
Peak Extraneous Flow: (13) = (11) x (12	**0.07**	L/s

PROJECT NAME:	1649 Montreal Road and 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

WASTEWATER PEAK FLOW DETERMINATION

Total Estimated Avg. Dry Weather Flow Rate:	**1.50**	**L/s**
Total Estimated Peak Dry Weather Flow Rate:	**5.03**	**L/s**
Total Estimated Peak Wet Weather Flow Rate:	**5.09**	**L/s**

Prepared by: Jaymeson Adams, EIT Date: 2021-04-01

Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-04-01
PEO# 1000067842

Z:\Cima-C10\Ott_Projects\A\A001000-A001499\A001101_Blair - Mtl Road Towers\300\360_Civil\210218_Adequacy of Servicing Calculations\01_SAN\[210331_Sanitary Flow.xlsx]Sheet1

Jaymeson Adams

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 13, 2021 3:56 PM
To: Jaymeson Adams
Cc: Tim Kennedy; Christian Lavoie-Lebel; Murshid, Shoma; Baird, Natasha
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request
Attachments: 1649 Montreal Rd & 741 Blair Rd April 2021.pdf

EXTERNAL EMAIL

Hi Jaymeson,

Firstly, I wanted to inform you that the water boundary conditions were received this morning. For your reference, please see below and the attached.

On the wastewater level, I wanted to bring to your attention that our Infrastructure team provided a response with respect to your email dated April 1, 2021 concerning the capacity of the City's system to accommodate the wastewater flow for the proposed development. Based on the modeling review, they have informed us that the existing system is flooding. Should you wish to discuss the existing flooding and capacity in further detail, please contact Eric Tousignant, Senior Engineer (Infrastructure) at eric.tousignant@ottawa.ca.

The following are boundary conditions, HGL, for hydraulic analysis at 1649 Montreal Rd & 741 Blair Rd (zone MONT) assumed to be connected to the 305 mm on Blair Road (see attached PDF for location).

Minimum HGL = 146.5 m

Maximum HGL = 146.9 m

Max Day + Fire Flow (83.3 L/s) = 144.4 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.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet

Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: April 08, 2021 10:11 AM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Good morning Ms. Mashaie,

Thank you for confirming this. I appreciate the sense of urgency with this file.

Regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 8, 2021 10:09 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

EXTERNAL EMAIL

Hi Jaymeson,

Please note that the team will do their best to deliver, and I will provide the results to your attention as soon as received.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
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Sent: April 08, 2021 9:24 AM
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Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

I am just following up on the boundary conditions request below. I was wondering if we can still expect the results within the maximum 2 week timeframe.

Thanks,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

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110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Mashaie, Sara <sara.mashaie@ottawa.ca>
Sent: April 1, 2021 9:19 AM
To: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

EXTERNAL EMAIL

Hi Jaymeson,

Thank you - I have forwarded the request to our water modelling team. Please allow up to 2 weeks for a response.

Regards,

Sara Mashaie, P.Eng., ing.
Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
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110 Laurier Avenue West. Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

From: Jaymeson Adams <Jaymeson.Adams@cima.ca>
Sent: March 31, 2021 5:36 PM
To: Mashaie, Sara <sara.mashaie@ottawa.ca>
Cc: Tim Kennedy <tim.kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

In addition, can you please confirm receipt of this request for boundary conditions?

The project schedule is very tight so any help in expediting the process would be greatly appreciated.

Thank you,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Jaymeson Adams
Sent: March 31, 2021 5:29 PM
To: sara.mashaie@ottawa.ca
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Hello Ms. Mashaie,

My name is Jaymeson Adams and I am the Design EIT working on this project.

We would like to kindly request boundary conditions for the proposed development at **1649 Montreal Road and 741 Blair Road**. Please find the proposed development information below and detailed calculations and associated figures attached including (1) Water Demand Calculations, (2) Fire Flow Calculations, (3) Figure 1 – Proposed Water Service Connection Locations, (4) Figure 2 – Exposure Separation Distances, (5) Figure 3 – Fire Hydrant Coverage, and (6) Architectural Concept Plans (for reference):

1. **Type of Development and Units:** The proposed development involves the construction of one (1) 26-storey mixed use building (residential and ground floor commercial space). There is a total of **243 residential units**. An underground 3-level parking garage extending the majority of the footprint of the site is also proposed (approximate garage footprint is shown on the attached Sketches).
2. **Site Address:** 1649 Montreal Road and 741 Blair Road
3. **Location of Services:** Please see attached Figure 1:
    a. Montreal Road – 305 mm diameter DI watermain.
    b. Blair Road – 305 mm diameter DI watermain.
4. **Average Daily Demand:** 1.87 L/s
5. **Maximum Daily Demand:** 5.56 L/s

6. **Peak Hour Demand:** 8.35 L/s
7. **Required Fire Flow (RFF):** 5,000 L/min

If you have any questions or concerns, please do not hesitate to contact me.

Best regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

T 613-860-2462 ext. 6659 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

'

'
'

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.

Le présent courriel a été expédié par le système de courriels de la Ville d'Ottawa. Toute distribution, utilisation ou reproduction du courriel ou des renseignements qui s'y trouvent par une personne autre que son destinataire prévu est interdite. Je vous remercie de votre collaboration.

'
'

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.

'

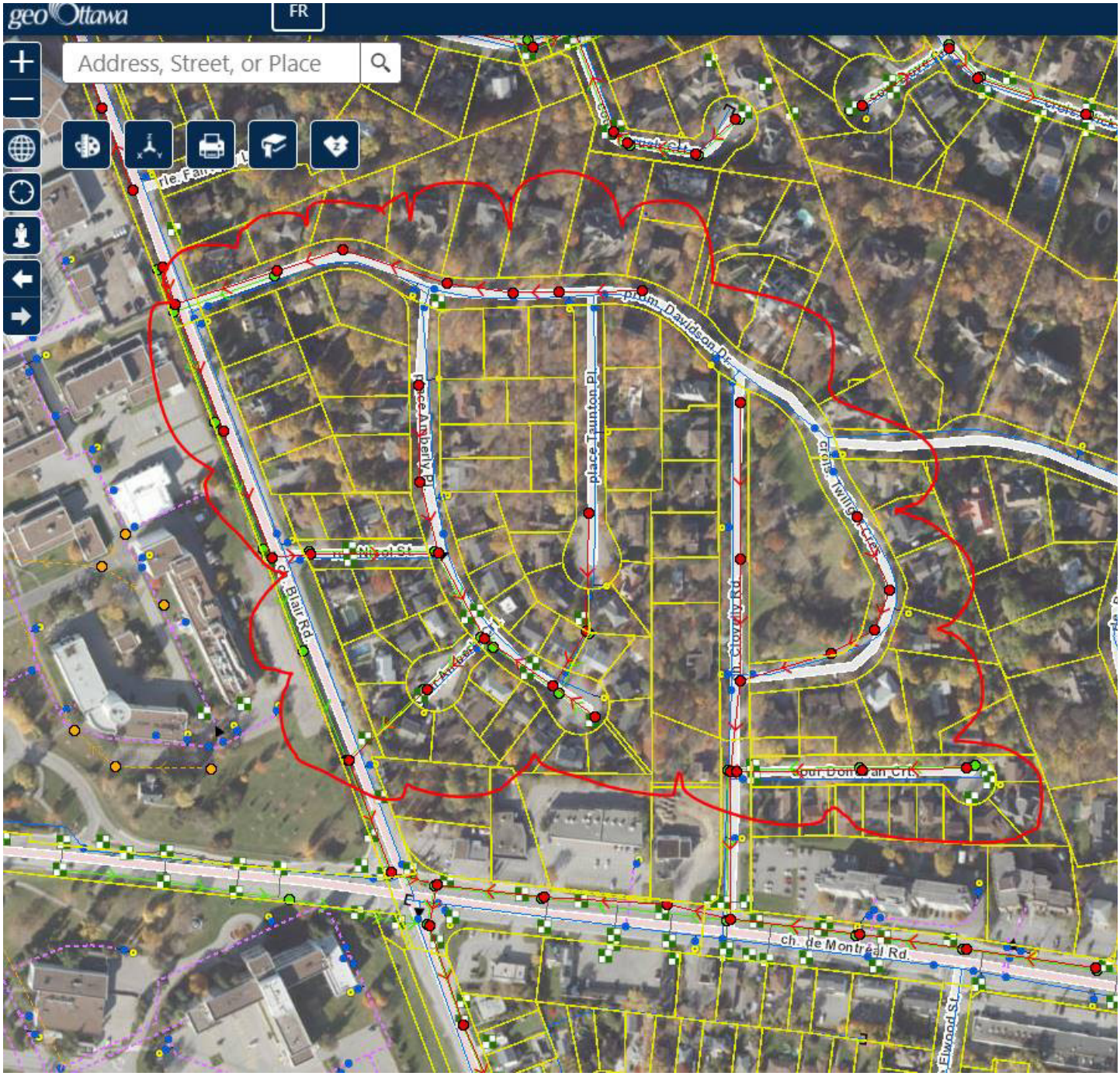
Jaymeson Adams

From: Christian Lavoie-Lebel
Sent: April 19, 2021 9:39 AM
To: Dominic Cleroux Cloutier
Cc: Roderick Lahey; Paul Black; Jaymeson Adams; martin Chénier
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request
Attachments: 1649 Montreal Rd & 741 Blair Rd April 2021.pdf

Good Morning,

We held a meeting this morning with the City of Ottawa modelling representative. The problem is caused by very high added flows associated to underground infiltration and surface storm water draining within the sanitary sewer due to multiple storm drainage existing problems.

The City as proposed a storm flow reduction alternative to compensate for the projects added sanitary flows. Replace existing Sanitary Manhole covers with solid sealed manhole covers (approx. 25 units) onto the illustrated area below sanitary networks. This alternative was agreed upon during the meeting and, unless advised otherwise, we will confirm that the client agrees to this within our Adequacy of Servicing report. This alternative will most likely cost around 12,000$.



Regards,

ÇA VA BIEN ALLER

Avis pour nos clients sur la COVID-19

CHRISTIAN LAVOIE-LEBEL, P.Eng, ing.
Partner / Senior Project Manager / Infrastructure

T 613-860-2462 ext. 6621 **M** 819-664-7920 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

420, boul. Maloney Est, bureau 201 Gatineau QC J8P 1E7 CANADA

From: Christian Lavoie-Lebel
Sent: April 14, 2021 11:32 AM
To: Dominic Cleroux Cloutier <dcloutier@bertone.ca>
Cc: Roderick Lahey <rlahey@rlaarchitecture.ca>; Paul Black <black@fotenn.com>; Jaymeson Adams <Jaymeson.Adams@cima.ca>
Subject: FW: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Hi Dominic,

Just a heads-up that we received the following email from the City of Ottawa modelling team with regards to lack of existing sanitary sewer capacities for the connection sewer point of our project.

On the wastewater level, I wanted to bring to your attention that our Infrastructure team provided a response with respect to your email dated April 1, 2021 concerning the capacity of the City's system to accommodate the wastewater flow for the proposed development. Based on the modeling review, they have informed us that the existing system is flooding. Should you wish to discuss the existing flooding and capacity in further detail, please contact Eric Tousignant, Senior Engineer (Infrastructure) at eric.tousignant@ottawa.ca.

We will contact M. Tousignant ASAP and let you know what comes out of that conversation.

Regards,

ÇA VA BIEN ALLER

CHRISTIAN LAVOIE-LEBEL, P.Eng, ing.
Partner / Senior Project Manager / Infrastructure

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Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>; Murshid, Shoma <Shoma.Murshid@ottawa.ca>; Baird, Natasha <Natasha.Baird@ottawa.ca>
Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

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Project Manager | Gestionnaire de Projet
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Planning, Infrastructure and Economic Development Department | Services de la planification, de l'infrastructure et du développement économique
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Subject: RE: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Good morning Ms. Mashaie,

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Regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

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Project Manager | Gestionnaire de Projet
Development Review, East Branch | Examen des projets d'aménagement, Secteur est
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613.580.2424 ext./poste 27885, sara.mashaie@ottawa.ca

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Thank you,

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Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

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110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

From: Jaymeson Adams
Sent: March 31, 2021 5:29 PM
To: sara.mashaie@ottawa.ca
Cc: Tim Kennedy <Tim.Kennedy@cima.ca>; Christian Lavoie-Lebel <Christian.Lavoie-Lebel@cima.ca>
Subject: 1649 Montreal Rd. and 741 Blair Rd. - Water Demands - Boundary Condition Request

Hello Ms. Mashaie,

My name is Jaymeson Adams and I am the Design EIT working on this project.

We would like to kindly request boundary conditions for the proposed development at **1649 Montreal Road and 741 Blair Road**. Please find the proposed development information below and detailed calculations and associated figures attached including (1) Water Demand Calculations, (2) Fire Flow Calculations, (3) Figure 1 – Proposed Water Service Connection Locations, (4) Figure 2 – Exposure Separation Distances, (5) Figure 3 – Fire Hydrant Coverage, and (6) Architectural Concept Plans (for reference):

1. **Type of Development and Units:** The proposed development involves the construction of one (1) 26-storey mixed use building (residential and ground floor commercial space). There is a total of **243 residential units**. An underground 3-level parking garage extending the majority of the footprint of the site is also proposed (approximate garage footprint is shown on the attached Sketches).

2. **Site Address:** 1649 Montreal Road and 741 Blair Road
3. **Location of Services:** Please see attached Figure 1:
    a. Montreal Road – 305 mm diameter DI watermain.
    b. Blair Road – 305 mm diameter DI watermain.
4. **Average Daily Demand:** 1.87 L/s
5. **Maximum Daily Demand:** 5.56 L/s
6. **Peak Hour Demand:** 8.35 L/s
7. **Required Fire Flow (RFF):** 5,000 L/min

If you have any questions or concerns, please do not hesitate to contact me.

Best regards,

JAYMESON ADAMS, EIT
Engineering Trainee / Infrastructure
Ingénieur en formation / Infrastructures

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110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

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Appendix F
Storm Servicing and Stormwater Management Calculations

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

STORM RUNOFF COEFFICIENT DETERMINATION (PRE-DEVELOPMENT)

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

PRE-DEVELOPMENT RUNOFF COEFFICIENT DETERMINATION:

Area	Pervious Area m²	Pervious Area Runoff Coefficient	Impervious Area m²	Impervious Area Runoff Coefficient	Total Area m²	Weighted Runoff Coefficient (5-year)	Weighted Runoff Coefficient (100-year)
Attenuated Areas	2995	0.20	1887	0.90	4882	**0.47**	**0.59**
Unattenuated Areas	192	0.20	322	0.90	514	**0.64**	**0.80**
TOTAL	**3187**	**0.20**	**2209**	**0.90**	**5396**	**0.49**	**0.61**

NOTES:

For 25 year storms add 10% to C value
For 50 year storms add 20% to C value
For 100 year storms add 25% to C value

Prepared by: Jaymeson Adams, EIT Date: 2021-04-07

Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-04-27
PEO# 100067842

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

STORM PRE-DEVELOPMENT FLOW

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

PRE-DEVELOPMENT FLOW DETERMINATION:

DESIGN CRITERIA:

Design Storm (year):	5	
IDF Regression Constants: (a)	998.071	
(b)	6.053	
(c)	0.814	
IDF Curve Equation (mm/hr):	$I = a / (\text{Time in min} + b)^c$	
Rational Formula (L/s):	Q = 2.78C*I*A	where: Q = Flow (L/s) C = Runoff Coefficient I = Rainfall Intensity (mm/hr) A = Area (hectares)

ALLOWABLE RELEASE RATE - SUMMARY:

Catchment ID	Area (A) ha	Runoff Coefficient (C)	Time of Concentration (tc) min	Intensity (I) mm/hr	Allowable Release Rate (Q) L/s	Release Flow Per Unit Area (Q/ha) L/s/ha
A1	0.488	0.47	10	104.19	**66.4**	**136.0**
Total	**0.488**				**66.4**	**136.0**

NOTES:

1. Calculated Time of Concentration (tc) using Bransby Williams (C > 0.4) is 7 min. Minimum Tc of 10 min used per City Standard.
2. IDF Parameters per City of Ottawa Sewer Design Guidelines, 2012 (Macdonald-Cartier International Airport)

Prepared by: Jaymeson Adams, EIT Date: 2021-04-07

Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-04-27
PEO# 100067842

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

STORM PRE-DEVELOPMENT FLOW - EXISTING SITE FLOWS

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

PRE-DEVELOPMENT FLOW DETERMINATION - 100-YEAR EVENT:

DESIGN CRITERIA:

Design Storm (year):	100	
IDF Regression Constants: (a)	1735.688	
(b)	6.014	
(c)	0.820	
IDF Curve Equation (mm/hr):	$I = a / (\text{Time in min} + b)^c$	
Rational Formula (L/s):	Q = 2.78C*I*A	where: Q = Flow (L/s) C = Runoff Coefficient I = Rainfall Intensity (mm/hr) A = Area (hectares)

ALLOWABLE RELEASE RATE - SUMMARY:

Catchment ID	Area (A) ha	Runoff Coefficient (C)	Time of Concentration (tc) min	Intensity (I) mm/hr	Release Rate (Q) L/s	Release Flow Per Unit Area (Q/ha) L/s/ha
A1	0.488	0.59	10	178.56	**142.9**	**292.6**
Total	**0.488**				**142.9**	**292.6**

NOTES:

1. Calculated Time of Concentration (tc) using Bransby Williams (C > 0.4) is 7 min. Minimum Tc of 10 min used per City Standard.
2. IDF Parameters per City of Ottawa Sewer Design Guidelines, 2012 (Macdonald-Cartier International Airport)

Prepared by: Jaymeson Adams, EIT Date: 2021-04-07

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CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

STORM RUNOFF COEFFICIENT DETERMINATION (POST-DEVELOPMENT)

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

POST-DEVELOPMENT RUNOFF COEFFICIENT DETERMINATION:

Area	Pervious Area m²	Pervious Area Runoff Coefficient	Impervious Area m²	Impervious Area Runoff Coefficient	Total Area m²	Weighted Runoff Coefficient (5-year)	Weighted Runoff Coefficient (100-year)
Garage and Roof Area (A1)	0	0.20	2957	0.90	2957	**0.90**	**0.95**
Area to Back (A2)	769	0.20	0	0.90	769	**0.20**	**0.25**
Area to Front (A3)	692	0.20	174	0.90	866	**0.34**	**0.43**
Landscaping Area facing Montreal (A4)	0	0.20	290	0.90	290	**0.90**	**0.95**
Unattenuated Areas	0	0.20	514	0.90	514	**0.90**	**0.95**
TOTAL	**1461**	**0.20**	**3935**	**0.90**	**5396**	**0.71**	**0.89**

NOTES:

For 25 year storms add 10% to C value
For 50 year storms add 20% to C value
For 100 year storms add 25% to C value

Prepared by: Jaymeson Adams, EIT Date: 2021-04-27

Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-04-27
PEO# 100067842

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

STORM PRE- VS POST DEVELOPMENT FLOW - UNATTENUATED AREAS (100-YEAR)

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

PRE- vs POST-DEVELOPMENT FLOW DETERMINATION FOR UNATTENUATED AREAS:

DESIGN CRITERIA:

Design Storm (year):	100	
IDF Regression Constants: (a) **(b)** **(c)**	1735.688 6.014 0.820	
IDF Curve Equation (mm/hr):	$I = a / (\text{Time in min} + b)^c$	
Rational Formula (L/s):	Q = 2.78C*I*A	where: Q = Flow (L/s) C = Runoff Coefficient I = Rainfall Intensity (mm/hr) A = Area (hectares)

RELEASE RATE SUMMARY - UNATTENUATED AREAS - PRE- vs POST-DEVELOPMENT (100-year):

Design Event	Area (A) ha	Runoff Coefficient (C)	Time of Concentration (tc) min	Intensity (I) mm/hr	Allowable Release Rate (Q) L/s	Release Flow Per Unit Area (Q/ha) L/s/ha
Pre-development	0.0514	0.80	10	178.56	**20.4**	**396.80**
Post-development	0.0514	0.95	10	178.56	**24.2**	**471.20**
Variance (Post minus Pre)					**3.8**	

NOTES:

1. Tc of 10 min used per City Standard.
2. IDF Parameters per City of Ottawa Sewer Design Guidelines, 2012 (Macdonald-Cartier International Airport)

Prepared by: Jaymeson Adams, EIT Date: 2021-04-07

Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-04-27
PEO# 100067842

PROJECT NAME: 1649 Montreal Road & 741 Blair Road
Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER: A001101
CLIENT: 10869279 Canada Inc.
PROJECT STATUS: Preliminary Design (Assessment of Adequacy of Public Services)

STORMWATER MANAGEMENT – PRELIMINARY RETENTION CALCULATIONS

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

STORMWATER MANAGEMENT SUMMARY - STORAGE AND DRAWDOWN:

DESIGN CRITERIA:

Rainfall event	100.0	years
Flows to Tank	62.6	L/s
Unattenuated Flow (100 year)	3.8	L/s
Allowable Release Rate	66.4	L/s

Sub-Area	Total Area (m^2)	Available Storage Area (m^2)	Catchbasin/ Roof Drain Elevation (m)	Maximum Ponding Elevation (m)	Y_{max} (m)	V_{max} (m^3)	V_{rain} (m^3)	V_{acc} (m^3)	Y_{rain} (m)	$Elev_{rain}$ (m)	A_{rain} (m^2)	Q (L/s)	Tank Release Rate ($Q_{1/2}$) (L/s)	Drawdown Time (min)	Comments
A1	2957	0	-	-	-	90.0	54.5	90.0	-	-	-	51.0	-	-	Building Roof
A2	769	0	-	-	-		5.3		-	-	-	2.0	-	-	Back
A3	866	0	-	-	-		13.9		-	-	-	2.0	-	-	Front
A4	290	0	-	-	-		3.7		-	-	-	7.6	-	-	Landscaping between Building & Montreal Rd
Unattenuated	514	0	-	-	-	-	-	-	-	-	-	3.8	-	-	Unattenuated
Total	**5396**	**0**				**90.0**	**77.3**	**90.0**				**66.4**			

DEFINITIONS OF ABBREVIATIONS USED IN CALCULATION TABLE:

NC = Area is not controlled (unattenuated)
Available Area = Area of water accumulated in sub-area at Max. Elev.
Catchbasin Elev. = Elevation of catchbasin inlet (top of grate).
Max. Elev. = Maximum elevation of water that may be accumulated within sub-area.
Y_{max} = Maximum depth of water that may be accumulated within the sub-area.
V_{max} = Maximum volume of water (capacity) that may be accumulated within the sub-area.
V_{rain} = Volume of water generated by rainfall.
V_{acc} = Total volume of water accumulated within the sub-area in the event of a specific rainfall.
Y_{rain} = Depth of water generated by rainfall.
$Elev_{rain}$ = Elevation of water generated by rainfall.
A_{rain} = Area of water generated by rainfall.
Q = Release flow rate.
Tank Release Rate = Release rate from the underground storage tank equal to 1/2 the allowable release rate.
Drawdown Time = Time required for the total volume of water accumulated within sub-area to subside.

Prepared by: Jaymeson Adams, EIT Date: 2021-04-27

Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-04-27
PEO# 100067842

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CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

RETENTION CALCULATIONS FOR FOR SUB-CATCHMENT AREA A1 (BLOCK 1)

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

REQUIRED STORAGE VOLUME DETERMINATION:

DESIGN CRITERIA:

Rainfall Station:	City of Ottawa Sewer Design Guidelines, 2012 (Macdonald-Cartier Airport)
Release Rate Per Unit Area (Q/ha):	172.47 L/s/ha
Area (A):	0.2957 ha
Runoff Coefficient (C):	0.95
Rainfall Event:	100 year
Release Rate (Q):	0.0510 m³/s
Discharge Factor (K):	1

Regression Constants	2 year	5 year	10 year	25 year	50 year	100 year
A	732.951	998.071	1174.184	1402.844	1569.58	1735.688
B	6.199	6.053	6.014	6.018	6.014	6.014
C	0.810	0.814	0.816	0.819	0.82	0.82

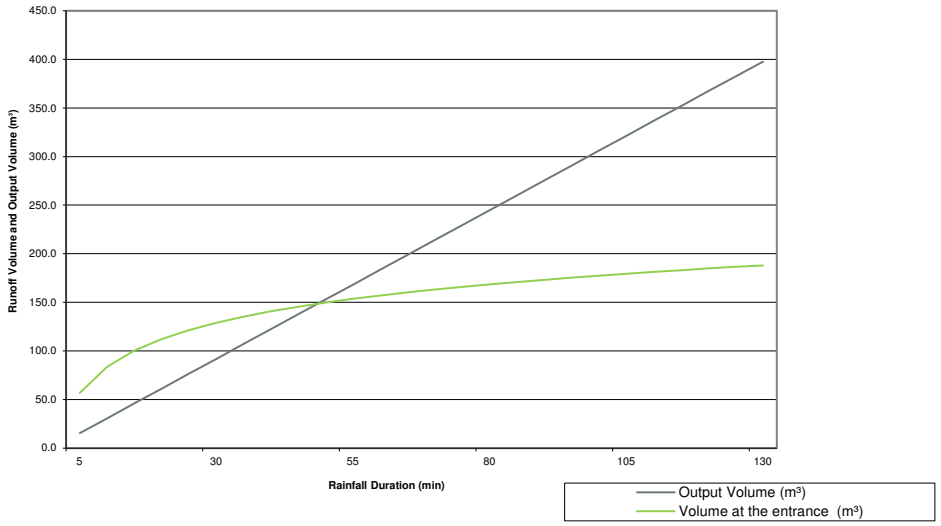
Required Retention Volume: **54.5 m³**

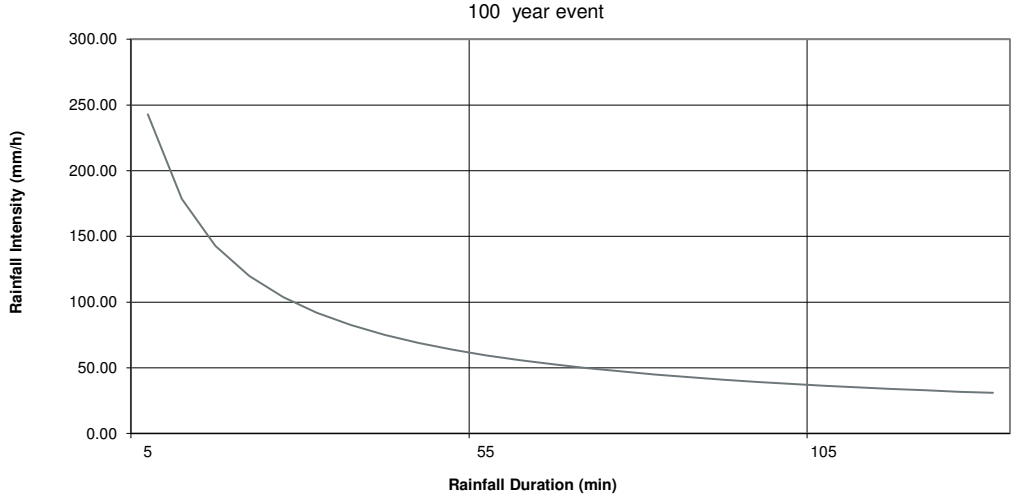
Rainfall Duration (min) *T* (1)	**Rainfall Intensity** (mm/h) *I* (2)	**Runoff Volume** (m³) *CIAT* (3)	**Output Volume** (m³) *kQT* (4)	**Retention Volume** (m³) *(3)-(4)* (5)
5.0	242.7	56.8	15.3	41.5
10.0	178.6	83.6	30.6	53.0
15.0	**142.9**	**100.4**	**45.9**	**54.5**
20.0	120.0	112.3	61.2	51.1
25.0	103.8	121.6	76.5	45.1
30.0	91.9	129.0	91.8	37.2
35.0	82.6	135.3	107.1	28.2
40.0	75.1	140.7	122.4	18.3
45.0	69.1	145.5	137.7	7.8
50.0	64.0	149.7	153.0	-3.3
55.0	59.6	153.5	168.3	-14.8
60.0	55.9	157.0	183.6	-26.6
65.0	52.6	160.2	198.9	-38.7
70.0	49.8	163.2	214.2	-51.0
75.0	47.3	165.9	229.5	-63.6
80.0	45.0	168.5	244.8	-76.3
85.0	43.0	170.9	260.1	-89.2
90.0	41.1	173.2	275.4	-102.2
95.0	39.4	175.4	290.7	-115.3
100.0	37.9	177.5	306.0	-128.5
105.0	36.5	179.4	321.3	-141.9
110.0	35.2	181.3	336.6	-155.3
115.0	34.0	183.1	351.9	-168.8
120.0	32.9	184.8	367.2	-182.4
125.0	31.9	186.5	382.5	-196.0
130.0	30.9	188.1	397.8	-209.7
Design Volume:				**54.5**

Init._____

ATTENUATED AREAS

Required Retention Determination Using the Rational Method





Prepared by: Jaymeson Adams, EIT Date: 2021-04-27

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PEO# 100067842

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PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

RETENTION CALCULATIONS FOR FOR SUB-CATCHMENT AREA A2 (BLOCK 2)

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

REQUIRED STORAGE VOLUME DETERMINATION:

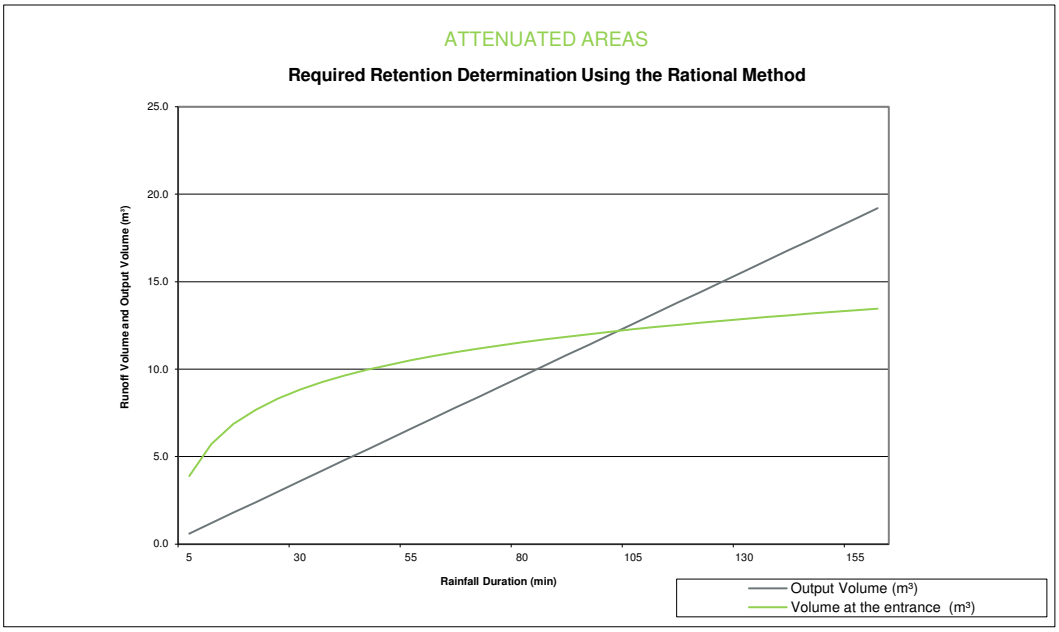
DESIGN CRITERIA:

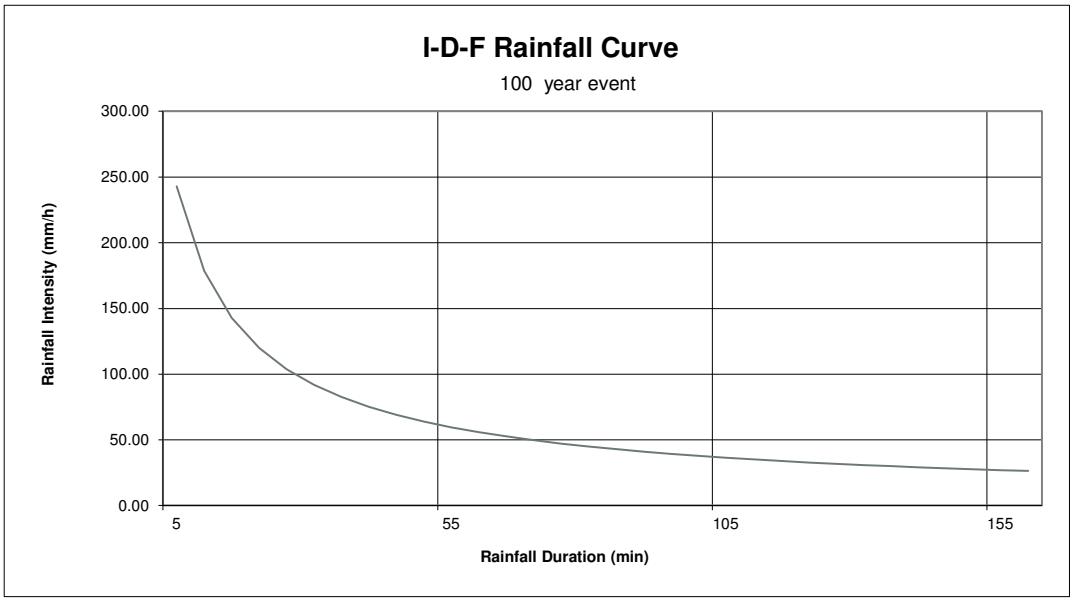
Rainfall Station:	City of Ottawa Sewer Design Guidelines, 2012 (Macdonald-Cartier Airport)
Release Rate Per Unit Area (Q/ha):	26.01 L/s/ha
Area (A):	0.0769 ha
Runoff Coefficient (C):	0.25
Rainfall Event:	100 year
Release Rate (Q):	0.0020 m³/s
Discharge Factor (K):	1

Regression Constants	2 year	5 year	10 year	25 year	50 year	100 year
A	732.951	998.071	1174.184	1402.844	1569.58	1735.688
B	6.199	6.053	6.014	6.018	6.014	6.014
C	0.810	0.814	0.816	0.819	0.82	0.82

Required Retention Volume: 5.3 m³

Rainfall Duration (min) *T* (1)	**Rainfall Intensity** (mm/h) *I* (2)	**Runoff Volume** (m³) *CIAT* (3)	**Output Volume** (m³) *kQT* (4)	**Retention Volume** (m³) *(3)-(4)* (5)
5.0	242.7	3.9	0.6	3.3
10.0	178.6	5.7	1.2	4.5
15.0	142.9	6.9	1.8	5.1
20.0	120.0	7.7	2.4	5.3
25.0	**103.8**	**8.3**	**3.0**	**5.3**
30.0	91.9	8.8	3.6	5.2
35.0	82.6	9.3	4.2	5.1
40.0	75.1	9.6	4.8	4.8
45.0	69.1	10.0	5.4	4.6
50.0	64.0	10.2	6.0	4.2
55.0	59.6	10.5	6.6	3.9
60.0	55.9	10.7	7.2	3.5
65.0	52.6	11.0	7.8	3.2
70.0	49.8	11.2	8.4	2.8
75.0	47.3	11.4	9.0	2.4
80.0	45.0	11.5	9.6	1.9
85.0	43.0	11.7	10.2	1.5
90.0	41.1	11.9	10.8	1.1
95.0	39.4	12.0	11.4	0.6
100.0	37.9	12.1	12.0	0.1
105.0	36.5	12.3	12.6	-0.3
110.0	35.2	12.4	13.2	-0.8
115.0	34.0	12.5	13.8	-1.3
120.0	32.9	12.6	14.4	-1.8
125.0	31.9	12.8	15.0	-2.2
130.0	30.9	12.9	15.6	-2.7
135.0	30.0	13.0	16.2	-3.2
140.0	29.2	13.1	16.8	-3.7
145.0	28.4	13.2	17.4	-4.2
150.0	27.6	13.3	18.0	-4.7
155.0	26.9	13.4	18.6	-5.2
160.0	26.2	13.5	19.2	-5.7
Design Volume:				**5.3**





Prepared by: Jaymeson Adams, EIT Date: 2021-04-27

Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-04-27
PEO# 100067842

Init._____

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

RETENTION CALCULATIONS FOR FOR SUB-CATCHMENT AREA A3 (BLOCK 3)

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

REQUIRED STORAGE VOLUME DETERMINATION:

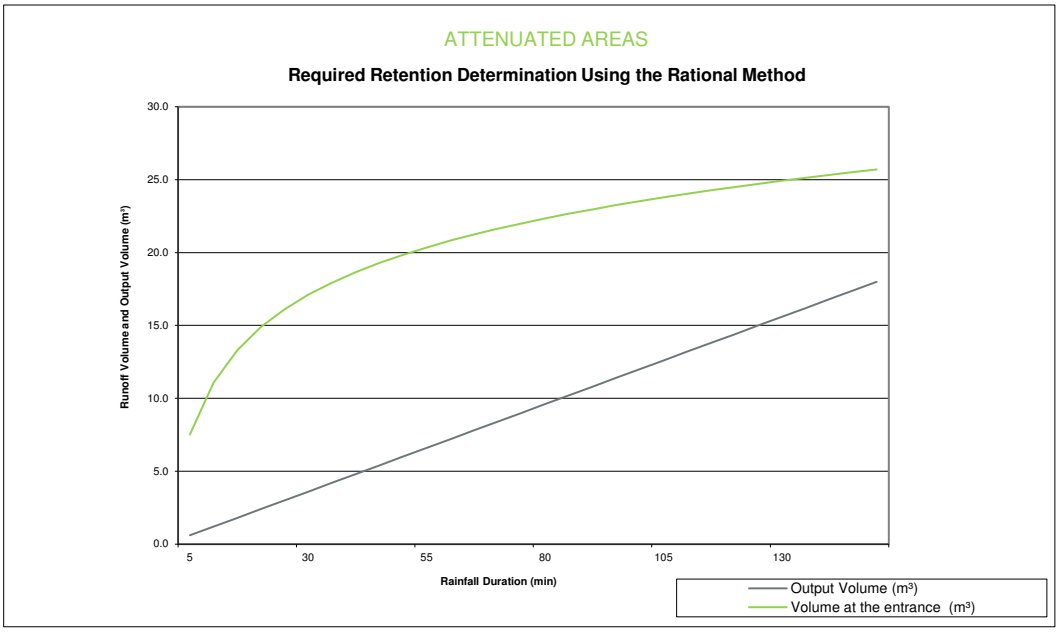
DESIGN CRITERIA:

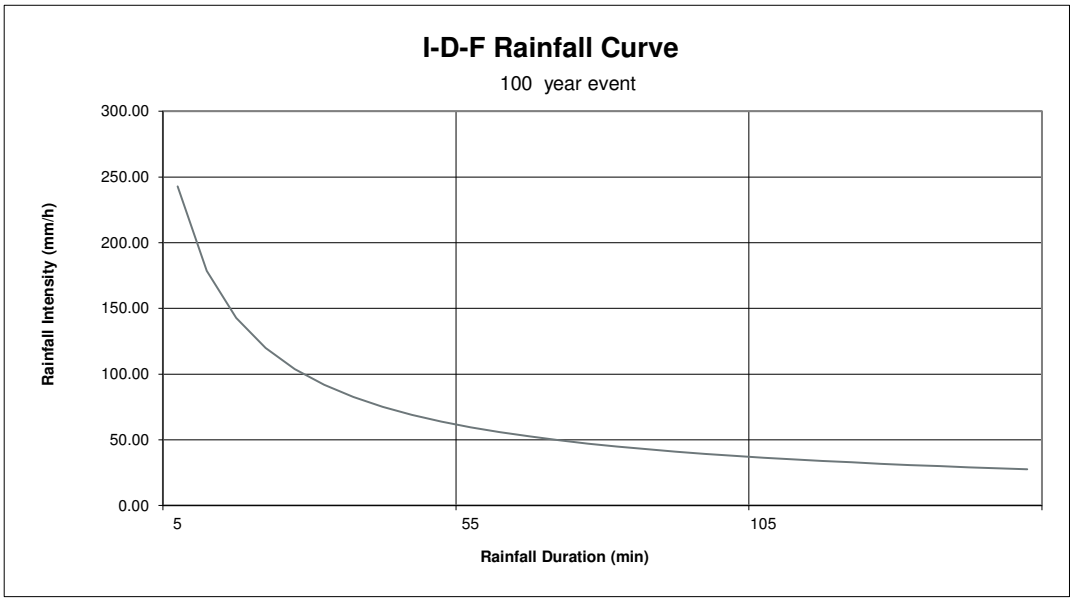
Rainfall Station:	City of Ottawa Sewer Design Guidelines, 2012 (Macdonald-Cartier Airport)
Release Rate Per Unit Area (Q/ha):	23.09 L/s/ha
Area (A):	0.0866 ha
Runoff Coefficient (C):	0.43
Rainfall Event:	100 year
Release Rate (Q):	0.0020 m³/s
Discharge Factor (K):	1

Regression Constants	2 year	5 year	10 year	25 year	50 year	100 year
A	732.951	998.071	1174.184	1402.844	1569.58	1735.688
B	6.199	6.053	6.014	6.018	6.014	6.014
C	0.810	0.814	0.816	0.819	0.82	0.82

Required Retention Volume:	**13.9 m³**

Rainfall Duration (min) *T* (1)	Rainfall Intensity (mm/h) *I* (2)	Runoff Volume (m³) *CIAT* (3)	Output Volume (m³) *kQT* (4)	Retention Volume (m³) *(3)-(4)* (5)
5.0	242.7	7.5	0.6	6.9
10.0	178.6	11.1	1.2	9.9
15.0	142.9	13.3	1.8	11.5
20.0	120.0	14.9	2.4	12.5
25.0	103.8	16.1	3.0	13.1
30.0	91.9	17.1	3.6	13.5
35.0	82.6	17.9	4.2	13.7
40.0	75.1	18.7	4.8	13.9
45.0	**69.1**	**19.3**	**5.4**	**13.9**
50.0	64.0	19.8	6.0	13.8
55.0	59.6	20.4	6.6	13.8
60.0	55.9	20.8	7.2	13.6
65.0	52.6	21.2	7.8	13.4
70.0	49.8	21.6	8.4	13.2
75.0	47.3	22.0	9.0	13.0
80.0	45.0	22.3	9.6	12.7
85.0	43.0	22.7	10.2	12.5
90.0	41.1	23.0	10.8	12.2
95.0	39.4	23.3	11.4	11.9
100.0	37.9	23.5	12.0	11.5
105.0	36.5	23.8	12.6	11.2
110.0	35.2	24.0	13.2	10.8
115.0	34.0	24.3	13.8	10.5
120.0	32.9	24.5	14.4	10.1
125.0	31.9	24.7	15.0	9.7
130.0	30.9	24.9	15.6	9.3
135.0	30.0	25.1	16.2	8.9
140.0	29.2	25.3	16.8	8.5
145.0	28.4	25.5	17.4	8.1
150.0	27.6	25.7	18.0	7.7
Design Volume:				**13.9**





Prepared by: Jaymeson Adams, EIT Date: 2021-04-27

Verified by: Christian Lavoie-Lebel, P.Eng. Date: 2021-04-27
PEO# 100067842

Init._____

PROJECT NAME:	1649 Montreal Road & 741 Blair Road Multi-use Development (Commercial/Residential)
CIMA+ PROJECT NUMBER:	A001101
CLIENT:	10869279 Canada Inc.
PROJECT STATUS:	Preliminary Design (Assessment of Adequacy of Public Services)

RETENTION CALCULATIONS FOR FOR SUB-CATCHMENT AREA A4 (BLOCK 4)

APPLICABLE DESIGN GUIDELINES:

1. City of Ottawa Sewer Design Guidelines, 2012

REQUIRED STORAGE VOLUME DETERMINATION:

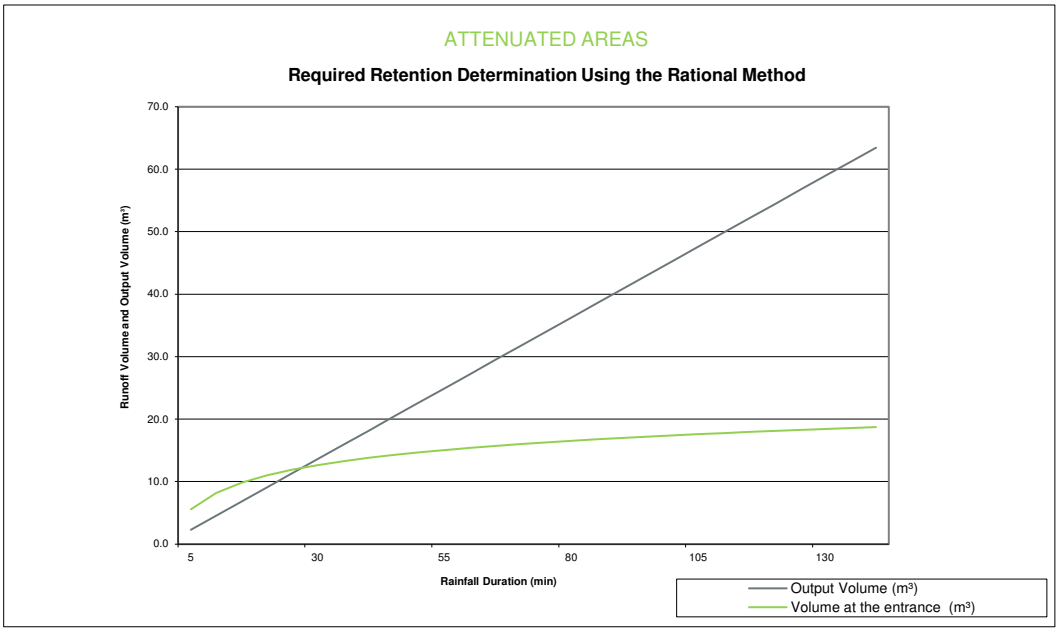
DESIGN CRITERIA:

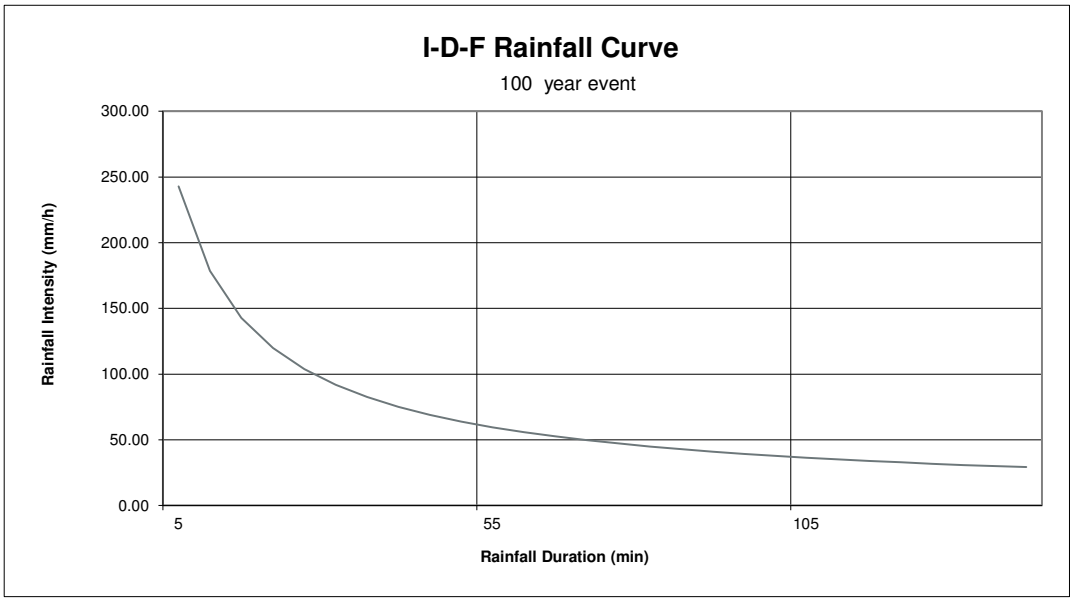
Rainfall Station:	City of Ottawa Sewer Design Guidelines, 2012 (Macdonald-Cartier Airport)
Release Rate Per Unit Area (Q/ha):	260.50 L/s/ha
Area (A):	0.0290 ha
Runoff Coefficient (C):	0.95
Rainfall Event:	100 year
Release Rate (Q):	0.0076 m³/s
Discharge Factor (K):	1

Regression Constants	2 year	5 year	10 year	25 year	50 year	100 year
A	732.951	998.071	1174.184	1402.844	1569.58	1735.688
B	6.199	6.053	6.014	6.018	6.014	6.014
C	0.810	0.814	0.816	0.819	0.82	0.82

Required Retention Volume: **3.7 m³**

Rainfall Duration (min) *T* (1)	Rainfall Intensity (mm/h) *I* (2)	Runoff Volume (m³) *CIAT* (3)	Output Volume (m³) *kQT* (4)	Retention Volume (m³) *(3)-(4)* (5)
5.0	242.7	5.6	2.3	3.3
10.0	**178.6**	**8.2**	**4.5**	**3.7**
15.0	142.9	9.8	6.8	3.0
20.0	120.0	11.0	9.1	2.0
25.0	103.8	11.9	11.3	0.6
30.0	91.9	12.7	13.6	-0.9
35.0	82.6	13.3	15.9	-2.6
40.0	75.1	13.8	18.1	-4.3
45.0	69.1	14.3	20.4	-6.1
50.0	64.0	14.7	22.7	-8.0
55.0	59.6	15.1	24.9	-9.9
60.0	55.9	15.4	27.2	-11.8
65.0	52.6	15.7	29.5	-13.7
70.0	49.8	16.0	31.7	-15.7
75.0	47.3	16.3	34.0	-17.7
80.0	45.0	16.5	36.3	-19.7
85.0	43.0	16.8	38.5	-21.8
90.0	41.1	17.0	40.8	-23.8
95.0	39.4	17.2	43.1	-25.9
100.0	37.9	17.4	45.3	-27.9
105.0	36.5	17.6	47.6	-30.0
110.0	35.2	17.8	49.9	-32.1
115.0	34.0	18.0	52.1	-34.2
120.0	32.9	18.1	54.4	-36.3
125.0	31.9	18.3	56.7	-38.4
130.0	30.9	18.4	58.9	-40.5
135.0	30.0	18.6	61.2	-42.6
140.0	29.2	18.7	63.5	-44.7
Design Volume:				**3.7**





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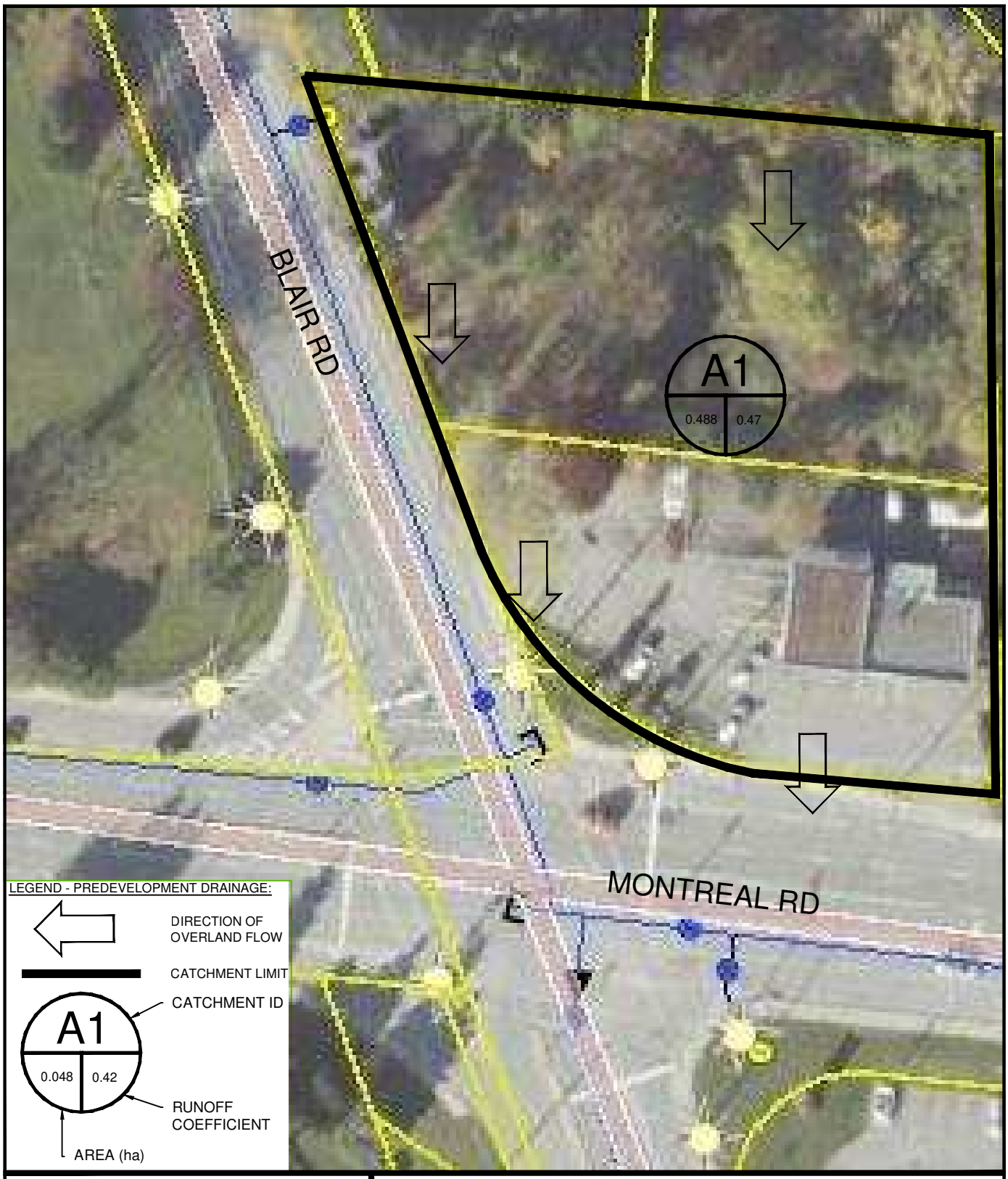

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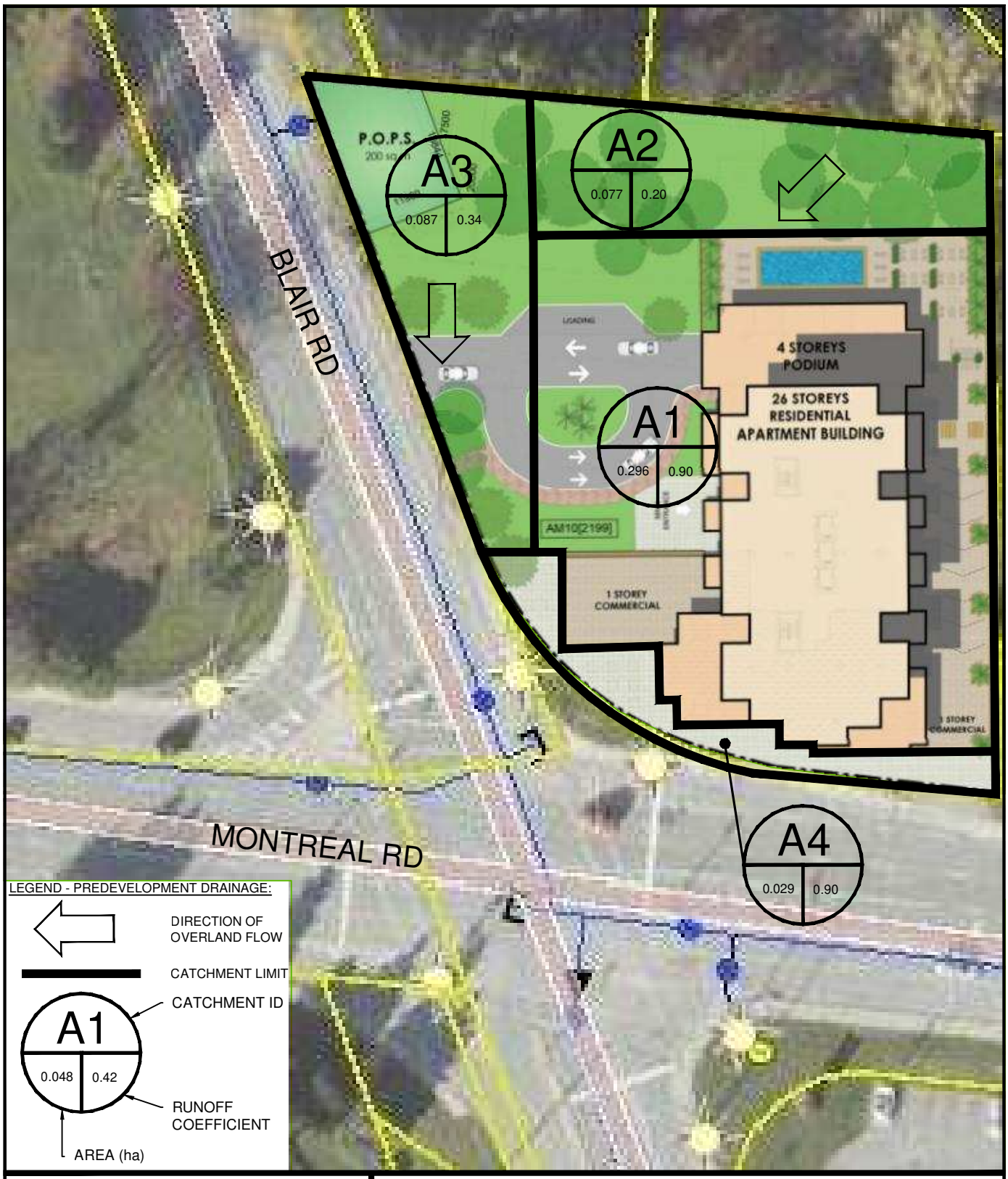
PRE-DEVELOPMENT DRAINAGE AREAS

DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE:	DATE:	PROJECT No:	SHEET No:	FIGURE No:
J. Adams	----	C. Lavoie-Lebel	NTS	2021/04/06	A001101	1 of 1	EXIST - 2



CIMA+

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POST-DEVELOPMENT DRAINAGE AREAS

DRAWN BY:	DESIGNED BY:	APPROVED BY:	SCALE:	DATE:	PROJECT No:	SHEET No:	FIGURE No:
J. Adams	----	C. Lavoie-Lebel	NTS	2021/04/27	A001101	1 of 1	EXIST - 2