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# ASSESSMENT OF ADEQUACY OF PUBLIC SERVICES

**FOR**

# URBAN CAPITAL PROPERTY GROUP
# 390 BANK STREET

CITY OF OTTAWA

PROJECT NO.: 19-1112
CITY APPLICATION NO.: D02-19-0122

APRIL 2020– REV. 2

**ASSESSMENT OF ADEQUACY OF PUBLIC SERVICES**
**FOR**
**390 BANK STREET**

**URBAN CAPITAL PROPERTY GROUP**

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**ASSESSMENT OF ADEQUACY OF PUBLIC SERVICES**
**FOR**
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**CITY OF OTTAWA**
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## 1.0 INTRODUCTION

David Schaeffer Engineering Limited (DSEL) has been retained by Urban Capital Property Group to prepare an Assessment of Adequacy of Public Services report in support of the application for a Zoning By-law Amendment (ZBLA) at 390 Bank Street.

The subject property is located within the City of Ottawa urban boundary, in the Somerset Ward. As illustrated in ***Figure 1***, below, the subject property is located southwest of the intersection of Bank Street and James Street. Comprised of one parcel the subject property measures approximately ***0.11 ha*** and is zoned Traditional Main Street (TM[1619]).


**Figure 1: Site Location**

The contemplated ZBLA would allow for the development of a 10-storey residential /commercial building fronting onto both Bank Street and James Street. The contemplated development would include approximately ***635 m²*** of ground level retail and underground parking, with access from James Street. The residential component is comprised of approximately ***128 units*** and ***187 m³*** of amenity space. A copy of the site plan is included in ***Drawings/Figures***.

The objective of this report is to provide sufficient detail to demonstrate that the proposed re-zoning and contemplated development are both supported by existing municipal services.

## 1.1 Existing Conditions

The existing site includes a commercial restaurant with an outdoor patio and an asphalt parking lot. Existing elevations onsite range between 71.85 m and 72.15 m with a minimal grade change of approximate 0.57% from the Northeast to the Southwest corner of the property.

The subject property is within the City of Ottawa combined sewer system. Sewer and watermain mapping, along with as built drawings, collected from the City of Ottawa indicate that the following services exist across the property frontages within, the adjacent municipal right-of-ways:

**Bank Street:**

- 305 mm diameter PVC watermain; and
- 900 mm concrete combined sewer, tributary to Rideau Canal Interceptor and ultimately tributary to the Robert O. Pickard Environmental Centre (***ROPEC***).

**James Street:**

- 203 mm ductile iron / PVC diameter watermain; and
- 225/300 mm clay/PVC combined sewer tributary to Rideau Canal Interceptor and ultimately tributary to ***ROPEC***.

## 1.2 Required Permits / Approvals

The contemplated development is subject to the zoning by-law amendment process. The City of Ottawa must approve the engineering design drawings and reports prior to the issuance of zoning by-law amendment.

The development is contemplated to outlet to a partially combined sewer sewershed.

Section 53 of the Ontario Water Resources Act Ontario Regulation 525/98, 2.(1) Subsection 53 (1) and (3) indicate that an Environmental Compliance Approval (ECA) is not required for a property which meets the following requirements:

1. The use operation, establishment, alteration, extension or replacement of or a change in a service connection.

Due to the subject property meeting the above noted preapproval requirements, it is anticipated that the development will not require the completion of an ECA through the Ministry of Environment, Conservation and Parks (MECP). Consultation between the City of Ottawa and the local MECP representative may be required to confirm.

## 1.3 Pre-consultation

Pre-consultation correspondence, along with the servicing guidelines checklist, is located in ***Appendix A***.

# 2.0 GUIDELINES, PREVIOUS STUDIES, AND REPORTS

## 2.1 Existing Studies, Guidelines, and Reports

The following studies were utilized in the preparation of this report.

- **Ottawa Sewer Design Guidelines**,
  City of Ottawa, *SDG002,* October 2012.
  ***(City Standards)***
  - **Technical Bulletin ISTB-2018-01**
    City of Ottawa, March 21, 2018.
    ***(*ISTB-2018-01*)***
  - **Technical Bulletin ISTB-2018-03**
    City of Ottawa, March 21, 2018.
    ***(*ISTB-2018-03*)***
- **Ottawa Design Guidelines – Water Distribution**
  City of Ottawa, July 2010.
  ***(Water Supply Guidelines)***
  - **Technical Bulletin ISD-2010-2**
    City of Ottawa, December 15, 2010.
    ***(*ISD-2010-2*)***
  - **Technical Bulletin ISDTB-2014-02**
    City of Ottawa, May 27, 2014.
    ***(*ISDTB-2014-02*)***
  - **Technical Bulletin ISDTB-2018-02**
    City of Ottawa, March 21, 2018.
    ***(*ISDTB-2018-02*)***
- **Design Guidelines for Sewage Works,**
  Ministry of the Environment, 2008.
  ***(MOE* Design Guidelines*)***
- **Stormwater Planning and Design Manual,**
  Ministry of the Environment, March 2003.
  ***(SWMP Design Manual)***
- **Ontario Building Code Compendium**
  Ministry of Municipal Affairs and Housing Building Development Branch, January 1, 2010 Update.
  ***(OBC)***

- **Geotechnical Investigation**
  Paterson Group, Project Number: PG4996,
  October 10, 2019.
  ***(Geotechnical Report)***

- **Geotechnical Memorandum 1**
  Paterson Group, Project Number: PG4996,
  February 27, 2020.
  ***(Geotechnical Memo)***

# 3.0 WATER SUPPLY SERVICING

## 3.1 Existing Water Supply Services

The subject property lies within the City of Ottawa 1W pressure zone, as shown by the Pressure Zone map in ***Appendix B***. As indicated by City of Ottawa watermain mapping and as built drawings, a local 305 mm diameter watermain exists within the Bank Street right-of-way and a local 203 mm diameter watermain exists within the James Street right-of-way.

## 3.2 Water Supply Servicing Design

***Table 1,*** below, summarizes the ***Water Supply Guidelines*** employed in the preparation of the preliminary water demand estimate.

**Table 1**
**Water Supply Design Criteria**

| Design Parameter | Value |
|---|---|
| Residential 1 Bedroom Apartment | 1.4 P/unit |
| Residential 2 Bedroom Apartment | 2.1 P/unit |
| Residential Average Daily Demand | 280 L/d/P*** |
| Residential Maximum Daily Demand | 3.6 x Average Daily * |
| Residential Maximum Hourly | 5.4 x Average Daily * |
| Commercial Retail | 2.5 L/m$^2$/d |
| Commercial Maximum Daily Demand | 1.5 x avg. day |
| Commercial Maximum Hour Demand | 1.8 x max. day |
| Minimum Watermain Size | 150 mm diameter |
| Minimum Depth of Cover | 2.4 m from top of watermain to finished grade |
| During normal operating conditions desired operating pressure is within | 350 kPa and 480kPa |
| During normal operating conditions pressure must not drop below | 275 kPa |
| During normal operating conditions pressure must not exceed | 552 kPa |
| During fire flow operating pressure must not drop below | 140 kPa |

**Daily average based on Appendix 4-A from **Water Supply Guidelines***
*** Residential Max. Daily and Max. Hourly peaking factors per MOE Guidelines for Drinking-Water Systems Table 3-3 for 0 to 500 persons.*
*-Table updated to reflect ISD-2010-2*
*****Daily consumption rate to align with the revised wastewater rates identified by City of Ottawa Technical Bulletin ISTB-2018-03. As a result, DSEL is submitting for a deviation from the ***Water Supply Guidelines***

***Table 2,*** below, summarizes the anticipated water supply demand and boundary conditions for the contemplated development based on the ***Water Supply Guidelines***.

**Table 2**
**Water Demand and Boundary Conditions**
**Contemplated Conditions**

| Design Parameter | Anticipated Demand[1] (L/min) | Boundary Condition[2] (m $H_2O$ / kPa) Bank Street | Boundary Condition[2] (m $H_2O$ / kPa) James Street |
|---|---|---|---|
| Average Daily Demand | 46.5 | 115.7 / 428.7 | 115.7 / 430.9 |
| Max Day + Fire Flow | 164.5 + 16,000 = 16,164.5 | 106.0 / 333.5 | 102.0 / 296.5 |
| Peak Hour | 247.5 | 106.8 / 341.4 | 106.8 / 343.5 |

1) Water demand calculation per ***Water Supply Guidelines***. See ***Appendix B*** for detailed calculations. Boundary conditions supplied by the City of Ottawa for the demands indicated in the correspondence; assumed ground elevation 72.00m (Bank Street) and 71.78m (James Street). See ***Appendix B.***

Fire flow requirements are to be determined in accordance with City of Ottawa ***Water Supply Guidelines*** and the Ontario Building Code.

Fire flow requirements were estimated per City of Ottawa Technical Bulletin ISTB-2018-02. The following assumptions were assumed:

- Type of construction – Non-Combustible Construction;
- Occupancy type – Non-Combustible; and
- Sprinkler Protection – Supervised Sprinkler System.

The above assumptions result in an estimated fire flow of approximately ***16,000 L/min***. A certified fire protection system specialist would need to be employed to design the building fire suppression system and confirm the actual fire flow demand.

The City of Ottawa was contacted to obtain boundary conditions associated with the estimated water demand, as indicated in the boundary request correspondence included in ***Appendix B***.

The City provided both the anticipated minimum and maximum water pressures, as well as, the estimated water pressure during fire flow demand for the demands, as indicated by the correspondence in ***Appendix B***. The minimum and maximum pressures fall within the required range identified in ***Table 1***. The available pressure for the fire flow demand exceeds the minimum pressure identified by the ***Water Supply Guidelines***.

Initial boundary conditions obtained indicate residual pressures fall within the required pressure range as specified in ***Table 1.***

Based on the updated Site Plan, the estimated water demand for the site decreased by approximately 1.0%. Therefore, the development is not anticipated to have a significant impact on the previously provided boundary conditions.

### 3.3 Water Supply Conclusion

The anticipated water demand under contemplated conditions was submitted to the City of Ottawa for establishing boundary conditions. As demonstrated by ***Table 2***, based on the City's model, the municipal system is capable of delivering water within the ***Water Supply Guidelines*** pressure range.

As indicated in ***Table 1,*** DSEL employed a daily consumption rate of 280 L/person/day to align with the revised wastewater rates identified by City of Ottawa Technical Bulletin ISTB-2018-03. As a result, DSEL is submitting for a deviation from the ***Water Supply Guidelines***.

# 4.0 WASTEWATER SERVICING

## 4.1 Existing Wastewater Services

The subject site lies within the Rideau Canal Interceptor Collector Sewer catchment area, as shown by the City sewer mapping included in ***Appendix C***. Based on City of Ottawa sewer mapping and as built drawings, both an existing 900 mm diameter combined sewer within Bank Street and an existing 225/300 mm diameter combined sewer within James Street are available to service the contemplated development.

The existing site consists of a restaurant contributing wastewater to the Bank Street sewer system. ***Table 3,*** below, demonstrates the estimated peak wastewater flow from the site based on existing site conditions. See ***Appendix C*** for associated calculations.

**Table 3**
**Summary of Estimated Peak Wastewater Flow**

| Design Parameter | Total Flow (L/s) |
|---|---|
| Estimated Average Dry Weather Flow | 0.16 |
| Estimated Peak Dry Weather Flow | 0.24 |
| Estimated Peak Wet Weather Flow | 0.28 |

The estimated sanitary peak wet weather flow of the existing restaurant is ***0.28 L/s***.

## 4.2 Wastewater Design

It is anticipated that the contemplated development will be serviced via the existing 225/300 mm clay/PVC combined sewer within James Street, which is tributary to the Rideau Canal Interceptor.

***Table 4,*** below, summarizes the ***City Standards*** employed in the design of the contemplated wastewater sewer system.

**Table 4**
**Wastewater Design Criteria**

| Design Parameter | Value |
|---|---|
| Residential 1 Bedroom Apartment | 1.4 P/unit |
| Residential 2 Bedroom Apartment | 2.1 P/unit |
| Average Daily Demand | 280 L/d/per |
| Peaking Factor | Harmon's Peaking Factor. Max 4.0, Min 2.0<br>Harmon's Corrector Factor 0.8 |
| Commercial Floor Space | 5 L/ $m^2$/d |
| Restaurant | 125 L/9.3m2/d |
| Infiltration and Inflow Allowance | 0.05 L/s/ha (Dry Weather)<br>0.28 L/s/ha (Wet Weather)<br>0.33 L/s/ha (Total) |
| Sanitary sewers are to be sized employing the Manning's Equation | $Q = \frac{1}{n} AR^{2/3} S^{1/2}$ |
| Minimum Sewer Size | 200 mm diameter |
| Minimum Manning's 'n' | 0.013 |
| Minimum Depth of Cover | 2.5 m from crown of sewer to grade |
| Minimum Full Flowing Velocity | 0.6 m/s |
| Maximum Full Flowing Velocity | 3.0 m/s |
| | |
| *Extracted from Sections 4 and 6 of the City of Ottawa Sewer Design Guidelines, October 2012.* | |

***Table 5,*** below, demonstrates the estimated peak wastewater flow from the contemplated development. See ***Appendix C*** for associated calculations.

**Table 5**
**Summary of Estimated Peak Wastewater Flow**

| Design Parameter | Total Flow (L/s) |
|---|---|
| Estimated Average Dry Weather Flow | 0.85 |
| Estimated Peak Dry Weather Flow | 2.73 |
| Estimated Peak Wet Weather Flow | 2.76 |

The estimated sanitary flow, based on the concept plan provided in ***Drawings/Figures,*** anticipates a peak wet weather flow of ***2.76 L/s***.

Due to the distance to the Bank Street collector and the complexity of the drainage area, the impacts from the anticipated flow from the site will need to be further reviewed by the City in order to confirm the resulting HGL within the existing James Street and Bank Street combined sewers.

As discussed in ***Section 6.0*** of this report, it is anticipated that sufficient capacity is available within the existing combined sewers to support the contemplated development, due to a reduction in combined sewer flow through stormwater retention.

## 4.3 Wastewater Servicing Conclusions

The site is tributary to the Rideau Canal Interceptor. Due to the distance to the Bank Street collector and the complexity of the drainage area, the impacts from the anticipated flow from the site will need to be further reviewed by the City in order to confirm the resulting HGL within the existing James Street and Bank Street combined sewers.

As a result of stormwater management (discussed in ***Section 6.0*** of this report), it is anticipated that sufficient capacity is available within the existing combined sewers to support the contemplated development.

The contemplated wastewater design conforms to all relevant ***City Standards***.

# 5.0 STORMWATER MANAGEMENT

## 5.1 Existing Stormwater Services

The subject site lies within the Rideau Canal Interceptor Collector Sewer catchment area, as shown by the City sewer mapping included in ***Appendix D***. Based on City of Ottawa sewer mapping and as built drawings, an existing 900 mm diameter combined sewer within Bank Street and an existing 225/300 mm diameter combined sewer within James Street are available to service the contemplated development.

Stormwater runoff from the subject property is tributary to the City of Ottawa combined sewer system and is located within the Ottawa Central sub-watershed. As such, approvals for contemplated development within this area are under the approval authority of the City of Ottawa.

Flows that influence the watershed in which the subject property is located are further reviewed by the principal authority. The subject property is located within the Ottawa River watershed, and is therefore subject to review by the Rideau Valley Conservation Authority (RVCA). Consultation with the RVCA is located in ***Appendix A***.

It was assumed that the existing development contained no stormwater management controls for flow attenuation. The estimated pre-development peak flows for the 2, 5, and 100-year are summarized in ***Table 6,*** below:

**Table 6**
**Summary of Existing Peak Storm Flow Rates**

| City of Ottawa Design Storm | Estimated Peak Flow Rate (L/s) |
|---|---|
| 2-year | 30.0 |
| 5-year | 41.0 |
| 100-year | 78.3 |

## 5.2 Post-development Stormwater Management Target

Stormwater management requirements for the contemplated development were reviewed with the City of Ottawa, where the contemplated development is required to:

- Meet an allowable release rate based on a Rational Method Coefficient of 0.40, employing the City of Ottawa IDF parameters for a 5-year storm with a time of concentration equal to or greater than 10 minutes.
- Attenuate all storms up to and including the City of Ottawa 100-year design event on site.
- Quality controls are not required for the contemplated development due to the outlet to the combined sewer; correspondence with the RVCA is included in ***Appendix A***.

Based on the above the allowable combined release rate for the contemplated development is ***12.7 L/s***.

As discussed in ***Section 4.0***, the anticipated peak wet weather wastewater flow is ***2.76 L/s***. As a result, stormwater is to be controlled to an allowable release rate of ***9.9 L/s***.

## 5.3 Contemplated Stormwater Management System

It is contemplated that the stormwater outlet from the contemplated development will be to the 225/300 mm diameter combined sewer within James Street.

To meet the stormwater objectives the contemplated development may contain a combination of roof top flow attenuation along with surface and subsurface storage.

***Table 7,*** below, summarizes post-development flow rates. The following storage requirement estimate assumes that approximately 10% of the development area will be directed to the outlet without flow attenuation. These areas will be compensated for in areas with flow attenuation controls.

**Table 7**
**Stormwater Flow Rate Summary**

| Control Area | 5-Year Release Rate | 5-Year Storage | 100-Year Release Rate | 100-Year Storage |
|---|---|---|---|---|
| | (L/s) | ($m^3$) | (L/s) | ($m^3$) |
| Unattenuated Areas | 2.9 | 0.0 | 5.5 | 0.0 |
| Attenuated Areas | 2.4 | 20.9 | 4.5 | 39.3 |
| **Total** | **5.2** | **20.9** | **9.9** | **39.3** |

It is anticipated that approximately ***39.3 $m^3$*** of storage will be required on site to attenuate flow to the established stormwater release rate of ***9.9 L/s***; storage calculations are contained within ***Appendix D***.

As discussed in ***Section 6.0,*** it is anticipated that sufficient capacity is available within the existing combined sewers to support the contemplated development due to a reduction in combined sewer flow through stormwater retention.

Actual storage volumes will need to be confirmed at the detailed design stage, based on a number of factors including grading constraints.

## 5.4 Stormwater Servicing Conclusions

Based on the above stated requirements, the allowable release rate for the proposed development is ***12.7 L/s***. Stormwater is to be controlled to an allowable release rate of ***9.9 L/s*** to compensate for the proposed peak wet weather sanitary flow. It is estimated that ***39.3 $m^3$*** of storage will be required to meet this release rate.

Based on consultation with the RVCA, stormwater quality controls are not required.

The contemplated stormwater design conforms to all relevant ***City Standards*** and Policies for approval.

## 6.0 COMBINED SEWER SYSTEM FLOW

Under existing conditions, it was assumed that the site contains no stormwater management system for flow attenuation. Therefore, the pre-development "design" combined flow was estimated to be approximately ***41.3 L/s***. The assessment of the pre-development combined flow condition assumes peak wastewater rates during a 5-year storm event.

The post-development combined flow for all storms up to and including a 100-year event will be limited to ***12.7 L/s***. This value includes both controlled and uncontrolled flows directed from the subject property.

***Table 8,*** below, summarizes the allowable and contemplated release rates from the development.

**Table 8**
**Summary of Existing and Contemplated Release Rates**

| City of Ottawa Design Storm | Existing Peak Flow Rate (L/s) | Contemplated Peak Flow Rate (L/s) |
|---|---|---|
| Wastewater | 0.3 | 2.8 |
| Stormwater | 41.0 | 9.9 |
| **Combined** | 41.3 | 12.7 |

Based on the contemplated stormwater target, the post-development combined flow will be lower than existing conditions by approximately ***28.6 L/s***, or a 69% net reduction in flow to the combined sewer.

## 7.0 UTILITIES

Gas and Hydro services currently exist within the Bank Street and James Street right-of-ways. Utility servicing will be coordinated with the individual utility companies prior to site development.

## 8.0 CONCLUSION AND RECOMMENDATIONS

David Schaeffer Engineering Ltd. (DSEL) has been retained by Urban Capital Property Group to prepare an Assessment of Adequacy of Public Services report in support of the application for a Zoning By-law Amendment (ZBLA) at 390 Bank Street. The preceding report outlines the following:

- Based on boundary conditions provided by the City the existing municipal water infrastructure is capable of providing the contemplated development with water within the City's required pressure range;
- The FUS method for estimating fire flow indicated ***16,000 L/min*** is required for the contemplated development;
- The contemplated development is anticipated to have a peak wet weather flow of ***2.76 L/s***;
- Based on consultation with the City the contemplated development will be required to attenuate post development combined flows to an equivalent release rate of ***12.7 L/s*** for all storms up to and including the 100-year storm event;
- Based on the proposed peak wet weather sanitary flow of ***2.76 L/s***, the post development storm allowable release rate was established as ***9.9 L/s***;
- It is contemplated that stormwater objectives may be met through storm water retention via roof top, surface and subsurface storage, it is anticipated that ***39.3 $m^3$*** of onsite storage will be required to attenuate flow to the established release rate above;
- Quality controls are not required for the contemplated development due to the combined sewer outlet, correspondence with the RVCA is included in ***Appendix A***; and
- Based on the contemplated stormwater target, the post-development combined flow to the combined sewer will be lower than existing conditions by approximately 69%. As a result, it is anticipated that sufficient capacity is available within the existing combined sewers to accommodate the contemplated development.

Prepared by,
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Per: Charlotte M. Kelly, EIT

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Per: Alison J. Gosling, EIT

Reviewed by,
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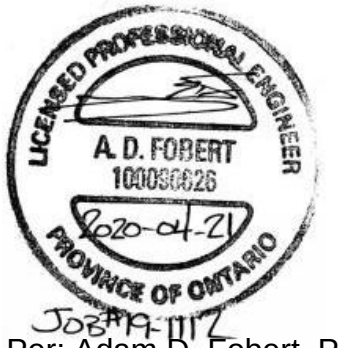


Per: Adam D. Fobert, PEng.


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# *APPENDIX A*

## *Pre-Consultation*

# DEVELOPMENT SERVICING STUDY CHECKLIST

19-1112 09/07/2019

| 4.1 General Content | | |
|---|---|---|
| ☐ | Executive Summary (for larger reports only). | N/A |
| ☒ | Date and revision number of the report. | Report Cover Sheet |
| ☒ | Location map and plan showing municipal address, boundary, and layout of proposed development. | Drawings/Figures |
| ☒ | Plan showing the site and location of all existing services. | Figure 1 |
| ☒ | Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to applicable subwatershed and watershed plans that provide context to which individual developments must adhere. | Section 1.0 |
| ☒ | Summary of Pre-consultation Meetings with City and other approval agencies. | Section 1.3 |
| ☒ | 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 2.1 |
| ☒ | Statement of objectives and servicing criteria. | Section 1.0 |
| ☒ | Identification of existing and proposed infrastructure available in the immediate area. | Sections 3.1, 4.1, 5.1 |
| ☐ | 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. | Section 1.4 |
| ☐ | All preliminary and formal site plan submissions should have the following information:<br>-Metric scale<br>-North arrow (including construction North)<br>-Key plan<br>-Name and contact information of applicant and property owner<br>-Property limits including bearings and dimensions<br>-Existing and proposed structures and parking areas<br>-Easements, road widening and rights-of-way<br>-Adjacent street names | N/A |

| 4.2 Development Servicing Report: Water | | |
|---|---|---|
| ☐ | Confirm consistency with Master Servicing Study, if available | N/A |
| ☒ | Availability of public infrastructure to service proposed development | Section 3.1 |
| ☒ | Identification of system constraints | Section 3.1 |
| ☒ | Identify boundary conditions | Section 3.1, 3.2 |
| ☒ | Confirmation of adequate domestic supply and pressure | Section 3.3 |



*Extracted from the City of Ottawa-Servicing Study Guidelines for Development Applications

| | | |
|---|---|---|
| ☒ | 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 3.2 |
| ☐ | Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves. | N/A |
| ☐ | Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design | N/A |
| ☐ | Address reliability requirements such as appropriate location of shut-off valves | N/A |
| ☐ | Check on the necessity of a pressure zone boundary modification | N/A |
| ☒ | Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range | Section 3.2, 3.3 |
| ☐ | 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 3.2 |
| ☐ | 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

| | | |
|---|---|---|
| ☒ | 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 4.2 |
| ☐ | Confirm consistency with Master Servicing Study and/or justifications for deviations. | N/A |
| ☐ | Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers. | N/A |
| ☒ | Description of existing sanitary sewer available for discharge of wastewater from proposed development. | Section 4.1 |
| ☒ | 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 4.2 |
| ☒ | Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format. | Section 4.2, Appendix C |
| ☒ | Description of proposed sewer network including sewers, pumping stations, and forcemains. | Section 4.2 |
| ☐ | 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 |



*Extracted from the City of Ottawa-Servicing Study Guidelines for Development Applications

| | | |
|---|---|---|
| ☐ | 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

| | | |
|---|---|---|
| ☒ | Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property) | Section 5.1 |
| ☒ | Analysis of available capacity in existing public infrastructure. | Section 5.1, Appendix D |
| ☒ | A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern. | Drawings/Figures |
| ☒ | 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 5.2 |
| ☒ | Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements. | Section 5.2 |
| ☒ | Description of the stormwater management concept with facility locations and descriptions with references and supporting information | Section 5.3 |
| ☐ | 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 5.3 |
| ☐ | 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 5.1, 5.3, 6.0 |
| ☐ | 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 |


*Extracted from the City of Ottawa-Servicing Study Guidelines for Development Applications

| | | |
|---|---|---|
| ☒ | Descriptions of how the conveyance and storage capacity will be achieved for the development. | Section 5.3 |
| ☐ | 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. | Section 7.0 |
| ☐ | 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

| | | |
|---|---|---|
| ☒ | 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 ct. 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. | Section 1.2 |
| ☐ | 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

| | | |
|---|---|---|
| ☒ | Clearly stated conclusions and recommendations | Section 8.0 |
| ☐ | 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. | |
| ☐ | All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario | |



*Extracted from the City of Ottawa-Servicing Study Guidelines for Development Applications

**From:** Kluke, Jenny
**To:** Jaime Posen
**Cc:** Wu, John; Moise, Christopher; Dubyk, Wally; Kimm, MacKenzie; "Jack Hanna"
**Subject:** Pre-consult follow up - 390 Bank Street
**Date:** Monday, December 10, 2018 3:00:32 PM
**Attachments:** image002.png
390 Bank-Heritage Pre-consult Comments.docx
390 Bank list of plans and studies ZBLA.pdf
390 Bank list of plans and studies SPC.pdf

---

Hi Jaime,

Further to our meeting on November 26, 2018 regarding the proposal to construct a nine-storey, 140-unit mixed use building at 390 Bank Street, please find below a summary of what was discussed.

Planning Considerations (Jenny Kluke)

- The property is designated as a Traditional Mainstreet in the Official Plan.
- The property is zoned TM [2214], which permits a low-rise apartment dwelling.
- The property is within the Centretown Secondary Plan area, within the Commercial District/Central Character Area. The Secondary Plan contemplates building heights up to 9 stories within this area.
- The property is within the Centretown Community Design Plan area.
- Parkland fees will be required.
- Schedule 236 deals only with maximum building heights, and not setbacks.
- The required rear yard setback is 4.5 metres abutting a public lane.
- The required corner side yard setback is 3 metres and any part of a building above 15 metres requires an additional 2 metre setback.
- A rooftop access with a washroom is not considered to be a permitted projection above a height limit. If there is a washroom in the rooftop access, it will be considered an additional storey and will be required to comply with the maximum building height.
- Section 37 may apply to this development.
- Parking for the non-residential use applies as follows:

  (d) where a non-residential use is located partly or entirely on the ground floor or in the basement: (By-law 2017-148)

  (i) in the case of a retail food store with a gross floor area of 1500 square metres or less, no off-street motor vehicle parking is required to be provided.

  (ii) in the case of a restaurant with a gross floor area of 350 square metres or less, no off-street motor vehicle parking is required to be provided.

  (iii) in the case of any other non-residential use with a gross floor area of 500 square metres or less, no off-street motor vehicle parking is required to be provided. (By-law 2016-249)
- 77 parking spaces are required for the residential component (64 residential spaces, 13 visitor spaces)
- A Minor Zoning By-law Amendment will be required to deal with the height increase and any non-compliant setbacks.
- This development is subject to review by the Urban Design Review Panel

Urban Design Comments (Christopher Moise)

- It is recommended that you make arrangements with the Urban Design Review Panel coordinator as soon as possible to be scheduled for an informal review by the Panel.

Heritage Comments (MacKenzie Kimm)

- See attached document.

Engineering Comments (John Wu)

- Site servicing is connected to a combined sewer system.
- All stormwater management is required to retain the runoff to this site to a c 0.4 at 5 year storm up to 100 year storm event.
- MOECP ECA approval is required for the stormwater management component outletting into a combined sewer.
- The following reports and studies are required: Servicing Study, Stormwater Management Report, Geotechnical Study, Noise Study, Phase 1 ESA, and a Wind Study.

Transportation Considerations (Wally Dubyk)

- Bank Street is designated as an Arterial road within the City's Official Plan with a ROW protection. The maximum land requirement from property abutting existing ROW is 0.90 metres. Subject to widening/easement policy.
- All underground and above ground building footprints need to be shown on the plan to confirm the structure does not extend over existing property lines, sight triangles and/or future road widening requirements.
- Ensure that the driveway grade does not exceed 2-6% within the private property for a distance of 9.0 metres from the highway line; see Section 25 (t) of the Private Approach By-Law #2003-447. Any grade exceeding 6% will require a subsurface melting device.
- The consultant should review the sight distance to the access and any obstructions that may hinder the view of the driver.
- The turning movement of the garbage truck as depicted on the sketch appears to be within close proximity of the proposed building corners. The garbage truck is to be provided with a safe access and the corners of the building to be protected.
- Bicycle parking spaces are required as per Section 111 of the Ottawa Comprehensive Zoning By-law. Bicycle parking spaces should be located in safe, secure places near main entrances and preferably protected from the weather.
- The TIA (Transportation Impact Assessment) Guidelines (2017) were approved by Transportation Committee and City Council on June 14, 2017. The new version of the TIA Guidelines (2017) that are posted on the web are now to be used for the TIA Submission for development applications.
- The following list highlights the significant changes to the 2006 TIA Guidelines
  1. A Screening Test (Step 1) quickly determines if a transportation study is required. Consultants should fill in the form in Appendix B.
  2. Should the development generate 60 peak hour person trips, the TIA guidelines Step 2 – Scoping report would be required.
  3. Study Scope (Step 2) is site specifically tailored; there are no longer three defined types of TIA reports. Scoping report is required and needs to be signed off by TPM before the consultant moves on to Forecasting volumes.
  4. Sign off from City Transportation Project Manager is required at key points in the review process prior to TIA Submission (Step 5). See Figure 1 on page 9 for a good flow chart of the process.
  5. Multi Modal Level of Service (MMLOS) and Complete Street analysis is required to assess the impact of all modes of travel rather than just vehicle traffic.
  6. There is no longer a requirement for consultant pre-approval. Consultants must now sign and submit the Credentials Form included in the Appendix A with each TIA report.
  7. The TIA Submission (report, drawings and/or monitoring plan) is required **with** the development application.
- Click on the website:

http://documents.ottawa.ca/sites/documents.ottawa.ca/files/tia_guidelines_en.pdf

Centretown Citizens Community Association Representative (Jack Hanna)

- Ensure there is adequate space between the edge of the building and the street for pedestrian movement.
- There are concerns about lack of landscaping along the front of the building.
- Are there going to be affordable housing units within the building?

Development Applications Required

To move forward with this proposal, a Site Plan Control, Manager Approval, Public Consultation Application and Minor Zoning By-law Amendment application will be required. Please review the fees associated with this here.

Attached is the *Applicant's Study and Plan Identification List*, which identifies the required studies and plans to support your application. For additional information on preparing studies and plans, please click on the following hyperlink: Guide to Preparing Studies and Plans.

As you may know, the property is in Ward 14-Somerset, with Councillor Catherine McKenney. It is in your best interest to initiate contact with close neighbours as well as the Councillor and Registered Community Groups. In addition, it may be beneficial to contact key technical agencies that may be involved in this file to discuss the proposal before submitting an application.

The above pre-consultation comments are valid for one year. If you submit a development application after this time, you may be required to meet for another pre-consultation meeting and/or the submission requirements may change.

Please do not hesitate to contact me if you have questions or require clarification on any of the above points.

Regards,
Jenny

**Jenny Kluke** MCIP, RPP
Planner
Development Review – Central Branch
Planning, Infrastructure and Economic Development Department
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West, Ottawa, ON K1P 1J1
613.580.2424 ext./poste 27184
E-mail: jenny.kluke@ottawa.ca
ottawa.ca/planning / ottawa.ca/urbanisme

'



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## Charlotte Kelly

**From:** Jamie Batchelor <jamie.batchelor@rvca.ca>
**Sent:** July 10, 2019 9:53 AM
**To:** Charlotte Kelly
**Subject:** Re: 390 Bank Street - Quality Control Requirement

Good Morning Charlotte,

Given that the stormwater will discharge to the combined storm sewer, no additional onsite water quality measures will be required save and except best management practices.

---

**From:** Charlotte Kelly <CKelly@dsel.ca>
**Sent:** July 9, 2019 4:59 PM
**To:** Jamie Batchelor
**Subject:** 390 Bank Street - Quality Control Requirement

Good afternoon Jamie,

Just wanted to touch base with you regarding a development at 390 Bank Street. The development involves the construction of a 10-storey residential and commercial building occupying the entirety of the 390 Bank parcel. The existing site fronting Bank consists of a paved surface parking lot and a restaurant. Please refer to the figure below for the existing property conditions.

The development anticipates to outlet to the existing combined sewer within James Street or Bank Street.

It is anticipated that stormwater quality controls are not required as the development proposes to outlet to the combined sewer which will ultimately be treated at ROPEC. Can you please confirm?


Thank-you,

Charlotte Kelly, E.I.T.
Project Coordinator / Junior Designer

**DSEL**
**david schaeffer engineering ltd.**

120 Iber Road, Unit 103
Stittsville, ON  K2S 1E9

**phone:** (613) 836-0856 ext.511
**email**:  ckelly@dsel.ca

**patersongroup** **memorandum**

**consulting engineers**

| | |
|---|---|
| **re:** | **Geotechnical Response to Review Comments**<br>**Proposed Multi-Storey Building**<br>**390 Bank Street - Ottawa** |
| **to:** | Fotenn - **Mr. Nick Sutherland** - sutherland@fotenn.com |
| **date:** | February 27, 2020 |
| **file:** | PG4996-MEMO.01 |

---

Further to your request, Paterson Group (Paterson) prepared the following memorandum to provide geotechnical responses to review comments regarding the proposed development at the aforementioned site. The present memorandum should be read in conjunction with Paterson Group Report PG4996-1 dated September 16, 2019.

## Geotechnical Comment 1

The Geotechnical Report requires more details relating to lowering the ground water tables, How much of a difference is there to the existing? Please provide more details about how it will not impact the neighbouring building.

## Response:

As discussed in Paterson Group Report PG4996-1 dated September 16, 2019, the long term groundwater level is anticipated at a depth of 4.5 to 5.5 metres below ground surface. Also, due to the low permeability of the soils that will be encountered at the time of construction, any dewatering that may occur is anticipated to be limited to the footprint of the excavation for the proposed building and considered negligible with respect to the long term groundwater table.

Based on our observations of the long term groundwater level within the silty clay deposit, no groundwater lowering is anticipated during the short-term construction period of the proposed building. Although the neighbouring structures are expected to be founded within the silty clay deposit, any short-term groundwater lowering will not have negative impacts on the neighbouring structure during the construction period.

As part of Paterson's recommendations, the foundation walls will be waterproofed which will reduce potential water infiltration around the building post-construction and hence will minimize long-term groundwater lowering.

We trust that this information satisfies your requirements.

**Paterson Group Inc.**

Drew Petahtegoose, B.Eng.


Faisal I. Abou-Seido, P.Eng.

# *APPENDIX B*

## *Water Supply*

**Water Demand Design Flows per Unit Count**
**City of Ottawa - Water Distribution Guidelines, July 2010**

**Domestic Demand**

| Type of Housing | Per / Unit | Units | Pop |
|---|---|---|---|
| Single Family | 3.4 | - | 0 |
| Semi-detached | 2.7 | - | 0 |
| Townhouse | 2.7 | - | 0 |
| Apartment | | | 0 |
| Bachelor | 1.4 | 21 | 30 |
| 1 Bedroom | 1.4 | 34 | 48 |
| 2 Bedroom | 2.1 | 73 | 154 |
| 3 Bedroom | 3.1 | - | 0 |
| Average | 1.8 | - | 0 |

| | Pop | Avg. Daily | | Max Day | | Peak Hour | |
|---|---|---|---|---|---|---|---|
| | | $m^3/d$ | L/min | $m^3/d$ | L/min | $m^3/d$ | L/min |
| **Total Domestic Demand** | 232 | 65.0 | 45.1 | 233.9 | 162.4 | 350.8 | 243.6 |

**Institutional / Commercial / Industrial Demand**

| | | | Avg. Daily | | Max Day | | Peak Hour | |
|---|---|---|---|---|---|---|---|---|
| **Property Type** | **Unit Rate** | **Units** | $m^3/d$ | L/min | $m^3/d$ | L/min | $m^3/d$ | L/min |
| Commercial + Amenity | 2.5 $L/m^2/d$ | 822 | 2.06 | 1.4 | 3.1 | 2.1 | 5.5 | 3.9 |
| Industrial - Light | 35,000 L/gross ha/d | - | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Industrial - Heavy | 55,000 L/gross ha/d | - | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total I/CI Demand** | | | 2.1 | 1.4 | 3.1 | 2.1 | 5.5 | 3.9 |
| **Total Demand** | | | **67.0** | **46.5** | **236.9** | **164.5** | **356.3** | **247.5** |

# Fire Flow Estimation per Fire Underwriters Survey

Water Supply For Public Fire Protection - 1999

## Fire Flow Required

### 1. Base Requirement

$$F = 220C\sqrt{A}$$ L/min *Where **F** is the fire flow, **C** is the Type of construction and **A** is the Total floor area*

Type of Construction: Non-Combustible Construction

| | | | |
|---|---|---|---|
| **C** | 0.8 | | *Type of Construction Coefficient per FUS Part II, Section 1* |
| **A** | 10626.0 | $m^2$ | *Total floor area based on FUS Part II section 1* |

| | | | |
|---|---|---|---|
| **Fire Flow** | 18142.5 | L/min | |
| | **18000.0** | **L/min** | *rounded to the nearest 1,000 L/min* |

## Adjustments

### 2. Reduction for Occupancy Type

| | | |
|---|---|---|
| Non-Combustible | -25% | |
| **Fire Flow** | **13500.0** | **L/min** |

### 3. Reduction for Sprinkler Protection

| | | |
|---|---|---|
| Sprinklered - Supervised | -50% | |
| **Reduction** | **-6750** | **L/min** |

### 4. Increase for Separation Distance

| | Cons. of Exposed Wall | S.D | Lw | Ha | LH | EC | |
|---|---|---|---|---|---|---|---|
| **N** | Wood Frame | 10.1m-20m | 22 | 3 | 66 | 14% | |
| **S** | Wood Frame | 0m-3m | 20 | 2 | 40 | 23% | |
| **E** | Wood Frame | 10.1m-20m | 19 | 3 | 57 | 13% | |
| **W** | Wood Frame | 3.1m-10m | 14 | 3 | 42 | 18% | |
| | | **% Increase** | | | | **68%** | *value not to exceed 75%* |

| | | |
|---|---|---|
| **Increase** | **9180.0** | **L/min** |

Lw = Length of the Exposed Wall
Ha = number of storeys of the adjacent structure. Max 5 stories
LH = Length-height factor of exposed wall. Value rounded up.
EC = Exposure Charge

## Total Fire Flow

| | | | |
|---|---|---|---|
| **Fire Flow** | 15930.0 | L/min | *fire flow not to exceed 45,000 L/min nor be less than 2,000 L/min per FUS Section 4* |
| | **16000.0** | **L/min** | *rounded to the nearest 1,000 L/min* |

**Notes:**
**-Type of construction, Occupancy Type and Sprinkler Protection information provided by RAW Design.**
**-Calculations based on Fire Underwriters Survey - Part II**

**Boundary Conditions Unit Conversion**

**Bank Street**

| | |
|---|---|
| Grnd Elev | 72.00 |

| | m $H_2O$ | PSI | kPa |
|---|---|---|---|
| Avg. Day | **115.7** | 62.2 | 428.7 |
| Peak Hour | **106.8** | 49.5 | 341.4 |
| Max Day + FF | **106.0** | 48.4 | 333.5 |

**James Street**

| | |
|---|---|
| Grnd Elev | 71.78 |

| | m $H_2O$ | PSI | kPa |
|---|---|---|---|
| Avg. Day | **115.7** | 62.5 | 430.9 |
| Peak Hour | **106.8** | 49.8 | 343.5 |
| Max Day + FF | **102.0** | 43.0 | 296.5 |

## Charlotte Kelly

**Subject:** FW: 19-1112 390 Bank Street - Boundary Condition Request
**Attachments:** 390 Bank St June 2019.pdf

---

**From:** Wu, John [mailto:John.Wu@ottawa.ca]
**Sent:** Thursday, June 27, 2019 11:31 AM
**To:** Alison Gosling <AGosling@dsel.ca>
**Subject:** RE: 19-1112 390 Bank Street - Boundary Condition Request

Here it is:

******The following information may be passed on to the consultant, but do NOT forward this e-mail directly.******

The following are boundary conditions, HGL, for hydraulic analysis at 390 Bank (zone 1W) assumed to be connected to the 203mm on James and the 305mm on Banks St (see attached PDF for location).

Minimum HGL = 106.8m, same at both connections

Maximum HGL = 115.7m, same at both connections

Max Day + Fire Flow (267 L/s) = 102.0m, James St connection

Max Day + Fire Flow (267 L/s) = 106.0m, Bank St connection

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.*

John

---

**From:** Alison Gosling <AGosling@dsel.ca>
**Sent:** June 25, 2019 10:42 AM
**To:** Wu, John <John.Wu@ottawa.ca>
**Cc:** Charlotte Kelly <CKelly@dsel.ca>
**Subject:** 19-1112 390 Bank Street - Boundary Condition Request

Good morning John,

We would like to request water boundary conditions for James Street and Bank Street using the following proposed development demands:

1. Location of Service / Street Number: 390 Bank Street

2. Type of development and the amount of fire flow required for the proposed development:

- The development would include approximately ***1122 m²*** of commercial/amenity space (***709 m²*** commercial and ***413 m²*** amenity) and a ***128 unit*** *10-storey condominium with underground parking.*
- It is anticipated that the development will have a dual connection to be serviced from the existing 203mm diameter watermain within the James St. right-of-way, and/or the existing 305mm diameter watermain within the Bank Street right-of-way as shown by the attached map.
- Fire demand based on Technical Bulletin ISTB-2018-02 has been used to calculate an estimate the max fire demand of ***16,000 L/min***. Refer to the attached for detailed calculations.

| | L/min | L/s |
|---|---|---|
| **Avg. Daily** | 48.0 | 0.80 |
| **Max Day** | 168.8 | 2.81 |
| **Peak Hour** | 254.1 | 4.24 |

If you have any questions, please feel free to contact me.


Thank you,

Alison Gosling, E.I.T.
Junior Project Manager


# DSEL

**david schaeffer engineering ltd.**

120 Iber Road, Unit 103
Stittsville, ON  K2S 1E9

**phone:** (613) 836-0856 ext.542
**cell:** (343) 542-9218
**fax**: (613) 836-7183
**email**: agosling@dsel.ca

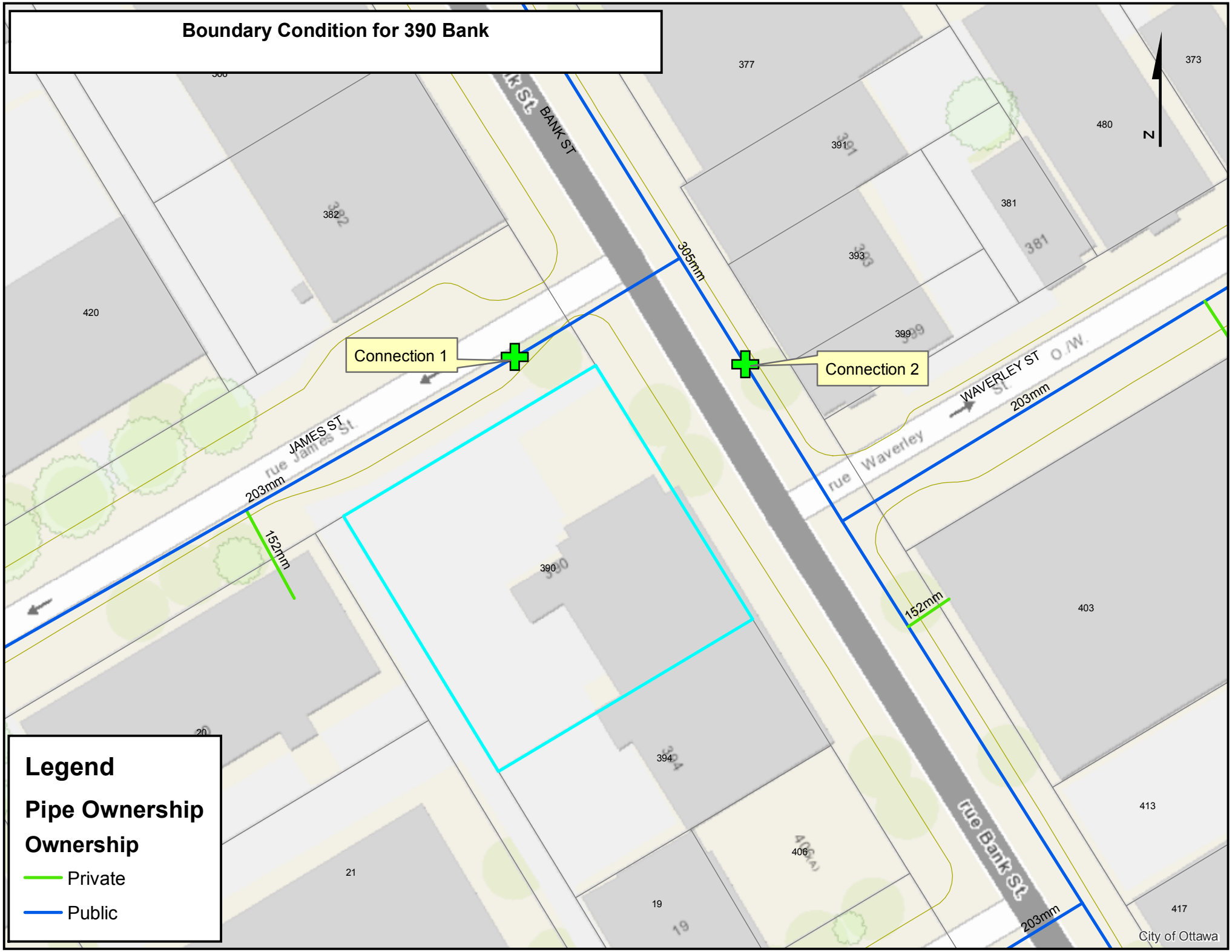


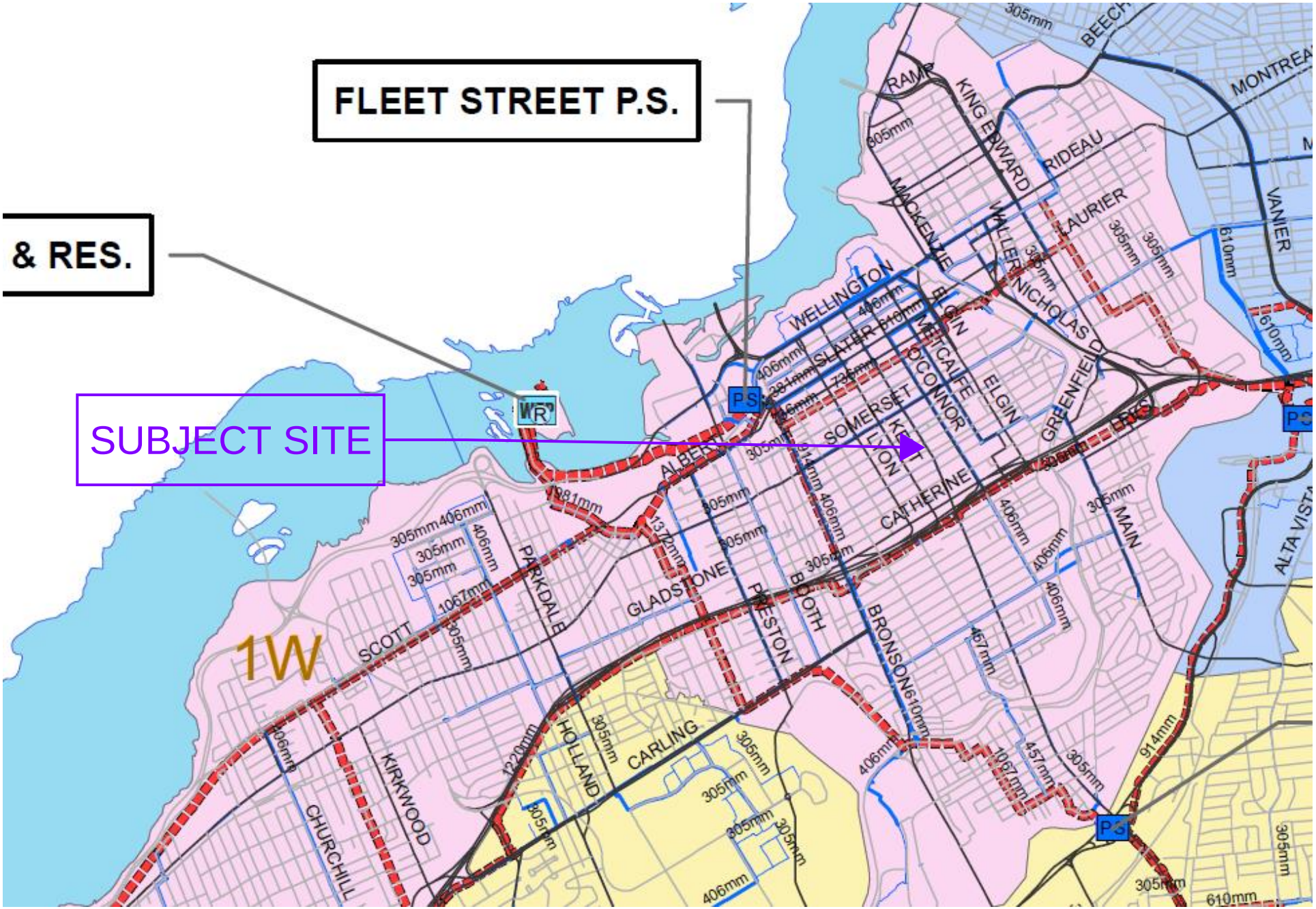

*Please note that I will be out of the office between June 28th and July 2nd.

'



'


Boundary Condition for 390 Bank
Connection 1
Connection 2
JAMES ST
rue James St
203mm
152mm
305mm
BANK ST
WAVERLEY ST
rue Waverley
203mm
152mm
rue Bank St
203mm
N
377
373
480
391
381
382
393
420
399
390
403
394
413
406
21
19
417
Legend
Pipe Ownership
Ownership
Private
Public
City of Ottawa



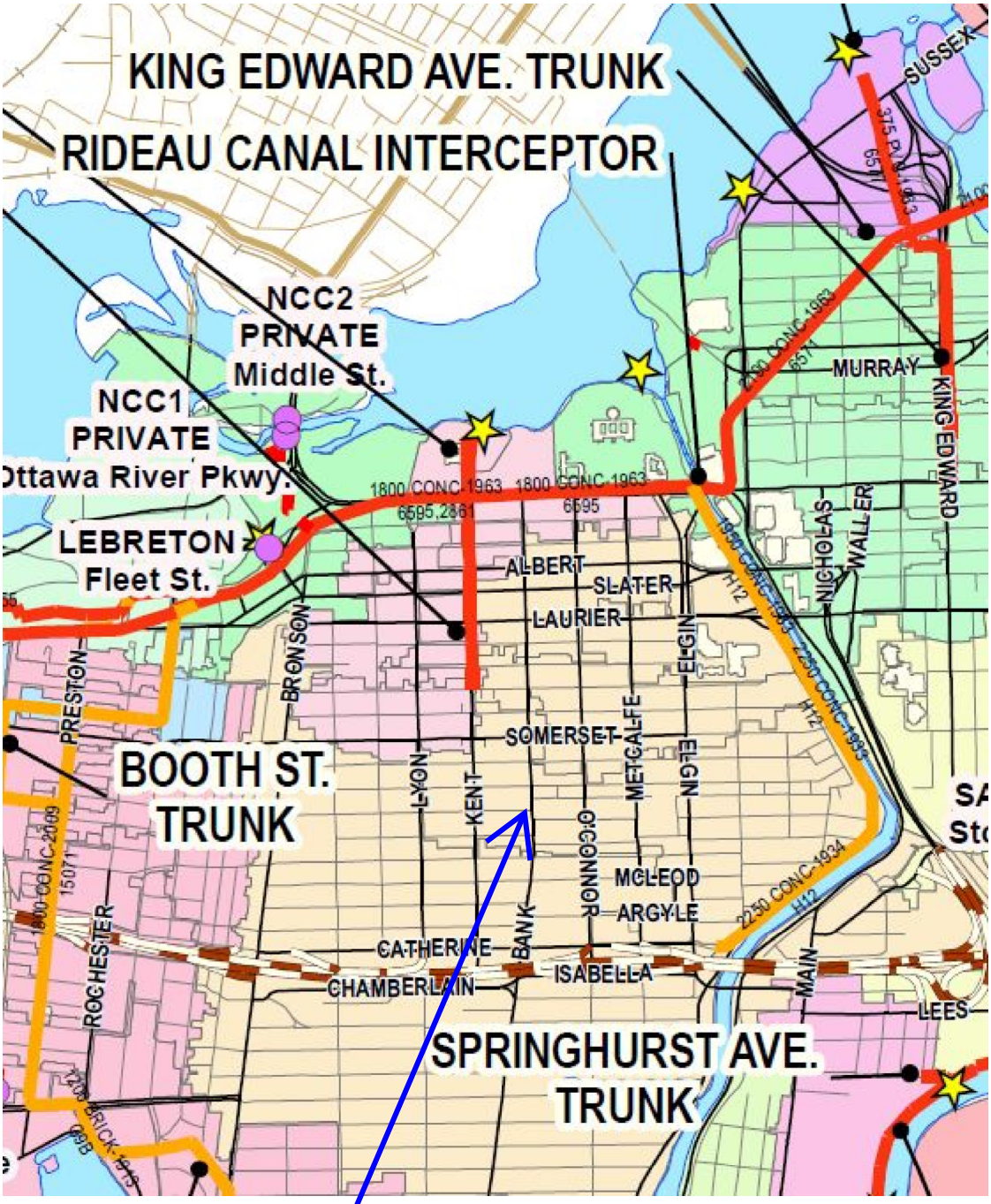

City of Ottawa - Water Distribution System Facilities and Feedermains

# *APPENDIX C*

## *Wastewater Collection*

# CITY OF OTTAWA - PLANNING & INFRASTRUCTURE PORTFOLIO

## SANITARY TRUCK SEWERS AND COLLECTION AREAS




SUBJECT SITE

**Wastewater Design Flows per Unit Count**
**City of Ottawa Sewer Design Guidelines, 2004**

**Site Area** 0.110 **ha**

**Extraneous Flow Allowances**

| | | |
|---|---|---|
| **Infiltration / Inflow (Dry)** | **0.01** | **L/s** |
| **Infiltration / Inflow (Wet)** | **0.03** | **L/s** |
| **Infiltration / Inflow (Total)** | **0.04** | **L/s** |

**Institutional / Commercial / Industrial Contributions**

| **Property Type** | **Unit Rate** | **No. of Units** | **Avg Wastewater (L/s)** |
|---|---|---|---|
| Commercial floor space* | 125 L/9.3m2/d | 55 | 0.16 |
| | | **Average I/C/I Flow** | **0.16** |
| | | **Peak Institutional / Commercial Flow** | 0.24 |
| | | **Peak Industrial Flow**** | 0.00 |
| | | **Peak I/C/I Flow** | **0.24** |

** assuming a 12 hour commercial operation*

*** peak industrial flow per City of Ottawa Sewer Design Guidelines Appendix 4B*

| | |
|---|---|
| **Total Estimated Average Dry Weather Flow Rate** | **0.16 L/s** |
| **Total Estimated Peak Dry Weather Flow Rate** | **0.24 L/s** |
| **Total Estimated Peak Wet Weather Flow Rate** | **0.28 L/s** |

**Urban Capital Property Group**
**390 Bank Street**
**Proposed Site Conditions**

**Wastewater Design Flows per Unit Count**
**City of Ottawa Sewer Design Guidelines, 2004**

**Site Area** 0.110 **ha**

**Extraneous Flow Allowances**

| | |
|---|---|
| **Infiltration / Inflow (Dry)** | **0.01 L/s** |
| **Infiltration / Inflow (Wet)** | **0.03 L/s** |
| **Infiltration / Inflow (Total)** | **0.04 L/s** |

**Domestic Contributions**

| **Unit Type** | **Unit Rate** | **Units** | **Pop** |
|---|---|---|---|
| Single Family | 3.4 | | 0 |
| Semi-detached and duplex | 2.7 | | 0 |
| Townhouse | 2.7 | | 0 |
| Stacked Townhouse | 2.3 | | 0 |
| Apartment | | | |
| Bachelor | 1.4 | 21 | 30 |
| 1 Bedroom | 1.4 | 34 | 48 |
| 2 Bedroom | 2.1 | 73 | 154 |
| 3 Bedroom | 3.1 | | 0 |
| Average | 1.8 | | 0 |

| | |
|---|---|
| **Total Pop** | **232** |
| **Average Domestic Flow** | **0.75 L/s** |
| **Peaking Factor** | **3.50** |
| **Peak Domestic Flow** | **2.63 L/s** |

**Institutional / Commercial / Industrial Contributions**

| **Property Type** | **Unit Rate** | **No. of Units** | **Avg Wastewater (L/s)** |
|---|---|---|---|
| Commercial floor space* | 5 $L/m^2/d$ | 822 | 0.10 |

| | |
|---|---|
| **Average I/C/I Flow** | **0.10** |
| **Peak Institutional / Commercial Flow** | 0.10 |
| **Peak Industrial Flow**** | 0.00 |
| **Peak I/C/I Flow** | **0.10** |

** assuming a 12 hour commercial operation*

*** peak industrial flow per City of Ottawa Sewer Design Guidelines Appendix 4B*

| | |
|---|---|
| **Total Estimated Average Dry Weather Flow Rate** | **0.85 L/s** |
| **Total Estimated Peak Dry Weather Flow Rate** | **2.73 L/s** |
| **Total Estimated Peak Wet Weather Flow Rate** | **2.76 L/s** |

# *APPENDIX D*

## *Stormwater Management*

**Estimated Peak Stormwater Flow Rate**
**City of Ottawa Sewer Design Guidelines, 2012**

**Existing Drainage Charateristics From Internal Site**

| | | |
|---|---|---|
| **Area** | 0.1100 | ha |
| **C** | 0.90 | Rational Method runoff coefficient |
| **L** | 38.4 | m |
| **Up Elev** | 72.17 | m |
| **Dn Elev** | 71.85 | m |
| **Slope** | 0.8 | % |
| **Tc** | 4.3 | min |

1) Time of Concentration per Federal Aviation Administration

$$t_c = \frac{1.8(1.1-C)L^{0.5}}{S^{0.333}}$$

tc, in minutes
C, rational method coefficient, (-)
L, length in ft
S, average watershed slope in %

**Estimated Peak Flow**

| | 2-year | 5-year | 100-year | |
|---|---|---|---|---|
| **i** | 109.2 | 149.0 | 256.3 | mm/hr |
| **Q** | 30.0 | 41.0 | 78.3 | L/s |

*Note:*
*C value for the 100-year storm is increased by 25%, to a maximum of 1.0 per Ottawa Sewer Design Guidelines (5.4.5.2.1)*

**Stormwater - Proposed Development**
**City of Ottawa Sewer Design Guidelines, 2012**

**Target Flow Rate**

| | | |
|---|---|---|
| **Area** | 0.11 | ha |
| **C** | 0.40 | Rational Method runoff coefficient |
| **$t_c$** | 10.0 | min |
| | **5-year** | |
| **i** | 104.2 | mm/hr |
| **Q** | 12.7 | L/s |
| **Sanitary Flow Rate** | 2.8 | L/s |
| **Stormwater Release Rate** | 9.9 | L/s |

**Estimated Post Development Peak Flow from Unattenuated Areas**

| | | |
|---|---|---|
| **Total Area** | 0.011 | ha |
| **C** | 0.90 | Rational Method runoff coefficient |

| | 5-year | | | | | 100-year | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| $t_c$ (min) | i (mm/hr) | $Q_{actual}$ (L/s) | $Q_{release}$ (L/s) | $Q_{stored}$ (L/s) | $V_{stored}$ ($m^3$) | i (mm/hr) | $Q_{actual}$ (L/s) | $Q_{release}$ (L/s) | $Q_{stored}$ (L/s) | $V_{stored}$ ($m^3$) |
| 10.0 | 104.2 | 2.9 | 2.9 | 0.0 | 0.0 | 178.6 | 5.5 | 5.5 | 0.0 | 0.0 |

**Estimated Post Development Peak Flow from Attenuated Areas**

| | | |
|---|---|---|
| **Total Area** | 0.099 | ha |
| **C** | 0.90 | Rational Method runoff coefficient |

| | 5-year | | | | | 100-year | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| $t_c$ (min) | i (mm/hr) | $Q_{actual}$ (L/s) | $Q_{release}$ (L/s) | $Q_{stored}$ (L/s) | $V_{stored}$ ($m^3$) | i (mm/hr) | $Q_{actual}$ (L/s) | $Q_{release}$ (L/s) | $Q_{stored}$ (L/s) | $V_{stored}$ ($m^3$) |
| 5 | 141.2 | 34.9 | 2.3 | 32.6 | 9.8 | 242.7 | 66.7 | 4.5 | 62.3 | 18.7 |
| 10 | 104.2 | 25.8 | 2.4 | 23.4 | 14.1 | 178.6 | 49.1 | 4.5 | 44.6 | 26.8 |
| 15 | 83.6 | 20.7 | 2.4 | 18.3 | 16.5 | 142.9 | 39.3 | 4.5 | 34.8 | 31.3 |
| 20 | 70.3 | 17.4 | 2.4 | 15.0 | 18.0 | 120.0 | 33.0 | 4.5 | 28.5 | 34.2 |
| 25 | 60.9 | 15.1 | 2.4 | 12.7 | 19.1 | 103.8 | 28.6 | 4.5 | 24.1 | 36.1 |
| 30 | 53.9 | 13.3 | 2.4 | 11.0 | 19.8 | 91.9 | 25.3 | 4.5 | 20.8 | 37.4 |
| 35 | 48.5 | 12.0 | 2.4 | 9.6 | 20.2 | 82.6 | 22.7 | 4.5 | 18.2 | 38.3 |
| 40 | 44.2 | 10.9 | 2.4 | 8.6 | 20.6 | 75.1 | 20.7 | 4.5 | 16.2 | 38.8 |
| 45 | 40.6 | 10.1 | 2.4 | 7.7 | 20.7 | 69.1 | 19.0 | 4.5 | 14.5 | 39.2 |
| 50 | 37.7 | 9.3 | 2.4 | 6.9 | 20.8 | 64.0 | 17.6 | 4.5 | 13.1 | 39.3 |
| 55 | 35.1 | 8.7 | 2.4 | 6.3 | 20.9 | 59.6 | 16.4 | 4.5 | 11.9 | 39.3 |
| 60 | 32.9 | 8.2 | 2.4 | 5.8 | 20.8 | 55.9 | 15.4 | 4.5 | 10.9 | 39.2 |
| 65 | 31.0 | 7.7 | 2.4 | 5.3 | 20.7 | 52.6 | 14.5 | 4.5 | 10.0 | 39.0 |
| 70 | 29.4 | 7.3 | 2.4 | 4.9 | 20.5 | 49.8 | 13.7 | 4.5 | 9.2 | 38.7 |
| 75 | 27.9 | 6.9 | 2.4 | 4.5 | 20.4 | 47.3 | 13.0 | 4.5 | 8.5 | 38.3 |
| 80 | 26.6 | 6.6 | 2.4 | 4.2 | 20.1 | 45.0 | 12.4 | 4.5 | 7.9 | 37.9 |
| 85 | 25.4 | 6.3 | 2.4 | 3.9 | 19.9 | 43.0 | 11.8 | 4.5 | 7.3 | 37.4 |
| 90 | 24.3 | 6.0 | 2.4 | 3.6 | 19.6 | 41.1 | 11.3 | 4.5 | 6.8 | 36.9 |
| 95 | 23.3 | 5.8 | 2.4 | 3.4 | 19.3 | 39.4 | 10.8 | 4.5 | 6.4 | 36.3 |
| 100 | 22.4 | 5.5 | 2.4 | 3.2 | 19.0 | 37.9 | 10.4 | 4.5 | 5.9 | 35.7 |
| 105 | 21.6 | 5.3 | 2.4 | 3.0 | 18.6 | 36.5 | 10.0 | 4.5 | 5.6 | 35.0 |

**5-year $Q_{attenuated}$ 2.38 L/s** **100-year $Q_{attenuated}$ 4.48 L/s**
**5-year Max. Storage Required 20.9 $m^3$** **100-year Max. Storage Required 39.3 $m^3$**

**Summary of Release Rates and Storage Volumes**

| Control Area | 5-Year Release Rate | 5-Year Storage | 100-Year Release Rate | 100-Year Storage |
|---|---|---|---|---|
| | (L/s) | ($m^3$) | (L/s) | ($m^3$) |
| Unattenuated Areas | 2.9 | 0.0 | 5.5 | 0.0 |
| Attenutated Areas | 2.4 | 20.9 | 4.5 | 39.3 |
| **Total** | **5.2** | **20.9** | **9.9** | **39.3** |

## *DRAWINGS / FIGURES*

405-317 ADELAIDE STREET WEST
TORONTO CANADA M5V 1P9
+1 416 599 9729 WWW.RAWDESIGN.CA

390 Bank Street, Ottawa, Ontario
Preliminary Site Stats
10 February 2020

| Official Plan |
|---|
| Current Zoning |

**Site Area** Gross 1,625 sq.m. 17,491 sq.ft.

| | Units | | | | | Retail GFA | | Residential GFA | | Communal Indoor Amenity* | | Communal Outdoor Amenity* | | Private Outdoor Amenity* | | Common | | Total GFA | | GCA | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Studio | 1B | 2B | 3B | Total | m2 | sf | m2 | sf | m2 | sf | m2 | sf | m2 | sf | m2 | sf | m2 | sf | m2 | sf |
| P2 | | | | | | | | | | | | | | | | | | | | 1,581 | 17,018 |
| P1 | | | | | | | | | | | | | | | | | | | | 1,581 | 17,018 |
| | | | | | | | | | | | | | | | | | | | | **3,162** | 34,035 |
| 1 | | | | | 0 | 635 | 6,833 | 353 | 3,798 | 187 | 2,011 | 55 | 592 | | | | | 988 | 10,631 | 1,180 | 12,701 |
| 2 | 3 | 3 | 11 | | 17 | | | 1,240 | 13,352 | | | | | 167 | 1,803 | 138 | 1,483 | 1,240 | 13,352 | 1,263 | 13,594 |
| 3 | 3 | 4 | 11 | | 18 | | | 1,304 | 14,041 | | | | | 100 | 1,077 | 140 | 1,510 | 1,304 | 14,041 | 1,304 | 14,041 |
| 4 | 3 | 4 | 11 | | 18 | | | 1,298 | 13,973 | | | | | 104 | 1,122 | 140 | 1,510 | 1,298 | 13,973 | 1,298 | 13,973 |
| 5 | 4 | 4 | 10 | | 18 | | | 1,291 | 13,900 | | | | | 110 | 1,183 | 140 | 1,510 | 1,291 | 13,900 | 1,291 | 13,900 |
| 6 | 4 | 5 | 9 | | 18 | | | 1,265 | 13,611 | | | | | 126 | 1,354 | 140 | 1,510 | 1,265 | 13,611 | 1,265 | 13,611 |
| 7 | 4 | 5 | 9 | | 18 | | | 1,252 | 13,474 | | | | | 106 | 1,142 | 140 | 1,510 | 1,252 | 13,474 | 1,252 | 13,474 |
| 8 | | 4 | 6 | | 10 | | | 939 | 10,107 | | | | | 333 | 3,584 | 126 | 1,358 | 939 | 10,107 | 939 | 10,107 |
| 9 | | 5 | 6 | | 11 | | | 939 | 10,107 | | | | | 65 | 700 | 126 | 1,358 | 939 | 10,107 | 939 | 10,107 |
| Mech/ Penthouse | 10 | | | | | | | 89 | 960 | | | 158 | 1,696 | 335 | 3,606 | 58 | | 89 | 960 | 281 | 3,025 |
| | | | | | | | | | | | | | | | | | | | | **11,012** | 118,533 |
| **Totals** | **21** | **34** | **73** | 0 | **128** | **635** | **6,833** | **9,971** | 107,322 | **187** | 2,011 | **213** | 2,288 | **1,446** | 15,570 | **1,150** | 12,379 | **10,605** | 114,155 | **14,174** | 152,568 |
| | 16% | 27% | 57% | | | | | | | * excluded from GFA | | | | | | | | | | | |

| | |
|---|---|
| FSI | 6.53 |
| Avg unit size | 66.2 m2 |

**Required Parking**

| | |
|---|---|
| Residential | 0 |
| Visitors (0.1 per unit) | 13 |
| Total | **13** |

**Proposed Parking**

| | P1 | P2 | | |
|---|---|---|---|---|
| Residential | 17 | 34 | 51 | |
| Visitors | 13 | | 13 | |
| Total | | | 64 | **64** |

**Required Bike Parking**

| | |
|---|---|
| Residential (0.5 per unit) | 64 |
| Retail (1 per 250m2) | 3 |
| Total | 67 |

**Proposed Bike Parking**

| | |
|---|---|
| Residential at grade | |
| Retail at grade | 3 |
| Residential at P1 | 56 |
| Residential at P2 | 16 |
| Total | 72 |

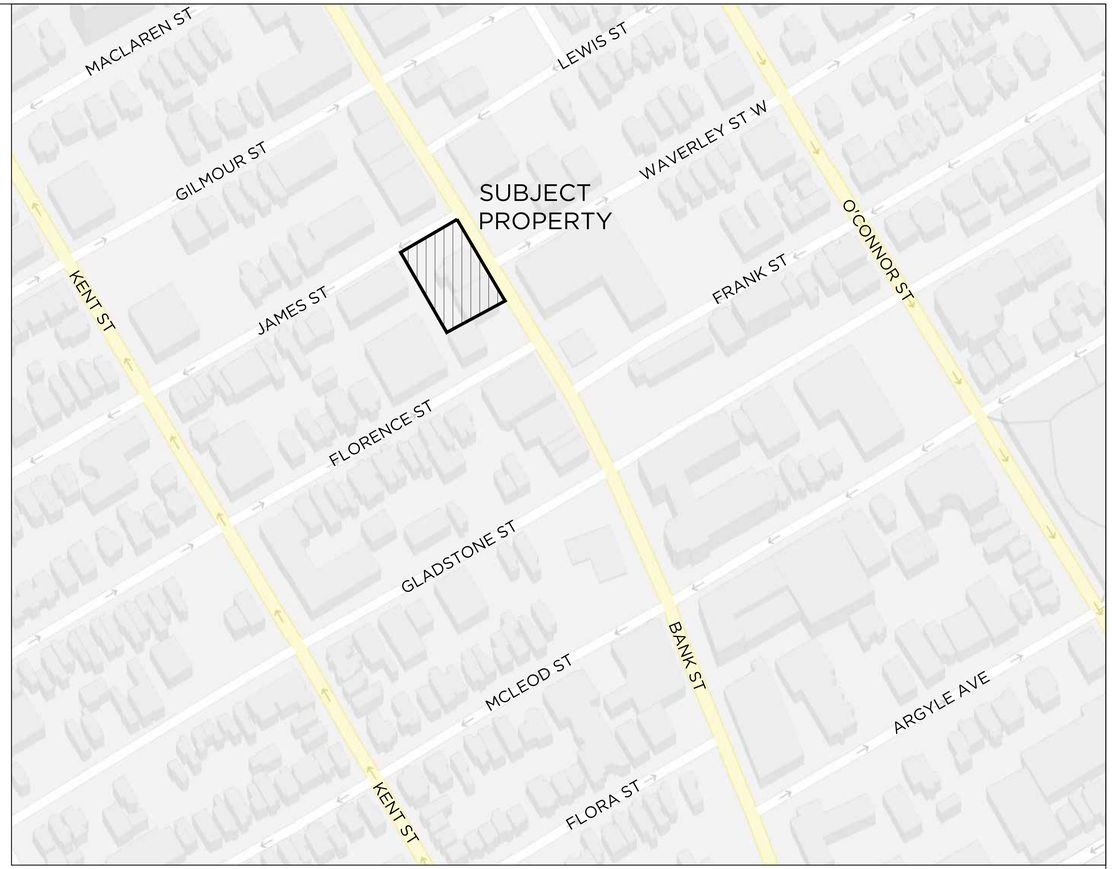
**Lockers**

| | |
|---|---|
| P1 | 5 |
| P2 | 37 |
| Total | 42 |

**Amenity**

| | Required | Provided |
|---|---|---|
| 6m2 per unit | 768 m2 | 1,846 m2 |
| min 50% as communal areas | 384 m2 | 399 m2 |

## 2 SITE STATS
SCALE NTS




## 1 CONTEXT PLAN
SCALE NTS



**ISSUED RECORD**

2019.09.23 - ISSUED FOR REZONING

**REVISION RECORD**

NORTH

405-317 ADELAIDE STREET WEST
TORONTO CANADA M5V 1P9
+1 416 599 9729
WWW.RAWDESIGN.CA

12017

JAMES HOUSE
390 BANK STREET
OTTAWA, ON

URBAN CAPITAL

17 Nelson Street | Toronto | Ontario | M5V 0G2
T. 416.304.0431

CONTEXT PLAN,
SITE STATS

NTS

A001

NOTE:
FOR SITE SERVICING & GRADING REFER TO DRAWINGS PREPARED BY DSEL

FOR LANDSCAPE & EXTERIOR LIGHTING REFER TO DRAWINGS PREPARED BY FOTENN

REFER TO DRAWING A201 FOR ADDITIONAL SITE NOTATIONS

SITE PLAN INFORMATION TAKEN FROM :

1. TOPOGRAPHY SURVEY OF LOTS 18, 19 & 20, REGISTERED PLAN NO. 1558, CITY OF OTTAWA, PREPARED BY STANTEC GEOMATICS LTD. (MAY 17, 2012).

72.00 = ESTABISHED GRADE

LEGEND

| | |
|---|---|
| 91.14 | EXISTING ELEVATION |
| + 88.20 | PROPOSED ELEVATION |
| + 88.20 TOS | TOP OF SLAB |
| + 88.20 TOW | TOP OF WALL |
| + 88.20 TOC | TOP OF CURB |
| | VEHICULAR EXIT/ENTRANCE |
| | PEDESTRIAN EXIT/ENTRANCE |
| | PRINCIPAL RES ENTRANCE |
| | SIAMESE CONNECTION |

NOTE:

1. THE BUILDING IS TO BE SPRINKLERED.
2. ALL WASTE GENERATED BY THE SITE TO BE STORED ON PRIVATE PROPERTY.
3. SIDEWALKS AND BOULEVARDS WITHIN THE RIGHT OF WAY TO HAVE A MINIMUM 2% AND MAXIMUM 4% SLOPE TOWARDS THE ROADWAY.
4. REFER TO SITE SERVICING PLAN, PREPARED BY DSEL, FOR SEWER AND WATER SERVICE INFORMATION.
5. ALL EXISTING ACCESSES, CURB CUTS, TRAFFIC CONTROL SIGNS, ETC. ALONG THE DEVELOPMENT SITE FRONTAGES THAT ARE NO LONGER REQUIRED ARE TO BE REMOVED. THE BOULEVARD WITHIN THE PUBLIC RIGHT OF WAY, IN ACCORDANCE WITH CITY STANDARDS AND TO THE SATISFACTION OF THE EXECUTIVE DIRECTOR OF TECHNICAL SERVICES ARE TO BE REINSTATED.



**ISSUED RECORD**

2019.09.23 - ISSUED FOR REZONING

**REVISION RECORD**

NORTH

RAW

405-317 ADELAIDE STREET WEST
TORONTO CANADA M5V 1P9
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12017

JAMES HOUSE
390 BANK STREET
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URBAN CAPITAL

17 Nelson Street | Toronto | Ontario | M5V 0G2
T. 416.304.0431

SITE PLAN

1:100

A100