david schaeffer engineering ltd

120 Iber Road, Suite 103
Ottawa, Ontario K2S 1E9
Tel. (613) 836-0856
Fax (613) 836-7183
www.DSEL.ca

SERVICING AND STORMWATER MANAGEMENT REPORT

FOR

THE PROPERTIES GROUP
70 BEECH STREET & 75 NORMAN STREET

CITY OF OTTAWA

PROJECT NO.: 18-1015

MARCH 2019 – REV 1

SERVICING AND STORMWATER MANAGEMENT REPORT
FOR
70 BEECH STREET & 75 NORMAN STREET

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TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

SERVICING AND STORMWATER MANAGEMENT REPORT
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1.0 INTRODUCTION

David Schaeffer Engineering Limited (DSEL) has been retained by The Properties Group to prepare a Servicing and Stormwater Management report in support of the application for Site Plan Control (SPC) at 70 Beech Street and 75 Norman Street.

The subject property is located within the City of Ottawa urban boundary, in the Somerset ward. As illustrated in ***Figure 1***, the subject property is bound by Beech Street to the North and Norman Street to the South. Currently comprised of two parcels of land,70 Beech Street and 75 Norman Street, the properties are to be joined into one parcel. The subject properties measure approximately ***0.12 ha***. 70 Beech Street is zoned Traditional Mainstreet (TM) and 75 Norman is zoned Residential Fourth Density (R4).

Figure 1: Site Location

The proposed SPC would allow for the development of a 6-storey commercial/residential building fronting onto Beech Street, within ***0.08 ha*** of the subject site. It is proposed surface parking for the building is to be located within the existing parking area of 75 Norman Street with access through the existing driveway off of Norman Street. The existing house and all existing service connections to Norman Street are to remain. The proposed development would include approximately ***538 m²*** of commercial/amenity space and approximately residential ***48*** dwelling units. A copy of the Site Plan prepared by RLA Architecture is included in ***Drawings/Figures***.

The objective of this report is to provide sufficient detail to demonstrate that the proposed development is supported by existing municipal services.

1.1 Existing Conditions

The existing 70 Beech street parcel includes an auto-mechanic garage including a paved parking area. 75 Norman Street contains a duplex and paved parking area in the rear yard. The elevations range between 61.97 m and 63.37 m with a grade change of approximately 1.25 m from the Northeast to the Southwest corner of the property.

Sewer and watermain mapping collected from the City of Ottawa indicate that the following services exist across the property frontages within the adjacent municipal right-of-ways:

Beech Street:

- 203 mm diameter PVC watermain; and
- 375 mm diameter concrete combined sewer, tributary to the Preston Street Trunk.

Norman Street:

- 152 mm diameter PVC watermain; and
- 675 mm diameter concrete combined sewer, tributary to the Preston Street Trunk.

1.2 Required Permits / Approvals

The proposed development is subject to the site plan control approval process. The City of Ottawa must approve the engineering design drawings and reports prior to the issuance of site plan control.

The proposed development is will outlet to a combined sewer. As a result, the Ministry of the Environment, Conservation and Parks (MOECP) will require an Environmental Compliance Application (ECA) to be submitted under the Direct Submission process.

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, PG4430-1 Revision 1, February 8, 2019.
  (Geotechnical Report)

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 Water Distribution System map, included in ***Appendix B***. A local 203 mm diameter watermains exist within the Beech Street right-of-way and a local 152 mm diameter watermain exists within the Norman Street right-of way.

3.2 Water Supply Servicing Design

It is proposed that the development be serviced via a 150 mm diameter water service, to be confirmed by the mechanical engineering, connecting to the existing 203 mm diameter watermain located within the Beech Street right-of-way. Refer to drawing ***SSP-1,*** accompanying this report for a detailed site servicing layout.

Table 1, below, summarizes the ***Water Supply Guidelines*** employed in the preparation of the 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	4.9 x Average Daily **
Residential Maximum Hourly	7.4 x Average Daily **
Commercial Retail	5.0 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	150mm diameter
Minimum Depth of Cover	2.4m from top of watermain to finished grade
During normal operating conditions desired operating pressure is within	350 kPa and 480 kPa
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	140k Pa

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

Table 2, below, summarizes the estimated water supply demand and boundary conditions for the proposed development based on the development statistics provided by RLA Architecture.

Table 2
Water Demand and Boundary Conditions

Design Parameter	Proposed Demand[1] (L/min)	Boundary Condition[2] Connection 1 (m H_2O / kPa)
Average Daily Demand	17.4	114.9 / 520.6
Max Day + Fire Flow	79.0 + 10,000 = 10,079.0	104.0 / 446.1
Peak Hour	120.2	107.3 / 413.7

1) Water demand calculation per ***Water Supply Guidelines***. See ***Appendix B*** for detailed calculations.
2) Boundary conditions supplied by the City of Ottawa for the demands indicated in the correspondence; assumed ground elevation 61.8 m. See ***Appendix B for detailed calculations.***

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 required fire flow was estimated in accordance with City of Ottawa Technical Bulletin ***ISTB-2018-02***; the resulting highest flows for each building type were sent to the City of Ottawa for boundary conditions. The following parameters were assumed:

- Type of construction – Ordinary Construction;
- Occupancy type – Limited combustible; and
- Sprinkler Protection – Sprinklered system

The following assumptions resulted in a fire flow estimation of ***10,000 L/s***. Calculation sheets per the ***ISTB-2018-02*** can be found in ***Appendix B***.

3.3 Water Supply Conclusion

A 150 mm diameter connection will service the development by connecting to the existing 203 mm diameter watermain within Beech Street.

The estimated water demand was submitted to the City of Ottawa for establishing boundary conditions. The City provided both the anticipated minimum and maximum water pressures, as well as, the estimated water pressure during fire flow. The minimum and maximum pressures fall within the required range identified 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 Preston Street Trunk catchment area, as shown by the City sewer mapping included in ***Appendix C***. An existing 375 mm diameter combined sanitary sewer within the Beech Street right-of-way, and a 675 mm diameter combined sewer within Norman Street right-of-way are available to service the proposed development.

4.2 Wastewater Design

It is proposed that the development be serviced via a 200 mm diameter sanitary service to the existing 375 mm diameter combined sanitary sewer located within the Beech Street right-of-way. Refer to drawing ***SSP-1,*** accompanying this report, for a detailed site servicing layout.

Table 3, below, summarizes the ***City Standards*** employed in the design of the proposed wastewater sewer system.

Table 3
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 Harmon Correction Factor 0.8
Infiltration and Inflow Allowance	0.33 L/s/ha
Commercial Floor/Amenity Space	5.0 L/m^2/d
Nursing/Rest Homes	450 L/Bed/d
Housekeeping Facilities	275 L/P/d
Dining Room/Kitchen	115 L/9.3m^3/d
Office Space	75 L/9.3m^3/d
Commercial Peaking Factor	1.0
Sanitary sewers are to be sized employing the Manning's Equation	$Q = \frac{1}{n} A R^{2/3} S^{1/2}$
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 and Technical Bulletin ISTB-2018-03.	

Table 4, below, demonstrates the estimated peak flow from the proposed development based on the development statistics provided by RLA Architecture. See ***Appendix C*** for associated calculations.

Table 4
Summary of Estimated Peak Wastewater Flow

Design Parameter	Total Flow (L/s)
Estimated Average Dry Weather Flow	0.33
Estimated Peak Dry Weather Flow	1.00
Estimated Peak Wet Weather Flow	**1.03**

The peak wet weather sanitary flow based on the Site Plan dated February 5th 2019, prepared by RLA Architecture and included in ***Drawings/Figures,*** is ***1.03 L/s***. The increase in wastewater discharge will be compensated for by a reduction in stormwater flow, as discussed in ***Section 6.0*** of the report.

4.3 Wastewater Servicing Conclusions

The subject site lies within the Preston Street Trunk catchment area. It is proposed that the development be serviced via a 200 mm diameter sanitary service to the existing 375 mm diameter combined sewer within Beech Street, tributary to the Preston Street Trunk.

As discussed in ***Section 6.0*** of the report, there will be a net decrease in total stormwater and sanitary flow to the existing combined sewer.

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

5.0 STORMWATER MANAGEMENT

5.1 Existing Stormwater Services

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 proposed 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***.

The development proposed to retain the existing parking area and house within the 75 Norman Street subject site. The existing one-story garage is to be removed and replaced with surface parking. Existing drainage patterns within 75 Norman Street are proposed to be maintained. Based on topography and City of Ottawa 1K mapping, stormwater is directed overland East of the subject site towards Rochester Street. Please refer to drawing ***FIG-1*** within ***Appendix D***.

Existing drainage within the 70 Beech Street subject site indicate that stormwater is directed towards the combined sewers within the Beech Street right-of-way.

It was assumed that the existing development contained no stormwater management controls for flow attenuation. The estimated combined pre-development peak flows directed towards the Beech Street right-of-way for the 2, 5, and 100-year storm events are summarized in ***Table 5,*** below:

Table 5
Summary of Existing Peak Storm Flow Rates (Beech Street)

City of Ottawa Design Storm	Estimated Peak Flow Rate (L/s)
2-year	19.1
5-year	26.1
100-year	56.1

5.2 Post-development Stormwater Management Target

Stormwater management requirements for the proposed development were reviewed with the City of Ottawa, generating the following requirements for the proposed development:

- Meet a total allowable combined release rate based on a Rational Method Coefficient of 0.40, employing the City of Ottawa IDF parameters for a 2-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 proposed development due to the combined sewer outlet; correspondence with the RVCA is included in ***Appendix A***.

Based on the above stated requirements, the allowable stormwater release rate for the proposed development is ***7.0 L/s***. As discussed in ***Section 6.0*** of this report and outlined in ***Table 7***, there is a net reduction in combined sanitary and stormwater flow rates to the existing combined sewer from the existing condition.

5.3 Proposed Stormwater Management System

It is proposed that the stormwater outlet from the development will be to the existing 375 mm diameter combined sewer within Beech Street via a 250 mm diameter storm service. Refer to drawing ***SSP-1,*** accompanying this report, for a detailed site servicing layout.

To meet the stormwater objectives the proposed development will attenuate flow attenuation via an internal cistern. Detailed design of the cistern will be completed by the architect and the mechanical engineer.

Stormwater runoff collected from the roof area will be directed to a ***40.0 m^3*** internal stormwater cistern. Cistern flow will be pumped to a maximum release rate of ***1.3 L/s*** via the internal mechanical system and will outlet to the municipal combined sewer within Beech Street, as shown by ***SSP-1***. Foundation drains are to be connected downstream of any cistern controls. Detailed calculations are located in ***Appendix D***.

Based on the Geotechnical Investigation ***(Geotechnical Report),*** post-development groundwater flows will be less than ***25,000 L/day***, with peak periods noted after rain events. This groundwater infiltration was included within the total post-development site release rate.

Table 6, below, summarizes post-development flow rates based on the proposed Site Plan and ***Geotechnical Report***.

Table 6
Stormwater Flow Rate Summary

Control Area	5-Year Release Rate	5-Year Storage	100-Year Release Rate	100-Year Storage Required
	(L/s)	(m^3)	(L/s)	(m^3)
Unattenuated Areas	2.5	0.0	5.5	0.0
Attenuated Areas	0.7	19.8	1.3	37.2
Ground Water Infiltration*	0.3	0.0	0.3	0.0
Total	**3.5**	**19.8**	**7.0**	**37.2**
Including 25,000 L/day groundwater infiltration as indicated by (Geotechnical Report**)*				

It is calculated that ***37.2 m³*** of storage will be required on site to attenuate flow to the established release rate of ***7.0 L/s.*** Storage will be provided via a ***40.0 m³*** internal cistern.

As discussed in ***Section 6.0*** of this report and outlined in ***Table 7***, there is a net reduction in total sanitary and stormwater flow rates to the existing combined sewer proposed.

5.4 Stormwater Quality Control

Quality controls are not required for the proposed development due to the combined sewer outlet; correspondence with the RVCA is included in ***Appendix A***.

5.5 Stormwater Servicing Conclusions

Post development stormwater runoff will be required to be restricted to the allowable target release rate for storm events up to and including the 100-year storm, in accordance with ***City Standards***.

Based on the above stated requirements, the allowable release rate for the proposed development is ***7.0 L/s***. It is estimated that ***37.2 m³*** of storage is required to meet this release rate and the storage will be provided via a ***40.0 m³*** internal cistern.

Quality controls are not required for the proposed development due to the combined sewer outlet.

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

6.0 COMBINED SEWER SYSTEM FLOW

Under existing conditions, it is assumed that the site contains no stormwater management system for flow attenuation. Therefore, the pre-development combined flow during the 2-year storm event was estimated to be approximately ***19.2 L/s***.

The post-development combined flow for all storms up to and including a 100-year event will be limited to ***8.0 L/s***. This value includes the peak dry weather sanitary flow and both controlled and uncontrolled flows directed towards the municipal infrastructure.

Based on the current Site Plan, the development proposes to control stormwater to an allowable release rate of ***7.0 L/s***, calculated based on the design parameters outlined in ***Section 5.2***.

Table 7, below, summarizes the allowable and proposed release rates from the development.

Table 7
Summary of Existing and Proposed Release Rates

City of Ottawa Design Storm	Existing Peak Flow Rate (L/s)	Proposed Peak Flow Rate (L/s)
Wastewater	0.1	1.0
Stormwater*	19.1	7.0
Combined	19.2	8.0
Including 25,000 L/day groundwater infiltration as indicated by (Geotechnical Report**)*		

As indicated by ***Table 7***, above, based on the proposed flow rate of ***8.0 L/s***, the post-development combined flow will result in a net reduction to the existing combined sewer by approximately ***11.2 L/s*** or ***58%*** during a 2-year storm event.

7.0 UTILITIES

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

8.0 EROSION AND SEDIMENT CONTROL

Soil erosion occurs naturally and is a function of soil type, climate and topography. During construction the extent of erosion losses is exaggerated due to the removal of vegetation and the top layer of soil becoming agitated.

Prior to topsoil stripping, earthworks or underground construction, erosion and sediment controls will be implemented and will be maintained throughout construction.

Silt fence will be installed around the perimeter of the site and will be cleaned and maintained throughout construction. Silt fence will remain in place until the working areas have been stabilized and re-vegetated.

Catch basins will have SILTSACKs or an approved equivalent installed under the grate during construction to protect from silt entering the storm sewer system.

A mud mat will be installed at the construction access in order to prevent mud tracking onto adjacent roads.

Erosion and sediment controls must be in place during construction. The following recommendations to the contractor will be included in contract documents:

- Limit extent of exposed soils at any given time;
- Re-vegetate exposed areas as soon as possible;
- Minimize the area to be cleared and grubbed;
- Protect exposed slopes with plastic or synthetic mulches;
- Install silt fence to prevent sediment from entering existing ditches;
- No refueling or cleaning of equipment near existing watercourses;
- Provide sediment traps and basins during dewatering;
- Install filter cloth between catch basins and frames;
- Plan construction at proper time to avoid flooding; and
- Establish material stockpiles away from watercourses, so that barriers and filters may be installed.

The contractor will, at every rainfall, complete inspections and guarantee proper performance. The inspection is to include:

- Verification that water is not flowing under silt barriers; and
- Clean and change filter cloth at catch basins.

9.0 CONCLUSION AND RECOMMENDATIONS

David Schaeffer Engineering Ltd. (DSEL) has been retained by The Properties Group to prepare a Servicing and Stormwater Management report in support of the application for Site Plan Control (SPC) at 70 Beech Street & 75 Norman 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 proposed development with water within the City's required pressure range;
- The FUS method for estimating fire flow indicated ***10,000 L/min*** is required for the mixed-use commercial/residential apartment building. As indicated by the boundary conditions provided by the City, the municipal system is capable of providing the required flow;
- The proposed development will be required to attenuate post development storm and sanitary flows to an equivalent combined release rate of ***8.0 L/s***. The combined release rate of sanitary and stormwater flow from the proposed site provides an approximately ***58%*** reduction in flow into the combined sewer within Beech Street;
- The proposed development is estimated to have a peak wet weather flow of ***1.03 L/s***.
- Based on City of Ottawa design criteria, the post development storm allowable release rate was established as ***7.0 L/s***;
- It is proposed that stormwater objective be met through storm water retention via cistern storage, it is calculated that ***37.2 m^3*** of onsite storage will be required to attenuate flow to the established release rate above, ***40.0 m^3*** is provided;
- Quality controls are not required for the proposed development due to the combined sewer outlet, correspondence with the RVCA is included in ***Appendix A***;
- The development proposes to outlet to a combined sewer, as a result, the Ministry of the Environment, Conservation and Parks (MOECP) will require an Environmental Compliance Application (ECA) to be submitted under the Direct Submission process.

Prepared by,
David Schaeffer Engineering Ltd.

Per: Charlotte M. Kelly, EIT.

Reviewed by,
David Schaeffer Engineering Ltd.

Per: Robert D. Freel, P.Eng.

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APPENDIX A

Pre-Consultation

DEVELOPMENT SERVICING STUDY CHECKLIST

18-1015 04/03/2019

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, EX-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, EX-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.	GP-1
☐	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	SP-1

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, 7.0, 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, 5.4, 5.5
☒	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, 5.4, 5.5
☒	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
☐	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 8.0
☐	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 9.0
☐	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

Charlotte Kelly

From: Jamie Batchelor <jamie.batchelor@rvca.ca>
Sent: February 22, 2019 2:06 PM
To: Charlotte Kelly
Cc: Alison Gosling
Subject: RE: 70 Beech Street - Quality Control Requirement

Good Afternoon Charlotte,

I can confirm that if the stormwater is outletting to a combined sewer, then onsite water quality controls are not required save and except best management practices.

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: Charlotte Kelly <CKelly@dsel.ca>
Sent: Friday, February 22, 2019 12:08 PM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Cc: Alison Gosling <AGosling@dsel.ca>
Subject: 70 Beech Street - Quality Control Requirement

Good afternoon Jamie,

We wanted to touch base with you regarding a development at 70 Beech Street / 75 Norman Street. The development involves the construction of a 6-storey residential and commercial building occupying the entirety of the 70 Beech parcel. The existing site fronting Beech consists of a paved surface parking lot and auto-mechanic shop. The existing property fronting Norman consist of a detached home with a detached garage and a paved rear yard parking area. The house is to remain however the garage is to be converted to more paved parking. Please refer to the figure below for the existing property conditions and the attached site plan for the proposed site layout.

The development proposes to outlet to the existing combined sewer within Beech 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?

Thanks,

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

70 Beech Street (75 Norman St)
Meeting Summary Notes
Nov. 3, 2017, Ottawa City Hall
Revised, November 15, 2017

Attendees:

- Brian Lahey (Owner, The Properties Group)
- Rod Lahey (Architect, RLA Architecture)
- Matt McElligott (Agent, Fotenn Consultants)
- Richard Buchanan (Project Manager, City of Ottawa)
- Christopher Moise (Urban Designer, Architect, City of Ottawa)
- Tracey Scaramozzino (File Lead, Planner, City of Ottawa)
- Michael Powell, Eric Darwin (Dalhousie Community Association) – not in attendance but will receive a copy of the minutes.

Issue of Discussion:

- Construction of new 6-storey mixed-use building at 70 Beech Street, with commercial on the ground floor, offices on the second floor, residential on floors 3-6.
- [Demolition of dwelling at 75 Norman Street to provide 13 surface parking spaces for the development at 70 Beech. *(*this part of the proposal has since been removed from the proposal*)*].
- Existing hydro wires will be relocated to the opposite side of the hydro poles to provide adequate 5m clearance for the devt.
- Roof-top amenity space will be provided to meet the zoning provisions.
- A minor re-zoning application will be requested to deal with several zoning deficiencies. These will be further reviewed once the site/bldg. design is further advanced.
- Garbage and bikes are located within the building

---

1. **Official Plan**
    - **a.** Designated "Mixed Use" in the Official Plan.
    - b. Beech Street, in this area is designated "Main Street" in Preston-Carling District Secondary Plan; the lands to the rear, fronting along Norman Street are designated "Mixed-Use Neighbourhood"

"*Preston Street and Beech Street will be animated and active Mainstreets with generous pedestrian zones for walking and seasonal outdoor patios, ample bicycle parking, strategic on street parking, special furnishing, street trees and planting beds. Bus stops and shelters will be located along Preston Street*."

Secondary Plan: Main Street in raspberry colour along Beech and Preston; mixed-use neighbourhood for sites along Norman.

Secondary Plan: Heights of 6-storeys along Beech and Preston; 4-storeys backing onto the site, fronting onto Norman.

2. **Zoning Information**
    a. TM [86]: for 70 Beech

3. **Infrastructure/Servicing**
    a. Standard Requirements: storm, sanitary, MOE application for combined services, ECA, noise study, Phase 1 and 2 ESA, eligible for Brownfield Contamination – as they are not the same owner that caused the contamination
    b. Applicants consultant: Carlos Da Silva, Paterson Group

4. **Initial Planning/Design Comments**
    a. Remove surface parking (applicant has agreed to do this)
    b. We will need to further review the proposed variances once the site/building design have been revised.
    c. The site is subject to the Urban Design Review Panel (UDRP)
    d. Design comments will be provided as the proposal evolves
    e. Cash-in-lieu of parkland is req'd – to a max of 10% of the land value.
    f. The proposed variances will be further reviewed once the site/bldg. design is further advanced.
    - Point of Note: Upon reflection after the meeting, City staff would like to advise the Applicants that the proposed rear yard setback of 1.5m rather than 7.5m is of concern to staff.

5. **Transportation**
    a. No transportation issues, as there are no longer any parking spaces being provided and bicycle parking is being provided.

6. **Waste Collection**
    a. Waste management will be controlled within an interior garbage room.
    b. Applicant to confirm if the residential units will be on City or Private garbage collection. The Commercial and Offices uses will both be on private collection.

7. **Process/Required Applications**
    a. Site Plan Control Application, Manager Approval, Public Consultation
    b. Minor Re-zoning to deal with zoning deficiencies (instead of going to the Committee of Adjustment)

8. **General Information**
    a. Rod Lahey will contact the Dalhousie Community Association (Michael Powell and Eric Darwin) to discuss the project. Tracey Scaramozzino is willing to attend if requested.
    b. Applicant to also speak to Councillor McKenney
    c. The Applicant will spend some time to revise the application before being submitted.

APPENDIX B

Water Supply

The Properties Group
70 Beech Street & 75 Norman Street
Proposed Site Conditions

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	-	0
1 Bedroom	1.4	30	42
2 Bedroom	2.1	18	38
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	80	22.4	15.6	109.8	76.2	165.8	115.1

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 floor space	5.0 $L/m^2/d$	538	2.69	1.9	4.0	2.8	7.3	5.0
Office	75 $L/9.3m^2/d$	-	0.00	0.0	0.0	0.0	0.0	0.0
Total I/CI Demand			2.7	1.9	4.0	2.8	7.3	5.0
Total Demand			**25.1**	**17.4**	**113.8**	**79.0**	**173.0**	**120.2**

Residential Maximum Daily Demand = 4.9 x Average Daily *
Residential Maximum Hourly Demand = 7.4 x Average Daily *

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: Ordinary Construction

C	1		*Type of Construction Coefficient per FUS Part II, Section 1*
A	2684.0	m^2	*Total floor area based on FUS Part II section 1*

Fire Flow	11397.6	L/min	
	11000.0	**L/min**	*rounded to the nearest 1,000 L/min*

Adjustments

2. Reduction for Occupancy Type

Limited Combustible	-15%	
Fire Flow	**9350.0**	**L/min**

3. Reduction for Sprinkler Protection

Sprinklered - Supervised	-50%	
Reduction	**-4675**	**L/min**

4. Increase for Separation Distance

	Cons. of Exposed Wall	S.D	Lw	Ha	LH	EC	
N	Non-Combustible	>45m	0	0	0	0%	
S	Wood Frame	10.1m-20m	20	2	40	13%	
E	Wood Frame	0m-3m	28	1	28	22%	
W	Wood Frame	0m-3m	29	2	58	23%	
		% Increase				**58%**	*value not to exceed 75%*

Increase	**5423.0**	**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	10098.0	L/min	*fire flow not to exceed 45,000 L/min nor be less than 2,000 L/min per FUS Section 4*
	10000.0	**L/min**	*rounded to the nearest 1,000 L/min*

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

70 Beech Street & 75 Norman Street
City of Ottawa Boundary Conditions

Boundary Conditions Unit Conversion

Grnd Elev 61.83

	m H_2O	PSI	kPa
Avg. Day	**114.9**	75.5	520.6
Peak Hour	**107.3**	64.7	446.1
Max Day + FF	**104.0**	60.0	413.7

	L/s	L/min
Fire Flow	167	10020

Alison Gosling

To: Robert Freel
Subject: RE: 70 Beech Street - Boundary Condition Request - 18-1015

From: Richard.Buchanan@ottawa.ca
Sent: January 29, 2019 10:27 AM
To: RFreel@dsel.ca
Subject: FW: 70 Beech Street - Boundary Condition Request - 18-1015

Hi Bobby

The following are boundary conditions, HGL, for hydraulic analysis at 70 Beech (zone 1W) assumed to be connected to the 203mm on Beech S t(see attached PDF for location).

Minimum HGL = 107.3m

Maximum HGL = 114.9m

MaxDay + FireFlow (167 L/s) = 104.0m

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.

Richard Buchanan, CET

Project Manager, Development Approvals
Planning, Infrastructure and Economic Development Department
Planning & Growth Management Branch
City of Ottawa | Ville d'Ottawa
613.580.2424 ext./poste 27801
ottawa.ca/planning / ottawa.ca/urbanisme

From: Robert Freel <RFreel@dsel.ca>
Sent: Wednesday, January 23, 2019 2:32 PM
To: Buchanan, Richard <Richard.Buchanan@ottawa.ca>
Subject: 70 Beech Street - Boundary Condition Request - 18-1015

Good afternoon Richard,

Hope you are surviving the snow.

We would like to request water boundary conditions for the proposed development at 70 Beech Street using the following proposed development demands:

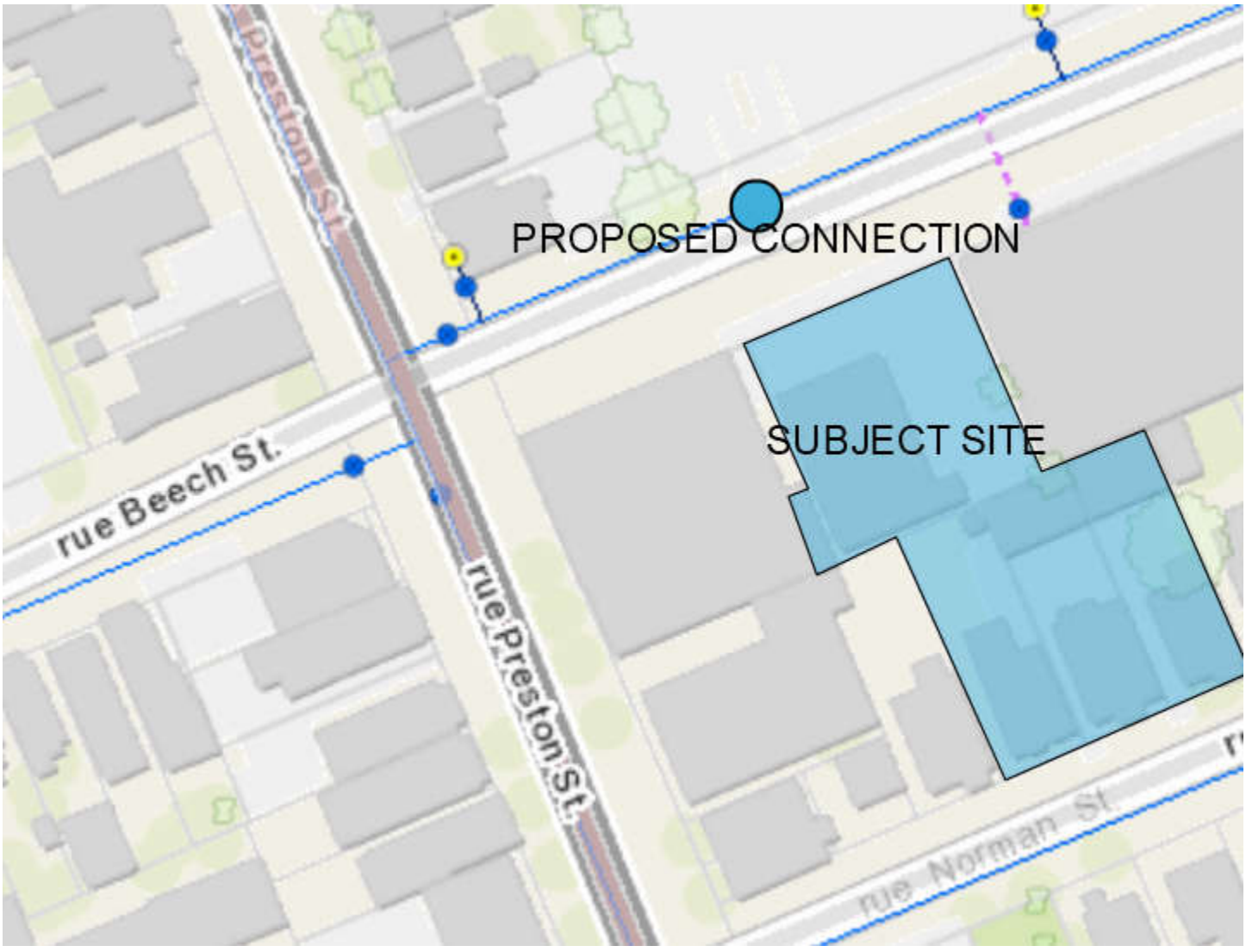
1. Location of Service / Street Number: 70 Beech Street / 75 Norman Street

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

- The development would include a ***48 unit*** *low rise condominium* with approximately ***538 m²*** of commercial/amenity space. Existing houses facing Norman Street are to remain.
- It is anticipated that the development will have a single connection to be serviced from the existing 203mm diameter watermain within the Beech St. 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 ***10,000 L/min***. Refer to the attached for detailed calculations.

	L/min	L/s
Avg. Daily	17.4	0.29
Max Day	79.0	1.32
Peak Hour	120.2	2.00

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



Thank you,

Bobby Freel, P.Eng.
Project Manager / Intermediate Designer

DSEL

david schaeffer engineering ltd.

120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
phone: (613) 836-0856 ext.558
cell: (613) 314-7675
email: rfreel@DSEL.ca

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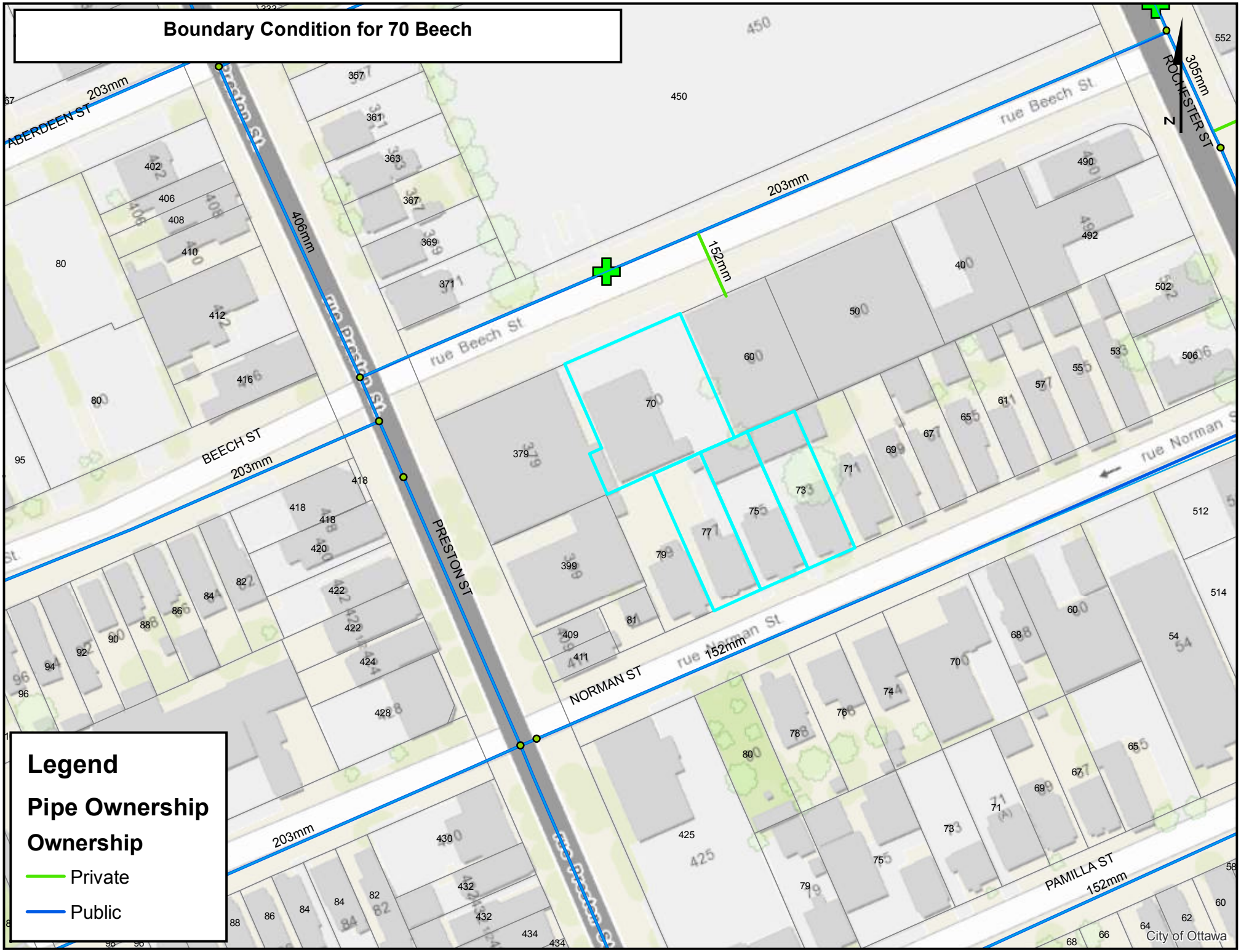
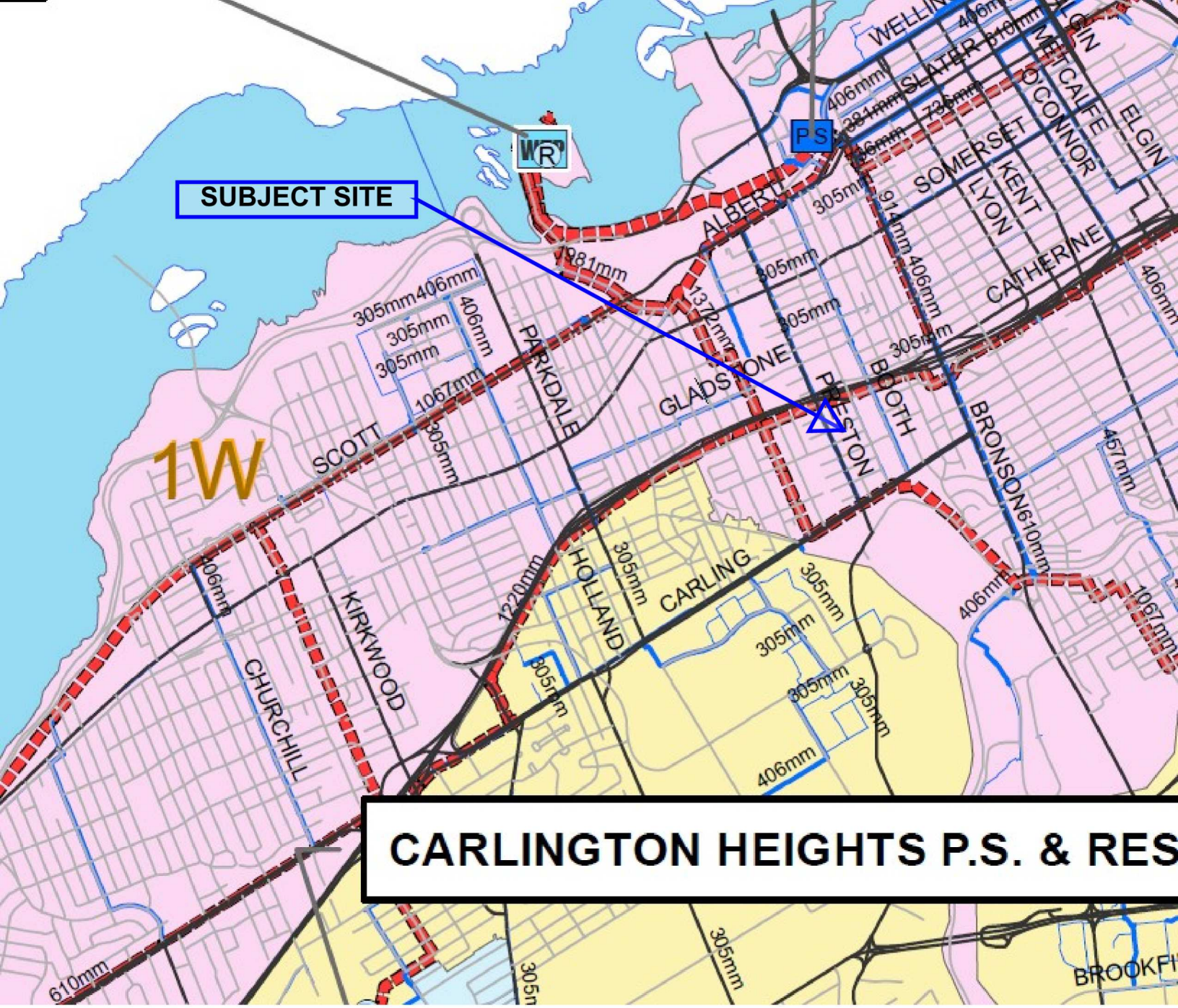

Boundary Condition for 70 Beech
ABERDEEN ST
203mm
406mm
rue Preston St
PRESTON ST
rue Beech St
203mm
152mm
BEECH ST
203mm
rue Norman St
NORMAN ST
152mm
ROCHESTER ST
305mm
PAMILLA ST
152mm
Legend
Pipe Ownership
Ownership
Private
Public
City of Ottawa



Water Distribution System Facilities & Feedermains
City of Ottawa

APPENDIX C

Wastewater Collection

The Properties Group
70 Beech Street & 75 Norman Street
Existing Site Conditions

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

Site Area 0.083 **ha**

Extraneous Flow Allowances

Infiltration / Inflow **0.02 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		0
1 Bedroom	1.4		0
2 Bedroom	2.1		0
3 Bedroom	3.1		0
Average	1.8		0

Total Pop **0**

Average Domestic Flow **0.00 L/s**

Peaking Factor **4.00**

Peak Domestic Flow **0.00 L/s**

Institutional / Commercial / Industrial Contributions

Property Type	Unit Rate		No. of Units	Avg Wastewater (L/s)
Commercial floor space*	5	$L/m^2/d$	306	0.04
Hospitals	900	L/bed/d		0.00
School	70	L/student/d		0.00
Ex. Industrial - Light**	35,000	L/gross ha/d	-	0.00
Industrial - Light**	35,000	L/gross ha/d	-	0.00
Industrial - Heavy**	55,000	L/gross ha/d		0.00

Average I/C/I Flow **0.04**

Peak Institutional / Commercial Flow 0.05
Peak Industrial Flow** 0.00
Peak I/C/I Flow **0.05**

** 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	**0.04 L/s**
Total Estimated Peak Dry Weather Flow Rate	**0.05 L/s**
Total Estimated Peak Wet Weather Flow Rate	**0.08 L/s**

The Properties Group
70 Beech Street & 75 Norman Street
Proposed Site Conditions

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

Site Area 0.083 **ha**

Extraneous Flow Allowances

Infiltration / Inflow (Dry)	**0.00 L/s**
Infiltration / Inflow (Wet)	**0.02 L/s**
Infiltration / Inflow (Total)	**0.03 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		0
1 Bedroom	1.4	30	42
2 Bedroom	2.1	18	38
3 Bedroom	3.1		0
Average	1.8		0

Total Pop	**80**
Average Domestic Flow	**0.26 L/s**
Peaking Factor	**3.62**
Peak Domestic Flow	**0.94 L/s**

Institutional / Commercial / Industrial Contributions

Property Type	Unit Rate	No. of Units	Avg Wastewater (L/s)
Commercial floor space*	5 $L/m^2/d$	538	0.06
Hospitals	900 L/bed/d		0.00
School	70 L/student/d		0.00
Industrial - Light**	35,000 L/gross ha/d		0.00
Industrial - Heavy**	55,000 L/gross ha/d		0.00

Average I/C/I Flow	**0.06**
Peak Institutional / Commercial Flow	0.06
Peak Industrial Flow**	0.00
Peak I/C/I Flow	**0.06**

** 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	**0.33 L/s**
Total Estimated Peak Dry Weather Flow Rate	**1.00 L/s**
Total Estimated Peak Wet Weather Flow Rate	**1.03 L/s**

CITY OF OTTAWA-SANITARY TRUNK AND COLLECTION AREAS

APPENDIX D

Stormwater Management

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

Existing Drainage Charateristics From Internal Site

Area	0.0825	ha
C	0.78	Rational Method runoff coefficient
L	30.34	m
Up Elev	62.21	m
Dn Elev	61.6	m
Slope	2.0	%
Tc	4.6	min

	Imp.	GRAV	Total
Area	0.033	0.049	0.082
C	0.9	0.7	0.78

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	107.0	146.0	251.1	mm/hr
Q	19.1	26.1	56.1	L/s

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

Target Flow Rate

Area	0.08	ha
C	0.40	Rational Method runoff coefficient
t_c	10.0	min

2-year

i	76.8	mm/hr
Q	7.0	L/s

Target Long Tem Post-Development Groundwater

Q	25000	L/day
Q	0.3	L/s

*As per Geotechnical Report (PG4430-1) prepared by Paterson Group and dated February 8th, 2019.

Estimated Post Development Peak Flow from Unattenuated Areas

	Imp.	**Perv.**	**Total**
Area	0.009	0.003	0.012
C	0.9	0.2	0.75

Total Area	0.012	ha
C	0.75	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	2.5	2.5	0.0	0.0	178.6	5.5	5.5	0.0	0.0

Estimated Post Development Peak Flow from Attenuated Areas

	Imp.	**Perv.**	**Total**
Area	0.071	0.000	0.071
C	0.9	0.2	0.90

Total Area	0.071	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)
150	16.4	2.9	0.7	2.2	19.8	27.6	5.4	1.3	4.1	37.2
155	15.9	2.8	0.7	2.1	19.8	26.9	5.3	1.3	4.0	37.1
160	15.6	2.8	0.7	2.1	19.8	26.2	5.2	1.3	3.9	37.1
165	15.2	2.7	0.7	2.0	19.7	25.6	5.0	1.3	3.7	37.0
170	14.8	2.6	0.7	1.9	19.7	25.0	4.9	1.3	3.6	36.9
175	14.5	2.6	0.7	1.9	19.7	24.4	4.8	1.3	3.5	36.8
180	14.2	2.5	0.7	1.8	19.6	23.9	4.7	1.3	3.4	36.8
185	13.9	2.5	0.7	1.8	19.6	23.4	4.6	1.3	3.3	36.6
190	13.6	2.4	0.7	1.7	19.5	22.9	4.5	1.3	3.2	36.5
195	13.3	2.4	0.7	1.7	19.5	22.4	4.4	1.3	3.1	36.4
200	13.0	2.3	0.7	1.6	19.4	22.0	4.3	1.3	3.0	36.3
205	12.8	2.3	0.7	1.6	19.3	21.6	4.2	1.3	2.9	36.2
210	12.6	2.2	0.7	1.5	19.3	21.1	4.2	1.3	2.9	36.0
215	12.3	2.2	0.7	1.5	19.2	20.8	4.1	1.3	2.8	35.9
220	12.1	2.1	0.7	1.4	19.1	20.4	4.0	1.3	2.7	35.8
225	11.9	2.1	0.7	1.4	19.0	20.0	3.9	1.3	2.6	35.6
230	11.7	2.1	0.7	1.4	19.0	19.7	3.9	1.3	2.6	35.5
235	11.5	2.0	0.7	1.3	18.9	19.3	3.8	1.3	2.5	35.3
240	11.3	2.0	0.7	1.3	18.8	19.0	3.7	1.3	2.4	35.1
245	11.1	2.0	0.7	1.3	18.7	18.7	3.7	1.3	2.4	35.0
250	10.9	1.9	0.7	1.2	18.6	18.4	3.6	1.3	2.3	34.8

5-year $Q_{attenuated}$ **0.69 L/s** — **100-year $Q_{attenuated}$** **1.30 L/s**
5-year Max. Storage Required **19.8 m^3** — **100-year Max. Storage Required** **37.2 m^3**

Summary of Release Rates and Storage Volumes

Control Area	5-Year Release Rate (L/s)	5-Year Storage (m^3)	100-Year Release Rate (L/s)	100-Year Storage (m^3)
Unattenuated Areas	2.5	0.0	5.5	0.0
Attenutated Areas	0.7	19.8	1.3	37.2
Ground Water Infiltration	0.3	0.0	0.3	0.0
Total	**3.5**	**19.8**	**7.0**	**37.2**

BEECH STREET

NORMAN STREET

PRESTON STREET

ROCHESTER STREET

EX. 203mmø WATERMAIN

EX. 84.0m–375mmø CONC. COMBINED @ 1.0%

EX. 73.5m–375mmø CONC. COMBINED @ 0.33%

EX. 102.0m–675mmø CONC. COMBINED @ 0.81%

EX. 88.6m–600mmø CONC. COMBINED @ 0.20%

EX. 150mmø WATERMAIN

PROTECT CB PER DETAIL

EX. COMBINED MH
T/A=62.15
E.INV=59.03

EX. CB
T/A=62.12

EX. CB
T/A=61.30

EX. COMBINED MH
T/A=61.20
W.INV=58.24
E.INV=58.10

EX. CB
T/A=61.43

EX. CB
T/A=62.22

EX. CB
T/A=62.76

EX. COMBINED MH
T/A=62.50
N/W=58.71
N/W=58.25

EX. COMBINED MH
T/A=62.47
W.INV=59.05
E.INV=59.05

EXISTING HYDRO POLE

SITE BENCH MARK #2
NAIL ON UP
ELEVATION=62.55m

SITE BENCH MARK #1
TOP OF SPINDLE
ELEVATION=63.51m

PIN 04104 – 0038

PIN 04104 – 0057

PIN 04104 – 0056

PIN 04104 – 0059

PIN 04104 – 0061

PIN 04104 – 0062

PART 1 PLAN 5R–3892

PART 1 PLAN 5R–13642

PART 2 PLAN 5R–13642

PART 3 PLAN 5R–13642

PART 4 PLAN 5R–13642

PART 5 PLAN 5R–13642

PART 6 PLAN 5R–13642

PART 7 PLAN 5R–13642

PART 8 PLAN 5R–13642

PART 9 PLAN 5R–13642

PART 10 PLAN 5R–13642

379 Preston Street
2 STOREY
STUCCO SIDED BUILDING

No. 35
1 STOREY
CONCRETE BLOCK BUILDING
(Concrete Block Noted)

No. 63
1½ STOREY
CONCRETE BLOCK BUILDING

No. 411 Preston Street
Fdn. 0.09 North

No. 77
1 1/2 STOREY
BRICK DWELLING
(Brick Noted)

No. 75
1 1/2 STOREY
BRICK DWELLING
(Brick Noted)

No. 73
1½ STOREY
BRICK DWELLING
(Brick Noted)

No. 480
Rochester Street

1 STOREY
WOOD SIDED
(Siding Noted)

BRICK & STUCCO SIDED
GARAGE

CONCRETE BLOCK SIDED
GARAGE
(Siding Noted)

1 STOREY
WOOD SIDED
(Siding Noted)

1 STOREY
BRICK
(Brick Noted)

DSEL
david schaeffer engineering ltd
SMART SUBDIVISIONS™

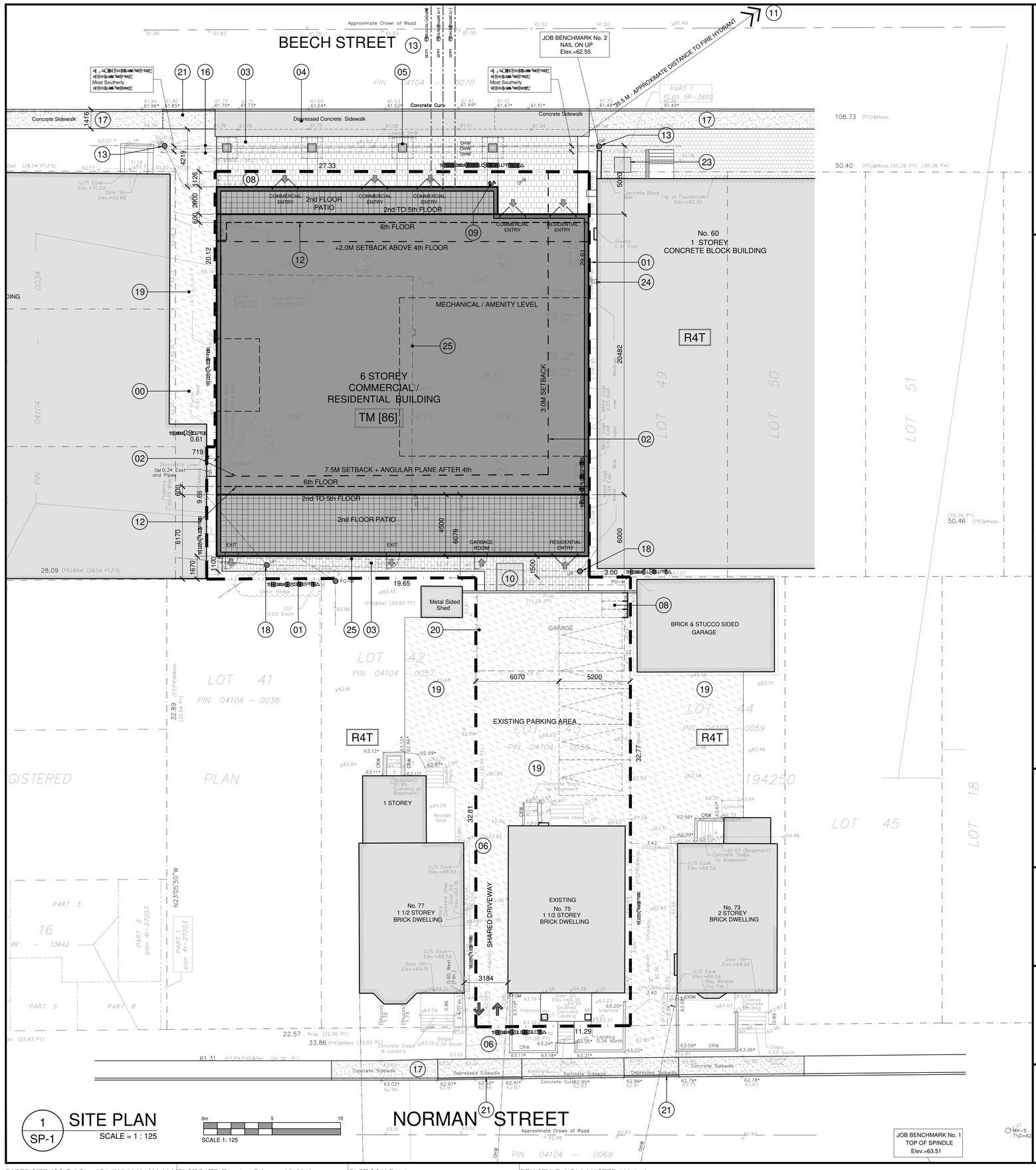
120 Iber Road Unit 103
Stittsville, Ontario, K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

EXISTING DRAINAGE PLAN
70 Beech Street/ 75 Norman Street

PROJ NO.:	18–1015
DRAWN BY:	CMK
DATE:	2019–02–12
SCALE:	N.T.S.
FIGURE NO.:	FIG-1

z:\projects\18–1015_ria_70 beech 74 norman\b_design\b2_drawings\b2–2_main (dsei)\2019–01–24_ottawa_ssp\cad\2019–02–27_1015_spa_cmk.dwg

DRAWINGS / FIGURES



1 SITE PLAN
SP-1
SCALE = 1 : 125

0m 5 10
SCALE 1: 125

KEY MAP

DRAWING NOTES

1. PROPERTY LINE
2. BUILDING SETBACKS
3. HARD SURFACE PAVING, SEE LANDSCAPE PLAN FOR PATTERN AND TYPE
4. EXISTING DEPRESSED CURB AND SIDEWALK TO BE REPLACED WITH BARRIER CURB AND 2.0 M WIDE SIDEWALK, TO CITY STANDARD
5. TREE WITH GRATE - SEE LANDSCAPE PLAN
6. EXISTING SHARED ENTRY DRIVEWAY TO REMAIN
7. STORM WATER TANK - SEE CIVIL PLAN
8. EXTERIOR BICYCLE PARKING SPACES WITH RACK
9. SIAMESE CONNECTION
10. HYDRO EXHAUST GRILL
11. EXISTING FIRE HYDRANT
12. OUTLINE OF BUILDING ABOVE
13. EXISTING UTILITY POLE
14. PROPOSED LOCATION OF UNDERGROUND UTILITIES
15. GAS REGULATOR / METER EQUIPMENT AREA
16. EXISTING HYDRO / UTILITY LINES TO BE ADJUSTED
17. EXISTING CONCRETE SIDEWALK WITH STREET CURB
18. EXISTING UTILITY POLE TO BE RELOCATED
19. EXISTING ASPHALT PARKING / LOADING AREA
20. EXISTING 1 STOREY CONCRETE BLOCK GARAGE TO BE REMOVED, REPAIR ASPHALT AS REQUIRED
21. EXISTING DEPRESSED CURB AND WALK
22. EXISTING PARKING SPACE
23. EXISTING UTILITY BOX
24. EXISTING GAS EQUIPMENT TO BE RELOCATED
25. REMOVE EXISTING 1 STOREY COMMERCIAL BUILDING

SITE PLAN SYMBOLS

- CONCRETE UNIT PAVERS SURFACE
- ASPHALT SURFACE
- NEW CITY SIDEWALK
- EXISTING CONCRETE SIDEWALK
- BICYCLE PARKING SPACE
- TWO WAY VEHICLE CIRCULATION
- MAIN ENTRANCE
- COMMERCIAL DOOR / FIRE EXIT
- PROPERTY LINE
- ZONING SETBACKS

CIVIL ENGINEER

David Schaeffer Engineering ltd.
120 Iber Road, Unit 203
[illegible]
Tel: (613) 836-0856
Fax: (613) 836-7183
Email: rfreel@DSEL.ca

LEGAL DESCRIPTION

SURVEYOR'S REAL PROPERTY REPORT
PART 1 Plan of
LOTS 43, 47 AND 48
AND PART OF LOT 46
REGISTERED PLAN 194250
CITY OF OTTAWA
Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

LANDSCAPE ARCHITECT

James B. Lennox & Associates Inc.
Landscape Architects
3332 Carling Ave.
[illegible]
Tel: 613-722-5168
Fax: 1-866-343-3942
Email: JL@jbla.ca

PROJECT DEVELOPER

BEECH HOLDINGS Ltd.
236 Metcalfe Street,
Ottawa, Canada K2P 1R3
Tel: 613.237.2425
Fax: 613.237.7300

GEOTECHNICAL ENGINEER

paterson group
154 Colonnade Road South
Ottawa, Ontario
K2E 7J5
Tel: 613.226-7381
Email: DGilbert@Patersongroup.ca

SURVEYOR

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

URBAN PLANNER

FoTenn Consultants Inc.
223 McLeod Street
Ottawa, ON Canada, K2P 0Z8
Tel.: (613) 730-5709
Fax: (613) 730-1136
E-Mail: mcelligott@fotenn.com

PROJECT INFORMATION

ZONING Zoning By-Law 2017-113	TM [86] / R4T
SITE AREA	1,187.3 sq. m. (12,780) sq. ft.
BUILDING HEIGHT (TM)	20.0 m
FRONT SIDE YARD SETBACK ABOVE 4th	+2.0 m
INTERIOR SIDE YARD SETBACK - EAST ONLY(TM)	3.0 m
REAR YARD SETBACK (TM)	7.5 m
AMENITY SPACE (6.0M X 48 UNITS)	288 sq. m.
FRONT SIDE YARD SETBACK (R4)	3.0 m
INTERIOR SIDE YARD SETBACK (R4) - TOTAL 1.8 m	0.9 m

PROJECT STATISTICS

BUILDING HEIGHT	24.0 M
AMENITY SPACE	
2nd FLOOR PRIVATE PATIOS =	134.4 sq. m.
COMMUNAL INTERIOR ROOF TOP =	53.0 sq. m.
COMMUNAL EXTERIOR ROOF TOP =	179.5 sq. m.
TOTAL =	366.9 sq. m.

BUILDING STATISTICS

GROSS BUILDING - AREAS (CITY OF OTTAWA'S DEFINITION)

BASEMENT LEVEL		0.0 sq. m. 0 sq. ft.
GROUND FLOOR		484.4 sq. m. 5,214 sq. ft.
TYPICAL FLOORS (2 - 5)	4 x 445.6 sq. m. 4 x 4,796 sq. ft.	1,782.2 sq. m. 19,184 sq. ft.
6th FLOOR		417.2 sq. m. 4,491 sq. ft.
MECHANICAL / AMENITY LEVEL		0.0 sq. m. 0 sq. ft.
TOTAL AREA ABOVE GRADE		2,683.8 sq. m. 28,888 sq. ft.
EXISTING DWELLING - 75 NORMAN		200.0 sq. m. 2,153 sq. ft.

UNIT STATISTICS

1 BEDROOM UNIT	30
1 BEDROOM + STUDY UNIT	18
TOTAL	48
COMMERCIAL AREA	484.4 sq. m. 5,214 sq. ft.
EXISTING DWELLING - 75 NORMAN	1

CAR PARKING

REQUIRED

RESIDENCE	- AREA 'Z' - NON REQUIRED	0
VISITOR	- 0.1 PER UNIT AFTER 12 UNITS	4
COMMERCIAL RETAIL	- AREA 'Z' - NON REQUIRED	0
75 NORMAN STREET	- AREA 'Z' - NON REQUIRED	0
TOTAL		4

PROVIDED

RESIDENCE	0
VISITOR	0
COMMERCIAL RETAIL	0
75 NORMAN STREET	5
TOTAL	5

BICYCLE PARKING

REQUIRED

RESIDENCE	- 0.5 PER UNIT (48 UNITS)	24
COMMERCIAL	[illegible]	2
TOTAL		26

PROVIDED

BASEMENT LEVEL	50
AT GRADE	4
TOTAL	54

LOT COVERAGE

PAVED SURFACE =	196.5 sq. m.	16.5%
BUILDING FOOTPRINT =	823.75 sq. m.	69.4%
LANDSCAPE OPEN SPACE =	176.05 sq. m.	14.1%
TOTAL =	1,187.3 sq. m.	100.0%

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

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

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

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- <00> INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- [00] INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (000) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 DETAIL NUMBER
- A900 TITLE
- SCALE
- DETAIL REFERENCE PAGE
- DETAIL CROSS REFERENCE PAGE

No.	DESCRIPTION	DATE
4		
3		
2	ISSUED FOR ZONING AMENDMENT / SITE PLAN CONTROL	Nov. 30, 17
1	ISSUED FOR DESIGN CONCEPT	Oct. 01, 17

REVISIONS:

ARCHITECT SEAL:
ONTARIO ASSOCIATION OF ARCHITECTS
R. RODERICK LAHEY
LICENCE 4375
SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT:
THE PROPERTIES GROUP
236 Metcalfe Street, Ottawa, Ontario K2P 1R3

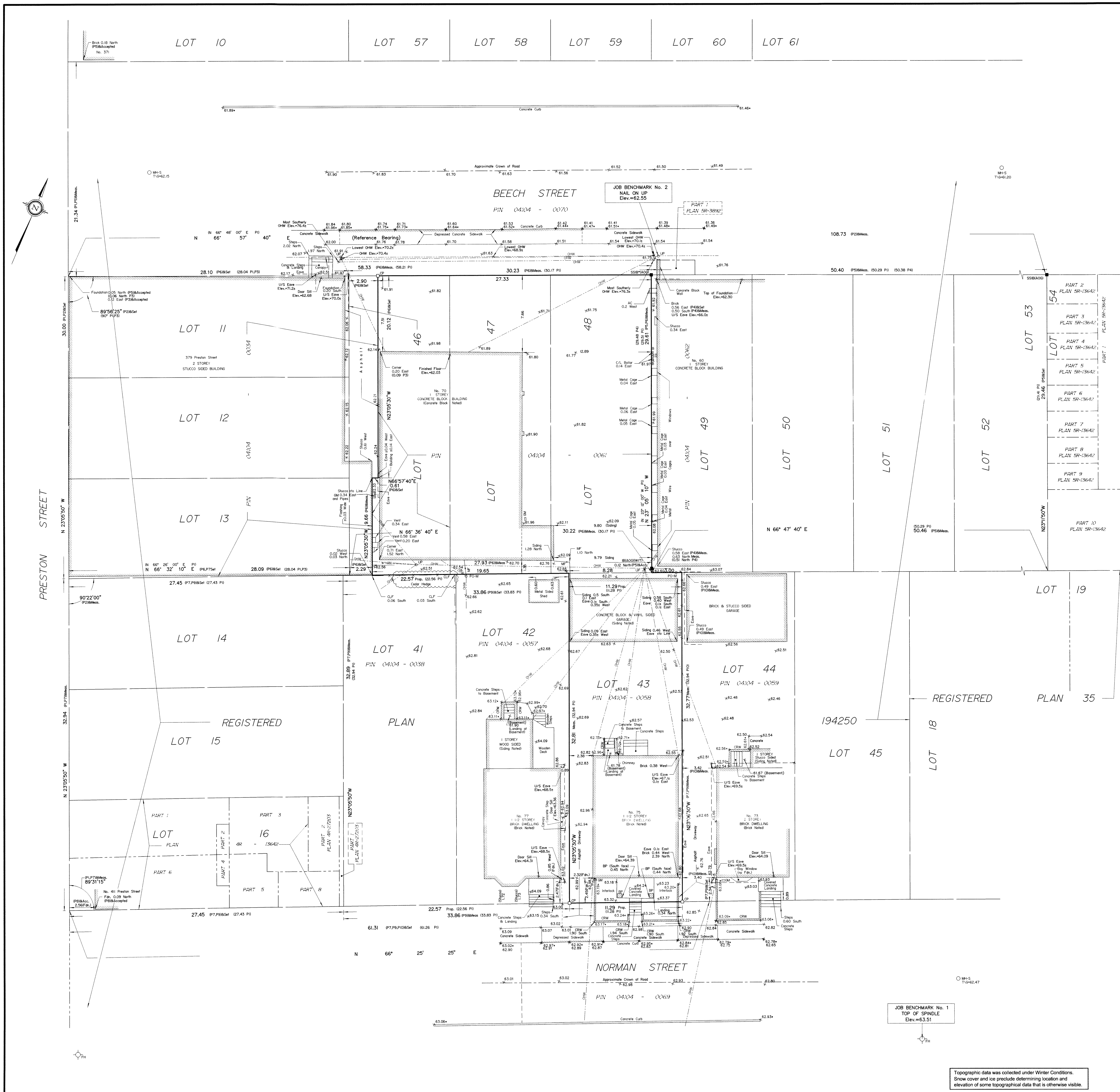
ARCHITECT:
rla/architecture
roderick lahey architect inc.
56 beech street, ottawa, ontario K1S 3J6
t. 613.724.9932 f. 613.724.1209 rlaarchitecture.ca

PROJECT TITLE:
70 BEECH STREET
OTTAWA ONTARIO

SHEET TITLE:
SITE PLAN

DRAWN:	CHECKED:
RV	M.L.
SCALE: 1:125	SHEET No. SP-1
PROJECT No. 1724	

PAPER SIZE: ISO Full Bleed B1 (707.00 X 1000.00 MM) | PLOT DATE: Tuesday, February 05, 2019 | PLOT SCALE: 1:1 | PEN STYLE: 0-RLA-MASTER-100%.ctb | F:\2017\1722 70 Beech - 75 Norman Street - Properties Group\01_Design Development\1722 70 Beech Site Plan 2019 02 04.dwg



SURVEYOR'S REAL PROPERTY REPORT

PART 1 Plan of

LOTS 43, 47 AND 48 AND PART OF LOT 46 REGISTERED PLAN 194250 CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 150

6 4.5 3.0 1.5 0 3 6 Metres

Metric

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

Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act, the Surveyors Act and the Land Titles Act and the regulations made under them.
2. The survey was completed on the 2nd day of March, 2018.

March 5th, 2018
Date

Richard R. Gauthier
Ontario Land Surveyor

PART 2
THIS PLAN MUST BE READ IN CONJUNCTION WITH SURVEY REPORT DATED: March 5, 2018

ANNIS, O'SULLIVAN, VOLLEBEKK LTD. grants to Beech Holdings Ltd. & Norman Beech Properties Ltd. ("The Client"), their solicitors, mortgagees, and other related parties, permission to use original, signed, sealed copies of the Surveyor's Real Property Report in transactions involving The Client.

Notes & Legend

	Denotes	
—□—	Denotes	Survey Monument Planted
—■—	"	Survey Monument Found
SIB	"	Standard Iron Bar
SSIB	"	Short Standard Iron Bar
IB	"	Iron Bar
CP	"	Concrete Pin
*	"	Survey Monument 0.3 metres Long
(WIT)	"	Witness
(AOG)	"	Annis, O'Sullivan, Vollebekk Ltd.
Meas.	"	Measured
Prop.	"	Proportioned
Acc.	"	Accepted
(P1)	"	Registered Plan 194250
(P2)	"	Plan 4R-26420
(P3)	"	(857) Plan February 18, 1957
(P4)	"	(857) Plan March 21, 1975
(P5)	"	Plan 5R-13642
(P6)	"	(AOG) Plan November 27, 2014
(P7)	"	Plan 4R-26420
(P8)	"	(725) Plan July 9, 1985
(P9)	"	(857) Plan August 27, 1998
(P10)	"	(725) Plan January 10 1986
Acc.	"	Accepted
CLF	"	Chain Link Fence
MF	"	Metal Fence
C/L	"	Centreline
AC	"	Air Conditioner
GM	"	Gas Meter
UP	"	Utility Pole
OHW	"	Overhead Wires
AN	"	Anchor
UP	"	Utility Pole
PO-M	"	Metal Pole
○ MH-S	"	Maintenance Hole (Sanitary)
FH	"	Fire Hydrant
+65.00	"	Location of Elevations
+65.00	"	Top of Wall/ Concrete Curb Elevations
C/L	"	Centreline
—	"	Property Line
CRW	"	Concrete Retaining Wall
U/S	"	Underside
Fdn.	"	Foundation
BP	"	Brick Pillar
B	"	Bollard

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2046658
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29 (3).

Bearings are astronomic, derived from the southerly limit of Beech Street shown to be N66°57'40"E on Plan 5R-13642.

For bearing comparisons, a rotation of 0°25'10" clockwise was applied to bearings on plan P7, 0°06'10" clockwise was applied to bearings on plan P9.

ELEVATION NOTES

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

UTILITY NOTES

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

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

Job No. 18444-18 NBP Lts 43 To 48 PL 194250 T F | ig