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ASSESSMENT OF ADEQUACY OF PUBLIC SERVICES

FOR

EBC INC.
1950 SCOTT STREET

CITY OF OTTAWA

PROJECT NO.: 18-1016

MAY 2018 – REV 1

ASSESSMENT OF ADEQUACY OF PUBLIC SERVICES
FOR
1950 SCOTT STREET
EBC INC.

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ASSESSMENT OF ADEQUACY OF PUBLIC SERVICES
FOR
1950 SCOTT STREET
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MAY 2018 – REV 1

CITY OF OTTAWA

DSEL PROJECT NO.: 18-1016

1.0 INTRODUCTION

David Schaeffer Engineering Limited (DSEL) has been retained by EBC Inc. to prepare an Assessment of Adequacy of Public Services report in support of the application for a Zoning By-law Amendment (ZBLA) at 1950 Scott Street.

The subject property is located within the City of Ottawa urban boundary, Kitchissippi Ward. As illustrated in ***Figure 1***, the subject property is located south west of the intersection of Clifton Road and Scott Street. Comprised of three parcels, the subject property measures approximately ***0.21ha*** and is zoned Residential, 5th density (R5B[1195] H(18)) along the Scott Street frontage and Residential, 3rd density (R3R) along the Clifton Road frontage.

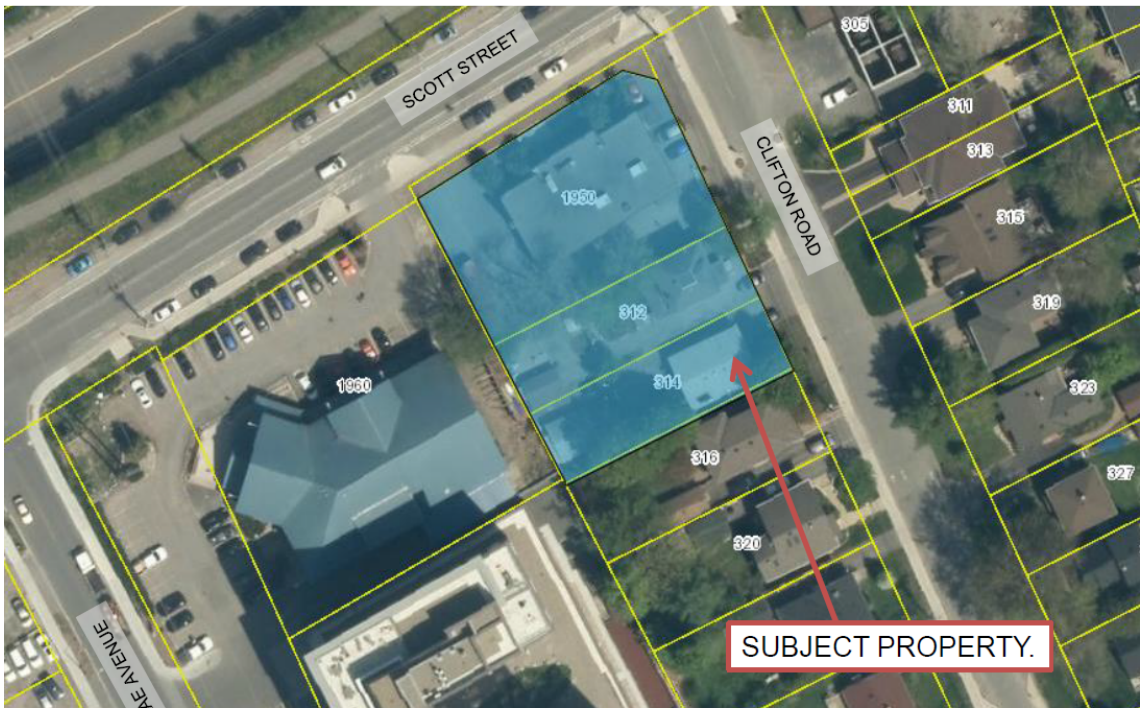

Figure 1: Site Location

The proposed ZBLA would allow for the development of a 20-storey, plus mezzanine, residential building fronting onto both Scott Street and Clifton Road. The contemplated development would include approximately 436m^2 of ground level residential space, 529m^2 of gym, lockers, administration and multipurpose space, and 162m^2 of pool space as well as, underground parking with access from Clifton Road. The residential component is comprised of approximately 141 units. A copy of the conceptual site plan is included in ***Drawings/Figures***.

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

1.1 Existing Conditions

The existing site includes two residential properties and one commercial property with associated asphalt drive aisles and few vegetated areas.

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:

Clifton Road

- 152 mm diameter unlined cast iron watermain
- 375 mm concrete storm sewer tributary to Ottawa Central sub-watershed
- 225 mm diameter concrete sanitary sewer

Scott Street

- 203 mm diameter watermain
- 1067 mm diameter concrete pressure pipe watermain
- 600 mm diameter concrete storm sewer tributary to Ottawa Central sub-watershed
- 225 mm diameter concrete sanitary sewer tributary to the West Nepean Collector
- 1500 mm diameter concrete sanitary West Nepean Collector

1.2 Pre-consultation

Pre-consultation correspondence from the City of Ottawa, 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, October 2012.
  (City Standards)

  - **Technical Bulletin ISDTB-2014-01**
    City of Ottawa, February 5, 2014.
    (ITSB-2014-01)

  - **Technical Bulletin PIEDTB-2016-01**
    City of Ottawa, September 6, 2016.
    (PIEDTB-2016-01)

  - **Technical Bulletin ISTB-2018-01**
    City of Ottawa, March 21, 2018.
    (ISTB-2018-01)

- **Ottawa Design Guidelines – Water Distribution**
  City of Ottawa, July 2010.
  (Water Supply Guidelines)

  - **Technical Bulletin ISD-2010-2**
    City of Ottawa, December 15, 2010.
    (ISDTB-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)

- **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)

- **Water Supply for Public Fire Protection**
  Fire Underwriters Survey, 1999.
  (FUS)

3.0 WATER SUPPLY SERVICING

3.1 Existing Water Supply Services

The subject property lies within the City of Ottawa 1W pressure zone. A local 152mm diameter watermain exists within the Clifton Road right-of-way and a 203 mm diameter watermain exists within the Scott Street right-of-way, as shown by the City Water Distribution Mapping in ***Appendix B***.

3.2 Water Supply Servicing Design

Table 1 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 3 Bedroom Apartment	3.1 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 *
Office Space	75 L/9.3m^2/d
Pool	40 L/9.3m^2/d
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	350kPa and 480kPa
During normal operating conditions pressure must not drop below	275kPa
During normal operating conditions pressure must not exceed	552kPa
During fire flow operating pressure must not drop below	140kPa

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 summarizes the anticipated water supply demand and boundary conditions for the proposed development based on the ***Water Supply Guidelines***.

Table 2
Water Demand and Boundary Conditions
Proposed Conditions

Design Parameter	Anticipated Demand[1] (L/min)	Boundary Condition[2] 1 (Scott Street) (m H_2O / kPa)	Boundary Condition[2] 2 (Clifton Road) (m H_2O / kPa)
Average Daily Demand	66.0	50.8 / 498.3	50.8 / 498.3
Max Day + Fire Flow	196.7+ 17000= 17196.7	31.5 / 309.0	25.0 / 245.3
Peak Hour	295.4	44.7 / 438.5	44.7 / 438.5

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 64m. See ***Appendix B.***

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

Using the ***FUS*** method a conservative estimation of fire flow had been established. The following assumptions were made:

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

The above assumptions result in an estimated fire flow of approximately ***17,000 L/min***, noting that actual building materials selected will affect the estimated flow. A certified fire protection system specialist will need to be employed to design the building fire suppression system and confirm the actual fire flow demand.

The City provided both the anticipated minimum and maximum water pressures, as well as, the estimated water pressure during fire flow based on the above demands as indicated by the correspondence in ***Appendix B***. The minimum and maximum pressures fall within the required range identified in ***Table 1***. Based on the boundary conditions provided by the City, minimum pressure is achieved at a fire flow of 17,000L/min.

3.3 Water Supply Conclusion

The anticipated water demand under proposed 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.

The contemplated water supply design conforms to all relevant City Guidelines and Policies.

4.0 WASTEWATER SERVICING

4.1 Existing Wastewater Services

The subject site lies within the West Nepean Collector Sewer catchment area, as shown by the ***Sanitary & Storm Collection System Maps,*** included in ***Appendix C***. Existing 225 mm diameter sanitary sewers within Clifton Road and Scott Street are available to service the contemplated development.

The Clifton Road and Scott Street sanitary sewers are tributary to the West Nepean Trunk Collector sewer approximately 250 m downstream of the site, as shown by the ***Sanitary and Storm Collection System Maps***.

4.2 Wastewater Design

It is anticipated that the contemplated development be serviced via a connection to the 225 mm the sanitary sewer within Scott Street, west of the Clifton Road intersection.

Table 3 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
Residential 3 Bedroom Apartment	3.1 P/unit
Average Daily Demand	280 L/d/per
Peaking Factor	Harmon's Peaking Factor. Max 3.8, Min 2.0
Commercial Floor Space	5 L/m^2/d
Commercial Office Space	75 L/9.3m^2/d
Pool	40 L/9.3m^2/d
Infiltration and Inflow Allowance	0.28L/s/ha
Industrial - Light	35,000 L/gross ha/d
Industrial Peaking Factor	7.0 per City of Ottawa Sewer Design Guidelines Appendix 4B
Sanitary sewers are to be sized employing the Manning's Equation	$Q = \frac{1}{n} AR^{2/3} S^{1/2}$
Minimum Sewer Size	250mm diameter
Minimum Manning's 'n'	0.013
Minimum Depth of Cover	2.5m from crown of sewer to grade
Minimum Full Flowing Velocity	0.6m/s
Maximum Full Flowing Velocity	3.0m/s
Extracted from Sections 4 and 6 of the City of Ottawa Sewer Design Guidelines, October 2012.	

Table 4 demonstrates the anticipated peak flow from the proposed development. 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	**1.10**
Estimated Peak Dry Weather Flow	**3.76**
Estimated Peak Wet Weather Flow	**4.14**

The estimated sanitary flow based on the concept plan, provided in ***Drawings/Figures,*** anticipates a peak wet weather flow of ***4.14 L/s***.

In order to assess the available capacity a sanitary analysis was conducted for the local municipal sanitary sewers, located across the frontage of the subject property and up to the connection to the West Nepean trunk Sewer. The catchment area serviced by the Scott Street sanitary sewer was identified and evaluated by reviewing existing development and zoning within the area. Refer to the sanitary drainage plan ***SAN-1*** in ***Drawings/Figures***.

City of Ottawa ***Technical Bulletin ISTB-2018-01*** was employed to generate a conservative estimate of the existing wastewater flow conditions within the existing sewer.

Based on the sanitary analysis, the controlling section of the local sewer system is located at the intersection of Scott Street and McRae Avenues (section 4-3) with an available residual capacity of ***9.67 L/s***; detailed calculations are included in ***Appendix C***.

The analysis above indicates that sufficient capacity is available in the local sewers to accommodate the contemplated development.

4.3 Wastewater Servicing Conclusions

The site is tributary to the West Nepean Trunk Collector sewer. Based on the sanitary analysis, sufficient capacity is available to accommodate the anticipated ***4.14 L/s*** peak wet weather flow from the contemplated development.

Existing sanitary analysis of the local sewer downstream of the subject site indicates that there is sufficient capacity to convey the contemplated flow from the proposed property.

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 sewer system and is located within the Ottawa Central sub-watershed. As such, approvals for the proposed development 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).

The estimated pre-development peak flows for the 2, 5, and 100-year are summarized in ***Table 5***:

Table 5
Summary of Existing Peak Storm Flow Rates

City of Ottawa Design Storm	Estimated Peak Flow Rate (L/s)
2-year	33.9
5-year	45.9
100-year	98.4

5.2 Post-development Stormwater Management Target

Based on City of Ottawa standards, stormwater management requirements for the proposed development are as follows:

- Allowable release rate based on a Rational Method Coefficient of 0.50, employing the City of Ottawa IDF parameters for a 5-year storm with a time of concentration equal to or greater than 10 minutes.
- All storms, up to and including the City of Ottawa 100-year design event, are to be attenuated on site.
- Quality controls are not required for the proposed development due to the site's distance from the outlet; correspondence with the RVCA is included in ***Appendix D***.

Based on the above, the allowable release rate for the proposed development is ***31.8L/s***.

5.3 Proposed Stormwater Management System

It is contemplated that the stormwater outlet from the proposed development will be directed to the 600 mm diameter storm sewer within Scott Street.

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

Quality controls are not required for the proposed development due to the site's distance from the outlet; correspondence with the RVCA is included in ***Appendix D***.

Table 6 summarizes post-development flow rates. The following storage requirement estimates 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 6
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	4.0	0.0	8.6	0.0
Attenuated Areas	10.9	16.3	23.2	34.8
Total	**14.9**	**16.3**	**31.8**	**34.8**

It is anticipated that approximately ***34.8 m^3*** of storage will be required on site to attenuate flow to the established release rate of ***31.8L/s***; storage calculations are contained within ***Appendix D***.

Based on a number of factors, including but not limited to grading constraints, actual storage volumes will need to be confirmed at the detailed design stage.

5.4 Stormwater Servicing Conclusions

In accordance with City of Ottawa ***City Standards,*** 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. The post-development allowable release rate was calculated as ***31.8L/s*** based on ***City of Ottawa Standards***. It is estimated that ***34.8 m^3*** of storage will be required on site to meet this release rate.

Quality controls are not required for the proposed development due to the site's distance from the outlet; correspondence with the RVCA is included in ***Appendix D***.

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

6.0 CONCLUSION AND RECOMMENDATIONS

David Schaeffer Engineering Ltd. (DSEL) has been retained by EBC Inc. to prepare an Assessment of Adequacy of Public Services report in support of the application for a Zoning By-law Amendment (ZBLA) at 1950 Scott 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 ***17,000 L/min*** is required for the contemplated development;
- The contemplated development is anticipated to have a peak wet weather flow of ***4.14 L/s***; Based on the sanitary analysis conducted, the existing municipal sewer infrastructure has sufficient capacity to support the development;
- Based on ***City Standards***, the contemplated development will be required to attenuate post development flows to an equivalent release rate of ***31.8 L/s*** for all storms up to and including the 100 year storm event;
- It is contemplated that stormwater objectives may be met through storm water retention via roof top, surface and subsurface storage, it is anticipated that ***34.8 m^3*** of onsite storage will be required to attenuate flow to the established release rate above;
- Based on consultation with the RVCA, stormwater quality controls are not required.

Prepared by,
David Schaeffer Engineering Ltd.

Per: Genavieve Melatti

Reviewed by,
David Schaeffer Engineering Ltd.

Per: Steven L. Merrick, P.Eng

APPENDIX A

Pre-Consultation

DEVELOPMENT SERVICING STUDY CHECKLIST

18-1016 10/05/2018

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.	N/A
☐	All preliminary and formal site plan submissions should have the following information: -Metric scale -North arrow (including construction North) -Key plan -Name and contact information of applicant and property owner -Property limits including bearings and dimensions -Existing and proposed structures and parking areas -Easements, road widening and rights-of-way -Adjacent street names	N/A

4.2 Development Servicing Report: Water

☐	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.	N/A
☐	Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	N/A
☒	Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).	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.	N/A
☐	Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.	N/A
☐	Identification of fill constraints related to floodplain and geotechnical investigation.	N/A

4.5 Approval and Permit Requirements: Checklist

☒	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 7.0
☐	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

APPENDIX B

Water Supply

Genavieve Melatti

From: Buchanan, Richard <Richard.Buchanan@ottawa.ca>
Sent: Wednesday, May 9, 2018 11:20 AM
To: Genavieve Melatti
Subject: FW: 1950 Scott Street - Boundary Conditions
Attachments: 1950 Scott April 2018.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning Genavieve

The following are boundary conditions, HGL, for hydraulic analysis at 1950 Scott (zone 1W) assumed to be connected to the 203mm on Scott and 152mm on Clifton (see attached PDF for location).

Minimum HGL = 108.7m, same at both connections

Maximum HGL = 114.8m, same at both connections

Max Day + Fire Flow (283 L/s) = 95.5m at Scott connection

Max Day + Fire Flow (283 L/s) = 89.0m at Clifton 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.

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: Genavieve Melatti [mailto:GMelatti@dsel.ca]
Sent: Thursday, May 03, 2018 9:59 AM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Subject: 1950 Scott Street - Boundary Conditions

Good morning Shawn,

Would we be able to request updated boundary conditions for 1950 Scott Street using the following proposed development demands:

1. Location of Service / Street Number: 1950 Scott Street

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

- The proposed development is residential, consisting of 141 residential units and a 161.51 m^2 pool.
- It is anticipated that the development will have two connections; one to the existing 203 mm diameter watermain within Scott Street and the second to the existing 152 mm diameter watermain within Clifton Road, as shown by the attached map.
- The maximum fire flow of 17,000 L/min is anticipated for the development.

3.

	L/min	L/s
Avg. Daily	66.0	1.10
Max Day	196.7	3.28
Peak Hour	295.4	4.92

It you have any questions please feel free to contact me.

Thank you,

Genavieve Melatti
Project Coordinator/ Junior Designer

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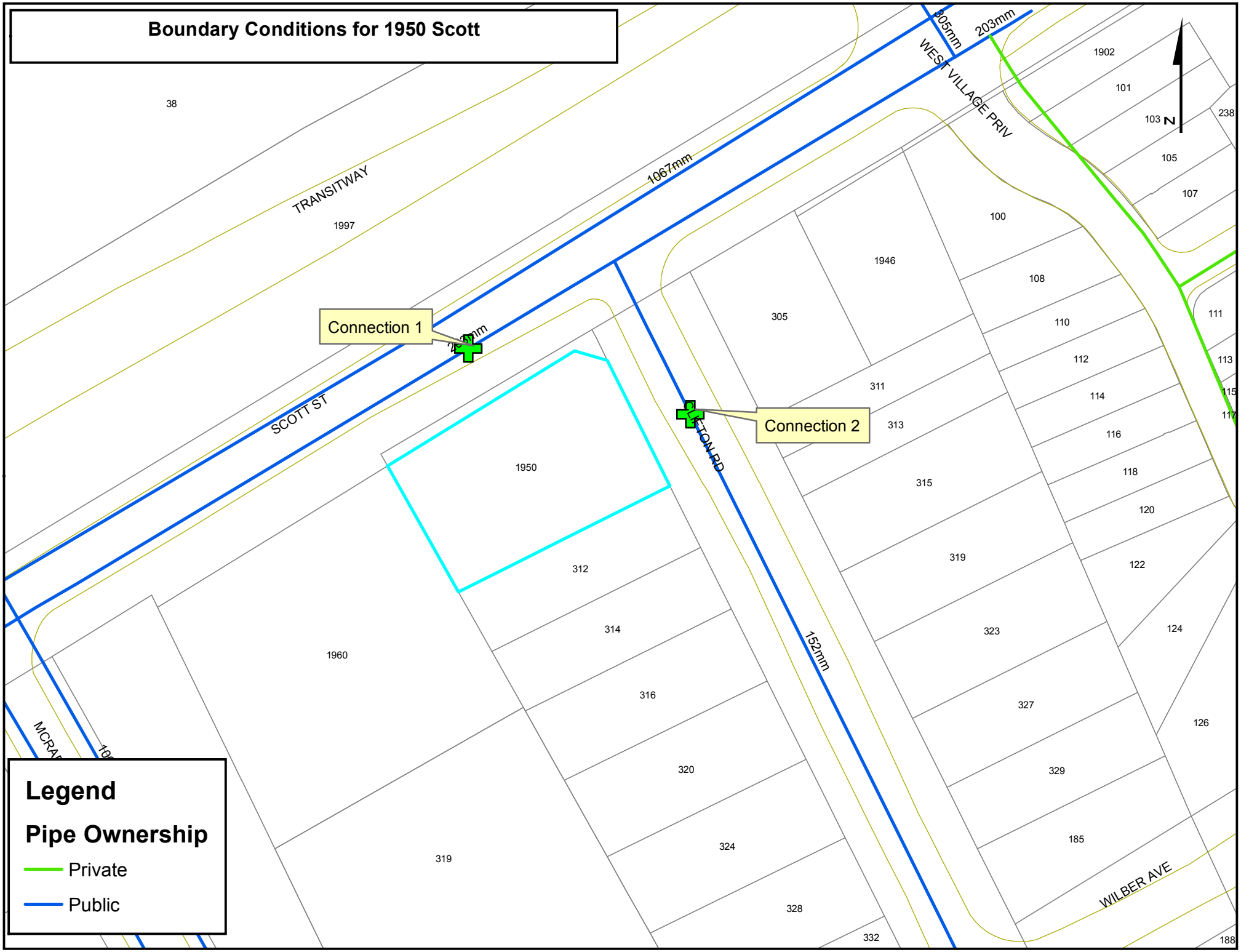
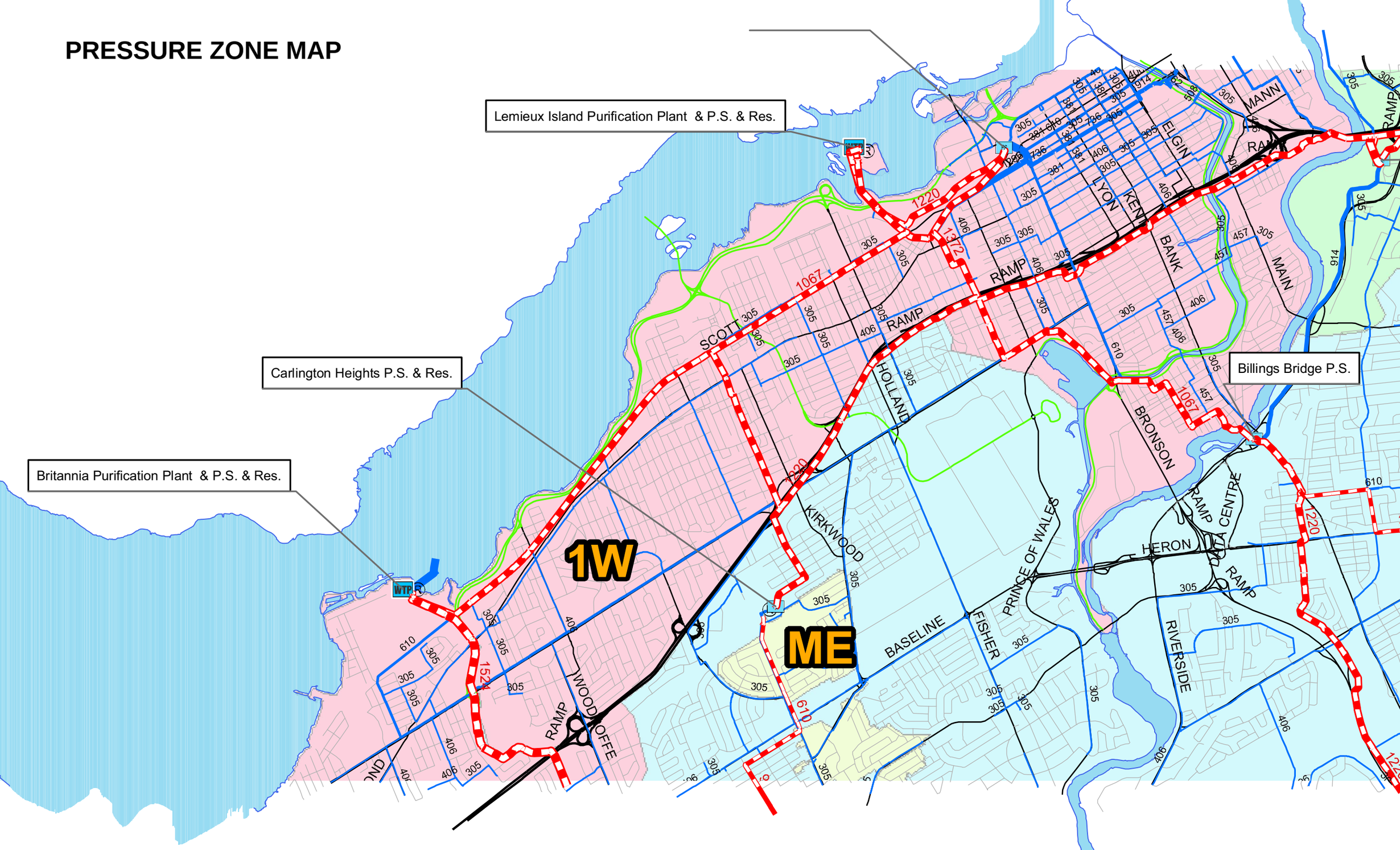

Boundary Conditions for 1950 Scott
Connection 1
Connection 2
SCOTT ST
TRANSITWAY
WEST VILLAGE PRIV
CLEYTON RD
WILBER AVE
1067mm
305mm
203mm
152mm
1950
1997
1960
1946
1902
38
305
311
312
313
314
315
316
319
320
323
324
327
328
329
332
100
101
103
105
107
108
110
111
112
113
114
115
116
117
118
120
122
124
126
185
188
238
N
Legend
Pipe Ownership
Private
Public

PRESSURE ZONE MAP



EBC INC
1950 SCOTT 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	22	31
2 Bedroom	2.1	66	139
3 Bedroom	3.1	53	165
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	335	93.8	65.1	281.4	195.4	422.1	293.1

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
Pool	40.0 L/9.3m^2/d	162	0.69	0.5	1.0	0.7	1.9	1.3
Office	75 L/9.3m^2/d	67	0.54	0.4	0.8	0.6	1.5	1.0
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			1.2	0.9	1.9	1.3	3.3	2.3
Total Demand			**95.0**	**66.0**	**283.3**	**196.7**	**425.4**	**295.4**

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	14756.3	m^2	*Total floor area based on FUS Part II section 1*

Fire Flow	21379.7	L/min	
	21000.0	**L/min**	*rounded to the nearest 1,000 L/min*

Adjustments

2. Reduction for Occupancy Type

Non-Combustible	-25%	
Fire Flow	**15750.0**	**L/min**

3. Reduction for Sprinkler Protection

Sprinklered	-50%	
Reduction	**-7875**	**L/min**

4. Increase for Separation Distance

N	>45m	0%	
S	0m-3m	25%	
E	20.1m-30m	10%	
W	3.1m-10m	20%	
	% Increase	**55%**	*value not to exceed 75% per FUS Part II, Section 4*
	Increase	**8662.5**	**L/min**

Total Fire Flow

Fire Flow	16537.5	L/min	*fire flow not to exceed 45,000 L/min nor be less than 2,000 L/min per FUS Section*
	17000.0	**L/min**	*rounded to the nearest 1,000 L/min*

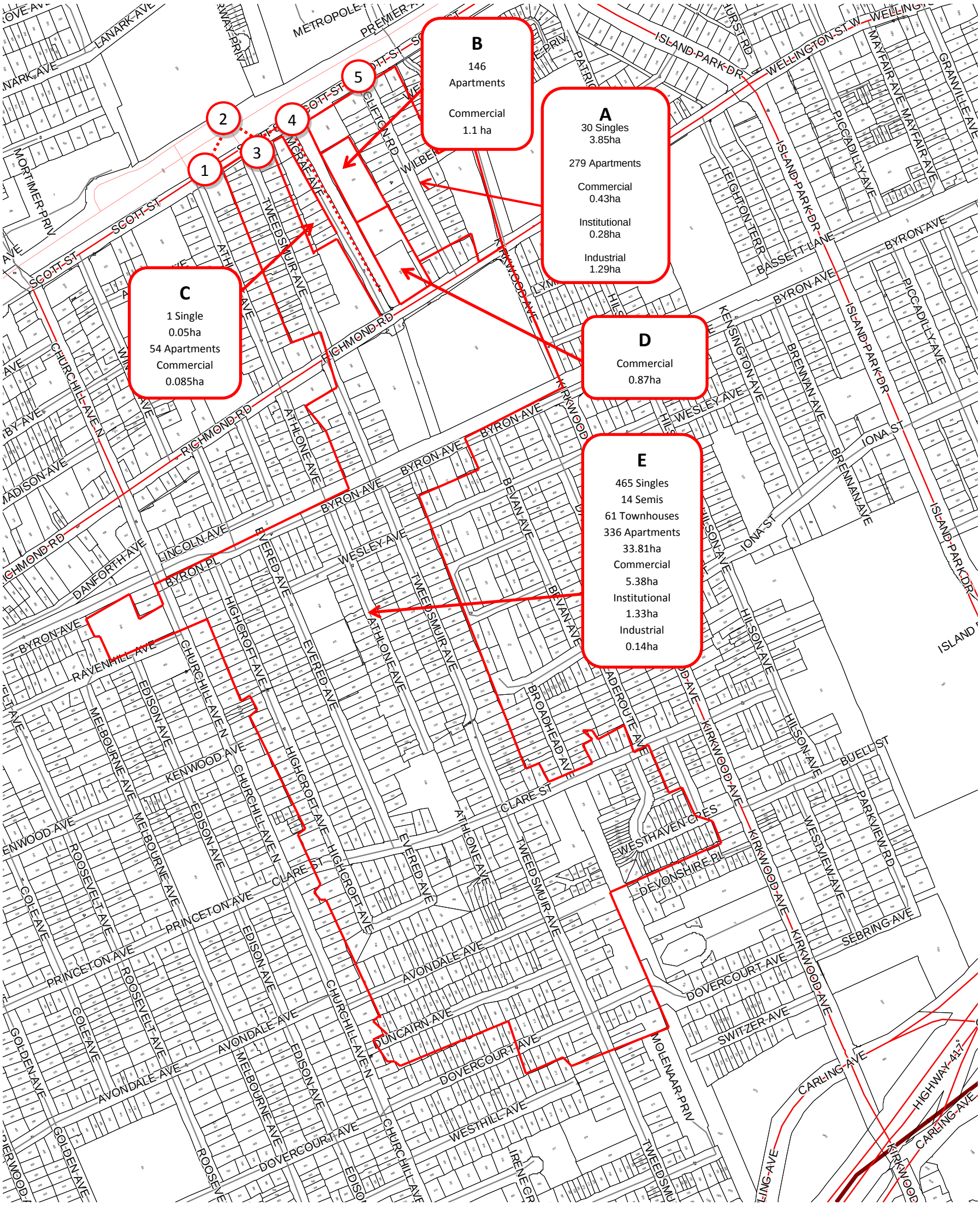
Notes:
-Type of construction, Occupancy Type and Sprinkler Protection information provided by _____.
-Calculations based on Fire Underwriters Survey - Part II

APPENDIX C

Wastewater Collection

2008 SANITARY AND STORM COLLECTION SYSTEM MAP

Scott Street - Sanitary Map



EBC INC
1950 SCOTT STREET
Proposed Development

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

Site Area 1.351 **ha**

Extraneous Flow Allowances

Infiltration / Inflow **0.38 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	22	31
2 Bedroom	2.1	66	139
3 Bedroom	3.1	53	165
Average	1.8		0

Total Pop **335**

Average Domestic Flow **1.09 L/s**

Peaking Factor **3.45**

Peak Domestic Flow **3.74 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		0.00
Pool	40 L/9.3m^2/d	162	0.01
Office	75 L/9.3m^2/d	67	0.01
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 **0.01**

Peak Institutional / Commercial Flow 0.02
Peak Industrial Flow** 0.00
Peak I/C/I Flow **0.02**

** 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	**1.10 L/s**
Total Estimated Peak Dry Weather Flow Rate	**3.76 L/s**
Total Estimated Peak Wet Weather Flow Rate	**4.14 L/s**

SANITARY SEWER CALCULATION SHEET

CLIENT: **EBC INC**
LOCATION: **1950 SCOTT STREET**
FILE REF: **18-1016**
DATE: **18-May-18**

DESIGN PARAMETERS

Avg. Daily Flow Res.	280	L/p/d	Peak Fact Res. Per Harmons: Min = 2.0, Max =3.8			Infiltration / Inflow	0.33	L/s/ha
Avg. Daily Flow Comn	28,000	L/ha/d	Peak Fact. Comm. If (Q/Q_{TOTAL}>20%)	1.5	Peak Fact. Comm. 1	Min. Pipe Velocity	0.60	m/s full flowing
Avg. Daily Flow Instit.	28,000	L/ha/d	Peak Fact. Instit. If (Q/Q_{TOTAL}>20%)	1.5	Peak Fact. Instit. 1	Max. Pipe Velocity	3.00	m/s full flowing
Avg. Daily Flow Indust	35,000	L/ha/d	Peak Fact. Indust. per MOE graph			Mannings N	0.013	
			Correction Factor K	0.8				

Location			Residential Area and Population									Commercial		Institutional		Industrial			Infiltration				Pipe Data							
Area ID	Up	Down	Area	Number of Units by type				Pop.	Cumulative Area	Cumulative Pop.	Peak. Fact.	Q_{res}	Area	Accu. Area	Area	Accu. Area	Area	Accu. Area	Q_{C+I+I}	Total Area	Accu. Area	Infiltration Flow	Total Flow	DIA	Slope	Length	$A_{hydraulic}$	R	Velocity	Q_{cap}	Q / Q full
			(ha)	Singles	Semi's	Town's	Apt's		(ha)		(-)	(L/s)	(ha)	(ha)	(ha)	(ha)	(ha)	(ha)	(L/s)	(ha)	(ha)	(L/s)	(L/s)	(mm)	(%)	(m)	(m^2)	(m)	(m/s)	(L/s)	(-)
A	5	4	3.85	30			279	604.0	3.9	604.0	3.34	6.55	0.43	0.43	0.28	0.28	1.29	1.29	1.1	5.848	5.848	1.930	9.60	225	0.40	131.7	0.040	0.056	0.71	28.4	0.34
B,C,D	4	3	0.05	1			200	363.0	3.900	967.0	3.25	10.18	2.06	2.48		0.28		1.29	2.1	2.105	7.953	2.624	14.93	225	0.30	48.5	0.040	0.056	0.62	24.6	0.61
E	3	2	33.81	465	14	61	336	2388.0	37.710	3355.0	2.92	31.75	5.38	7.86	1.33	1.61	0.14	1.43	5.5	40.660	48.613	16.042	53.27	375	1.00	14.5	0.110	0.094	1.59	175.3	0.30
	2	1	0.00					0.0	37.7	3355.0	2.92	31.75		7.86		1.61		1.43	5.5	0.000	48.613	16.042	53.27	375	1.00	5.9	0.110	0.094	1.59	175.3	0.30

APPENDIX D

Stormwater Management

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

Target Flow Rate

Area 0.22 ha
C 0.50 Rational Method runoff coefficient
t_c 10.0 min

5-year
i 104.2 mm/hr
Q 31.8 L/s

Estimated Post Development Peak Flow from Unattenuated Areas

Total Area 0.02 ha
C 0.63 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	4.0	4.0	0.0	0.0	178.6	8.6	8.6	0.0	0.0

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)

Estimated Post Development Peak Flow from Attenuated Areas

Total Area 0.20 ha
C 0.63 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	104.2	36.1	10.9	25.3	15.2	178.6	77.3	23.2	54.1	32.5
15	83.6	29.0	10.9	18.1	16.3	142.9	61.9	23.2	38.6	34.8
20	70.3	24.3	10.9	13.5	16.1	120.0	52.0	23.2	28.7	34.5
25	60.9	21.1	10.9	10.2	15.3	103.8	45.0	23.2	21.7	32.6
30	53.9	18.7	10.9	7.8	14.0	91.9	39.8	23.2	16.5	29.8
35	48.5	16.8	10.9	5.9	12.4	82.6	35.8	23.2	12.5	26.3
40	44.2	15.3	10.9	4.4	10.5	75.1	32.5	23.2	9.3	22.3
45	40.6	14.1	10.9	3.1	8.5	69.1	29.9	23.2	6.7	18.0
50	37.7	13.0	10.9	2.1	6.3	64.0	27.7	23.2	4.5	13.4
55	35.1	12.2	11.0	1.2	4.0	59.6	25.8	23.2	2.6	8.5
60	32.9	11.4	11.0	0.5	1.6	55.9	24.2	23.2	1.0	3.5
65	31.0	10.8	11.0	0.0	0.0	52.6	22.8	23.2	0.0	0.0
70	29.4	10.2	11.0	0.0	0.0	49.8	21.6	23.2	0.0	0.0
75	27.9	9.7	11.0	0.0	0.0	47.3	20.5	23.2	0.0	0.0
80	26.6	9.2	11.0	0.0	0.0	45.0	19.5	23.2	0.0	0.0
85	25.4	8.8	11.0	0.0	0.0	43.0	18.6	23.2	0.0	0.0
90	24.3	8.4	11.0	0.0	0.0	41.1	17.8	23.2	0.0	0.0
95	23.3	8.1	11.0	0.0	0.0	39.4	17.1	23.2	0.0	0.0
100	22.4	7.8	11.0	0.0	0.0	37.9	16.4	23.2	0.0	0.0
105	21.6	7.5	11.0	0.0	0.0	36.5	15.8	23.2	0.0	0.0
110	20.8	7.2	11.0	0.0	0.0	35.2	15.2	23.2	0.0	0.0

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)

5-year $Q_{attenuated}$ 10.87 L/s **100-year $Q_{attenuated}$ 23.24 L/s**
5-year Max. Storage Required 16.3 m^3 **100-year Max. Storage Required 34.8 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	4.01	0.0	8.59	0.0
Attenutated Areas	10.87	16.3	23.24	34.8
Total	**14.9**	**16.27**	**31.84**	**34.8**

Genavieve Melatti

From: Jamie Batchelor <jamie.batchelor@rvca.ca>
Sent: Monday, May 7, 2018 1:30 PM
To: Alison Gosling
Cc: Genavieve Melatti
Subject: RE: 1950 Scott Street

Good Afternoon Alison,

Based on the parking being underground and the fact that the stormwater outlet is over 2km downstream, the RVCA accepts that no additional onsite water quality control measures will be required save and except best management practies.

From: Alison Gosling [mailto:AGosling@dsel.ca]
Sent: Tuesday, May 01, 2018 4:54 PM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Cc: Genavieve Melatti <GMelatti@dsel.ca>
Subject: RE: 1950 Scott Street

Good afternoon Jamie,

We wanted to follow up on the quality control confirmation for the development at 1950 Scott Street. Please note that no surface parking is proposed.

Please let us know if you have any additional questions.

Thank you,

Alison Gosling, 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.542
fax: (613) 836-7183
email: agosling@dsel.ca

From: Alison Gosling
Sent: Friday, April 20, 2018 12:59 PM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Subject: 1950 Scott Street

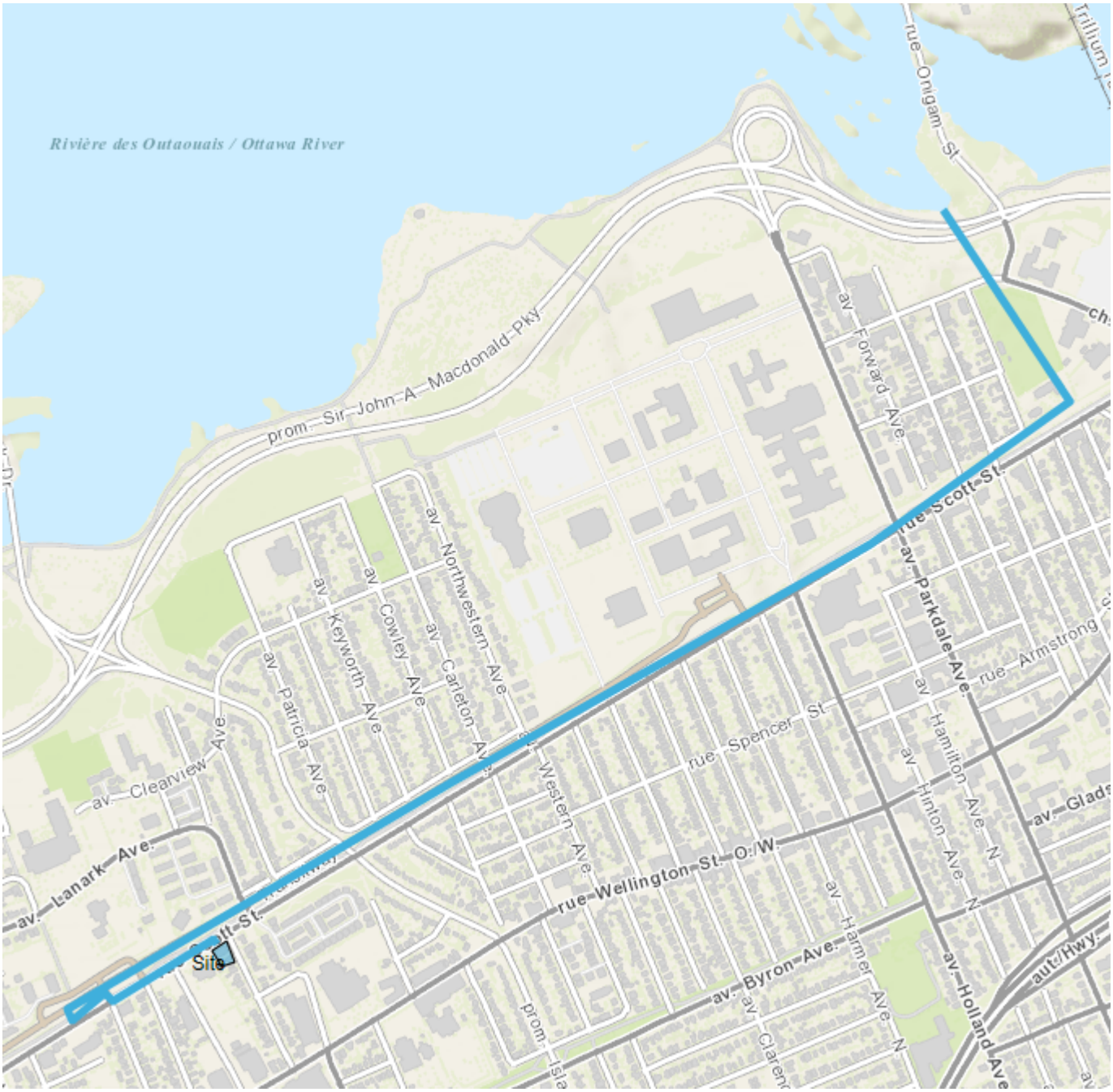
Good afternoon Jamie,

We wanted to touch base with you regarding a development at 1950 Scott Street.

The development proposes to construct a 20-storey plus mezzanine residential building with associated underground parking. The development will discharge stormwater to the existing 600 mm diameter storm sewer within Scott Street. Stormwater collected at site travels approximately 3.2 km and outlets to the Ottawa River.

It is not anticipated that quality controls will be required due to the distance to the outlet and as stormwater runoff is primarily from the rooftop and landscaped areas.

Can you please confirm if any quality controls will be required?



Please feel free to call if you have any questions or you would like to discuss.

Thank you,

Alison Gosling, 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.542
fax: (613) 836-7183
email: agosling@dsel.ca

DRAWINGS / FIGURES

LEGEND

- CORRIDOR
- PARKING AREA
- SERVICES
- VEHICULE CIRCULATION
- VERT. CIRCULATION

PARKING

P1	
SMALL SPACES (2 400 X 4 600)	03 SPACES
REG. SPACES (2 600 X 5 200)	57 SPACES
TANDEM (2 600 X 5 200)	02 SPACES
TOTAL P1	62 SPACES
P2	
SMALL SPACES (2 400 X 4 600)	03 SPACES
REG. SPACES (2 600 X 5 200)	64 SPACES
TANDEM (2 600 X 5 200)	01 SPACES
TOTAL P2	68 SPACES
P2.5	
SMALL SPACES (2 400 X 4 600)	01 SPACES
REG. SPACES (2 600 X 5 200)	36 SPACES
TANDEM (2 600 X 5 200)	05 SPACES
TOTAL P2.5	42 SPACES
TOTAL P1+P2+P2.5	172 SPACES
VISITOR PARKING	10 SPACES
RESIDENT PARKING	162 SPACES
BICYCLE	
BICYCLE P1	33 SPACES
BICYCLE P2	30 SPACES
BICYCLE P2.5	15 SPACES
TOTAL BICYCLE	78 SPACES
RATIO RESIDENTIAL	
141 UNITS / 1.15 SPACE UNIT	162 SPACES
RATIO RESIDENTIAL INCLUDING VISITORS	
141 UNITS / 1.2 SPACE UNIT	172 SPACES

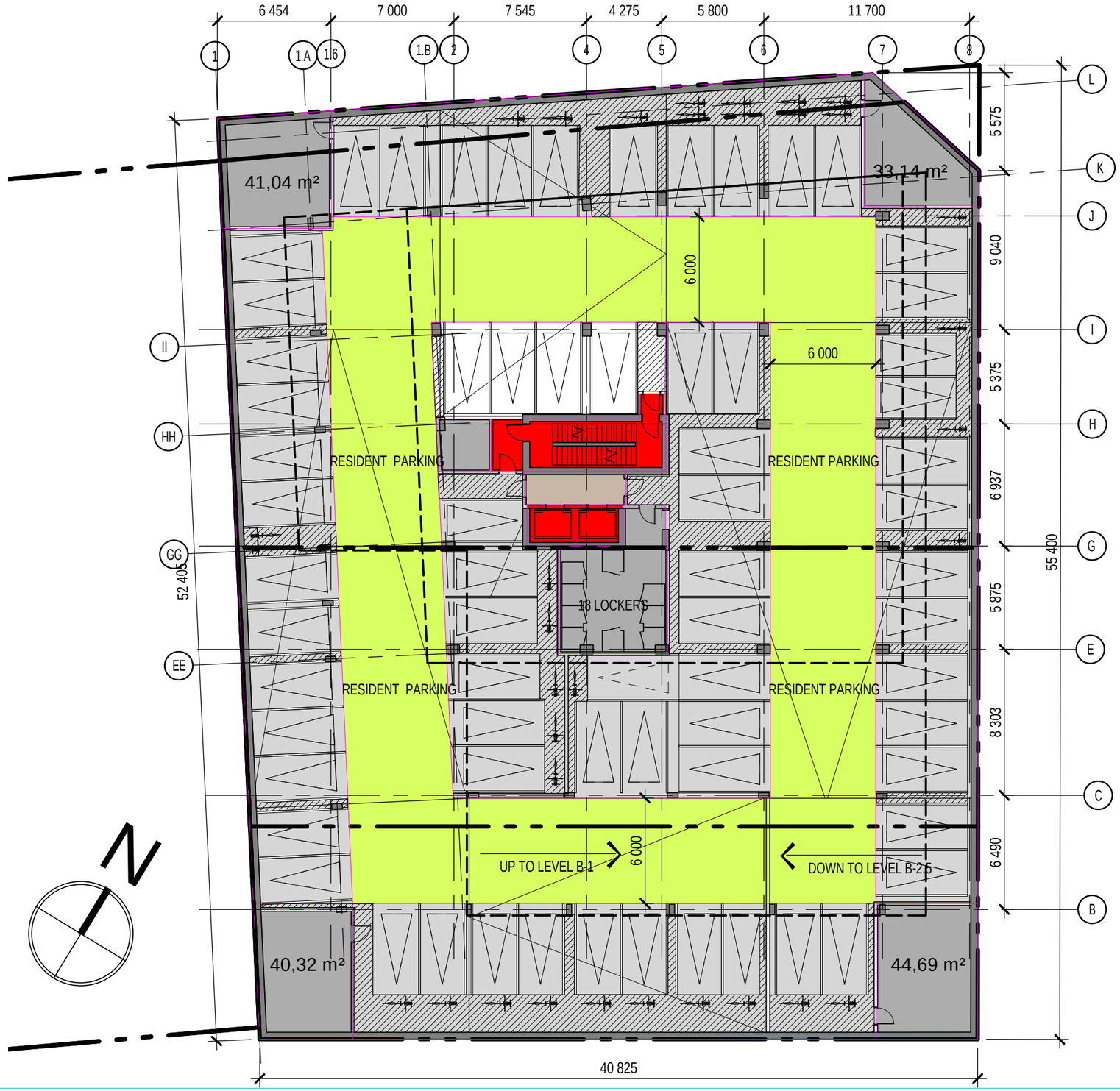
BASEMENT B-2.5

SCALE 1 : 250

ebc INC

NEUF ARCHITECT(E)S

1950 SCOTT STREET 03/22/18 A 200-A



LEGEND

- CORRIDOR
- PARKING AREA
- SERVICES
- VEHICULE CIRCULATION
- VERT. CIRCULATION

PARKING

P1	
SMALL SPACES (2 400 X 4 600)	03 SPACES
REG. SPACES (2 600 X 5 200)	57 SPACES
TANDEM (2 600 X 5 200)	02 SPACES
TOTAL P1	62 SPACES
P2	
SMALL SPACES (2 400 X 4 600)	03 SPACES
REG. SPACES (2 600 X 5 200)	64 SPACES
TANDEM (2 600 X 5 200)	01 SPACES
TOTAL P2	68 SPACES
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RESIDENT PARKING	162 SPACES
BICYCLE	
BICYCLE P1	33 SPACES
BICYCLE P2	30 SPACES
BICYCLE P2.5	15 SPACES
TOTAL BICYCLE	78 SPACES
RATIO RESIDENTIAL	
141 UNITS / 1.15 SPACE UNIT	162 SPACES
RATIO RESIDENTIAL INCLUDING VISITORS	
141 UNITS / 1.2 SPACE UNIT	172 SPACES

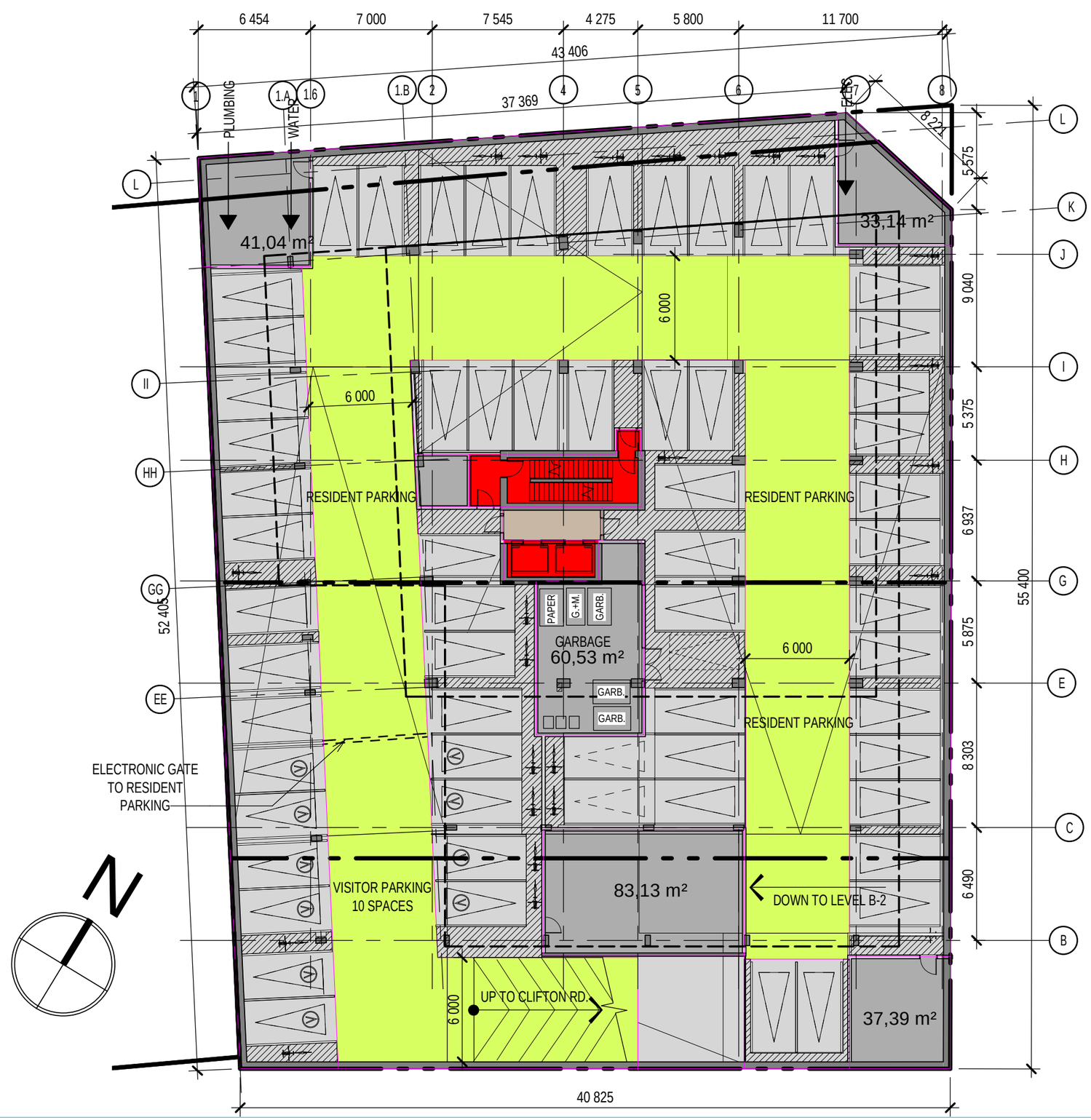
BASEMENT B-2

SCALE 1 : 250

ebc INC

NEUF ARCHITECT(E)S

1950 SCOTT STREET 03/21/18 A 200-B



LEGEND

- CORRIDOR
- PARKING AREA
- SERVICES
- VEHICULE CIRCULATION
- VERT. CIRCULATION

PARKING

P1	
SMALL SPACES (2 400 X 4 600)	03 SPACES
REG. SPACES (2 600 X 5 200)	57 SPACES
TANDEM (2 600 X 5 200)	02 SPACES
TOTAL P1	62 SPACES
P2	
SMALL SPACES (2 400 X 4 600)	03 SPACES
REG. SPACES (2 600 X 5 200)	64 SPACES
TANDEM (2 600 X 5 200)	01 SPACES
TOTAL P2	68 SPACES
P2.5	
SMALL SPACES (2 400 X 4 600)	01 SPACES
REG. SPACES (2 600 X 5 200)	36 SPACES
TANDEM (2 600 X 5 200)	05 SPACES
TOTAL P2.5	42 SPACES
TOTAL P1+P2+P2.5	172 SPACES
VISITOR PARKING	10 SPACES
RESIDENT PARKING	162 SPACES
BICYCLE	
BICYCLE P1	33 SPACES
BICYCLE P2	30 SPACES
BICYCLE P2.5	15 SPACES
TOTAL BICYCLE	78 SPACES
RATIO RESIDENTIAL	
141 UNITS / 1.15 SPACE UNIT	162 SPACES
RATIO RESIDENTIAL INCLUDING VISITORS	
141 UNITS / 1.2 SPACE UNIT	172 SPACES

BASEMENT B-1

SCALE 1 : 250

ebc INC

NEUF ARCHITECT(E)S

1950 SCOTT STREET 03/21/18 A 200-C

GROUND FLOOR

SCALE 1 : 250

ebc INC

NEUF ARCHITECT(E)S

1950 SCOTT STREET 03/21/18 A 201

2nd & 3rd FLOORS

SCALE 1 : 250

ebc INC

NEUF ARCHITECT(E)S

1950 SCOTT STREET 03/21/18 A 202

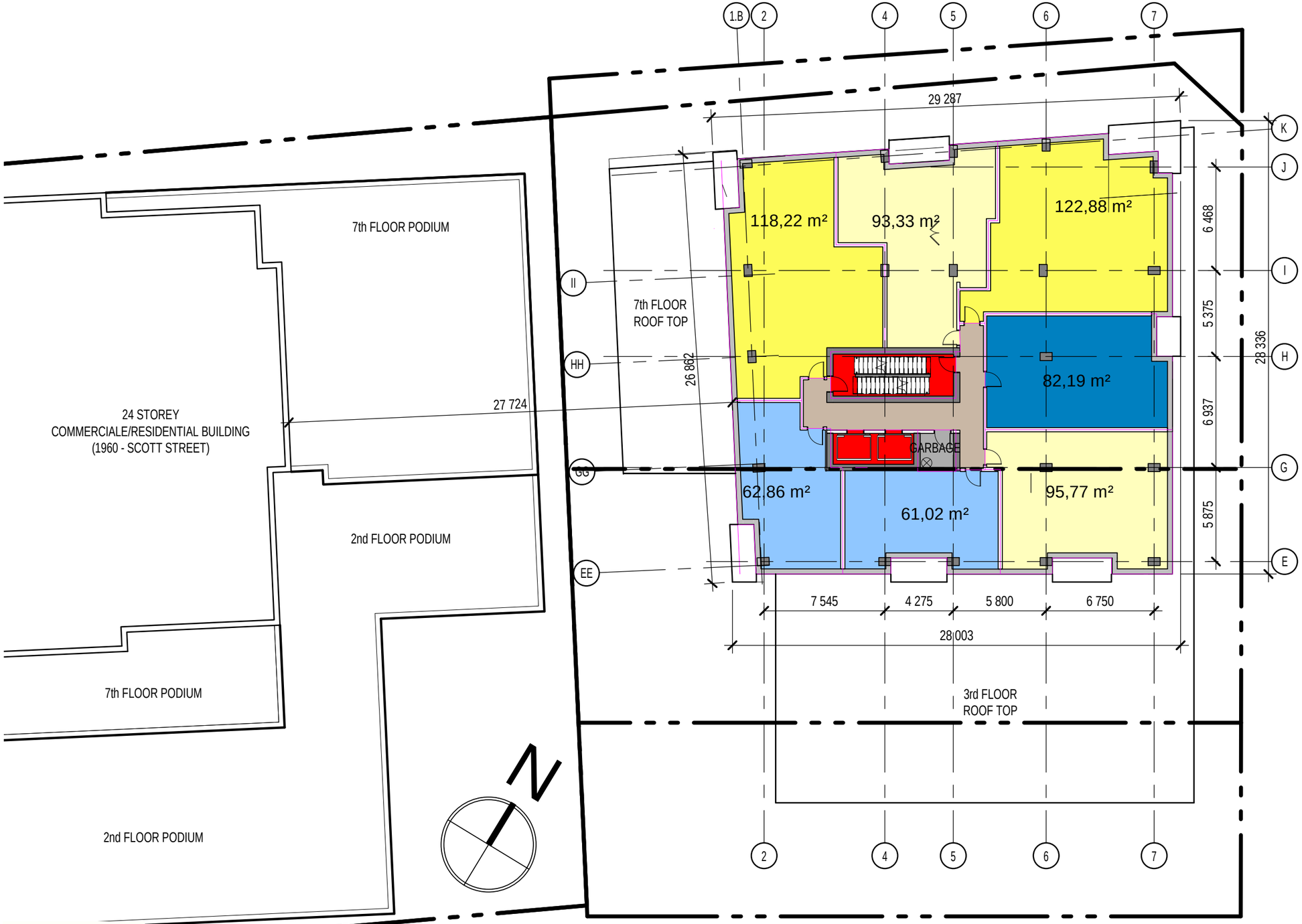
4th @ 7th FLOORS

SCALE 1 : 250

ebc INC

NEUF ARCHITECT(E)S

1950 SCOTT STREET 03/21/18 A 203



LEGEND

- 1BR
- 1BR + D
- 2BR
- 2BR + D
- CORRIDOR
- SERVICES
- VERT. CIRCULATION

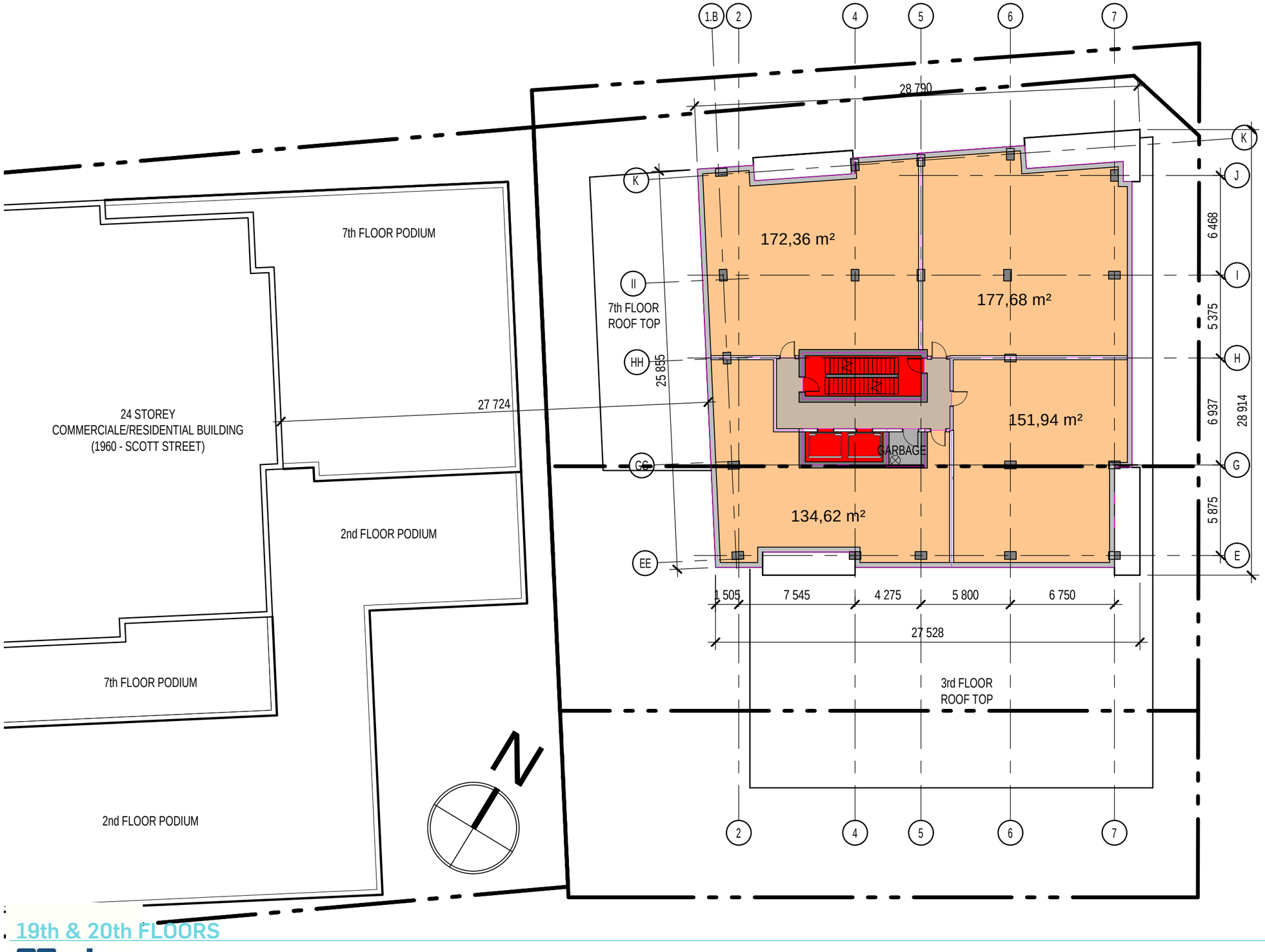
8th @ 18th FLOORS

SCALE 1 : 250

ebc INC

NEUF ARCHITECT(E)S

1950 SCOTT STREET 03/21/18 A 204



LEGEND

- 3BR
- CORRIDOR
- SERVICES
- VERT. CIRCULATION

19th & 20th FLOORS

SCALE 1 : 250

ebc INC

NEUF ARCHITECT(E)S

1950 SCOTT STREET 03/21/18 A 205

LEGEND

- 3BR
- CORRIDOR
- SERVICES
- SKY LOUNGE
- VERT. CIRCULATION

MEZZ. FLOOR AREA: 299 M²
MEZZ. FLOOR COVERAGE : 39.5%

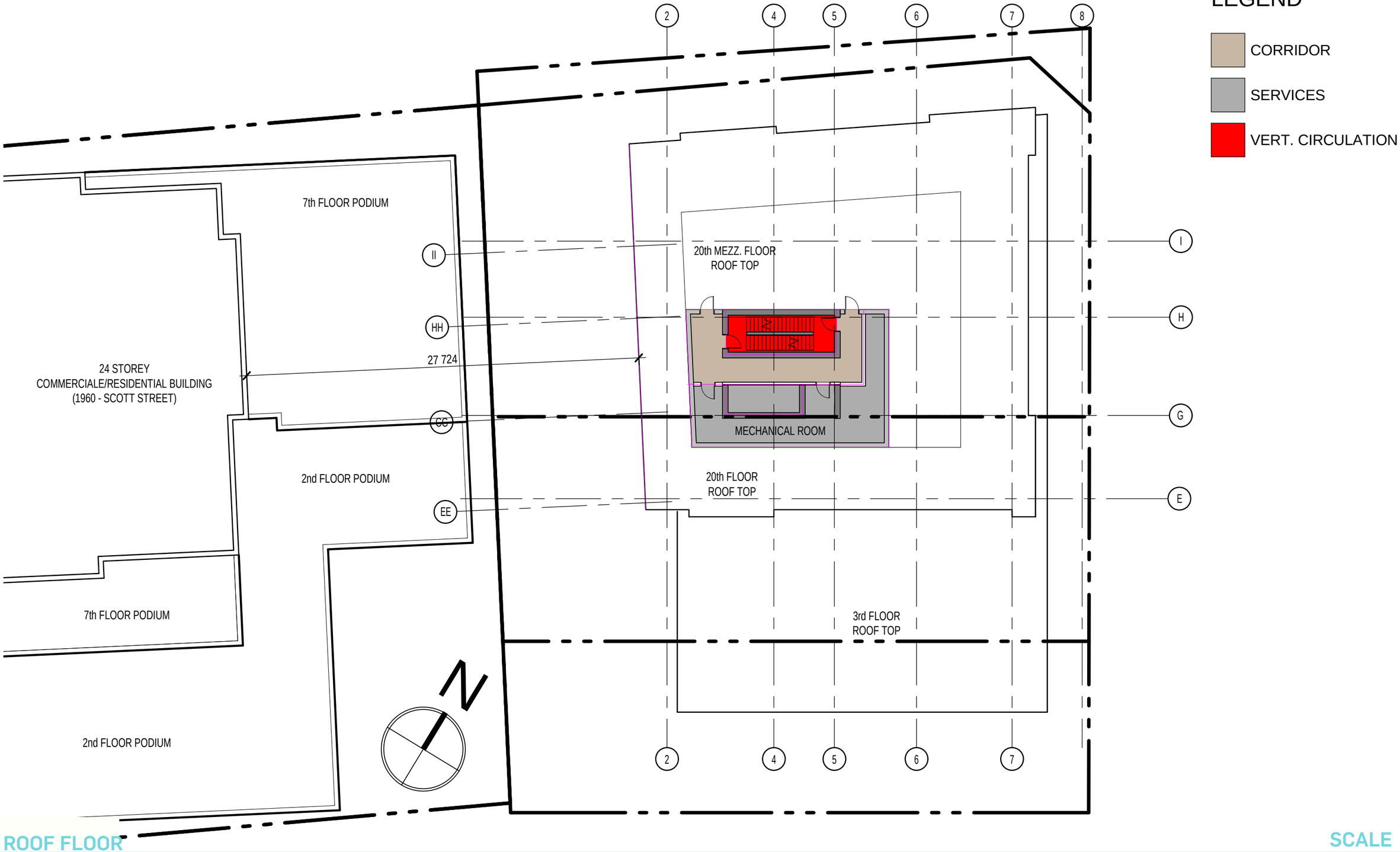
20th Mezz./ Sky Lounge FLOOR

SCALE 1 : 250

ebc INC

NEUF ARCHITECT(E)S

1950 SCOTT STREET 03/22/18 A 206



ROOF FLOOR

SCALE 1 : 250

ebc INC

NEUF ARCHITECT(E)S

1950 SCOTT STREET 03/22/18 A 207