JLR No.: 25205-100.1
Revision: 1

February 7, 2020

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Site Servicing Report

99 Parkdale Avenue

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1.0 INTRODUCTION

1.1 Background

In 2011, J.L. Richards & Associates Limited (JLR) was retained by Urbandale Construction to prepare a Site Servicing Report and engineering drawings in support of a Site Plan Application for a Condominium Tower sited at 99 Parkdale Avenue. This Site Servicing Report addressed water, sanitary, storm and stormwater management servicing associated with the development of a Condominium Tower on Parkdale Avenue. Subsequently thereafter, approvals were granted in 2012 by the City of Ottawa under Site Plan Control.

Recently, Brigil under their umbrella company 11034936 Canada Inc. herein referred to as the Owner, acquired 99 Parkdale Avenue for their condominium development. The subject lands currently occupied by Lots 4, 5 and 6 on Registered Plan 41, within the City of Ottawa. Subsequently, the Owner retained the services of JLR to prepare a Site Servicing Report and engineering drawings for municipal infrastructure supporting the construction of a Condominium Tower sited at 99 Parkdale Avenue. The project is herein referred to as the 99 Parkdale Avenue Condominium Tower. A copy of the Site Plan and Legal Plans is included in Appendix A.

This Site Servicing Report has been prepared to outline the design objectives and criteria, servicing constraints and strategies for developing the subject lands with water, wastewater, storm and stormwater management services in accordance with: i) the November 2009 Servicing Study Guidelines for Development Applications in the City of Ottawa (City), as well as ii) the servicing requirements discussed during the pre-consultation meeting (June 6, 2019), follow-up discussion on August 28, 2019 (E-Mail dated August 28, 2019 attached in Appendix C) and more recent discussions held on January 20, 2020.

1.2 Municipal Design Guidelines

This Site Servicing Report and associated engineering drawings were prepared in accordance with the following:

Ottawa Sewer Design Guidelines (October 2012) complete with the following Technical Bulletins;
- ISTB-2012-01;
- ISTDB-2014-01;
- ISTDB-2016-01;
- ISTDB-2018-01;
- ISTDB-2019-01; and
- ISTDB-2019-02;

City of Ottawa Water Distribution Guidelines complete with the following Technical Bulletins:
- ISTDB-2010-02;
- ISTDB-2014-02; and
- ISTDB-2018-02.

Detail Drawings as well as well as Sewer Material Specifications including:
- Sewer Connection (2003-513) and Sewer Use (2003-514) By-Laws

Watermains/Services Material Specifications as well as Water and Road Standard Detail Drawings

Water By-Law (2018-167)

1.3 Site Description, Background and Population

The existing site (2019 condition) consists of four (4) undeveloped parcels that front onto Parkdale Avenue and back onto a public laneway, between Burnside Avenue and Emmerson Avenue. The current municipal address of these units are 99, 101, 105 and 107 Parkdale Avenue, respectively (refer to Legal Plans in Appendix A). Overall, it accounts for approximately 0.137 ha (1,372 m^2). However, in 2012, these parcels were occupied by four (4) single units which were converted into multi-tenanted residential units (i.e., two units per lot).

The 99 Parkdale Avenue site is currently bounded by a 9-storey condominium apartment complex to the north, a 28-storey condominium tower (in-progress) to the south, Parkdale Avenue to the west, and a large condominium apartment building to the east (see Figure 1 – Site Location below, based on 2012 aerial mapping).

Figure 1: Site Location

As noted above, the existing detached houses that fronted onto Parkdale Avenue and backed onto the public laneway were demolished around 2014. The combined area of the vacant parcels is 1,372 m^2, which includes a ±46.7 m^2 widening parcel along Parkdale Avenue.

The proposed building at 99 Parkdale Avenue will be 28-storey Condominium Tower consisting of; 6 studios, 127 x 1-bedroom and 107 x 2-bedroom units. Overall, 240 units are being proposed. Based on the unit density of the City of Ottawa (Table 4-1, Ottawa Design Guidelines (ODG), Water Distribution, 2010), the total population is 412. The zoning for the land is R5B [1929] S284-h.

1.4 Existing Infrastructure

A detailed review of existing services was carried out in the vicinity of the above-noted properties to investigate the servicing requirements for a condominium tower site. The following information was previously received from the City and reviewed (refer to Appendix B for copy of Drawings):

- City of Ottawa Drawing 3409: Parkdale Avenue, revision No. 3 (02/28/2003);
- City of Ottawa Drawing D-08-11: Parkdale Avenue/Burnside Avenue Utility Drawing (revised January 2010); and
- City of Ottawa Drawing D-08-07: Parkdale Avenue/Emmerson Avenue Utility Drawing (revised January 2010).

Based on a review of background Drawings and comments from the City, the following infrastructure has been identified to exist within the Parkdale Avenue right-of-way (R.O.W.) in the vicinity of the subject lands:

- 2100 mm diameter concrete storm trunk tunnel;
- 300 mm diameter storm sewer on the west side of Parkdale Avenue;
- 300 mm diameter shallow bury storm sewer on the west side of Parkdale Avenue;
- 375 mm diameter sanitary sewer;
- 200 mm diameter watermain; and
- 225 mm diameter combined tile pipe sewer (abandoned).

Figure 2 (below) shows the existing infrastructure adjacent to 99 Parkdale Avenue (from the City of Ottawa's Geo Ottawa).

Figure 2: Existing Infrastructure

1.5 Pre-Consultation, Permits, Approvals and Comments

A pre-consultation meeting was held on June 9th, 2019 between the Owner's representatives and staff from the City. A copy of the pre-consultation meeting notes has been provided in Appendix C. More recently, additional discussions were held with the City regarding the storm discharge criterion. The E-Mail summarizing the latest discussions and servicing requirements

is also included in Appendix C. For the purpose of this Site Servicing Report, the storm discharge criteria for 99 Parkdale has been summarized in Section 4.2. In addition, the RVCA was also consulted on water quality requirements (refer to Appendix C for E-Mail). All of the pre-consultation notes have been compiled in Appendix C. The City of Ottawa Development Servicing Study Checklist is included in Appendix D.

On January 9, 2020, comments were issued by the City of Ottawa (refer to the end of Appendix C for copy of comments). Subsequently, a conference call was held on January 20, 2020 and additional conversions were held with the Water Resources group in regard to fire protection. Based on those discussions, the Site Servicing Report and associated drawings were revised accordingly.

2.0 WATER SERVICING

2.1 Design Criteria

Headloss calculations were carried out for the proposed 99 Parkdale Avenue Condominium Tower to confirm that the existing supply (i.e., from the Parkdale Avenue 200 mm diameter watermain) and proposed water services to the Condominium Tower can provide adequate supply while complying with both the Ottawa Design Guidelines (ODG) for Water Distribution (July 2010), and Technical Bulletins ISDTB-2014-02 and ISTB-2018-02. The above-noted documents have been referred to in this Report as the ODG.

The ODG requires that a water supply system be designed to satisfy the following demand criteria:

- maximum day demand plus fire flow; and
- maximum hourly demand (peak hour demand).

Given the site's usage as a residential high-rise, fire flow requirements within this private property must comply with the Ontario Building Code (OBC). Section A-3.2.5.7 of the OBC reads as follows:

"The water supply requirements for interior fire suppression systems such as sprinkler systems and standpipe and hose systems are contained in other standards, NFPA Standard 13".

Section 2.4 (below) provides additional details with respect to fire flow requirements.

2.2 System Pressures

Section 4.2.2 of the ODG requires that new development additions to the public water distribution system be designed such that the minimum and maximum water pressures, as well as flow rates, conform to the following:

i. Under maximum hourly demand conditions (peak hour), the pressures shall not fall below 276 kPa (40 psi).

ii. During periods of simultaneous maximum day and fire flow demand, the residual pressure at any point in the distribution system shall not be less than 140 kPa (20 psi).

iii. In accordance with the Ontario Code & Guide for Plumbing, the static pressure at any fixture shall not exceed 552 kPa (80 psi) in areas that may be occupied.

iv. The maximum pressure at any point in the distribution system shall not exceed 689 kPa (100 psi) in unoccupied areas.

v. Feedermains, which have been provided primarily for the purpose of redundancy, shall meet, at a minimum, the basic day plus fire flow demand. This criterion is not applicable to this HNA as there are only watermain laterals proposed as part of this Application.

The headloss calculations shown below were completed to demonstrate compliance to the above watermain pressure under the various demand conditions.

2.3 Water Demands

To assess the headloss along the proposed water services (Drawing S1 at the back of the Report), the above-noted water demand scenarios were evaluated against the pressure criteria listed in Section 2.2 using the well-known Hazen Williams equation.

The theoretical domestic demand for the 99 Parkdale was calculated based on the information provided by the Owner. A total of 240 apartments is proposed consisting of 6 studio, 127 x 1-bedroom and 107 x 2-bedroom apartments. Based on densities of 1.4 (1-bedroom) and 2.1 (2-bedroom) persons per unit (Table 4.1 of the ODG – Water Distribution), a total population of 408 was calculated (Appendix E1). Given that the theoretical population is 412 is below 500 and as requested by the City, the peaking factors used for 99 Parkdale were extracted from Table 3-3 of the Ministry of the Environment's (MOE) publication entitled "Design Guidelines for Drinking-Water Systems, 2008" herein referred as the MOE Design Guidelines.

Table 1: Theoretical Water Demands summarizes the overall water demands for 99 Parkdale that were calculated based on theoretical unit rates. These demands were based on a population of 412 and using the recommended peaking factors of the MOE Design Guidelines (Table 3-3) for populations less than 500. These demands were then used to assess headloss under various demand scenarios along the proposed water servicing. Although water servicing consists of twin 150 mm diameter water laterals (Drawing S1), the total theoretical demands was solely drawn from only one of the twin 150 mm diameter watermain services.

Table 1: Theoretical Water Demands

Water Demand (L/s)	Peaking Factor (MOE Table 3-3)	Total Demand (L/s)
Average Day	N/A	1.34
Maximum Day	3.24 x avg	4.33
Peak Hour	4.86 x avg	6.49
Minimum Hour	0.26 x avg	0.35

Hydraulic boundary conditions were obtained from the City (Appendix E2) based on the above-noted demands and fire flow noted in Section 2.4 (below).

2.4 Fire Flow Requirements

Various guidelines are used throughout North America to establish fire flow requirements for different types of buildings. The following two (2) Guidelines speaks about the required fire flow (RFF):

Private Sites:

The RFF within private sites shall be calculated based on the Ontario Building Code (OBC), which in turn, is based on NFPA 13 when the building is to be equipped by a fire suppression system and that there are no on-site hydrants proposed (just service laterals). Based on Table 11.2.2.1 (Water Supply Requirements for Pipe Schedule Sprinkler Systems) and Table 11.2.3.1.2 (Hose Stream Allowance and Water Supply Duration Requirements for Hydraulically Calculated Systems) of NFPA 13, the RFF within the property for ordinary hazard shall be 4,150 L/min (69.2 L/s) consisting of 3,200 L/min (53.3 L/s) for the fire suppression system and 950 L/min (15.8 L/s) for the total combined hose allowance (refer to Appendix E3).

Municipal Right-Of-Way (ROW):

The RFF along the City of Ottawa ROW must comply with the Guidelines entitled “Water Supply for Public Fire Protection (1999)” developed by the Fire Underwriters Survey (FUS) as well as Technical Bulletins TB-2014-02 and TB-2018-02. Based on these documents, the RFF that shall be available along the ROW was conservatively estimated at 21,000 L/min (350 L/s) as per TB-2018-02 (Appendix E3). However, given that no on-site hydrants are proposed but only service laterals to the sprinklered building, the targeted RFF for this private property was set to 4,150 L/min (69.2 L/s) and headloss was calculated accordingly. The boundary conditions provided reflect a RFF of 69.2 L/s and the conservative FUS RFF is provided as information only.

2.5 Watermain Sizing and Roughness Coefficients

The existing and proposed watermain layout for 99 Parkdale Avenue is shown on the Site Servicing Plan (Drawing S1) at the back of the Report. The proposed water servicing for 99 Parkdale consists of the following:

- Domestic supply to 99 Parkdale will be provided by a 150 mm diameter water service lateral that will connect to the Parkdale Avenue 200 mm diameter watermain. However, due to the population and usage of this property, a second 150mm diameter watermain is proposed to minimize the risk of water supply interruption to 99 Parkdale. One of the twin 200 mm diameter watermain will provide the supply for domestic demands and fire suppression feed with the second watermain as a backup. The mechanical engineer will be responsible to size and design a pump to supply domestic demands and a fire pump to provide adequate supply to the fire suppression system and standpipe. As per the OBC, these systems will be designed in accordance with NFPA 13. The fire suppression system will require the ability to deliver flows of 3,200 L/min (53.3 L/s).

- The siamese connection will be located on the western face of the building, off of Parkdale Avenue in close proximity of the mechanical room within the prescribed distance to the existing fire hydrants.

The headloss calculations (Appendix E4) were carried out using the well-known Hazen Williams relationship. As requested, all headloss calculations were completed for a single 150 mm diameter watermain. The 150 mm diameter watermain was assigned a roughness coefficient of 110 which is consistent with the Design Guidelines for water distribution. As per Table 1, the headloss calculations were completed assuming that all demand would be drawn from a single 150 mm diameter watermain

2.6 Hydraulic Boundary Conditions

The headloss calculations were carried out under various water demand conditions as described in Sections 2.3 and 2.4. Boundary conditions were requested for 99 Parkdale Avenue where the twin 200 mm diameter watermains will converge into the condominium tower. Boundary conditions received from the City are summarized in Table 2: Hydraulic Boundary Conditions below.

Table 2: Hydraulic Boundary Conditions

Theoretical Water Demand Single 200 mm dia WM	Parkdale Avenue HGL (m)
Peak Hour	107.5
Maximum Day + Fire Flow of 69.2 L/s	106.0
Maximum HGL	115.0

It should be noted that the above boundary conditions reflect a larger domestic demand than what has been used in the headloss calculations due to the average daily demand of 280 L/cap/day (versus 350 L/cap/day).

2.7 Headloss Calculations

The proposed servicing as presented on Drawing S1 was evaluated under domestic (peak hour and maximum HGL pressure check) as well as during a maximum day combined to a fire flow demand condition. The 150 mm diameter watermain service lateral is ±9.4 m in length. Sections 2.7.1 to 2.7.3 summarizes the headloss calculations and associated findings.

2.7.1 Peak Hour Demand

The headloss was calculated along one of the proposed 150 mm diameter water service laterals (Appendix E4), from the existing Parkdale Avenue 200 mm diameter watermain to 99 Parkdale. Based on a total peak hour demand of 6.49 L/s, a headloss of 0.038 m in

total was estimated. When this headloss is subtracted from the Parkdale Avenue supply HGL of 107.5 m, a residual HGL of 107.462 m was calculated at the building face. The calculated HGL of 107.462 m represents a pressure of 466 kPa (67.6 psi). Consequently, the calculated pressure exceeds the minimum pressure constraint of 275 kPa (40 psi) assuming that all of the peak demand is drawn from one of the twin watermains. It should be noted that given the height of the Condominium Tower, a booster pump is to be sized by the Owner's mechanical engineer to deliver the domestic demands to all users.

2.7.2 Maximum Day Demand plus Fire Flow

The headloss was calculated under a maximum day of 4.33 L/s combined to a fire flow (69.2 L/s) to demonstrate that one of the proposed 150 mm diameter watermains is capable of delivering the flows to the building (Appendix E4). Based on the combined demand of 73.48 L/s (4.33 L/s + 69.20 L/s), the demand of 73.53 L/s will generate a headloss of 3.4104 m on the 150 mm diameter watermain. When this headloss is subtracted from the Parkdale Avenue supply HGL of 106.0 m, a residual HGL of 102.590 m was calculated at the building face, representing a pressure of 418 kPa (60.6 psi). Consequently, the minimum pressure constraint of 140 kPa (20 psi) is met by one of the proposed 150 mm diameter watermains. From that point, a booster pump is to be sized by the Owner's mechanical engineer to supply the domestic demands and flows to the fire suppression system.

2.7.3 High Pressure Check

The OBC requires that a high pressure check (maximum hydraulic grade elevation) be performed on the proposed system to ensure that the maximum pressure constraint of 552 kPa (80 psi) of the Ontario Code & Guide for Plumbing is not exceeded. To verify this criterion, a minimum hour demand of 0.35 L/s was used based on the peaking factor of 0.26 in accordance with Table 3-3 of the MOE Design Guidelines.

Based on the HGL of 115.0 m (at the Parkdale Avenue 200 mm diameter watermain), the pressure at the Tower is 55 m (115.0 m – 60.0 m) based on a calculated headloss of 0.0002 m. This corresponds to a pressure of 540 kPa (78.3 psi). Consequently, the calculated pressure does not exceed the maximum pressure constraint of 552 kPa and the installation of a pressure reducing valve (PRV) in the mechanical room is not warranted.

2.8 Summary and Conclusions

Based on the above watermain servicing details, it is recommended that the two proposed 150 mm diameter watermains shown on the Site Servicing (Drawing S1) be implemented to provide water servicing for the proposed Condominium Tower recognizing that a booster pump will be sized by the Owner's mechanical engineer.

3.0 WASTEWATER SERVICING

3.1 Background

Wastewater flows generated by the 99 Parkdale Avenue Condominium Tower are to be collected within the building and conveyed by a proposed 150 mm diameter sanitary service to the dedicated sanitary outlet being the existing Parkdale Avenue 375 mm diameter sanitary sewer (refer to Site Servicing, Drawing S1).

3.2 Design Criteria

The proposed sanitary service for 99 Parkdale Avenue was designed based on the City of Ottawa Sewer Design Guidelines ((OSDG) - (October 2012)) and associated Technical Bulletins. Key design parameters have been summarized in Table 3: Wastewater Servicing Design Criteria:

Table 3: Wastewater Servicing Design Criteria

Design Criteria	Design Value	Reference
Residential average flow	280 L per capita/day	ISTB-2018-01
Residential peaking factor	Harmon Formula	City Section 4.4.1
Infiltration flow	0.33 L/s/effective gross ha	ISTB-2018-01
Minimum velocity	0.6 m/s	City Section 6.1.2.2
Maximum velocity	3.0 m/s	City Section 6.1.2.2
Manning Roughness Coefficient (for smooth wall pipes)	0.013	City Section 6.1.8.2
Minimum allowable slopes	Varies	City Table 6.2, Section 6.1.2.2

3.3 Theoretical Sanitary Peak Flow and Proposed Sanitary Servicing

The wastewater flows from the 99 Parkdale Avenue Condominium Tower will be discharged into the municipal system (Parkdale Avenue 375 mm diameter sanitary sewer) via a proposed 150 mm diameter sanitary service lateral. Based on the proposed densities for apartment buildings (as recommended by the OSDG), the peak wastewater flows were calculated based on the design value of 280 L per capita per day and population of 412 as per the design parameters listed in the above table.

A peak wastewater flow of 5.39 L/s was calculated for 99 Parkdale based on the following parameters:

i) Residential average unit flow rate of 280 L per capita per day;

ii) Theoretical population of 412;
iii) Peaking factor of 4.00, calculated in accordance with the Harmon formula;
iv) Total infiltration allowance of 0.05 L/s (0.1372 ha x 0.33 L/s) in accordance with the OSDG and ISTB-2018-01.

It should be noted that the above calculated peak flow of 5.39 L/s for the 99 Parkdale is lower than the previous calculated peak flow of 5.17 L/s estimated and approved as part of the July 2012 Site Plan Control Application. The calculated peak flow of 5.39 L/s was used as the design target for the purpose of sizing the proposed sanitary service lateral.

Proposed Sanitary Service Lateral Sizing

To accommodate the above design flow target of 5.39 L/s, a proposed 150 mm diameter sanitary sewer service is proposed at a minimum slope of 1.0% (refer to Drawing S1), which is sufficient to accommodate the peak design flow. The proposed 150 mm diameter sewer will provide a free-flowing capacity of 32.8 L/s. It should also be noted that the proposed theoretical peak wastewater flow of 5.39 L/s represents less than 5% of the total capacity of the 375 mm diameter sanitary sewer (based on a sewer section with the flatter slope) along Parkdale Avenue.

3.4 Summary and Conclusions

Based on the above wastewater servicing details, it is recommended that the wastewater servicing shown on the Site Servicing (Drawing S1) be implemented to provide wastewater servicing for the proposed Condominium Tower.

4.0 STORM SERVICING AND STORMWATER MANAGEMENT

4.1 Background

Runoff generated by the proposed 99 Parkdale Avenue Condominium Tower will be conveyed using the minor and major system principles as follows:

- runoff from the Condominium Tower will be collected by a series of roof drains and internal sewers that will collect runoff and discharge into the existing 300 mm diameter sewer located within the right-of-way (once detained in an internal storage tank) and subsequently to the 2100 diameter storm tunnel, and
- runoff from the surfaces adjacent to the building envelope (pavers, walkways, planting/planters, etc.) will sheet flow towards the adjacent municipal roadways. Both minor and major system contributions discharge to the Ottawa River located ±350 m downstream.

4.2 Storm Criteria

Based on the recent discussions, the main objective from the City's perspective is to ensure that the post-development peak flows delivered to the local 300 mm diameter storm sewer and 2100 diameter storm tunnel not be increased from those under the existing condition when the four

(4) parcels were occupied. Upon further discussions with the City, the following criteria was targeted for this project:

- The storm intensities for the 1:5 year and 1:100 year recurrences to be set in accordance with the Ottawa Sewer Design Guidelines;

- The allowable peak flow to be released into the minor system to be restricted based on the 1:5 year peak flow rate based on the 2012 condition. However, more recent discussions held with the City, has shown that the allowable release rate shall be set based on a C-Factor of 0.62 (refer to August 28, 2019 Email, at the back of Appendix C);

- The allowable release rate to the 300 mm diameter and 2100 mm diameter storm sewers to be set based on calculated runoff coefficient (C-Factor) and Time of Concentration (Tc) based on the 2012 condition;

- The 1:100 year post-development peak flows from the Condominium Tower to be limited to the existing 1:5 year peak flow rate. Hence, on-site storage is required. Should the on-site storage consist of a cistern/tank and the Modified Rational Method be used for sizing, the calculation should be completed assuming 50% of the allowable release rate;

- The controlled flows to be released into the existing 300 mm diameter storm sewer system located near the western edge of Parkdale Avenue; and

- Given that most of the parcel will consist of the Condominium Tower and soft landscaping, the area surrounding the building envelope (pavers, asphalt, etc.) which totals 277 m^2 can sheet flow towards the municipal ROW given its proximity to the Ottawa River.

- Given that the Site mostly consist of rooftop and grass (85%), the RVCA confirmed that the site discharge does not require any additional control measures for protection of the receiving stream (Appendix C).

Storm servicing developed for 99 Parkdale Avenue was developed to adhere with the above-noted storm criteria.

4.3 Allowable Release Rate

Storm servicing and stormwater management for the subject property is to be developed to limit the 1:100 year post-development flow from the Condominium Tower to the 1:5 year existing peak flow based on the 2012 condition. In order to evaluate the existing runoff coefficient (C-Factor), an area take-off of the four (4) properties in 2012 (refer to Appendix F1 for area take off sketch).

Table 4: Summary of Existing Surfaces

Overall Parcel (per AOL survey)		
Surface Details	**Area (m^2)**	**C-Factor**
Roofs, asphalt, laneways, sheds	949	0.90
Grass	423	0.20
TOTAL:	**1372**	**0.684**
Overall Parcel (excluding widening)		
Roofs, asphalt, laneways, sheds	914.9	0.90
Grass	410.4	0.20
TOTAL:	**1325.3**	**0.683**

Based on the above surface breakdown, (refer to Appendix F1), an existing (2012) C-Factor of 0.683 was estimated to reflect the 2012 conditions. However, given the requirements provided by the City, flows from the Condominium Tower must be retained based on a C-Factor of 0.62 (Appendix C for correspondence). Based on current topography, a calculated time of concentration (Tc) of 10.5 minutes was estimated for the front and back of the properties assuming an inlet time of 10 minutes (travelling time of 0.5 minutes, Appendix F2). Based on the calculations included in Appendix F2, an allowable peak flow of 23.2 L/s was estimated using the Rational Method. Hence, the 1:100 year post-development peak flows from the Condominium Tower must be limited to 23.2 L/s by means of retention.

4.4 Storm Servicing

The general storm and stormwater servicing constraints used to develop the detailed design for 99 Parkdale are listed in Table 5: Storm Servicing Design Criteria below.

Table 5: Storm Servicing Design Criteria

General Design Criteria
Storm sewers sized to accommodate the 1:2 year peak flows (minimum) calculated with the Rational Method and the City of Ottawa Intensity-Duration-Frequency (IDF) curves. Sewer also to be sized to convey the restricted flows from the building envelope.
Storm sewers designed based on an inlet time of ten (10) minutes, as per the Technical Bulletin ISDTB-2012-4.
Minor system storm flows to be controlled to the allowable 1:5 year peak flow based on a C-Factor of 0.62 (Appendix C). Based on the Rational Method calculations, storm flows of the Tower must be limited to 23.2 L/s.
The 1:100 year peak flows to be detained on-site by means of on-site storage designed to limit the total outflows to the allowable 1:5 year peak flow.
Sanitary maintenance holes located away from ponding areas to minimize extraneous flows. In locations where sanitary maintenance holes need to be located in ponding areas, watertight maintenance hole covers are provided.
Provide measures to ensure that site preparation and construction is in accordance with the current Best Management Practices for Erosion and Sediment Control.

4.5 Proposed Stormwater Management Solution and Calculations

4.5.1 Water Quantity

Storm servicing and stormwater management was developed to limit the 1:100 year post-development flows below the allowable peak flow of 23.2 L/s. As per the August 28, 2019 E-Mail, the areas adjacent to the building envelope totalling ±277 m^2 can sheet flow towards the municipal ROWs (Parkdale Avenue and rear Laneway). Table 6 below summarizes the various surfaces in accordance with the revised Site Plan.

Table 6: Post-Development Condition Surfaces

Area (m^2)	Type	Runoff Coefficient (C-Factor)
To Parkdale Avenue 300 mm diameter storm sewer		
1107	Building	0.90
1107		0.90
To municipal ROWs via sheet flow		
104	Walkways, pavers, etc.	0.90
173	Grass/Planters	0.60
277		0.71

It should be noted the areas tabulated above reflects the minor variance that has been submitted in order to permit the podium to be built with a zero setback to the lot line (south wall). In addition, given that 99 Parkdale Avenue is proposed to connect to 121 Parkdale Avenue (each underground level, the two podium levels and rooftop of the podium), a permanent encroachment agreement is being applied for in order for 99 Parkdale Avenue to slightly encroach (12 m^2) onto 121 Parkdale Avenue.

The Drainage and StormWater Management (Drawing DST) depicts the proposed post-development surfaces. As per the discharge criterion provided by the City, runoff from the building envelope (1107 m^2) is to be limited to 23.2 L/s (C-Factor of 0.62) up to the 1:100 year design storm while the adjacent surfaces (±277 m^2) will sheet flow to the ROWs. Based on a Tc of 10 minutes, these adjacent areas (±277 m^2 at a C-Factor of 0.71) will generate a 1:100 year peak flow of 11.76 L/s based on an intensity of 178.56 mm/hr. The overall combined 1:100 year peak flow of 33.6 L/s (23.2 L/s and 10.4 L/s) is less than the 1:100 year post-development peak flow of 36.46 L/s as reported in the approved Site Servicing Report dated July 2012 (refer to Sheet 4, Appendix D of 2012 Report).

In order to fulfill the storm discharge criterion, on-site storage is required. The Owner's representative and architect have requested that on-site storage be achieved by means of an internal storage tank, which will be part of the Building's Design Drawings completed by the Mechanical Engineer.

To quantify the storage volume requirements for the building envelope, the Modified Rational Method (MRM) was used. Given that an internal storage tank equipped with a restrictor is proposed, the MRM calculation was carried out assuming that the outflow was reduced by 50% to reflect the effectiveness of the tank when filling. This methodology has been highlighted in the June 9th, 2019 pre-consultation notes. Given that on-site detention is provided solely for the building, the C-Factor of 0.90 was not further increased for the 1:100 year calculations. The allowable peak flow calculations, and on-site storage volume calculations are summarized in Appendix F2.

Internal Storage Tank Sizing:

Based on an allowable release rate of 23.2 L/s, minimum storage of 26 m^3 (25.9 m^3) is required based on the MRM calculations (refer to Appendix F2). As noted above, the targeted peak flow used in the MRM was set to 50% of the allowable peak flow of 23.2 L/s (i.e., 11.6 L/s). Based on Drawing DST, a containment measure such as an internal storage tank with minimum storage of 26 m^3 needs to be incorporated into the building design. This internal storage tank must be designed with a custom inlet control device (ICD) sized by the mechanical engineer to release 21.61 L/s based on the maximum head differential of the storage tank. In addition, it is also recommended that the tank be equipped with an overflow drain that would allow excess runoff beyond the capacity of the tank to safely be evacuated. This safety feature is to be incorporated and designed by the Owner's mechanical engineer. Based on the calculations in Appendix F2, the difference between the peak flows between the climate change (20% above the 1:100 year) and the 1:100 year is 6.64 L/s (39.86 L/s – 33.22 L/s). Drawing DST incorporates the above-noted design features and targets that must be incorporated by the mechanical engineer during the design of the Condominium Tower.

Targeted Peak Flow Calculation and Storm Sewer Sizing:

In accordance with the OSDG, the proposed storm sewer service must be sized to convey under free flowing conditions the 1:2 year post-development peak flows (minimum level of service as per the OSDG). Given that stormwater management is provided to limit flows to the 1:5 year existing peak flow, the proposed storm sewer was designed to accommodate the greater of the 1:2 year post-development peak flow or the allowable peak flow of 23.2 L/s.

The Rational Method was used to evaluate the 1:2 year post-development peak flow from the building envelope using the following parameters:

i) Area of 1107 m^2 (0.1107 ha) for the Building Envelope;
ii) A 1:2 year intensity of 76.8 mm/hr (Tc=10 minutes); and
iii) A C-Factor of 0.90.

Based on the above parameters, the 1:2 year post-development peak flow (Qp) of 22.3 L/s was calculated. Given that the 1:100 year post-development peak flow from the building envelope must be controlled to 23.2 L/s, this targeted peak flow was used to size the proposed storm sewer service.

It is proposed that a 200 mm diameter storm sewer service be provided at 0.8% slope. The free-flowing capacity of this 200 mm diameter sewer is 30.6 L/s, thereby exceeding the 1:2 year post-development peak flow (20.8 L/s) and the allowable peak flow of 23.2 L/s.

1. In terms of the climate change event (+20% above the 1:100 year), the stormwater management calculations (Appendix F2) show that the internal storage tank should be equipped with a conveyance means to convey the overflow. Based on the difference in peak flows between the climate change and 1:100 year, this conveyance should accommodate ±6.6 L/s. Given the size of areas sheet flowing at the back to the Laneway and front onto Parkdale, the peak flows under the climate change event (20% above 1:100 year) are less than 10 L/s. Based on the slopes along the major overland system along Parkdale Avenue and rear Laneway, there is substantial fall; 1.6% for the Laneway & 1.0% for Parkdale. Given the finished floor elevation of 60.40 m and the downstream spill over elevation of 58.50 m, there is no concern with major overland flow from the surfaces sheet flowing and reaching the building envelope.

4.5.2 Sewer Connection to Municipal Storm Sewer

A review of possible storm outlets along Parkdale Avenue was carried out based on the background drawings included in Appendix B. The City of Ottawa Drawing No. 3409 (Revision 3) identifies three (3) storm sewers on Parkdale Avenue that could potentially serve as the dedicated outlet for piped minor system flows of 22.3 L/s from the building envelope. This review showed the three (3) outlets as follows; i) a 2100 mm diameter tunnelled trunk sewer, and ii) two (2) 300 mm diameter storm sewers are located within the City right-of-way directly in front of the 99 Parkdale Avenue development.

The 2100 mm diameter tunnelled storm sewer and a relatively shallow 300 mm diameter storm sewer located in the boulevard area on the west side of the street present connection challenges. Typically, the City discourages direct connections to a deep trunk storm sewer. In this case, the invert of the 2100 mm diameter tunnelled led storm is located approximately 8 m below the surface and is covered with 3-4 m of rock. As with the existing connections to the trunk, it is expected that a vertical drop structure would be required over the tunnelled storm to serve as a conveyance means. Given the complexity of the structure and the relatively small flow being added (22.3 L/s), this is considered an undesirable connection. This was corroborated during the previous Site Plan Application that was approved by the City of Ottawa in 2016.

Due to the lack of cover over the more westerly storm sewer, it is proposed that a connection be made to the deeper 300 mm diameter storm sewer at MH 5, as identified on the Drawing S1 (Servicing Plan). A review of the existing drainage area serviced by this storm sewer was undertaken to determine whether capacity exists to accommodate flows from 99 Parkdale Avenue. Figure 2 (refer to Appendix F3) presents the existing storm drainage area serviced by the storm sewer. Parking lots on the federal Tunney's Pasture Campus outlet their flows either via the surface or by catch basin connections to the two 300 mm diameter storm sewers. Based on a field investigation, it has been confirmed that a catch basin exists within the parking area site with a shallow lead that runs to the shallow Parkdale Avenue storm sewer. Drawing D-08-11 from the Utility Coordinating Committee Central Registry (Appendix B) identifies a connection to the shallow 300 mm diameter storm sewer south of the parking area access from Parkdale Avenue, which is located approximately in line with the existing parking area catch basin. Based on the review of the existing grades, approximately 0.19 ha of asphalt area and 0.35 ha of landscaped area was found to drain to the catch basin and the shallow 300 mm diameter storm sewer. The area tributary to this catch basin has been depicted on Figure 2 (Appendix F3) along with those (remaining parking and roadway areas) that drain to the three (3) roadside catch basins located on Parkdale Avenue. Based on the areas depicted on Figure 2 (Appendix F3), approximately 0.49 ha of asphalt and 0.54 ha of landscape area were found to drain to these catch basins. A review of the pipe capacity indicates that a total flow (1:2 year) of approximately ±93.6 L/s outlets to these catch basins connected to the deep 300 mm diameter storm sewer. The capacity of this storm sewer is approximately 112 L/s. Thus, the existing storm sewer has sufficient capacity to capture the 1:2 year peak flow. In addition to Figure 2, Appendix F3 also includes the storm sewer design sheets for the existing and post-development drainage condition.

Based on the above analysis, the existing 300 mm diameter storm sewer does have the free-flowing capacity to convey the 1:2 year existing design flows; however, it does not have the capacity to convey the additional 22.3 L/s of controlled site flow (sewer has a residual capacity of 18.75 L/s). Consequently, it is proposed that the catch basin located north of the Columbine Boulevard and Parkdale Avenue intersection be adjusted so that the catch basin outlets directly to MH 4 rather than the 300 mm diameter storm sewer. A 450 mm diameter storm sewer provides an outlet between MH 4 and the vertical drop structure over the 2100 mm diameter storm sewer. This 450 mm diameter storm sewer has sufficient capacity to outlet flows for the drainage area identified along with the controlled minor system flows from 99 Parkdale Avenue. By reconnecting the catch basin outlet, approximately 36.31 L/s of flow (i.e., 93.59 L/s – 57.28 L/s) will be diverted from the 300 mm diameter storm sewer and, thereby providing a residual capacity exceeding the

22.3 L/s allowable peak flow. As noted above, Appendix F3 includes the post-development storm sewer design sheet and Figure 3 (post-development drainage areas). Figure 3 identifies the rearranged drainage area boundaries while the 1:2 year post-development peak flow calculations show a total flow of 82.88 L/s which is less than the free flowing capacity of 112.34 L/s. The 200 mm diameter service conveying a controlled release flow of approximately 22.3 L/s will be outlet to MH 5 as identified on Drawing S1 included at the end of this Report.

4.5.3 Water Quality

Storm runoff that was historically generated by the four (4) parcels (2012 condition) was conveyed to the Ottawa River by means of a storm sewer while excess flows was accommodated by the major overland flow system. Both storm contributions did not include any end-of-pipe quality measure prior to discharge into the Ottawa River.

Runoff generated by the proposed 99 Parkdale Avenue condominium Tower will mostly consist of rooftops and podiums and a grass area adjacent to the building envelope. The proportion of the building envelope and grass accounts for 85% of the total parcel.

The RVCA was consulted to get advice on water quality control for 99 Parkdale Avenue. Given that 85% of the site surfaces are roofs and grass, the RVCA accepted that the site does not require additional quality measures for the protection of receiving watercourse.

4.6 Summary and Conclusions

The storm and stormwater management solutions presented in this Site Servicing Report were found to fulfill the water quantity and quality criterion presented in Section 4.2. The cistern/storage tank will need to be designed by the Owner's mechanical engineer as per the recommendations listed in Section 4.5.1 and on Drawing DST. In light of the above, it is recommended that the storm and stormwater management solution shown on the Drainage and Stormwater Management, Site Servicing, Grading and Erosion Control (Drawings DST, S1 and G1) be implemented to provide storm servicing for the proposed development.

5.0 EROSION AND SEDIMENTATION CONTROL

At the on-set of the construction of the 99 Parkdale Condominium Tower, substantial excavation will be completed for the underground garage. As a result, runoff from the site will mostly be contained in the excavation area. As such, appropriate erosion and sedimentation control measures, as outlined in the Ontario Ministry of Natural Resources (MNR) Guidelines on Erosion and Sediment Control for Urban Construction Sites, will be implemented to trap sediment on site. The following erosion and sedimentation control measures could be implemented during construction (refer to Drawing RESC for measures and notes):

- Supply and installation of a silt fence barrier, as per OPSD 219.110, if required;
- Supply and installation of filter fabric between the frame and cover of catch basins and maintenance holes adjacent to the project area during construction, to prevent sediment

from entering the sewer system. The filter fabric is to be inspected regularly and corrected as required;
- Stockpiling of material during construction is to be located offsite;
- Sandbags are to be placed blocking part of the sewer pipe in the connecting storm maintenance holes to eliminate construction debris from entering the existing storm sewer system. The sandbags are to be removed after the proposed storm sewers have been fully cleaned.

The proposed erosion control measures shall conform to the following documents:

- "Guidelines on Erosion and Sediment Control for Urban Construction Sites" published by Ontario Ministries of Natural Resources, Environment, Municipal Affairs, and Transportation & Communication, Association of Construction Authorities of Ontario and Urban Development Institute, Ontario, May 1987.
- "MTO Drainage Manual", Chapter F: "Erosion of Materials and Sediment Control", Ministry of Transportation & Communications, 1985.
- "Erosion and Sediment Control" Training Manual by Ministry of Environment, Spring 1998.
- Applicable Regulations and Guidelines of the Ministry of Natural Resources.

This report has been prepared for the exclusive use of Brigil, for the stated purpose, for the named facility. Its discussions and conclusions are summary in nature and cannot be properly used, interpreted or extended to other purposes without a detailed understanding and discussions with the client as to its mandated purpose, scope and limitations. This report was prepared for the sole benefit and use of Brigil and may not be used or relied on by any other party without the express written consent of J.L. Richards & Associates Limited.

J.L. RICHARDS & ASSOCIATES LIMITED

Prepared by:

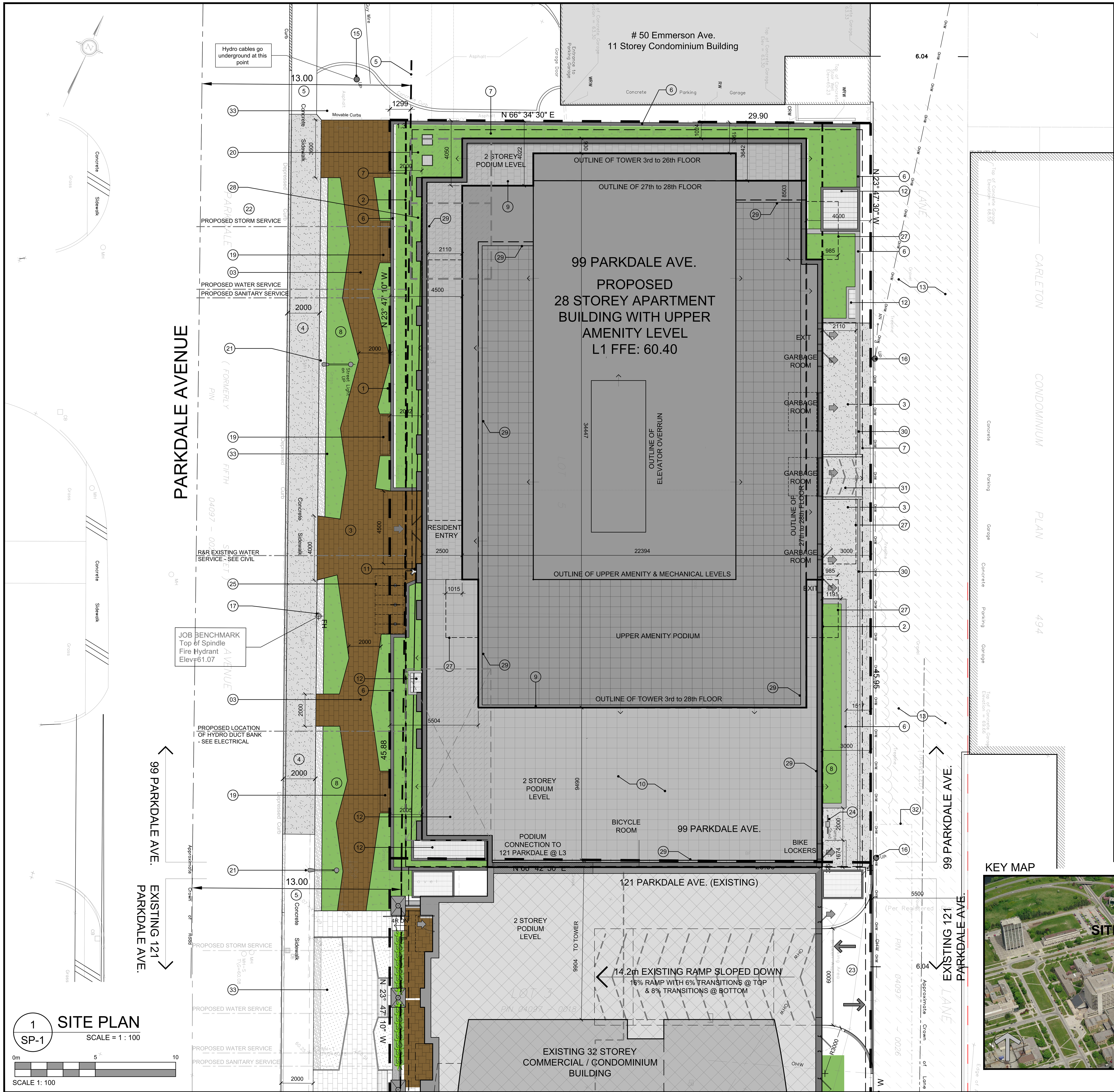
Steve Picken
Civil Designer

Reviewed by:

Lucie Dalrymple, P.Eng.
Senior Civil Engineer

Appendix A

Site Plan and Legal Plans



KEY MAP

SITE PLAN SYMBOLS

- CONCRETE UNIT PAVERS SURFACE
- CONCRETE WALK / DRIVING SURFACE
- 3rd FLOOR EXTERIOR AMENITY SPACE
- 29th FLOOR EXTERIOR AMENITY SPACE
- ASPHALT LANE WAY
- SOFT LANDSCAPING
- OVERFLOW ROOF SCUPPER
- TWO WAY VEHICLE CIRCULATION
- MAIN ENTRANCE
- SERVICE / FIRE EXIT
- PROPERTY LINE
- PROPOSED ROAD WIDENING / BUILDING SETBACKS

DRAWING NOTES

1. PROPERTY LINE
2. BUILDING SETBACKS
3. HARD SURFACE PAVING, SEE LANDSCAPE PLAN FOR PATTERN AND TYPE
4. 2000mm WIDE SIDEWALK WITH STREET CURB TO CITY OF OTTAWA STANDARDS
5. ROAD ALLOWANCE (ROW)
6. LOW PLANTER WALL
7. OUTLINE OF UNDERGROUND PARKING LEVELS
8. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
9. OUTLINE OF TOWER ABOVE
10. EXTERIOR AMENITY AT 3rd FLOOR
11. SIAMESE CONNECTION
12. AIR INTAKE / EXHAUST GRILL
13. EXISTING GRAVEL LANE WAY TO BE PAVED
14. CONCRETE WALK, WIDTH AS SHOWN
15. EXISTING OVERHEAD HYDRO LINES
16. EXISTING UTILITY POLE (BELL / ROGERS)
17. EXISTING FIRE HYDRANT RELOCATE AS REQUIRED
18. OUTLINE OF PRIVATE TERRACE ABOVE
19. SITE FURNITURE (AS PER LANDSCAPE PLAN)
20. CISTERN IN P1 PARKING LEVEL WITH ACCESS C.B.
21. EXISTING STREET LIGHT
22. PROPOSED U/G BUILDING SERVICE LINE - SEE CIVIL
23. EXISTING VEHICLE ENTRANCE RAMP TO U/G GARAGE LOCATED AT 121 PARKDALE
24. GAS PRESSURE RELEASE STATION
25. BICYCLE RACKS, SEE LANDSCAPE PLAN FOR EXACT LOCATION AND SPEC
26. ELECTRICAL VAULT BELOW
27. LINE OF L4-26 BALCONIES ABOVE
28. P1 LEVEL SERVICES & WATER ENTRY ROOM
29. 1.07M H. GLASS GUARD @ PODIUM FLOOR
30. DEPRESSED CURB AS PER CITY STANDARDS. SEE CIVIL
31. 10% SLOPED RAMP FROM GARBAGE ROOM
32. PROPOSED LOCATION OF NAT. GAS CONNECTION. SEE MECHANICAL
33. U/G HYDRO LINE. SEE SURVEY DRAWINGS

URBAN PLANNER

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LANDSCAPE ARCHITECT

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5871 Hugh Crescent
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Tel: (613) 826-0518
E-Mail: rlevstek@larocquelevstek.com

PROJECT INFORMATION

ZONING	R5B[1929] S284-h
SITE AREA	1,372.7 sq. m. (14,776 sq. ft.)

PROJECT STATISTICS

GRADE (ZONING DEFINITION)	60.50 M (geo.)
BUILDING HEIGHT	84.0 M
YARD SETBACKS - AS PER ZONING SCHEDULE	S284
LANDSCAPE OPEN SPACE (REQ'D)	30.0% (411.81 sq. m.)
PROVIDED:	50.5% (693.50 sq. m.)
AMENITY SPACE REQUIRED	6 sq.m x 238 units = 1,440 sq.m
PROVIDED:	3,329 sq.m

GROSS BUILDING - AREAS

(CITY OF OTTAWA ZONING DEFINITION)

PARKING LEVEL (P1 to P6)		0 sq. m. 000 sq. ft.
GROUND FLOOR		0 sq. m. 000 sq. ft.
2nd FLOOR		792.0 sq. m. 8,525 sq. ft.
3rd FLOOR		503.3 sq. m. 5,417 sq. ft.
4th to 26th FLOOR	23 x 577.21 sq. m. 23 x 6,213 sq. ft.	13,275.7 sq. m. 142,899 sq. ft.
27th to 28th FLOOR	2 x 506 sq. m. 2 x 5,447 sq. ft.	1,012 sq. m. 10,894 sq. ft.
29th & 30th LEVEL MECHANICAL & AMENITY PENTHOUSE		0 sq. m. 000 sq. ft.
TOTAL BUILDING AREA		15,583.1 sq. m. 167,735 sq. ft.

UNIT STATISTICS

STUDIO UNIT	06
1 BEDROOM	127
2+ BEDROOM UNIT	107
TOTAL	240

CAR PARKING

ZONING - AREA 'Z' ON SCHD. 1A

REQUIRED		
RESIDENCE	- NOT REQUIRED	0
VISITOR	- 0.1 PER DWELLING UNIT (AFTER 12 UNITS)	23
TOTAL		23
PROVIDED		
RESIDENCE	- 0.76 PER UNIT (240 UNITS)	184
VISITOR	- 0.1 PER DWELLING UNIT (AFTER 12 UNITS)	23
TOTAL		207

NOTE:
2 TYPE 'A' & 2 TYPE 'B' B/F SPACES PROVIDED. (3 REQUIRED TOTAL)
78 PROVIDED STALLS (38%) ARE REDUCED SIZE

BICYCLE PARKING

REQUIRED		
RESIDENCE	- 0.5 PER UNIT (240 UNITS)	120
PROVIDED		
INTERIOR		248
EXTERIOR		6
TOTAL		254

LOT COVERAGE

PAVED SURFACE =	103.0 sq. m.	7.5%
BUILDING FOOTPRINT =	1,120.5 sq. m.	81.6%
LANDSCAPE OPEN SPACE :	149.2 sq. m.	10.9%
TOTAL =	1,372.7 sq. m.	100.0%
TOTAL LANDSCAPED AREA:		
GROUND FLOOR =	149.2 sq. m.	10.9%
3rd FLOOR PODIUM =	248.9 sq. m.	18.1%
AMENITY ROOF TERRACE =	295.4 sq. m.	21.5%
TOTAL =	693.5 sq. m.	50.1%

AMENITY SPACE

PRIVATE BALCONIES =	2,179.0 sq. m.
PRIVATE PATIOS =	122.0 sq. m.
1st FLOOR COMMUNAL INTERIOR =	320.2 sq. m.
3rd FLOOR COMMUNAL INTERIOR =	69.3 sq. m.
3rd FLOOR COMMUNAL EXTERIOR =	229.7 sq. m.
29th FLOOR COMMUNAL INTERIOR =	170.0 sq. m.
29th FLOOR COMMUNAL EXTERIOR =	295.4 sq. m.
TOTAL =	3,385.6 sq. m.
(TOTAL COMMUNAL) =	1,084.6 sq. m.
REQUIRED - 6.0M² PER UNIT (240) =	1,440.0 sq. m.
REQUIRED COMMUNAL @ 50% =	720.0 sq. m.

LEGAL DESCRIPTION

TOPOGRAPHICAL PLAN OF THE

LOTS 4, 5 and 6
EAST PARKDALE AVENUE
(Formerly Firth Street)
REGISTERED PLAN 41
CITY OF OTTAWA
Prepared by Annis, O'Sullivan, Vollebekk Ltd.
&
TOPOGRAPHICAL PLAN OF THE LANE
(BETWEEN FORWARD AVE. & PARKDALE AVE.)
REGISTERED PLAN 41
CITY OF OTTAWA
Prepared by Annis, O'Sullivan, Vollebekk Ltd.

PROJECT DEVELOPER

BRIGIL Construction
98, Lois street
Gatineau, Qc, J8Y 3R7
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Fax: (819) 243-5126
E-Mail: brigil@brigil.com

SURVEYOR

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

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.
- DETAIL NUMBER / TITLE / SCALE / DETAIL REFERENCE PAGE / DETAIL CROSS REFERENCE PAGE

GENERAL NOTES:

A. REFER TO TYPICAL ASSEMBLIES SHEET FOR WALL, PARTITION, ROOF CEILING & FLOOR TYPES.
B. FOR DOOR TYPES AND HARDWARE REQUIREMENTS REFER TO DOOR SCHEDULE ON A900 SERIES.
C. ALL INTERIOR DIMENSIONS ARE TAKEN FROM THE FACE OF DRYWALL.
D. ALL EXTERIOR DIMENSIONS ARE TAKEN FROM THE FACE OF CLADDING.
E. ALL EXTERIOR WALLS ARE TO BE TYPE 'W1' UNLESS NOTED OTHER WISE.
F. ALL INTERIOR PARTITIONS ARE TO BE TYPE 'P1' UNLESS NOTED OTHER WISE.

No.	DESCRIPTION	DATE
9		
8		
7		
6		
5	ISSUED FOR REVISED SPC - R2	Feb.07, 20
4	ISSUED FOR SITE PLAN CONTROL	Oct. 22, 19
3	ISSUED FOR CONSULTANT COORDINATION	Oct. 10, 19
2	ISSUED FOR REVISED LAYOUT	July 16, 19
1	ISSUED FOR DESIGN CONCEPT	Ap. 08, 19

REVISIONS:

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

NORTH ARROW:

CLIENT:

BRIGIL

ARCHITECT:

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

PROJECT TITLE:

99 PARKDALE

OTTAWA ONTARIO

SHEET TITLE:

SITE PLAN

DRAWN: RV	CHECKED: R.L.A.
SCALE: 1:100	SHEET No. SP-1
PROJECT No. 1918	

D07-12-19-0176

PAPER SIZE: ISO Full Bleed B1 (707.00 X 1000.00 MM) PLOT DATE: Friday, February 07, 2020 PLOT SCALE: 1:1 PEN STYLE: 0-RLA-MASTER-100%.ctb F:\2019\1918 - 99 Parkdale - Dumaurier (Brigil)\01_Design Development\1918 SP-1 Site Plan 2020 01 17.dwg

#18067

TOPOGRAPHICAL PLAN OF

LOTS 4, 5 AND 6
EAST PARKDALE AVENUE
(FORMERLY FIFTH STREET)
REGISTERED PLAN 41
CITY OF OTTAWA

Prepared by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 125

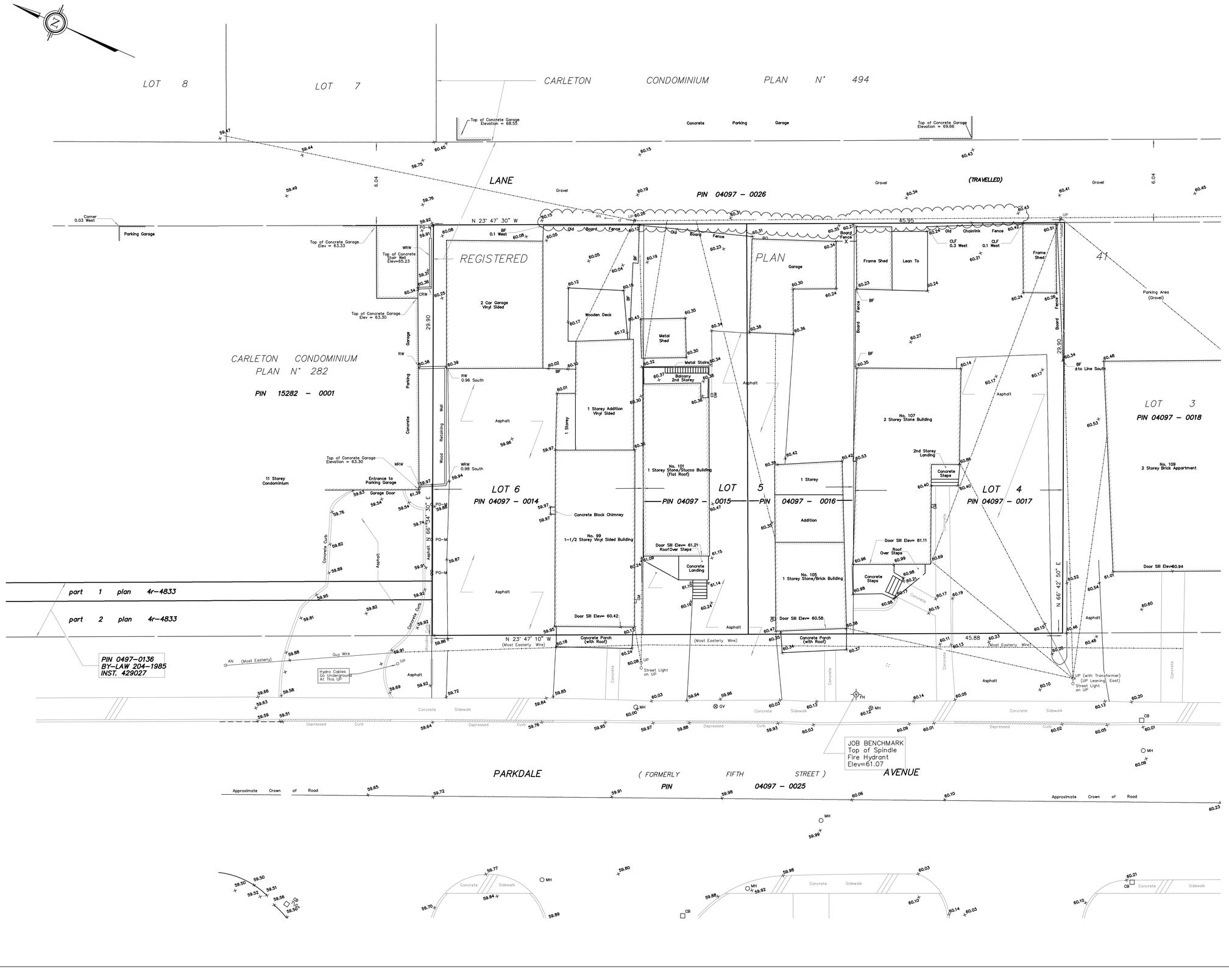
5.0 3.75 2.5 1.25 0 2.5 5 Metres

Metric

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

Date

Edward M. Lancaster, O.L.S.



Notes & Legend

	=	Deciduous Tree
FH	=	Fire Hydrant
MH	=	Maintenance Hole (Unidentified)
OHW	=	Overhead Wires
CB	=	Catch Basin
GM	=	Gas Meter
CLF	=	Chain Link Fence
BF	=	Board Fence
PO–M	=	Metal Pole
UP	=	Utility Pole
AN	=	Anchor
+65.00	=	Location of Elevations
C/L	=	Centreline
	=	Property Line
	=	Tree Line
WRW	=	Wood Retaining Wall
CRW	=	Concrete Retaining Wall

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

Bearings are MTM grid bearings, derived from simultaneous GPS observations and are referred to the Central Meridian of Zone 9 of the Ontario Coordinate System, Longitude 76°30' West (MTM NAD-83).

SITE AREA = 1372.7 m²

BOUNDARY INFORMATION DERIVED FROM FIELD SURVEY, REGISTRY OFFICE AND OFFICE RECORDS.

ELEVATION NOTES

1. Elevations shown are referred to 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.
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Email: Nepean@aovltd.com
Ontario Land Surveyors

Job No. 11850–11 Urbandale Corporation Lt 4 5 6 Plan 41 T CRO

TOPOGRAPHICAL PLAN OF THE

LANE (Between Forward Avenue and Parkdale Avenue) REGISTERED PLAN 41 CITY OF OTTAWA

Prepared by Annis, O'Sullivan, Vollebekk Ltd.

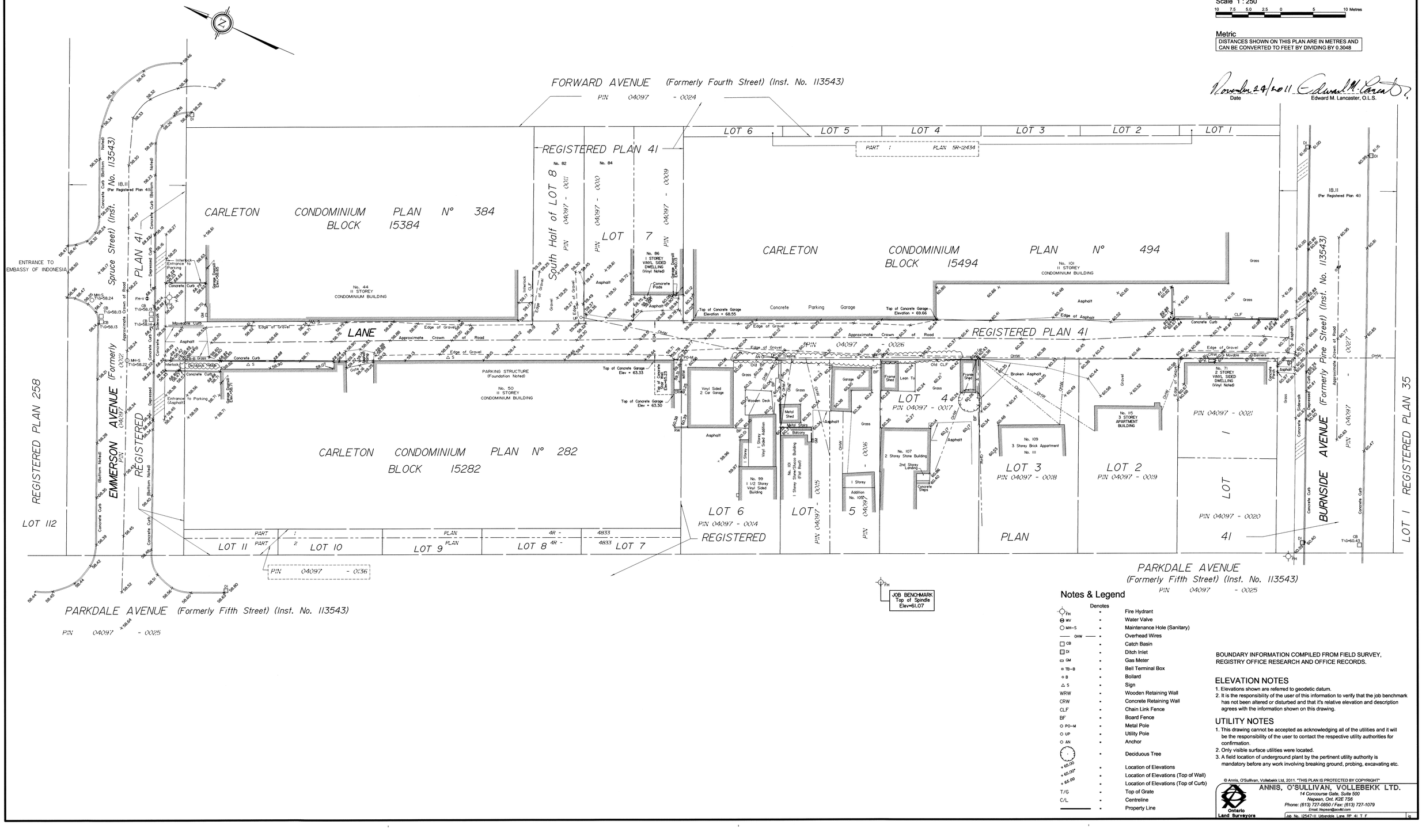
Scale 1 : 250

10 7.5 5.0 2.5 0 5 10 Metres

Metric

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

November 24/2011 — Edward M. Lancaster
Date — Edward M. Lancaster, O.L.S.



Notes & Legend

Denotes		
FH	-	Fire Hydrant
WV	-	Water Valve
MH-S	-	Maintenance Hole (Sanitary)
OHW	-	Overhead Wires
CB	-	Catch Basin
DI	-	Ditch Inlet
GM	-	Gas Meter
TB-B	-	Bell Terminal Box
B	-	Bollard
S	-	Sign
WRW	-	Wooden Retaining Wall
CRW	-	Concrete Retaining Wall
CLF	-	Chain Link Fence
BF	-	Board Fence
PO-M	-	Metal Pole
UP	-	Utility Pole
AN	-	Anchor
	-	Deciduous Tree
+65.00	-	Location of Elevations
+65.00	-	Location of Elevations (Top of Wall)
+65.00	-	Location of Elevations (Top of Curb)
T/G	-	Top of Grate
C/L	-	Centreline
	-	Property Line

BOUNDARY INFORMATION COMPILED FROM FIELD SURVEY, REGISTRY OFFICE RESEARCH AND OFFICE RECORDS.

ELEVATION NOTES

1. Elevations shown are referred to 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.
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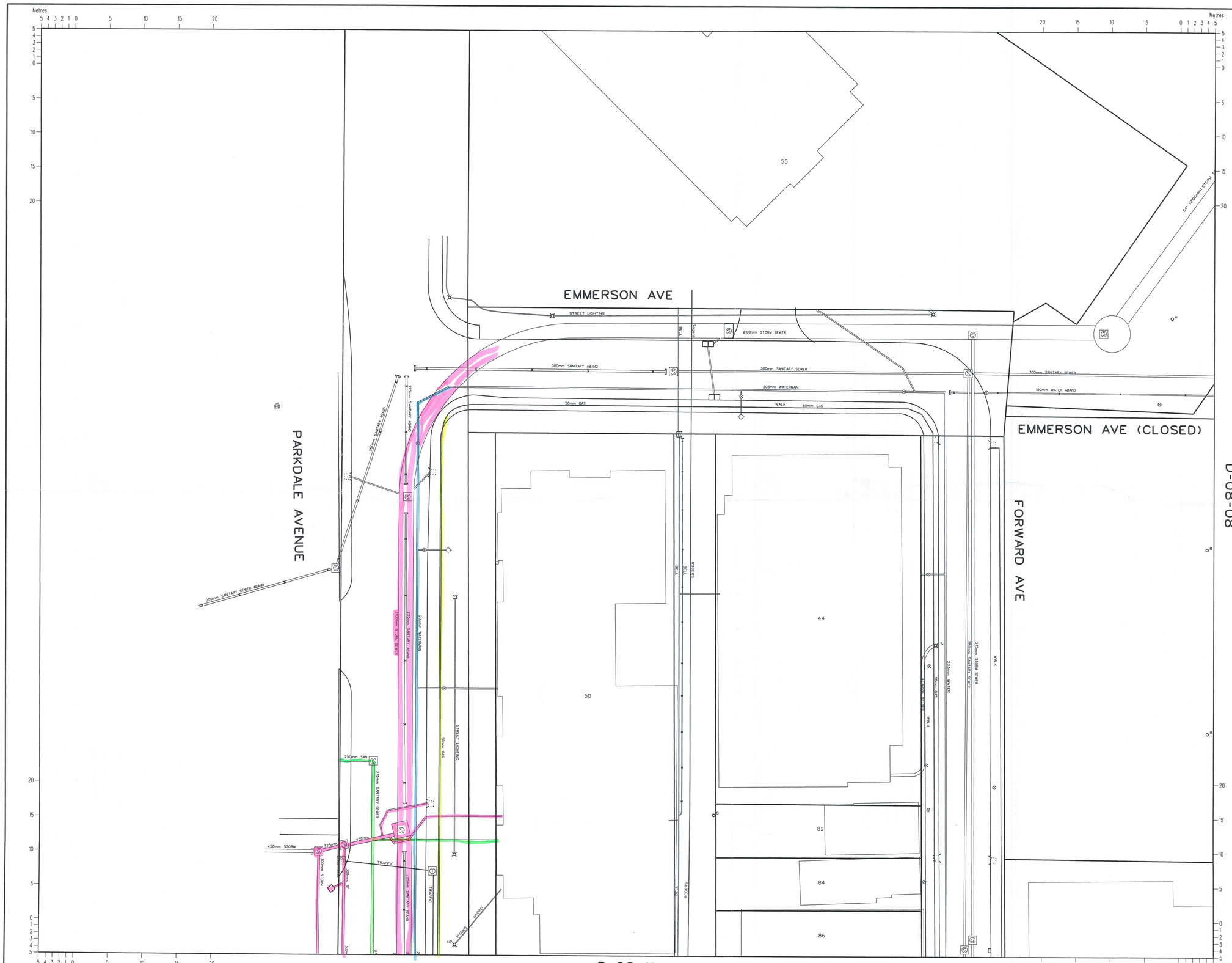
Ontario Land Surveyors

Job No. 12547-11 Urbandale Lane RP 41 T. F — 1/1

Y:\2011\12547-11\FINAL\12547-11 Urbandale Lane RP 41 T F.DWG, 24/11/2011 4:47:48 PM

Appendix B

Copy of Background Drawings



REVISIONS / RÉVISIONS	DATE	BY
3409 - Parkdale/Emmerson (Feb, 2005) WM/Sewer/Road rev. on Parkdale & Emmerson	June 2005	DC
REDRAWN FROM VOIDED UTILITY PLAN D-08-07	JULY 2007	DC
3317 - FORWARD/HINCHEY/LYNDALE (200 SEWER,WATER,ROAD FROM CONSTRUCTION. NOTES	DEC 2009	DC
ENBRIDGE-EGDOB006 (JAN, 2008) GAS ADDED TO FORWARD AVE	JAN. 2010	KJ

LEGEND

- Poles: Rogers, Bell, Hydro, Utility, Hydro One, Flag
- Poles w/ Light Standards: Bell, Hydro, Hydro-Bell, Traffic, Utility
- Manholes-City: Sanitary,Storm,Water, Catchbasin, Generic
- Manholes-Utility: Bell,Hydro,Traffic,Allstream, Atria, PWGSC, Group Telecom, Rogers, Street Lighting
- Catch Basins: Heavy Duty, Standard, Curb Inlet, CI for CBMH, Ditch Inlet, Rear Yard, Wing Wall
- Pedestals: Allstream, Atria, Bell, Hydro, Gas, Group Telecom, Rogers, Telus, Videotron
- Hand Holes: Allstream, Atria, Group Telecom, Hydro, Traffic, Streetlighting
- Markers: Bell, Gas, Hydro, Rogers
- Bell: Bell Dip, Bell Panel, Guy Wire, Telephone Booth
- Gas: Meter, Valve, Regulator
- Hydro: Thermocouple, Transformer, Tower, Hydro One Tower
- Streetscape: Bus Shelter, Decorative Light, Parking Meter, Planter Box
- Traffic: Connect Box, Disconnect Box, Ground Rods V&H, Signal
- Water : Fire Hydrant, Water Valve, Wall Hydrant
- Pipe: Sewer, Water, Gas
- Conduit, Ducts, Lateral
- Street Lighting Cable
- Abandoned Conduit / Duct / Pipes with Endcap
- Culvert
- Reducer
- Rogers Power Supply
- Property Line

CAUTION/ATTENTION

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Property lines were compiled from plans and documents recorded in the Land Registry System and are for indexing purposes only.

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

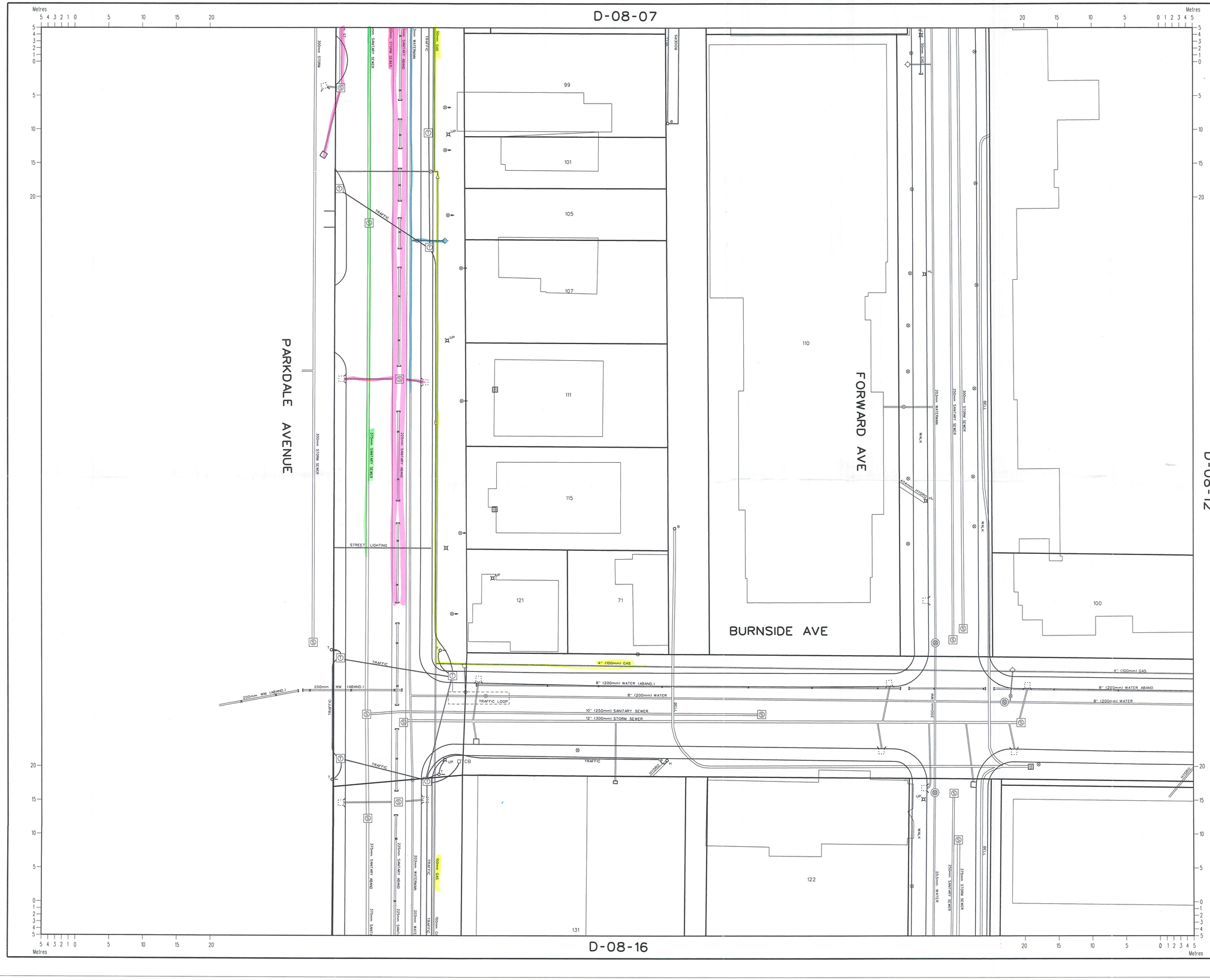
Ottawa

Department of Public Works and Services / Services et Travaux publics
Infrastructure Services Branch / Direction des services d'infrastructure
Infrastructure Management Division / Division de la gestion de l'infrastructure
100 Constellation Cres., 6th Floor East / 6ème Étage Est, Ottawa, ON K2G 6J8

OTTAWA UTILITY COORDINATING COMMITTEE
CENTRAL REGISTRY
COMITÉ DE COORDINATION DES SERVICES PUBLICS D'OTTAWA
ENREGISTREMENT CENTRAL

UTILITY COORDINATING COMMITTEE — UCC Ottawa CCSP — COMITÉ DE COORDINATION DES SERVICES PUBLICS

N. SCHEPERS, P.Eng. DCM, ISCS	W. NEWELL, P. Eng. DIRECTOR, INFRASTRUCTURE SERVICES
C. COLAIACOVO MANAGER, BUSINESS & TECHNICAL SERVICES	R. ZORGEL COORDINATOR, INFORMATION CENTRE
PRODUCED BY: UCC MAPPING STAFF	SHEET NUMBER D-08-07
SCALE: 1:250	



REVISIONS / RÉVISIONS	DATE	BY
3409 - Parkdale/Emmerson (Feb. 2005) WM/Sewer/Road rev. on Parkdale	JUNE 2005	DC
3080 - BURNSIDE (SEPT 1999) SEWER, WATER, ROAD REVISED	JUNE 2005	DC
REDRAWN FROM VOIDED UTILITY PLAN D-08-11	JULY 2007	DC
3327 - FORWARD/MARCHEY/LYNDALE (2006) SEWER,WATER,ROAD FROM CONSTRUCTION NOTES	DEC 2009	DC
ENBRIDGE-EC0080006 (JAN. 2008) GAS ADDED TO FORWARD AVE	JAN. 2010	KJ

LEGEND

- Poles: Rogers, Bell, Hydro, Utility, Hydro One, Flag
- Poles w/ Light Standards: Bell, Hydro, Hydro-Bell, Traffic, Utility
- Manholes-City: Sanitary,Storm,Water, Catchbasin, Generic
- Manholes-Utility: Bell,Hydro,Traffic,Allstream, Atria, PWGSC Group Telecom, Rogers, Street Lighting
- Catch Basins: Heavy Duty, Standard, Curb Inlet, CI for CBMH Ditch Inlet, Rear Yard, Wing Wall
- Pedestals: Allstream, Atria, Bell, Hydro, Gas, Group Telecom, Rogers, Telus, Videotron
- Hand Holes: Allstream, Atria, Group Telecom, Hydro, Traffic, Streetlighting
- Markers: Bell, Gas, Hydro, Rogers
- Bell: Bell Dip, Bell Panel, Guy Wire, Telephone Booth
- Gas: Meter, Valve, Regulator
- Hydro: Thermocouple, Transformer, Tower, Hydro One Tower
- Streetscape: Bus Shelter, Decorative Light, Parking Meter, Planter Box
- Traffic: Connect Box, Disconnect Box, Ground Rods V&H, Signal
- Water : Fire Hydrant, Water Valve, Wall Hydrant
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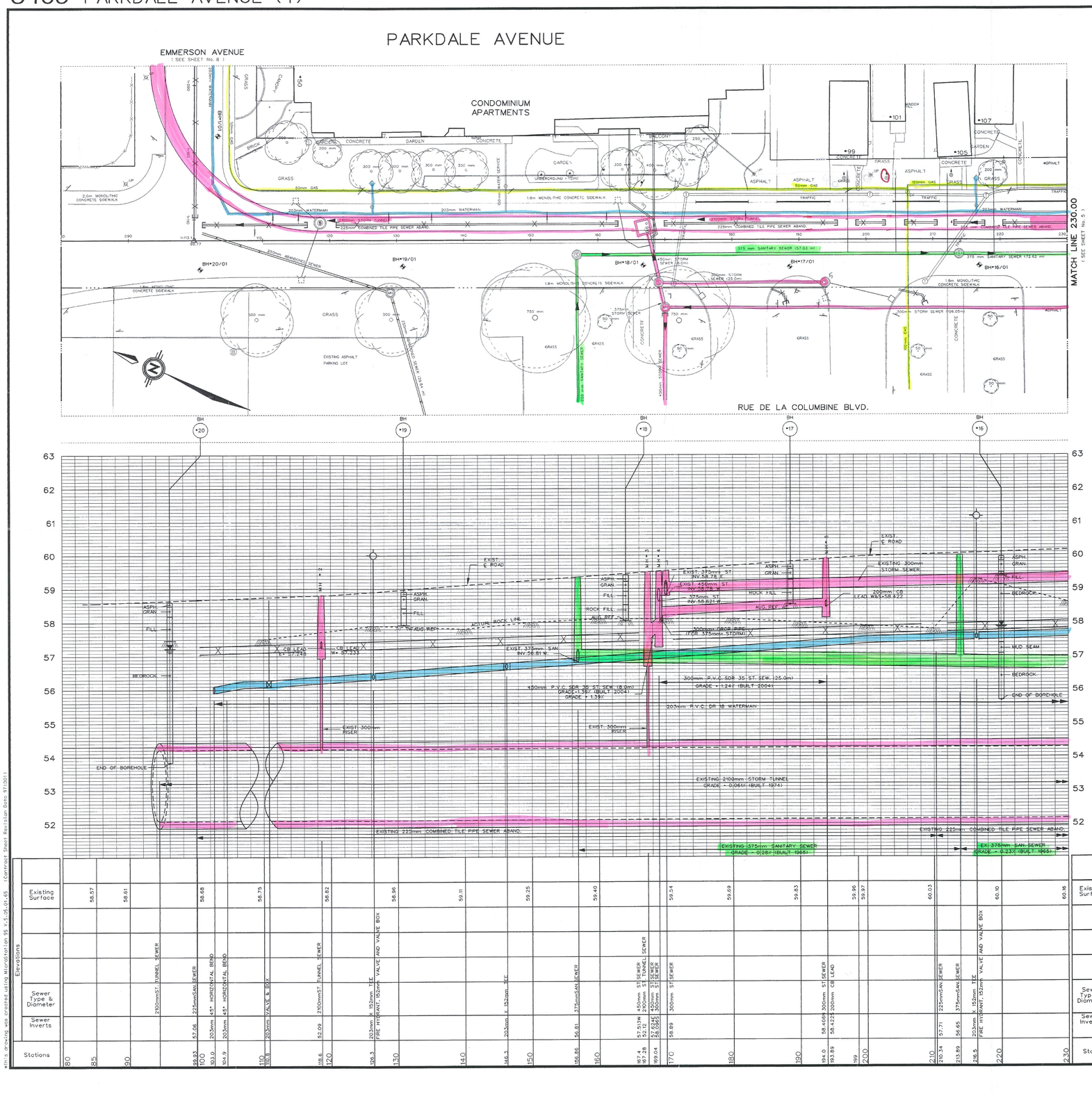
PRODUCED BY: UCC MAPPING STAFF	SHEET NUMBER D-08-11
SCALE: 1 : 250	

3409 PARKDALE AVENUE (4)



Stations	Sewer Type & Diameter	Sewer Inverts	Existing Surface
80			58.57
85			58.61
90	2100mmST. TUNNEL SEWER		
99.83	225mmSAN.SEWER	57.08	58.68
100			
103.0	203mm 45° HORIZONTAL BEND		
104.9	203mm 45° HORIZONTAL BEND		
110			58.75
113.1	203mm VALVE & BOX		
118.6	2100mmST. TUNNEL SEWER	52.09	
120			58.82
126.3	203mm X 152mm TEE		
	FIRE HYDRANT, 152mm VALVE AND VALVE BOX		58.96
130			
140			59.11
146.3	203mm X 152mm TEE		
150			59.25
156.86	375mmSAN.SEWER	56.81	
160			59.40
167.4	450mm ST SEWER	57.513W	
167.28	2100mm ST TUNNEL SEWER	52.12	
	450mm ST SEWER	57.524E	
169.04	2100mm ST TUNNEL SEWER	52.265	
170			59.54
	300mm ST SEWER	58.89	
180			59.69
190			59.83
194.0	300mm ST SEWER	58.460S	
193.89	200mm CB LEAD	58.422S	
199			59.96
200			59.97
210			60.03
210.34	225mmSAN.SEWER	57.71	
213.89	375mmSAN.SEWER		
216.5	203mm X 152mm TEE	56.65	
	FIRE HYDRANT, 152mm VALVE AND VALVE BOX		60.10
220			
230			60.16

Elevations

Revisions:

No.	Date	Description	Drawn By	Approved By
1	02/28/2003	ISSUED FOR APPROVAL	MJD	AG
2	06/16/2003	ISSUED FOR CIRCULATION	MJD	AG
3	08/15/2003	ISSUED FOR TENDER	MJD	AG

Design:

Designed By: ALAIN GRÉGOIRE P.ENG.	Date	Checked By: JO-ANNE MOORE P.ENG.	Date
Survey Detail By:	Date	Field Checked By	Date
Drafting By: MICHAEL DREW	Date	Checked By: ALAIN GRÉGOIRE P.ENG.	Date

Construction Services Manager
WAYNE NEWELL P.ENG.

Construction Type: Sewer, Water, Traffic, Sidewalk, Road.	Inspector: Randy Cormier
Work Commenced: April 2004	Project Manager: Reg Rehbein & Richard Holder
Work Completed: September 2004	Field Book *
Contractor: Greenbelt Const.	Date: February 2005
Drafting Revisions: Randy Cormier	Date: Feb. 05 / Checked By: Richard Holder

As-Built Notes:

1. Soil information taken from : Neil Levac File Ref: 01284
2. This plan supercedes (in whole or in part) plan *
3. While illustrations and utilities shown are taken from the best available information, they cannot be guarantees.
4. The actual rock line was recorded during construction of the existing Water and Sewers.
5. Borehcles taken prior to construction.
6. See typical cross sections for road structure material depths.
7. Ministry of Environment Approval * Sewer / Water

DELCAN

Legal Survey Notes:

Boundary information shown hereon has been compiled and calculated from Teranet data and not based on an actual survey.

Distances shown to survey monuments are for reference purposes only. Survey monuments may not define property boundaries.

THIS IS NOT A PLAN OF SURVEY

This plan was compiled from plans and documents recorded in the Land Registry System and has been prepared for property indexing purposes only.

Ottawa

Transportation, Utilities and Public Works
Infrastructure Services Branch
110 LAURIER AVENUE WEST, OTTAWA, ONTARIO, K1P 1J1

Rosemarie Leclair	Richard Hewitt, P.Eng.
General Manager	Branch Director

PARKDALE AVENUE

PLAN AND PROFILE
STA. 80 TO STA. 230

Contract No:	Survey Books:	Scales: (See note)	Plan No:
02C3409		HOR. 1:250 VERT. 1:50	3409 Sheet 4 of 9

File name: 3409p4.dgn
References: 3409b.dgn

*This drawing was created using Microstation SS V.5.05.01.65 (Contract Sheet Revision Date: 97100)

Appendix C

Pre-consultation notes and
Correspondences

Pre-application Consultation Meeting Minutes
Address: 99 Parkdale Avenue
Formal Pre-consultation File No.: PC2019-0130
Date: Thursday June 6, 2019, 3:00pm – 4:00pm
Location: Room 4105E, City Hall, 110 Laurier Ave W
City Contact: Ann O'Connor

City of Ottawa Staff Present:
Ann O'Connor – File Lead, Planner, Central Development Review
Christopher Moise – Urban Designer
Shawn Wessel – Infrastructure Project Manager
Mike Giampa – Transportation Project Manager
Mark Gordon – Planning Student

Invitees Present:
Rod Lahey – Rod Lahey Architecture
Jean-Luc Rivard – Brigil
Tim Moore – Brigil
Philip Thilbert – Project Manager
Marc Rivet – Planner, J.L. Richards & Associates Limited

Introductions and Acknowledgements

- Round table introductions

- Acknowledgement that no members of the Mechanicsville Community Association Representative have signed an NDA. Members of the Hintonburg Community Association were invited but did not attend.

Overview of Proposal (Rod Lahey)

- The property at 99 Parkdale is currently vacant. The subject property is located on the east side of Parkdale Avenue, between Burnside and Emmerson Avenues. It is across from Tunney's Pasture.

- The property abutting 99 Parkdale to the south is municipally known as 111 Parkdale but referred to by the applicant's team as 121 Parkdale. This site is currently undergoing construction to build a 32-storey mixed-use building. At this point, the 6-level underground parking garage and up to the 24th floor has been constructed.

- Since 99 Parkdale was rezoned in 2012 and since the SPC approval in 2013, there is a new property owner and new architect working on the project. The applicant identified that the proposal involves minor deviations from the zoning schedule 284 to accommodate a re-design.

- There is no height increase proposed (neither in metres nor in the number of storeys).

- There is an increase in the number of dwelling units. There are now 9 dwelling units per floor proposed, which is an increase from the previous approvals.

- There are a number of shared services and amenities proposed with 121 Parkdale:
    - Vehicular access to a 6-storey underground parking lot is proposed from an existing ramp on the abutting property to the south, 121 Parkdale Ave. This ramp is accessed from the City lane to the east.

    - The underground parking lot at 99 Parkdale will connect to the already-constructed 6-storey parking garage under 121 Parkdale.

    - A 2-storey podium at 99 parkdale is proposed to connect internally to the already-constructed 2-storey podium at 121 Parkdale. This podium will primarily be used by commercial uses that face Parkdale, as well as the lobby for the residential component.

    - Above the 2-storey podium will be a roof terrace, to be shared by both 99 Parkdale and 121 Parkdale.

- The two towers (at 99 and 121 Parkdale) have approximately 18m separation distance.

- The tower at 99 Parkdale is approximately 2.8m from the northern property line, which is slightly further away than the previously approved design.

- There is a desire for the owner to begin construction in the fall. There is also a desire to seek compliance for zoning changes through a Minor Variance application with the Committee of Adjustment rather than through a Minor Rezoning application with Planning Committee and Council. The reason CofA is preferred, is because the process takes less time.

Preliminary Comments from the City

Planning Comments (Ann O'Connor)

- Based on the current proposal, the following are required:
    - Official Plan Amendment
        - The proposal is not compliant with setbacks and separation distances in the Scott St SP.
            - The northern interior side yard setback does not meet the minimum required 11.5m for the tower portion.
            - The separation distance between the two towers at 99 Parkdale and 121 Parkdale does not meet the required 23m separation distance.
            - The tower portion must be setback a minimum of 3.5m from the face of the podium along Parkdale.
        - There may also be other areas of non-compliance, which can only be identified once more information is provided.

    - Major Zoning By-law Amendment
        - The existing zone is R5B[1929] S284-h. This is a residential zone, which does not permit the proposed mixed-use building with commercial uses at-grade. A major rezoning would be required to add the proposed non-residential uses.
        - The changes proposed to the zoning schedule as well as any other issues of non-compliance may be addressed through this application.

    - Site Plan Control, New, Complex, Non-Rural application.
        - The SPC approval (from April 18, 2013 plus extensions) lapsed in January 2019. As per the new SPC procedures, since the SP was approved more than 3 years ago, any future development would not be a revision; it would be 'new' complex site plan application.
        - Assuming that the soft and hard servicing is between $50,000-$300,000, the fee for this application is: $37,216.89. See the City's fee schedule online for more information.

    - Formal Review at the Urban Design Review Panel (UDRP) during the Site Plan Control application.

- The property is designated "Mixed-Use Centre" in Schedule B of the Official Plan.

- The properties are subject to the Scott Street Secondary Plan (SP) and Community Design Plan (CDP). The existing zoning schedule was approved prior to the approval of the Scott Street SP and CDP. Any change to the zoning

schedule requires compliance with these policies. The proposal does not conform with the SP and would require an OPA.

- Schedule A – Land Use designates the site “Mixed-Use Centre”

- Schedule B – Maximum Building Heights designates the site as “Height Limit Varies as per Existing Zoning”

- Section 4.1.2(3) requires that: “Tower portions of high-rise buildings will have minimum setbacks from rear and interior lot lines of 11.5m except where the high-rise building abuts a mid-block connection, the setback may be reduced to 3.5m.” Therefore, in this case, while the rear yard setback may be reduced to 3.5m (because it abuts a mid-block connection), the northern interior side yard setback is still required to be 11.5m.

- Section 4.1.2(3) also states that reductions to these setbacks may be permitted provided that 4.1.2(4) can be met. Policy 4 is not met because the tower portions of the high-rise buildings are not staggered from each other. To the north, there is an 11-storey high-rise residential building.

- Section 4.1.2(4) also requires that 23m separation distance be provided between the two mixed-use buildings proposed to face each other located on 99 Parkdale and 121 Parkdale.

- Compliance with all other Sections of the SP is also required. For example:
  - The tower portion must be setback a minimum of 3.5m from the face of the podium along Parkdale Avenue (Section 4.1.2(6)). This is distance is not illustrated on the current designs.
  - Information on floor plates are also required to ensure compliance (Section 4.1.2(5)).
  - Information on whether there is at least a 1m front yard setback from the required road widening provided to ensure compliance (Section 4.1(3)).
  - Information on the whether the tower portions have blank facades and information on the percentage of the podium façade facing Parkdale is occupied by windows and doors (Section 4.1(8)).
  - Etc.

- The property is zoned R5B[1929] S284-h – Residential Fifth Density, Subzone B, Exception 1929, Schedule 284, subject to a holding provision
  - A Major ZBLA would be required to develop a mixed-use building.

- At-grade non-residential uses can be considered by Planning Services. While in the past commercial was not encouraged, if there is consideration of small-scale commercial uses to create an active streetscape, further discussion is appropriate.

- Other modulations in the building massing, resulting in changes to the zoning schedule, can be discussed further.

- Further information about the areas of non-compliance will be outlined by the applicant moving forward.

- There are a number of applicable design guidelines/other policies for this site and proposal:
  - Urban Design Guidelines for High-Rise Towers. Particular attention should be given to these recently Council-approved guidelines.
  - Tunney's Pasture Master Plan
  - Tunney's Pasture LRT connectivity study
  - Solid Waste Collection Guidelines
  - Consider the bird friendly design guidelines from Toronto

- The properties are located within a "Design Priority Area" as the property is located in the Tunney's Pasture Mixed Use Centre. The proposal will be required to attend a Formal Review with the UDRP.

- Section 37 must be addressed in the application submission. If the GFA is increasing, additional contributions may be required. What was approved as Section 37 components through the original approval may no longer be appropriate.

- Comments on the current proposal and approach:
  - A significant amount of design direction is provided for this property within existing City policies and guidelines. Please refer to these policies in the re-design.

  - Incorporate larger separation distances between the property to the north and the tower at 121 Parkdale.

  - It would be valuable for the applicant's team to model the surrounding context to illustrate the proposal's relationship to the existing built forms and abutting context. The proposal can then be put into the model, and the massing can be adjusted to respond to this context. This will be particularly helpful in understanding the appropriate separation distances to the north and south.

- Illustrate the road widening (26m) on all plans.

- Illustrate the building located on the lot abutting 99 Parkdale to the north on plans for 99 Parkdale. The yard setbacks for this abutting tower should be included in the survey.

- Address the at-grade condition between the proposed building and Parkdale Ave. This involves the podium height, the type of uses, glazing, rhythm of the streetscape, landscaping, etc.

- Address waste management. Provide clarity on the proposed access to and use of the rear lane for garbage and recycling purposes.

- Address emergency vehicle access. The laneway may be too narrow, therefore, identify how such large emergency vehicles will access the site.

- Address site and ROW landscaping. Providing tree canopy along the street and soft-landscaping will be an important part of the public realm interface.

- Address the pedestrian and cycling connections. Easily accessible and secure bicycle parking is a priority.

- Address how to make the development accessible and sustainable.

Urban Design Comments (Christopher Moise)

- A formal review by the Urban Design Review Panel (UDRP) is required.

Infrastructure Comments (Shawn Wessel)

- Infrastructure
  - Parkdale Ave.
    - 203 mm dia. PVC Watermain (c. 2004) is available
    - 375 mm dia. Conc. Sanitary Sewer (c. 1964) is available, which drains to Interceptor Sewer.
    - 2100 dia. mm Conc. Central North Hintonburg Storm Trunk Sewer (c. 1974) is available, which Outlets to the Ottawa River at Sir. John A Macdonald Blvd.

  - Burnside Ave.
    - 203 mm dia. PVC Watermain (c. 1999) is available
    - 250 mm dia. PVC Sanitary Sewer (c. 1999) is available, which connects to Parkdale Ave. and drains to Interceptor Sewer.

- Please note: Applicant to contact Rideau Valley Conservation Authority (RVCA) for possible restrictions due to quality control. Provide correspondence in Report.

- The following apply to this site and any development within a separated sewer area:
  - Total (San & Stm) allowable release rate will be 5 year pre-development rate if:
  - Not within a partially separated sewer area or sewer pipe is newer than 1970,
  - Coefficient (C) of runoff will need to be determined as per existing conditions but in no case more than 0.5,
  - TC = 20 minutes or can be calculated
  - TC should be not be less than 10 minutes, since IDF curves become unrealistic at less than 10 min.,
  - Any storm events greater than 5 year, up to 100 year, and including 100 year storm event must be detained on site.,
  - Two separate sewer laterals (one for sanitary and other for storm) will be required.

- Please note:
  - Foundation drains are to be independently connected to sewermain (separated or combined) unless being pumped with appropriate back up power, sufficient sized pump and back flow prevention.

  - Roof drains are to be connected downstream of any incorporated ICD within the SWM system.

- Boundary Conditions will be provided at request of consultant after providing Average Daily Demands, Peak Hour Demands & Max Day + Fire Flow Demands

- Other:
  - Environmental Noise Study is required due to within 100m proximity of the following:
    - Parkdale Ave
    - Burnside Ave.
    - Forward Ave.
    - Columbine Dwy
    - Emmerson Ave.

  - Stationary Noise Study – consultant to speak to this in their report as per City NCG and NPC 300 Guidelines.

  - Shadow Study required for this proposal.

- Wind Study is required for this proposal.

- Hydro Ottawa UG Expansion has started work in this area on Parkdale and Colombine Drwy including paving curb to curb. with end date of 06/28/19. Location listed as: 104 Parkdale Ave, Ottawa, Ontario, K1A to 45.409104, -75.734343 (Closest Street); Colombine Drwy, Ottawa, Ontario, K1Y via Parkdale Ave & Colombine Drwy, Ottawa, Ontario, K1Y. Listed on Envista

- Bell Canada has proposed pole and UG service replacement at or near 83 Burnside, near Parkdale intersection, end date listed as 09/11/2019. Listed on Envista.

- City ISD Sewer Network Improvements listed on Parkdale in project site area listed on GeoOttawa and marked to start this season.

- Water Supply Redundancy – Fire Flow:
    - Applicant to ensure that a second service with an inline valve chamber be provided where the average daily demand exceeds 50 m^3 / day (0.5787 l/s per day)
    - FUS Fire Flow Criteria to be used unless a low rise building, where OBC requirements may be applicable.

- Where underground storage (UG) and surface ponding are being considered:
    - Show all ponding for 5 and 100 year events
    - Note - There must be at least 15cm of vertical clearance between the spill elevation and the ground elevation at the building envelope that is in proximity of the flow route or ponding area. The exception in this case would be at reverse sloped loading dock locations. At these locations, a minimum of 15cm of vertical clearance must be provided below loading dock openings. Ensure to provide discussion in report and ensure grading plan matches if applicable.
    - Provide information on type of underground storage system including product name and model, number of chambers, chamber configuration, confirm invert of chamber system, top of chamber system, required cover over system and details, interior bottom slope (for self-cleansing), chart of storage values, length, width and height, capacity, entry ports (maintenance) etc.
    - Provide a cross section of underground chamber system showing invert and obvert/top, major and minor HWLs, top of ground, system volume provided during major and minor events. UG storage to provide actual 2 and 100 year event storage requirements.
    - In regards to all proposed UG storage, ground water levels (and in particular HGW levels) will need to be reviewed to ensure that the

proposed system does not become surcharged and thereby ineffective.

- Modeling can be provided to ensure capacity for both storm and sanitary sewers for the proposed development by City's Water Distribution Dept. – Modeling Group, through PM and upon request.

- Provided Info:
  - Please be advised that it is the responsibility of the applicant and their representatives/consultants to verify information provided by the City of Ottawa.
  - Please contact City View and Release Info Centre at Ext. 44455

- Environmental Source Information:
  - City of Ottawa - Historical Land Use Inventory (HLUI)

  - The HLUI database is currently undergoing an update. The updated HLUI will include additional sources beyond those included in the current database, making the inclusion of this record search even more important.

  - Although a municipal historic land use database is not specifically listed as required environmental record in O. Reg 153/04, Schedule D, Part II states the following:

  - The following are the specific objectives of a records review:
    - To obtain and review records that relate to the Phase I (One) property and to the current and past uses of and activities at or affecting the Phase I (One) property in order to determine if an area of potential environmental concern exists and to interpret any area of potential environmental concern.
    - To obtain and review records that relate to properties in the Phase I (One) study area other than the Phase I (One) property, in order to determine if an area of potential environmental concern exists and to interpret any area of potential environmental concern.

  - It is therefore reasonable to request that the HLUI search be included in the Phase I ESA to meet the above objectives. Please submit.

- All existing reports and plans will need to be revised if older than 2 years and must reflect current City Standards, Guidelines, By-laws and Policies.

  - Please refer to City of Ottawa website portal for "Guide to preparing Studies and Plans" at https://ottawa.ca/en/city-hall/planning-and-development/information-developers/development-application-review-process/development-application-submission/guide-preparing-studies-and-plans.

- Please ensure you are using the current guidelines, bylaws and standards including materials of construction, disinfection and all relevant reference to OPSS/D and AWWA guidelines - all current and as amended, such as:

- City of Ottawa Sewer Design Guidelines (CoOSDG) complete with ISTDB 2012-01, 2014-01, 2016-01 & 2018-01 technical bulletin updates as well as current Sewer, Landscape & Road Standard Detail Drawings as well as Material Specifications (MS Docs).

- Sewer Connection (2003-513) & Sewer Use (2003-514) By-Laws.

- City of Ottawa Water Distribution Design Guidelines (CoOWDDG) complete with ISTDB 2010-02, 2014-02 & 2018-02 technical bulletin updates as well as current Watermain/ Services Material Specifications (MS Docs) as well as Water and Road Standard Detail Drawings.

- FUS Fire Flow standards

- Water (2018-167) By-Law

- Ensure to include version date and add "(as amended)" when referencing all standards, detail drwaings, by-Laws and guidelines.

Transportation Comments (Mike Giampa)

- Screening form has been submitted and a TIA is warranted. The applicant should proceed to step 2 (scoping) and step 3 (forecasting) prior to site plan submission. Any road modifications will be identified at the TIA Strategy step 4.

- The laneway that will provide access should be paved and/or improved.

- There is a 26m ROW protection on Parkdale (Parkway to Wellington).

- The rear laneway has no City ownership or maintenance classification on GeoOttawa. It should be confirmed that it is a public right of way.

Next Steps

- Refine the proposal to address issues raised through the pre-consultation.

- It is recommended that the applicant team seek input from the Ward Councillor, Mechanicsville Community Association, and neighbouring property owners.

APPLICANT'S STUDY AND PLAN IDENTIFICATION LIST

Legend: **S** indicates that the study or plan is required with application submission.
A indicates that the study or plan may be required to satisfy a condition of approval/draft approval.

For information and guidance on preparing required studies and plans refer to:

http://ottawa.ca/en/development-application-review-process-0/guide-preparing-studies-and-plans

S/A	Number of copies	ENGINEERING		S/A	Number of copies
S	15	1. Site Servicing Plan	2. Site Servicing Study	S	3
S	15	3. Grade Control and Drainage Plan	4. Geotechnical Study	S	3
	2	5. Composite Utility Plan	6. Groundwater Impact Study		3
	3	7. Servicing Options Report	8. Wellhead Protection Study		3
S	9	9. Community Transportation Study	10.Erosion and Sediment Control Plan	S	3
S	3	11.Storm water Management Report / Brief	12.Hydro geological and Terrain Analysis		3
	3	13.Hydraulic Water main Analysis	14.Noise Study	S	3
	PDF only	15.Roadway Modification Functional Design	16.Confederation Line Proximity Study		3

S/A	Number of copies	PLANNING / DESIGN / SURVEY		S/A	Number of copies
	15	17.Draft Plan of Subdivision	18.Plan Showing Layout of Parking Garage	S	2
	15	19.Draft Plan of Condominium	20.Planning Rationale	S	3
S	15	21.Site Plan	22.Minimum Distance Separation (MDS)		3
	15	23.Concept Plan Showing Proposed Land Uses and Landscaping	24.Agrology and Soil Capability Study		3
	3	25.Concept Plan Showing Ultimate Use of Land	26.Cultural Heritage Impact Statement		3
S	15	27.Landscape Plan	28.Archaeological Resource Assessment Requirements: **S** (site plan) **A** (subdivision, condo)		3
S	2	29.Survey Plan	30.Shadow Analysis	S	3
S	3	31.Architectural Building Elevation Drawings (dimensioned)	32.Design Brief (includes the Design Review Panel Submission Requirements)	S	Available online
S	3	33.Wind Analysis			

S/A	Number of copies	ENVIRONMENTAL		S/A	Number of copies
S	3	34.Phase 1 Environmental Site Assessment	35.Impact Assessment of Adjacent Waste Disposal/Former Landfill Site		3
A	3	36.Phase 2 Environmental Site Assessment (depends on the outcome of Phase 1)	37.Assessment of Landform Features		3
	3	38.Record of Site Condition	39.Mineral Resource Impact Assessment		3
S	3	40.Tree Conservation Report	41.Environmental Impact Statement / Impact Assessment of Endangered Species		3
	3	42.Mine Hazard Study / Abandoned Pit or Quarry Study	43.Integrated Environmental Review (Draft, as part of Planning Rationale)		3

S/A	Number of copies	ADDITIONAL REQUIREMENTS		S/A	Number of copies
S	1	44. Applicant's Public Consultation Strategy (may be provided as part of the Planning Rationale)	45. Digital copy of all plans and studies (send link to file-transfer site)	**S**	n/a
S	3	46. Floor Plans	47. Section 37 Calculations for re-design	**S**	2

Meeting Date: June 6, 2019

Application Type: **OPA, ZBLA & SPC**

File Lead (Assigned Planner): Ann O'Connor

Infrastructure Approvals Project Manager: Shawn Wessel

Site Address (Municipal Address): 99 Parkdale

*One (1) indicates that considerable major revisions are required before a planning application is submitted, while five (5) suggests that proposal appears to meet the City's key land use policies and guidelines. This assessment is purely advisory and does not consider technical aspects of the proposal or in any way guarantee application approval. *It is important to note that the need for additional studies and plans may result during application review. If following the submission of your application, it is determined that material that is not identified in this checklist is required to achieve complete application status, in accordance with the Planning Act and Official Plan requirements, the* Planning, Infrastructure and Economic Development Department *will notify you of outstanding material required within the required 30 day period. Mandatory pre-application consultation will not shorten the City's standard processing timelines, or guarantee that an application will be approved. It is intended to help educate and inform the applicant about submission requirements as well as municipal processes, policies, and key issues in advance of submitting a formal development application. This list is valid for one year following the meeting date. If the application is not submitted within this timeframe the applicant must again pre-consult with the Planning, Infrastructure and Economic Development Department.*

From:	Wessel, Shawn
To:	Guy Forget; O"Connor, Ann
Cc:	Jean-Luc Rivard; Marc Rivet; Lucie Dalrymple
Subject:	RE: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions
Date:	Thursday, August 29, 2019 10:36:08 AM
Attachments:	image001.png 99 Parkdale Aug 2019.pdf

Good morning Mr. Forget.

Please find boundary conditions from our Water Distribution Dept. as per your request.

The following are boundary conditions, HGL, for hydraulic analysis at 99 Parkdale (zone 1W) assumed to be connected to the 203mm on Parkdale. See attached PDF for location.

Min HGL = 107.5m

Max HGL = 115.0m

MaxDay + FireFlow (69 L/s) = 106.0m

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.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

Development Review Central Branch | Direction de l'examen des projets d'aménagement, Centrale
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(613) 580 2424 Ext. | Poste 33017
Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

From: Guy Forget <gforget@jlrichards.ca>
Sent: August 27, 2019 11:33 AM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>; O'Connor, Ann <Ann.O'Connor@ottawa.ca>
Cc: Jean-Luc Rivard <jlrivard@brigil.com>; Marc Rivet <mrivet@jlrichards.ca>; Lucie Dalrymple <ldalrymple@jlrichards.ca>
Subject: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions

Ann/Shawn,

On November 14, 2011, boundary conditions were provided by the City for Urbandale's 99 Parkdale Avenue condo tower. The boundary condition provided at that time were as follows:

Maximum pressure check = 114.9 m
Peak Hour demand = 108.2 m
Maximum day plus fire flow = 106.7 m

As you are aware, Brigil purchased the subject lands and proposes a similar tower. Based on the latest Site Plan (attached), the following unit breakdown is proposed:

133 x 1 bedroom condo x 1.4 = 186 population
105 x 2 bedroom condo x 3.1 = 326 population

Total residential population = 512

Domestic water demand table is attached

FUS fire flow calculation is attached.

Pease note that the required fire flow (RFF) for the proposed tower shall be based on the Ontario Building Code (OBC), which in turn is based on NFPA 13. Based on Table 11.2.2.1 (Water Supply Requirements for Pipe Schedule Sprinkler Systems) and Table 11.2.3.1.2 (Hose Stream Allowance and Water Supply Duration Requirements for Hydraulically Calculated Systems) of NFPA 13, the RFF within the property shall be 4,150 L/min (69.2 L/s) consisting of 3,200 L/min (53.3 L/s) for the fire suppression system and 950 L/min (15.8 L/s) for the total combined hose allowance for ordinary hazard.

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

i. Location of service (provide a figure/ map showing the connection location). See attached Location of service from the approved 2012 Site Plan (Urbandale). The proposed watermain for the Brigil tower will be located in close proximity of this service.

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

iii. Average daily demand: 1.65 L/s

iv. Maximum daily demand: 4.13 L/s

v. Maximum hourly daily demand: 9.09 L/s

vi. Hydrant location and spacing to meet City's Water Design guidelines. Details will be provided in submission

If you require any clarification, let me know.

Guy

Guy Forget, P.Eng., LEED AP
Associate
Senior Water Resources Engineer

J.L. Richards & Associates Limited
700 - 1565 Carling Avenue, Ottawa, ON K1Z 8R1
Tel: 613-728-3571 Fax: 613-728-6012

'

collaboration.

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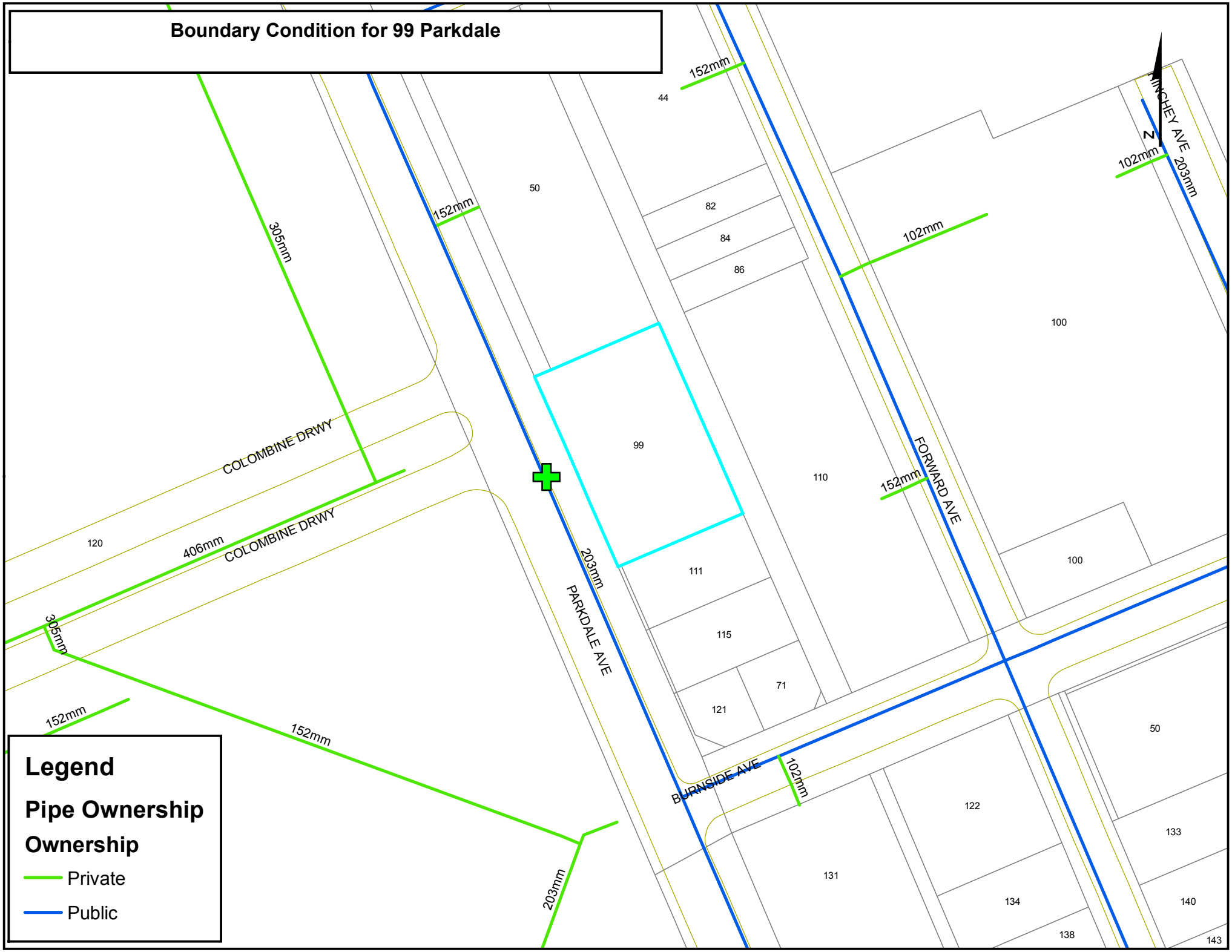
Boundary Condition for 99 Parkdale
152mm
44
50
82
84
86
305mm
152mm
102mm
KINCHEY AVE 203mm
N
102mm
100
COLOMBINE DRWY
99
110
152mm
FORWARD AVE
120
406mm
COLOMBINE DRWY
203mm
PARKDALE AVE
111
100
305mm
115
71
121
152mm
152mm
50
BURNSIDE AVE
102mm
122
133
131
134
140
138
143
203mm
Legend
Pipe Ownership
Ownership
Private
Public

Guy Forget

From: Guy Forget
Sent: Wednesday, January 22, 2020 8:44 AM
To: Wessel, Shawn; Khawam, Walid
Cc: Steven Picken
Subject: RE: 99 Parkdale Ave D07-12-19-0176

Hi Shawn/Walid,

Thanks for the quick response with this issue.

As per my email below, the maximum fire flow requirement for an un-sprinklered building as per the OBC is 150 L/s (9,000 L/min).

Given that 99 Parkdale is a sprinklered building, the OBC states that the building supply for fire fighting should follow the guidance of NFPA 13. Given that the fire hazard is ordinary, the fire flow requirement is 69 L/s as per NFPA 13, which the boundary conditions provided in August, 2019. As a result, the Boundary Condition still applies.

Guy

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Tuesday, January 21, 2020 3:09 PM
To: Guy Forget <gforget@jlrichards.ca>; Khawam, Walid <Walid.Khawam@ottawa.ca>
Cc: Steven Picken <spicken@jlrichards.ca>
Subject: RE: 99 Parkdale Ave D07-12-19-0176

Good afternoon Mr. Forget.

I wanted to let you know that Water Distribution Dept. has confirmed that the OBC, in this case, can be used for fire flow calculations.

Further to your email, please feel free to send your boundary condition request at your convenience.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

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(613) 580 2424 Ext. | Poste 33017
Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

From: Guy Forget <gforget@jlrichards.ca>
Sent: January 21, 2020 7:38 AM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>; Khawam, Walid <Walid.Khawam@ottawa.ca>
Cc: Steven Picken <spicken@jlrichards.ca>
Subject: RE: 99 Parkdale Ave D07-12-19-0176

Shawn/Walid,

In regard to fire flow protection, if the OBC (i.e., the Office of the Fire Marshall of Ontario) could be applied (it should given that it is on private property), the maximum fire flow requirement for a non-sprinklered building (99 Parkdale is a sprinklered building, which will be designed as per the OBC, and NFPA 13), is 150 L/s (9,000 L/min).

If the above is accepted, we request in advance revised boundary conditions. We could then size the service laterals connecting to the tower, and demonstrate that the OBC requirement (maximum fire flow availability per the OBC) can be met by the ROW hydrants as per the City Tech Bulletin (maximum hydrant flow availability).

Thank you

Guy

Guy Forget, P.Eng., LEED AP

Senior Water Resources Engineer

J.L. Richards & Associates Limited
700 - 1565 Carling Avenue, Ottawa, ON K1Z 8R1
Tel: 613-728-3571 Fax: 613-728-6012

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Monday, January 20, 2020 3:03 PM
To: Guy Forget <gforget@jlrichards.ca>; Khawam, Walid <Walid.Khawam@ottawa.ca>

Cc: Steven Picken <spicken@jlrichards.ca>
Subject: RE: 99 Parkdale Ave D07-12-19-0176

Good afternoon Mr. Forget.

I spoke with Walid and we are seeking input from other relevant departments on this matter and recognize the urgency of your inquiry.

I hope to have some response comments regarding FUS vs OBC to you very soon.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

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(613) 580 2424 Ext. | Poste 33017
Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

From: Guy Forget <gforget@jlrichards.ca>
Sent: January 20, 2020 2:16 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>; Khawam, Walid <Walid.Khawam@ottawa.ca>
Cc: Steven Picken <spicken@jlrichards.ca>
Subject: FW: 99 Parkdale Ave D07-12-19-0176

Walid,

I Typed in incorrectly your email, here is the email sent 2 hrs ago

Guy Forget, P.Eng., LEED AP

Senior Water Resources Engineer

J.L. Richards & Associates Limited
700 - 1565 Carling Avenue, Ottawa, ON K1Z 8R1
Tel: 613-728-3571 Fax: 613-728-6012

From: Guy Forget
Sent: Monday, January 20, 2020 1:50 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>; walid.khawan@ottawa.ca
Cc: Steven Picken <spicken@jlrichards.ca>
Subject: RE: 99 Parkdale Ave D07-12-19-0176

Walid/Shawn,

As discussed, I took the HGL provided in the boundary conditions and applied NFPA 291 which is the standard used to estimate fire flow availability at 20 psi (refer to equation 4.10.1.2) for a water distribution system.

When the max HGL of 115 m (0 L/s) is used and 106 m (69 L/s + 4 L/s), the fire flow availability is 165 L/s (9,900 L/s) per the attached. This formula is used when hydrant flow tests are used to estimate fire flow availability at 20 psi.

Using the cap fire flow at hydrants per ISTB-2018-02, assumes that the restriction is the hydrant and not the watermain.

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Monday, January 20, 2020 12:26 PM
To: Guy Forget <gforget@jlrichards.ca>
Cc: Steven Picken <spicken@jlrichards.ca>
Subject: 99 Parkdale Ave D07-12-19-0176

Good morning Mr. Forget.

Further to previous discussions I have been provided with a response from Water Distribution Dept. regarding OBC vs ULC FUS Fire Flow calculations. Their response is as follows:

There are four hydrants within 150m of the proposed site (H013, H014, H193 and H036 on attached figure). As per Table 1 in Appendix I of technical bulletin ISTB-2018-02, the total available flow from those hydrants is 19000 L/min (2 x 5700 L/in + 2x 3800 L/min) which is less than the calculated fire flow based on the FUS method. See attached map.
Please refer to Technical Bulletin ISTB-2018-02

I suggest you contact Walid Khawam at Ext. 16658 to discuss the requirements and available flows for this site.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

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shawn.wessel@ottawa.ca

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From: Tousignant, Eric
To: Wessel, Shawn; Guy Forget
Subject: RE: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions
Date: Wednesday, August 28, 2019 1:54:59 PM
Attachments: image001.png

Shawn

I just had a chat with Guy. Back in 2011 (approx) I looked at this site and figured that due to the proximity to the River, strict SWM would not be required. We settled back then on controlling the 5 year to existing conditions, which was approximately C=0.62. Given that the building will take most of the footprint, I would recommend that they control the roof footprint to the 5 year, C=0.62. As for the small area around the building, I would not control that and simply let it drain to the street.

Eric

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

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: August 28, 2019 8:57 AM
To: Guy Forget <gforget@jlrichards.ca>
Cc: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Subject: RE: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions

Thank you for your email Mr. Forget

As we obtain clarification and HGL information from our Water Resources Dept.

I would recommend you contact Eric Tousignant direct at Eric.Tousignant@ottawa.ca to discuss HGL, flooding, capacity or any other SWM related questions for this. This group has the capacity to complete modeling for areas of the City and have knowledge of historical surcharge and flooding conditions that may/maynot affect this development being proposed.

Please keep me in the loop for all pertinent discussions as it relates to this SPC application.

Please provide any updated water demand information so that I may have the Water Distribution Dept. amend the boundary conditions as needed.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

-

Regards,

Shawn Wessel, A.Sc.T.,rcji

Project Manager - Infrastructure Approvals

Gestionnaire de projet – Approbation des demandes d'infrastructures

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(613) 580 2424 Ext. | Poste 33017
Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

Please consider the environment before printing this email

From: Guy Forget <gforget@jlrichards.ca>
Sent: August 28, 2019 8:27 AM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Subject: RE: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions

Hi Shawn,

We might revise the FUS calculations as I had more discussions with the architect about the building.

If you are available today, I would also want to discuss the storm criteria as it is not consistent with the one that we used in 2012 nor the one used for 121 Parkdale. It is my opinion that providing excess retention on site will simply delay the peaks which will coincide with upstream flows. In 2012, the site being so close to the Ottawa River was considered in the storm criteria.

If you have time today, would like to discuss this in more details.

Thanks

Guy

Guy Forget, P.Eng., LEED AP
Associate
Senior Water Resources Engineer

J.L. Richards & Associates Limited
700 - 1565 Carling Avenue, Ottawa, ON K1Z 8R1
Tel: 613-728-3571 Fax: 613-728-6012

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Tuesday, August 27, 2019 2:49 PM
To: Guy Forget <gforget@jlrichards.ca>; O'Connor, Ann <Ann.O'Connor@ottawa.ca>
Cc: Jean-Luc Rivard <jlrivard@brigil.com>; Marc Rivet <mrivet@jlrichards.ca>; Lucie Dalrymple <ldalrymple@jlrichards.ca>
Subject: RE: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions

Thank you for your email Mr. Forget

I have forwarded your request to Water Distribution for their response.

I will reply to you as soon as possible.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

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Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

From: Guy Forget <gforget@jlrichards.ca>
Sent: August 27, 2019 11:33 AM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>; O'Connor, Ann <Ann.O'Connor@ottawa.ca>
Cc: Jean-Luc Rivard <jlrivard@brigil.com>; Marc Rivet <mrivet@jlrichards.ca>; Lucie Dalrymple <ldalrymple@jlrichards.ca>
Subject: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions

Ann/Shawn,

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Maximum day plus fire flow = 106.7 m

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133 x 1 bedroom condo x 1.4 = 186 population
105 x 2 bedroom condo x 3.1 = 326 population

Total residential population = 512

Domestic water demand table is attached

FUS fire flow calculation is attached.

Pease note that the required fire flow (RFF) for the proposed tower shall be based on the Ontario Building Code (OBC), which in turn is based on NFPA 13. Based on Table 11.2.2.1 (Water Supply Requirements for Pipe Schedule Sprinkler Systems) and Table 11.2.3.1.2 (Hose Stream Allowance and Water Supply Duration Requirements for Hydraulically Calculated Systems) of NFPA 13, the RFF within the property

shall be 4,150 L/min (69.2 L/s) consisting of 3,200 L/min (53.3 L/s) for the fire suppression system and 950 L/min (15.8 L/s) for the total combined hose allowance for ordinary hazard.

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

i. Location of service (provide a figure/ map showing the connection location). See attached Location of service from the approved 2012 Site Plan (Urbandale). The proposed watermain for the Brigil tower will be located in close proximity of this service.

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

iii. Average daily demand: 1.65 L/s

iv. Maximum daily demand: 4.13 L/s

v. Maximum hourly daily demand: 9.09 L/s

vi. Hydrant location and spacing to meet City's Water Design guidelines. Details will be provided in submission

If you require any clarification, let me know.

Guy

Guy Forget, P.Eng., LEED AP
Associate
Senior Water Resources Engineer

J.L. Richards & Associates Limited
700 - 1565 Carling Avenue, Ottawa, ON K1Z 8R1
Tel: 613-728-3571 Fax: 613-728-6012

J.L. Richards & Associates Limited
ENGINEERS · ARCHITECTS · PLANNERS

CANADA'S BEST MANAGED COMPANIES

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From: Jamie Batchelor
To: Guy Forget
Cc: Lucie Dalrymple; Marc Rivet; Jean-Luc Rivard
Subject: RE: 99 Parkdale Condominium Tower
Date: Wednesday, September 4, 2019 11:48:04 AM
Attachments: image002.png

Good Morning Guy,

Based on the drawings provided, this redevelopment will be primarily rooftop area receiving rainwater. Roofs and landscaped areas, for the purpose of protecting water quality and aquatic habitat, are deemed as clean. The RVCA therefore accepts that the stormwater runoff from this site does not require any additional quality control measures for protection of the receiving watercourse.

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: Guy Forget <gforget@jlrichards.ca>
Sent: Thursday, August 29, 2019 11:44 AM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Cc: Lucie Dalrymple <ldalrymple@jlrichards.ca>; Marc Rivet <mrivet@jlrichards.ca>; Jean-Luc Rivard <jlrivard@brigil.com>
Subject: 99 Parkdale Condominium Tower

Hi Jamie,

We have been retained by Brigil to prepare engineering documents for their proposed Condominium Building sited at 99 Parkdale Avenue (see attached Site Plan). The proposed Tower sits on four (4) properties consisting of 99, 101, 105 and 107 Parkdale Avenue. These 4 properties consisted, up until 2014, of multi-tenanted residential units (2 units per lot). Based on an imperviousness calculation, the C-Factor was estimated at 0.65. The building structures have been removed around 2014-2015.

As background to this project, 99-107 Parkdale Avenue was recently acquired by Brigil from Urbandale. In 2012, JLR had prepared engineering documents for Urbandale's Condominium Building and approvals was subsequently issued by the City under Site Plan Control (refer to 2012 Servicing Drawing prepared for Urbandale). The City asked during the June 6, 2019 pre-consult meeting that the RVCA be contacted to discuss water quality.

Proposed Condominium Project:

The Site will comprise a 28-storey Condominium Building (refer to Site Plan) as well as small areas surrounding the building envelope. These areas abutting the envelope consist of pavers, walkways and grass.

The proposed breakdown of the overall property is as follows:

Building Envelope = 1076 m2
Walkway/pavers = 200 m2
Grass = 50 m2, which might increase.

Based on the above breakdown, the building footprint and grass accounts for 85% of the total area. The storm discharge criteria provided by the City is to limit the 1:100 year post-development peak flows to those of the 1:5 year (based on the 2014 condition). The outlet sewer consists of a 300 mm diameter storm sewer that connects shortly thereafter to a 2100 mm diameter storm tunnel about 30 m away. Both storm sewer systems do not have an end of pipe quality control unit.

In 2012, there was no requirement to incorporate a water quality unit given that the building/grass area accounted for the most part of the property. The current Site Plan by Brigil maintains the high proportion of building/grass area. Can you confirm whether the 2012 servicing strategy can be maintained.

If you need further clarifications, do not hesitate to call.

Guy

Guy Forget, P.Eng., LEED AP
Associate
Senior Water Resources Engineer

J.L. Richards & Associates Limited
700 - 1565 Carling Avenue, Ottawa, ON K1Z 8R1
Tel: 613-728-3571 Fax: 613-728-6012

J.L. Richards & Associates Limited
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Appendix D

Servicing Study Checklist

BRIGIL 99 PARKDALE AVENUE CONDOMINIUM TOWER

DEVELOPMENT SERVICING STUDY CHECKLIST

REFERENCED STUDIES AND REPORTS	REFERENCE
Site Servicing Report for Brigil, 99 Parkdale Avenue Condominium Tower (J.L. Richards & Associates Limited, October 2019)	SSR
Servicing Study Guidelines for Development Applications in the City of Ottawa, November 2009	SSG
Ottawa Sewer Design Guidelines and Associated Technical Bulletins (2012)	OSDG

4.1	GENERAL CONTENT	REFERENCE
☐	Executive Summary (for larger reports only).	N/A
☒	Date and revision number of the report.	SSR (Title Page)
☒	Location map and plan showing municipal address, boundary, and layout of proposed development.	SSR (Figure 1 and Appendix A, Sheet No. SP-1)
☒	Plan showing the site and location of all existing services.	SSR (Figure 2 and Appendix B) Site Servicing Plan (S1)
☒	Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.	SSR (Section 1.2)
☒	Summary of Pre-consultation Meetings with City and other approval agencies.	SSR (Section 1.4 and Appendix C)
☒	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.	SSR (Sect. 2.1, 3.2 – Table 3, 4.4 – Table 5)
☒	Statement of objectives and servicing criteria.	SSR (Sect. 2.1, 3.2, 4.2)
☒	Identification of existing and proposed infrastructure available in the immediate area.	SSR (Sect. 1.3) Site Servicing Plan (S1)
☐	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.	Grading Plan and Erosion Control Measures (G1)
☐	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	All Drawings

4.2	**DEVELOPMENT SERVICING REPORT: WATER**	**REFERENCE**
☐	Confirm consistency with Master Servicing Study, if available.	N/A
☒	Availability of public infrastructure to service proposed development.	SSR (Sect. 2.8, Appendix 'E') Site Servicing Plan (S1)
☒	Identification of system constraints.	SSR (Sect. 2.0)
☒	Identify boundary conditions.	SSR (Sect. 2.6 – Table 2, Appendix 'E2')
☒	Confirmation of adequate domestic supply and pressure.	SSR (Sect. 2.1, Appendix 'E4')
☒	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.	SSR (Sect. 2.4, Appendix 'E3')
☒	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.	SSR (Sect. 2.7.3)
☐	Definition of phasing constraints. Hydraulic modelling 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 shutoff 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.	SSR (Sect. 2.3, Appendix 'E1')
☒	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.	SSR (Sect. 2) Site Servicing Plan (S1)
☒	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.	SSR (Sect. 2.7.1, 2.7.2, 2.8)
☒	Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	SSR (Sect. 2.3, Appendix 'E1')
☒	Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.	SSR (Appendix 'E2')

4.3	**DEVELOPMENT SERVICING REPORT: WASTEWATER**	**REFERENCE**
☒	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).	SSR (Sect. 3.2)
☐	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.	SSR (Sect. 3.1, 3.3) Site Servicing Plan (S1)
☒	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.)	SSR (Sect. 3.3)

☐	Calculations related to dry weather and wet weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	N/A
☒	Description of proposed sewer network, including sewers, pumping stations and forcemains.	SSR (Sect. 3.3) Site Servicing Plan (S1)
☐	Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).	N/A
☐	Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	N/A
☐	Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	N/A
☐	Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	N/A
☐	Special considerations, such as contamination, corrosive environment, etc.	N/A

4.4	**DEVELOPMENT SERVICING REPORT: STORMWATER**	**REFERENCE**
☒	Description of drainage outlets and downstream constraints, including legality of outlets (i.e., municipal drain, right-of-way, watercourse, or private property).	SSR (Sect. 4.1, 4.5.2)
☒	Analysis of available capacity in existing public infrastructure.	SSR (Sect. 4.5.2, Appendix 'F3')
☐	A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.	Drawing DST
☒	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.	SSR (Sect. 6.2, 6.3)
☒	Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	SSR (Sect. 4.5.1)
☒	Description of the stormwater management concept with facility locations and descriptions with references and supporting information.	SSR Sect 4.5, Drawing S1, DST

☐	Setback 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 subwatershed and Master Servicing Study, if applicable study exists.	N/A
☒	Storage requirements (complete with calculations) and conveyance capacity for minor events (1:2 year return period) and major events (1:100 year return period).	SSR (Sect. 4.2, 4.5.1, Appendices 'B' and F2)
☐	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.	SSR (Sect. 4.5, Appendix F3), Drawing DST
☐	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.	Servicing Plan (S1)
☐	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.	SSR (Sect 4.5.3)
☐	Identification of municipal drains and related approval requirements.	N/A
☒	Description of how the conveyance and storage capacity will be achieved for the development.	SSR (Sect. 4.4, 4.5, 4.6)
☒	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.	SSR (Sect. 5.0) Grading, Drawing G1

☐	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	REFERENCE
The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development, as well as the relevant issues affecting such approval. The approval and permitting shall include but not be limited to the following:		
☐	Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams, as defined in the Act.	SSR (Sect 4.2, 4.5.3) Appendix 'C'
☐	Application for Environmental Compliance Approval (ECA) 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	REFERENCE
☒	Clearly stated conclusions and recommendations.	SSR (Sect. 2.8, 3.4, 4.6)
☒	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.	SSR (Sect. 1.4, Appendix C)
☒	All draft and final reports shall be signed and stamped by a Professional Engineer registered in Ontario.	SSR, Drawing Set

Appendix E1

Water Demand Calculations

Water Demand Calculations
99 Parkdale (JLR 25205-100)

No. of Studios & 1-bedroom	133	units
Density	1.4	p/p/u (Table 4.1)
No. Ppl	187	ppl
No. of 2-bedroom	107	units
Density	2.1	p/p/u (Table 4-1)
No. Ppl	225	ppl
Total Population	412	ppl
Average Day Consumption Rate	280	L/c/d
Average Day Demand	**1.34**	**L/s**
Maximum Day Peaking Factor	3.24	x Avg Day (Table 3-3 MOE)
Maximum Day Demand	**4.33**	**L/s**
Peak Hour Peaking Factor	4.86	x Max Day (Table 3-3 MOE)
Peak Hour Demand	**6.49**	**L/s**
Minimum Hour Peaking Factor	0.26	x Avg Day (Table 3-3 MOE)
Minimum Hour Demand	**0.35**	**L/s**

Appendix E2

Hydraulic Boundary Condition
E-Mail

From:	Wessel, Shawn
To:	Guy Forget; O"Connor, Ann
Cc:	Jean-Luc Rivard; Marc Rivet; Lucie Dalrymple
Subject:	RE: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions
Date:	Thursday, August 29, 2019 10:36:08 AM
Attachments:	image001.png 99 Parkdale Aug 2019.pdf

Good morning Mr. Forget.

Please find boundary conditions from our Water Distribution Dept. as per your request.

The following are boundary conditions, HGL, for hydraulic analysis at 99 Parkdale (zone 1W) assumed to be connected to the 203mm on Parkdale. See attached PDF for location.

Min HGL = 107.5m

Max HGL = 115.0m

MaxDay + FireFlow (69 L/s) = 106.0m

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.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

Development Review Central Branch | Direction de l'examen des projets d'aménagement, Centrale
Planning, Infrastructure and Economic Development Department | Direction générale de la planification de l'infrastructure et du développement économique
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(613) 580 2424 Ext. | Poste 33017
Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

From: Guy Forget <gforget@jlrichards.ca>
Sent: August 27, 2019 11:33 AM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>; O'Connor, Ann <Ann.O'Connor@ottawa.ca>
Cc: Jean-Luc Rivard <jlrivard@brigil.com>; Marc Rivet <mrivet@jlrichards.ca>; Lucie Dalrymple <ldalrymple@jlrichards.ca>
Subject: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions

Ann/Shawn,

On November 14, 2011, boundary conditions were provided by the City for Urbandale's 99 Parkdale Avenue condo tower. The boundary condition provided at that time were as follows:

Maximum pressure check = 114.9 m
Peak Hour demand = 108.2 m
Maximum day plus fire flow = 106.7 m

As you are aware, Brigil purchased the subject lands and proposes a similar tower. Based on the latest Site Plan (attached), the following unit breakdown is proposed:

133 x 1 bedroom condo x 1.4 = 186 population
105 x 2 bedroom condo x 3.1 = 326 population

Total residential population = 512

Domestic water demand table is attached

FUS fire flow calculation is attached.

Pease note that the required fire flow (RFF) for the proposed tower shall be based on the Ontario Building Code (OBC), which in turn is based on NFPA 13. Based on Table 11.2.2.1 (Water Supply Requirements for Pipe Schedule Sprinkler Systems) and Table 11.2.3.1.2 (Hose Stream Allowance and Water Supply Duration Requirements for Hydraulically Calculated Systems) of NFPA 13, the RFF within the property shall be 4,150 L/min (69.2 L/s) consisting of 3,200 L/min (53.3 L/s) for the fire suppression system and 950 L/min (15.8 L/s) for the total combined hose allowance for ordinary hazard.

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

i. Location of service (provide a figure/ map showing the connection location). See attached Location of service from the approved 2012 Site Plan (Urbandale). The proposed watermain for the Brigil tower will be located in close proximity of this service.

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

iii. Average daily demand: 1.65 L/s

iv. Maximum daily demand: 4.13 L/s

v. Maximum hourly daily demand: 9.09 L/s

vi. Hydrant location and spacing to meet City's Water Design guidelines. Details will be provided in submission

If you require any clarification, let me know.

Guy

Guy Forget, P.Eng., LEED AP
Associate
Senior Water Resources Engineer

J.L. Richards & Associates Limited
700 - 1565 Carling Avenue, Ottawa, ON K1Z 8R1
Tel: 613-728-3571 Fax: 613-728-6012

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collaboration.

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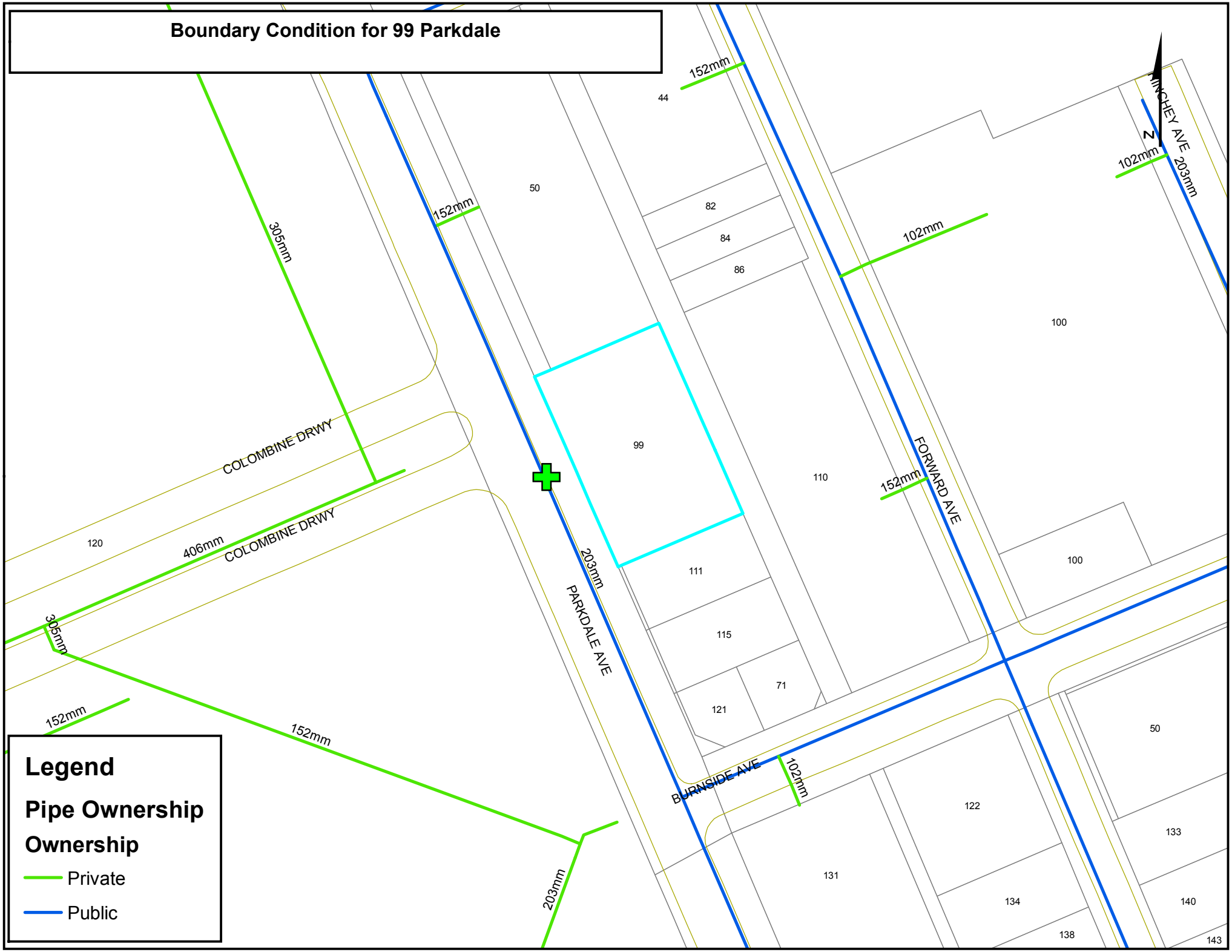
Boundary Condition for 99 Parkdale
152mm
44
50
82
84
86
305mm
152mm
102mm
KINCHEY AVE 203mm
N
102mm
100
COLOMBINE DRWY
99
110
152mm
FORWARD AVE
120
406mm
COLOMBINE DRWY
203mm
PARKDALE AVE
111
100
305mm
115
71
121
152mm
152mm
50
BURNSIDE AVE
102mm
122
133
131
134
140
138
143
203mm
Legend
Pipe Ownership
Ownership
Private
Public

Guy Forget

From: Guy Forget
Sent: Wednesday, January 22, 2020 8:44 AM
To: Wessel, Shawn; Khawam, Walid
Cc: Steven Picken
Subject: RE: 99 Parkdale Ave D07-12-19-0176

Hi Shawn/Walid,

Thanks for the quick response with this issue.

As per my email below, the maximum fire flow requirement for an un-sprinklered building as per the OBC is 150 L/s (9,000 L/min).

Given that 99 Parkdale is a sprinklered building, the OBC states that the building supply for fire fighting should follow the guidance of NFPA 13. Given that the fire hazard is ordinary, the fire flow requirement is 69 L/s as per NFPA 13, which the boundary conditions provided in August, 2019. As a result, the Boundary Condition still applies.

Guy

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Tuesday, January 21, 2020 3:09 PM
To: Guy Forget <gforget@jlrichards.ca>; Khawam, Walid <Walid.Khawam@ottawa.ca>
Cc: Steven Picken <spicken@jlrichards.ca>
Subject: RE: 99 Parkdale Ave D07-12-19-0176

Good afternoon Mr. Forget.

I wanted to let you know that Water Distribution Dept. has confirmed that the OBC, in this case, can be used for fire flow calculations.

Further to your email, please feel free to send your boundary condition request at your convenience.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

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(613) 580 2424 Ext. | Poste 33017
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shawn.wessel@ottawa.ca

From: Guy Forget <gforget@jlrichards.ca>
Sent: January 21, 2020 7:38 AM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>; Khawam, Walid <Walid.Khawam@ottawa.ca>
Cc: Steven Picken <spicken@jlrichards.ca>
Subject: RE: 99 Parkdale Ave D07-12-19-0176

Shawn/Walid,

In regard to fire flow protection, if the OBC (i.e., the Office of the Fire Marshall of Ontario) could be applied (it should given that it is on private property), the maximum fire flow requirement for a non-sprinklered building (99 Parkdale is a sprinklered building, which will be designed as per the OBC, and NFPA 13), is 150 L/s (9,000 L/min).

If the above is accepted, we request in advance revised boundary conditions. We could then size the service laterals connecting to the tower, and demonstrate that the OBC requirement (maximum fire flow availability per the OBC) can be met by the ROW hydrants as per the City Tech Bulletin (maximum hydrant flow availability).

Thank you

Guy

Guy Forget, P.Eng., LEED AP

Senior Water Resources Engineer

J.L. Richards & Associates Limited
700 - 1565 Carling Avenue, Ottawa, ON K1Z 8R1
Tel: 613-728-3571 Fax: 613-728-6012

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Monday, January 20, 2020 3:03 PM
To: Guy Forget <gforget@jlrichards.ca>; Khawam, Walid <Walid.Khawam@ottawa.ca>

Cc: Steven Picken <spicken@jlrichards.ca>
Subject: RE: 99 Parkdale Ave D07-12-19-0176

Good afternoon Mr. Forget.

I spoke with Walid and we are seeking input from other relevant departments on this matter and recognize the urgency of your inquiry.

I hope to have some response comments regarding FUS vs OBC to you very soon.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
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(613) 580 2424 Ext. | Poste 33017
Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

From: Guy Forget <gforget@jlrichards.ca>
Sent: January 20, 2020 2:16 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>; Khawam, Walid <Walid.Khawam@ottawa.ca>
Cc: Steven Picken <spicken@jlrichards.ca>
Subject: FW: 99 Parkdale Ave D07-12-19-0176

Walid,

I Typed in incorrectly your email, here is the email sent 2 hrs ago

Guy Forget, P.Eng., LEED AP

Senior Water Resources Engineer

J.L. Richards & Associates Limited
700 - 1565 Carling Avenue, Ottawa, ON K1Z 8R1
Tel: 613-728-3571 Fax: 613-728-6012

From: Guy Forget
Sent: Monday, January 20, 2020 1:50 PM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>; walid.khawan@ottawa.ca
Cc: Steven Picken <spicken@jlrichards.ca>
Subject: RE: 99 Parkdale Ave D07-12-19-0176

Walid/Shawn,

As discussed, I took the HGL provided in the boundary conditions and applied NFPA 291 which is the standard used to estimate fire flow availability at 20 psi (refer to equation 4.10.1.2) for a water distribution system.

When the max HGL of 115 m (0 L/s) is used and 106 m (69 L/s + 4 L/s), the fire flow availability is 165 L/s (9,900 L/s) per the attached. This formula is used when hydrant flow tests are used to estimate fire flow availability at 20 psi.

Using the cap fire flow at hydrants per ISTB-2018-02, assumes that the restriction is the hydrant and not the watermain.

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Monday, January 20, 2020 12:26 PM
To: Guy Forget <gforget@jlrichards.ca>
Cc: Steven Picken <spicken@jlrichards.ca>
Subject: 99 Parkdale Ave D07-12-19-0176

Good morning Mr. Forget.

Further to previous discussions I have been provided with a response from Water Distribution Dept. regarding OBC vs ULC FUS Fire Flow calculations. Their response is as follows:

There are four hydrants within 150m of the proposed site (H013, H014, H193 and H036 on attached figure). As per Table 1 in Appendix I of technical bulletin ISTB-2018-02, the total available flow from those hydrants is 19000 L/min (2 x 5700 L/in + 2x 3800 L/min) which is less than the calculated fire flow based on the FUS method. See attached map.
Please refer to Technical Bulletin ISTB-2018-02

I suggest you contact Walid Khawam at Ext. 16658 to discuss the requirements and available flows for this site.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

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shawn.wessel@ottawa.ca

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From: Tousignant, Eric
To: Wessel, Shawn; Guy Forget
Subject: RE: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions
Date: Wednesday, August 28, 2019 1:54:59 PM
Attachments: image001.png

Shawn

I just had a chat with Guy. Back in 2011 (approx) I looked at this site and figured that due to the proximity to the River, strict SWM would not be required. We settled back then on controlling the 5 year to existing conditions, which was approximately C=0.62. Given that the building will take most of the footprint, I would recommend that they control the roof footprint to the 5 year, C=0.62. As for the small area around the building, I would not control that and simply let it drain to the street.

Eric

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

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: August 28, 2019 8:57 AM
To: Guy Forget <gforget@jlrichards.ca>
Cc: Tousignant, Eric <Eric.Tousignant@ottawa.ca>
Subject: RE: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions

Thank you for your email Mr. Forget

As we obtain clarification and HGL information from our Water Resources Dept.

I would recommend you contact Eric Tousignant direct at Eric.Tousignant@ottawa.ca to discuss HGL, flooding, capacity or any other SWM related questions for this. This group has the capacity to complete modeling for areas of the City and have knowledge of historical surcharge and flooding conditions that may/maynot affect this development being proposed.

Please keep me in the loop for all pertinent discussions as it relates to this SPC application.

Please provide any updated water demand information so that I may have the Water Distribution Dept. amend the boundary conditions as needed.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

-

Regards,

Shawn Wessel, A.Sc.T.,rcji

Project Manager - Infrastructure Approvals

Gestionnaire de projet – Approbation des demandes d'infrastructures

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(613) 580 2424 Ext. | Poste 33017
Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

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From: Guy Forget <gforget@jlrichards.ca>
Sent: August 28, 2019 8:27 AM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>
Subject: RE: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions

Hi Shawn,

We might revise the FUS calculations as I had more discussions with the architect about the building.

If you are available today, I would also want to discuss the storm criteria as it is not consistent with the one that we used in 2012 nor the one used for 121 Parkdale. It is my opinion that providing excess retention on site will simply delay the peaks which will coincide with upstream flows. In 2012, the site being so close to the Ottawa River was considered in the storm criteria.

If you have time today, would like to discuss this in more details.

Thanks

Guy

Guy Forget, P.Eng., LEED AP
Associate
Senior Water Resources Engineer

J.L. Richards & Associates Limited
700 - 1565 Carling Avenue, Ottawa, ON K1Z 8R1
Tel: 613-728-3571 Fax: 613-728-6012

From: Wessel, Shawn <shawn.wessel@ottawa.ca>
Sent: Tuesday, August 27, 2019 2:49 PM
To: Guy Forget <gforget@jlrichards.ca>; O'Connor, Ann <Ann.O'Connor@ottawa.ca>
Cc: Jean-Luc Rivard <jlrivard@brigil.com>; Marc Rivet <mrivet@jlrichards.ca>; Lucie Dalrymple <ldalrymple@jlrichards.ca>
Subject: RE: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions

Thank you for your email Mr. Forget

I have forwarded your request to Water Distribution for their response.

I will reply to you as soon as possible.

If you require additional information or clarification, please do not hesitate to contact me anytime.

Thank you

Regards,

Shawn Wessel, A.Sc.T.,rcji
Project Manager - Infrastructure Approvals
Gestionnaire de projet – Approbation des demandes d'infrastructures

Development Review Central Branch | Direction de l'examen des projets d'aménagement, Centrale
Planning, Infrastructure and Economic Development Department | Direction générale de la planification de l'infrastructure et du développement économique
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Int. Mail Code | Code de Courrier Interne 01-14
shawn.wessel@ottawa.ca

From: Guy Forget <gforget@jlrichards.ca>
Sent: August 27, 2019 11:33 AM
To: Wessel, Shawn <shawn.wessel@ottawa.ca>; O'Connor, Ann <Ann.O'Connor@ottawa.ca>
Cc: Jean-Luc Rivard <jlrivard@brigil.com>; Marc Rivet <mrivet@jlrichards.ca>; Lucie Dalrymple <ldalrymple@jlrichards.ca>
Subject: 99 Parkdale Avenue - Request for Hydraulic Boundary Conditions

Ann/Shawn,

On November 14, 2011, boundary conditions were provided by the City for Urbandale's 99 Parkdale Avenue condo tower. The boundary condition provided at that time were as follows:

Maximum pressure check = 114.9 m
Peak Hour demand = 108.2 m
Maximum day plus fire flow = 106.7 m

As you are aware, Brigil purchased the subject lands and proposes a similar tower. Based on the latest Site Plan (attached), the following unit breakdown is proposed:

133 x 1 bedroom condo x 1.4 = 186 population
105 x 2 bedroom condo x 3.1 = 326 population

Total residential population = 512

Domestic water demand table is attached

FUS fire flow calculation is attached.

Pease note that the required fire flow (RFF) for the proposed tower shall be based on the Ontario Building Code (OBC), which in turn is based on NFPA 13. Based on Table 11.2.2.1 (Water Supply Requirements for Pipe Schedule Sprinkler Systems) and Table 11.2.3.1.2 (Hose Stream Allowance and Water Supply Duration Requirements for Hydraulically Calculated Systems) of NFPA 13, the RFF within the property

shall be 4,150 L/min (69.2 L/s) consisting of 3,200 L/min (53.3 L/s) for the fire suppression system and 950 L/min (15.8 L/s) for the total combined hose allowance for ordinary hazard.

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

i. Location of service (provide a figure/ map showing the connection location). See attached Location of service from the approved 2012 Site Plan (Urbandale). The proposed watermain for the Brigil tower will be located in close proximity of this service.

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

iii. Average daily demand: 1.65 L/s

iv. Maximum daily demand: 4.13 L/s

v. Maximum hourly daily demand: 9.09 L/s

vi. Hydrant location and spacing to meet City's Water Design guidelines. Details will be provided in submission

If you require any clarification, let me know.

Guy

Guy Forget, P.Eng., LEED AP
Associate
Senior Water Resources Engineer

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J.L. Richards & Associates Limited
ENGINEERS · ARCHITECTS · PLANNERS

CANADA'S BEST MANAGED COMPANIES

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'

This e-mail originates from the City of Ottawa e-mail system. Any distribution, use or copying

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From: Jamie Batchelor
To: Guy Forget
Cc: Lucie Dalrymple; Marc Rivet; Jean-Luc Rivard
Subject: RE: 99 Parkdale Condominium Tower
Date: Wednesday, September 4, 2019 11:48:04 AM
Attachments: image002.png

Good Morning Guy,

Based on the drawings provided, this redevelopment will be primarily rooftop area receiving rainwater. Roofs and landscaped areas, for the purpose of protecting water quality and aquatic habitat, are deemed as clean. The RVCA therefore accepts that the stormwater runoff from this site does not require any additional quality control measures for protection of the receiving watercourse.

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: Guy Forget <gforget@jlrichards.ca>
Sent: Thursday, August 29, 2019 11:44 AM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Cc: Lucie Dalrymple <ldalrymple@jlrichards.ca>; Marc Rivet <mrivet@jlrichards.ca>; Jean-Luc Rivard <jlrivard@brigil.com>
Subject: 99 Parkdale Condominium Tower

Hi Jamie,

We have been retained by Brigil to prepare engineering documents for their proposed Condominium Building sited at 99 Parkdale Avenue (see attached Site Plan). The proposed Tower sits on four (4) properties consisting of 99, 101, 105 and 107 Parkdale Avenue. These 4 properties consisted, up until 2014, of multi-tenanted residential units (2 units per lot). Based on an imperviousness calculation, the C-Factor was estimated at 0.65. The building structures have been removed around 2014-2015.

As background to this project, 99-107 Parkdale Avenue was recently acquired by Brigil from Urbandale. In 2012, JLR had prepared engineering documents for Urbandale's Condominium Building and approvals was subsequently issued by the City under Site Plan Control (refer to 2012 Servicing Drawing prepared for Urbandale). The City asked during the June 6, 2019 pre-consult meeting that the RVCA be contacted to discuss water quality.

Proposed Condominium Project:

The Site will comprise a 28-storey Condominium Building (refer to Site Plan) as well as small areas surrounding the building envelope. These areas abutting the envelope consist of pavers, walkways and grass.

The proposed breakdown of the overall property is as follows:

Building Envelope = 1076 m2
Walkway/pavers = 200 m2
Grass = 50 m2, which might increase.

Based on the above breakdown, the building footprint and grass accounts for 85% of the total area. The storm discharge criteria provided by the City is to limit the 1:100 year post-development peak flows to those of the 1:5 year (based on the 2014 condition). The outlet sewer consists of a 300 mm diameter storm sewer that connects shortly thereafter to a 2100 mm diameter storm tunnel about 30 m away. Both storm sewer systems do not have an end of pipe quality control unit.

In 2012, there was no requirement to incorporate a water quality unit given that the building/grass area accounted for the most part of the property. The current Site Plan by Brigil maintains the high proportion of building/grass area. Can you confirm whether the 2012 servicing strategy can be maintained.

If you need further clarifications, do not hesitate to call.

Guy

Guy Forget, P.Eng., LEED AP
Associate
Senior Water Resources Engineer

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Appendix E3

Fire Flow Requirements

11.2.2 Water Demand Requirements — Pipe Schedule Method.

11.2.2.1 Table 11.2.2.1 shall be used in determining the minimum water supply requirements for light and ordinary hazard occupancies protected by systems with pipe sized according to the pipe schedules of Section 23.7.

Table 11.2.2.1 Water Supply Requirements for Pipe Schedule Sprinkler Systems

Occupancy Classification	Minimum Residual Pressure Required		Acceptable Flow at Base of Riser (Including Hose Stream Allowance)		Duration (minutes)
	psi	bar	gpm	L/min	
Light hazard	15	1	500–750	1900-2850	30–60
Ordinary hazard	20	1.4	850–1500	3200-5700	60–90

11.2.2.2 Pressure and flow requirements for extra hazard occupancies shall be based on the hydraulic calculation methods of 11.2.3.

11.2.2.3 The pipe schedule method shall be permitted as follows:

(1) Additions or modifications to existing pipe schedule systems sized according to the pipe schedules of Section 23.7
(2) Additions or modifications to existing extra hazard pipe schedule systems
(3) New systems of 5000 ft^2 (465 m^2) or less
(4) New systems exceeding 5000 ft^2 (465 m^2) where the flows required in Table 11.2.2.1 are available at a minimum residual pressure of 50 psi (3.4 bar) at the highest elevation of sprinkler

11.2.2.4 Table 11.2.2.1 shall be used in determining the minimum water supply requirements.

11.2.2.5 The lower duration value of Table 11.2.2.1 shall be acceptable only where the sprinkler system waterflow alarm device(s) and supervisory device(s) are electrically supervised and such supervision is monitored at an approved, constantly attended location.

11.2.2.6* Residual Pressure.

11.2.2.6.1 The residual pressure requirement of Table 11.2.2.1 shall be met at the elevation of the highest sprinkler.

11.2.2.6.2 Friction Loss Due to Backflow Prevention Valves.

11.2.2.6.2.1 When backflow prevention valves are installed on pipe schedule systems, the friction losses of the device shall be accounted for when determining acceptable residual pressure at the top level of sprinklers.

11.2.2.6.2.2 The friction loss of this device [in psi (bar)] shall be added to the elevation loss and the residual pressure at the top row of sprinklers to determine the total pressure needed at the water supply.

11.2.2.7 The lower flow figure of Table 11.2.2.1 shall be permitted only where the building is of noncombustible construction or the potential areas of fire are limited by building size or compartmentation such that no open areas exceed 3000 ft^2 (280 m^2) for light hazard or 4000 ft^2 (370 m^2) for ordinary hazard.

11.2.3 Water Demand Requirements — Hydraulic Calculation Methods.

11.2.3.1 General.

11.2.3.1.1 The water demand for sprinklers shall be determined only from one of the following, at the discretion of the designer:

(1) Density/area curves of Figure 11.2.3.1.1 in accordance with the density/area method of 11.2.3.2
(2) The room that creates the greatest demand in accordance with the room design method of 11.2.3.3
(3) Special design areas in accordance with 11.2.3.4

11.2.3.1.2 The minimum water supply shall be available for the minimum duration specified in Table 11.2.3.1.2.

11.2.3.1.3 The lower duration values in Table 11.2.3.1.2 shall be permitted where the sprinkler system waterflow alarm device(s) and supervisory device(s) are electrically supervised and such supervision is monitored at an approved, constantly attended location.

11.2.3.1.4 Restrictions. When either the density/area method or room design method is used, the following shall apply:

(1)*For areas of sprinkler operation less than 1500 ft^2 (139 m^2) used for light and ordinary hazard occupancies, the density for 1500 ft^2 (139 m^2) shall be used.
(2) For areas of sprinkler operation less than 2500 ft^2 (232 m^2) for extra hazard occupancies, the density for 2500 ft^2 (232 m^2) shall be used.

11.2.3.1.5 Unsprinklered Combustible Concealed Spaces.

11.2.3.1.5.1* When using the density/area or room design method, unless the requirements of 11.2.3.1.5.2 are met for buildings having unsprinklered combustible concealed spaces, as described in 8.15.1.2 and 8.15.6, the minimum area of sprinkler operation for that portion of the building shall be 3000 ft^2 (280 m^2).

(A) The design area of 3000 ft^2 (280 m^2) shall be applied only to the sprinkler system or portions of the sprinkler system that are adjacent to the qualifying combustible concealed space.

(B) The term *adjacent* shall apply to any sprinkler system protecting a space above, below, or next to the qualifying concealed space except where a barrier with a fire resistance rating at least equivalent to the water supply duration completely separates the concealed space from the sprinklered area.

11.2.3.1.5.2 The following unsprinklered concealed spaces shall not require a minimum area of sprinkler operation of 3000 ft^2 (280 m^2):

(1) Noncombustible and limited-combustible concealed spaces with minimal combustible loading having no access. The space shall be considered a concealed space even with small openings such as those used as return air for a plenum.
(2) Noncombustible and limited-combustible concealed spaces with limited access and not permitting occupancy or storage of combustibles. The space shall be considered a concealed space even with small openings such as those used as return air for a plenum.
(3) Combustible concealed spaces filled entirely with noncombustible insulation.
(4)*Light or ordinary hazard occupancies where noncombustible or limited-combustible ceilings are directly attached

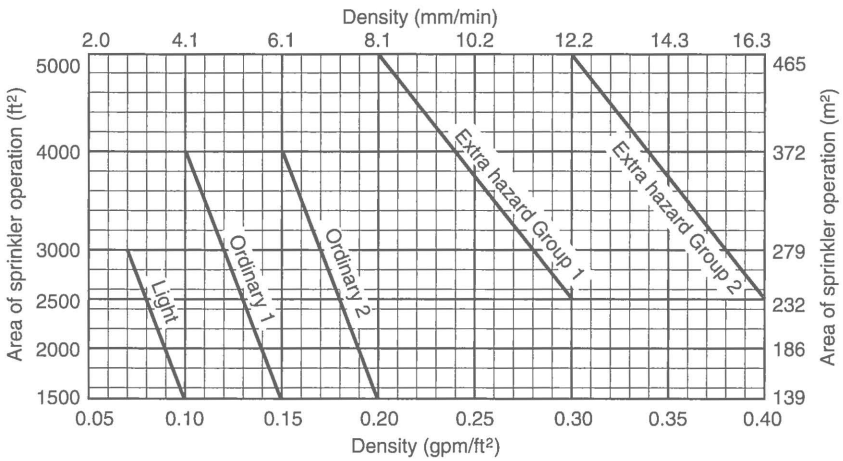


FIGURE 11.2.3.1.1 Density/Area Curves.

Table 11.2.3.1.2 Hose Stream Allowance and Water Supply Duration Requirements for Hydraulically Calculated Systems

Occupancy	Inside Hose		Total Combined Inside and Outside Hose		Duration (minutes)
	gpm	L/min	gpm	L/min	
Light hazard	0, 50, or 100	0, 190, or 380	100	380	30
Ordinary hazard	0, 50, or 100	0, 190, or 380	250	950	60–90
Extra hazard	0, 50, or 100	0, 190, or 380	500	1900	90–120

to the bottom of solid wood joists or solid limited-combustible construction or noncombustible construction so as to create enclosed joist spaces 160 ft^3 (4.5 m^3) or less in volume, including space below insulation that is laid directly on top or within the ceiling joists in an otherwise sprinklered concealed space.

(5) Concealed spaces where rigid materials are used and the exposed surfaces have a flame spread index of 25 or less and the materials have been demonstrated to not propagate fire more than 10.5 ft (3.2 m) when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials,* or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials,* extended for an additional 20 minutes in the form in which they are installed in the space.

(6) Concealed spaces in which the exposed materials are constructed entirely of fire-retardant-treated wood as defined by NFPA 703.

(7) Concealed spaces over isolated small rooms not exceeding 55 ft^2 (5.1 m^2) in area.

(8) Vertical pipe chases under 10 ft^2 (0.9 m^2), provided that in multifloor buildings the chases are firestopped at each floor using materials equivalent to the floor construction, and where such pipe chases contain no sources of ignition, piping shall be noncombustible, and pipe penetrations at each floor shall be properly sealed.

(9) Exterior columns under 10 ft^2 (0.9 m^2) in area formed by studs or wood joists, supporting exterior canopies that are fully protected with a sprinkler system.

(10)*Light or ordinary hazard occupancies where noncombustible or limited-combustible ceilings are attached to the bottom of composite wood joists either directly or on to metal channels not exceeding 1 in. (25 mm) in depth, provided the adjacent joist channels are firestopped into volumes not exceeding 160 ft^3 (4.5 m^3) using materials equivalent to ½ in. (13 mm) gypsum board, and at least 3½ in. (90 mm) of batt insulation is installed at the bottom of the joist channels when the ceiling is attached utilizing metal channels.

11.2.3.2 Density/Area Method.

11.2.3.2.1 Water Supply.

11.2.3.2.1.1 The water supply requirement for sprinklers only shall be calculated from the density/area curves of Figure 11.2.3.1.1 or from Chapter 22 where density/area criteria are specified for special occupancy hazards.

11.2.3.2.1.2 When using Figure 11.2.3.1.1, the calculations shall satisfy any single point on the appropriate density/area curve.

11.2.3.2.1.3 When using Figure 11.2.3.1.1, it shall not be necessary to meet all points on the selected curves.

11.2.3.2.2 Sprinklers.

11.2.3.2.2.1 The densities and areas provided in Figure 11.2.3.1.1 shall be for use only with spray sprinklers.

11.2.3.2.2.2 Quick-response sprinklers shall not be permitted for use in extra hazard occupancies or other occupancies where there are substantial amounts of flammable liquids or combustible dusts.

11.2.3.2.2.3 For extended coverage sprinklers, the minimum design area shall be that corresponding to the hazard in Figure 11.2.3.1.1 or the area protected by five sprinklers, whichever is greater.

11.2.3.2.2.4 Extended coverage sprinklers shall be listed with and designed for the minimum flow corresponding to the density for the hazard as specified in Figure 11.2.3.1.1.

FUS Fire Flow Calculations

2270 Walkley Road - JLR 22584-001.1

Step	Parameter	Value		Note
A	Type of Construction	Non-combustible		
	Coefficient (C)	0.8		
B	Floor Area 2nd Floor	788	m^2	
C	Height in storeys	28	storeys	Excluding Parking Garage 50% below Grade
	Total Floor Area	15076	m^2	
D	Fire Flow Formula	$F=220C\sqrt{A}$		
	Fire Flow	21610	L/min	
	Rounded Fire Flow	22000	L/min	Flow rounded to nearest 1000 L/min.
E	Occupancy Class	Limited Combustible		Residential buildings have a limited combustible occupancy
	Occupancy Charge	-15%		
	Occupancy Increase or Decrease	-3300		
	Fire Flow	18700	L/min	No rounding applied.
F	Sprinkler Protection	Automatic Fully Supervised		
	Sprinkler Credit	-50%		
	Decrease for Sprinkler	-9350	L/min	
G	*North Side Exposure*			
	Exposing Wall:	Non-combustible		
	Exposed Wall:	Non-combustible		
	Length of Exposed Wall:	14.1	m	
	Height of Exposed Wall:	10	storeys	
	Length-Height Factor	141.0	m-storeys	
	Separation Distance	2.07	m	
	North Side Exposure Charge	25%		
	East Side Exposure			
	Exposing Wall:	Non-combustible		
	Exposed Wall:	Non-combustible		
	Length of Exposed Wall:	43.6	m	
	Height of Exposed Wall:	3	storeys	
	Length-Height Factor	130.8	m-storeys	
	Separation Distance	9.15	m	
	East Side Exposure Charge	20%		
	South Side Exposure			
	Exposing Wall:	Non-combustible		
	Exposed Wall:	Non-combustible		
	Length of Exposed Wall:	20.3	m	
	Height of Exposed Wall:	28	storeys	
	Length-Height Factor	569.5	m-storeys	
	Separation Distance	19.4	m	
	South Side Exposure Charge	15%		
	West Side Exposure			
	Exposing Wall:	Non-combustible		
	Exposed Wall:	Non-combustible		
	Length of Exposed Wall:	29.0	m	
	Height of Exposed Wall:	3	storeys	
	Length-Height Factor	87.0	m-storeys	
	Separation Distance	105	m	
	West Side Exposure Charge	0%		
	Total Exposure Charge	60%		
	Increase for Exposures	11220	L/min	
H	Fire Flow	20570	L/min	
	Rounded Fire Flow	21000	L/min	Flow rounded to nearest 1000 L/min.
	Required Fire Flow (RFF)	**21000**	**L/min**	
		350	**L/s**	

Fire Underwriters Survey (FUS) Fire Flow Calculations
In accordance with City of Ottawa Technical Bulletin ISTB-2018-02 dated March 21, 2018

Appendix E4

Headloss Calculations

99 Parkdale Avenue Condominium Tower

Brigil (11034936 Canada Inc.)

25205-100

Headloss Calculations per the Hazen Williams Equation

Calculate headloss in a given pipe length based on flows and C value

HL = 10.675 * L * Q^1.852 / (C^1.856 * D ^4.8704)

Where,

HL = Headloss (m)

L - Length (m)
Q - Flow (m^3/s)
C - Hazen Williams "C"
D - Main Diameter (m)

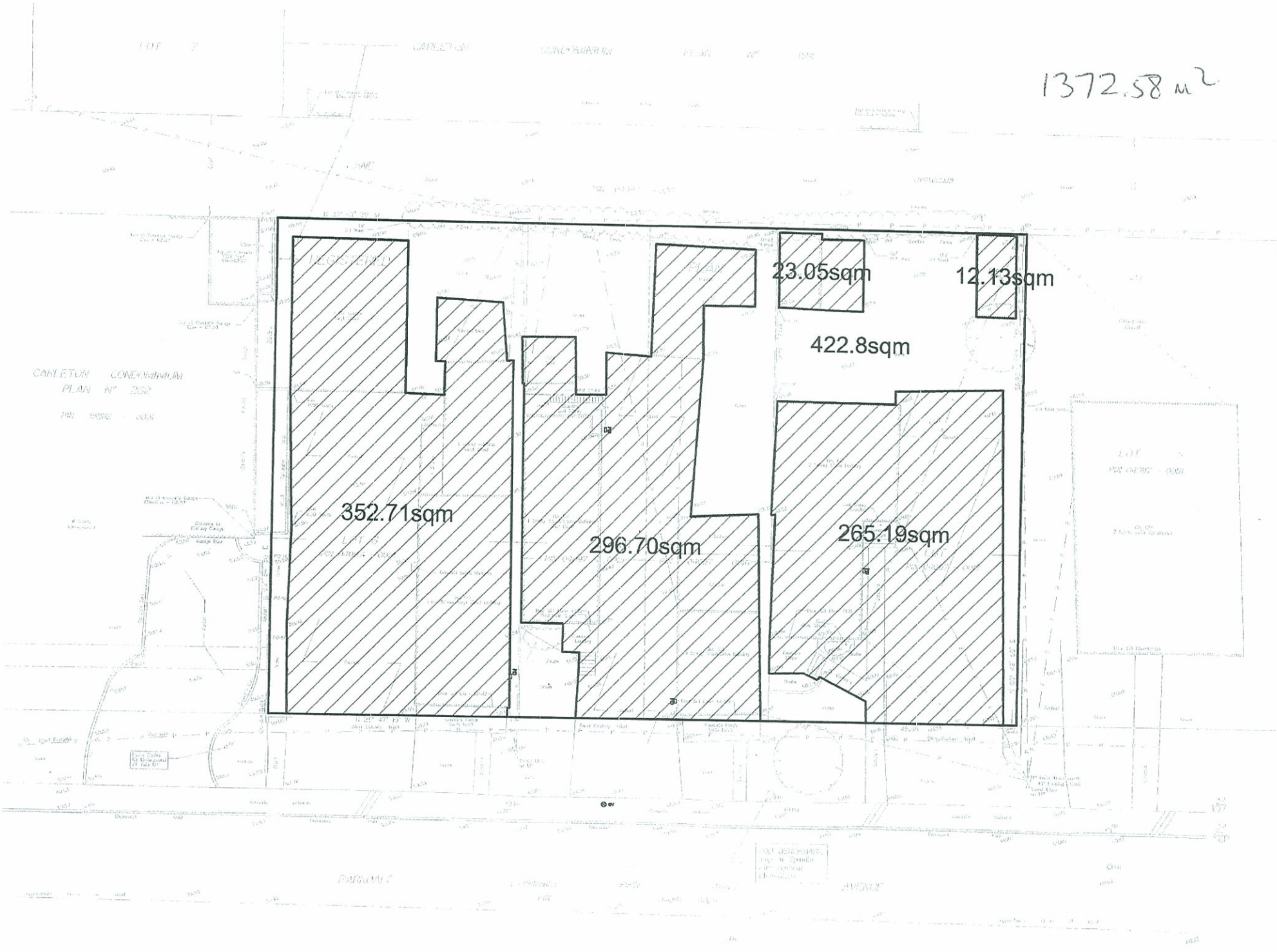
Water Demand Condition	Flow - Q (L/s)	Flow - Q (m^3/s)	Length (m)	C	D (m)	HeadLoss (m)	HGL (m) @ 200mm WM	HGL @ Tower (m)	Tower Elevation (m)	Pressure @ Tower (m)	Pressure @ Tower (kPa)	Requirement	Criteria Acheived?
Average Day Maximum Day	1.34 4.33	0.001335 0.00433	20 20	100 100	0.15 0.15								
Peak Hour	6.49	0.00649	20	100	0.15	0.0380	107.5	107.462	60	47.462	466	275	Yes
Maximum HGL	0.35	0.00035	20	100	0.15	0.0002	115.0	115.000	60	55.000	540	552	Yes
Maximum Day Plus Fire (Q = 4.28 L/s + 69.2 L/s)	73.53	0.07353	20	100	0.15	3.4104	106.0	102.590	60	42.590	418	140	Yes

Booster pump to be designed by the Owner's Mechanical Engineer

Appendix F1

Figure Depicting Existing Areas

1372.58 m²



Appendix F2

Allowable Peak Flow and
Storage Volume Calculations

BRIGIL (11034936 Canada Inc.)

Storm Criterion from the City of Ottawa (per August 28, 2019 Email and June 2019 Preconsult):

i) 1:5 year and 1:100 year intensities per the Ottawa Sewer Design Guidelines
ii) Allowable release rate to the storm sewer to be restricted to the exisitng 1:5 year peak flow (2012 condition).
iii) Allowable release rate to the storm sewer system to set based on calculated C-Factor and Tc (2012 condition).
iv) The 1:100 year from the Building to be restricted to the allowable release rate (5 year) and on-site storage provided.
iii) The areas surrounding the building envelope can sheet flow towarsd the roadways
iv) Controlled flows from the building to discharge into the 300 mm diameter storm sewer
v) Proposed surface around the Tower (hard surface & grass) to flow unrestricted to the roadways
vi) Should a cistern or storage tank be proposed as retention, 50% of the allowable peak flow should be used in the calculation

Calculation of Pre-Development Runoff Coefficient (C-Factor)

AREA OF PARCEL (incl. ParkdaleWidening) = 1667 m^2 (parcel & strip of r.o.w. fronting to Parkdale Ave)

SUMMARY OF AREAS (per AOV Survey)

Type of Surface	Area (m^2)	Area (ha)	C-Factor	AC
Overall Parcel surveyed by AOV (including widening/Parkdale Strip)				
Rooftop, Asphalt, Laneway, Shed, etc	949.0	0.0949	0.9	0.085
Grass	423.0	0.0423	0.2	0.008
Total:	1372.0	0.1372		0.684
Overall Parcel surveyed by AOV (excluding widening/Parkdale Strip)				
Rooftop, Asphalt, Laneway, Shed, etc	914.9	0.0915	0.9	0.082
Grass	410.4	0.0410	0.2	0.008
TOTAL:	1325.3	0.1325		0.683

C_{avg} (exist) = {[0.0915 x 0.9] + [0.0410 x 0.2]} / {0.0915 + 0.0410}

C_{avg} (exist) = 0.68

$C_{Design\ Criteria}$ = 0.62 **Water Quantity Design Criteria per August 28, 2019 Email from City (Eric Tousignant)**

Calculation of Time of Concentration (Pre-Development Conditions)

Time of concentrations were estimated for the front and rear year areas based on split-lot drainage:

Front Areas:
Traveled lengths were found to range between 18.5 m and 25.5 m and slopes from 2.47% and 4.4%
Based on the above lengths/slopes, velocities were found to range between 0.9 m/s to 1.2 m/s
Travel times for Lengths of 18.5 m and 25.5 m = ±0.5 mins
Tc = 10 min + 0.5 min = 10.5 mins

Rear Areas:
Traveled lengths were found to range between 10.5 m and 17.0 m and slopes from 0.48% and 0.92%
Based on the above lengths/slopes, velocities were found to range between 0.31 m/s to 0.43 m/s
Travel times for Lengths of 10.5 m and 17.0 m = ±0.5 mins
Tc = 10 min + 0.5 min = 10.5 mins

T_c (exist) set to 10.5 mins, in accordance with Section 5.4.5.1 of the Ottawa Sewer Design Guidelines

Allowable Peak Flow Calculations (Existing)

Establish peak flows that are currently being conveyed to the roadway and captured by the existing 2100 mm diameter trunk storm sewer:

Calculate peak flow based on C-Factor = 0.62:

Q_{5yr} = 2.78CIA

Q_{5yr} = 2.78 x 0.62 x 101.62 mm/hr x 0.1325 ha (I_{5yr} based on Tc = 10.5 mins) - Per City Design Criteria (August 28, 2019 Email)

Q_{5yr} (allowable) = 23.21 L/s

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

BRIGIL (11034936 Canada Inc.)

Post-Development Flow Calculations & Storage Volume Calculation

SUMMARY OF ALL AREAS

Type	Area m^2	Area (ha)	C Factor	AC	Note
Condo Tower (total - plan view)	1107	0.1107	0.9	0.100	Provision of on-site storage
Misc Strips Outside of Tower					
Walkway/Pavers/concrete	104	0.0104	0.9	0.009	Sheet flow to ROW
Planters	173	0.0173	0.6	0.010	Sheet flow to ROW
TOTAL:	1384	0.1384		0.119	

Runoff from walkway/pavers & grass to be discharge freely onto the ROW (per August 28, 2019 email from City)

Tower to be controlled via on-site storage (Internal Storage Tank):

Area =	**0.1107**
C-Factor =	**0.900**

Storage Volume Requirement Calculations:

Storage Tank Storage Volume Calculation (1:100 year)

Post-Development						
Time (min)	**Intensity 1:100 Yr (mm/hr)**	**Design Release Rate (L/s)**	**Allowable [1] Release Rate (L/s)**	**Storage Release Rate (L/s)**	**Volume Required m3**	
5	242.70	67.22	11.6	55.61	16.7	
10	178.56	49.45	11.6	37.84	22.7	
15	142.89	39.57	11.6	27.97	25.2	
20	119.95	33.22	11.6	21.61	25.9	**Vrequired**
25	103.85	28.76	11.6	17.15	25.7	
30	91.87	25.44	11.6	13.84	24.9	
35	82.58	22.87	11.6	11.26	23.7	
40	75.15	20.81	11.6	9.20	22.1	
45	69.05	19.12	11.6	7.52	20.3	
50	63.95	17.71	11.6	6.11	18.3	

Note [1] : Allowable release rate reduced by 50% to account for Internal Storage Tank as measure that provides retention

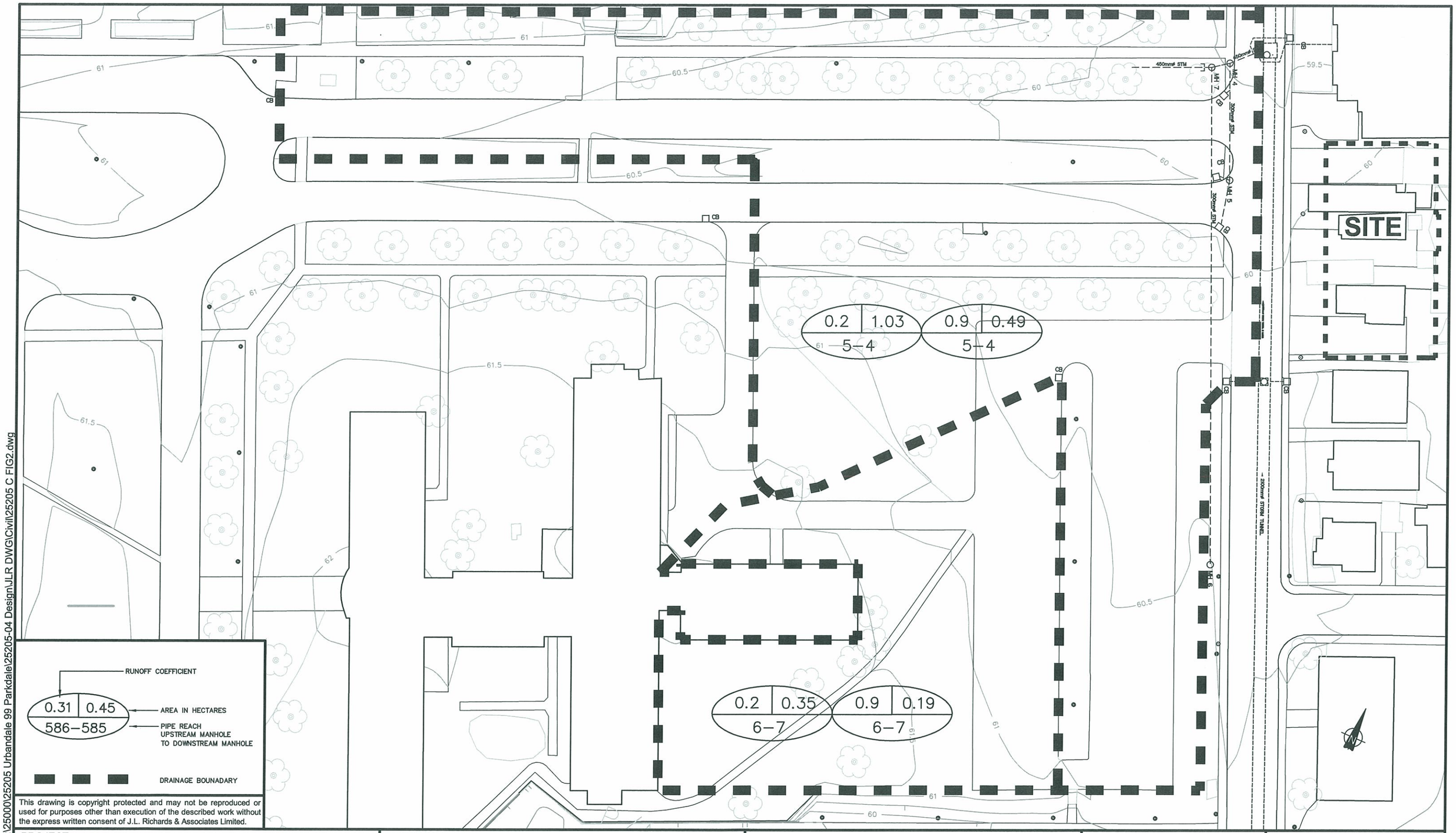
Internal Storage tank to provide minimum of 25 m^3 of storage
Restrictor to be sized on maximum head
Internal Storage Tank designed by mechanial engineer to be equipped with an overflow pipe to accommodate overflow from Climate Change

Overflow Capacity (Climate Change) = (120% x Qp 100 year) -(Qp 100 year)
CCE Qp = 39.86 L/s
Qp 100 year = 33.22 L/s

Overflow = 6.64 L/s, overflow conveyance system by mechanical engineer to accommodate minimum 10 L/s

Appendix F3

Figure 2, Figure 3, and storm sewer design sheets (existing and post-development)



File Location: P:\25000\25205 Urbandale 99 Parkdale\25205-04 Design\JLR DWG\Civil\25205 C FIG2.dwg

PROJECT:
99 PARKDALE AVENUE CONDOMINIUM BUILDING
URBANDALE CONSTRUCTION

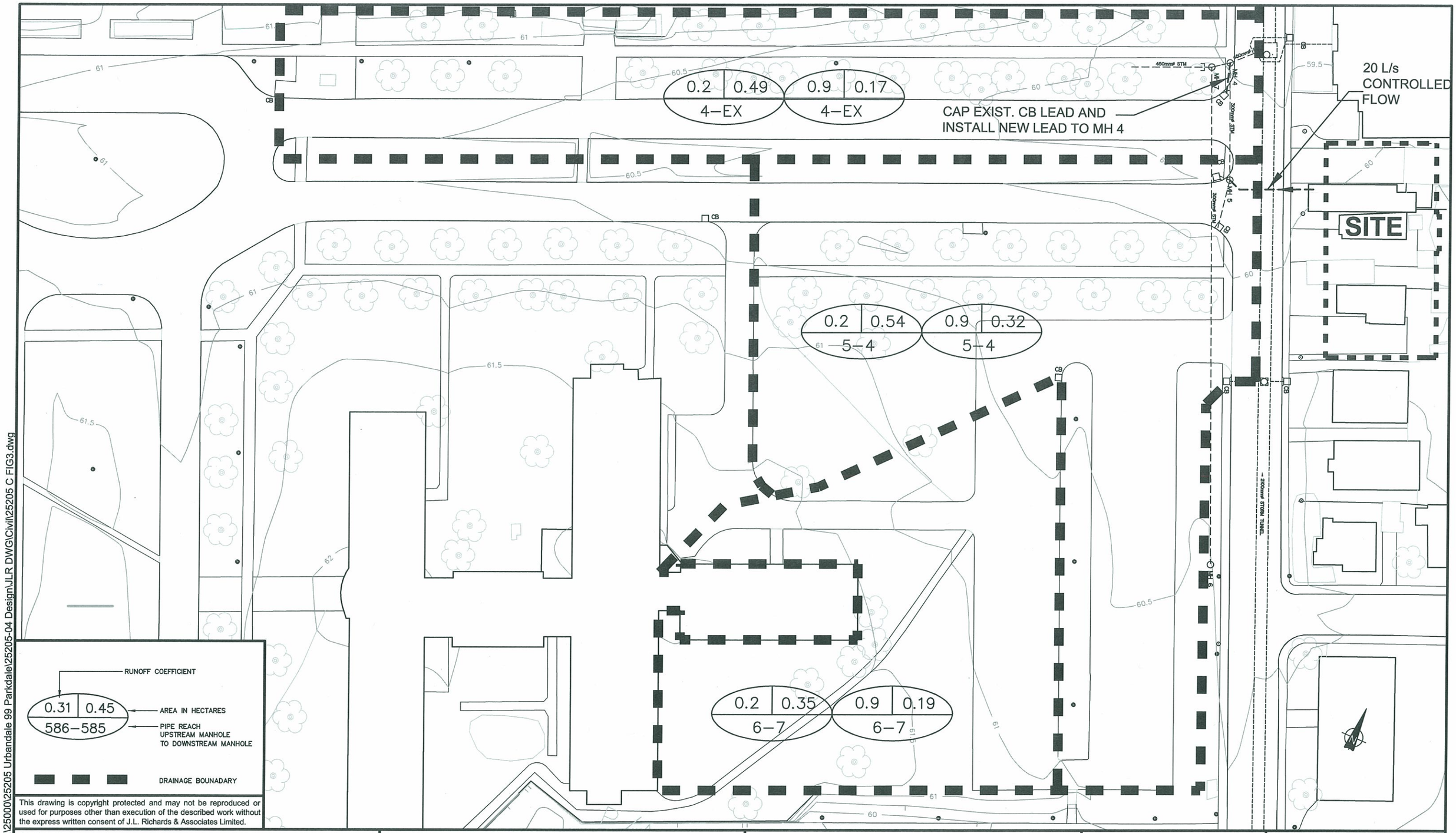
DRAWING:
EXISTING OUTLET STORM MANHOLE UPSTREAM DRAINAGE AREA

J.L.Richards
ENGINEERS·ARCHITECTS·PLANNERS
J.L. Richards & Associates Limited
864 Lady Ellen Place
Ottawa, ON Canada
K1Z 5M2
Tel: 613 728 3571
Fax: 613 728 6012

DESIGN:	L.J.
DRAWN:	ARM
CHECKED:	L.D.
PLOTTED:	Nov 25, 2011

DRAWING NO.: **FIGURE 2**

JLR NO: 25205-04



RUNOFF COEFFICIENT

0.31 | 0.45 — AREA IN HECTARES

586–585 — PIPE REACH
UPSTREAM MANHOLE
TO DOWNSTREAM MANHOLE

DRAINAGE BOUNDARY

File Location: P:\25000\25205 Urbandale 99 Parkdale\25205-04 Design\JLR DWG\Civil\25205 C FIG3.dwg

PROJECT:
99 PARKDALE AVENUE CONDOMINIUM BUILDING
URBANDALE CONSTRUCTION

DRAWING:
MODIFIED OUTLET STORM MANHOLE UPSTREAM DRAINAGE AREA

J.L.Richards
ENGINEERS·ARCHITECTS·PLANNERS

J.L. Richards
& Associates Limited
864 Lady Ellen Place
Ottawa, ON Canada
K1Z 5M2
Tel: 613 728 3571
Fax: 613 728 6012

DESIGN:	L.J.
DRAWN:	ARM
CHECKED:	L.D.
PLOTTED:	Nov 25, 2011

DRAWING NO.: **FIGURE 3**

JLR NO: 25205-04

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

99 Parkdale Avenue
CITY OF OTTAWA
Brigil (11034936 Canada Inc)
JLR PROJECT NO.: 25205-100

EXISTING CONDITIONS

STORM SEWER DESIGN SHEET
1:2 YEAR IDF CURVE

Designed: G.F.
Checked By: S.P.

Date: September 2019

2 YEAR IDF CURVE **Denotes Existing Sewers**
Manning's Coefficient (n) =

STREET	MANHOLE NUMBER		AREAS (ha)			1:2 YR PEAK FLOW GENERATION					Total Storm Flow (L/s)	Q_d/Q_{cap}	SEWER DATA					
	From	To	0.20	0.90	1.00	2.78AR	2.78AR CUMM	Time min	Intens. mm/hr	Peak Flow (l/s)			Dia (mm)	Slope %	Q full (l/s)	V full (m/s)	Length (m)	Flow Time (min)
Parkdale Avenue	5	4	1.03	0.49		1.80	1.80	20.00	52.03	93.59	93.59	0.83	300	1.24	112.34	1.54	25.00	0.27
								20.27										
Parkdale Avenue	6	7	0.35	0.19		0.67	0.67	20.00	52.03	34.86	34.86	0.45	300	0.60	78.14	1.07	106.00	1.65
								21.65										
Parkdale Avenue	7	4				0.00	0.67	21.65	49.52	33.18	33.18	0.09	375	3.70	351.84	3.09	3.00	0.02
Parkdale Avenue	4	3				0.00	2.47	21.65	49.52	122.25	122.25	0.35	450	1.39	350.67	2.14	8.00	0.06
								21.71										
		TOTAL AREA (ha)			2.06													

Parkdale Avenue- AS BUILT INFORMATION

Ex. Inv @ ST MH3 (Parkdale Ave)	**57.513**
Ex. Obv @ ST MH 3 (Parkdale Ave)	**57.963**

Information taken from Ottawa As-Built Plans - Parkdale Avenue
DWG No. 3409, Rev. 3 (Tender) - Parkdale Avenue

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

99 Parkdale
CITY OF OTTAWA
Brigil (11034936 Canada Inc)
JLR PROJECT NO.: 25205-100

POST DEVELOPMENT CONDITION

STORM SEWER DESIGN SHEET
1:2 YEAR IDF CURVE

Designed: G.F.
Checked By: S.P.

2 YEAR IDF CURVE **Denotes Existing Sewers**
Manning's Coefficient (n) =

Date: September 2019

STREET	MANHOLE NUMBER		AREAS (ha)			1:2 YR PEAK FLOW GENERATION					CONTROLLED AREA			Total Storm Flow (L/s)	Q_d/Q_{cap}	SEWER DATA					
	From	To	0.20	0.90	1.00	2.78AR	2.78AR CUMM	Time min	Intens. mm/hr	Peak Flow (l/s)	Resistricted flow rate (L/s)	Restrict. Flow (CUM)	Cummulative (CUM)			Dia (mm)	Slope %	Q full (l/s)	V full (m/s)	Length (m)	Flow Time (min)
Parkdale Avenue	5	4	0.54	0.32		1.10	1.10	20.00	52.03	57.28	25.60	25.60	25.60	82.88	0.74	300	1.24	112.34	1.54	25.00	0.27
								20.27													
Parkdale Avenue	6	7	0.35	0.19		0.67	0.67	20.00	52.03	34.86			25.60	60.46	0.77	300	0.60	78.14	1.07	106.00	1.65
								21.65													
Parkdale Avenue	7	4				0.00	0.67	21.65	49.52	33.18			25.60	58.78	0.17	375	3.70	351.84	3.09	3.00	0.02
Parkdale Avenue	4	3	0.49	0.17		0.70	2.47	21.67	49.50	122.19			25.60	147.79	0.42	450	1.39	350.67	2.14	8.00	0.06
								21.73													
		TOTAL AREA (ha)	2.06																		

Parkdale Avenue- AS BUILT INFORMATION

Ex. Inv @ ST MH3 (Parkdale Ave)	**57.513**
Ex. Obv @ ST MH 3 (Parkdale Ave)	**57.963**

Information taken from Ottawa As-Built Plans - Parkdale Avenue
DWG No. 3409, Rev. 3 (Tender) - Parkdale Avenue

GENERAL CONSTRUCTION NOTES :

1. ALL MATERIALS AND CONSTRUCTION TO BE IN ACCORDANCE WITH CURRENT CITY OF OTTAWA (COA) STANDARDS AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS (OPSS & OPSD); SEWER AND WATERMAIN MATERIAL TYPES AND DISINFECTION.
2. SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH CURRENT CITY OF OTTAWA (COA) STANDARDS AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS (OPSS & OPSD); ROADS AND PUBLIC WORKS.
3. VALVES TO BE OPERATED BY CITY OF OTTAWA STAFF ONLY.
4. NO CONNECTION TO EXISTING WATER NETWORK SHALL BE COMPLETED UNTIL A WATER PERMIT IS OBTAINED FROM THE CITY OF OTTAWA (COO). COA FORCES TO COMPLETE WATERMAIN CONNECTIONS. EXCAVATION, BACKFILLING AND REINSTATEMENT TO BE COMPLETED BY CONTRACTOR.
5. UNLESS OTHERWISE NOTED, DIMENSIONS FROM STREET LINE ARE TO THE CENTRELINE OF SEWER OR MANHOLE.
6. THE INSIDE DIAMETER OF PIPES ARE REFERRED TO IN PLAN VIEW.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATES FROM ALL UTILITY COMPANIES TO LOCATE EXISTING UTILITIES PRIOR TO EXCAVATION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION, BACKFILL, REINSTATEMENT OF ALL AREAS DISTURBED DURING CONSTRUCTION AND ALL ASSOCIATED WORKS TO THE SATISFACTION OF THE ENGINEER AND CITY OF OTTAWA.
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE, VIA EXCAVATION, THE EXACT LOCATION AND ELEVATION OF THE EXISTING WATERMAINS, SEWERS AND UNDERGROUND STRUCTURES AS REQUIRED FOR ALL CONNECTIONS, RELOCATIONS AND BLANKINGS.
10. 99 PARKDALE AVENUE SERVICING DESIGN DRAWINGS TO BE READ IN CONJUNCTION WITH THE SERVICING REPORT (FEBRUARY 2020) PREPARED BY J.L. RICHARDS & ASSOCIATES.
11. ALL WATERMAINS AND WATER SERVICES LESS THAN 2.4m FROM A STORM SEWER, CATCH BASIN OR MANHOLE SHALL BE INSULATED IN ACCORDANCE WITH THE CITY OF OTTAWA'S REQUIREMENTS AS SET OUT IN CITY'S OF OTTAWA SPECIFICATION F-7014.
12. AT ALL CONNECTION POINTS, REINSTATE SURFACES TO EXISTING CONDITION OR BETTER.
-ASPHALT RESTORATION SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD DRAWING No. R10.
-THICKNESS OF GRANULARS AND ASPHALT LAYERS SHALL MATCH EXISTING
13. REFER TO ARCHITECTURAL DRAWINGS FOR SITE LAYOUT.
14. BENCHMARK: TOP OF SPINDLE OF FIRE HYDRANT LOCATED ON EAST SIDE OF PARKDALE AVENUE WITH ELEVATION = 61.07m, AS PROVIDED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD. (AOV). BENCHMARK IS VALID UNTIL HYDRANT IS RELOCATED. BENCHMARK IS TO BE TRANSFERRED BY AOV PRIOR TO RELOCATING THE HYDRANT.
15. INSULATE FULL LENGTH OF 200Ø STORM SERVICE AS PER CITY OF OTTAWA W22.

NORTH WATERMAIN TABLE-Sta. 1+000 to 1+010.5
PVC DR-18 CL.150

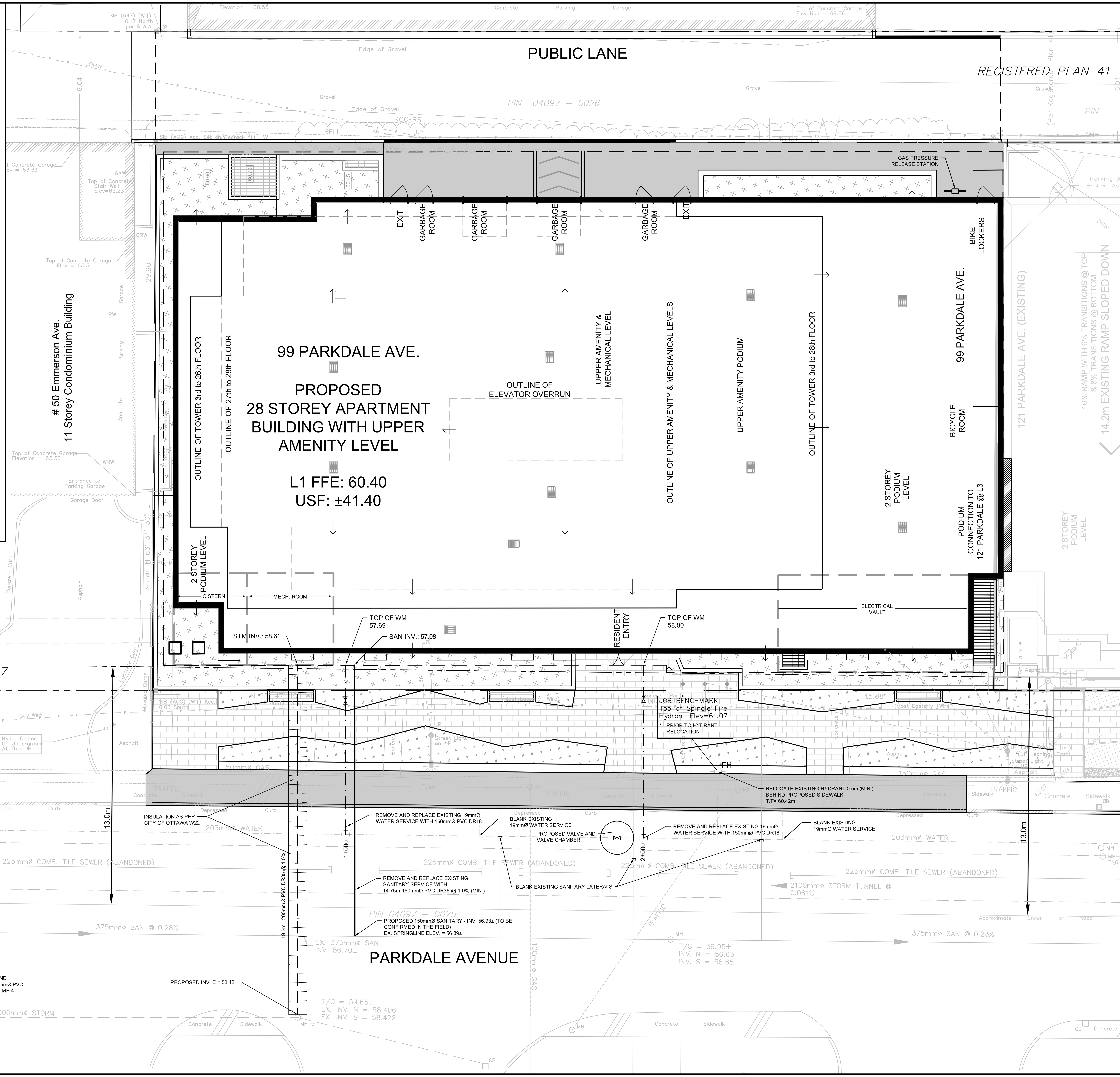
SIZE	STATION ALONG WM	DETAIL	FINISHED GRADE	TOP OF WM
150mmØ	1+000	TAPPING VALVE & SLEEVE	59.80	57.40
	1+007.3	VALVE & VB	60.09	57.69
	1+007.8	FACE OF UNDERGROUND PARKING STRUCTURE	60.09	57.69

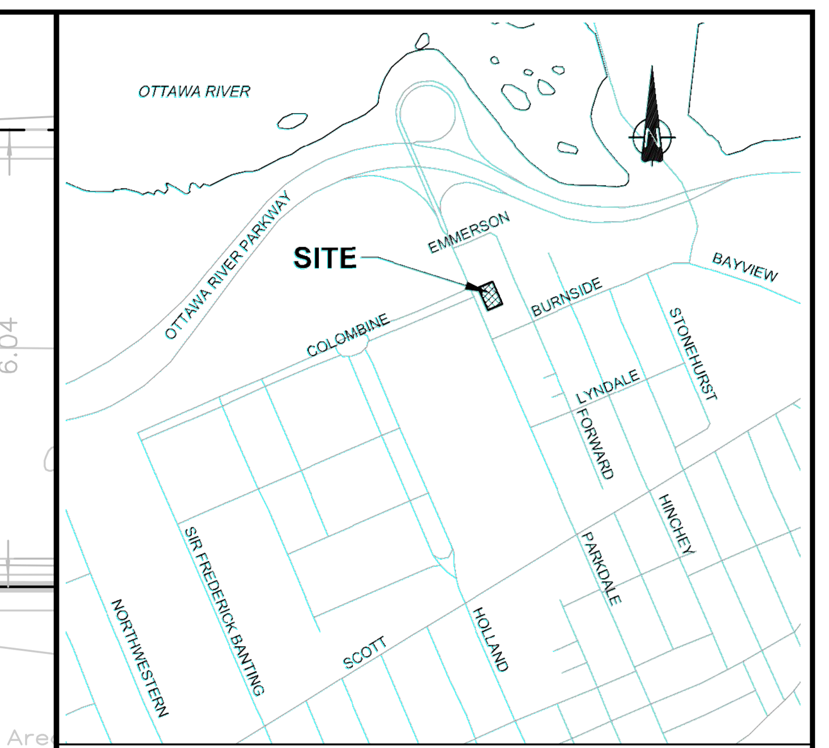
SOUTH WATERMAIN TABLE-Sta. 2+000 to 2+010.5
PVC DR-18 CL.150

SIZE	STATION ALONG WM	DETAIL	FINISHED GRADE	TOP OF WM
150mmØ	2+000	TAPPING VALVE & SLEEVE	60.10	57.70
	2+007.3	VALVE & VB	60.30	57.90
	2+007.8	FACE OF UNDERGROUND PARKING STRUCTURE	60.30	58.00

ASPHALT PAVEMENT STRUCTURE FOR REAR LANE
*300mm (MIN.) GRAN.'B' TYPE II 150mm GRAN.'A' 50mm SP19.0 40mm SP12.5
REFER TO GEOTECHNICAL REPORT

* GRANULAR 'B' THICKNESS TO BE CONFIRMED BY GEOTECHNICAL ENGINEER AT TIME OF CONSTRUCTION AND/OR SUBGRADE PREPARATION.





LEGEND

Symbol	Description
□	EXISTING CATCH BASIN
	PROPOSED WATERMAIN & VALVE
	EXISTING WATERMAIN, VALVE & HYDRANT
	EXISTING SANITARY SEWER & MANHOLE
	EXISTING STORM SEWER & MANHOLE
	PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER & MANHOLE
	RETAINING WALL
FF = 104.48	FINISHED FLOOR ELEVATION
Ⓜ	WATER METER
Ⓡ	REMOTE WATER METER
	SIAMESE CONNECTION
▼	PROPOSED BUILDING ENTRANCE
→	OVERFLOW ROOF SCUPPER
	PROPERTY LINE
	OUTLINE OF UNDERGROUND PARKING LEVELS

No.	ISSUE / REVISION	DD/MM/YY
02	ISSUED TO CITY FOR REVIEW - SECOND SUBMISSION	07/02/2020
01	ISSUED TO CITY FOR REVIEW - FIRST SUBMISSION	22/10/2019

VERIFY SHEET SIZE AND SCALES. BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: 1:100

CLIENT: BRIGIL

CONSULTANT: J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS www.jlrichards.ca

CONSULTANT:

PROFESSIONAL STAMP: LICENSED PROFESSIONAL ENGINEER M. N. L. DALRYMPLE Feb. 7/20 PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT: 99 PARKDALE AVENUE
OTTAWA ONTARIO

DRAWING: SITE SERVICING PLAN

DESIGN:	SP	DRAWING #:
DRAWN:	SP	S1
CHECKED:	LD	
JLR #:	25205-100	

City File No: D07-12-19-0176 Plan No: 18067

PLOT DATE: Friday, February 7, 2020 12:18:13 PM

File Location: P:\25000\25205-100 - Brigil - 99 Parkdale Ave\5-Production\1-Civil\25205-100 C S1.dwg

GRADING NOTES:

1. ROADWAY SUBGRADE SHALL BE INSPECTED BY A QUALIFIED GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF GRANULARS, ABOVE WOVEN GEOTEXTILE (IF REQUIRED). ROADWAY MATERIAL AND COMPACTION INSPECTION TO BE CARRIED OUT BY A QUALIFIED GEOTECHNICAL ENGINEER AS REQUIRED BY THE MUNICIPALITY.

2. ROAD STRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT AT MINIMUM:

   PUBLIC REAR LANE PAVEMENT STRUCTURE SHALL BE:
   - 40mm WEAR COURSE - SUPERPAVE 12.5
   - 50mm BINDER COURSE - SUPERPAVE 19.0
   - 150mm BASE - OPSS GRANULAR 'A' CRUSHED STONE COMPACTED TO 100% SPMDD
   - 400mm (MIN.) SUBBASE - OPSS GRANULAR 'B' TYPE II COMPACTED TO 100% SPMDD

   SUBGRADE - EITHER IN SITU SOILS OR OPSS GRANULAR 'B' TYPE I OR II MATERIAL PLACED OVER IN SITU SOIL
   REQUIREMENT FOR ADDITIONAL GRANULAR 'B' AND/OR FILTER CLOTH TO BE CONFIRMED ON SITE BY GEOTECHNICAL ENGINEER.

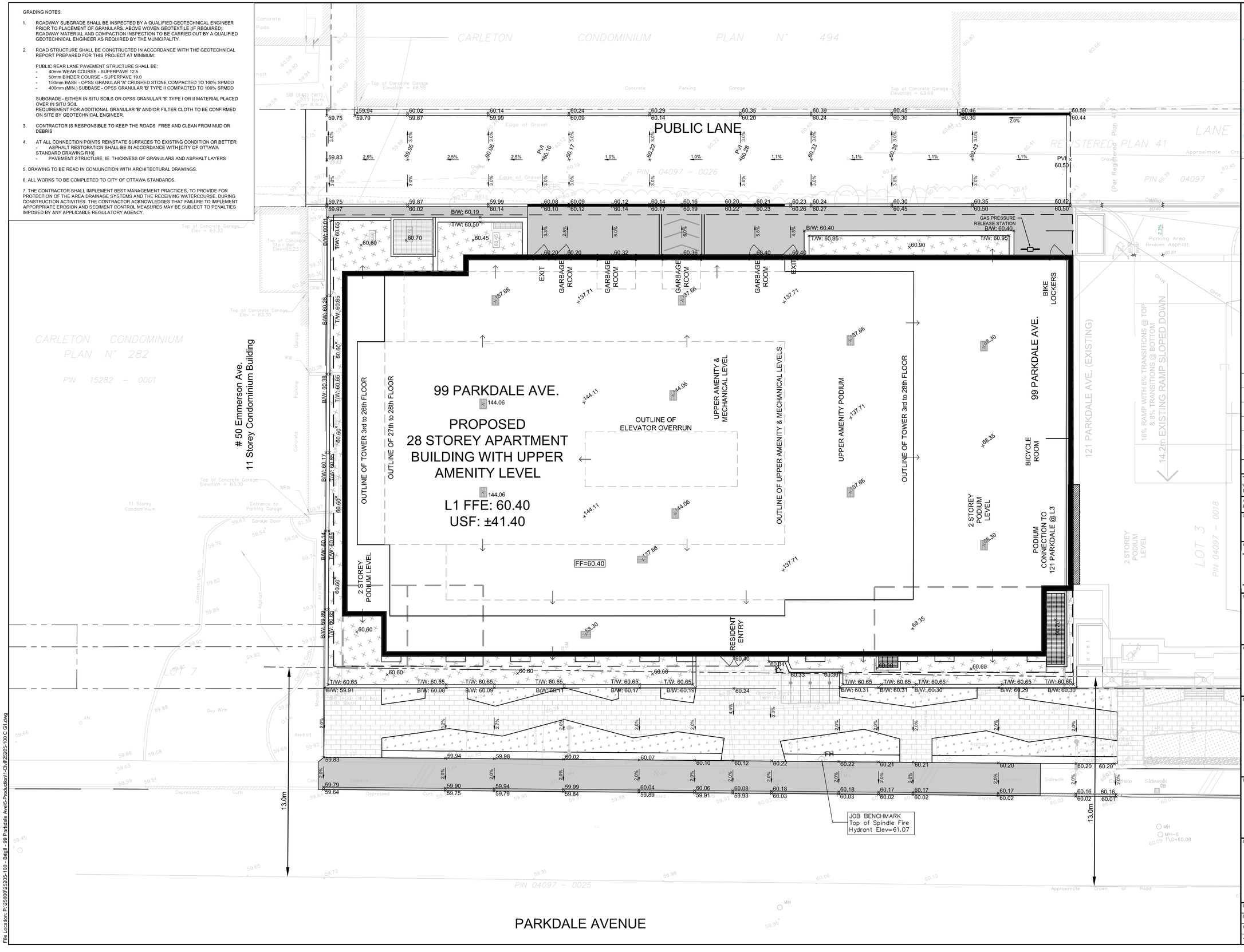
3. CONTRACTOR IS RESPONSIBLE TO KEEP THE ROADS FREE AND CLEAN FROM MUD OR DEBRIS

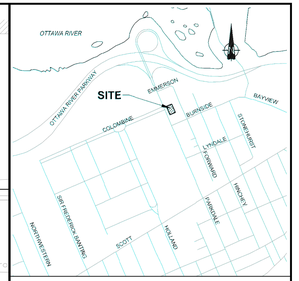
4. AT ALL CONNECTION POINTS REINSTATE SURFACES TO EXISTING CONDITION OR BETTER:
   - ASPHALT RESTORATION SHALL BE IN ACCORDANCE WITH [CITY OF OTTAWA STANDARD DRAWING R10]
   - PAVEMENT STRUCTURE, IE. THICKNESS OF GRANULARS AND ASPHALT LAYERS

5. DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS.

6. ALL WORKS TO BE COMPLETED TO CITY OF OTTAWA STANDARDS.

7. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEMS AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPORPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.





LEGEND

- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- 92.52 / 92.00 — PROPOSED ELEVATION / EXISTING ELEVATION
- PROPOSED TERRACING (MAX 3:1)
- 3.0% — SURFACE SLOPE
- CONCRETE SURFACE
- GRASS SURFACE
- INTERLOCK PATHWAY
- PLANTER SURFACE
- DEPRESSED CURB
- SIAMESE CONNECTION
- OVERFLOW ROOF SCUPPER

No.	ISSUE / REVISION	DD/MM/YY
02	ISSUED TO CITY FOR REVIEW - SECOND SUBMISSION	07/02/2020
01	ISSUED TO CITY FOR REVIEW - FIRST SUBMISSION	22/10/2019

VERIFY SHEET SIZE AND SCALES. BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: 1:100

CLIENT: BRIGIL

CONSULTANT: www.jlrichards.ca
J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP: LICENSED PROFESSIONAL ENGINEER M. N. L. DALRYMPLE Feb. 7/20 PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT: 99 PARKDALE AVENUE
OTTAWA ONTARIO

DRAWING: GRADING AND EROSION CONTROL PLAN

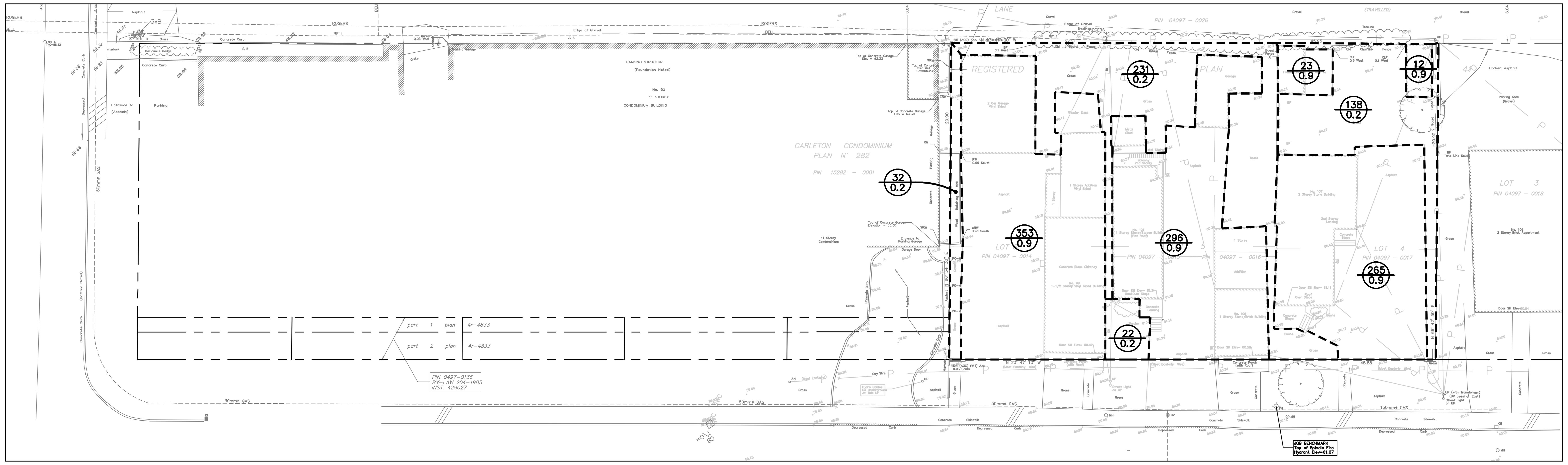
DESIGN:	SP
DRAWN:	SP
CHECKED:	LD
JLR #:	25205-100

DRAWING #: G1

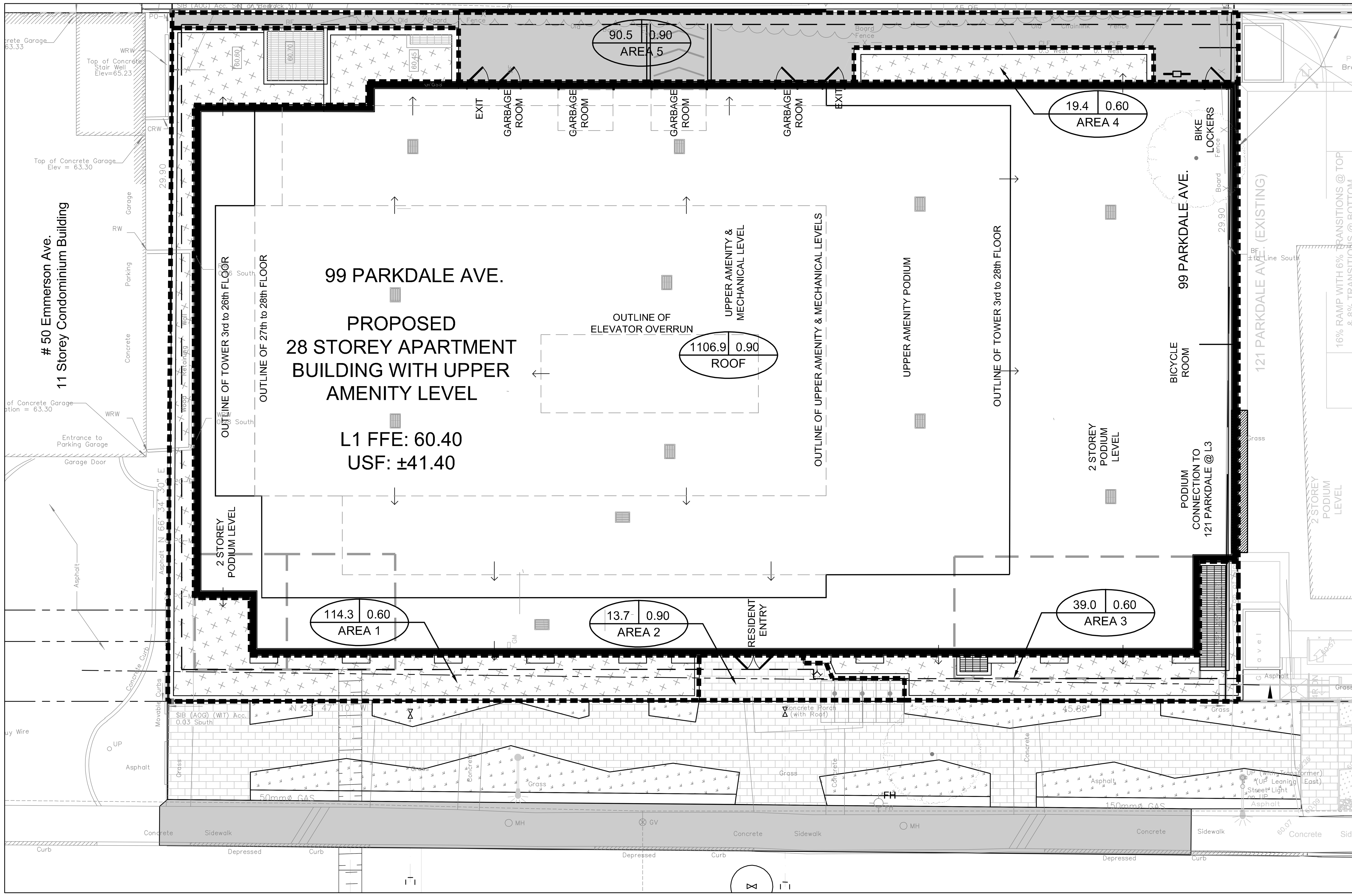
City File No: D07-12-19-0176 Plan No: 18067

PLOT DATE: Friday, February 7, 2020 12:20:21 PM

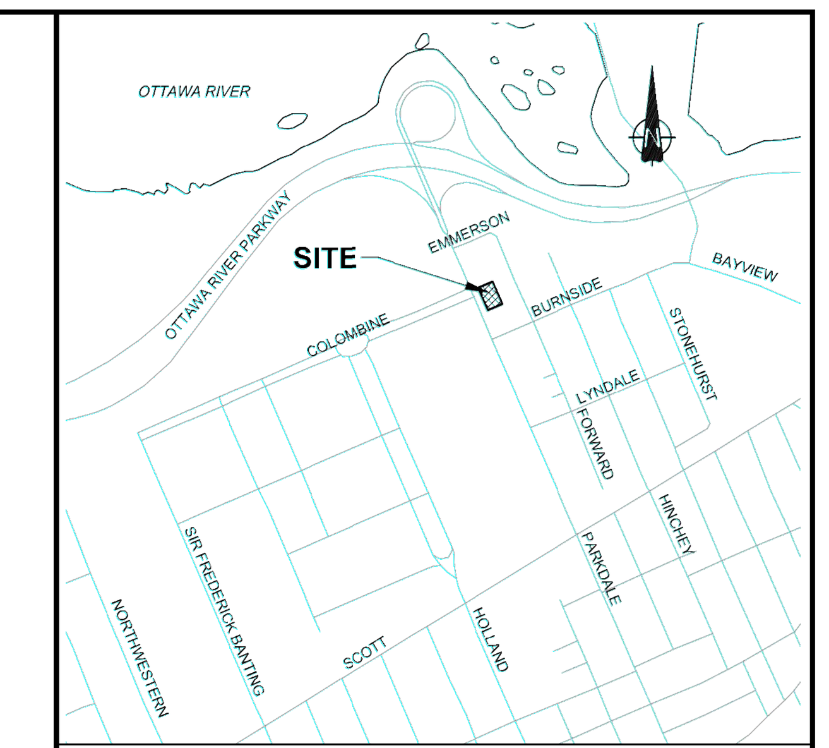
File Location: P:\25000\25205-100 - Brigil - 99 Parkdale Ave\5-Production\1-Civil\25205-100 C G1.dwg



PRE DRAINAGE PLAN - SCALE 1:250



POST DRAINAGE PLAN - SCALE 1:100



LEGEND

- 0.094 | 0.81 / AREA 1 — AREA IN SQUARE METRES; RUNOFF COEFFICIENT (1:5 year); DRAINAGE AREA NUMBER
- POST DRAINAGE BOUNDARY
- POST DRAINAGE BOUNDARY
- 37 / 0.2 — AREA IN METRES; RUNOFF COEFFICIENT
- CONCRETE SURFACE
- GRASS SURFACE
- INTERLOCK PATHWAY

NOTE: AREA NOTED WITH RUNOFF COEFFICIENT OF 0.60 REFLECTS PLANTERS

STORMWATER MANAGEMENT REQUIREMENTS:

TO LIMIT POST-DEVELOPMENT FLOWS TO THE ALLOWABLE RELEASE RATE, THE FOLLOWING SHOULD BE INCORPORATED INTO THE BUILDING DESIGN BY THE MECHANICAL ENGINEER:

1. RUNOFF FROM THE CONDOMINIUM TOWER THAT IS COLLECTED INTERNALLY BY DRAINS/PIPES AND SEWERS IS TO BE CONVEYED TO A CENTRALIZED CISTERN/STORAGE TANK, WHICH WILL BE DESIGNED BY THE MECHANICAL ENGINEER WITH A MINIMUM STORAGE VOLUME OF 24 M3;
2. THE CISTERN/STORAGE TANK TO INCORPORATE A CUSTOM INLET CONTROL DEVICE (ICD) SIZED BY THE MECHANICAL ENGINEER TO RELEASE A MAXIMUM OUTFLOW RATE OF 25.6 L/S (WHEN FULL) BASED ON THE MAXIMUM HEAD DIFFERENTIAL;
3. CISTERN/STORAGE TANK TO INCORPORATE AN OVERFLOW DRAIN BEYOND THE 24 M3 OF CONTAINMENT. THE OVERFLOW TO BE DESIGNED BY THE MECHANICAL ENGINEER WITH SUFFICIENT CAPACITY TO EVACUATE EXCESS RUNOFF BEYOND THE CAPACITY OF THE CISTERN/STORAGE TANK.

RUNOFF COEFFICIENT TABLE

AREAS	0.60	0.90
1	114.3	
2		13.7
3	39.0	
4	19.4	
5		90.5
ROOF		1106.9

No.	ISSUE / REVISION	DD/MM/YY
02	ISSUED TO CITY FOR REVIEW - SECOND SUBMISSION	07/02/2020
01	ISSUED TO CITY FOR REVIEW - FIRST SUBMISSION	22/10/2019

VERIFY SHEET SIZE AND SCALES. BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

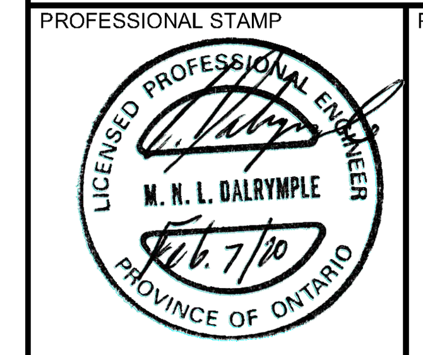
SCALE: 1:100

CLIENT: BRIGIL

CONSULTANT: J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS www.jlrichards.ca

CONSULTANT:

PROFESSIONAL STAMP



PROJECT NORTH

PROJECT: 99 PARKDALE AVENUE

OTTAWA ONTARIO

DRAWING: DRAINAGE AND STORMWATER MANAGEMENT PLAN

DESIGN: SP
DRAWN: SP
CHECKED: LD
JLR #: 25205-100
DRAWING #: DST

City File No: D07-12-19-0176 Plan No: 18067

PLOT DATE: Friday, February 7, 2020 12:22:14 PM

File Location: P:\25000\25205-100 - Brigil - 99 Parkdale Ave\5-Production\1-Civil\25205 C DST.dwg

GENERAL CONSTRUCTION NOTES :

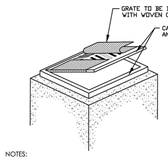
EROSION AND SEDIMENTATION CONTROL SYSTEM (ESCS) REQUIREMENTS

PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR IS REQUIRED TO CONSTRUCT AN EROSION AND SEDIMENTATION CONTROL SYSTEM (ESCS) ON-SITE (IN ADDITION TO THE PROPOSED MEASURES DEPICTED ON THIS DRAWING) TO CONVEY RAINWATER AND/OR PUMPED WATER PRIOR TO ITS DISCHARGE TO THE SURFACE AND/OR TO ANY NATURAL WATER COURSE AND/OR TO ANY EXISTING SEWER SYSTEM. THE CONTRACTOR SHALL CONSTRUCT THE ESCS IN SUCH A WAY AS TO ENSURE THAT THE QUALITY OF THE DISCHARGED PUMP WATER DOES NOT EXCEED THE MORE STRINGENT CRITERIA OF EITHER THE ALLOWABLE TSS CONCENTRATION LIMITS SPECIFIED IN THE PTTW OR 25 MG/L AT ANY TIME.

THE CONTRACTOR SHALL CONSTRUCT AN ESCS TO ACHIEVE THE TURBIDITY AND TSS REMOVAL CRITERIA, REGULARLY MONITOR AND MAINTAIN IT TO ENSURE ONGOING COMPLIANCE. THE CONTRACTOR SHALL TAKE WATER SAMPLES AT THE OUTLET OF THE ESCS TO ENSURE THAT THE TURBIDITY AND TSS REMOVAL CRITERIA ARE MET IN ACCORDANCE WITH CITY OF OTTAWA S.P. NO. F_1004. IF THE ANALYTICAL RESULTS ARE LESS THAN PRESCRIBED CRITERIA, THEN THE CONTRACTOR MAY BEGIN DEWATERING PROVIDED THAT THE QUALITY OF THE WATER REMAINS SUBSTANTIALLY THE SAME AS THE INITIAL MEASURED SAMPLE. SUBSEQUENT WATER SAMPLES SHALL ALSO BE COLLECTED IN ACCORDANCE WITH CITY OF OTTAWA S.P. NO. F_1004.

NOTES:

1. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO WORK AND MAINTAINED DURING THE WORK PHASE BY THE GENERAL CONTRACTOR TO PREVENT ENTRY OF SEDIMENT INTO THE RECEIVING STREAM. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED DAILY BY THE GENERAL CONTRACTOR TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY AND ARE BEING MAINTAINED AND/OR UPGRADED AS REQUIRED. IF THE SEDIMENT AND EROSION CONTROL MEASURES ARE NOT FUNCTIONING PROPERLY, NO FURTHER WORK SHALL OCCUR UNTIL THE PROBLEM HAS BEEN ADDRESSED AND RECTIFIED.
2. ALL MATERIALS AND EQUIPMENT USED FOR THE PURPOSE OF SITE PREPARATION AND PROJECT COMPLETION SHALL BE OPERATED AND STORED IN A MANNER THAT PREVENTS ANY DELETERIOUS SUBSTANCES (I.E. PETROLEUM PRODUCTS, SILT, ETC.) FROM ENTERING THE RECEIVING STREAM.
3. SEDIMENT AND EROSION CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY SITE INSPECTOR, ENGINEER AND/OR THE LOCAL CONSERVATION AUTHORITY.
4. INSPECTIONS AND REPAIR OF SEDIMENT AND EROSION CONTROLS WILL BE CONDUCTED AS SOON AS POSSIBLE FOLLOWING ANY RAIN EVENTS.
5. WORKS WILL NOT BE CONSIDERED COMPLETE UNTIL ALL SEDIMENT CONTROLS ARE REMOVED.
6. ALL SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED AND CONSTRUCTED PER OPSS AND OPSD. SILT FENCE SHALL BE TO OPSD 219.110.
7. CONTRACTOR IS RESPONSIBLE TO KEEP THE ROADS FREE AND CLEAN FROM MUD OR DEBRIS
8. A MUD MAT IS TO BE BUILT AT THE DRIVE SITE ENTRANCE TO PREVENT THE TRANSPORT OF SEDIMENT ONTO PAVED SURFACES.
9. FILTER FABRIC TO BE PLACED UNDER GRATE OF EXISTING STREET CATCH BASINS. THE FILTER FABRIC SHALL BE INSPECTED DAILY TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY AND ARE MAINTAINED AS REQUIRED.
10. CB SUMP TO BE PERIODICALLY CLEANED TO ENSURE ACCUMULATED SEDIMENTS DO NOT INTERFERE WITH STORMWATER CONVEYANCE OR CONTRIBUTE TO INCREASED BUILD-UP OF CONTAMINANTS (HEAVY METALS, NUTRIENTS, TOTAL SUSPENDED SOLIDS, PCB's, PAH's ETC.) IN THE SUMP, THAT MAY ENTER THE SEWER SYSTEM.
11. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEMS AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPORPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

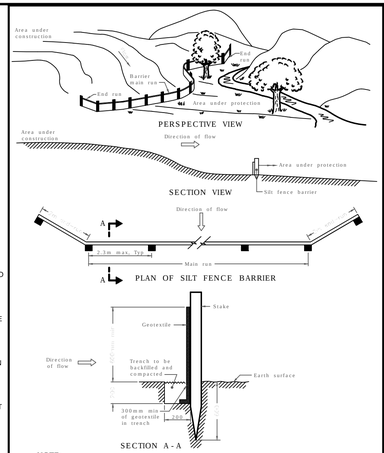


NOTES:

1) TO BE USED UNDER APPROPRIATE DRAINAGE CIRCUMSTANCES, DURING THE CONSTRUCTION PERIOD.
2) WOVEN GEOTEXTILE TO HAVE A MINIMUM EQUIVALENT OPENING SIZE OF 0.15mm AND A MAXIMUM EQUIVALENT OPENING SIZE OF 0.25mm.
3) WOVEN GEOTEXTILE TO BE REPLACED PERIODICALLY WHEN ACCUMULATED SEDIMENTS INTERFERE WITH DRAINAGE.
4) ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

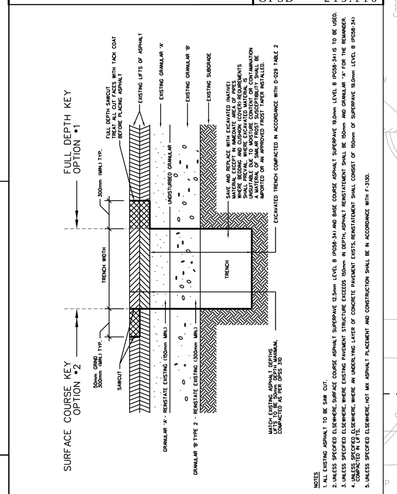
ROADSIDE CATCH BASIN SEDIMENT PROTECTION DETAIL

N.T.S.

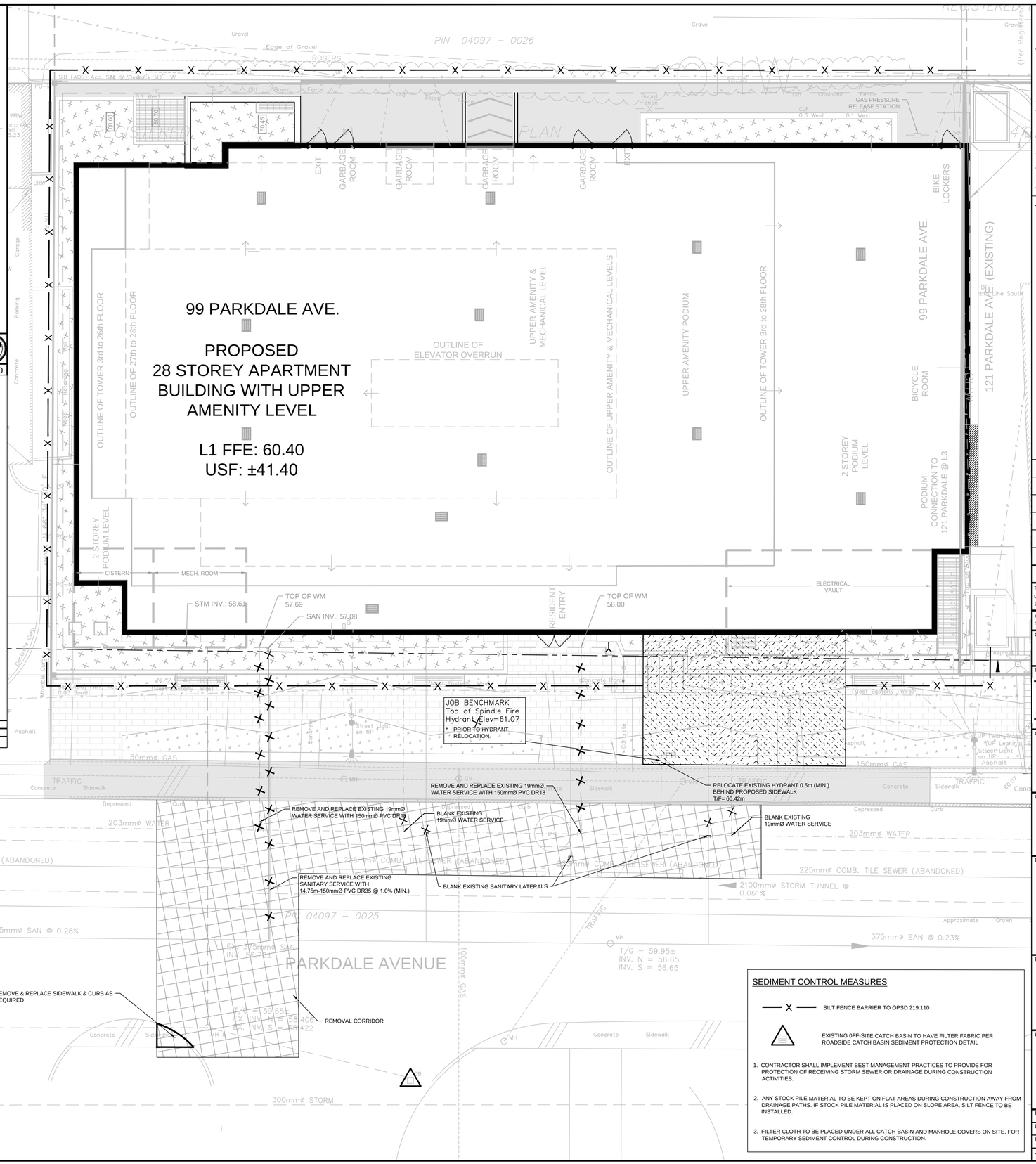


NOTE:
A All dimensions are in millimetres or metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	1996 02 01 Rev
LIGHT DUTY SILT FENCE BARRIER	Date _____
	OPSD - 219.110



Ottawa	STANDARD TRENCH REINSTATMENT IN PAVED SURFACE	DATE: MAY 2001 DATE: MARCH 2017 DWG. No.: R10

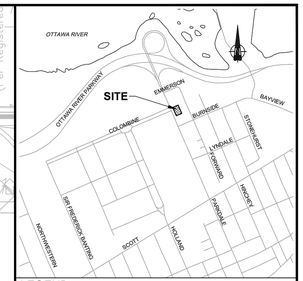


SEDIMENT CONTROL MEASURES

— X — SILT FENCE BARRIER TO OPSD 219.110

EXISTING OFF-SITE CATCH BASIN TO HAVE FILTER FABRIC PER ROADSIDE CATCH BASIN SEDIMENT PROTECTION DETAIL

1. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF RECEIVING STORM SEWER OR DRAINAGE DURING CONSTRUCTION ACTIVITIES.
2. ANY STOCK PILE MATERIAL TO BE KEPT ON FLAT AREAS DURING CONSTRUCTION AWAY FROM DRAINAGE PATHS. IF STOCK PILE MATERIAL IS PLACED ON SLOPE AREA, SILT FENCE TO BE INSTALLED.
3. FILTER CLOTH TO BE PLACED UNDER ALL CATCH BASIN AND MANHOLE COVERS ON SITE, FOR TEMPORARY SEDIMENT CONTROL DURING CONSTRUCTION.



LEGEND

- PROPOSED SILT FENCE BARRIER TO OPSD 219.110
- PROPERTY LINE
- EXISTING OFFSITE CATCH BASIN c/w FILTER CLOTH
- PROPOSED MUD MAT
- REMOVAL CORRIDOR
- AMENITY AREA
- ASPHALT SIDEWALK / WALKWAY
- CONCRETE SIDEWALK / WALKWAY

No.	ISSUE / REVISION	DD/MM/YY
02	ISSUED TO CITY FOR REVIEW - SECOND SUBMISSION	07/02/2020
01	ISSUED TO CITY FOR REVIEW - FIRST SUBMISSION	22/10/2019

VERIFY SHEET SIZE AND SCALES. BAR TO THE RIGHT IS 25mm IF THIS IS A FULL SIZE DRAWING. 0 25mm

SCALE: 1:100

CLIENT: BRIGIL

CONSULTANT: www.jlrichards.ca

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

CONSULTANT:

PROFESSIONAL STAMP: LICENSED PROFESSIONAL ENGINEER — N. K. L. DALRYMPLE — Feb. 7/20 — PROVINCE OF ONTARIO

PROJECT NORTH

PROJECT: 99 PARKDALE AVENUE — OTTAWA ONTARIO

DRAWING: REMOVALS, REINSTATEMENTS & EROSION PLAN

DESIGN:	SP
DRAWN:	SP
CHECKED:	LD
JLR #:	25205-100

DRAWING #: RESC

City File No: D07-16-08-0022 Plan No: 18067

PLOT DATE: Friday, February 7, 2020 12:24:54 PM

File Location: P:\25000\025205-100 - Brigil - 99 Parkdale Ave\5-Production\1-Civil\025205-100 C RESC.dwg