david schaeffer engineering ltd

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

SERVICING AND STORMWATER MANAGEMENT REPORT

FOR

TAGGART GROUP OF COMPANIES
275 CARLING AVENUE

CITY OF OTTAWA

PROJECT NO.: 17-988
CITY APPLICATION NO.: D07-12-18-0120

FEBRUARY 2019 – REV 2

SERVICING AND STORMWATER MANAGEMENT REPORT
FOR
275 CARLING AVENUE

TAGGART GROUP OF COMPANIES
FEBRUARY 2019 – REV 2

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

SERVICING AND STORMWATER MANAGEMENT REPORT
FOR
275 CARLING AVENUE
TAGGART GROUP OF COMPANIES
FEBRUARY 2019 – REV 2

CITY OF OTTAWA
PROJECT NO.: 17-988

1.0 INTRODUCTION

David Schaeffer Engineering Limited (DSEL) has been retained by Taggart Group of Companies to prepare a Servicing and Stormwater Management report in support of the application for Site Plan Control (SPC) at 275 Carling Avenue.

The subject property is located within the City of Ottawa urban boundary, in the Capital ward. As illustrated in ***Figure 1***, the subject property is bound by Carling Avenue to the South, Cambridge Street South to the West, and Clemow Avenue to the North. Currently comprised of a single parcel of land (265 Carling Avenue) to be divided into two parcels, the subject property measures approximately ***0.38 ha*** and is zoned Arterial Mainstreet (AM).

Figure 1: Site Location

The proposed SPC would allow for the development of a 16-storey retirement residence/commercial building fronting onto Carling Avenue, Cambridge Street South and Clemow Avenue within ***0.21 ha*** of the subject site. The proposed development would include approximately ***2,227 m^2*** of amenity/office space and underground parking, with access from Clemow Avenue. The residential component is comprised of approximately ***118*** dwelling units and ***50*** rooming units. A copy of the Site Plan prepared by RLA Architecture is included in ***Drawings/Figures***.

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

1.1 Existing Conditions

The existing site includes a paved parking area surrounded by vegetated grass areas. The elevations range between 76.22 m and 77.41 m with a grade change of approximately 0.31 m from the Northeast to the Southwest corner of the property.

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

Clemow Avenue:

- 203 mm diameter PVC watermain;
- 300 mm diameter PVC SDR 35 combined sewer, tributary to the Rideau Canal Interceptor and tributary to the Ottawa River, in the event of an overflow event.

Cambridge Street South:

- 203 mm diameter PVC watermain;
- 300 mm diameter PVC SDR 35 combined sewer, tributary to the Rideau Canal Interceptor and tributary to the Ottawa River, in the event of an overflow event.

Carling Avenue:

- 406 mm diameter PVC watermain;
- 300 mm diameter combined sewer, tributary to the Rideau Canal Interceptor and tributary to the Ottawa River, in the event of an overflow event.

1.2 Required Permits / Approvals

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

The development is proposed to consist of a single parcel of land that is not industrial, however will outlet to a combined sewer. As a result, the Ministry of the Environment,

Conservation and Parks (MECP) will require an Environmental Compliance Application (ECA) to be submitted under the Direct Submission process.

1.3 Pre-consultation

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

2.0 GUIDELINES, PREVIOUS STUDIES, AND REPORTS

2.1 Existing Studies, Guidelines, and Reports

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

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

- **NFPA 13 – Standard for the Installation of Sprinkler Systems**
  National Fire Protection Association, 2016.
  (NFPA Standards)

- **Geotechnical Investigation**
  Paterson Group, PG2682-1 Revision 1, February 15, 2018.

- **Memorandum – Response to City Comments**
  Paterson Group, PG2682-MEMO.02, February 07, 2019.
  (*Paterson, Memo.02*)

3.0 WATER SUPPLY SERVICING

3.1 Existing Water Supply Services

The subject property lies within the City of Ottawa 1W pressure zone, as shown by the Water Distribution System map, included in ***Appendix B***. Local 203 mm diameter watermains exist within the Cambridge South Street and Clemow Avenue right-of-ways and a local 406 mm diameter watermain exists within the Carling Avenue right-of way.

3.2 Water Supply Servicing Design

It is proposed that the development be serviced via two 150 mm diameter water services to the existing 203 mm watermain located within the Clemow Avenue right-of-way on either side of the existing valve box. Refer to drawing ***SSP-1*** for a detailed site servicing layout.

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

Table 1
Water Supply Design Criteria

Design Parameter	Value
Residential 1 Bedroom Apartment	1.4 P/unit
Residential 2 Bedroom Apartment	2.1 P/unit
Residential Average Daily Demand	280 L/d/P
Residential Maximum Daily Demand	3.6 x Average Daily *
Residential Maximum Hourly	5.4 x Average Daily *
Commercial Retail	2.5 L/m^2/d
Commercial Maximum Daily Demand	1.5 x avg. day
Commercial Maximum Hour Demand	1.8 x max. day
Office Space	75 L/9.3m^3/d (12-hour Operation)
Nursing/Rest Homes	450 L/bed/d
Housekeeping Facilities	275 L/P/d
Dining Room/Kitchen	115 L/9.3m^3/d (12-hour Operation)
Minimum Watermain Size	150mm diameter
Minimum Depth of Cover	2.4m from top of watermain to finished grade
During normal operating conditions desired operating pressure is within	350kPa and 480kPa
During normal operating conditions pressure must not drop below	275kPa
During normal operating conditions pressure must not exceed	552kPa
During fire flow operating pressure must not drop below	140kPa

Daily average based on Appendix 4-A from **Water Supply Guidelines*
*** Residential Max. Daily and Max. Hourly peaking factors per MOE Guidelines for Drinking-Water Systems Table 3-3 for 0 to 500 persons.*
-Table updated to reflect ISD-2010-2

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

Table 2
Water Demand and Boundary Conditions

Design Parameter	Proposed Demand[1] (L/min)	Boundary Condition[2] Connection 1 (m H_2O / kPa)
Average Daily Demand	59.3	38.4 / 376.7
Max Day + Fire Flow	170.2 + 4,150 = 4,320.2	12,900 L/min @ 140 kPa
Peak Hour	264.5	29.9 / 293.3
1) Water demand calculation per ***Water Supply Guidelines***. See ***Appendix B*** for detailed calculations. 2) Boundary conditions supplied by the City of Ottawa for the demands indicated in the correspondence; assumed ground elevation 77.0m (Connection 1). See ***Appendix B for detailed calculations.***		

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

Based on the updated Site Plan, the estimated water demand for the site decreased by approximately 13%. It is not anticipated to have a significant impact on the previously provided boundary conditions.

The City provided the available fire flow at 140 kPa along with the anticipated minimum and maximum water pressures for the demands, as indicated by the correspondence included in ***Appendix B***. The minimum and maximum pressures fall within the required range identified in ***Table 1***. Based on the City of Ottawa boundary conditions, the existing municipal infrastructure is capable of providing ***12,360 L/min*** near the proposed connection at 140 kPa during fire flow demands.

For the purpose of estimating fire flow, the short method within the National Fire Protection Association (NFPA) standards were utilized. As indicated by Section 11.2.2 from the ***NFPA Standards***, fire flow requirements are to be determined by combining the required flow rate for the sprinkler system, along with the anticipated hose stream. As indicated by Table 11.2.2.1 and Table 11.2.3.1.2 extracted from the ***NFPA Standards*** and included in ***Appendix B***, the anticipated fire flow requirements for the sprinkler system is ***3,200 L/min*** (850 gpm) and the anticipated internal and external total combined inside and outside hose stream demand is ***950 L/min*** (250 gpm).

As a result, the total fire flow is anticipated to be ***4,150 L/min*** (1,100 gpm). Based on the boundary conditions provided by the City of Ottawa, sufficient supply is available for fire flow. A certified fire protection system specialist will need to be employed to design the building fire suppression system and confirm the actual fire flow demand.

In accordance with City of Ottawa technical bulletin ISDTB-2014-02, redundant service connections will be required due to an anticipated design flow of greater than 50 m^3/day.

The existing valve box within the Clemow Avenue right-of-way allowing for a redundant service should the watermain close within Clemow Avenue from the east or west.

3.3 Water Supply Conclusion

The estimated water demand under proposed conditions was submitted to the City of Ottawa for establishing boundary conditions. Based on the updated Site Plan, the estimated water demand for the site decreased by approximately 8%. It is not anticipated to have a significant impact on the previously provided boundary conditions.

In accordance with ***NFPA Standards, 4,150 L/min of*** fire flow is required for the proposed development. As demonstrated by the boundary conditions, the municipal system is capable of delivering water within the ***Water Supply Guidelines*** pressure range and supply the required fire flow.

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

4.0 WASTEWATER SERVICING

4.1 Existing Wastewater Services

The subject site lies within the Rideau Canal Interceptor catchment area, as shown by the City sewer mapping included in ***Appendix C***. Existing 300 mm diameter combined sewers within the Clemow Avenue, Cambridge Street South, and Carling Avenue right-of-ways are available to service the proposed development.

4.2 Wastewater Design

It is proposed that the development be serviced via a 200 mm sanitary service to the existing 300 mm diameter combined sewer located within the Clemow Avenue right-of-way. Refer to drawing ***SSP-1*** for a detailed site servicing layout.

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

Table 3
Wastewater Design Criteria

Design Parameter	Value
Residential 1 Bedroom Apartment	1.4 P/unit
Residential 2 Bedroom Apartment	2.1 P/unit
Average Daily Demand	280 L/d/per
Peaking Factor	Harmon's Peaking Factor. Max 4.0, Min 2.0 Harmon Correction Factor 0.8
Commercial Floor/Amenity Space	2.5 L/m^2/d
Nursing/Rest Homes	450 L/Bed/d
Housekeeping Facilities	275 L/P/d
Dining Room/Kitchen	115 L/9.3m^3/d
Office Space	75 L/9.3m^3/d
Commercial Peaking Factor	1.0
Infiltration and Inflow Allowance	0.05 L/s/ha (Dry Weather) 0.28 L/s/ha (Wet Weather) 0.33 L/s/ha (Total)
Sanitary sewers are to be sized employing the Manning's Equation	$Q = \frac{1}{n} A R^{2/3} S^{1/2}$
Minimum Sewer Size	200 mm diameter
Minimum Manning's 'n'	0.013
Minimum Depth of Cover	2.5m from crown of sewer to grade
Minimum Full Flowing Velocity	0.6m/s
Maximum Full Flowing Velocity	3.0m/s
Extracted from Sections 4 and 6 of the City of Ottawa Sewer Design Guidelines, October 2012 and Technical Bulletin ISTB-2018-03.	

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

Table 4
Summary of Estimated Peak Wastewater Flow

Design Parameter	Total Flow (L/s)
Estimated Average Dry Weather Flow	5.58
Estimated Peak Dry Weather Flow	7.21
Estimated Peak Wet Weather Flow	7.27

The peak wet weather sanitary flow based on the Site Plan dated January 24th, 2019, prepared by RLA Architecture and included in ***Drawings/Figures,*** is ***7.27 L/s***.

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

4.3 Wastewater Servicing Conclusions

The subject site lies within the Rideau Canal Interceptor catchment area. It is proposed that the development be serviced via a 200 mm sanitary service to the existing 300 mm diameter combined sewer within Clemow Avenue, tributary to the Rideau Canal Interceptor.

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

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

5.0 STORMWATER MANAGEMENT

5.1 Existing Stormwater Services

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

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

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

Table 5
Summary of Existing Peak Storm Flow Rates

City of Ottawa Design Storm	Estimated Peak Flow Rate (L/s)
2-year	56.1
5-year	76.8
100-year	151.4

5.2 Post-development Stormwater Management Target

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

- Meet a total allowable combined release rate based on a Rational Method Coefficient of 0.40, employing the City of Ottawa IDF parameters for a 2-year storm with a time of concentration equal to or greater than 10 minutes;
- Attenuate all storms up to and including the City of Ottawa 100-year design event on site;
- Quality controls are not required for the proposed development due to the combined sewer outlet; correspondence with the RVCA is included in ***Appendix A***.

Based on the above stated requirements, the allowable stormwater release rate for the proposed development is ***16.3 L/s***. As discussed in ***Section 6.0*** of this report and outlined in ***Table 7***, there is a net reduction in combined sanitary and stormwater flow rates to the existing combined sewer from the existing condition.

5.3 Proposed Stormwater Management System

It is proposed that the stormwater outlet from the development will be to the existing 300 mm diameter combined sewer within Clemow Avenue via a 250 mm diameter storm service. Refer to drawing ***SSP-1*** for a detailed site servicing layout.

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

As coordinated with the architect and mechanical engineer, stormwater runoff collected from the roof area will be directed to an ***85.0 m^3*** internal stormwater cistern. Cistern flow will be pumped to a maximum release rate of ***2.6 L/s*** using the internal mechanical system and will outlet to the municipal combined sewer within Clemow Avenue, as shown by ***SSP-1***. Foundation drains are to be connected downstream of any cistern controls. Detailed calculations are located in ***Appendix D***.

Based on the Geotechnical Memo ***(Paterson, Memo.02),*** post-development groundwater flows will be less than ***50,000 L/day***, with peak periods noted after rain events. This groundwater infiltration was included within the total post-development site release rate.

Table 6, below, summarizes post-development flow rates based on the proposed Site Plan and ***Paterson, Memo.02***.

Table 6
Stormwater Flow Rate Summary

Control Area	5-Year Release Rate	5-Year Storage	100-Year Release Rate	100-Year Storage Required
	(L/s)	(m^3)	(L/s)	(m^3)
Unattenuated Areas	6.4	0.0	13.7	0.0
Attenuated Areas	1.0	43.1	2.0	87.6
Ground Water Infiltration*	0.6	0.0	0.6	0.0
Total	**8.0**	**43.1**	**16.3**	**87.6**
Including 50,000 L/day groundwater infiltration as indicated by (Paterson, Memo.02**)*				

It is calculated that ***87.6 m^3*** of storage will be required on site to attenuate flow to the established release rate of ***16.3 L/s*** and will be provided via an ***88.0 m^3*** internal cistern.

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

5.4 Stormwater Quality Control

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

5.5 Stormwater Servicing Conclusions

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

Based on the above stated requirements, the allowable release rate for the proposed development is ***16.3 L/s***. It is estimated that ***81.9 m³*** of storage is required to meet this release rate and will be provided via an ***85.0 m³*** internal cistern.

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

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

6.0 COMBINED SEWER SYSTEM FLOW

Under existing conditions, the site contains no stormwater management system for flow attenuation. Therefore, the pre-development "design" combined flow during the 2-year storm event was estimated to be approximately ***56.1 L/s***. The assessment of the pre-development combined flow condition assumes peak wastewater rates during a 2-year storm event.

The post-development combined flow for all storms up to and including a 100-year event will be limited to ***23.5 L/s***. This value includes the peak dry weather sanitary flow and both controlled and uncontrolled flows directed from the subject property.

Based on the current Site Plan, the development proposes to control stormwater to an allowable release rate of ***16.3 L/s***, calculated based on the design parameters outlined in ***Section 5.2***.

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

Table 7
Summary of Existing and Proposed Release Rates

City of Ottawa Design Storm	Existing Peak Flow Rate (L/s)	Proposed Peak Flow Rate (L/s)
Wastewater	0.0	7.2
Stormwater*	56.1	16.3
Combined	56.1	23.5
Including 50,000 L/day groundwater infiltration as indicated by* (*Paterson, Memo.02***)		

As indicated by Table 7, above, based on the proposed flow rate of ***23.5 L/s***, the post-development combined flow will result in a net reduction to the existing combined sewer by approximately ***32.6 L/s*** or ***58%*** during a 2-year storm event.

7.0 UTILITIES

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

8.0 EROSION AND SEDIMENT CONTROL

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

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

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

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

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

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

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

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

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

9.0 CONCLUSION AND RECOMMENDATIONS

David Schaeffer Engineering Ltd. (DSEL) has been retained by Taggart Group of Companies to prepare a Servicing and Stormwater Management report in support of the application for Site Plan Control (SPC) at 275 Carling Avenue. The preceding report outlines the following:

- Based on boundary conditions provided by the City, the existing municipal water infrastructure is capable of providing the proposed development with water within the City's required pressure range;
- Fire flow requirements were estimated in accordance with ***NFPA Standards***. Based on the boundary conditions provided by the City of Ottawa, sufficient flow is available to service the development;
- It is proposed to attenuate post development storm and sanitary flows to an equivalent combined release rate of ***23.5 L/s***. The combined release rate of sanitary and stormwater flow from the proposed site provides a reduction in flow of approximately ***58%*** to the combined sewer within Clemow Avenue;
- The proposed development is estimated to have a peak wet weather flow of ***7.27 L/s***;
- Based on City of Ottawa design criteria, the post development storm allowable release rate was established as ***16.3 L/s***;
- It is proposed that stormwater objective be met through storm water retention via cistern storage, it is calculated that ***87.6 m^3*** of onsite storage will be required to attenuate flow to the established release rate above and will be provided via an internal ***88.0 m^3*** cistern;
- Quality controls are not required for the proposed development due to the combined sewer outlet, correspondence with the RVCA is included in ***Appendix A***;
- The development proposes to outlet to a combined sewer, as a result, the Ministry of the Environment, Conservation and Parks (MECP) will require an Environmental Compliance Application (ECA) to be submitted under the Direct Submission process.

Prepared by,
David Schaeffer Engineering Ltd.

Per: Alison J. Gosling, EIT.

Prepared by,
David Schaeffer Engineering Ltd.

Per: Charlotte M. Kelly, EIT.

Reviewed by,
David Schaeffer Engineering Ltd.

Per: Robert D. Freel, P.Eng.

z:\projects\17-988_taggart_275-carling-ave\b_design\b3_reports\b3-2_servicing (dsel)\2019-01_spa_sub2\fsr-2019-02-14_988_stamp.docx

APPENDIX A

Pre-Consultation

DEVELOPMENT SERVICING STUDY CHECKLIST

17-988 06/02/2019

4.1 General Content		
☐	Executive Summary (for larger reports only).	N/A
☒	Date and revision number of the report.	Report Cover Sheet
☒	Location map and plan showing municipal address, boundary, and layout of proposed development.	Drawings/Figures
☒	Plan showing the site and location of all existing services.	Figure 1, EX-1
☒	Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.	Section 1.0
☒	Summary of Pre-consultation Meetings with City and other approval agencies.	Section 1.3
☒	Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.	Section 2.1
☒	Statement of objectives and servicing criteria.	Section 1.0
☒	Identification of existing and proposed infrastructure available in the immediate area.	Sections 3.1, 4.1, 5.1, EX-1
☐	Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).	N/A
☒	Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.	GP-1
☐	Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.	N/A
☐	Proposed phasing of the development, if applicable.	N/A
☐	Reference to geotechnical studies and recommendations concerning servicing.	N/A
☒	All preliminary and formal site plan submissions should have the following information: -Metric scale -North arrow (including construction North) -Key plan -Name and contact information of applicant and property owner -Property limits including bearings and dimensions -Existing and proposed structures and parking areas -Easements, road widening and rights-of-way -Adjacent street names	SP-1

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

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

☒	Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.	Section 3.2
☐	Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.	N/A
☐	Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design	N/A
☐	Address reliability requirements such as appropriate location of shut-off valves	N/A
☐	Check on the necessity of a pressure zone boundary modification	N/A
☒	Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range	Section 3.2, 3.3
☐	Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.	N/A
☐	Description of off-site required feedermains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.	N/A
☒	Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.	Section 3.2
☐	Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.	N/A

4.3 Development Servicing Report: Wastewater

☒	Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).	Section 4.2
☐	Confirm consistency with Master Servicing Study and/or justifications for deviations.	N/A
☐	Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.	N/A
☒	Description of existing sanitary sewer available for discharge of wastewater from proposed development.	Section 4.1
☒	Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)	Section 4.2
☒	Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.	Section 4.2, Appendix C
☒	Description of proposed sewer network including sewers, pumping stations, and forcemains.	Section 4.2
☐	Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).	N/A

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

☐	Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.	N/A
☐	Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.	N/A
☐	Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.	N/A
☐	Special considerations such as contamination, corrosive environment etc.	N/A

4.4 Development Servicing Report: Stormwater Checklist

☒	Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)	Section 5.1
☒	Analysis of available capacity in existing public infrastructure.	Section 5.1, 7.0, Appendix D
☒	A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.	Drawings/Figures
☒	Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.	Section 5.2, 5.4, 5.5
☒	Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.	Section 5.2, 5.4, 5.5
☒	Description of the stormwater management concept with facility locations and descriptions with references and supporting information	Section 5.3
☐	Set-back from private sewage disposal systems.	N/A
☐	Watercourse and hazard lands setbacks.	N/A
☒	Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.	Appendix A
☐	Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.	N/A
☒	Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).	Section 5.3
☐	Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.	N/A
☒	Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.	Section 5.1, 5.3
☐	Any proposed diversion of drainage catchment areas from one outlet to another.	N/A
☐	Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.	N/A
☐	If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100-year return period storm event.	N/A
☐	Identification of potential impacts to receiving watercourses	N/A
☐	Identification of municipal drains and related approval requirements.	N/A

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

☒	Descriptions of how the conveyance and storage capacity will be achieved for the development.	Section 5.3
☐	100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.	N/A
☐	Inclusion of hydraulic analysis including hydraulic grade line elevations.	N/A
☒	Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.	Section 8.0
☐	Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.	N/A
☐	Identification of fill constraints related to floodplain and geotechnical investigation.	N/A

4.5 Approval and Permit Requirements: Checklist

☒	Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement ct. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.	Section 1.2
☐	Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.	N/A
☐	Changes to Municipal Drains.	N/A
☐	Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)	N/A

4.6 Conclusion Checklist

☒	Clearly stated conclusions and recommendations	Section 9.0
☐	Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.	
☐	All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario	

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

Alison Gosling

From: Jamie Batchelor <jamie.batchelor@rvca.ca>
Sent: Friday, June 1, 2018 8:41 AM
To: Alison Gosling
Subject: RE: 275 Carling Avenue - Quality Control Requirement

Good Morning Alison,

Stormwater from this site would be directed to a combined storm sewer where water quality treatment is provided by the downstream Robert O. Pickard Environmental Centre. Therefore, the RVCA accepts that there is requirement for additional onsite water quality treatment measures save and except best management practices.

Jamie Batchelor, MCIP, RPP
Planner
Rideau Valley Conservation Authority
3889 Rideau Valley Drive
613-692-3571 ext 1191
jamie.batchelor@rvca.ca

From: Alison Gosling [mailto:AGosling@dsel.ca]
Sent: Thursday, May 31, 2018 4:35 PM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Subject: RE: 275 Carling Avenue - Quality Control Requirement

Thank you!

Alison Gosling, E.I.T.
Project Coordinator / Junior Designer

DSEL
david schaeffer engineering ltd.

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

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

From: Jamie Batchelor [mailto:jamie.batchelor@rvca.ca]
Sent: Thursday, May 31, 2018 4:34 PM
To: Alison Gosling <AGosling@dsel.ca>
Subject: RE: 275 Carling Avenue - Quality Control Requirement

Hi Alison,

I haven't forgot your inquiry. I'm hoping to get to it tomorrow.

From: Alison Gosling [mailto:AGosling@dsel.ca]
Sent: Monday, May 28, 2018 11:39 AM
To: Jamie Batchelor <jamie.batchelor@rvca.ca>
Subject: 275 Carling Avenue - Quality Control Requirement

Good afternoon Jamie,

We wanted to touch base with you regarding a development at 275 Carling Avenue. The development involves the construction of a 16-storey retirement residence and commercial building with associated underground parking. The existing site consists of a paved surface parking lot as demonstrated in ***Figure 1*** below.

The development proposes to outlet to the existing combined sewer within Clemow Avenue. The existing combined sewer either travels approximately ***3.7 km*** to an outlet into the Ottawa River during a major storm event, as shown by ***Figure 2*** below, or travels to the Robert O. Pickard Environmental Centre.

It is anticipated that stormwater quality controls are not required as the development proposes to outlet to the combined sewer within Clemow Avenue. Can you please confirm?

Figure 1: Existing Site

Figure 2: Combined Overflow Path to Ottawa River

Please feel free to contact me to discuss.

Thank you,

Alison Gosling, E.I.T.
Project Coordinator / Junior Designer

DSEL
david schaeffer engineering ltd.

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

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

APPENDIX B

Water Supply

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

Domestic Demand

Type of Housing	Per / Unit	Units	Pop
Single Family	3.4		0
Semi-detached	2.7		0
Townhouse	2.7		0
Apartment			0
Bachelor	1.4		0
1 Bedroom	1.4	70	98
2 Bedroom	2.1	48	101
3 Bedroom	3.1		0
Average	1.8		0

	Pop	Avg. Daily		Max Day ϒ		Peak Hour ϒϒ	
		m^3/d	L/min	m^3/d	L/min	m^3/d	L/min
Total Domestic Demand	199	55.7	38.7	200.6	139.3	300.9	209.0

Institutional / Commercial / Industrial Demand

			Avg. Daily		Max Day ϒ		Peak Hour ϒϒ	
Property Type	**Unit Rate**	**Units**	m^3/d	L/min	m^3/d	L/min	m^3/d	L/min
Nursing / Rest homes ŧ	450 L/bed/d	50	22.50	15.6	33.8	23.4	60.8	42.2
Housekeeping Facilities †	275 L/person/d	186.0	5.50	3.8	8.2	5.7	14.8	10.3
Dining Room/Kitchen*	115 L/seat/d	1085.4	1.12	0.8	1.7	1.2	3.0	2.1
Office Space*	75 L/9.3m^2/d	122.8	0.08	0.1	0.1	0.1	0.2	0.2
Commercial/Amentities Space*	2.5 L/m^2/d	2104.0	0.44	0.3	0.7	0.5	1.2	0.8
Total I/CI Demand			29.6	20.6	44.5	30.9	80.0	55.6
Total Demand			**85.4**	**59.3**	**245.1**	**170.2**	**380.9**	**264.5**

† Flow rates per City of Ottawa Sewer Design Guidelins Appendix 4A
** Assumed 12 Hour operation per day*

ϒ *Residential Max Day Peaking Factor =*	3.6	ϒ *Commercial Max Day Peaking Factor =*	1.5
ϒϒ *Residential Peak Hour Peaking Factor =*	5.4	ϒϒ *Commercial Peak Hour Peaking Factor =*	1.8

Boundary Conditions Unit Conversion
Connection 1:

	Height (m)	Elevation (m)	m H_2O	PSI	kPa		L/s	L/min
Avg. DD	115.4	77	38.4	54.6	376.7	Fire Flow @ 140kPa	215	12900
Fire Flow			0.0	0.0	0.0			
Peak Hour	106.9	77	29.9	42.5	293.3			

Alison Gosling

From: Alison Gosling
Sent: Friday, May 18, 2018 10:18 AM
To: 'Buchanan, Richard'
Cc: Robert Freel
Subject: 275 Carling Avenue - Boundary Condition Request

Good morning Richard,

We would like to request water boundary conditions for Clemow Avenue using the following proposed development demands:

1. Location of Service / Street Number: 275 Carling Avenue

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

- The proposed development is mixed use retirement residence/commercial. The full build-out proposes 168 residential units and 1,243 m^2 of commercial space and medical facilities.
- It is anticipated that the development will have a dual connection to be services from the existing 203 mm diameter watermain within Clemow Avenue, as shown by the attached map.
- A maximum fire flow of 14,000L/s is anticipated for the development.

3.

	L/min	L/s
Avg. Daily	68.4	1.14
Max Day	204.2	3.40
Peak Hour	315.3	5.25

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

Thank you,

Alison Gosling, E.I.T.
Project Coordinator / Junior Designer

DSEL
david schaeffer engineering ltd.

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

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

Alison Gosling

From: Buchanan, Richard <Richard.Buchanan@ottawa.ca>
Sent: Tuesday, May 22, 2018 1:27 PM
To: Alison Gosling
Subject: FW: 275 Carling Avenue - Boundary Condition Request
Attachments: 275 Carling May 2018.pdf

Good afternoon Alison,

The following are boundary conditions, HGL, for hydraulic analysis at 275 Carling (zone 1W) assumed to be connected to two locations to the 203 mm on Clemow (see PDF for locations).

Minimum HGL = 106.9 m (Both Connections)

Maximum HGL = 115.4 m (Both Connections)

Available Fire Flow = 215 L/s (Connection 1) assuming a residual of 20 psi and a ground elevation of 77.0 m

Available Fire Flow = 206 L/s (Connection 2) assuming a residual of 20 psi and a ground elevation of 76.4 m

These are for current conditions and are based on computer model simulation.

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.

Richard Buchanan, CET

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

From: Alison Gosling <AGosling@dsel.ca>
Sent: Friday, May 18, 2018 10:18 AM
To: Buchanan, Richard <Richard.Buchanan@ottawa.ca>
Cc: Robert Freel <RFreel@dsel.ca>
Subject: 275 Carling Avenue - Boundary Condition Request

Good morning Richard,

We would like to request water boundary conditions for Clemow Avenue using the following proposed development demands:

1. Location of Service / Street Number: 275 Carling Avenue

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

- The proposed development is mixed use retirement residence/commercial. The full build-out proposes 168 residential units and 1,243 m^2 of commercial space and medical facilities.
- It is anticipated that the development will have a dual connection to be services from the existing 203 mm diameter watermain within Clemow Avenue, as shown by the attached map.
- A maximum fire flow of 14,000L/s is anticipated for the development.

3.

	L/min	L/s
Avg. Daily	68.4	1.14
Max Day	204.2	3.40
Peak Hour	315.3	5.25

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

Thank you,

Alison Gosling, E.I.T.
Project Coordinator / Junior Designer

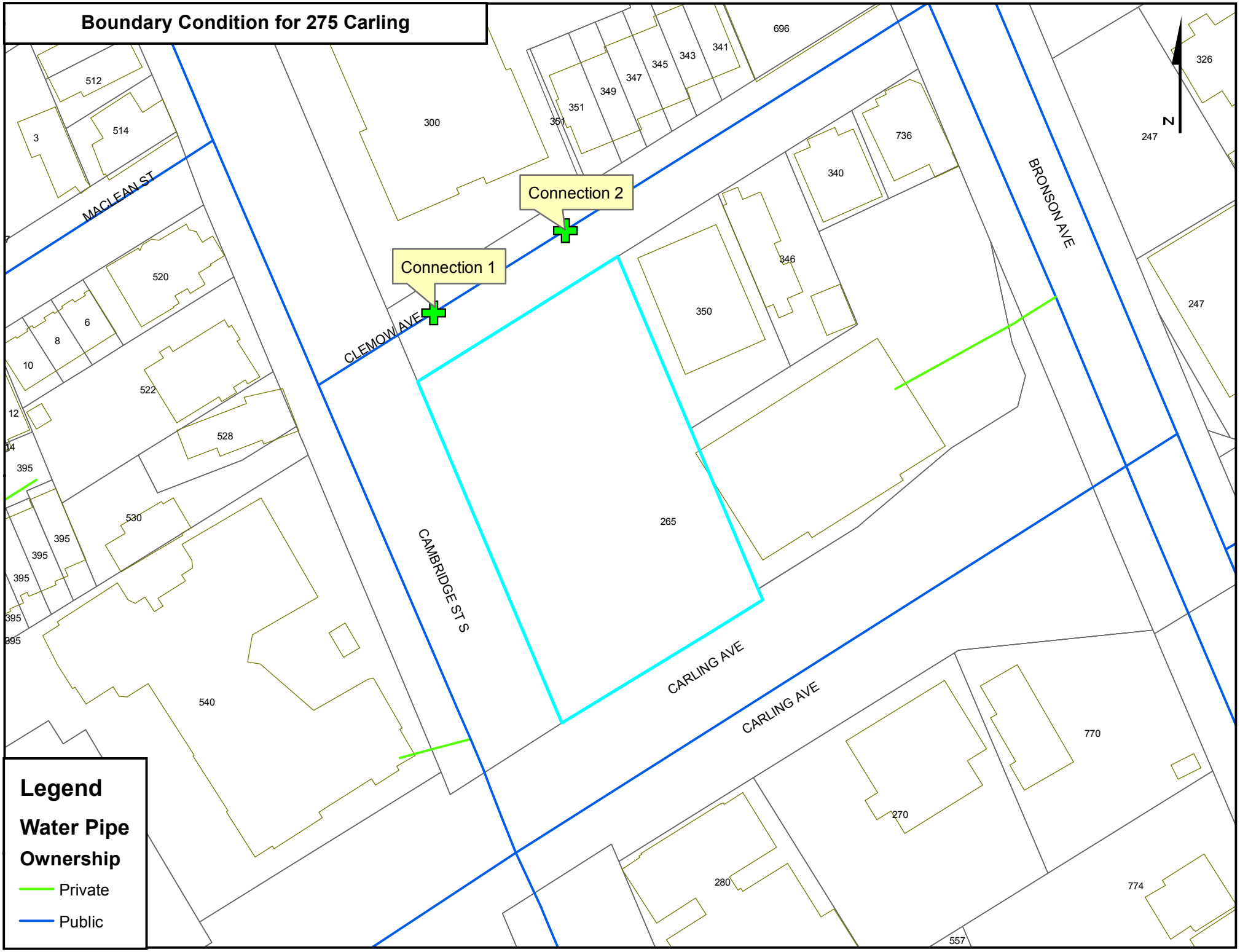
DSEL
david schaeffer engineering ltd.

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

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

'

'


Boundary Condition for 275 Carling
Connection 2
Connection 1
MACLEAN ST
CLEMOW AVE
CAMBRIDGE ST S
CARLING AVE
CARLING AVE
BRONSON AVE
265
300
340
346
350
540
736
770
N
Legend
Water Pipe
Ownership
Private
Public

National Fire Protection Association (NFPA) 13 – Standard for the Installation of Sprinkler Systems

Table 11.2.2.1, Table 11.2.3.1.2

National Fire Protection Association 13 - Standard for the Installation of Sprinkler Systems Report, Table 11.2.2.1

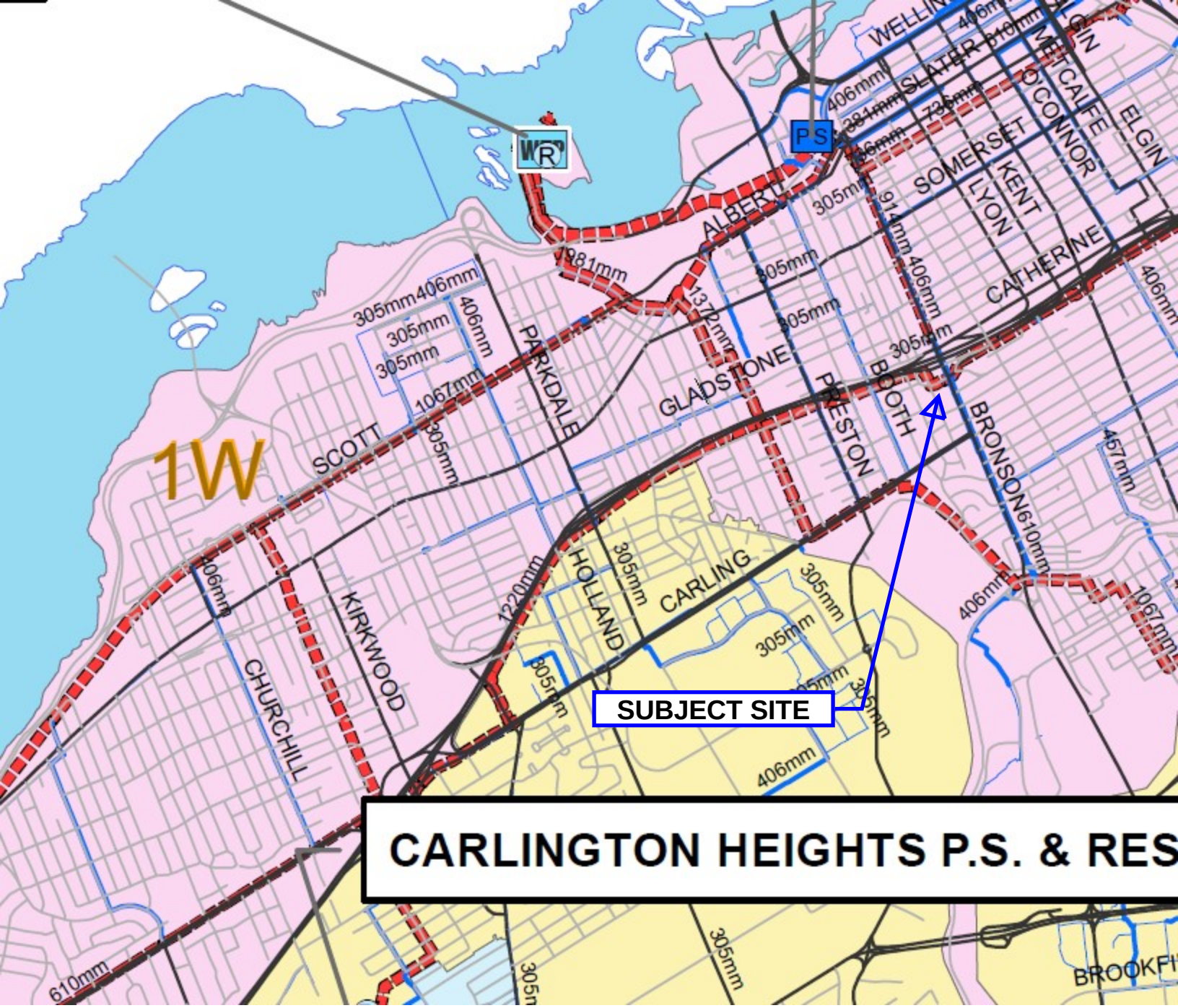
Table 11.2.2.1 Water Supply Requirements for Pipe Schedule Sprinkler Systems

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

National Fire Protection Association 13 - Standard for the Installation of Sprinkler Systems Report, Table 11.2.3.1.2

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



Water Distribution System Facilities & Feedermains
City of Ottawa

APPENDIX C

Wastewater Collection

Wastewater Design Flows per Unit Count
City of Ottawa Sewer Design Guidelines, 2012

Site Area 0.21 **ha**

Extraneous Flow Allowances

Infiltration / Inflow (Wet)	**0.01**	**L/s**
Infiltration / Inflow (Dry)	**0.06**	**L/s**
Infiltration / Inflow (Total)	**0.07**	**L/s**

Domestic Contributions

Unit Type	**Unit Rate**	**Units**	**Pop**
Single Family	3.4		0
Semi-detached and duplex	2.7		0
Townhouse	2.7		0
Stacked Townhouse	2.3		0
Apartment			
Bachelor	1.4		0
1 Bedroom	1.4	70	98
2 Bedroom	2.1	48	101
3 Bedroom	3.1		0
Average	1.8		0

Total Pop	**199**	
Average Domestic Flow	**0.64**	**L/s**
Peaking Factor	**3.52**	
Peak Domestic Flow	**2.27**	**L/s**

Institutional / Commercial / Industrial Contributions

Property Type	**Unit Rate**		**No. of Units**	**Avg Wastewater (L/s)**
Nursing / Rest homes †	450	L/bed/d	50	0.52
Housekeeping Facilities †	275	L/person/d	186.0	1.18
Dining Room/Kitchen*	115	L/seat/d	1085.4	2.89
Office Space*	75	L/9.3m^2/d	122.8	0.21
Commercial/Amenity Space*	2.5	L/m^2/d	2104.0	0.12

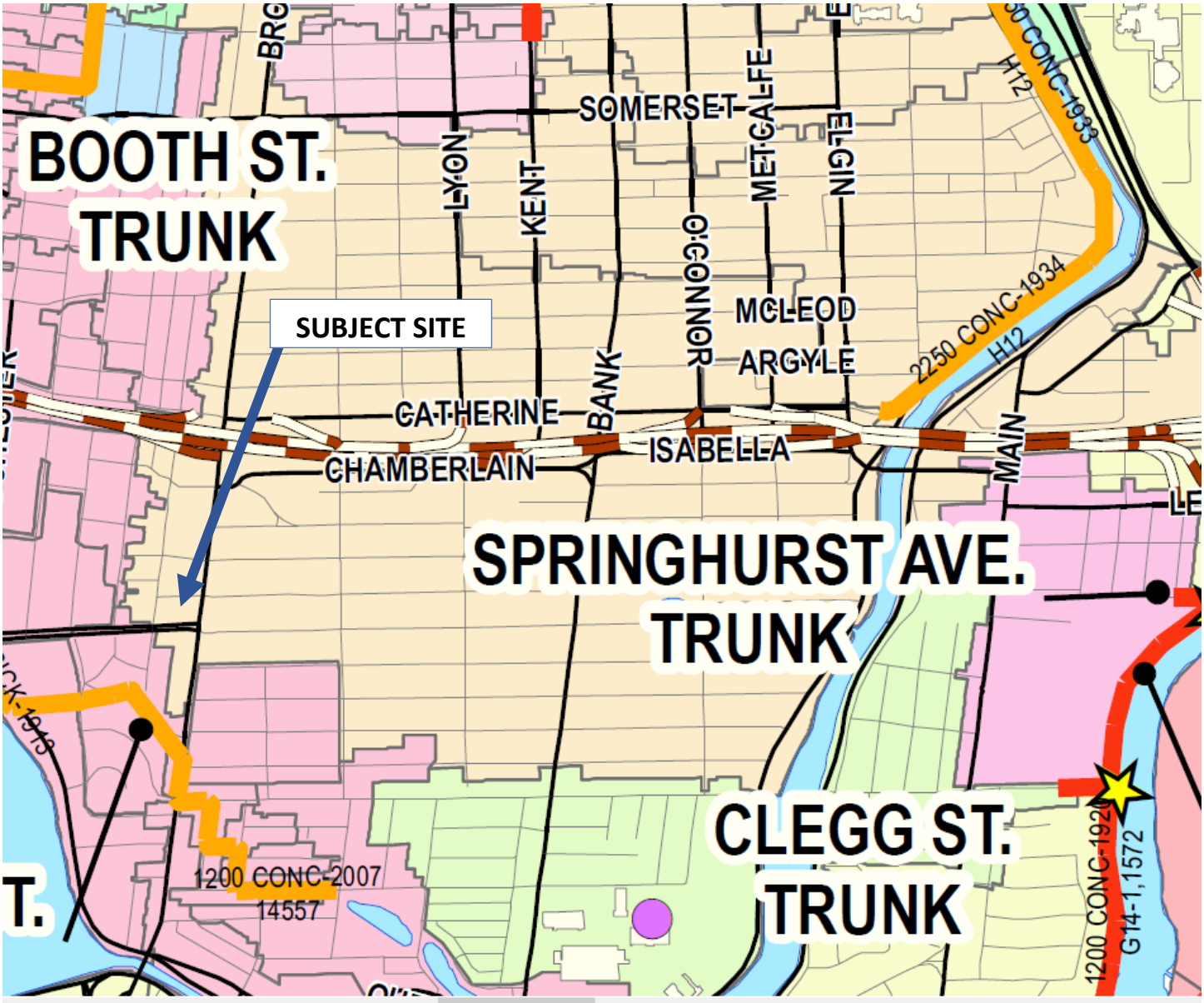
Average I/C/I Flow	**4.93**
Peak Institutional / Commercial Flow	4.93
Peak Industrial Flow**	0.00
Peak I/C/I Flow	**4.93**

** assuming a 12 hour commercial operation*

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

Total Estimated Average Dry Weather Flow Rate	**5.58**	**L/s**
Total Estimated Peak Dry Weather Flow Rate	**7.21**	**L/s**
Total Estimated Peak Wet Weather Flow Rate	**7.27**	**L/s**

CITY OF OTTAWA-SANITARY TRUNK AND COLLECTION AREAS



APPENDIX D

Stormwater Management

275 Carling Avenue
Existing Site Conditions

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

Existing Drainage Charateristics From Internal Site

Area	0.191	ha
C	0.87	Rational Method runoff coefficient
L	35.0	m
Up Elev	77.23	m
Dn Elev	76.16	m
Slope	3.1	%
Tc	3.0	min

	Imp.	Perv.	Total
Area	0.183	0.007	0.191
C	0.9	0.2	0.87

1) Time of Concentration per Federal Aviation Administration

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

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

Estimated Peak Flow

	2-year	5-year	100-year	
i	121.3	165.9	285.7	mm/hr
Q	56.1	76.8	151.4	L/s

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

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

Target Flow Rate

Area	0.191	ha
C	0.40	Rational Method runoff coefficient
t_c	10.0	min

2-year

i	76.8	mm/hr
Q	16.3	L/s

Target Long Tem Post-Development Groundwater

Q	50000	L/day
Q	0.6	L/s

*As per Geotechnical Response to City Comments (PG2682-MEMO.02) prepared by Paterson Group and dated February 7th, 2019.

Estimated Post Development Peak Flow from Unattenuated Areas

	Imp.	Perv.	Total
Area	0.021	0.018	0.038
C	0.9	0.2	0.58

Total Area	0.038	ha
C	0.58	Rational Method runoff coefficient

	5-year					100-year				
t_c (min)	i (mm/hr)	Q_{actual} (L/s)	$Q_{release}$ (L/s)	Q_{stored} (L/s)	V_{stored} (m^3)	i (mm/hr)	Q_{actual} (L/s)	$Q_{release}$ (L/s)	Q_{stored} (L/s)	V_{stored} (m^3)
10.0	104.2	6.4	6.4	0.0	0.0	178.6	13.7	13.7	0.0	0.0

Estimated Post Development Peak Flow from Attenuated Areas

	Imp.	Perv.	Total
Area	0.138	0.014	0.152
C	0.9	0.2	0.83

Total Area	0.153	ha
C	0.83	Rational Method runoff coefficient

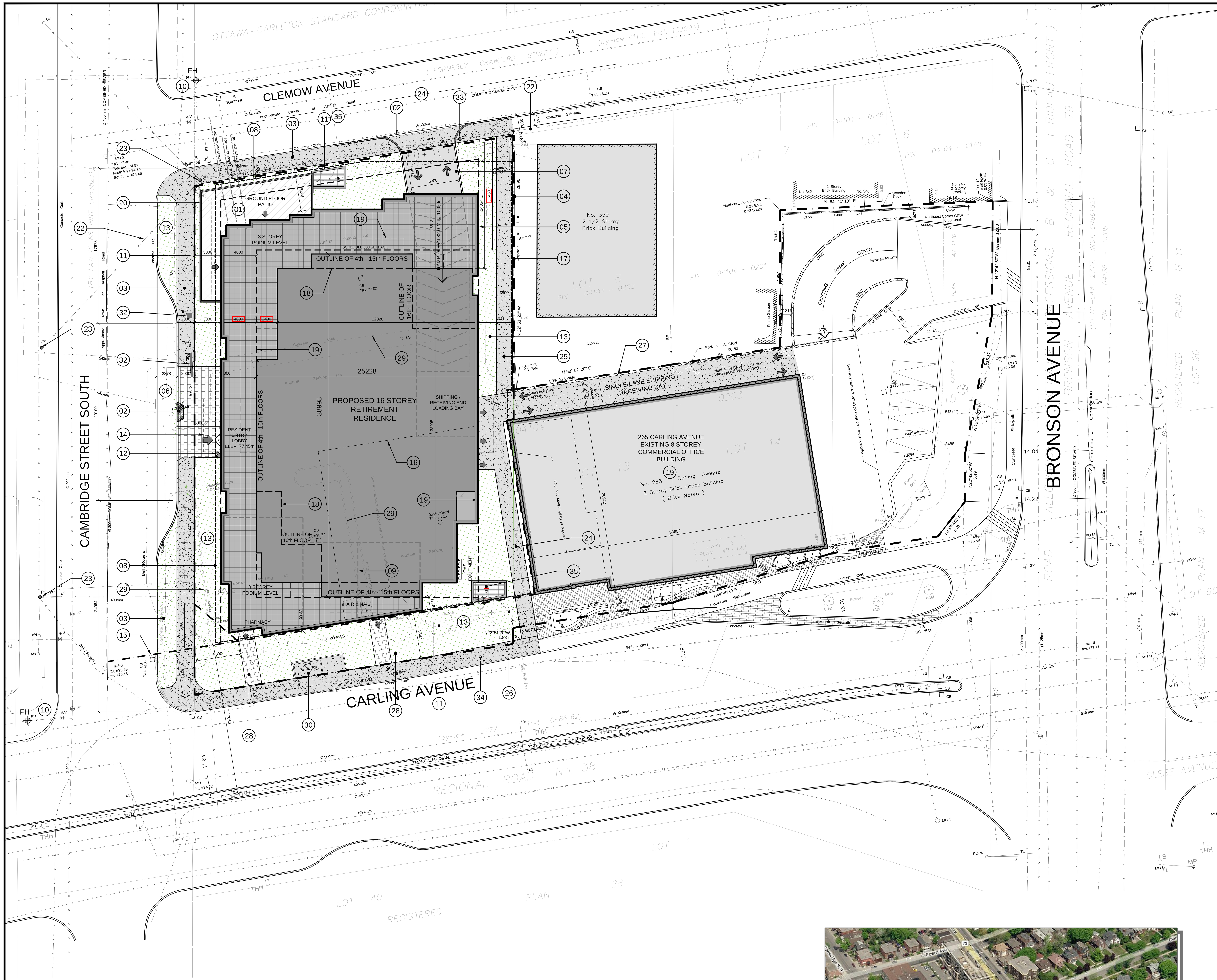
	5-year					100-year				
t_c (min)	i (mm/hr)	Q_{actual} (L/s)	$Q_{release}$ (L/s)	Q_{stored} (L/s)	V_{stored} (m^3)	i (mm/hr)	Q_{actual} (L/s)	$Q_{release}$ (L/s)	Q_{stored} (L/s)	V_{stored} (m^3)
150	16.4	5.8	1.0	4.8	42.9	27.6	11.7	2.0	9.7	87.1
155	15.9	5.6	1.0	4.6	42.9	26.9	11.4	2.0	9.4	87.2
160	15.6	5.5	1.0	4.5	43.0	26.2	11.1	2.0	9.1	87.4
165	15.2	5.3	1.0	4.3	43.0	25.6	10.9	2.0	8.8	87.4
170	14.8	5.2	1.0	4.2	43.1	25.0	10.6	2.0	8.6	87.5
175	14.5	5.1	1.0	4.1	43.1	24.4	10.4	2.0	8.3	87.5
180	14.2	5.0	1.0	4.0	43.1	23.9	10.1	2.0	8.1	87.6
185	13.9	4.9	1.0	3.9	43.1	23.4	9.9	2.0	7.9	87.6
190	13.6	4.8	1.0	3.8	43.1	22.9	9.7	2.0	7.7	87.6
195	13.3	4.7	1.0	3.7	43.1	22.4	9.5	2.0	7.5	87.6
200	13.0	4.6	1.0	3.6	43.1	22.0	9.3	2.0	7.3	87.5
205	12.8	4.5	1.0	3.5	43.1	21.6	9.1	2.0	7.1	87.5
210	12.6	4.4	1.0	3.4	43.1	21.1	9.0	2.0	6.9	87.4
215	12.3	4.3	1.0	3.3	43.1	20.8	8.8	2.0	6.8	87.3
220	12.1	4.3	1.0	3.3	43.0	20.4	8.6	2.0	6.6	87.3
225	11.9	4.2	1.0	3.2	43.0	20.0	8.5	2.0	6.5	87.2
230	11.7	4.1	1.0	3.1	42.9	19.7	8.3	2.0	6.3	87.1
235	11.5	4.0	1.0	3.0	42.9	19.3	8.2	2.0	6.2	87.0
240	11.3	4.0	1.0	3.0	42.8	19.0	8.1	2.0	6.0	86.8
245	11.1	3.9	1.0	2.9	42.8	18.7	7.9	2.0	5.9	86.7
250	10.9	3.8	1.0	2.8	42.7	18.4	7.8	2.0	5.8	86.6

5-year $Q_{attenuated}$	**1.00 L/s**	**100-year $Q_{attenuated}$**	**2.03 L/s**
5-year Max. Storage Required	**43.1 m^3**	**100-year Max. Storage Required**	**87.6 m^3**

Summary of Release Rates and Storage Volumes

Control Area	5-Year Release Rate (L/s)	5-Year Storage (m^3)	100-Year Release Rate (L/s)	100-Year Storage (m^3)
Unattenuated Areas	6.4	0.0	13.7	0.0
Attenutated Areas	1.0	43.1	2.0	87.6
Ground Water Infiltration	0.6	0.0	0.6	0.0
Total	**8.0**	**43.1**	**16.3**	**87.6**

DRAWINGS / FIGURES

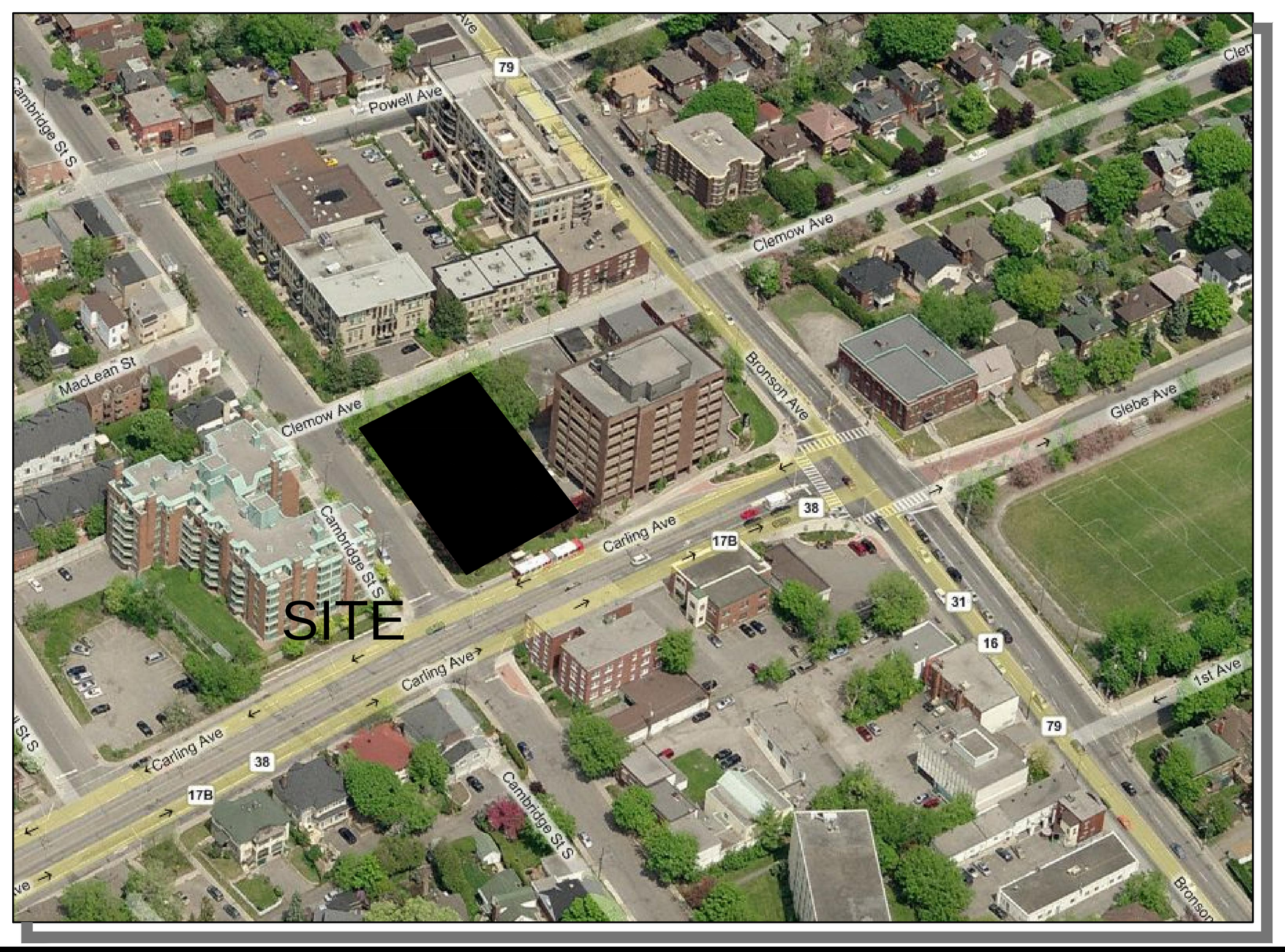


SITE PLAN

0m 5 10 20

SCALE 1: 200

KEY MAP



SITE PLAN SYMBOLS

- CONCRETE UNIT PAVERS SURFACE
- CONCRETE UNIT PAVERS AT ENTRANCE
- CONCRETE WALKING / DRIVING SURFACE
- SOFT LANDSCAPING
- TEMPORARY ASPHALT SURFACE
- WALL MOUNTED LIGHT
- TWO WAY VEHICLE CIRCULATION
- MAIN ENTRANCE
- COMMERCIAL ENTRANCE AND OR FIRE EXIT
- BOLLARD STYLE BIKE RACK
- PROPERTY LINE

DRAWING NOTES

1. HARD SURFACE PAVING, SEE LANDSCAPE PLAN FOR PATTERN AND TYPE
2. DEPRESSED CURB AND SIDEWALK TO CITY STANDARDS
3. EXISTING 1.5M CONCRETE CITY SIDEWALK TO BE REPLACED WITH NEW 2.0M TO CITY STANDARD
4. PROPERTY LINE
5. BUILDING SETBACK AS PER ZONING SCHEDULE #S303
6. STREET LAY-BY
7. VEHICLE ENTRANCE RAMP TO U/G PARKING GARAGE WITH TRENCH DRAIN
8. OUTLINE OF UNDERGROUND PARKING LEVELS
9. OUTLINE OF GROUND FLOOR COMMERCIAL UNITES
10. EXISTING FIRE HYDRANT
11. EXISTING TREES TO BE REMOVED
12. SIAMESE CONNECTION
13. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
14. GROUND FLOOR ENTRY CANOPY
15. ROAD WIDENING LIMIT
16. OUTLINE OF EXISTING UNDER GROUND PARKING STRUCTURE TO BE REMOVED
17. 1800mm HIGH PRIVACY FENCE
18. OUTLINE OF 16th FLOOR
19. OUTLINE OF PRIVATE TERRACE ABOVE
20. EXISTING 8 STOREY COMMERCIAL BUILDING
21. PRIVACY SCREEN / GUARD RAILINGS
22. EXISTING OVERHEAD HYDRO LINES
23. EXISTING UTILITY POLE
24. PROPOSED SERVICES LOCATION, SEE CIVIL
25. 1.8 M WIDE CONCRETE WALKWAYS
26. EXISTING 1200mm HT BRICK WALL TO BE REMOVED
27. EXISTING RETAINING WALL
28. UNIT PAVER PATH TO COMMERCIAL ENTRY
29. EXISTING ASPHALT PARKING LOT / CURBING TO BE REMOVED
30. EXISTING PAD AND BUS SHELTER
31. EXISTING SITE SIDEWALK
32. EXISTING UTILITY BOX TO BE RELOCATED
33. EXISTING UTILITY POLE TO BE RELOCATED
34. EXISTING CONCRETE SIDEWALK
35. INTAKE & EXHAUST GRILLS
36. HYDRO TRANSFORMER & SWITCHGEAR EQUIPMENT

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
Email: EdH@aovltd.com

URBAN PLANNER

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

CIVIL ENGINEER

David Schaeffer Engineering ltd.
120 Iber Road, Unit 203
Stittsville, ON K2S 1E9
Tel: (613) 836-0856
Fax: (613) 836-7183
Email: rfreel@DSEL.ca

LANDSCAPE ARCHITECT

LASHLEY + ASSOCIATES CORPORATION
950 GLADSTONE AVENUE, SUITE 202
OTTAWA, ON K1Y 3E6
Tel: (613) 233 8579
Fax: (613) 233 4051
Email: rpaliga@lashleyla.com

PROJECT INFORMATION

ZONING	Zoning By-Law 2008-250	WEST - AM[2022] S303 EAST - AM[2022] H(28)
SITE AREA		3,781.87 sq. m. (40,708) sq. ft.
BUILDING HEIGHT		52.0 M
CAMBRIDGE STREET YARD SETBACK		3.0 M
CLEMOW AVENUE YARD SETBACK		2.0 M
INTERIOR YARD SETBACK		4.0 M
AVERAGE GRADE		76.80 GEO. ELEV.
AMENITY SPACE		
ROOMING UNIT - 10% GFA =		175.2 sq. m.
DWELLING UNIT - 6.0 sq. m. PER UNIT =		708.0 sq. m.

PROJECT STATISTICS

BUILDING HEIGHT		52.0 M
AMENITY SPACE		
PRIVATE BALCONY =		748.0 sq. m.
1st FLOOR COMMUNAL EXTERIOR =		284.9 sq. m.
1st FLOOR COMMUNAL INTERIOR =		112.1 sq. m.
4th FLOOR COMMUNAL INTERIOR =		701.7 sq. m.
4th FLOOR COMMUNAL EXTERIOR =		448.8 sq. m.
TOTAL =		2,295.5 sq. m.

SITE COVERAGE - RETIREMENT HOME LAND ONLY

BUILDING FOOTPRINT =	64.5%	1,369.6 sq. m.
DRIVING SURFACE =	2.3%	48.3 sq. m.
LANDSCAPE AREA =	33.2%	704.35 sq. m.
TOTAL =	100.0%	2,122.25 sq. m.

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

PARKING LEVEL (TYPICAL)		0.0 sq. m. (0) sq. ft.
GROUND FLOOR		0.0 sq. m. (0) sq. ft.
2nd & 3rd FLOOR	2 x 875.9 sq. m. 2 x (9,428) sq. ft.	1,751.8 sq. m. (18,856) sq. ft.
4th FLOOR - AMENITY		0.0 sq. m. (0) sq. ft.
TYPICAL FLOORS (5 - 15)	11 x 685.9 sq. m. 11 x (7,383) sq. ft.	7,544.9 sq. m. (81,213) sq. ft.
16th FLOOR		575.0 sq. m. (6,189) sq. ft.
TOTAL AREA (ABOVE GRADE)		9,871.7 sq. m. (106,258) sq. ft.
EXISTING COMMERCIAL 8 STOREY OFFICE BUILDING		3,911.0 sq. m. (42,100) sq. ft.

UNIT STATISTICS

STUDIO - ROOMING UNIT	50
1 BEDROOM - DWELLING UNIT	48
1 BEDROOM + - DWELLING UNIT	22
2 BEDROOM - DWELLING UNIT	48
TOTAL	168
MEDICAL HEALTH / PERSONAL SERVICES	941.8 sq. m. 10,137 sq. ft.
MEDICAL HEALTH / PERSONAL SERVICES	220.0 sq. m. 2,370 sq. ft.

CAR PARKING ZONING AREA 'Y'

REQUIRED

EX OFFICE BLDG.	- 1.0 PER 100m² OF G.F.A.	39
RESIDENCE	- 0.25 PER UNIT (168 UNITS)	42
VISITOR	- NOT REQUIRED	0
MEDICAL HEALTH / PERSONAL SERVICES	- 1.0 PER 100m² OF G.F.A.	9
COMMERCIAL	- NOT REQUIRED UNDER 500m²	0
TOTAL		94

PROVIDED

EX OFFICE BLDG.		92
RESIDENCE		126
VISITOR	- NOT REQUIRED	0
MEDICAL HEALTH / PERSONAL SERVICES	- 1.0 PER 100m² OF G.F.A.	13
TOTAL		231

LOCATION OF PARKING

EX OFFICE BUILDING AT GRADE	5
EX OFFICE BUILDING P1 LEVEL	18
PROPOSED BUILDING P1 LEVEL	27
PROPOSED BUILDING P2 LEVEL	40
PROPOSED BUILDING P3 LEVEL	40
PROPOSED BUILDING P4 LEVEL	40
PROPOSED BUILDING P5 LEVEL	40
PROPOSED BUILDING P6 LEVEL	44
TOTAL	261

BICYCLE PARKING

REQUIRED

ROOMING UNIT	- 0.25 PER UNIT (50 UNITS)	13
DWELLING UNIT	- 0.25 PER UNIT (118 UNITS)	30
MEDICAL HEALTH / PERSONAL SERVICES	- 1.0 PER 1500m² OF G.F.A.	1
COMMERCIAL	- 1.0 PER 250m² OF G.F.A.	22
TOTAL		66

PROVIDED

UNDERGROUND	80
EXTERIOR AT GRADE	5
TOTAL	85

PROJECT DEVELOPER

Taggart Corporation
225 Metcalfe Street, Suite 610
Ottawa, ON. K2P 1P9
Tel: 613-234-7000
Fax: 613-526-7933

LEGAL DESCRIPTION

TOPOGRAPHICAL PLAN OF
LOTS 9, 10, 11, 12 and
PART OF LOTS 6, 7, 13, 14 and **15**
REGISTERED PLAN 54
CITY OF OTTAWA
Prepared by Annis, O'Sullivan, Vollebekk Ltd.

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
8	ISSUED FOR S.P.C. COMMENT LETTER 1	Jan. 24,19
7	ISSUED FOR S.P.C. APPLICATION	June 20,18
6	REVISED DESIGN - COMMUNITY MEETING	Sept. 21,17
5	ISSUED FOR - COMMUNITY MEETING	Oct. 4, 16
4	O.M.B. HEARING	Mar. 4, 13
3	REVISED RAMP LOCATION	Mar. 4, 13
2	ISSUED FOR ZONING REPORT	Jan 15, 13
1	ISSUED FOR ZONING AMENDMENT	Mar 28, 12

REVISIONS:

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

SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT:

TAMARACK
TAMARACKHOMES.COM

ARCHITECT:

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

PROJECT TITLE:

275 CARLING AVENUE

CARLING @ CAMBRIDGE

OTTAWA ONTARIO

SHEET TITLE:

SITE PLAN

DRAWN: RV	CHECKED: R.L.A.
SCALE: 1:200	SHEET No. SP-1
PROJECT No. 1628	

SITE PLAN

0m 5 10 20

SCALE 1: 200

KEY MAP

SITE PLAN SYMBOLS

- CONCRETE UNIT PAVERS SURFACE
- CONCRETE UNIT PAVERS AT ENTRANCE
- CONCRETE WALKING / DRIVING SURFACE
- SOFT LANDSCAPING
- TEMPORARY ASPHALT SURFACE
- WALL MOUNTED LIGHT
- TWO WAY VEHICLE CIRCULATION
- MAIN ENTRANCE
- COMMERCIAL ENTRANCE AND OR FIRE EXIT
- BOLLARD STYLE BIKE RACK
- PROPERTY LINE

DRAWING NOTES

1. HARD SURFACE PAVING, SEE LANDSCAPE PLAN FOR PATTERN AND TYPE
2. DEPRESSED CURB AND SIDEWALK TO CITY STANDARDS
3. EXISTING 1.5M CONCRETE CITY SIDEWALK TO BE REPLACED WITH NEW 2.0M TO CITY STANDARD
4. PROPERTY LINE
5. BUILDING SETBACK AS PER ZONING SCHEDULE #S303
6. STREET LAY-BY
7. VEHICLE ENTRANCE RAMP TO U/G PARKING GARAGE WITH TRENCH DRAIN
8. OUTLINE OF UNDERGROUND PARKING LEVELS
9. OUTLINE OF GROUND FLOOR COMMERCIAL UNITES
10. EXISTING FIRE HYDRANT
11. EXISTING TREES TO BE REMOVED
12. SIAMESE CONNECTION
13. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
14. GROUND FLOOR ENTRY CANOPY
15. ROAD WIDENING LIMIT
16. OUTLINE OF EXISTING UNDER GROUND PARKING STRUCTURE TO BE REMOVED
17. 1800mm HIGH PRIVACY FENCE
18. OUTLINE OF 16th FLOOR
19. OUTLINE OF PRIVATE TERRACE ABOVE
20. EXISTING 8 STOREY COMMERCIAL BUILDING
21. PRIVACY SCREEN / GUARD RAILINGS
22. EXISTING OVERHEAD HYDRO LINES
23. EXISTING UTILITY POLE
24. PROPOSED SERVICES LOCATION, SEE CIVIL
25. 1.8 M WIDE CONCRETE WALKWAYS
26. EXISTING 1200mm HT BRICK WALL TO BE REMOVED
27. EXISTING RETAINING WALL
28. UNIT PAVER PATH TO COMMERCIAL ENTRY
29. EXISTING ASPHALT PARKING LOT / CURBING TO BE REMOVED
30. EXISTING PAD AND BUS SHELTER
31. EXISTING SITE SIDEWALK
32. EXISTING UTILITY BOX TO BE RELOCATED
33. EXISTING UTILITY POLE TO BE RELOCATED
34. EXISTING CONCRETE SIDEWALK
35. INTAKE & EXHAUST GRILLS
36. HYDRO TRANSFORMER & SWITCHGEAR EQUIPMENT

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
Email: EdH@aovltd.com

URBAN PLANNER

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

CIVIL ENGINEER

David Schaeffer Engineering ltd.
120 Iber Road, Unit 203
Stittsville, ON K2S 1E9
Tel: (613) 836-0856
Fax: (613) 836-7183
Email: rfreel@DSEL.ca

LANDSCAPE ARCHITECT

LASHLEY + ASSOCIATES CORPORATION
950 GLADSTONE AVENUE, SUITE 202
OTTAWA, ON K1Y 3E6
Tel: (613) 233 8579
Fax: (613) 233 4051
Email: rpaliga@lashleyla.com

PROJECT INFORMATION

ZONING	Zoning By-Law 2008-250	WEST - AM[2022] S303 EAST - AM[2022] H(28)
SITE AREA		3,781.87 sq. m. (40,708) sq. ft.
BUILDING HEIGHT		52.0 M
CAMBRIDGE STREET YARD SETBACK		3.0 M
CLEMOW AVENUE YARD SETBACK		2.0 M
INTERIOR YARD SETBACK		4.0 M
AVERAGE GRADE		76.80 GEO. ELEV.
AMENITY SPACE		
ROOMING UNIT - 10% GFA =		175.2 sq. m.
DWELLING UNIT - 6.0 sq. m. PER UNIT =		708.0 sq. m.

PROJECT STATISTICS

BUILDING HEIGHT	52.0 M
AMENITY SPACE	
PRIVATE BALCONY =	748.0 sq. m.
1st FLOOR COMMUNAL EXTERIOR =	284.9 sq. m.
1st FLOOR COMMUNAL INTERIOR =	112.1 sq. m.
4th FLOOR COMMUNAL INTERIOR =	701.7 sq. m.
4th FLOOR COMMUNAL EXTERIOR =	448.8 sq. m.
TOTAL =	2,295.5 sq. m.

SITE COVERAGE - RETIREMENT HOME LAND ONLY

BUILDING FOOTPRINT =	64.5%	1,369.6 sq. m.
DRIVING SURFACE =	2.3%	48.3 sq. m.
LANDSCAPE AREA =	33.2%	704.35 sq. m.
TOTAL =	100.0%	2,122.25 sq. m.

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

PARKING LEVEL (TYPICAL)		0.0 sq. m. (0) sq. ft.
GROUND FLOOR		0.0 sq. m. (0) sq. ft.
2nd & 3rd FLOOR	2 x 875.9 sq. m. 2 x (9,428) sq. ft.	1,751.8 sq. m. (18,856) sq. ft.
4th FLOOR - AMENITY		0.0 sq. m. (0) sq. ft.
TYPICAL FLOORS (5 - 15)	11 x 685.9 sq. m. 11 x (7,383) sq. ft.	7,544.9 sq. m. (81,213) sq. ft.
16th FLOOR		575.0 sq. m. (6,189) sq. ft.
TOTAL AREA (ABOVE GRADE)		9,871.7 sq. m. (106,258) sq. ft.
EXISTING COMMERCIAL 8 STOREY OFFICE BUILDING		3,911.0 sq. m. (42,100) sq. ft.

UNIT STATISTICS

STUDIO - ROOMING UNIT	50
1 BEDROOM - DWELLING UNIT	48
1 BEDROOM + - DWELLING UNIT	22
2 BEDROOM - DWELLING UNIT	48
TOTAL	168
MEDICAL HEALTH / PERSONAL SERVICES	941.8 sq. m. 10,137 sq. ft.
MEDICAL HEALTH / PERSONAL SERVICES	220.0 sq. m. 2,370 sq. ft.

CAR PARKING ZONING AREA 'Y'

REQUIRED

EX OFFICE BLDG.	- 1.0 PER 100m² OF G.F.A.	39
RESIDENCE	- 0.25 PER UNIT (168 UNITS)	42
VISITOR	- NOT REQUIRED	0
MEDICAL HEALTH / PERSONAL SERVICES	- 1.0 PER 100m² OF G.F.A.	9
COMMERCIAL	- NOT REQUIRED UNDER 500m²	0
TOTAL		94

PROVIDED

EX OFFICE BLDG.		92
RESIDENCE		126
VISITOR	- NOT REQUIRED	0
MEDICAL HEALTH / PERSONAL SERVICES	- 1.0 PER 100m² OF G.F.A.	13
TOTAL		231

LOCATION OF PARKING

EX OFFICE BUILDING AT GRADE	5
EX OFFICE BUILDING P1 LEVEL	18
PROPOSED BUILDING P1 LEVEL	27
PROPOSED BUILDING P2 LEVEL	40
PROPOSED BUILDING P3 LEVEL	40
PROPOSED BUILDING P4 LEVEL	40
PROPOSED BUILDING P5 LEVEL	40
PROPOSED BUILDING P6 LEVEL	44
TOTAL	261

BICYCLE PARKING

REQUIRED

ROOMING UNIT	- 0.25 PER UNIT (50 UNITS)	13
DWELLING UNIT	- 0.25 PER UNIT (118 UNITS)	30
MEDICAL HEALTH / PERSONAL SERVICES	- 1.0 PER 1500m² OF G.F.A.	1
COMMERCIAL	- 1.0 PER 250m² OF G.F.A.	22
TOTAL		66

PROVIDED

UNDERGROUND	80
EXTERIOR AT GRADE	5
TOTAL	85

PROJECT DEVELOPER

Taggart Corporation
225 Metcalfe Street, Suite 610
Ottawa, ON. K2P 1P9
Tel: 613-234-7000
Fax: 613-526-7933

LEGAL DESCRIPTION

TOPOGRAPHICAL PLAN OF
LOTS 9, 10, 11, 12 and
PART OF LOTS 6, 7, 13, 14 and **15**
REGISTERED PLAN 54
CITY OF OTTAWA
Prepared by Annis, O'Sullivan, Vollebekk Ltd.

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 (00, A000 A000)

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
1	ISSUED FOR S.P.C. COMMENT LETTER 1	Jan. 24,19

REVISIONS:

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

NORTH ARROW:

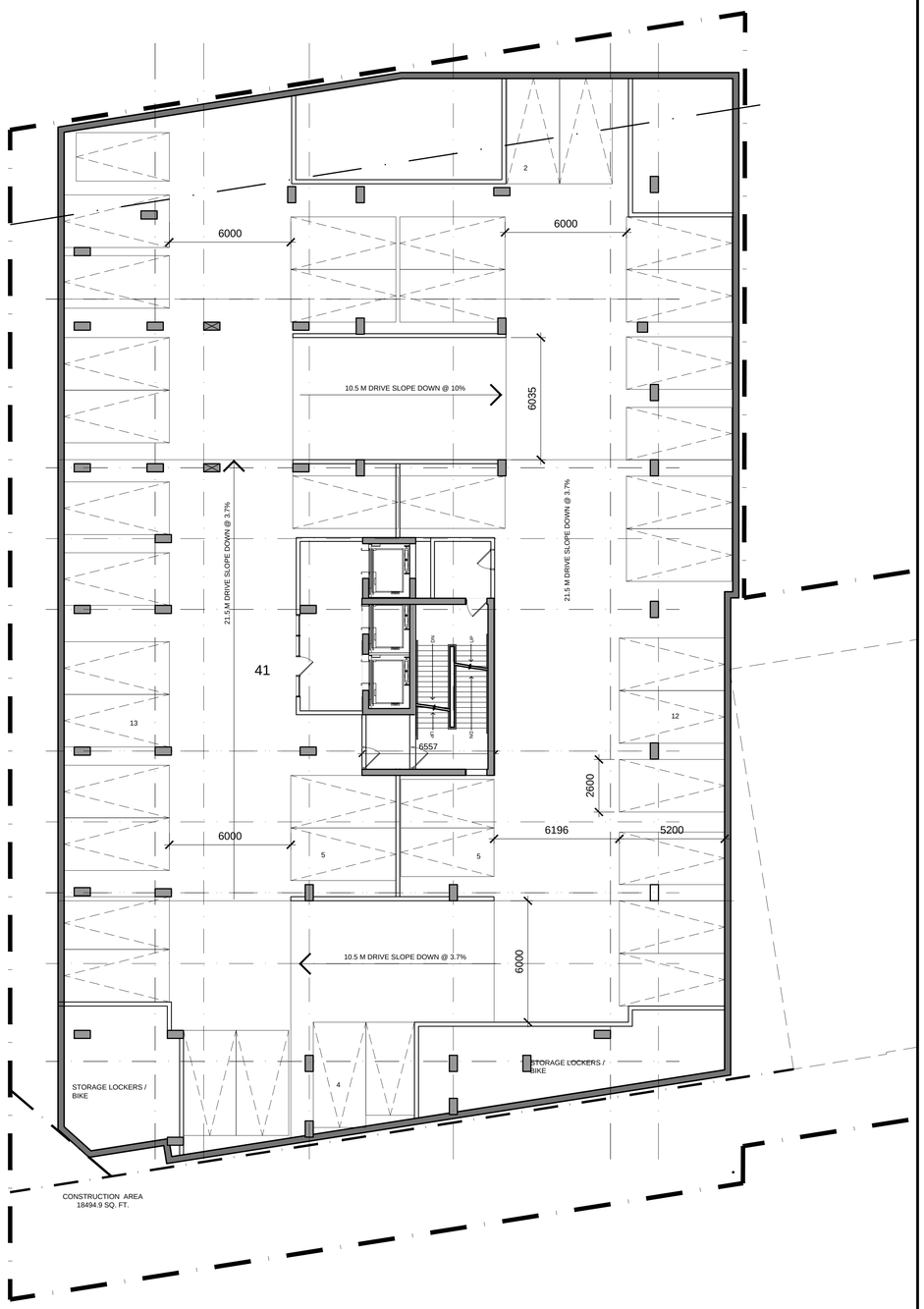
CLIENT: TAMARACK TAMARACKHOMES.COM

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

PROJECT TITLE:
275 CARLING AVENUE
CARLING @ CAMBRIDGE
OTTAWA ONTARIO

SHEET TITLE:
SITE PLAN
PROPOSED STREET ALIGNMENT

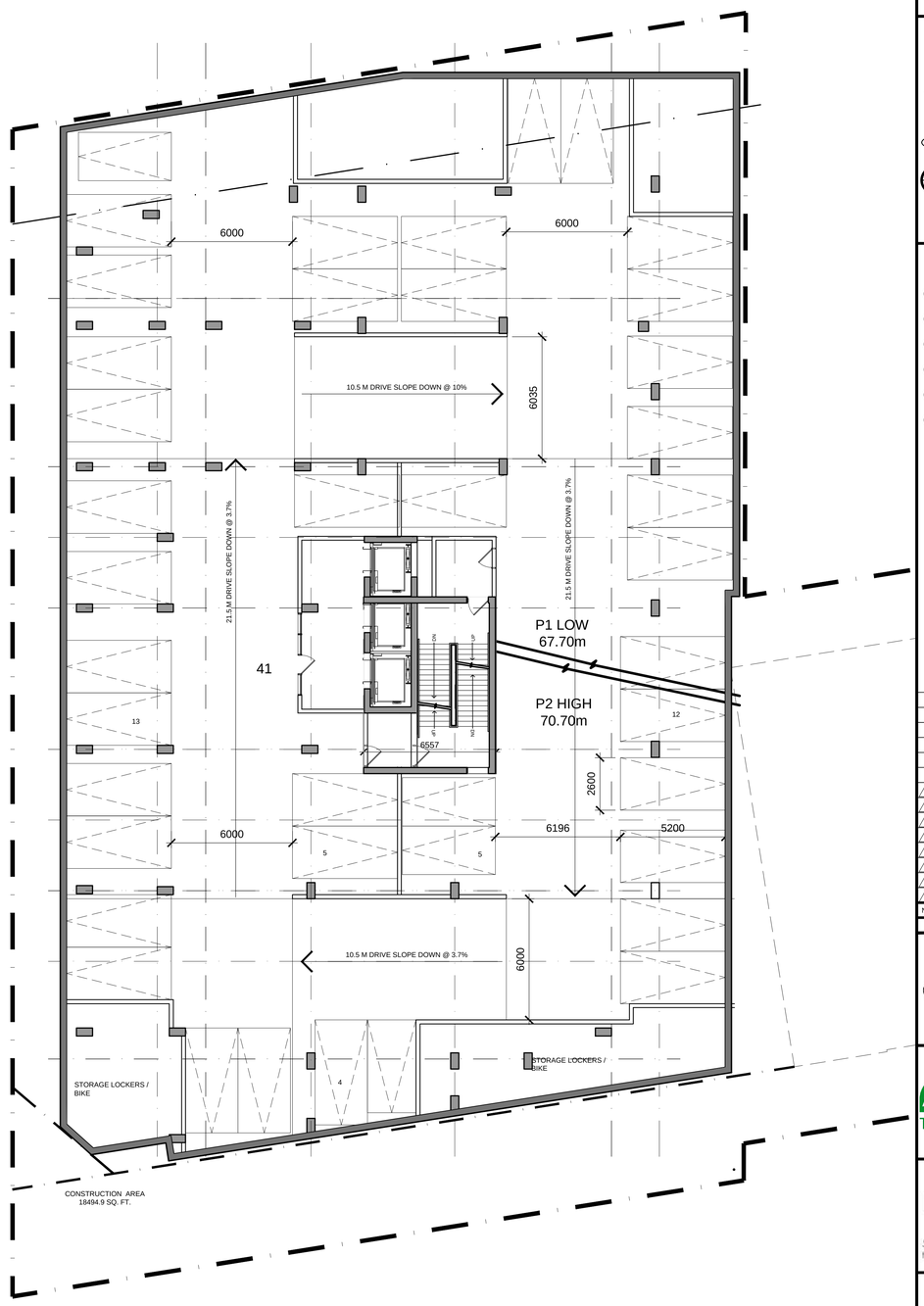
DRAWN: RV	CHECKED: R.L.A.
SCALE: 1:200	SHEET No. SP-2
PROJECT No. 1628	



P4 LEVEL
PARKING SPACES: 41
BIKE STORAGE: 18
LOCKERS: 0

P4 LEVEL
RESIDENTIAL PARKING

0m 2.5 5 7.5 10
BAR SCALE



P2 LEVEL
PARKING SPACES: 41
BIKE STORAGE: 18
LOCKERS: 0

P3 LEVEL
PARKING SPACES: 41
BIKE STORAGE: 18
LOCKERS: 0

P2 LEVEL (TYPICAL - P3)
RESIDENTIAL PARKING

0m 2.5 5 7.5 10
BAR SCALE

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- ◇ 00 INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- ◇ 00 INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (000) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 TITLE / A900 SCALE — DETAIL NUMBER; 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
8	ISSUED FOR S.P.C. COMMENT LETTER 1	Jan. 24,19
7	ISSUED FOR S.P.C. APPLICATION	July 27,18
6	REVISED DESIGN - COMMUNITY MEETING	Sept. 21,17
5	ISSUED FOR - COMMUNITY MEETING	Oct. 4, 16
4	O.M.B. HEARING	Mar. 4, 13
3	REVISED RAMP LOCATION	Mar. 4, 13
2	ISSUED FOR ZONING REPORT	Jan 15, 13
1	ISSUED FOR ZONING AMENDMENT	Mar 28, 12

REVISIONS:

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

NORTH ARROW:

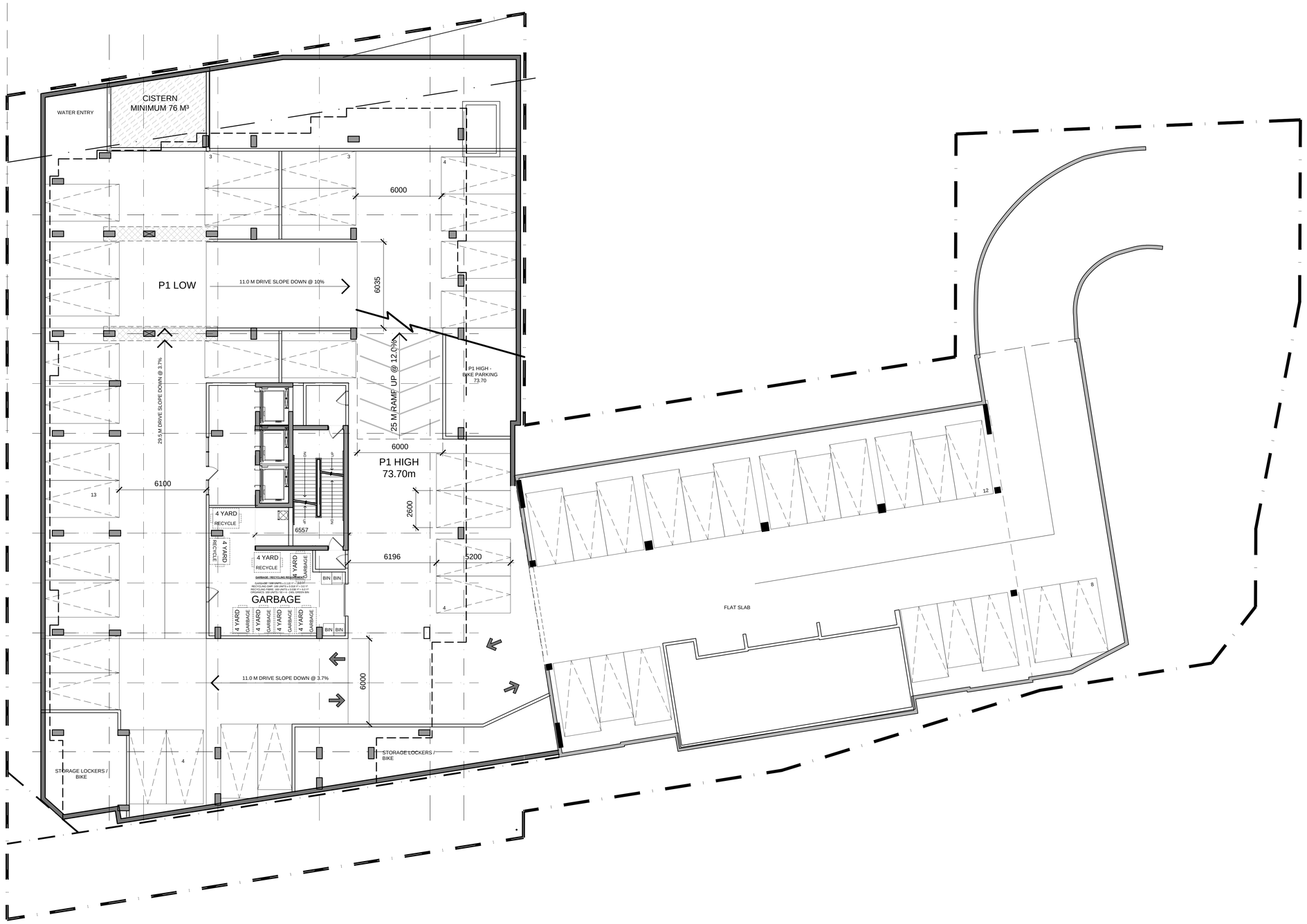
CLIENT: TAMARACK HOMES

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

PROJECT TITLE:
275 CARLING AVENUE
CARLING @ CAMBRIDGE
OTTAWA ONTARIO

SHEET TITLE:
FLOOR PLANS

DRAWN: RV
CHECKED: R.L.A.
SCALE: 1:125
SHEET No. A-01
PROJECT No. 1628



P1 LEVEL
RESIDENTIAL PARKING

P1 LEVEL
NEW - PARKING SPACES: 31
EXISTING - PARKING SPACES - 20

0m 2.5 5 7.5 10
BAR SCALE

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

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

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

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- ◇00 INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- ⬡00 INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (000) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 TITLE / A900 SERIES — 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
8	ISSUED FOR S.P.C. COMMENT LETTER 1	Jan. 24,19
7	ISSUED FOR S.P.C. APPLICATION	July 27,18
6	REVISED DESIGN - COMMUNITY MEETING	Sept. 21,17
5	ISSUED FOR - COMMUNITY MEETING	Oct. 4, 16
4	O.M.B. HEARING	Mar. 4, 13
3	REVISED RAMP LOCATION	Mar. 4, 13
2	ISSUED FOR ZONING REPORT	Jan 15, 13
1	ISSUED FOR ZONING AMENDMENT	Mar 28, 12

REVISIONS:

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

NORTH ARROW:

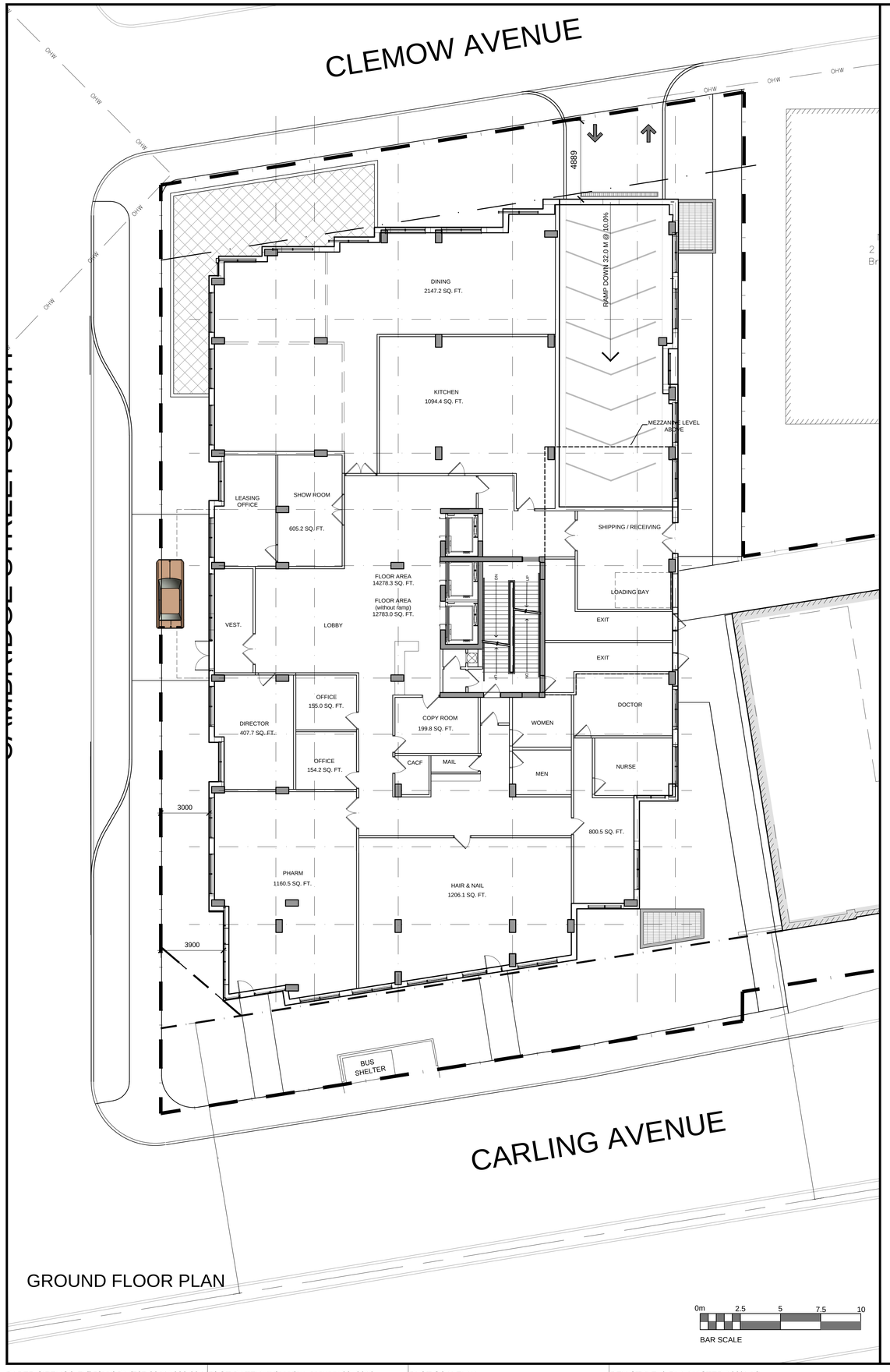
CLIENT: TAMARACK — TAMARACKHOMES.COM

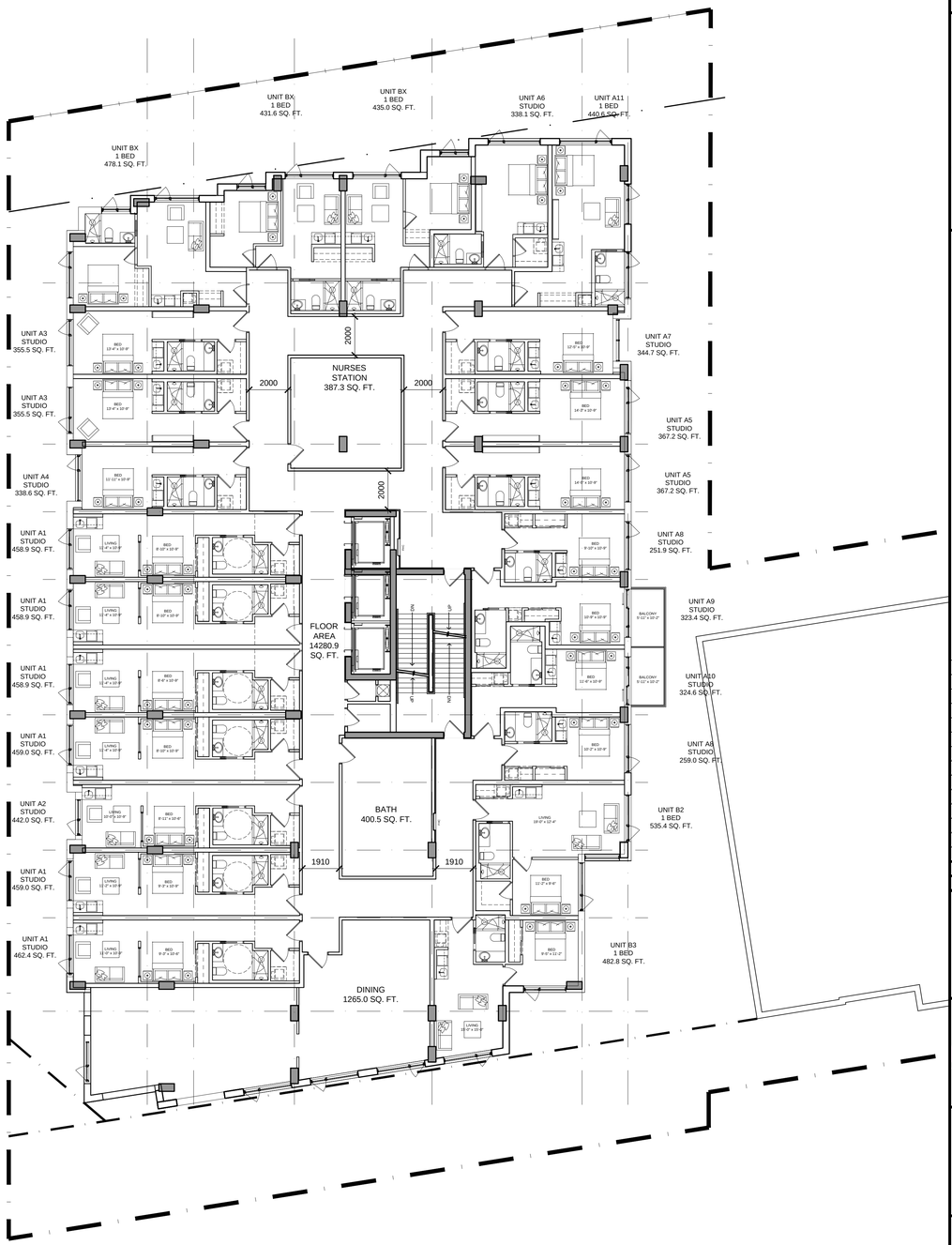
ARCHITECT:
rla/architecture
roderick lahey architect inc.
56 beech street, ottawa, ontario K1S 3J6
t. 613.724.9932 f. 613.724.1209 rlaarchitecture.ca

PROJECT TITLE:
275 CARLING AVENUE
CARLING @ CAMBRIDGE
OTTAWA ONTARIO

SHEET TITLE:
FLOOR PLANS

DRAWN:	CHECKED:
RV	R.L.A.
SCALE: 1:125	SHEET No. A-02
PROJECT No. 1628	





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

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

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

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- ◇00 INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- ⬡00 INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (000) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 DETAIL NUMBER / A900 DETAIL REFERENCE PAGE
- TITLE / SCALE
- 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
8	ISSUED FOR S.P.C. COMMENT LETTER 1	Jan. 24,19
7	ISSUED FOR S.P.C. APPLICATION	July 27,18
6	REVISED DESIGN - COMMUNITY MEETING	Sept. 21,17
5	ISSUED FOR - COMMUNITY MEETING	Oct. 4, 16
4	O.M.B. HEARING	Mar. 4, 13
3	REVISED RAMP LOCATION	Mar. 4, 13
2	ISSUED FOR ZONING REPORT	Jan 15, 13
1	ISSUED FOR ZONING AMENDMENT	Mar 28, 12

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — RODERICK J. LAHEY — LICENCE 4378 — SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT:

TAMARACK
TAMARACKHOMES.COM

ARCHITECT:

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

PROJECT TITLE:

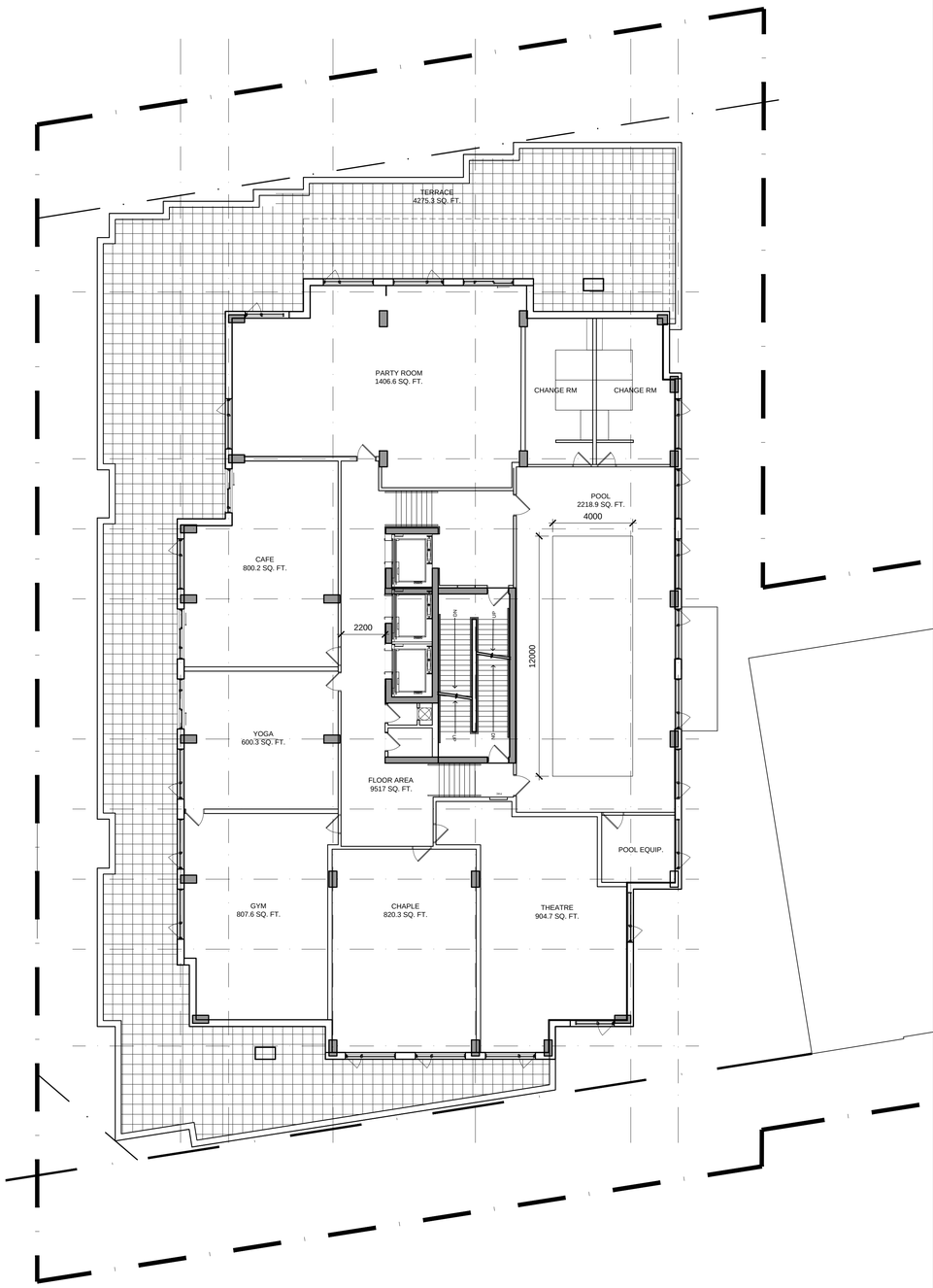
275 CARLING AVENUE

CARLING @ CAMBRIDGE
OTTAWA ONTARIO

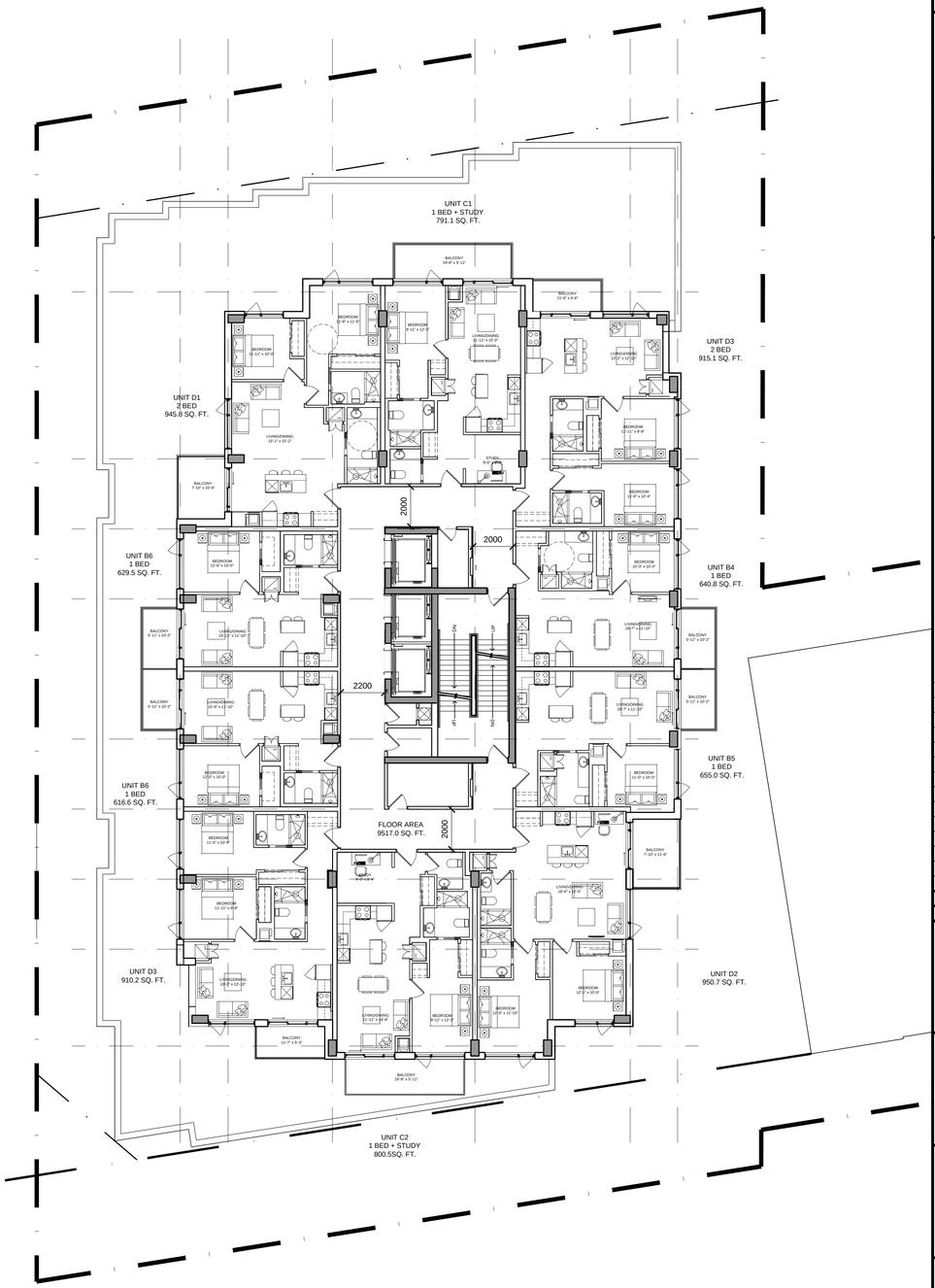
SHEET TITLE:

FLOOR PLANS

DRAWN: RV
CHECKED: R.L.A.
SCALE: 1:125
SHEET No. A-03
PROJECT No. 1628



4th FLOOR - AMENITY LEVEL



TYPICAL FLOOR - TOWER
5th to 15th FLOOR

11 FLOORS WITH
10 UNITS = 110 UNITS

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
- 00 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
8	ISSUED FOR S.P.C. COMMENT LETTER 1	Jan. 24,19
7	ISSUED FOR S.P.C. APPLICATION	July 27,18
6	REVISED DESIGN - COMMUNITY MEETING	Sept. 21,17
5	ISSUED FOR - COMMUNITY MEETING	Oct. 4, 16
4	O.M.B. HEARING	Mar. 4, 13
3	REVISED RAMP LOCATION	Mar. 4, 13
2	ISSUED FOR ZONING REPORT	Jan 15, 13
1	ISSUED FOR ZONING AMENDMENT	Mar 28, 12

REVISIONS:

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

NORTH ARROW:

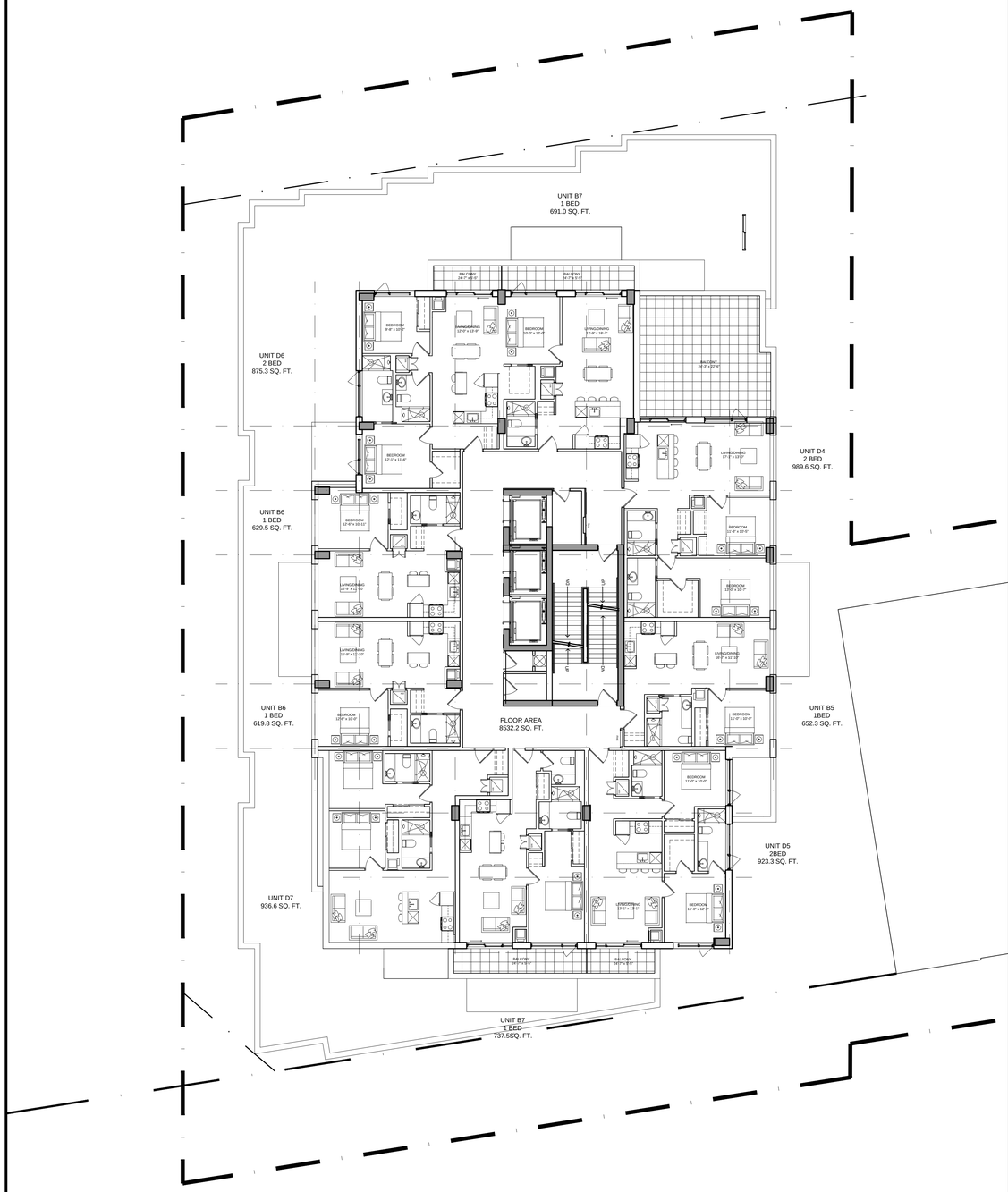
CLIENT: TAMARACK — TAMARACKHOMES.COM

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

PROJECT TITLE:
275 CARLING AVENUE
CARLING @ CAMBRIDGE
OTTAWA ONTARIO

SHEET TITLE:
FLOOR PLANS

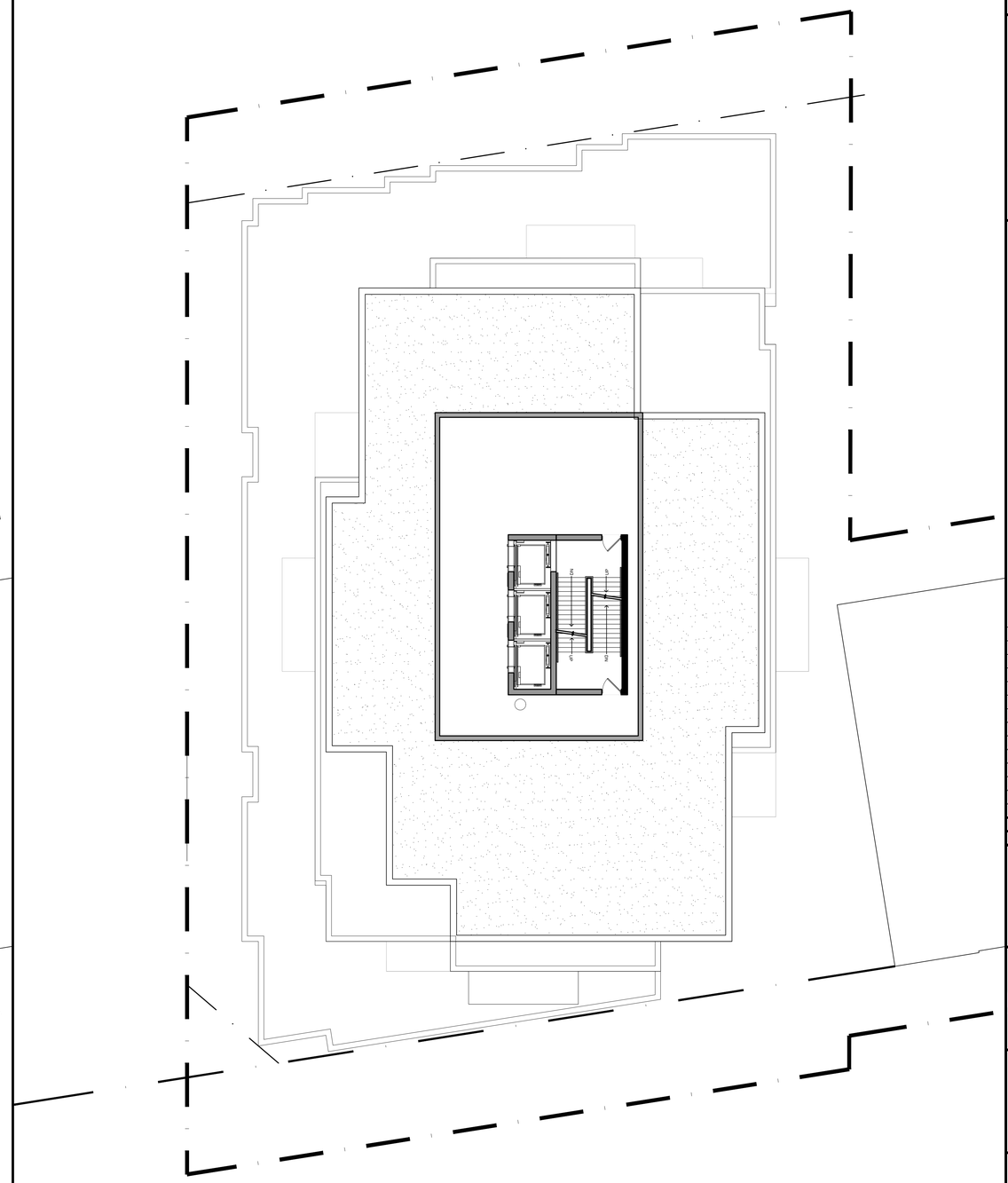
DRAWN:	CHECKED:
RV	R.L.A.
SCALE: 1:125	SHEET No. A-04
PROJECT No. 1628	



16th FLOOR PLAN

0m 2.5 5 7.5 10

BAR SCALE



MECHANICAL PENTHOUSE

0m 2.5 5 7.5 10

BAR SCALE

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

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

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

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- ◇ 00 INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- ◇ 00 INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (000) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.

00 TITLE / SCALE / A000 — 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
8	ISSUED FOR S.P.C. COMMENT LETTER 1	Jan. 24,19
7	ISSUED FOR S.P.C. APPLICATION	July 27,18
6	REVISED DESIGN - COMMUNITY MEETING	Sept. 21,17
5	ISSUED FOR - COMMUNITY MEETING	Oct. 4, 16
4	O.M.B. HEARING	Mar. 4, 13
3	REVISED RAMP LOCATION	Mar. 4, 13
2	ISSUED FOR ZONING REPORT	Jan 15, 13
1	ISSUED FOR ZONING AMENDMENT	Mar 28, 12

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — RODERICK A. LAHEY LICENCE 4375

SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT:

TAMARACK
TAMARACKHOMES.COM

ARCHITECT:

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

PROJECT TITLE:

275 CARLING AVENUE

CARLING @ CAMBRIDGE

OTTAWA ONTARIO

SHEET TITLE:

FLOOR PLANS

DRAWN:	CHECKED:
RV	R.L.A.
SCALE: 1:125	SHEET No. A-05
PROJECT No. 1628	

PAPER SIZE: ISO Full Bleed B1 (707.00 X 1000.00 MM) | PLOT DATE: Wednesday, January 23, 2019 | PLOT SCALE: 1:1 | PEN STYLE: 0-RLA-MASTER-100%.ctb | F:\2016\1628 Carling @ Cambridge (Taggart)\01_Design Development\1628 Floorplans - 20181214.dwg

TOPOGRAPHICAL PLAN OF

LOTS 9, 10, 11, 12 and PART OF LOTS 6, 7, 13, 14 and 15 REGISTERED PLAN 54 CITY OF OTTAWA

Prepared by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 200

8.0 6.0 4.0 2.0 0 4 8 Metres

Metric

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

JAN. 13, 2012 — E.H. Herweyer O.L.S.

Date

Notes & Legend

Denotes

	•	Deciduous Tree
FH	•	Fire Hydrant
WV	•	Water Valve
MH–ST	•	Maintenance Hole (Storm Sewer)
MH–S	•	Maintenance Hole (Sanitary)
MH–B	•	Maintenance Hole (Bell Telephone)
MH–T	•	Maintenance Hole (Traffic)
MH–H	•	Maintenance Hole (Hydro)
MH–G	•	Maintenance Hole (Gas)
MH	•	Maintenance Hole (Unidentified)
VC	•	Valve Chamber (Watermain)
ST	•	Underground Storm Sewer
FO	•	Underground Fibre Optic
P	•	Underground Power
S	•	Underground Sanitary Sewer
W	•	Underground Water
P	•	Underground Power
G	•	Underground Gas
T	•	Underground Traffic
B	•	Underground Bell
TV	•	Underground Rogers
OHW	•	Overhead Wires
CB	•	Catch Basin
HH	•	Handhole
TB–B	•	Bell Terminal Box
TB–C	•	Cable Terminal Box
TB–T	•	Traffic Terminal Box
TB	•	Unidentified Terminal Box
TSP	•	Traffic Signal Post
B	•	Bollard
S	•	Sign
CLF	•	Chain Link Fence
BF	•	Board Fence
P&W	•	Post and Wire
TSL	•	Traffic Light
UP	•	Utility Pole
AN	•	Anchor
LS	•	Light Standard
TL	•	Traffic Light
Ø	•	Diameter
+ 65.00	•	Location of Elevations
+ 65.00	•	Location of Elevations (Top of Curb)
+ 65.00	•	Location of Elevations (Top of Wall)
T/G	•	Top of Grade
C/L	•	Centreline
Inv.	•	Invert
CRW	•	Concrete Retaining Wall
BRW	•	Brick Retaining Wall
		Property Line
GV	•	Gas Valve
PO–W	•	Wooden Pole
PO–M	•	Metal Pole

SITE AREA = 3782 m²

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.
4. Underground services are taken from City of Ottawa Engineering Plans F-10-23, G-10-04, G-11-01, 2909 Sheet 9 of 18, 2907 Sheet 16 of 18 and Plan by (857) dated September 14, 1973.

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

Job No. I2495-II Topo pt Lts 6 7 9 -15 RP54 T FI — N/A