# SITE SERVICING & STORMWATER MANAGEMENT REPORT
# 1047 RICHMOND ROAD

Project No.: CCO-22-2242

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# 1.0 PROJECT DESCRIPTION

## 1.1 Purpose

Egis Canada (Egis) has been retained by Fengate to prepare this Site Servicing and Stormwater Management Report in support of the Site Plan Control process for the development located at 1047 Richmond Road within the City of Ottawa.

The main purpose of this report is to present a servicing design for the development in accordance with the recommendations and guidelines provided by the City of Ottawa (City), the Rideau Valley Conservation Authority (RVCA), and the Ministry of the Environment, Conservation and Parks (MECP). This report will address the water, sanitary, and storm sewer servicing for the development, ensuring that the available existing services will adequately service the proposed development.

This report should be read in conjunction with the following drawings:

- CCO-22-2242, C101 – Lot Grading, Drainage, Erosion, and Sediment Control Plan
- CCO-22-2242, C102 – Site Servicing Plan
- CCO-22-2242, PRE – Pre-Development Drainage Area Plan (Appendix E)
- CCO-22-2242, POST – Post-Development Drainage Area Plan (Appendix F)

## 1.2 Site Description

Figure 1: Site Map

The subject property, herein referred to as the site, is located at 1047 Richmond Road within the Bay Ward. The site covers approximately 0.91 ha and is located at the northeast corner of the Richmond Road and New Orchard Avenue North intersection. The site is zoned for Traditional Mainstreet use (TM). See Site Location Plan in Appendix A for more details.

## 1.3 Proposed Development and Statistics

The proposed development consists of a phased mixed-use development. The Phase 1 development proposes a 36-storey mixed-use building containing 425 residential units and 502.5 $m^2$ of commercial space. Drive aisles will be provided throughout the site and parking provided via an underground parking garage with access from New Orchard Avenue N. The Phase 1 development will be located within 0.51 ha of the site. Refer to the Site Plan prepared by RLA and included in Appendix B for further details.

## 1.4 Existing Conditions and Infrastructure

The site is currently developed as a car dealership with a large asphalt parking area. Based on available mapping, the existing building appears to be serviced by the municipal infrastructure within Richmond Road.

Sewer and watermain mapping collected from the City of Ottawa indicate that the following services exist across the property frontages within the adjacent municipal rights-of-way(s):

- RICHMOND ROAD
  - 203 mm diameter CI watermain, a
  - 225 mm diameter concrete sanitary sewer tributary to the West Nepean Collector, and a
  - 1050 mm diameter concrete storm sewer tributary outlets at the Ottawa River.
- NEW ORCHARD AVENUE NORTH
  - 203/152 mm diameter cast iron watermain, a
  - 300 mm diameter concrete sanitary sewer tributary to the West Nepean Collector, and a
  - 675-1050 mm diameter concrete storm sewer tributary outlets at the Ottawa River.

## 1.5 Approvals

The proposed development is subject to the City of Ottawa site plan control approval process. Site plan control requires the City to review, provide concurrence and approve the engineering design package. Permits to construct can be requested once the City has issued a site plan agreement.

An Environmental Compliance Approval (ECA) through the Ministry of Environment, Conservation and Parks (MECP) is not anticipated to be required since the proposed storm sewer system services one parcel of land, does not propose industrial use, and does not outlet to a combined sewer.

# 2.0 BACKGROUND STUDIES, STANDARDS, AND REFERENCES

## 2.1 Background Reports / Reference Information

Background studies have been completed for the proposed development, which include the City of Ottawa's as-built drawings, a topographical survey, a geotechnical report, and a hydrogeological investigation.

As-built drawings of existing services, provided by the City of Ottawa Information Centre, within the vicinity of the proposed site were reviewed in order to identify infrastructure available to service the proposed development.

The following reports have previously been completed and are available under separate cover:

- A topographic survey (#21985-21) of the site was completed by Annis, O'Sullivan, Vollebekk Ltd. and dated October 25, 2023.
- The Geotechnical and Hydrogeological Investigation was prepared by Golder Associates Ltd.. and dated June 26, 2023.
- The Geotechnical Assessment Report was prepared by Terrapex Environmental Ltd. and dated December 5, 2024
- The Site Plan (#2405) was prepared by RLA Architecture and dated April 14, 2025 (Site Plan).

## 2.2 Applicable Guidelines and Standards

City of Ottawa:

- Ottawa Sewer Design Guidelines, City of Ottawa, SDG002, October 2012. (Ottawa Sewer Guidelines)
  - Technical Bulletin ISTB-2014-01 City of Ottawa, February 2014. (ISTB-2014-01)
  - Technical Bulletin PIEDTB-2016-01 City of Ottawa, September 2016. (PIEDTB-2016-01)
  - Technical Bulletin ISTB-2018-01 City of Ottawa, January 2018. (ISTB-2018-01)
  - Technical Bulletin ISTB-2018-04 City of Ottawa, March 2018. (ISTB-2018-04)
  - Technical Bulletin ISTB-2019-02 City of Ottawa, February 2019. (ISTB-2019-02)
- Ottawa Design Guidelines – Water Distribution City of Ottawa, July 2010. (Ottawa Water Guidelines)
  - Technical Bulletin ISD-2010-2 City of Ottawa, December 15, 2010. (ISD-2010-2)
  - Technical Bulletin ISDTB-2014-02 City of Ottawa, May 2014. (ISDTB-2014-02)
  - Technical Bulletin ISTB-2018-02 City of Ottawa, March 2018. (ISTB-2018-02)

- Technical Bulletin ISTB-2021-03 City of Ottawa, August 2021. (ISTB-2021-03)

1Ministry of Environment, Conservation and Parks:

- Stormwater Planning and Design Manual, Ministry of the Environment, March 2003. (MECP Stormwater Design Manual)
- Design Guidelines for Sewage Works, Ministry of the Environment, 2008. (MECP Sewer Design Guidelines)

Other:

- Water Supply for Public Fire Protection, Fire Underwriters Survey, 2020. (FUS Guidelines)

# 3.0 PRE-CONSULTATION SUMMARY

A pre-consultation meeting was conducted on June 13, 2024, to discuss the proposed development. Specific design parameters to be incorporated within this design include the following:

- Pre-development and post-development flows shall be calculated using a calculated time of concentration (Tc) or 10 minutes.
- Control 5 through 100-year post-development flows to the 2-year pre-development flows with a combined C value to a maximum of 0.50.
- Quality control is required to be provided for this site (80% TSS Removal).

The notes from the City of Ottawa can be found in Appendix B.

# 4.0 WATER SERVICING

## 4.1 Existing Watermain

The site is located within the 1W pressure zone, as per the Water Distribution System mapping included in Appendix C. The following subsections outline the water infrastructure that exists within Richmond Road and New Orchard Avenue N.

### 4.1.1 Richmond Road

There is an existing 203 mm diameter watermain within Richmond Road. Based on the City of Ottawa mapping, the existing building is currently serviced by this watermain. In addition, there is an existing fire hydrant fronting the site along Richmond Road.

As seen on EWC Designers drawings EJV-S2RDRI-RWY-DWG-3705 and EJV-S2RDRI-RWY-DWG-3706, the existing 203 mm diameter watermain will be upgraded to 300 mm diameter as part of road renewal works on Richmond Road. The existing hydrant will also be replaced with two new hydrants along the Richmond Road frontage.

### 4.1.2 New Orchard Avenue N

There is an existing 203 mm diameter PVC watermain within New Orchard Avenue N. Approximately 79 m north of Richmond Road, the municipal system transitions from a 203 mm diameter watermain to a 152 mm diameter watermain. The watermain stops short of the 1220 mm diameter transmission main at the north end of New Orchard Ave N. In addition, there are two existing fire hydrants fronting the site along New Orchard Ave N.

As seen on EWC Designers drawing EJV-S2RDRI-RWY-DWG-3745, the existing 203 mm diameter watermain will be upgraded to 300 mm diameter as part of road renewal works on New Orchard Avenue N. The existing hydrants will also be replaced with one new hydrant along New Orchard Avenue N.

## 4.2 Proposed Water Servicing

Following Section 4.3.1 of the guidelines, service areas with a basic day demand greater than 50 m3/day require a redundant connection to the municipal system. The redundancy is proposed to be provided via multiple water services separated by an isolation valve.

Two new 200 mm diameter water services connected to the future 300 mm diameter watermain within New Orchard Avenue N. are proposed to service the Phase 1 development. The water services will contain water valves located at the property line. The water services are designed to have a minimum of 2.4 m cover.

The Fire Underwriters Survey 2020 (FUS) method was utilized to determine the required fire flow for the site. The 'C' factor (type of construction) for the FUS calculation was determined to be 0.8 (non-combustible type). The total floor area ('A' value) for the FUS calculation was determined to be 7,056.4 $m^2$. The results of the calculations

yielded a required fire flow of 7,000 L/min. A fire flow of 9,000 L/min was calculated using the Ontario Building Code (OBC) criteria. The detailed calculations for the FUS and OBC can be found in Appendix C.

The water demands for the proposed building have been calculated to adhere to the Ottawa Design Guidelines – Water Distribution manual and can be found in Appendix C. The results have been summarized in Table 1, below.

Table 1: Water Supply Design Criteria and Water Demands

| | |
|---|---|
| Site Area | 0.51 ha (Phase 1) |
| Residential | 280 L/person/day |
| Maximum Daily Peaking Factor | 2.5 x avg day |
| Maximum Hour Peaking Factor | 2.2 x avg day |
| Average Day Demand (L/s) | 2.74 |
| Maximum Daily Demand (L/s) | 6.69 |
| Peak Hourly Demand (L/s) | 14.62 |
| FUS Fire Flow Requirement (L/s) | 116.7 (7,000 L/min) |
| OBC Fire Flow Requirement (L/s) | 150 (9,000 L/min) |

The City provided the estimated water pressures during the average day scenario, peak hour scenario and the max day plus fire flow scenarios for the demands indicated by the correspondence in Appendix C. The resulting pressures for the boundary conditions results are shown in Table 2, below. While it is noted that estimated demands have decreased slightly since the boundary condition request as a result of unit count changes, this is not expected to impact the validity of the results.

Table 2: Boundary Conditions Results

| Scenario | Proposed Demands (L/s) | Connection HGL (m $H_2O$)*/kPa |
|---|---|---|
| Average Day Demand | 2.74 | 53.9 / 528.8 |
| Max Daily + Fire Flow Demand (FUS) | 6.69 + 116.7 = 123.39 | 29.3 / 287.4 |
| Max Daily + Fire Flow Demand (OBC) | 6.69 + 150 = 156.69 | 18.7 / 183.4 |
| Peak Hour Demand | 14.62 | 46.3 / 454.2 |
| *Adjusted for an estimated ground elevation of 64.5 m above the connection point. | | |

The normal operating pressure range is anticipated to be 454 kPa to 529 kPa and will not be less than 275 kPa (40 psi) or exceed 689 kPa (100 psi). The proposed watermains will meet the minimum required 20 psi (140 kPa) from the Ottawa Water Guidelines at the ground level under maximum day demand and fire flow conditions.

While boundary conditions were provided for the existing 203 mm diameter watermain only, it is expected that available fire flow within the future 300 mm watermain will only improve as a result of reduced losses.

To confirm the adequacy of fire flow to protect the proposed development, existing public fire hydrants within 150 m of the proposed building were analyzed per City of Ottawa ISTB 2018-02 Appendix I Table 1. Based on City guidelines (ISTB-2018-02), the existing hydrants can provide adequate fire protection to the proposed development. It is expected that future hydrants installed as part of the road renewal works will provide an equivalent level of protection. The results are summarized in Table 3, below.

Table 3: Fire Protection Confirmation

| Building | Fire Flow Demand (L/min) | Fire Hydrant(s) within 75m (5,700 L/min) | Fire Hydrant(s) within 150m (3,800 L/min) | Combined Fire Flow (L/min) |
|---|---|---|---|---|
| 1047 Richmond Rd | 7,000 L/min – FUS<br>9,000 L/min – OBC | 4 public | 1 public | 26,600 |

# 5.0 SANITARY SERVICING

## 5.1 Existing Sanitary Sewers

There is an existing 225 mm diameter sanitary sewer within Richmond Road and an existing 300 mm diameter sanitary sewer within New Orchard Avenue N. available to service the site. Both sanitary sewers are tributary to the same outlet, the West Nepean Collector, at the north end of New Orchard Avenue N.

As seen on EWC Designers drawings EJV-S2RDRI-RWY-DWG-3605 and EJV-S2RDRI-RWY-DWG-3606, the existing 225 mm diameter sanitary sewer within Richmond Road will be upgraded to 250 mm diameter as part of road renewal works.

As seen on EWC Designers drawing EJV-S2RDRI-RWY-DWG-3645, the existing 300 mm diameter sanitary sewer within New Orchard Avenue N. will be replaced with a new 300 mm diameter sanitary sewer as part of road renewal works.

## 5.2 Proposed Sanitary Servicing

A new 300 mm diameter gravity sanitary service for the Phase 1 building will be connected to the future 300 mm diameter sanitary sewer within New Orchard Avenue N. The Phase 2 development is anticipated to be serviced via the future 250 mm diameter sanitary sewer within Richmond Road, as illustrated by drawing C102. The sanitary service will be complete with a sampling port for flow monitoring. Refer to drawing C102 for a detailed servicing layout.

Table 4: Sanitary Design Criteria

| Design Parameter | Value |
|---|---|
| Site Area | 0.51 ha |
| Residential | 280 L/person/day |
| Residential Peaking Factor | 3.29 |
| Institutional/Commercial Peaking Factor | 1.0 |
| Extraneous Flow Allowance | 0.33 L/s/ha |

Table 5, below, summarizes the estimated wastewater flow from the proposed development. Refer to Appendix D for detailed calculations.

Table 5: Summary of Estimated Sanitary Flow

| Design Parameter | Total Flow (L/s) |
|---|---|
| Total Estimated Average Dry Weather Flow | 2.76 |
| Total Estimated Peak Dry Weather Flow | 8.67 |
| Total Estimated Peak Wet Weather Flow | 8.81 |

The proposed 300 mm diameter gravity sanitary service will be installed with a minimum full flow target velocity (cleansing velocity) of 0.6 m/s and a full flow velocity of not more than 3.0 m/s. The capacity of the laterals is 100.9 L/s at a proposed slope of 1.0%. Therefore, the building services are sufficiently sized to accommodate the development. Refer to Appendix D for the sanitary sewer design sheet.

City staff were contacted on August 21, 2024, to review proposed wastewater flows from the site and advise if there were any downstream constraints. City staff confirmed on August 28th, 2024, that there were no concerns with the municipal system based on a contemplated flow of 10.02 L/s. The proposed flow has since been decreased to 8.81 L/s; therefore, the municipal system has the capacity for the proposed Phase 1 development and HGL concerns are not anticipated. Correspondence with City Staff is included in Appendix D.

# 6.0 STORM SEWER SERVICING

## 6.1 Existing Storm Sewers

Stormwater runoff from the site is currently tributary to the Ottawa River within the Ottawa Central sub-watershed. Runoff leaving the site travels approximately 300 m before discharging to the Ottawa River. The following subsections outline the storm infrastructure that exists within New Orchard Avenue N and Richmond Road.

### 6.1.1 New Orchard Avenue N

There is an existing 675 mm diameter storm sewer located within New Orchard Avenue North. The storm sewer slopes to the north and discharges directly into the Ottawa River approximately 300 m downstream.

### 6.1.2 Richmond Road

There is an existing 1050 mm diameter storm sewer located within Richmond Road. The storm sewer slopes to the west and connects to New Orchard Avenue N.

As seen on EWC Designers drawings EJV-S2RDRI-RWY-DWG-3605 and EJV-S2RDRI-RWY-DWG-3606, the existing 1050 mm diameter storm sewer within Richmond Road will be removed and replaced with realigned 450 mm – 1050 mm diameter storm sewers.

## 6.2 Proposed Storm Servicing

A new 250 mm storm service will be extended from the existing 675 mm diameter storm sewer within New Orchard Avenue N. Drainage collected via area drains, trench drains, and roof drains within the Phase 1 limits will be directed to an internal cistern. Drainage within the Phase 2 limits is anticipated to be directed to an internal cistern and will be determined at the time of detailed design. The Phase 1 cistern will provide flow attenuation to the specified release rate in Section 7.0.

Foundation drainage is proposed to be connected to the 250mm storm service downstream of any cistern controls.

See CCO-22-2242 - POST and Storm Sewer Design Sheet in Appendix F of this report for more details. The Stormwater Management design for the subject property will be outlined in Section 6.0.

# 7.0 PROPOSED STORMWATER MANAGEMENT

## 7.1 Design Criteria and Methodology

Stormwater management for the proposed site will be maintained through positive drainage away from the proposed building, and stormwater will collected by roof, area, and trench drains. The storm system will capture the rooftop and at-grade runoff and direct the flow to internal cisterns within each building. The restricted flow from Phase 1 will be released into a proposed storm service connected to the 675 mm storm sewer located within New Orchard Avenue N. The emergency overland flow route for the proposed site will be directed northwest towards New Orchard Ave N.

In summary, the following design criteria have been employed in developing the stormwater management design for the site as directed by the RVCA and City:

Quality Control

- Quality control to an enhanced level of treatment is required.

Quantity Control

- Post-development flow 5/100-year to be restricted to match the 2-year pre-development flow with a maximum C value of 0.50.

## 7.2 Runoff Calculations

Runoff calculations presented in this report are derived using the Rational Method, given as:

$$Q = 2.78CIA \quad \text{(L/s)}$$

Where:
C = Runoff coefficient
I = Rainfall intensity in mm/hr (City of Ottawa IDF curves)
A = Drainage area in hectares

It is recognized that the Rational Method tends to overestimate runoff rates. As a result, the conservative calculation of runoff ensures that any SWM facility sized using this method is expected to function as intended.

The following coefficients were used to develop an average C for each area:

| | |
|---|---|
| Roofs/Concrete/Asphalt | 0.90 |
| Gravel | 0.60 |
| Undeveloped and Grass | 0.20 |

As per the City of Ottawa - Sewer Design Guidelines, the 5-year balanced 'C' value must be increased by 25% for a 100-year storm event to a maximum of 1.0.

As per the pre-consultation meeting with the City of Ottawa, the time of concentration (Tc) used for post-development flows shall be calculated using the pre-development Tc or a maximum Tc of 10 minutes.

## 7.3 Pre-Development Drainage

It has been assumed that the site contains no stormwater management controls for flow attenuation. The estimated pre-development peak flows for the 5, and 100-year events are summarized below in Table 6. See CCO-22-2242 - PRE in Appendix E and Appendix G for calculations.

Table 6: Pre-Development Runoff Summary

| Drainage Area | Area (ha) | Q (L/s) | |
|---|---|---|---|
| | | 5-Year | 100-Year |
| A1 | 0.507 | 132.12 | 251.57 |
| A2 | 0.399 | 102.82 | 195.86 |
| Total | 0.905 | 234.94 | 447.43 |

## 7.4 Post-Development Drainage

The proposed site drainage limits are demonstrated in the Post-Development Drainage Area Plan. See CCO-22-2242 - POST in Appendix F of this report for more details. A summary of the Post-Development Runoff Calculations can be found below.

Table 7: Post-Development Runoff Summary

| Drainage Area | Area (ha) | Runoff Coefficient (2/5-Year) | Runoff Coefficient (100-Year) | 5-year Peak Flow (L/s) | 100-year Peak Flow (L/s) |
|---|---|---|---|---|---|
| B1A | 0.461 | 0.80 | 0.90 | 107.59 | 205.74 |
| B1B | 0.003 | 0.90 | 1.00 | 0.68 | 1.30 |
| B1C | 0.042 | 0.65 | 0.73 | 7.94 | 15.32 |
| B2A | 0.355 | 0.83 | 0.92 | 85.26 | 162.84 |
| B2B | 0.003 | 0.90 | 1.00 | 0.73 | 1.39 |
| B2C | 0.041 | 0.57 | 0.65 | 6.79 | 13.19 |
| Total | 0.905 | | | 208.99 | 399.79 |

See Appendix G for calculations.

Runoff for areas B1A and B1B will be restricted via the internal Phase 1 cistern before flowing to the existing storm system within New Orchard Ave N. Runoff for area B1C will be unrestricted towards the right-of-ways and will be compensated for within areas with controls. Stormwater management for areas B2A-B2C has been estimated and will be confirmed during the Phase 2 detailed design. This quantity and quality control will be further detailed in Sections 7.5 and 7.6.

## 7.5 Quantity Control

Post-development drainage will be restricted to a maximum release rate of 96.67 L/s for the entire site (106.76 L/s/ha). Reducing site flows will be achieved using flow restrictions within the internal cisterns and will create the need for onsite storage. Runoff from areas B1A to B1C and B2A to B2C will be restricted as shown in the table below.

Table 8: Post-Development Runoff Summary

| Drainage Area | Area (ha) | 5-year Peak Flow (L/s) | 100-year Peak Flow (L/s) | 100-year Storage Required ($m^3$) | 100-year Storage Available ($m^3$) |
|---|---|---|---|---|---|
| B1A | 0.461 | 34.06 | 38.01 | 165.6 | 165.6 |
| B1B | 0.003 | | | | |
| B1C | 0.042 | 7.94 | 15.32 | - | - |
| Phase 1 Total | 0.507 | 42.00 | 53.33 | 165.6 | 165.6 |
| B2A | 0.355 | 27.05 | 30.15 | 97.9 | TBD |
| B2B | 0.003 | | | | |
| B2C | 0.041 | 6.79 | 13.19 | - | - |
| Total | 0.905 | 75.84 | 96.67 | 263.49 | 165.6 + TBD (Phase 2) |

See Appendix G for calculations.

Runoff for areas B1A to B1B will be collected by area, trench, and roof drains within the Phase 1 limits and will be restricted using the internal cistern. Flow restriction will require 165.6 $m^3$ of storage. Stormwater will be conveyed to the existing storm sewer within New Orchard Ave N via the proposed 250 mm storm service at a maximum release rate of 38.01 L/s. To determine the required cistern storage volume, the design release rate was reduced by 50% to 19.00 L/s It is expected that flow restriction will be provided by an inlet control device located at the outlet of the cistern. Design details for the inlet control device will be provided following coordination with City Staff on HGL levels within the New Orchard Avenue N storm sewer.

Runoff from area B1C will sheet drain without attenuation towards the right-of-ways.

Runoff for areas B2A to B2B will be collected by area, trench, and roof drains within the Phase 2 limits and is anticipated to be restricted within the Phase 2 internal cistern. Flow restriction will require approximately 98 $m^3$

of storage, assuming the cistern does not drain by gravity and will be pumped. Stormwater will be conveyed to the existing storm sewer within Richmond Road via the contemplated 250 mm storm service at a maximum release rate of 30.15 L/s.

In the event that there is a rainfall event above the 100-year storm, or a blockage within the storm sewer system, an emergency overland flow route has been provided so that the stormwater runoff will spill towards the northwest entrance at New Orchard Ave N at an elevation of 64.32, providing 1.13 metres of freeboard from the residential first floor elevation.

## 7.6 Quality Control

Quality controls will be provided within the building via a Stormceptor OGS unit or an approved equivalent. Further details will be provided by mechanical.

# 8.0 EROSION AND SEDIMENT CONTROL

## 8.1 Temporary Measures

Before construction begins, temporary silt fence, straw bale or rock flow check dams will be installed at all natural runoff outlets from the property. These controls must be maintained throughout construction and inspection of sediment and erosion control will be facilitated by the Contractor or Contract Administration staff throughout the construction period.

Silt fences will be installed where shown on the final engineering plans, specifically along the downstream property limits. The Contractor, at their discretion or the instruction of the City, Conservation Authority or the Contract Administrator shall increase the quantity of sediment and erosion controls on-site to ensure that the site is operating as intended and no additional sediment finds its way off-site. The rock flow, straw bale & silt fence check dams and barriers shall be inspected weekly and after rainfall events. Care shall be taken to properly remove sediment from the fences and check dams as required. Fibre roll barriers are to be installed at all existing curb inlet catchbasins and filter fabric is to be placed under the grates of all existing catchbasins and manholes along the frontage of the site and any new structures immediately upon installation. The measures for the existing/proposed structures is to be removed only after all areas have been paved. Care shall be taken at the removal stage to ensure that any silt that has accumulated is properly handled and disposed of. Removal of silt fences without prior removal of the sediments shall not be permitted.

Although not anticipated, work through winter months shall be closely monitored for erosion along sloped areas. Should erosion be noted, the Contractor shall be alerted and shall take all necessary steps to rectify the situation. Should the Contractor's efforts fail to remediate the eroded areas, the Contractor shall contact the City and/or Conservation Authority to review the site conditions and determine the appropriate course of action. As the ground begins to thaw, the Contractor shall place silt fencing at all required locations as soon as ground conditions warrant. Please see the Site Grading, Drainage Plan and Sediment & Erosion Control Plan for additional details regarding the temporary measures to be installed and their appropriate OPSD references.

## 8.2 Permanent Measures

Rip-rap will be placed at all locations that have the potential for concentrated flow. The Contractor must ensure that the geotextile is keyed in properly to ensure runoff does not undermine the rip-rapped area. Additional rip rap is to be placed at erosion-prone locations as identified by the Contractor / Contract Administrator / City or Conservation Authority.

It is expected that the Contractor will promptly ensure that all disturbed areas receive topsoil and seed/sod and that grass be established as soon as possible. Any areas of excess fill shall be removed or levelled as soon as possible and must be located a sufficient distance from any watercourse to ensure that no sediment is washed out into the watercourse. As the vegetation growth within the site provides a key component to the control of sediment for the site, it must be properly maintained once established. Once the construction is complete, it will

be up to the landowner to maintain the vegetation and ensure that the vegetation is not overgrown or impeded by foreign objects.

# 9.0 SUMMARY

- The proposed development consists of a phased mixed-use development. The Phase 1 development proposes a 36-storey mixed-use building containing 425 residential units and 502.5 $m^2$ of commercial space.
- The Phase 1 development will be serviced via two 200 mm water services connected to the future 300mm diameter watermain within New Orchard Ave N. The Phase 2 development is anticipated to be serviced from Richmond Road.
- The Phase 1 development will be serviced via a 300 mm diameter sanitary service connected to the future 300 mm diameter sanitary sewer within New Orchard Ave N. The Phase 2 development is anticipated to be serviced from Richmond Road.
- The Phase 1 development will be serviced via a 250 mm diameter storm service connected to the existing 675 mm diameter storm sewer within New Orchard Ave N. The Phase 2 development is anticipated to be serviced from Richmond Road.
- Storage for the 5- through 100-year storm events will be provided by an internal cistern to provide flow restriction on-site.
- Quality controls will be provided within the building via a Stormceptor OGS unit or an approved equivalent. Further details will be provided by mechanical.

# 10.0 RECOMMENDATIONS

Based on the information presented in this report, we recommend that the City of Ottawa approve this Site Servicing and Stormwater Management Report in support of the proposed 1047 Richmond Road.

This report is respectfully being submitted for approval.

Regards,

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# 11.0 STATEMENT OF LIMITATIONS

This report was produced for the exclusive use of Fengate. The purpose of the report is to assess the existing stormwater management system and provide recommendations and designs for the post-construction scenario that are in compliance with the guidelines and standards from the Ministry of the Environment, Conservation and Parks, City of Ottawa and local approval agencies. Egis Canada reviewed the site information and background documents listed in Section 2.0 of this report. While the previous data was reviewed by Egis Canada and site visits were performed, no field verification/measures of any information were conducted.

Any use of this review by a third party, or any reliance on decisions made based on it, without a reliance report is the responsibility of such third parties. Egis Canada accepts no responsibility for damages, if any, suffered by any third party as a result of decisions or actions made based on this review.

The findings, conclusions and/or recommendations of this report are only valid as of the date of this report. No assurance is made regarding any changes in conditions subsequent to this date. If additional information is discovered or becomes available at a future date, Egis Canada should be requested to re-evaluate the conclusions presented in this report, and provide amendments, if required.

# APPENDIX A
# KEY PLAN

500 250 0 500

Scale 1:20,000 Metres

LEGEND

- Site Location
- Local Road
- Major Road
- Watercourse
- Waterbody
- Wooded Area

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2021.

| | |
|---|---|
| CLIENT: | FENGATE |
| PROJECT: | 1047 RICHMOND ROAD |
| TITLE: | SITE LOCATION PLAN |

McINTOSH PERRY
115 Walgreen Road, RR3, Carp, ON K0A1L0
Tel: 613-836-2184 Fax: 613-836-3742
www.mcintoshperry.com

| | | |
|---|---|---|
| PROJECT NO: CCO-22-2242 | | FIGURE: 1 |
| Date | Dec., 17, 2021 | |
| GIS | SK | |
| Checked By | AG | |

C:\Users\s.klassen\McIntosh Perry\GIS - Documents\Projects\2022\CCO\CCO-22-2242 Fengate Richmond Rd\aprx\Key Maps\LandDevelopment\CCO-22-2242_01_KeyPlan.aprx

# APPENDIX B
# BACKGROUND DOCUMENTS

File No.: PC2024-0163

June 13, 2024

Jillian Simpson
Fotenn Planning + Design
Via email: simpson@fotenn.com

**Subject: Pre-Consultation: Meeting Feedback**
**Proposed Site Plan Control Application – 1047 Richmond Road**

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on May 21, 2024.

## Purpose of Meeting:

- Phase 1 Pre-consultation for a proposed application for Site Plan Control to permit the development of a high-rise mixed-use development.
- Tower A (Phase 1) is described as a 38-storey building, with a 3-storey podium, with 400 residential units and 600m2 of commercial space at grade.
- Tower B (Phase 2) is described as a 38-storey building, with a 4 storey podium. Approximately 400m2 of commercial space is shown along Richmond. The number of residential units in the Phase 2 is unknown.
- 1012 sq m of parkland is proposed at the southwest corner. 350m2 outdoor amenity area is proposed at the centre of the site.
- Vehicular access is proposed at the rear of the site, off New Orchard Avenue North. Approximately 250 vehicular parking spaces are proposed below grade.
- 427 bicycle parking spaces are proposed on site.

## Pre-Consultation Preliminary Assessment

| | | | | |
|---|---|---|---|---|
| **1** ☐ | **2** ☐ | **3** ☒ | **4** ☐ | **5** ☐ |

One (1) indicates that considerable major revisions are required while five (5) suggests that the 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.

## Next Steps

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. Please proceed to complete a Phase 3 Pre-consultation Application Form and submit it together with the necessary studies and/or plans to planningcirculations@ottawa.ca.

2. In your subsequent pre-consultation submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed must be included with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.

3. Please note, if your development proposal changes significantly in scope, design, or density before the Phase 3 pre-consultation, you may be required to complete or repeat the Phase 2 pre-consultation process.

**Supporting Information and Material Requirements**

1. The attached **Study and Plan Identification List** outlines the information and material that has been identified, during this phase of pre-consultation, as either required (R) or advised (A) as part of a future complete application submission.

    a. The required plans and studies must meet the City's Terms of Reference (ToR) and/or Guidelines, as available on Ottawa.ca. These ToR and Guidelines outline the specific requirements that must be met for each plan or study to be deemed adequate.

**Consultation with Technical Agencies**

1. You are encouraged to consult with technical agencies early in the development process and throughout the development of your project concept. A list of technical agencies and their contact information is enclosed.

**Planning:**

Comments:

1. Official Plan (Volume 1) Policies

    a. Transect Policy Area: Inner Urban; Designation: Mainstreet Corridor

        i. High-rise development is permitted along Mainstreets in the Inner Urban Transect. A zoning by-law amendment was approved on the site establishing the build form permitted on site.

    b. Richmond Road is identified as a Major Pathway for the Active Transportation Network, as shown on Schedule C3 and an Arterial Road on the Urban Road Network as shown on Schedule C4.

        i. A City project is currently underway to redesign Richmond Road. The works are associated with the LRT Confederation Line extension. The design includes cycle tracks and connections to the future New Orchard Station. Please feel free to contact

Jerico.Gapas@ottawa.ca for regular updates and coordination as required.

c. The site is located along the Development Zone of Influence as shown in Annex 2. See transportation comments.

d. The site is within a Design Priority Area on Schedule C7A. See Urban Design comments.

2. The site is situated within the Sherbourne and New Orchard Secondary Plan.

   a. The site is designated Station Area on Schedule A – Designation Plan

   b. Staff appreciate the aspects of the proposal that align with the direction provided in the Secondary Plan:

      i. The proposal contains a mix of land uses, with a majority of ground floor space for retail or commercial uses.

      ii. The proposal has no curb cuts for vehicular traffic from the mainstreet (Richmond Road).

      iii. Parking is provided underground or internal to the site.

      iv. Parkland conveyance is provided at the southwest corner of the site

      v. A minimum 200 square metres of Privately Owned Public Space is provided.

   c. Section 4, Policy 2 a) indicates that the 'tower should be set back from the podium faces and should be ariculated to break up building mass and allow sky view, sunlight, and transition towards abutting properties." Please re-introduce a tower setback from the lot lines abutting New Orchard and the future park.

   d. Per the OLT decision, two towers of a maximum of 38 and 40 storeys are permited on the subject site. Both towers are currently contemplated at 38-storeys. Please introduce variation in building height.

   e. On the next submission, please show the location of street trees. See Forestry comments below regarding New Orchard Ave as a 'Greenstreet'.

3. Please consider adding a pedestrian connection from the proposed parkland to the private amenity space. See also Parks comments below.

4. Planning staff will coordinate a meeting with Development Review, OC Transpo, LRT and Parks staff to discuss the location of the bus stop.

5. Section 37 requirements / Community Benefits Charge

    a. The former Section 37 regime has been replaced with a "Community Benefits Charge", By-law No. 2022-307, of 4% of the land value. This charge will be required for ALL buildings that are 5 or more storeys and 10 or more units and will be required at the time of building permit unless the development is subject to an existing registered Section 37 agreement. Questions regarding this change can be directed to Ranbir.Singh@ottawa.ca.

6. Planning staff recommend a focussed discussion to review the Phasing of the project, and possible implications on zoning.

**Urban Design**

Submission Requirements:

7. Urban Design Brief is required. Please see attached customized Terms of Reference to guide the preparation.

    a. The Urban Design Brief should be structured by generally following the headings highlighted under Section 3 – Contents of these Terms of Reference.

    b. The following elements are particularly important for this development application.

        i. Cross-sections to understand future streetscape conditions.
        ii. Rationalization of landscape programming.

    c. Please note that the Urban Design Brief will also serve as the submission to the Urban Design Review Panel (see notes below).

8. Additional drawings and studies are required as shown on the SPIL. Please follow the terms of references ( Planning application submission information and materials | City of Ottawa) the prepare these drawings and studies. These include:

    a. Design Brief

    b. Site Plan

    c. Landscape Plan

    d. Elevations

    e. Conceptual Floor Plans

    f. Wind Study

g. Shadow Analysis

h. UDRP Report

Urban Design Review Panel Review and Report:

9. The site is located within a Design Priority Area and is subject to review by the Urban Design Review Panel. UDRP review occurs within the pre-consultation stage. To proceed with UDRP review, please contact udrp@ottawa.ca.

10. The submission of a UDRP report is a requirement for deeming an application complete. Please follow the instructions provided in the Terms of Reference available here: Urban Design Review Panel Report (ottawa.ca)

Comments on Preliminary Design: Applicants are to provide a response to these comments in the Design Brief.

Policy Comments:

Applicable Design Guidelines:

11. Design Guidelines for High Rise Buildings

12. Bird Friend Design Guidelines

13. Urban Design Guidelines for Commercial Patios

Section 4.6 Urban Design

14. The site is within a Design Priority Area, please review the applicable policies within Section 4.6 as applicable.

15. Particularly policy 5 in 4.6.1 and 4.6.3 speaks to the four-season comfort, pedestrian amenities, and interest.

Proposal Comments:

16. This property is located in a Design Priority Area. These are areas in the city where the new Official Plan anticipates design excellence and a high-quality public realm treatment to be achieved.

17. Please ensure that the design brief, Shadow Analysis and Wind Study address the cumulative impacts of both Phase 1 and Phase 2.

18. Currently, the POPs straddles two phases of development. It would be more effective to design and deliver the POPs holistically. It is recommended that the entire POPs be designed with either Phase 1 or deferred to Phase 2.

19. The re-design of the vehicular access/loading area to the rear is appreciated.

20. At the rezoning stage, sub-optimal wind impacts were identified on the public realm, park and private amenity. From an urban design perspective, the best approach to avoid such conditions in the first place would be through building placement and massing. Urban design strongly encourages the applicant to continue to explore massing and site plan options (within the approved building envelope) including the shape and placement of the towers and podiums to reduce undesirable wind impacts.

21. Please review the grading interface between the proposed residential terraces and New Orchard. How will this grade change be managed to ensure that a pleasant and pedestrian oriented public realm will be provided?

22. The interface with the property to the north should be evaluated. Look for opportunities to retain and provide tree planting and soft landscaping.

23. Please review the podium and building design. A three-storey podium is sufficient for the context but there are portions of the building without podiums. Please examine the interface with the park to ensure that a comfortable 'human scale' environment is provided. While the townhouse form along New Orchard is appropriate, please ensure that podium provides a prominent step back above the third floor.

24. Further analysis of the landscaping program is required.

    a. Integration of ground floor programming and public spaces/private realm is required.

    b. Analysis of microclimate is required (sun-shadow and wind) to define programming and use of private amenity areas and POPs.

    c. Ensure that street trees can be provided along New Orchard and Richmond Road. The limit of the parking garage may need to be revised to accommodate tree plantings.

    d. The interface with Richmond Road needs to be further explored to ensure that Richmond's role as an "active and dynamic'. Mainstreet with commercial uses and access to rapid transit is enhanced. Street tree plantings and ample sidewalks should be provided. The commercial patios provided are appreciated.

<u>Other Comments:</u>

25. It is recommended that the applicant come in for a Phase 2 pre-con with some analysis done on the architecture, shadow and wind study. This also allows for a discussion on the design before the applicant submits to the UDRP.

## Engineering

General Comments:

26. Existing services that are not reused shall be decommissioned/removed, per City of Ottawa Standards.

Water:

**Existing Public Services:**

203mm (CI), E of site, Richmond Road

76mm, potential existing service

203mm (CI), W of site, New Orchard Avenue North

Reduced to 152mm (CI), N of Ambleside Drive

**Boundary Conditions:**

27. Request Boundary Conditions prior to next submission. Contact assigned City Infrastructure Project Manager with the following information:

    a. Location of service(s)

    b. Type of development

    c. Fire flow (per FUS method – include FUS calculation sheet with boundary condition request – boundary conditions will not be requested without fire flow calculations)

    d. Average Daily Demand (l/s)

    e. Maximum Hourly Demand (l/s)

    f. Maximum Daily Demand (l/s)

**General Comments:**

28. New Orchard Avenue North (north of Ambleside Drive) is a vulnerable service area, this should be considered in your analysis and design.

29. Per WDG 4.3.1, where basic demand is greater than 50 m3 /day, there shall be a minimum of two water services, separated by an isolation valve, to avoid creation of vulnerable service area.

30. Per WDG 4.4.7.2, District Meter Area (DMA) Chamber is required for services greater than 150mm in diameter.

## SANITARY

**Existing Public Services:**

225mm (conc.), E of site, Richmond Road

300mm (conc.), W of site, New Orchard Avenue North

**General Comments:**

31. Please submit anticipated sanitary demands.

32. Analysis and demonstration that there is sufficient/adequate residual capacity to accommodate any increase in wastewater flows in the receiving and downstream wastewater systems are required to be provided.

## STORMWATER

**Existing Infrastructure/Systems:**

1050mm (conr.), W of site, New Orchard Avenue North

Reduced to 675mm (conr.), N of Ambleside Drive

**General Comments:**

33. Quantity Control:

    a. Allowable runoff coefficient(c): Lesser of pre-development or c=0.5.

    b. Time of Concentration (Tc): pre-development or maximum=10min.

    c. Flows up to the 100-year storm event shall be controlled to the pre-development 2-year storm event.

34. Quality Control:

    a. Enhanced level of treatment is required: minimum 80% TSS removal

## GEOTECHNICAL INVESTIGATION

35. A geotechnical report is required for this development proposal.

## ENVIRONMENTAL COMPLIANCE APPROVAL (ECA)

36. Based on the information available to date, it is expected that an ECA may be required for the site. This should be confirmed as the details of the development progress.

## GENERAL INFORMATION/OTHER

37. Topographic information and design grades to be tied to proper geodetic benchmark along with proper description of the Geodetic Benchmark used.

38. All submitted report and plan are to be provided in *.pdf documents (documents shall be flattened and unsecured)

## REFERENCES AND RESOURCES

39. Record drawings and utility plans are also available for purchase from the City (Contact the City's Information Centre by email at InformationCentre@ottawa.ca or by phone at (613) 580-2424 x.44455).

40. Servicing and site works shall be in accordance with the following documents:

    a. General City of Ottawa guidelines (including technical bulletins)

41. geoOttawa - https://maps.ottawa.ca/geoOttawa/

Feel free to contact Ryan Brault, Project Manager, ((613) 580-2424 ext. 32540, ryan.brault@ottawa.ca) for follow-up questions.

**Environmental Remediation Unit**

*Comments reiterated from April 2022.*

42. The presence of soil and groundwater contamination onsite is confirmed. Completion of remedial activities is required.

43. Upon completion of the remedial activities and the confirmatory soil and groundwater sampling, the phase two ESA report needs to be updated with a remediation report appended as per the O. Reg. 153/04 requirements. The revised report needs to be submitted to the City, which I recommend including this as a condition of approval.

44. Due to the proposed land use change to a more sensitive use (i.e. commercial to residential), filing an RSC is required. A building permit may be issued on a phased base to allow the completion of excavation for remedial purposes.

    For questions, contact Vahid Arasteh, Environnemental Remediation Unit.

## Noise

Comments:

45. A road noise and vibration study is required

Feel free to contact Mike Giampa, TPM, for follow-up questions.

## Transportation

Comments:

46. An O-Train Proximity study is required.

47. Right-of-way protection.

    a. See Schedule C16 of the Official Plan.

    b. Any requests for exceptions to ROW protection requirements must be discussed with Transportation Planning and concurrence provided by Transportation Planning management.

48. Ensure that the latest New Orchard/Richmond protected intersection design is incorporated into the site plan and that there is no property encroachment. Contact the Stage 2 Rail Office for the latest design.

49. A TIA is warranted, please proceed to step 2 scoping. Step 3 strategy submission will be required 14 days prior to the phase 3 precon.

Feel free to contact Mike Giampa, Transportation Project Manager, for follow-up questions.

## Environment

Comments:

50. Significant environmental features – the site is 92 m from the Ottawa River parkway which is an important open space however it isn't identified as significant under the natural heritage policies. No Environmental Impact Study is required.

51. Bird-safe design - please review and incorporate bird safe design elements. Some of the risk factors include glass and related design traps such as corner glass and fly-through conditions, ventilation grates and open pipes, landscaping, light pollution. More guidance and solutions are available in the guidelines which can be found here:

https://documents.ottawa.ca/sites/documents/files/birdsafedesign_guidelines_en.pdfEnvironmental impact statements

52. Please add features that reduce the urban heat island effect (see OP 10.3.3) produced by the parking lot and a building footprint. For example, this impact can be reduced by adding large canopy trees, green roof or vegetation walls, or constructing the building differently.

Feel free to contact Matthew Hayley, Environmental Planner, for follow-up questions.

**Forestry**

TCR Comments:

53. A TCR is required with this application, including all elements within schedule E of the Tree Protection By-law.

54. The setbacks from the proposed buildings, driveway and underground parking must provide sufficient space to retain and protect existing trees along the property lines and to plant new trees within the ROW and/or frontages.

55. Section 4.8.2 of the New Official Plan provides strong direction to maintain the urban forest canopy and its ecosystem services during intensification noting when considering the impacts on individual trees, planning and development decisions, including Committee of Adjustment decisions, shall give priority to the retention and protection of large, healthy trees over replacement plantings and compensation. Applications must address the cumulative impacts on the urban forest, over time and space, with the goal of 40% urban forest canopy cover in mind. Further, that the City and the Committee of Adjustment may refuse a development application where it deems the loss of a tree(s) avoidable.

    a. The TCR must confirm the ownership of all protected trees on and surrounding the property, which may be impacted by the proposed development.

    b. If any boundary or adjacent trees are affected, the owners must be consulted. A permit cannot be issued for removal of boundary or adjacent trees without the permission of all owners. If permission is not given, designs must account for the retention of the identified trees.

    c. Please clarify the extent of excavation for the underground parking on the TCR and Landscape Plan.

56. A permit is required prior to any tree removal on site. The tree permit will be released upon site plan approval. Please contact the planner associated with the file or the Planning Forester, Nancy Young (Nancy.young@ottawa.ca) for information on obtaining the tree permit.

57. To ensure that no harm is caused to breeding birds, tree removal and vegetation clearing should be avoided during the migratory bird season (April 15 – August 15) as specified by The City of Ottawa's Environmental Impact Study Guidelines.

Landscape Plan Comments:

58. The Landscape Plan must address all requirements within the Landscape Plan Terms of Reference https://documents.ottawa.ca/sites/documents/files/landscape_tor_en.pdf , including the projection of canopy cover toward the target of 40%, and confirmation of adequate soil volumes to support any proposed trees.

59. The Landscape Plan provided with the ZBLA submission does not provide sufficient detail for review. It does provide some internal space within the lot for planting, but all appear to be on top of or in close proximity to underground parking, and details are required to ensure that sufficient soil volumes and appropriate hardscape designs are provided to support the trees proposed.

60. The access walkways, services, etc. To the building from New Orchard must provide sufficient space and soil volume for planting street trees, as described in the Green streets policy.

61. The Landscape Plan must also show the setback distances to buildings (including balconies) and underground structures to ensure that both the above and below-ground space proposed is sufficient for tree planting in the Right of Way and other landscaped areas.

    a. While there is no standard in place, a minimum setback of 4.5m between a tree and building is strongly recommended to allow for canopy development and eventual shade.

62. The Official Plan section 4.8.2, sub 3 provides the following direction related to tree planting related to site plans:

    a. Preserve and provide space for mature, healthy trees on private and public property, including the provision of adequate volumes of high-quality soil as recommended by a Landscape Architect;

    b. On urban properties subject to site plan control or community planning permits, development shall create tree planting areas within the site and in the adjacent boulevard, as applicable, that meet the soil volume requirements in any applicable City standards or best management practices or in accordance with the recommendation of a Landscape Architect;

63. The Cleary and New Orchard Secondary Plan designates New Orchard as a Greenstreet, providing the following direction with respect to tree planting:

> 3) *Greenstreets, identified on Schedule B - Public Realm Plan, will serve to connect the community to the surrounding greenspace network, community facilities and the open space along Ottawa River and shoreline. Properties that have a lot line abutting a Greenstreet are to be developed to provide canopy trees lining the street, either within the public right-of-way or on private land, as part of the redevelopment of their property.*

a. This street frontage is a high priority for significant tree planting which could include a double row of trees or raised, shared open planting pits to provide optimum growing conditions combined with amenity space. The setbacks from both the buildings (including balcony projections) and underground parking must accommodate the greenstreet planting concept with appropriate soil volumes.

64. The Zoning By-law does not require provision of parking in this area. It is strongly recommended to increase the setbacks from the parking garage to the property lines to facilitate both retention of shared/adjacent trees and the planting of trees in both the Richmond Rd and New Orchard ROWs.

65. It is a high priority for the proposed park to maintain as much soft, permeable surface as possible, to provide uncompacted soil volume for unimpeded growth of full-sized canopy trees.

66. Section 4.6.4 sub4 of the Official Plan directs the placement of Parks to be either away from Arterial roads or to provide a landscape buffer with the planting of trees, shrubs, and hedges.

> 4) To mitigate health risks associated with air pollution caused by traffic, outdoor children's play areas associated with a child care facility, school or park (excluding sportsfields) should avoid locations adjacent to an Arterial Road, Provincial Highway or City Freeway as identified on Schedule C4. Where no alternatives exist, an opaque screen or a landscape buffer that consists of a contiguous row of shrubs and trees, or a hedge will be required between the play area and the street.

a) Given that the proposed park is at the corner of an arterial road and a Green Street, the Landscape Plan for the site must include planting of large-growing trees along both frontages to provide a landscape buffer and necessary shade.

67. The City's priority is to plant a diversity of large-growing native species where possible, appropriate to the conditions on site, to enhance the streetscape and work toward 40% canopy cover in the urban area.

68. Please confirm the soil volumes in the planting areas to ensure that newly planted trees have an adequate soil volume for their size at maturity. The following is a table of recommended minimum soil volumes:

| Tree Type/Size | Single Tree Soil Volume (m3) | Multiple Tree Soil Volume (m3/tree) |
|---|---|---|
| Ornamental | 15 | 9 |
| Columnar | 15 | 9 |
| Small | 20 | 12 |
| Medium | 25 | 15 |
| Large | 30 | 18 |
| Conifer | 25 | 15 |

Feel free to contact Nancy Young, Forester, for follow-up questions.

**Parkland**

Form of Parkland Dedication:

69. PFP has requested parkland dedication in accordance with the Parkland Dedication By-law for residential and commercial uses included in the proposed development. The park has been identified on plan at 1012 sqm.

70. Please identify the phase of the development parkland will be dedicated.

71. Please note, if the proposed land use changes or gross floor area changes, then the parkland dedication requirement will be re-evaluated accordingly.

72. PFP requests the following information to confirm and calculate the parkland conveyance:

    a. Gross floor area of proposed residential development

    b. The proportion of commercial/ development proposed on site.

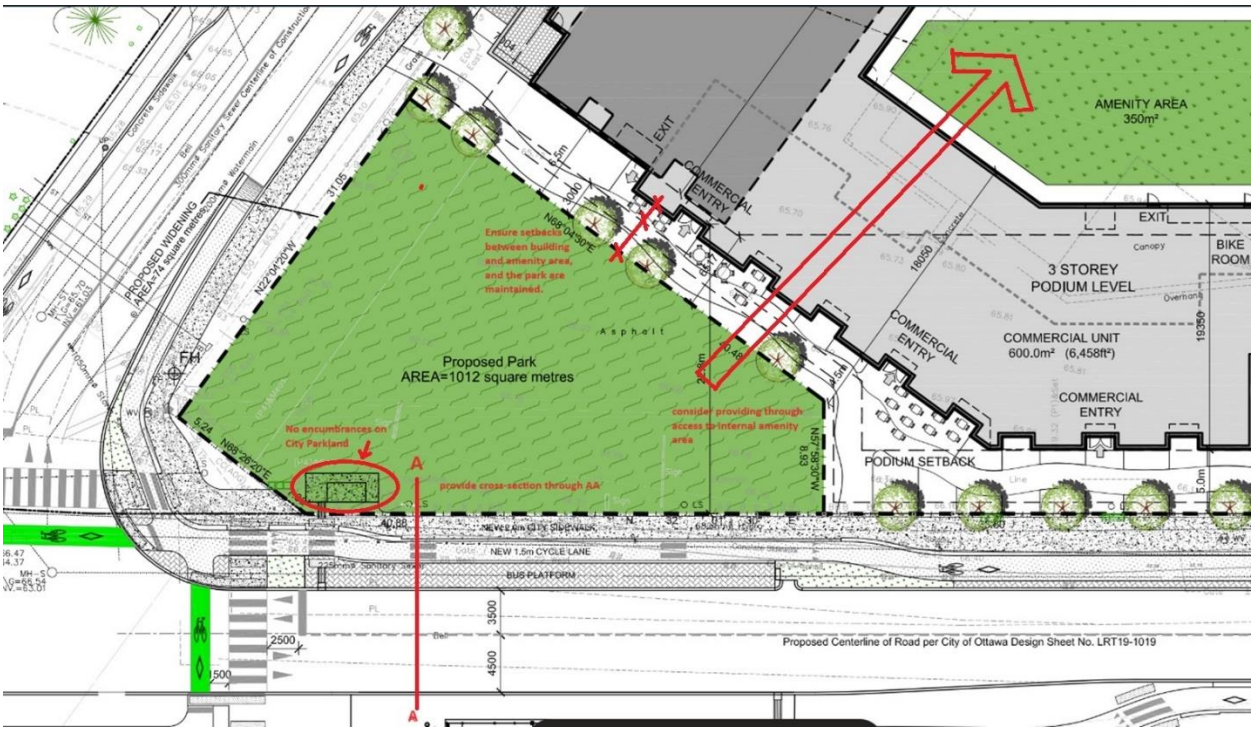
73. Please provide existing natural fall of land and surrounding grades around and in the park.

74. Indicate the proposed service drops for the park (water, storm, sanitary, electrical) 2m inside property line.

75. No encumbrances above air space, at or below grade are permitted on parkland including but not limited to stormwater storage, swales, hydro box, cable, natural gas, bus or rail stops and shelters. Please remove bus shelter from Park.

76. Please add street trees to the right-of-way in front of the park, not in the park. The parkland dedication should not be reduced in order to achieve this. The building may require shifting to the north to accommodate ROW planting.

77. Please provide a cross section AA (see plan below) of the street to park, identifying all elements within the street, bus lane, bike path, sidewalk ,ROW and Park including elevations.




Reference Documents:

- Please review the following City of Ottawa reference documents which outline the requirements for parkland conveyance and/or cash-in-lieu of parkland.
    - Official Plan (2021)
    - Parkland Dedication By-Law (2022-280) and Planning Act amendments
    - City of Ottawa Standard Parks Conditions

Please note that the park comments are preliminary and will be finalized (and subject to change) upon receipt of the development application revision as per planning comments and conditions and any requested supporting documentation.

Feel free to contact Louise Cerveny, Parks Planner, for follow-up questions.

## Transit Services

Comments:

78. Transit Services is supportive of the proposed low residential parking rate given the site location adjacent to current and future major transit corridors.

79. Given the large scale of the proposed development, it would be desirable to include a dedicated accessible passenger loading zone (PLZ) in the rear access loop. Dedicated accessible PLZ's protect for both ParaTranspo and other public vehicle accessible pick-up and drop-off functions, removing the potential for conflict and the barrier for passenger transfer between vehicles and accessible exterior paths of travel to/from buildings. Section 3.2 and Figure 28 of the *City of Ottawa Accessibility Design Standards* provide a practical example that details the appropriate features and a minimum standard design. Using these as a guide, please consider how an accessible loading zone can be incorporated.

80. Please continue to coordinate with the Rail Construction office for updated Richmond Road complete street plans, including confirming the bus stop design at the southwest corner of the site and coordinating with Stage 2 street construction staging or closures.

## National Capital Commission

Context:

- The proposed development is adjacent to the Ottawa River South Shore Riverfront Park (ORSSRPP), which is the 220-hectare federal park that stretches from Mud Lake to LeBreton Flats. The NCC's intentions for these lands is laid out in the Ottawa River South Shore Riverfront Park Plan (ORSSRPP).

- The proposed development is also adjacent to the Kichi Zībī Mīkan, which is one of the NCC's Parkways. The Ottawa River Capital Pathway runs alongside the parkway, as is laid out in the NCC's Capital Pathways Strategic Plan (CPSP).

- The nearby NCC-owned lands are designated as Capital Urban Greenspace in the Capital Urban Lands Plan.

Comments:

81. Role and jurisdiction

    a. The NCC is not an approval authority for the proposed development. These comments are offered as a nearby landowner and the federal planning agency for the National Capital Region.

82. Sherbourne and New Orchard Secondary Plan

   b. The Sherbourne and New Orchard Secondary Plan calls for New Orchard Avenue to be redesigned to a 'Greenstreet' to serve to connect the intensifying community to the greenspace network. New Orchard also does not current feature any sidewalks or active transportation facilities.

      i. **Note:** If the design of the 'Greenstreet' or other capital works requires modifications to the NCC's lands, a Federal Land Use, Design, and Transaction Approval will be required.

83. Birds

   a. The Ottawa River is a critical corridor for migratory birds, including species at risk. As the City's Bird-Safe Design Guidelines state, "Proximity of structures to natural areas and greenspaces also increases the risks to birds throughout the year, due to the attractive habitat these areas provide".

   b. The NCC has adopted Bird-Safe Design Guidelines. Ottawa City Council has also approved the *City of Ottawa (2020) Bird Safe Design Guidelines*. The proposed development must consider design elements to minimize the potential for negative impact to birds.

      i. **Request:** That the City ensure the design employs best practices in building design, exterior material choice, and in illumination to limit risks to bird safety.

Feel free to contact Ted Horton, for follow-up questions.

**Other**

84. The High Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design. The HPDS was passed by Council on April 13, 2022.

   a. At this time, the HPDS is not in effect and Council has referred the 2023 HPDS Update Report back to staff with direction to bring forward an updated report to Committee with recommendations for revised phasing timelines, resource requirements and associated amendments to the Site Plan Control By-law by no later than Q1 2024.

   b. Please refer to the HPDS information attached and ottawa.ca/HPDS for more information.

Should there be any questions, please do not hesitate to contact myself or the contact identified for the above areas / disciplines.

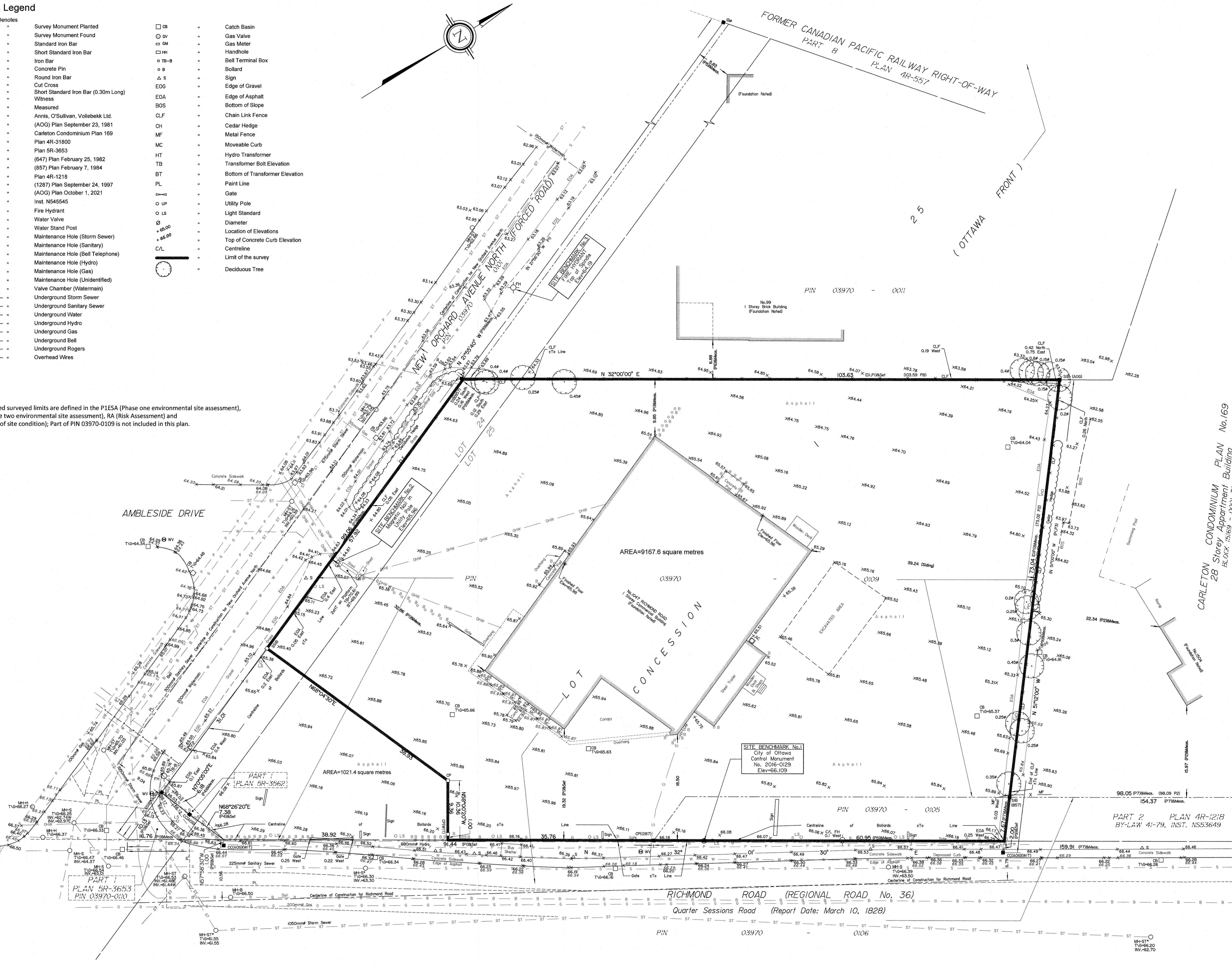
Yours Truly,
Kimberley Baldwin

c.c. Sole Soyak, Planner 1 (Planner Support)
Lisa Stern, Urban Design
Ryan Brault, PM
Rubina Rasool, PM (PM Support)
Mike Giampa, TPM
Louise Cerveny, Parks Planner
Jerico Gapas, LRT
Matthew Hayley, Environmental Planner
Nancy Young, Forester
Vahid Aresteh, ERU
Ted Horton, NCC

## Notes & Legend

| | Denotes | |
|---|---|---|
| Survey Monument Planted | " | |
| Survey Monument Found | " | |
| SIB | " | Standard Iron Bar |
| SSIB | " | Short Standard Iron Bar |
| IB | " | Iron Bar |
| CP | " | Concrete Pin |
| IBø | " | Round Iron Bar |
| CC | " | Cut Cross |
| SSIB* | " | Short Standard Iron Bar (0.30m Long) |
| (WIT) | " | Witness |
| Meas. | " | Measured |
| (AOG) | " | Annis, O'Sullivan, Vollebekk Ltd. |
| (P1) | " | (AOG) Plan September 23, 1981 |
| (P2) | " | Carleton Condominium Plan 169 |
| (P3) | " | Plan 4R-31800 |
| (P4) | " | Plan 5R-3653 |
| (P5) | " | (647) Plan February 25, 1982 |
| (P6) | " | (857) Plan February 7, 1984 |
| (P7) | " | Plan 4R-1218 |
| (P8) | " | (1287) Plan September 24, 1997 |
| (P9) | " | (AOG) Plan October 1, 2021 |
| (DI) | " | Inst. N545545 |
| FH | " | Fire Hydrant |
| WV | " | Water Valve |
| SP | " | Water Stand Post |
| MH-ST | " | Maintenance Hole (Storm Sewer) |
| MH-S | " | Maintenance Hole (Sanitary) |
| MH-B | " | Maintenance Hole (Bell Telephone) |
| MH-H | " | Maintenance Hole (Hydro) |
| MH-G | " | Maintenance Hole (Gas) |
| MH | " | Maintenance Hole (Unidentified) |
| VC | " | Valve Chamber (Watermain) |
| — ST — | " | Underground Storm Sewer |
| — S — | " | Underground Sanitary Sewer |
| — W — | " | Underground Water |
| — P — | " | Underground Hydro |
| — G — | " | Underground Gas |
| — B — | " | Underground Bell |
| — TV — | " | Underground Rogers |
| — OHW — | " | Overhead Wires |
| CB | " | Catch Basin |
| GV | " | Gas Valve |
| GM | " | Gas Meter |
| HH | " | Handhole |
| TB-B | " | Bell Terminal Box |
| B | " | Bollard |
| S | " | Sign |
| EOG | " | Edge of Gravel |
| EOA | " | Edge of Asphalt |
| BOS | " | Bottom of Slope |
| CLF | " | Chain Link Fence |
| CH | " | Cedar Hedge |
| MF | " | Metal Fence |
| MC | " | Moveable Curb |
| HT | " | Hydro Transformer |
| TB | " | Transformer Bolt Elevation |
| BT | " | Bottom of Transformer Elevation |
| PL | " | Paint Line |
| Gate symbol | " | Gate |
| UP | " | Utility Pole |
| LS | " | Light Standard |
| Ø | " | Diameter |
| + 65.00 | " | Location of Elevations |
| + 65.00 | " | Top of Concrete Curb Elevation |
| C/L | " | Centreline |
| Thick line | " | Limit of the survey |
| Tree symbol | " | Deciduous Tree |

NOTE:
The illustrated surveyed limits are defined in the P1ESA (Phase one environmental site assessment), P2ESA (Phase two environmental site assessment), RA (Risk Assessment) and RSC (Record of site condition); Part of PIN 03970-0109 is not included in this plan.




# TOPOGRAPHICAL PLAN OF SURVEY OF PART OF PIN 03970-0109 AND ALL OF PIN 03970-0105

## PART OF LOTS 24 AND 25
## CONCESSION 1 (OTTAWA FRONT)
## GEOGRAPHIC TOWNSHIP OF NEPEAN
## CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 300

12 9 6 3 0 6 12 Metres

Metric

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

### Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act and the Surveyors Act and the regulations made under them.
2. The survey was completed on the 13th day of October, 2023.

October 25, 2023
Date

E. H. Herweyer
Ontario Land Surveyor

Distances shown on this plan are ground distances and can be converted to grid distances by multiplying by the combined scale factor of 0.999982.

For bearing comparisons, a rotation of 0°01'00" counter-clockwise was applied to bearings on P1,P4 & P5.
For bearing comparisons, a rotation of 0°19'10" counter-clockwise was applied to bearings on P6.
For bearing comparisons, a rotation of 0°01'30" counter-clockwise was applied to bearings on P2 & P7.

Coordinates are derived from Can-Net 2016 Real Time Network GPS observations referenced to Specified Control Points 01919680005 and 01919750705, MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-60554
THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
In accordance with Regulation 1026, Section 29 (3).

### ELEVATION NOTES

1. Elevations shown are geodetic derived from City of Ottawa Monument No.2016-0129 with a published elevation of 66.109m and are referred to the CGVD28 geodetic datum.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

### UTILITY NOTES

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. Underground utility data derived from City of Ottawa utility sheet reference E-01-09.
4. Sanitary and storm sewer grades and inverts were derived from Plan 2353 (Sheet 4, 5 & 6 of 6) & Plan I-10-c-1.
5. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.
6. Manholes noted with a " * " were not located in the field due to field conditions and construction work. The location of these manholes is derived per the noted drawings above.

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ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
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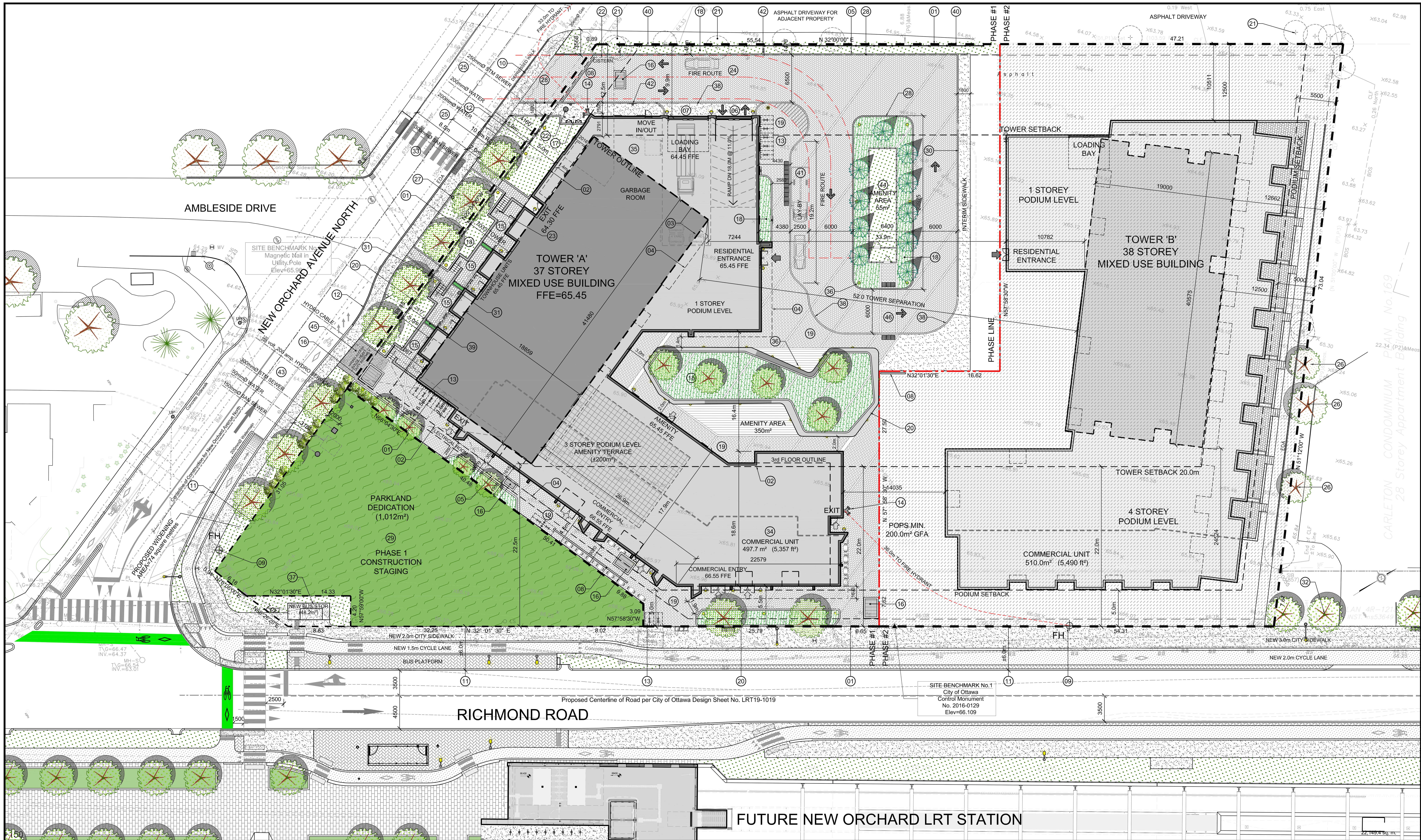
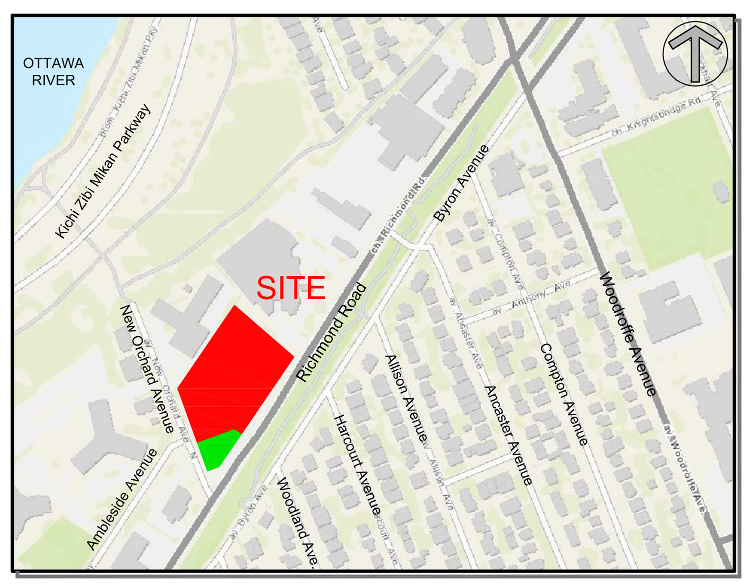
Ontario Land Surveyors

Job No. 21985-21 FengateDvlpmnt PrtLts24 25 Conl OF T2 D2 | DG




**1 SP-2 SITE PLAN** SCALE = 1 : 250

SCALE 1: 250




KEY MAP

## PROJECT DEVELOPER
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Cell: (613) 266-5273
E-Mail: joshua.foster@gradientwind.com

## LEGAL DESCRIPTION
TOPOGRAPHICAL PLAN OF SURVEY OF
PART OF PIN 03970-0109 AND ALL OF PIN 03970-0105

PART OF LOTS 24 AND 25
CONCESSION 1 (OTTAWA FRONT)
GEOGRAPHIC TOWNSHIP OF NEPEAN
CITY OF OTTAWA
Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

## LANDSCAPE ARCHITECT
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## TRANSPORTATION ENGINEER
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Email: Austin.Shih@parsons.com

## GEOTECHNICAL ENGINEER
**Golder Associates Ltd.**
1931 Roberson Road
Ottawa, Ontario K2H5B7
Tel.:613 592 9600
E-Mail: ___________

## SITE PLAN SYMBOLS:
- SOFT LANDSCAPE PLANTING
- PARKLAND DEDICATION
- CONCRETE PAVERS, SEE LANDSCAPE DRAWINGS
- PAVERS @ TERRACE LEVEL
- CONCRETE UNIT PAVERS ON DRIVEWAY
- CITY SIDEWALK
- BIKE RACK
- MAIN ENTRANCE DOOR
- COMMERCIAL / EXIT DOOR
- PROPOSED SITE LIGHTING
- VEHICULAR DIRECTION
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- SIAMESE CONNECTION
- FH FIRE HYDRANT

NOTE:
SEE LANDSCAPE FOR ALL SURFACE MATERIAL AND PATTERN

## DRAWING NOTES:
1. PROPERTY LINE
2. BUILDING / TOWER SETBACK LINE
3. OUTLINE OF TOWER
4. LINE OF BALCONIES / CANOPY ABOVE
5. LINE OF PARKING GARAGE BELOW
6. ENTRANCE TO GARAGE RAMP
7. ENTRANCE TO LOADING BAY
8. TRENCH DRAIN
9. RELOCATED EXISTING FIRE HYDRANT
10. DEPRESSED STREET CURB & SIDEWALK, CONTINUOUS AND DEPRESSED @ DRIVEWAY
11. PROPOSED CITY ROAD AND BOULEVARD AS PER PHASE 2 CONFEDERATION LINE WORK
12. CITY CURB, SIDEWALK & GRASSED BOULEVARD
13. BICYCLE RACKS, SEE LANDSCAPE PLAN FOR TYPE
14. SIAMESE CONNECTION
15. PRIVATE PATIO FOR GROUND FLOOR UNITS WITH PRIVACY RAILING, HT. VARIES
16. INTAKE / EXHAUST GRATE
17. GAS PRESSURE RELEASE STATION
18. SOFT LANDSCAPING
19. HARD SURFACE LANDSCAPED AREA
20. RAISED PLANT BED , SEE LANDSCAPE
21. EXISTING TREE TO BE REMOVED
22. CISTERN WITH OVERFLOW / ACCESS MH.
23. EXTERIOR STEPS WITH HANDRAILS AS REQUIRED
24. 6.0 METRE WIDE FIRE ROUTE
25. PROPOSED SERVICES, SEE CIVIL
26. EXISTING TREE TO REMAIN
27. EXISTING UTILITY / LIGHT POLE
28. 150mm HT. BARRIER CURB
29. PROPOSED PARKLAND DEDICATION
30. INTERIM CONCRETE CURB AND SIDEWALK
31. EXISTING UTILITY / LIGHT POLE TO BE REMOVED
32. TREES AS PER PHASE 2 CONFEDERATION LINE WORK
33. EXISTING PEDESTRIAN CROSSWALK
34. GROUND FLOOR COMMERCIAL UNIT
35. GROUND FLOOR GARBAGE ROOM
36. SITE LIGHTING - SEE ELECTRICAL SITE PLAN
37. BUS STOP AS PER PHASE 2 CONFEDERATION LINE WORK
38. CONCRETE WALK & CURB: DEPRESSED / MOUNTABLE
39. 1.2m HT. METAL PLANTER WITH PRIVACY SCREEN
40. REMOVE EXISTING CHAIN LINK FENCE ON PROPERTY LINE AND REPLACED WITH 2.1m HT. SOLID WOOD FENCE
41. ACCESSIBLE PASSENGER LOADING AREA WITH TWSI
42. SIGNAGE: FIRE ROUTE, NO PARKING, LOADING, ECT.
43. PARK SERVICES
44. EXTERIOR AMENITY AREA
45. HYDRO ACCESS ROUTE, HEAVY DUTY INSULATION AND PAVERS REQUIRED
46. UNIT PAVER CROSSWALK WITH TWSI

## PROJECT INFORMATION
Zoning By-law 2008-250 Consolidation TM[2494] H(127) SITE AREA 0.9 ha. 9,104.0 sq. m / 97,995 sq. ft.

| ZONING | REQUIRED | PROVIDED |
|---|---|---|
| BUILDING HEIGHT - PODIUM | 4 STOREY / 15.0m | 3 STOREY / 11.0m |
| BUILDING HEIGHT - TOWER 'A' WEST | 40 STOREY / 127.0m | 37 STOREY / 113.0m |
| BUILDING HEIGHT - TOWER 'B' EAST - PHASE 2 | 38 STOREY / 121.0m | STOREY / ___.0m |
| GRADE (GEODETIC ELEVATION - ASL) | 65.50m ASL | 65.50m ASL |
| DENSITY - FSI | 6.3 (57,355.2m²) | 2.44 (22,149.4m²) |
| TOWER FLOOR PLATE - GFA | 750.0m² | 636.1m² |
| PRIVATELY OWNER PUBLIC SPACE (POPS): MIN. 200.0m² | 200.0m² | 0.0m² |
| NON-RESIDENTIAL SPACE AT GRADE: MIN. 1,000.0m² | 1,000.0m² | 502.5m² |
| FRONT, CORNER & INTERIOR YARD SETBACK (PODIUM) | 5.0m | 5.0m |
| ABUTTING PARK SETBACK (PODIUM) | 3.0m | 4.5m |
| FRONT YARD SETBACK (TOWER) | 22.0m | 22.5m |
| REAR & INTERIOR YARD SETBACK (TOWER) | 12.5m | 12.5m |
| INTERIOR YARD SETBACK (TOWER) | 12.5m | n/a |
| CORNER SIDE YARD SETBACK (TOWER) | 7.0m | 7.0m |
| ABUTTING PARK SETBACK (TOWER) | 6.5m | 6.5m |
| TOWER SEPARATION (SAME LOT) | 25.0m | 52.0m |
| AMENITY AREA - TOTAL 6.0m² PER UNIT: 425 UNITS | 2,550.0m² | 4,413.0m² |
| AMENITY AREA - 50% COMMUNAL PER UNIT | 1,275.0m² | 1,813.0m² |
| VEHICLE PARKING: RESIDENTIAL - AREA "Z" NOT REQUIRED | 0 | 189 |
| VEHICLE PARKING: VISITOR - 0.1 PER UNIT AFTER 12 UNITS (MAX. 30 PER BLDG.) | 30 | 30 |
| VEHICLE PARKING: COMMERCIAL - AREA "Z" NOT REQUIRED | 0 | 35 |
| BICYCLE PARKING - RESIDENTIAL - 0.5 PER UNIT | 213 | 232 |
| BICYCLE PARKING - COMMERCIAL - 1.0 PER 250m² GFA | 3 | 18 |
| AISLE & DRIVEWAY MINIMUM / MAXIMUM WIDTH | 6.0m / 6.7m | 6.0m / 6.7m |

## BUILDING STATISTICS

GROSS BUILDING - AREA (CITY OF OTTAWA'S DEFINITION) — PHASE 1 - TOWER 'A'

| | | |
|---|---|---|
| P2 PARKING LEVEL | | 0.0 sq. m. / 0 sq. ft. |
| P2 PARKING LEVEL | | 0.0 sq. m. / 0 sq. ft. |
| GROUND FLOOR | | 711.5 sq. m. / 7,659 sq. ft. |
| 2nd FLOOR | | 708.7 sq. m. / 7,628 sq. ft. |
| 3rd FLOOR | | 1,277.3 sq. m. / 13,749 sq. ft. |
| 4th FLOOR - AMENITY LEVEL | | 0.0 sq. m. / 0 sq. ft. |
| 5th - 14th FLOOR | 10 x 626.82 sq. m. / 10 x 6,747 sq. ft. | 6,268.2 sq. m. / 67,470 sq. ft. |
| 15th - 35th FLOOR | 21 x 626.82 sq. m. / 21 x 6,747 sq. ft. | 13,163.2 sq. m. / 141,687 sq. ft. |
| 36th FLOOR - RESIDENTIAL / AMENITY | | 501.1 sq. m. / 5,394 sq. ft. |
| AMENITY / MECHANICAL PENTHOUSE | | 0 sq. m. / 000 sq. ft. |
| TOTAL AREA | | 22,630.0 sq. m. / 243,587 sq. ft. |
| TOWER FLOOR PLATE (AS DEFINED IN ZONING EXCEPTION 2494) | | 636.1 sq. m. / 6,847 sq. ft. |
| TOWER BALCONY PROJECTIONS | | 79.0 sq. m. / 850 sq. ft. |

### UNIT STATISTICS

| | | |
|---|---|---|
| STUDIO UNIT | 10.1% | 43 |
| 1 BEDROOM UNIT | 40.7% | 173 |
| 1 BEDROOM + DEN UNIT | 17.9% | 76 |
| 2 BEDROOM UNIT | 18.1% | 77 |
| 2 BEDROOM + DEN UNIT | 11.1% | 47 |
| 3 BEDROOM UNIT | 1.2% | 5 |
| TOWNHOUSE UNIT - 3 BEDROOM | 0.9% | 4 |
| TOTAL | 100% | 425 |
| RESIDENTIAL AREA | | 22,149.4 sq. m. / 238,414 sq. ft. |
| COMMERCIAL AREA (CITY OF OTTAWA'S DEFINITION) | | 502.5 sq. m. / 5,409 sq. ft. |
| COMMERCIAL AREA (BOMA LEASABLE AREA DEFINITION - NOTED ON FLOOR PLAN) | | 523.8 sq. m. / 5,735 sq. ft. |

### CAR PARKING

REQUIRED by ZONING BY-LAW

| | | |
|---|---|---|
| RESIDENCE | - AREA 'Z' NONE REQUIRED | 0 |
| VISITOR | - 0.1 PER DWELLING UNIT (MAX. 30 PER BLDG.) | 30 |
| COMMERCIAL | - AREA 'Z' NONE REQUIRED | 0 |
| TOTAL | | 30 |

PROVIDED

| | | |
|---|---|---|
| RESIDENCE | - 0.447 PER UNIT | 189 |
| VISITOR | - 0.071 PER UNIT | 30 |
| COMMERCIAL | | 35 |
| TOTAL | | 254 |

LOCATION

| | |
|---|---|
| P2 U/G PARKING LEVEL | 133 |
| P1 U/G PARKING LEVEL | 121 |
| EXTERIOR AT GRADE | 0 |
| TOTAL | 254 |

### BICYCLE PARKING

REQUIRED

| | | |
|---|---|---|
| RESIDENCE | - 0.5 PER UNIT | 213 |
| COMMERCIAL | - 1.0 PER 250m² OF G.F.A. | 3 |
| TOTAL | | 215 |

PROVIDED

| | | |
|---|---|---|
| RESIDENCE - INTERIOR | - 0.5 PER UNIT | 222 |
| RESIDENCE - EXTERIOR | | 10 |
| COMMERCIAL | | 18 |
| TOTAL | | 250 |

LOCATION

| | |
|---|---|
| P2 U/G PARKING LEVEL | 93 |
| P1 U/G PARKING LEVEL | 129 |
| GROUND FLOOR | 0 |
| EXTERIOR AT GRADE | 28 |
| TOTAL | 250 |

STILL UNDER REVIEW

### AMENITY SPACE

| | |
|---|---|
| GROUND FLOOR COMMUNAL EXTERIOR = | 350.0 sq. m. |
| GROUND FLOOR COMMUNAL INTERIOR = | 200.0 sq. m. |
| 4th FLOOR COMMUNAL INTERIOR = | 590.0 sq. m. |
| 4th FLOOR COMMUNAL TERRACE = | 200.0 sq. m. |
| 36th FLOOR COMMUNAL INTERIOR = | 208.0 sq. m. |
| 37th FLOOR COMMUNAL INTERIOR = | 265.0 sq. m. |
| PRIVATE BALCONIES = | 2,520.0 sq. m. |
| PRIVATE TERRACE = | 80.0 sq. m. |
| TOTAL = | 4,413.0 sq. m. |
| TOTAL COMMUNAL = | 1,813.0 sq. m. |
| REQUIRED - 6.0m² PER UNIT (425) = | 2,550.0 sq. m. |
| REQUIRED COMMUNAL @ 50% = | 1,275.0 sq. m. |

### WASTE REQUIREMENT

| | | |
|---|---|---|
| GARBAGE - COMPACTED | - 0.053 PER UNIT | 23 YARDS |
| RECYCLING GMP | - 0.018 PER UNIT | 8 YARDS |
| RECYCLING FIBER | - 0.038 PER UNIT | 16 YARDS |
| COMPOST | - 240L PER 50 UNITS | 9 |

### LOT COVERAGE

| | | |
|---|---|---|
| PHASE 2 LANDS | 4,004.1 sq. m. | 44.22% |
| POPS (ALL IN PHASE 2) | 0.0 sq. m. | 0% |
| PAVED SURFACE | 983.3 sq. m. | 10.86% |
| TOWER 'A' FOOTPRINT | 2,121.2 sq. m. | 23.42% |
| LANDSCAPE OPEN SPACE | 1,947.2 sq. m. | 21.50% |
| TOTAL | 9,055.8 sq. m. | 100.0% |
| PARKLAND DEDICATION | 1,012.0 sq. m. | |
| NEW ORCHARD ROW | 74.0 sq. m. | |
| BUS STOP | 48.2 sq. m. | |
| TOTAL | 1,134.2 sq. m. | |

TOTAL - PRE DEVELOPMENT AREA 10,190.0 sq. m.

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.

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## 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

### REVISIONS:

| No. | DESCRIPTION | DATE |
|---|---|---|
| 13 | ISSUED FOR ROUND 2 COMMENT RESPONSE | Apr. __, 25 |
| 12 | ISSUED FOR BUILDING PERMIT | Mar. 24, 25 |
| 11 | ISSUED FOR CONSULTANT REVIEW | Mar. 05, 25 |
| 10 | ISSUED FOR PAGE TURN REVIEW | Jan. 22, 25 |
| 9 | ISSUED FOR ROUND 1 COMMENT RESPONSE | Dec. 13, 24 |
| 8 | ISSUED FOR OWNER / CONSULTANT REVIEW | Nov. 26, 24 |
| 7 | ISSUED FOR SPC APPLICATION | Sept. 03, 24 |
| 6 | ISSUED FOR OWNER / CONSULTANT REVIEW | Aug. 28, 24 |
| 5 | ISSUED FOR UDRP PRESENTATION | Aug. 02, 24 |
| 4 | ISSUED FOR OWNER / CONSULTANT REVIEW | July 12, 24 |
| 3 | ISSUED FOR PRE-CONSULT PHASE 1 - ADDITIONAL INFO. PACKAGE | June 10, 24 |
| 2 | ISSUED FOR PRE-CONSULT APPLICATION | Apr. 26, 24 |
| 1 | ISSUED FOR OWNER REVIEW | Apr. 11, 24 |

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — KEVIN M. REID LICENCE 8667
SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT:
FENGATE Asset Management
1047 Richmond Investment GP Inc.

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:
1047 RICHMOND ROAD
OTTAWA ONTARIO

SHEET TITLE:
SITE PLAN
PHASE 1

DRAWN: R.V. CHECKED: R.V.
SCALE: 1:250 SHEET No. SP-1
PROJECT No. 2404

D07-12-24-0104

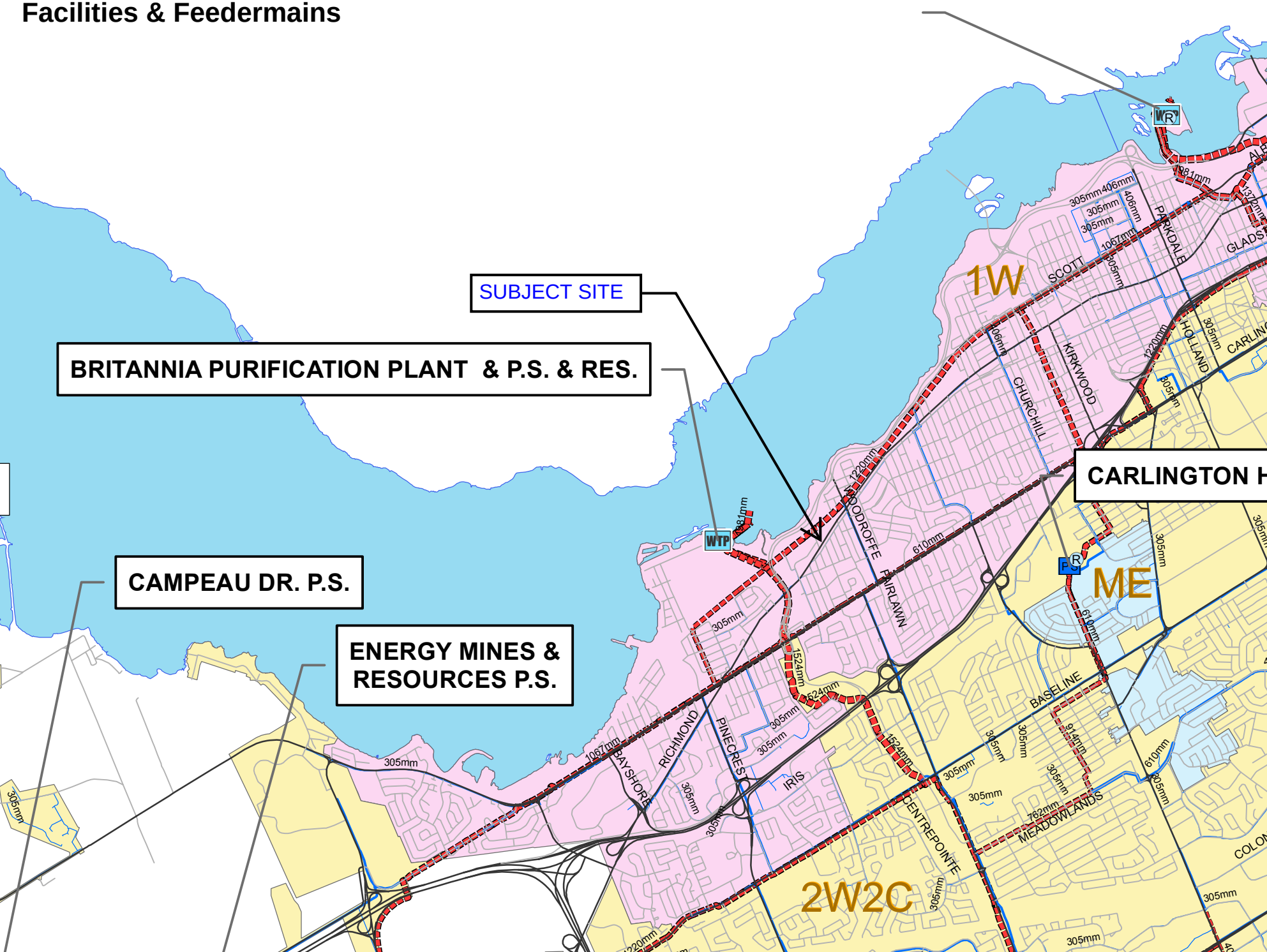
PAPER SIZE: ISO_B1_(707.00_x_1000.00_MM) | PLOT DATE: Wednesday, April 09, 2025 | PLOT SCALE: 1:1 | PEN STYLE: 0-RLA-MASTER-100%.ctb

F:\2024\2404 - 1047 Richmond Rd\01 Design Development\01 Site Plan\2404 1047 Richmond SP-1 Site Plan.dwg

DWG # 19186

# APPENDIX C
# WATERMAIN CALCULATIONS

# City of Ottawa - Water Distribution System
# Facilities & Feedermains



## CCO-22-2242 - 1047 Richmond Road - Tower A - Water Demands

| | |
|---|---|
| Project: | 1047 Richmond Road - Tower A |
| Project No.: | CCO-22-2242 |
| Designed By: | AJG |
| Checked By: | RDF |
| Date: | April 11, 2025 |
| Site Area: | 0.51 gross ha |

| Residential | NUMBER OF UNITS | | UNIT RATE | |
|---|---|---|---|---|
| Townhouse | 4 | homes | 2.7 | persons/unit |
| Studio Apartment | 43 | units | 1.4 | persons/unit |
| 1 Bedroom Apartment | 173 | units | 1.4 | persons/unit |
| 1 Bedroom + Den Apartment | 76 | units | 2.1 | persons/unit |
| 2 Bedroom Apartment | 77 | units | 2.1 | persons/unit |
| 2 Bedroom + Den Apartment | 47 | units | 3.1 | persons/unit |
| 3-Bedroom Apartment | 5 | units | 3.1 | persons/unit |
| Total Population | 796 | persons | | |
| Amenity | 4413 | m2 | | |
| Commercial | 503 | m2 | | |

### WATER DEMAND DESIGN FLOWS PER UNIT COUNT

| DEMAND TYPE | AMOUNT | UNITS | |
|---|---|---|---|
| Residential | 280 | L/c/d | |
| Industrial - Light | 35,000 | L/gross ha/d | |
| Industrial - Heavy | 55,000 | L/gross ha/d | |
| Shopping Centres | 2,500 | L/(1000m² /d | |
| Hospital | 900 | L/(bed/day) | |
| Schools | 70 | L/(Student/d) | |
| Trailer Park with no Hook-Ups | 340 | L/(space/d) | |
| Trailer Park with Hook-Ups | 800 | L/(space/d) | |
| Campgrounds | 225 | L/(campsite/d) | |
| Mobile Home Parks | 1,000 | L/(Space/d) | |
| Motels | 150 | L/(bed-space/d) | |
| Hotels | 225 | L/(bed-space/d) | |
| Tourist Commercial | 28,000 | L/gross ha/d | |
| Other Commercial | 28,000 | L/gross ha/d | |
| WATER DEMAND DESIGN FLOWS PER UNIT COUNT | Residential | 2.58 | L/s |
| | Commercial/Industrial/Institutional | 0.16 | L/s |

### MAXIMUM DAILY DEMAND

| DEMAND TYPE | AMOUNT | | UNITS |
|---|---|---|---|
| Residential | 2.5 | x avg. day | L/c/d |
| Industrial | 1.5 | x avg. day | L/gross ha/d |
| Commercial | 1.5 | x avg. day | L/gross ha/d |
| Institutional | 1.5 | x avg. day | L/gross ha/d |
| MAXIMUM DAILY DEMAND | Residential | 6.45 | L/s |
| | Commercial/Industrial/Institutional | 0.24 | L/s |

### MAXIMUM HOUR DEMAND

| DEMAND TYPE | AMOUNT | | UNITS |
|---|---|---|---|
| Residential | 2.2 | x max. day | L/c/d |
| Industrial | 1.8 | x max. day | L/gross ha/d |
| Commercial | 1.8 | x max. day | L/gross ha/d |
| Institutional | 1.8 | x max. day | L/gross ha/d |
| MAXIMUM HOUR DEMAND | Residential | 14.19 | L/s |
| | Commercial/Industrial/Institutional | 0.43 | L/s |

WATER DEMAND DESIGN FLOWS PER UNIT COUNT
CITY OF OTTAWA - WATER DISTRIBUTION GUIDELINES, JULY 2010

| | | |
|---|---|---|
| WATER DEMAND DESIGN FLOWS PER UNIT COUNT | 2.74 | L/s |
| MAXIMUM DAILY DEMAND | 6.69 | L/s |
| MAXIMUM HOUR DEMAND | 14.62 | L/s |

# CCO-22-2242 - 1047 Richmond Road - Tower A - OBC Fire Calculations

| | |
|---|---|
| Project: | 1047 Richmond Road |
| Project No.: | CCO-22-2242 |
| Designed By: | AJG |
| Checked By: | RDF |
| Date: | April 11, 2025 |

## Ontario 2006 Building Code Compendium (Div. B - Part 3)

### Water Supply for Fire-Fighting - Residential & Commercial Building

Building is classified as Group : C (from table 3.2.2.55)

Building is of noncombustible construction or of heavy timber construction conforming to Article 3.1.4.6. Floor assemblies are fire separations but with no fire-resistance rating. Roof assemblies, mezzanines, loadbearing walls, columns and arches do not have a fire-resistance rating.

From Div. B A-3.2.5.7. of the Ontario Building Code - 3. Building On-Site Water Supply:

(a) Q = K x V x Stot

where:

Q = minimum supply of water in litres

K = water supply coefficient from Table 1

V = total building volume in cubic metres

Stot = total of spatial coefficient values from the property line exposures on all sides as obtained from the formula:

Stot = 1.0 + [Sside1+Sside2+Sside3+..etc.]

| | | |
|---|---|---|
| K | 16 | |
| V | 102,480 | (Total building volume in m³.) |
| Stot | 1.9 | (From figure 1 pg A-32 ) |
| Q = | 3,115,377.06 L | |

| | | | From Figure 1 (A-32) |
|---|---|---|---|
| Snorth | 10 | m | 0.0 |
| Seast | 60 | m | 0.0 |
| Ssouth | 6 | m | 0.4 |
| Swest | 5 | m | 0.5 |

* approximate distances

From Table 2: Required Minimum Water Supply Flow Rate (L/s)

9000 L/min if Q > 270,000 L
2378 gpm

## CCO-22-2242 - 1047 Richmond Road - Phase I - Fire Underwriters Survey

| | |
|---|---|
| Project: | 1047 Richmond Road - Phase I |
| Project No.: | CCO-22-2242 |
| Designed By: | AJG |
| Checked By: | RDF |
| Date: | April 11, 2025 |

### From the Fire Underwriters Survey (2020)

From Part II – Guide for Determination of Required Fire Flow Copyright I.S.O.:
City of Ottawa Technical Bulletin ISTB-2018-02 Applied Where Applicable

A. BASE REQUIREMENT (Rounded to the nearest 1000 L/min)

F = 220 x C x √A Where:

F = Required fire flow in liters per minute
C = Coefficient related to the type of construction.
A = The total floor area in square meters (including all storey's, but excluding basements at least 50 percent below grade) in the building being considered.

Construction Type Non-Combustible Construction

C 0.8 A 32,277.0 $m^2$

| Floor Level | Area (M2) | Area Applied (M2) | |
|---|---|---|---|
| L1 | 2118 | 2118 | 100% |
| L2 | 1317 | 1317 | 100% |
| L3 | 1570 | 785 | 50% |
| L4 | 808 | 404 | 50% |
| L5 | 811 | 405 | 50% |
| L6 | 811 | 405 | 50% |
| L7 | 811 | 405 | 50% |
| L8 | 811 | 405 | 50% |
| L9 | 811 | 405 | 50% |
| L10 | 811 | 405 | 50% |

Total Floor Area (per the 2020 FUS Page 20 - Total Effective Area) 7,056.4 $m^2$

* Unprotected Vertical Openings

| | |
|---|---|
| Calculated Fire Flow | 14,784.4 L/min |
| | 15,000.0 L/min |

B. REDUCTION FOR OCCUPANCY TYPE (No Rounding)

From Page 24 of the Fire Underwriters Survey:

Limited Combustible -15%

| | |
|---|---|
| Fire Flow | 12,750.0 L/min |

C. REDUCTION FOR SPRINKLER TYPE (No Rounding)

Fully Supervised Sprinklered -50%

| | |
|---|---|
| Reduction | -6,375.0 L/min |

D. INCREASE FOR EXPOSURE (No Rounding)

| | Separation Distance (m) | Cons.of Exposed Wall | Length Exposed Adjacent Wall (m) | Height (Stories) | Length-Height Factor | | Exposure Fully Protected By Sprinklers |
|---|---|---|---|---|---|---|---|
| Exposure 1 | 20.1 to 30 | Ordinary - Mass Timber (Unprotected) | 29 | 1 | 29.0 | 1% | No |
| Exposure 2 | 10.1 to 20 | Fire Resistive - Non Combustible (Unprotected Openings) | 19 | 38 | 735.3 | 0% | Yes |
| Exposure 3 | 20.1 to 30 | Fire Resistive - Non Combustible (Unprotected Openings) | 26 | 1 | 26.1 | 0% | No |
| Exposure 4 | Over 30 m | Ordinary - Mass Timber (Unprotected) | N/A | 4 | N/A | 0% | N/A |
| | | | | | % Increase* | 1% | |

| | |
|---|---|
| Increase* | 127.5 L/min |

E. Total Fire Flow (Rounded to the Nearest 1000 L/min)

| | |
|---|---|
| Fire Flow | 6,502.5 L/min |
| Fire Flow Required** | 7,000.0 L/min |

* In accordance with Part II, Section 4, the Increase for separation distance is not to exceed 75%
** In accordance with Section 4 the Fire flow is not to exceed 45,000 L/min or be less than 2,000 L/min

# CCO-22-2242 - 1047 Richmond Road - Boundary Condition Unit Conversion

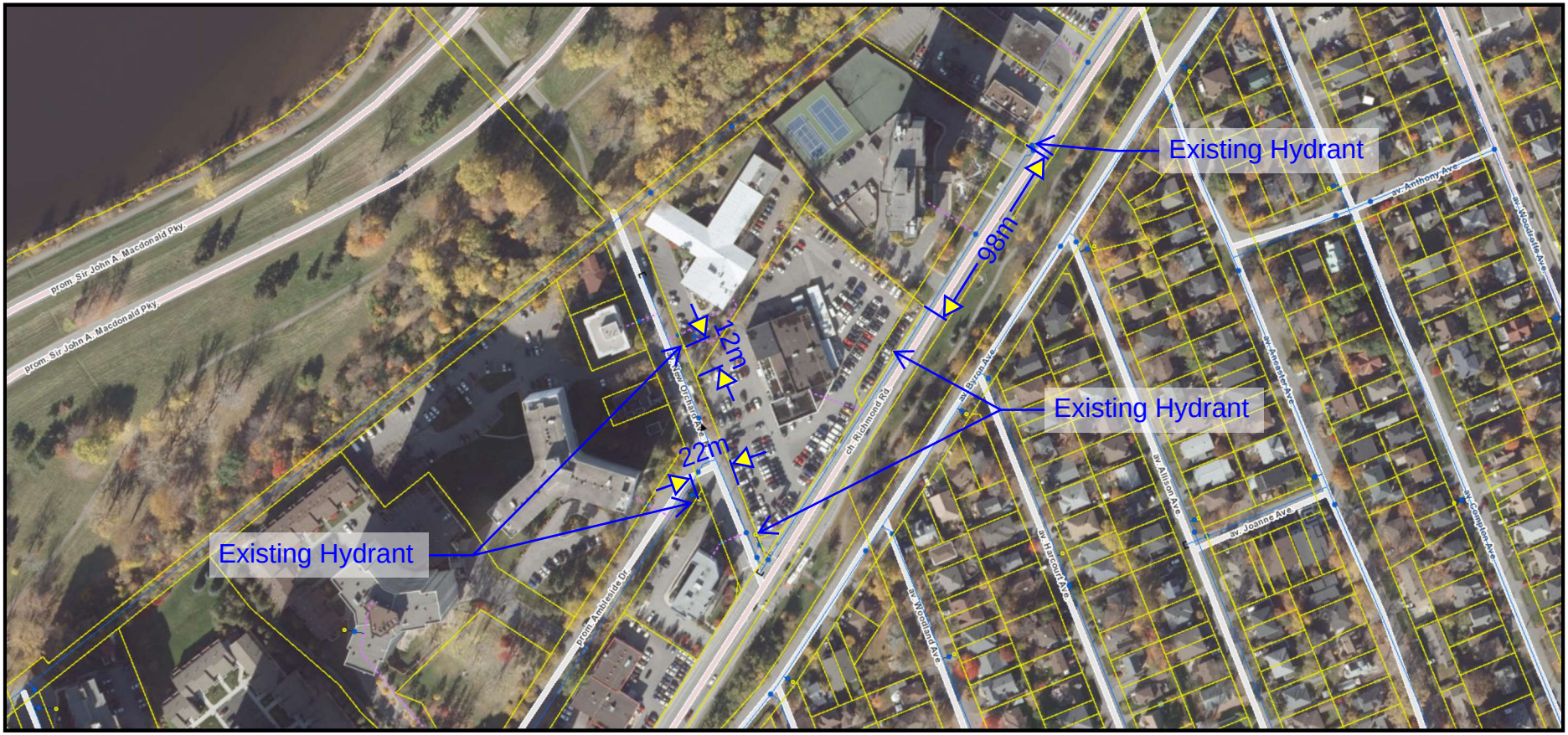
| | |
|---|---|
| Project: | 1047 Richmond Road |
| Project No.: | CCO-22-2242 |
| Designed By: | AJG |
| Checked By: | RDF |
| Date: | April 11, 2025 |

## Boundary Conditions Unit Conversion

### New Orchard Ave N.- 203mm

| Scenario | Height (m) | Elevation (m) | m $H_2O$ | PSI | kPa |
|---|---|---|---|---|---|
| **Avg. DD** | 116.0 | 62.1 | 53.9 | 76.7 | 528.8 |
| **Fire Flow (116.67 L/s or 7,000 L/min)** | 91.4 | 62.1 | 29.3 | 41.7 | 287.4 |
| **Fire Flow (150 L/s or 9,000 L/min)** | 80.8 | 62.1 | 18.7 | 26.6 | 183.4 |
| **Peak Hour** | 108.4 | 62.1 | 46.3 | 65.9 | 454.2 |

# 1047 Richmond Road
# Hydrant Coverage Figure




https://maps.ottawa.ca/geoOttawa/

2021-10-08

## GOSLING Alison

**From:** Brault, Ryan <ryan.brault@ottawa.ca>
**Sent:** August 2, 2024 9:26 AM
**To:** VALENTI Francis
**Cc:** GOSLING Alison
**Subject:** Re: 1047 Richmond Road - Boundary Condition Request
**Attachments:** 1047 Richmond Road July 2024.pdf

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

/!\ Courriel externe - Merci d'être prudent avec les liens et les pièces jointes /!\ External email - Please be careful with links and attachments /!\

Good Morning,

The following are boundary conditions, HGL, for hydraulic analysis at 1047 Richmond Road, (zone 1W) assumed to be a dual connection connected to the 203 mm watermain on New Orchard Avenue North (see attached PDF for location).

Minimum HGL: 108.4 m

Maximum HGL: 116.0 m

Max Day + Fire Flow (116.67 L/s – FUS): 91.4 m

Max Day + Fire Flow (150 L/s – OBC): 80.8 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.*

Please let me know if you any questions or concerns.

Regards,

**Ryan Brault, M.Eng., P.Eng**
Project Manager - Infrastructure Approvals

City of Ottawa
Development Review - West Branch
Planning, Development, and Building Services
110 Laurier Ave West, 4th Floor East;
Ottawa ON K1P 1J1
Tel: 613-580-2424 x 32540

**From:** VALENTI Francis <Francis.VALENTI@egis-group.com>
**Sent:** Tuesday, July 16, 2024 12:32 PM
**To:** Brault, Ryan <ryan.brault@ottawa.ca>
**Cc:** GOSLING Alison <Alison.GOSLING@egis-group.com>
**Subject:** 1047 Richmond Road - Boundary Condition Request

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Good afternoon,

We would like to request boundary conditions for the proposed development located at 1047 Richmond Road. Phase 1 of the proposed development consists of a 40-storey mixed use building, complete with underground parking, landscaping, and drive aisles with street access from New Orchard Avenue North. The proposed connections (dual) will be to the existing 203 mm diameter cast iron watermain located within New Orchard Avenue North. Please note that boundary conditions for Phase II will be requested once detailed site stats are available.

- The estimated fire flow is 9,000 L/min based on the OBC method
- The estimated fire flow is 7,000 L/min based on the FUS method
- Average Daily Demand: 2.82 L/s
- Maximum Daily Demand: 6.87 L/s
- Maximum hourly daily demand: 15.01 L/s

Please find attached a map showing the proposed connection location and calculations prepared for the demands listed above.

Thank you,

egis
**Francis Valenti**, EIT
Engineering Intern, North America
Phone: +1 613-714-6895, Mobile: +1 613-808-2123

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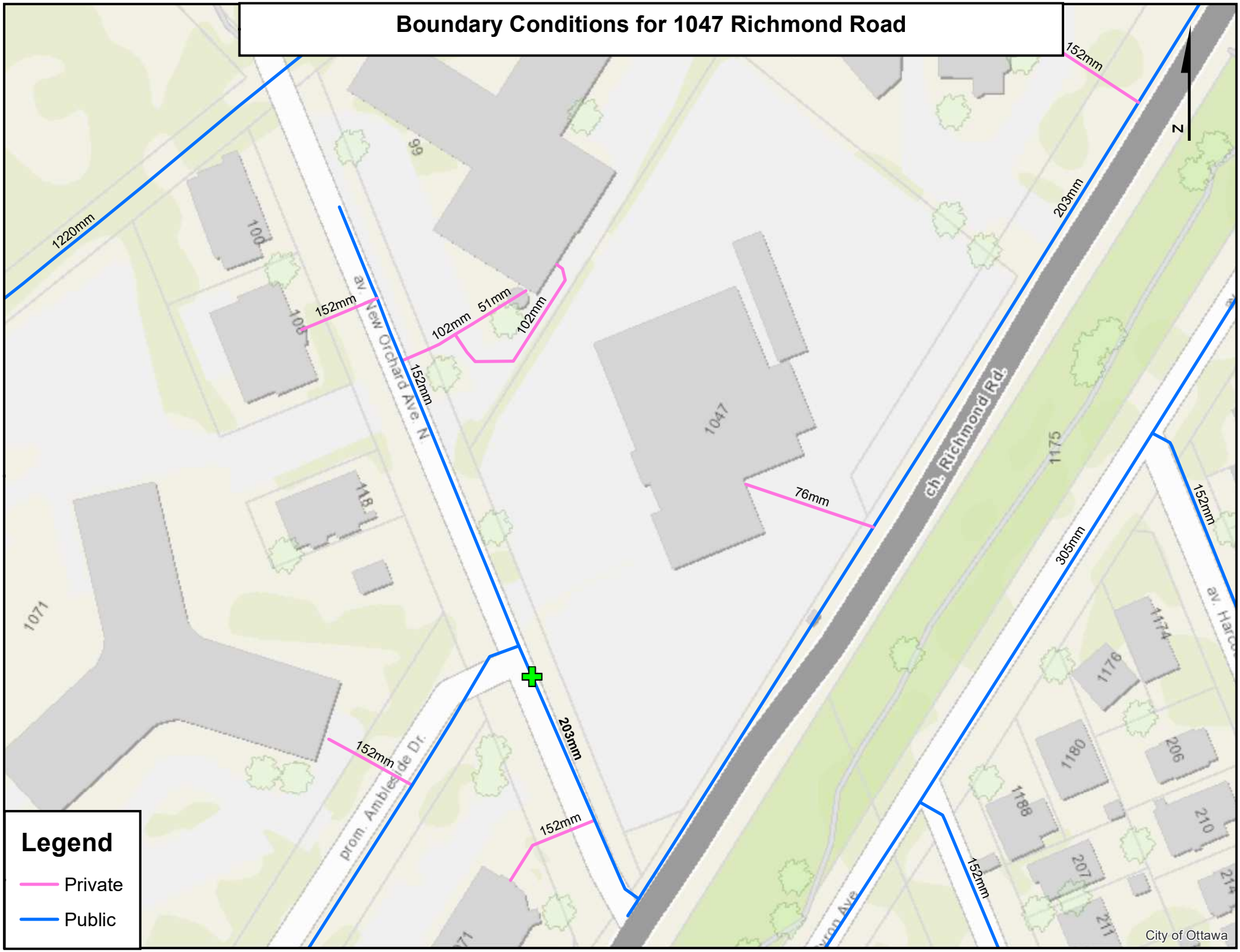
# Boundary Conditions for 1047 Richmond Road



# APPENDIX D
# SANITARY CALCULATIONS

## CCO-22-2242 - 1047 Richmond Road - Tower A - Sanitary Demands

| | |
|---|---|
| Project: | 1047 Richmond Road - Tower A |
| Project No.: | CCO-22-2242 |
| Designed By: | FV |
| Checked By: | AJG |
| Date: | Apr-25 |

| | | |
|---|---|---|
| Site Area | 0.51 | Gross ha |

| Residential | NUMBER OF UNITS | | UNIT RATE | |
|---|---|---|---|---|
| Townhouse | 4 | homes | 2.7 | persons/unit |
| Studio Apartment | 43 | units | 1.4 | persons/unit |
| 1 Bedroom Apartment | 173 | units | 1.4 | persons/unit |
| 1 Bedroom + Den Apartment | 76 | units | 2.1 | persons/unit |
| 2 Bedroom Apartment | 77 | units | 2.1 | persons/unit |
| 2 Bedroom + Den Apartment | 47 | units | 3.1 | persons/unit |
| 3-Bedroom Apartment | 5 | units | 3.1 | persons/unit |

| | | |
|---|---|---|
| Total Population | 796 | Persons |
| Commercial Area | 503 | $m^2$ |
| Amenity Space | 4413 | $m^2$ |

### DESIGN PARAMETERS

| | | |
|---|---|---|
| Institutional/Commercial Peaking Factor | 1.0 | |
| Residential Peaking Factor | 3.29 | * Using Harmon Formula = 1+(14/(4+P^0.5))*0.8<br>where P = population in thousands, Harmon's Correction Factor = 0.8 |
| Mannings coefficient (n) | 0.013 | |
| Demand (per capita) | 280 | L/day |
| Infiltration allowance | 0.33 | L/s/Ha |

### EXTRANEOUS FLOW ALLOWANCES

| Infiltration / Inflow | Flow (L/s) |
|---|---|
| Dry | 0.03 |
| Wet | 0.14 |
| Total | 0.17 |

### AVERAGE DAILY DEMAND

| DEMAND TYPE | AMOUNT | UNITS | POPULATION / AREA | Flow (L/s) |
|---|---|---|---|---|
| Residential | 280 | L/c/d | 796 | 2.58 |
| Industrial - Light** | 35,000 | L/gross ha/d | | 0 |
| Industrial - Heavy** | 55,000 | L/gross ha/d | | 0 |
| Commercial / Amenity | 2,800 | L/(1000m² /d ) | 4916 | 0.16 |
| Hospital | 900 | L/(bed/day) | | 0 |
| Schools | 70 | L/(Student/d) | | 0 |
| Trailer Parks no Hook-Ups | 340 | L/(space/d) | | 0 |
| Trailer Park with Hook-Ups | 800 | L/(space/d) | | 0 |
| Campgrounds | 225 | L/(campsite/d) | | 0 |
| Mobile Home Parks | 1,000 | L/(Space/d) | | 0 |
| Motels | 150 | L/(bed-space/d) | | 0 |
| Hotels | 225 | L/(bed-space/d) | | 0 |
| Office | 75 | L/7.0$m^2$/d | | 0 |
| Tourist Commercial | 28,000 | L/gross ha/d | | 0 |
| Other Commercial | 28,000 | L/gross ha/d | | 0 |

| | | |
|---|---|---|
| AVERAGE RESIDENTIAL FLOW | 2.58 | L/s |
| PEAK RESIDENTIAL FLOW | 8.49 | L/s |
| | | |
| AVERAGE ICI FLOW | 0.16 | L/s |
| PEAK INSTITUTIONAL/ COMMERCIAL FLOW | 0.16 | L/s |
| PEAK INDUSTRIAL FLOW | 0.00 | L/s |
| TOTAL PEAK ICI FLOW | 0.16 | L/s |

### TOTAL SANITARY DEMAND

| | | |
|---|---|---|
| TOTAL ESTIMATED AVERAGE DRY WEATHER FLOW | 2.76 | L/s |
| TOTAL ESTIMATED PEAK DRY WEATHER FLOW | 8.67 | L/s |
| TOTAL ESTIMATED PEAK WET WEATHER FLOW | 8.81 | L/s |

# SANITARY SEWER DESIGN SHEET

PROJECT: 1047 RICHMOND ROAD
LOCATION: 1047 RICHMOND ROAD
CLIENT: FENGATE

| LOCATION | | | | RESIDENTIAL | | | | | | | | | ICI AREAS | | | | | | | INFILTRATION ALLOWANCE | | | FLOW | SEWER DATA | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| STREET | AREA ID | FROM MH | TO MH | UNIT TYPES | | | | AREA (ha) | POPULATION | | PEAK FACTOR | PEAK FLOW (L/s) | AREA (ha) | | | | | | PEAK FLOW (L/s) | AREA (ha) | | FLOW (L/s) | DESIGN FLOW (L/s) | CAPACITY (L/s) | LENGTH (m) | DIA (mm) | SLOPE (%) | VELOCITY (full) (m/s) | AVAILABLE CAPACITY | |
| | | | | SF | SD | TH | APT | | IND | CUM | | | INSTITUTIONAL | | COMMERCIAL | | INDUSTRIAL | | | IND | CUM | | | | | | | | L/s | (%) |
| | | | | | | | | | | | | | IND | CUM | IND | CUM | IND | CUM | | | | | | | | | | | | |
| NEW ORCHARD | | BLDG A | MH2A | | | | 425 | 0.51 | 789.0 | 789.0 | 3.29 | 8.42 | | 0.00 | 0.492 | 0.49 | | 0.00 | 0.16 | 0.51 | 0.51 | 0.17 | 8.74 | 100.88 | 9.80 | 300 | 1.00 | 1.383 | 92.14 | 91.33 |

Design Parameters:

| Residential | | | ICI Areas | | | Peak Factor |
|---|---|---|---|---|---|---|
| SF | 3.4 | p/p/u | | | | |
| TH/SD | 2.7 | p/p/u | INST | 28,000 | L/Ha/day | 1 |
| APT | 2.3 | p/p/u | COM | 28,000 | L/Ha/day | 1 |
| Other | 60 | p/p/Ha | IND | 35,000 | L/Ha/day | MOE Chart |

Notes:
1. Mannings coefficient (n) = 0.013
2. Demand (per capita): 280 L/day
3. Infiltration allowance: 0.33 L/s/Ha
4. Residential Peaking Factor:
Harmon Formula = 1+(14/(4+P^0.5)*0.8)
where P = population in thousands

Designed: AJG

Checked: AJG

Project No.: CCO-22-2242

| No. | Revision | Date |
|---|---|---|
| 1. | Site Plan Control Application | 2024-08-28 |
| 2 | Reissued for Site Plan Control | 2024-12-12 |
| 3 | Reissued for Site Plan Control | 2025-04-11 |

Sheet No:
1 of 1

## GOSLING Alison

**From:** Brault, Ryan <ryan.brault@ottawa.ca>
**Sent:** August 28, 2024 8:35 AM
**To:** VALENTI Francis
**Cc:** GOSLING Alison
**Subject:** RE: 1047 Richmond Road - Downstream Sanitary Capacity

**Follow Up Flag:** Follow up
**Flag Status:** Completed

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Good Morning,

I have received the following response for our asset management team in relation to sanitary sewer capacity for 1047 Richmond Road:

> No issues with proposed peak flows( 10.02L/s) in Phase 1. Both Richmond and New Orchard Avenue have capacity for the proposed flows.

Please let me know if you have any questions or concerns.

Regards,

**Ryan Brault, M.Eng., P.Eng**
Project Manager - Infrastructure Approvals

City of Ottawa
Development Review - West Branch
Planning, Development, and Building Services
110 Laurier Ave West, 4th Floor East;
Ottawa ON K1P 1J1
Tel: 613-580-2424 x 32540

---

**From:** VALENTI Francis <Francis.VALENTI@egis-group.com>
**Sent:** August 21, 2024 3:49 PM
**To:** Brault, Ryan <ryan.brault@ottawa.ca>
**Cc:** GOSLING Alison <Alison.GOSLING@egis-group.com>
**Subject:** 1047 Richmond Road - Downstream Sanitary Capacity

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Good afternoon,

As requested in the Phase 1 Feedback form, I'm reaching out to provide the anticipated sanitary demands for the proposed development located at 1047 Richmond Road. Can you please review and confirm if there's adequate downstream capacity to accommodate these flows? The demands are listed below, and detailed calculations are attached.

- Average Dry Weather Flow: 2.74 L/s
- Peak Dry Weather Flow: 9.88 L/s
- Peak Wet Weather Flow: 10.02 L/s

Thank you,

egis
**Francis Valenti**, EIT
Engineering Intern, North America
Phone: +1 613-714-6895, Mobile: +1 613-808-2123

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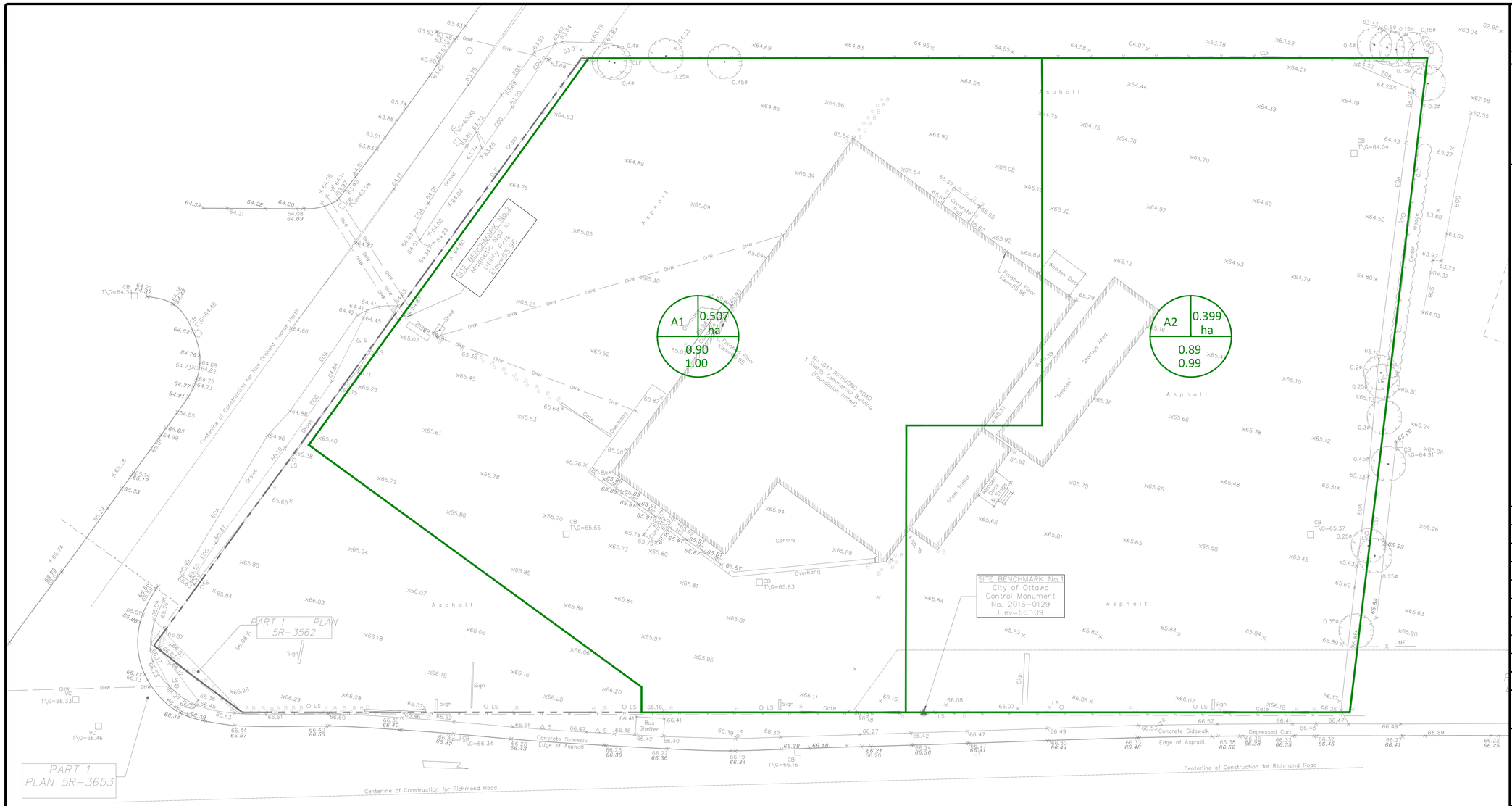
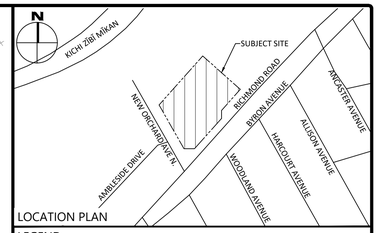
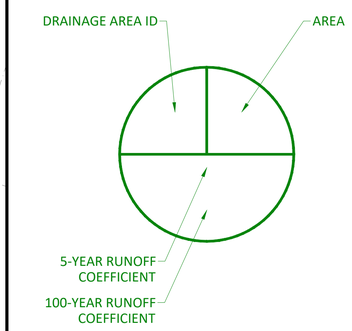
# APPENDIX E
# PRE-DEVELOPMENT DRAINAGE PLAN




LOCATION PLAN

LEGEND




SUBJECT TO REVIEW

| No. | Revisions | Date |
|---|---|---|
| 1 | ISSUED FOR REVIEW | APR. 11, 2025 |

Check and verify all dimensions before proceeding with the work — Do not scale drawings

SCALE 1 : 250

0 5 10 15 20 25 Metres


egis
115 Walgreen Road, R.R.3
Carp, ON K0A 1L0
Tel: 613-836-2184
Fax: 613-836-3742
www.egis-group.com


Stamp:

Client:

FENGATE ASSET MANAGEMENT
2275 UPPER MIDDLE RD. E. SUITE 700
OAKVILLE, ON L6H 0C3

Project:

MIXED-USE RESIDENTIAL DEVELOPMENT
1047 RICHMOND ROAD

Drawing Title:

PRE-DEVELOPMENT DRAINAGE AREA PLAN

| | |
|---|---|
| Scale: 1:250 | Project Number: CCO-22-2242 |
| Drawn By: FV | |
| Checked By: AG | Drawing Number: PRE |
| Designed By: AG | |

D07-12-24-0104

#19186

## GENERAL NOTES

1. THE ORIGINAL TOPOGRAPHY, GROUND ELEVATION AND SURVEY DATA SHOWN ARE SUPPLIED FOR INFORMATION PURPOSES ONLY, AND IMPLY NO GUARANTEE OF ACCURACY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION SHOWN.
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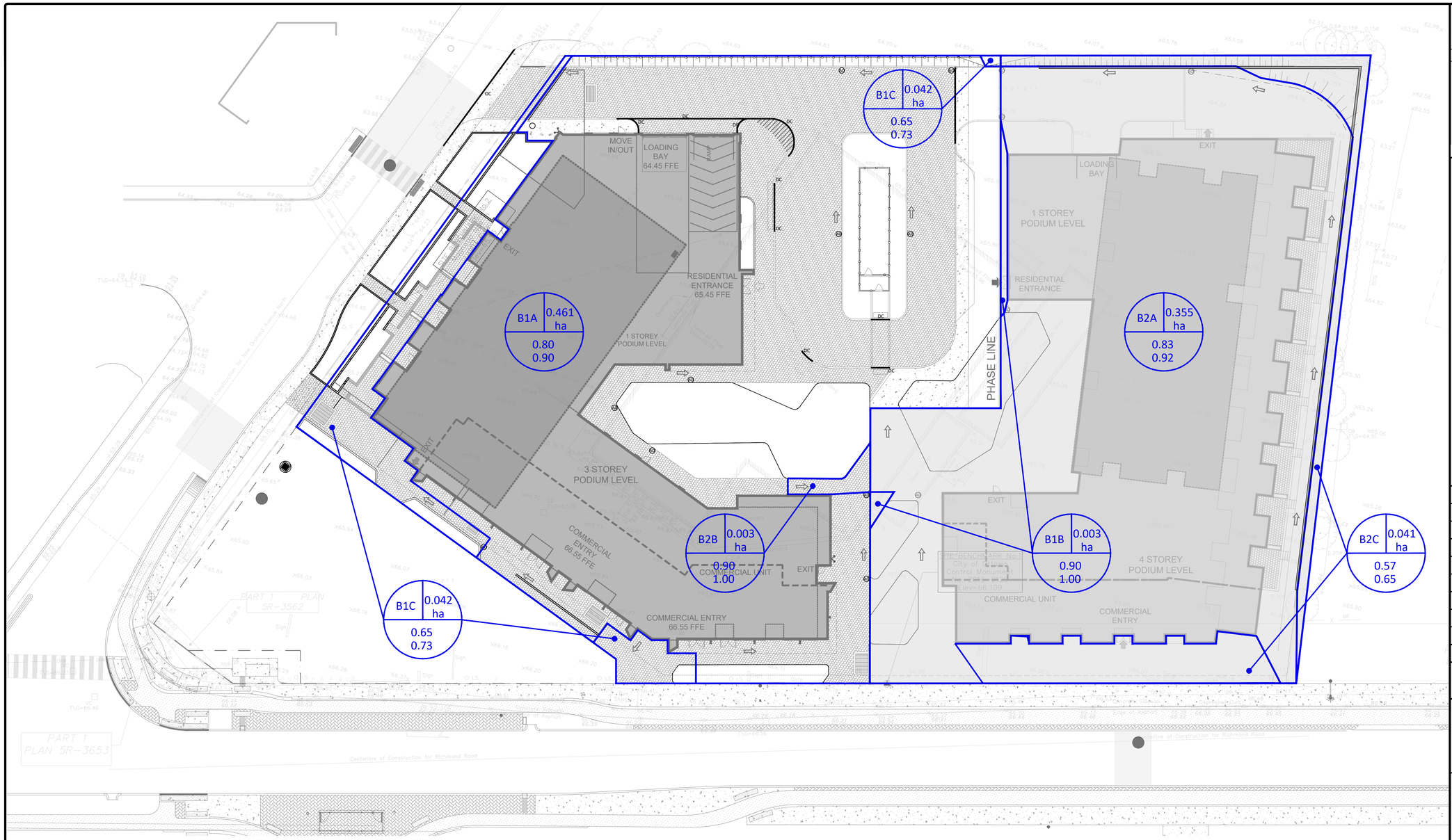
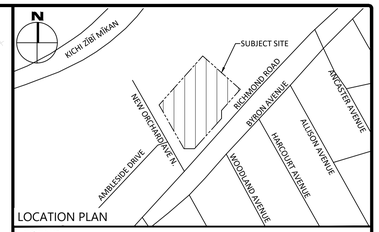
19. THIS PLAN MUST BE READ IN CONJUNCTION WITH THE GEOTECHNICAL ASSESSMENT COMPLETED BY TERRAPEX ENVIRONMENTAL LTD., DATED DECEMBER 5, 2024.

FILENAME: \\Ottawa01 Project - Proposals\2022 Jobs\CCO-22-2242 - Fengate - 1047 Richmond Road\12 - Drawings\CCO-22-2242 - Presentation.dwg
LAYOUT: PRE-DEVELOPMENT PLAN - 250 LAST MODIFIED BY: FVanderkooy
PLOT SCALE: 1:1 PLOTTED BY: Frank Vanderkooy LAST PLOTTED: Friday, April 11, 2025 CTB FILE USED: M-CV-STANDARD.ctb

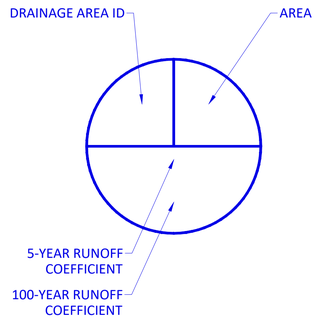
# APPENDIX F
# POST-DEVELOPMENT DRAINAGE PLAN




LOCATION PLAN

LEGEND




SUBJECT TO REVIEW

| No. | Revisions | Date |
|---|---|---|
| 1 | ISSUED FOR REVIEW | APR. 11, 2025 |

Check and verify all dimensions before proceeding with the work

Do not scale drawings

SCALE 1 : 250

0 5 10 15 20 25 Metres

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egis
115 Walgreen Road, R.R.3
Carp, ON K0A 1L0
Tel: 613-836-2184
Fax: 613-836-3742
www.egis-group.com


Stamp:

Client:
FENGATE ASSET MANAGEMENT
2275 UPPER MIDDLE RD. E. SUITE 700
OAKVILLE, ON L6H 0C3

Project:
MIXED-USE RESIDENTIAL DEVELOPMENT
1047 RICHMOND ROAD

Drawing Title:
POST-DEVELOPMENT DRAINAGE AREA PLAN

| | |
|---|---|
| Scale: 1:250 | Project Number: CCO-22-2242 |
| Drawn By: FV | |
| Checked By: AG | Drawing Number: POST |
| Designed By: AG | |

D07-12-24-0104

#19186


FILENAME: \\Ottawa01\Project - Proposals\2022 Jobs\CCO\CCO-22-2242 - Fengate - 1047 Richmond Road\12 - Drawings\CCO-22-2242 - Presentation.dwg
LAYOUT: POST-DEVELOPMENT PLAN - 1:250 - 11x17 USER: Fraser Vaughan
LAST EDITED: Friday, April 11, 2025 - 3:18:11 PM PC3: STANDARD.ctb

# APPENDIX G
# STORMWATER MANAGEMENT CALCULATIONS

| Tc (min) | Intensity (mm/hr) | | |
|---|---|---|---|
| | 2-Year | 5-Year | 100-Year |
| 20 | 52.0 | 70.3 | 120.0 |
| 10 | 76.8 | 104.2 | 178.6 |

| C-Values | |
|---|---|
| Impervious | 0.90 |
| Gravel | 0.60 |
| Pervious | 0.20 |

Pre-Development Runoff Coefficient

| Drainage Area | Impervious Area ($m^2$) | Gravel ($m^2$) | Pervious Area ($m^2$) | Average C (5-year) | Average C (100-year) | |
|---|---|---|---|---|---|---|
| A1 | 5,068 | 0 | 0 | 0.90 | 1.00 | Phase 1 Pre-Development Area |
| A2 | 8,930 | 0 | 125 | 0.89 | 0.99 | Phase 2 Pre-Development Area |

Pre-Development Runoff Calculations

| Drainage Area | Area (ha) | C 2/5-Year | C 100-Year | Tc (min) | Q (L/s) | | |
|---|---|---|---|---|---|---|---|
| | | | | | 2-Year | 5-Year | 100-Year |
| A1 | 0.507 | 0.90 | 1.00 | 10 | 97.39 | 132.12 | 251.57 |
| A2 | 0.399 | 0.89 | 0.99 | 10 | 75.79 | 102.82 | 195.86 |
| Total | 0.905 | | | | 173.18 | 234.94 | 447.43 |

Post-Development Runoff Coefficient

| Drainage Area | Impervious Area ($m^2$) | Gravel ($m^2$) | Pervious Area ($m^2$) | Average C (2/5-year) | Average C (100-year) | |
|---|---|---|---|---|---|---|
| B1A | 3,988 | 0 | 627 | 0.80 | 0.90 | Phase 1 Restricted |
| B1B | 26 | 0 | 0 | 0.90 | 1.00 | Phase 1 External Drainage (From Phase 2) |
| B1C | 270 | 0 | 155 | 0.65 | 0.73 | Phase 1 Unrestricted |
| B2A | 3,190 | 0 | 362 | 0.83 | 0.92 | Phase 2 Restricted |
| B2B | 28 | 0 | 0 | 0.90 | 1.00 | Phase 2 External Drainage (From Phase 1) |
| B2C | 218 | 0 | 190 | 0.57 | 0.65 | Phase 2 Unrestricted |

Post-Development Runoff Calculations

| Drainage Area | Area (ha) | C 2/5-Year | C 100-Year | Tc (min) | Q (L/s) | | |
|---|---|---|---|---|---|---|---|
| | | | | | 5-Year | 100-Year | |
| B1A | 0.461 | 0.80 | 0.90 | 10 | 107.59 | 205.74 | Phase 1 Restricted |
| B1B | 0.003 | 0.90 | 1.00 | 10 | 0.68 | 1.30 | Phase 1 External Drainage (From Phase 2) |
| B1C | 0.042 | 0.65 | 0.73 | 10 | 7.94 | 15.32 | Phase 1 Unrestricted |
| B2A | 0.355 | 0.83 | 0.92 | 10 | 85.26 | 162.84 | Phase 2 Restricted |
| B2B | 0.003 | 0.90 | 1.00 | 10 | 0.73 | 1.39 | Phase 2 External Drainage (From Phase 1) |
| B2C | 0.041 | 0.57 | 0.65 | 10 | 6.79 | 13.19 | Phase 2 Unrestricted |
| Total | 0.905 | | | | 208.99 | 399.79 | |

Required Restricted Flow

| Drainage Area | Area (ha) | C 2/5-Year | Tc (min) | Q (L/s) | Q (L/s/ha) |
|---|---|---|---|---|---|
| | | | | 2-Year | 2-Year |
| A1 | 0.507 | 0.50 | 10 | 54.11 | 106.76 |
| A2 | 0.399 | 0.50 | 10 | 42.56 | |
| Total | 0.905 | | | 96.67 | 106.76 |

Post-Development Restricted Runoff Calculations

| Drainage Area | Unrestricted Flow (L/S) | | Restricted Flow (L/S) | | Storage Required ($m^3$) | | Storage Provided ($m^3$) | |
|---|---|---|---|---|---|---|---|---|
| | 5-year | 100-Year | 5-Year | 100-Year | 5-Year | 100-Year | 5-Year | 100-Year |
| B1A | 107.59 | 205.74 | 34.06 | 38.01 | 70.2 | 165.6 | 165.6 | 165.6 |
| B1B | 0.68 | 1.30 | | | | | | |
| B1C | 7.94 | 15.32 | 7.94 | 15.32 | - | - | - | - |
| Total (B1) | 116.21 | 222.36 | 42.00 | 53.33 | 70.2 | 165.6 | 165.6 | 165.6 |
| B2A | 85.26 | 162.84 | 27.05 | 30.15 | 37.2 | 97.9 | TBD | TBD |
| B2B | 0.73 | 1.39 | | | | | | |
| B2B | 6.79 | 13.19 | 6.79 | 13.19 | - | - | - | - |
| Total (Site) | 208.99 | 399.79 | 75.84 | 96.67 | 107.32 | 263.49 | TBD | TBD |

Storage Requirements for Area B1A, B1B (Phase 1 + External Drainage from Phase 2)



5-Year Storm Event

| Tc (min) | I (mm/hr) | Runoff (L/s) | Allowable Outflow (L/s) | Runoff to be Stored (L/s) | Storage Required ($m^3$) |
|---|---|---|---|---|---|
| 10 | 104.2 | 108.28 | 17.03 | 91.25 | 54.75 |
| 20 | 70.3 | 73.05 | 17.03 | 56.02 | 67.23 |
| 30 | 53.9 | 56.01 | 17.03 | 38.98 | 70.16 |
| 40 | 44.2 | 45.93 | 17.03 | 28.90 | 69.36 |
| 50 | 37.7 | 39.18 | 17.03 | 22.15 | 66.44 |

| Maximum Storage Required 5-year = | 70 | $m^3$ |
|---|---|---|

100-Year Storm Event

| Tc (min) | I (mm/hr) | Runoff (L/s) | Allowable Outflow (L/s) | Runoff to be Stored (L/s) | Storage Required ($m^3$) |
|---|---|---|---|---|---|
| 20 | 120.0 | 139.14 | 19.00 | 120.13 | 144.16 |
| 30 | 91.9 | 106.56 | 19.00 | 87.55 | 157.60 |
| 40 | 75.1 | 87.08 | 19.00 | 68.07 | 163.38 |
| 50 | 64.0 | 74.21 | 19.00 | 55.20 | 165.61 |
| 60 | 55.9 | 64.82 | 19.00 | 45.81 | 164.92 |

| Maximum Storage Required 100-year = | 166 | $m^3$ |
|---|---|---|

* Inflow dropping by more than allowabl

5-Year Storm Event Storage Summary

| Storage Available ($m^3$) = 165.6 | * |
|---|---|
| Storage Required ($m^3$) = 70.2 | |

100-Year Storm Event Storage Summary

| Storage Available ($m^3$) = 165.6 | * |
|---|---|
| Storage Required ($m^3$) = 165.6 | |

* Available Storage based on preliminary cistern sizing.

Storage Requirements for Area B2A, B2B (Phase 2 + External Drainage from Phase 1)



5-Year Storm Event

| Tc (min) | I (mm/hr) | Runoff (L/s) | Allowable Outflow (L/s) | Runoff to be Stored (L/s) | Storage Required ($m^3$) |
|---|---|---|---|---|---|
| 10 | 104.2 | 86.00 | 27.05 | 58.94 | 35.37 |
| 20 | 70.3 | 58.02 | 27.05 | 30.97 | 37.16 |
| 30 | 53.9 | 44.48 | 27.05 | 17.43 | 31.38 |
| 40 | 44.2 | 36.48 | 27.05 | 9.43 | 22.62 |
| 50 | 37.7 | 31.11 | 27.05 | 4.06 | 12.18 |

| Maximum Storage Required 5-year = | 37 | $m^3$ |
|---|---|---|

100-Year Storm Event

| Tc (min) | I (mm/hr) | Runoff (L/s) | Allowable Outflow (L/s) | Runoff to be Stored (L/s) | Storage Required ($m^3$) |
|---|---|---|---|---|---|
| 10 | 178.6 | 164.28 | 30.15 | 134.12 | 80.47 |
| 20 | 120.0 | 110.38 | 30.15 | 80.22 | 96.27 |
| 30 | 91.9 | 84.53 | 30.15 | 54.38 | 97.88 |
| 40 | 75.1 | 69.08 | 30.15 | 38.93 | 93.42 |
| 50 | 64.0 | 58.87 | 30.15 | 28.72 | 86.15 |

| Maximum Storage Required 100-year = | 98 | $m^3$ |
|---|---|---|

5-Year Storm Event Storage Summary

| Storage Available ($m^3$) = TBD | * |
|---|---|
| Storage Required ($m^3$) = 37.2 | |

100-Year Storm Event Storage Summary

| Storage Available ($m^3$) = TBD | * |
|---|---|
| Storage Required ($m^3$) = 97.9 | |

* Cistern sizing to be determined during detailed design of Phase 2

# APPENDIX H
# CITY OF OTTAWA DESIGN CHECKLIST

# City of Ottawa

# 4. Development Servicing Study Checklist

The following section describes the checklist of the required content of servicing studies. It is expected that the proponent will address each one of the following items for the study to be deemed complete and ready for review by City of Ottawa Infrastructure Approvals staff.

The level of required detail in the Servicing Study will increase depending on the type of application. For example, for Official Plan amendments and re-zoning applications, the main issues will be to determine the capacity requirements for the proposed change in land use and confirm this against the existing capacity constraint, and to define the solutions, phasing of works and the financing of works to address the capacity constraint. For subdivisions and site plans, the above will be required with additional detailed information supporting the servicing within the development boundary.

## 4.1 General Content

| Criteria | Location (if applicable) |
|---|---|
| ☐ Executive Summary (for larger reports only). | N/A |
| ☐ Date and revision number of the report. | On Cover |
| ☐ Location map and plan showing municipal address, boundary, and layout of proposed development. | Appendix A |
| ☐ Plan showing the site and location of all existing services. | Site Servicing Plan (C102) |
| ☐ 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. | 1.1 Purpose<br><br>1.2 Site Description<br><br>6.0 Proposed Stormwater Management |
| ☐ Summary of pre-consultation meetings with City and other approval agencies. | Appendix B |
| ☐ 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. | 1.1 Purpose<br><br>1.2 Site Description<br><br>6.0 Proposed Stormwater Management |
| ☐ Statement of objectives and servicing criteria. | 3.0 Pre-Consultation Summary |

| | |
|---|---|
| ☐ Identification of existing and proposed infrastructure available in the immediate area. | N/A |
| ☐ 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). | Site Grading Plan (C101) |
| ☐ 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. | Site Grading Plan (C101) |
| ☐ Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts. | N/A |
| ☐ Proposed phasing of the development, if applicable. | N/A |
| ☐ Reference to geotechnical studies and recommendations concerning servicing. | Section 2.0 Background Studies, Standards and References |
| ☐ All preliminary and formal site plan submissions should have the following information:<br>○ Metric scale<br>○ North arrow (including construction North)<br>○ Key plan<br>○ Name and contact information of applicant and property owner<br>○ Property limits including bearings and dimensions<br>○ Existing and proposed structures and parking areas<br>○ Easements, road widening and rights-of-way<br>○ Adjacent street names | Site Grading Plan (C101) |

## 4.2 Development Servicing Report: Water

| Criteria | Location (if applicable) |
|---|---|
| ☐ Confirm consistency with Master Servicing Study, if available | N/A |
| ☐ Availability of public infrastructure to service proposed development | N/A |
| ☐ Identification of system constraints | N/A |
| ☐ Identify boundary conditions | Appendix C |
| ☐ Confirmation of adequate domestic supply and pressure | N/A |
| ☐ 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. | Appendix C |
| ☐ 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 | Appendix C, Section 4.2 Proposed Water Servicing |

| | |
|---|---|
| ☐ 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. | Site Servicing Plan (C101) |
| ☐ 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. | Appendix C |
| ☐ 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

| Criteria | Location (if applicable) |
|---|---|
| ☐ 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). | N/A |
| ☐ 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 5.2 Proposed Sanitary Servicing |

| | |
|---|---|
| ☐ 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 5.2 Proposed Sanitary Servicing |
| ☐ 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. | Section 5.2 Proposed Sanitary Servicing |
| ☐ 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 Checklist

| Criteria | Location (if applicable) |
|---|---|
| ☐ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property) | Section 6.0 Storm Sewer Servicing & Section 7.0 Proposed Stormwater Management |
| ☐ Analysis of available capacity in existing public infrastructure. | N/A |
| ☐ A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern. | Pre & Post-Development Plans |
| ☐ 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 6.0 Storm Sewer Servicing & Section 7.0 Proposed Stormwater Management |
| ☐ Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements. | Section 6.0 Storm Sewer Servicing & Section 7.0 Proposed Stormwater Management |
| ☐ Description of the stormwater management concept with facility locations and descriptions with references and supporting information. | Section 6.0 Storm Sewer Servicing & Section 7.0 Proposed Stormwater Management |
| ☐ Set-back from private sewage disposal systems. | N/A |
| ☐ Watercourse and hazard lands setbacks. | N/A |
| ☐ Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed. | N/A |
| ☐ Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists. | N/A |
| ☐ Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5-year return period) and major events (1:100-year return period). | Appendix G |

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|---|---|
| ☐ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals. | Site Grading Plan (C101) |
| ☐ 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. | Appendix G, Section 7.0 Proposed Stormwater Management |
| ☐ Any proposed diversion of drainage catchment areas from one outlet to another. | Section 6.0 Storm Sewer Servicing & Section 7.0 Proposed Stormwater Management |
| ☐ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities. | Section 6.0 Storm Sewer Servicing & Section 7.0 Proposed Stormwater Management |
| ☐ 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 |
| ☐ Descriptions of how the conveyance and storage capacity will be achieved for the development. | Section 6.0 Storm Sewer Servicing & Section 7.0 Proposed Stormwater Management |
| ☐ 100-year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading. | Site Grading Plan (C101) |
| ☐ Inclusion of hydraulic analysis including hydraulic grade line elevations. | N/A |

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|---|---|
| ☐ Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors. | Section 8.0 Sediment & Erosion Control |
| ☐ 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

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 each approval. The approval and permitting shall include but not be limited to the following:

| Criteria | Location (if applicable) |
|---|---|
| ☐ 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. | N/A |
| ☐ 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

| Criteria | Location (if applicable) |
|---|---|
| ☐ Clearly stated conclusions and recommendations | Section 9.0 Summary<br><br>Section 10.0 Recommendations |
| ☐ 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 are stamped |
| ☐ All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario | All are stamped |