1867 Alta Vista

Assessment of Adequacy of Public Services

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Table of Contents

List of Figures

List of Tables

List of Appendices

Assessment of Adequacy of Public Services

1. INTRODUCTION AND SITE DESCRIPTION

Parsons has been retained by TCU Devcorp to conduct an Assessment on the Adequacy of Public Services in support of the Zoning Bylaw Amendment (ZBA) and Official Plan Amendment (OPA) applications. These applications pertain to the proposed development of one (1) residential building, along with associated surface and underground parking facilities, located at 1867 Alta Vista Drive.

The subject property consists of a single lot, legally described as part of Lot 15, Concession Junction Gore, in the Township of Gloucester. The property is currently designated as IP (Business Park and Industrial Zone), Subzone 12 (Hospital Lands). The proposed OPA and ZBA applications seek to rezone the property to R5B (Residential Fifth Density Zone).

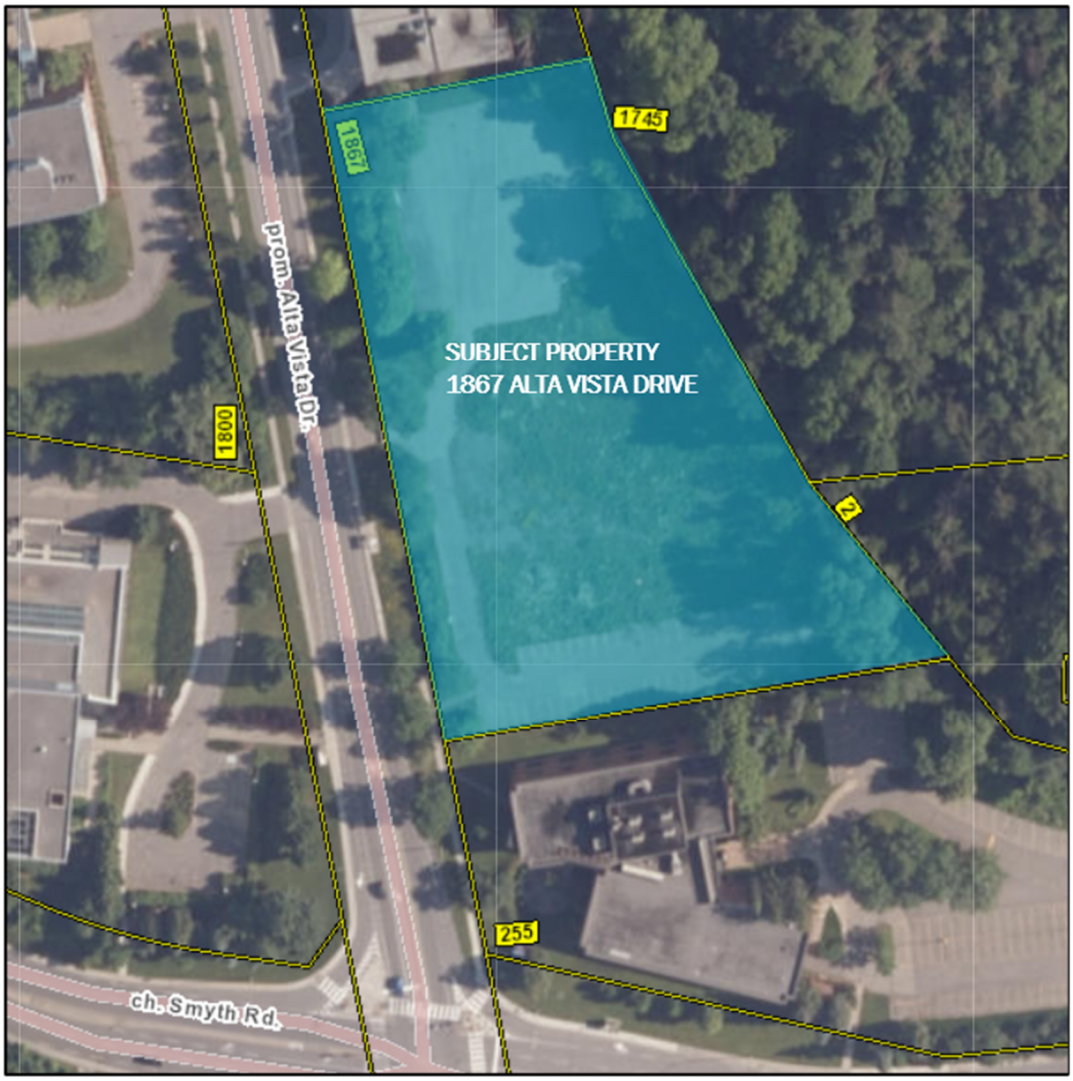


Figure 1: Aerial View of Proposed Development

The property has a frontage of approximately 145 meters along Alta Vista Drive. It is bordered by industrial properties and buildings to the south and north, and by a creek to the east. The total site area is approximately 1.21 hectares.

According to the Site Plan and Floor Plans prepared by RLA Architecture, the proposed development will consist of one residential building with an underground parking garage. The site will have a single access road via Alta Vista Drive. The building is proposed to be 9 stories tall. The ground floor is designed as two separate building sections with an outdoor space in between for pedestrian circulation. Above this, a connecting podium bridges the gap, rejoining the two sections into a single continuous structure. There will be a total of 309 residential units, with a unit mix of studio, 1-bedroom, 1-bedroom+den, 2-bedroom, 2-bedroom+den, and 3-bedroom apartments.

The ground level will feature amenity spaces, with provisions for potential commercial spaces. For further details, refer to the Site Plan and architectural Floor Plans provided in **Appendix F**.

2. EXISTING SITE AND DRAINAGE DESCRIPTION

2.1.1. EXISTING DRAINAGE

The existing site covers an area of approximately 1.21 hectares. Approximately from the late 1960s to 2016 there were three existing buildings located on this site, one standalone building and two that were connected by a podium. These were later demolished around the year 2016 making this site a brownfield site. Currently the site consists of grassed areas, two paved parking lots, and a single access road connecting to Alta Vista Drive. Mature trees line both the western and eastern boundaries of the property, providing a natural buffer. The northern and southern boundaries are adjacent to existing buildings, while a creek is located along the eastern edge of the site.

Surface drainage across the site generally flows northeast, ultimately discharging toward the creek to the east. However, localized variations in topography influence the drainage patterns, as follows:

- Portions of the site near the western boundary direct flow uncontrolled westward toward Alta Vista Drive.
- A small area along the northern boundary drains northeast toward an adjacent property. However, these overland flows remain close to the property line and eventually also discharge into the creek.

A steep embankment runs along the eastern edge of the site, transitioning from the upper site elevations down to the creek. This embankment varies in width from approximately 2 to 15 meters, with slopes ranging between 10% and 30%. The highest elevation on the site is approximately 74.80 meters, located near the southwest corner, while the lowest elevation (at bottom of embankment) is approximately 69.96 meters, located at the northeast corner. This results in a total elevation change of approximately 4.84 meters across the site. The elevation difference from the upper site down to the top of the embankment is approximately 2.63 meters. Outside of the embankment, site slopes are generally mild, ranging between 1% and 4%.

Refer to **Appendix G** for the topographical survey.

2.1.2. EXISTING SERVIES

The following municipal infrastructure is located within the Alta Vista Drive right-of-way, adjacent to the subject site:

- A 305 mm PVC watermain runs within Alta Vista Drive, with a water service stub provided near the southwest corner of the site.
- A 250 mm concrete sanitary sewer is located within Alta Vista Drive, approximately 60 meters north of the site.

- A 200 mm sanitary force main is also present within Alta Vista Drive, with a stub connection located adjacent to the southwest corner of the property.
- There are no storm sewers within Alta Vista Drive. However, a creek located to the east of the site has been identified by the City of Ottawa as the designated stormwater outlet for the property.

2.1.3. GEOTECHNICAL STUDY

A geotechnical investigation conducted by Paterson Group (Report PG7401-1 Revision 1, dated April 22, 2025) was reviewed to inform the municipal servicing design. Subsurface conditions encountered across the site generally consist of a layer of fill material overlaying native glacial till and bedrock. The fill is composed primarily of brown silty sand with varying amounts of clay, gravel, and construction debris, and was observed to extend to depths between approximately 0.9 and 5.0 meters below the existing ground surface. Beneath the fill, a very dense layer of glacial till was identified, made up of silty sand to sandy silt with inclusions of gravel, cobbles, and occasional boulders.

Groundwater was observed within the range of approximately 1.5 to 2.5 meters below the ground surface. Based on the soil conditions and groundwater observations, infiltration into shallow excavations is expected to be manageable using conventional open sump pumping methods. However, it is noted that groundwater levels are subject to seasonal variation and may differ at the time of construction.

For the underground parking structure, a subsurface drainage system is recommended using perforated 100 mm pipes in clear stone, spaced roughly six meters apart and connected to the building's sump pit(s). A perimeter drainage system should also be included and linked to the underslab network to effectively manage water infiltration.

The geotechnical report recommends standard trench bedding and backfill practices, including 150 mm of OPSS Granular A bedding beneath water and sewer pipes, compacted to 99% SPMDD and Granular A cover extending from the spring line to at least 300 mm above the pipe. Native silty sand and glacial till may be reused above the pipe cover zone where conditions are dry. In areas beneath hard surfaces, native soil should be used within the frost zone to minimize differential frost heave.

3. SCOPE OF WORK

The scope of work, as per applicable guidelines, includes stormwater management, water services, and sanitary services. For stormwater management, the work involves calculating allowable and post-development release rates, as well as demonstrating how target quantity objectives will be met and conducting a water balance assessment. For water services, the scope includes estimating average and peak water supply demands, determining fire flow requirements using the Fire Underwriters Survey (FUS) method, confirming the adequacy of water supply and pressure during peak and fire flow conditions, and describing the proposed water distribution network and its connection to the existing system. For sanitary services, the work involves describing the existing sanitary sewers available for wastewater discharge, calculating peak flow rates, detailing the proposed sanitary sewer system, and reviewing the impact of increased sanitary flow on downstream infrastructure.

4. REGULATORY APPROVALS

An MECP Environmental Compliance Approval (ECA) for Municipal/Private Sewage Works will likely be required for the proposed development. The project will also need to be registered with the Environmental Activity and Sector Registry (EASR) to permit dewatering activities during sewer installation.

Any project that alters a property in proximity to a waterbody, wetland, steep slope, or floodplain within the Rideau Valley watershed requires a permit under Ontario Regulation 41/24 – Prohibited Activities, Exemptions and Permits, made

under Section 28 of the Conservation Authorities Act. The Rideau Valley Conservation Authority (RVCA) is mandated to administer and enforce this regulation through permitting and inspections.

Consultation with, and approvals from, Public Services and Procurement Canada (PSPC) may also be required to relocate the storm outlet pipe or to repair the existing outlet, as the works are located on federal land.

5. WATER SUPPLY AND FIRE PROTECTION

5.1.1. EXISTING WATER SERVICES

The subject site will be serviced by the existing water infrastructure within the City of Ottawa's 1E water distribution network pressure zone, as identified in Appendix A of the Infrastructure Master Plan (September 2024). A 305 mm watermain is currently located within Alta Vista Drive, providing water supply to the surrounding area.

In addition, there are three existing public fire hydrants located near the site, all situated along the east side of Alta Vista Drive. These hydrants form part of the existing water infrastructure supporting fire protection for the area. For detailed fire hydrant locations, refer to **Appendix C**.

5.1.2. PROPOSED SERVICING DESIGN

The interior layout and architectural floor plans for the proposed building were reviewed to determine the total number of residential units and their breakdown. The building will include a total of **309 residential units**, consisting of 73 studio units, 95 one-bedroom units, 53 one-bedroom plus den units, 70 two-bedroom units, 5 two-bedroom plus den units and 13 three-bedroom units.

Based on the City of Ottawa Design Guidelines for population projections, this unit mix translates to an estimated residential population of approximately **550 persons**.

According to Technical Bulletin ISTB-2021-03, dated August 18, 2021, the average daily water consumption rate for subdivisions with populations ranging from 501 to 3,000 persons is 280 L/capita/day.

The table below summarizes the proposed development's population projections, as calculated using *Table 4.1 ("Per Unit Populations") from the City of Ottawa Sewer Design Guidelines (October 2012).*

Table 1: Residential Populations

Domestic Demands – Building 1 (North)			
Apartment Type	**Persons per unit**	**Number of units**	**Population**
Studio	1.4	73	102.2
1 Bedroom	1.4	95	133.0
1 Bedroom + Den	2.1	53	111.3
2 Bedroom	2.1	70	147.0
2 Bedroom +Den	3.1	5	15.5
3 Bedroom	3.1	13	40.3
	Total	**309**	**549.3**

Based on the architectural floor plans provided, the total area of ground-level amenity and commercial spaces in both buildings is approximately 0.185 hectares. The water consumption rate for these spaces, as outlined in Table 4.2 of the City of Ottawa Design Guidelines for Water Distribution, is assumed to be 28,000 liters per hectare per day (L/ha/day). This rate is used to estimate water demand for infrastructure planning and to ensure the adequacy of the existing water distribution system to support the proposed development.

To determine the water supply required to service the development, the following formula was used:

$$Q = q * P * M$$

Where, q = the average consumption (L/cap/day), P=design population (cap), and M=Peak Factor.

As outlined in Table 4.2, "Consumption Rates for Subdivisions of 501 to 3,000 Persons," in the City of Ottawa Design Guidelines for Water Distribution, the specified factors are applicable to sites with populations within this range. Since the proposed development is projected to have an approximate population of 549.3, the parameters of Table 4.2 are applicable. The following factors were used for the assessment:

Maximum Day Demand:

- Residential: 2.5 x average day (L/c/d)
- Commercial: 1.5 x average day (L/gross ha/d)

Maximum Hour Demand:

- Residential: 2.2 x max day (L/c/d)
- Commercial: 1.8 x max day (L/gross ha/d)

Based on the above parameters the combined demands for the site are the following:
Average Day Demand: 1.8L/s
Maximum Day Demand: 4.5L/s
Maximum Hour Demand: 10.0L/s

Based on the maximum hour demand of 10.0 L/s, it was determined that a **150 mm** diameter water service will be required to adequately service the site. Furthermore, in accordance with the City of Ottawa Water Distribution Systems Guidelines, service areas with a basic day demand exceeding 50 m^3/day must be connected to a minimum of two feeder mains to prevent the creation of a vulnerable service area. Since the average day demand for the site is 155.52 m^3/day, the site will be serviced by a looped 150 mm diameter watermain connection, which will tie into the existing 305 mm PVC watermain located within Alta Vista Drive. Refer to **Appendix C** for detailed water demand calculations.

5.1.3. FIRE FLOWS

The estimated fire flow for the proposed building was calculated in accordance with ISTB-2018-02 and the Fire Underwriters Survey, *Water Supply for Public Fire Protection* (2020).

The following parameters, provided by the Architect, were used to calculate the fire flow demands:

- Type of Building Construction: Type II Non-combustible Construction
- Sprinkler System: Present, fully automatic, and supervised
- Building Content Combustibility: Limited combustible
- Interconnected Floor Spaces or Unprotected Openings: None

Based on this information, the estimated fire flow for the site is 10,000 L/min (166.7L/s), with a required fire flow duration of 2 hours. There are three existing fire hydrants in proximity to the proposed buildings that can provide the required fire flow of 10,000 L/min. Refer to **Appendix C**, for fire hydrant locations and detailed fire flow calculations. Table 3 below summarizes the aggregate fire flow of the contributing hydrants near the proposed development, as calculated using Table 18.5.4.3 of ISTB-2018-02

Table 2: Fire Hydrant Coverage

Fire Flow Demand	Fire Hydrant(s) within 75m	Fire Hydrant(s) within 150m	Available Combined Flow
10000 L/min	1	2	= 1x5700L/min+2x3800L/min = 13,300 L/min

The total available flow from the contributing hydrants is 13,300 L/min, which exceeds the required fire flow of 10,000 L/min and is sufficient to provide adequate fire protection for the proposed development. A certified fire protection system specialist will be required to design the building's fire suppression system and confirm the actual fire flow demand.

5.1.4. BOUNDARY CONDITIONS

The City of Ottawa was contacted to obtain boundary conditions associated with the proposed water demands. Correspondence regarding the boundary conditions is provided in **Appendix A**. Table 2 below summarizes the boundary conditions at the proposed water connection locations.

Table 3: Boundary Conditions

Design Parameters	Demand (L/s)	Boundary Conditions at Alta Vista Drive (1) * (mH2O/ kPa)	Boundary Conditions at Alta Vista Drive (2) * (mH2O/ kPa)
Average Day Demand	1.8	47.10 / 461.8	45.07 / 441.9
Max Day + Fire Flow	4.5 + 166.7	25.20 / 247.1	23.17 / 227.2
Peak Hour	10.0	38.40 / 376.5	36.37 / 355.6
* Assumed ground elevation at connection point 1 = 71.60m and connection point 2 = 73.63m			

As indicated in Table 2, pressures in all scenarios meet the required pressure ranges stated in section *4.2.2 of the Water Distribution Ottawa Design Guidelines and Technical Bulletin ISD-2010-02*. The proposed water supply design complies with all relevant City of Ottawa Guidelines and Policies.

6. SANITARY SERVICE

6.1.1. EXISTING SANITARY SERVICES

An existing 200 mm sanitary force main is located within Alta Vista Drive, approximately 8 meters south of the site, with a stub connection situated near the southwest corner of the property. This force main connects to the 300 mm sanitary sewer on Smyth Road to the south. Additionally, a 250 mm concrete sanitary sewer is located within Alta Vista Drive, approximately 60 meters north of the site. This sewer flows northward and discharges into the Rideau River Collector.

It is proposed that the site will connect to the existing 250 mm concrete sanitary sewer to the north. To facilitate this connection, the existing City sewer will need to be extended approximately 95 meters south along Alta Vista Drive to reach the site. Coordination with the City of Ottawa will be required during the detailed design stage to implement the sewer extension.

6.1.2. SANITARY FLOWS

The parameters used to calculate the anticipated sanitary flows are a residential daily demand of 280 L/p/day, a residential peaking factor of 3.4 calculated by using the Harmon Equation, and a total infiltration rate of 0.33 L/s/ha. Based on these parameters, a population of 549.3 and the total site area of 1.21 ha, the total anticipated wastewater flow for the developments is estimated to be **6.5 L/s**. Refer to **Appendix D** for sanitary flow calculations.

6.1.3. SANITARY SEWER EXTENSION AND SITE SERVICING

There are currently no sanitary sewers fronting the development along Alta Vista Drive. As a result, a sanitary sewer extension will be required to extend the existing sewer from MHSA30147, located north of the site, approximately 95 m south to service the property. The proposed development will connect via a single 150 mm diameter sanitary service to a future manhole at the upstream end of the proposed 250 mm diameter sewer extension. Additionally, a sanitary monitoring hole will be installed at the property line. Based on a high-level analysis, the proposed sanitary sewer on Alta Vista Drive will have sufficient cover and flows from the building will be able to drain by gravity. The City of Ottawa has confirmed that the existing sanitary sewer on Alta Vista Drive can accommodate the anticipated flows. Refer to **Appendix A** for City correspondence. It should be noted that the email confirms that the sewer has enough capacity for proposed flows of 7.8L/s, this was based on earlier sanitary flow calculations. Since our updated flows are 6.5L/s and less than the original calculated amounts we can confirm that the existing sewer will have sufficient capacity for our anticipated flows.

Designing the sanitary sewer extension and system will be coordinated with the City of Ottawa during the detailed design stage.

7. STORMWATER MANAGEMENT

7.1.1. EXISTING STROMWATER INFRASTRUCTURE AND WATERSHEDS

The existing property is tributary to the Rideau River – Rideau Falls sub-catchment. Most of the stormwater runoff from the subject property flows east towards an existing creek which flows north and is tributary to the City of Ottawa sewer system. Approvals for the proposed development within this area are under the approval authority of the City of Ottawa. However, the Rideau Valley Conservation Authority will have to be notified of the work, as runoff from the site will enter the existing creek. Additionally since the creek is located on Federal Lands, consultation with and review from Public Services and Procurement Canada (PSPC) will be required at the detailed design stage.

In pre-development conditions, drainage from the subject property is depicted by existing watersheds EWS-01 and EWS-02. EWS-01 (0.187ha) surface drains west to Alta Vista Drive and EWS-02 (1.027ha) surface drains east to the existing creek. Refer to plan C105 included in **Appendix H** for the Pre-Development Watershed Drawing. Table 4 below details the existing watershed information.

Table 4: Existing Watersheds

WATERSHED	C = 0.2	C = 0.90	Total Area (m^2)	Total Area (ha)	Combined C
EWS-01 to Alta Vista	684.1	1189.8	1873.9	0.187	0.64
EWS-02 to Creek	7103.6	3163.9	10267.5	1.027	0.42
TOTAL	**7787.7**	**4535.6**	**12140.0**	**1.214**	**0.45**

Currently there is no existing storm sewer infrastructure within the Alta Vista Drive Right of Way. Based on the pre-consultation meeting feedback with the City of Ottawa it was determined that the designated outlet for the site is the creek bordering the eastern property line. Only a single outlet to the creek will be permitted and it is recommended to re-use the existing outlet if it is in a suitable condition. However, based on a site visit, the existing outlet does not meet current design standards. It is located at the upstream end of the creek, lacks appropriate erosion and outlet protection (e.g., headwall, riprap, or energy dissipation), and is not in an efficient location for servicing the site. At the detailed design stage, we will assess whether a more suitable outlet location is available and will coordinate this assessment and final selection with the City of Ottawa and PSPC.

7.1.2. STORMWATER DESIGN

Based on the pre-consultation meeting feedback with the City of Ottawa, included in **Appendix B**, the following stormwater management requirements were identified for the subject site:

- Use a calculated time of concentration (cannot be less than 10 minutes);
- Storm sewer outlets should not be submerged;
- The quantity control criteria is pre-to-post with the designated outlet being the creek bordering the easterly property line;
- 5-year post-development flows to be controlled to 5-year pre-development, 100-year post-development controlled to 100-year pre-development;
- Flows to the storm sewer in excess of the pre-development flow for the respective design storm must be detained on site for storms up to the 1:100 year return;
- The pre-development runoff coefficient or a maximum equivalent 'C' of 0.5, whichever is less;
- Quality control criteria: 'enhanced' target (80% TSS removal); and
- A water balance assessment is required to support this application, due to the proximity of the adjacent watercourse.

7.1.3. WATER QUALITY

To achieve the "enhanced" target of 80% Total Suspended Solids (TSS) removal, identified through the pre-consultation meeting feedback, the stormwater management design will include a Jellyfish Membrane Filtration System.

7.1.4. WATER QUANTITY

Under existing conditions, the site surface drains to two primary locations: the majority of the site surface drains uncontrolled northeast toward the existing creek, while a smaller portion surface drains uncontrolled west toward Alta Vista Drive. To maintain the existing drainage characteristics, the allowable release rates to Alta Vista Drive and the creek were determined for both the 5-year and 100-year storm events. These calculations were performed using the runoff equation and the Modified Rational Method. Table 5 below summarizes the allowable release rates. In post development conditions, the design will attempt to maintain as much of the area that was going to the creek and as much of the area that was going to Alta Vista to avoid adding additional large amounts of volume to the existing creek.

Table 5: Allowable Release Rates

	Allowable Release Rates (L/s)
Alta Vista Drive 5-Year	27.14
Alta Vista Drive100-Year	46.51
Creek 5–Year	123.64
Creek 100-Year	211.87

At the detailed design stage, it is assumed that the majority of runoff from the roofs and on-site hard surfaces (including parking areas, walkways, sidewalks, and on-site drive isles) will be captured and directed to the underground parking garage. Grassed areas to the west of the building, adjacent to Alta Vista Drive, will drain west toward the right-of-way, including the designated privately owned public space (POPS). Areas to the east of the building, outside the limits of the parking garage, will mostly drain northeast toward the creek, consistent with existing drainage conditions. It is assumed that these areas will remain undisturbed, with existing grades maintained from the Top of Bank 30-meter offset east toward the creek. Refer to plan C106 included in **Appendix H** for the Post-Development Watershed Drawing.

Based on a high-level drainage plan, Table 6 below summarizes the post-development watersheds. These watershed delineations are preliminary and based on current assumptions. A detailed grading and drainage plan will be completed at the Site Plan Control stage, at which time the post-development watersheds will be updated accordingly.

Table 6: Post Development Watersheds

WATERSHED	C = 0.20	C = 0.90	Total Area (m^2)	Total Area (ha)	Combined C
WS-01 Uncontrolled to Alta Vista	640.15	427.10	1067.25	0.107	0.48
WS-02 Uncontrolled to Alta Vista	202.76	79.70	282.46	0.028	0.40
WS-03 Uncontrolled to Creek	4713.00	0.00	4713.00	0.471	0.20
WS-04 Controlled to Creek	1992.52	4086.13	6078.65	0.608	0.67
TOTAL	**7548.43**	**4592.93**	**12141.4**	**1.214**	**0.46**

Flows to Alta Vista

All areas draining toward Alta Vista Drive will remain uncontrolled and will surface drain to the right-of-way. The uncontrolled watershed to Alta Vista Drive is estimated to have a release rate of 18.09 L/s during the 5-year storm and 31.01 L/s during the 100-year storm.

Since these release rates are below the design allowable release rate limits to Alta Vista Drive (27.14 L/s for the 5-year storm and 46.51 L/s for the 100-year storm), no additional controls will be required. These areas will continue to surface drain uncontrolled toward Alta Vista Drive, consistent with existing conditions.

Flows to Creek

Under post-development conditions, the uncontrolled release rate to the creek is estimated to be 27.30 L/s during the 5-year storm and 58.49 L/s during the 100-year storm. With allowable release rates of 123.64 L/s for the 5-year storm and 211.87 L/s for the 100-year storm, the remaining allowable release rates are 96.34 L/s and 153.38 L/s, respectively. Under existing conditions, most of the site flows uncontrolled to the creek. In post-development conditions, most of the uncontrolled runoff will originate from the undeveloped 30-meter buffer adjacent to the creek, consistent with existing conditions.

To manage runoff exceeding these allowable rates, **13.0 m^3** of storage will be required for the 5-year storm and **59.7 m^3** for the 100-year storm. At the detailed design stage, this storage may be achieved through a combination of roof storage, using controlled roof drains, and a proposed cistern in the underground parking garage. The cistern will be designed to pump at specified release rates for both the 5-year and 100-year storm events.

Table 7 below summarizes the stormwater release and storage requirements.

Table 7: Post-development Release Rates and Storage Requirements

	Allowable Release Rate (L/s)	Uncontrolled Release Rate (L/s)	Controlled Release Rate (L/s)	Required Storage (m^3)
5-Year Storm	123.64	27.30	96.34	13.0
100-Year Storm	211.87	58.49	153.38	59.8

The underground cistern will direct flows to an on-site storm manhole equipped with a Jellyfish Membrane Filtration System and a 375 mm diameter storm sewer outlet, which will discharge to the existing creek bordering the site to the east. The Jellyfish Filter will enhance water quality by removing oil, grit, and fine particles from stormwater before discharge, helping to achieve the 80% Total Suspended Solids (TSS) removal target. The outlet to the creek will not be submerged and will be installed with a headwall, as per OPSD 804.040, along with riprap for erosion control and a rodent protection grate for

added security. For detailed stormwater calculations, including release rates, storage volumes, and storm sewer pipe sizing, refer to **Appendix E.**

A detailed grading and drainage plan will be completed at the Site Plan Control stage to reflect updated drainage areas and stormwater infrastructure based on the final design. This plan will ensure compliance with all relevant City guidelines and policies.

At the detailed design stage, the water balance requirements will take precedence over the City's initial stormwater design criteria, as total water volume targets must be met. To achieve this, Low Impact Development (LID) measures will be incorporated into the design, which may alter release rates but will ensure they remain within the allowable range. The incorporation of LID measures will be explicitly reflected in the stormwater quantity control design, and the post-development stormwater management system will be updated to account for the hydrologic benefits of the proposed LIDs. This will demonstrate compliance with the City of Ottawa's 5-year and 100-year peak flow control requirements. Additionally, PSPC will be reviewing the storm design and any proposed changes to the creek outlet at the detailed design stage.

8. WATER BALANCE

8.1.1. WATER BALANCE – THORNTHWAITE MATHER

A water balance assessment evaluates how precipitation is distributed within the hydrologic cycle, including evapotranspiration, surface runoff, groundwater recharge (infiltration), and changes in soil moisture storage. The purpose of the water balance is to quantify how development alters the natural movement of water across and through the site, and to assess changes in both total runoff volume leaving the site and groundwater recharge relative to existing conditions.

This water balance assessment is distinct from event-based stormwater quantity control analyses (e.g., 2-year, 5-year, and 100-year storm events), which focus on peak flow rates and detention storage requirements. Instead, the water balance is a climate-based analysis that evaluates the annual distribution of precipitation and the cumulative effects of development on runoff volumes and infiltration.

In accordance with the City of Ottawa, the Rideau Valley Conservation Authority (RVCA), and the MECP Stormwater Management Planning and Design Manual (2003), the water balance for the subject site has been assessed using the Thornthwaite–Mather water balance method. This method is a continuous soil-water accounting approach based on climatic data that evaluates how precipitation is partitioned into actual evapotranspiration, soil moisture storage, and surplus water.

Site-specific Thornthwaite water balance data from 1945 to 2024 were obtained from Environment and Climate Change Canada by providing a soil water holding capacity of 75 mm, which is representative of the fine sandy loam soil conditions at the site. Based on the climatic data provided, the Thornthwaite–Mather method was applied to quantify precipitation, actual evapotranspiration, and surplus water for the subject site. See **Appendix A** for the site-specific water balance data obtained. Table 8 below provides a summary of the average precipitation, potential evapotranspiration, actual evapotranspiration and surplus amounts in mm/year.

Table 8: Average Data

PCPN (Precipitation)	902 mm/year
PE (Potential Evapotranspiration)	620 mm/year
AE (Actual Evapotranspiration)	543 mm/year
SURP (Surplus)	356 mm/year

8.1.2. WATER BALANCE CALCULATIONS

The Thornthwaite-Mather Soil Water Balance equation was used for our calculations.

$$P = AE + \Delta S + SURP$$

Where:

- P: Precipitation
- AE: Actual Evapotranspiration
- ΔS: Change in soil moisture storage
- SURP: Surplus

$$SURP = Runoff + Recharge$$

The surplus water represents the portion of precipitation that remains after evapotranspiration and soil moisture demands have been satisfied and is available to contribute to surface runoff and groundwater recharge. The Thornthwaite surplus was subsequently partitioned into runoff and infiltration using infiltration factors based on site-specific soil type, land cover, and topographic conditions, in accordance with Tables 3.1 Hydrologic Cycle Component Values from the MECP Stormwater Management Planning and Design Manual. See Table 9 below for infiltration factors.

Table 9: MECP Infiltration Factors

Topography Infiltration Factors	
Flat Land, average slope < 0.6 m/km	0.3
Rolling Land, average slope 2.8 m to 3.8 m/km	0.2
Hilly Land, average slope 28 m to 47 m/km	**0.1**
Soils Infiltration Factors	
Tight impervious clay	0.1
Medium combinations of clay and loam	0.2
Open Sandy loam	**0.4**
Cover Infiltration Factors	
Cultivated Land	**0.1**
Woodland	0.2

Based on the existing and proposed site conditions the following were selected; hilly land with a factor of 0.1, open sandy loam with a factor of 0.4 and cultivated land with a factor of 0.1. Therefore, the total infiltration factor for the site is 0.6.

The following formulas were used to determine the annual infiltration and the annual runoff based on a surplus of 356mm/year and a total infiltration factor of 0.6.

Taking the infiltration factors and the surplus, the following is determined:

$$I_{recharge} = F \times SURP = 0.6 \times 356mm = 213.6mm$$

Runoff from pervious areas is then calculated:

$$R_{pervious} = (1 - F) \times SURP = 0.4 \times 356mm = 142.4mm$$

Therefore, for the site and soil type the annual soil recharge (infiltration) is **213.6mm/year** and the annual runoff on pervious areas is **142.4mm/year**.

Based on our predevelopment and post-development areas; the following formulas were used to calculate the change in groundwater recharge (infiltration) resulting from the proposed development and the change in total annual runoff volume leaving the site.

Recharge volumes for pre-development and post development:

$$V_{recharge,pre} = \frac{213.6mm}{1000} \times 7787.7m^2 = 1663.4m^3/year$$
$$V_{recharge,post} = \frac{213.6mm}{1000} \times 7{,}548.4m^2 = 1612.3m^3/year$$

Annual runoff pre-development and post-development:

$$Runoff_{predevelopmet} = \left(\frac{902mm}{1000} \times 4535.6m^2\right) + \left(\frac{142.4mm}{1000} \times 7787.7m^2\right) = 5035.9m^3/year$$

$$Runoff_{post\ development} = \left(\frac{902mm}{1000} \times 4592.9m^2\right) + \left(\frac{142.4mm}{1000} \times 7548.4m^2\right) = 5217.7m^3/year$$

Therefore, under post-development conditions, the site is expected to experience a groundwater recharge deficit of approximately **51.1 m³/year** and an increase in total runoff volume of approximately **181.8 m³/year** relative to pre-development conditions. See **Appendix E** for the Water Balance parameters and calculations.

8.1.3. WATER BALANCE CONCLUSIONS AND MITIGATION STRATEGY

Based on the results of the water balance assessment, under post-development conditions the site is anticipated to experience a groundwater recharge deficit of approximately **51.1 m³** per year and an increase in total runoff volume of approximately **181.8 m³** per year relative to existing conditions. These changes reflect the increased imperviousness associated with the proposed development and the corresponding reduction in pervious area.

At the detailed design stage, appropriate Low Impact Development (LID) measures will be evaluated to mitigate these changes by promoting on-site runoff volume reduction through infiltration, filtration, and evapotranspiration processes. Potential LID measures may include, but are not limited to, lined rain gardens and bioretention cells, infiltration or filtration trenches, permeable pavement systems, blue roof systems, enhanced topsoil and planting systems, and other source control measures, where site conditions permit.

However, the subject site is a previously developed **brownfield site** and is subject to **shallow groundwater conditions** and **potential soil contamination**. As such, direct infiltration practices may be constrained or prohibited due to the risk of contaminant leaching and groundwater quality impacts. In accordance with the *City of Ottawa Low Impact Development Technical Guidance Report (2021*), infiltration-based LIDs are not recommended where there is a risk of contamination to groundwater or mobilization of existing soil contaminants. In addition, the presence of a high groundwater table and shallow bedrock conditions would require a minimum vertical separation of 1.0 m between the base of any infiltration facility and the seasonally high groundwater table or underlying rock, which may not be achievable across the site without extensive excavation or dewatering. Additionally, based on the Geotechnical study it is anticipated that the site will require construction dewatering and the use of sump pumps as part of the development process.

Given these constraints, the preferred stormwater management approach at the detailed design stage may need to be focused on LID filtration and evapotranspiration-based practices, including lined bioretention facilities, blue roof systems, and landscaped surface controls, designed to reduce runoff volumes while preventing downward migration of runoff into potentially contaminated soils. Where feasible, multiple shallow and distributed LID facilities may be implemented throughout the site to collectively achieve the required runoff volume reduction and retention targets.

In addition, the incorporation of LID measures at the detailed design stage will be explicitly reflected in the stormwater quantity control design, and the post-development stormwater management system will be updated accordingly to account for the hydrologic benefits of the proposed LIDs in demonstrating compliance with the City of Ottawa's 5-year and 100-year peak flow control requirements.

9. EROSION AND SEDIMENT CONTROL

During construction, erosion and sediment controls will be implemented to prevent sediment runoff from leaving the site and entering the creek. A sediment control fence will be installed along the entire site perimeter to intercept runoff at all potential exit points. Inlet sediment control devices will also be placed in any catch basins and/or manholes in and around the site that may be affected by construction activities.

Straw bales will be installed downstream of the storm sewer outlet in the creek, during construction, as per OPSD 219.180. These bales will temporarily filter sediment runoff and will remain in place until the rip-rap is installed at the outlet for permanent erosion protection.

All erosion and sediment control measures will be constructed and maintained in compliance with Ontario Provincial Standard Specification (OPSS) 577.

10. CONCLUSION

The Assessment of Adequacy of Public Services report for the development at 1867 Alta Vista Drive, presents the rationale and details for the servicing requirements for the subject property. In accordance with the report's objectives, the servicing requirements for the development are summarized below:

Water Service:

- The new development will be services via two (2) 150mm diameter services connected to the existing 305mm PVC watermain located in Alta Vista Drive.
- The maximum fire flow required for the site is **10,000L/min** using the FUS method.
- Boundary conditions received from the City of Ottawa indicate that sufficient pressure is available to service the site.
- There are at least three (3) existing hydrants available to service the site. These will provide a combined fire flow of 13,300L/min.

Sanitary Service

- The total calculated wet wastewater flow from the proposed development is **6.5L/s**.
- There is an existing 250mm sanitary sewer located in Alta Vista north of the site, the existing sewer will need to be extended approximately 95 meters south along Alta Vista Drive to allow for connection to the site.
- The existing 250mm sanitary sewer in Alta Vista can accommodate the anticipated sanitary flows of 6.5L/s

Stormwater Management

- The 5-year post-development flows will be controlled to the 5-year pre-development and the 100-year post-development flows will be controlled to the 100-year pre-development.
- To match existing drainage conditions most flows will be directed east to the creek and there will be a small portion that will flow uncontrolled west to Alta Vista Drive, consistent with existing conditions.
- The allowable release rates at the 5 Year and 100 Year storms to Alta Vista Drive will be **27.14L/s** and **46.51L/s** respectively.
- The allowable release rates at the 5Year and 100Year storms to the creek will be **123.64L/s** and **211.87L/s** respectively.

- The required onsite storage at the 5 Year and 100 Year storms is **13.0m³** and **59.7m³** respectively.
- The storage may be achieved through a combination of roof storage, using controlled roof drains, and a proposed cistern in the underground parking garage. The cistern will be designed to pump at specified release rates for both the 5-year and 100-year storm events.
- 80%TSS removal will be achieved through use of a Jellyfish Membrane Filtration System.
- The stormwater quantity control design (5-year and 100-year events) will be updated at detailed design to explicitly include the proposed LID measures, and the overall stormwater management system will be refined accordingly to demonstrate compliance with City of Ottawa peak flow control requirements.
- During detailed design, review and approval will be required from the City of Ottawa, the RVCA and PSPC.

Water Balance

- The water balance assessment indicates a post-development groundwater recharge deficit of approximately **51.1 m³/year** and an increase in annual runoff volume of approximately **181.8 m³/year** relative to existing conditions.
- At the detailed design stage, appropriate Low Impact Development (LID) measures will be incorporated, where feasible, to offset the increased runoff volume and address the recharge deficit through filtration and evapotranspiration-based practices, in consideration of the site's brownfield conditions and shallow groundwater constraints.

Should you have any questions or require additional clarification regarding this report, please do not hesitate to contact the undersigned.

Best regards,

TAMARA HARB, P.Eng.
Municipal Engineer
1223 Michael St, Gloucester, ON K1J 7T2, Canada
tamara.harb@parsons.com
Mobile: +1 343.998.1436

Appendix A

Correspondence

Harb, Tamara [NN-CA]

From: Cassidy, Tyler <tyler.cassidy@ottawa.ca>
Sent: Thursday, December 11, 2025 9:19 AM
To: Harb, Tamara [NN-CA]
Subject: [EXTERNAL] RE: 479542_1867 Alta Vista Drive_ Storm connection location and parkland servicing
Attachments: 1867 Alta Vista Road December 2025.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Tamara,

Great timing – they just came in this morning. Find the results to your boundary condition request below:

The following are boundary conditions, HGL, for hydraulic analysis at 1867 Alta Vista Drive (zone 1E) assumed to be connected via two (2) connections on Alta Vista Drive and looped internally (see attached PDF for location).

Both Connections:
Minimum HGL = 110.0 m
Maximum HGL = 118.7 m
Max Day + Fire Flow (166.7 L/s) = 96.8 m

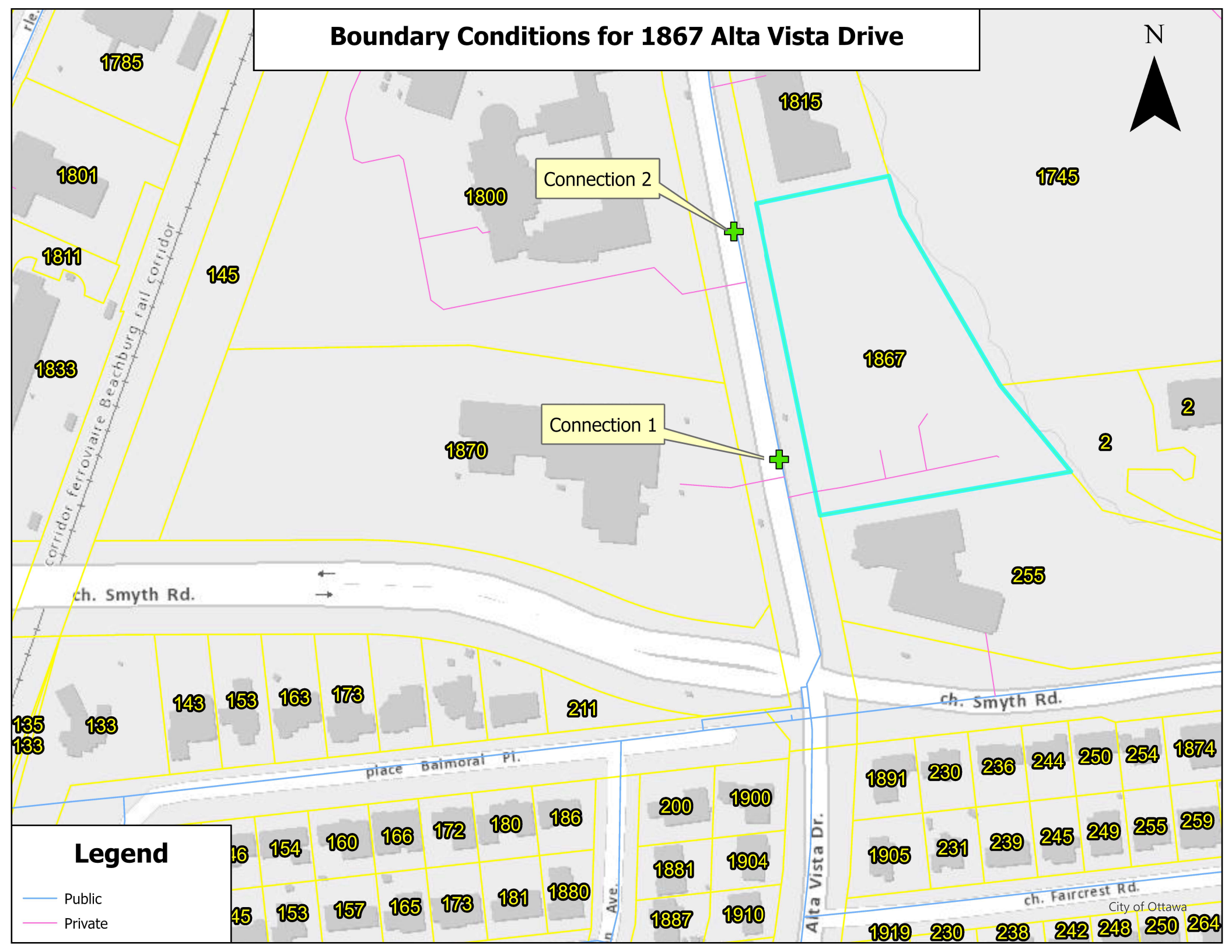
These are for current conditions and are based on computer model simulation.

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.

Thank you,

Tyler Cassidy, P.Eng
Infrastructure Project Manager,
Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 12977, Tyler.Cassidy@ottawa.ca

From: Tamara.Harb@parsons.com <Tamara.Harb@parsons.com>
Sent: December 11, 2025 9:00 AM
To: Cassidy, Tyler <tyler.cassidy@ottawa.ca>
Subject: RE: 479542_1867 Alta Vista Drive_ Storm connection location and parkland servicing


Boundary Conditions for 1867 Alta Vista Drive
N
Connection 2
Connection 1
1785
1801
1811
1833
1800
1815
1745
145
1867
1870
2
2
255
ch. Smyth Rd.
Corridor ferroviaire Beachburg rail corridor
place Balmoral Pl.
Alta Vista Dr.
ch. Faircrest Rd.
City of Ottawa
135
133
143
153
163
173
211
200
1900
1881
1904
1887
1910
1880
1891
230
236
244
250
254
1874
1905
231
239
245
249
255
259
1919
230
238
242
248
250
264
Legend
Public
Private

Harb, Tamara [NN-CA]

From: Cassidy, Tyler <tyler.cassidy@ottawa.ca>
Sent: Wednesday, September 17, 2025 12:46 PM
To: Harb, Tamara [NN-CA]
Cc: Scaramozzino, Tracey; Evan Johnson
Subject: [EXTERNAL] RE: 1867 Alta Vista OPA/ZBLA Submission Requirements

Hi Tamara,

The domestic demands your previously provided (listed below) for the boundary condition request do not match the calculated demands in the PDF. Can you please confirm which are correct? Please also confirm that the buildings will be internally looped on site via a private watermain.

- *Required Fire Flow per FUS: 116.7L/s*
- *Average Daily Demand: 1.2L/s*
- *Maximum Daily Demand: 3.9L/s*
- *Maximum Hourly Demand: 38.4L/s*

Flows based on earlier site concept plan

I can also confirm that there are no sanitary capacity constraints with the existing 250 mm dia. Sanitary sewer on Alta Vista Drive and we can accommodate your proposed 7.8 L/s wastewater flow.

Finally, I have not yet received a response from our Water Resources team on availability to discuss the water balance assessment for this application. The more information you can give me beforehand the better we will be able to schedule.

Thank you,

Tyler Cassidy, P.Eng
Infrastructure Project Manager,
Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 12977, Tyler.Cassidy@ottawa.ca

From: Tamara.Harb@parsons.com
Sent: September 10, 2025 12:00 PM
To: Cassidy, Tyler
Cc: Scaramozzino, Tracey ; Evan Johnson
Subject: RE: 1867 Alta Vista OPA/ZBLA Submission Requirements

THORNWAITE WATER BALANCE

Ottawa CDA WATER BUDGET MEANS FOR THE PERIOD 1945-2024 DC20492

LAT.... 45.38 WATER HOLDING CAPACITY... 75 MM HEAT INDEX... 37.84
LONG... 75.72 LOWER ZONE..... 45 MM A..... 1.097

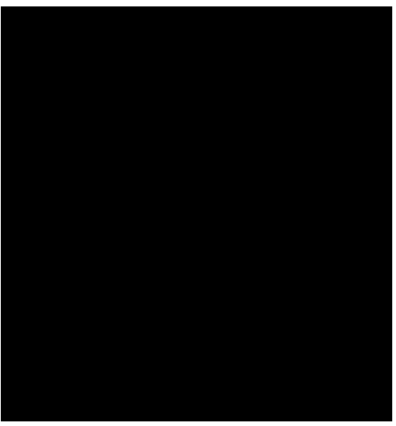
DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.1	59	11	16	0	0	0	26	70	74	287
28- 2	-8.6	53	11	20	1	1	0	30	91	75	340
31- 3	-2.4	62	32	74	6	6	0	100	47	75	401
30- 4	6.1	74	71	50	32	32	0	89	0	74	475
31- 5	13.3	77	77	0	81	81	0	14	0	56	551
30- 6	18.5	89	89	0	117	108	-9	4	0	33	639
31- 7	21.0	89	89	0	137	108	-29	1	0	13	729
31- 8	19.8	89	89	0	118	87	-31	1	0	14	817
30- 9	15.3	84	84	0	77	70	-7	3	0	25	900
31-10	8.8	79	78	0	39	38	-1	13	0	52	79
30-11	1.9	74	60	8	11	11	0	38	6	71	153
31-12	-6.2	73	26	16	1	1	0	37	37	75	227
AVE	6.4 TTL	902	717	184	620	543	-77	356			

Ottawa CDA STANDARD DEVIATIONS FOR THE PERIOD 1945-2024 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.1	24	13	18	1	1	0	27	39	4	57
28- 2	2.8	25	14	22	1	1	0	31	52	2	63
31- 3	2.6	29	21	42	5	5	0	49	69	0	73
30- 4	1.7	33	33	72	8	8	0	75	0	3	84
31- 5	1.9	36	36	0	12	12	0	25	0	22	96
30- 6	1.2	38	38	0	8	18	19	13	0	29	109
31- 7	1.2	40	40	0	9	30	32	7	0	21	118
31- 8	1.4	39	39	0	9	29	31	5	0	23	128
30- 9	1.5	35	35	0	8	14	14	13	0	24	125
31-10	1.6	36	36	2	7	7	2	22	0	26	36
30-11	1.8	26	27	9	4	4	0	30	9	9	43
31-12	3.1	28	22	15	2	2	0	29	29	1	52

Appendix B

Pre-Consultation Meeting Notes



File No.: PC2025-0051

March 20, 2025

Lisa Dalla Rosa
Fotenn
dallarosa@fotenn.com

Subject: Pre-Consultation: Meeting Feedback
Proposed Rezoning and Site Plan Control Application – 1867 Alta Vista Drive

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on **March 11, 2025**.

Additional comments are provided from the email received from you on March 19, 2025.

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.

Proposal Image, attendance and details from precon meeting:

1. 2, 9-storey residential buildings with 4-storey podiums at Alta Vista frontage
2. 445 du, unknown # of parking spaces; 283 are required for the du and visitor as per the zoning
3. Amenity amount is unknown (544 + 975 m2 is shown); 2670m2 is req'd as per the zoning
4. 928 m2 Parkland dedication, calculated at 10% of the buildable land area (does not include the creek setback lands as part of the base calculation, as it is un-buildable)
5. 2 amenity areas
6. Underground parking, mostly to be located under the building and hard surfaces, so as to not impede tree root growth on the surface
7. Applicant asked whether the City would prefer to have the buildings close to the Alta Vista ROW or setback, in keeping with the current built form.
8. They are considering an R5B [xxxx] zone

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.

2. 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. Policies and provisions: Official Plan, Secondary Plan

    a. Some high-level policies are met. Residential use is permitted; the proposal supports intensification, 15min n'hoods, supports transit, more diverse housing forms

b. Some policies are not met from the N'hood policies which has a cap at 4-storeys (the proposal is 9-storeys) – Policy 6.3.1 (2,34,5). Can these requirements be satisfied?

c. The Secondary Plan speaks to proper transitioning to lower density residential properties.

2. Zoning By-law

   a. Current zone: IP12 (note: IP12 does not permit residential)

   b. Draft Zoning By-Law: permits residential, but has max ht of 18m

   c. ZBLA has been requested from IP12 to R5B [xxxx] to permit the use, height

3. 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.

4. Wind Analysis, Preliminary is required if the proposed building is more than 2x the height of adjacent existing buildings and is proposed to be greater than 5-storeys. A secondary Wind Analysis could be required based on the results of the Preliminary study.

5. Shadow Analysis is required, due to the proposal being greater than 5-storeys and being within the Greenbelt

6. Ensure all zoning provisions especially for amenity, bicycle parking, vehicular parking are provided

7. Staff have confirmed that the typical area to be included when referring to taller buildings are areas within the same designation, that are contiguous without a major physical barrier. In this situation, the Beachburg Rail corridor would be seen as a dividing line which would mean that the majority of the buildings 'in the immediate vicinity of 1867 Alta Vista Drive' would be low-rise, non-residential uses.

8. The height of 9-storeys will require an OPA and a strong rationale. We look forward to seeing revised plans, taking all permissions and restrictions into account.

9. Please provide images/massing to show the building in-situ in the current and planned context.

10. As a follow up to the March 19, 2025 email from Lisa Dalla Rosa:

    a. Thank you for reaching out to the Councillor.

    b. An OPA would be required to request the 9-storeys, since the area is NOT characterized by taller buildings.

    c. Staff are willing to review a more shallow setback along Alta Vista Drive than what currently exists for the other properties. The intent of the 'evolving neighbourhood overlay' is to shift to a more urban condition, and not to replicate what is there now. I believe Christopher was asking to see massing/elevations with setbacks to assess the proposal more fully.

Feel free to contact tracey.scaramozzino@ottawa.ca, Planner, File Lead, for follow-up questions.

Urban Design (Christopher Moise):

1. The following element of the preliminary design are of concern:
    a. Establishing a low-rise expression fronting the right-of-way appears to be the right move.
    b. Establishing what the suitable height for the buildings requires additional analysis using massing models and a site section that includes the building heights and the street.
    c. Regarding the park relationship to the building to the north, there is sensitivity, and we recommend some separation to city lands from built form, especially if it is a nine-storey wall.
    d. The surrounding context employ significant building setbacks from the public right-of-way so additional analysis needs to focus on what an appropriate set-back for the buildings might be.
    e. See attached Urban Design Terms of Reference.

Engineering

Comments:

11. The Stormwater Management Criteria, for the subject site, is to be based on the following:

    a. Application of the IDF information derived from the Meteorological Services of Canada rainfall data, taken from the MacDonald Cartier Airport, collected 1966 to 1997.

    b. A calculated time of concentration (cannot be less than 10 minutes).

    a) Storm sewer outlets should not be submerged.

    c. The quantity control criteria is pre-to-post with the designated outlet being the creek bordering the easterly property line (5-year post-development flows controlled to 5-year pre-development, 100-year post-development controlled to 100-year pre-development.

    d. The pre-development condition is how the site is currently (gravel, asphalt and grass).

    e. Flows to the storm sewer in excess of the pre-development flow for the respective design storm must be detained on site for storms up to the 1:100 year return.

    f. The pre-development runoff coefficient or a maximum equivalent 'C' of 0.5, whichever is less (§ 8.3.7.3).

    g. Quality control criteria.: 'enhanced' target (80% TSS removal).

    h. A water balance assessment is required to support this application, due to the proximity of the adjacent watercourse. See the MECP Stormwater Management Planning and Design Manual (2003) for methodology.

12. Deep Services (Storm, Sanitary and/or Water Supply)

    a. Water: 305mm dia. PVC on Alta Vista Drive.

    b) Sanitary: We have record of an existing 200mm/250mm dia. SAN sewer on Alta Vista Drive. If the intent is to connect to this sewer, it will be the applicants responsibility to provide a CCTV inspection and stamped memo stating the sewer is in suitable condition for use.

    In the event a sewer extension is required, reach out to the Infrastructure Project Manager to obtain additional design requirements.

c) Stormwater: The designated outlet for the site is the creek bordering the eastern property line. Only a single outlet to the creek will be permitted and it is recommended to re-use the existing outlet if it is in suitable condition.

a) A sanitary monitoring maintenance hole is required.

b) Sewer connections to be made above the springline of the sewermain as per:

i. Std Dwg S11.1 for flexible main sewers – connections made using approved tee or wye fittings.

ii. Std Dwg S11 (For rigid main sewers) – lateral must be less that 50% the diameter of the sewermain,

iii. Std Dwg S11.2 (for rigid main sewers using bell end insert method) – for larger diameter laterals where manufactured inserts are not available; lateral must be less that 50% the diameter of the sewermain,

iv. Connections to manholes permitted when the connection is to rigid main sewers where the lateral exceeds 50% the diameter of the sewermain. – Connect obvert to obvert with the outlet pipe unless pipes are a similar size.

13. An MECP Environmental Compliance Approval **Municipal/Private Sewage Works** will likely be required for the proposed development. A Ministry contact has been provided below but please work with City staff on the need (or not) of an application.

a) Patrick Lalonde at (613) 521-3450 or Patrick.Lalonde@ontario.ca

14. Water

a) Water Boundary condition requests must include the location of the service (map or plan with connection location(s) indicated) and the expected loads required by the proposed development, including calculations. Please provide the following information:

i. Location of service

ii. Type of development

iii. The amount of fire flow required (per OBC or FUS).

iv. Average daily demand: ___ l/s.

v. Maximum daily demand: ___l/s.

vi. Maximum hourly daily demand: ___ l/s.

b. Looping of the private watermain will be required if average day demands are greater than 50m3/day.

c. Twin service connections are required for buildings with a unit count greater than 50.

15. Sanitary Sewer Capacity: At the time of the pre-consultation meeting, the downstream sewers on Smyth Road have are able to convey 8.99 L/s from this development. In the event the wastewater flows are greater than the anticipated 8.99 L/s, reach out to the Project Manager to determine if additional capacity is available.

16. If a fire route is placed over an underground parking structure, additional design requirements are required by Ottawa Fire Services. Please reach out to the Infrastructure Project Manager for additional design requirements.

17. Geotechnical Investigation report is required for this development.

18. A Slope Stability analysis is required to determine the developable area of this project. Assess the geotechnical setback and setback from natural hazards. Please include all relevant setbacks on the Site Plan, Grading & Servicing Plan.

Feel free to contact Tyler Cassidy, P.Eng., Project Manager, for follow-up questions.

Noise

Comments:

19. A road noise study is required.

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

Transportation

Comments:

20. Right-of-way protection (Alta Vista).

a) See Schedule C16 of the Official Plan.

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

21. A TIA is warranted, please proceed to Step 2 Scoping. The application will not be deemed complete without Step 2 being submitted at least 14 calendar days prior to a Phase 3 pre-consultation or formal application. A TIA Strategy report (Step

3) with the Synchro files will be required at or prior to the formal application. Refer to the City of Ottawa website for the updated July 2023 TIA process: Transportation Impact Assessment Guidelines | City of Ottawa.

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

Environment

1. The current plan appears to have development within the watercourse setback. This setback is enabled in section 4.9.3 of the Official Plan, which reads:

> "2) Where a Council-approved watershed, subwatershed or environmental management plan does not exist, or provides incomplete recommendations, the minimum setback from surface water features shall be the greater of the following:
>
> a) Development limits as established by the conservation authority's hazard limit, which includes the regulatory flood line, geotechnical hazard limit and meander belt;
>
> b) Development limits as established by the geotechnical hazard limit in keeping with Council approved Slope Stability Guidelines for Development Applications;
>
> c) 30 metres from the top of bank, or the maximum point to which water can rise within the channel before spilling across the adjacent land; and
>
> d) 15 metres from the existing stable top of slope, where there is a defined valley slope or ravine."

2. It is likely that this development is within the setbacks established in a), c), and d). Note that a) and d) are geotechnical hazards and that exceptions to these should be discussed with the City's project managers and the Conservation Authority.

3. The 30m setback in c), however, is an ecological one. The watercourse in question is entombed both upstream and downstream of the exposed stretch upon which the site exists. As a result of this, it is possible that the full 30m setback may not be necessary here – the stream may be degraded to the point that a reduced setback is justified.

4. If the applicant seeks a reduction in this setback, the proper tool to do so is an Environmental Impact Statement (EIS). The EIS must investigate the ecological function of the watercourse and take all measures necessary to ensure that no negative impact to the features or functions occurs as a result of the development.

5. Note that the provisions of policy 7) of section 4.9.3 will guide staff's review. That policy reads:

> "7) Exceptions to the setbacks in Policy 2) shall be considered by the City in consultation with the conservation authority in situations where development is proposed on existing lots where, due to the historical development in the area, it is impossible to achieve the minimum setback because of the size or location of the lot, approved or existing use on the lot or other physical constraint, providing the following conditions are met to the City's satisfaction:
>
> a) The ecological function of the site is restored and enhanced, to the greatest extent possible, through naturalization with native, non-invasive vegetation and bioengineering techniques to mitigate erosion and stabilize soils; and
>
> b) Buildings and structures are located, or relocated, to an area within the existing lot that improves the existing setback, to the greatest extent possible, and does not encroach closer to the surface water feature."

6. The City will be seeking as great a setback as possible (without preventing development), while also showing substantial replanting between the development and the watercourse.

7. In addition to the watercourse setbacks, an EIS is also required to address natural heritage feature present in the area. Other matters that must be addressed are potential significant woodlands, potential significant valleylands, and species-at-risk habitat. Note that black ash may be present on site; previous works that may inform the current application may not have included black ash as it was only recently added (back) to the endangered species list.

8. The City's Bird Safe Design Guidelines apply to any residential development over 4 storeys in height. Of particular note is Guideline 2, requiring mitigation measures for 90% of glazing below 16m.

9. While it is expected that plantings between the development and the watercourse will be required as part of the setback exemption, please consider additional

plantings on site wherever possible to help meet the urban forest canopy goals and to reduce the impacts of climate change and the urban heat island effect. In particular, Staff would prefer to see an increasing gradation of density, diversity, and naturalization in plantings as proximity to the watercourse buffer increases. Please note that the City prefers that all plantings be of native and non-invasive species.

Feel free to contact mark.elliott@ottawa.ca, Environmental Planner, for follow-up questions.

Forestry

Comments:

- A Tree Conservation Report and Landscape Plan are submission requirements. The TCR and EIS can be combined.
- Section 4.8.2 of the Official Plan, policies 3 a and b respectively must be adhered to:
    - 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;
    - 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;
- There are Secondary Plan policies relevant to trees that must be followed:
    - Section 2 – Policy 2) Where lot sizes vary as a result of redevelopment, street trees at the same interval as the established street tree alignment must be provided in order to maintain streetscape continuity.
        - The Alta Vista Drive Minor Corridor from Dale Avenue to Heron Road, excluding that portion of Alta Vista Drive from the Green Transportation and Utility Corridor to Smyth Road; and
    - Section 2- Policy 3) For new development, existing mature vegetation (trees, shrubs) is to be retained or replaced with vegetation of comparable size, where possible. Where not possible, there shall be a reinstatement of an appropriate quantity and quality of urban tree canopy on the site of the development.
- Removal of a healthy City owned tree from the Right of Way is not permitted unless justified. Locate drive isles, services, drainage features…etc. with least impact to existing trees. If removal of a City of Ottawa tree is justified, monetary compensation and replacement planting will be required. Monetary compensation would have to be paid before the tree removal permit is released for the site.
- A parking garage design that underlays the buildings and hard surfaces (i.e. surface parking lot and drive isle) is desirable. Providing unencumbered soft

landscaped amenity areas would be highly desirable for tree planting and align well with policies in Section 4.8.2 of the OP.

- Ensure the Geotechnical Investigation provides recommendations on tree planting setbacks. If a parking garage is present, please have the consultant address how this influences tree planting if sensitive soils are present.
- Prioritize large canopy native tree species especially in proximity to the rear lot line. Plantings along the rear property should reflect naturalized forest habitat. If restoration planting stock is proposed, maintenance information should be included on the LP. Restoration stock (e.g. pots) should not be planted closer than 2m from each other.

Tree Conservation Report requirements. The following Tree Conservation Report (TCR) requirements have been adapted from the Schedule E of the Urban Tree Protection Guidelines – for more information on these requirements please contact hayley.murray@ottawa.ca

- A Tree Conservation Report (TCR) must be supplied for review along with the suite of other plans/reports required by the City
- Any tree 10 cm in diameter or greater and City-owned trees of any diameter requires a tree permit issued under the Tree Protection Bylaw (Bylaw 2020 – 340); the permit will be based on an approved TCR and made available at or near plan approval.
- The TCR must contain 2 separate plans/maps:
  i. Plan/Map 1 - show existing conditions with tree cover information.
  ii. Plan/Map 2 - show proposed development with tree cover information.
- The TCR must list all trees on site, as well as off-site trees if the CRZ (critical root zone) extends into the developed area, by species, diameter, and health condition. Please note that averages can be used if there are forested areas.
- Please identify trees by ownership – private onsite, private on adjoining site, city owned, co-owned (trees on a property line)
- If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained.
- The removal of trees on a property line will require the permission of both property owners.
- All retained trees must be shown, and all retained trees within the area impacted by the development process must be protected as per City guidelines available at Tree Protection Specification or by searching Ottawa.ca
- The City encourages the retention of healthy trees; if possible, please seek opportunities for retention of trees that will contribute to the design/function of the site.
- Removal of a City tree is not permitted unless justified. If justified, monetary compensation for the value of the tree must be paid before a tree removal permit is issued.

Landscape Plan (LP) requirements

- Landscape Plan Terms of Reference must be adhered to for all tree planting: Click Here. For more information on these requirements please contact hayley.murray@ottawa.ca

Additional Elements for Tree Planting in the Right of Way:

- Please ensure any retained trees are shown on the LP
- Sensitive Marine Clay - Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines.
- Soil Volume - Please demonstrate as per the Landscape Plan Terms of Reference that the available soil volumes for new plantings will meet or exceed the minimum soil volumes requested.
- The city requests that consideration be given to planting native species wherever there is a high probability of survival to maturity.
- Efforts shall be made to provide as much future canopy cover as possible at a site level, through tree planting and tree retention. The Landscape Plan shall show/document that the proposed tree planting and retention will contribute to the City's overall canopy cover over time. Please provide a projection of the future canopy cover for the site to 40 years

- Minimum Setbacks
  - Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.
  - Maintain 2.5m from curb
  - Coniferous species require a minimum 4.5m setback from curb, sidewalk, or MUP/cycle track/pathway.
  - Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing, except where otherwise approved in naturalization / afforestation areas.
  - Adhere to Ottawa Hydro's planting guidelines (species and setbacks) when planting around overhead primary conductors.

- Tree specifications
  - Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.
  - Maximize the use of large deciduous species wherever possible to maximize future canopy coverage.

- Tree planting on city property shall be in accordance with the City of Ottawa's Tree Planting Specification; and if possible, include watering and warranty as described in the specification.
- No root barriers, dead-man anchor systems, or planters are permitted.
- No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

Feel free to contact Hayley Murray, Planning Forester, for follow-up questions.

Parkland

Comments:

22. Please provide total developable land area excluding the watercourse setback.

23. A block west and equivalent in width to the park block up to the watercourse should be transferred to the City. Such block area is not to be counted toward parkland dedication.

Feel free to contact steve.gauthier@ottawa.ca for follow-up questions.

Conservation Authority

A portion of the subject lands at 1867 Alta Vista Drive are located within RVCA's Regulated Area due to a river/stream valley associated with the adjacent watercourse. RVCA's regulated extends 15 metres from the extent of the erosion hazard. Any site alteration or development within the regulated area on the property would require a permit from RVCA following the planning process.

RVCA has a mandate through provincial legislation to regulate development and site alteration within and directly adjacent to natural features (i.e., valley and stream corridors and wetlands) and areas subject to natural hazards, such as flooding, erosion, unstable soils/bedrock. The purpose of the legislation is to ensure people and property are being protected from natural hazards.

Requirements for Review of Future Planning Act Applications

1. It is the expectation of RVCA staff that all development will be appropriately setback from the erosion hazard associated with the stream/river valley. RVCA policies and

Provincial guidelines require a 6 metre setback from the erosion hazard as determined through the applicable technical studies in order to provide for an erosion access allowance (i.e., an unencumbered area free and clear of any structures, both above and below ground, established to provide space for machinery/equipment and workers to access a slope area and undertake repairs/maintenance in the event that there is erosion or slope instability issues.

2. Slope stability/erosion hazard assessment – Report to delineate the extent of the erosion hazard associated with the river/stream valley slope.

3. Stormwater management report – Outlining how the proposed stormwater management design conforms with requirements for water quantity (i.e., controls to protect downstream properties from flood increases due to upstream development) and water balance (i.e., matching the pre-development proportions of infiltration, runoff, and evapotranspiration) per the Ministry of Environment, Conservation and Parks' Stormwater Management Planning and Design Manual.

4. Shoring and foundation plans - Details for the proposed excavation and shoring methods to be utilized for any proposed excavation. Details regarding proposed mitigation measures/foundation treatments for reducing risks associated with undertaking site alteration and construction within sensitive/unstable soils.

5. Dewater plan - If dewatering is required as a component of the development, a plan/report should be submitted that identifies the applicable details (e.g., how long will dewatering occur, what are the anticipated volumes, where will water be discharged to and what method/set up will be used to discharge the water).

6. Engineering Drawings/Plans – Including Site Plan, Grading Plan, Site Servicing Plan, Erosion and Sediment Control Plan, cross-sections and associated details.

7. Current topographic survey of the property prepared by an Ontario Land Surveyor.

8. Landscape restoration plans – Outlining how disturbed areas around the river/stream corridor will be protected/stabilized/naturalized.

Feel free to contact Stephen.bohan@rvca.ca, for follow-up questions.

Community issues

Comments:

24. The Community was not invited to the pre-consultation meeting.

Other

25. 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 and will be applicable to Site Plan Control and Plan of Subdivision applications.

    a) The HPDS was passed by Council on April 13, 2022, but is not in effect at this time, as Council has referred the 2023 HPDS Update Report back to staff with the direction to bring forward an updated report to Committee at a later date. The timing of an updated report to Committee is unknown at this time, and updates will be shared when they are available.

    b) Please refer to the HPDS information at ottawa.ca/HPDS for more information.

26. Under the Affordable Housing Community Improvement Plan, a Tax Increment Equivalent Grant (TIEG) program was created to incentivize the development of affordable rental units. It provides a yearly fixed grant for 20 years. The grant helps offset the revenue loss housing providers experience when incorporating affordable units in their developments.

    a. To be eligible for the TIEG program you must meet the following criteria:

        i. the greater of five units OR 15 per cent of the total number of units within the development must be made affordable

        ii. provide a minimum of 15 per cent of each unit type in the development as affordable

        iii. enter into an agreement with the city to ensure the units maintain affordable for a minimum period of 20 years at or below the city-wide average market rent for the entire housing stock based on building form and unit type, as defined by the Canada Mortgage and Housing Corporation

        iv. must apply after a formal Site Plan Control submission, or Building Permit submission for projects not requiring Site Plan Control, and prior to Occupancy Permit issuance

b. Please refer to the TIEG information *at Affordable housing community improvement plan / Plan d'améliorations communautaires pour le logement abordable for more details or contact the TIEG coordinator via email at affordablehousingcip@ottawa.ca.*

Submission Requirements and Fees

1. Zoning By-Law Amendment and Site Plan Control Application
    a. Additional information regarding fees related to planning applications can be found here.
2. The attached **Study and Plan Identification List** outlines the information and material that has been identified as either required (R) or advised (A) as part of a future complete application submission.
3. The required plans and studies **must meet all 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.
4. All of the above comments or issues should be addressed to ensure the effectiveness of the application submission review.

Should there be any questions, please do not hesitate to contacts identified for the above disciplines.

Regards,
Tracey Scaramozzino

c.c. SME's as per above

Appendix C

Water Calculations and Fire Hydrant Locations

Water Supply Calculations

Date	12/1/2025
Project Name	1867 Alta Vista
Address	1867 Alta Vista
Prepared by	Tamara Harb, P.Eng

Domestic Demands			
Property Type	**Persons per unit**	**Number of units**	**Population**
Studio	1.4	73	102.2
1 Bedroom Apartment	1.4	95	133
1 Bedroom + Den	2.1	53	111.3
2 Bedroom Apartment	2.1	70	147
2 Bedroom + Den	3.1	5	15.5
3 Bedroom Apartment	3.1	13	40.3
	Total	**309**	**549.3**

Average Water Consumption Rate	280	L/c/d	
Average Day Demand	**153804.0**	**L/d**	**1.78 L/s**
Maximum Day Factor	2.50		**City of Ottawa Guidelines (Table 4.2)**
Maximum Daily Demand	**384510.0**	**L/d**	**4.45 L/s**
Peak Hour Factor	2.20		**City of Ottawa Guidelines (Table 4.2)**
Maximum Hour Demand	**845922.0**	**L/d**	**9.79 L/s**

Commerical Demands					
Property Type	**Unit**	**Rate**	**Units**		**Demand (L/d)**
Amenity	28000	L/ha/d	0.185	ha	5191.2
				Total	**5191.2**

Average Day Demand	**5,191**	**L/d**	**0.060 L/s**
Maximum Day Factor	1.5		(City of Ottawa Design Guidelines-Table 4.2)
Maximum Daily Demand	**7,787**	**L/d**	**0.090 L/s**
Peak Hour Factor	1.8		(City of Ottawa Design Guidelines-Table 4.2)
Maximum Hour Demand	**14,016**	**L/d**	**0.162 L/s**

Domestic plus Commerical/Amenity		
Average Day Demand	**1.8**	**L/s**
Maximum Daily Demand	**4.5**	**L/s**
Maximum Hour Demand	**10.0**	**L/s**

Assuming a maximum velocity of 1.8m/s, the diameter of pipe is calculated as:

Minimum pipe diameter (d) =	$(4Q/\pi V)^{1/2}$	
=	0.084	m
=	84	mm
Proposed pipe diameter (d) =	**150**	mm
=	**6**	Inches

Fire Flow Calculations

Project 479542 - 1867 Alta Vista Drive
Date December 1, 2025
Method Fire Underwriters Survey (FUS)
Prepared by Tamara Harb, P.Eng.

Step	Task	Term	Options	Multiplier	Choose:	Value	Unit	Fire Flow
Structural Framing Material								
1	Choose frame used for building	Coefficient C related to the type of construction	Type V - Wood Frame	1.5	Type II Non-combustible construction	**0.8**		
			Type IV-A Mass Timber Construction	0.8				
			Type IV-B Mass Timber Construction	0.9				
			Type IV-C Mass Timber Construction	1.0				
			Type IV-D Mass Timber Construction	1.5				
			Type III Ordinary Construction	1.0				
			Type II Non-combustible construction	0.8				
			Type I Fire resistive construction	0.6				
Floor Space Area (A)								
2	Building Footprint					**5,764**	m^2	
3	Obtain fire flow before reductions	Required fire flow *(rounded to nearest 1,000 L/min)*	Fire Flow = 220 x C x $A^{0.5}$				L/min	**14,000**
Reductions or surcharge due to factors affecting burning								
4	Choose combustibility of contents	Occupancy hazard reduction or surcharge	Non-combustible	-25%	Limited combustible	**-15%**	L/min	**11,900**
			Limited combustible	-15%				
			Combustible	0%				
			Free burning	15%				
			Rapid burning	25%				
5	Choose reduction for sprinklers	Sprinkler reduction	Full automatic sprinklers	-30%	True	**-30%**	L/min	**5,950**
			Water supply is standard for both the system and fire department hose lines	-10%	True	**-10%**		
			Fully supervised system	-10%	True	**-10%**		
6	Choose separation	Exposure distance between units	North Side	10.1 to 20m	15%		L/min	**9,520**
			East Side	>30m	0%			
			West Side	>30m	0%			
			South Side	10.1 to 20m	15%	**30%**		
Net required fire flow								
7	Obtain fire flow, duration, and volume	Minimum required fire flow rate (rounded to nearest 1000)					L/min	**10,000**
		Minimum required fire flow rate					L/s	**166.7**
		Required duration of fire flow					hr	**2**

1867 Alta Vista Drive
Hydrant Coverage Map

- Hydrant Within 75m
- Hydrant Within 150m

Appendix D

Wastewater Calculations

Sanitary Flow Calculations

Project: 1867 Alta Vista
Location: 1867 Alta Vista
Designed: Tamara Harb, P.Eng
Date: 12/17/2025

Sanitary Design Parameters
Commercial & Institutional Flow = 28000 L/ha/day
Light Industrial Flow = 35000 L/ha/day
Heavy Industrial Flow = 55000 L/ha/day
Maximum Residential Peak Factor = 4.0
Commercial & Institutional Peak Factor = 1.5
Average Daily Flow = 280 L/p/day
Industrial Peak Factor = as per Appendix 4-B
Extraneous Flow = 0.33 L/s/ha

Pipe Design Parameters
Maximum Velocity = 3.00 m/s
Minimum Velocity = 0.60 m/s
Manning's n = 0.013

LOCATION			RESIDENTIAL						COMMERCIAL		INDUSTRIAL			INSTITUTIONAL		C+I+I	INFILTRATION			TOTAL FLOW, Q (L/s)	PIPE						
STREET	FROM	TO	AREA (ha)	POP.	ACCU. AREA (ha)	ACCU. POP.	PEAK FACT.	PEAK FLOW (L/s)	AREA (ha)	ACCU. AREA (ha)	AREA	ACCU. AREA (ha)	PEAK FACT.	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (L/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (L/s)		LENGTH (m)	DIA. (mm)	SLOPE (%)	MATERIAL	CAP. Q(FULL) (L/s)	VEL. V(FULL) (m/s)	RATIO Q /QFULL
Alta Vista Drive	Bldg Parking Garage	PROP SAN MH in Alta Vista	1.210	549.3	1.210	549.3	3.4	6.01	0.185	0.185	0.00	0.00	0.0	0.0	1.5	0.09	1.210	1.210	0.40	6.50	13.5	150	1.00%	PVC	15.23	0.86	0.43

Appendix E

Stormwater and Water Balance Calculations

PARSONS

1867 Alta Vista Drive

Project No.: 479542

Date: 12/02/2025

Designer: Tamara Harb, P.Eng

Pre-Development Catchments

WATERSHED	C = 0.2	C=0.7	C = 0.90	Total Area (m^2)	Total Area (ha)	Combined C
EWS-01 to Alta Vista	684.1	0.0	1189.8	1873.9	0.187	0.64
EWS-02 to Creek	7103.6	0.0	3163.9	10267.5	1.027	0.42
TOTAL	**7787.7**	**0.0**	**4353.6**	**12141.4**	**1.214**	**0.45**

Post-Development Catchments

Alta Vista

WATERSHED	C = 0.20	C = 0.70	C = 0.90	Total Area (m^2)	Total Area (ha)	Combined C
WS-01 Uncontrolled to Alta Vista	640.15	0.00	427.1	1067.25	0.107	0.48
WS-02 Uncontrolled to Alta Vista	202.76	0.00	79.7	282.46	0.028	0.40
TOTAL	**842.9**	**0.0**	**506.8**	**1349.7**	**0.135**	**0.46**

Creek

WATERSHED	C = 0.20	C = 0.70	C = 0.90	Total Area (m^2)	Total Area (ha)	Combined C
WS-03 Uncontrolled to Creek	4713.00	0.00	0	4713.00	0.471	0.20
WS-04 Controlled to Creek	1992.52	0.00	4086.13	6078.65	0.608	0.67
TOTAL	**6705.5**	**0.0**	**4086.1**	**10791.7**	**1.079**	**0.47**

	C = 0.20	C = 0.70	C = 0.90	Total Area (m^2)	Total Area (ha)	Combined C
Total Areas for Entire Site	**7548.43**	**0.00**	**4592.93**	**12141.4**	**1.214**	**0.46**

PARSONS

1867 Alta Vista Drive
Project No.: 479542
Date: 12/02/2025
Designer: Tamara Harb, P.Eng

Stormwater Management
Design Sheet
5-Year Post to 5-Year Pre to Creek

Runoff Equation

Q = 2.78CIA (L/s)
C = Runoff coefficient
I = Rainfall intensity (mm/hr) = $A / (Td + C)^B$
A = Area (ha)
T_c = Time of concentration (min)

Pre-development Stormwater Management - 5 Year Storm

5 year storm

$I_5 = 998.071 / (Td + 6.053)^{0.814}$ **a = 998.071** **b = 0.814** **c = 6.053**

C = 0.42 max of 0.5 as per City of Ottawa
I = 104.2 mm/hr
Tc = 10 min
Total Area = 1.027 ha

Allowable Release Rate= 123.64 L/s

5412.597

6727.443

Post-development Stormwater Management

					$\sum R_{2\&5}$
	Total Site Area =	**1.079**	ha	**∑R=**	
Controlled	WS-04 Controlled to Creek	0.608	ha	R=	0.67
	Total Controlled (Through ICD)	**0.608**	**ha**	**∑R=**	**0.67**
Un-controlled	WS-03 Uncontrolled to Creek	0.471	ha	R=	0.20
	Total Un-Controlled =	**0.471**	**ha**	**∑R=**	**0.20**

Post-development Stormwater Management (Uncontrolled Catchments)

5 Year Storm Event:

$I_5 = 998.071 / (Td + 6.053)^{0.814}$ **a = 998.071** **b = 0.814** **c = 6.053**

Time (min)	Intensity (mm/hr)	Uncontrolled Runoff (L/s)	Controlled Release Rate Constant (L/s)	Total Release Rate (L/s)
10	104.2	27.30	0.00	27.30

Post-development Stormwater Management (Controlled)

5 Year Storm Event:

$I_5 = 998.071 / (Td + 6.053)^{0.814}$ **a = 1735.688** **b = 0.820** **c = 6.014**

		Storage Required				
Time (min)	Intensity (mm/hr)	Controlled Runoff (L/s)	Storage Volume (m^3)	Controlled Release Rate Constant (L/s)	Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
10	104.2	118.06	13.04	96.34	0.00	96.34
15	83.6	94.68	0.00	96.34	0.00	96.34
20	70.3	79.60	0.00	96.34	0.00	96.34
25	60.9	69.00	0.00	96.34	0.00	96.34
30	53.9	61.11	0.00	96.34	0.00	96.34
35	48.5	54.98	0.00	96.34	0.00	96.34
40	44.2	50.07	0.00	96.34	0.00	96.34
45	40.6	46.04	0.00	96.34	0.00	96.34
50	37.7	42.67	0.00	96.34	0.00	96.34
60	32.9	37.33	0.00	96.34	0.00	96.34
70	29.4	33.28	0.00	96.34	0.00	96.34
80	26.6	30.10	0.00	96.34	0.00	96.34
90	24.3	27.52	0.00	96.34	0.00	96.34
100	22.4	25.39	0.00	96.34	0.00	96.34
110	20.8	23.59	0.00	96.34	0.00	96.34
120	19.5	22.06	0.00	96.34	0.00	96.34

Total Storage Required = 13.04 m^3

PARSONS

1867 Alta Vista Drive
Project No.: 479542
Date: 12/02/2025
Designer: Tamara Harb, P.Eng

Stormwater Management
Design Sheet
100-Year Post to 100-Year Pre to Creek

Runoff Equation

Q = 2.78CIA (L/s)
C = Runoff coefficient
I = Rainfall intensity (mm/hr) = A / (Td + C) ^{B}
A = Area (ha)
T_c = Time of concentration (min)

Pre-development Stormwater Management - 100 Year Storm

100 year storm

I_{100} = **1735.688 / (Td + 6.014)$^{0.820}$** **a = 1735.688** **b = 0.820** **c = 6.014**

C =	0.42	max of 0.5 as per City of Ottawa
I =	178.6	mm/hr
Tc =	10	min
Total Area =	1.027	ha

Allowable Release Rate= **211.87** L/s

Post-development Stormwater Management

					$\sum R_{2\&5}$	$\sum$R100
	Total Site Area =	**1.079**	ha	**∑R=**		
Controlled	WS-04 Controlled to Creek	0.608	ha	R=	0.67	0.84
	Total Controlled	**0.608**	**ha**	**∑R=**	**0.67**	**0.84**
Un-controlled	WS-03 Uncontrolled to Creek	0.471	ha	R=	0.20	0.25
	Total Un-Controlled =	**0.471**	**ha**	**∑R=**	**0.20**	**0.25**

Post-development Stormwater Management (Uncontrolled)

100 Year Storm Event:

I_{100} = **1735.688 / (Td + 6.014)$^{0.820}$** **a = 1735.688** **b = 0.820** **c = 6.014**

Time (min)	Intensity (mm/hr)	Uncontrolled Runoff (L/s)	Controlled Release Rate Constant (L/s)	Total Release Rate (L/s)
10	178.6	58.49	0.00	58.49

Post-development Stormwater Management (Controlled)

100 Year Storm Event:

I_{100} = **1735.688 / (Td + 6.014)$^{0.820}$** **a = 1735.688** **b = 0.820** **c = 6.014**

		Storage Required				
Time (min)	Intensity (mm/hr)	Controlled Runoff (L/s)	Storage Volume (m^3)	Controlled Release Rate Constant (L/s)	Uncontrolled Runoff (L/s)	Total Release Rate (L/s)
10	178.6	252.91	59.72	153.38	0.00	153.38
15	142.9	202.40	44.11	153.38	0.00	153.38
20	120.0	169.90	19.82	153.38	0.00	153.38
25	103.8	147.09	0.00	153.38	0.00	153.38
30	91.9	130.12	0.00	153.38	0.00	153.38
35	82.6	116.97	0.00	153.38	0.00	153.38
40	75.1	106.44	0.00	153.38	0.00	153.38
45	69.1	97.80	0.00	153.38	0.00	153.38
50	64.0	90.59	0.00	153.38	0.00	153.38
60	55.9	79.17	0.00	153.38	0.00	153.38
70	49.8	70.52	0.00	153.38	0.00	153.38
80	45.0	63.73	0.00	153.38	0.00	153.38
90	41.1	58.23	0.00	153.38	0.00	153.38
100	37.9	53.69	0.00	153.38	0.00	153.38
110	35.2	49.86	0.00	153.38	0.00	153.38
120	32.9	46.59	0.00	153.38	0.00	153.38

Total Storage Required = **59.72** **m^3**

PARSONS

1867 Alta Vista Drive
Project No.: 479542
Date: 12/02/2025
Designer: Tamara Harb, P.Eng

Stormwater Management
Design Sheet
100-Year Post to 100-Year Pre to Alta Vista

Runoff Equation

Q = 2.78CIA (L/s)
C = Runoff coefficient
I = Rainfall intensity (mm/hr) = A / (Td + C) ^{B}
A = Area (ha)
T_c = Time of concentration (min)

Pre-development Stormwater Management - 5 Year Storm

100 year storm

I_{100} = **1735.688** / **(Td + 6.014)$^{0.820}$** **a = 1735.688** **b = 0.820** **c = 6.014**

C =	0.50	max of 0.5 as per City of Ottawa
I =	178.6	mm/hr
Tc =	10	min
Total Area =	0.187	ha

Allowable Release Rate= **46.51** L/s

5412.597

6727.443

Post-development Stormwater Management

					$\sum R_{2\&5}$
	Total Site Area =	**0.135**	ha	**∑R=**	
	WS-01 Uncontrolled to Alta Vista	0.107	ha	R=	0.48
	WS-02 Uncontrolled to Alta Vista	0.028	ha	R=	0.40
	Total Un-Controlled =	**0.135**	**ha**	**∑R=**	**0.46**

Post-development Stormwater Management (Uncontrolled Catchments)

100 Year Storm Event:

I_{100} = **1735.688** / **(Td + 6.014)$^{0.820}$** **a = 1735.688** **b = 0.820** **c = 6.014**

Time (min)	Intensity (mm/hr)	Uncontrolled Runoff (L/s)	Controlled Release Rate Constant (L/s)	Total Release Rate (L/s)
10	178.6	31.01	0.00	31.01

PARSONS

1867 Alta Vista Drive
Project No.: 479542
Date: 12/02/2025
Designer: Tamara Harb, P.Eng

Stormwater Management
Design Sheet
5-Year Post to 5-Year Pre to Alta Vista

Runoff Equation

Q = 2.78CIA (L/s)
C = Runoff coefficient
I = Rainfall intensity (mm/hr) = A / (Td + C) ^{B}
A = Area (ha)
T_c = Time of concentration (min)

Pre-development Stormwater Management - 5 Year Storm

5 year storm

I_5 = 998.071/ (Td + 6.053)$^{0.814}$ **a = 998.071** **b = 0.814** **C = 6.053**

C =	0.50	max of 0.5 as per City of Ottawa
I =	104.2	mm/hr
Tc =	10	min
Total Area =	0.187	ha

Allowable Release Rate= **27.14** L/s 0.081 806.614

5412.597

6727.443

Post-development Stormwater Management

					$\sum R_{2\&5}$
	Total Site Area =	**0.135**	ha	**∑R=**	
	WS-01 Uncontrolled to Alta Vista	0.107	ha	R=	0.48
	WS-02 Uncontrolled to Alta Vista	0.028	ha	R=	0.40
	Total Un-Controlled =	**0.135**	**ha**	**∑R=**	**0.46**

Post-development Stormwater Management (Uncontrolled Catchments)

5 Year Storm Event:

I_5 = 998.071/ (Td + 6.053)$^{0.814}$ **a = 998.071** **b = 0.814** **C = 6.053**

Time (min)	Intensity (mm/hr)	Uncontrolled Runoff (L/s)	Controlled Release Rate Constant (L/s)	Total Release Rate (L/s)
10	104.2	18.09	0.00	18.09

PARSONS

Storm Design Parameters

1867 Alta Vista Drive
Project No.: 479542
Date: 12/02/2025
Designer: Tamara Harb, P.Eng

Rational Method Q = 2.78CIA

Q = Peak flow in litres per second (L/s)
A = Drainage area in hectares (ha)
C = Runoff coefficient
I = Rainfall intensity (mm/hr)

Runoff Coefficient (C)	
Grass	0.20
Gravel	0.70
Asphalt / rooftop	0.90

Ottawa Macdonald-Cartier International Airport IDF curve equation (10 year event, intensity in mm/hr)

I100 = 1735.688 / (Td + 6.014)0.820

Min. velocity = 0.80 m/s
Manning's "n" = 0.013

LOCATION			AREA (ha)			FLOW						STORM SEWER							
WATERSHED / STREET	FROM	TO	C = 0.20	C = 0.70	C = 0.90	Indiv. 2.78AC	Accum. 2.78AC	Time of Conc. (min.)	Rainfall Intensity (mm/hr)	Peak Flow Q (L/s)	Controlled Flow Q (L/s)	Pipe Diameter (mm)	Type	Slope (%)	Length (m)	Capacity Full (L/s)	Velocity Full (m/s)	Time of Flow (min.)	Ratio (Q/Q_{FULL})
WS-04			0.199	0.000	0.409	1.133	1.133	10.00	178.6	202.33	153.38	375	PVC	2.00%	30.0	248.0	2.25	0.22	0.62

1867 Alta Vista Drive
Project No.: 479542
Date: 12/02/2025
Designer: Tamara Harb, P.Eng

Water Balance Assessment

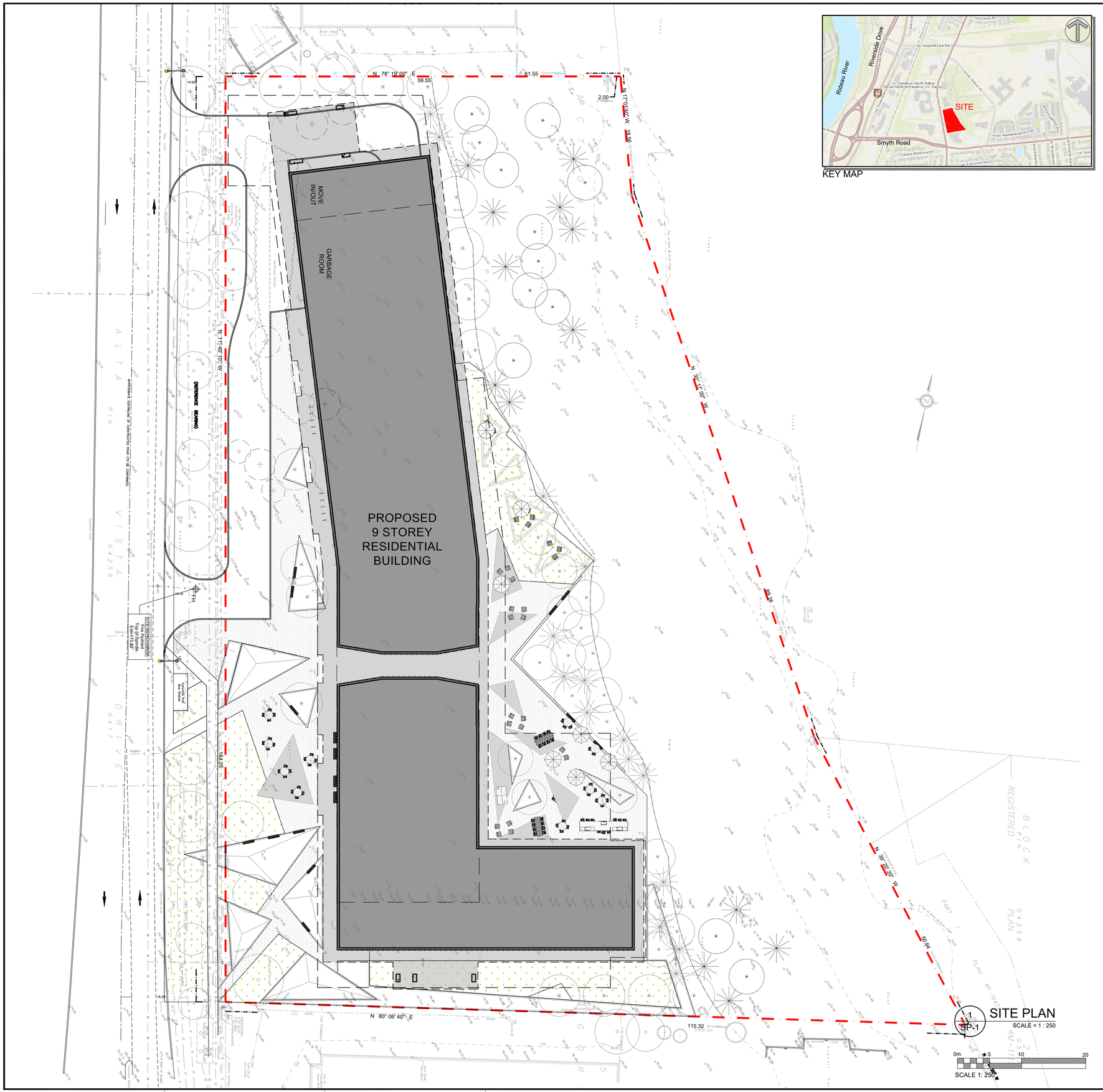
MECP	Soil Water Holding Capacity mm	75
	Infiltraion Factors	
	Topography	0.1
	Soils	0.4
	Cover	0.1
Thornwaite	PCPN (Precipitation) mm/year	902
	PE (Potential Evapotranspiration) mm/year	620
	AE (Actual Evapotrnspiration) mm/year	543
	SURP (Surplus) mm/year	356
Pre-development to Creek	Impervious Area m2	4353.6
	Pervious Area m2	7787.7
Post-development to Creek	Impervious Area m2	4592.93
	Pervious Area m2	7548.43
	Total Infiltration Factors F	0.6
	Infiltration Recharge (F*SURP) mm/year	213.6
	Runoff (SURP - Infiltration Recharge) mm/year	142.4

Recharge Volumes in Pervious Areas	Pre-development m3/year	1663.453
	Post-development m3/year	1612.345
	Change in Recharge m3/year	-51.1081

	Runoff Volumes	
Pre-development	Impervious m3	3926.947
	Pervious m3	1108.968
	Total Runoff m3	5035.916
Post-development	Impervious m3	4142.823
	Pervious m3	1074.896
	Totoal Runoff m3	5217.719
	Change in total runoff to creek m3	**181.8036**

Appendix F

Site Plan and Architectural Floor Plans



KEY MAP

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

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

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

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

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

No.	DESCRIPTION	DATE
4		
3		
2		
1	ISSUED FOR OWNER / CONSULTANT REVIEW	2025 12 05

REVISIONS:

ARCHITECT SEAL:

SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT:

TCU Development Corporation

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:

1867 ALTA VISTA DRIVE

OTTAWA ONTARIO

SHEET TITLE:

SITE PLAN

DRAWN:	CHECKED:
R.V.	K.R.
SCALE: 1:250	SHEET No. SP-1
PROJECT No. 2516	

D07-12-26-00

DWG # ____

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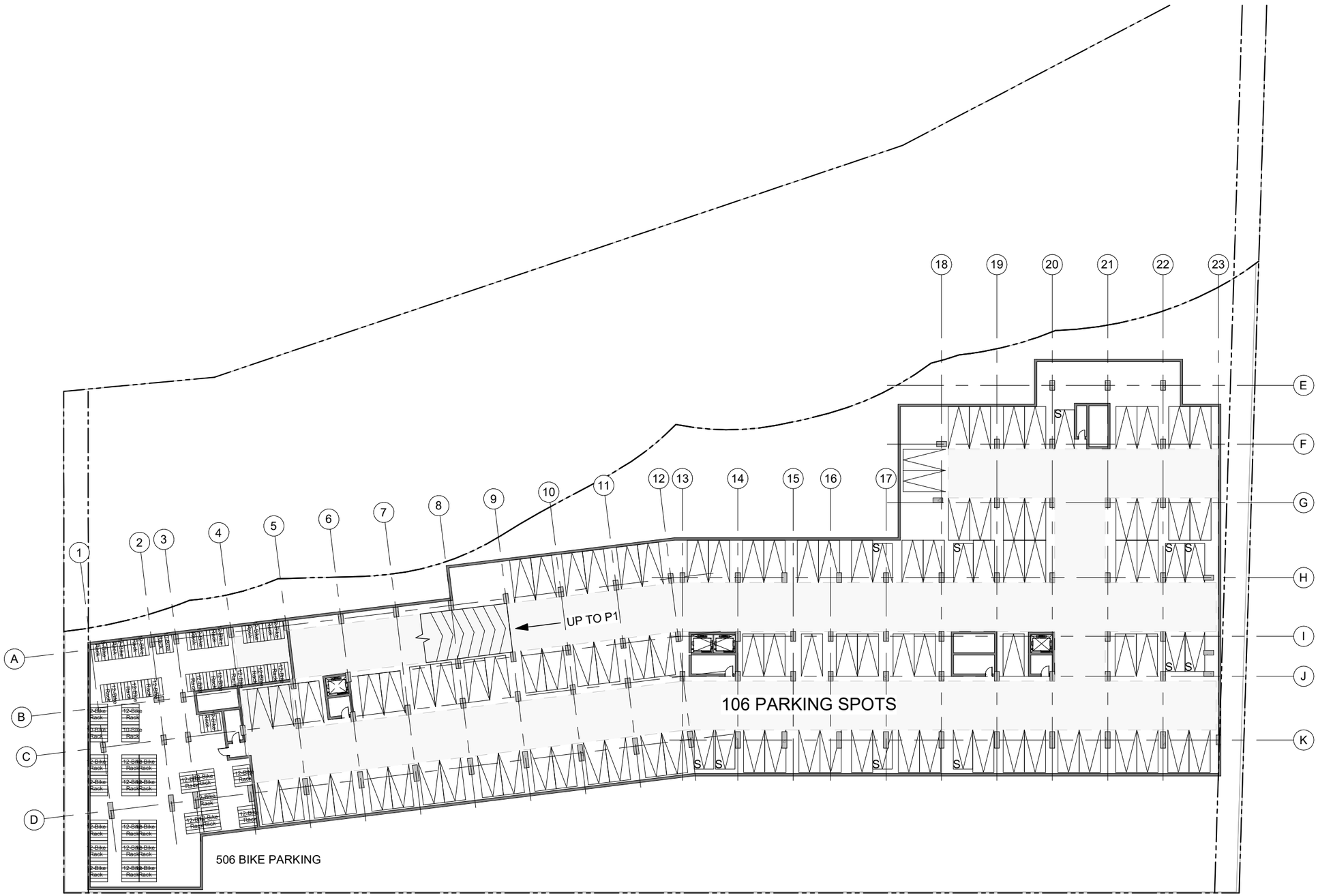

rla/architecture

P2 PLAN

SCALE: 1 : 500

DATE: 2025-12-09

106 TOTAL PARKING SPACES
11 SMALL CAR SPACES
506 BIKE PARKING SPOTS

1867 ALTA VISTA

1867 Alta Vista Drive, Ottawa, Ontario

DRAWN BY
LS

SHEET #
D100

PROJ. No. 2516

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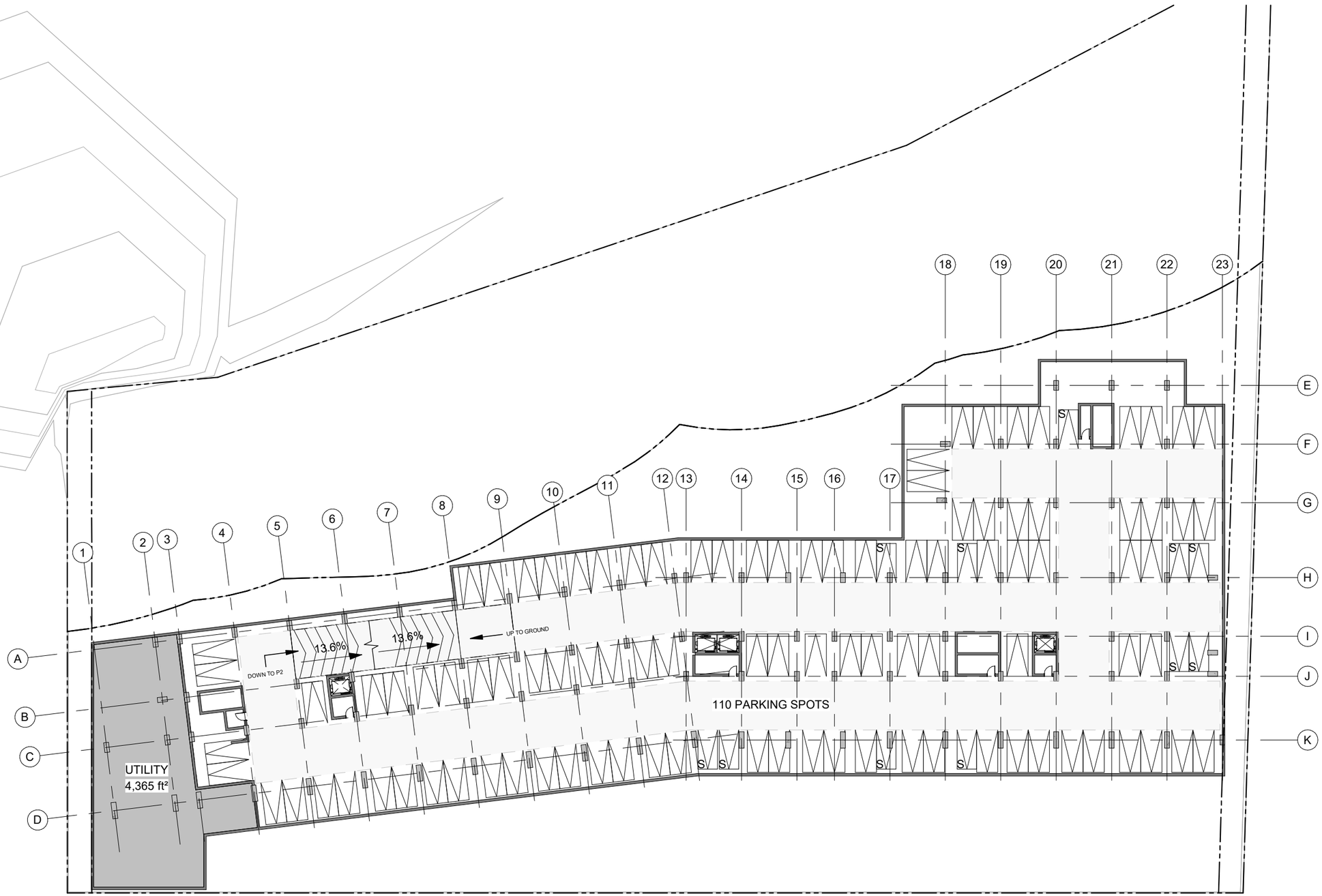

rla/architecture

P1 PLAN

SCALE: 1 : 500

DATE: 2025-12-09

110 TOTAL PARKING SPACES
11 SMALL CAR SPACES

1867 ALTA VISTA

1867 Alta Vista Drive, Ottawa, Ontario

DRAWN BY
LS

SHEET #
D101

PROJ. No. 2516

PLOT DATE: 12/9/2025 2:57:54 PM

PLOT SCALE: 1:1

PAPER SIZE: ANSI B Tabloid 11" x 17" (279.40 x 431.80mm)

rla/architecture

GROUND FLOOR PLAN

SCALE: 1 : 500

DATE: 2025-12-09

GFA: 32,215 SQ FT
AMENITY AREA: 19,326 SQ FT / 1,795 SQ M
UNITS: 9
STUDIO: 0
1 BED: 0
1+ DEN: 7
2 BED: 2
2+ DEN: 0
3 BED: 0

1867 ALTA VISTA

1867 Alta Vista Drive, Ottawa, Ontario

DRAWN BY LS

SHEET # D102

PROJ. No. 2516

PLOT DATE: 12/9/2025 2:56:15 PM

PLOT SCALE: 1:1

PAPER SIZE: ANSI B Tabloid 11" x 17" (279.40 x 431.80mm)

rla / architecture

L2-3 PLAN

SCALE: 1 : 500

DATE: 2025-12-09

GFA: 41,825 SQ FT
AMENITY AREA: 288 SQ FT / 27 SQ M
UNITS: 43

STUDIO: 11	2 BED: 10
1 BED: 8	2+ DEN: 2
1+ DEN: 10	3 BED: 2

1867 ALTA VISTA

1867 Alta Vista Drive, Ottawa, Ontario

DRAWN BY
LS

SHEET #
D103

PROJ. No. 2516

PLOT DATE: 12/9/2025 2:56:16 PM

PLOT SCALE: 1:1

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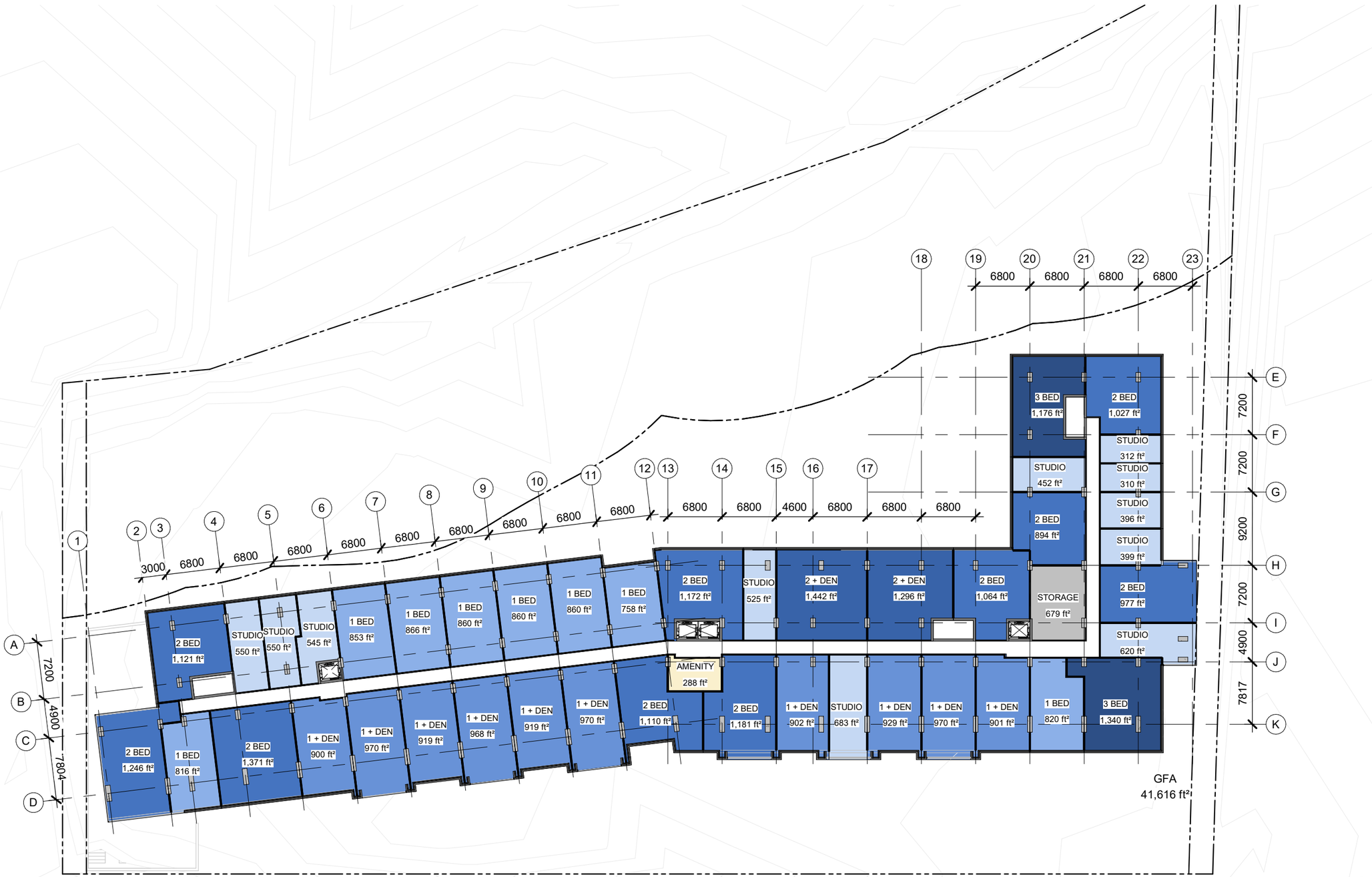

rla/architecture

L4 PLAN

SCALE: 1 : 500

DATE: 2025-12-09

GFA: 41,616 SQ FT
AMENITY AREA: 288 SQ FT / 27 SQ M
UNITS: 43

STUDIO: 11	2 BED: 10
1 BED: 8	2+ DEN: 2
1+ DEN: 10	3 BED: 2

1867 ALTA VISTA

1867 Alta Vista Drive, Ottawa, Ontario

DRAWN BY
LS

SHEET #
D104

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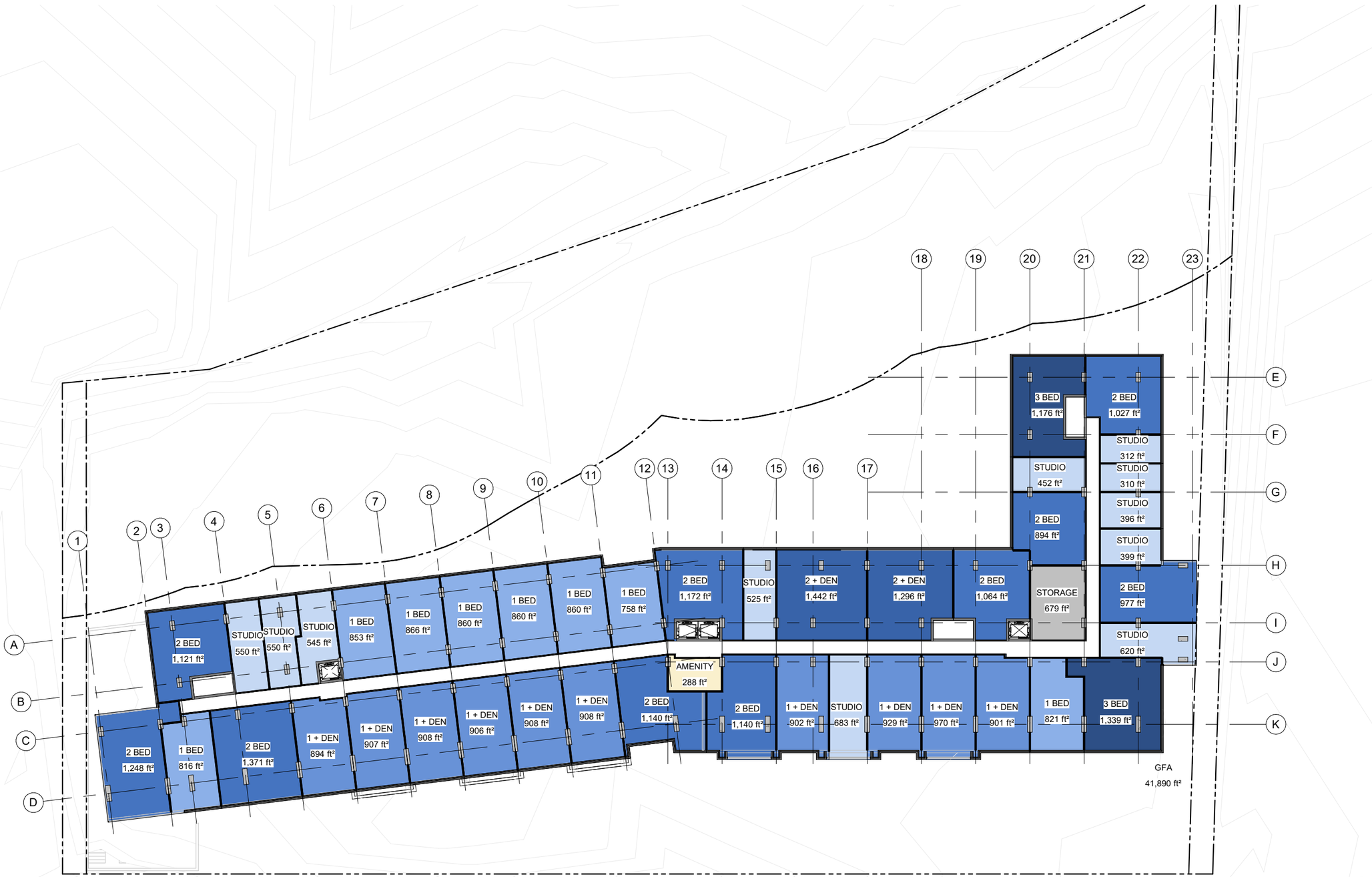

rla/architecture

L5-6 PLAN

SCALE: 1 : 500

DATE: 2025-12-09

GFA: 41,890
AMENITY AREA: 288
UNITS: 43

STUDIO: 11	2 BED: 10
1 BED: 8	2+ DEN: 2
1+ DEN: 10	3 BED: 2

1867 ALTA VISTA

1867 Alta Vista Drive, Ottawa, Ontario

DRAWN BY
LS

SHEET #
D105
PROJ. No. 2516

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PLOT SCALE: 1:1

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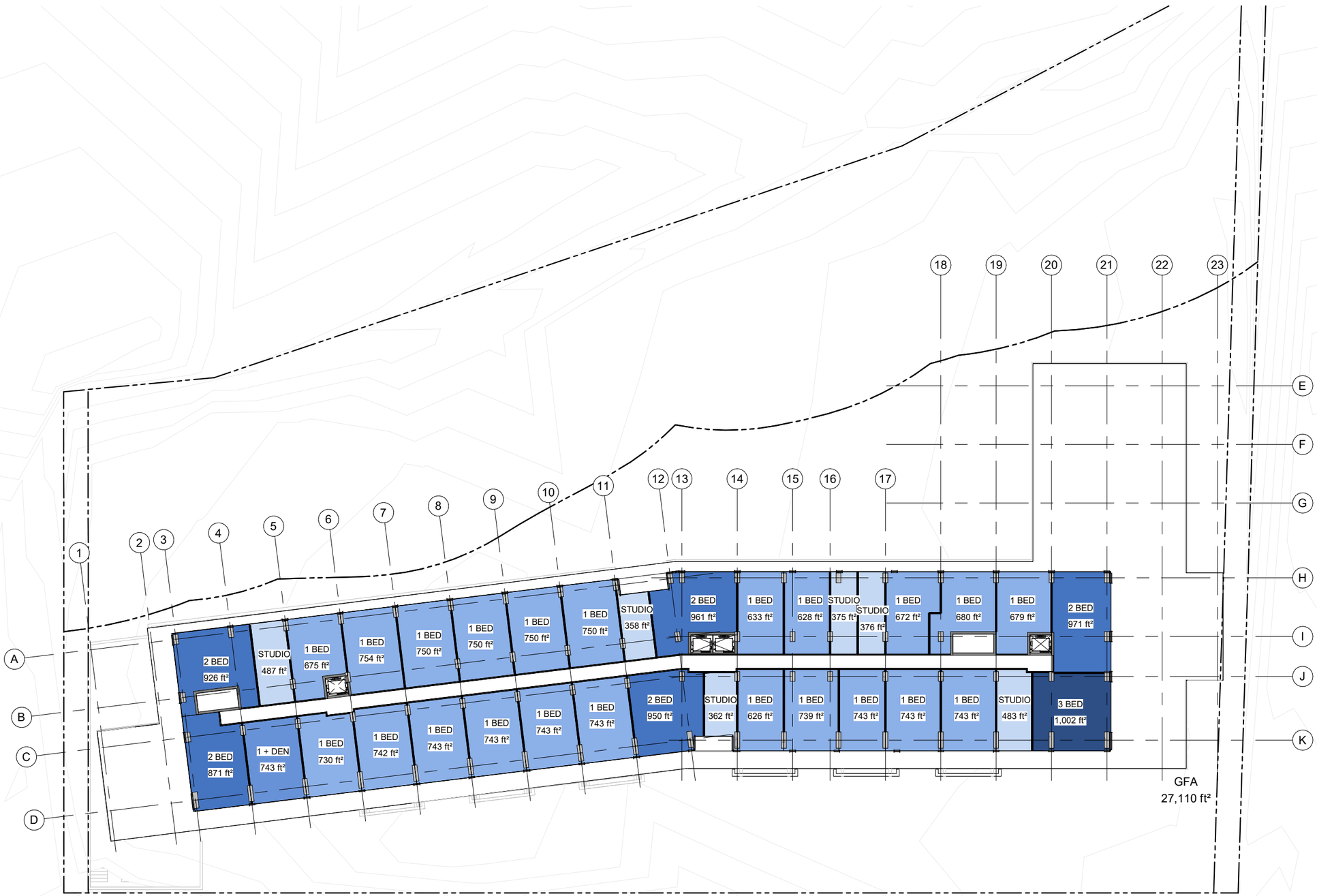

rla/architecture

L7-9 PLAN

SCALE: 1 : 500

DATE: 2025-12-09

GFA: 27,110 SQ FT
AMENITY AREA: 0
UNITS: 35

STUDIO: 6	2 BED: 5
1 BED: 22	2+ DEN: 0
1+ DEN: 1	3 BED: 1

1867 ALTA VISTA

1867 Alta Vista Drive, Ottawa, Ontario

DRAWN BY
LS

SHEET #
D106
PROJ. No. 2516

PLOT DATE: 12/9/2025 2:56:20 PM

PLOT SCALE: 1:1

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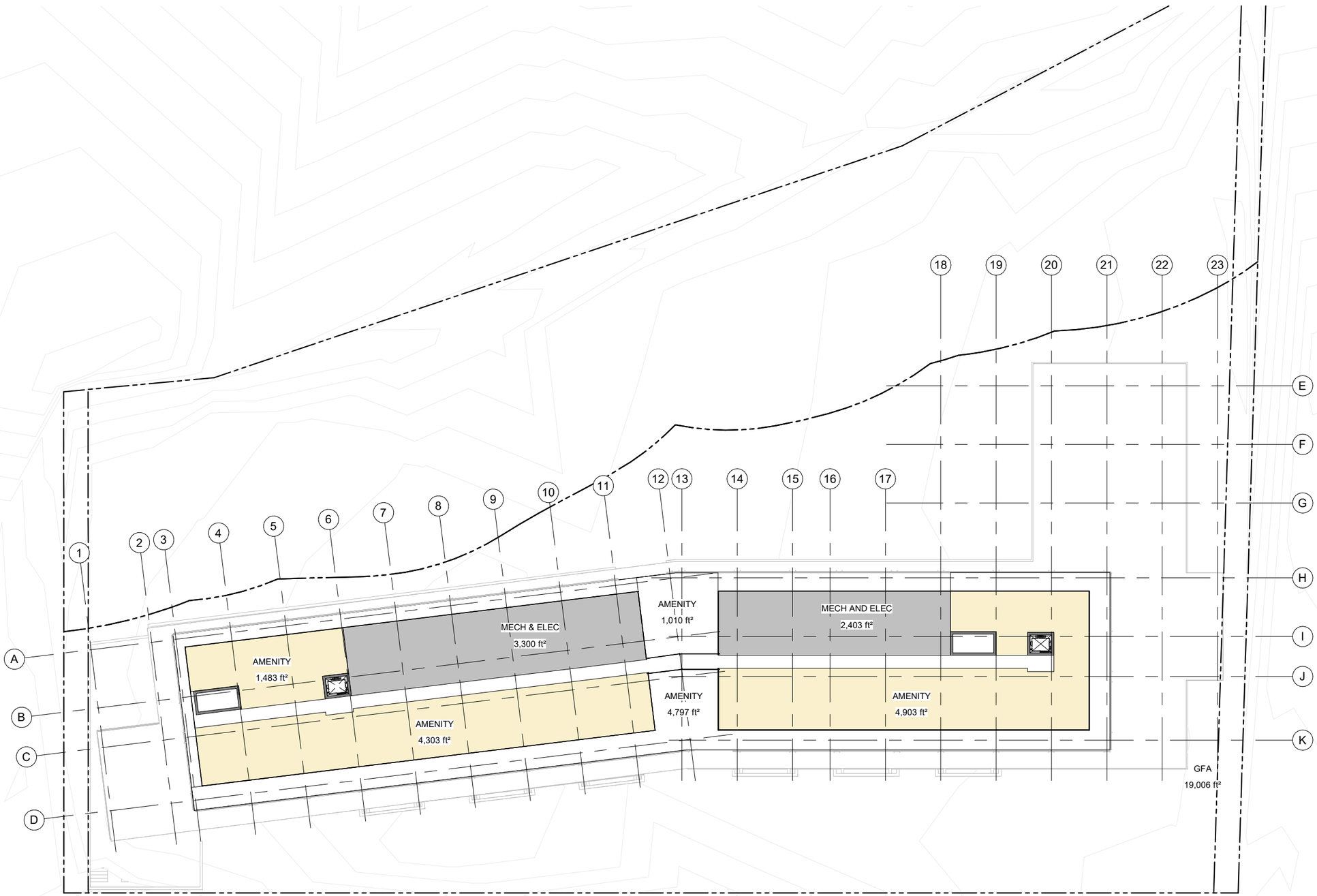

rla/architecture

MECHANICAL PENTHOUSE PLAN

SCALE: 1 : 500

DATE: 2025-12-09

GFA: 19,006 SQ FT
AMENITY AREA: 16,496 SQ FT / 1533 SQ M
M&E AREA: 5,703 SQ FT / 530 SQ M

1867 ALTA VISTA

1867 Alta Vista Drive, Ottawa, Ontario

DRAWN BY
LS

SHEET #
D107
PROJ. No. 2516

PLOT DATE: 12/9/2025 2:56:22 PM

PLOT SCALE: 1:1

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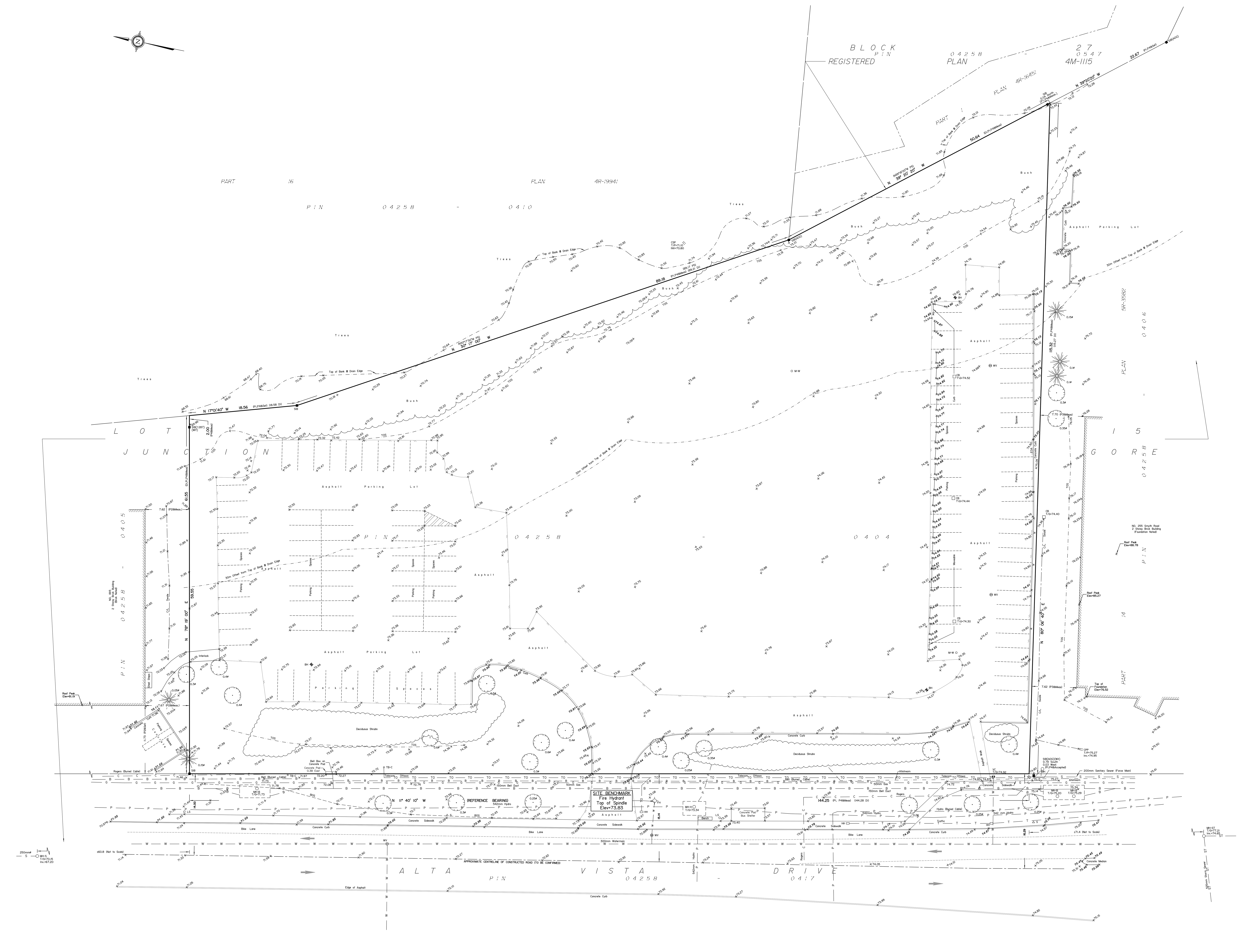
Appendix G

Topographical Survey



PLAN OF SURVEY OF

PART OF LOT 15
CONCESSION JUNCTION GORE
GEOGRAPHIC TOWNSHIP OF GLOUCESTER
CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 200

8.0 6.0 4.0 2.0 0 4 8 Metres

Metric

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

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 26th day of June, 2025.

Date

D. S. McMorran
Ontario Land Surveyor

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-110830

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
In accordance with Regulation 1026, Section 29 (3).

Notes & Legend

	Denotes	
(symbol)	"	Survey Monument Found
SIB	"	Standard Iron Bar
(WIT)	"	Witness
Meas.	"	Measured
(AOG)	"	Annis, O'Sullivan, Vollebekk Ltd.
(P1)	"	(857) Plan dated October 3, 1985
(P2)	"	(857) Plan dated April 19, 1985
(P3)	"	(857) Plan dated December 13, 1984
(P4)	"	(1287) Plan dated April 26, 2016
(P5)	"	Plan 4R-19941
(D1)	"	Inst. N561626
TOS	"	Top of Slope
BOS	"	Bottom of Slope
C/L	"	Centreline
CSP	"	Corrugated Steel Pipe
CPP	"	Corrugated Plastic Pipe
CCP	"	Concrete Pipe
T/P	"	Top of Pipe
T/G	"	Top of Grate
Inv.	"	Invert
CB	"	Catch Basin
MH-ST	"	Maintenance Hole (Storm)
MH-S	"	Maintenance Hole (Sanitary)
MH-B	"	Maintenance Hole (Bell)
MH-H	"	Maintenance Hole (Hydro)
MH	"	Maintenance Hole (Unidentified)
VC	"	Valve Chamber (Watermain)
WV	"	Water Valve
FH	"	Fire Hydrant
ST	"	Underground Storm Sewer
S	"	Underground Sanitary Sewer
W	"	Underground Water
P	"	Underground Power
B	"	Underground Bell
(line)	"	Underground Allstream
G	"	Underground Gas
TO		Telecom Ottawa
C	"	Underground Roger's Cable
LS	"	Light Standard
(line)	"	Edge of Asphalt
HH	"	Handhole
TB-B	"	Bell Terminal Box
TB-C	"	Cable Terminal Box
S	"	Sign
BH	"	Bore Hole
M-W	"	Monitoring Well
(symbol)	"	Deciduous Tree
(symbol)	"	Coniferous Tree
ø	"	Diameter
+ 65.00	"	Location of Elevations
+ 65.00	"	Location of Top of Curb Elevations

Bearings are grid, derived from Can-Net 2016 Real Time Network GPS observations and are referenced to Specified Control Points 01919680105 and 019198434761, MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

ELEVATION NOTES

1. Elevations shown are geodetic, derived from City of Ottawa Vertical Control Monument No. 3641 (Index No. 328), having a published elevation of 68.78 metres, 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

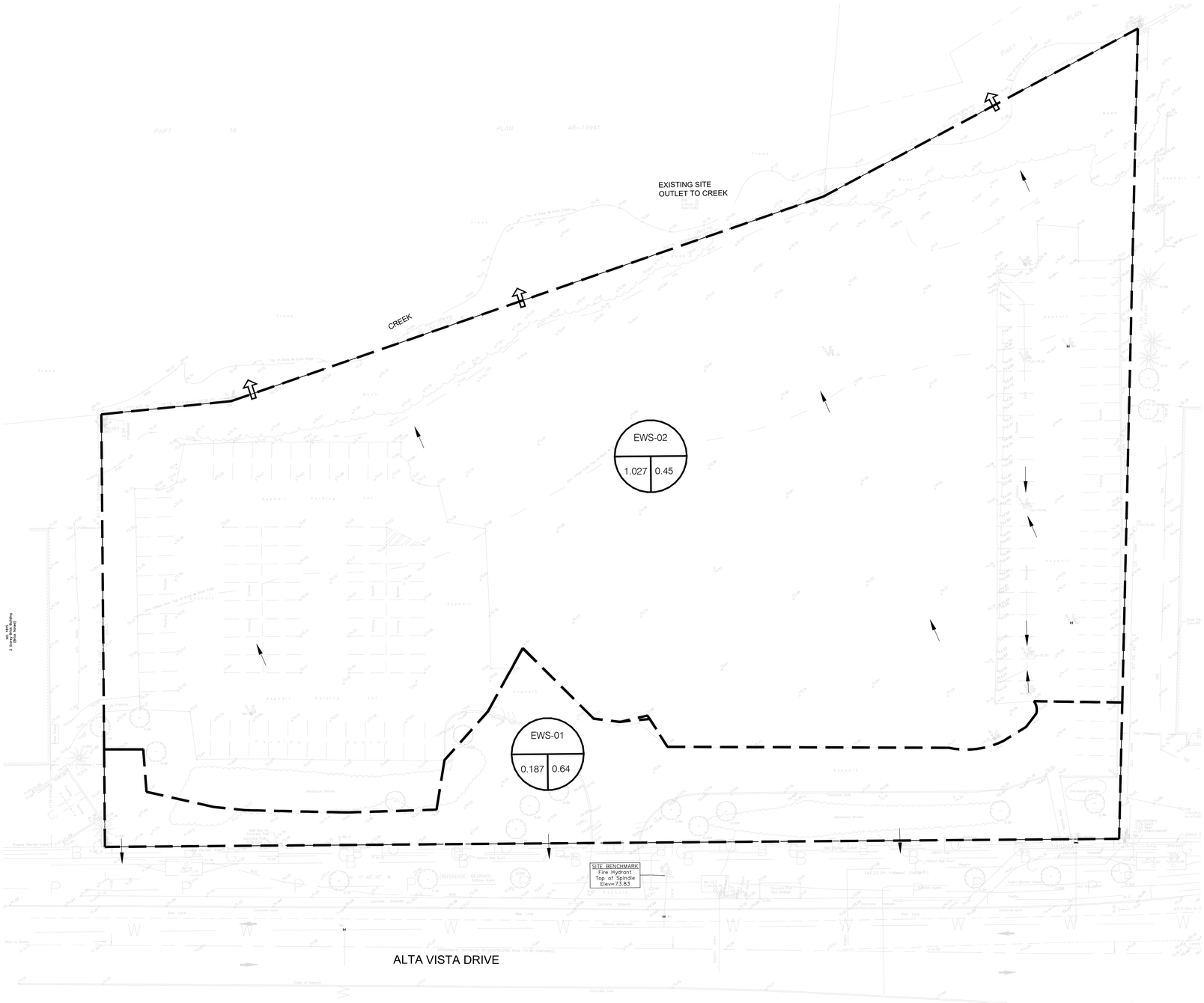
1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. Underground utility data derived from City of Ottawa utility sheet reference: Drawings H-16-05, H-16-06, I-16-11 (all with a revision date of Nov. 2021) and Plan No. 3069 (Sheets 3 & 4 of 13 with a revision date of Aug. 29, 1997).
4. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

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

Job No. 25764-25 TCU PtLt15 JG GL O D3 | ISW

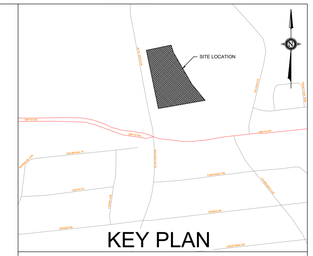
Appendix H

Pre & Post Development Watersheds



LEGEND:

- PROPOSED NEW PROPERTY LINE DUE TO RIGHT-OF-WAY WIDENING
- WATERSHED BOUNDARY
- WS-XX — WATERSHED NAME
- XX — RUNOFF COEFFICIENT
- XX — AREA IN HECTARES
- MINOR OVERLAND FLOW ROUTE
- MAJOR OVERLAND FLOW ROUTE



KEY PLAN

TOPOGRAPHIC INFORMATION & BENCHMARK

TOPOGRAPHIC SURVEY COMPLETED BY ANNIS O'SULLIVAN VOLLEBEKK LTD. ON JUNE 26th, 2025. ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE CGVD-28 GEODETIC DATUM.

SITE BENCHMARK No.1 LOCATED AT HYDRANT AT EXISTING ENTRANCE ALONG ALTA VISTA DRIVE. FIRE HYDRANT TOP OF SPINDLE = 73.83

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	BY
01	2025-12-17	ISSUED FOR OPA/ZBA	T.H.

REVISIONS

LICENSED PROFESSIONAL ENGINEER
T. HARB
100223503
2025-12-17
PROVINCE OF ONTARIO

5m 2 0 5 10m
SCALE: 1:300

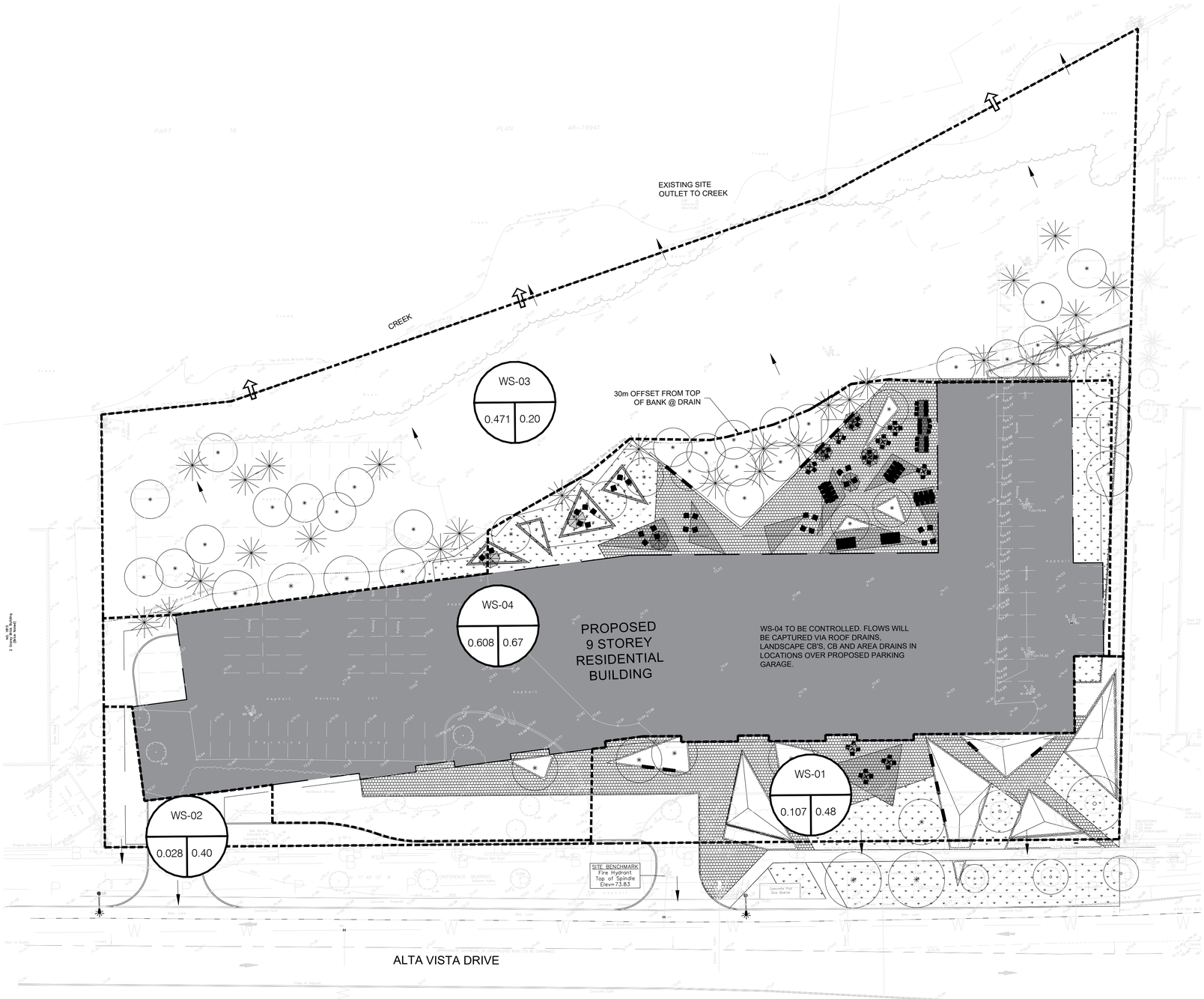
PARSONS
1223 Michael Street, Suite 100, Ottawa, Ontario, Canada K1J 7T2
Tel: (613) 738-4160 Fax: (613) 739-7105

CLIENT
TCU DEVCORP

PROJECT
1867 ALTA VISTA DRIVE
OTTAWA, ONTARIO

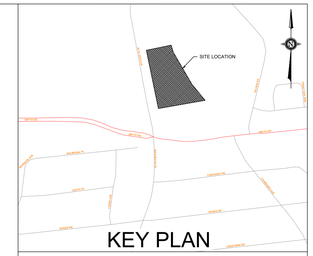
TITLE
PRE DEVELOPMENT
DRAINAGE AREAS

DESIGNED BY: T.H.	PROJECT NO.: 479542
DRAWN BY: J.B.	
CHECKED BY: M.M.	C105 (DRAWING NO.) / PRE (DRAWING)
DATE: SEP 2025	
SCALE: 1:300	



LEGEND:

- PROPERTY LINE
- WATERSHED BOUNDARY
- WATERSHED NAME
- RUNOFF COEFFICIENT
- AREA IN HECTARES
- MINOR OVERLAND FLOW ROUTE
- MAJOR OVERLAND FLOW ROUTE



TOPOGRAPHIC INFORMATION & BENCHMARK

TOPOGRAPHIC SURVEY COMPLETED BY ANNIS O'SULLIVAN VOLLEBEKK LTD. ON JUNE 26th, 2025. ELEVATIONS SHOWN ARE GEODETIC AND ARE REFERRED TO THE CGVD-28 GEODETIC DATUM.

SITE BENCHMARK No.1 LOCATED AT HYDRANT AT EXISTING ENTRANCE ALONG ALTA VISTA DRIVE. FIRE HYDRANT TOP OF SPINDLE = 73.83

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	BY
01	2025-12-17	ISSUED FOR OPA/ZBA	T.H.

REVISIONS

LICENSED PROFESSIONAL ENGINEER
T. HARB
100223503
2025-12-17
PROVINCE OF ONTARIO

5m 2 0 5 10m
SCALE: 1:300

PARSONS
1223 Michael Street, Suite 100, Ottawa, Ontario, Canada K1J 7T2
Tel: (613) 738-4160 Fax: (613) 739-7105

CLIENT
TCU DEVCORP

PROJECT
1867 ALTA VISTA DRIVE
OTTAWA, ONTARIO

TITLE
POST DEVELOPMENT
DRAINAGE AREAS

DESIGNED BY	T.H.
DRAWN BY	J.B.
CHECKED BY	M.M.
DATE	SEP 2025
SCALE	1:300
PROJECT NO.	479542
DRAWING NO.	C106
DRAWING	POST