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DESIGN BRIEF

FOR

CAIVAN (STITTSVILLE) INC.

PROPOSED RESIDENTIAL SITE PLAN

MAGNOLIA PHASE 1 STACKED TOWNS

CITY OF OTTAWA

PROJECT NO.: 25-1494

FEBRUARY 2026

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DESIGN BRIEF
FOR
PROPOSED RESIDENTIAL SITE PLAN

CAIVAN (STITTSVILLE) INC.

PROJECT NO: 25-1494

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CITY OF OTTAWA
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1.0 INTRODUCTION

David Schaeffer Engineering Limited (DSEL) has been retained to prepare a Design Brief in support of a site plan application for the residential condominium block within Phase 1 of the Magnolia subdivision on behalf of Caivan (Stittsville) Inc.

The overall Magnolia Subdivision land area is approximately 75.4 ha (all land use components) and is located within the City of Ottawa urban boundary in the Stittsville ward. The subject site plan block is within Phase 1 of the Magnolia Subdivision lands and the area is bound by Flewellyn Road to the South, proposed West SWM Pond to the east, the proposed subdivision to the north *(Stittsville South – Area 6)* and west. The 2.39 ha site plan (Q4 Architects Inc., January 2026) is provided in **Appendix A**.

The objective of this report is to provide sufficient details with respect to the design of the proposed site services in support of the application of site plan control.

1.1 Existing Conditions

The ***Magnolia Phase 1 Condo Block*** lands have a gradual slope south towards the existing Flewellyn Road right-of-way. All existing stormwater flows are conveyed overland to the existing Flewellyn Road ditch system, and ultimately to the downstream Faulkner Municipal Drain.

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1.2 Site Plan Layout

The proposed project consists of 13 blocks of stacked dwellings, above ground parking, walkways, and amenity space. See proposed site plan in **Appendix A**.

The predicted populations currently associated with the development concept are described in the following table below.

Table 1: Development Statistics for Magnolia Phase 1 Condo Site Plan

Land Use	Total Area (ha)	Projected Residential Units	Residential Population per Unit *	Projected Population
Stacked Dwellings	0.64	268	2.7	724
Amenity	0.45			
Landscaped	0.45			
Roads/parking/Paved Area	0.83			
Total	**2.37**	**268**		**724**

** NOTE: Population projections may differ from population estimates used in background Transportation Studies, Planning Rationale, and other studies.*

1.3 Consultation Summary

Consultation with the City of Ottawa Planning and Engineering Staff was initiated in December 2025 for the Magnolia Phase 1 Stacked Condo block to review City Standards, submission requirements, and the availability of background information.

1.4 Required Permits / Approvals

The City of Ottawa must approve detailed engineering design drawings and reports prior to construction of the proposed infrastructure identified in this report.

The following additional approvals and permits listed in **Table 2** are expected to be required prior to construction of the private infrastructure detailed herein. Other permits and approvals may be required, as detailed in the other studies submitted as part of the Planning Act applications (e.g. *Tree Conservation Report, Phase 1 Environmental Site Assessment, etc*.).

Table 2: Potential Required Permits/Approvals

Agency	Permit/Approval Required	Trigger	Remarks
City of Ottawa	MECP Form SS2 – Record of Future Alteration Authorized for Components of the Municipal Sewage Collection System	Construction of new sanitary sewers, Pump Station and forcemain.	City of Ottawa to review and approve plans prior to the completion of Form SS2.

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City of Ottawa	MECP Form SW1 – Record of Future Alteration Authorized for Storm Sewers/Ditches/Culverts	Construction of new storm sewers, ditches, and culverts.	City of Ottawa to review and approve plans prior to the completion of Form SW1.

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2.0 GUIDELINES, PREVIOUS STUDIES, AND REPORTS

2.1 Existing Studies, Guidelines, and Reports

The following documents were referenced in the preparation of this report:

- Ottawa Sewer Design Guidelines,
  City of Ottawa, *SDG002,* October 2012.
  (City Standards)

  - Technical Bulletin ISDTB-2014-01, Revisions to Ottawa Design Guidelines – Sewer,
    City of Ottawa, February 5, 2014.
    *(*ISDTB-2014-01*)*

  - Technical Bulletin PIEDTB-2016-01, Revisions to Ottawa Design Guidelines – Sewer,
    City of Ottawa, September 6, 2016.
    *(*PIEDTB-2016-01*)*

  - Technical Bulletin ISTB-2018-01, Revisions to Ottawa Design Guidelines – Sewer,
    City of Ottawa, March 21, 2018.
    *(*ISTB-2018-01*)*

  - Technical Bulletin ISTB-2018-03, Revisions to Ottawa Design Guidelines – Sewer,
    City of Ottawa, June, 2018.
    *(*ISTB-2018-04*)*

  - Technical Bulletin ISTB-2019-02, Revisions to Ottawa Design Guidelines – Sewer,
    City of Ottawa, July 8, 2019.
    *(*ISTB-2019-02*)*

  - Technical Bulletin IWSTB-2024-04, Screening Criteria – Infiltration-type LIDs for Development,
    City of Ottawa, September 12, 2024.

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

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

  - Technical Bulletin ISDTB-2014-02
    City of Ottawa, May 27, 2014.
    *(*ISDTB-2014-02*)*

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  - Technical Bulletin ISTB-2018-02
    City of Ottawa, March 21, 2018.
    *(*ISTB-2018-02*)*

  - Technical Bulletin ISTB-2021-03
    City of Ottawa, August 18, 2021
    (ISTB-2021-03)

  - Technical Bulletin IWSTB-2024-05
    City of Ottawa, November 18, 2024
    (IWSTB-2024-05)

- Design Guidelines for Sewage Works,
  Ministry of the Environment, 2008.
  (MOE Design Guidelines*)*

- Stormwater Planning and Design Manual
  Ministry of the Environment, March 2003.
  (SWMP Design Manual)

- Erosion & Sediment Control Guidelines for Urban Construction
  Greater Golden Horseshoe Area Conservation Authorities, December 2006
  (E&S Guidelines)

- Ontario Building Code Compendium
  Ministry of Municipal Affairs and Housing Building Development Branch,
  January 1, 2010 Update *(OBC)*

- Hydraulic Capacity and Modeling Analysis – Stittsville South Urban Expansion Area Development (Final Report). GeoAdvice Engineering Inc., January 8, 2026.

- Geotechnical Investigation, Proposed Residential Development, 5993, 6070 & 6115 Flewellyn Road, Ottawa
  Paterson Group (PG5570-2), July 5, 2024
  (Stittsville South Geotechnical)

- Hydrogeological Existing Conditions Report, Proposed Residential Development, 5993 & 6115 Flewellyn Road & 6030 & 6070 Fernbank Road, Ottawa, Ontario
  Paterson Group (PH4625-REP.01.R1), July 5, 2024
  (Stittsville South Hydrogeology)

- Stittsville South Expansion Lands – Transportation Report. CGH Transportation (PN: 2021-128), November 2023.

- Scoped Master Servicing Study for Stittsville South Urban Expansion Area (W-4), DSEL (21-1247), August 2025*. (DSEL Scoped MSS)*

- Functional Servicing Report for Stittsville South Urban Expansion Area (W-4), DSEL (21-1247), January 2026*. (DSEL Functional Servicing Report)*

Design Brief & Stormwater Management Report for Magnolia Subdivision Phase 1, DSEL (21-1247), February 2026*. (DSEL Phase 1 Design Brief)*

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3.0 WATER SUPPLY SERVICING

3.1 Existing Water Supply Services

The Magnolia Phase 1 Site Plan lands, within the Magnolia Subdivision, is located adjacent to the City of Ottawa's Pressure Zone (PZ) 3W. The pressure zone receives supply from the Campeau Drive and Glen Cairn Pump stations. The Stittsville Elevated Tank provides balanced storage during peak usage and fire conditions. The Magnolia Phase 1 lands will be serviced by the existing 250 mm diameter watermains located within the Parade Drive and Aridus ROW.

An extension of the watermain network is proposed within the Magnolia Phase 1 Subdivision, which will feed the subject site plan block. The watermains for the subdivision were designed in accordance with the ***Hydraulic Capacity and Modeling Analysis*** prepared by GEO-ADVICE (January 8, 2026) included in **Appendix B**.

3.2 Water Supply Servicing Design

As shown in **Drawing 4**, water servicing will be provided internal to the site via 200 mm watermains that will be looped within the site plan block and connect to the 200 mm diameter watermain on Street 1 (E) and Future Street (W). All units in each block will be serviced from the 200 mm watermain within the Private streets. The subject lands will be metered at the connections to Street 1 (E) and Future Street once developed in the future phase (W), and all mains contained within are private. A temporary watermain is proposed at the north boundary of the site plan block until such time that servicing of the future phase occurs and the ultimate connection to the watermain network is made.

Table 3: Water Supply Design Criteria

Design Parameter	Value
Extracted from Section 4: Ottawa Design Guidelines, Water Distribution (July 2010)	
Residential – Multi Family Townhome	2.7 p/unit
Minimum Watermain Size	150 mm diameter
Minimum Depth of Cover	2.4 m from top of watermain to finished grade
During normal operating conditions desired operating pressure is within	350 kPa and 480kPa
During fire flow operating pressure must not drop below	140 kPa
GeoAdvice Hydraulic Analysis, GeoAdvice, January 2026 for Population Exceeding 3000 Persons	
Residential – MLT	219 L/cap/day
Residential – Average Day Demand	Population x Demand
Residential – Max Day Demand	AVDY x 2.5
Residential – Peak Hour Demand	MXDY x 2.2
Fire Flow Requirement	13,000 L/min

Table 4 summarizes the estimated water supply demands seen in ***GeoAdvice Hydraulic Analysis*** for the proposed site plan (Phase 1) based on the **Water Supply Guidelines**.

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Table 4: Water Demand Proposed Conditions

Design Parameter	Estimated Demand[1] (L/min)
Average Daily Demand	106.8
Max Day + Fire Flow	172.2 + 6,300= 6,472.2
Peak Hour	353.4

As outlined in the City of Ottawa Design Guidelines, the generally accepted practice is to design new water distribution systems to operate between 350kPa (50psi) and 480kPa (70psi). Per the ***GeoAdvice Hydraulic Analysis***, the pressure requirements within normal operating pressure (max day flow) range from 350 – 480 kPa, Peak Hour Demand (min allowable) is 276 kPa, and Maximum Day plus Fire is 140 kPa. The modeled service pressures are 565 kPa and 414 kPa for the Average Day Demand Maximum Pressure and Peak Hour Demand Minimum Pressure, respectively. Sufficient fire flow will be available to maintain a 140 kPa minimum allowable pressure within the site plan.

3.3 Fire Flow Requirements

Per ***GeoAdvice Hydraulic Analysis***, the site plan block was assigned a fireflow of 167 L/s, however, the analysis shows that 224 L/s is available under the max day plus fire flow scenario, which will be supplied by the internally looped 200mm diameter watermains. The 200mm watermains are sized to the minimum diameter that satisfies the Max Day plus fire and Peak hour demand.

The City of Ottawa's recent Technical Bulletin (IWSTB-2024-05) states that the requirement for levels of fire protection on private property in urban areas is covered in Section A-3.2.5.7 of the OBC. Fire flow requirements, provided in ***Appendix B.2***, were estimated for the most constrained blocks (Blocks 3, 10 & 9), each consisting of 12 units, yielded a required fire flow of 6,300 L/min. All other blocks required 4,500 L/min or less fire flow within the site plan. For the Blocks adjacent to the existing housing rear yards, a 4.5m offset from the property line of the proposed blocks was used, see **Appendix *B.3***, for a mark-up example of the most constrained buildings within the site plan block.

3.4 Water Supply Conclusion

The site plan blocks will be serviced internally with meter chambers installed within the property boundary at the site entrances. The looped watermain network ultimately connects to the Magnolia Phase 1 subdivision at Street 3 (E) and an ultimate connection to the future phase at the west boundary. A temporary watermain is proposed at the north boundary of the site plan block in the interim. The system has been reviewed for required domestic demand and fire flows and meets all necessary requirements.

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4.0 WASTEWATER SERVICING

4.1 Existing Wastewater Services

The subject site was considered in the design of the Magnolia Subdivision - Phase 1 with sanitary flows conveyed to the existing Shea Road Sanitary Pump Station located north of the Davidson Pond which serves as the outlet for the overall development. Please refer to the **Sanitary Drainage Plan (Drawing 15)** prepared by DSEL.

4.2 Wastewater Design

The site plan block has an internal network of sanitary sewers that will direct flows to the proposed sanitary sewer within Street 1 of the Magnolia Subdivision. Blocks 1, 12 and 13 will have direct lateral connections to the 250 mm diameter sanitary sewer within Street 1 of the subdivision. Each unit has one lateral servicing two units (upper and lower) as shown in **Drawing 2**. The internal sanitary sewer layout within the site plan will consist of a 200 mm PVC sanitary sewer that will follow the internal private streets, connecting Private Street 3 (MH 118A) and Private Street 5 (MH 176A) to Phase 1 of the Subdivision at MH 119A and 120A, respectively.

The site plan has an estimated population of 724 persons and as such total flows are estimated to be approximately 8.53 L/s from the site plan block to the existing sanitary pump station which has capacity available to accommodate the site plan block as demonstrated in the ***DSEL Phase 1 Design Brief***. The sanitary design sheet is included in **Appendix C.1**.

Table 5 below summarizes the design standards used in the development of the proposed wastewater sewer system for the Magnolia Subdivision - Phase 1. The sanitary calculation sheets have been updated to reflect the revised population and are included in **Appendix C**.

Table 5: Wastewater Design Criteria

Design Parameter	Value
Current Design Guidelines	
Residential – Stacked TH Condo	2.7 p/unit
Average Daily Demand	280 L/d/person
Peaking Factor	Harmon's Peaking Factor. Max 4.0, Min 2.0
Infiltration and Inflow Allowance	0.33 L/s/ha
Park Flows	28,000 L/ha/d
Park Peaking Factor	1.0
Sanitary sewers are to be sized employing the Manning's Equation	$Q = \frac{1}{n} A R^{2/3} S^{1/2}$
Minimum Sewer Size	200mm diameter
Minimum Manning's 'n'	0.013
Minimum Depth of Cover	2.5m from crown of sewer to grade
Minimum Full Flowing Velocity	0.6m/s
Maximum Full Flowing Velocity	3.0m/s
Extracted from Sections 4 and 6 of the City of Ottawa Sewer Design Guidelines, October 2012, and associated Technical Bulletins.	

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4.3 Wastewater Servicing Conclusions

The subject property will be serviced by local sanitary sewers which will outlet to existing infrastructure constructed as part of the Magnolia Subdivision Phase 1. The subject site has been contemplated in the downstream sewers and existing Shea Road Sanitary Pump Station. Sufficient capacity exists to support the development of the private site plan block.

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5.0 STORMWATER MANAGEMENT

5.1 Existing Stormwater Services

As discussed in the ***DSEL Phase 1 Design Brief*** the development of the site plan block was considered in the Magnolia Subdivision Phase 1 detailed subdivision design, with the majority of flows contributing to the downstream West Pond.

5.2 Stormwater Management Design and Objectives

The ***DSEL Phase 1 Design Brief*** made the following assumptions regarding the proposed site plan block:

- The site plan block has a drainage area of approximately 2.37 hectares with a runoff coefficient of 0.8.
- As modeled in the ***DSEL Phase 1 Design Brief*** the site plan block is required to capture the majority of the flows up to an including the 100 year design storm on-site and convey these flows via a proposed storm sewer to MH203 at the southern entrance at Street 1. Boundary areas adjacent to Flewellyn and Street 1 were anticipated to convey flows uncontrolled to the adjacent rights-of-ways.
- Quantity, Quality and Erosion Control for the site plan block will be provided by the downstream West Pond.

On-site storm flows will be captured by local CB infrastructure and allocated to the West SWM Pond within the subdivision. **Table 6** below summarizes the design standards used for the proposed on-site storm sewer system. Storm calculation sheets for the subject property have been appended to this technical brief in **Appendix D**.

Table 6: Storm Sewer Design Criteria

Design Parameter	Value
Minor System Design Return Period	1:2 year (PIEDTB-2016-01) for private roads, without ponding
Major System Design Return Period	1:100 year
Intensity Duration Frequency Curve (IDF) 2-year storm event: A=732.951 | B=6.199 | C=0.810 5-year storm event: A = 998.071 | B = 6.053 | C = 0.814	$i = \frac{A}{(t_c + B)^C}$
Minimum Time of Concentration	10 minutes
Rational Method	$Q = CiA$
Storm sewers are to be sized employing the Manning's Equation	$Q = \frac{1}{n} A R^{2/3} S^{1/2}$
Runoff coefficient for paved and roof areas	0.9
Runoff coefficient for landscaped areas	0.2
Minimum Sewer Size	250 mm diameter

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Minimum Manning's 'n' for pipe flow	0.013
Minimum Depth of Cover	1.5 m from crown of sewer to grade
Minimum Full Flowing Velocity	0.8 m/s
Maximum Full Flowing Velocity	6.0 m/s
Clearance from 100-Year Hydraulic Grade Line to Building Opening	0.30 m
Design Parameter	**Value**
Extent of Major System	To be contained within the private road and parking areas or adjacent to the ROW provided that the water level must not touch any part of the building envelope and must remain below the lowest building opening during the stress test event (100-year + 20%) and 15cm vertical clearance is maintained between spill elevation on the street and the ground elevation at the nearest building envelope (PIEDTB-2016-01)
Stormwater Management Model (per ***DSEL Phase 1 Design Brief***)	PCSWMM (version 7.4)
Model Parameters	Fo = 76.2 mm/hr, Fc = 13.2 mm/hr, DCAY = 4.14/hr, D.Stor.Imp. = 1.57 mm, D.Stor.Per. = 4.67 mm
Imperviousness	Based on runoff coefficient (C) where Percent Imperviousness = (C - 0.2) / 0.7 x 100%.
Design Storms	Chicago 3-hour Design Storms and 24-hour SCS Type II Design Storms. Maximum intensity averaged over 10 minutes.
Historical Events	July 1st, 1979, August 4th, 1988 and August 8th, 1996
Climate Change Street Test	20% increase in the 100-year, 3-hour Chicago storm
Extracted from City of Ottawa Sewer Design Guidelines, October 2012, and ISSU, and based on recent residential subdivisions in City of Ottawa.	

5.3 Hydraulic Grade Line Analysis

Per the ***DSEL Phase 1 Design Brief***, the proposed HGL at the storm connection at MH203 is designed to be 103.510 which includes the full 100 year flows from the proposed site plan block. The lowest FFE for the proposed townhome blocks connected to the internal private storm sewer system is 107.33 m. Therefore no HGL concerns have been identified for the internal townhome blocks.

5.4 Minor System Design

The minor stormwater management system conveys internal site runoff to the downstream municipal storm network. Stormwater is collected on-site through a network of catch basins

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(CBs) and storm sewers, which direct flows to MH203 via a 900 mm diameter storm sewer into Street 1 (East) and outlets into the West SWM Pond (Block 1), that eventually drains into the Faulkner Municipal Drain (FMD).

Each catch basin in the system is modeled with orifice flow restrictions to simulate the hydraulic performance of CB grates. During significant rainfall events, this can result in minor ponding at CBs due to the grate constriction. Overall, the minor system design meets the City of Ottawa's design criteria and ensures effective stormwater conveyance within the site. See storm design sheet within **Appendix D** demonstrating minor system peak flows.

5.5 Major System Design

Major system conveyance, or overland flow (OLF), is provided to accommodate flows in excess of the minor system capacity. OLF is accommodated by generally storing stormwater up to the 100-year design event in road sags then routing additional surface flow along the road network and rear yards as shown in the Storm Drainage Plans, included as **Drawing 16**. All internal major system drainage is conveyed to a set of CB's designed to capture the full major system flows for the development prior to conveying these flows via the storm sewer network to the downstream West Pond.

5.6 Grading and Drainage Design

The following additional grading criteria and guidelines are applied to detailed design, per City of **Ottawa Guidelines** and standard industry practices:

- Slope in grassed areas will be between 2% and 7%;
- Grades in excess of 7% will require terracing to a maximum of a 3:1 slope;
- Swales are to be 0.15m deep with 3:1 side slopes unless otherwise indicated on the drawings; and,
- Perforated pipe will be required for drainage swales if they are less than 1.5% in slope;
- Grades within the roads and parking stalls are limited to min 1% and max 5%.

Drawing 13 illustrates the proposed detailed grading. External areas north of the development will be diverted around the proposed site plan block in the interim condition. It is expected that once those parcels are developed, stormwater will be attenuated on-site va rear yard catchbasins and directed toward the West SWM Pond.

5.7 Stormwater Servicing Conclusions

The stormwater from the proposed site plan block has been accounted for in downstream linear storm infrastructure and downstream West Pond. The downstream West Pond provides the required quantity, quality and erosion controls for the proposed site plan block. The uncontrolled drainage areas within the site plan block consist of front or year yard drainage and therefore do not require quality control. The downstream West Pond has been designed to over-control for these areas in conformance with the overall development as the SWM pond has been sufficiently sized to accommodate the site plan block.

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6.0 EROSION AND SEDIMENT CONTROL

Soil erosion occurs naturally and is a function of soil type, climate and topography. The extent of erosion losses is exaggerated during construction where vegetation has been removed and the top layer of soil becomes agitated. Prior to topsoil stripping, earthworks or construction, erosion and sediment controls will be implemented and will be maintained throughout construction.

Silt fencing will be installed around the perimeter of the active part of the site (and headwater features) and will be cleaned and maintained throughout construction. The silt fence will remain in place until the working areas have been stabilized and re-vegetated.

Catchbasins will have catchbasin inserts installed during construction to protect from silt entering the storm sewer system.

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

The following additional recommendations to the Contractor will be included in contract documents:

- Limit extent of exposed soils at any given time.
- Re-vegetate exposed areas as soon as possible.
- Minimize the area to be cleared and grubbed.
- Protect exposed slopes with plastic or synthetic mulches.
- Install silt fence to prevent sediment from entering any existing ditches.
- No refueling or cleaning of equipment near existing watercourses.
- Provide sediment traps and basins during dewatering.

The Contractor will be required to complete regular inspections and guarantee proper performance. The inspection is to include:

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

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7.0 CONCLUSION AND RECOMMENDATIONS

David Schaeffer Engineering Ltd. (DSEL) has been retained by Caivan (Stittsville) Inc. to prepare a Design Brief in support of their application for site plan control. The preceding report outlines the following:

- Water – surrounding water main infrastructure within the Magnolia Subdivision is available to support the subject lands. Sufficient pressure is available within the City's desired pressure range.
- Wastewater – Sanitary sewers and Blocks 1, 12 and 13 within the private development will have servicing connections directly to Street 1 of the Magnolia Subdivision and the remaining sanitary flows will be conveyed by gravity to the subdivision sanitary sewer network and ultimately to the existing Shea Road Sanitary Pump Station. The sanitary sewer network has capacity to support the site plan block.
- Stormwater – Stormwater was considered in the design of the receiving storm sewers and downstream West Pond facility which provides all necessary quantity, quality and erosion controls. The subject property consists of a series of catchbasins and gravity sewers that allocate flows to the West SWM Pond as part of the Magnolia Subdivision – Phase 1.

The submitted materials demonstrate that the water, sanitary, and storm services currently proposed and/or under construction can accommodate the contemplated development.

Prepared by,
David Schaeffer Engineering Ltd.



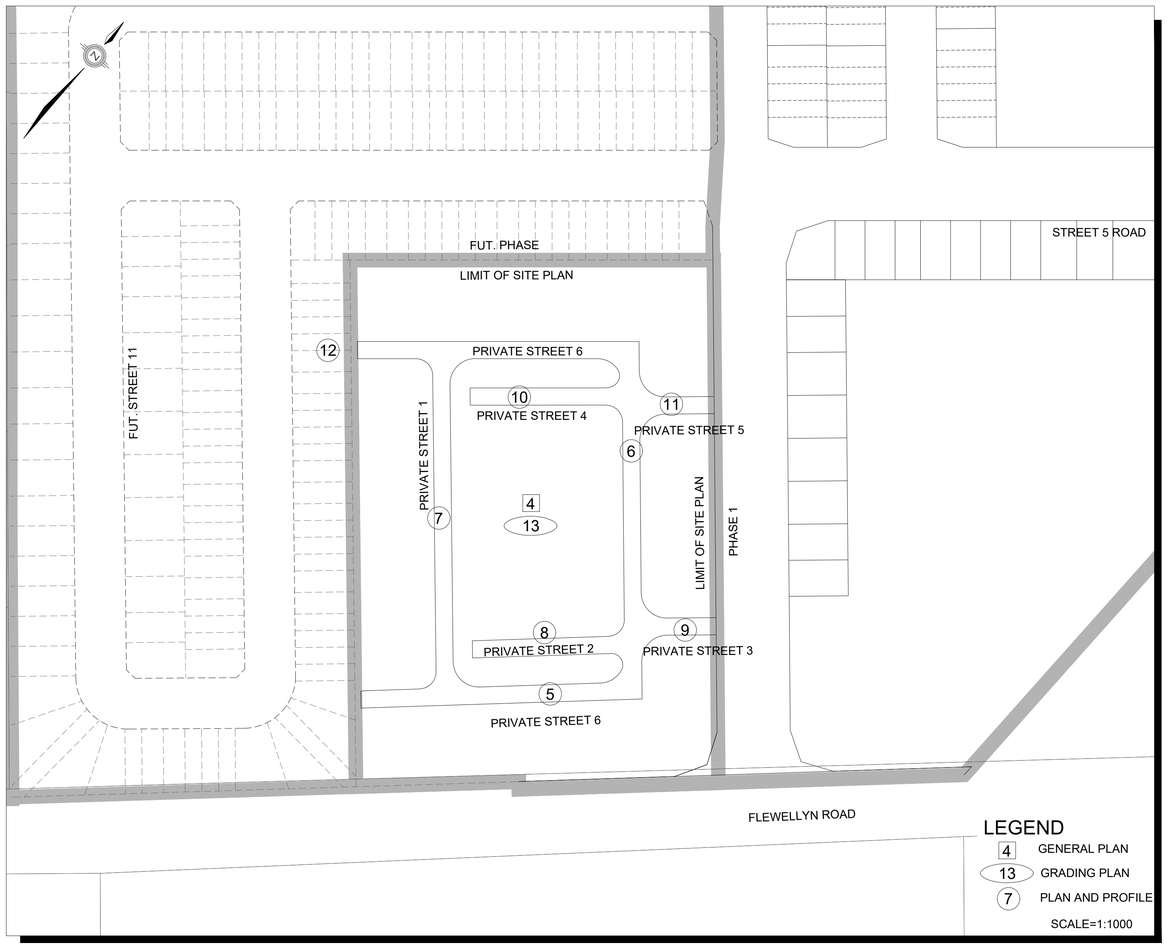
Per: John Priamo, P.Eng.
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DRAWINGS

MAGNOLIA STACKED TOWNS

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2	DETAILS AND TABLE	
3	DETAILS	
4	GENERAL PLAN	
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6	PRIVATE STREET 6	STA. 0+170.000 TO STA. 0+309.108
7	PRIVATE STREET 1	STA. 0+000.000 TO STA. 0+133.091
8	PRIVATE STREET 2	STA. 0+000.000 TO STA. 0+77.009
9	PRIVATE STREET 3	STA. 0+000.000 TO STA. 0+52.535
10	PRIVATE STREET 4	STA. 0+000.000 TO STA. 0+77.228
11	PRIVATE STREET 5	STA. 0+000.000 TO STA. 0+52.589
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PROJECT No. 25-1494

Ottawa

Caivan (Stittsville) Inc.

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042

GENERAL NOTES:

1. ALL WORKS AND MATERIALS SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE CITY OF OTTAWA, AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS), AS AMENDED BY THE CITY OF OTTAWA.
2. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL EXISTING UTILITIES WITHIN THE SITE AND ADJACENT WORK AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY SERVICES OR UTILITIES DISTURBED DURING CONSTRUCTION, TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
3. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
4. ANY AREAS BEYOND THE LIMIT OF THE SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AT THE CONTRACTORS EXPENSE.
5. RELOCATION OF EXISTING SERVICES AND/OR UTILITIES SHALL BE AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER AT THE EXPENSE OF THE DEVELOPER.
6. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS". THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE CONSTRUCTOR AS DEFINED IN THE ACT.
7. ALL CONSTRUCTION SIGNING MUST CONFORM TO THE M.T.O. MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST AMENDMENT).
8. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
9. THE SUPPORT OF ALL UTILITIES SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
10. THERE WILL BE NO SUBSTITUTION OF MATERIALS UNLESS PRIOR WRITTEN APPROVAL BY THE DIRECTOR OF ENGINEERING HAS BEEN OBTAINED.
11. ALL SEWERS SHALL BE INSTALLED WITH LASER AND CHECKED WITH LEVEL INSTRUMENT PRIOR TO BACKFILLING.
12. THE CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL BEDDING OR ADDITIONAL STRENGTH PIPE IF THE MAXIMUM TRENCH WIDTH, AS SPECIFIED BY OPSD, IS EXCEEDED.
13. ALL PIPE / CULVERT / SECTION SIZES REFER TO INSIDE DIMENSIONS.
14. SHOULD DEEPLY BURIED ARCHAEOLOGICAL REMAINS BE FOUND ON THE PROPERTY DURING CONSTRUCTION ACTIVITIES, THE HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE MUST BE NOTIFIED IMMEDIATELY.
15. STREET LIGHTING TO CITY OF OTTAWA STANDARDS.
16. ALL NECESSARY CLEARING AND GRUBBING SHALL BE COMPLETED BY THE CONTRACTOR. REVIEW WITH CONTRACT ADMINISTRATOR AND THE CITY OF OTTAWA PRIOR TO ANY TREE CUTTING.
17. CONTRACTOR SHALL PERFORM LEAKAGE TESTING, IN THE PRESENCE OF THE CONSULTANT, FOR SANITARY SEWERS IN ACCORDANCE WITH OPSS 410 AND OPSS 407. CONTRACTOR SHALL PERFORM VIDEO INSPECTION OF ALL STORM AND SANITARY SEWERS. A COPY OF THE VIDEO AND INSPECTION REPORT SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW.
18. THE CLAY SEALS TO BE INSTALLED AS PER CITY STANDARD DRAWING NO. S8. THE SEALS SHOULD BE AT LEAST 1.5m LONG (IN THE TRENCH DIRECTION) AND SHOULD EXTEND FROM TRENCH WALL TO TRENCH WALL GENERALLY. THE SEALS SHOULD EXTEND FROM THE FROST LINE AND FULLY PENETRATE THE BEDDING, SUBBEDDING AND COVER MATERIAL. THE BARRIERS SHOULD CONSIST OF RELATIVELY DRY AND COMPACTABLE BROWN SILTY CLAY PLACED IN MAXIMUM 225mm THICK LOOSE LAYERS COMPACTED TO A MINIMUM OF 95% OF THE MATERIAL'S SPMDD. THE CLAY SEALS SHOULD BE PLACED AT THE SITE BOUNDARIES AND AT STRATEGIC LOCATIONS AT NO MORE THAN 60m INTERVALS IN THE SERVICE TRENCHES.
19. AS PER GEOTECHNICAL CONSULTANT'S RECOMMENDATIONS, THE CLAY SEAL IS ONLY REQUIRED WITHIN THE GRANULAR MATERIAL SURROUNDING THE PIPE. THE EXCAVATED SILTY CLAY WILL BE REUSED AS TRENCH BACKFILL WHICH WILL ACT AS A CLAY SEAL.
20. AS PER GEOTECHNICAL CONSULTANT'S RECOMMENDATIONS, AT LEAST 150mm OF OPSS GRANULAR A SHOULD BE USED FOR PIPE BEDDING FOR SEWER AND WATER PIPES. WHERE THE INVERT OF THE EXCAVATION IS BELOW THE STIFF CRUST AND INTO THE GREY SILTY CLAY, THE THICKNESS OF THE BEDDING SHOULD BE INCREASED TO 300mm. THE BEDDING SHOULD EXTEND TO THE SPRING LINE OF THE PIPE. COVER MATERIAL, FROM THE SPRING LINE TO AT LEAST 300mm ABOVE THE OBVERT OF THE PIPE SHOULD CONSIST OF OPSS GRANULAR A. THE BEDDING AND COVER MATERIALS SHOULD BE PLACED IN MAXIMUM 300mm THICK LIFTS COMPACTED TO A MINIMUM OF 99% OF THE MATERIAL'S SPMDD.
21. FOR HOUSE CONNECTIONS INSTALLED UNDER STEPS AND PORCHES, SLEEVE SHALL BE USED.

STORM NOTES:

1. ALL REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.2 (LATEST AMENDMENT). ALL NON-REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH CSA A257.1 (LATEST AMENDMENT). PIPE SHALL BE JOINTED WITH STD. RUBBER GASKETS AS PER CSA A257.3 (LATEST AMENDMENT).
2. ALL STORM SEWER TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. S6 AND S7 CLASS 'B' UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY PROJECT GEOTECHNICAL ENGINEER.
3. ALL PVC STORM SEWERS ARE TO BE SDR 35 APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
4. ALL STORM LATERALS SHALL BE PVC SDR 28, WHITE IN COLOR AND MARKED WITH A 50mm x 100mm WOODEN MARKER EXTENDING FROM THE INVERT TO 1.0m ABOVE GRADE PAINTED GREEN. HOUSE CONNECTIONS SHALL BE 2.0 m MIN. BELOW FINISHED GRADE AT STREET LINE WHERE POSSIBLE. SINGLE CONNECTIONS SHALL BE 100mm DIA..
5. STORM MANHOLE FRAME AND COVERS SHALL BE AS PER CITY OF OTTAWA STD. S24.1 AND S25.
6. SAFETY PLATFORMS SHALL BE IN ACCORDANCE WITH OPSD 404.02.
7. DROP STRUCTURES SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA SPECIFICATIONS AND OPSD 1003.01.
8. STORM SEWER MANHOLES SERVING LOCAL SEWERS LESS THAN 900mm SHALL BE CONSTRUCTED WITH A 300mm SUMP. FOR STORM SEWERS 900mm AND OVER USE BENCHING IN ACCORDANCE WITH OPSD 701.021.
9. SINGLE AND DOUBLE CATCH BASINS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. S1. AND OPSD 705.020, RESPECTIVELY. FRAMES AND GRATE SHALL BE AS PER CITY OF OTTAWA STD. S19 FOR REAR LOT CATCH BASINS AND STREET CATCH BASINS.
10. CURB INLET TYPE CATCH BASIN (CICB) SHALL BE USED IN SPECIFIC LOCATIONS IN ACCORDANCE WITH CITY OF OTTAWA STD. S3. FRAME AND GRATE SHALL BE AS PER CITY OF OTTAWA STD. S22 AND S23, UNLESS OTHERWISE NOTED.
11. SINGLE AND DOUBLE CATCHBASIN LEADS SHALL BE 200mm DIA (MIN.), AT 1.0% SLOPE (MIN.), UNLESS OTHERWISE NOTED. WHERE REAR LOT CATCHBASINS CONNECT TO STREET CATCHBASINS, SINGLE AND DOUBLE CATCHBASIN LEADS SHALL BE 250mm DIA (MIN.), AT 1.0% SLOPE (MIN.), UNLESS OTHERWISE NOTED. CB LEAD OUT INVERT TO BE SET 1.38m BELOW TOP OF GRATE ELEVATION UNLESS OTHERWISE NOTED.
12. ALL STREET CATCHBASINS/CATCHBASIN MANHOLES SHALL HAVE 600mm SUMPS, AND ALL REAR YARD CATCHBASINS (OPSD 705.010) SHALL HAVE 300mm SUMPS UNLESS OTHERWISE NOTED. REAR YARD LANDSCAPE CATCHBASINS TO BE SUMPLESS.
13. CONTRACTOR SHALL ENSURE THAT CATCHBASINS ARE INSTALLED AT THE LOW POINT OF SAG CURB WORKS.
14. THE STORM SEWER CLASSES HAVE BEEN DESIGNED BASED ON BEDDING CONDITIONS SPECIFIED ABOVE. WHERE THE SPECIFIED TRENCH WIDTH IS EXCEEDED, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADDITIONAL BEDDING, A DIFFERENT TYPE OF BEDDING OR A HIGHER PIPE STRENGTH AT THEIR OWN EXPENSE AND SHALL ALSO BE RESPONSIBLE FOR EXTRA TEMPORARY AND/OR PERMANENT REPAIRS MADE NECESSARY BY THE WIDENED TRENCH.
15. THE MINIMUM DIAMETER FOR REAR LOT PERFORATED PIPE IS 250mm, REFER TO CITY STD. S29 FOR DETAIL, UNLESS OTHERWISE NOTED.
16. FOR TWO OR MORE REAR LOT CATCH BASINS CONNECTED IN SERIES, THE LEAD FROM THE LAST REAR LOT CB TO THE STORM SEWER SHALL BE SOLID PIPE.
17. ALL STORM SEWERS WITH LESS THAN 2.0m COVER TO BE INSULATED PER CITY STANDARDS S35.

SANITARY NOTES:

1. ALL SANITARY SEWER INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE CITY OF OTTAWA AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS) AS AMENDED BY THE CITY OF OTTAWA.
2. ALL SANITARY SEWERS SHALL BE PVC SDR 35, IPEX "RING-TITE" (OR EQUIVALENT), AS PER CSA STANDARD B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE NOTED.
3. SANITARY SEWER TRENCH AND BEDDING SHALL BE AS PER CITY OF OTTAWA STD. S6 AND S7, CLASS 'B' BEDDING UNLESS OTHERWISE NOTED.BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY PROJECT GEOTECHNICAL ENGINEER.
4. ALL SANITARY LATERALS ARE TO BE PVC SDR 28, IPEX "RING-TITE" (OR EQUIVALENT), WHITE IN COLOUR AND MARKED WITH A 50mm x 100mm WOODEN MARKER, EXTENDING FROM THE INVERT TO 1.0 m ABOVE GRADE PAINTED RED. HOUSE CONNECTIONS SHALL BE 2.75m BELOW FINISHED GRADE AT STREET LINE WHERE POSSIBLE. SINGLE CONNECTIONS SHALL BE 135mm DIA..
5. SANITARY MANHOLE FRAME AND COVERS SHALL BE AS PER CITY OF OTTAWA STD. S24 AND S25.
6. SAFETY PLATFORMS SHALL BE AS PER OPSD 404.02.
7. DROP STRUCTURES SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA SPECIFICATIONS AND OPSD 1003.01.
8. SANITARY SEWER MANHOLES SHALL BE BENCHED AS PER OPSD 701.021.
9. FOR SANITARY MANHOLES, DEPENDING ON THE ELEVATION OF THE GROUNDWATER TABLE, AND SUBJECT TO THE RECOMMENDATION OF THE PROJECT GEOTECHNICAL CONSULTANT, CRETEX SEALS, OR A SIMILAR PRODUCT, SHALL BE INSTALLED IN THE FIRST PRE-CAST MANHOLE SECTION TO JUST BELOW THE MANHOLE FRAME TO PREVENT INFILTRATION.
10. SANITARY MANHOLE FRAME AND COVERS SHALL BE AS PER CITY OF OTTAWA STD. S24 AND S25, EXCEPT FOR WHERE IN PONDING AREAS, WHERE WATERTIGHT FRAME AND COVERS SHALL BE EAST JORDAN CAMPRESSION 41420049W01 AS PER CITY OF OTTAWA MS-22.15 (OR APPROVED EQUIVALENT)

WATER NOTES:

1. ALL WATERMAIN INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE CITY OF OTTAWA AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS) AS AMENDED BY THE CITY OF OTTAWA.
2. ALL PVC WATERMAINS SHALL BE EQUAL TO AWWA C-900 CLASS 150, SDR 18.
3. WATERMAIN TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W17, UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY PROJECT GEOTECHNICAL ENGINEER.
4. ALL PVC WATERMAINS SHALL BE INSTALLED WITH A 10 GAUGE STRANDED COPPER TWU OR RWU TRACER WIRE IN ACCORDANCE WITH CITY OF OTTAWA STD. W36.
5. WATER SERVICES ARE TO BE TYPE K SOFT COPPER AS PER CITY OF OTTAWA STD. W26 UNLESS OTHERWISE SPECIFIED. SINGLE SERVICES SHALL BE 19mm DIA. PEX. WATER SERVICES SHALL BE MARKED WITH A "50mm x 100mm", EXTENDING FROM THE INVERT TO 1.0m ABOVE GRADE PAINTED BLUE. CURB STOPS SHALL BE INSTALLED AT THE PROPERTY LINE.
6. CATHODIC PROTECTION IS REQUIRED ON ALL METALLIC FITTINGS AS PER CITY OF OTTAWA STD. W40 AND W42.
7. CONTRACTOR TO SUPPLY HYDRANT EXTENSION TO ADJUST THE LENGTH OF HYDRANT BARREL AS REQUIRED.
8. FIRE HYDRANTS SHALL BE INSTALLED AS PER CITY OF OTTAWA STD. W19, AND LOCATED AS PER CITY STD. W18.
9. VALVE IN BOXES SHALL BE INSTALLED AS PER CITY OF OTTAWA STD. W24.
10. 50mm DIAMETER WATERMAINS SHALL BE PEX OR TYPE 'K' COPPER TUBING. WATERMAIN INSTALLATION IN CUL-DE-SAC TO BE INSTALLED AS PER CITY OF OTTAWA STD. W37.
11. WATERMAIN IN FILL AREAS TO BE INSTALLED WITH RESTRAINED JOINTS AS PER CITY OF OTTAWA STD. W25.5 AND W25.6.
12. THRUST BLOCKING OF WATERMAIN TO BE INSTALLED AS PER CITY OF OTTAWA STD. W25.3 AND W25.4.
13. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CAPS, PLUGS AND BLOW-OFFS AND NOZZLES REQUIRED FOR TESTING AND DISINFECTION OF THE WATERMAIN.
14. INSULATION FOR WATERMAIN CROSSING OVER AND BELOW SEWER SHOULD BE IN ACCORDANCE WITH CITY OF OTTAWA STD. W25.2 AND W25, RESPECTIVELY, WHERE WATERMAIN COVER IS LESS THAN 2.4m.
15. WHERE THE SEPARATION BETWEEN SERVICES AND MANHOLES IS LESS THAN 1.2m, WATER SERVICES ARE TO BE INSULATED AS PER CITY STD. W23.
16. AS PER MOE GUIDELINE, THE MINIMUM VERTICAL CLEARANCE BETWEEN WATERMAIN AND SEWER / UTILITY IS 0.50m. FOR CROSSING UNDER SEWER, ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS IS REQUIRED TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING. THE LENGTH OF WATER PIPE SHALL BE CENTRED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.

ROADWORK NOTES:

1. ALL TOPSOIL AND ORGANIC MATERIAL SHALL BE STRIPPED WITHIN THE ROAD ALLOWANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. CONCRETE CURB SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. SC1.1 (BARRIER CURB) AND SC1.3 (MOUNTABLE CURB). PROVISION SHALL BE MADE FOR CURB DEPRESSIONS AT SIDEWALKS AND DRIVEWAYS.
3. ROAD SUBDRAINS SHALL BE REFERENCE TO R1, AS SUGGESTED IN RG4683-2, SUBDRAIN INVERTS TO BE APPROXIMATELY 300mm BELOW SUBGRADE LEVEL
4. CONCRETE SIDEWALK SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. SC3 AND SC1.4.
5. PAVEMENT REINSTATEMENT FOR SERVICE AND UTILITY CUTS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. R10 AND OPSD 509.010, OPSS 310.
6. GRANULAR "A" SHALL BE PLACED TO A MINIMUM THICKNESS OF 300mm AROUND ALL STRUCTURES WITHIN PAVEMENT AREA.
7. ALL GRANULAR FOR ROADS SHALL BE COMPACTED TO A MINIMUM OF 99% STANDARD PROCTOR DENSITY.
8. ASPHALT WEAR COURSE SHALL NOT BE PLACED UNTIL THE VIDEO INSPECTION OF SEWERS & NECESSARY REPAIRS HAVE BEEN CARRIED OUT TO THE SATISFACTION OF THE CONSULTANT.
9. SUB-EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'B' COMPACTED IN MAXIMUM 300 mm LIFTS.
10. PEDESTRIAN CURB RAMP WITH BOULEVARD SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. SC7.
11. PAVEMENT DESIGN TYPE (SEE DWG. 3 FOR PAVEMENT DESIGN TYPE LAYOUT)

ACCESS LANES & HEAVY DUTY TRUCK PARKING
- 40mm SUPERPAVE 12.5 ASPHALTIC CONCRETE
- 50mm SUPERPAVE 19.0 ASPHALTIC CONCRETE
- 150mm OPSS GRANULAR A CRUSHED STONE
- 450mm OPSS GRANULAR B TYPE II
- SUBGRADE

DRIVEWAYS AND PARKING AREAS
- 50mm HL-3 OR SUPERPAVE 12.5 ASPHALTIC CONCRETE
- 150mm OPSS GRANULAR A CRUSHED STONE
- 300mm GRANULAR B TYPE II
- SUBGRADE

GRADING NOTES:

1. A FLAT AREA HAVING A WIDTH OF 0.6m SHALL BE PROVIDED AT THE BOUNDARY LIMITS ADJACENT DEVELOPED PROPERTIES IN ORDER THAT THE EXISTING BOUNDARY ELEVATIONS SHALL BE MAINTAINED.
2. ALL ROOF DOWNSPOUTS SHALL DISCHARGE TO THE GROUND ONTO SPLASH PADS AND SHALL NOT BE CONNECTED TO THE STORM SEWER, OR THE BUILDING FOUNDATION DRAIN.
3. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS." THE GENERAL CONTRACTOR SHALL BE DESIGNATED AS THE CONSTRUCTOR AS DEFINED IN THE ACT.
4. PRIOR TO THE COMMENCEMENT OF THE SITE GRADING WORKS, ALL SILTATION CONTROL DEVICES SHALL BE INSTALLED AND OPERATIONAL. THE CONTRACTOR SHALL MAINTAIN ALL WORKS UNTIL SERVICING CONSTRUCTION IS COMPLETED TO THE SATISFACTION OF THE ENGINEER AND THE CITY OF OTTAWA.
5. ALL SWALES SHALL BE 0.15m DEEP WITH 3:1 SIDE SLOPES UNLESS OTHERWISE INDICATED. THE MINIMUM LONGITUDINAL SLOPE IS 1% AND 1.5% WITH INSTALLATION OF SUBDRAIN OR WITHOUT, RESPECTIVELY.
6. TOP OF GRATE (T/G) ELEVATIONS FOR ALL STREET CATCHBASINS SHOWN ON PLANS, REFER TO THE ELEVATIONS AT GUTTER OR EDGE OF PAVEMENT, WHERE APPLICABLE.

EROSION AND SEDIMENT CONTROL NOTES:

1. PRIOR TO TOPSOIL STRIPPING, EARTHWORKS, OR UNDERGROUND CONSTRUCTION, EROSION AND SEDIMENT CONTROLS SHALL BE IMPLEMENTED TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
2. SEDIMENT CONTROL FENCE SHALL BE CLEANED AND MAINTAINED IN GOOD REPAIR BY CONTRACTOR.
3. SEDIMENT CONTROL FENCE TO REMAIN IN PLACE UNTIL THE WORKING AREA HAS BEEN STABILIZED AND REVEGETATED.
4. ACCUMULATED SEDIMENT TO BE REMOVED OFF SITE PRIOR TO THE REMOVAL OF SEDIMENT CONTROL FENCE.
5. CONTRACTOR TO INSTALL AND MAINTAIN MUD MAT AT CONSTRUCTION ACCESS IN ORDER TO PREVENT MUD TRACKING ONTO ADJACENT ROADS. MUD MAT TO BE MINIMUM 30m LONG AND 10.0m WIDE AND SHALL CONSIST OF 0.3m OF 50mm CLEAR STONE.

GEOTECHNICAL REPORT/MEMO:

1. REFER TO:
   - GEOTECHNICAL INVESTIGATION REPORT NO. PG5570-2-REV5, DATED JULY 9, 2025 BY PATERSON GROUP

INFORMATION PRESENTED ON THESE DRAWINGS HAS BEEN INTERPOLATED FROM THE GEOTECHNICAL REPORTS AND ACCURACY IS NOT GUARANTEED. CONTRACTORS ARE ADVISED TO READ THE GEOTECHNICAL REPORTS AND ASSUME THEIR OWN CONCLUSIONS.

SPILLS CONTROL NOTES:

1. ALL CONSTRUCTION EQUIPMENT SHALL BE REFUELED, MAINTAINED AND STORED NO LESS THAN 30 METERS FROM THE WATERCOURSES, STREAMS, CREEKS, WOODLOTS AND ANY ENVIRONMENTALLY SENSITIVE AREAS, OR AS OTHERWISE SPECIFIED.
2. THE CONTRACTOR MUST IMPLEMENT ALL NECESSARY MEASURES IN ORDER TO PREVENT LEAKS, DISCHARGES OR SPILLS OF POLLUTANTS, DELETERIOUS MATERIALS, OR OTHER SUCH MATERIALS OR SUBSTANCES WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT.
3. IN THE EVENT OF A LEAK, DISCHARGE OR SPILL OF A POLLUTANT, DELETERIOUS MATERIAL OR OTHER SUCH MATERIAL OR SUBSTANCE WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT, THE CONTRACTOR SHALL:

a). IMMEDIATELY NOTIFY THE APPROPRIATE FEDERAL, PROVINCIAL AND LOCAL GOVERNMENT MINISTRIES, DEPARTMENTS, AGENCIES AND AUTHORITIES OF THE INCIDENT IN ACCORDANCE WITH ALL CURRENT LAWS, LEGISLATION, ACTS, BY-LAWS, PERMITS, APPROVALS, ETC.

b). TAKE IMMEDIATE MEASURES TO CONTAIN THE MATERIAL OR SUBSTANCE, AND TO TAKE SUCH MEASURES AS THEY DEEM APPROPRIATE TO MITIGATE AGAINST THE ANY ADVERSE IMPACTS TO THE NATURAL ENVIRONMENT.

c). THE CONTRACT SHALL RESTORE THE AFFECTED AREA TO ORIGINAL CONDITION OR BETTER, ALL TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION.

RETAINING WALLS:

1. PRE-CAST UNIT RETAINING WALL TYPE TO BE SPECIFIED BY PROJECT LANDSCAPE ARCHITECT AT LOCATIONS, AS SPECIFIED ON THE GRADING PLAN(S) TO BE APPROVED BY AUTHORITIES HAVING JURISDICTION.
2. ALL RETAINING WALLS SHALL BE CONCRETE, CONCRETE PRODUCT WITH TIE-BACK SYSTEM OR HEAVY BLOCK SYSTEM.
3. ALL TYPICAL RETAINING WALLS GREATER THAN 1.0m HEIGHT ARE TO BE DESIGNED, APPROVED AND STAMPED BY A CONSULTING ENGINEER SPECIALIZING IN STRUCTURAL ENGINEERING.
4. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS CERTIFIED BY A STRUCTURAL ENGINEER.
5. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A CERTIFICATE FROM A STRUCTURAL ENGINEER CERTIFYING THAT THE WALL HAS BEEN CONSTRUCTED IN CONFORMANCE WITH THE APPROVED ENGINEERING DRAWINGS AND THE CERTIFIED SHOP DRAWINGS.
6. FENCES OR RAILINGS ARE REQUIRED FOR WALLS HIGHER THAN 0.6m.

LEGEND

WATERMAIN

CROSS
45° BEND
LATERAL
HYDRANT, VALVE & VB
TEE
VALVE & VC
VALVE & VB
22.5° BEND
11.25° BEND
REDUCER
CAP

SANITARY

MAINTENANCE HOLE
CAP
EXISTING SANITARY MAINTENANCE HOLE

STORM

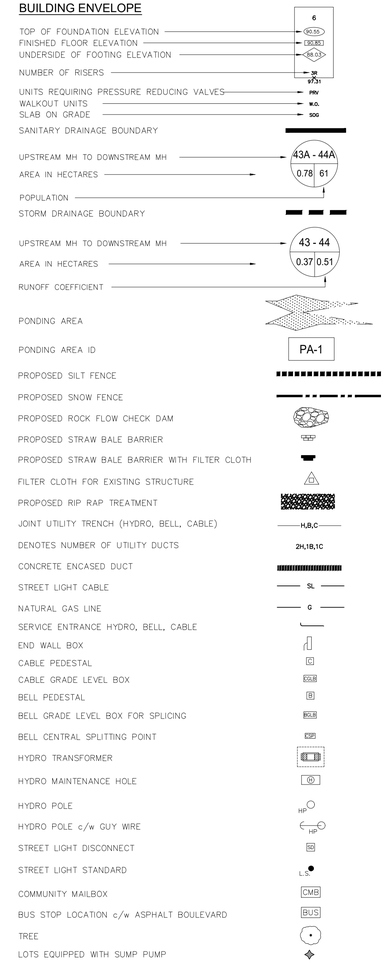
STREET CATCHBASIN & LEAD
STREET CATCHBASIN WITH CLOSED LID & LEAD
MAINTENANCE HOLE
CURB INLET CATCHBASIN & LEAD
CATCHBASIN/ MAINTENANCE HOLE
INTERCONNECTED CATCH BASIN & LEADS
CAP
WATER BOX
SINGLE SERVICE LOCATION (ST, SAN & WM)
TEE CATCHBASIN
PERFORATED PIPE
ELBOW CATCHBASIN
EXISTING STORM MAINTENANCE HOLE
DITCH AND CULVERT
CONCRETE SIDEWALK
CURB & DEPRESSED CURB
ASPHALT SIDEWALK
CHAINLINK FENCE (1.5m UNLESS OTHERWISE NOTED)
NOISE BARRIER
WOODEN POST AND RAIL FENCE
WOOD PRIVACY BARRIER
POST AND RAIL FENCE
PHASING LIMITS
PROPERTY BOUNDARY
BOREHOLE (BH)
TEST PIT (TP)
AUGER HOLE (AH)
MONITORING WELL LOCATION
CONCEPTUAL WELL LOCATION
CONTOUR
PROPOSED ELEVATION
EXISTING ELEVATION
TOP OF GRATE ELEVATION
PROPOSED TERRACING
SURFACE SLOPE
FLOW DIRECTION
MAJOR OVERLAND FLOW DIRECTION
TACTILE WALKING SURFACE INDICATOR (AS PER CITY OF OTTAWA STD. SC6)
BIKE RACK
EARTHBIN (DWG. 3 FOR DETAILS)

AS PER GEOTECHNICAL REPORT

91.00
92.52 / 92.49
T/G 92.55
2.0%



BUILDING ENVELOPE



CITY OF OTTAWA								
SEWER AND WATERMAIN INSULATION								
CALCULATION OF THICKNESS OF INSULATION								
Depth (m)	Ti	Using Ti						
(m)	(mm)	(mm)	As per City Standard (W22):					
1.20	100	100			Ti=	(2400 - H)		
1.25	96	100				12		
1.30	92	100						
1.35	88	100						
1.40	83	100						
1.45	79	100	where:	Ti =	Thickness of Insulation (mm), 50mm min.			
1.50	75	75		H =	H Depth of Cover above OD (mm)			
1.55	71	75						
1.60	67	75						
1.65	63	75						
1.70	58	75						
1.75	54	75						
1.80	50	50						
1.85	46	50						
1.90	42	50						
1.95	38	50						
2.00	33	50						
2.05	29	50						
2.10	25	50						
2.15	21	50						
2.20	17	50						
2.25	13	50						
2.30	8	50						

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01. SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE

ELEVATIONS SHOWN ON THIS PLAN ARE GEODETIC RELATED TO CGVD28:78 VERTICAL DATUM

LEGAL INFORMATION

SITE PLAN: PC2025-0260
PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY G4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON JANUARY 21, 2026.

No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

CITY OF OTTAWA

PROJECT No. 25-1494

LICENSED PROFESSIONAL ENGINEER W. LIU 100167932 26-01-30 PROVINCE OF ONTARIO

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

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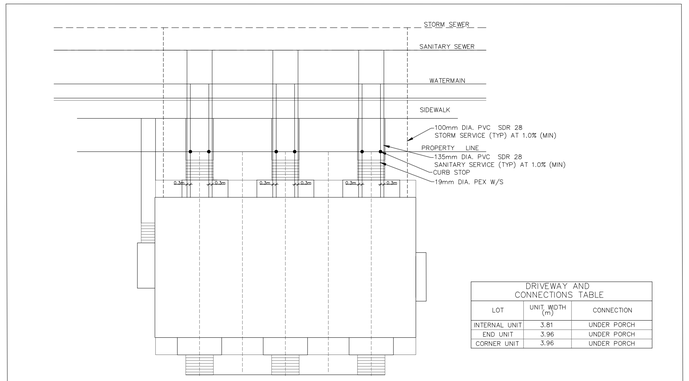
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GENERAL NOTES

DRAWN BY:	M.S & A.S.	CHECKED BY:	W.L.
DESIGNED BY:	W.L.	CHECKED BY:	C.M.
SCALE:	N.T.S.	DATE:	JANUARY 2026

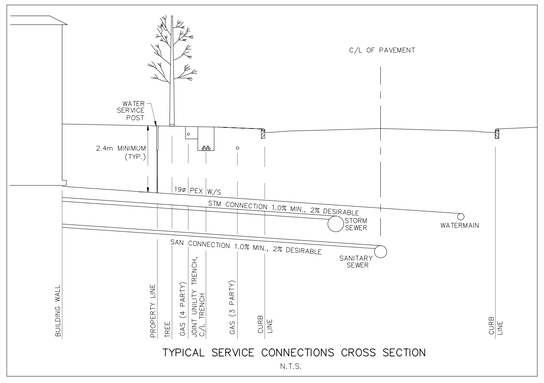
SHEET NO. 1 OF 18

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042

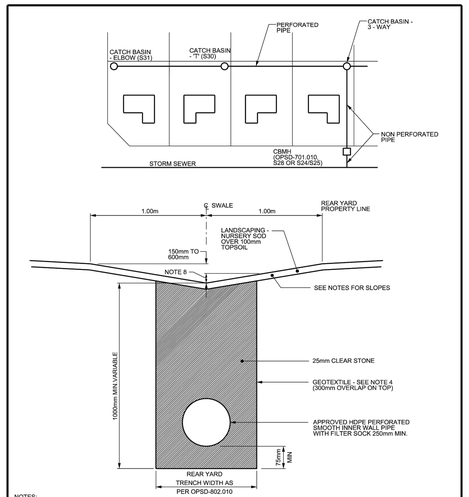


DRIVEWAY AND CONNECTIONS TABLE		
LOT	UNIT WIDTH (m)	CONNECTION
INTERNAL UNIT	3.81	UNDER PORCH
END UNIT	3.96	UNDER PORCH
CORNER UNIT	3.96	UNDER PORCH

TYPICAL SERVICE CONNECTION (STACKED TOWNHOUSE)
N.T.S.



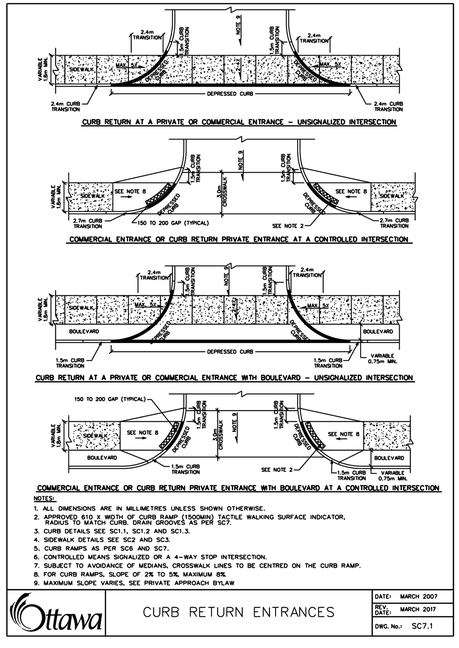
TYPICAL SERVICE CONNECTIONS CROSS SECTION
N.T.S.



NOTES:
1. SIDE SLOPE OF SWALE - MIN. 1.5%, MAX. 3:1.
2. LONGITUDINAL SLOPE OF SWALE WITHOUT PERFORATED PIPE 1.5% MIN.
3. LONGITUDINAL SLOPE OF SWALE WITH PERFORATED PIPE 0.5% MIN. WITH 1% OR GREATER PREFERRED.
4. UNDER DRIVEWAYS NON PERFORATED PIPE TO BE USED WITH 75mm BEDDING AND BACKFILLED WITH APPROVED NATIVE MATERIAL.
5. CB "T" TO BE SPACED ABOUT EVERY 20 TO 25m AND LOCATED 1m OFF REAR YARD AND SIDE YARD PROPERTY LINES.
6. CB ELBOW TO BE AT UPPER ENDS OF PERFORATED PIPE AND LOCATED 1m OFF REAR YARD AND SIDE YARD PROPERTY LINES.
7. GEOTEXTILE SHALL BE APPROVED NON-WOVEN CLASS 1 OR AS SPECIFIED.
8. MAXIMUM REAR YARD WATER DEPTH IS 300mm.

N.T.S.

Ottawa	PERFORATED PIPE INSTALLATION FOR REAR YARD AND LANDSCAPING APPLICATIONS	DATE:	MARCH 2007
		REV. DATE:	MARCH 2017
		DWG. No.:	S29



NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
2. APPROVED 610 X WIDTH OF CURB RAMP (1500MIN) TACTILE WALKING SURFACE INDICATOR, RADIUS TO MATCH CURB. DRAIN GROOVES AS PER SC7.
3. CURB DETAILS SEE SC1.1, SC1.2 AND SC1.3.
4. SIDEWALK DETAILS SEE SC2 AND SC3.
5. CURB RAMPS AS PER SC6 AND SC7.
6. CONTROLLED MEANS SIGNALIZED OR A 4-WAY STOP INTERSECTION.
7. SUBJECT TO AVOIDANCE OF MEDIANS, CROSSWALK LINES TO BE CENTRED ON THE CURB RAMP.
8. FOR CURB RAMPS, SLOPE OF 2% TO 5%, MAXIMUM 8%.
9. MAXIMUM SLOPE VARIES, SEE PRIVATE APPROACH BYLAW

Ottawa	CURB RETURN ENTRANCES	DATE:	MARCH 2007
		REV. DATE:	MARCH 2017
		DWG. No.:	SC7.1

CATCH BASIN DATA TABLE

STREET NAME	CATCHBASIN ID	OUTLET PIPE				TOP OF GRATE	GRATING COVER	INVERT	
		DIA. (mm)	TYPE	LENGTH (m)	INV. DEPTH (m)			INLET	OUTLET
PRIVATE STREET 2	CB 200	200	PVC	0.63	1.50	105.62	S19 PERFORATED	-	104.12
PRIVATE STREET 1	CB 201	200	PVC	2.96	1.50	105.72	S19 PERFORATED	-	104.22
PRIVATE STREET 1	CB 202	200	PVC	5.05	1.50	105.80	S19 PERFORATED	-	104.30
PRIVATE STREET 1	CB 203	200	PVC	5.05	1.50	105.89	S19 PERFORATED	-	104.39
PRIVATE STREET 1	CB 204	200	PVC	1.05	1.50	105.89	S19 PERFORATED	-	104.39
PRIVATE STREET 3	CB 205	200	PVC	3.51	1.50	105.44	S19 PERFORATED	-	103.94
PRIVATE STREET 4	CB 206	200	PVC	2.12	1.50	106.03	S19 PERFORATED	-	104.53
PRIVATE STREET 4	CB 207	200	PVC	5.07	1.50	106.03	S19 PERFORATED	-	104.53
PRIVATE STREET 6	CB 208	200	PVC	6.13	1.50	105.84	S19 PERFORATED	-	104.34
PRIVATE STREET 6	CB 209	200	PVC	2.70	1.61	105.65	S19 PERFORATED	104.09	104.04
PRIVATE STREET 6	CB 210	200	PVC	6.09	1.50	105.65	S19 PERFORATED	-	104.15
PRIVATE STREET 6	CB 211	200	PVC	1.78	1.50	105.53	S19 PERFORATED	-	104.03
PRIVATE STREET 6	DCB 212	250	PVC	3.02	1.50	105.45	S19 PERFORATED	-	103.95
PRIVATE STREET 6	DCB 213	250	PVC	2.81	1.50	105.47	S19 PERFORATED	-	103.97
PRIVATE STREET 6	CB 214	200	PVC	3.08	1.50	105.89	S19 PERFORATED	-	104.39
PRIVATE STREET 6	CB 215	200	PVC	3.02	1.50	105.89	S19 PERFORATED	-	104.39
PRIVATE STREET 6	CB 217	200	PVC	6.55	1.50	105.87	S19 PERFORATED	-	104.37
PRIVATE STREET 6	CB 218	200	PVC	0.40	1.50	105.86	S19 PERFORATED	-	104.36
PRIVATE STREET 6	CB 219	200	PVC	0.40	1.61	106.08	S19 PERFORATED	104.52	104.47
PRIVATE STREET 6	CB 220	200	PVC	6.10	1.50	106.08	S19 PERFORATED	-	104.58
PRIVATE STREET 5	CB 221	200	PVC	7.54	1.50	105.99	S19 PERFORATED	-	104.49
PRIVATE STREET 6	CB 222	200	PVC	4.44	1.50	105.57	S19 PERFORATED	-	104.07

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION
TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01. SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE
ELEVATIONS SHOWN ON THIS PLAN ARE GEODETIC RELATED TO CGVD28:78 VERTICAL DATUM

LEGAL INFORMATION
SITE PLAN: PC2025-0260
PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON JANUARY 21, 2026.

No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

Ottawa

CITY OF OTTAWA

PROJECT No. 25-1494

LICENSED PROFESSIONAL ENGINEER W. LIU 100167932 26-01-30 PROVINCE OF ONTARIO

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

DSEL

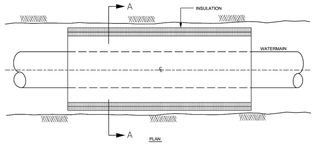
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

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DETAILS AND TABLE

DRAWN BY:	M.S & A.S.	CHECKED BY:	W.L.	SHEET NO.
DESIGNED BY:	W.L.	CHECKED BY:	C.M.	2 OF 18
SCALE:	1:500	DATE:	JANUARY 2026	

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042

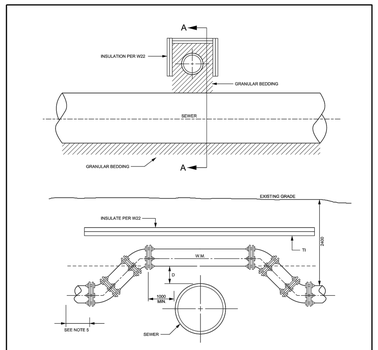


NOTES

FOR 150 - 400mm (NOMINAL DIAMETER) WATERMAINS, WHERE THE DEPTH OF COVER IS LESS THAN 2400mm

1. INCREMENTS OF THICKNESS SHALL BE ADJUSTABLE TO 25mm.
2. IN PROXIMITY OF MAINTENANCE HOLES, CULVERTS, CATCHBASINS, ETC., INSULATION SHALL BE PLACED PER DETAIL W23
3. DEPTH OF COVER LESS THAN 1200mm REQUIRES SPECIAL DESIGN
4. STAGGER JOINTS OF MULTIPLE SHEETS.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

Ottawa	THERMAL INSULATION FOR WATERMAINS IN SHALLOW TRENCHES	DATE: MAY 2001 REV. DATE: MARCH 2013 DWG. No.: W22



NOTES:

FOR WATERMAIN 100mm (NOMINAL) TO 400mm (NOMINAL)

1. BARREL TO BARREL SEPARATION (C) SHALL BE 200mm MINIMUM.
2. THRUST BLOCKS FOR MAINS LARGER THAN 400mm (NOMINAL) SHALL BE PER SPECIAL DESIGN.
3. FOR 300mm (NOMINAL) AND 400mm (NOMINAL) MAINS, BENDS SHALL BE MAX. 22° 30'.
4. CONCRETE FOR THRUST BLOCKS SHALL BE 20 MPa.
5. REFER TO W20.5 FOR RESTRAINED LENGTH REQUIREMENTS.
6. REFER TO W20.3 AND W20.4 FOR THRUST BLOCK REQUIREMENTS.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
8. DESIGNED TO MEET THE INTENT OF THE MOE WATERMAIN DESIGN CRITERIA JUNE 2012.

Ottawa	WATERMAIN CROSSING OVER SEWER	DATE: MAY 2001 REV. DATE: MARCH 2013 DWG. No.: W25.2

EarthBin® EB500 & EB505
Capacity: 5,000 Litre / 6.5 yd³

844-215-2467
www.earthbin.com
earthbin@earthbin.com

Model:
☐ EB500
☐ EB505

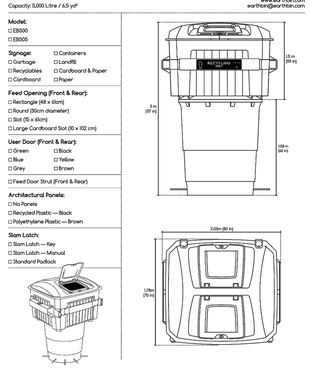
Signage: ☐ Containers
☐ Garbage ☐ Landfill
☐ Recyclables ☐ Cardboard & Paper
☐ Cardboard ☐ Paper

Feed Opening (Front & Rear):
☐ Rectangle (48 x 40cm)
☐ Round (50cm diameter)
☐ Slot (15 x 40cm)
☐ Large Cardboard Slot (10 x 102 cm)

User Door (Front & Rear):
☐ Green ☐ Black
☐ Blue ☐ Yellow
☐ Grey ☐ Brown
☐ Feed Door Strut (Front & Rear)

Architectural Panels:
☐ No Panels
☐ Recycled Plastic — Black
☐ Polyethylene Plastic — Brown

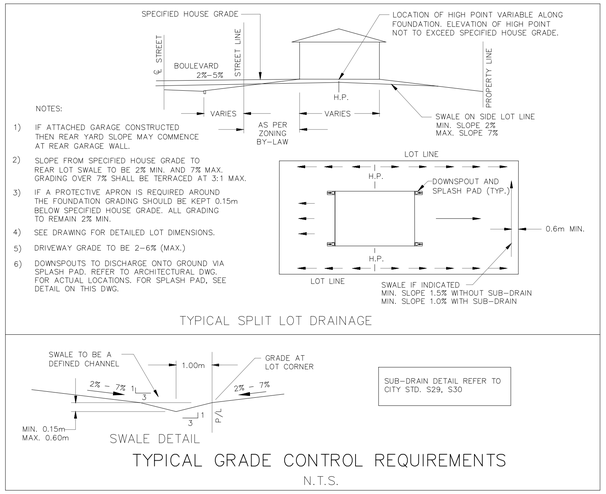
Slam Latch:
☐ Slam Latch — Key
☐ Slam Latch — Manual
☐ Standard Padlock



Details and specifications may change without notice due to continuous product improvement.

EB500, EB505
2/2023

PATENT PENDING
ALL CONTENT © EARTHBIN



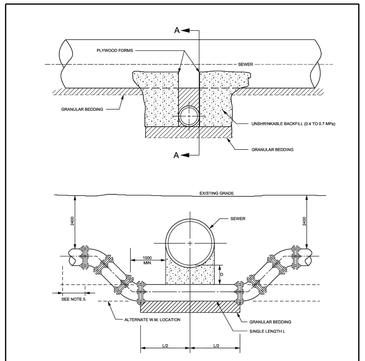
NOTES:

1) IF ATTACHED GARAGE CONSTRUCTED THEN REAR YARD SLOPE MAY COMMENCE AT REAR GARAGE WALL.
2) SLOPE FROM SPECIFIED HOUSE GRADE TO REAR LOT SWALE TO BE 2% MIN. AND 7% MAX. GRADING OVER 7% SHALL BE TERRACED AT 3:1 MAX.
3) IF A PROTECTIVE APRON IS REQUIRED AROUND THE FOUNDATION GRADING SHOULD BE KEPT 0.15m BELOW SPECIFIED HOUSE GRADE. ALL GRADING TO REMAIN 2% MIN.
4) SEE DRAWING FOR DETAILED LOT DIMENSIONS.
5) DRIVEWAY GRADE TO BE 2-6% (MAX.)
6) DOWNSPOUTS TO DISCHARGE ONTO GROUND VIA SPLASH PAD. REFER TO ARCHITECTURAL DWG. FOR ACTUAL LOCATIONS. FOR SPLASH PAD, SEE DETAIL ON THIS DWG.

TYPICAL SPLIT LOT DRAINAGE

SUB-DRAIN DETAIL REFER TO CITY STD. 529, 530

TYPICAL GRADE CONTROL REQUIREMENTS
N.T.S.

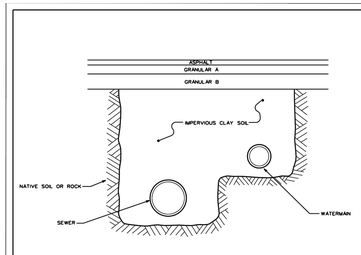


NOTES:

FOR WATERMAIN 100mm (NOMINAL) TO 400mm (NOMINAL)

1. BARREL TO INVERT SEPARATION (D) SHALL BE 500mm MINIMUM.
2. THRUST BLOCKS FOR MAINS LARGER THAN 400mm (NOMINAL) SHALL BE PER SPECIAL DESIGN.
3. FOR 300mm (NOMINAL) AND 400mm (NOMINAL) MAINS, BENDS SHALL BE MAX. 22° 30'.
4. CONCRETE FOR THRUST BLOCKS SHALL BE 20 MPa.
5. REFER TO W20.5 FOR RESTRAINED LENGTH REQUIREMENTS.
6. REFER TO W20.3 AND W20.4 FOR THRUST BLOCK REQUIREMENTS.
7. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
8. DESIGNED TO MEET THE INTENT OF THE MOE WATERMAIN DESIGN CRITERIA JUNE 2012.

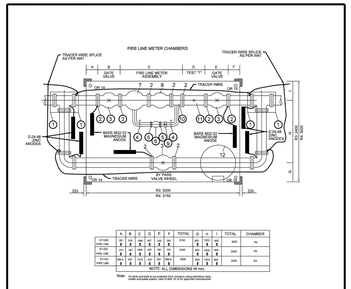
Ottawa	WATERMAIN CROSSING BELOW SEWER	DATE: MAY 2001 REV. DATE: MARCH 2013 DWG. No.: W25

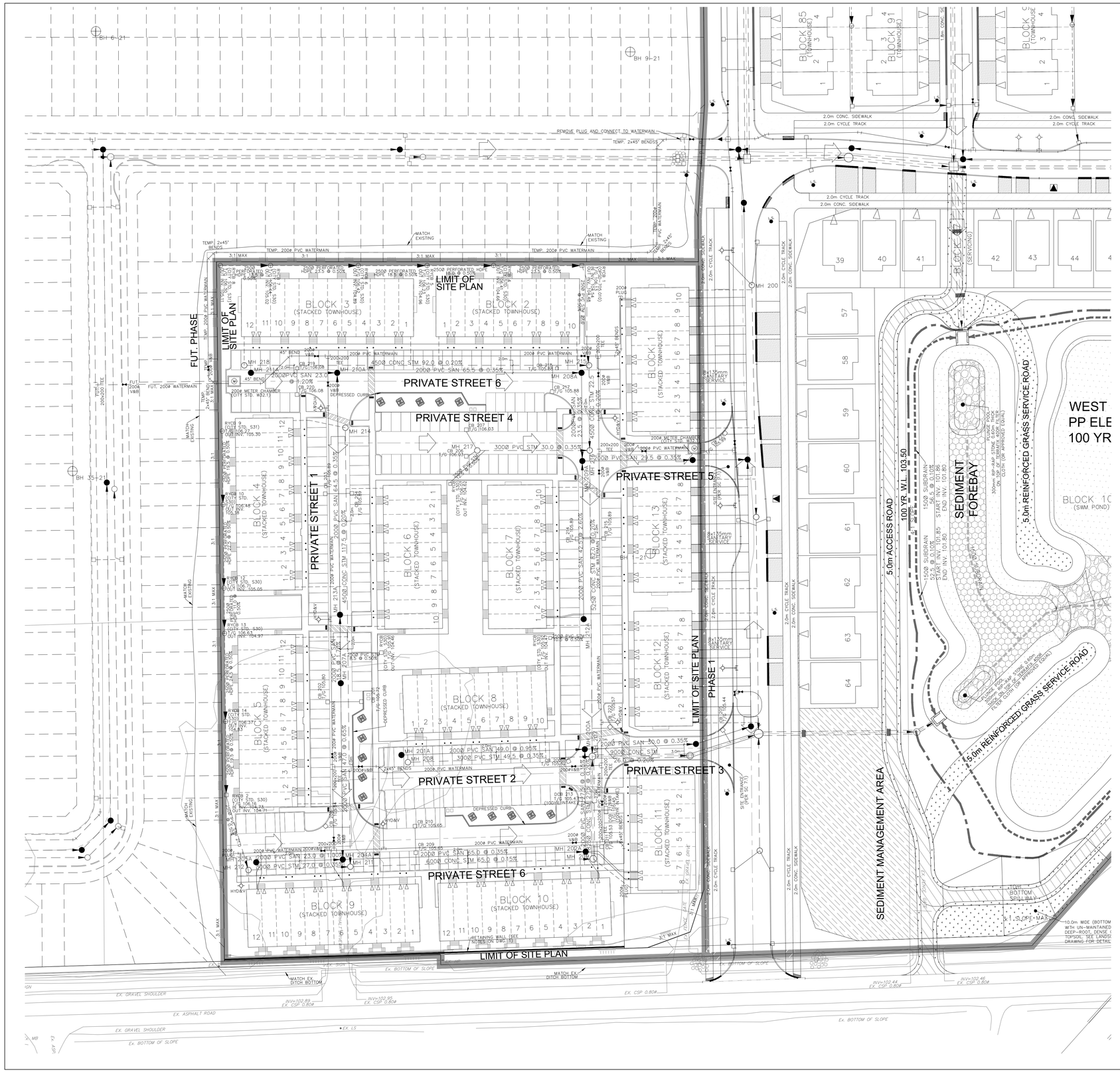


NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
2. CLAY SEAL TO EXTEND FULL TRENCH WIDTH TO EXISTING NATIVE SOILS WITH A MINIMUM THICKNESS OF 1.0m ALONG PIPES.
3. CLAY SEAL TO BE LOCATED SO THAT NO PIPE JOINTS ARE WITHIN THE CLAY SEAL MATERIAL.

Ottawa	CLAY SEAL FOR PIPE TRENCHES	DATE: MAY 2001 REV. DATE: MARCH 2006 DWG. No.: S8





NOT FOR CONSTRUCTION

NOTES:

1. ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION
2. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
3. ALL EXISTING ABOVE GROUND FEATURES, E.G. MH /CHAMBER COVERS, PEDESTALS, HYDRO AND LIGHT POLES, ETC. AFFECTED BY THE DEVELOPMENT TO BE ADJUSTED TO SUIT TO THE SATISFACTION OF PARTIES AFFECTED
4. ALL EXISTING BUILDING, SHED, POST & WIRE FENCE, CHAIN LINK FENCE, TREE, UTILITY WIRE, POLE, CULVERT AND POOL WITHIN LOTS AND BLOCKS TO BE REMOVED, UNLESS OTHERWISE NOTED
5. ALL EXISTING POST & WIRE FENCE, CULVERTS, UTILITY WIRE / POLES, TREES, SHRUBS ETC. WITHIN LOTS, BLOCKS AND ROADS TO BE REMOVED, UNLESS OTHERWISE NOTED
6. PERMISSION REQUIRED FOR REMOVAL OF EXISTING TREES ON EXTERNAL LANDS WHERE APPLICABLE
7. PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS
8. FOR RLCB LAYOUT & TYPICAL EASEMENT DETAIL REFER TO DRAWING No. 2
9. ANY DISTURBED MATERIAL ENCOUNTERED BELOW THE SUBGRADE LEVEL WITHIN A BUILDING FOOTPRINT TO BE SUB-EXCAVATED AND BACKFILLED WITH COMPACTED ENGINEERED FILL AS PER GEOTECHNICAL ENGINEERS RECOMMENDATION.
10. FOR WATERMAIN CROSSING BELOW AND ABOVE SEWERS, REFER TO CITY STD. W25 AND W25.2, RESPECTIVELY, WHERE APPLICABLE
11. ALL WATERMAIN CONNECTIONS AND DECOMMISSIONING OF EXISTING WATERMAINS TO BE COMPLETED BY CITY FORCES. TRENCH BACKFILL/REINSTATEMENT TO BE COMPLETED BY THE CONTRACTOR TO THE SATISFACTION OF THE CITY OF OTTAWA
12. FOR WATERMAIN STUBS, 2.4m MIN. COVER TO BE PROVIDED
13. THE COVER OF EX. MH, CB, CHAMBER AND OTHER ABOVEGROUND FEATURES TO BE ADJUSTED TO SUIT THE NEW FINISHED GRADE, WHERE APPLICABLE
14. INSULATION REQUIRED FOR WATERMAIN / WATER SERVICE WHERE THE SEPARATION BETWEEN WATERMAIN / WATER SERVICE AND OTHER SERVICES AND STRUCTURES IS LESS THAN 1.2m AND THE COVER IS LESS THAN 2.4m. REFER TO CITY STD. W23 FOR DETAIL.
15. FOR SERVICE INSTALLATION AT SEWER CROSSING, REFER TO CITY STD. W38 FOR DETAIL
16. FOR HOUSE CONNECTIONS INSTALLED UNDER DRIVEWAYS, SLEEVE SHALL BE USED UNDER THE GARAGE SLAB.
17. FOR CATCHBASIN DATA, REFER TO DWG. No. 2 FOR DETAILS

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01. SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE

ELEVATIONS SHOWN ON THIS PLAN ARE GEODETIC RELATED TO CGVD28:78 VERTICAL DATUM

LEGAL INFORMATION

SITE PLAN: PC2025-0260
PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON JANUARY 21, 2026.

No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

Ottawa

CITY OF OTTAWA

PROJECT No. 25-1494

LICENCED PROFESSIONAL ENGINEER
W. LIU
100167932
26-01-30
PROVINCE OF ONTARIO

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

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GENERAL PLAN

DRAWN BY:	M.S & A.S.	CHECKED BY:	W.L.
DESIGNED BY:	W.L.	CHECKED BY:	C.M.
SCALE:	1:500	DATE:	JANUARY 2026

SHEET NO. 4 OF 18

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042

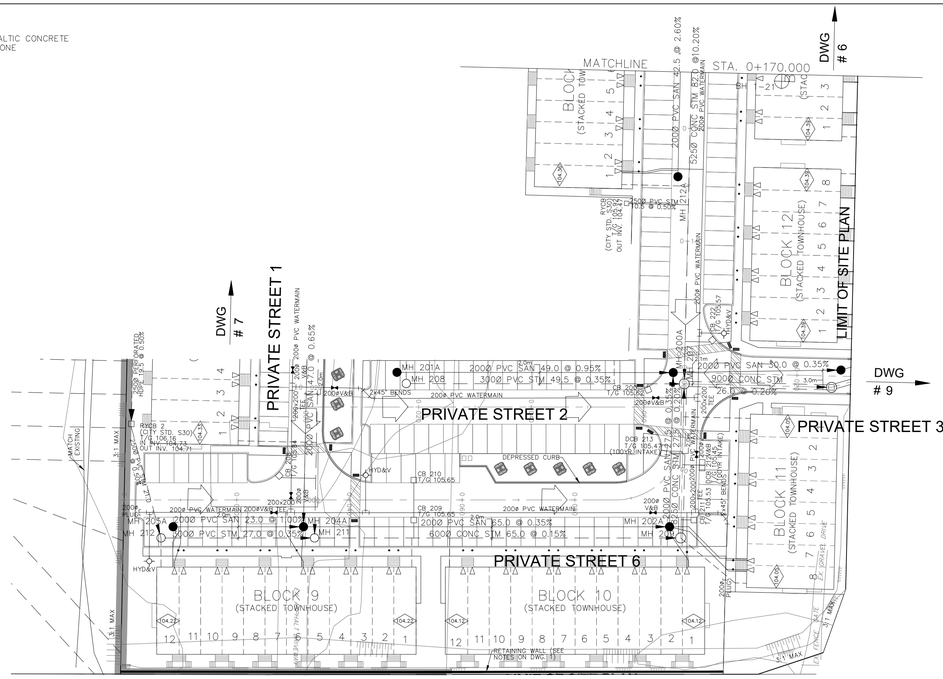
PAVEMENT DESIGN

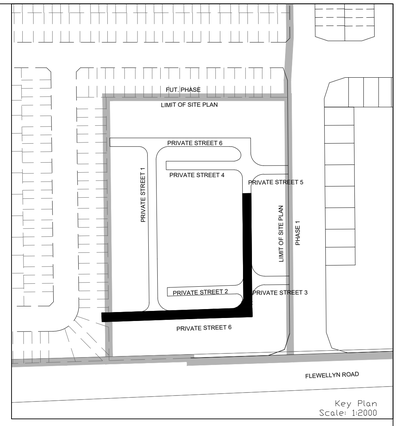
ACCESS LANES & HEAVY DUTY TRUCK PARKING
40mm SUPERPAVE 12.5 ASPHALTIC CONCRETE
50mm SUPERPAVE 19.0 ASPHALTIC CONCRETE
150mm OPSS GRANULAR A CRUSHED STONE
450mm OPSS GRANULAR B TYPE II
SUBGRADE

DRIVEWAYS AND PARKING AREAS
50mm HL-3 OR SUPERPAVE 12.5 ASPHALTIC CONCRETE
150mm OPSS GRANULAR A CRUSHED STONE
300mm GRANULAR B TYPE II
SUBGRADE

NOTES:

1. ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION
2. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
3. ALL EXISTING TREES, SHRUBS ETC. WITHIN LOTS, BLOCKS AND ROADS TO BE REMOVED, UNLESS OTHERWISE NOTED
4. PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS
5. FOR WATERMAIN STUBS, 2.4m MIN. COVER TO BE PROVIDED
6. ANY DISTURBED MATERIAL ENCOUNTERED BELOW THE SUBGRADE LEVEL WITHIN A BUILDING FOOTPRINT TO BE SUB-EXCAVATED AND BACKFILLED WITH COMPACTED ENGINEERED FILL AS PER GEOTECHNICAL ENGINEERS RECOMMENDATION
7. FOR CATCHBASIN DATA, REFER TO DWG. No. 2 FOR DETAILS

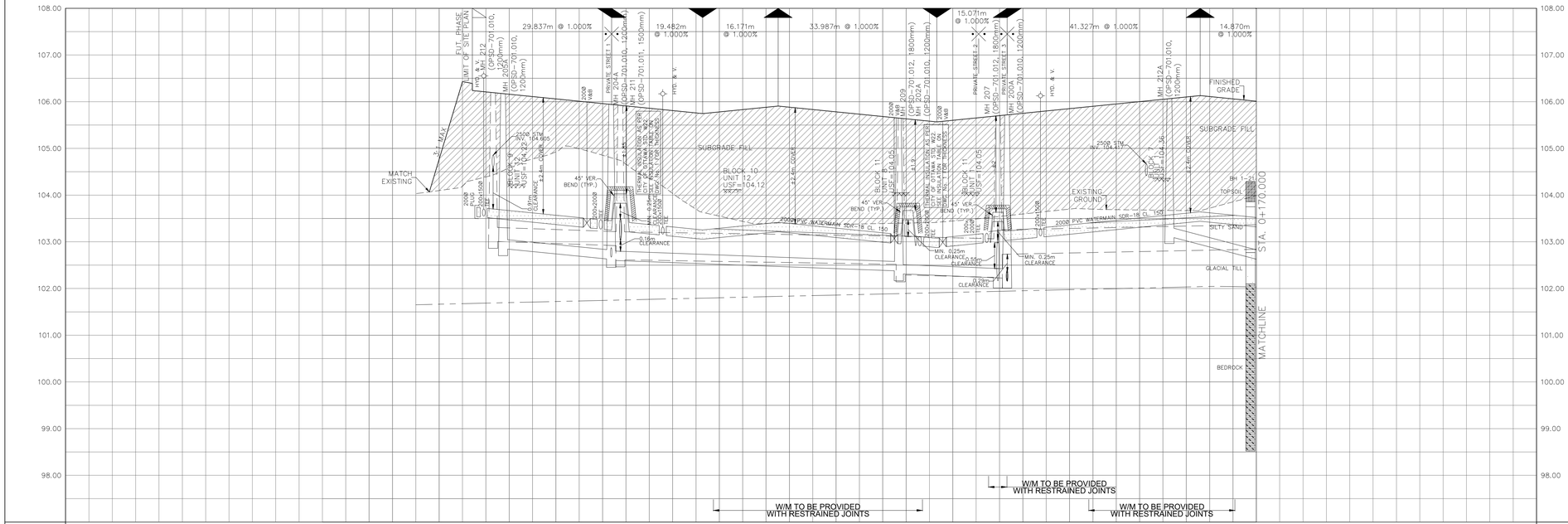




LEGEND

- CROSS
- 45° BEND
- LATERAL
- HYDRANT, VALVE & VB
- TEE
- VALVE & VC
- VALVE & VB
- 22.5° BEND
- 11.25° BEND
- REDUCER
- CAP
- SANITARY MAINTENANCE HOLE (WATERTIGHT LID PER OPSD 401.030)
- SANITARY MAINTENANCE HOLE
- CAP
- STREET CATCHBASIN & LEAD
- STREET CATCHBASIN WITH CLOSED LID & LEAD
- STORM MAINTENANCE HOLE
- CURB INLET CATCHBASIN & LEAD
- CATCHBASIN/ MAINTENANCE HOLE INTERCONNECTED CATCH BASIN & LEADS
- CAP
- SINGLE SERVICE LOCATION (ST, SAN & WM)
- SINGLE SERVICE LOCATION (ST, SAN & WM)
- TEE CATCHBASIN
- PERFORATED PIPE
- ELBOW CATCHBASIN
- DITCH AND CULVERT
- EXISTING SANITARY MAINTENANCE HOLE
- EXISTING STORM MAINTENANCE HOLE
- HYDRO TRANSFORMER
- STREET LIGHT STANDARD
- CONCRETE SIDEWALK
- CURB & DEPRESSED CURB
- ASPHALT SIDEWALK
- PHASING LIMITS
- PROPERTY BOUNDARY
- BOREHOLE (BH)
- TEST PIT (TP)
- AUGER HOLE (AH)
- MONITORING WELL LOCATION
- CONCEPTUAL WELL LOCATION
- LOT/BLOCK NUMBER
- UNDERSIDE OF FOOTING ELEVATION
- OVERLAND FLOW DIRECTION
- EXTERNAL OVERLAND FLOW DIRECTION
- EMERGENCY OVERLAND FLOW DIRECTION
- TACTILE WALKING SURFACE INDICATOR (AS PER CITY OF OTTAWA STD. SC6, SC7, SC7.1, SC7.2, SC7.3)
- CLAY SEAL (REFER TO GENERAL NOTES. No. 16 ON DWG No. 1, AND GEOTECHNICAL CONSULTANT'S SPECIFICATIONS)
- RETAINING WALL (SEE NOTES ON DWG. 1 AND STRUCTURAL DWG'S FOR DETAIL)
- BEDROCK CONTOUR
- GARBAGE BIN
- ORGANIC BIN

AS PER GEOTECHNICAL REPORT



| | | |

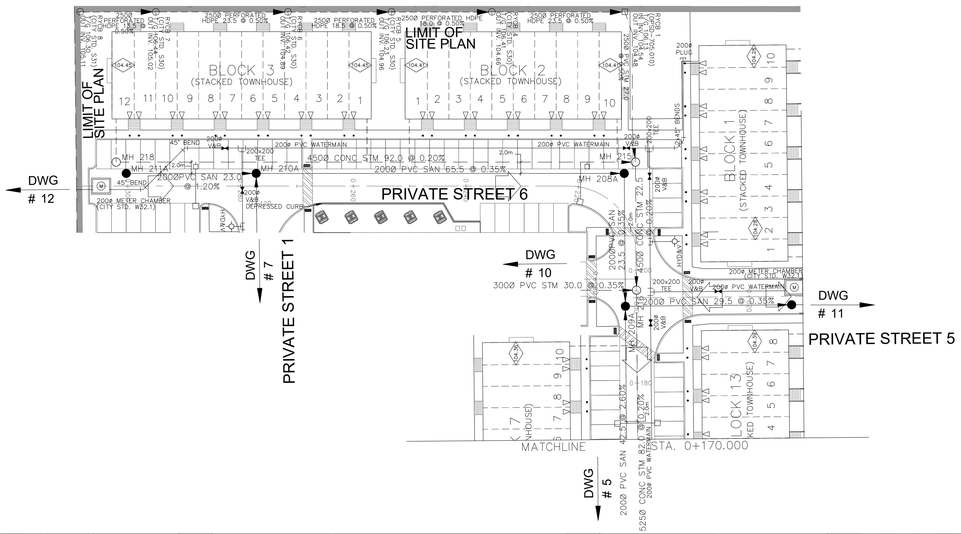
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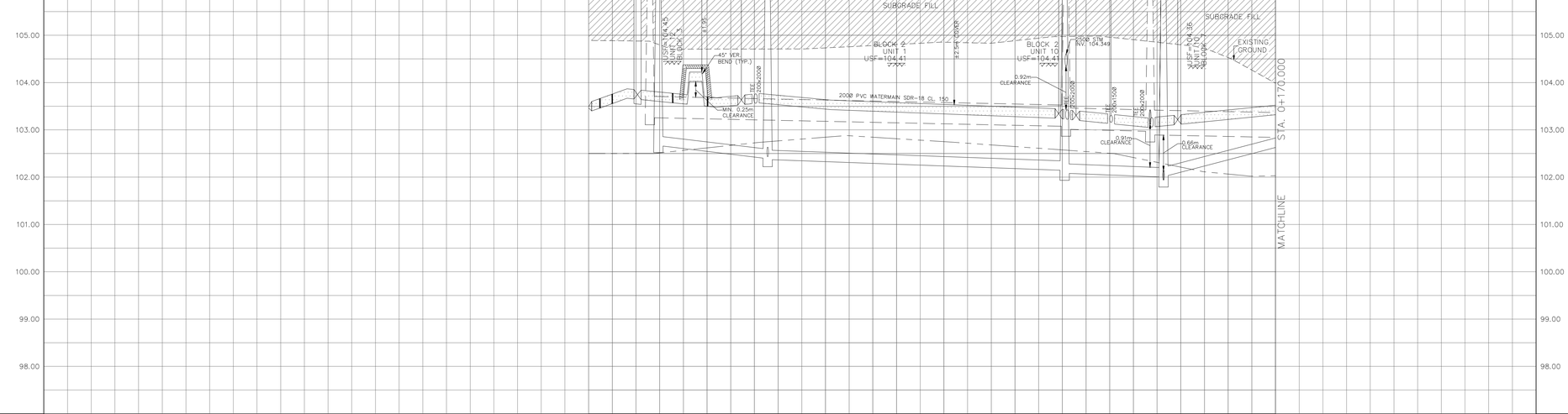
ACCESS LANES & HEAVY DUTY TRUCK PARKING
40mm SUPERPAVE 12.5 ASPHALTIC CONCRETE
50mm SUPERPAVE 19.0 ASPHALTIC CONCRETE
150mm OPSS GRANULAR A CRUSHED STONE
450mm OPSS GRANULAR B TYPE II
SUBGRADE

DRIVEWAYS AND PARKING AREAS
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150mm OPSS GRANULAR A CRUSHED STONE
300mm GRANULAR B TYPE II
SUBGRADE

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7. FOR CATCHBASIN DATA, REFER TO DWG. No. 2 FOR DETAILS





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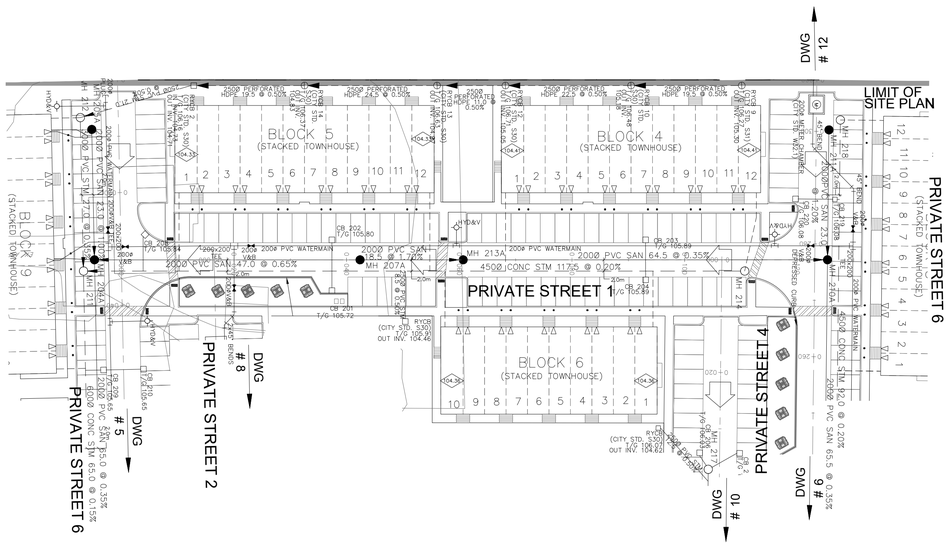
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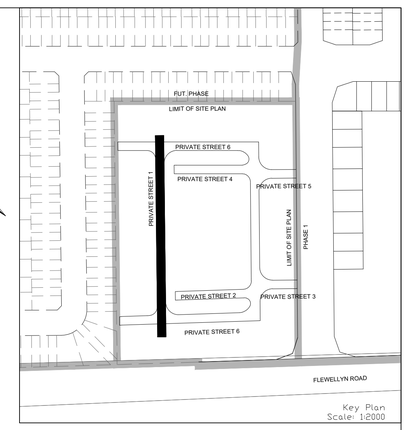
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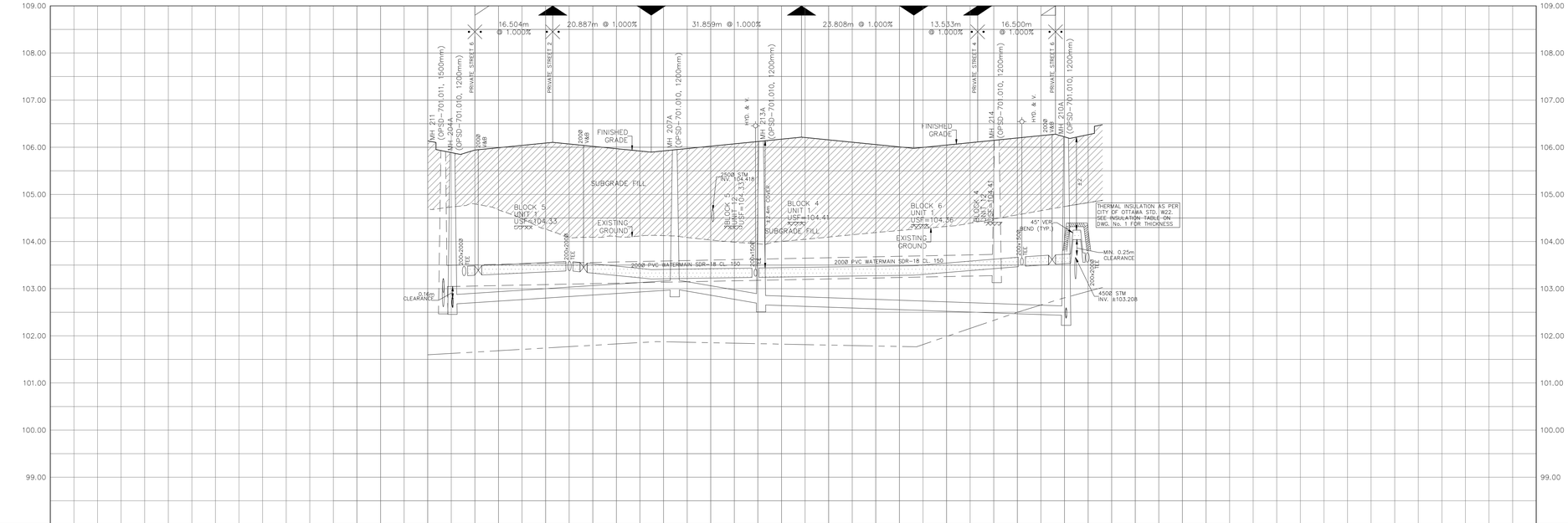
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LEGEND

CROSS
45° BEND
LATERAL
HYDRANT, VALVE & VB
TEE
VALVE & VC
VALVE & VB
22.5° BEND
11.25° BEND
REDUCER
CAP
SANITARY MAINTENANCE HOLE (WATERTIGHT LID PER OPSD 401.030)
SANITARY MAINTENANCE HOLE
CAP
STREET CATCHBASIN & LEAD
STREET CATCHBASIN WITH CLOSED LID & LEAD
STORM MAINTENANCE HOLE
CURB INLET CATCHBASIN & LEAD
CATCHBASIN/ MAINTENANCE HOLE INTERCONNECTED CATCH BASIN & LEADS
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SINGLE SERVICE LOCATION (ST, SAN & WM)
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PERFORATED PIPE
ELBOW CATCHBASIN
DITCH AND CULVERT
EXISTING SANITARY MAINTENANCE HOLE
EXISTING STORM MAINTENANCE HOLE

HYDRO TRANSFORMER
STREET LIGHT STANDARD
CONCRETE SIDEWALK
CURB & DEPRESSED CURB
ASPHALT SIDEWALK
PHASING LIMITS
PROPERTY BOUNDARY
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TEST PIT (TP)
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LOT/BLOCK NUMBER
UNDERSIDE OF FOOTING ELEVATION
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EXTERNAL OVERLAND FLOW DIRECTION
EMERGENCY OVERLAND FLOW DIRECTION
TACTILE WALKING SURFACE INDICATOR (AS PER CITY OF OTTAWA STD. SC6, SC7, SC7.1, SC7.2, SC7.3)
CLAY SEAL (REFER TO GENERAL NOTES. No. 16 ON DWG. No. 1, AND GEOTECHNICAL CONSULTANT'S SPECIFICATIONS)
RETAINING WALL (SEE NOTES ON DWG. 1 AND STRUCTURAL DWG'S FOR DETAIL)
BEDROCK CONTOUR
GARBAGE BIN
ORGANIC BIN

AS PER GEOTECHNICAL REPORT

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01. SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE

ELEVATIONS SHOWN ON THIS PLAN ARE GEODETIC RELATED TO CGVD28:78 VERTICAL DATUM

LEGAL INFORMATION

SITE PLAN: PC2025-0260
PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON JANUARY 21, 2026.

No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

CITY OF OTTAWA

PROJECT No. 25-1494

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
26-01-30
PROVINCE OF ONTARIO

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

© DSEL

PRIVATE STREET 1

STA. 0+000.000 TO STA. 0+133.091

DRAWN BY: M.S & A.S.	CHECKED BY: W.L.	SHEET NO.
DESIGNED BY: W.L.	CHECKED BY: C.M.	7 OF 18
SCALE: H=1:500/ V=1:50	DATE: JANUARY 2026	

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042

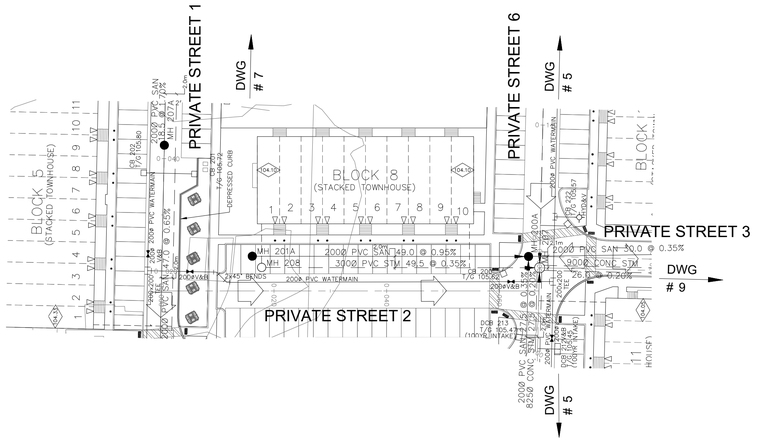
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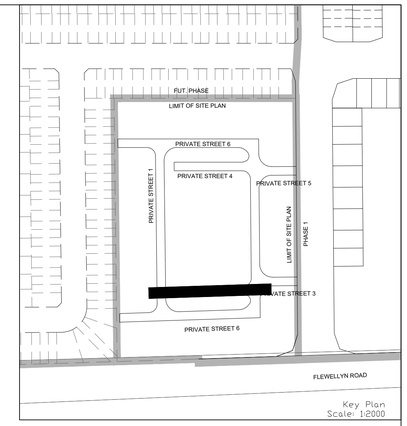
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450mm OPSS GRANULAR B TYPE II
SUBGRADE

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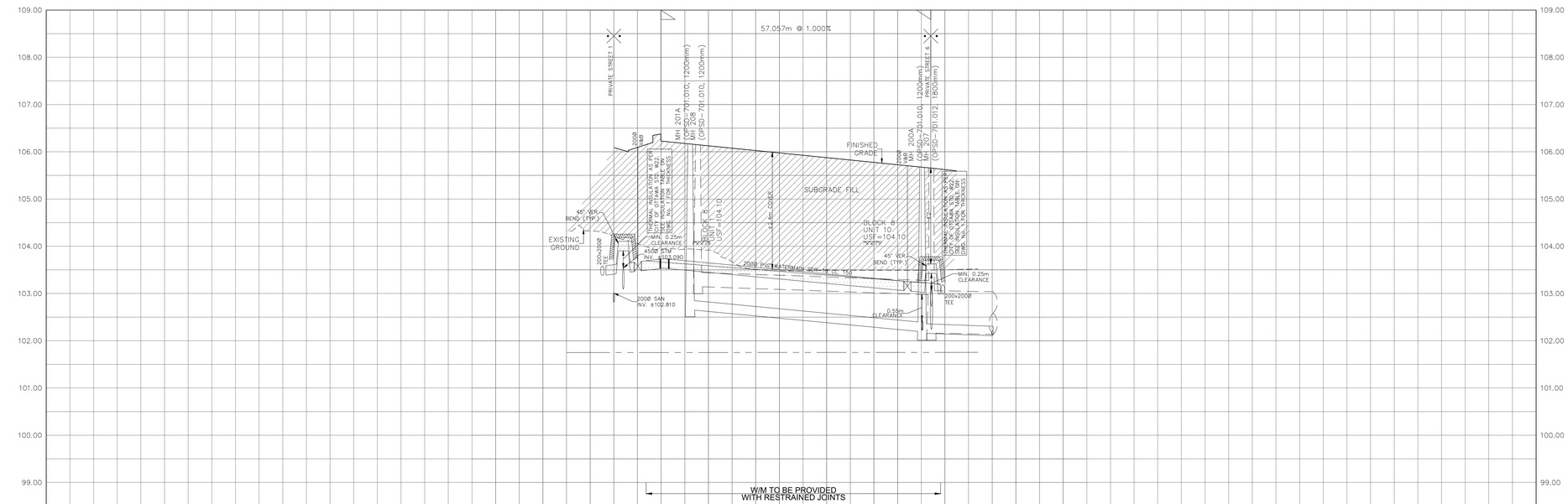
LEGEND

CROSS
45° BEND
LATERAL
HYDRANT, VALVE & VB
TEE
VALVE & VC
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SINGLE SERVICE LOCATION (ST, SAN & WM)
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ORGANIC BIN

AS PER GEOTECHNICAL REPORT

NOT FOR CONSTRUCTION



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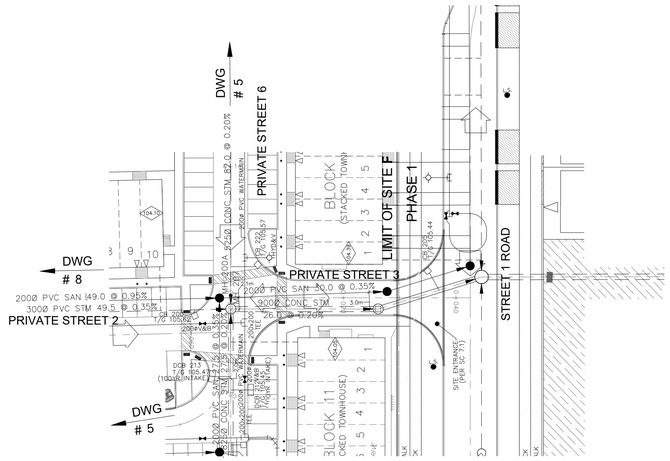
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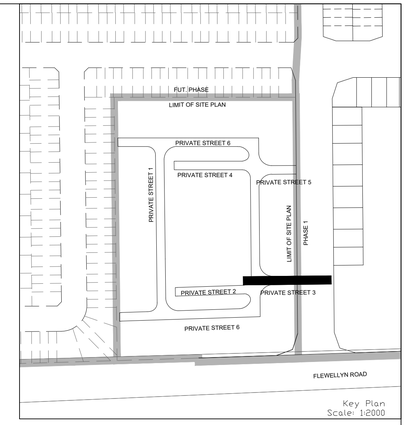
ACCESS LANES & HEAVY DUTY TRUCK PARKING
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150mm OPSS GRANULAR A CRUSHED STONE
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SUBGRADE

DRIVEWAYS AND PARKING AREAS
50mm HL-3 OR SUPERPAVE 12.5 ASPHALTIC CONCRETE
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300mm GRANULAR B TYPE II
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LEGEND

CROSS
45° BEND
LATERAL
HYDRANT, VALVE & VB
TEE
VALVE & VC
VALVE & VB
22.5° BEND
11.25° BEND
REDUCER
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STREET CATCHBASIN WITH CLOSED LID & LEAD
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TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01. SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE

ELEVATIONS SHOWN ON THIS PLAN ARE GEODETIC RELATED TO CGVD28:78 VERTICAL DATUM

LEGAL INFORMATION

SITE PLAN: PC2025-0260
PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON JANUARY 21, 2026.

No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

CITY OF OTTAWA

PROJECT No. 25-1494

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
26-01-30
PROVINCE OF ONTARIO

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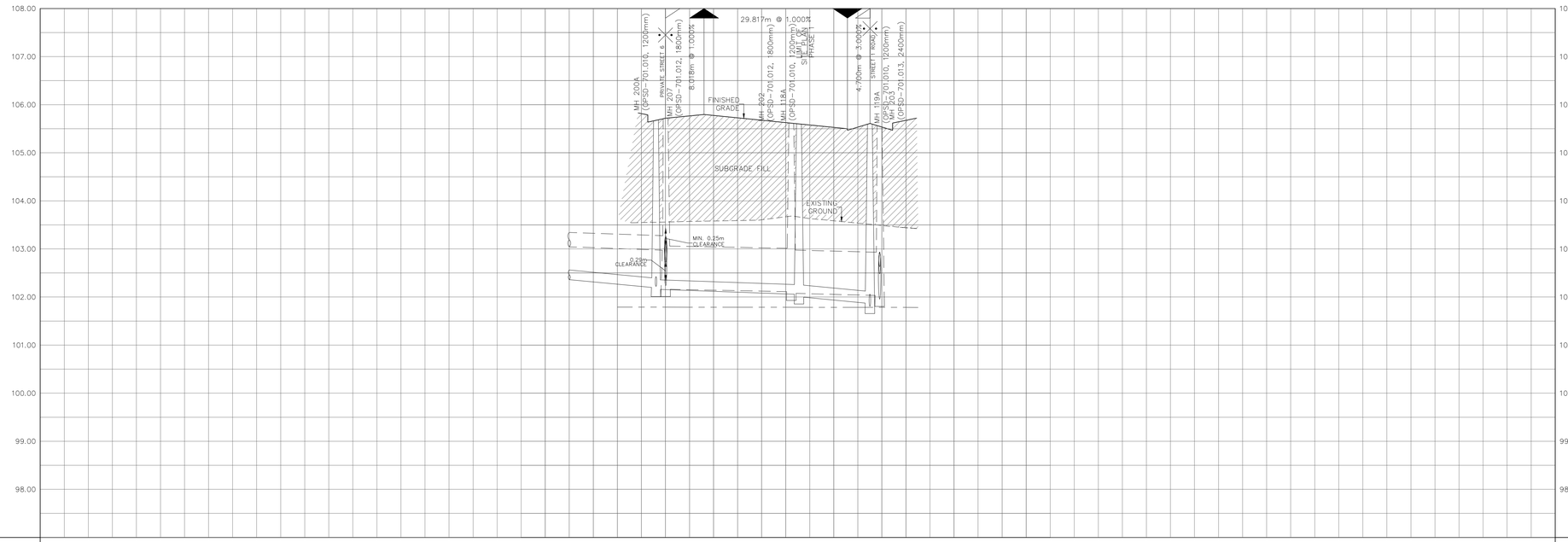
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PRIVATE STREET 3

STA. 0+000.000 TO STA. 0+52.535

DRAWN BY: M.S & A.S.	CHECKED BY: W.L.	SHEET NO.
DESIGNED BY: W.L.	CHECKED BY: C.M.	9 OF 18
SCALE: H=1:500/ V=1:50	DATE: JANUARY 2026	

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042



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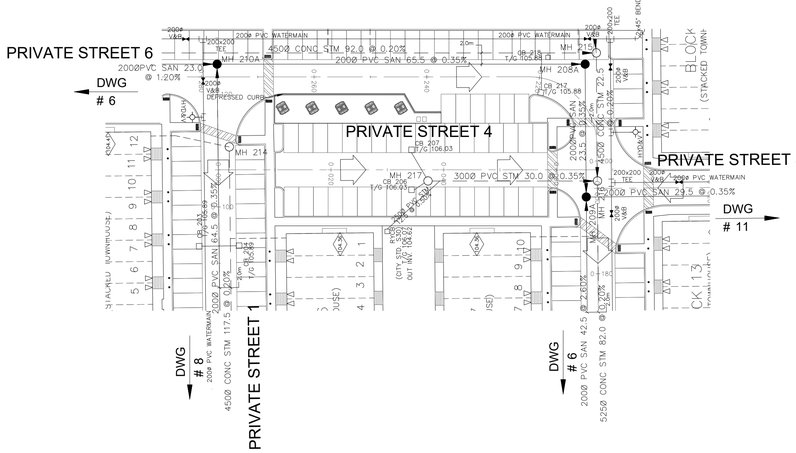
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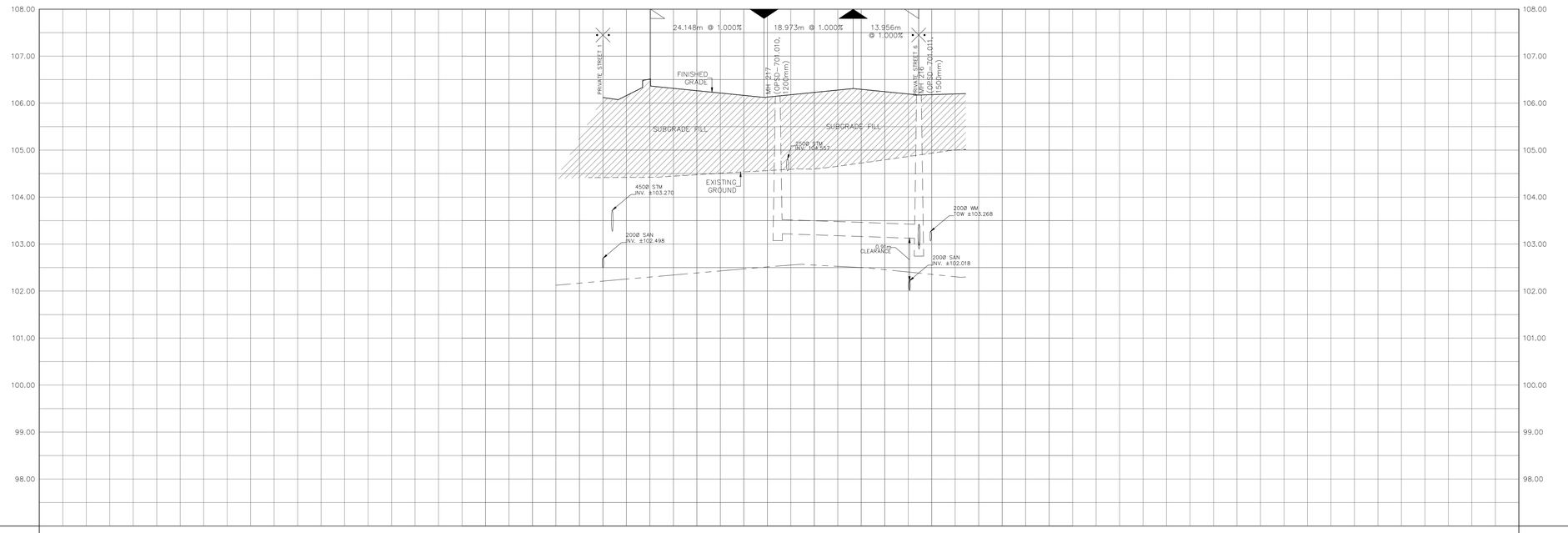
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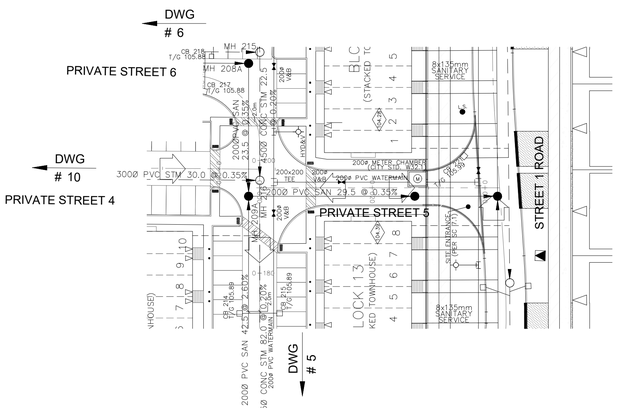
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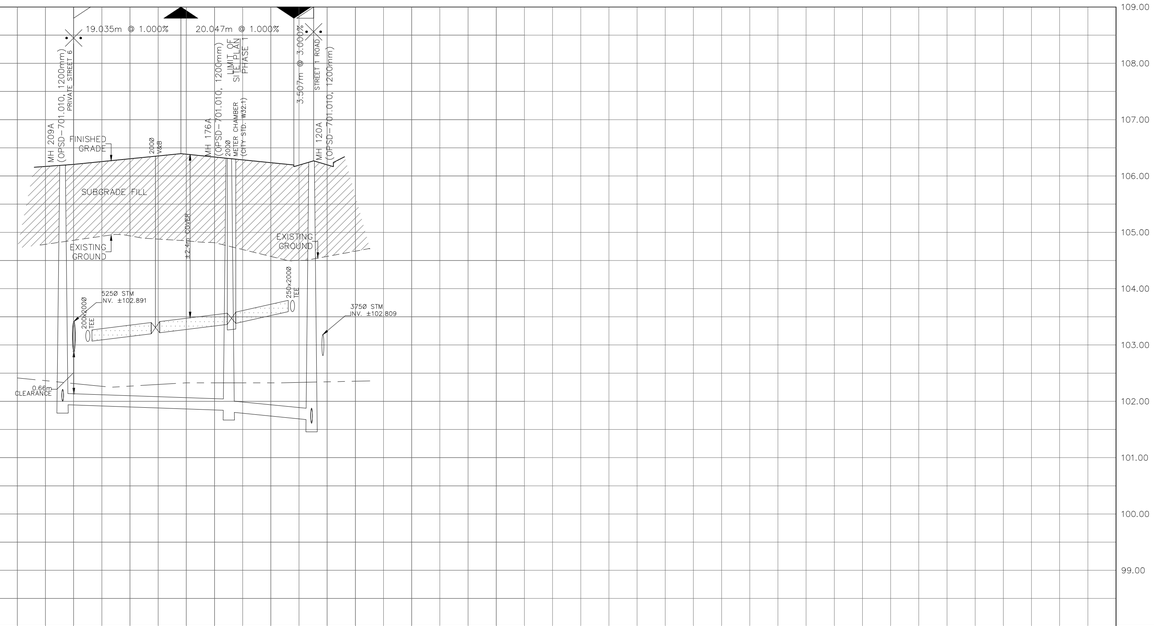
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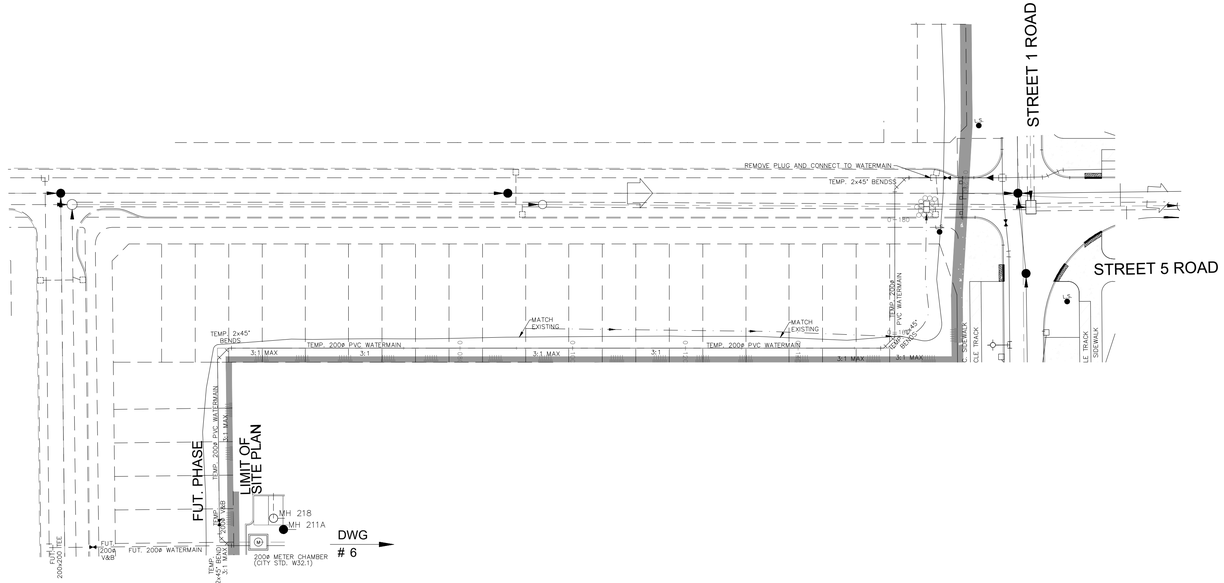


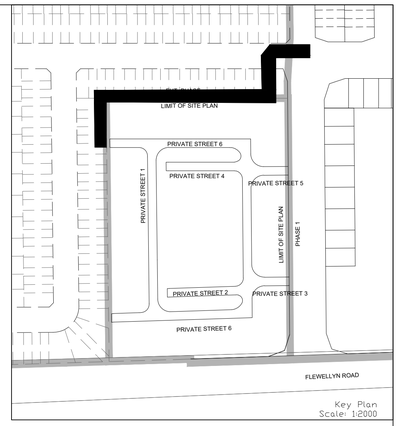


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6. ANY DISTURBED MATERIAL ENCOUNTERED BELOW THE SUBGRADE LEVEL WITHIN A BUILDING FOOTPRINT TO BE SUB-EXCAVATED AND BACKFILLED WITH COMPACTED ENGINEERED FILL AS PER GEOTECHNICAL ENGINEERS RECOMMENDATION
7. FOR CATCHBASIN DATA, REFER TO DWG. No. 2 FOR DETAILS

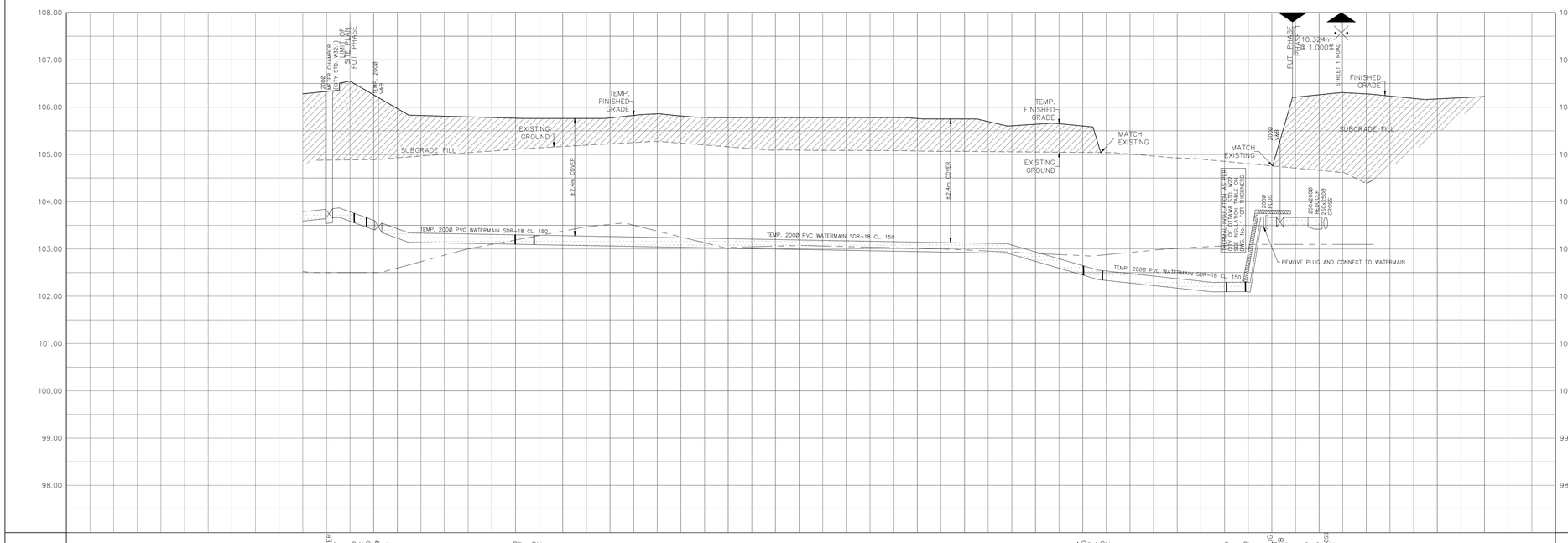




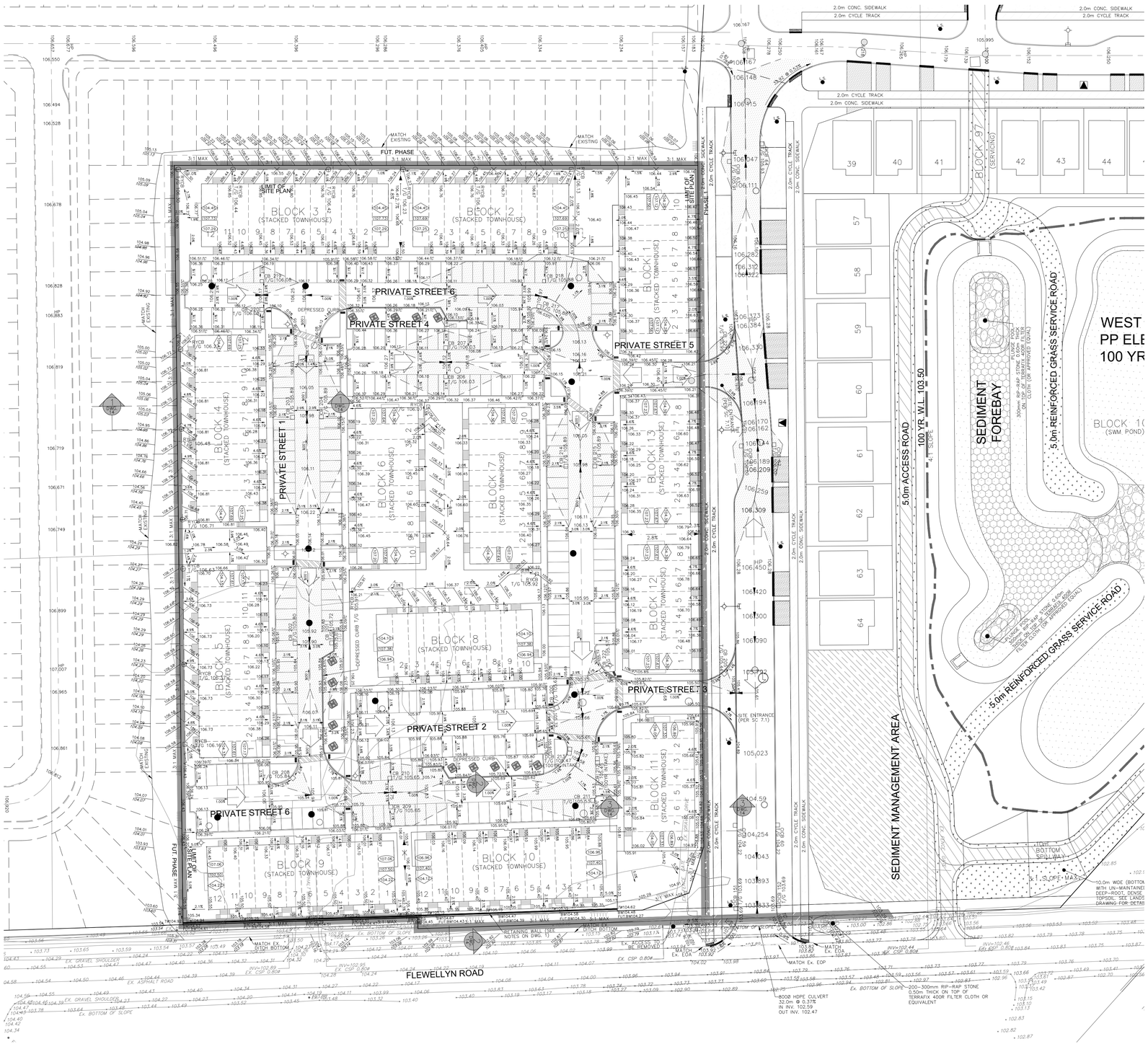
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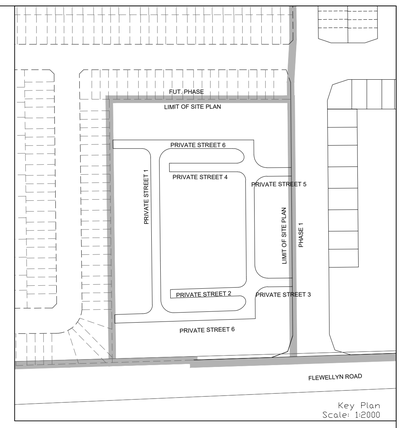
- CROSS
- 45° BEND
- LATERAL
- HYDRANT, VALVE & VB
- TEE
- VALVE & VC
- VALVE & VB
- 22.5° BEND
- 11.25° BEND
- REDUCER
- CAP
- SANITARY MAINTENANCE HOLE (WATERTIGHT LID PER OPSD 401.030)
- SANITARY MAINTENANCE HOLE
- CAP
- STREET CATCHBASIN & LEAD
- STREET CATCHBASIN WITH CLOSED LID & LEAD
- STORM MAINTENANCE HOLE
- CURB INLET CATCHBASIN & LEAD
- CATCHBASIN/ MAINTENANCE HOLE INTERCONNECTED CATCH BASIN & LEADS
- CAP
- SINGLE SERVICE LOCATION (ST, SAN & WM)
- SINGLE SERVICE LOCATION (ST, SAN & WM)
- TEE CATCHBASIN
- PERFORATED PIPE
- ELBOW CATCHBASIN
- DITCH AND CULVERT
- EXISTING SANITARY MAINTENANCE HOLE
- EXISTING STORM MAINTENANCE HOLE
- HYDRO TRANSFORMER
- STREET LIGHT STANDARD
- CONCRETE SIDEWALK
- CURB & DEPRESSED CURB
- ASPHALT SIDEWALK
- PHASING LIMITS
- PROPERTY BOUNDARY
- BOREHOLE (BH)
- TEST PIT (TP)
- AUGER HOLE (AH)
- MONITORING WELL LOCATION
- CONCEPTUAL WELL LOCATION
- LOT/BLOCK NUMBER
- UNDERSIDE OF FOOTING ELEVATION
- OVERLAND FLOW DIRECTION
- EXTERNAL OVERLAND FLOW DIRECTION
- EMERGENCY OVERLAND FLOW DIRECTION
- TACTILE WALKING SURFACE INDICATOR (AS PER CITY OF OTTAWA STD. SC6, SC7, SC7.1, SC7.2, SC7.3)
- CLAY SEAL (REFER TO GENERAL NOTES. No. 16 ON DWG No. 1, AND GEOTECHNICAL CONSULTANT'S SPECIFICATIONS)
- RETAINING WALL (SEE NOTES ON DWG. 1 AND STRUCTURAL DWG'S FOR DETAIL)
- BEDROCK CONTOUR
- GARBAGE BIN
- ORGANIC BIN

AS PER GEOTECHNICAL REPORT



| | | |





LEGEND

- PROPOSED ELEVATION — 103.45
- EXISTING ELEVATION — 102.23
- FUTURE ELEVATION BY NOVATECH — [103.00]
- PROPOSED SWALE GRADE — 1.5%
- HIGH POINT — HP 102.16
- STREET CATCHBASIN
- STREET CATCHBASIN WITH CLOSED LID
- CATCHBASIN MANHOLE
- TEE CATCHBASIN
- ELBOW CATCHBASIN
- HYDRANT, VALVE & VB
- VALVE & VB
- BUILDING ENVELOPE
- TOP OF FOUNDATION (TOF) — 94.70
- FINISHED FLOOR ELEVATION (FFE) — 95.00
- UNDERSIDE OF FOOTING — 92.00
- ELEVATION (USF)
- FRONT/REAR ENVELOPE ELEVATION — 97.00
- LOTS EQUIPPED WITH SUMP PUMP (REFER TO DETAIL DWG. 3) — E.F.
- ENGINEERED FILL (REFER TO DWG. 1) — W.O. SOG
- WALKOUT UNITS SLAB ON GRADE
- HYDRO SWITCHGEAR
- HYDRO TRANSFORMER
- STREET LIGHT STANDARD
- TACTILE WALKING SURFACE INDICATOR (AS PER CITY OF OTTAWA STD. SC6)
- CURB TRANSITION — 102.16
- RETAINING WALL (SEE NOTES ON DWG. 1 AND STRUCTURAL DWG'S FOR DETAIL)
- FIREWALL
- FOUNDATION SPLIT
- OVERLAND FLOW DIRECTION
- EXTERNAL OVERLAND FLOW DIRECTION
- EMERGENCY OVERLAND FLOW DIRECTION
- EMERGENCY OVERLAND FLOW DIRECTION
- RETAINING WALL AND ELEVATIONS — T/Wall=103.10 B/Wall=102.44
- PROPERTY BOUNDARY
- 3:1 TERRACING MAXIMUM SLOPE — 100.20 / 99.20
- PONDING AREA WITH SPILLWAY ELEVATION — 102.16
- 250ø PVC PERFORATED PIPE (REFER TO CITY STD S29 FOR REAR YARD TRENCH AND PIPE DETAILS ONLY) (SUBDRAIN APPLIED FOR SLOPE LESS THAN 1.5%)
- EXISTING SANITARY MAINTENANCE HOLE
- EXISTING STORM MAINTENANCE HOLE
- SANITARY MAINTENANCE HOLE (WATERTIGHT LID PER OPSD 401.030)
- SANITARY MAINTENANCE HOLE
- PHASING LIMITS
- ORGANIC BIN
- GARBAGE BIN

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01. SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE

ELEVATIONS SHOWN ON THIS PLAN ARE GEODETIC RELATED TO CGVD28:78 VERTICAL DATUM

LEGAL INFORMATION

SITE PLAN: PC2025-0260
PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON JANUARY 21, 2026.

NOTES:

1. ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION
2. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF Ex. UNDERGROUND SERVICES AND Ex. UTILITIES PRIOR TO STARTING CONSTRUCTION
3. ALL EXISTING ABOVE GROUND FEATURES, E.G. MH/CHAMBER COVERS, PEDESTALS, HYDRO AND LIGHT POLES, ETC. AFFECTED BY THE DEVELOPMENT TO BE ADJUSTED TO SUIT TO THE SATISFACTION OF PARTIES AFFECTED
4. ALL EXISTING BUILDING, SHED, POST & WIRE FENCE, CHAIN LINK FENCE, TREE, UTILITY WIRE, POLE, CULVERT AND POOL WITHIN LOTS AND BLOCKS TO BE REMOVED, UNLESS OTHERWISE NOTED
5. ALL EXISTING POST & WIRE FENCE, CULVERTS, UTILITY WIRE / POLES, TREES, SHRUBS ETC. WITHIN LOTS, BLOCKS AND ROADS TO BE REMOVED, UNLESS OTHERWISE NOTED
6. PERMISSION REQUIRED FOR REMOVAL OF EXISTING TREES ON EXTERNAL LANDS WHERE APPLICABLE
7. PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS
8. FOR RLOB LAYOUT & TYPICAL EASEMENT DETAIL REFER TO DRAWING No. 2
9. A GEOTECHNICAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO IS TO INSPECT ALL SUBGRADE SURFACES FOR FOOTING AND PAVEMENT STRUCTURES PRIOR TO CONSTRUCTION
10. PERFORATED PIPE IS REQUIRED FOR SWALE SLOPE LESS THAN 1.5% REFER TO CITY STD. S29, S30 FOR REAR YARD TRENCH AND PIPE DETAIL ONLY
11. BUILDING DENOTED AS REQUIRING ENGINEERING FILL (E.F.) ARE ESTIMATED AND FOR REFERENCE ONLY. FINAL E.F. REQUIREMENTS ARE TO BE DETERMINED ONSITE BY THE PROJECT GEOTECHNICAL CONSULTANT. E.F. SHOWN ON THE PLANS INDICATE THAT FILL IS REQUIRED, BELOW AND UP TO 0.10m ABOVE THE ASSUMED UNDER SIDE FOOTING WITHIN THE BUILDING ENVELOPE, AS SHOWN ON THE PLAN.

No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

CITY OF OTTAWA

PROJECT No. 25-1494

W. LIU 100167932 26-01-30 PROVINCE OF ONTARIO — LICENSED PROFESSIONAL ENGINEER

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

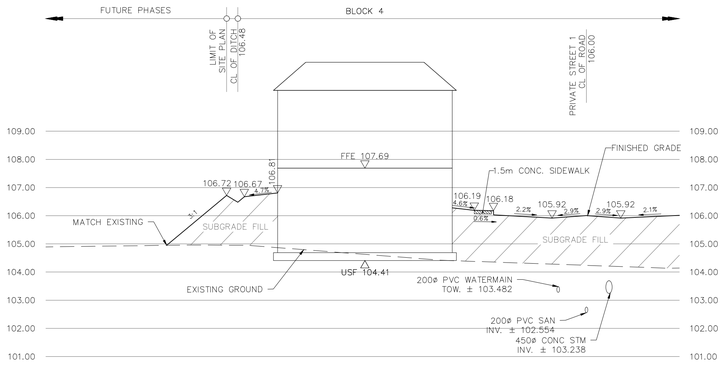
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GRADING PLAN

DRAWN BY:	M.S & A.S.	CHECKED BY:	W.L.
DESIGNED BY:	W.L.	CHECKED BY:	C.M.
SCALE:	1:500	DATE:	JANUARY 2026

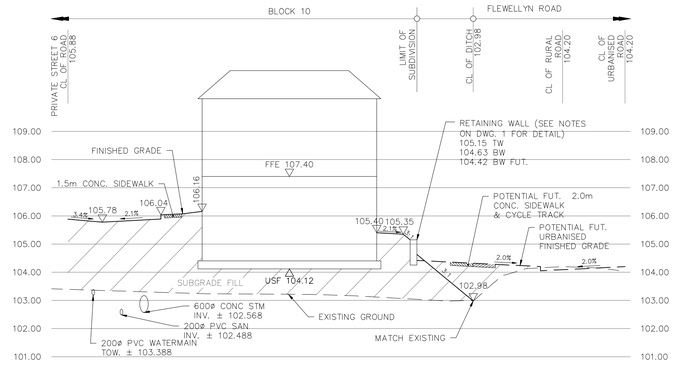
SHEET NO. 13 OF 18

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042



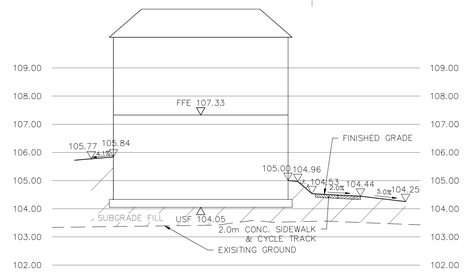
SECTION 1–1

SCALE HOR. 1:250
VER. 1:100



SECTION 2–2

SCALE HOR. 1:250
VER. 1:100



SECTION 3–3

SCALE HOR. 1:250
VER. 1:100

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01. SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE

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LEGAL INFORMATION

SITE PLAN: PC2025-0260
PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON JANUARY 21, 2026.

No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

CITY OF OTTAWA

PROJECT No. 25-1494

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
26-01-30
PROVINCE OF ONTARIO

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

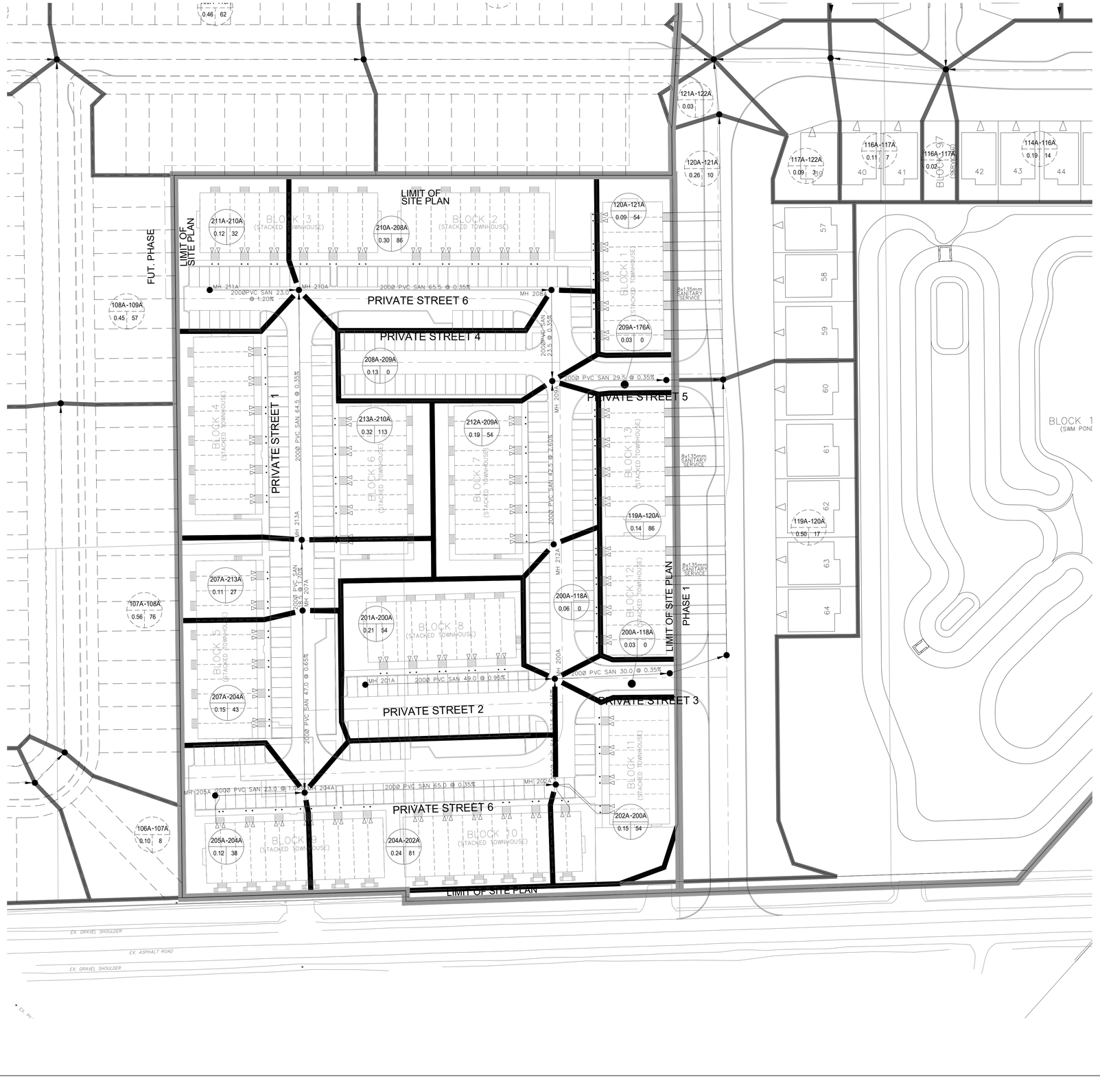
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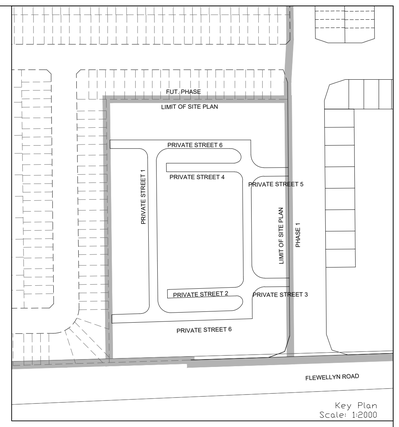
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CROSS SECTIONS

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DESIGNED BY: W.L.	CHECKED BY: C.M.	14 OF 18	
SCALE: AS SHOWN	DATE: JANUARY 2026		

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042





Key Plan
Scale: 1:2000

LEGEND

SANITARY DRAINAGE BOUNDARY
SANITARY DRAINAGE BOUNDARY (BY OTHERS)
UPSTREAM MH TO DOWNSTREAM MH — 43A - 44A
AREA IN HECTARES — 0.78
POPULATION — 61
UPSTREAM MH TO DOWNSTREAM MH — 43A-44A
AREA IN OTHER PHASES IN HECTARES — 0.78
POPULATION — 61
SANITARY MAINTENANCE HOLE (WATERTIGHT LID PER OPSD 401.030)
SANITARY MAINTENANCE HOLE
CAP
EXISTING SANITARY MAINTENANCE HOLE
EX. 900mmØ SAN MH202A

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION
TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01. SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE
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No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

CITY OF OTTAWA

PROJECT No. 25-1494

LICENSED PROFESSIONAL ENGINEER — W. LIU — 100167932 — 26-01-30 — PROVINCE OF ONTARIO

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

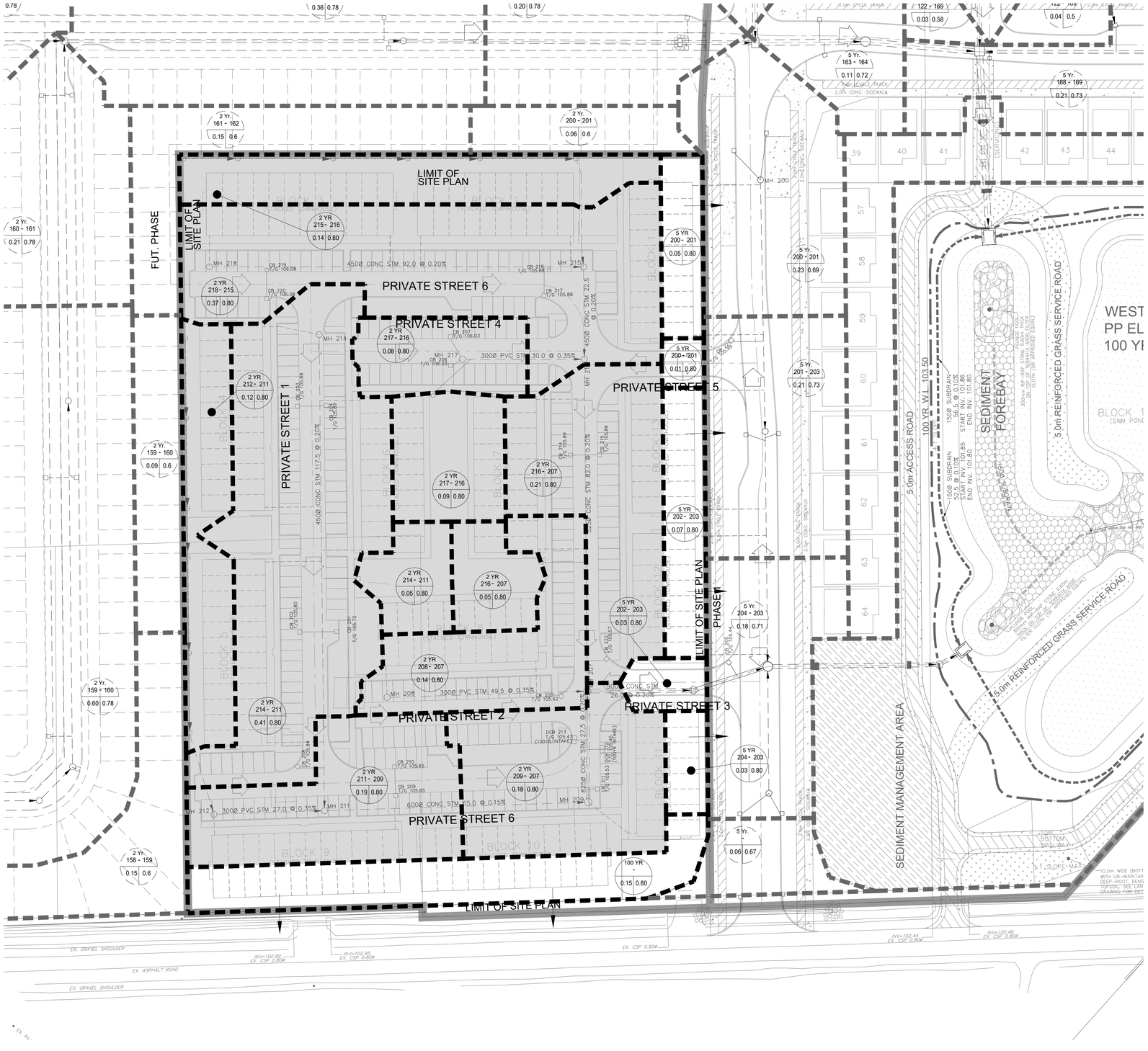
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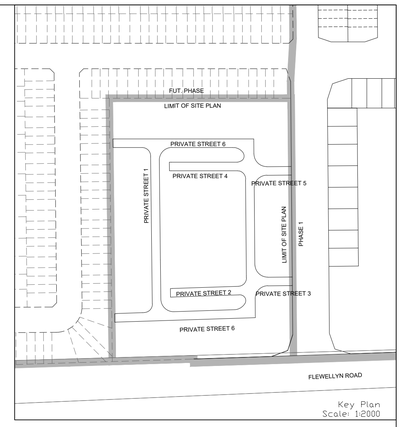
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SANITARY DRAINAGE PLAN

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SCALE: 1:500	DATE: JANUARY 2026		

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042





LEGEND

- STORM DRAINAGE BOUNDARY
- STORM DRAINAGE BOUNDARY (OTHER PHASES)
- STORM FREQUENCY
- UPSTREAM MH TO DOWNSTREAM MH
- AREA IN HECTARES
- RUNOFF COEFFICIENT
- UPSTREAM MH TO DOWNSTREAM MH
- AREA IN OTHER PHASES IN HECTARES
- RUNOFF COEFFICIENT
- EXCESS 100YR MAJOR OVERLAND FLOW CAPTURE AREA TO DCB 212 AND 213
- STREET CATCHBASIN & LEAD
- STREET CATCHBASIN WITH CLOSED LID & LEAD MAINTENANCE HOLE
- CURB INLET CATCHBASIN & LEAD CATCHBASIN/ MAINTENANCE HOLE
- INTERCONNECTED CATCH BASIN & LEADS
- CAP
- OVERLAND FLOW DIRECTION
- EXTERNAL OVERLAND FLOW DIRECTION
- EXISTING STORM MAINTENANCE HOLE

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01. SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE

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LEGAL INFORMATION

SITE PLAN: PC2025-0260
PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON JANUARY 21, 2026.

No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

CITY OF OTTAWA

PROJECT No. 25-1494

W. LIU 100167932 26-01-30 LICENSED PROFESSIONAL ENGINEER PROVINCE OF ONTARIO

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

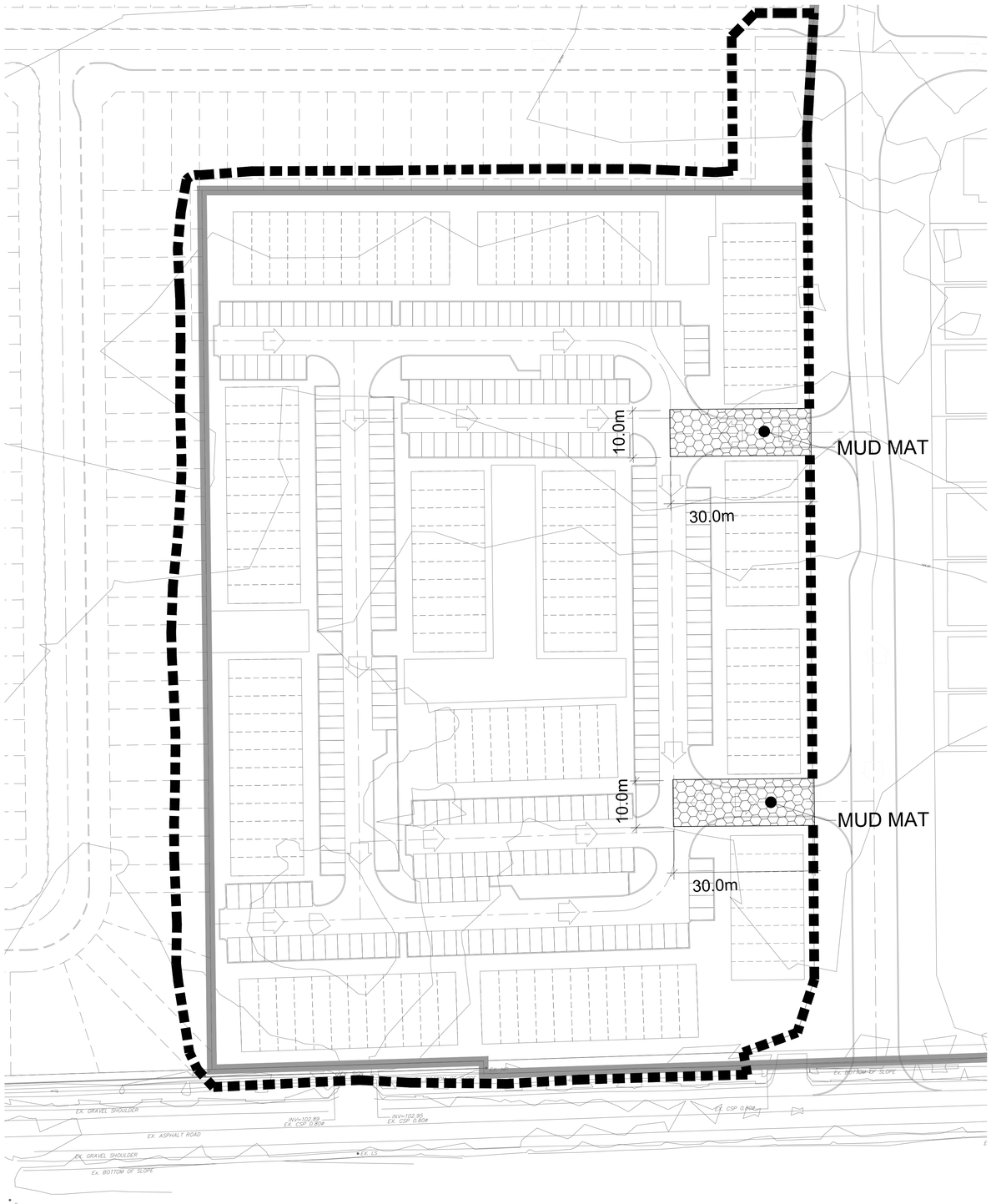
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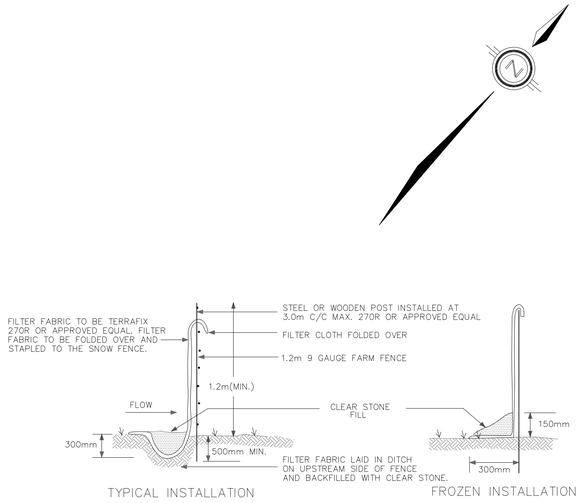
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STORM DRAINAGE PLAN

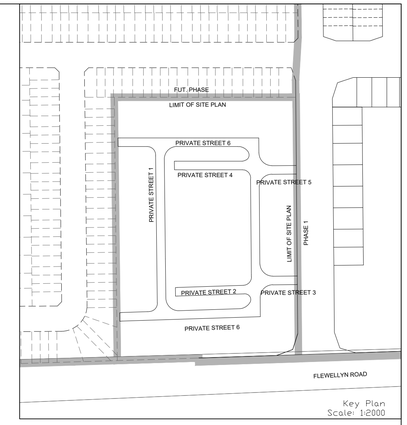
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DESIGNED BY: W.L.	CHECKED BY: C.M.	16	OF 18
SCALE: 1:500	DATE: JANUARY 2026		

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042





SILT CONTROL FENCE
SCALE: N.T.S



Key Plan
Scale: 1:2000

SEQUENCE OF ACTIVITIES

THE EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE:

- INSTALLATION OF THE SEDIMENT CONTROL FENCING WHERE INDICATED. THE OPTIMIZED LOCATION, TIMING, AND EXTENTS OF SILT FENCE INSTALLATION WILL BE ESTABLISHED BASED UPON THE SITE CONSTRUCTION STAGING WITH INPUTS FROM THE PROJECT ENVIRONMENTAL ENGINEER
- REMOVAL OF SITE VEGETATION IN ACCORDANCE WITH ALL APPLICABLE BY-LAWS,
- CONSTRUCTION OF THE EROSION AND SEDIMENT CONTROL POND IN ACCORDANCE WITH THE DESIGN DRAWINGS.
- REGULAR MONITORING OF THE SEDIMENT CONTROL FENCES BY THE CONTRACTOR TO VERIFY THAT THE FENCES ARE FUNCTIONING AS INTENDED.
- REGULAR MONITORING OF THE SEDIMENT BASIN TO VERIFY THAT THE BASIN IS FUNCTIONING AS INTENDED.
- REMOVAL OF THE EROSION AND SEDIMENT CONTROL DEVICES ONCE THE SITE HAS BEEN STABILIZED.

SPILLS CONTROL NOTES

ALL CONSTRUCTION EQUIPMENT SHALL BE REFUELED, MAINTAINED AND STORED NO LESS THAN 30 METERS FROM THE WATERCOURSES, STREAMS, CREEKS, WOODLOTS AND ANY ENVIRONMENTALLY SENSITIVE AREAS, OR AS OTHERWISE SPECIFIED.

THE CONTRACTOR MUST IMPLEMENT ALL NECESSARY MEASURES IN ORDER TO PREVENT LEAKS, DISCHARGES OR SPILLS OF POLLUTANTS, DELETERIOUS MATERIALS, OR OTHER SUCH MATERIALS OR SUBSTANCES WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT.

IN THE EVENT OF A LEAK, DISCHARGE OR SPILL OF A POLLUTANT, DELETERIOUS MATERIAL OR OTHER SUCH MATERIAL OR SUBSTANCE WHICH WOULD OR COULD CAUSE AN ADVERSE IMPACT TO THE NATURAL ENVIRONMENT, THE CONTRACTOR SHALL,

1. IMMEDIATELY NOTIFY THE APPROPRIATE FEDERAL, PROVINCIAL AND LOCAL GOVERNMENT MINISTRIES, DEPARTMENTS, AGENCIES AND AUTHORITIES OF THE INCIDENT IN ACCORDANCE WITH ALL CURRENT LAWS, LEGISLATION, ACTS, BY-LAWS, PERMITS, APPROVALS, ETC.
2. TAKE IMMEDIATE MEASURES TO CONTAIN THE MATERIAL OR SUBSTANCE, AND TO TAKE SUCH MEASURES AS THEY DEEM APPROPRIATE TO MITIGATE AGAINST THE ANY ADVERSE IMPACTS TO THE NATURAL ENVIRONMENT.
3. THE CONTRACT SHALL RESTORE THE AFFECTED AREA TO ORIGINAL CONDITION OR BETTER, ALL TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION.

MONITORING OF SEDIMENT AND EROSION CONTROLS

MONITORING AND REPORTING TO BE COMPLETED IN ACCORDANCE WITH THE MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS (MECP) AND RIDEAU VALLEY CONSERVATION AUTHORITY(RVCA) APPROVALS.

MAINTENANCE PROGRAM

ALL DAMAGED ESC MEASURES SHOULD BE REPAIRED AND/OR REPLACEMENT WITHIN 48 HOURS OF THE INSPECTION.
THE ENVIRONMENTAL MONITOR IS REQUIRED TO SUBMIT UPDATES TO THE TOWN/ REGION/ CONSERVATION AUTHORITY BY EMAIL IN A TIMELY MANNER.
SEDIMENT SHOULD BE REMOVED FROM THE SEDIMENT CONTROL FENCING ONCE SEDIMENT HAS ACCUMULATED TO A LEVEL OF ONE-THIRD THE HEIGHT OF FENCING OR TO A HEIGHT OF 30 cm. ANY AMOUNT OF ACCUMULATED SEDIMENT SHOULD BE REMOVED PRIOR TO THE REMOVAL OF THE CONTROL MEASURES.

THE SILTATION CONTROL PLAN IS INTENDED TO ASSIST THE CONTRACTOR IN THE LAYOUT AND CONSTRUCTION OF THE SILTATION CONTROL FEATURES ONLY. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION OF SITE SERVICES.

LEGEND

PROPOSED SILT FENCE
MAJOR OVERLAND FLOW DIRECTION
PHASING LIMITS

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01. SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE

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LEGAL INFORMATION

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PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON JANUARY 21, 2026.

No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

CITY OF OTTAWA

PROJECT No. 25-1494

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
26-01-30
PROVINCE OF ONTARIO

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

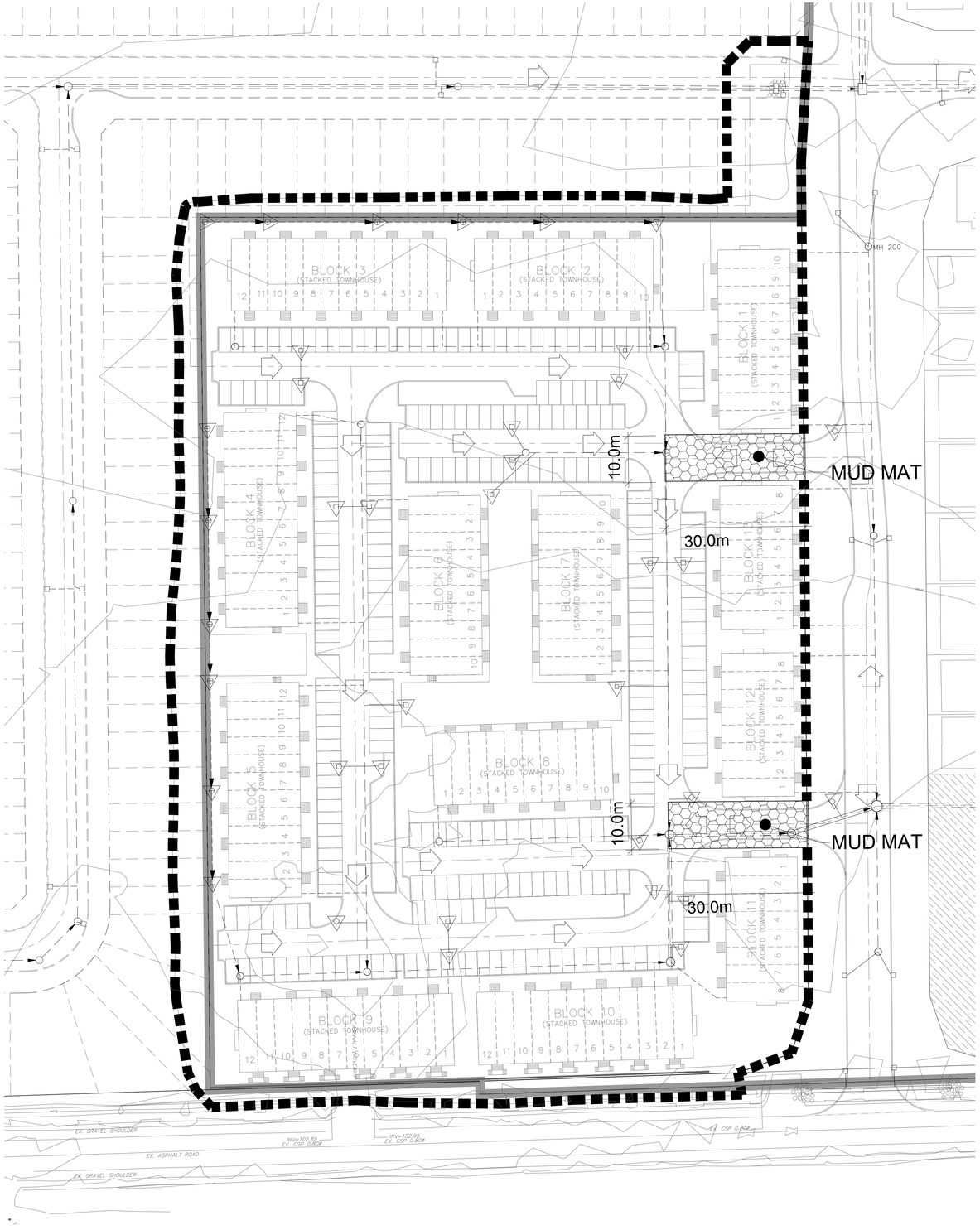
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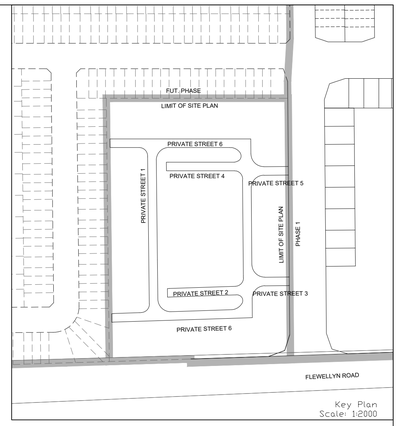
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EROSION AND SEDIMENT CONTROL PLAN STAGE 1

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DESIGNED BY: W.L.	CHECKED BY: C.M.	17	OF 18
SCALE: 1:500	DATE: JANUARY 2026		

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042





LEGEND

PROPOSED SILT FENCE

MAJOR OVERLAND FLOW DIRECTION

FILTER CLOTH FOR EXISTING STRUCTURE

PHASING LIMITS

EROSION AND SEDIMENT CONTROL NOTES:

PRIOR TO TOPSOIL STRIPPING, EARTHWORKS, OR UNDERGROUND CONSTRUCTION, EROSION AND SEDIMENT CONTROLS SHALL BE IMPLEMENTED TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.

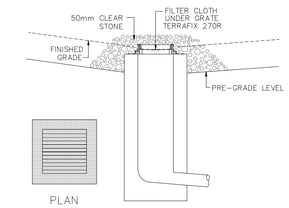
SEDIMENT CONTROL FENCE SHALL BE CLEANED AND MAINTAINED IN GOOD REPAIR BY CONTRACTOR.

SEDIMENT CONTROL FENCE TO REMAIN IN PLACE UNTIL THE WORKING AREA HAS BEEN STABILIZED AND REVEGETATED.

ACCUMULATED SEDIMENT TO BE REMOVED OFF SITE PRIOR TO THE REMOVAL OF SEDIMENT CONTROL FENCE.

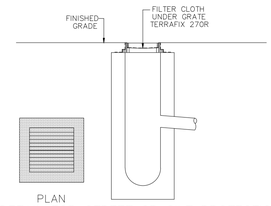
EROSION AND SEDIMENT CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR CONSERVATION AUTHORITY PERSONNEL.

CONTRACTOR MUST USE BEST MANAGEMENT PRACTICES (BMPS) FOR EROSION AND SEDIMENT CONTROL.



DETAIL FOR RLCB/DICB SILT PROTECTION

SCALE: NTS



DETAIL FOR STREET CB SILT PROTECTION

SCALE: NTS

THE SILTATION CONTROL PLAN IS INTENDED TO ASSIST THE CONTRACTOR IN THE LAYOUT AND CONSTRUCTION OF THE SILTATION CONTROL FEATURES ONLY. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION OF SITE SERVICES.

MONITORING OF SEDIMENT AND EROSION CONTROLS

MONITORING AND REPORTING TO BE COMPLETED IN ACCORDANCE WITH THE MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS (MECP) AND RIDEAU VALLEY CONSERVATION AUTHORITY(RVCA) APPROVALS.

MAINTENANCE PROGRAM

ALL DAMAGED ESC MEASURES SHOULD BE REPAIRED AND/OR REPLACEMENT WITHIN 48 HOURS OF THE INSPECTION.

THE ENVIRONMENTAL MONITOR IS REQUIRED TO SUBMIT UPDATES TO THE TOWN/ REGION/ CONSERVATION AUTHORITY BY EMAIL IN A TIMELY MANNER.

SEDIMENT SHOULD BE REMOVED FROM THE SEDIMENT CONTROL FENCING ONCE SEDIMENT HAS ACCUMULATED TO A LEVEL OF ONE-THIRD THE HEIGHT OF FENCING OR TO A HEIGHT OF 30 cm. ANY AMOUNT OF ACCUMULATED SEDIMENT SHOULD BE REMOVED PRIOR TO THE REMOVAL OF THE CONTROL MEASURES.

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION

TOPOGRAPHIC INFORMATION PROVIDED BY J.D. BARNES LIMITED
PROJECT No. 23-10-060-01, SURVEYS RECEIVED ON NOVEMBER 4, 2025.

ELEVATION NOTE

ELEVATIONS SHOWN ON THIS PLAN ARE GEODETIC RELATED TO CGVD28:78 VERTICAL DATUM

LEGAL INFORMATION

SITE PLAN: PC2025-0260
PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY G+A ARCHITECTS, PROJECT No. 25026, RECEIVED ON JANUARY 21, 2026.

No.	BY	DATE	DESCRIPTION
1	W.L.	26-01-30	1st SUBMISSION

CITY OF OTTAWA

PROJECT No. 25-1494

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
2026-01-30
PROVINCE OF ONTARIO

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
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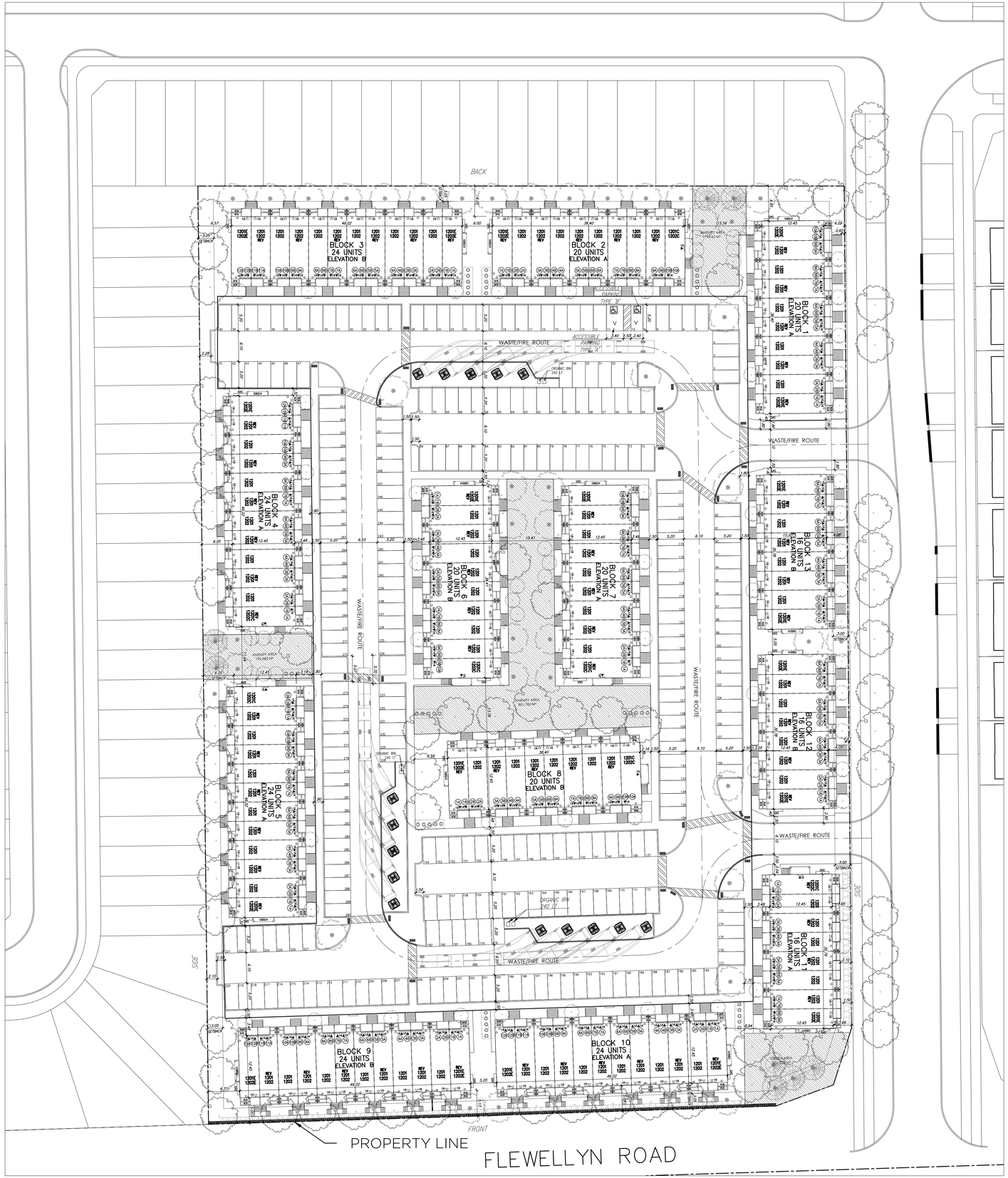
EROSION AND SEDIMENT CONTROL PLAN STAGE 2

DRAWN BY: M.S & A.S.	CHECKED BY: W.L.	SHEET NO.	
DESIGNED BY: W.L.	CHECKED BY: C.M.	18	OF 18
SCALE: 1:500	DATE: JANUARY 2026		

CITY FILE No. D07-16-24-0020 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042

David Schaeffer Engineering Ltd.
120 Iber Road, Suite 103
Stittsville, ON K2S 1E9
613-836-0856
dsel.ca

APPENDIX A



SITE PLAN NOTES

1. DO NOT SCALE DRAWINGS FOR PRINT.
2. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF Q4 ARCHITECTS AND CAIVAN . COPYRIGHT RESERVED.
3. WALKWAYS AND CURBS TO BE TIED INTO PUBLIC ROW WHERE APPLICABLE.
4. REFERENCE CITY OF OTTAWA T.W.S.I. DETAIL SC7.3
5. WHERE THE CLEAR WIDTH OF WALKWAY IS LESS THAN 1800 MM PROVIDE A PASSING AREA, 1800 MM WIDE BY 1800 MM LONG (MINIMUM) AT INTERVALS OF 30 METRES OR LESS AS PER CITY OF OTTAWA ACCESSIBILITY DESIGN STANDARDS 3.3.2: EXTERIOR PATHS OF TRAVEL - CLEAR WIDTH

SITE AREA	23,721.97 m² (2.37 ha)
PAVED AREA****	8,365m² (32.66%)
LANDSCAPED AREA (MIN 30%)	8,954 m² (37.75%)
TOTAL BUILDING COVERAGE	6,402 m² (27%)
TOTAL GROSS FLOOR AREA	24,098 m²
DENSITY (UPH)	112.98 UPH
ZONE CATEGORY	R4(Z)

DWELLING BLOCK	DWELLING TYPE	COVERAGE AREA (m²)	UNITS
BLOCKS 3, 4, 5, 9, 10	24 UNITS STACKED DWELLING	572.75 m² (per Block)	120
BLOCKS 1, 2, 6, 7, 8	20 UNITS STACKED DWELLING	477.91 m² (per Block)	100
BLOCKS 11, 12, 13	16 UNITS STACKED DWELLING	383.07 m² (per Block)	48
	TOTAL		268

AMENITY AREAS

	AREA	COMMENTS
PRIVATE AMENITY AREAS		
REAR DECK	398.37 m²	Lower units (134 units)
REAR PATIOS	2154.60	Lower units where applicable(140 units)
SECOND FLOOR BALCONIES	543.58 m²	Upper units (134 units)
TOTAL PRIVATE AREAS	3096.54 m²	
COMMUNAL AMENITY AREAS		
AMENITY AREA 1	801.785 m²	
AMENITY AREA 2	198.625 m²	
AMENITY AREA 3	192.682 m²	
TOTAL COMMUNAL AREAS	1193.1 m²	
TOTAL AMENITY AREAS	4,289.64 m²	
GREEN AREA	251.020 m²	**Not count as amenity area**

** Per the 2014 Guide to the Integrated Accessibility Standards Regulation - Design of Public Spaces Standard, 4% of parking spaces provided for public use must be accessible. 2 of the provided 22 visitor spaces have been designed to be barrier-free, one Type A and one Type B size.

*** Section 110(3)(d) where an in-ground refuse container is provide, the screening requirement of Section (3)(c) above may be achieved with soft landscaping (Bylaw 2020-289)

**** Paved area includes 50% of the area required for bicycle parking spaces (67 spots = 73.44 m²)

GARBAGE:
REQUESTED BY ZONING:

GARBAGE: 0.231 CUBIC YARD /UNIT	0.231 X 268= 61.91 CUBIC YARD	= 11 (6 CU YD BINS)
RECYCLING 0.018 CUBIC YARD /UNIT + 0.062 CUBIC YARD /UNIT	0.018 X 268 = 4.82 CUBIC YARDS 0.062 X 268 = 16.62 CUBIC YARDS	= 1 (6 CU YD BINS) = 3 (6 CU YD BINS)
ORGANIC 240L PER 50 UNITS	268/50 = 5.36 UNITS	= 6 (240L BIN)

SCALE 1:400 0 5 10 15 20 25 30

ZONE PROVISION - PLANNED UNIT DEVELOPMENT		REQUIRED	PROPOSED
162A(2)	Min. Lot Area (m2)	1400 m²	23, 732.97 m²
162A(2)	Min. Lot Width (m)	18 m	128.7 m
162A(2) [YYYY]	Min. Front Yard Setback (m)	3	5.10
162A(2) [YYYY]	Min. Interior Side Yard Setback (m)	3	6.05
162B.6 [YYYY]	Min. Rear yard setback (m)	3	6.05
162A(2)Y [YYYY]	Min. Corner Side yard set back (m)	3	4.1
162A(2)	Max Building Height (m)	15	13.5
161	Landscaped Area	30	38
131.1	Min. Width of Private Way / Parking Aisle (m)	6	6.1
131.4a	Min. Setback for Any Wall of a Residential Buildings Within a Planned Unit Development	1.2	6.05
131.2	Min. setback for any wall of a residential use building to a private way	1.8	2.9
137	**AMENITY AREA**		
137.6	Total min. amenity area (6m² per unit)	1608 m²	4289.64 m²
137.6	Min. Communal Amenity Area m² (Min. 50% area)	804 m²	1193.1 m²
65	**PERMITTED PROJECTION INTO REQUIRED YARDS**		
65.5.i	Fire escapes, Open Stairways, Stoop (m)	>0.6m to lot line	0.6m
65.6.a(i)	Covered or Uncovered Balcony, Porch and Deck	2m no closer than 1 to a lot line	2m no closer than 1.65 to a lot line
	PARKING REQUIREMENTS	**REQUIRED**	**PROPOSED**
101 (Table R10) [YYYY]	Resident Parking - 1.0/ spaces/unit	268	268
102 (Table column III) [YYYY]	Visitor Parking - 0.1 spaces/unit	27 (0.1)	22 (0.08)
106.1	Min. Perpendicular Parking Space Size (m)	2.6 x 5.2	2.6 x 5.2
106.2	Min. Length Parallel parking	6.7	6.7
107 (Table 107.d)	Min. Requires Aisle Width	6.0	6.1
	BARRIER FREE PARKING		
Traffic and Parking Bylaw Section 111	Min. Barrier Free Parking **	2	2
111	**BICYCLE STORAGE**		
111B	Min. bicycle parking space dimension, horizontal (m)	Width: 0.6m Length: 1.8m	0.6 1.8
111A(b)	Min. Bicycle parking space access aisle Width (m)	1.5	1.5
111.11	Min. Bicycle Parking 0.5 spaces/unit	134	135
110(a)(b)	**LANDSCAPE AREA SURROUNDING PARKING LOT**		
110.a	Abutting a Street (m)	3	N/A
110.b	Not Abutting a street (m)	3	2.1m
110.1.b	Min. % of parking lot landscape	15%	19.87%
110	**REFUSE COLLECTION AREAS**		
110.3b	Min. Waste collection setback to lot line	3	>38m
110.3.c/d	Opaque Screen Min. Height (m)	2	2***

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The contractor / builder must verify all dimensions on the job and report any discrepancy to the designer before proceeding with the work.

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LEGEND

- STACKED TOWNS
- ENTRANCE
- BALCONY
- PORCH
- PROJECTION (STAIRS)
- PAVERS
- SODDING
- LIGHT DUTY ASPHALT PAVING
- CROSSWALK
- CURB (0.2m)
- DEPRESSED CURB
- TACTILE WALKING SURFACE INDICATOR (NOTE 4)
- BLOCK BOUNDARY
- WASTE ENCLOSURE FENCE
- WOOD PRIVACY FENCE
- CURB PIN
- RETAINING WALL
- PRIVACY FENCE (SEE LANDSCAPE)
- METAL FENCE (SEE LANDSCAPE)
- NO PARKING
- BARRIER FREE PARKING
- BARRIER FREE PARKING SIGNAGE
- V VISITOR PARKING
- BIKE RACKS (15 Bycicles)
- EARTH BIN (6.5 yd³)
- HYDRO TRANSFORMER
- LIGHT POLE
- S.S SNOW STORAGE AREA
- L/A LANDSCAPED AREA
- MEDIUM DECIDUOUS TREE*
- SMALL DECIDUOUS TREE*
- DECIDUOUS SHRUB*
- CONIFEROUS SHRUB*
- GRASSES/PERENNIALS *
- SLOPED GRADE

DIMENSIONS FROM J.D. BARNES DRAFT MPLAN DATED 26/09/2025
*TREES AND SHRUB LOCATIONS TO BE CONFIRMED ON LANDSCAPE PLAN

3	ISSUE FOR SPA	2026.01.20	CT
2	ISSUE FOR COORDINATION	2026.01.08	JM
1	ISSUE FOR COORDINATION	2025.11.28	JM

Issued / Revision Chart

Project Title

Magnolia/Stittsville
PHASE 1 -STACKED TOWNS

Location OTTAWA, ON.

Site Plan File:
Eng. File:
ZBLA File:

Legal Name

Client CAIVAN

Project No.

Scale 1:500

Drawn By CT

Checked By CT

OVERALL SITE PLAN

SP1

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APPENDIX B

Hydraulic Capacity and Modeling Analysis Stittsville South Urban Expansion Area Development

Technical Memorandum

FINAL

Prepared for:
David Schaeffer Engineering Ltd.
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9

Prepared by:
GeoAdvice Engineering Inc.
Unit 203, 2502 St. John's Street
Port Moody, BC V3H 2B4

Submission Date: January 8, 2026

Contact: Mr. Werner de Schaetzen, Ph.D., P.Eng.
Project: 2022-018-DSE

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BC Permit to Practice: 1000623
ON CofA Number: 100118603

Document History and Version Control

Revision No.	Date	Document Description	Revised By	Reviewed By
R0	December 1, 2023	Draft	Ben Loewen	Werner de Schaetzen
R1	December 6, 2023	Updated Draft	Ben Loewen	Werner de Schaetzen
R2	August 8, 2024	Final	Ben Loewen	Werner de Schaetzen
R3	January 10, 2025	Draft	Jim Lee	Werner de Schaetzen
R4	January 17, 2025	Final	Jim Lee	Werner de Schaetzen
R5	December 19, 2025	Draft	Jacky Lee	Werner de Schaetzen
R6	January 8, 2026	Final	Jacky Lee	Werner de Schaetzen

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BC Permit to Practice: 1000623
ON CofA Number: 100118603

1 Introduction

GeoAdvice Engineering Inc. ("GeoAdvice") was retained by David Schaeffer Engineering Ltd. ("DSEL") to size the proposed watermain network for the Stittsville South Urban Expansion Area (SSUEA) development ("Development") in the City of Ottawa, ON ("City").

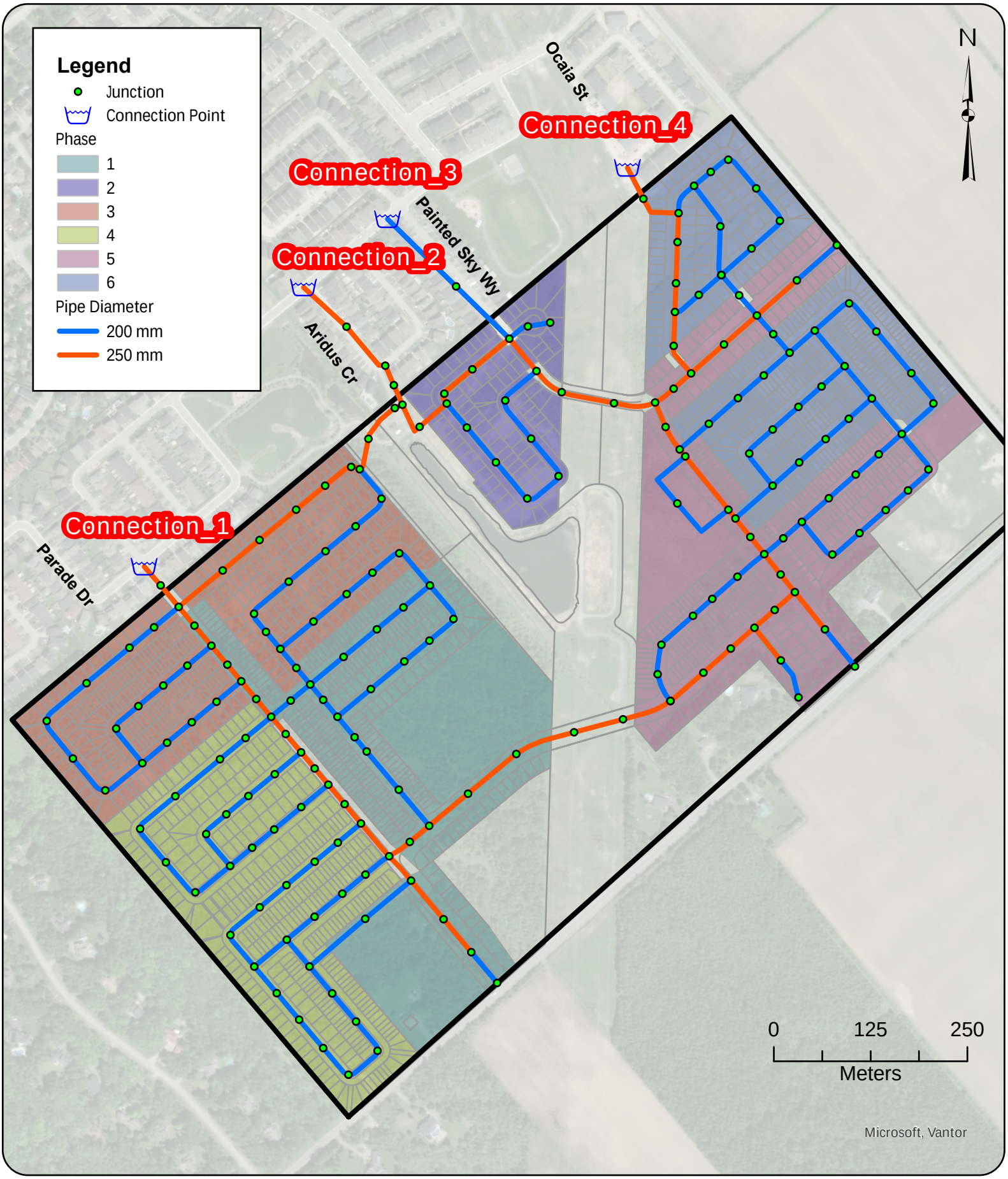
The development will have four (4) connections to the City's water distribution system on Parade Drive, Aridus Crescent, Hickstead Way via Painted Sky Way, and Ocaia Street that will feed the proposed development. The connections used for modeling the proposed development were based on the boundary conditions provided by the City on July 25, 2024 (refer to **Appendix C**).

The development site is shown in **Figure 1.1** on the following page, with the recommended watermain pipe diameter.

This memo describes the assumptions and results of the hydraulic modeling and capacity analysis using InfoWater Pro (Autodesk software), a GIS water distribution system modeling and management software application.

The results presented in this memo are based on the analysis of steady state simulations. The predicted available fire flows, as calculated by the hydraulic model, represent the flow available in the watermain while maintaining a residual pressure of 20 psi at the hydrant. No extended period simulations were completed in this analysis to assess the water quality or to assess the hydraulic impact on storage and pumping.

BC Permit to Practice: 1000623
ON CofA Number: 100118603



GeoAdvice Engineering Inc.

Project: **Hydraulic Capacity and Modeling Analysis**
SSUEA
2022-018-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **January 2026**
Created by: **JL**
Reviewed by: **WdS**

DISCLAIMER: GeoAdvice does not warrant in any way the accuracy and completeness of the information shown on this map. Field verification of the accuracy and completeness of the information shown on this map is the sole responsibility of the user.

Site Layout and Connection Point

Figure 1.1

2 Modeling Considerations

2.1 Watermain Configuration

The watermain network was modeled based on drawings prepared by DSEL and provided to GeoAdvice on December 16, 2025.

2.2 Elevations

Elevations of the modeled junctions were assigned according to a preliminary site grading plan at road level, which was prepared by DSEL and provided to GeoAdvice on December 16, 2025.

2.3 Consumer Demands

The demand factors were based on the City of Ottawa's internally developed parameters (DraftFinal_SystemLevelDemandParameters_24May2024(JB).xls) for populations exceeding 3,000. A summary of the rates relevant for this development is presented in **Table 2.1**.

Table 2.1: City of Ottawa Demand Factors*

Demand Type	Amount	Units	Outdoor Water Demand (OWD)	Units
Average Day Demand (ADD)				
Single Family Home	180	L/c/d	700	L/unit/d
Multi Family Townhome	198	L/c/d	350	L/unit/d
High Density Building	219	L/c/d	0	L/unit/d
Institutional/Park**	28,000	L/ha/d		
Maximum Daily Demand (MDD)				
Single Family Home	ADD + OWD	L/d		
Multi Family Townhome	ADD + OWD	L/d		
High Density Building	ADD	L/d		
Institutional/Park	1.5 x ADD	L/ha/d		
Peak Hour Demand (PHD)				
Single Family Home	2.1 x MDD	L/d		
Multi Family Townhome	2.1 x MDD	L/d		
High Density Building	1.6 x MDD	L/d		
Institutional/Park	1.8 x MDD	L/ha/d		

***For all demands, a connection loss of 80 L/unit/day was applied to each unit**
****City of Ottawa Design Guidelines – Water Distribution (2010)**

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ON CofA Number: 100118603

Table 2.2 and **Table 2.3** summarize the water demand calculations for proposed development.

Table 2.2: Development Population and Demand Calculations – Residential

Phase	Dwelling Type	# of Units	Population (Capita)	Water Demand* (L/s)		
				ADD	MDD	PHD
1	Single Detached	64	218	0.51	1.03	2.10
	Townhome	170	459	1.21	1.90	3.81
	Stacked**	268	724	1.78	2.87	5.89
Subtotal		**502**	**1,401**	**3.51**	**5.80**	**11.80**
2	Single Detached	81	276	0.65	1.31	2.66
Subtotal		**81**	**276**	**0.65**	**1.31**	**2.66**
3	Single Detached	190	646	1.52	3.06	6.23
	Townhome	109	295	0.78	1.22	2.45
Subtotal		**299**	**941**	**2.30**	**4.28**	**8.68**
4	Single Detached	148	504	1.19	2.39	4.86
	Townhome	175	473	1.25	1.95	3.93
Subtotal		**323**	**977**	**2.43**	**4.34**	**8.79**
5	Single Detached	108	368	0.87	1.74	3.55
	Townhome	155	419	1.10	1.73	3.48
	Stacked**	178	481	1.18	1.91	3.91
Subtotal		**441**	**1,268**	**3.16**	**5.38**	**10.94**
6	Single Detached	82	279	0.66	1.32	2.69
	Townhome	260	702	1.85	2.90	5.83
Subtotal		**342**	**981**	**2.51**	**4.22**	**8.52**
Total		**1,988**	**5,844**	**14.55**	**25.33**	**51.39**

***Includes water demands from connection loss**
****Number of connections for stacked units is assumed to be 0.5 connections/unit**

Table 2.3: Park Demand Calculations

Phase	Dwelling Type	Area (ha)	Water Demand (L/s)		
			ADD	MDD	PHD
1	Park	3.00	0.97	1.46	2.63
5	Park	0.41	0.13	0.20	0.36
Total		**3.41**	**1.11**	**1.66**	**2.98**

Demands were grouped into demand polygons and then uniformly distributed to the model nodes located within each polygon. Detailed calculations of demands as well as the illustrated allocation areas are shown in **Appendix A**.

2.4 Fire Flow Demand

Fire flow demands are typically determined in accordance with the Fire Underwriters Survey's Water Supply for Public fire Protection guideline (2020). FUS calculations are based on the types of building, floor area, number of storeys, construction class, occupancy class and exposure factor. At this time, there is not enough information about the building construction details to complete FUS calculations.

As agreed with DSEL, the following required fire flow were assumed:

- Park: 167 L/s
- Residential (all dwelling types): 167 L/s

FUS calculations should be completed once detailed drawings become available to validate the required fire flow assumptions. The FUS fire flows may vary from those assumed in this memo.

Fire flow simulations were completed at each model node under the most conservative required fire flow value. The locations of nodes do not necessarily represent hydrant locations. Detailed FUS fire flow calculations as well as the illustrated spatial allocation of the required fire flows are shown in **Appendix B**.

2.5 Boundary Conditions

The boundary conditions were provided by the City of Ottawa in the form of Hydraulic Grade Line (HGL) at the following locations:

- Connection 1: Parade Drive
- Connection 2: Aridus Crescent
- Connection 3: Hickstead Way via Painted Sky Way
- Connection 4: Ocaia Street

The four connections to the proposed development are illustrated in **Figure 1.1**.

Boundary conditions were provided for Peak Hour (PHD), Maximum Day plus Fire (MDD+FF) and Average Day (high pressure check, ADD) demand conditions. The City boundary conditions were provided to GeoAdvice on July 25, 2024, and can be found in **Appendix C**.

Table 2.4 summarizes the *"Future Servicing Scenario 1 – 254 mm Looping"* Boundary Condition detailed in Subsection 3 of **Appendix C**, which was used to size the water network as agreed with DSEL.

BC Permit to Practice: 1000623
ON CofA Number: 100118603

Table 2.4: Boundary Conditions (Appendix C - Subsection 3)

Condition	Connection 1 HGL (m)	Connection 2 HGL (m)	Connection 3 HGL (m)	Connection 4 HGL (m)
Average Day (max. pressure)	160.4	160.4	160.4	160.4
Peak Hour (min. pressure)	152.0	151.8	151.8	151.8
Max Day + Fire Flow (167 L/s)	143.9	141.7	141.7	137.5

3 Hydraulic Capacity Design Criteria

3.1 Pipe Characteristics

Pipe characteristics of internal diameter (ID) and Hazen-Williams C factors were assigned in the model according to the City of Ottawa Design Guidelines for PVC watermain material. Pipe characteristics used for the development are outlined in **Table 3.1** below.

Table 3.1: Model Pipe Characteristics

Nominal Diameter (mm)	ID PVC (mm)	Hazen Williams C-Factor (/)
200	204	110
250	250	110

3.2 Pressure Requirements

As outlined in the City of Ottawa Design Guidelines, the generally accepted best practice is to design new water distribution systems to operate between 350 kPa (50 psi) and 480 kPa (70 psi). The maximum pressure at any point in the distribution system in occupied areas outside of the public right-of-way shall not exceed 552 kPa (80 psi). Pressure requirements are outlined in **Table 3.2.**

Table 3.2: Pressure Requirements

Demand Condition	Minimum Pressure		Maximum Pressure	
	(kPa)	(psi)	(kPa)	(psi)
Normal Operating Pressure (maximum daily flow)	350	50	480	70
Peak Hour Demand (minimum allowable pressure)	276	40	-	-
Maximum Fixture Pressure (Ontario Building Code)	-	-	552	80
Maximum Distribution Pressure (minimum hour check)	-	-	552	80
Maximum Day Plus Fire	140	20	-	-

4 Hydraulic Capacity Analysis

The proposed watermains within the development were sized to the minimum diameter which would satisfy the greater of maximum day plus fire and peak hour demand. Modeling was carried out for average day, peak hour and maximum day plus fire flow using InfoWater Pro.

4.1 Development Pressure Analysis

Modeled service pressures for the development are summarized in **Table 4.1**.

Table 4.1: Summary of Available Service Pressures

Average Day Demand Maximum Pressure	Peak Hour Demand Minimum Pressure
82 psi (565 kPa)	60 psi (414 kPa)

As outlined in the City of Ottawa Design Guidelines, the generally accepted best practice is to design new water distribution systems to operate between 350 kPa (50 psi) and 480 kPa (70 psi). The maximum pressure at any point within the distribution system in occupied areas outside of the public right-of-way shall not exceed 552 kPa (80 psi) and the minimum pressure at any point within the distribution system shall not fall below 270 kPa (40 psi). **The maximum service pressure is 82 psi, above the 80 psi threshold. As such, pressure reducing valves may be required for the proposed development. The minimum pressure is 60 psi under PHD, meeting the required 40 psi threshold.**

Figures showing the pressures under ADD and PHD scenarios are provided in **Appendix D.**

4.2 Development Fire Flow Analysis

Summary of the minimum available fire flow in the development is shown in **Table 4.2**.

Table 4.2: Summary of the Minimum Available Fire Flows

Required Fire Flow	Minimum Available Flow*
167 L/s	166 L/s

***The predicted available fire flows, as calculated by the hydraulic model, represent the flow available in the watermain while maintaining a residual pressure of 20 psi at the hydrant. High available fire flows (>500 L/s) are theoretical values. Actual available fire flow is limited by the hydraulic losses through the hydrant lateral and hydrant port sizes.**

Summaries of the residual pressures in the development are shown in **Table 4.3**. The minimum allowable pressure under fire flow conditions is 140 kPa (20 psi) at the location of the fire.

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ON CofA Number: 100118603

Table 4.3: Summary of the Residual Pressures

Minimum Residual Pressure	Average Residual Pressure	Maximum Residual Pressure
20 psi (138 kPa)	37 psi (255 kPa)	48 psi (331 kPa)

In total, there is one (1) junction with insufficient residual pressure and available fire flow within the development; however, it is within 1% of the required fire flow and residual pressure. There is also available fire flow and pressure within 60 m of the junction.

The figure illustrating the fire flow results can be found in **Appendix E.**

Submission

Prepared by:

Jacky Lee, E.I.T.
Hydraulic Modeler / Project Engineer

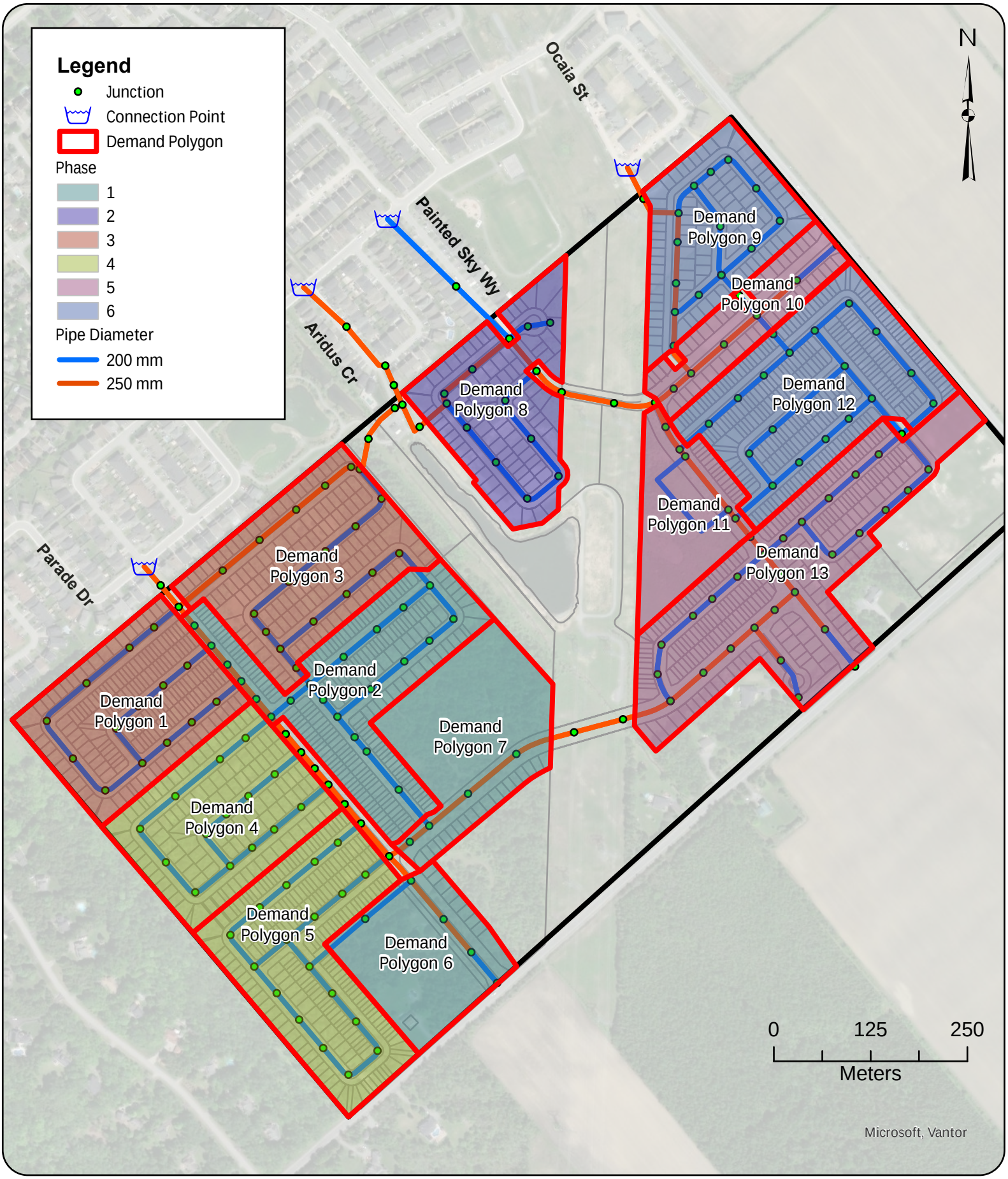
Approved by:

Jan 8, 2026
LICENSED PROFESSIONAL ENGINEER
W. B. F. de Schaetzen
100116349
PROVINCE OF ONTARIO

Werner de Schaetzen, Ph.D., P.Eng.
Senior Modeling Review / Project Manager

BC Permit to Practice: 1000623
ON CofA Number: 100118603

Appendix A Demand Calculations



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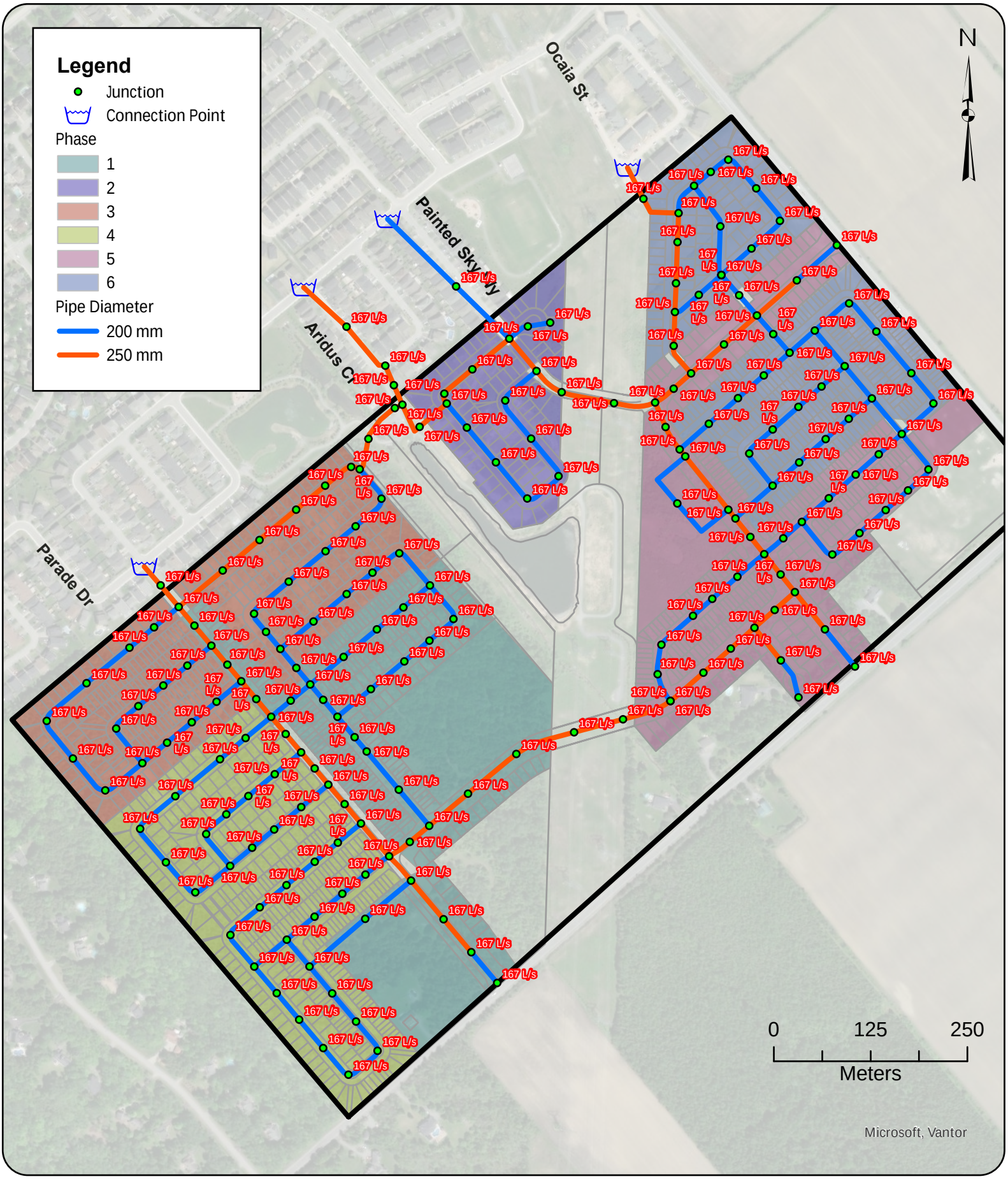
Project: **Hydraulic Capacity and Modeling Analysis**
SSUEA
2022-018-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **January 2026**
Created by: **JL**
Reviewed by: **WdS**

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Demand Polygons

Figure A.1

Appendix B Required Fire Flows



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SSUEA
2022-018-DSE
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Required Fire Flow

Figure B.1

Appendix C Boundary Conditions

Boundary Conditions
Stittsville South Urban Expansion Area

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	1,264	16.72
Maximum Daily Demand	2,494	26.21
Peak Hour	3,772	52.24
Fire Flow Demand #1	10,000	167
Fire Flow Demand #2	13,000	217
Fire Flow Demand #3	17,000	283

Location



Existing Condition with **Conceptual** Looping for Future Servicing Scenario 1



Existing Condition with **Conceptual** Looping for Future Servicing Scenario 2



Results

1. Existing Condition Model (No Future Demand)

Connection 1 - Parade Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.2	72.5
Peak Hour	155.2	65.4
Max Day plus Fire Flow #1	143.5	48.7
Max Day plus Fire Flow #2	135.7	37.7
Max Day plus Fire Flow #3	123.2	19.8
[1] Ground Elevation =	109.2	m

Connection 2 - Aridus Cres.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.2	79.2
Peak Hour	155.2	72.1
Max Day plus Fire Flow #1	137.3	46.6
Max Day plus Fire Flow #2	125.6	30.0
Max Day plus Fire Flow #3	106.6	2.9
[1] Ground Elevation =	104.5	m

Connection 3 - Hickstead Way

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.2	77.9
Peak Hour	155.2	70.8
Max Day plus Fire Flow #1	139.7	48.8
Max Day plus Fire Flow #2	129.6	34.4
Max Day plus Fire Flow #3	113.1	11.0
[1] Ground Elevation =	105.4	m

Connection 4 - Ocaia St.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.2	79.8
Peak Hour	155.2	72.7
Max Day plus Fire Flow #1	127.3	33.0
Max Day plus Fire Flow #2	109.3	7.5
Max Day plus Fire Flow #3	80.0	-34.3
[1] Ground Elevation =	104.1	m

2. Existing Condition Model with Future Demands

Connection 1 - Parade Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	72.8
Peak Hour	152.0	60.8
Max Day plus Fire Flow #1	143.4	48.6
Max Day plus Fire Flow #2	135.2	37.0
Max Day plus Fire Flow #3	122.0	18.2

[1] Ground Elevation = 109.2 m

Connection 2 - Aridus Cres.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	79.5
Peak Hour	151.7	67.1
Max Day plus Fire Flow #1	136.1	45.0
Max Day plus Fire Flow #2	123.8	27.5
Max Day plus Fire Flow #3	104.0	-0.7

[1] Ground Elevation = 104.5 m

Connection 3 - Hickstead Way

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	78.2
Peak Hour	151.7	65.8
Max Day plus Fire Flow #1	138.7	47.4
Max Day plus Fire Flow #2	128.0	32.1
Max Day plus Fire Flow #3	110.8	7.6

[1] Ground Elevation = 105.4 m

Connection 4 - Ocaia St.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	80.1
Peak Hour	151.6	67.6
Max Day plus Fire Flow #1	125.5	30.5
Max Day plus Fire Flow #2	106.8	3.9
Max Day plus Fire Flow #3	76.5	-39.2

[1] Ground Elevation = 104.1 m

3. Future Servicing Scenario 1 - 254 mm Looping

Connection 1 - Parade Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	72.8
Peak Hour	152.0	60.7
Max Day plus Fire Flow #1	143.9	49.3
Max Day plus Fire Flow #2	136.1	38.1
Max Day plus Fire Flow #3	123.5	20.2

[1] Ground Elevation = 109.2 m

Connection 2 - Aridus Cres.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	79.5
Peak Hour	151.8	67.3
Max Day plus Fire Flow #1	141.7	52.8
Max Day plus Fire Flow #2	132.6	39.9
Max Day plus Fire Flow #3	118.0	19.2

[1] Ground Elevation = 104.5 m

Connection 3 - Hickstead Way

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	78.2
Peak Hour	151.8	66.0
Max Day plus Fire Flow #1	141.7	51.5
Max Day plus Fire Flow #2	132.6	38.6
Max Day plus Fire Flow #3	118.0	17.9

[1] Ground Elevation = 105.4 m

Connection 4 - Ocaia St.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	80.1
Peak Hour	151.8	67.9
Max Day plus Fire Flow #1	137.5	47.6
Max Day plus Fire Flow #2	126.0	31.2
Max Day plus Fire Flow #3	107.4	4.7

[1] Ground Elevation = 104.1 m

4. Future Servicing Scenario 2 – 254 mm Looping

Connection 1 - Parade Dr.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	72.8
Peak Hour	152.0	60.7
Max Day plus Fire Flow #1	143.9	49.3
Max Day plus Fire Flow #2	136.1	38.2
Max Day plus Fire Flow #3	123.5	20.2

[1] Ground Elevation = 109.2 m

Connection 2 - Aridus Cres.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	79.5
Peak Hour	151.8	67.3
Max Day plus Fire Flow #1	141.7	52.9
Max Day plus Fire Flow #2	132.6	40.0
Max Day plus Fire Flow #3	118.0	19.3

[1] Ground Elevation = 104.5 m

Connection 3 - Hickstead Way

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	78.2
Peak Hour	151.8	66.0
Max Day plus Fire Flow #1	141.7	51.5
Max Day plus Fire Flow #2	132.6	38.6
Max Day plus Fire Flow #3	118.0	17.9

[1] Ground Elevation = 105.4 m

Connection 4 - Ocaia St.

Demand Scenario	Head (m)	Pressure[1] (psi)
Maximum HGL	160.4	80.1
Peak Hour	151.8	67.9
Max Day plus Fire Flow #1	137.9	48.1
Max Day plus Fire Flow #2	126.5	32.0
Max Day plus Fire Flow #3	108.3	6.0

[1] Ground Elevation = 104.1 m

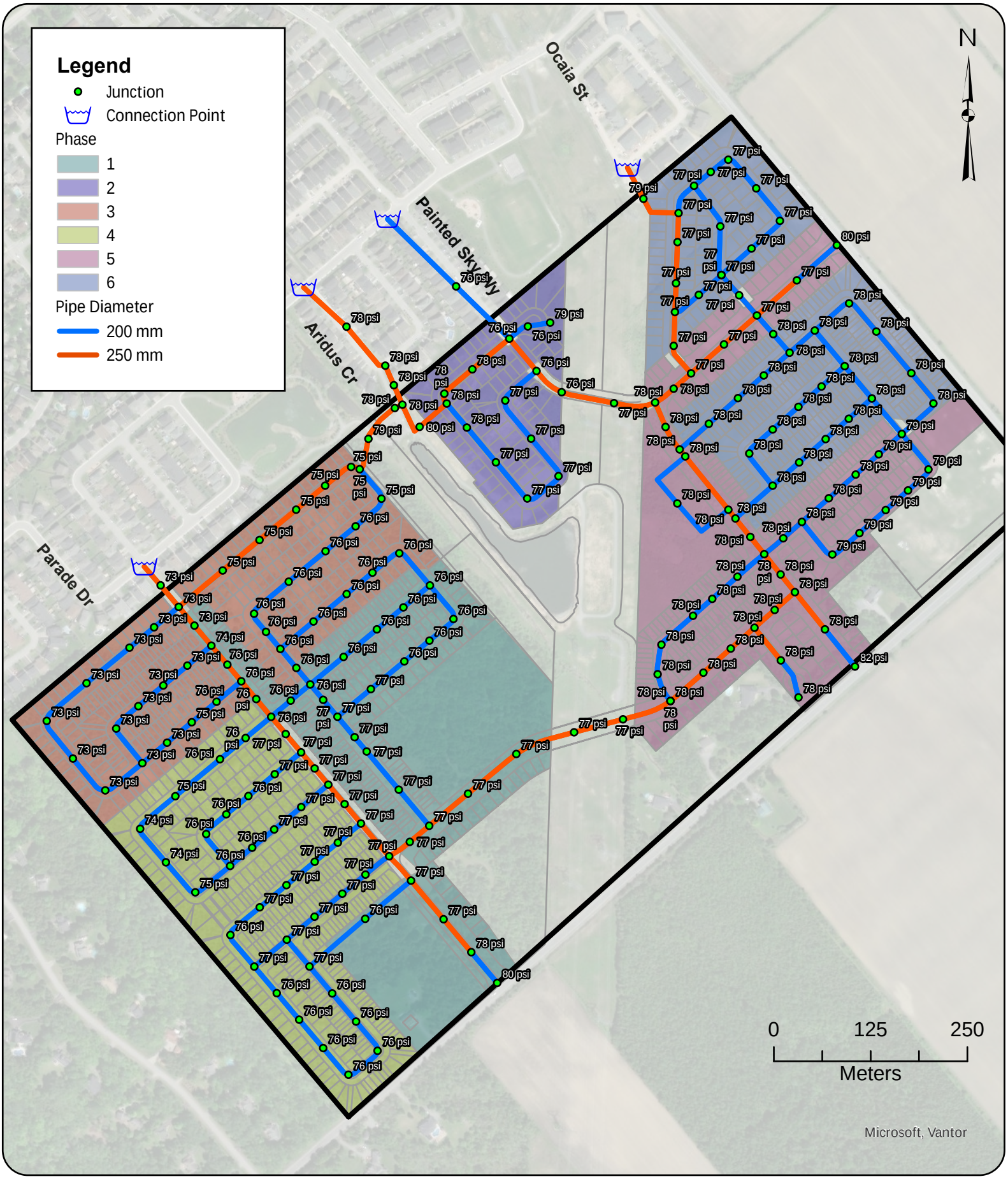
Notes

1. *Per the OWDG Section 4.2.2:*
    - *During periods of maximum day and fire flow demand, the residual pressure at any point in the distribution system shall not be less than 20 psi.*

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. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

Appendix D Pressure Results



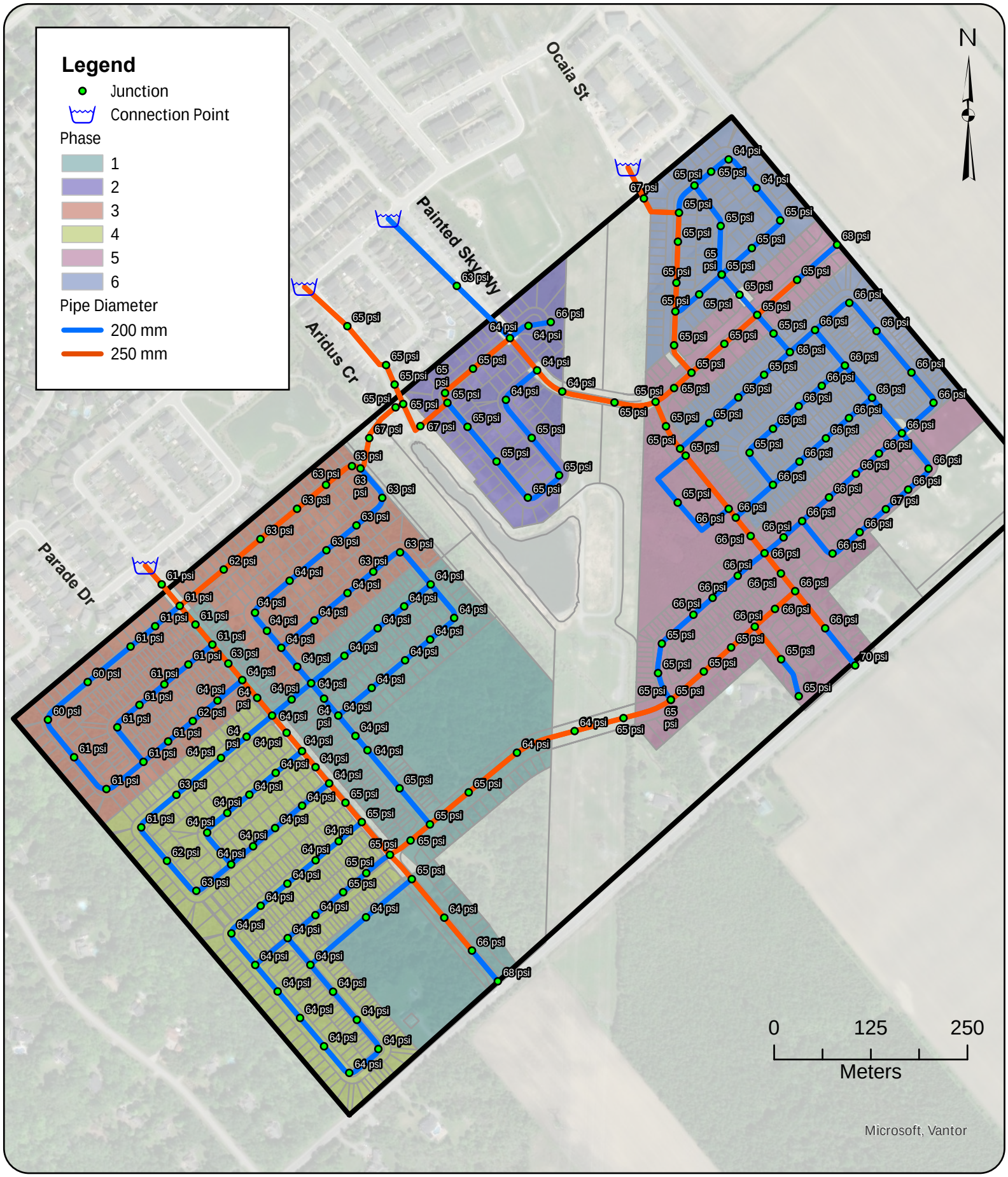
GeoAdvice Engineering Inc.

Project: **Hydraulic Capacity and Modeling Analysis**
SSUEA
2022-018-DSE
Client: **David Schaeffer Engineering Ltd.**
Date: **January 2026**
Created by: **JL**
Reviewed by: **WdS**

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ADD Pressure Modeling Results

Figure D.1

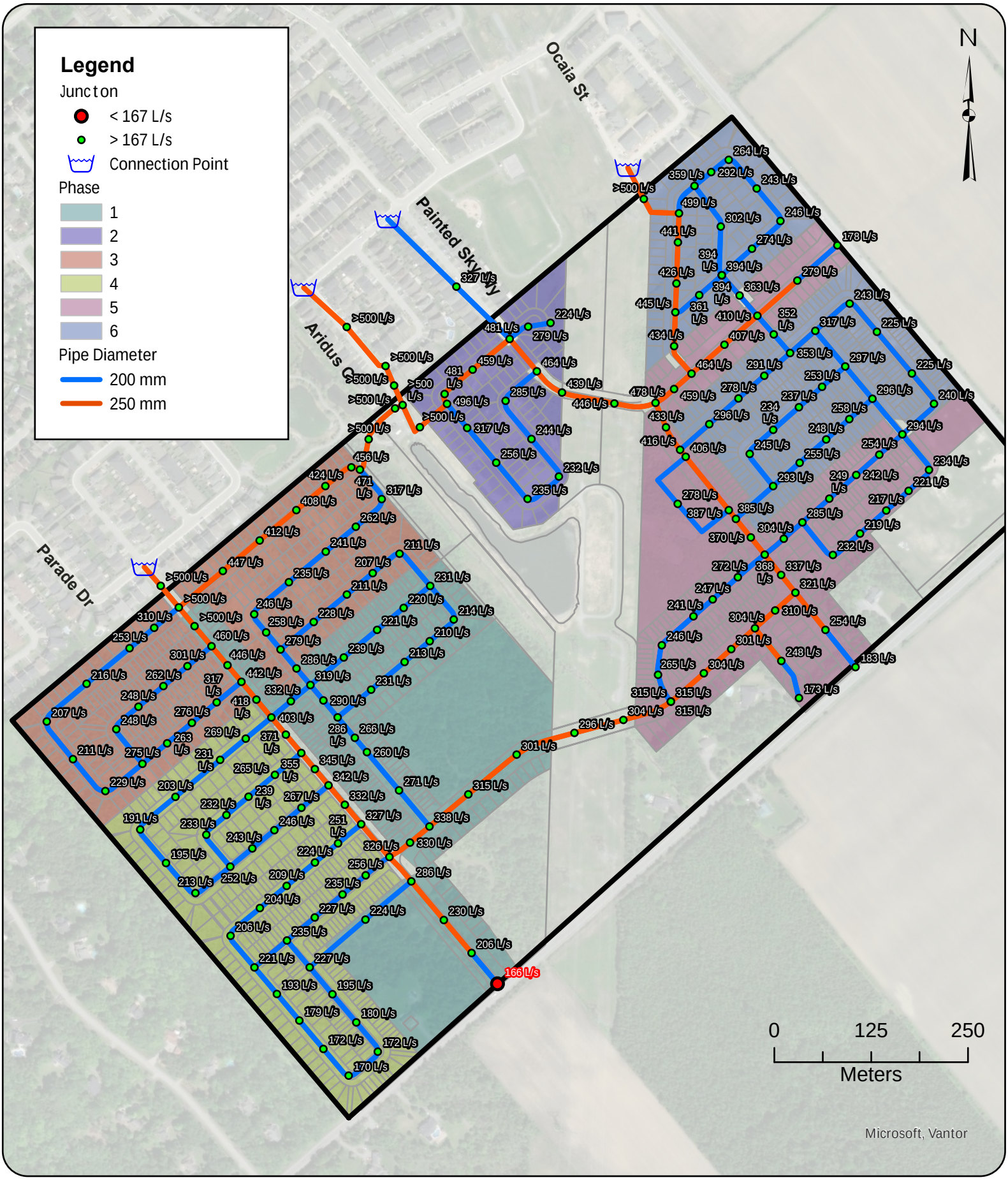


GeoAdvice Engineering Inc.	Project: **Hydraulic Capacity and Modeling Analysis SSUEA 2022-018-DSE** Client: **David Schaeffer Engineering Ltd.** Date: **January 2026** Created by: **JL** Reviewed by: **WdS**	DISCLAIMER: GeoAdvice does not warrant in any way the accuracy and completeness of the information shown on this map. Field verification of the accuracy and completeness of the information shown on this map is the sole responsibility of the user.

PHD Pressure Modeling Results

Figure D.2

Appendix E MDD+FF Model Results



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Available Fire Flow Modeling Results

Figure E.1

Caivan
Magnolia Ph.1 Site Plan
Required Fire Flow

Required Fire Flow per IWSTB-2024-05 (OBC A-3.2.5.7)
Block 3

$Q = K\ V\ S_{tot}$

Where,

Q	201,272	minimum supply of water in litres
K	18	water supply coefficient from Table 1
V	7,454.50	total building volume in cubic metres
S_{tot}	1.50	total spacial coefficient from property line exposures

Buidling Volume	Area (m^2)	h (m)	V (m^3)
Basement	45.01	3.05	137.3
Ground	42.09	3.4	143.1
2nd floor	44.71	3.4	152.0
3rd floor	46.65	2.47	115.2
Attic	23.74	3.1	73.6

		units	total vol	
621.2	X	12	7454.50	m^3

Required minimum water supply flow rate, L/min

Q (L)		RFF (L/min)	
	108,000	2700	
108,000	135,000	3600	
135,000	162,000	4500	
162,000	190,000	5400	
190,000	270,000	6300	**<---- Required Fire Flow**
270,000		9000	

Spacial Coefficient

	m	S
North	9	0.1
South	22	0
West	11	0
East	6	0.4

The minimum fire flow for the subdivision is 10,000 L/min as per the City requirements. This 10,000 L/min fire flow was applied to this site plan, however, the governing required fire flow was 6,300 L/min which conforms to the OBC requirements.

The Blocks that govern this 6,300 L/min fire flow are Blocks 3, 10 & 9, which each consist of 12 units each. Secondly, other blocks require 4,500 L/min or less fire flow within the site plan.

For the Blocks adjacent to existing housing rearyards, a 4.5m offset from the property line of the proposed blocks was used.

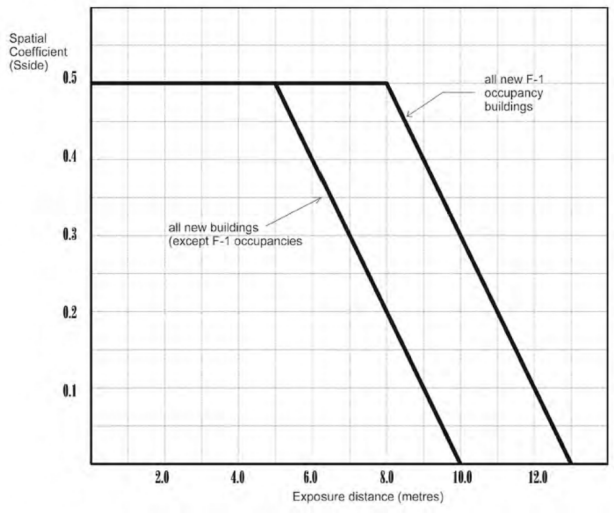


Figure 1
Spatial Coefficient vs Exposure Distance

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Caivan
Magnolia Ph.1 Site Plan
Required Fire Flow

Required Fire Flow per IWSTB-2024-05 (OBC A-3.2.5.7)
Block 10

$Q = K\ V\ S_{tot}$

Where,

Q	234,817	minimum supply of water in litres
K	18	water supply coefficient from Table 1
V	7,454.50	total building volume in cubic metres
S_{tot}	1.75	total spacial coefficient from property line exposures

Buidling Volume	Area (m^2)	h (m)	V (m^3)
Basement	45.01	3.05	137.3
Ground	42.09	3.4	143.1
2nd floor	44.71	3.4	152.0
3rd floor	46.65	2.47	115.2
Attic	23.74	3.1	73.6

		units	total vol	
621.2	X	12	7454.50	m^3

Required minimum water supply flow rate, L/min

Q (L)		RFF (L/min)	
	108,000	2700	
108,000	135,000	3600	
135,000	162,000	4500	
162,000	190,000	5400	
190,000	270,000	6300	**<---- Required Fire Flow**
270,000		9000	

Spacial Coefficient

	m	S
North	40	0
South	25	0
West	5	0.5
East	7.5	0.25

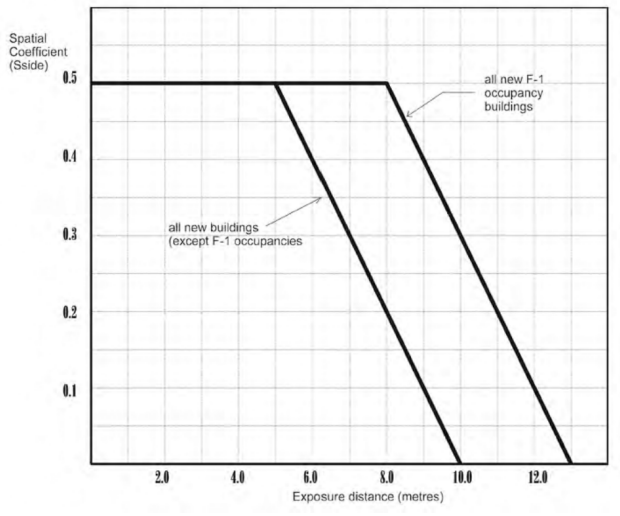


Figure 1
Spatial Coefficient vs Exposure Distance

Caivan
Magnolia Ph.1 Site Plan
Required Fire Flow

Required Fire Flow per IWSTB-2024-05 (OBC A-3.2.5.7)
Block 9

$Q = K\ V\ S_{tot}$

Where,

Q	201,272	minimum supply of water in litres
K	18	water supply coefficient from Table 1
V	7,454.50	total building volume in cubic metres
S_{tot}	1.50	total spacial coefficient from property line exposures

Buidling Volume	Area (m^2)	h (m)	V (m^3)
Basement	45.01	3.05	137.3
Ground	42.09	3.4	143.1
2nd floor	44.71	3.4	152.0
3rd floor	46.65	2.47	115.2
Attic	23.74	3.1	73.6

		units	total vol	
621.2	X	12	7454.50	m^3

Required minimum water supply flow rate, L/min

Q (L)		RFF (L/min)	
	108,000	2700	
108,000	135,000	3600	
135,000	162,000	4500	
162,000	190,000	5400	
190,000	270,000	6300	**<---- Required Fire Flow**
270,000		9000	

Spacial Coefficient

	m	S
North	22	0
South	30	0
West	11	0
East	5	0.5

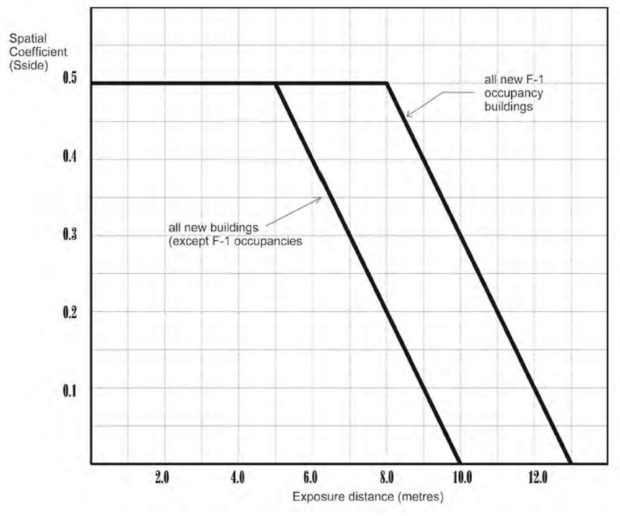


Figure 1
Spatial Coefficient vs Exposure Distance

Caivan
Magnolia Ph.1 Site Plan
Required Fire Flow

Required Fire Flow per IWSTB-2024-05 (OBC A-3.2.5.7)
Block 4

$Q = K\ V\ S_{tot}$

Where,

Q	147,599	minimum supply of water in litres
K	18	water supply coefficient from Table 1
V	7,454.50	total building volume in cubic metres
S_{tot}	1.10	total spacial coefficient from property line exposures

Buidling Volume	Area (m^2)	h (m)	V (m^3)
Basement	45.01	3.05	137.3
Ground	42.09	3.4	143.1
2nd floor	44.71	3.4	152.0
3rd floor	46.65	2.47	115.2
Attic	23.74	3.1	73.6

		units	total vol	
621.2	X	12	7454.50	m^3

Required minimum water supply flow rate, L/min

Q (L)		RFF (L/min)	
	108,000	2700	
108,000	135,000	3600	
135,000	162,000	4500	**<---- Required Fire Flow**
162,000	190,000	5400	
190,000	270,000	6300	
270,000		9000	

Spacial Coefficient

	m	S
North	22	0.00
South	12	0.00
West	9	0.10
East	24	0.00

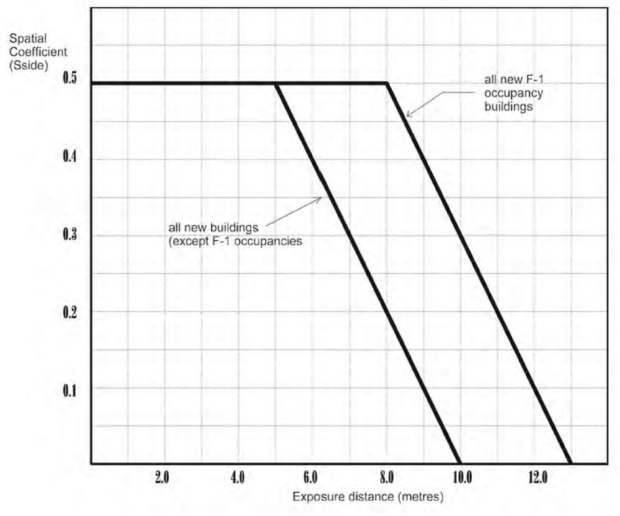


Figure 1
Spatial Coefficient vs Exposure Distance

Caivan
Magnolia Ph.1 Site Plan
Required Fire Flow

Required Fire Flow per IWSTB-2024-05 (OBC A-3.2.5.7)
Block 6 & 7

$Q = K\ V\ S_{tot}$

Where,

Q	120,763	minimum supply of water in litres
K	18	water supply coefficient from Table 1
V	6,212.09	total building volume in cubic metres
S_{tot}	1.08	total spacial coefficient from property line exposures

Buidling Volume	Area (m^2)	h (m)	V (m^3)
Basement	45.01	3.05	137.3
Ground	42.09	3.4	143.1
2nd floor	44.71	3.4	152.0
3rd floor	46.65	2.47	115.2
Attic	23.74	3.1	73.6

		units	total vol	
621.2	X	10	6212.09	m^3

Required minimum water supply flow rate, L/min

Q (L)		RFF (L/min)	
	108,000	2700	
108,000	135,000	3600	**<---- Required Fire Flow**
135,000	162,000	4500	
162,000	190,000	5400	
190,000	270,000	6300	
270,000		9000	

Spacial Coefficient

	m	S
North	9.2	0.08
South	18.9	0
West	25.1	0
East	20.7	0

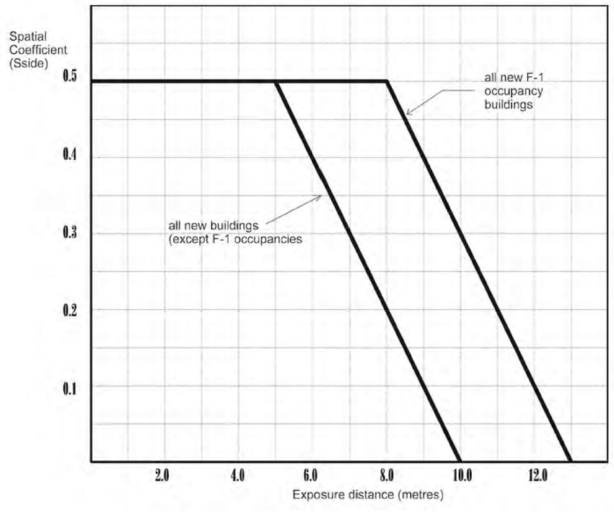


Figure 1
Spatial Coefficient vs Exposure Distance

Caivan
Magnolia Ph.1 Site Plan
Required Fire Flow

Required Fire Flow per IWSTB-2024-05 (OBC A-3.2.5.7)
Block 1

$Q = K\ V\ S_{tot}$

Where,

Q	111,818	minimum supply of water in litres
K	18	water supply coefficient from Table 1
V	6,212.09	total building volume in cubic metres
S_{tot}	1.00	total spacial coefficient from property line exposures

Buidling Volume	Area (m^2)	h (m)	V (m^3)
Basement	45.01	3.05	137.3
Ground	42.09	3.4	143.1
2nd floor	44.71	3.4	152.0
3rd floor	46.65	2.47	115.2
Attic	23.74	3.1	73.6

		units	total vol	
621.2	X	10	6212.09	m^3

Required minimum water supply flow rate, L/min

Q (L)		RFF (L/min)	
	108,000	2700	
108,000	135,000	3600	**<---- Required Fire Flow**
135,000	162,000	4500	
162,000	190,000	5400	
190,000	270,000	6300	
270,000		9000	

Spacial Coefficient

	m	S
North	11.5	0
South	12	0
West	11	0
East	25	0

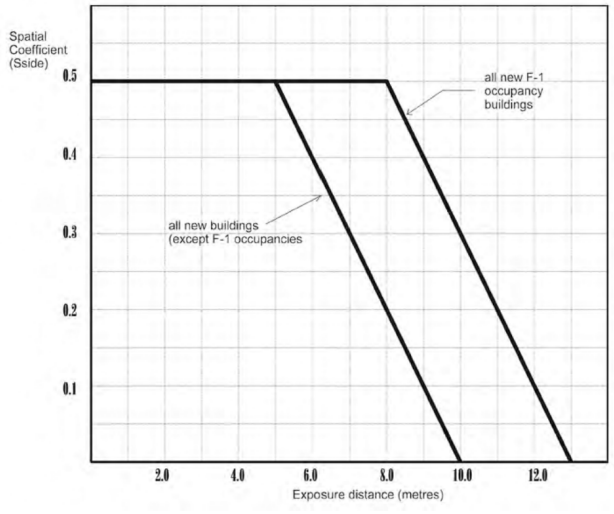


Figure 1
Spatial Coefficient vs Exposure Distance

Caivan
Magnolia Ph.1 Site Plan
Required Fire Flow

Required Fire Flow per IWSTB-2024-05 (OBC A-3.2.5.7)
Block 1

$Q = K\ V\ S_{tot}$

Where,

Q	111,818	minimum supply of water in litres
K	18	water supply coefficient from Table 1
V	6,212.09	total building volume in cubic metres
S_{tot}	1.00	total spacial coefficient from property line exposures

Buidling Volume	Area (m^2)	h (m)	V (m^3)
Basement	45.01	3.05	137.3
Ground	42.09	3.4	143.1
2nd floor	44.71	3.4	152.0
3rd floor	46.65	2.47	115.2
Attic	23.74	3.1	73.6

		units	total vol	
621.2	X	10	6212.09	m^3

Required minimum water supply flow rate, L/min

Q (L)		RFF (L/min)	
	108,000	2700	
108,000	135,000	3600	**<---- Required Fire Flow**
135,000	162,000	4500	
162,000	190,000	5400	
190,000	270,000	6300	
270,000		9000	

Spacial Coefficient

	m	S
North	12.5	0
South	40	0
West	28.5	0
East	23	0

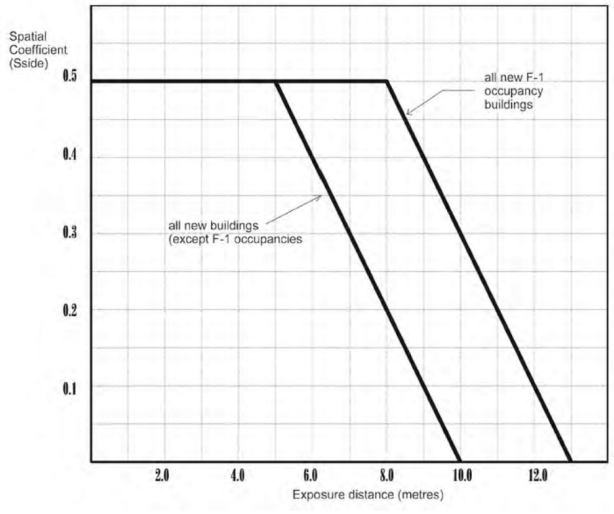


Figure 1
Spatial Coefficient vs Exposure Distance

Caivan
Magnolia Ph.1 Site Plan
Required Fire Flow

Required Fire Flow per IWSTB-2024-05 (OBC A-3.2.5.7)
Block 13

$Q = K\ V\ S_{tot}$

Where,

Q	89,454	minimum supply of water in litres
K	18	water supply coefficient from Table 1
V	4,969.67	total building volume in cubic metres
S_{tot}	1.00	total spacial coefficient from property line exposures

Buidling Volume	Area (m^2)	h (m)	V (m^3)
Basement	45.01	3.05	137.3
Ground	42.09	3.4	143.1
2nd floor	44.71	3.4	152.0
3rd floor	46.65	2.47	115.2
Attic	23.74	3.1	73.6

		units	total vol	
621.2	X	8	4969.67	m^3

Required minimum water supply flow rate, L/min

Q (L)		RFF (L/min)	
	108,000	2700	**<---- Required Fire Flow**
108,000	135,000	3600	
135,000	162,000	4500	
162,000	190,000	5400	
190,000	270,000	6300	
270,000		9000	

Spacial Coefficient

	m	S
North	12	0
South	13	0
West	24	0
East	25	0

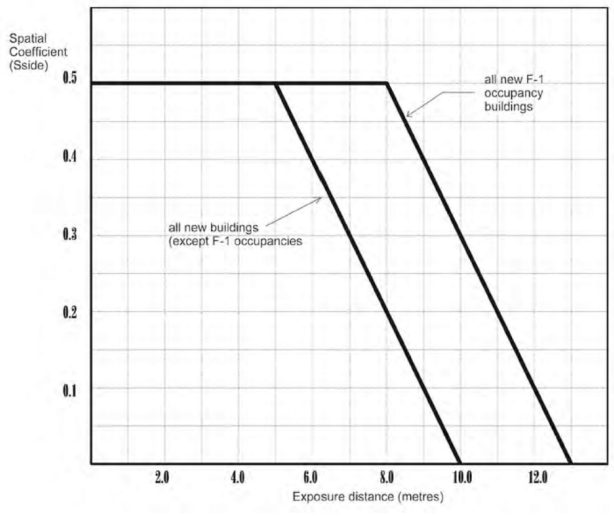
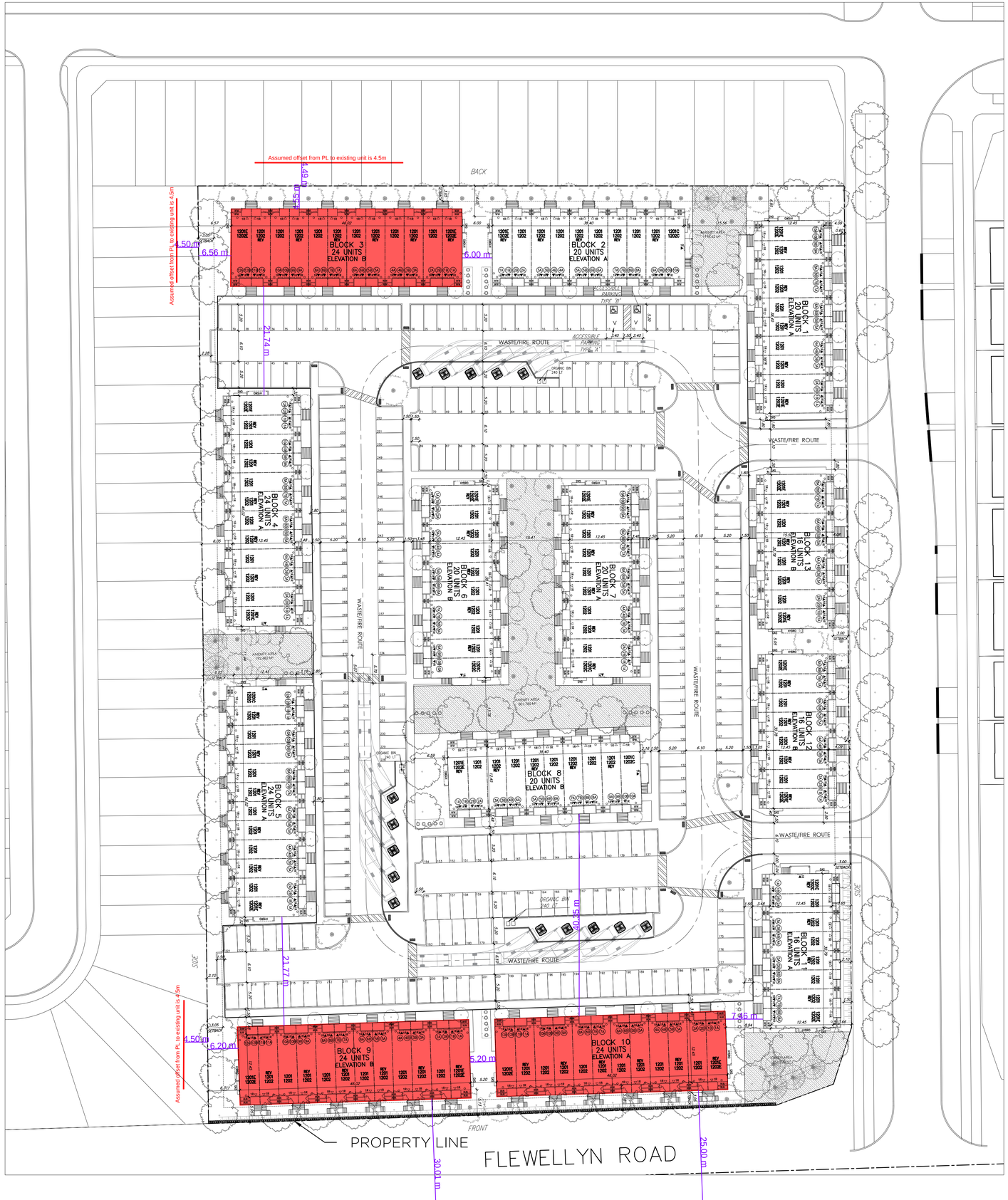


Figure 1
Spatial Coefficient vs Exposure Distance



SITE PLAN NOTES

1. DO NOT SCALE DRAWINGS FOR PRINT.
2. THIS DRAWING IS THE EXCLUSIVE PROPERTY OF Q4 ARCHITECTS AND CAIVAN . COPYRIGHT RESERVED.
3. WALKWAYS AND CURBS TO BE TIED INTO PUBLIC ROW WHERE APPLICABLE.
4. REFERENCE CITY OF OTTAWA T.W.S.I. DETAIL SC7.3
5. WHERE THE CLEAR WIDTH OF WALKWAY IS LESS THAN 1800 MM PROVIDE A PASSING AREA, 1800 MM WIDE BY 1800 MM LONG (MINIMUM) AT INTERVALS OF 30 METRES OR LESS AS PER CITY OF OTTAWA ACCESSIBILITY DESIGN STANDARDS 3.3.2: EXTERIOR PATHS OF TRAVEL - CLEAR WIDTH

SITE AREA	23,721.97 m² (2.37 ha)
PAVED AREA****	8,365m² (32.66%)
LANDSCAPED AREA (MIN 30%)	8,954 m² (37.75%)
TOTAL BUILDING COVERAGE	6,402 m² (27%)
TOTAL GROSS FLOOR AREA	24,098 m²
DENSITY (UPH)	112.98 UPH
ZONE CATEGORY	R4(Z)

DWELLING BLOCK	DWELLING TYPE	COVERAGE AREA (m²)	UNITS
BLOCKS 3, 4, 5, 9, 10	24 UNITS STACKED DWELLING	572.75 m² (per Block)	120
BLOCKS 1, 2, 6, 7, 8	20 UNITS STACKED DWELLING	477.91 m² (per Block)	100
BLOCKS 11, 12, 13	16 UNITS STACKED DWELLING	383.07 m² (per Block)	48
	TOTAL		268

AMENITY AREAS

	AREA	COMMENTS
PRIVATE AMENITY AREAS		
REAR DECK	398.37 m²	Lower units (134 units)
REAR PATIOS	2154.60	Lower units where applicable(140 units)
SECOND FLOOR BALCONIES	543.58 m²	Upper units (134 units)
TOTAL PRIVATE AREAS	3096.54 m²	
COMMUNAL AMENITY AREAS		
AMENITY AREA 1	801.785 m²	
AMENITY AREA 2	198.625 m²	
AMENITY AREA 3	192.682 m²	
TOTAL COMMUNAL AREAS	1193.1 m²	
TOTAL AMENITY AREAS	4,289.64 m²	
GREEN AREA	251.020 m²	**Not count as amenity area**

** Per the 2014 Guide to the Integrated Accessibility Standards Regulation - Design of Public Spaces Standard, 4% of parking spaces provided for public use must be accessible. 2 of the provided 22 visitor spaces have been designed to be barrier-free, one Type A and one Type B size.

*** Section 110(3)(d) where an in-ground refuse container is provide, the screening requirement of Section (3)(c) above may be achieved with soft landscaping (bylaw 2020-289)

**** Paved area includes 50% of the area required for bicycle parking spaces (67 spots = 73.44 m²)

GARBAGE:
REQUESTED BY ZONING:

GARBAGE: 0.231 CUBIC YARD /UNIT	0.231 X 268= 61.91 CUBIC YARD	= 11 (6 CU YD BINS)
RECYCLING 0.018 CUBIC YARD /UNIT	0.018 X 268 = 4.82 CUBIC YARDS	= 1 (6 CU YD BINS)
+ 0.062 CUBIC YARD /UNIT	0.062 X 268 = 16.62 CUBIC YARDS	= 3 (6 CU YD BINS)
ORGANIC 240L PER 50 UNITS	268/50 = 5.36 UNITS	= 6 (240L BIN)

SCALE 1:400 0 5 10 15 20 25 30

ZONE PROVISION - PLANNED UNIT DEVELOPMENT		REQUIRED	PROPOSED
162A(2)	Min. Lot Area (m2)	1400 m²	23, 732.97 m²
162A(2)	Min. Lot Width (m)	18 m	128.7 m
162A(2) [YYYY]	Min. Front Yard Setback (m)	3	5.10
162A(2) [YYYY]	Min. Interior Side Yard Setback (m)	3	6.05
162B.6 [YYYY]	Min. Rear yard setback (m)	3	6.05
162A(2)Y [YYYY]	Min. Corner Side yard set back (m)	3	4.1
162A(2)	Max Building Height (m)	15	13.5
161	Landscaped Area	30	38
131.1	Min. Width of Private Way / Parking Aisle (m)	6	6.1
131.4a	Min. Setback for Any Wall of a Residential Buildings Within a Planned Unit Development	1.2	6.05
131.2	Min. setback for any wall of a residential use building to a private way	1.8	2.9
137	**AMENITY AREA**		
137.6	Total min. amenity area (6m² per unit)	1608 m²	4289.64 m²
137.6	Min. Communal Amenity Area m² (Min. 50% area)	804 m²	1193.1 m²
65	**PERMITTED PROJECTION INTO REQUIRED YARDS**		
65.5.i	Fire escapes, Open Stairways, Stoop (m)	>0.6m to lot line	0.6m
65.6.o(i)	Covered or Uncovered Balcony, Porch and Deck	2m no closer than 1 to a lot line	2m no closer than 1.65 to a lot line
	PARKING REQUIREMENTS	**REQUIRED**	**PROPOSED**
101 (Table R10) [YYYY]	Resident Parking - 1.0/ spaces/unit	268	268
102 (Table column III) [YYYY]	Visitor Parking - 0.1 spaces/unit	27 (0.1)	22 (0.08)
106.1	Min. Perpendicular Parking Space Size (m)	2.6 x 5.2	2.6 x 5.2
106.2	Min. Length Parallel parking	6.7	6.7
107 (Table 107.d)	Min. Requires Aisle Width	6.0	6.1
	BARRIER FREE PARKING		
Traffic and Parking Bylaw Section 111	Min. Barrier Free Parking **	2	2
111	**BICYCLE STORAGE**		
111B	Min. bicycle parking space dimension, horizontal (m)	Width: 0.6m Length: 1.8m	0.6 1.8
111A(b)	Min. Bicycle parking space access aisle Width (m)	1.5	1.5
111.11	Min. Bicycle Parking 0.5 spaces/unit	134	135
110(a)(b)	**LANDSCAPE AREA SURROUNDING PARKING LOT**		
110.a	Abutting a Street (m)	3	N/A
110.b	Not Abutting a street (m)	3	2.1m
110.1.b	Min. % of parking lot landscape	15%	19.87%
110	**REFUSE COLLECTION AREAS**		
110.3b	Min. Waste collection setback to lot line	3	>38m
110.3.c/d	Opaque Screen Min. Height (m)	2	2***

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The contractor / builder must verify all dimensions on the job and report any discrepancy to the designer before proceeding with the work.

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LEGEND

- STACKED TOWNS
- ENTRANCE
- BALCONY
- PORCH
- PROJECTION (STAIRS)
- PAVERS
- SODDING
- LIGHT DUTY ASPHALT PAVING
- CROSSWALK
- CURB (0.2m)
- DEPRESSED CURB
- TACTILE WALKING SURFACE INDICATOR (NOTE 4)
- BLOCK BOUNDARY
- WASTE ENCLOSURE FENCE
- WOOD PRIVACY FENCE
- CURB PIN
- NO PARKING
- BARRIER FREE PARKING
- BARRIER FREE PARKING SIGNAGE
- V VISITOR PARKING
- BIKE RACKS (15 Bycicles)
- EARTH BIN (6.5 yd³)
- HYDRO TRANSFORMER
- LIGHT POLE
- S.S SNOW STORAGE AREA
- L/A LANDSCAPED AREA
- MEDIUM DECIDUOUS TREE*
- SMALL DECIDUOUS TREE*
- DECIDUOUS SHRUB*
- CONIFEROUS SHRUB*
- GRASSES/PERENNIALS *
- SLOPED GRADE
- RETAINING WALL
- PRIVACY FENCE (SEE LANDSCAPE)
- METAL FENCE (SEE LANDSCAPE)

DIMENSIONS FROM J.D. BARNES DRAFT MPLAN DATED 26/09/2025
*TREES AND SHRUB LOCATIONS TO BE CONFIRMED ON LANDSCAPE PLAN

3	ISSUE FOR SPA	2026.01.20	CT
2	ISSUE FOR COORDINATION	2026.01.08	JM
1	ISSUE FOR COORDINATION	2025.11.28	JM

Issued / Revision Chart

Project Title

Magnolia/Stittsville
PHASE 1 -STACKED TOWNS

Location OTTAWA, ON.

Site Plan File:
Eng. File:
ZBLA File:

Legal Name

Client CAIVAN

Project No.

Scale 1:500

Drawn By CT

Checked By CT

OVERALL SITE PLAN

SP1

David Schaeffer Engineering Ltd.
120 Iber Road, Suite 103
Stittsville, ON K2S 1E9
613-836-0856
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APPENDIX C

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION									COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	UNITS Singles	UNITS Townhouse	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
PRIVATE STREET 5																													
Contribution From PRIVATE STREET 6, Pipe 208A - 209A								0.98	258				0.00		0.00		0.00		0.98	0.98									
Contribution From PRIVATE STREET 6, Pipe 212A - 209A								0.19	54				0.00		0.00		0.00		0.19	1.17									
	209A	176A	0.03				0	1.20	312	3.46	3.50		0.00		0.00		0.00	0.00	0.03	1.20	0.40	3.89	29.5	200	0.35	19.40	0.20	0.62	0.48
	176A	120A						1.20	312	3.46	3.50		0.00		0.00		0.00	0.00	0.00	1.20	0.40	3.89	14.5	200	1.00	32.80	0.12	1.04	0.70
To STREET 1 ROAD, Pipe 120A - 121A								1.20	312				0.00		0.00		0.00			1.20									
PRIVATE STREET 2																													
	201A	200A	0.21	20		20	54	0.21	54	3.65	0.64		0.00		0.00		0.00	0.00	0.21	0.21	0.07	0.71	49.0	200	0.95	31.97	0.02	1.02	0.41
To PRIVATE STREET 3, Pipe 200A - 118A								0.21	54				0.00		0.00		0.00			0.21									
PRIVATE STREET 1																													
	207A	204A	0.15	16		16	43	0.15	43	3.66	0.51		0.00		0.00		0.00	0.00	0.15	0.15	0.05	0.56	47.0	200	0.65	26.44	0.02	0.84	0.34
To PRIVATE STREET 6, Pipe 204A - 202A								0.15	43				0.00		0.00		0.00			0.15									
	207A	213A	0.11	10		10	27	0.11	27	3.69	0.32		0.00		0.00		0.00	0.00	0.11	0.11	0.04	0.36	18.5	200	1.70	42.76	0.01	1.36	0.39
	213A	210A	0.32	42		42	113	0.43	140	3.56	1.62		0.00		0.00		0.00	0.00	0.32	0.43	0.14	1.76	64.5	200	0.35	19.40	0.09	0.62	0.38
To PRIVATE STREET 6, Pipe 210A - 208A								0.43	140				0.00		0.00		0.00			0.43									
PRIVATE STREET 6																													
	212A	209A	0.19	20		20	54	0.19	54	3.65	0.64		0.00		0.00		0.00	0.00	0.19	0.19	0.06	0.70	42.5	200	2.60	52.89	0.01	1.68	0.59
To PRIVATE STREET 5, Pipe 209A - 176A								0.19	54				0.00		0.00		0.00			0.19									
	205A	204A	0.12	14		14	38	0.12	38	3.67	0.45		0.00		0.00		0.00	0.00	0.12	0.12	0.04	0.49	23.0	200	1.00	32.80	0.01	1.04	0.38
Contribution From PRIVATE STREET 1, Pipe 207A - 204A								0.15	43				0.00		0.00		0.00		0.15	0.27									
	204A	202A	0.24	30		30	81	0.51	162	3.54	1.86		0.00		0.00		0.00	0.00	0.24	0.51	0.17	2.03	65.0	200	0.35	19.40	0.10	0.62	0.40
	202A	200A	0.15	20		20	54	0.66	216	3.51	2.46		0.00		0.00		0.00	0.00	0.15	0.66	0.22	2.67	27.5	200	0.35	19.40	0.14	0.62	0.43
To PRIVATE STREET 3, Pipe 200A - 118A								0.66	216				0.00		0.00		0.00			0.66									
	211A	210A	0.12	12		12	32	0.12	32	3.68	0.38		0.00		0.00		0.00	0.00	0.12	0.12	0.04	0.42	23.0	200	1.20	35.93	0.01	1.14	0.38
Contribution From PRIVATE STREET 1, Pipe 213A - 210A								0.43	140				0.00		0.00		0.00		0.43	0.55									
	210A	208A	0.30	32		32	86	0.85	258	3.48	2.91		0.00		0.00		0.00	0.00	0.30	0.85	0.28	3.19	65.5	200	0.35	19.40	0.16	0.62	0.45
	208A	209A	0.13				0	0.98	258	3.48	2.91		0.00		0.00		0.00	0.00	0.13	0.98	0.32	3.24	23.5	200	0.35	19.40	0.17	0.62	0.46
To PRIVATE STREET 5, Pipe 209A - 176A								0.98	258				0.00		0.00		0.00			0.98									
PRIVATE STREET 3																													
Contribution From PRIVATE STREET 2, Pipe 201A - 200A								0.21	54				0.00		0.00		0.00		0.21	0.21									
Contribution From PRIVATE STREET 6, Pipe 202A - 200A								0.66	216				0.00		0.00		0.00		0.66	0.87									
			0.03				0	0.90	270				0.00		0.00		0.00		0.03	0.90									
	200A	118A	0.06				0	0.96	270	3.48	3.04		0.00		0.00		0.00	0.00	0.06	0.96	0.32	3.36	30.0	200	0.35	19.40	0.17	0.62	0.46
	118A	119A						0.96	270	3.48	3.04		0.00		0.00		0.00	0.00	0.00	0.96	0.32	3.36	15.5	250	0.90	56.42	0.06	1.15	0.63
To STREET 1 ROAD, Pipe 119A - 120A								0.96	270				0.00		0.00		0.00			0.96									
MAGNOLIA PHASE 1 STREET 1 ROAD																													
Contribution From PRIVATE STREET 3, Pipe 118A - 119A								0.96	270				0.00		0.00		0.00		0.96	0.96									
			0.14	32		32	86	1.10	356				0.00		0.00		0.00		0.14	1.10									
	119A	120A	0.50	5	5		17	1.60	373	3.43	4.15		0.00		0.00		0.00	0.00	0.50	1.60	0.53	4.67	71.5	250	0.25	29.73	0.16	0.61	0.44

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha
Average Daily Flow =	280	l/p/day		
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha
Max Res. Peak Factor =	4.00			
Commercial/Inst./Park Peak Factor =	1.00			
Institutional =	0.32	l/s/Ha		

Industrial Peak Factor = as per MOE Graph

Extraneous Flow =		0.330	L/s/ha
Minimum Velocity =		0.600	m/s
Manning's n =	(Conc)	0.013	(Pvc) 0.013
Townhouse coeff=		2.7	
Single house coeff=		3.4	



Designed: M.S.

Checked: W.L.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 15

PROJECT: **Magnolia Stacked Towns**

LOCATION: **City of Ottawa**

File Ref: 25-1494

Date: **29 Jan 2026**

Sheet No. 1 of 2

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION									COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	UNITS Singles	UNITS Townhouse	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
Contribution From PRIVATE STREET 5, Pipe 176A - 120A								1.20	312				0.00		0.00		0.00		1.20	2.80									
			0.09	20		20	54	2.89	739				0.00		0.00		0.00		0.09	2.89									
	120A	121A	0.26	3	3		10	3.15	749	3.30	8.01		0.00		0.00		0.00	0.00	0.26	3.15	1.04	9.05	68.5	250	0.25	29.73	0.30	0.61	0.53
To MAGNOLIA PHASE 1 STREET 1 ROAD, Pipe 121A - 122A								3.15	749				0.00		0.00		0.00			3.15									



DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha				
Average Daily Flow =	280	l/p/day			Industrial Peak Factor = as per MOE Graph			
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha	Extraneous Flow =	0.330	L/s/ha	
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity =	0.600	m/s	
Max Res. Peak Factor =	4.00				Manning's n = (Conc)	0.013	(Pvc)	0.013
Commercial/Inst./Park Peak Factor =	1.00				Townhouse coeff=	2.7		
Institutional =	0.32	l/s/Ha			Single house coeff=	3.4		

Designed: M.S.	PROJECT: **Magnolia Stacked Towns**		
Checked: W.L.	LOCATION: **City of Ottawa**		
Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 15	File Ref: 25-1494	Date: **29 Jan 2026**	Sheet No. 2 of 2

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APPENDIX D

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

	LOCATION		AREA (Ha) 2 YEAR				AREA (Ha) 5 YEAR				AREA (Ha) 10 YEAR				AREA (Ha) 100 YEAR				FLOW						SEWER DATA										
			AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	Time of	Intensity	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	INV	OBV	T/G	CAPACITY	VELOCITY	TIME OF	RATIO
Location	From Node	To Node	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	Conc. (min)	2 Year (mm/h)	5 Year (mm/h)	10 Year (mm/h)	100 Year (mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	UPS	UPS	UPS	(l/s)	(m/s)	LOW (min	Q/Q full
PRIVATE STREET 2																																			
	208	207	0.14	0.80	0.31	0.31			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	24	300	300	PVC	0.35	49.5	103.146	103.446	106.148	57.2089	0.8093	1.0193	0.418
To PRIVATE STREET 3, Pipe 207 - 202						0.31				0.00				0.00				0.00	11.02																
PRIVATE STREET 1																																			
			0.05	0.80	0.11	0.11			0.00	0.00			0.00	0.00			0.00	0.00																	
	214	211	0.41	0.80	0.91	1.02			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	79	450	450	CONC	0.20	117.5	103.278	103.728	106.152	127.5033	0.8017	2.4428	0.616
To PRIVATE STREET 6, Pipe 211 - 209						1.02				0.00				0.00				0.00	12.44																
PRIVATE STREET 4																																			
			0.08	0.80	0.18	0.18			0.00	0.00			0.00	0.00			0.00	0.00																	
	217	216	0.09	0.80	0.20	0.38			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	29	300	300	PVC	0.35	30.0	103.224	103.524	106.151	57.2089	0.8093	0.6178	0.508
To PRIVATE STREET 6, Pipe 216 - 207						0.38				0.00				0.00				0.00	10.62																
PRIVATE STREET 6																																			
	212	211	0.12	0.80	0.27	0.27			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	20	300	300	PVC	0.35	27.0	103.010	103.310	106.193	57.2089	0.8093	0.5560	0.358
Contribution From PRIVATE STREET 1, Pipe 214 - 211						1.02				0.00				0.00				0.00	12.44																
	211	209	0.19	0.80	0.42	1.71			0.00	0.00			0.00	0.00			0.00	0.00	12.44	68.55	92.85	108.78	158.94	117	600	600	CONC	0.15	65.0	102.615	103.215	105.921	237.8056	0.8411	1.2880	0.494
			-1.85	0.80	-4.11	-2.40			0.00	0.00			0.00	0.00			0.00	0.00																	
					0.00	-2.40			0.00	0.00			0.00	0.00	0.18	0.80	0.40	0.40																	
	209	207			0.00	-2.40			0.00	0.00			0.00	0.00	1.85	0.80	4.11	4.51	13.73	64.93	87.90	102.95	150.38	523	825	825	CONC	0.20	27.5	102.292	103.117	105.644	641.9463	1.2009	0.3817	0.815
To PRIVATE STREET 3, Pipe 207 - 202						-2.40				0.00				0.00				4.51	14.11																
	218	215	0.37	0.80	0.82	0.82			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	63	450	450	CONC	0.20	92.0	103.258	103.708	106.310	127.5033	0.8017	1.9126	0.496
	215	216	0.14	0.80	0.31	1.13			0.00	0.00			0.00	0.00			0.00	0.00	11.91	70.17	95.07	111.40	162.78	80	450	450	CONC	0.20	22.5	103.014	103.464	106.014	127.5033	0.8017	0.4678	0.624
Contribution From PRIVATE STREET 4, Pipe 217 - 216						0.38				0.00				0.00				0.00	10.62																
			0.05	0.80	0.11	1.62			0.00	0.00			0.00	0.00			0.00	0.00																	
	216	207	0.21	0.80	0.47	2.09			0.00	0.00			0.00	0.00			0.00	0.00	12.38	68.73	93.10	109.08	159.38	144	525	525	CONC	0.20	82.0	102.894	103.419	106.192	192.3297	0.8885	1.5382	0.747
To PRIVATE STREET 3, Pipe 207 - 202						2.09				0.00				0.00				0.00	13.92																
PRIVATE STREET 3																																			
Contribution From PRIVATE STREET 2, Pipe 208 - 207						0.31				0.00				0.00				0.00	11.02																
Contribution From PRIVATE STREET 6, Pipe 209 - 207						-2.40				0.00				0.00				4.51	14.11																
Contribution From PRIVATE STREET 6, Pipe 216 - 207						2.09				0.00				0.00				0.00	13.92																
	207	202			0.00	0.00			0.00	0.00			0.00	0.00			0.00	4.51	14.11	63.94	86.54	101.36	148.04	668	900	900	CONC	0.20	26.0	102.162	103.062	105.717	809.5958	1.2726	0.3405	0.826
					0.00	0.00	0.03	0.80	0.07	0.07			0.00	0.00			0.00	4.51																	
	202	203			0.00	0.00	0.07	0.80	0.16	0.22			0.00	0.00			0.00	4.51	14.45	63.09	85.37	99.98	146.02	678	900	900	CONC	0.25	19.0	102.078	102.978	105.615	905.1556	1.4228	0.2226	0.749
To MAGNOLIA PHASE 1 WEST POND INLET, Pipe 203 - 206						0.00				0.22				0.00				4.51	14.68																

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
26-01-30
PROVINCE OF ONTARIO

Designed: M.S.	PROJECT:	**Magnolia Stacked Towns**
Checked: W.L.	LOCATION:	**City of Ottawa**
Dwg. Reference: 16	File Ref: 25-1491	Date: 29 Jan 2026 — Sheet No. SHEET 1 OF 1