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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

OCTOBER 2026

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**DESIGN BRIEF
FOR
PROPOSED RESIDENTIAL SITE PLAN**

CAIVAN (STITTSVILLE) INC.

PROJECT NO: 25-1494

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
1.1	Existing Conditions	1
1.2	Site Plan Layout	1
1.3	Consultation Summary.....	2
1.4	Required Permits / Approvals.....	2
2.0	GUIDELINES, PREVIOUS STUDIES, AND REPORTS	3
2.1	Existing Studies, Guidelines, and Reports	3
3.0	WATER SUPPLY SERVICING	5
3.1	Existing Water Supply Services	5
3.2	Water Supply Servicing Design	5
3.3	Fire Flow Requirements.....	6
3.4	Water Supply Conclusion.....	6
4.0	WASTEWATER SERVICING	7
4.1	Existing Wastewater Services	7
4.2	Wastewater Design.....	7
4.3	Sanitary HGL Analysis.....	8
4.4	Wastewater Servicing Conclusions	8
5.0	STORMWATER MANAGEMENT	9
5.1	Existing Stormwater Services	9
5.2	Stormwater Management Design and Objectives	9
5.3	Hydraulic Grade Line Analysis	10
5.4	Minor System Design	11
5.5	Major System Design	11
5.6	Grading and Drainage Design	11
5.7	Stormwater Servicing Conclusions	12
6.0	EROSION AND SEDIMENT CONTROL.....	13

7.0 CONCLUSION AND RECOMMENDATIONS 14

DRAWINGS

Drawing 0	Title Page
Drawing 1	General Notes
Drawing 2	Details and Tables
Drawing 3	Details
Drawing 4	General Plan
Drawings 5	Private Street 6
Drawings 6	Private Street 6
Drawings 7	Private Street 6
Drawings 8	Private Street 1
Drawings 9	Private Street 2
Drawing 10	Private Street 3
Drawing 11	Private Street 4
Drawing 12	Private Street 5
Drawing 13	Grading Plan
Drawing 14	Cross Sections
Drawing 15	Sanitary Drainage Plan
Drawing 16	Storm Drainage Plan
Drawing 17	Ponding Plan
Drawing 18	Erosion and Sediment Control Plan – Stage 1
Drawing 19	Erosion and Sediment Control Plan – Stage 2

TABLES

Table 1: Development Statistics for Magnolia Phase 1 Condo Site Plan
Table 2: Water Supply Design Criteria
Table 3: Wastewater Design Criteria
Table 4: Storm Sewer Design Criteria

APPENDICES

Appendix A General

- Overall Site Plan - Magnolia Phase 1 Stacked Towns

Appendix B Water Supply

- Hydraulic Capacity and Modelling Analysis, Technical Memorandum, GeoAdvice, August 26, 2026
- Markup of Unit offsets in support of OBC Calculation

Appendix C Wastewater Collection

- DSEL 1494 Sanitary Design Sheet – Site Plan (October 2026)
- DSEL 1247 Drawing 44 Markup with Updated Site Plan Stats

Appendix D Stormwater Management

- DSEL 1494 Storm Design Sheet – Site Plan (October 2026)
- DSEL Ponding Depths
- DSEL HGL Results
- **Figure 1 – Post Development Drainage Plan**
- DSEL PCSWMM Model

**DESIGN BRIEF
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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 2.37 ha site plan (Q4 Architects Inc., October 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.

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)	Residential Units	Residential Population per Unit *	Population
Stacked Dwellings	0.63	264	2.7	713
Amenity	0.33			
Landscaped	0.59			
Roads/parking/Paved Area	0.82			
Total	2.37	264		713

* 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. Comments on the 1st Submission were provided by the City of Ottawa and responses are included with the overall 2nd submission package.

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.

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.*).

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 IWSTRB-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)

- 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 IWSTRB-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
Phase 1 Development (Final Report). GeoAdvice Engineering Inc., August 26, 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)

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 watermain 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 watermain for the subdivision and site plan were designed in accordance with the **GeoAdvice Hydraulic Analysis** (August 2026) included in **Appendix B**.

3.2 Water Supply Servicing Design

As shown on **Drawing 4**, water servicing will be provided internal to the site via 200 mm watermain that will be looped within the site plan block and connect to the 250 mm diameter watermain on Street 1 (E) and 200 mm watermain on Street 6 (N). 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 and Future Street once developed in the future phase (W), and all mains contained within are private. It is noted that the ultimate watermain connection to the future phase to the west will require a municipal easement to extend the watermain from the ROW to the limit of the site plan block where it will be connected to the proposed water meter.

A temporary watermain is proposed from the location of the ultimate western connection, north along the west boundary and east along the north boundary of the site plan block connecting to the proposed Street 6 temporary turning circle.

Table 2: Water Supply Design Criteria

Design Parameter	Value
<i>Extracted from Section 4: Ottawa Design Guidelines, Water Distribution (July 2010)</i>	
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
<i>GeoAdvice Hydraulic Analysis, GeoAdvice, January 2026 for Population Exceeding 3000 Persons</i>	
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

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 modeled service pressures are 552 kPa and 437 kPa for the Average Day Demand Maximum Pressure and Peak Hour Demand Minimum Pressure, respectively for the Phase 1 subdivision, which includes the site plan block.

3.3 Fire Flow Requirements

Per **GeoAdvice Hydraulic Analysis**, the available fire flows, as shown on Figure Appendix E, for the site plan block range from 162 L/s to 210 L/s, which will be supplied by the internally looped 200 mm diameter watermain. The 200 mm watermain is 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 the **GeoAdvice Hydraulic Analysis**, were estimated for the most constrained blocks 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**, 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 1 (E) and an ultimate connection to the future phase at the west boundary. A temporary watermain is proposed along the west and 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.

4.0 WASTEWATER SERVICING

4.1 Existing Wastewater Services

The subject site was considered in the design of the Magnolia Subdivision - Phase 1 (see Phase 1 **Drawing 44, Appendix C**) with sanitary flows conveyed to the existing Shea Road Sanitary Pump Station located north of the existing 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 264 units resulting in a population of 713 persons. As shown on the Phase 1 Subdivision Sanitary Drainage Plan (**Drawing 44, Appendix C**), the downstream sewer system assumed a population of 722 persons. Therefore, the site plan has been adequately designed for in the downstream sewer system and ultimately 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**.

Table 5 below summarizes the design standards used in the development of the proposed wastewater sewer system for the Magnolia Subdivision - Phase 1.

Table 3: 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	$Q = \frac{1}{n} AR^{\frac{2}{3}} S^{\frac{1}{2}}$
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
<i>Extracted from Sections 4 and 6 of the City of Ottawa Sewer Design Guidelines, October 2012, and associated Technical Bulletins.</i>	

4.3 Sanitary HGL Analysis

As part of the **DSEL Phase 1 Design Brief**, PCSWMM was used to analyze the sanitary HGL elevations within the proposed development lands under Rare and Annual flow conditions. As shown in **Appendix D**, Blocks 1-3 which connect to the municipal sanitary sewer on Street 1 have USF elevations that range from 104.28 m to 104.39 m. The max HGL for the Annual and Rare scenarios within the sewers adjacent to these blocks ranges from 103.54 m - 103.55 m. Therefore, minimum freeboard is sufficient for both the Rare and Annual flow conditions for Blocks 1-3.

For blocks internal to the subdivision, USF elevations range from 104.05 (Block 11) to 104.56 (Block 4) which are 0.50 m to 1.01 m above the HGL at the connection to the subdivision. Therefore, minimum freeboard is assumed to be sufficient for both the Rare and Annual flow conditions for all Blocks. The subdivision sanitary HGL models will be updated to incorporate the private site plan sewers prior to final approval.

4.4 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.

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 as a lumped block draining to the downstream West Pond. A separate PCSWMM model has been developed for the site plan block to assess the internal storm sewer system and confirm the minor and major system is sufficiently designed. This section will discuss the site plan model setup and results.

5.2 Stormwater Management Design and Objectives

The applied design criteria for the site plan block include the following::

- 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.
- 2.06 hectares of the site plan block will be conveyed to MH 202 located at the southern entrance of Street 1 via a proposed storm sewer network.
- Areas adjacent to boundary roads adjacent to Street 1 (0.16 hectares) and Flewellyn (0.15 hectares) will be conveyed to the adjacent right-of-way consistent with the **DSEL Phase 1 Design Brief**.
- A fixed outlet condition which applies HGLs from the **DSEL Phase 1 Design Brief** PCSWMM model was considered at MH 202 to account for flows from the adjacent subdivision.
- Quantity, Quality and Erosion Control for the site plan block will be provided by the adjacent 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 and PCSWMM modeling for the subject property have been appended to this technical brief in **Appendix D**.

Table 4: 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	$Q = \frac{1}{n} AR^{\frac{2}{3}} S^{\frac{1}{2}}$
Runoff coefficient for paved and roof areas	0.9
Runoff coefficient for landscaped areas	0.2
Minimum Sewer Size	250 mm diameter
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 15 cm 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
<i>Extracted from City of Ottawa Sewer Design Guidelines, October 2012, and ISSU, and based on recent residential subdivisions in City of Ottawa.</i>	

5.3 Hydraulic Grade Line Analysis

An HGL analysis was completed to ensure there will be sufficient freeboard between the HGL and the proposed underside of footing (USF). As shown in **Appendix D**, the minimum freeboard was found to be 0.33m in the 100-year storm event, which meets the 0.3 m freeboard required between the HGL and USF. In addition, the minimum freeboard of 0.0 m

for the 100-year +20% stress test was achieved. Therefore, the HGL analysis demonstrates that gravity service connections to the storm sewer are feasible throughout the proposed site plan block.

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 (CBs) and storm sewers, which direct flows to MH202 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 inlet control devices (ICDs) to simulate the hydraulic performance of CB grates. The ICDs ensure the 2-year event is captured in the minor system with 6 cm or less of depth above the proposed 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. CB ponding depth results for the 2-year, 5-year, 100-year, and stress tests are presented in **Appendix D**.

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.

Based on the PCSWMM model, it was determined that the 100-year depth of water on the streets at the ponding areas will not exceed 35 cm. Additionally, it was determined that the maximum water surface elevation will not touch the building envelopes during the 100-year +20% stress test. CB ponding depth results for the 2-year, 5-year, 100-year, and stress tests are presented in **Appendix D**.

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 via 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 roof and/or front/rear 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.

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.

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 – Blocks 1, 2 and 3 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 rear lot catchbasins which capture 100 year flows and internal road/parking lot catchbasins equipped with 2 year ICD's and associated gravity sewers that allocate flows to the West SWM Pond as part of Phase 1 of the overall Magnolia Subdivision.

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

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Per: John Priamo, P.Eng.
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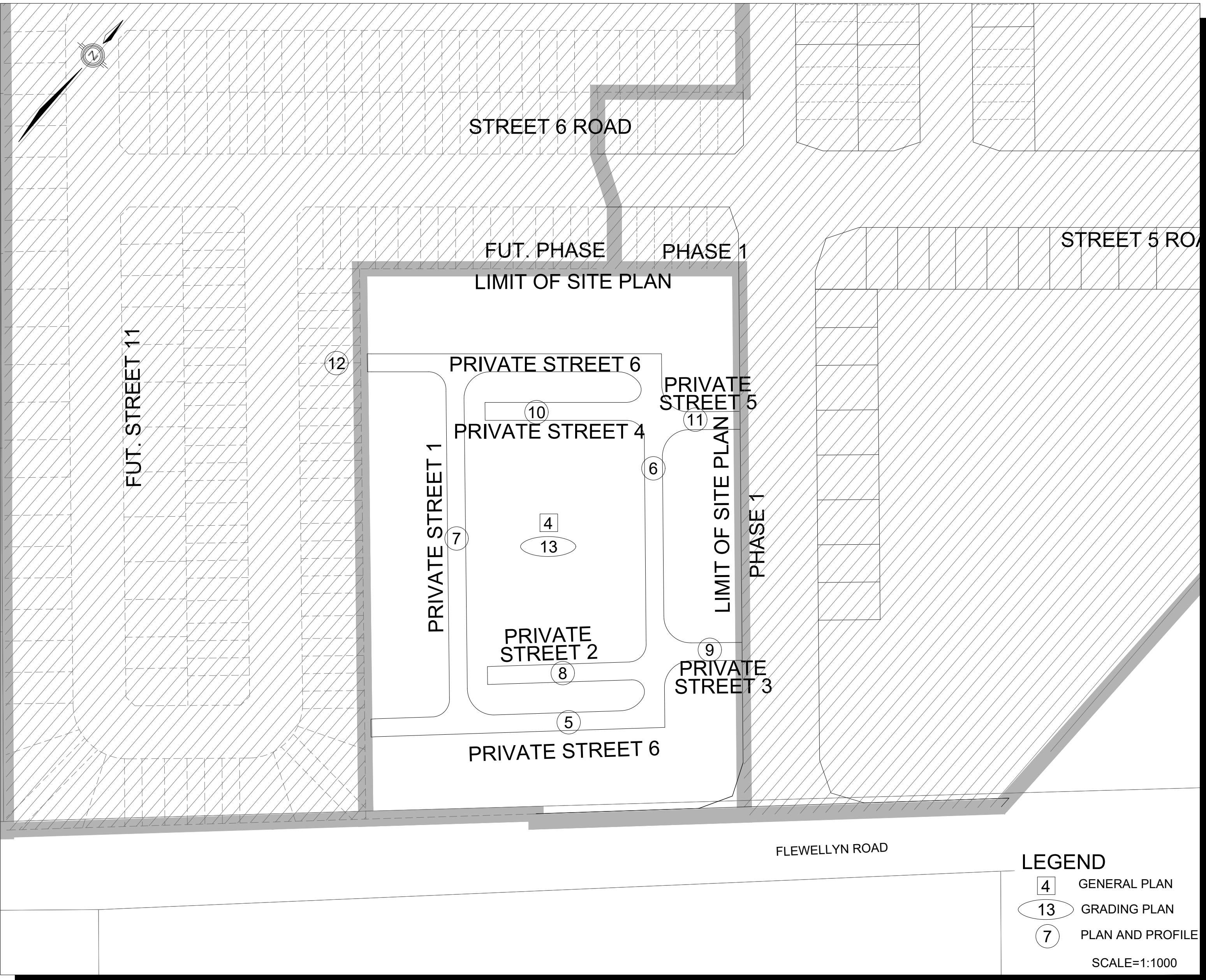
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DRAWINGS

MAGNOLIA STACKED TOWNS

Sheet Number	Sheet Title	Sheet Description
0	TITLE PAGE	
1	GENERAL NOTES	
2	DETAILS AND TABLE	
3	DETAILS	
4	GENERAL PLAN	
5	PRIVATE STREET 6	STA. 0+000.000 TO STA. 0+170.000
6	PRIVATE STREET 6	STA. 0+170.000 TO STA. 0+308.960
7	PRIVATE STREET 1	STA. 0+000.000 TO STA. 0+122.944
8	PRIVATE STREET 2	STA. 0+000.000 TO STA. 0+67.010
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
12	TEMPORARY WATERMAIN	STA. 0+000.000 TO STA. 0+124.977
13	GRADING PLAN	
14	CROSS SECTIONS	
15	SANITARY DRAINAGE PLAN	
16	STORM DRAINAGE PLAN	
17	PONDING PLAN	
18	EROSION AND SEDIMENT CONTROL PLAN STAGE 1	
19	EROSION AND SEDIMENT CONTROL PLAN STAGE 2	



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PROJECT No. 25-1494



Caivan (Stittsville) Inc.

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 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. AS PER GEOTECHNICAL CONSULTANT'S RECOMMENDATIONS, THE CLAY 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 SPMD. 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 OVERT 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 SPMD. 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 BLUE. 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 (ICB) 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 WATER TIGHT FRAME AND COVERS SHALL BE EAST JORDAN COMPRESSION 41420049W01 AS PER CITY OF OTTAWA MS-22.15 (OR APPROVED EQUIVALENT)	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 SPECIED 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. 7. RETAINING WALLS INCLUDING ALL COMPONENTS SHALL BE LOCATED AT A MINIMUM OF 0.15m FROM ANY PROPERTY LINE.	CITY OF OTTAWA SEWER AND WATERMAIN INSULATION CALCULATION OF THICKNESS OF INSULATION <table> <tr> <th>Depth (m)</th> <th>Ti</th> <th>Using Ti</th> <th></th> <th></th> <th></th> </tr> <tr> <td>(m)</td> </tr></table>	Depth (m)	Ti	Using Ti				(m)
Depth (m)	Ti	Using Ti								
(m)										

CITY OF OTTAWA			
SEWER AND WATERMAIN INSULATION			
CALCULATION OF THICKNESS OF INSULATION			
Depth (m)	T _i (mm)	Using T _i (mm)	
1.20	100	100	As per City Standard (W22):
1.25	96	100	T _i = $\frac{(2400 - H)}{12}$
1.30	92	100	
1.35	88	100	
1.40	83	100	
1.45	79	100	where: T _i = 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 GEODETTIC RELATED TO CGVD28:78 VERTICAL DATUM

SITE PLAN: PC2025-0260

PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON SEPTEMBER 18,
2026.

2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION
No.	BY	DATE	DESCRIPTION



CAIVAN
PITTSVILLE
INC.

MAGNOLIA STACKED TOWNS

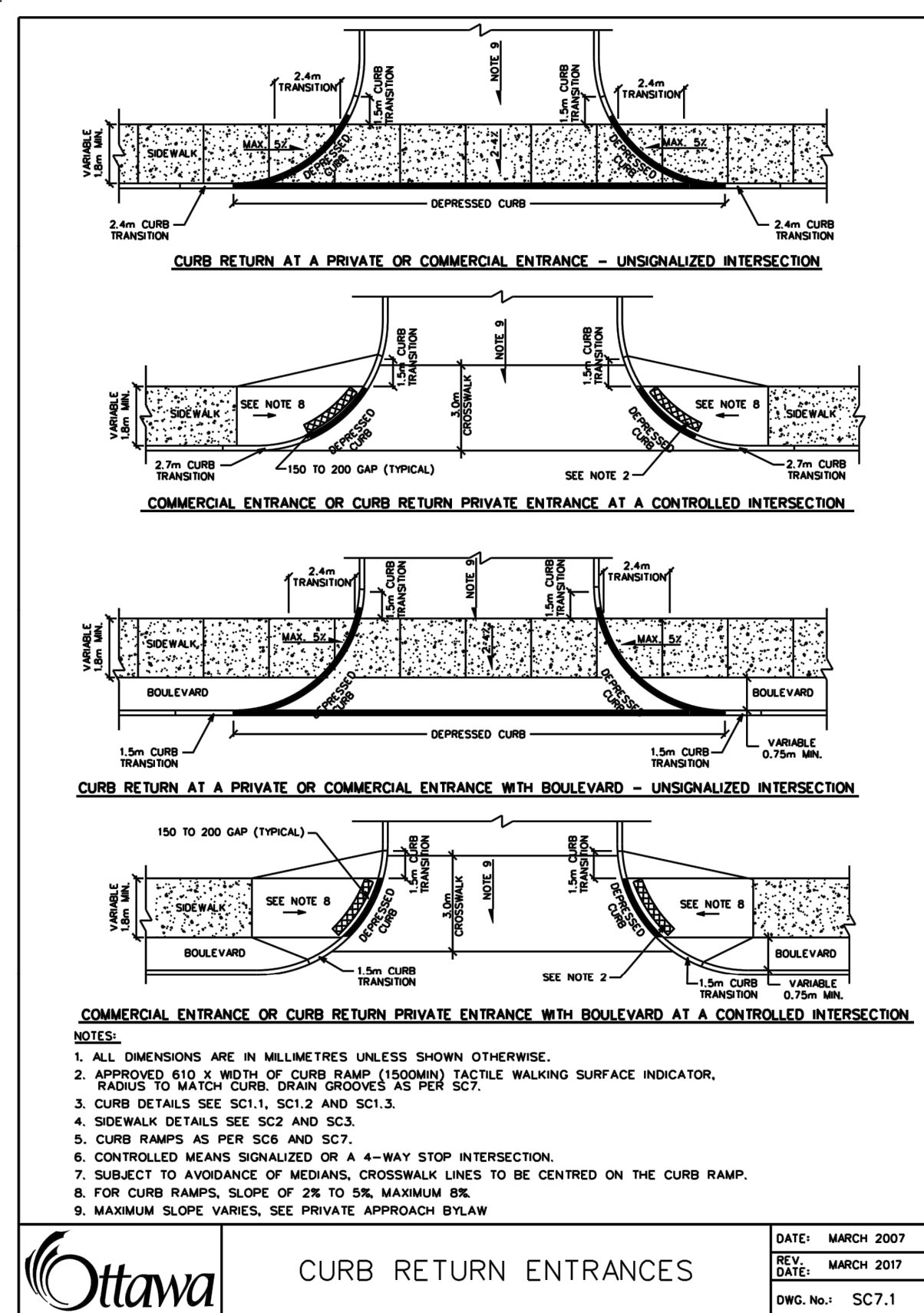
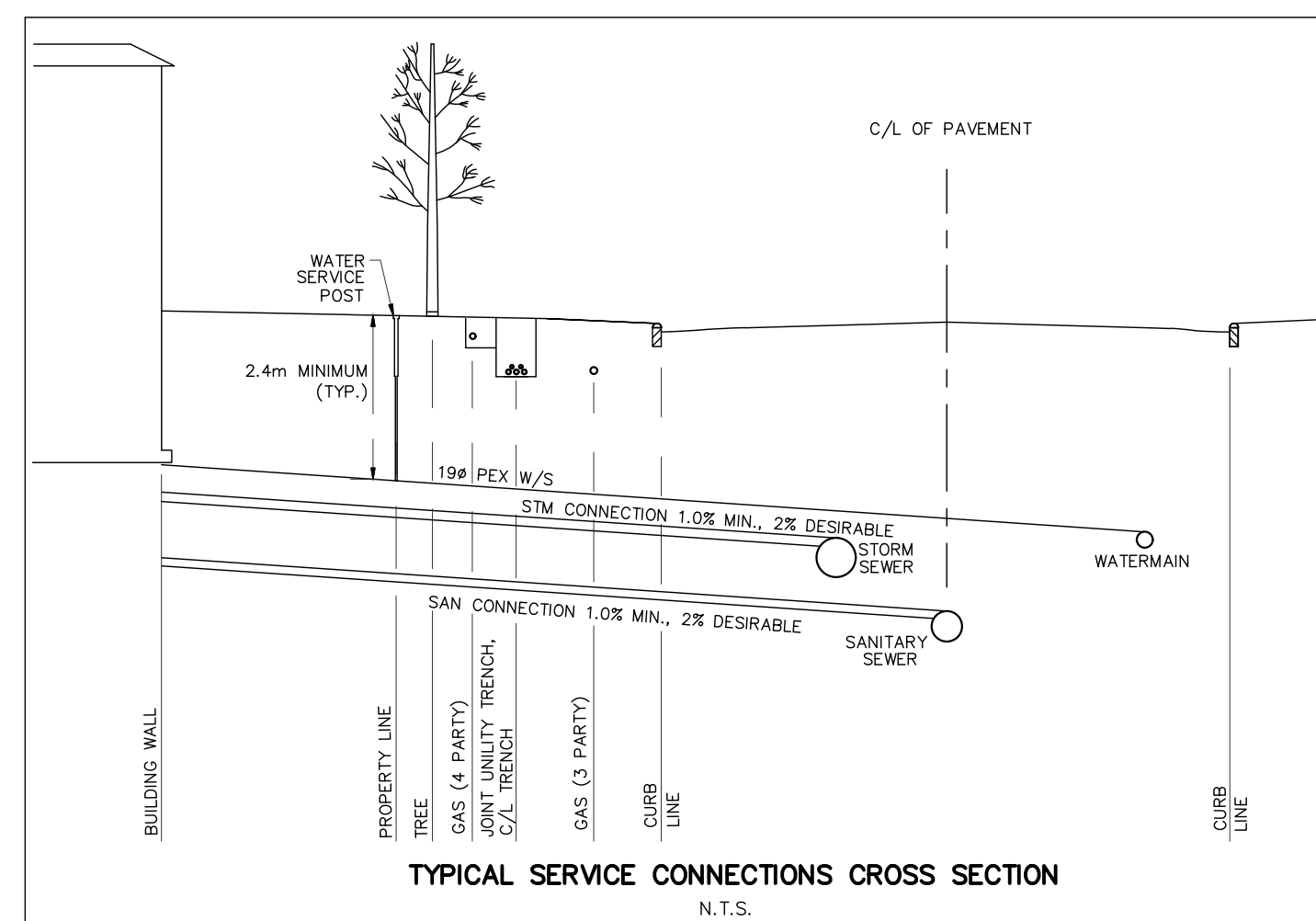
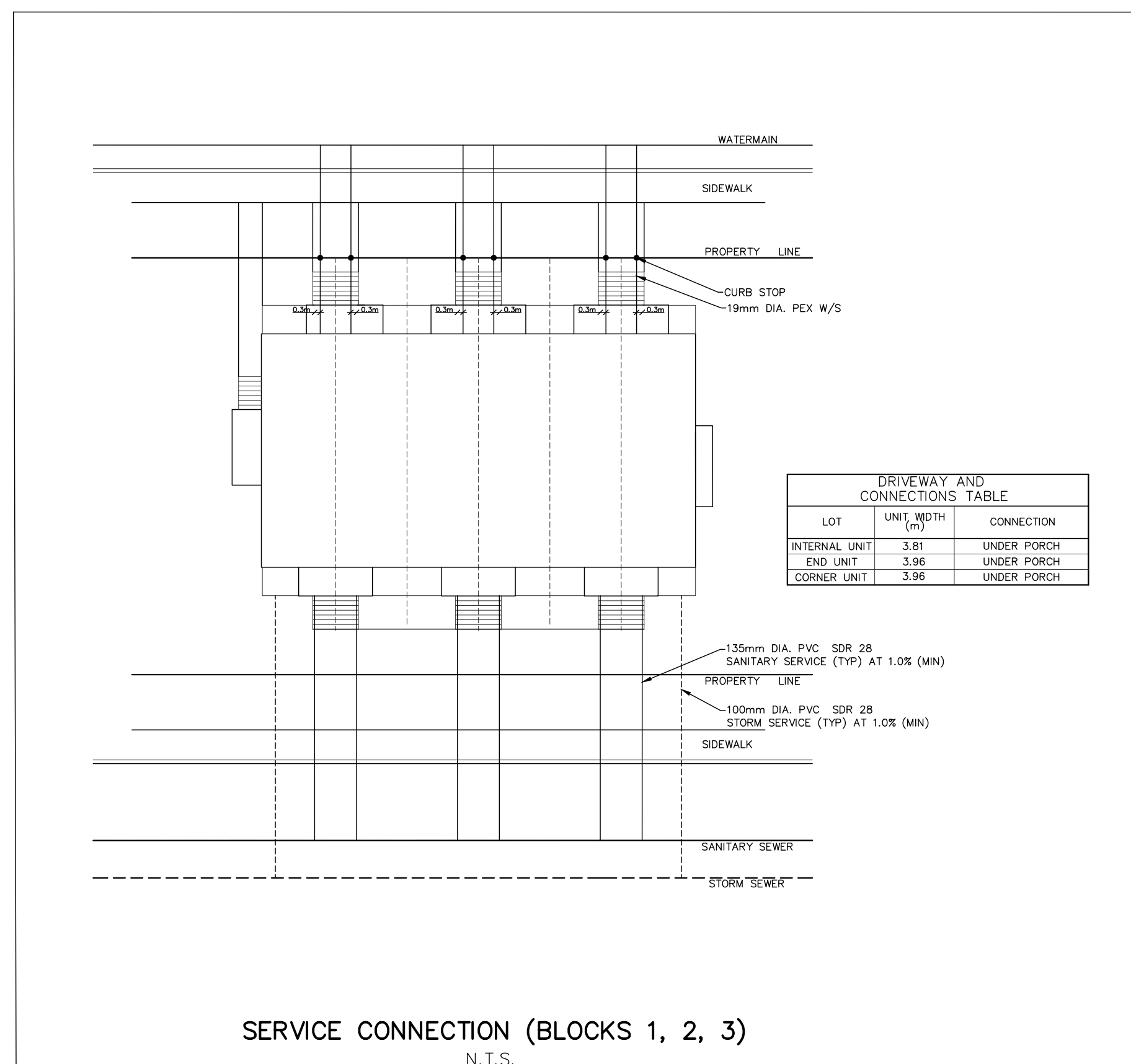
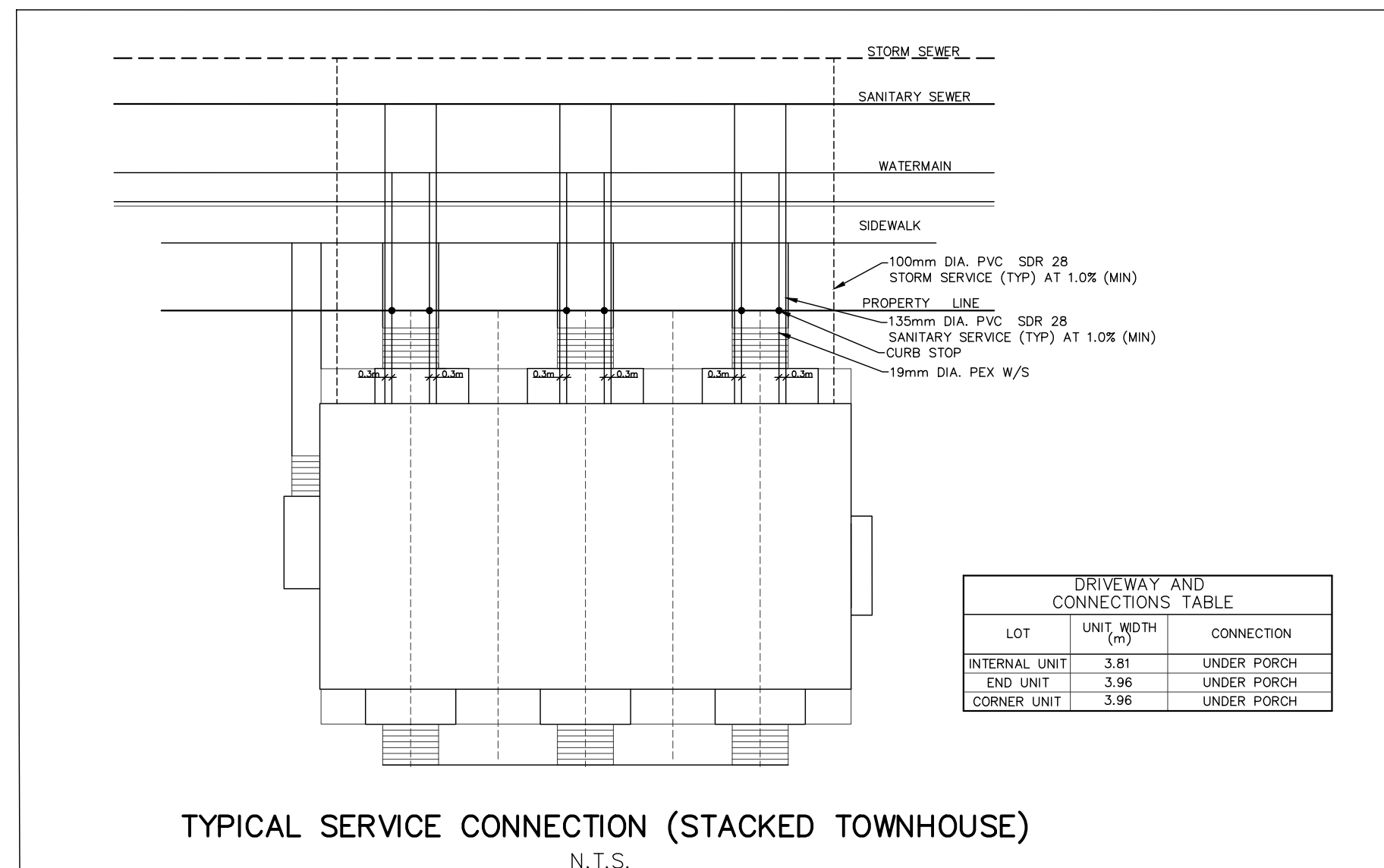


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GENERAL NOTES

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

[illegible]



CB & INLET CONTROL DEVICE (ICD) DATA (Circular Orifice Plate)									
STREET NAME	CATCHBASIN ID	PIPE DIA. (mm)	LENGTH (m)	INV. DEPTH	TOP OF GRATE	GRATING COVER	INLET INV (m)	OUTLET INV (m)	ICD DIA. (mm)
PRIVATE STREET 2	CB_200	250	0.971	1.44	105.47	\$19 PERFORATED	104.08	104.03	94
PRIVATE STREET 1	CB_201	200	3.227	1.38	105.72	\$19 PERFORATED		104.34	127
PRIVATE STREET 1	CB_202	200	5.048	1.38	105.80	\$19 PERFORATED		104.42	127
PRIVATE STREET 1	CB_203	200	5.046	1.38	105.89	\$19 PERFORATED		104.51	94
PRIVATE STREET 1	CB_204	200	1.172	1.38	105.89	\$19 PERFORATED		104.51	94
PRIVATE STREET 3	CB_205	200	4.688	1.38	105.44	\$19 PERFORATED		104.06	83
PRIVATE STREET 4	CB_206	200	9.936	1.38	106.11	\$19 PERFORATED		104.73	83
PRIVATE STREET 4	CB_207	200	11.477	1.38	106.11	\$19 PERFORATED		104.73	83
PRIVATE STREET 1	CB_208	200	4.333	1.38	105.75	\$19 PERFORATED		104.37	83
PRIVATE STREET 6	CB_209	250	3.860	1.74	105.65	\$19 PERFORATED	104.17	103.91	94
PRIVATE STREET 6	CB_210	200	9.948	1.38	105.65	\$19 PERFORATED		104.27	200
PRIVATE STREET 6	CB_211	200	1.868	1.38	105.53	\$19 PERFORATED		104.15	83
PRIVATE STREET 6	CB_212	250	3.025	1.38	105.45	\$19 PERFORATED		104.07	83
PRIVATE STREET 6	CB_213	250	2.971	1.38	105.47	\$19 PERFORATED		104.09	83
PRIVATE STREET 6	CB_214	200	3.083	1.38	105.89	\$19 PERFORATED		104.51	83
PRIVATE STREET 6	CB_215	200	3.017	1.38	105.89	\$19 PERFORATED		104.51	83
PRIVATE STREET 6	CB_217	200	6.710	1.38	105.88	\$19 PERFORATED		104.50	83
PRIVATE STREET 6	CB_218	200	2.399	1.38	105.88	\$19 PERFORATED		104.50	127
PRIVATE STREET 6	CB_219	250	2.401	1.74	106.08	\$19 PERFORATED	104.62	104.34	83
PRIVATE STREET 6	CB_220	200	8.449	1.38	106.08	\$19 PERFORATED		104.70	200
PRIVATE STREET 5	CB_221	200	7.205	1.38	105.99	\$19 PERFORATED		104.61	83
PRIVATE STREET 6	CB_222	200	4.688	1.38	105.51	\$19 PERFORATED		104.13	83
PRIVATE STREET 1	CB_223	200	1.441	1.38	105.75	\$19 PERFORATED		104.37	83
PRIVATE STREET 2	CB_224	200	7.014	1.74	105.47	\$19 PERFORATED		103.73	200
PRIVATE STREET 2	CB_225	200	2.882	1.38	105.49	\$19 PERFORATED		104.11	83
PRIVATE STREET 4	CB_226	200	7.205	1.38	106.00	\$19 PERFORATED		104.62	83
PRIVATE STREET 5	CB_227	200	7.395	1.38	106.00	\$19 PERFORATED		104.62	83
PRIVATE STREET 4	CB_228	200	5.050	1.38	105.98	\$19 PERFORATED		104.60	83
PRIVATE STREET 5	CB_229	200	1.175	1.38	105.98	\$19 PERFORATED		104.60	83

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 SEPTEMBER 18, 2026.

No.	BY	DATE	DESCRIPTION
2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION



Ottawa

**CITY OF
OTTAWA**

PROJECT No. 25-1494



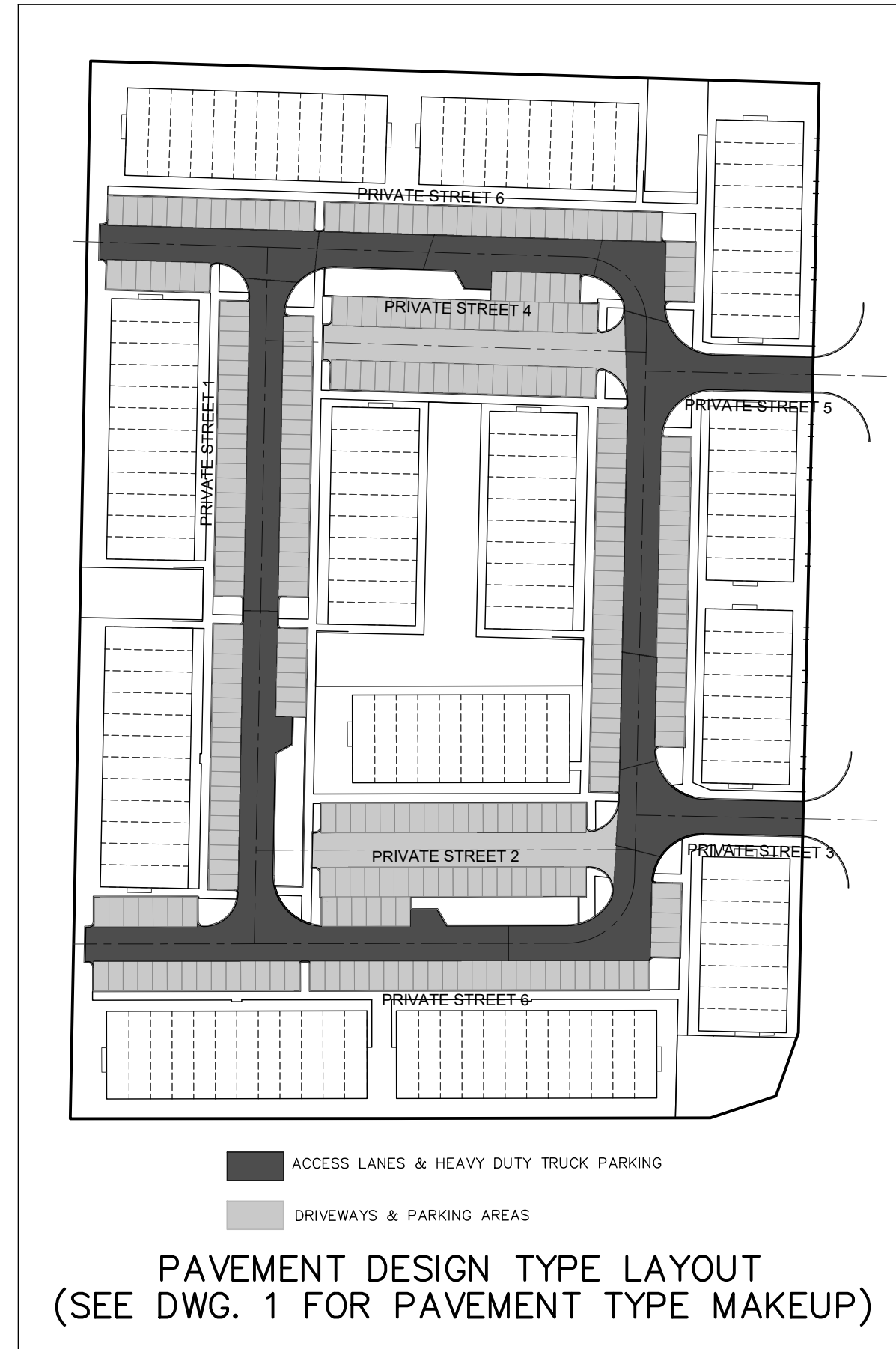
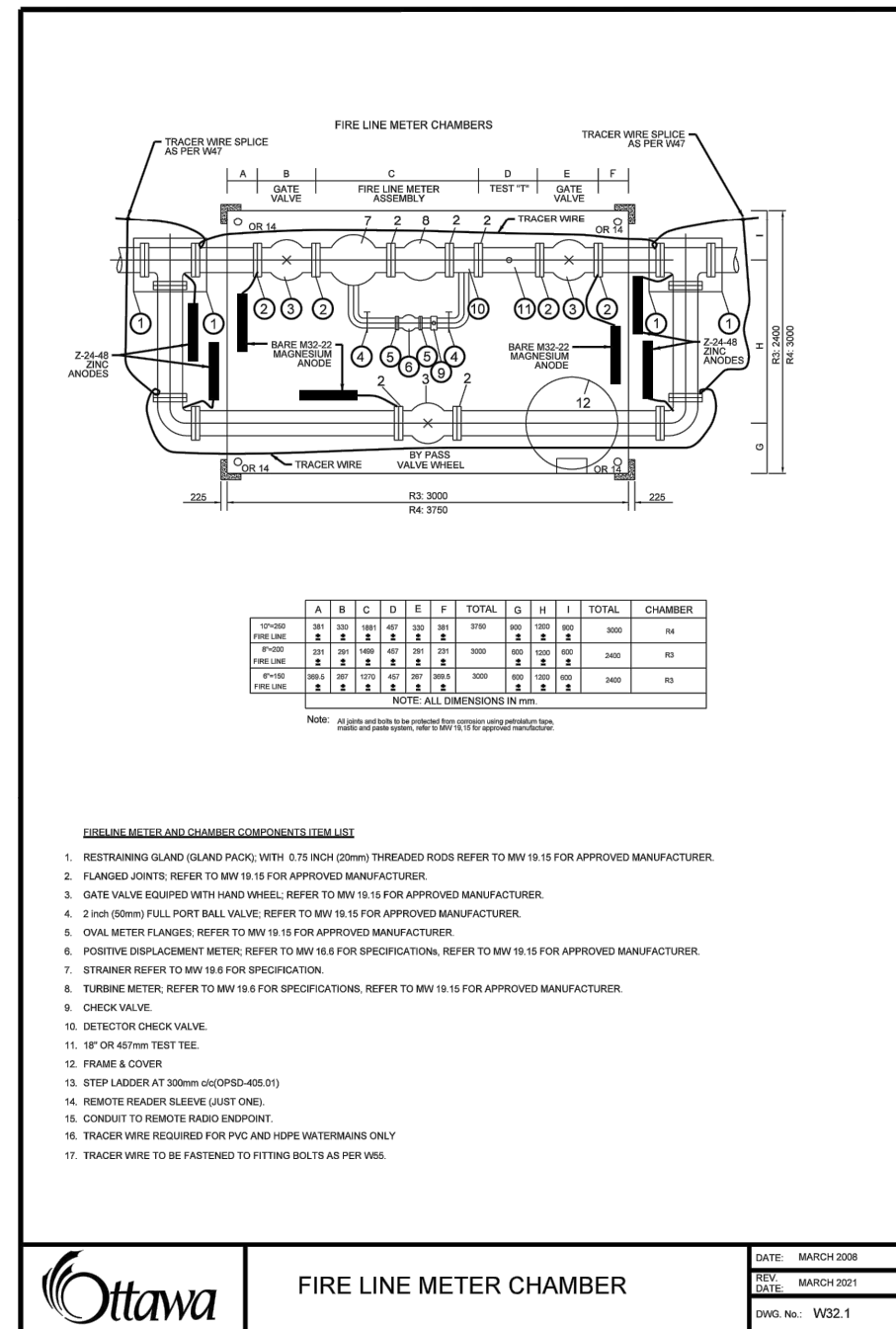
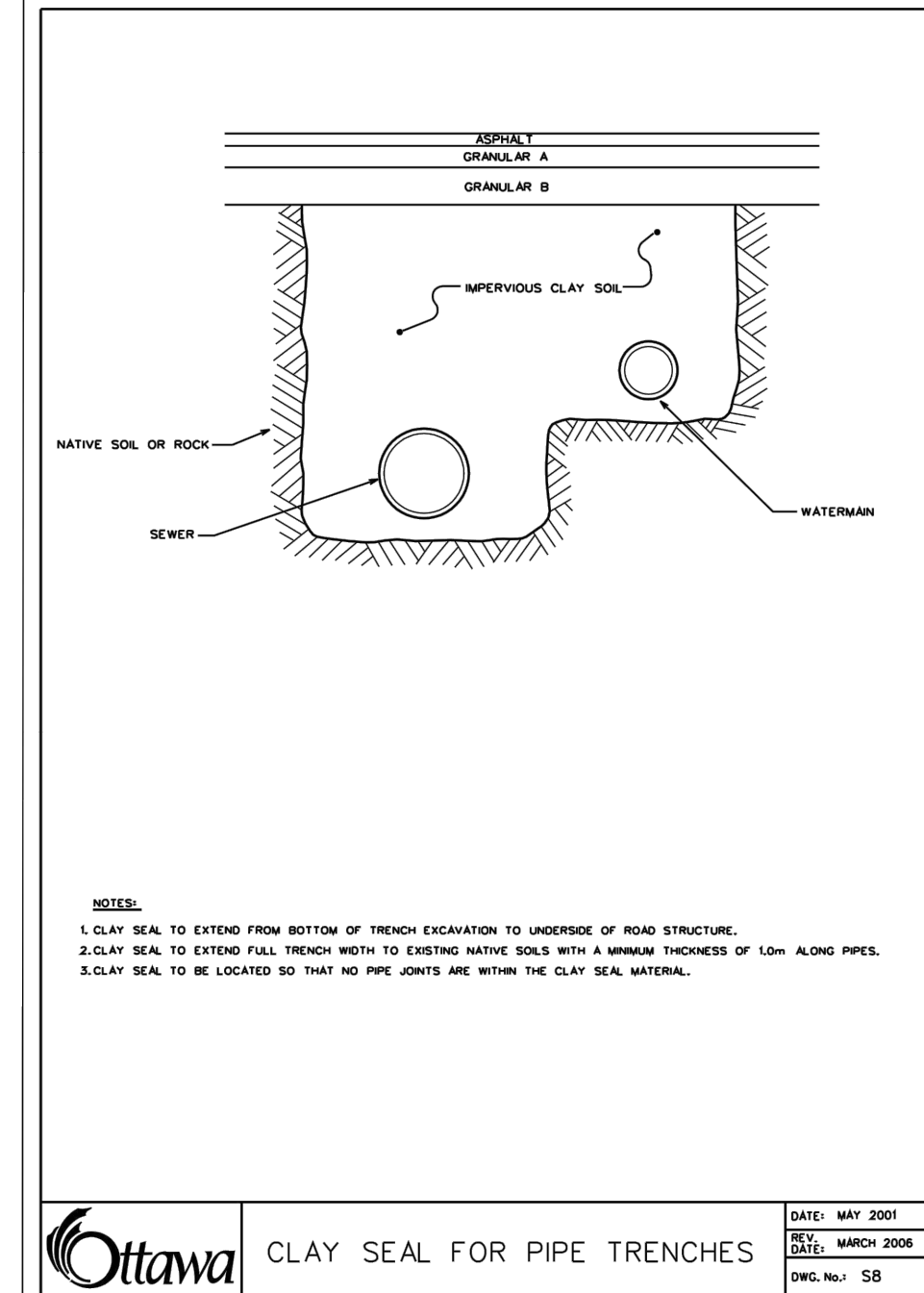
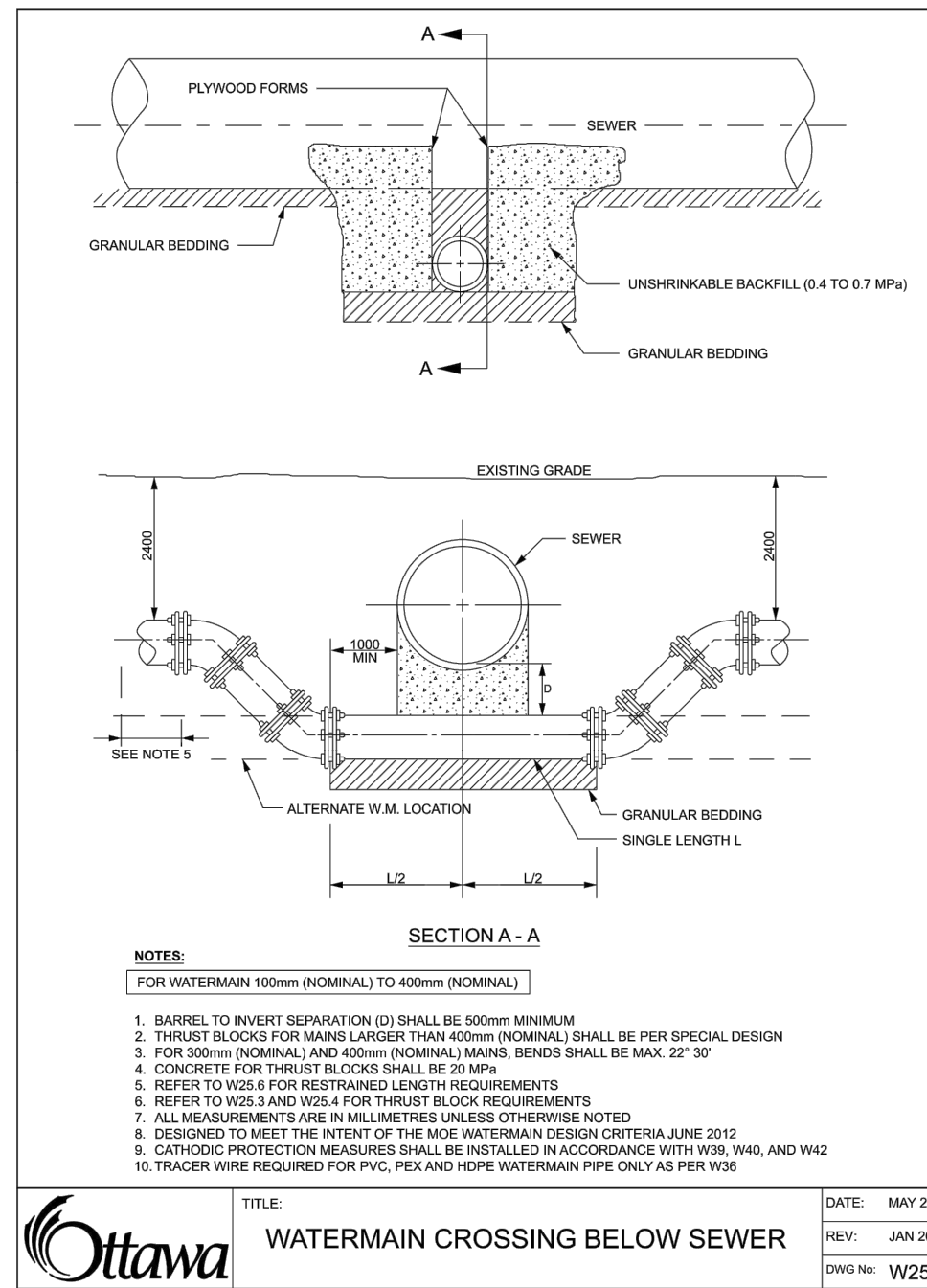
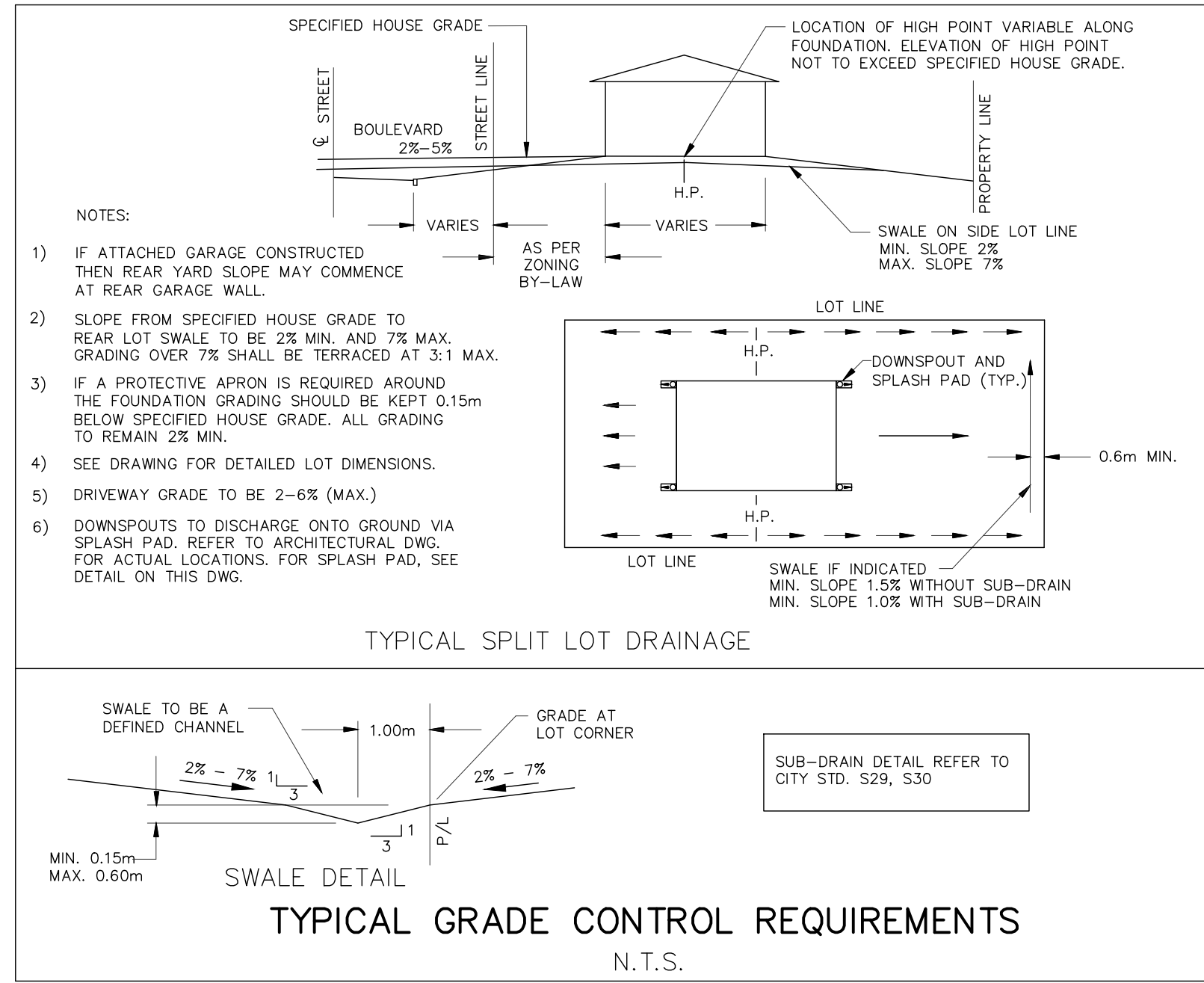
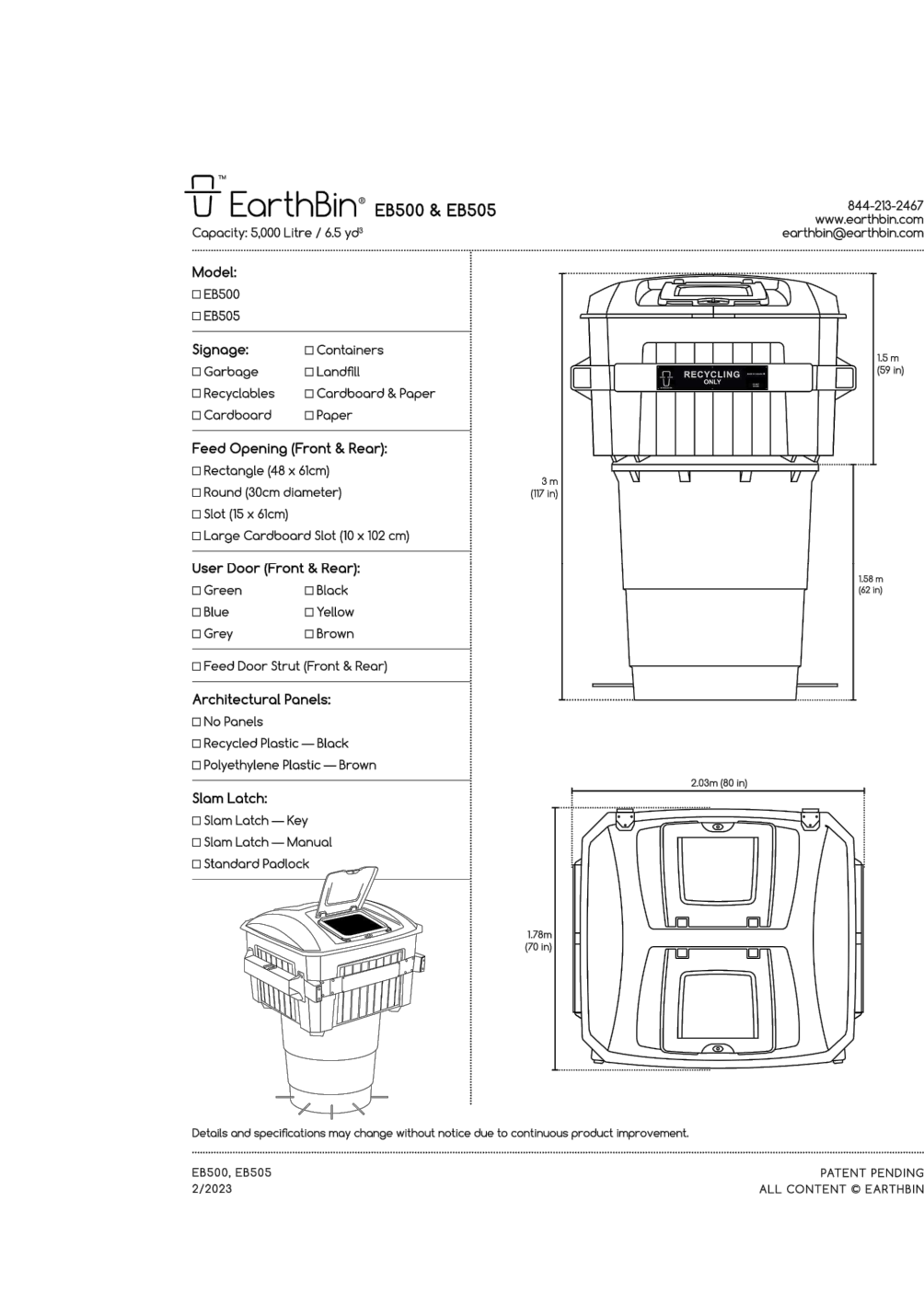
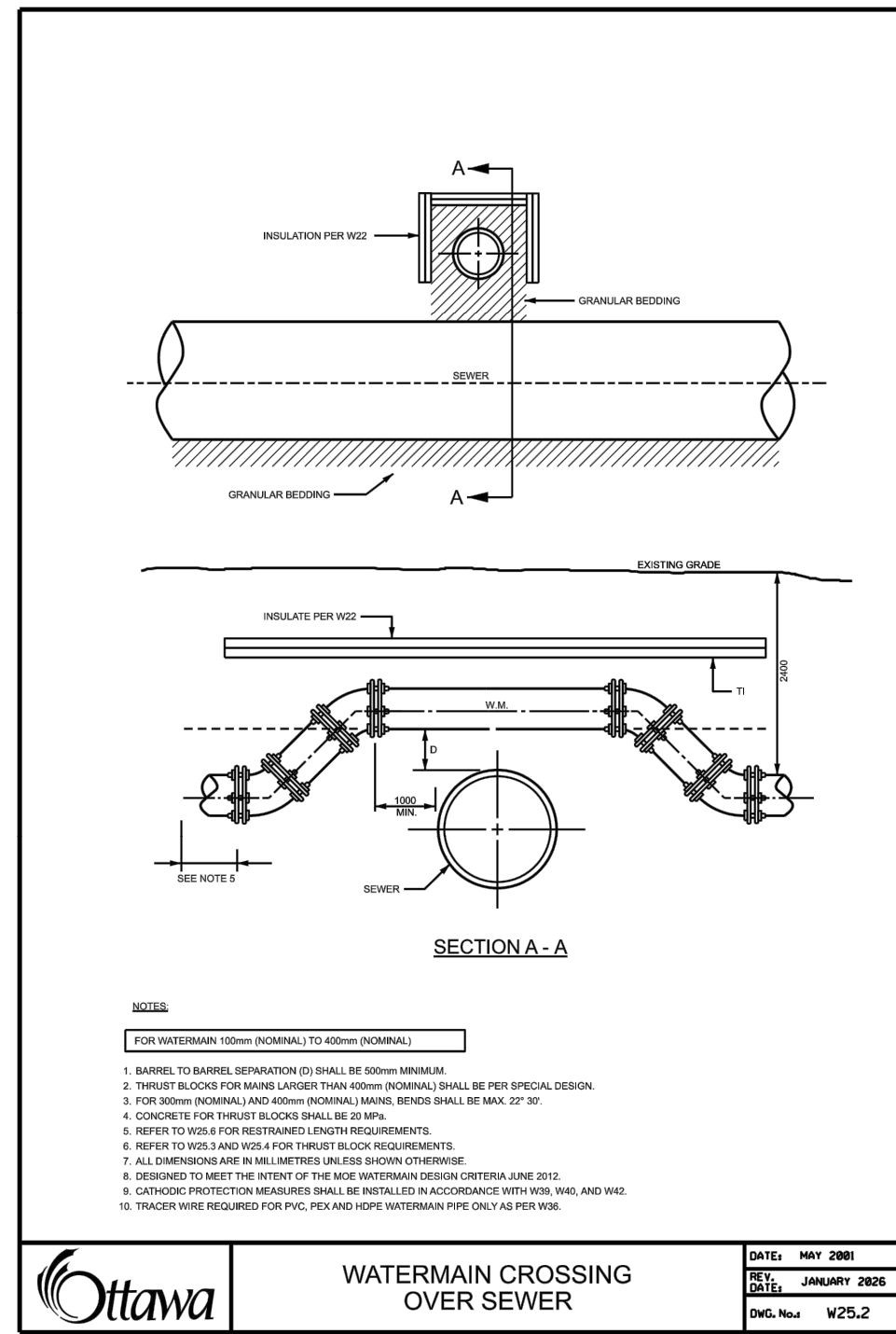
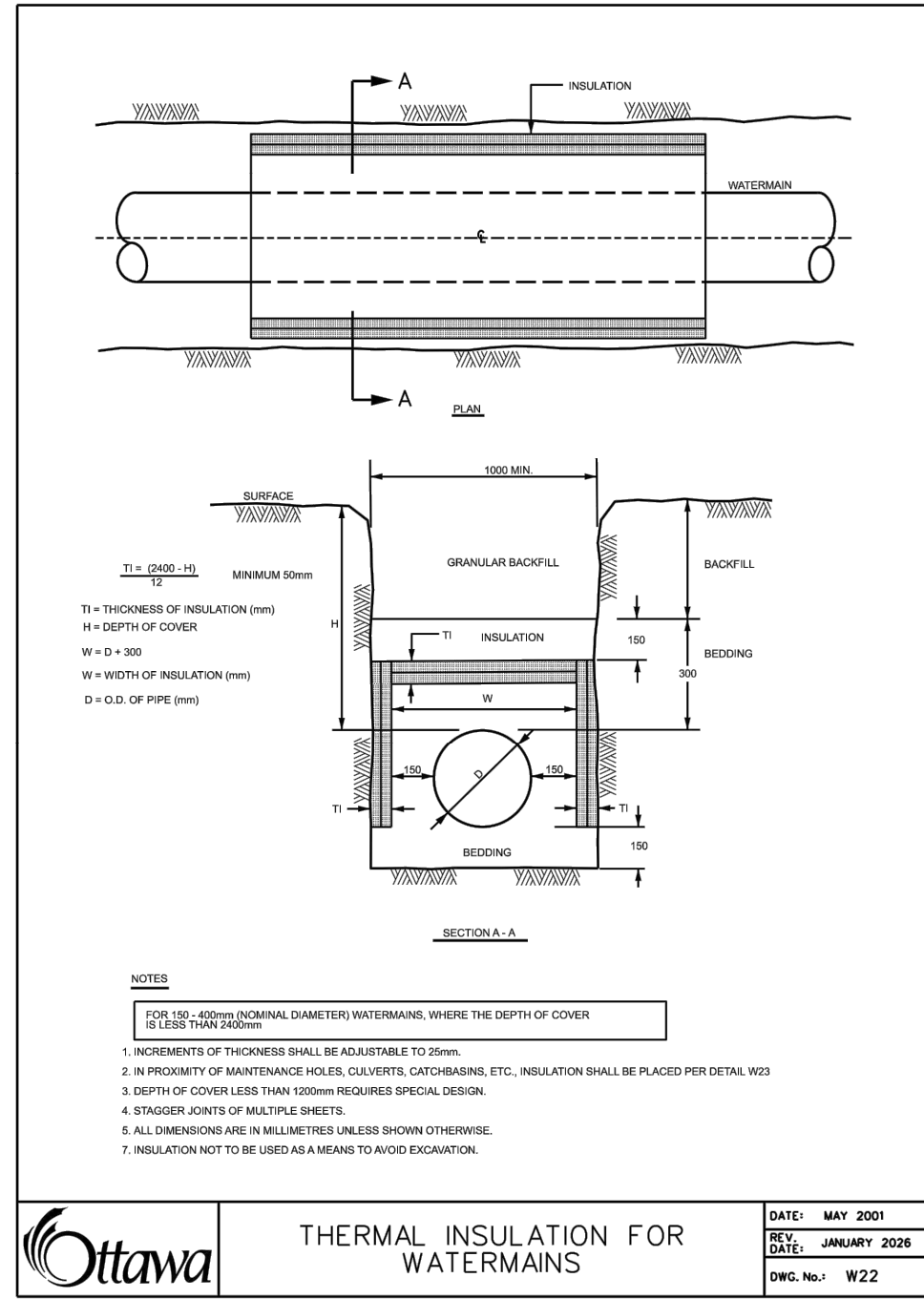
CAIVAN (STITTSVILLE) INC.	MAGNOLIA STACKED TOWNS
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DETAILS AND TABLE © DSI

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



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 SEPTEMBER 18, 2026.

2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION
No.	BY	DATE	DESCRIPTION

CITY OF OTTAWA

PROJECT No. 25-1494

M.T.H. SIU
100674364
26-10-02
PROVINCE OF ONTARIO

CAIVAN (STITTSVILLE) INC.

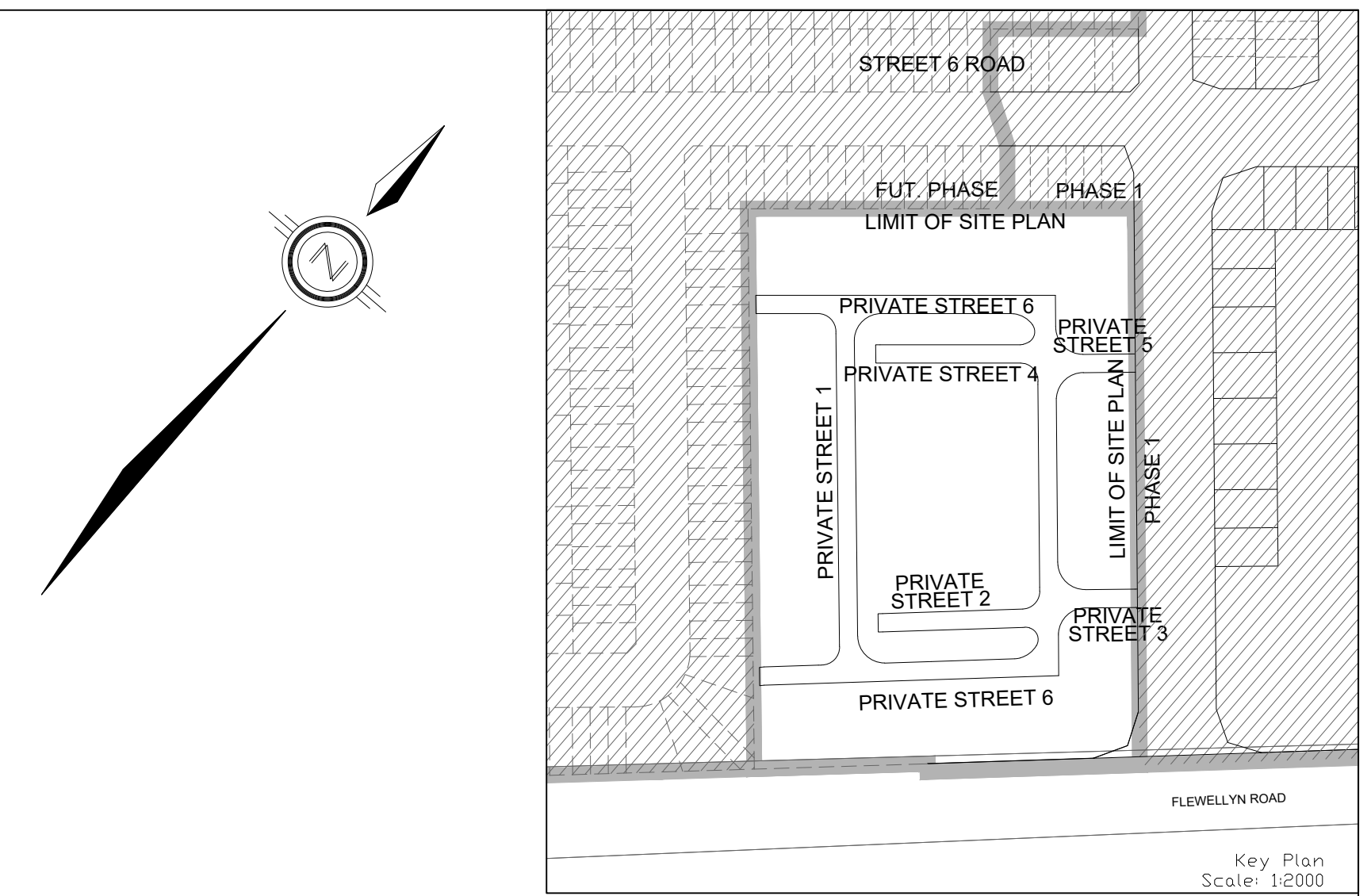
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www.DSEL.ca

DETAILS

DRAWN BY:	M.S. & A.S.	CHECKED BY:	S.L.M.	SHEET NO.
DESIGNED BY:	M.S. & W.L.	CHECKED BY:	C.M.	
SCALE:	1:500	DATE:	JANUARY 2026	3



LEGEND

- CROSS
- 45° BEND
- LATERAL
- HYDRANT, VALVE & VB
- TEE
- VALVE & VC
- VALVE & VB
- 22.5° BEND
- 11.25° BEND
- REDUCER
- CAP
- STREET CATCHBASIN & LEAD
- STREET CATCHBASIN WITH STORM MAINTENANCE HOLE
- CURB INLET CATCH-BASIN & LEAD
- CATCHBASIN MAINTENANCE HOLE INTERCONNECTED CATCH BASIN & LEADS
- TEE CATCHBASIN
- PERFORATED PIPE
- ELBOW CATCHBASIN

NOTES:

- ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES. HAVING JURISDICTION
- CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF EX. UNDERGROUND SERVICES AND EX. UTILITIES PRIOR TO STARTING CONSTRUCTION
- 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
- 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
- ALL EXISTING POST & WIRE FENCE, CULVERTS, UTILITY WIRE / POLES, TREES, SHRUBS ETC. WITHIN LOTS, BLOCKS AND ROADS TO BE REMOVED, UNLESS OTHERWISE NOTED
- PERMISSION REQUIRED FOR REMOVAL OF EXISTING TREES ON EXTERNAL LANDS WHERE APPLICABLE
- PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS
- FOR RLB LAYOUT & TYPICAL EASEMENT DETAIL REFER TO DRAWING No. 2
- 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.
- FOR WATERMAIN CROSSING BELOW AND ABOVE SEWERS, REFER TO CITY STD. W25 AND W25.2, RESPECTIVELY, WHERE APPLICABLE
- 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
- FOR WATERMAIN SIZES, 2.4m MIN. COVER TO BE PROVIDED
- THE COVER OF EX. MH, CB, CHAMBER AND OTHER ABOVEGROUND FEATURES TO BE ADJUSTED TO SUIT THE NEW FINISHED GRADE, WHERE APPLICABLE
- 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.
- FOR SERVICE INSTALLATION AT SEWER CROSSING, REFER TO CITY STD. W38 FOR DETAIL
- FOR HOUSE CONNECTIONS INSTALLED UNDER DRIVEWAYS, SLEEVE SHALL BE USED UNDER THE GARAGE SLAB
- FOR CATCHBASIN DATA, REFER TO DWG. No. 2 FOR DETAILS

Sanitary Maintenance Hole
(WATERTIGHT LID PER OPSD 401.030)

Sanitary Maintenance Hole

CAP

RETAINING WALL (SEE NOTES ON DWG. 1 AND STRUCTURAL DWG'S FOR DETAILS)

SINGLE SERVICE LOCATION (SAN & WM)

SINGLE SERVICE LOCATION (ST, SAN & WM)

HYDRO SWITCHGEAR

HYDRO TRANSFORMER

STREET LIGHT STANDARD

DITCH AND CULVERT

CONCRETE SIDEWALK (PER CITY OF OTTAWA STD SC1.4)

BARRIER CURB

BARRIER CURB WITH GUTTER & DEPRESSED CURB (PER CITY OF OTTAWA STD SC1.1, SC1.2, SC1.3)

ASPHALT SIDEWALK

PHASING LIMITS

PROPERTY BOUNDARY

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) (SPECIFICATIONS)

EXISTING OR FUTURE SANITARY MAINTENANCE HOLE

EXISTING OR FUTURE STORM MAINTENANCE HOLE

ORGANIC BIN

GARBAGE BIN

EXISTING OR FUTURE PHASES OF MAGNOLIA SUBDIVISION

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 CGVD28:76 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 SEPTEMBER 18, 2026.

2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION

No.	BY	DATE	DESCRIPTION

CITY OF OTTAWA

PROJECT No. 25-1494

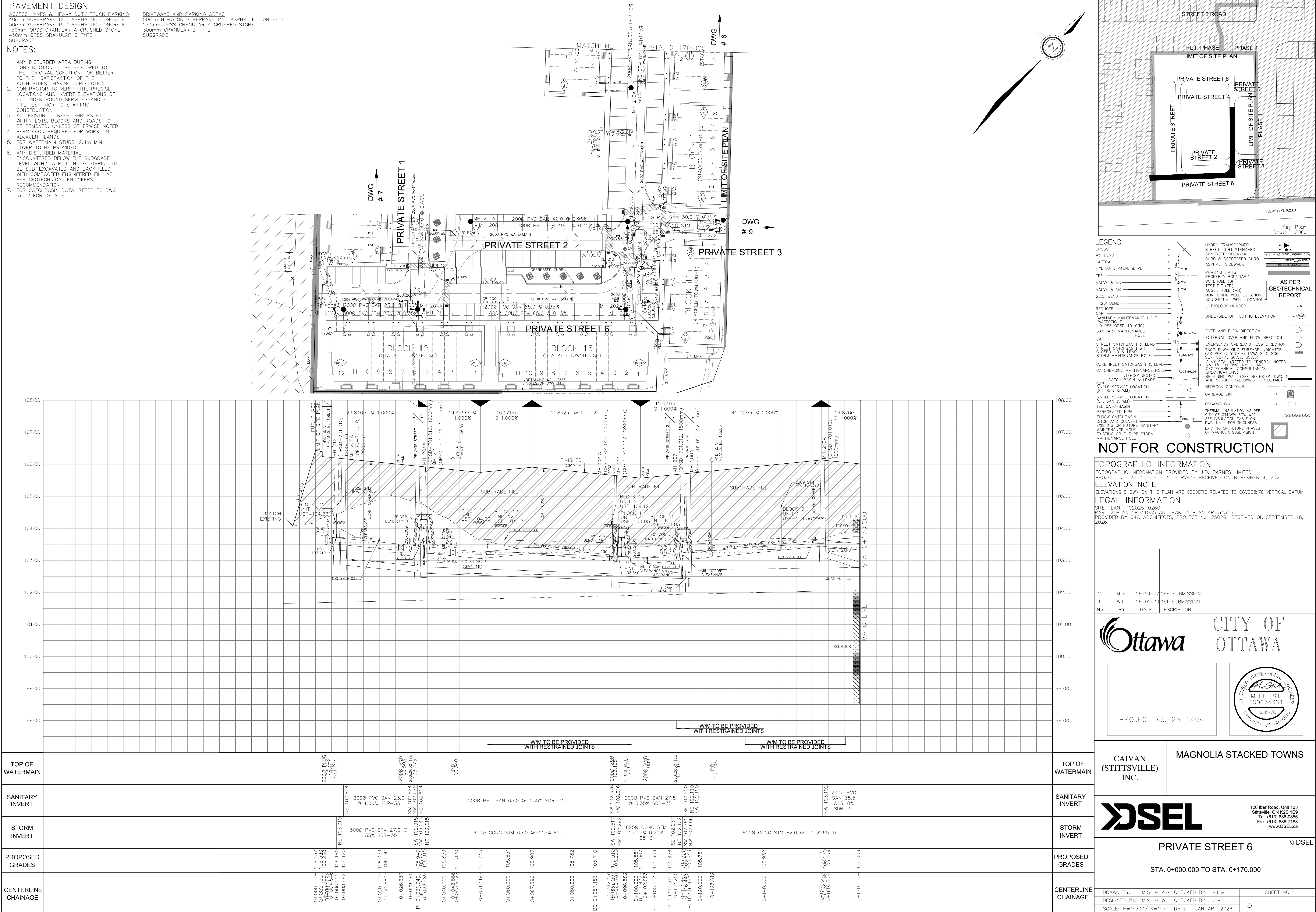
CAIVAN (STITTSVILLE) INC.

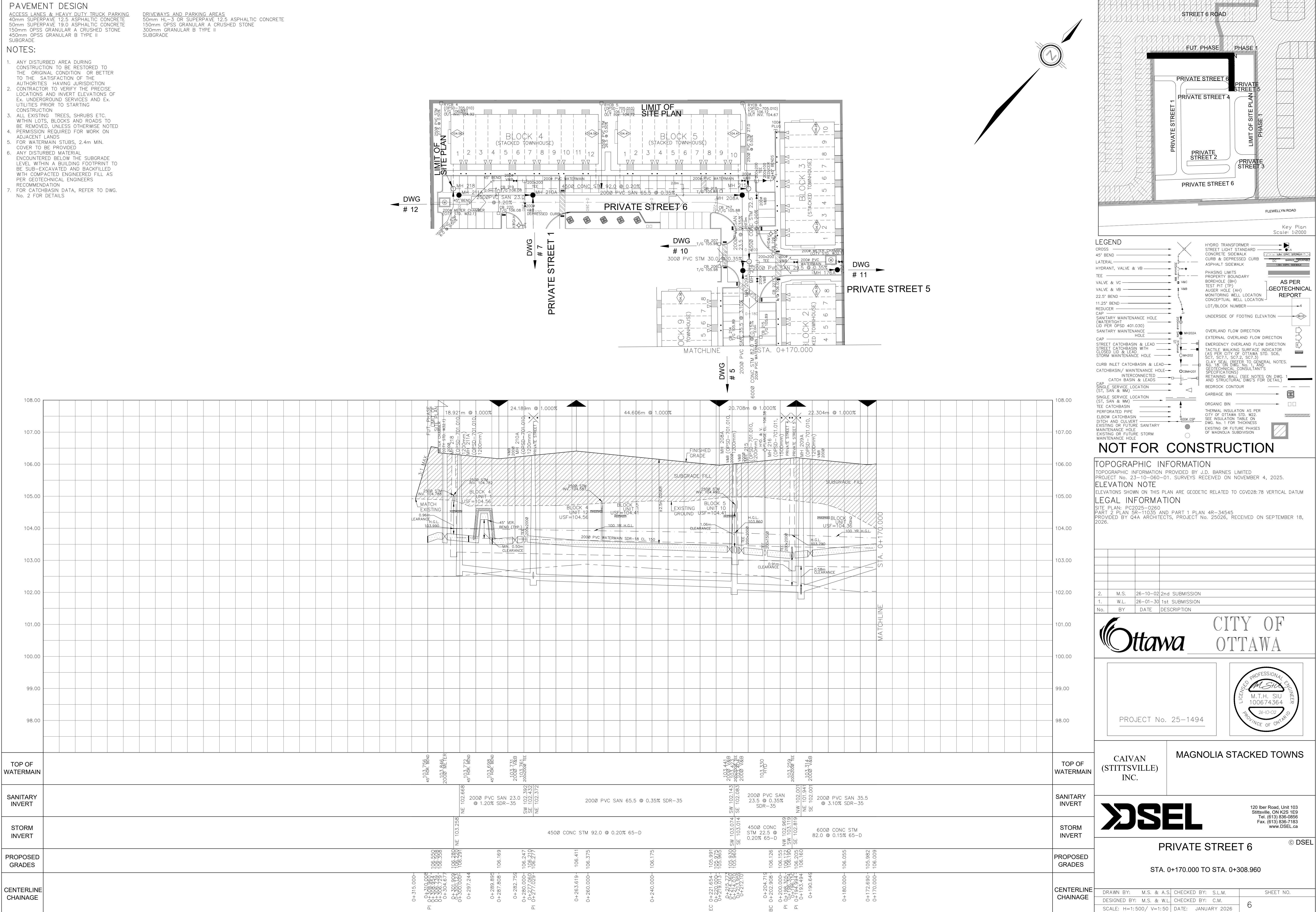
MAGNOLIA STACKED TOWNS

DSEL

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

DRAWN BY: M.S. & A.S.	CHECKED BY: S.L.M.	SHEET No.
DESIGNED BY: M.S. & W.L.	CHECKED BY: C.M.	4
SCALE: 1:500	DATE: JANUARY 2026	





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 ALL UNDERGROUND SERVICES AND UTILITIES PRIOR TO STARTING CONSTRUCTION
3. ALL EXISTING TREES, SHRUBS ETC. WITHIN BLOCKS AND ROADS TO BE REMOVED, UNLESS OTHERWISE NOTED
4. PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS
5. FOR WALKWAYS, STUBS, 2.4m MIN. COVER TO BE PROVIDED
6. ANY DISTURBED MATERIAL ENCOUNTERED BELOW THE SUBGRADE TO BE REMOVED TO A DEPTH OF 150mm SUB-EXCAVATED AND BACKFILLED WITH COMPACTED ENGINEERS FILL AS PER GEOTECHNICAL ENGINEERS RECOMMENDATION
7. FOR CATCHBASIN DATA, REFER TO DWG NO. 2 FOR DETAILS

Block 7 (Stacked Townhouse)

Block 6 (Stacked Townhouse)

Block 8 (Stacked Townhouse)

Block 4 (Stacked Townhouse)

PRIVATE STREET 1

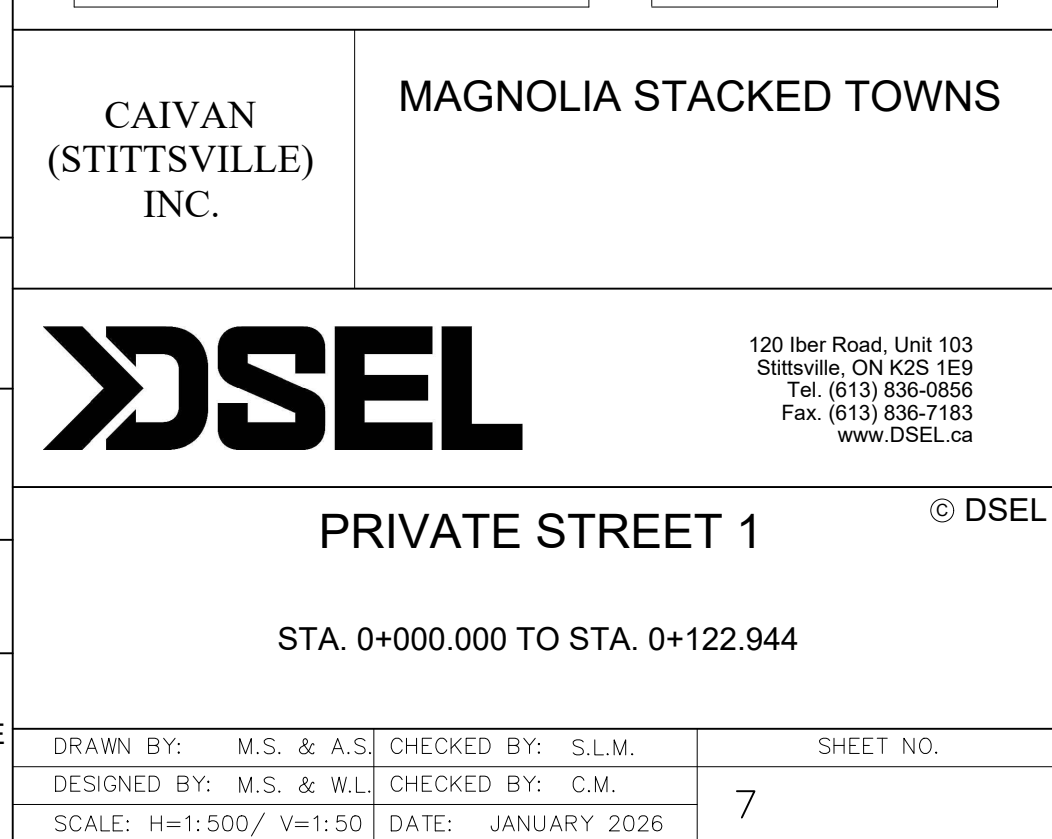
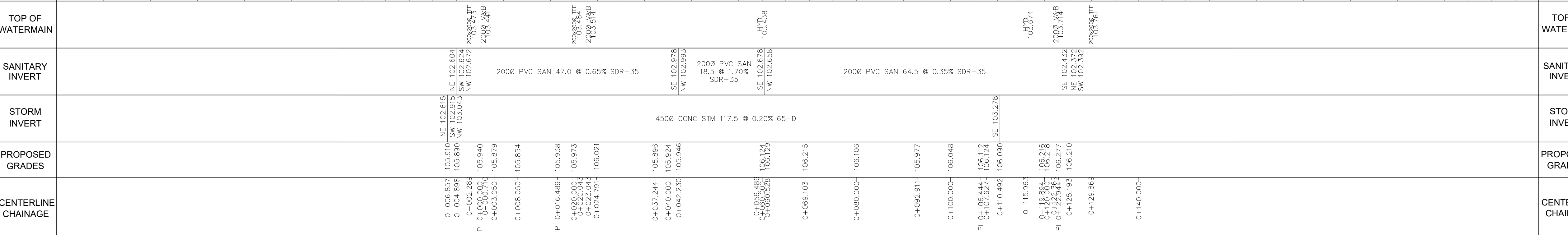
PRIVATE STREET 2

PRIVATE STREET 6

PRIVATE STREET 8

LIMIT OF SITE PLAN

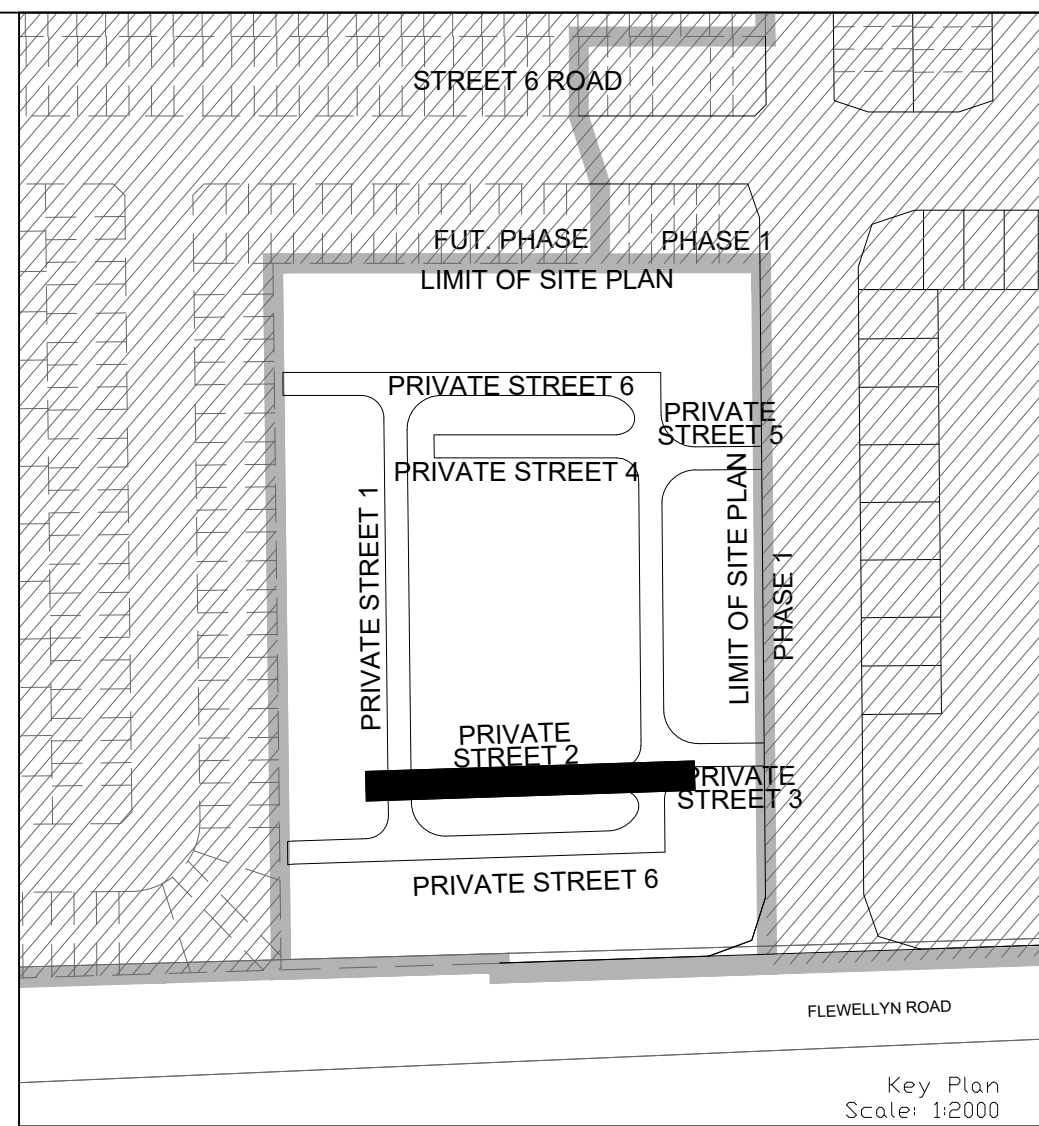
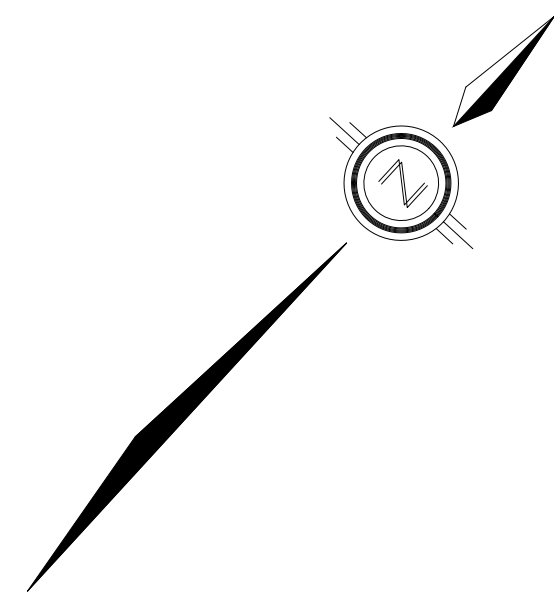
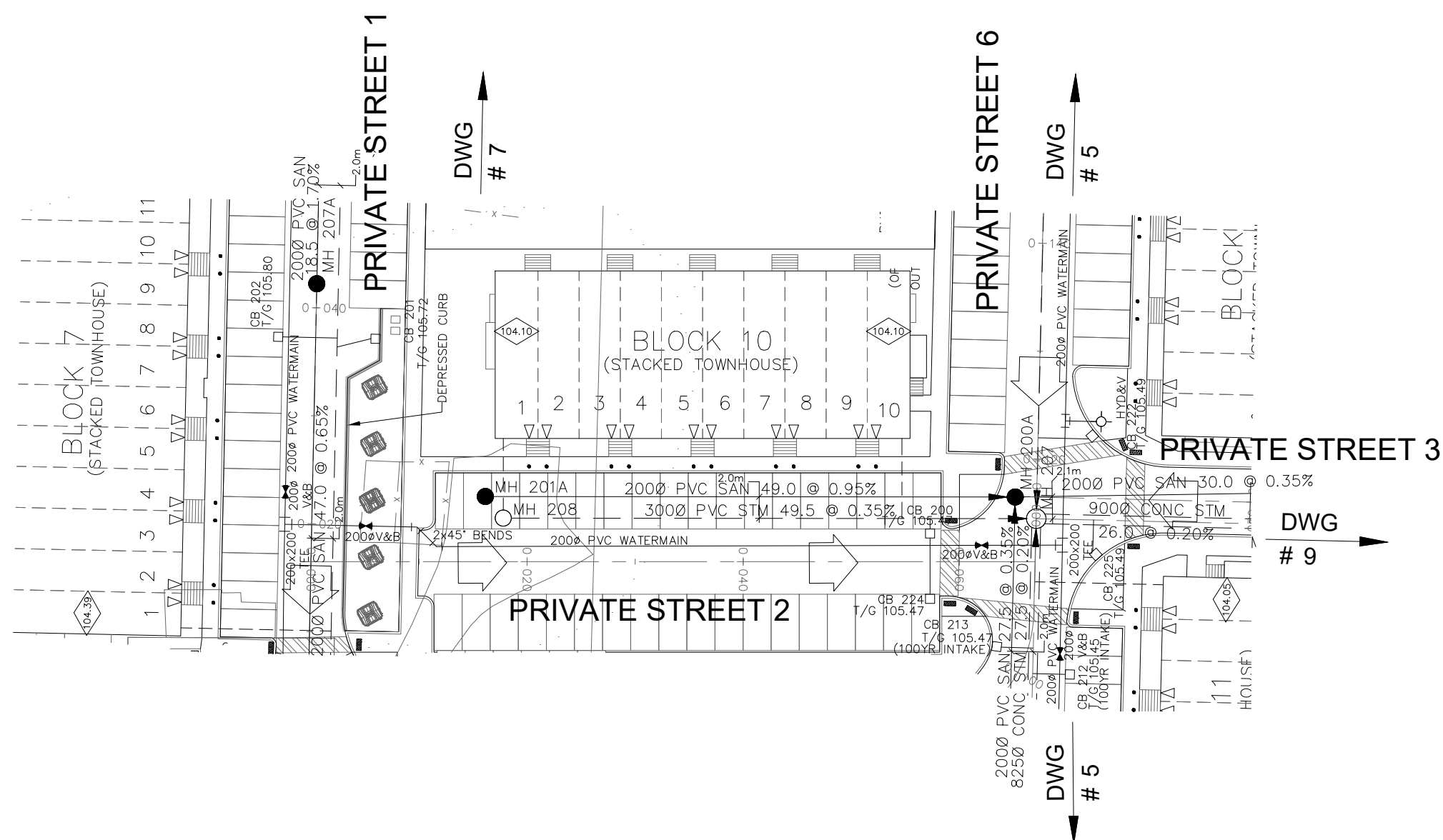
DWG # 12



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

1. ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO ORIGINAL OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION OVER THE CRITICAL AREAS.
2. LOCATIONS AND INVERT ELEVATIONS OF EX. UNDERGROUND SERVICES AND UTILITIES PRIOR TO STARTING CONSTRUCTION.
3. ALL EXISTING TREES, SHRUBS ETC., WITHIN BLOCKS & ROADS TO BE REMOVED. OTHERS NOTED. PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS.
4. FOR EX. WORK TO BE STUBS, 2.4m MIN. COVER TO BE PROVIDED.
5. ANY DISTURBED MATERIAL INCREASED DEPTH OF SUBGRADE LEVEL WITHIN A BUILDING FOOTPRINT TO BE SUB-EXCAVATED AND BACKFILLED WITH SUBGRADE MATERIAL UP TO 15% PER GEOTECHNICAL ENGINEERS RECOMMENDATION.
6. FOR ALL DATA, REFER TO DWG. NO. 2 FOR DETAILS.



-
- LEGEND**
- CROSS**
40" BEND
- LATERAL**
HYDRANT, VALVE & VB
- TEE**
VALVE & VC
VALVE & VB
22.5" BEND
REDUCER
- CATCH BASIN**
SANTARY MAINTENANCE HOLE
(WATER LOT)
ID: PER QPSD 401.030
SANTARY MAINTENANCE HOLE
HOLE
- CAP**
STREET CATCHBASIN & LEAD
STREET CATCHBASIN WITH
LEAD
STORM MAINTENANCE HOLE
- CURB INLET CATCHBASIN & LEAD**
CATCHBASIN MAINTENANCE HOLE
INTERCONNECTED
CATCH BASIN & LEADS
- CAP**
SINGLE SERVICE LOCATION
(ST, SAN & WW)
TEE CATCHBASIN
PERFORATED PIPE
ELBOW
FITTING OR FUTURE SANTARY
MAINTENANCE HOLE
EXISTING OR FUTURE STORM
MAINTENANCE HOLE
- HYDRO TRANSFORMER**
STREET LIGHT STANDARD
SIDEWALK
CURB & DEPRESSED CURB
ASPHALT SIDEWALK
- PHASING LIMITS**
PROPERTY LOCATION
BOROUGH (SH)
TEST PIT (TP)
AUGER HOLE (AH)
MONITORING WELL LOCATION
CONCEPTUAL WELL LOCATION
LOT/BLOCK NUMBER
- AS PER GEOTECHNICAL REPORT**
- OVERLAND FLOW DIRECTION**
EXTERNAL OVERLAND FLOW DIRECTION
EMERGENCY OVERLAND FLOW DIRECTION
TACTILE WALKWAY SURFACE INDICATOR
AS PER CITY OF OTTAWA SCS
SCS, SC7.1, SC7.2, SC7.3
(CLAY CITY OF OTTAWA TO GENERAL NOTES
18.18 ON DWG. NO. 10
& 18.19 ON DWG. NO. 10
SPECIFICATIONS (SEE NOTES ON DWG.
10 AND STRUCTURAL DWGS FOR DETAILS)
- RETAINING WALL**
BEDROCK CONTOUR
GARAGE BIN
ORGANIC BIN
INSULATION INSULATION AS PER
CITY OF OTTAWA STD. W-2
SEE INSULATION TABLE ON
DWG. NO. 11 THICKNESS
EXISTING OR FUTURE PHASES
OF MANGLIA SUBVISION

NOT FOR CONSTRUCTION

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 SEPTEMBER 18, 2026.

2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION
No.	BY	DATE	DESCRIPTION



CAIVAN (STITTSVILLE) INC.	MAGNOLIA STACKED TOWNS
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PRIVATE STREET 2

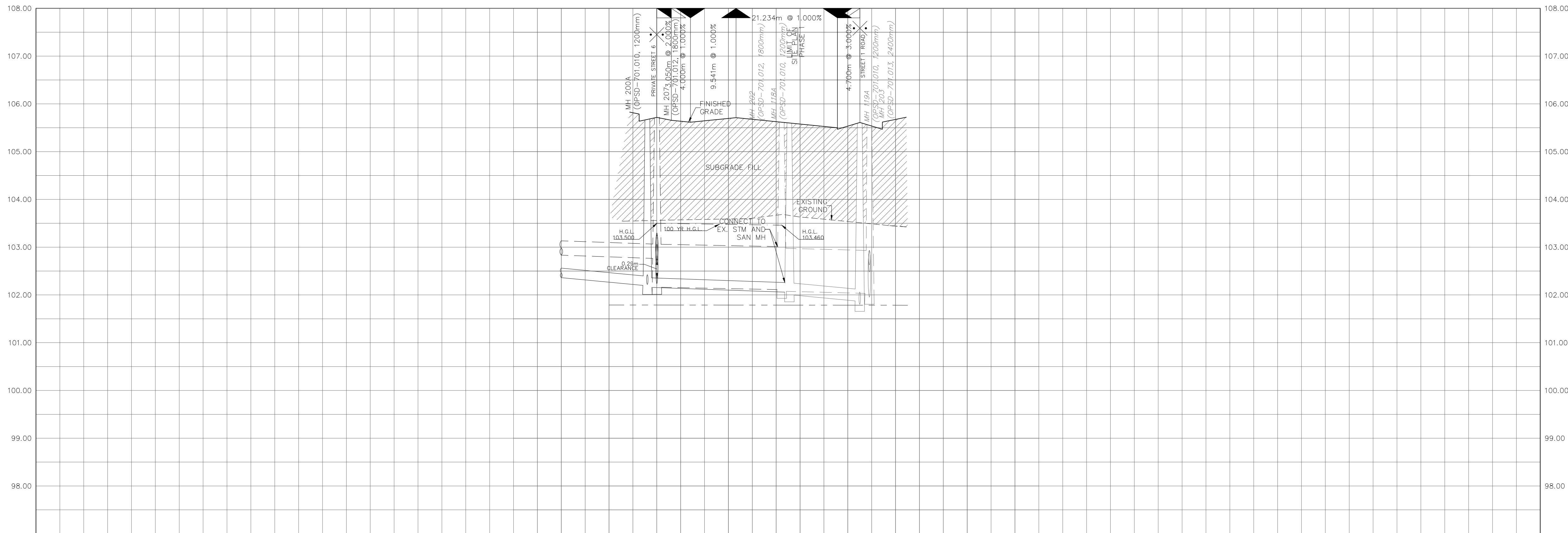
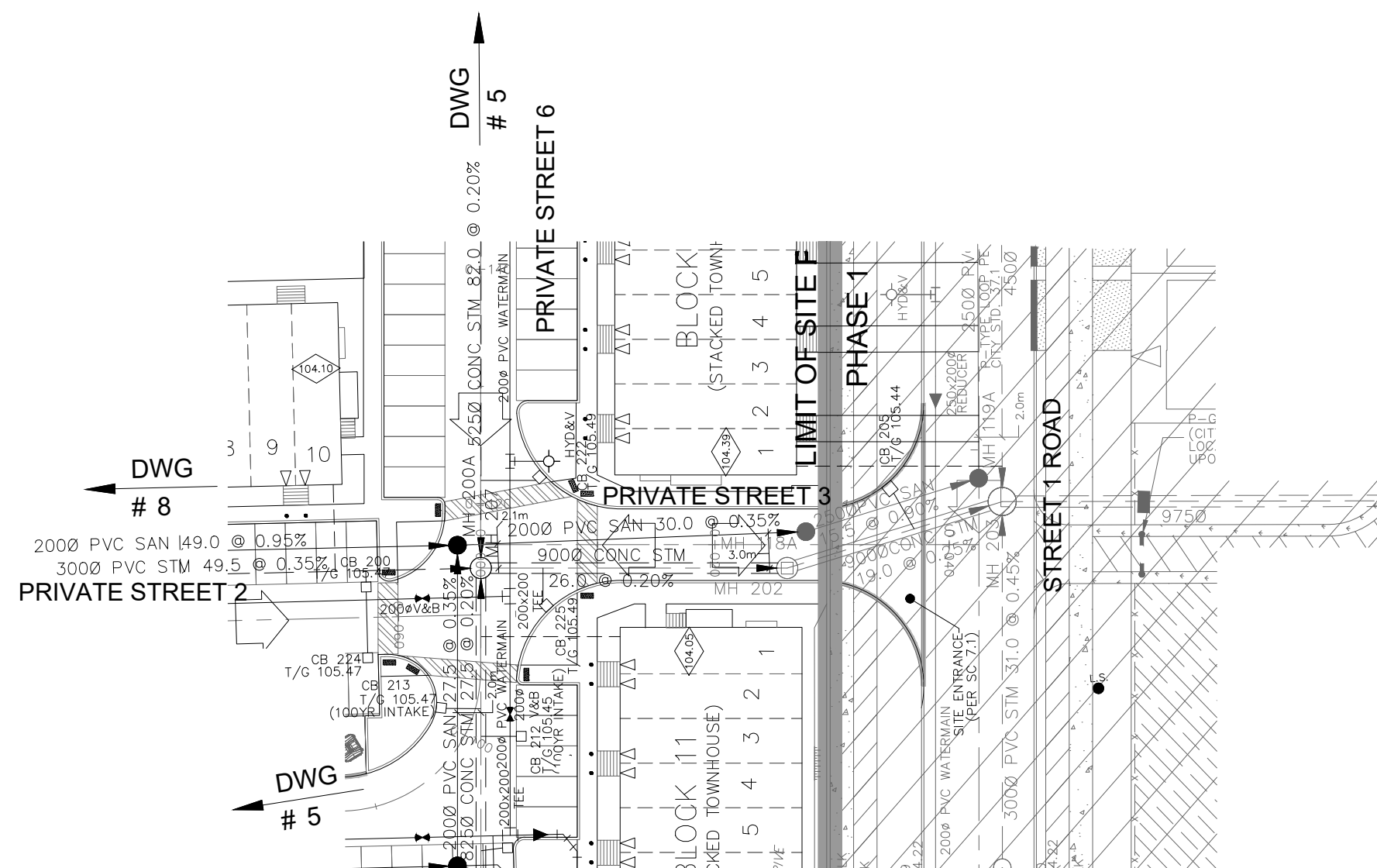
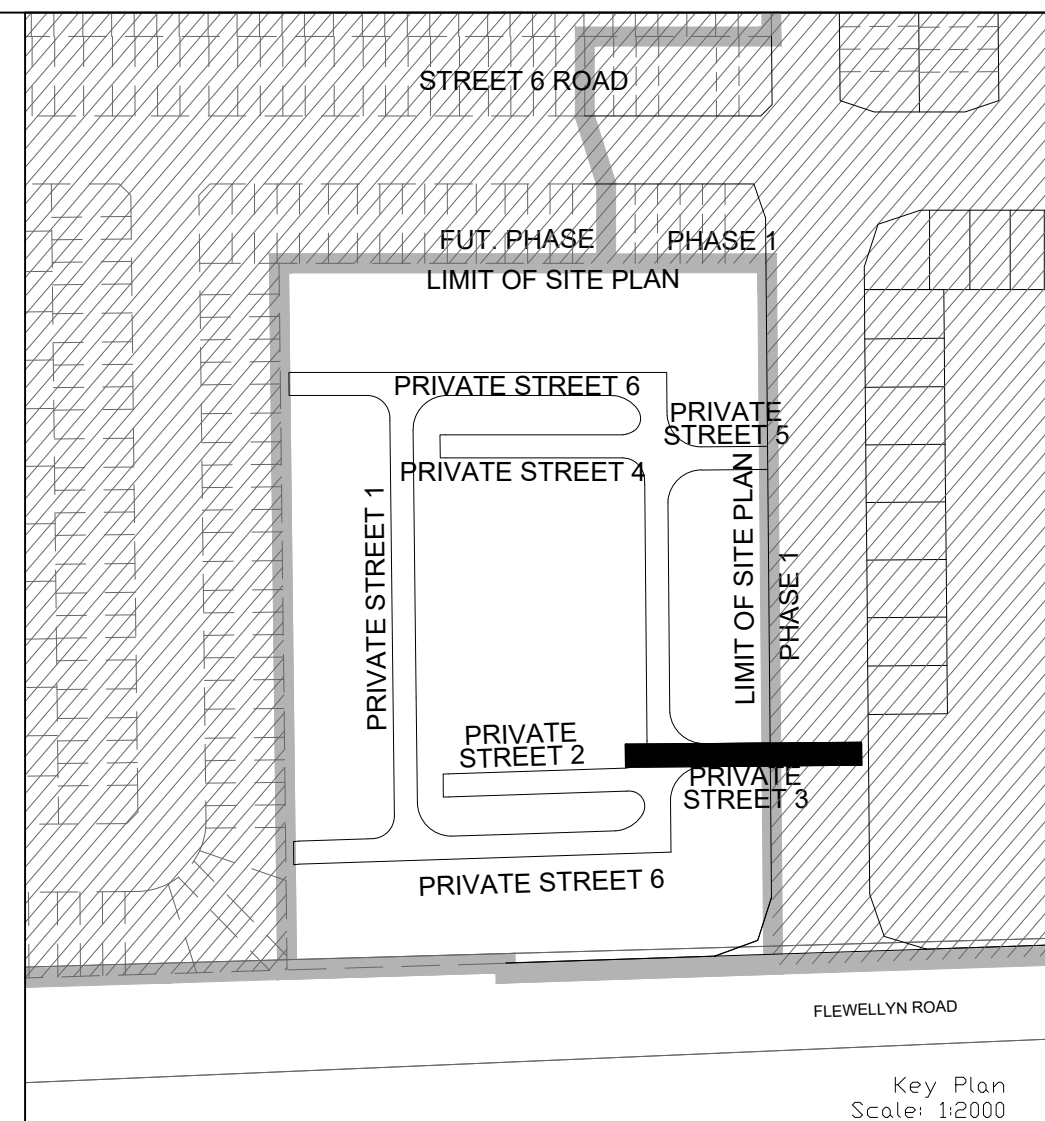
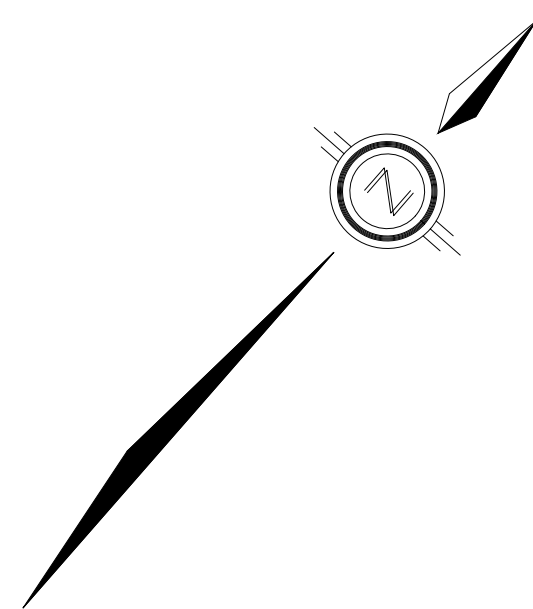
STA. 0+000.000 TO STA. 0+67.010

DRAWN BY: M.S. & A.S.	CHECKED BY: S.L.M.	8
DESIGNED BY: M.S. & W.L.	CHECKED BY: C.M.	
SCALE: H=1:500/ V=1:50	DATE: JANUARY 2026	

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

1. ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION OVER THE CRITICAL ZONE.
2. LOCATIONS AND INVERT ELEVATIONS OF EX. UNDERGROUND SERVICES AND UTILITIES PRIOR TO STARTING CONSTRUCTION.
3. ALL EXISTING TREES, SHRUBS ETC., WITHIN BLOCKS & ROADS TO BE REMOVED. OTHERS NOTED. PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS.
4. FOR EX. SERVICES, 2.4m MIN. COVER TO BE PROVIDED.
5. ANY DISTURBED MATERIAL EXPOSED DURING EX. SUBGRADE LEVEL WITHIN A BUILDING FOOTPRINT TO BE SUB-EXCAVATED AND BACKFILLED WITH FILL TO BE APPROVED BY ALL PROJECT GEOTECHNICAL ENGINEERS RECOMMENDATION.
6. FOR ALL DATA, REFER TO DWG. NO. 2 FOR DETAILS

[illegible]

LEGEND

- CROSS
- 45° BEND
- LATERAL
- TRANSITANT, VALVE & VB
- TEE
- VALVE & VC
- 22.25' BEND
- 22.25' BEND
- 11.25' BEND
- REDUCER
- CAP
- SANITARY MAINTENANCE HOLE
(WATER TIGHT)
- LEAD LID (PER OPSD 401.030)
- SANITARY MAINTENANCE HOLE
- CAP
- STREET CATCHBASIN & LEAD
- STREET CATCHBASIN WITH FLOODED INLET
- STORM MAINTENANCE HOLE
- CURB INLET CATCHBASIN & LEAD
- CATCHBASIN WITH FLOODED INLET
- INTERCONNECTED CATCH BASIN & LEADS
- CAP
- SEWER SERVICE LOCATION (ST. SAN & MW)
- SINGLE SEWER LOCATION (ST. SAN & MW)
- TEE CATCHBASIN
- PERFORATED PIPE
- BOWEN CATCHBASIN
- DITCH AND CULVERT
- EXISTING OR FUTURE STORM MAINTENANCE HOLE
- EXISTING OR FUTURE STORM MAINTENANCE HOLE

HYDRO TRANSFORMER

- STREET LIGHT STANDARD CONDUIT SIDEWALK CURB & DEPRESSED CURB ASPHALT SIDEWALK

PHASING LIMITS

- PROPERTY BOUNDARY BORERHOLE (BH)
- TEST PIT (TP)
- AUGER HOLE (AH)
- MONITORING WELL LOCATION CONCEPTUAL WELL LOCATION LOT/BLOCK NUMBER

AS PER GEOTECHNICAL REPORT

- UNDERSIDE OF FOOTING ELEVATION
- OVERLAND FLOW DIRECTION
- EXTERNAL OVERLAND FLOW DIRECTION
- EMERGENCY OVERLAND FLOW DIRECTION
- TACTILE WALKWAY SURFACE INDICATOR
- CLAY CLASSIFICATION (SEE SCS, SC7, SC7.1, SC7.2, SC7.3)
- PLEASE REFER TO GENERAL NOTES.
- NO. 15 ON DWG. NO. 1 AND NO. 16 ON DWG. NO. 2
- RETAINING WALL (SEE NOTES ON DWG. 1 AND STRUCTURAL DWGS FOR DETAILS)
- BEDROCK CONTOUR
- GARBAGE BIN
- ORGANIC BIN
- INSULATION AS PER CITY OF OTTAWA STD. W-2. SEE INSTALLATION TABLE ON DWG. No. 1 THICKNESS
- EXISTING OR FUTURE PHASES OF MANGLIA SUBVISION

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

SITE PLAN: PC2025-0260

PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON SEPTEMBER 18,
2026.

2.	M.S.	26-10-02	2nd	SUBMISSION	
1.	W.L.	26-01-30	1st	SUBMISSION	
No.	BY	DATE	DESCRIPTION		

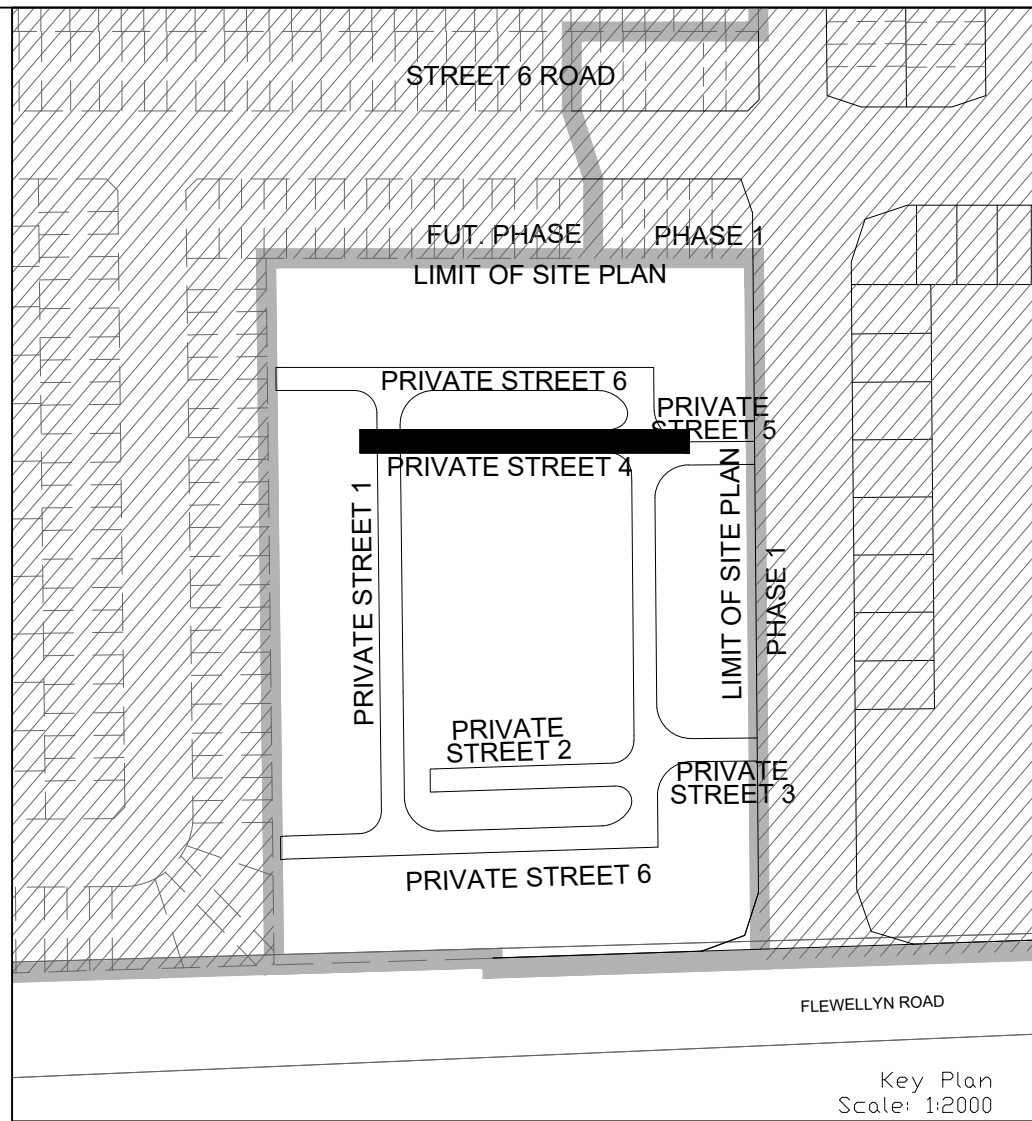
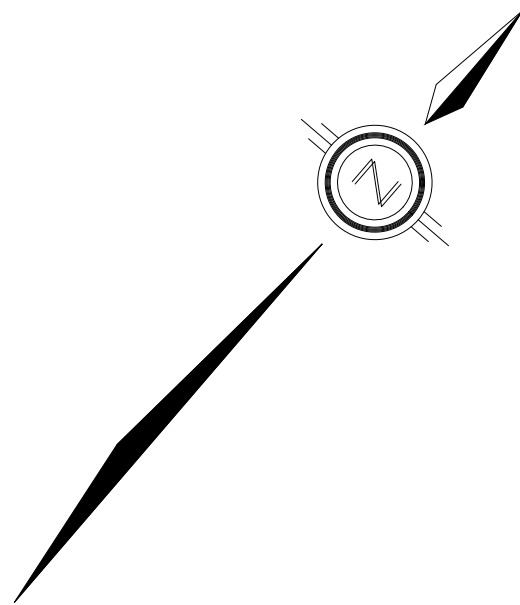


CAIVAN (STITTSVILLE) INC.		MAGNOLIA STACKED TOWNS	
		120 Iber Road, Unit 103 Stittsville, ON K2S 1E9 Tel. (613) 836-0858 Fax. (613) 836-7183 www.DSEL.ca	
PRIVATE STREET 3		© DSEL	
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DESIGNED BY: M.S. & W.L.	CHECKED BY: C.M.	9	
SCALE: H=1:500 / V=1:50		DATE: JANUARY 2026	

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

1. ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION OVER THE CRITICAL ZONE.
2. LOCATIONS AND INVERT ELEVATIONS OF EX. UNDERGROUND SERVICES AND UTILITIES PRIOR TO STARTING CONSTRUCTION.
3. ALL EXISTING TREES, SHRUBS ETC., WITHIN BLOCKS & ROADS TO BE REMOVED. OTHERS NOTED. PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS.
4. FOR EX. CEMENT STUBS, 2.4m MIN. COVER TO BE PROVIDED.
5. ANY DISTURBED MATERIAL INCREASED DEPTH OF SUBGRADE LEVEL WITHIN A BUILDING FOOTPRINT TO BE SUB-EXCAVATED AND BACKFILLED WITH COMPACTED FILL UP TO 15% AS PER GEOTECHNICAL ENGINEERS RECOMMENDATION.
6. FOR ALL DATA, REFER TO DWG. NO. 2 FOR DETAILS



CROSS
 45° BEND
 LATERAL
 VALVE & VB
 TEE
 VALVE & VC
 VALVE & VD
 22.5° BEND
 21.25° BEND
 REDUCER
 CAP
 SANITARY MAINTENANCE HOLE
 (WATERHOLE)
 LD PER OFSD 401.030
 SANITARY MAINTENANCE HOLE
 STREET CATCHBASIN & LEAD
 CATCHBASIN WITH
 CLOSED LD & LEAD
 TO MAIN MAINTENANCE HOLE
 GROSS INLET CATCHBASIN & LEAD
 CATCHBASIN / MAINTENANCE HOLE
 INTERCONNECTED
 CATCHBASIN & LEADS
 CAP
 SINGLE SERVICE LOCATION
 (ST, SAN & WM)
 SINGLE SERVICE LOCATION
 (ST, SAN & WM)
 TEE CATCHBASIN
 PERFORATED PIPE
 FLOWB CATCHBASIN
 DIRT AND CULVERT
 EXISTING ON FUTURE SANITARY
 MAINTENANCE HOLE
 EXISTING OR FUTURE STORM
 MAINTENANCE HOLE

STREET LIGHT STANDARD
 CONCRETE SIDEWALK
 CURB & DERESSED CURB
 ASPHALT SIDEWALK
 PHASING LINES
 TEST PROPERTY
 BENCHMARK (BM)
 LOT PT (TP)
 AUGER HOLE (AH)
 MONITORING WELL LOCATION
 CONCEPTUAL WELL LOCATION
 LOT, BLOCK NUMBER
 UNDER OF FOOTING ELEVATION
 OVERLAND FLOW DIRECTION
 EXTERNAL OVERLAND FLOW DIRECTION
 EXISTENCE OVERLAND FLOW DIRECTION
 TASTLE WALKING SURFACE INDICATOR
 (AS PER CITY OF OTTAWA STD. SC6,
 SC7, SC8, SC9 &
 GLAY SLAT REFER TO GENERAL NOTES.
 GEOTECHNICAL CONSULTANT'S
 SPECIFICATIONS & LEADS
 RETAINING WALL (SEE NOTES ON DWG. 1
 & STRUCTURAL DWGS FOR DETAILS)
 BEDROCK CONTOUR
 GARBAGE BIN
 ORGANIC BIN
 THERMAL INSULATION AS PER
 CITY OF OTTAWA STD. W22.
 SEE INSULATION TABLE IN
 CITY TALK FOR THICKNESS
 EXISTING OR FUTURE PHASES
 OF MANGLIA SUBDIVISION

AS PER
 GEOTECHNICAL
 REPORT

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 GEODETTIC 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 SEPTEMBER 18,
2026.



CAIVAN (STITTSVILLE) INC.	MAGNOLIA STACKED TOWNS
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DSEL

PRIVATE STREET 4

STA. 0+000.000 TO STA. 0+77.228

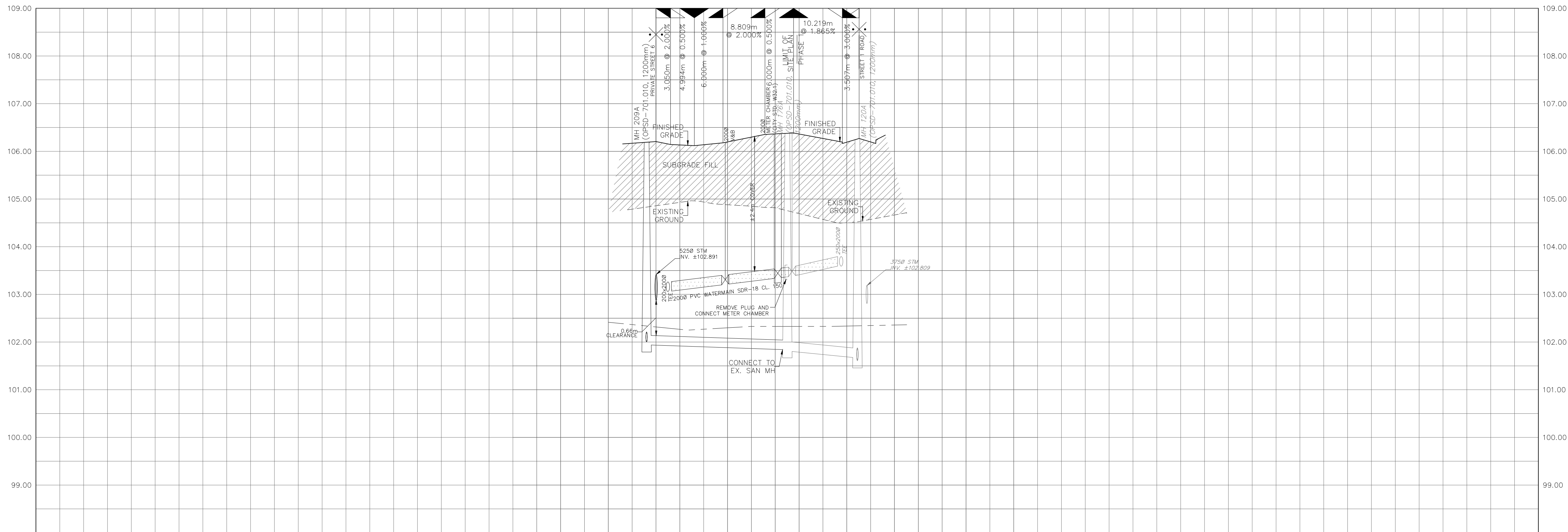
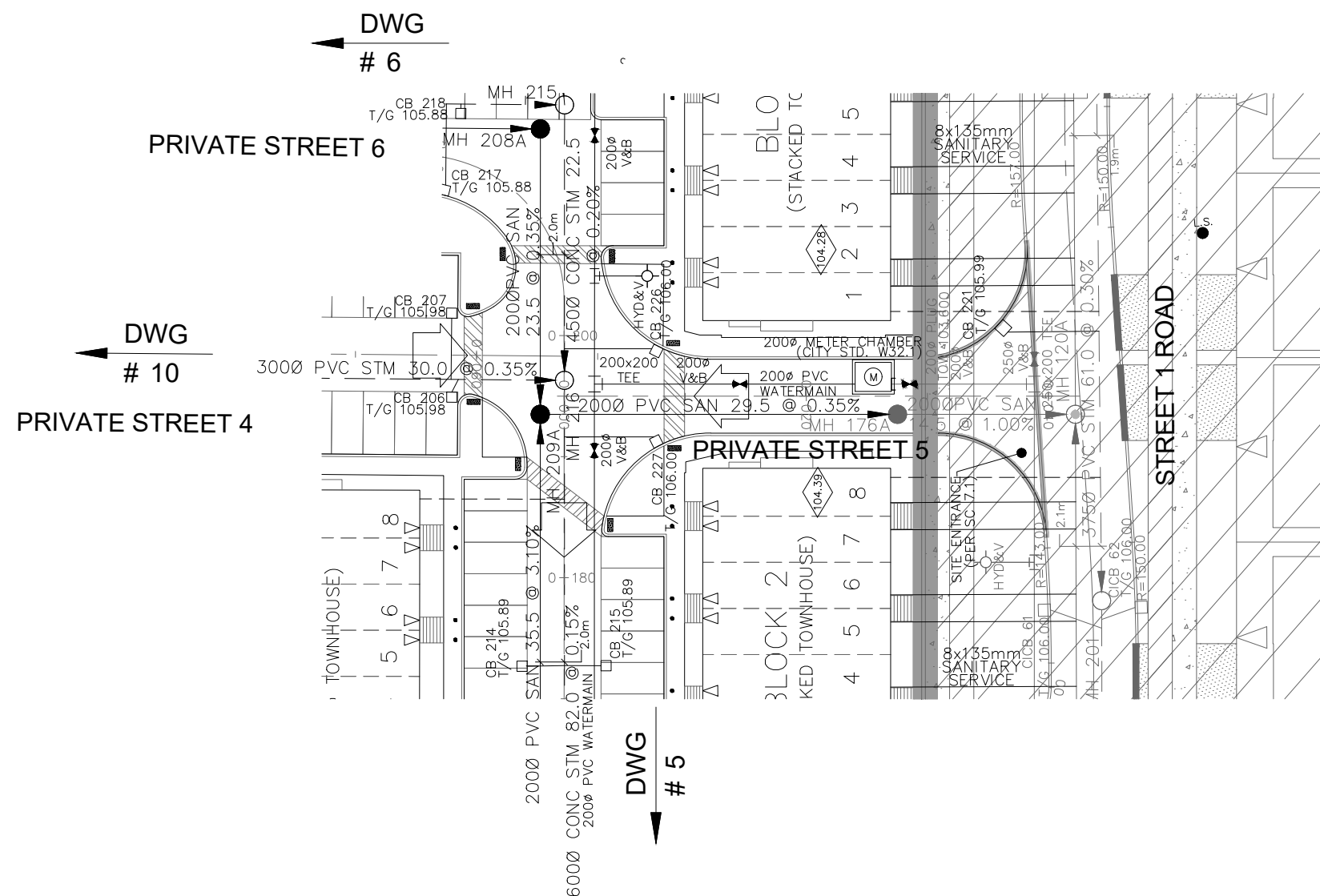
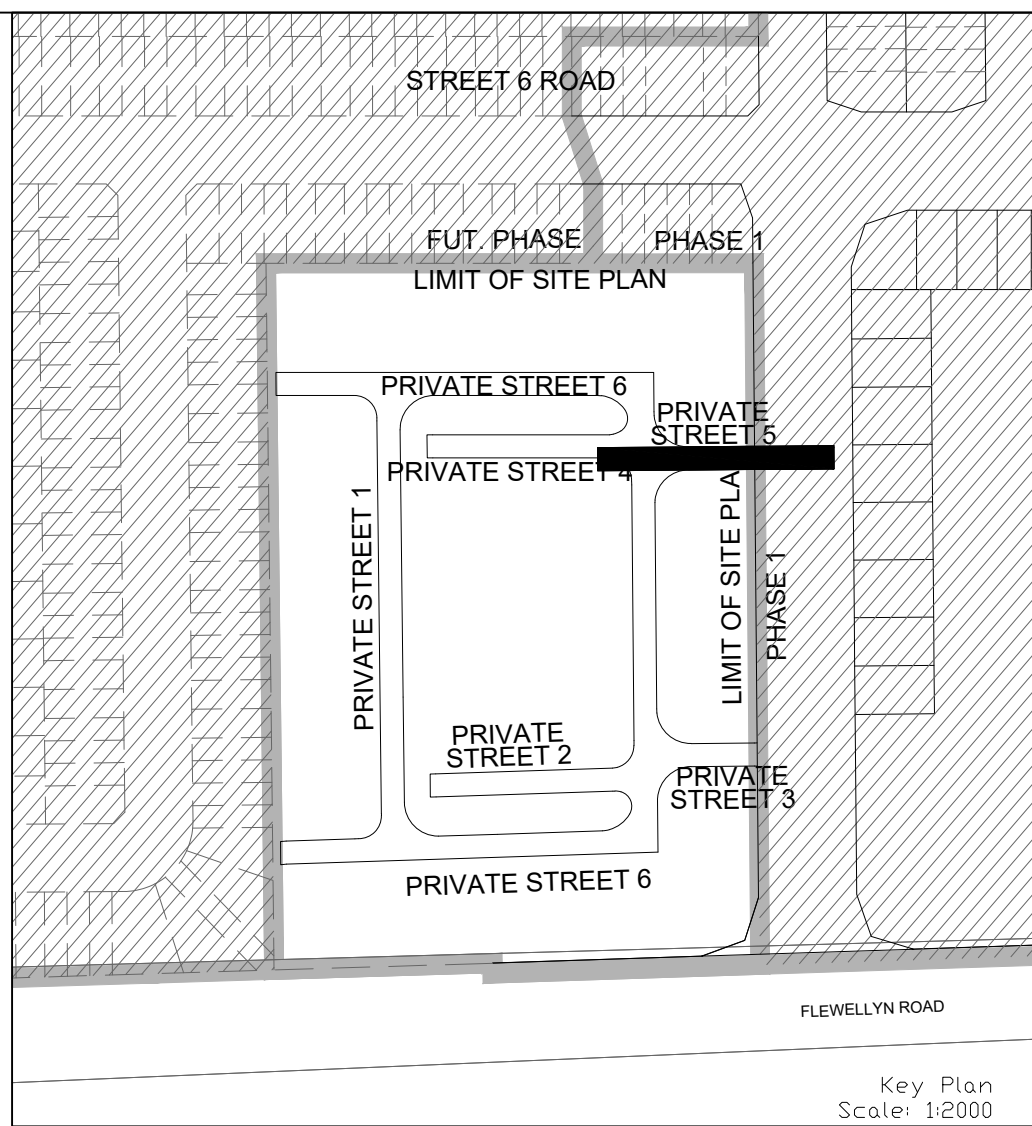
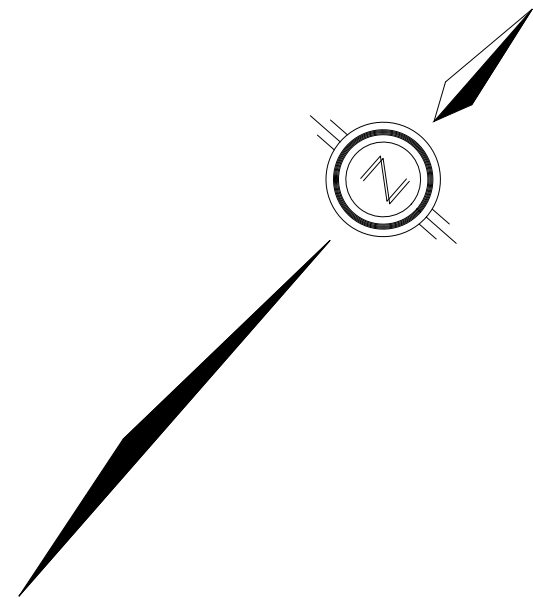
DRAWN BY: M.S. & A.S.	CHECKED BY: S.L.M.	10
DESIGNED BY: M.S. & W.L.	CHECKED BY: C.M.	
SCALE: H=1:500/ V=1:50	DATE: JANUARY 2026	

CITY FILE No. D07-12-26-0069 CITY PLAN No. XXXXXX ZBLA File No. D02-02-24-0042

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

1. ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO ORIGINAL OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION OVER THE AREA. PROVIDE LOCATIONS AND INVERT ELEVATIONS OF EX. UNDERGROUND SERVICES AND EX. UTILITIES PRIOR TO STARTING CONSTRUCTION.
3. ALL EXISTING TREES, SHRUBS ETC., WITHIN BLOCKS & ROADS TO REMAIN. REMOVE OTHERS. NOTE: PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS.
5. FOR EX. CEMENT STUBS, 2.4m MIN. COVER TO BE PROVIDED.
6. ANY DISTURBED MATERIAL EXPOSED DURING SUBGRADE LEVEL WITHIN A BUILDING FOOTPRINT TO BE SUB-EXCAVATED AND BACKFILLED WITH FILL TO BE APPROVED BY ALL APPLICABLE GEOTECHNICAL ENGINEERS RECOMMENDATION.
7. FOR ALL EXISTING DATA, REFER TO DWG. NO. 2 FOR DETAILS

[illegible]

GEN'D CROSS
45° BEND
LATERALITY
HYDRANT, VALVE & VB
TEE
VALVE & VC
VALVE & VB
22.5° BEND
11.25° BEND
REDUCER
CAP
SANITARY MAINTENANCE HOLE (W/ WATER)
LOT PER OPSD 401.030
SANITARY MAINTENANCE HOLE
STREET CATCHBASIN & LEAD
STREET CATCHBASIN WITH PERMANENT FLOW
STORM MAINTENANCE HOLE
CURB INLET CATCHBASIN & LEAD
CATCHBASIN / MAINTENANCE HOLE
INTERCONNECTED CATCH BASIN & LEADS
CAP
SINGLE SERVICE LOCATION (ST, SAN & WW)
TEE CATCHBASIN
PERFORATED PIPE
ELBOW
DISCHARGE
DITCH & CULVERT
EXISTING OR FUTURE SANITARY MAINTENANCE HOLE
EXISTING OR FUTURE STORM MAINTENANCE HOLE

HYDRO TRANSFORMER
SLIGHT TIGHT STANDARD CONCRETE SIDEWALK
CURBS & DEPRESSED CURB ASPHALT SIDEWALK
PHASING LINES
PROPERTY BOUNDARY BOREHOLE (BH)
TEST PIT (TP)
AUGER HOLE (AH)
MONITORING WELL LOCATION
LOT/BLOCK NUMBER
UNDERSIDE OF FOOTING ELEVATION
OVERLAND FLOW DIRECTION
EXTERNAL OVERLAND FLOW DIRECTION
EMERGENCY OVERLAND FLOW DIRECTION
TACILE WATCHEMAN SURVEY INDICATOR
AS PER CITY OF OTTAWA, SEC. 506, SEC. 507.1, SEC. 507.2, SEC. 507.3
CLAY SHALLOW TO GENERAL NOTES
18" NB, ON DWS. NO. 1 & 1A
SPECIFICATIONS
RETAINMENT (SEE NOTES ON DWG. 1 AND STRUCTURAL DWGS FOR DETAILS)
BEDROCK CONTOUR
GARBAGE BIN
ORGANIC BIN
THERMAL INSULATION AS PER CITY OF OTTAWA, ST. W22
SEE INSULATION TABLE ON DWG. NO. 1 THICKNESS
EXISTING OR FUTURE PHASES OF MANGLIA SUBDIVISION

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

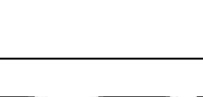
ELEVATIONS SHOWN ON THIS PLAN ARE GEODETTIC RELATED TO CGVD28:78 VERTICAL DATUM

LEGAL INFORMATION

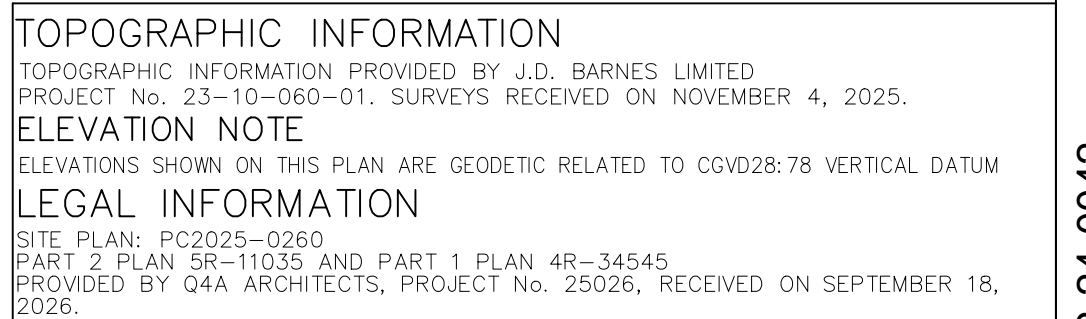
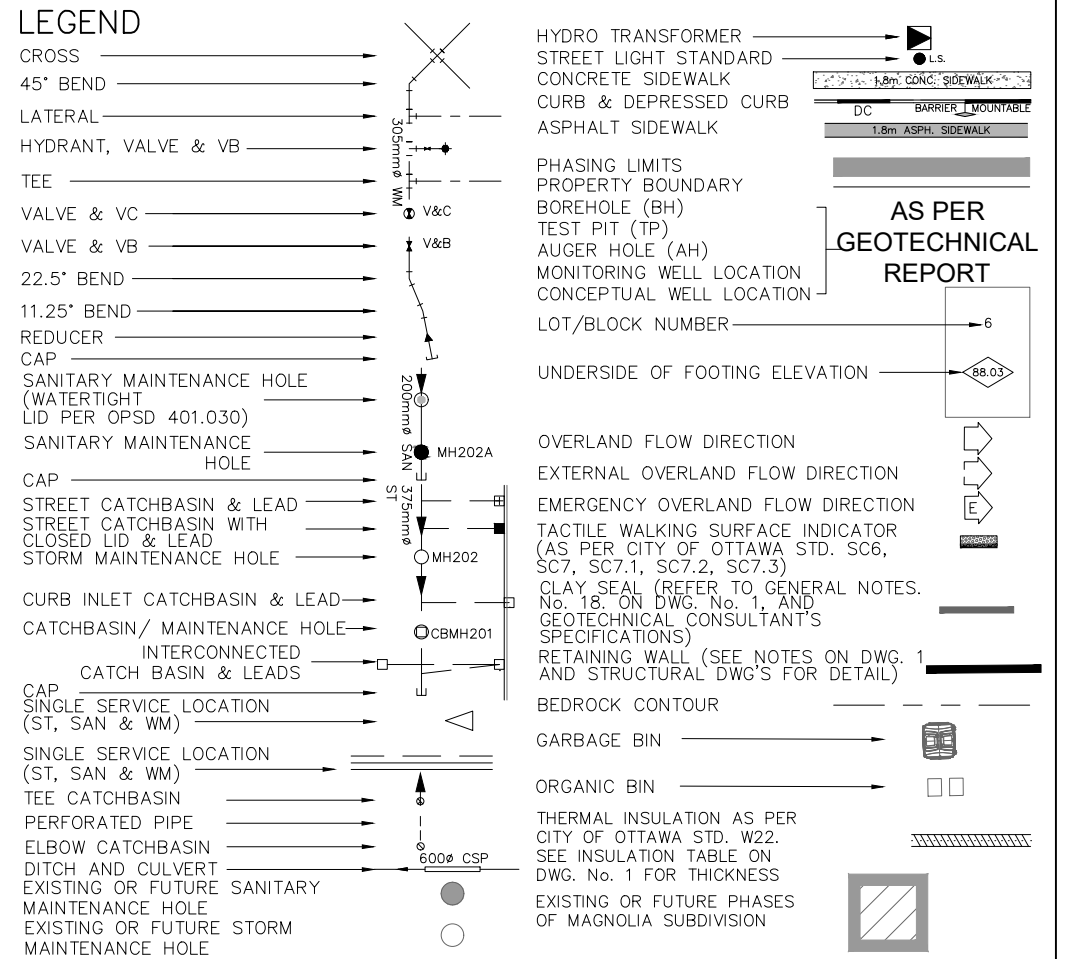
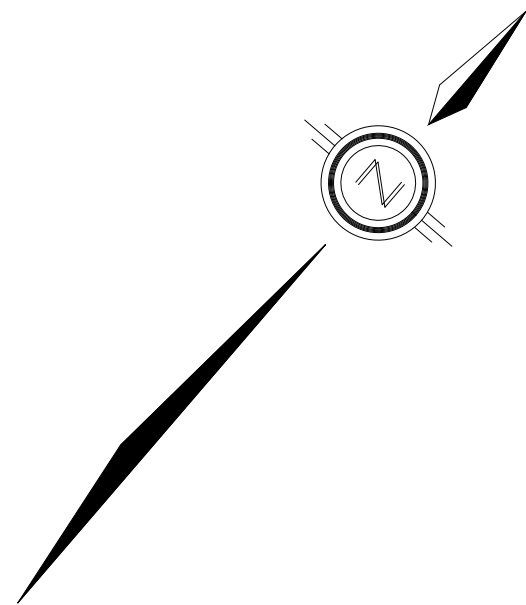
SITE PLAN: PC2025-0260
PART 2 PLAN 5R-11035 AND PART 1 PLAN 4R-34545
PROVIDED BY Q4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON SEPTEMBER 18,
2026.

2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION
No.	BY	DATE	DESCRIPTION



CAIVAN (STITTSVILLE) INC.	MAGNOLIA STACKED TOWNS
	120 Iber Road, Unit 103 Stittville, ON K2S 1E9 Tel. (613) 836-0856 Fax. (613) 836-7183 www.DSEL.ca

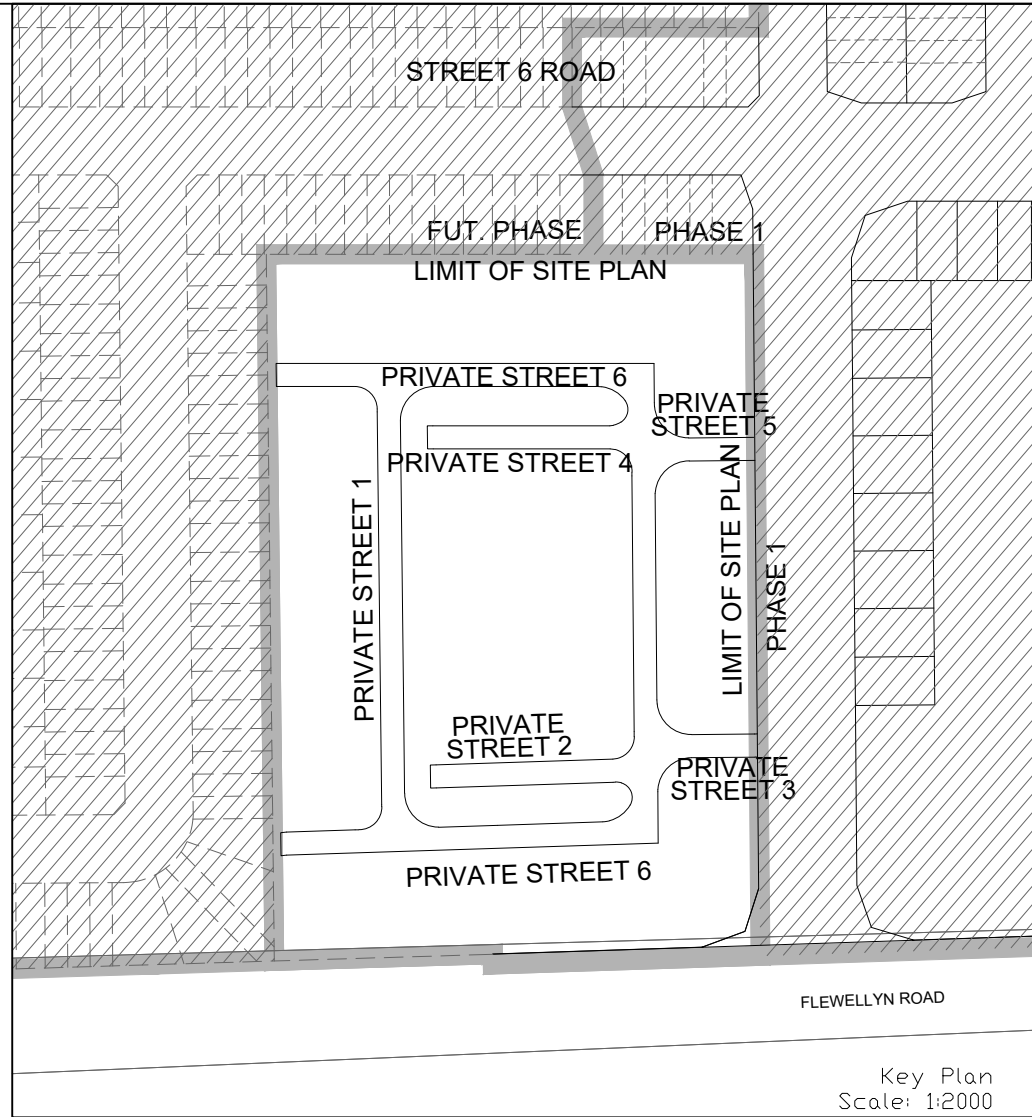
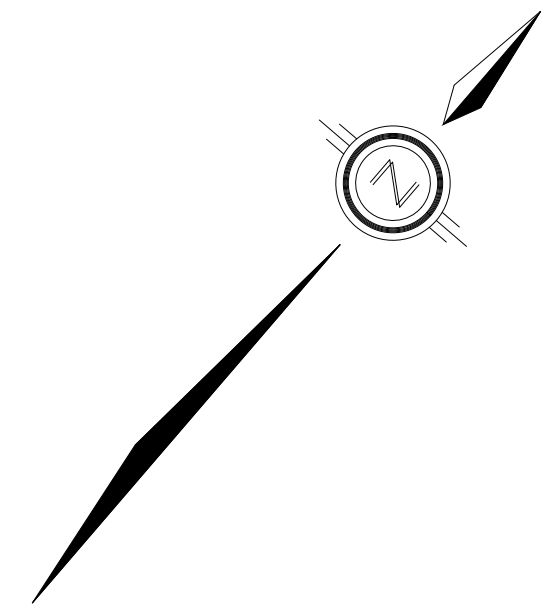
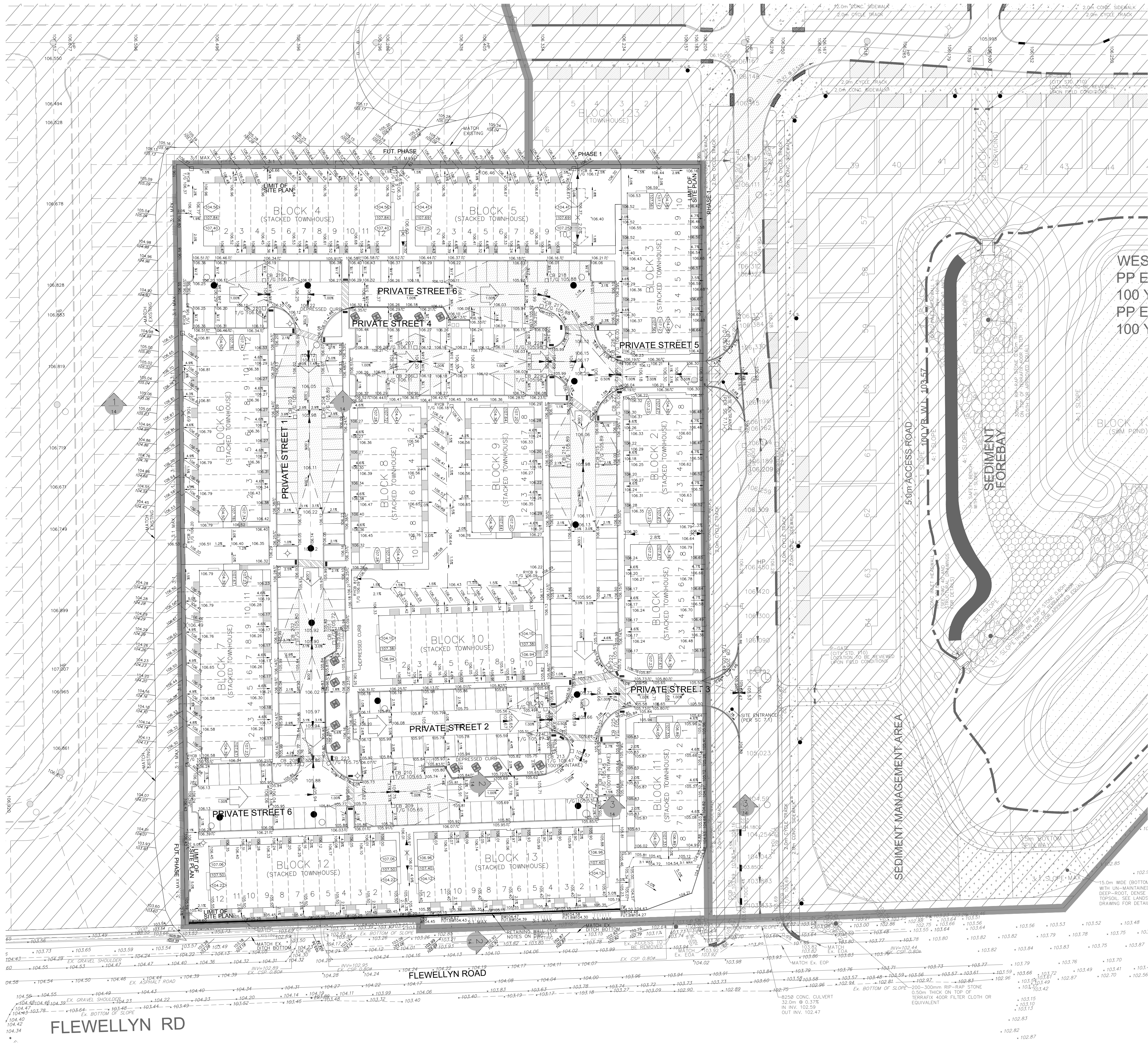
1. ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION
2. CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF ALL UNDERGROUND SERVICES, AND EX. UTILITIES PRIOR TO STARTING CONSTRUCTION
3. ALL EXISTING TREES, SHRUBS ETC. WITHIN 5.0 M. ROCKY AREAS TO BE REMOVED, UNLESS OTHERWISE NOTED
4. PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS
5. FOR WARMAN STUBS, 2.4m MIN. COVER TO BE PROVIDED
6. ANY DISTURBED MATERIAL ENCOUNTERED BELOW THE SUBGRADE LEVEL TO BE EXCAVATED TO FOOTPRINT TO BE SUB-EXCAVATED AND BACKFILLED WITH COMPACTED ENGINEERED FILL AS PER GEOTECHNICAL ENGINEERS RECOMMENDATION
7. FOR TRENCH-BAND DATA, REFER TO DWG No. 2 FOR DETAILS



2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION
No.	BY	DATE	DESCRIPTION



TOP OF WATERMAIN	CAIVAN (STITTSVILLE) INC.		MAGNOLIA STACKED TOWNS	
SANITARY INVERT	 120 Iber Road, Unit 103 Sittitville, OH 42681 ES Tel: (613) 836-0856 Fax: (613) 836-7183 www.DSEL.ca			
STORM INVERT				
PROPOSED GRADES	TEMPORARY WATERMAIN			© DSEL
CENTERLINE CHAINAGE	STA. 0+000.000 TO STA. 0+124.977			
	DRAWN BY: M.S. & A.S.	CHECKED BY: S.L.M.	SHEET NO.	
	DESIGNED BY: M.S. & W.L.	CHECKED BY: C.M.	12	
	SCALE: H=1:500 / V=1:50	DATE: JANUARY 2026		



LEGEND	
PROPOSED ELEVATION	103.45
EXISTING ELEVATION	102.73
FUTURE ELEVATION BY NOVATECH	103.900
PROPOSED SWALE GRADE	102.15
HIGH POINT	102.16
STREET CATCHBASIN	
STREET CATCHBASIN WITH CLOSED LID	
CATCHBASIN MANHOLE	
ELBOW CATCHBASIN	
HYDRANT, VALVE & VB	
VALVE & VB	
BUILDING ENVELOPE	
TOP OF FOUNDATION (TOF)	
FINISHED FLOOR ELEVATION (FFE)	
UNDERSIDE OF FOOTING ELEVATION (USF)	
ELONGATED ELEVATION	
LOTS EQUIPPED WITH SUMP PUMP (REFER TO DWG. 3)	
ENGINEERED FILL (REFER TO DWG. 1)	
WALKOUT UNITS	
SLAB ON GRADE	
HYDRO SWITCHGEAR	
HYDRO TRANSFORMER	
STREET LIGHT STANDARD	
TACTILE WALKING SURFACE INDICATOR (AS PER CITY OF OTTAWA STD. SCS)	
CURB TRANSITION	
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	
PROPERTY BOUNDARY	
3:1 TERRACING MAXIMUM SLOPE	
PONDING AREA WITH SPILLWAY ELEVATION	
250mm 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 OR FUTURE SANITARY MAINTENANCE HOLE	
EXISTING OR FUTURE STORM MAINTENANCE HOLE	
EXISTING SANITARY MAINTENANCE HOLE (WATERTIGHT LID PER OPSD 401.030)	
SANITARY MAINTENANCE HOLE	
STORM 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 G4A ARCHITECTS, PROJECT No. 25026, RECEIVED ON SEPTEMBER 18, 2026.

No.	BY	DATE	DESCRIPTION
2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION

PROJECT No. 25-1494

CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

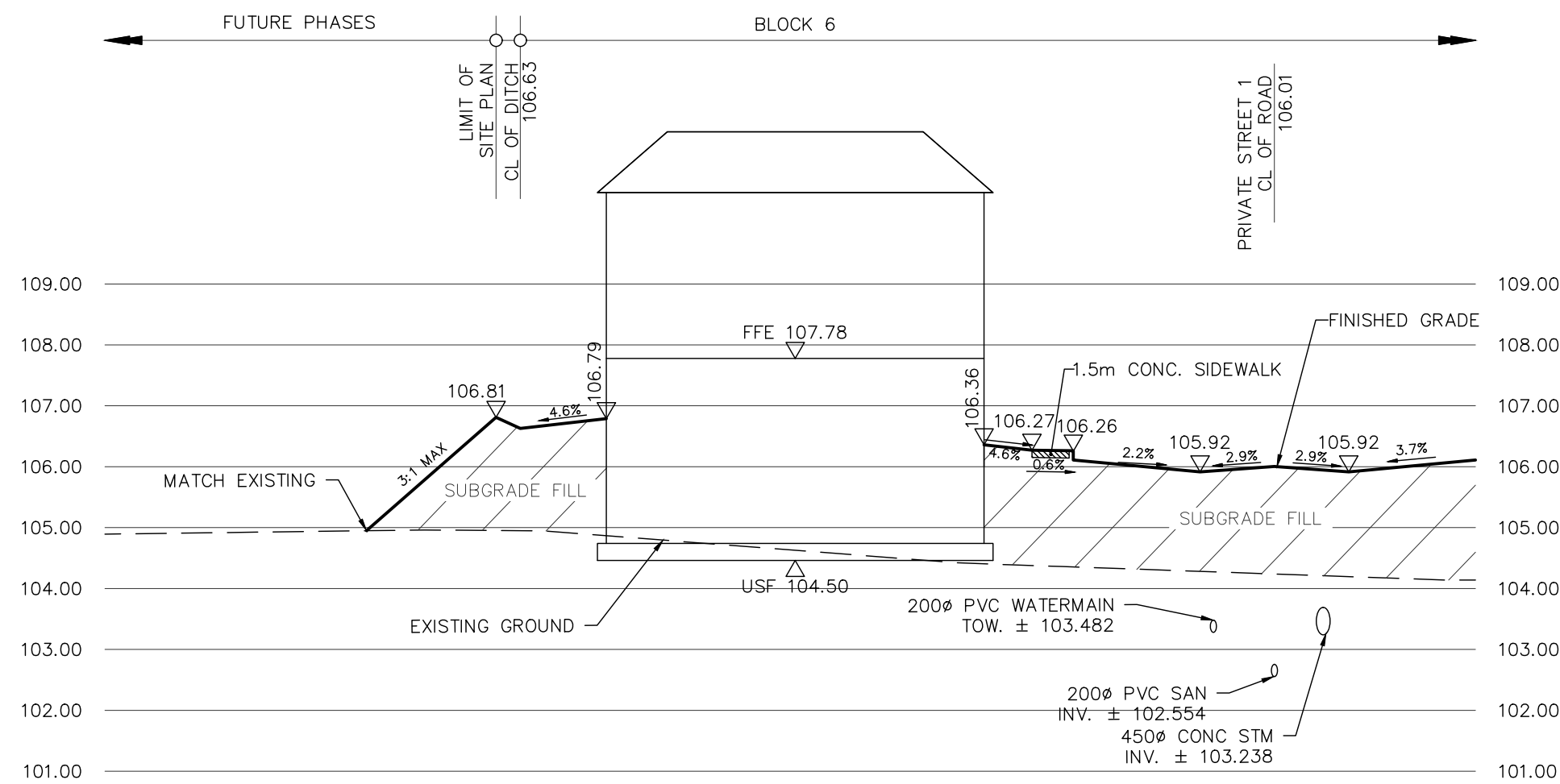
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel: (613) 836-0856
Fax: (613) 836-7153
www.DSEL.ca

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GRADING PLAN

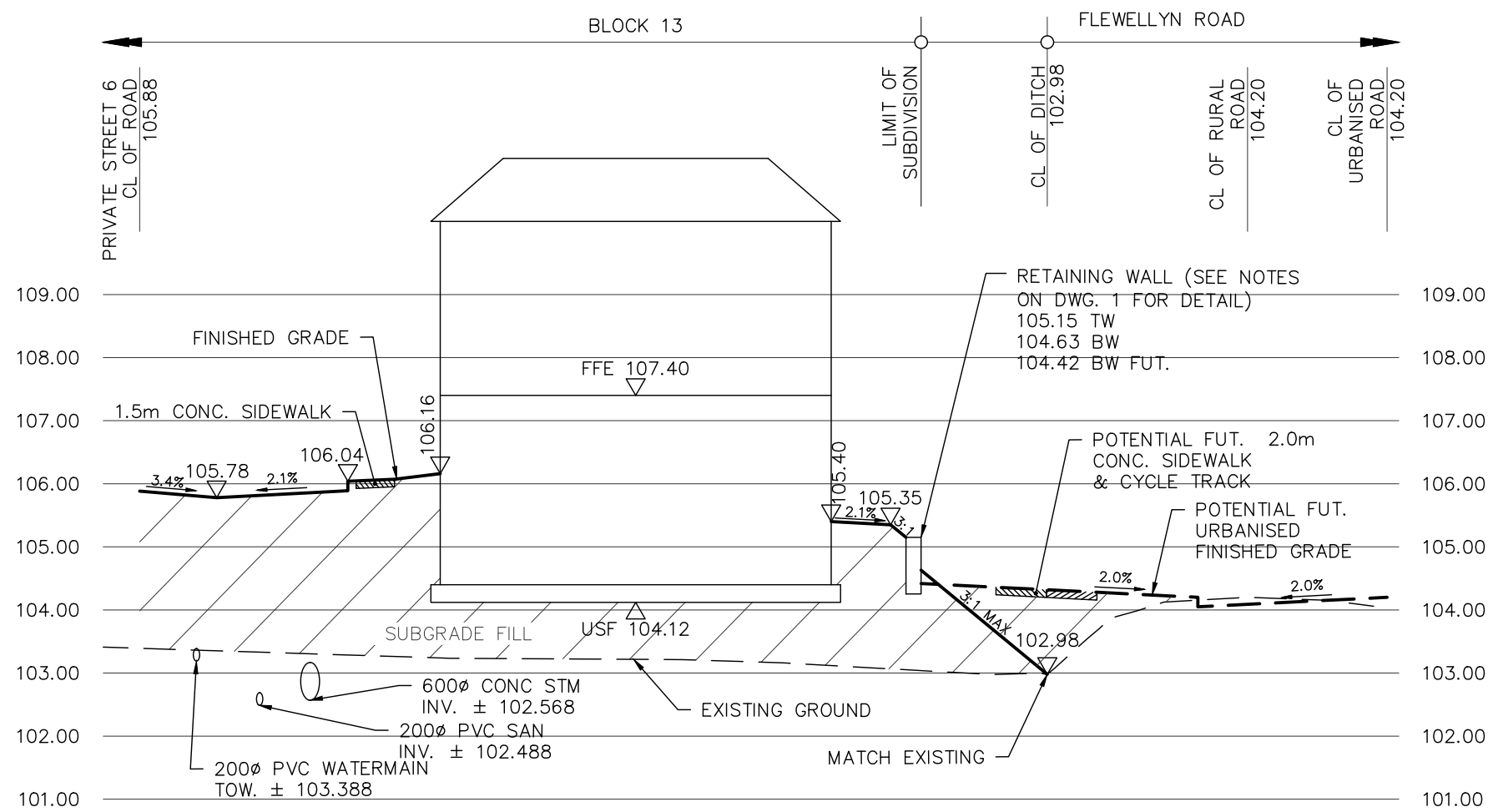
DRAWN BY: M.S. & A.S.	CHECKED BY: S.L.M.	SHEET No.
DESIGNED BY: M.S. & W.L.	CHECKED BY: C.M.	13
SCALE: 1:500	DATE: JANUARY 2026	

- NOTES:
- ANY DISTURBED AREA DURING CONSTRUCTION TO BE RESTORED TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION
 - CONTRACTOR TO VERIFY THE PRECISE LOCATIONS AND INVERT ELEVATIONS OF EX. UNDERGROUND SERVICES AND EX. UTILITIES PRIOR TO STARTING CONSTRUCTION
 - 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 OTHERWISE NOTED
 - ALL EXISTING POST & WIRE FENCE, CULVERTS, UTILITY WIRE / POLES, TREES, SHRUBS ETC. WITHIN LOTS, BLOCKS AND ROADS TO BE REMOVED, UNLESS OTHERWISE NOTED
 - PERMISSION REQUIRED FOR REMOVAL OF EXISTING TREES ON EXTERNAL LANDS WHERE APPLICABLE
 - PERMISSION REQUIRED FOR WORK ON ADJACENT LANDS
 - FOR R/CB LAYOUT & TYPICAL EASEMENT DETAIL REFER TO DRAWING No. 2
 - A GEOTECHNICAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO IS TO INSPECT ALL SUBGRADE SURFACES FOR FOOTING AND PAVEMENT STRUCTURES PRIOR TO CONSTRUCTION
 - 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
 - BUILDING DENOTED AS REQUIRING ENGINEERING FILL (E.F.) ARE ESTIMATED AND FOR REFERENCE ONLY. FINAL E.F. REQUIREMENTS ARE TO BE DETERMINED ON SITE 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.



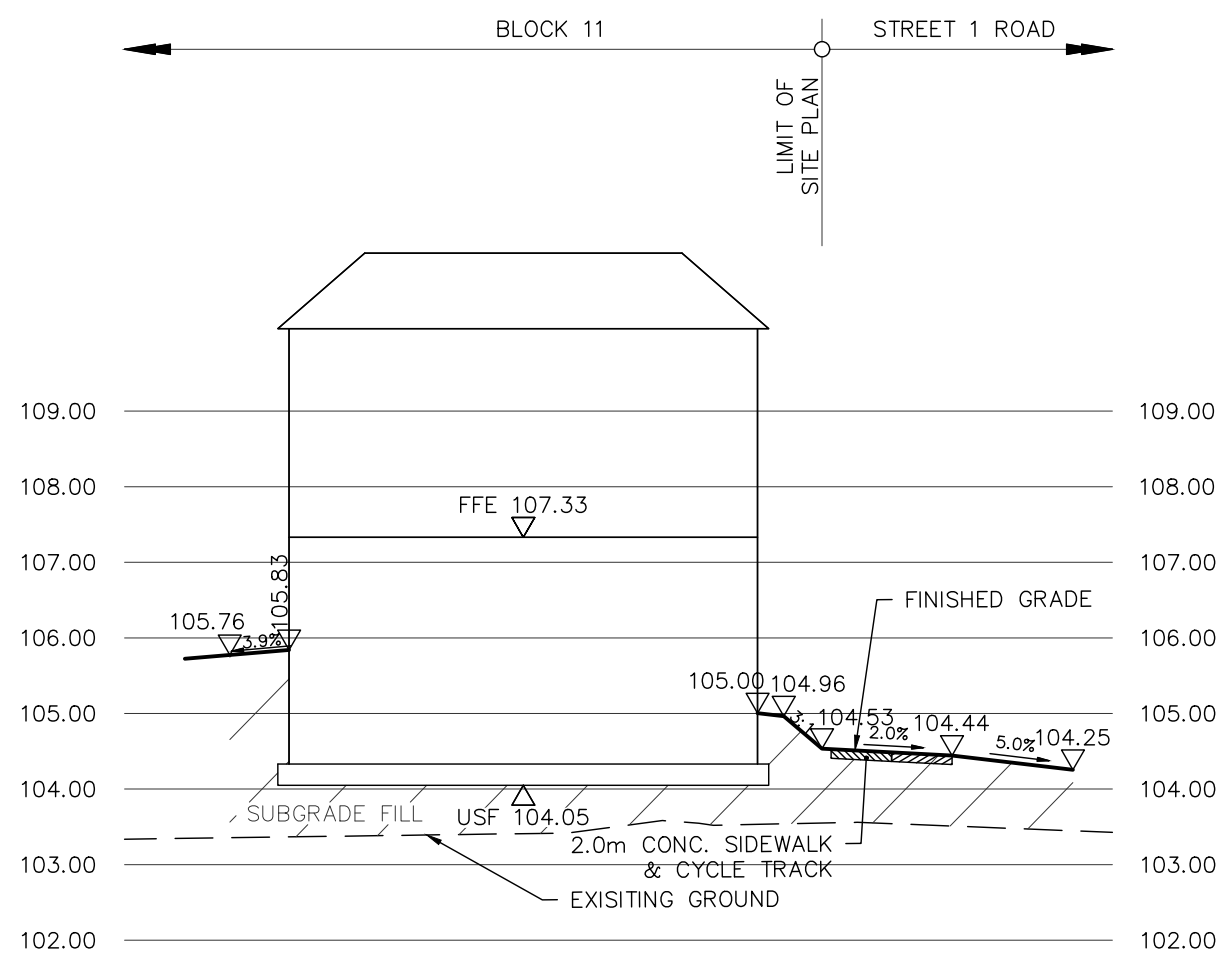
SECTION 1-1

SCALE HOR. 1:250
VER. 1:100



SECTION 2-2

SCALE HOR. 1:250
VER. 1:100



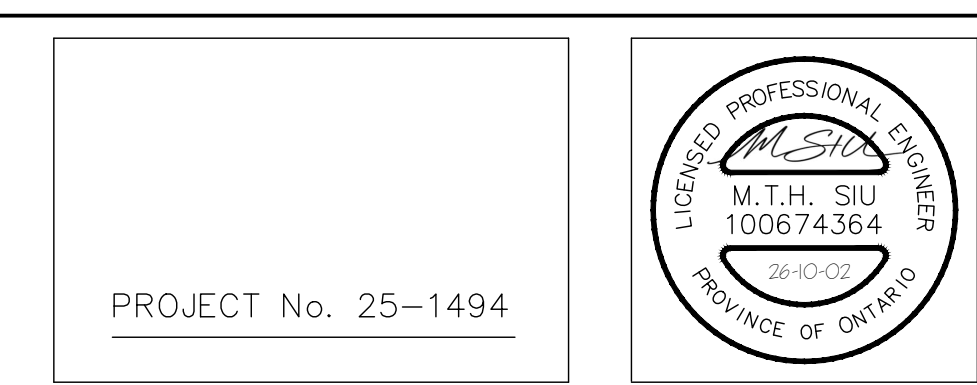
SECTION 3-3

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
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 SEPTEMBER 18, 2026.

2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION
No.	BY	DATE	DESCRIPTION



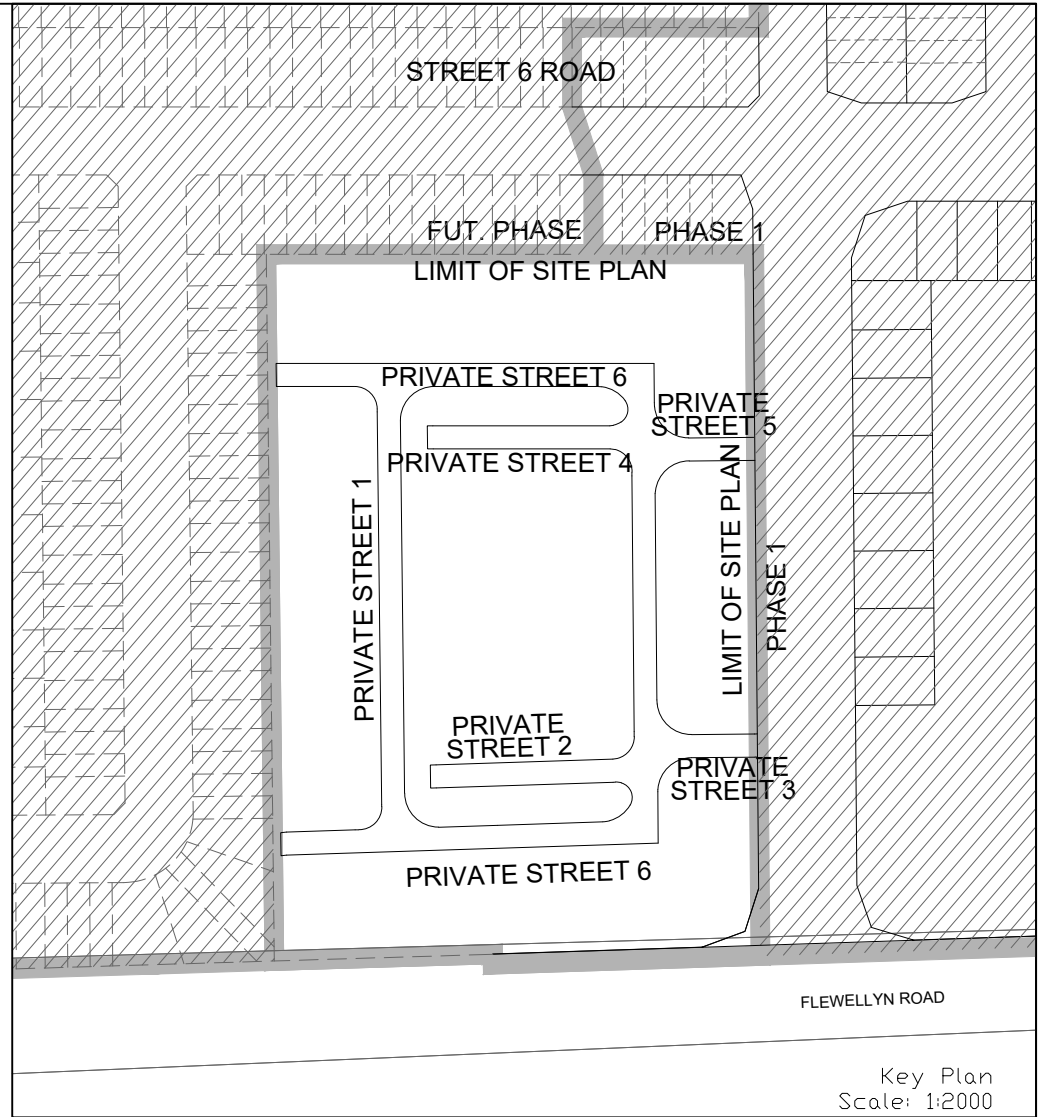
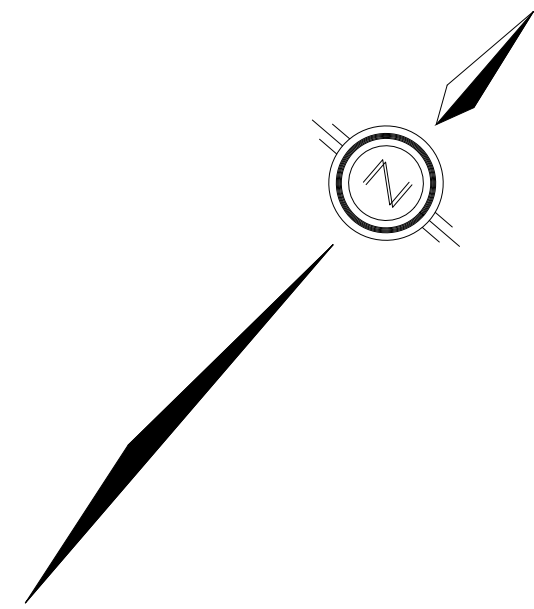
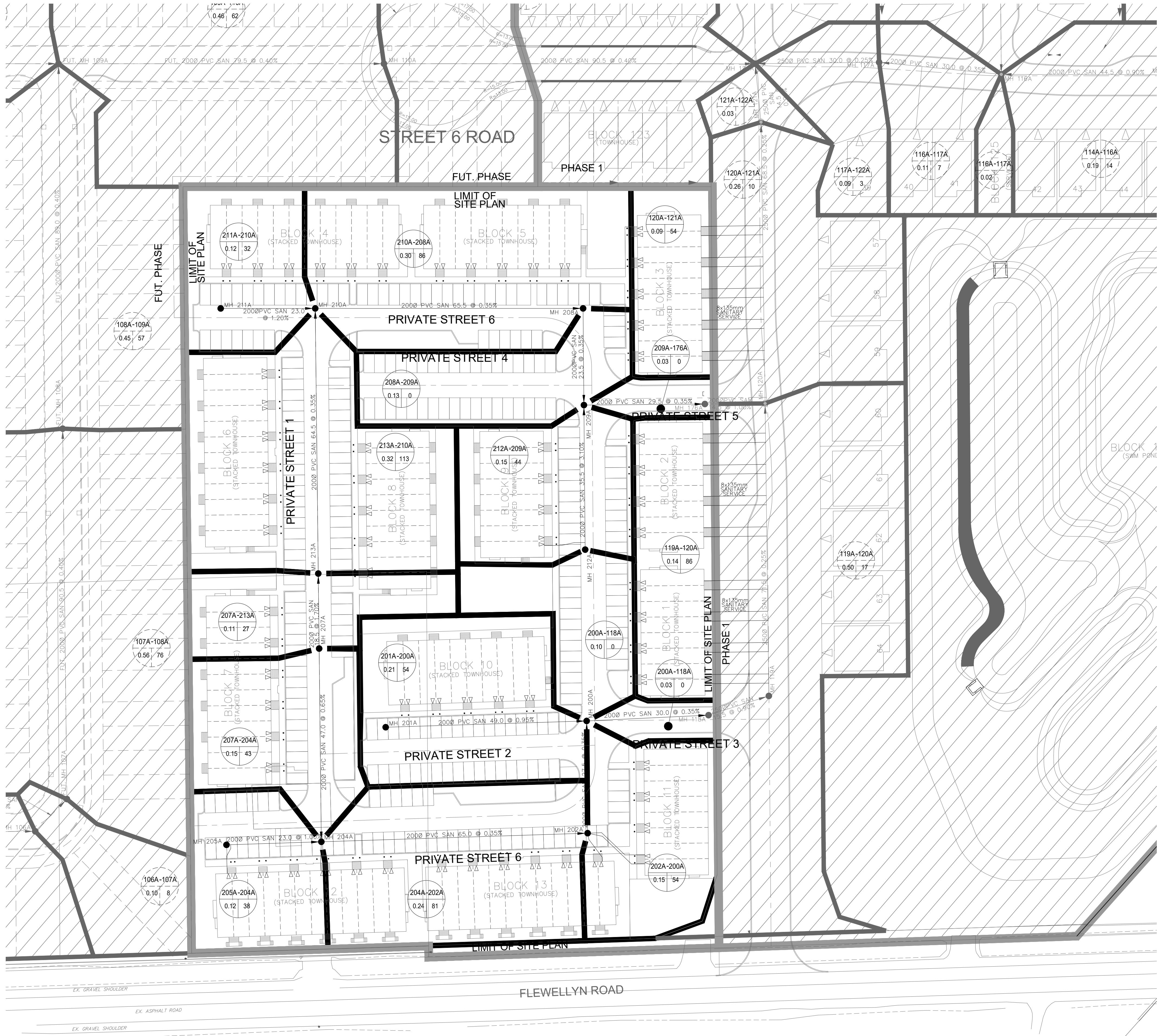
CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS



CROSS SECTIONS

DRAWN BY: M.S. & A.S.	CHECKED BY: S.L.M.	SHEET NO.
DESIGNED BY: M.S. & W.L.	CHECKED BY: C.M.	14
SCALE: AS SHOWN	DATE: JANUARY 2026	



LEGEND

- SANITARY DRAINAGE BOUNDARY
- SANITARY DRAINAGE BOUNDARY (BY OTHERS)
- UPSTREAM MH TO DOWNSTREAM MH
- AREA IN HECTARES
- POPULATION
- SANITARY MAINTENANCE HOLE (WATERTIGHT LID PER OPSD 401.030)
- SANITARY MAINTENANCE HOLE
- CAP
- EXISTING OR FUTURE SANITARY MAINTENANCE HOLE

NOT FOR CONSTRUCTION

TOPOGRAPHIC INFORMATION
ELEVATION NOTE
LEGAL INFORMATION

2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION
No.	BY	DATE	DESCRIPTION

PROJECT No. 25-1494

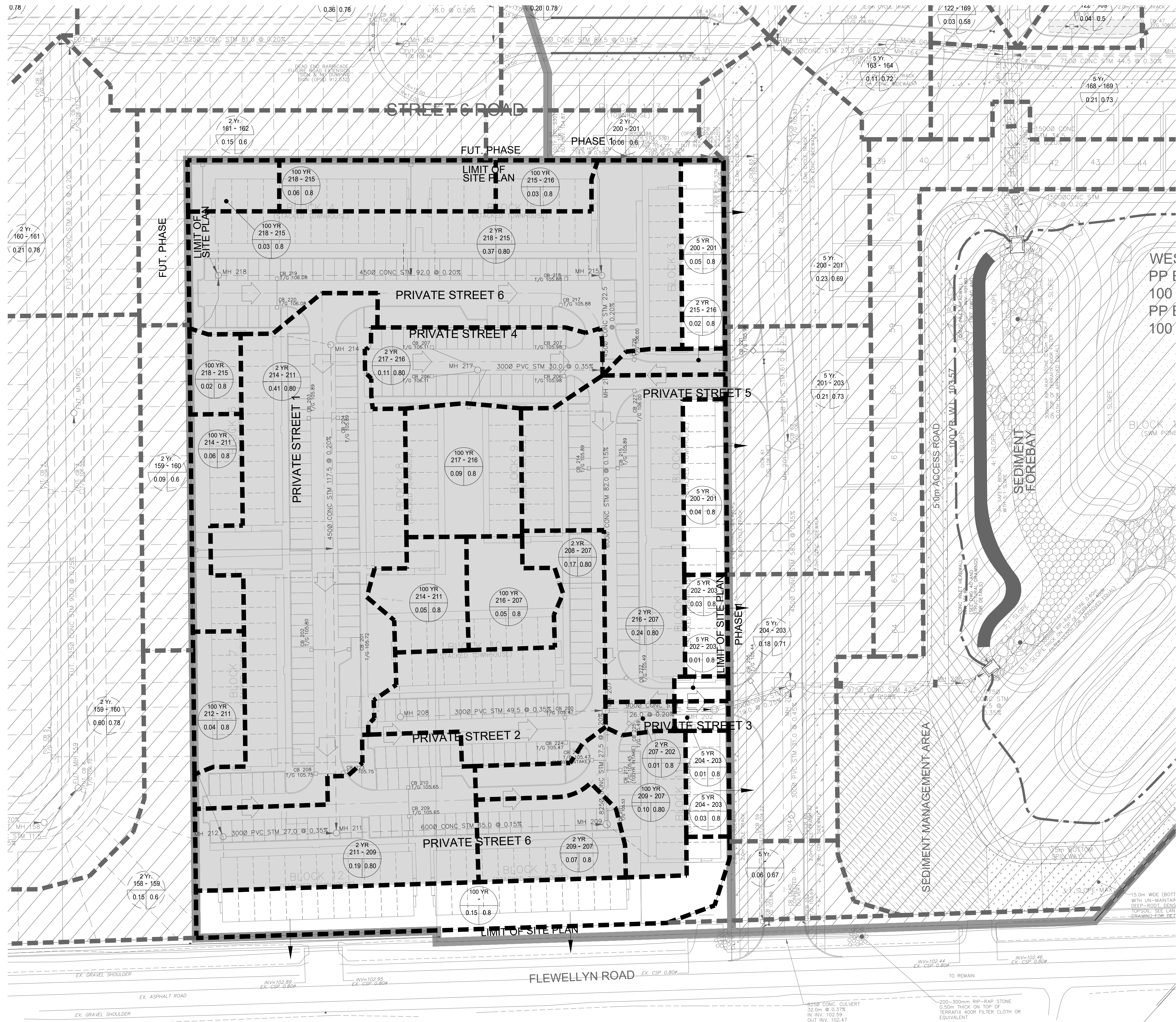
CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel: (613) 836-0856
Fax: (613) 836-7153
www.DSEL.ca

SANITARY DRAINAGE PLAN

DRAWN BY: M.S. & A.S.	CHECKED BY: S.L.M.	SHEET NO.
DESIGNED BY: M.S. & W.L.	CHECKED BY: C.M.	15
SCALE: 1:500	DATE: JANUARY 2026	



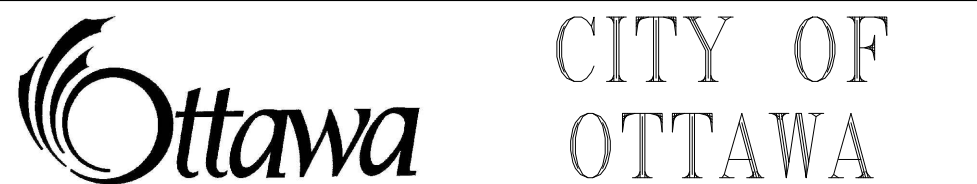
LEGEND

- STORM DRAINAGE BOUNDARY (OTHER PHASES)
- STORM DRAINAGE BOUNDARY (OTHER PHASES)
- 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 CB 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 OR FUTURE 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
ELEVATIONS SHOWN ON THIS PLAN ARE GEODETIC RELATED TO CGVD28:76 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 SEPTEMBER 18, 2026.

2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION
No.	BY	DATE	DESCRIPTION



PROJECT No. 25-1494

CITY OF OTTAWA

PROFESSIONAL ENGINEER
M.T.H. SIU
100674364
26-10-02
PROVINCE OF ONTARIO

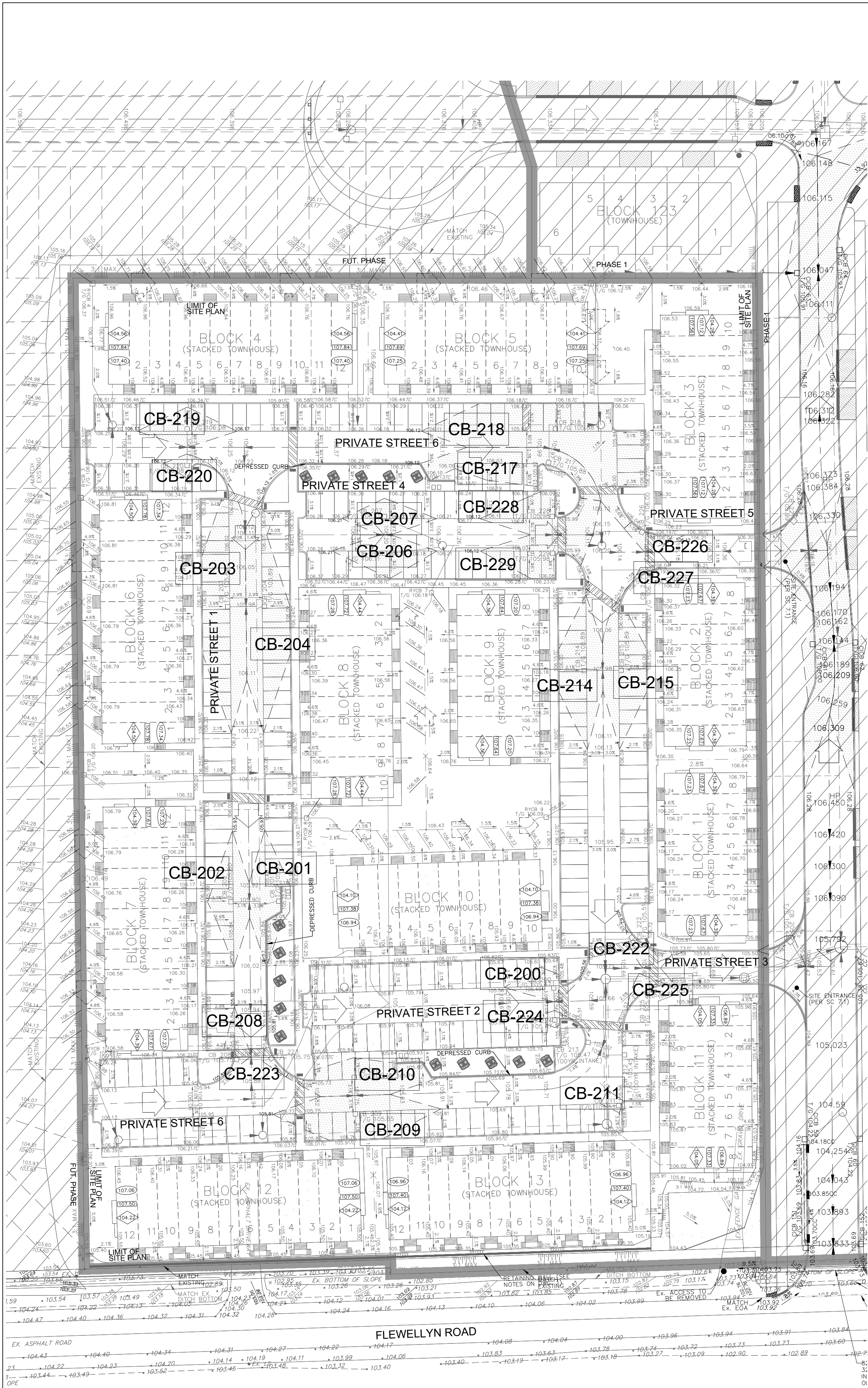
CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

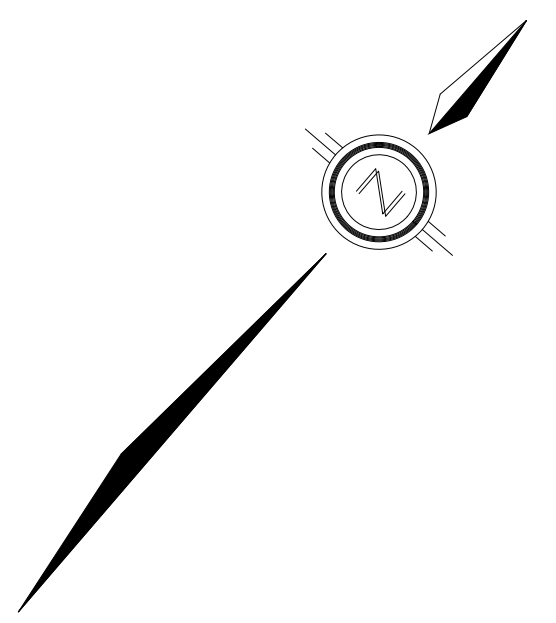


STORM DRAINAGE PLAN

DRAWN BY: M.S. & A.S.	CHECKED BY: S.L.M.	SHEET NO.
DESIGNED BY: M.S. & W.L.	CHECKED BY: C.M.	16
SCALE: 1:500	DATE: JANUARY 2026	

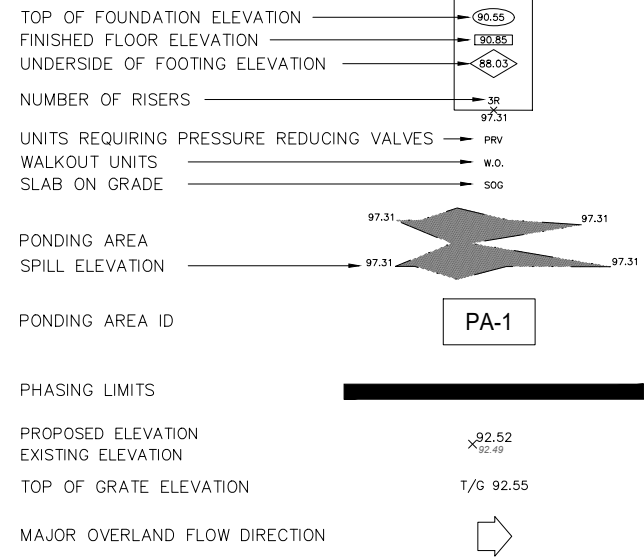


YN RD



PONDING VOLUME TABLE												
AREA NUMBER	SPILL ELEVATION (m)	GUTTER ELEVATION (m)	MAXIMUM STATIC PONDING DEPTH (m)	MAXIMUM STATIC PONDING AREA (m ²)	MAXIMUM 2YR PONDING DEPTH (m)	MAXIMUM 2YR PONDING ELEVATION (m)	MAXIMUM 5YR PONDING DEPTH (m)	MAXIMUM 5YR PONDING ELEVATION (m)	MAXIMUM 100YR PONDING DEPTH (m)	MAXIMUM 100YR PONDING ELEVATION (m)	MAXIMUM 100YR+20% PONDING DEPTH (m)	MAXIMUM 100YR+20% PONDING ELEVATION (m)
CB-200	105.56	105.47	0.09	44.55	0.03	105.50	0.03	105.50	0.15	105.62	0.22	105.69
CB-201	105.93	105.72	0.21	117.27	0.06	105.78	0.08	105.80	0.14	105.86	0.25	105.97
CB-202	105.93	105.80	0.13	109.55	0.06	105.86	0.08	105.88	0.14	105.94	0.25	106.05
CB-203	106.12	105.89	0.23	288.88	0.04	105.93	0.11	106.00	0.29	106.18	0.33	106.22
CB-204	106.12	105.89	0.23	246.21	0.04	105.93	0.11	106.00	0.29	106.18	0.33	106.22
CB-206	106.21	106.11	0.10	84.70	0.02	106.13	0.02	106.13	0.03	106.14	0.04	106.15
CB-207	106.21	106.11	0.10	64.35	0.02	106.13	0.02	106.13	0.03	106.14	0.04	106.15
CB-208	105.85	105.75	0.10	27.77	0.03	105.78	0.04	105.79	0.17	105.92	0.18	105.93
CB-209	105.81	105.65	0.16	173.54	0.03	105.68	0.07	105.72	0.24	105.89	0.26	105.91
CB-210	105.81	105.65	0.16	130.69	0.03	105.68	0.07	105.72	0.24	105.89	0.26	105.91
CB-211	105.56	105.53	0.03	9.68	0.03	105.56	0.04	105.57	0.09	105.62	0.16	105.69
CB-212 (100YR)	N/A	105.45	N/A	N/A	0.03	105.48	0.04	105.49	0.17	105.62	0.24	105.69
CB-213 (100YR)	N/A	105.47	N/A	N/A	0.03	105.50	0.04	105.51	0.17	105.64	0.24	105.71
CB-214	106.04	105.89	0.15	155.30	0.03	105.92	0.03	105.92	0.18	106.07	0.21	106.10
CB-215	106.04	105.89	0.15	155.00	0.03	105.92	0.03	105.92	0.18	106.07	0.21	106.10
CB-217	106.12	105.88	0.24	161.87	0.04	105.92	0.06	105.94	0.18	106.06	0.22	106.10
CB-218	106.12	105.88	0.24	386.42	0.04	105.92	0.06	105.94	0.18	106.06	0.22	106.10
CB-219	106.17	106.08	0.09	71.73	0.02	106.10	0.05	106.13	0.17	106.25	0.18	106.26
CB-220	106.12	106.08	0.04	16.88	0.02	106.10	0.05	106.13	0.17	106.25	0.18	106.26
CB-222	105.62	105.51	0.11	24.59	0.02	105.53	0.02	105.53	0.03	105.54	0.18	105.69
CB-223	105.81	105.75	0.06	9.77	0.03	105.78	0.04	105.79	0.17	105.92	0.18	105.93
CB-224	105.51	105.47	0.04	10.99	0.03	105.50	0.03	105.50	0.15	105.62	0.22	105.69
CB-225	105.57	105.49	0.08	15.01	0.01	105.50	0.01	105.50	0.13	105.62	0.20	105.69
CB-226	106.12	106.00	0.12	29.59	0.01	106.01	0.01	106.01	0.02	106.02	0.03	106.03
CB-227	106.04	106.00	0.04	3.58	0.01	106.01	0.01	106.01	0.02	106.02	0.04	106.04
CB-228	106.12	105.98	0.14	112.32	0.01	105.99	0.01	105.99	0.02	106.00	0.02	106.00
CB-229	106.12	105.98	0.14	102.96	0.01	105.99	0.01	105.99	0.02	106.00	0.02	106.00

LEGEND



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 SEPTEMBER 18, 2026.

2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION
No.	BY	DATE	DESCRIPTION

PROJECT No. 25-1494

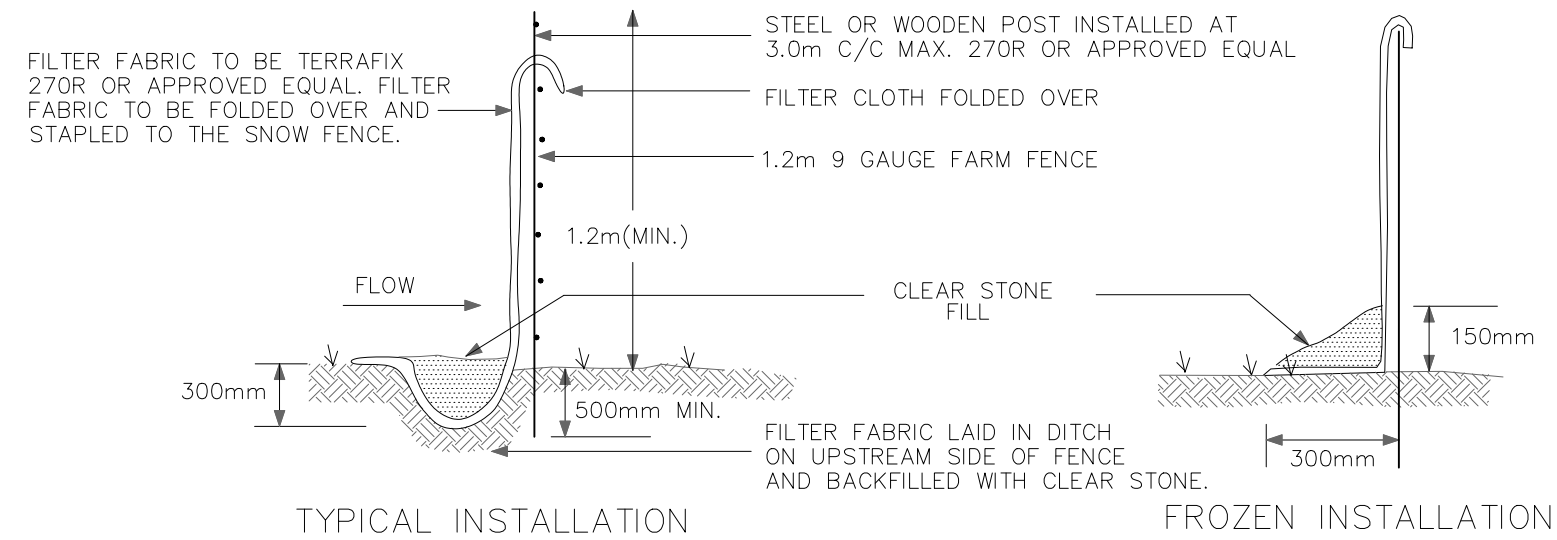
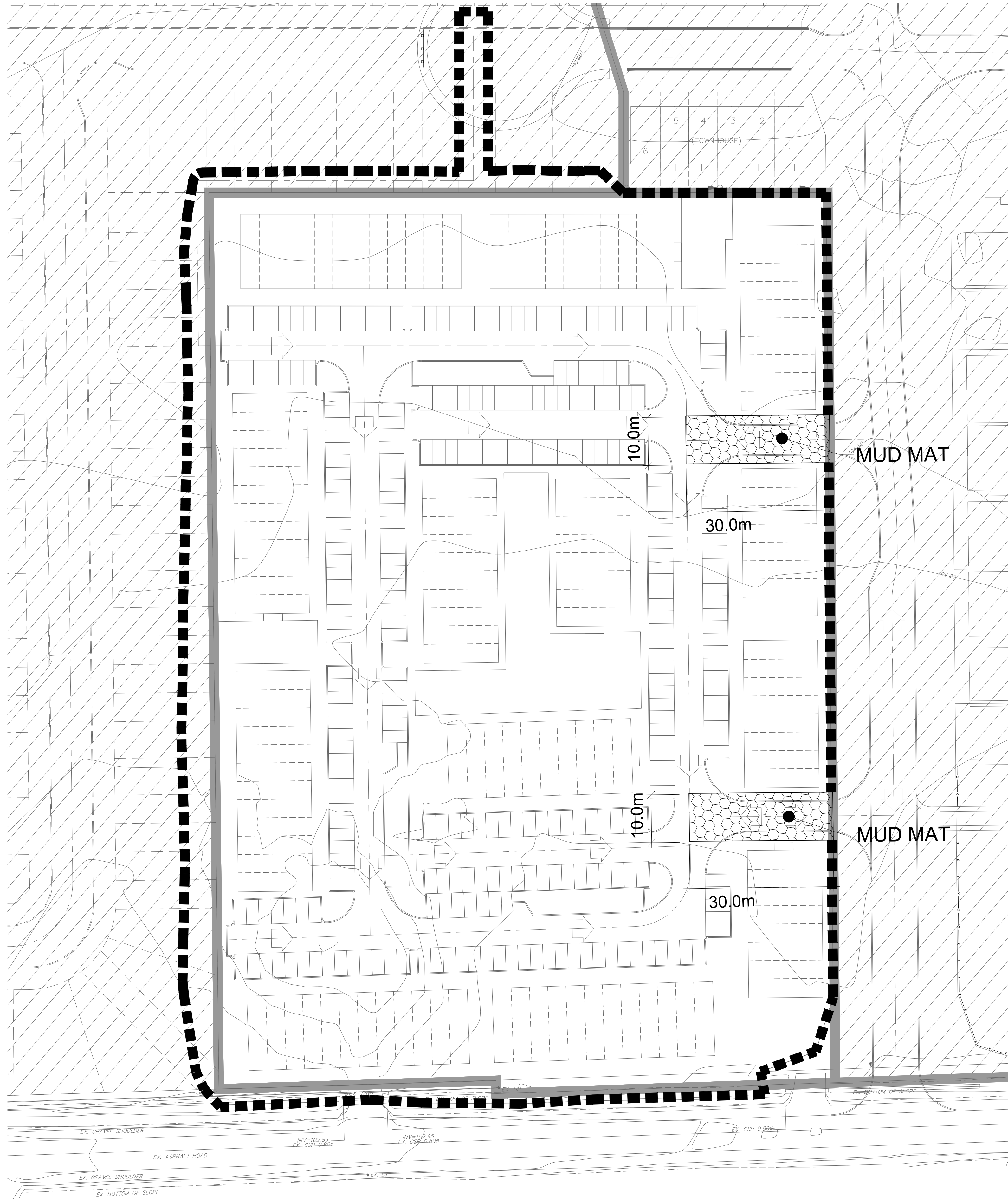
CAIVAN (STITTSVILLE) INC.

MAGNOLIA STACKED TOWNS

120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel: (613) 836-0866
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PONDING PLAN

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



SILT CONTROL FENCE
SCALE: N.T.S

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:

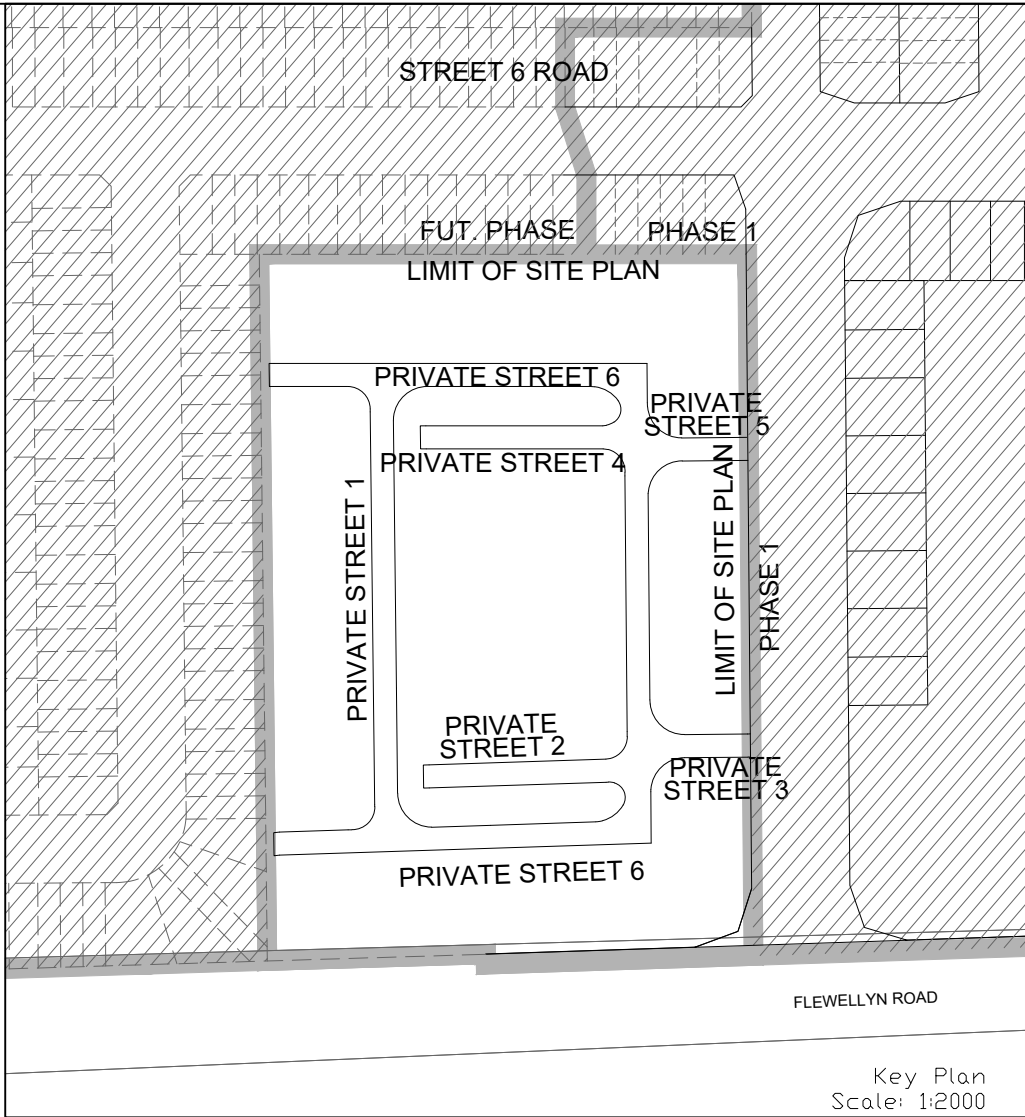
1. IMMEDIATELY NOTIFY THE APPROPRIATE FEDERAL, PROVINCIAL AND LOCAL GOVERNMENT MINISTRIES, DEPARTMENTS, AGENCIES AND AUTHORITIES OF THE INCIDENT IN ACCORDANCE WITH ALL CURRENT LAWS, LEGISLATION, ACTS, BY-LAWS, PERMITS, APPROVALS, ETC.
2. TAKE IMMEDIATE MEASURES TO CONTAIN THE MATERIAL OR SUBSTANCE, AND 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.



Key Plan
Scale: 1:2000

LEGEND

- PROPOSED SILT FENCE: [Thick dashed line symbol]
- MAJOR OVERLAND FLOW DIRECTION: [Arrow symbol]
- PHASING LIMITS: [Thick solid line symbol]

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

Ottawa CITY OF OTTAWA

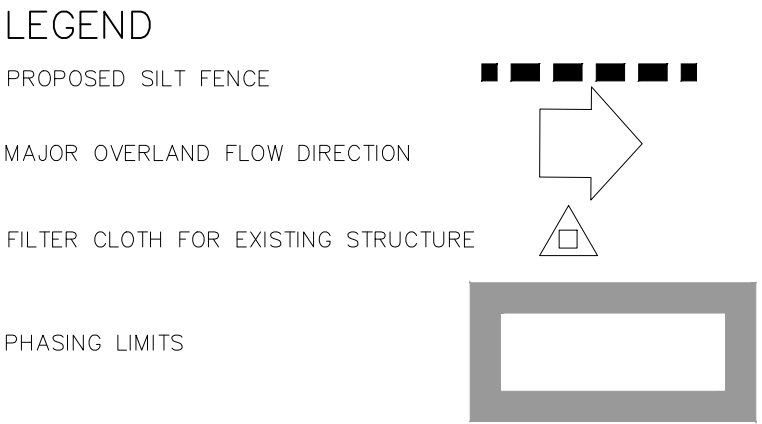
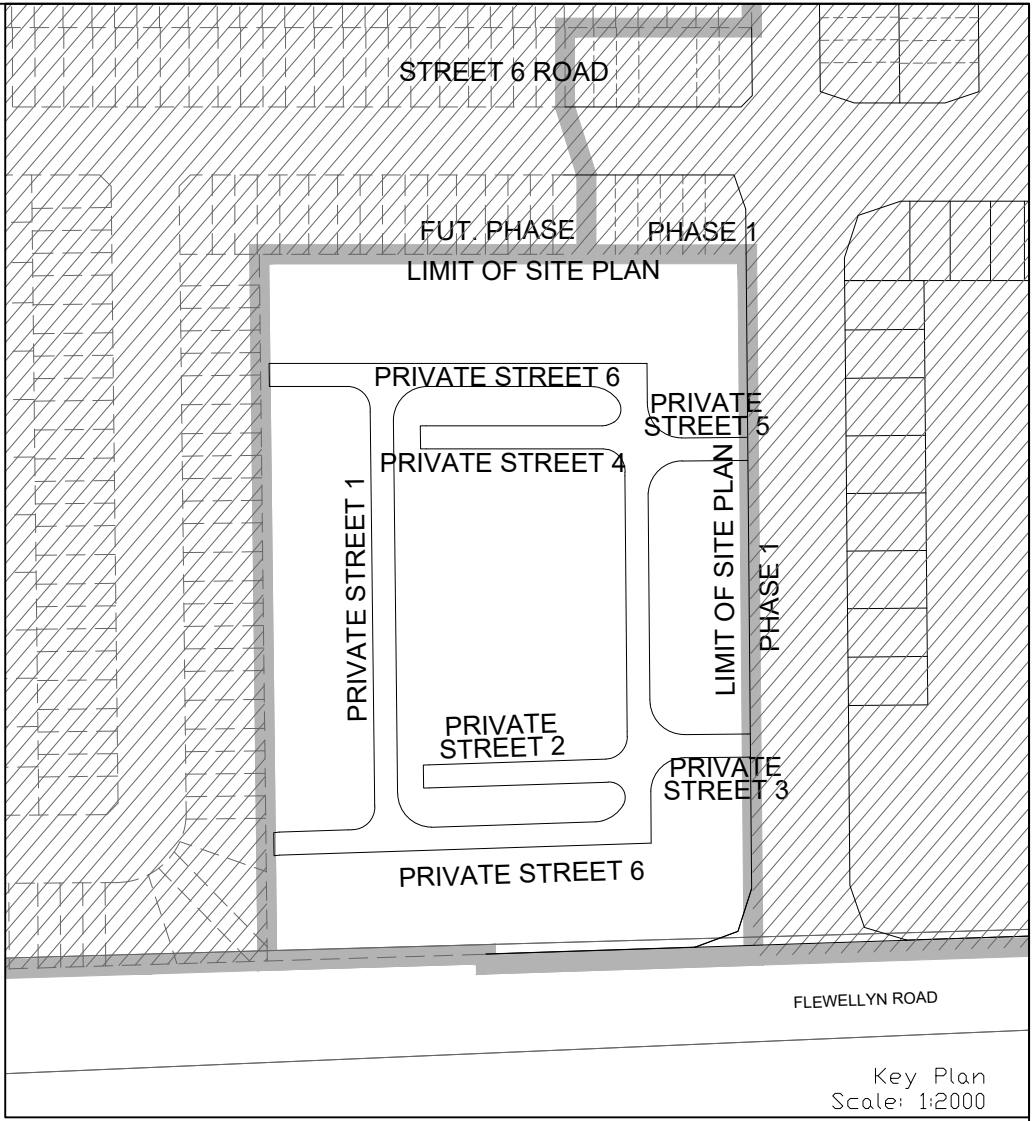
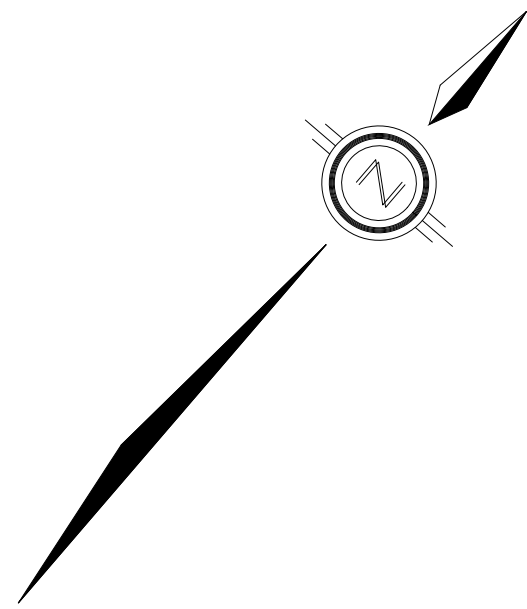
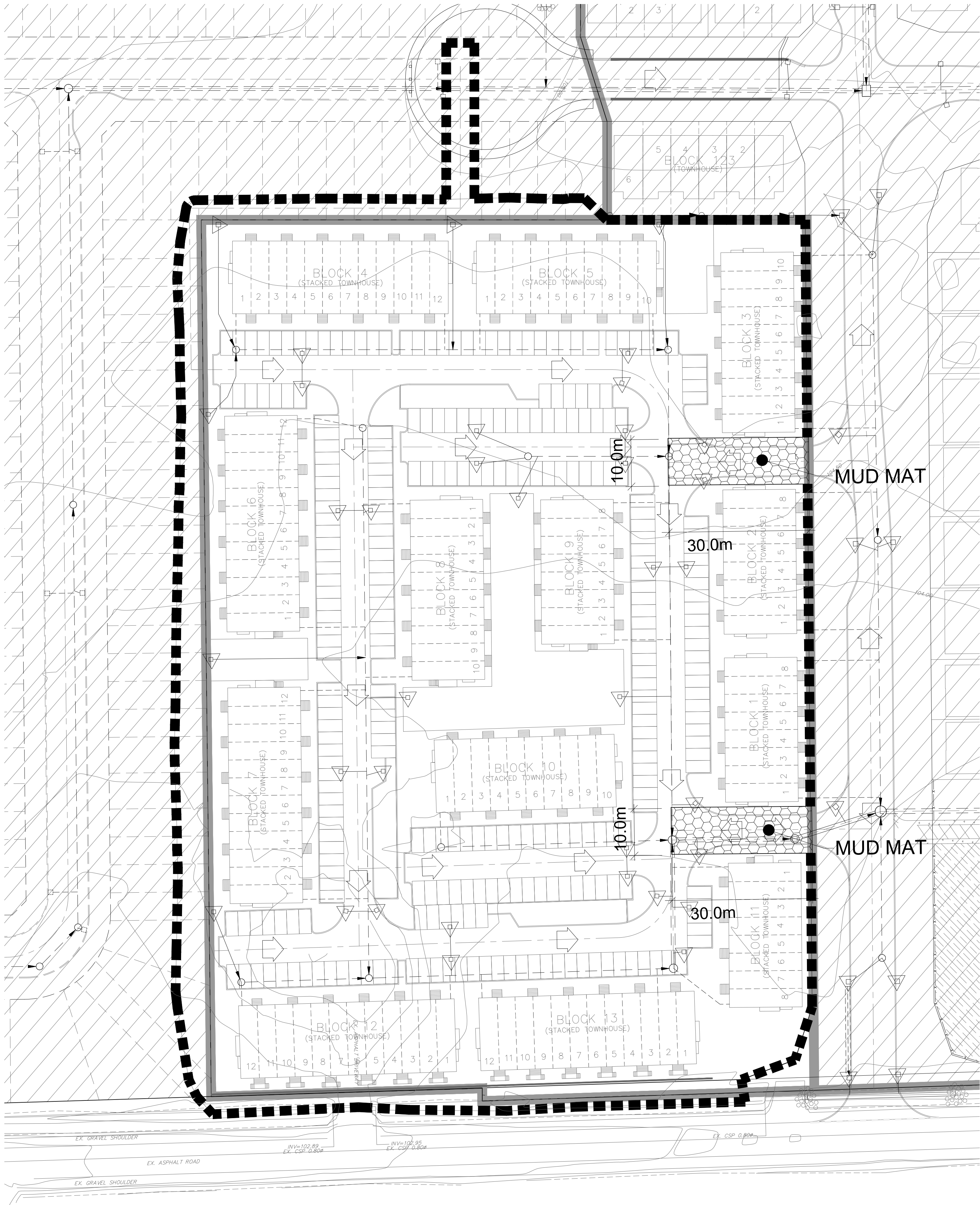
PROJECT No. 25-1494

CAIVAN (STITTSVILLE) INC. MAGNOLIA STACKED TOWNS

DSEL 120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel: (613) 836-0856
Fax: (613) 836-7153
www.DSEL.ca

EROSION AND SEDIMENT CONTROL PLAN STAGE 1

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



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.

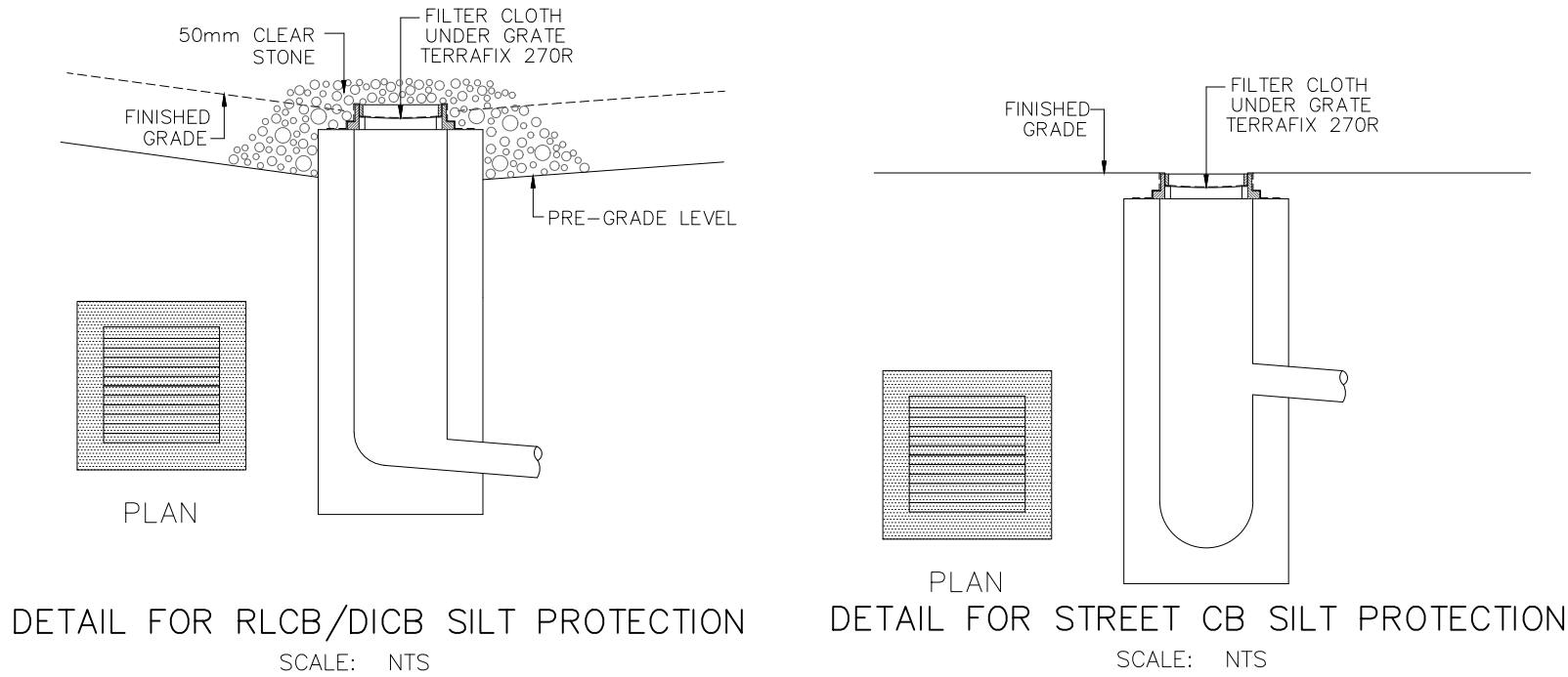
SEDIMENT CONTROL FENCE SHALL BE CLEANED AND MAINTAINED IN GOOD REPAIR BY CONTRACTOR.

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.



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
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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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2.	M.S.	26-10-02	2nd SUBMISSION
1.	W.L.	26-01-30	1st SUBMISSION
No.	BY	DATE	DESCRIPTION



PROJECT No. 25-1494



CAIVAN
(STITTSVILLE)
INC.

MAGNOLIA STACKED TOWNS



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**EROSION AND SEDIMENT CONTROL PLAN
STAGE 2**

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DESIGNED BY: M.S. & W.L.	CHECKED BY: C.M.	19
SCALE: 1:500	DATE: JANUARY 2026	



David Schaeffer Engineering Ltd.

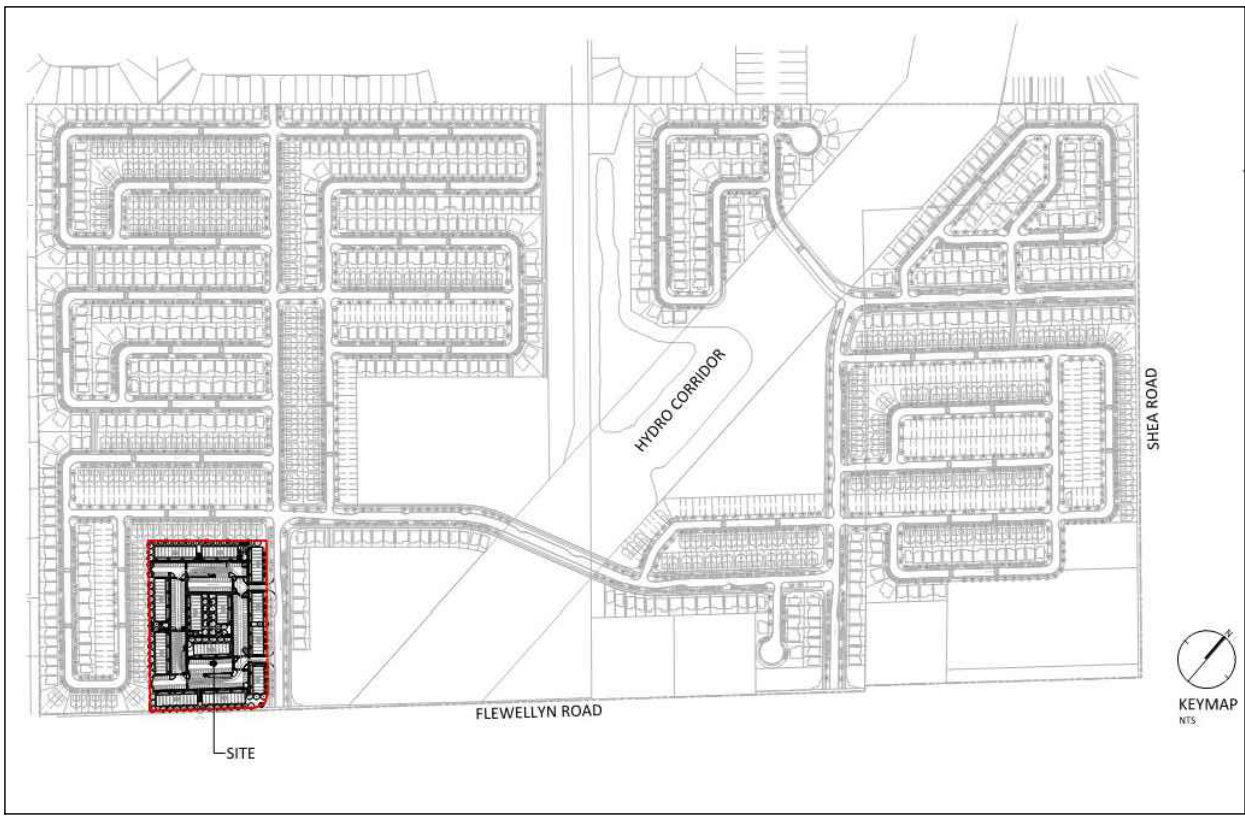
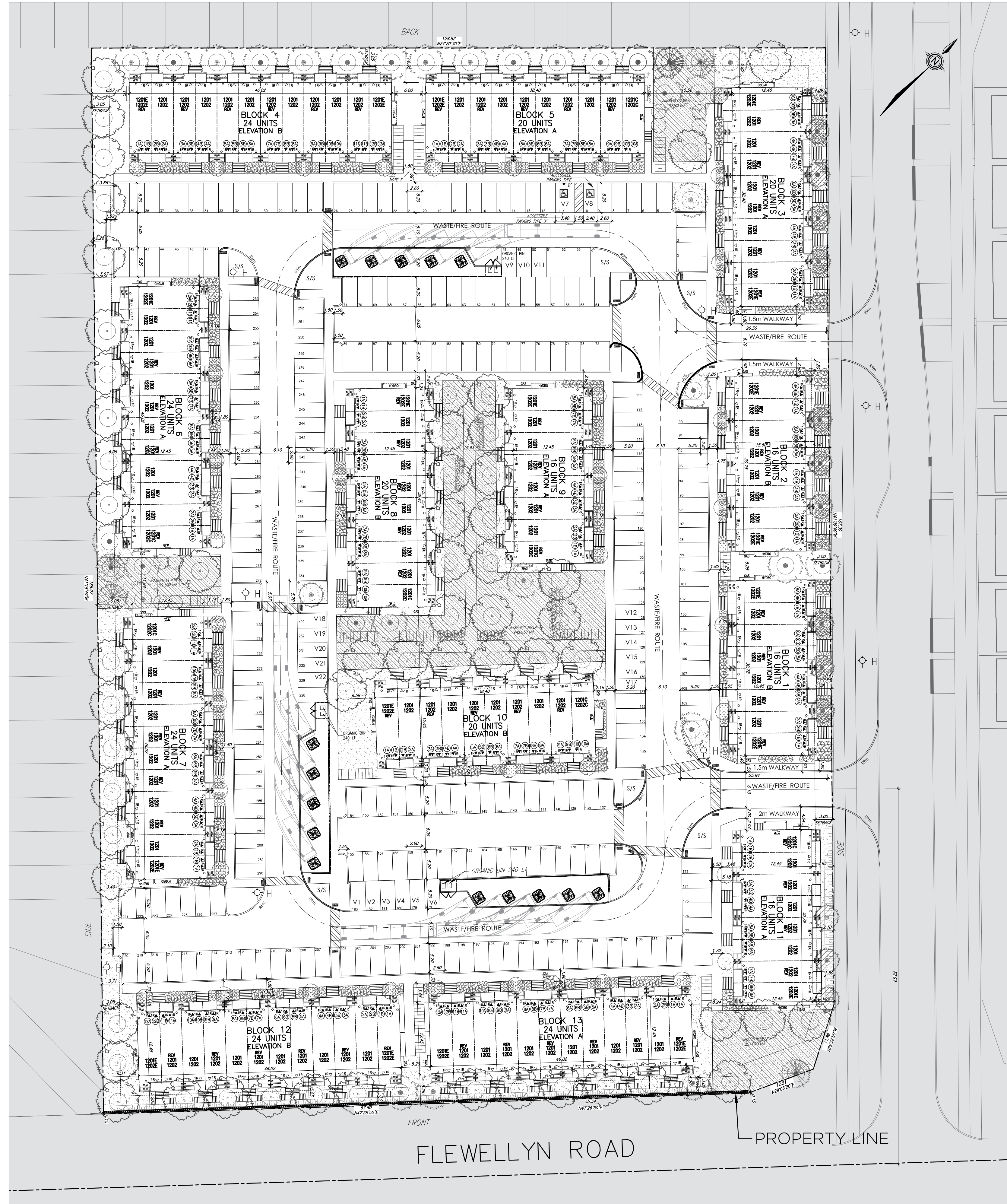
120 Iber Road, Suite 103

Stittsville, ON K2S 1E9

613-836-0856

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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 SCT.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

Q4A
ARCHITECTS

Q4 ARCHITECTS INC.

4110 YONGE STREET
Suite 602, Toronto, ON
M2P 2B7

T: 416.322.6334
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E: info@q4architects.com

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

Drawings are NOT to be scaled. All drawings and specifications are instruments of service and the copyright property of the designer and must be returned upon request.

Q4 Architects Inc. retains the copyright in all drawings, plans, sketches, and all digital information. They may not be copied or used for any other projects or purposes or distributed without the written consent of Q4 Architects Inc.

LEGEND

STACKED TOWNS	NO PARKING
ENTRANCE	BARRIER FREE PARKING
BALCONY	BARRIER FREE PARKING SIGNAGE
PORCH	V VISITOR PARKING
PROJECTION (STAIRS)	BKE RACKS (15 Bicycles)
SODDING	EARTH BIN (6.5 yd³)
	HYDRO TRANSFORMER
CROSSWALK	S.S. SNOW STORAGE AREA
CURB (0.2m)	LANDSCAPED AREA
DEPRESSED CURB	MEDIUM DECIDUOUS TREE*
TACTILE WALKING SURFACE INDICATOR (NOTE 4)	SMALL DECIDUOUS TREE*
BLOCK BOUNDARY	DECIDUOUS SHRUB*
WASTE ENCLOSURE FENCE	CONIFEROUS SHRUB*
RETAINING WALL	GRASSES/PERENNIALS*
FIRE HYDRANT	SLOPED GRADE

DIMENSIONS FROM J.D. BARNES DRAFT M.P.L.N. DATED 11/09/2024
TREES AND SHRUB LOCATIONS TO BE CONFIRMED ON LANDSCAPE PLAN

7	2nd SUBMISSION	2026-10-01	CT
6	NEW BLOCK NUMBERS	2026-07-13	JM
5	UNIT NUMBERING CHANGE BLOCK #3	2026-06-18	JM
4	1st ISSUE FOR SPA	2026-01-29	JM
3	2nd ISSUE FOR SPA	2026-03-20	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.

BLOCK 101 Plan No. 4M-xxxx

Part of lot 24 concession 9 (Gouldbourn)

PINS 04449-3825 (L7)

Legal Name

CAIVAN

Client

Project No.

25026

Scale

1:400

Drawn By

CT

Checked By

CT

OVERALL SITE PLAN

SITE AREA	23,721.97 m² (2.37 ha)
PAVED AREA	8,161.4 m²
LANDSCAPED AREA	9,252.94 m²
TOTAL BUILDING COVERAGE	6,307.63 m²
TOTAL GROSS FLOOR AREA	23,735.70 m²
DENSITY (UPH)	111.29 UPH
ZONE CATEGORY	N4B

DWELLING BLOCK	DWELLING TYPE	COVERAGE AREA (m²)	GROSS AREA (m²)	UNITS
BLOCKS 4, 6, 7, 12, 13	24 UNITS STACKED DWELLING	572.75 m² (per Block)	2,264.86 m² (per Block)	120
BLOCKS 3, 5, 8, 10	20 UNITS STACKED DWELLING	477.91 m² (per Block)	1,889.02 m² (per Block)	80
BLOCKS 1, 2, 9, 11	16 UNITS STACKED DWELLING	383.07 m² (per Block)	1,513.18 m² (per Block)	64
				TOTAL 264

AMENITY AREAS	
AREA	COMMENTS
PRIVATE AMENITY AREAS	
REAR DECK	992.42 m² Lower units (132 units)
REAR PATIOS	1074.50 Lower units where applicable (70 units)
SECOND FLOOR BALCONIES	535.4 m² Upper units (132 units)
TOTAL PRIVATE AREAS	2002.3 m²
COMMUNAL AMENITY AREAS	
AMENITY AREA 1	942.859 m²
AMENITY AREA 2	198.625 m²
AMENITY AREA 3	192.682 m²
TOTAL COMMUNAL AREAS	1,334.2 m²
TOTAL AMENITY AREAS	3,336.5 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 26 visitor spaces have been designed to be barrier-free, one Type A and one Type B size.

GARBAGE: REQUESTED BY ZONING:
GARBAGE: 0.231 CUBIC YARD /UNIT 0.231 X 264 = 60.98 CUBIC YARD = 11 (6 CU YD BINS)
RECYCLING 0.018 CUBIC YARD /UNIT 0.018 X 264 = 4.75 CUBIC YARD = 1 (6 CU YD BINS)
+ 0.062 CUBIC YARD /UNIT 0.062 X 264 = 16.37 CUBIC YARD = 3 (6 CU YD BINS)
ORGANIC 240L PER 50 UNITS 264/50 = 5.28 UNITS = 6 (240L BIN)

SCALE 1:400 0 5 10 15 25 30

THE SITE PLAN IS IN CONJUNCTION WITH THE DRAFT PLAN PLAN OF SUBDIVISION, DATED SEPTEMBER 26, 2025 PREPARED BY J.D.BARNES LIMITED

D07-12-26-0069

SP1



David Schaeffer Engineering Ltd.

120 Iber Road, Suite 103

Stittsville, ON K2S 1E9

613-836-0856

dsel.ca

APPENDIX B



Hydraulic Capacity and Modeling Analysis Stittsville South Urban Expansion Area Phase 1 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: August 26, 2026

Contact: Mr. Werner de Schaetzen, Ph.D., P.Eng.

Project: 2022-018-DSE

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Document History and Version Control

Revision No.	Date	Document Description	Revised By	Reviewed By
R0	August 24, 2026	Draft	Leon Wang	Werner de Schaetzen
R1	August 26, 2026	Final	Leon Wang	Werner de Schaetzen

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1 Introduction

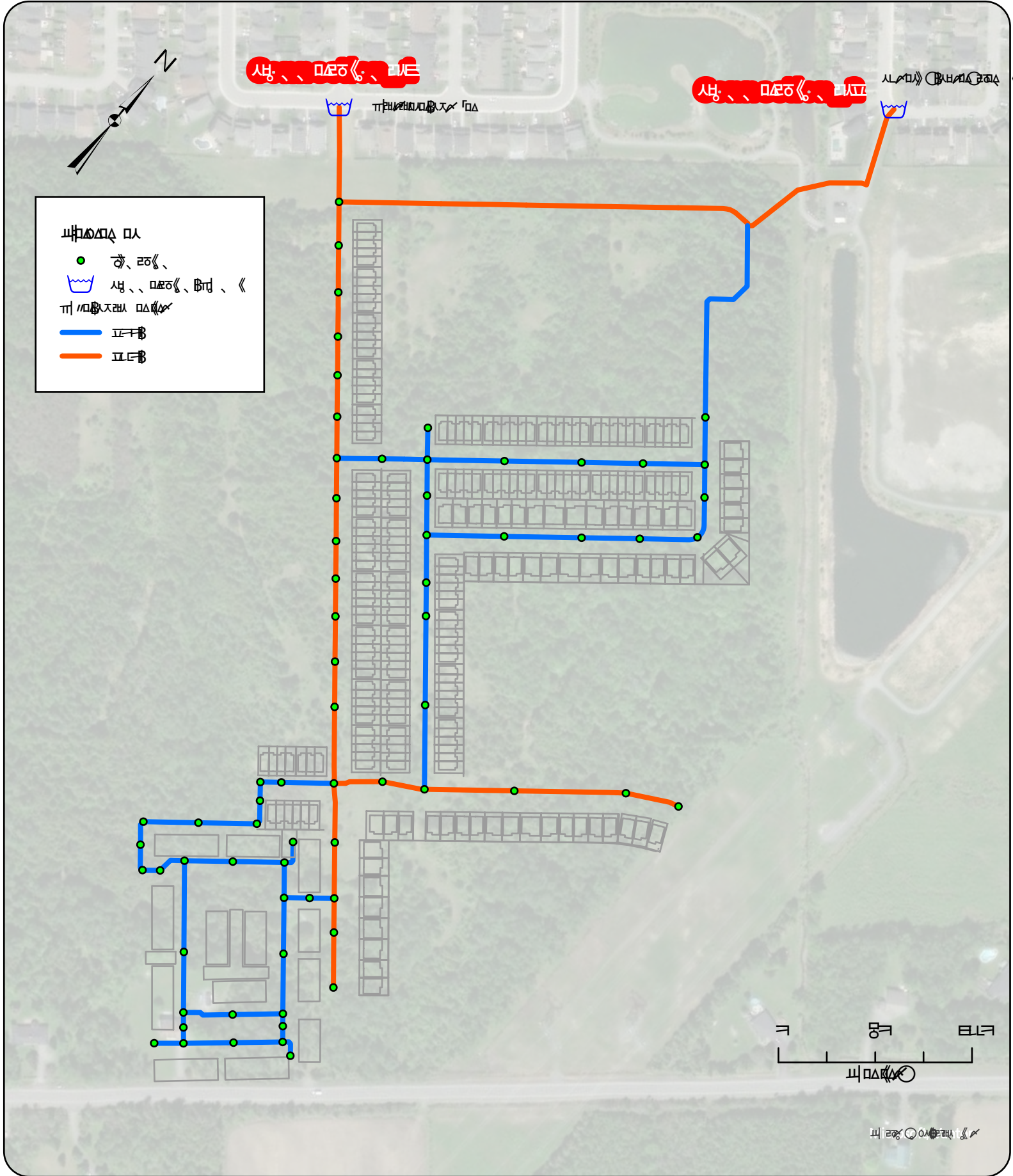
GeoAdvice Engineering Inc. (“GeoAdvice”) was retained by David Schaeffer Engineering Ltd. (“DSEL”) to size the proposed watermain network for the Stittsville South Urban Expansion Area (SSUEA) Phase 1 Development (“Development”) in the City of Ottawa, ON (“City”).

The development will have two (2) connections to the City’s water distribution system on Parade Drive and Aridus Crescent. The connections used for modeling the proposed development were based on the boundary conditions provided by the City on August 17, 2026 (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.



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საქართველოს რესპუბლიკის ტერიტორიის განვითარების
საქართველოს რესპუბლიკის ტერიტორიის განვითარების
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საქართველოს რესპუბლიკის ტერიტორიის განვითარების



2 Modeling Considerations

2.1 Watermain Configuration

The watermain network was modeled based on drawings prepared by DSEL and provided to GeoAdvice on August 18, 2026.

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 August 18, 2026.

2.3 Consumer Demands

The residential demands for the development were provided by DSEL as summarized in **Table 2.1** and were uniformly distributed to all junctions within the development.

Detailed demand calculations are provided in **Appendix A**.

Table 2.1: Development Water Demands

Scenario	Demand (L/s)
Average Day Demand (ADD)	4.31
Max Day Demand (MDD)	10.78
Peak Hour Demand (PHD)	23.71

2.4 Fire Flow Demand

Fire flow calculations for three (3) building types (single detached, street townhouse, and stacked townhouse) were completed by GeoAdvice in accordance with 2024 Ontario Building Code (OBC). As agreed with DSEL, no Fire Underwriters Survey (FUS) calculations were completed for the development, and the OBC methodology was used exclusively. **Table 2.4** shows the required fire flow for each building type in the development.

Table 2.4: Fire Flow Requirements at 140 kPa (20 psi)

Development Type	Fire Flow (L/s)
Single-detached	45
Street Townhouse	75
Stacked Townhouse	105

Fire flow requirements and simulations were only assessed and completed at model nodes within the development. The locations of nodes do not necessarily represent hydrant locations. To



maintain a conservative analysis, the highest required fire flow of 105 L/s (corresponding to the stacked townhouse block) was allocated to all model nodes within the development.

Detailed OBC 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

The two (2) 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 August 17, 2026, and can be found in **Appendix C**.

Table 2.2 summarizes the “Future Servicing Scenario with 254 mm WM Looping” Boundary Condition detailed in **Appendix C**, which was used to size the water network as agreed with DSEL.

Table 2.2: Boundary Conditions

Condition	Connection 1 HGL (m)	Connection 2 HGL (m)
Average Day (max. pressure)	159.5	159.5
Peak Hour (min. pressure)	153.6	153.6
Max Day + Fire Flow (167 L/s)	146.0	144.4

Note that although the required fire flow for the development is 105 L/s, the boundary conditions (Maximum Day plus Fire Flow of 167 L/s) were applied in the model without extrapolation to maintain a conservative approach.

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
76 psi (525 kPa)	63 psi (437 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).

As shown in **Table 4.1**, the modeled maximum pressure of 525 kPa (76 psi) under ADD and the minimum pressure of 437 kPa (63 psi) under PHD are both well within the City's preferred operating range. Consequently, the system will maintain adequate service pressures without the need for pressure reducing valves (PRVs) or booster facilities.

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*
105 L/s	162 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.



Table 4.3: Summary of the Residual Pressures

Minimum Residual Pressure	Average Residual Pressure	Maximum Residual Pressure
39 psi (269 kPa)	45 psi (313 kPa)	51 psi (349 kPa)

As shown in **Table 4.3**, the fire flow requirements can be met at all junctions within the development.

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



Submission

Prepared by:

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Hydraulic Modeler / Project Engineer

Approved by:

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



Appendix A Demand Calculations

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



Domestic Demand

Type of Housing	Per / Unit	Units	Pop
Single Family	3.4	64	218
Semi-detached	2.7	-	0
Townhouse	2.7	183	495
Stacked Units (Duplex)	2.3	268	617
Apartment			0
Bachelor	1.4	-	0
1 Bedroom	1.4	-	0
2 Bedroom	2.1	-	0
3 Bedroom	3.1	-	0
Average	1.8	-	0

	Pop	Avg. Daily		Max Day		Peak Hour	
		m ³ /d	L/min	m ³ /d	L/min	m ³ /d	L/min
Total Domestic Demand	1330	372.4	258.6	931.0	646.5	2048.2	1422.4

Institutional / Commercial / Industrial Demand

Property Type	Unit Rate	Units	Avg. Daily		Max Day		Peak Hour	
			m ³ /d	L/min	m ³ /d	L/min	m ³ /d	L/min
Commercial floor space	2.5 L/m ² /d	-	0.00	0.0	0.0	0.0	0.0	0.0
Office	75 L/9.3m ² /d	-	0.00	0.0	0.0	0.0	0.0	0.0
Restaurant*	125 L/seat/d	-	0.00	0.0	0.0	0.0	0.0	0.0
Industrial - Light	35,000 L/gross ha/d	-	0.00	0.0	0.0	0.0	0.0	0.0
Industrial - Heavy	55,000 L/gross ha/d	-	0.00	0.0	0.0	0.0	0.0	0.0
Total I/CI Demand			0.0	0.0	0.0	0.0	0.0	0.0
Total Demand			372.4	258.6	931.0	646.5	2048.2	1422.4

* Estimated number of seats at 1seat per 9.3m²

Caivan
Magnolia - Phase 1
Proposed Site Conditions

Pop. Eq.	Max Day	Peak Hour		
30	9.5	14.3		
150	4.9	7.4		
300	3.6	5.4		
450	3	4.5		
500	2.9	4.3		
501	2.5	5.5	2.5	5.5

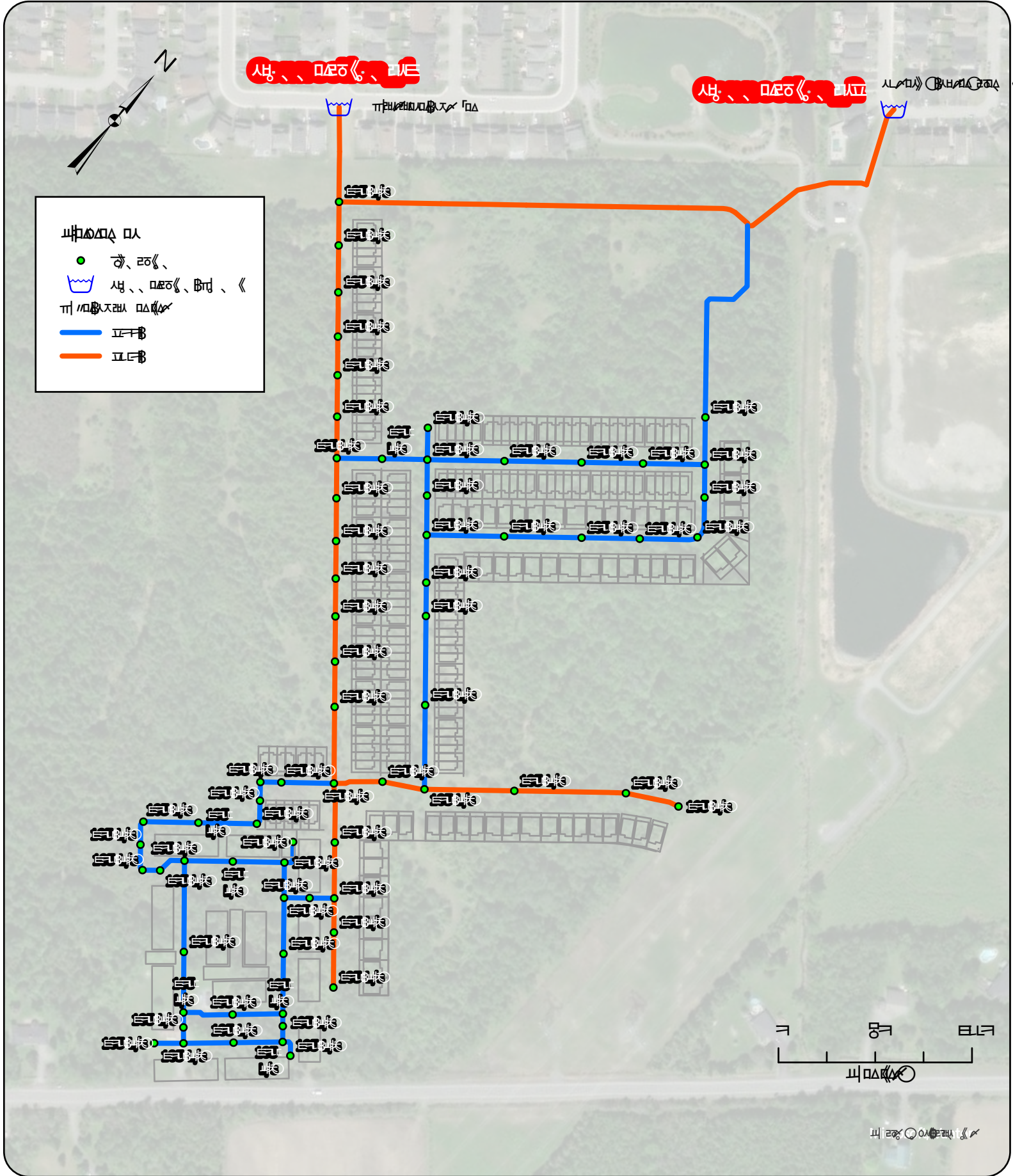
Per City of Ottawa Water Distribution Guidelines.

For Peaking Factors below pop 501 MOE Design Guidelines for Drinking Water Systems

	L/min	L/s
Avg. Daily	258.6	4.31
Max Day	646.5	10.78
Peak Hour	1422.4	23.71



Appendix B Required Fire Flows



GeoADVICE 20 YEARS საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის	საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის	საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის	საზღვრის, მდინარის, მდინარის საზღვრის, მდინარის, მდინარის
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OBC Required Fire Flow Calculation

Client: David Schaeffer Engineering Ltd.
Project: 2022-018-DSE

Method: OBC 2024 Compendium, Div. B, Appx. A, Note A-3.2.5.7, Item 3
Ottawa ref: Ottawa WDG002 2nd Ed. (8 Dec 2025), s.4.2.11 para. 2 - urban

Development: Stittsville South - Stacked Townhouse

Zoning: Multi Family Residential

Date: August 24, 2026



A. Occupancy Classification: C Residential

Major occupancy group/division per OBC Table 3.1.2.1. The sheet resolves the Table 1 column.

B. Type of Construction: 4 Combustible, partly rated

K: water supply coefficient, OBC Table 1 K = 23 - Table 1 column: A-2, B-1, B-2, B-3, C, D

Combustible construction. Floor assemblies are fire separations but have no FRR; roof assemblies, mezzanines, loadbearing walls, columns and arches have no FRR.

C. Building Volume:

Ground floor area 595 m2

Number of storeys 3 -

Average storey height 3.50 m

Manual volume override m3

V (calc) = 6,248 m3

V used = 6,248 m3

V is the TOTAL BUILDING VOLUME in m3 - not floor area. For a townhouse or row-house block, decide first what counts as "the building": a firewall meeting the Code divides a structure into two or more buildings, which changes V and therefore Q. State the basis used.

D. Spatial Coefficients (property line exposures)

Side	Exposure dist. (m)	Sside used	Basis
North	9.0	0.10	Figure 1, non F-1 curve at 9.0 m
East	13.5	0.00	Figure 1, non F-1 curve at 13.5 m
South	40.0	0.00	Figure 1, non F-1 curve at 40.0 m
West	6.0	0.40	Figure 1, non F-1 curve at 6.0 m
Sum Sside =		0.50	-
Stot =		1.50	-

<- Stot need not exceed 2.0 (Item 3(a))

E. Minimum Supply of Water

Q = K x V x Stot

Q = 215,539 L Q = 215,539 L

F. Required Minimum Water Supply Flow Rate

One-storey building, area <= 600 m2? No (suggest: FF = 6,300 L/min)

30-minute minimum, Item 3(c) FF x 30 = 189,000 L

Governs = Q governs

Required Minimum Water Supply Flow Rate	6,300	L/min
Required Minimum Water Supply Flow Rate	105.0	L/s
Minimum Supply of Water, Q	215,539	L
Governing supply volume	215,539	L

The required water supply for the Stittsville South - Stacked Townhouse development should be reviewed when drawings and site plans have been finalized. The required fire flow may change with building volume, construction type, occupancy and property line exposures. If any of these items change, the calculation should be reviewed to determine the impact.

Q = K x V x Stot, where Q is the minimum supply of water in litres, K is the water supply coefficient from OBC Table 1, V is the total building volume in cubic metres, and Stot = 1.0 + (Sside1 + Sside2 + Sside3 + ...). Stot need not exceed 2.0. Item 3(b): where the supply is from a municipal system the flow rate must be available at a minimum pressure of 140 kPa. Item 3(c): the supply must be not less than that needed to provide the Table 2 flow rate for a minimum of 30 minutes.

Sside values are from OBC Figure 1 (Spatial Coefficient vs Exposure Distance) as digitized on the Exposures tab. Verify any value falling on the sloping part of either curve against the printed figure and OFM guideline TG-03-1999.

SCOPE NOTE: OBC Table 2 is titled "Part 3 buildings under the Building Code". Where this method is applied to a Part 9 building such as a townhouse or row-house block, state that basis explicitly - the City has accepted the OBC approach on some sites and not others, so confirm it in writing before pipe sizes are fixed.

This workbook covers the OBC flow-rate calculation for private property in an URBAN, hydrant-serviced area (WDG002 s.4.2.11 paragraph 2). It does NOT cover: municipal watermain sizing, which still requires the FUS method under s.4.2.11 paragraph 1; the rural on-site storage process under Appendix J; or the Appendix I hydrant-placement protocol, which is mandatory for dead-end watermains.

OBC Required Fire Flow Calculation

Page 1 of 1

OBC Required Fire Flow Calculation

Client: David Schaeffer Engineering Ltd.
Project: 2022-018-DSE

Method: OBC 2024 Compendium, Div. B, Appx. A, Note A-3.2.5.7, Item 3
Ottawa ref: Ottawa WDG002 2nd Ed. (8 Dec 2025), s.4.2.11 para. 2 - urban

Development: Stittsville South - Townhouse

Geo20
ADVICE

Zoning: Multi Family Residential

Date: August 24, 2026

A. Occupancy Classification: C Residential
Major occupancy group/division per OBC Table 3.1.2.1. The sheet resolves the Table 1 column.

B. Type of Construction: 4 Combustible, partly rated
K: water supply coefficient, OBC Table 1 K = 23 - Table 1 column: A-2, B-1, B-2, B-3, C, D
Combustible construction. Floor assemblies are fire separations but have no FRR; roof assemblies, mezzanines, loadbearing walls, columns and arches have no FRR.

C. Building Volume:
Ground floor area 465 m2
Number of storeys 2 -
Average storey height 3.50 m
Manual volume override m3
V (calc) = 3,255 m3
V used = 3,255 m3
V is the TOTAL BUILDING VOLUME in m3 - not floor area. For a townhouse or row-house block, decide first what counts as "the building": a firewall meeting the Code divides a structure into two or more buildings, which changes V and therefore Q. State the basis used.

D. Spatial Coefficients (property line exposures)

Side	Exposure dist. (m)	Sside used	Basis
North	3.0	0.50	Figure 1, non F-1 curve at 3.0 m
East	23.5	0.00	Figure 1, non F-1 curve at 23.5 m
South	3.0	0.50	Figure 1, non F-1 curve at 3.0 m
West	9.0	0.10	Figure 1, non F-1 curve at 9.0 m
		Sum Sside = 1.10	-
		Stot = 2.00	- <- at the Item 3(a) maximum of 2.0

E. Minimum Supply of Water
Q = K x V x Stot Q = 149,730 L Q = 149,730 L

F. Required Minimum Water Supply Flow Rate
One-storey building, area <= 600 m2? No (sugges FF = 4,500 L/min
30-minute minimum, Item 3(c) FF x 30 = 135,000 L
Governs = Q governs

Required Minimum Water Supply Flow Rate	4,500	L/min
Required Minimum Water Supply Flow Rate	75.0	L/s
Minimum Supply of Water, Q	149,730	L
Governing supply volume	149,730	L

The required water supply for the Stittsville South - Townhouse development should be reviewed when drawings and site plans have been finalized. The required fire flow may change with building volume, construction type, occupancy and property line exposures. If any of these items change, the calculation should be reviewed to determine the impact.

Q = K x V x Stot, where Q is the minimum supply of water in litres, K is the water supply coefficient from OBC Table 1, V is the total building volume in cubic metres, and Stot = 1.0 + (Sside1 + Sside2 + Sside3 + ...). Stot need not exceed 2.0. Item 3(b): where the supply is from a municipal system the flow rate must be available at a minimum pressure of 140 kPa. Item 3(c): the supply must be not less than that needed to provide the Table 2 flow rate for a minimum of 30 minutes.

Sside values are from OBC Figure 1 (Spatial Coefficient vs Exposure Distance) as digitized on the Exposures tab. Verify any value falling on the sloping part of either curve against the printed figure and OFM guideline TG-03-1999.

SCOPE NOTE: OBC Table 2 is titled "Part 3 buildings under the Building Code". Where this method is applied to a Part 9 building such as a townhouse or row-house block, state that basis explicitly - the City has accepted the OBC approach on some sites and not others, so confirm it in writing before pipe sizes are fixed.

This workbook covers the OBC flow-rate calculation for private property in an URBAN, hydrant-serviced area (WDG002 s.4.2.11 paragraph 2). It does NOT cover: municipal watermain sizing, which still requires the FUS method under s.4.2.11 paragraph 1; the rural on-site storage process under Appendix J; or the Appendix I hydrant-placement protocol, which is mandatory for dead-end watermains.

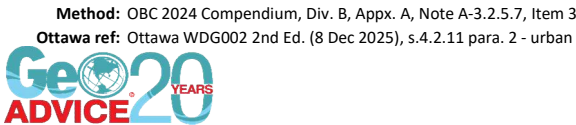
OBC Required Fire Flow Calculation

Client: David Schaeffer Engineering Ltd.
Project: 2022-018-DSE

Development: Stittsville South - Single Family

Zoning: Single Family Residential

Date: August 24, 2026



A. Occupancy Classification: C Residential
Major occupancy group/division per OBC Table 3.1.2.1. The sheet resolves the Table 1 column.

B. Type of Construction: 4 Combustible, partly rated
K: water supply coefficient, OBC Table 1 K = 23 - Table 1 column: A-2, B-1, B-2, B-3, C, D
Combustible construction. Floor assemblies are fire separations but have no FRR; roof assemblies, mezzanines, loadbearing walls, columns and arches have no FRR.

C. Building Volume:
Ground floor area 122 m2
Number of storeys 2 -
Average storey height 3.50 m
Manual volume override m3
V (calc) = 854 m3
V used = 854 m3
V is the TOTAL BUILDING VOLUME in m3 - not floor area. For a townhouse or row-house block, decide first what counts as "the building": a firewall meeting the Code divides a structure into two or more buildings, which changes V and therefore Q. State the basis used.

D. Spatial Coefficients (property line exposures)

Side	Exposure dist. (m)	Sside used	Basis
North	33.4	0.00	Figure 1, non F-1 curve at 33.4 m
East	1.2	0.50	Figure 1, non F-1 curve at 1.2 m
South	5.8	0.42	Figure 1, non F-1 curve at 5.8 m
West	35.0	0.00	Figure 1, non F-1 curve at 35.0 m
Sum Sside =		0.92	-
Stot =		1.92	-

<- Stot need not exceed 2.0 (Item 3(a))

E. Minimum Supply of Water
Q = K x V x Stot
Q = 37,713 L
Q = 37,713 L

F. Required Minimum Water Supply Flow Rate
One-storey building, area <= 600 m2? No (suggest: No)
30-minute minimum, Item 3(c)
FF = 2,700 L/min
FF x 30 = 81,000 L
Governs = FF x 30 governs
<- Item 3(c) needs more than Q. Carry FF x 30.

Required Minimum Water Supply Flow Rate	2,700	L/min
Required Minimum Water Supply Flow Rate	45.0	L/s
Minimum Supply of Water, Q	37,713	L
Governing supply volume	81,000	L

The required water supply for the Stittsville South - Single Family development should be reviewed when drawings and site plans have been finalized. The required fire flow may change with building volume, construction type, occupancy and property line exposures. If any of these items change, the calculation should be reviewed to determine the impact.

Q = K x V x Stot, where Q is the minimum supply of water in litres, K is the water supply coefficient from OBC Table 1, V is the total building volume in cubic metres, and Stot = 1.0 + (Sside1 + Sside2 + Sside3 + ...). Stot need not exceed 2.0. Item 3(b): where the supply is from a municipal system the flow rate must be available at a minimum pressure of 140 kPa. Item 3(c): the supply must be not less than that needed to provide the Table 2 flow rate for a minimum of 30 minutes.

Sside values are from OBC Figure 1 (Spatial Coefficient vs Exposure Distance) as digitized on the Exposures tab. Verify any value falling on the sloping part of either curve against the printed figure and OFM guideline TG-03-1999.

SCOPE NOTE: OBC Table 2 is titled "Part 3 buildings under the Building Code". Where this method is applied to a Part 9 building such as a townhouse or row-house block, state that basis explicitly - the City has accepted the OBC approach on some sites and not others, so confirm it in writing before pipe sizes are fixed.

This workbook covers the OBC flow-rate calculation for private property in an URBAN, hydrant-served area (WDG002 s.4.2.11 paragraph 2). It does NOT cover: municipal watermain sizing, which still requires the FUS method under s.4.2.11 paragraph 1; the rural on-site storage process under Appendix I; or the Appendix I hydrant-placement protocol, which is mandatory for dead-end watermains.



Appendix C Boundary Conditions

Boundary Conditions 6070 Fernbank Rd – 2026

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	258.6	4.31
Maximum Daily Demand	646.8	10.78
Peak Hour	1,422.6	23.71
Fire Flow Demand #1	10,000.0	166.67
Fire Flow Demand #2	13,000.0	216.67

Location



Scenario 1: Existing Conditions Servicing Scenario (without 254mm WM Looping)



Scenario 2: Future Servicing Scenario with 254mm WM Looping

Results

Scenario 1: Existing Conditions Servicing Scenario (without 254mm WM Looping)

Connection 1 - Parade Dr.

Demand Scenario	Head (m)	Pressure¹ (psi)
Maximum HGL	159.5	72
Peak Hour	153.6	63
Max Day plus Fire Flow #1	145.0	51
Max Day plus Fire Flow #2	139.0	42

¹ Ground Elevation = 109.2 m

Connection 2- Aridus Cres.

Demand Scenario	Head (m)	Pressure¹ (psi)
Maximum HGL	159.5	78
Peak Hour	153.6	70
Max Day plus Fire Flow #1	141.1	52
Max Day plus Fire Flow #2	132.7	40

¹ Ground Elevation = 104.5 m

Scenario 2: Future Servicing Scenario with 254mm WM Looping

Connection 1 - Parade Dr.

Demand Scenario	Head (m)	Pressure¹ (psi)
Maximum HGL	159.5	72
Peak Hour	153.6	63
Max Day plus Fire Flow #1	146.0	52
Max Day plus Fire Flow #2	140.6	45

¹ Ground Elevation = 109.2 m

Connection 2- Aridus Cres.

Demand Scenario	Head (m)	Pressure¹ (psi)
Maximum HGL	159.5	78
Peak Hour	153.6	70
Max Day plus Fire Flow #1	144.4	57
Max Day plus Fire Flow #2	138.1	48

¹ Ground Elevation = 104.5 m

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



Appendix E MDD+FF Model Results

Assumed offset from PL to existing unit is 4.5m

Assumed offset from PL to existing unit is 4.5m

Assumed offset from PL to existing unit is 4.5m

PROPERTY LINE

FLEWELLYN ROAD

SITE AREA	23,721.97 m ² (2.37 ha)
PAVED AREA****	8,366m ² (35.24%)
LANDSCAPED AREA (MIN 30%)	8,954 m ² (37.75%)
TOTAL BUILDING COVERAGE	6,402 m ² (27%)
TOTAL GROSS FLOOR AREA	24,098 m ²
DENSITY (UPH)	112.98 UPH
ZONE CATEGORY	R4(Z)

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

AMENITY AREAS		
	AREA	COMMENTS
PRIVATE AMENITY AREAS		
REAR DECK	398.37 m ²	Lower units (134 units)
REAR PATIOS	2154.60	Lower units where applicable(140 units)
SECOND FLOOR BALCONIES	543.58 m ²	Upper units (134 units)
TOTAL PRIVATE AREAS	3096.54 m²	
COMMUNAL AMENITY AREAS		
AMENITY AREA 1	801.785 m ²	
AMENITY AREA 2	198.625 m ²	
AMENITY AREA 3	192.682 m ²	
TOTAL COMMUNAL AREAS	1193.1 m²	
TOTAL AMENITY AREAS	4,289.64 m²	
GREEN AREA	251,020 m ²	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 space.

**** Section 110(3)(d) where on in-ground refuse container is provide, the screening requirement of Section 3(c) above may be achieved with soft landscaping (Below 2020-299)

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

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

SCALE 1:400

ZONE PROVISION - PLANNED UNIT DEVELOPMENT	REQUIRED	PROPOSED
162A(Z)	Min. Lot Area (m ²)	1400 m ² 23,732.97 m ²
162A(Z)	Min. Lot Width (m)	18 m 128.7 m
162A(Z)	Min. Front Yard Setback (m)	3 5.10
162A(Z)	Min. Interior Side Yard Setback (m)	3 6.05
162B.6	Min. Rear yard setback (m)	3 6.05
162A(ZIY)	Min. Corner Side yard set back (m)	3 4.1
162A(Z)	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 Building 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 (6m ² per unit)	1608 m ² 4289.64 m ²
137.6	Min. Communal Amenity Area m ² (Min. 50% area)	804 m ² 1193.1 m ²
65	PERMITTED PROJECTION INFO REQUIRED YARDS	
65.3.i	Fire escapes, Open Stairways, Stoop (m)	>0.6m to lot line 0.6m
65.6.d(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
101	PARKING REQUIREMENTS	
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.a)	Min. Requires Aisle Width	6.0 6.1
110	BARrier FREE PARKING	
110.a	Min. Barrier Free Parking **	2 2
111	BICYCLE STORAGE	
111.b	Min. bicycle parking space dimension, horizontal (m)	Width: 0.6m 0.4 Length: 1.8m 1.8
111A(b)	Min. bicycle parking space access aisle Width (m)	1.5 1.5
111.1.1	Min. Bicycle Parking 0.3 spaces/unit	134 135
110(c,d)	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***

Q4A
ARCHITECTS

Q4 ARCHITECTS INC.

4110 YONGE STREET
Suite 602, Toronto ON.
M2P 2B7

T. 416.322.6334
F. 416.322.7294
E. info@q4architects.com

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

Drawings are NOT to be scaled. All drawings and specifications are instruments of service and the copyright property of the designer and must be returned upon request.

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LEGEND	
STACKED TOWNS	NO PARKING
ENTRANCE	BARrier FREE PARKING
BALCONY	BARrier FREE PARKING SIGNAGE
PORCH	V VISITOR PARKING
PROJECTION (STAIRS)	BKE RACKS (15 Bicycles)
PAVERS	EARTH BIN (6.5 yd ³)
SODDING	HYDRO TRANSFORMER
LIGHT DUTY ASPHALT PAVING	LIGHT POLE
CROSSWALK	SHOW STORAGE AREA
CURB (0.2m)	LANDSCAPED AREA
DEPRESSED CURB	MEDIUM DECIDUOUS TREE*
TACTILE WALKING SURFACE INDICATOR (NOTE 4)	DECIDUOUS SHRUB*
BLOCK BOUNDARY	CONFEROUS SHRUB*
WASTE ENCLOSURE FENCE	GRASSES/PERENNIALS *
WOOD PRIVACY FENCE	SLOPED GRADE
CURB PIN	
RETAINING WALL	
PRIVACY FENCE (SEE LANDSCAPE)	
METAL FENCE (SEE LANDSCAPE)	

DIMENSIONS FROM J.D. BARNES DRAFT PLAN, DATED 26/09/2020
TREES AND SHRUB LOCATIONS TO BE CONFIRMED ON LANDSCAPE PLAN

1	ISSUE FOR SPA	2026-01-20	CT
2	ISSUE FOR COORDINATION	2026-01-08	JM
3	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

CAIVAN

Client

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

dsel.ca

APPENDIX C

LOCATION			RESIDENTIAL AREA AND POPULATION								PEAK		COMM		INSTT		PARK		C+H	INFILTRATION			PIPE										VEL.	
STREET		FROM M.H.	TO M.H.	AREA (ha)	UNITS	UNITS Singles	Townhouse	POP.	CUMULATIVE AREA (ha)	POP.	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	(FULL) (m/s)	(ACT.) (m/s)				
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 3									0.21	54				0.00		0.00		0.00		0.21	0.21													
Contribution From PRIVATE STREET 2, Pipe 201A - 200A									0.66	216				0.00		0.00		0.00		0.66	0.87													
Contribution From PRIVATE STREET 6, Pipe 202A - 200A									0.90	270				0.00		0.00		0.00		0.03	0.90													
		200A	118A	0.03				0	1.00	270	3.48	3.04		0.00		0.00		0.00	0.00	0.10	1.00	0.33	3.37	30.0	200	0.35	19.40	0.17	0.62	0.46				
To MAGNOLIA PHASE 1 STREET 1 ROAD, Pipe 118A - 119A				0.10				0	1.00	270				0.00		0.00		0.00		1.00														
PRIVATE STREET 1									1.00	270				0.00		0.00		0.00																
		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	0.15	16		16	44	0.15	44	3.66	0.52		0.00		0.00		0.00	0.00	0.15	0.15	0.05	0.57	35.5	200	3.10	57.75	0.01	1.84	0.59				
To PRIVATE STREET 5, Pipe 209A - 176A									0.15	44				0.00		0.00		0.00			0.15													
		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													





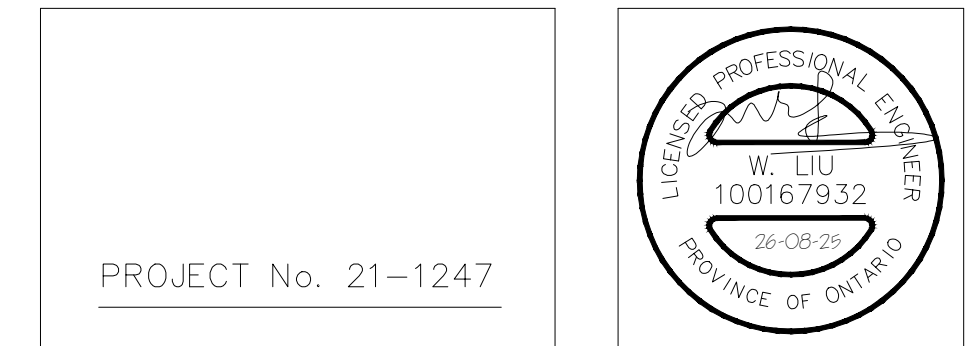
LEGEND

- SANITARY DRAINAGE BOUNDARY
- SANITARY DRAINAGE BOUNDARY (BY OTHERS)
- UPSTREAM MH TO DOWNSTREAM MH
- AREA IN HECTARES
- POPULATION
- SANITARY MAINTENANCE HOLE (WATERTIGHT LID PER CP-50 401.030)
- SANITARY MAINTENANCE HOLE
- CAP
- EXISTING SANITARY 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
ELEVATIONS SHOWN ON THIS PLAN ARE GEODETIC RELATED TO CGVD28-78 VERTICAL DATUM
LEGAL INFORMATION
W-PLAN PROVIDED BY BY J.D. BARNES LIMITED, PROJECT No. 23-10-060-00
(Phase 1), RECEIVED ON AUGUST 11, 2026

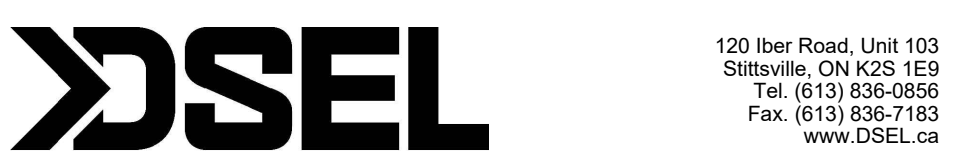
2	W.L.	26-08-25	2nd SUBMISSION
1	W.L.	26-03-20	1st SUBMISSION
No.	BY	DATE	DESCRIPTION



PROJECT No. 21-1247

CAIVAN (STITTSVILLE) INC.

STITTSVILLE SOUTH URBAN EXPANSION AREA (W-4)
PHASE 1



SANITARY DRAINAGE PLAN

DRAWN BY: M.S. & A.S.	CHECKED BY: W.L.	SHEET NO.
DESIGNED BY: W.L.	CHECKED BY: C.M.	44
SCALE: 1:1000	DATE: MARCH 2026	



David Schaeffer Engineering Ltd.

120 Iber Road, Suite 103

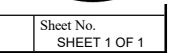
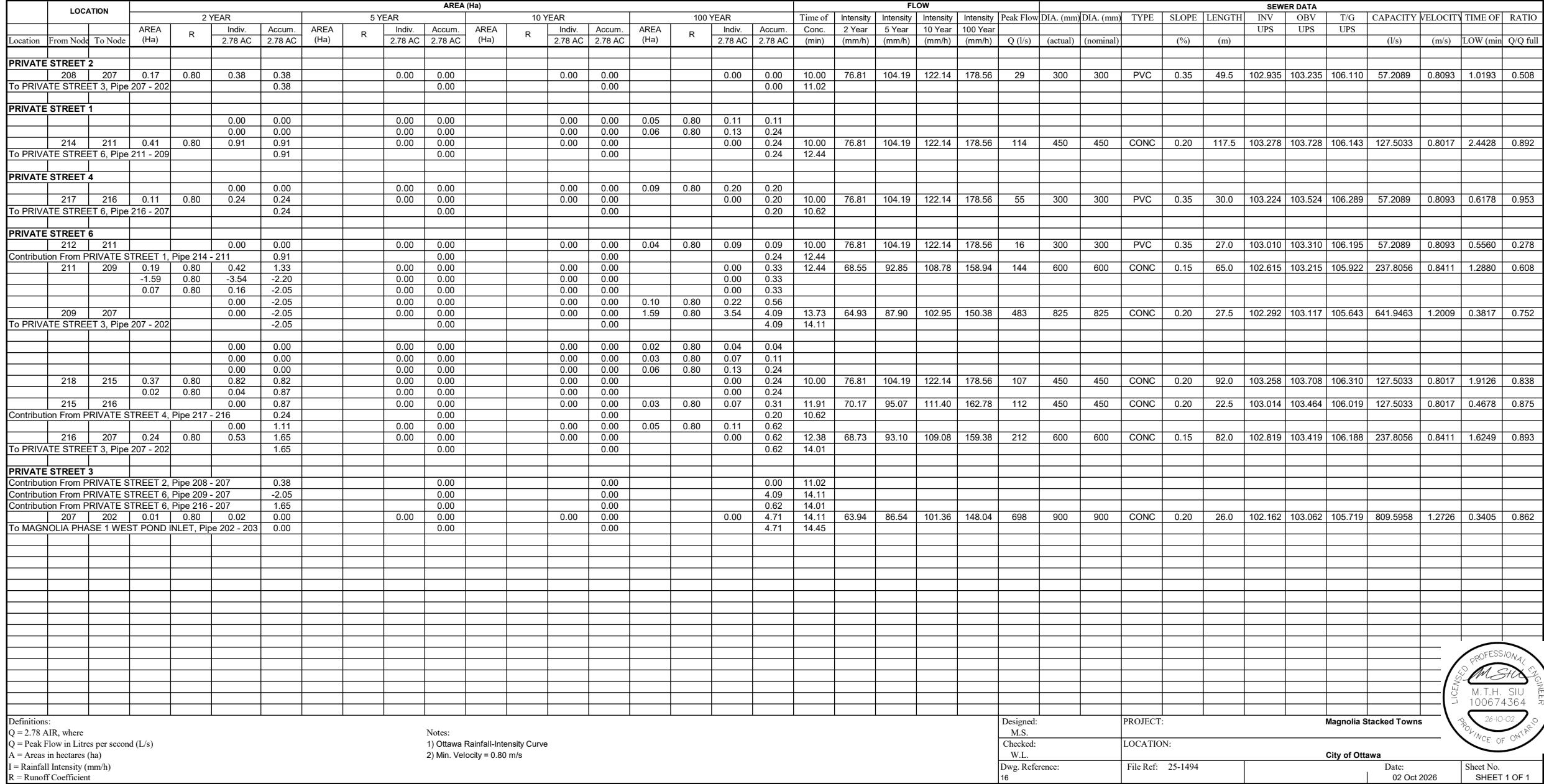
Stittsville, ON K2S 1E9

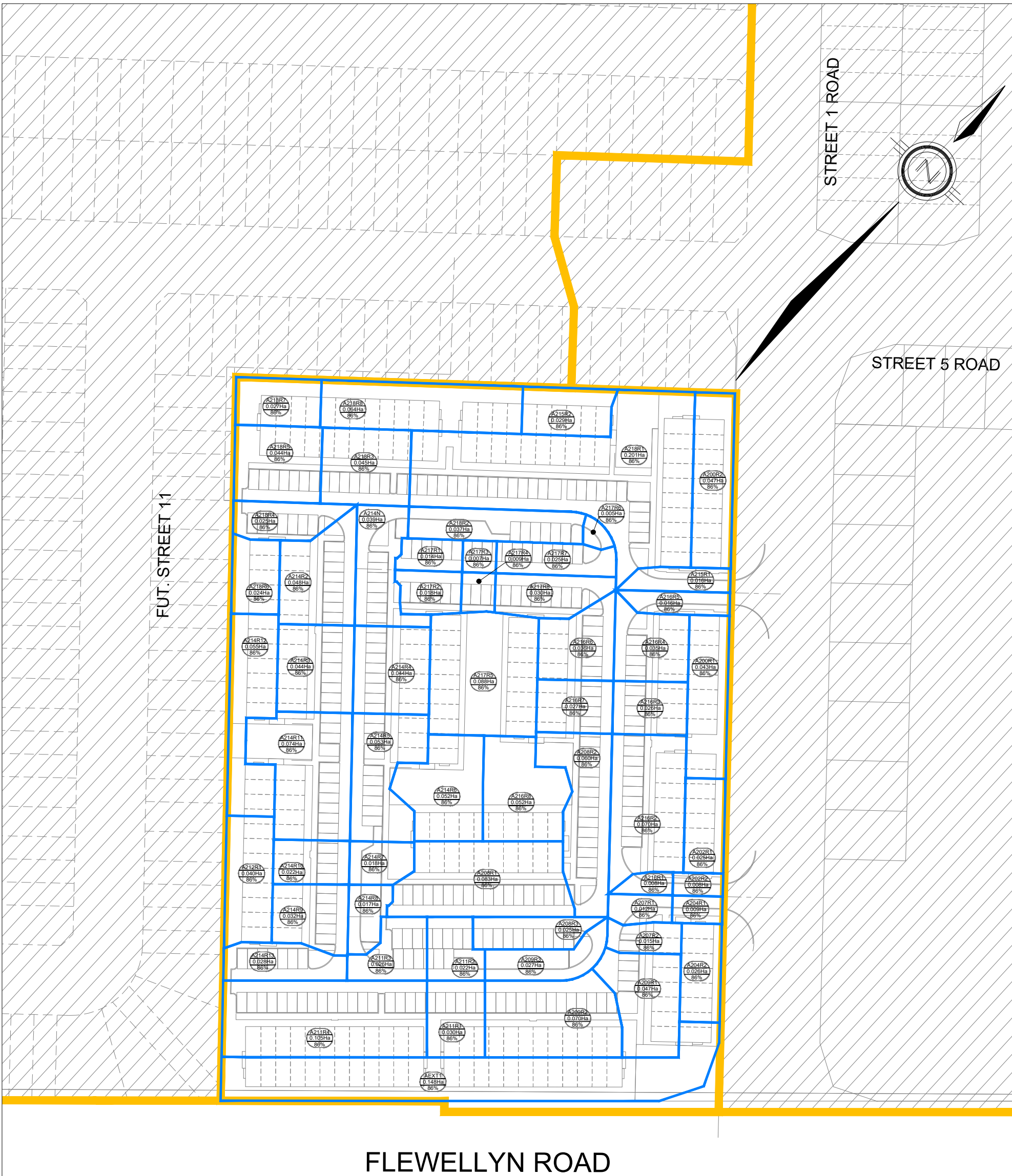
613-836-0856

dse.ca

APPENDIX D

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

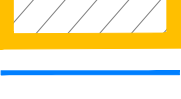




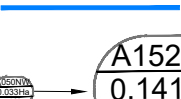
LEGEND



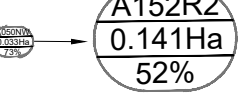
SITE BOUNDARY



FUTURE PHASES



DRAINAGE BOUNDARY



AREA ID
DRAINAGE AREA
IMPERVIOUSNESS

 120 Iber Road, Unit 103 Stittsville, ON K2S 1E9 Tel. (613) 836-0856 Fax. (613) 836-7183 www.DSEL.ca	CAIVAN (STITTSVILLE) INC., MAGNOLIA STACKED TOWNS CITY OF OTTAWA	POST DEVELOPMENT DRAINAGE PLAN	
		PROJECT No.: 25-1494	
		DATE: OCTOBER 2026	
SCALE: 1:1000		FIGURE: 1	

Stormwater - Proposed Development
City of Ottawa Sewer Design Guidelines, 2026

Drainage Area

Area ID A212R1

100-year (L/s)

Q 19.5 per subcatchment area A212R1

Grate Capacity

Ponding Depth 0.3 m
Single CB Capacity 202 L/s



Depth H (m)	OPSD 400.01	
	SINGLE * (L/s)	TWIN * (L/s)
0	0	0
0.01	1	1
0.02	2	3
0.03	4	5
0.04	7	9
0.05	11	16
0.06	16	27
0.07	20	36
0.08	36	54
0.09	48	71
0.1	61	91
0.11	73	109
0.12	86	127
0.13	99	140
0.14	109	155
0.15	120	169
0.16	129	183
0.17	136	196
0.18	145	211
0.19	150	228
0.2	156	243
0.21	161	259
0.22	167	275
0.23	172	291
0.24	176	307
0.25	181	322
0.26	186	337
0.27	189	354
0.28	194	371
0.29	199	387
0.3	202	403

Lead Size

Diameter 250 mm
Slope 0.50 %
Area 0.049 m2
R 0.063 m
Flow 42.05 L/s

Stormwater - Proposed Development
City of Ottawa Sewer Design Guidelines, 2026

Drainage Area

Area ID A214R12

100-year (L/s)

Q 26.6

per subcatchment area A214R12

Grate Capacity

Ponding Depth 0.29 m
Single CB Capacity 199 L/s



Depth H (m)	OPSD 400.01	
	SINGLE * (L/s)	TWIN * (L/s)
0	0	0
0.01	1	1
0.02	2	3
0.03	4	5
0.04	7	9
0.05	11	16
0.06	16	27
0.07	20	36
0.08	36	54
0.09	48	71
0.1	61	91
0.11	73	109
0.12	86	127
0.13	99	140
0.14	109	155
0.15	120	169
0.16	129	183
0.17	136	196
0.18	145	211
0.19	150	228
0.2	156	243
0.21	161	259
0.22	167	275
0.23	172	291
0.24	176	307
0.25	181	322
0.26	186	337
0.27	189	354
0.28	194	371
0.29	199	387
0.3	202	403

Lead Size

Diameter 250 mm
Slope 0.50 %
Area 0.049 m2
R 0.063 m
Flow 42.05 L/s

Stormwater - Proposed Development
City of Ottawa Sewer Design Guidelines, 2026

Drainage Area

Area ID A214R6

100-year (L/s)

Q 24.7

per subcatchment area A214R6

Grate Capacity

Ponding Depth 0.08 m
Single CB Capacity 36 L/s



Depth H (m)	OPSD 400.01	
	SINGLE * (L/s)	TWIN * (L/s)
0	0	0
0.01	1	1
0.02	2	3
0.03	4	5
0.04	7	9
0.05	11	16
0.06	16	27
0.07	20	36
0.08	36	54
0.09	48	71
0.1	61	91
0.11	73	109
0.12	86	127
0.13	99	140
0.14	109	155
0.15	120	169
0.16	129	183
0.17	136	196
0.18	145	211
0.19	150	228
0.2	156	243
0.21	161	259
0.22	167	275
0.23	172	291
0.24	176	307
0.25	181	322
0.26	186	337
0.27	189	354
0.28	194	371
0.29	199	387
0.3	202	403

Lead Size

Diameter 250 mm
Slope 0.50 %
Area 0.049 m2
R 0.063 m
Flow 42.05 L/s

Stormwater - Proposed Development
City of Ottawa Sewer Design Guidelines, 2026

Drainage Area

Area ID A215R2

100-year (L/s)

Q 14.1

per subcatchment area A215R2

Grate Capacity

Ponding Depth 0.25 m
Single CB Capacity 181 L/s



Depth H (m)	OPSD 400.01	
	SINGLE * (L/s)	TWIN * (L/s)
0	0	0
0.01	1	1
0.02	2	3
0.03	4	5
0.04	7	9
0.05	11	16
0.06	16	27
0.07	20	36
0.08	36	54
0.09	48	71
0.1	61	91
0.11	73	109
0.12	86	127
0.13	99	140
0.14	109	155
0.15	120	169
0.16	129	183
0.17	136	196
0.18	145	211
0.19	150	228
0.2	156	243
0.21	161	259
0.22	167	275
0.23	172	291
0.24	176	307
0.25	181	322
0.26	186	337
0.27	189	354
0.28	194	371
0.29	199	387
0.3	202	403

Lead Size

Diameter 250 mm
Slope 0.50 %
Area 0.049 m2
R 0.063 m
Flow 42.05 L/s

Stormwater - Proposed Development
City of Ottawa Sewer Design Guidelines, 2026

Drainage Area

Area ID A216R8

100-year (L/s)

Q 24.7

per subcatchment area A216R8

Grate Capacity

Ponding Depth 0.08 m
Single CB Capacity 36 L/s



Depth H (m)	OPSD 400.01	
	SINGLE * (L/s)	TWIN * (L/s)
0	0	0
0.01	1	1
0.02	2	3
0.03	4	5
0.04	7	9
0.05	11	16
0.06	16	27
0.07	20	36
0.08	36	54
0.09	48	71
0.1	61	91
0.11	73	109
0.12	86	127
0.13	99	140
0.14	109	155
0.15	120	169
0.16	129	183
0.17	136	196
0.18	145	211
0.19	150	228
0.2	156	243
0.21	161	259
0.22	167	275
0.23	172	291
0.24	176	307
0.25	181	322
0.26	186	337
0.27	189	354
0.28	194	371
0.29	199	387
0.3	202	403

Lead Size

Diameter 250 mm
Slope 0.50 %
Area 0.049 m2
R 0.063 m
Flow 42.05 L/s

Stormwater - Proposed Development
City of Ottawa Sewer Design Guidelines, 2026

Drainage Area

Area ID A217R5

100-year (L/s)

Q 41.0

per subcatchment area A217R5

Grate Capacity

Ponding Depth 0.23 m
Single CB Capacity 172 L/s



Depth H (m)	OPSD 400.01	
	SINGLE * (L/s)	TWIN * (L/s)
0	0	0
0.01	1	1
0.02	2	3
0.03	4	5
0.04	7	9
0.05	11	16
0.06	16	27
0.07	20	36
0.08	36	54
0.09	48	71
0.1	61	91
0.11	73	109
0.12	86	127
0.13	99	140
0.14	109	155
0.15	120	169
0.16	129	183
0.17	136	196
0.18	145	211
0.19	150	228
0.2	156	243
0.21	161	259
0.22	167	275
0.23	172	291
0.24	176	307
0.25	181	322
0.26	186	337
0.27	189	354
0.28	194	371
0.29	199	387
0.3	202	403

Lead Size

Diameter 250 mm
Slope 0.50 %
Area 0.049 m2
R 0.063 m
Flow 42.05 L/s

Stormwater - Proposed Development
City of Ottawa Sewer Design Guidelines, 2026

Drainage Area

Area ID A218R6

100-year (L/s)

Q 11.7

per subcatchment area A218R6

Grate Capacity

Ponding Depth 0.11 m
Single CB Capacity 73 L/s



Depth H (m)	OPSD 400.01	
	SINGLE * (L/s)	TWIN * (L/s)
0	0	0
0.01	1	1
0.02	2	3
0.03	4	5
0.04	7	9
0.05	11	16
0.06	16	27
0.07	20	36
0.08	36	54
0.09	48	71
0.1	61	91
0.11	73	109
0.12	86	127
0.13	99	140
0.14	109	155
0.15	120	169
0.16	129	183
0.17	136	196
0.18	145	211
0.19	150	228
0.2	156	243
0.21	161	259
0.22	167	275
0.23	172	291
0.24	176	307
0.25	181	322
0.26	186	337
0.27	189	354
0.28	194	371
0.29	199	387
0.3	202	403

Lead Size

Diameter 250 mm
Slope 0.50 %
Area 0.049 m2
R 0.063 m
Flow 42.05 L/s

Stormwater - Proposed Development
City of Ottawa Sewer Design Guidelines, 2026

Drainage Area

Area ID A218R7

100-year (L/s)

Q 13.1

per subcatchment area A218R7

Grate Capacity

Ponding Depth 0.29 m
Single CB Capacity 199 L/s



Depth H (m)	OPSD 400.01	
	SINGLE * (L/s)	TWIN * (L/s)
0	0	0
0.01	1	1
0.02	2	3
0.03	4	5
0.04	7	9
0.05	11	16
0.06	16	27
0.07	20	36
0.08	36	54
0.09	48	71
0.1	61	91
0.11	73	109
0.12	86	127
0.13	99	140
0.14	109	155
0.15	120	169
0.16	129	183
0.17	136	196
0.18	145	211
0.19	150	228
0.2	156	243
0.21	161	259
0.22	167	275
0.23	172	291
0.24	176	307
0.25	181	322
0.26	186	337
0.27	189	354
0.28	194	371
0.29	199	387
0.3	202	403

Lead Size

Diameter 250 mm
Slope 0.50 %
Area 0.049 m2
R 0.063 m
Flow 42.05 L/s

Stormwater - Proposed Development
City of Ottawa Sewer Design Guidelines, 2026

Drainage Area

Area ID A218R8

100-year (L/s)

Q 30.6

per subcatchment area A218R8

Grate Capacity

Ponding Depth 0.29 m
Single CB Capacity 199 L/s

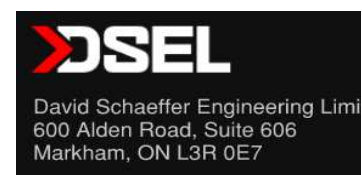


Depth H (m)	OPSD 400.01	
	SINGLE * (L/s)	TWIN * (L/s)
0	0	0
0.01	1	1
0.02	2	3
0.03	4	5
0.04	7	9
0.05	11	16
0.06	16	27
0.07	20	36
0.08	36	54
0.09	48	71
0.1	61	91
0.11	73	109
0.12	86	127
0.13	99	140
0.14	109	155
0.15	120	169
0.16	129	183
0.17	136	196
0.18	145	211
0.19	150	228
0.2	156	243
0.21	161	259
0.22	167	275
0.23	172	291
0.24	176	307
0.25	181	322
0.26	186	337
0.27	189	354
0.28	194	371
0.29	199	387
0.3	202	403

Lead Size

Diameter 250 mm
Slope 0.50 %
Area 0.049 m2
R 0.063 m
Flow 42.05 L/s

Project Name: Magnolia
Project Number: 1494
Designed By: JC
Checked By: JP
Date: 29-Sep-26



Ponding Depths Over Catchbasins - 3hr Chicago

ICD ID	Junction ID	Applied ICD (m)	Applied ICD (mm)	2yr Depth Over CB (m)	5yr Depth Over CB (m)	100yr Depth Over CB (m)	100yr + 20% Depth Over CB (m)
Streets Controlled to 2-year							
ICD-CB_201	CB_201	0.127	127	0.06	0.08	0.14	0.25
ICD-CB_202	CB_202	0.127	127	0.06	0.08	0.14	0.25
ICD-CB_203	CB_203	0.094	94	0.04	0.11	0.29	0.33
ICD-CB_204	CB_204	0.094	94	0.04	0.11	0.29	0.33
ICD-CB_206	CB_206	0.083	83	0.02	0.02	0.03	0.04
ICD-CB_207	CB_207	0.083	83	0.02	0.02	0.03	0.04
ICD-CB_208	CB_208	0.083	83	0.03	0.04	0.17	0.18
ICD-CB_209-CB_210	CB_209	0.094	94	0.03	0.07	0.24	0.26
ICD-CB_211	CB_211	0.083	83	0.03	0.04	0.09	0.16
ICD-CB_212	CB_212	0.083	83	0.03	0.04	0.17	0.24
ICD-CB_213	CB_213	0.083	83	0.03	0.04	0.17	0.24
ICD-CB_214	CB_214	0.083	83	0.03	0.03	0.18	0.21
ICD-CB_215	CB_215	0.083	83	0.03	0.03	0.18	0.21
ICD-CB_217	CB_217	0.083	83	0.04	0.06	0.18	0.22
ICD-CB_218	CB_218	0.127	127	0.04	0.06	0.18	0.22
ICD-CB_219-CB_220	CB_219	0.083	83	0.02	0.05	0.17	0.18
ICD-CB_222	CB_222	0.083	83	0.02	0.02	0.03	0.18
ICD-CB_223	CB_223	0.083	83	0.03	0.04	0.17	0.18
ICD-CB_224-CB_200	CB_200	0.094	94	0.03	0.03	0.15	0.22
ICD-CB_225	CB_225	0.083	83	0.01	0.01	0.13	0.20
ICD-CB_226	CB_226	0.083	83	0.01	0.01	0.02	0.03
ICD-CB_227	CB_227	0.083	83	0.01	0.01	0.02	0.04
ICD-CB_228	CB_228	0.083	83	0.01	0.01	0.02	0.02
ICD-CB_229	CB_229	0.083	83	0.01	0.01	0.02	0.02
MAX=				0.06	0.11	0.29	0.33

Note: Up to roughly 6 cm head is required to push through CB grates.

3hr Chicago generates higher intensity than 24hr SCS and therefore higher flow depth over CB.

Project Name: Mangolia
Project Number: 1494
Designed By: JC
Checked By: JP
Date: 2026-09-29



USF Freeboard Results - 100yr 3hr CHI

Name	Inlet Node	Outlet Node	Lot #	USF (m)	Dist from DS MH (m)	U/S MH HGL (m)	D/S MH HGL (m)	Pipe Length (m)	INT. HGL (m)	Freeboard (m)
STM-218-215	MH 218	MH 215	4-1	104.56	92.2	103.99	103.86	92.00	103.99	0.57
STM-218-215	MH 218	MH 215	4-12	104.56	47.6	103.99	103.86	92.00	103.93	0.63
STM-218-215	MH 218	MH 215	5-1	104.41	40.1	103.99	103.86	92.00	103.92	0.49
STM-218-215	MH 218	MH 215	5-10	104.41	3.2	103.99	103.86	92.00	103.86	0.55
STM-214-211	MH 214	MH 211	6-1	104.41	74.9	104.08	103.70	117.50	103.94	0.47
STM-214-211	MH 214	MH 211	6-12	104.50	117.3	104.08	103.70	117.50	104.08	0.42
STM-214-211	MH 214	MH 211	7-1	104.39	17	104.08	103.70	117.50	103.75	0.64
STM-214-211	MH 214	MH 211	7-12	104.39	61.5	104.08	103.70	117.50	103.90	0.49
STM-214-211	MH 214	MH 211	8-1	104.44	101.1	104.08	103.70	117.50	104.03	0.41
STM-214-211	MH 214	MH 211	8-10	104.36	64.2	104.08	103.70	117.50	103.91	0.45
STM-216-207	MH 216	MH 207	9-1	104.36	42.7	103.79	103.50	82.00	103.65	0.71
STM-216-207	MH 216	MH 207	9-8	104.36	72	103.79	103.50	82.00	103.75	0.61
STM-208-207	MH 208	MH 207	10-1	104.1	49.3	103.73	103.50	49.50	103.73	0.37
STM-208-207	MH 208	MH 207	10-10	104.1	12.4	103.73	103.50	49.50	103.56	0.54
STM-209-207	MH 209	MH 207	11-1	104.05	5.8	103.54	103.50	27.50	103.51	0.54
STM-209-207	MH 209	MH 207	11-8	104.05	27.4	103.54	103.50	27.50	103.54	0.51
STM-211-209	MH 211	MH 209	12-1	104.22	47.7	103.70	103.54	65.00	103.66	0.56
STM-212-211	MH 212	MH 211	12-12	104.22	27.2	103.71	103.70	27.00	103.71	0.51
STM-209-207	MH 209	MH 207	13-1	104.12	27.4	103.54	103.50	27.50	103.54	0.58
STM-211-209	MH 211	MH 209	13-3	104.12	3.5	103.70	103.54	65.00	103.55	0.57
STM-211-209	MH 211	MH 209	13-12	104.12	41	103.70	103.54	65.00	103.64	0.48
									MIN =	0.37

Project Name: Mangolia
 Project Number: 1494
 Designed By: JC
 Checked By: JP
 Date: 2026-09-29



USF Freeboard Results - 100yr 3hr CHI +20%

Name	Inlet Node	Outlet Node	Lot #	USF (m)	Dist from DS MH (m)	U/S MH HGL (m)	D/S MH HGL (m)	Pipe Length (m)	INT. HGL (m)	Freeboard (m)
STM-218-215	MH 218	MH 215	4-1	104.56	92.2	104.37	104.21	92.00	104.37	0.19
STM-218-215	MH 218	MH 215	4-12	104.56	47.6	104.37	104.21	92.00	104.29	0.27
STM-218-215	MH 218	MH 215	5-1	104.41	40.1	104.37	104.21	92.00	104.28	0.13
STM-218-215	MH 218	MH 215	5-10	104.41	3.2	104.37	104.21	92.00	104.22	0.19
STM-214-211	MH 214	MH 211	6-1	104.41	74.9	104.44	103.98	117.50	104.27	0.14
STM-214-211	MH 214	MH 211	6-12	104.50	117.3	104.44	103.98	117.50	104.44	0.06
STM-214-211	MH 214	MH 211	7-1	104.39	17	104.44	103.98	117.50	104.05	0.34
STM-214-211	MH 214	MH 211	7-12	104.39	61.5	104.44	103.98	117.50	104.22	0.17
STM-214-211	MH 214	MH 211	8-1	104.44	101.1	104.44	103.98	117.50	104.38	0.06
STM-214-211	MH 214	MH 211	8-10	104.36	64.2	104.44	103.98	117.50	104.23	0.13
STM-216-207	MH 216	MH 207	9-1	104.36	42.7	104.13	103.74	82.00	103.94	0.42
STM-216-207	MH 216	MH 207	9-8	104.36	72	104.13	103.74	82.00	104.08	0.28
STM-208-207	MH 208	MH 207	10-1	104.1	49.3	104.01	103.74	49.50	104.01	0.09
STM-208-207	MH 208	MH 207	10-10	104.1	12.4	104.01	103.74	49.50	103.81	0.29
STM-209-207	MH 209	MH 207	11-1	104.05	5.8	103.78	103.74	27.50	103.75	0.30
STM-209-207	MH 209	MH 207	11-8	104.05	27.4	103.78	103.74	27.50	103.78	0.27
STM-211-209	MH 211	MH 209	12-1	104.22	47.7	103.98	103.78	65.00	103.93	0.29
STM-212-211	MH 212	MH 211	12-12	104.22	27.2	103.99	103.98	27.00	103.99	0.23
STM-209-207	MH 209	MH 207	13-1	104.12	27.4	103.78	103.74	27.50	103.78	0.34
STM-211-209	MH 211	MH 209	13-3	104.12	3.5	103.98	103.78	65.00	103.79	0.33
STM-211-209	MH 211	MH 209	13-12	104.12	41	103.98	103.78	65.00	103.91	0.21
									MIN =	0.06